0077911

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

COMPLETE COPY OF DATA PACKAGE TO:

Rick Kerkow	L6-06	KW 6/10/08 Initials/Date
Kathy Wendt	H4-21	KW 6/10/08 Initials/Date

COMMENTS:

SDG K1181 SAF-RC-088

Rad only Chem only X Rad & Chem

X Complete Partial

WASTE SITE: 618-7 Burial Ground (drums)

RECEIVED
JUN 12 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

April 28, 2008

RECEIVED
APR 2008

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

Reference: **P.O. #S00W235A00**
Eberline Services R8-04-063-7792, SDG K1181

Dear Ms. Kessner:

Enclosed is the data report for two solid (other solid) samples designated under SAF No. RC-088 received at Eberline Services on April 11, 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 C. Mannion
Senior Program Manager

MCM/njv

Enclosure: Data Package

1.0 GENERAL

Washington Closure Hanford (WCH) Sample Delivery Group K1181 was composed of two solid (other solid) samples designated under SAF No. RC-088 with a Project Designation of: 618-7 Burial Ground-Other Liquids.

Note: the samples were composed of oily dirt and were therefore treated as solid (other solid).

The samples were received as stated on the Chain-of-Custody document. Any discrepancies are noted on the Eberline Services Sample Receipt Checklist. The results were transmitted to WCH via e-mail on April 28, 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

No problems were encountered during the course of the analyses.

3.0 Case Narrative Certification Statement

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

Melissa Mannion

Melissa C. Mannion
Senior Program Manager

04/24/08
Date

E B E R L I N E S E R V I C E S / R I C H M O N D
SAMPLE DELIVERY GROUP K1181

SDG	7792
Contact	Melissa C. Mannion

Client	Hanford
Contract	No. S00W235A00
Case no	SDG_K1181

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

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

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Prepared by

Reviewed by

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-TOC
Version	3.06
Report date	04/28/08

SDG 7792
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1181

ABOUT THE DATA SUMMARY SECTION

The Data Summary Section of a Data Package has all data, in several useful orders, necessary for first level, routine review of the data package for a Sample Delivery Group (SDG). This section follows the Data Package Narrative, which has an overview of the data package and a discussion of special problems. It is followed by the Raw Data Section, which has full details.

The Data Summary Section has several groups of reports:

SAMPLE SUMMARIES

The Sample and QC Summary Reports show all samples, including QC samples, reported in one SDG. These reports cross-reference client and lab sample identifiers.

PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches (lab groupings reflecting how work was organized) relevant to the reported SDG with information necessary to check the completeness and consistency of the SDG.

WORK SUMMARY

The Work Summary Report shows all samples and work done on them relevant to the reported SDG.

METHOD BLANKS

The Method Blank Reports, one for each Method Blank relevant to the SDG, show all results and primary supporting information for the blanks.

LAB CONTROL SAMPLES

The Lab Control Sample Reports, one for each Lab Control Sample relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 04/28/08

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 K1181

LAB SAMPLE SUMMARY

SDG 7792
Contact Melissa C. Mannion

Client Hanford
Contract No. S00W235A00
Case no SDG K1181

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAF NO	CHAIN OF CUSTODY	COLLECTED
R804063-01	J169N4	618-7 BurialGrnds(drums)	SOLID		RC-088	RC-088-005	04/08/08 09:20
R804063-02	J169N7	618-7 BurialGrnds(drums)	SOLID		RC-088	RC-088-005	04/08/08 09:35
R804063-03	Lab Control Sample		SOLID		RC-088		
R804063-04	Method Blank		SOLID		RC-088		
R804063-05	Duplicate (R804063-01)	618-7 BurialGrnds(drums)	SOLID		RC-088		04/08/08 09:20

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LS
Version 3.06
Report date 04/28/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1181

SDG 7792
Contact Melissa C. Mannion

QC SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1181

: 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
792	RC-088-005	J169N4	SOLID	100.0	656 g		04/11/08	3	R804063-01	7792-001
		J169N7	SOLID	100.0	734 g		04/11/08	3	R804063-02	7792-002
		Method Blank	SOLID						R804063-04	7792-004
		Lab Control Sample	SOLID						R804063-03	7792-003
		Duplicate (R804063-01)	SOLID	100.0	656 g		04/11/08	3	R804063-05	7792-005

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-QS
Version 3.06
Report date 04/28/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1181

SDG 7792
Contact Melissa C. Mannion

PREP BATCH SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1181

TEST	MATRIX	METHOD	PREPARATION ERROR BATCH	2σ %	PLANCHETS ANALYZED CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	MS/ORIG	QUALIFIERS
Alpha Spectroscopy												
AM	SOLID	Americium 241 in Solids	6148-066	8.0	2			1	1	1/1		
PU	SOLID	Plutonium, Isotopic in Solids	6148-066	8.0	2			1	1	1/1		
TH	SOLID	Thorium, Isotopic in Solids	6148-066	8.0	2			1	1	1/1		
U	SOLID	Uranium, Isotopic in Solids	6148-066	8.0	2			1	1	1/1		
Beta Counting												
SR	SOLID	Total Strontium in Solids	6148-066	10.4	2			1	1	1/1		
Gas Proportional Counting												
93A	SOLID	Gross Alpha in Solids	6148-066	20.6	2			1	1	1/1		
93B	SOLID	Gross Beta in Solids	6148-066	11.0	2			1	1	1/1		
Gamma Spectroscopy												
GAM	SOLID	Gamma Scan	6148-066	7.0	2			1	1	1/1		

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

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-PBS
Version 3.06
Report date 04/28/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1181

LAB WORK SUMMARY

SDG 7792
Contact Melissa C. Mannion

Client Hanford
Contract No. S00W235A00
Case no SDG K1181

AB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
804063-01	J169N4			7792-001	93A/93		04/17/08	04/21/08	BW	Gross Alpha in Solids
04/08/08	618-7 BurialGrnds(drums)		SOLID	7792-001	93B/93		04/17/08	04/21/08	BW	Gross Beta in Solids
04/11/08	RC-088-005	RC-088		7792-001	AM		04/23/08	04/24/08	BW	Americium 241 in Solids
				7792-001	GAM		04/14/08	04/17/08	CSS	Gamma Scan
				7792-001	PU		04/23/08	04/24/08	BW	Plutonium, Isotopic in Solids
				7792-001	SR		04/18/08	04/21/08	BW	Total Strontium in Solids
				7792-001	TH		04/18/08	04/18/08	BW	Thorium, Isotopic in Solids
				7792-001	U		04/22/08	04/22/08	BW	Uranium, Isotopic in Solids
804063-02	J169N7			7792-002	93A/93		04/17/08	04/21/08	BW	Gross Alpha in Solids
04/08/08	618-7 BurialGrnds(drums)		SOLID	7792-002	93B/93		04/17/08	04/21/08	BW	Gross Beta in Solids
04/11/08	RC-088-005	RC-088		7792-002	AM		04/23/08	04/24/08	BW	Americium 241 in Solids
				7792-002	GAM		04/14/08	04/17/08	CSS	Gamma Scan
				7792-002	PU		04/23/08	04/24/08	BW	Plutonium, Isotopic in Solids
				7792-002	SR		04/18/08	04/21/08	BW	Total Strontium in Solids
				7792-002	TH		04/18/08	04/18/08	BW	Thorium, Isotopic in Solids
				7792-002	U		04/22/08	04/22/08	BW	Uranium, Isotopic in Solids
804063-03	Lab Control Sample			7792-003	93A/93		04/17/08	04/21/08	BW	Gross Alpha in Solids
			SOLID	7792-003	93B/93		04/17/08	04/21/08	BW	Gross Beta in Solids
		RC-088		7792-003	AM		04/23/08	04/24/08	BW	Americium 241 in Solids
				7792-003	GAM		04/14/08	04/17/08	CSS	Gamma Scan
				7792-003	PU		04/23/08	04/24/08	BW	Plutonium, Isotopic in Solids
				7792-003	SR		04/18/08	04/21/08	BW	Total Strontium in Solids
				7792-003	TH		04/18/08	04/18/08	BW	Thorium, Isotopic in Solids
				7792-003	U		04/23/08	04/24/08	BW	Uranium, Isotopic in Solids
804063-04	Method Blank			7792-004	93A/93		04/21/08	04/21/08	BW	Gross Alpha in Solids
			SOLID	7792-004	93B/93		04/21/08	04/21/08	BW	Gross Beta in Solids
		RC-088		7792-004	AM		04/23/08	04/24/08	BW	Americium 241 in Solids
				7792-004	GAM		04/15/08	04/17/08	CSS	Gamma Scan
				7792-004	PU		04/23/08	04/24/08	BW	Plutonium, Isotopic in Solids
				7792-004	SR		04/18/08	04/21/08	BW	Total Strontium in Solids
				7792-004	TH		04/18/08	04/18/08	BW	Thorium, Isotopic in Solids
				7792-004	U		04/22/08	04/22/08	BW	Uranium, Isotopic in Solids

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 04/28/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1181

SDG 7792
Contact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford
Contract No. S00W235A00
Case no SDG K1181

AB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
304063-05	Duplicate (R804063-01)			7792-005	93A/93		04/17/08	04/21/08	BW	Gross Alpha in Solids
04/08/08	618-7 BurialGrnds(drums)		SOLID	7792-005	93B/93		04/17/08	04/21/08	BW	Gross Beta in Solids
04/11/08		RC-088		7792-005	AM		04/23/08	04/24/08	BW	Americium 241 in Solids
				7792-005	GAM		04/15/08	04/17/08	CSS	Gamma Scan
				7792-005	PU		04/23/08	04/24/08	BW	Plutonium, Isotopic in Solids
				7792-005	SR		04/18/08	04/21/08	BW	Total Strontium in Solids
				7792-005	TH		04/18/08	04/18/08	BW	Thorium, Isotopic in Solids
				7792-005	U		04/22/08	04/22/08	BW	Uranium, Isotopic in Solids

COUNTS OF TESTS BY SAMPLE TYPE

TEST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
93A/93	RC-088	Gross Alpha in Solids	900.0_ALPHABETA_GPC	2			1	1	1	5
93B/93	RC-088	Gross Beta in Solids	900.0_ALPHABETA_GPC	2			1	1	1	5
AM	RC-088	Americium 241 in Solids	AMCMISO_IE_PLATE_AEA	2			1	1	1	5
GAM	RC-088	Gamma Scan	GAMMA_GS	2			1	1	1	5
PU	RC-088	Plutonium, Isotopic in Solids	PUISO_PLATE_AEA	2			1	1	1	5
SR	RC-088	Total Strontium in Solids	SRTOT_SEP_PRECIP_GPC	2			1	1	1	5
TH	RC-088	Thorium, Isotopic in Solids	THISO_IE_PLATE_AEA	2			1	1	1	5
U	RC-088	Uranium, Isotopic in Solids	UISO_PLATE_AEA	2			1	1	1	5
TOTALS				16			8	8	8	40

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 04/28/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1181

7792-004

Method Blank

METHOD BLANK

SDG	7792	Client/Case no	Hanford	SDG K1181	
Contact	Melissa C. Mannion	Contract	No. S00W235A00		
Lab sample id	R804063-04	Client sample id	Method Blank		
Dept sample id	7792-004	Material/Matrix		SOLID	
		SAF No	RC-088		

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	-0.771	3.0	6.76	10.0	U	93A
Gross Beta	12587-47-2	-2.10	3.1	5.78	15.0	U	93B
Total Strontium	SR-RAD	0.003	0.14	0.301	1.00	U	SR
Americium 241	14596-10-2	0.027	0.054	0.078	1.00	U	AM
Thorium 228	14274-82-9	-0.032	0.19	0.393	1.00	U	TH
Thorium 230	14269-63-7	0.191	0.26	0.305	1.00	U	TH
Thorium 232	TH-232	-0.032	0.064	0.244	1.00	U	TH
Uranium 233/234	U-233/234	0.021	0.042	0.162	1.00	U	U
Uranium 235	15117-96-1	0.026	0.051	0.196	1.00	U	U
Uranium 238	U-238	0	0.042	0.162	1.00	U	U
Plutonium 238	13981-16-3	0.035	0.039	0.056	1.00	U	PU
Plutonium 239/240	PU-239/240	0	0.016	0.037	1.00	U	PU
Potassium 40	13966-00-2	U		0.470		U	GAM
Cobalt 60	10198-40-0	U		0.020	0.050	U	GAM
Cesium 137	10045-97-3	U		0.022	0.100	U	GAM
Radium 226	13982-63-3	U		0.049	0.100	U	GAM
Radium 228	15262-20-1	U		0.097	0.200	U	GAM
Europium 152	14683-23-9	U		0.072	0.100	U	GAM
Europium 154	15585-10-1	U		0.056	0.100	U	GAM
Europium 155	14391-16-3	U		0.053	0.100	U	GAM
Thorium 228	14274-82-9	U		0.043		U	GAM
Thorium 232	TH-232	U		0.097		U	GAM
Uranium 235	15117-96-1	U		0.103		U	GAM
Uranium 238	U-238	U		2.54		U	GAM
Americium 241	14596-10-2	U		0.054		U	GAM

618-7 Burial Grounds-Other Liquids

QC-BLANK #65337

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	04/28/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1181

7792-003

Lab Control Sample

LAB CONTROL SAMPLE

SDG 7792

Contact Melissa C. Mannion

Client/Case no Hanford SDG K1181

Contract No. S00W235A00

Lab sample id R804063-03

Dept sample id 7792-003

Client sample id Lab Control Sample

Material/Matrix SOLID

SAF No RC-088

ANALYTE	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST	ADDED pCi/g	2σ ERR pCi/g	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Gross Alpha	110	17	5.26	10.0		93A	102	4.1	108	58-142	70-130
Gross Beta	91.0	7.3	5.28	15.0		93B	93.5	3.7	97	79-121	80-120
Total Strontium	9.50	0.53	0.221	1.00		SR	9.35	0.37	102	81-119	80-120
Americium 241	4.44	1.1	0.578	1.00		AM	5.08	0.20	87	65-135	80-120
Thorium 230	16.1	1.9	0.234	1.00		TH	18.2	0.73	88	80-120	80-120
Uranium 233/234	4.77	0.31	0.170	1.00		U	5.58	0.22	85	86-114	80-120
Uranium 235	3.80	0.27	0.039	1.00		U	4.52	0.18	84	85-115	80-120
Uranium 238	4.88	0.31	0.161	1.00		U	6.04	0.24	81	86-114	80-120
Plutonium 238	5.44	0.29	0.086	1.00		PU	5.88	0.24	93	85-115	80-120
Plutonium 239/240	6.08	0.32	0.038	1.00		PU	6.60	0.26	92	86-114	80-120
Cobalt 60	1.13	0.045	0.029	0.050		GAM	1.14	0.046	99	87-113	80-120
Cesium 137	1.25	0.053	0.035	0.100		GAM	1.22	0.049	102	86-114	80-120

618-7 Burial Grounds-Other Liquids

QC-LCS #65336

Lab id EBRLNE

Protocol Hanford

Version Ver 1.0

Form DVD-LCS

Version 3.06

Report date 04/28/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1181

7792-005 J169N4

DUPLICATE

SDG	7792			Client/Case no	Hanford SDG K1181
Contact	Melissa C. Mannion			Contract	No. S00W235A00
	DUPLICATE		ORIGINAL		
Lab sample id	R804063-05	Lab sample id	R804063-01	Client sample id	J169N4
Dept sample id	7792-005	Dept sample id	7792-001	Location/Matrix	618-7 BurialGrnds(drums) SOLID
		Received	04/11/08	Collected/Weight	04/08/08 09:20 656 g
% solids	100.0	% solids	100.0	Custody/SAF No	RC-088-005 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	13.3	5.8	4.14	10.0		93A	22.1	7.3	4.11		50	91	1.6
Gross Beta	20.6	4.3	5.27	15.0		93B	21.6	4.4	5.27		5	50	0.3
Total Strontium	0.087	0.16	0.302	1.00	U	SR	0.045	0.12	0.230	U	-		0.4
Americium 241	0	0.27	0.496	1.00	U	AM	-0.032	0.13	0.350	U	-		0.2
Thorium 228	0.482	0.26	0.246	1.00		TH	0.291	0.21	0.325	U	49	131	1.1
Thorium 230	0.802	0.39	0.246	1.00		TH	0.792	0.37	0.354		1	103	0
Thorium 232	0.353	0.19	0.246	1.00		TH	0.634	0.27	0.202		57	102	1.7
Uranium 233/234	3.18	0.59	0.173	1.00		U	2.95	0.62	0.217		8	45	0.5
Uranium 235	0.246	0.16	0.209	1.00		U	0.240	0.21	0.262	U	2	164	0
Uranium 238	3.02	0.59	0.173	1.00		U	3.09	0.68	0.217		2	47	0.1
Plutonium 238	-0.017	0.060	0.115	1.00	U	PU	-0.004	0.044	0.092	U	-		0.3
Plutonium 239/240	0.013	0.026	0.041	1.00	U	PU	-0.009	0.009	0.042	U	-		1.6
Potassium 40	10.0	0.74	0.320			GAM	10.2	2.7	0.271		2	44	0.1
Cobalt 60	U		0.041	0.050	U	GAM	U		0.027	U	-		0.6
Cesium 137	U		0.041	0.100	U	GAM	U		0.030	U	-		0.4
Radium 226	0.332	0.087	0.087	0.100		GAM	0.277	0.088	0.059		18	63	0.9
Radium 228	0.587	0.17	0.166	0.200		GAM	0.473	0.18	0.119		22	72	0.9
Europium 152	U		0.099	0.100	U	GAM	U		0.074	U	-		0.4
Europium 154	U		0.142	0.100	U	GAM	U		0.089	U	-		0.6
Europium 155	U		0.101	0.100	U	GAM	U		0.071	U	-		0.5
Thorium 228	0.453	0.044	0.043			GAM	0.428	0.055	0.037		6	28	0.6
Thorium 232	0.587	0.17	0.166			GAM	0.473	0.18	0.119		22	72	0.9
Uranium 235	U		0.283		U	GAM	U		0.273	U	-		0.1
Uranium 238	U		7.62		U	GAM	U		6.71	U	-		0.2
Americium 241	U		0.150		U	GAM	U		0.132	U	-		0.2

618-7 Burial Grounds-Other Liquids

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	04/28/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1181

7792-005 J169N4

DUPLICATE, cont.

SDG	7792			Client/Case no	Hanford SDG K1181
Contact	Melissa C. Mannion			Contract	No. S00W235A00
	DUPLICATE		ORIGINAL		
Lab sample id	R804063-05	Lab sample id	R804063-01	Client sample id	J169N4
Dept sample id	7792-005	Dept sample id	7792-001	Location/Matrix	618-7 BurialGrnds(drums) SOLID
		Received	04/11/08	Collected/Weight	04/08/08 09:20 656 g
% solids	100.0	% solids	100.0	Custody/SAF No	RC-088-005 RC-088

QC-DUP#1 65338

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	04/28/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1181

7792-001 J169N4

DATA SHEET

SDG	7792	Client/Case no	Hanford SDG K1181
Contact	Melissa C. Mannion	Contract	No. S00W235A00
Lab sample id	R804063-01	Client sample id	J169N4
Dept sample id	7792-001	Location/Matrix	618-7 BurialGrnds(drums) SOLID
Received	04/11/08	Collected/Weight	04/08/08 09:20 656 g
% solids	100.0	Custody/SAF No	RC-088-005 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	22.1	7.3	4.11	10.0		93A
Gross Beta	12587-47-2	21.6	4.4	5.27	15.0		93B
Total Strontium	SR-RAD	0.045	0.12	0.230	1.00	U	SR
Americium 241	14596-10-2	-0.032	0.13	0.350	1.00	U	AM
Thorium 228	14274-82-9	0.291	0.21	0.325	1.00	U	TH
Thorium 230	14269-63-7	0.792	0.37	0.354	1.00		TH
Thorium 232	TH-232	0.634	0.27	0.202	1.00		TH
Uranium 233/234	U-233/234	2.95	0.62	0.217	1.00		U
Uranium 235	15117-96-1	0.240	0.21	0.262	1.00	U	U
Uranium 238	U-238	3.09	0.68	0.217	1.00		U
Plutonium 238	13981-16-3	-0.004	0.044	0.092	1.00	U	PU
Plutonium 239/240	PU-239/240	-0.009	0.009	0.042	1.00	U	PU
Potassium 40	13966-00-2	10.2	2.7	0.271			GAM
Cobalt 60	10198-40-0	U		0.027	0.050	U	GAM
Cesium 137	10045-97-3	U		0.030	0.100	U	GAM
Radium 226	13982-63-3	0.277	0.088	0.059	0.100		GAM
Radium 228	15262-20-1	0.473	0.18	0.119	0.200		GAM
Europium 152	14683-23-9	U		0.074	0.100	U	GAM
Europium 154	15585-10-1	U		0.089	0.100	U	GAM
Europium 155	14391-16-3	U		0.071	0.100	U	GAM
Thorium 228	14274-82-9	0.428	0.055	0.037			GAM
Thorium 232	TH-232	0.473	0.18	0.119			GAM
Uranium 235	15117-96-1	U		0.273		U	GAM
Uranium 238	U-238	U		6.71		U	GAM
Americium 241	14596-10-2	U		0.132		U	GAM

618-7 Burial Grounds-Other Liquids

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	04/28/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1181

7792-002 J169N7

DATA SHEET

SDG	7792	Client/Case no	Hanford SDG K1181
Contact	Melissa C. Mannion	Contract	No. S00W235A00
Lab sample id	R804063-02	Client sample id	J169N7
Dept sample id	7792-002	Location/Matrix	618-7 BurialGrnds(drums) SOLID
Received	04/11/08	Collected/Weight	04/08/08 09:35 734 g
% solids	100.0	Custody/SAF No	RC-088-005 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	23.6	7.7	5.60	10.0		93A
Gross Beta	12587-47-2	22.4	4.9	6.26	15.0		93B
Total Strontium	SR-RAD	-0.062	0.16	0.355	1.00	U	SR
Americium 241	14596-10-2	0.083	0.50	0.918	1.00	U	AM
Thorium 228	14274-82-9	0.267	0.24	0.349	1.00	U	TH
Thorium 230	14269-63-7	0.630	0.29	0.298	1.00		TH
Thorium 232	TH-232	0.315	0.19	0.185	1.00		TH
Uranium 233/234	U-233/234	6.37	0.89	0.169	1.00		U
Uranium 235	15117-96-1	0.295	0.16	0.205	1.00		U
Uranium 238	U-238	5.18	0.77	0.169	1.00		U
Plutonium 238	13981-16-3	-0.019	0.044	0.090	1.00	U	PU
Plutonium 239/240	PU-239/240	0.003	0.013	0.030	1.00	U	PU
Potassium 40	13966-00-2	8.91	0.41	0.200			GAM
Cobalt 60	10198-40-0	U		0.023	0.050	U	GAM
Cesium 137	10045-97-3	U		0.018	0.100	U	GAM
Radium 226	13982-63-3	U		0.059	0.100	U	GAM
Radium 228	15262-20-1	0.415	0.085	0.083	0.200		GAM
Europium 152	14683-23-9	U		0.053	0.100	U	GAM
Europium 154	15585-10-1	U		0.065	0.100	U	GAM
Europium 155	14391-16-3	U		0.067	0.100	U	GAM
Thorium 228	14274-82-9	0.527	0.044	0.043			GAM
Thorium 232	TH-232	0.415	0.085	0.083			GAM
Uranium 235	15117-96-1	U		1.04		U	GAM
Uranium 238	U-238	20.1	2.7	2.52			GAM
Americium 241	14596-10-2	U		0.047		U	GAM

618-7 Burial Grounds-Other Liquids

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	04/28/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1181

Test AM Matrix SOLID
SDG 7792
Contact Melissa C. Mannion

LAB METHOD SUMMARY

AMERICIUM 241 IN SOLIDS

ALPHA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1181

.ESULTS

AB AMPLE ID	RAW TEST	SUF- FIX	PLANCHET	CLIENT SAMPLE ID	Americium 241	
reparation batch 6148-066						
804063-01			7792-001	J169N4	U	
804063-02			7792-002	J169N7	U	
804063-03			7792-003	Lab Control Sample	ok	
804063-04			7792-004	Method Blank	U	
804063-05			7792-005	Duplicate (R804063-01)	-	U

ominal values and limits from method RDLs (pCi/g) 1.00
18-7 Burial Grounds-Other Liquids

IETHOD PERFORMANCE

AB AMPLE 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
reparation batch 6148-066			2σ prep error 8.0 % Reference Lab Notebook #6148, pg. 66													
.804063-01			J169N4	0.350	0.500			34		214			15	04/23/08	04/23	SS-033
.804063-02			J169N7	0.918	0.500			28		100			15	04/23/08	04/23	SS-035
.804063-03			Lab Control Sample	0.578	0.500			43		101				04/23/08	04/23	SS-036
:804063-04			Method Blank	0.078	0.500			51		950				04/23/08	04/23	SS-032
:804063-05			Duplicate (R804063-01)	0.496	0.500			54		101			15	04/23/08	04/23	SS-038
Iominal values and limits from method				1.00	0.500			20-105		100	100		180			

PROCEDURES	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 5 SAMPLES
MDA 0.484 ± 0.617
YIELD 42 ± 22

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 04/28/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1181

Test PU Matrix SOLID
SDG 7792
Contact Melissa C. Mannion

LAB METHOD SUMMARY

PLUTONIUM, ISOTOPIC IN SOLIDS
ALPHA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1181

.ESULTS

AB AMPLE ID	RAW TEST	SUF- FIX	PLANCHET	CLIENT SAMPLE ID	Plutonium 238		Plutonium 239/240	
reparation batch 6148-066								
304063-01			7792-001	J169N4	U		U	
304063-02			7792-002	J169N7	U		U	
304063-03			7792-003	Lab Control Sample	ok		ok	
304063-04			7792-004	Method Blank	U		U	
804063-05			7792-005	Duplicate (R804063-01)	-	U	-	U
ominal values and limits from method 18-7 Burial Grounds-Other Liquids				RDLs (pCi/g)	1.00		1.00	

IETHOD PERFORMANCE

AB AMPLE ID	RAW TEST	SUF- FIX	CLIENT SAMPLE ID	MAX MDA pCi/g	ALIQ g	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL- YZED	DETECTOR
reparation batch 6148-066			2σ prep error 8.0 % Reference Lab Notebook #6148, pg. 66													
804063-01			J169N4	0.092	0.500			56		950			15	04/23/08	04/23	SS-033
804063-02			J169N7	0.090	0.500			80		946			15	04/23/08	04/23	SS-035
804063-03			Lab Control Sample	0.086	0.500			78		947				04/23/08	04/23	SS-036
804063-04			Method Blank	0.056	0.500			62		947				04/23/08	04/23	SS-037
804063-05			Duplicate (R804063-01)	0.115	0.500			61		947			15	04/23/08	04/23	SS-038
ominal values and limits from method				1.00	0.500			20-105		100	100		180			

PROCEDURES	REFERENCE	PUISO_PLATE_AEA
	SPP-061	Determination of Moisture Content in Solid Samples rev 0
	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 5 SAMPLES
MDA 0.088 ± 0.042
YIELD 67 ± 22

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 04/28/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1181

Test TH Matrix SOLID
SDG 7792
Contact Melissa C. Mannion

LAB METHOD SUMMARY

THORIUM, ISOTOPIC IN SOLIDS

ALPHA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1181

.ESULTS

AB AMPLE ID	RAW TEST	SUF- FIX	PLANCHET	CLIENT SAMPLE ID	Thorium 230
reparation batch 6148-066					
304063-01			7792-001	J169N4	0.792
304063-02			7792-002	J169N7	0.630
304063-03			7792-003	Lab Control Sample	ok
304063-04			7792-004	Method Blank	U
304063-05			7792-005	Duplicate (R804063-01)	ok

ominal values and limits from method RDLs (pCi/g) 1.00
18-7 Burial Grounds-Other Liquids

IETHOD PERFORMANCE

AB AMPLE ID	RAW TEST	SUF- FIX	CLIENT SAMPLE ID	MAX MDA pCi/g	ALIQ g	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL- YZED	DETECTOR
reparation batch 6148-066			2σ prep error 8.0 % Reference Lab Notebook #6148, pg. 66													
804063-01			J169N4	0.354	0.250			103		179			10	04/18/08	04/18	SS-061
804063-02			J169N7	0.349	0.250			105		178			10	04/18/08	04/18	SS-055
804063-03			Lab Control Sample	0.234	0.250			99		150				04/18/08	04/18	SS-055
804063-04			Method Blank	0.393	0.250			100		151				04/18/08	04/18	SS-061
804063-05			Duplicate (R804063-01)	0.246	0.250			98		151			10	04/18/08	04/18	SS-064
ominal values and limits from method				1.00	0.250			20-105		150			180			

PROCEDURES	REFERENCE	THISO_IE_PLATE_AEA
	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 FOR 5 SAMPLES
MDA 0.315 ± 0.142
YIELD 101 ± 6

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 04/28/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1181

Test U Matrix SOLID
SDG 7792
Contact Melissa C. Mannion

LAB METHOD SUMMARY

URANIUM, ISOTOPIC IN SOLIDS

ALPHA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1181

.ESULTS

AB AMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	1: Uranium 233/234	2: Uranium 235	3: Uranium 238	RESULT RATIOS (%) 1+3	2σ	2+3	2σ
reparation batch 6148-066											
304063-01			7792-001	J169N4	2.95	U	3.09	95	29	8	7
304063-02			7792-002	J169N7	6.37	0.295	5.18	123	25	6	3
304063-03			7792-003	Lab Control Sample	LOW	LOW	LOW				
304063-04			7792-004	Method Blank	U	U	U				
304063-05			7792-005	Duplicate (R804063-01)	ok	ok	ok	105	28	8	6
ominal values and limits from method				RDLs (pCi/g)	1.00	1.00	1.00	100		4	
18-7 Burial Grounds-Other Liquids								Averages 108		7	

IETHOD PERFORMANCE

AB AMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MAX MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
reparation batch 6148-066			2σ prep error 8.0 % Reference Lab Notebook #6148, pg. 66													
804063-01			J169N4	0.262	0.500			71		113			14	04/21/08	04/22	SS-055
804063-02			J169N7	0.205	0.500			98		113			14	04/21/08	04/22	SS-056
804063-03			Lab Control Sample	0.170	0.500			88		949				04/21/08	04/23	SS-031
804063-04			Method Blank	0.196	0.500			94		113				04/21/08	04/22	SS-058
804063-05			Duplicate (R804063-01)	0.209	0.500			93		114			14	04/21/08	04/22	SS-035
ominal values and limits from method				1.00	0.500			20-105		100	100		180			

PROCEDURES	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 5 SAMPLES
MDA 0.208 ± 0.067
YIELD 89 ± 21

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 04/28/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1181

Test SR Matrix SOLID
SDG 7792
Contact Melissa C. Mannion

LAB METHOD SUMMARY

TOTAL STRONTIUM IN SOLIDS

BETA COUNTING

Client Hanford
Contract No. S00W235A00
Contract SDG K1181

:ESULTS

AB AMPLE ID	RAW TEST	SUF- FIX	PLANCHET	CLIENT SAMPLE ID	Total Strontium	
reparation batch 6148-066						
804063-01			7792-001	J169N4	U	
804063-02			7792-002	J169N7	U	
804063-03			7792-003	Lab Control Sample	ok	
804063-04			7792-004	Method Blank	U	
804063-05			7792-005	Duplicate (R804063-01)	-	U

ominal values and limits from method RDLs (pCi/g) 1.00
18-7 Burial Grounds-Other Liquids

IETHOD PERFORMANCE

AB AMPLE 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
reparation batch 6148-066			2σ prep error 10.4 % Reference Lab Notebook #6148, pg. 66													
804063-01			J169N4	0.230	1.00			97		100			10	04/18/08	04/18	GRB-221
804063-02			J169N7	0.355	1.00			100		100			10	04/18/08	04/18	GRB-222
804063-03			Lab Control Sample	0.221	1.00			95		100				04/18/08	04/18	GRB-222
804063-04			Method Blank	0.301	1.00			94		100				04/18/08	04/18	GRB-228
804063-05			Duplicate (R804063-01)	0.302	1.00			97		100			10	04/18/08	04/18	GRB-230
ominal values and limits from method				1.00	1.00			30-105		100			180			

PROCEDURES	REFERENCE	SRTOT_SEP_PRECIP_GPC
	SPP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	CP-380	Strontium in Water Samples, rev 2

AVERAGES ± 2 SD MDA 0.282 ± 0.112
FOR 5 SAMPLES YIELD 97 ± 5

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 04/28/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1181

Test 93A Matrix SOLID
SDG 7792
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GROSS ALPHA IN SOLIDS

GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. S00W235A00
Contract SDG K1181

RESULTS

AB AMPLE ID	RAW TEST	SUF- FIX	PLANCHET	CLIENT SAMPLE ID	Gross Alpha
reparation batch 6148-066					
804063-01	93		7792-001	J169N4	22.1
804063-02	93		7792-002	J169N7	23.6
804063-03	93		7792-003	Lab Control Sample	ok
804063-04	93		7792-004	Method Blank	U
804063-05	93		7792-005	Duplicate (R804063-01)	ok
ominal values and limits from method 18-7 Burial Grounds-Other Liquids				RDLs (pCi/g)	10.0

METHOD PERFORMANCE

AB AMPLE ID	RAW TEST	SUF- FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU- TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL- YZED	DETECTOR
reparation batch 6148-066 2σ prep error 20.6 % Reference Lab Notebook #6148, pg. 66																
804063-01	93		J169N4	4.11	0.100			41		100			9	04/17/08	04/17	GRB-109
804063-02	93		J169N7	5.60	0.100			40		100			9	04/17/08	04/17	GRB-110
804063-03	93		Lab Control Sample	5.26	0.100			63		100				04/17/08	04/17	GRB-111
804063-04	93		Method Blank	6.76	0.100			62		100				04/17/08	04/21	GRB-209
804063-05	93		Duplicate (R804063-01)	4.14	0.100			42		100			9	04/17/08	04/17	GRB-109
ominal values and limits from method				10.0	0.100			5-250		100			180			

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

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 5.17 ± 2.21
RESIDUE 50 ± 24

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 04/28/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1181

Test 93B Matrix SOLID
SDG 7792
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GROSS BETA IN SOLIDS
GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. S00W235A00
Contract SDG K1181

:ESULTS

AB AMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Beta
reparation batch 6148-066					
804063-01	93		7792-001	J169N4	21.6
804063-02	93		7792-002	J169N7	22.4
804063-03	93		7792-003	Lab Control Sample	ok
804063-04	93		7792-004	Method Blank	U
804063-05	93		7792-005	Duplicate (R804063-01)	ok

ominal values and limits from method RDLs (pCi/g) 15.0
18-7 Burial Grounds-Other Liquids

IETHOD PERFORMANCE

AB AMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
reparation batch 6148-066			2σ prep error 11.0 % Reference Lab Notebook #6148, pg. 66													
804063-01	93		J169N4	5.27	0.100			41		100			9	04/17/08	04/17	GRB-109
804063-02	93		J169N7	6.26	0.100			40		100			9	04/17/08	04/17	GRB-110
804063-03	93		Lab Control Sample	5.28	0.100			63		100				04/17/08	04/17	GRB-111
804063-04	93		Method Blank	5.78	0.100			62		100				04/17/08	04/21	GRB-209
804063-05	93		Duplicate (R804063-01)	5.27	0.100			42		100			9	04/17/08	04/17	GRB-109
ominal values and limits from method				15.0	0.100			5-250		100			180			

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

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 5.57 ± 0.886
RESIDUE 50 ± 24

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 04/28/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1181

Test GAM Matrix SOLID
SDG 7792
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GAMMA SCAN

GAMMA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1181

ESULTS

AB AMPLE ID	RAW TEST	SUF- FIX	PLANCHET	CLIENT SAMPLE ID	Cobalt 60		Cesium 137	
reparation batch 6148-066								
804063-01			7792-001	J169N4	U		U	
804063-02			7792-002	J169N7	U		U	
804063-03			7792-003	Lab Control Sample	ok		ok	
804063-04			7792-004	Method Blank	U		U	
804063-05			7792-005	Duplicate (R804063-01)	-	U	-	U
ominal values and limits from method				RDLs (pCi/g)	0.050		0.100	
18-7 Burial Grounds-Other Liquids								

IETHOD PERFORMANCE

AB AMPLE 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
reparation batch 6148-066			2σ prep error 7.0 % Reference Lab Notebook #6148, pg. 66													
804063-01			J169N4	7.28	193					955			6	04/14/08	04/14	JR,08,00
804063-02			J169N7	4.40	197					953			6	04/14/08	04/14	JR,07,00
804063-03			Lab Control Sample	0.029	193					955				04/14/08	04/14	JR,04,00
804063-04			Method Blank	5.97	193					404				04/14/08	04/15	JR,02,00
804063-05			Duplicate (R804063-01)	8.33	193					404			7	04/14/08	04/15	JR,05,00
ominal values and limits from method				0.050	193					100			180			

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

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 5.20 ± 6.49
YIELD ____ ± ____

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 04/28/08

SDG 7792
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1181

SAMPLE SUMMARY

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

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

The following notes apply to these reports:

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

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

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

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

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

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

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 04/28/08

SDG 7792
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1181

PREPARATION BATCH SUMMARY

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

The following notes apply to this report:

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

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

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

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

  These qualifiers should be reviewed as follows:

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

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

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

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

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 04/28/08

SDG 7792
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1181

WORK SUMMARY

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

The following notes apply to this report:

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

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

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

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

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

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

Lab id EBRLNE
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SDG 7792
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REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1181

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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Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 04/28/08

DATA SHEET

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

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

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

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

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

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

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

P The RESULT is 'preliminary'.

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

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

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

The following values are underlined to indicate possible problems:

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

SDG 7792
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. S00W235A00
Case no SDG_K1181

DATA SHEET

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

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

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

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 04/28/08

SDG 7792
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1181

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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Protocol Hanford
Version Ver 1.0
Form DVD-RG
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SDG 7792
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1181

DUPLICATE

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

The following notes apply to this report:

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

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

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

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

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

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

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

  This value reported for this limit is at most 999.

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

  1. A fixed percentage specified in the protocol.

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Version 3.06
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DUPLICATE

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

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

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

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

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

SDG 7792
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1181

MATRIX SPIKE

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

The following notes apply to this report:

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

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

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

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

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

* The first, computed limits for the recovery reflect:

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

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

  2. The error of ADDED.

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

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

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 04/28/08

SDG 7792
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. S00W235A00
Case no SDG_K1181

MATRIX SPIKE

for the recovery.

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

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

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 04/28/08

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-088-005	Page 1 of 1
Collector: R. Kerkow / B. Lawrence / W. Sexsmith	Company Contact: Joan Kessner; Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH	Price Code: 9 BG; Data Turnaround: 15 Days
Project Designation: 618-7 Burial Ground - Other Liquids	Sampling Location: 618-7 Burial Ground (drums) K1181 (7792)	SAF No.: RC-088	
Ice Chest No.: AFS-04-037	Field Logbook No.: EL-1395-12; COA: RG61872000	Method of Shipment: Fed Ex	
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A080220	Bill of Lading/Air Bill No.: see OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Radioactive contamination, potential beryllium contamination

Special Handling and/or Storage

None

Preservation	Cool 4C	Cool 4C	None	None	None						
Type of Container	aG	aG	P	P	P						
No. of Container(s)	1	D	D	D	1						
Volume	~~125~~mL 250 RTC	~~125mL~~ RTC	~~125mL~~ RTC	~~60mL~~ RTC	500mL						
SAMPLE ANALYSIS	Semi-VOA - 8270A (TCL)	PCBs - 8082 RTC	See item (1) in Special Instructions. 4/8/08	Ignitability - 1010	See item (2) in Special Instructions.						
Sample No. / Matrix *	Sample Date	Sample Time									
J169N4 OTHER ~~LIQUID~~ solid	4/8/08	0920					X				
J169N7 OTHER ~~LIQUID~~ solid	4/8/08	0935					X				

MCM per WCH 4/10/08

CHAIN OF POSSESSION	Sign/Print Names	
Relinquished By/Removed From: [signature]	Date/Time: 1025 4-8-08	Received By/Stored In: RT Coffman / RT Coffman	Date/Time: 1025 4/8/08
Relinquished By/Removed From: RT Coffman / RT Coffman	Date/Time: 1300 4/8/08	Received By/Stored In: 1060/1A RT Coffman / RT Coffman	Date/Time: 1300 4/8/08
Relinquished By/Removed From: 1060/1A	Date/Time: 4/10/08 1100	Received By/Stored In: [signature] M Stankovich	Date/Time: 1100 4/10/08
Relinquished By/Removed From: WCH [signature] M Stankovich	Date/Time: 4/10/08 1500	Received By/Stored In: Fed Ex	Date/Time:
Relinquished By/Removed From: Fed Ex	Date/Time:	Received By/Stored In: [signature]	Date/Time: 04/11/08 08:35
Relinquished 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

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

WCH-EE-011

EBERLINE SERVICE

RICHMOND, CA LABORATORY

SAMPLE RECEIPT CHECKLIST

4/11/08

Client: W.C. HANFORD City RICHLAND State WA

Date/Time received 04/11/08 08:35 CoC No. RC-088-005

Container I.D. No. AFS-04-057 Requested TAT (Days) 15 P.O. Received Yes [ ] No [ ]

INSPECTION

1. Custody seals on shipping container intact? Yes [X] No [ ] N/A [ ]
2. Custody seals on shipping container dated & signed? Yes [X] No [ ] N/A [ ]
3. Custody seals on sample containers intact? Yes [X] No [ ] N/A [ ]
4. Custody seals on sample containers dated & signed? Yes [X] No [ ] N/A [ ]
5. Packing material is: Wet [ ] Dry [X]
6. Number of samples in shipping container: 2 Sample Matrix X OTHER 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 [X] No [ ]
10. Samples have: Tape [ ] Hazard labels [ ] Rad labels [ ] Appropriate sample labels [X]
11. Samples are: In good condition [X] Leaking [ ] Broken Container [ ] Missing [ ]
12. Samples are: Preserved [ ] Not preserved [ ] pH _____ Preservative _____
13. Describe any anomalies:
    NOTE: ACTUAL MATRIX IS SOLID
14. Was P.M. notified of any anomalies? Yes [ ] No [ ] Date _____
15. Inspected by MFW Date: 04/11/08 Time: 09:00

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

Ion Chamber Ser. No. _____ Calibration date _____

Alpha Meter Ser. No. _____ Calibration date _____

Beta/Gamma Meter Ser. No. 100482 Calibration date 09MAY07

LIONVILLE LABORATORY INC.

RECEIVED
JUN 2008

2 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 #	0804L900
SDG #	K1181
SAF #	RC-088
Date Received	4/11/08
# Samples	2
Matrix	OTHER SOLID
Volatiles	
Semivolatiles	X
Pest/PCB	X
Glycols	
DRO/KRO/GRO	
GC Organics	X
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

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

RECEIVED
JUN 2008

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD RC-088 K1181

DATE RECEIVED: 04/11/08 LVL LOT # :08[illegible]900

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J169N4						
IGNITABILITY	001	SO	08LFP008	04/08/08	04/22/08	04/22/08
J169N7						
IGNITABILITY	002	SO	08LFP008	04/08/08	04/22/08	04/22/08

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-088 K1181
LVL#: 0801L900

W.O.#: 11343-606-001-9999-00
Date Received: 04-11-08

INORGANIC NARRATIVE

1. This narrative covers the analysis of 2 solid 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

5/1/08
Date

njp\i04-900

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

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 K1181
LVL#: 0804L900

W.O.#: 11343-601-001-9999-00
Date Received: 04-11-08

Analyte:	**Observation:**
Ignitability	Samples J169N4, J169N7 and J169N7 duplicate did not ignite. The samples were heated to approximately 220°F. p-Xylene was used to determined the accuracy of the ignitability apparatus. The p-Xylene will ignite at 81°F +/- 1°F. For this test, the p-Xylene ignited at 81°F.

njp\i04-900 .pt2

LIONVILLE LABORATORY INC.

ıville Laboratory Use Only

8041900

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI

000000006

ıt TNU HANFORD SAF# RC-088

Final Proj. Sampling Date

ıct# 11343-606-001-9999-00

ıct Contact/Phone#

ville Laboratory Project Manager O-JOHNSON

SW846 Del STD TAT 15 days

Rec'd 4-11-08 Date Due 4-26-08

Refrigerator #			A															
#/Type Container	Liquid / Solid		3															
			1C															
Volume			250															
Preservatives																		
ANALYSES REQUESTED →			ORGANIC							INORG								
			VOA	BNA	Pest/PCB	Herb		8015 Specific		Metal HG	CN	I/NO3						

ıIX EB:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	Lionville Laboratory Use Only												
									0625-H	OPCB			8015		Met①		IIGN			
Soil	001	J169N4			SOLID	4-8-08	0920		X	X			X		X		X			
Sediment	002	⊥ 7			⊥	⊥	0930		X	X			X		X		X			
Solid																				
Sludge																				
Water																				
Oil																				
Air																				
Drum Solids																				
Drum Liquids																				
EP/TCLP																				
Leachate																				
Wipe																				
Other																				
Fish																				

ecial Instructions:

met① = HSL + Sn, 2r

Special Instructions:

4/11/08 1. 08015 - report propylene + ethylene glycol

2.

3.

4.

5.

6.

Relinquished by	Received by	Date	Time
DEO	[signature]	4/11/08	1115

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-088-005 | Page 1 of 1

Collector R. Kerkow / B. Lawrence / W. Sexsmith	**Company Contact** Joan Kessner	**Telephone No.** 509-375-4688	**Project Coordinator** KESSNER, JH
Price Code 8G	**Data Turnaround** 15 Days		
Project Designation 618-7 Burial Ground - Other Liquids	**Sampling Location** 618-7 Burial Ground (drums)		**SAF No.** RC-088
Ice Chest No. GRP-03-014	**Field Logbook No.** EL-1395-12	**COA** RG61872000	**Method of Shipment** FedEx
Shipped To EBERLINE SERVICES / LIONVILLE	**Offsite Property No.** A080234		**Bill of Lading/Air Bill No.** See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Radioactive contamination, potential beryllium contamination

Special Handling and/or Storage

None Cool 4°C

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	~~125mL~~ 250 RTL	~~125mL~~ RTL	~~125mL~~ RTL	~~500mL~~ RTL	500mL						
SAMPLE ANALYSIS	Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions.	Ignitability - 1010	See item (2) in Special Instructions. RTL 4/8/08						
Sample No.	**Matrix ***	**Sample Date**	**Sample Time**								
I169N4	OTHER LIQUID	4/8/08	0920	X	X	X	X			B12 #0077 / GREEN	LIQUID
I169N7	OTHER LIQUID	4/8/08	0935	X	X	X	X			B12 #0078 / OILY	DRUM

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B Lawrence	1025 4-8-08	RT Coffman / RT Coffman	1025 4/8/08
RT Coffman / RT Coffman	1300 4/8/08	Refer # 1A	1300 4/8/08
060/1A	4/10/08 1020	MS Stankovich	4/10/08 1020
WCH MS Stankovich	4/10/08 1500	FedEx	
FedEx	4-11-08 1115	[signature]	4-11-08 1115
FedEx	4-11-08 1115	[signature]	4-11-08 1115

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

ADD: ALCOHOLS, GLYCOLS, KETONES 8015M RBK 4/8/08

NOTE: SAMPLE MEDIA IS CONTAINED IN ONE 250mL CONTAINER. RBK 4/8/08

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

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

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

CH-EE-011

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Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD

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

Date: 4/11/08

LvLI Batch #: 08041900

Sample Custodian: [signature]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 79891703 1410
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 2-3	°C	Cooler # GRP.03-014
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	Client CoC indicates liquid sample are solids.
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	mp 4-30-08
16. Project Manager contacted concerning any discrepancies?	☑ Yes	☐ No	☐ N/A

Person Contacted O-V-

Date 4-11-08

LvLI

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TNUHANFORD RC-088 K1181

DATE RECEIVED: 04/11/08 LVL LOT # :0804L906

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J169N4						
SILVER, TOTAL	001	SO	08L0166	04/08/08	04/23/08	04/24/08
SILVER, TOTAL	001 REP	SO	08L0166	04/08/08	04/23/08	04/24/08
SILVER, TOTAL	001 MS	SO	08L0166	04/08/08	04/23/08	04/24/08
ALUMINUM, TOTAL	001	SO	08L0166	04/08/08	04/23/08	04/24/08
ALUMINUM, TOTAL	001 REP	SO	08L0166	04/08/08	04/23/08	04/24/08
ALUMINUM, TOTAL	001 MS	SO	08L0166	04/08/08	04/23/08	04/24/08
ARSENIC, TOTAL	001	SO	08L0166	04/08/08	04/23/08	04/24/08
ARSENIC, TOTAL	001 REP	SO	08L0166	04/08/08	04/23/08	04/24/08
ARSENIC, TOTAL	001 MS	SO	08L0166	04/08/08	04/23/08	04/24/08
BARIUM, TOTAL	001	SO	08L0166	04/08/08	04/23/08	04/24/08
BARIUM, TOTAL	001 REP	SO	08L0166	04/08/08	04/23/08	04/24/08
BARIUM, TOTAL	001 MS	SO	08L0166	04/08/08	04/23/08	04/24/08
BERYLLIUM, TOTAL	001	SO	08L0166	04/08/08	04/23/08	04/24/08
BERYLLIUM, TOTAL	001 REP	SO	08L0166	04/08/08	04/23/08	04/24/08
BERYLLIUM, TOTAL	001 MS	SO	08L0166	04/08/08	04/23/08	04/24/08
CALCIUM, TOTAL	001	SO	08L0166	04/08/08	04/23/08	04/24/08
CALCIUM, TOTAL	001 REP	SO	08L0166	04/08/08	04/23/08	04/24/08
CALCIUM, TOTAL	001 MS	SO	08L0166	04/08/08	04/23/08	04/24/08
CADMIUM, TOTAL	001	SO	08L0166	04/08/08	04/23/08	04/24/08
CADMIUM, TOTAL	001 REP	SO	08L0166	04/08/08	04/23/08	04/24/08
CADMIUM, TOTAL	001 MS	SO	08L0166	04/08/08	04/23/08	04/24/08
COBALT, TOTAL	001	SO	08L0166	04/08/08	04/23/08	04/24/08
COBALT, TOTAL	001 REP	SO	08L0166	04/08/08	04/23/08	04/24/08
COBALT, TOTAL	001 MS	SO	08L0166	04/08/08	04/23/08	04/24/08
CHROMIUM, TOTAL	001	SO	08L0166	04/08/08	04/23/08	04/24/08
CHROMIUM, TOTAL	001 REP	SO	08L0166	04/08/08	04/23/08	04/24/08
CHROMIUM, TOTAL	001 MS	SO	08L0166	04/08/08	04/23/08	04/24/08
COPPER, TOTAL	001	SO	08L0166	04/08/08	04/23/08	04/24/08
COPPER, TOTAL	001 REP	SO	08L0166	04/08/08	04/23/08	04/24/08
COPPER, TOTAL	001 MS	SO	08L0166	04/08/08	04/23/08	04/24/08
IRON, TOTAL	001	SO	08L0166	04/08/08	04/23/08	04/24/08
IRON, TOTAL	001 REP	SO	08L0166	04/08/08	04/23/08	04/24/08
IRON, TOTAL	001 MS	SO	08L0166	04/08/08	04/23/08	04/24/08
MERCURY, TOTAL	001	SO	08C0072	04/08/08	04/18/08	04/18/08
MERCURY, TOTAL	001 REP	SO	08C0072	04/08/08	04/18/08	04/18/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-088 K1181

DATE RECEIVED: 04/11/08 LVL LOT # :0804L900

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MERCURY, TOTAL	001 MS	SO	08C0072	04/08/08	04/18/08	04/18/08
POTASSIUM, TOTAL	001	SO	08L0166	04/08/08	04/23/08	04/24/08
POTASSIUM, TOTAL	001 REP	SO	08L0166	04/08/08	04/23/08	04/24/08
POTASSIUM, TOTAL	001 MS	SO	08L0166	04/08/08	04/23/08	04/24/08
MAGNESIUM, TOTAL	001	SO	08L0166	04/08/08	04/23/08	04/24/08
MAGNESIUM, TOTAL	001 REP	SO	08L0166	04/08/08	04/23/08	04/24/08
MAGNESIUM, TOTAL	001 MS	SO	08L0166	04/08/08	04/23/08	04/24/08
MANGANESE, TOTAL	001	SO	08L0166	04/08/08	04/23/08	04/24/08
MANGANESE, TOTAL	001 REP	SO	08L0166	04/08/08	04/23/08	04/24/08
MANGANESE, TOTAL	001 MS	SO	08L0166	04/08/08	04/23/08	04/24/08
SODIUM, TOTAL	001	SO	08L0166	04/08/08	04/23/08	04/24/08
SODIUM, TOTAL	001 REP	SO	08L0166	04/08/08	04/23/08	04/24/08
SODIUM, TOTAL	001 MS	SO	08L0166	04/08/08	04/23/08	04/24/08
NICKEL, TOTAL	001	SO	08L0166	04/08/08	04/23/08	04/24/08
NICKEL, TOTAL	001 REP	SO	08L0166	04/08/08	04/23/08	04/24/08
NICKEL, TOTAL	001 MS	SO	08L0166	04/08/08	04/23/08	04/24/08
LEAD, TOTAL	001	SO	08L0166	04/08/08	04/23/08	04/24/08
LEAD, TOTAL	001 REP	SO	08L0166	04/08/08	04/23/08	04/24/08
LEAD, TOTAL	001 MS	SO	08L0166	04/08/08	04/23/08	04/24/08
ANTIMONY, TOTAL	001	SO	08L0166	04/08/08	04/23/08	04/24/08
ANTIMONY, TOTAL	001 REP	SO	08L0166	04/08/08	04/23/08	04/24/08
ANTIMONY, TOTAL	001 MS	SO	08L0166	04/08/08	04/23/08	04/24/08
SELENIUM, TOTAL	001	SO	08L0166	04/08/08	04/23/08	04/24/08
SELENIUM, TOTAL	001 REP	SO	08L0166	04/08/08	04/23/08	04/24/08
SELENIUM, TOTAL	001 MS	SO	08L0166	04/08/08	04/23/08	04/24/08
TIN, TOTAL	001	SO	08L0166	04/08/08	04/23/08	04/24/08
TIN, TOTAL	001 REP	SO	08L0166	04/08/08	04/23/08	04/24/08
TIN, TOTAL	001 MS	SO	08L0166	04/08/08	04/23/08	04/24/08
THALLIUM, TOTAL	001	SO	08L0166	04/08/08	04/23/08	04/24/08
THALLIUM, TOTAL	001 REP	SO	08L0166	04/08/08	04/23/08	04/24/08
THALLIUM, TOTAL	001 MS	SO	08L0166	04/08/08	04/23/08	04/24/08
VANADIUM, TOTAL	001	SO	08L0166	04/08/08	04/23/08	04/24/08
VANADIUM, TOTAL	001 REP	SO	08L0166	04/08/08	04/23/08	04/24/08
VANADIUM, TOTAL	001 MS	SO	08L0166	04/08/08	04/23/08	04/24/08
ZINC, TOTAL	001	SO	08L0166	04/08/08	04/23/08	04/24/08
ZINC, TOTAL	001 REP	SO	08L0166	04/08/08	04/23/08	04/24/08
ZINC, TOTAL	001 MS	SO	08L0166	04/08/08	04/23/08	04/24/08
ZIRCONIUM, TOTAL	001	SO	08L0166	04/08/08	04/23/08	04/24/08

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TNUHANFORD RC-088 K1181

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CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
ZIRCONIUM, TOTAL	001 REP	SO	08L0166	04/08/08	04/23/08	04/24/08
ZIRCONIUM, TOTAL	001 MS	SO	08L0166	04/08/08	04/23/08	04/24/08
J169N7						
SILVER, TOTAL	002	SO	08L0166	04/08/08	04/23/08	04/24/08
ALUMINUM, TOTAL	002	SO	08L0166	04/08/08	04/23/08	04/24/08
ARSENIC, TOTAL	002	SO	08L0166	04/08/08	04/23/08	04/24/08
BARIUM, TOTAL	002	SO	08L0166	04/08/08	04/23/08	04/24/08
BERYLLIUM, TOTAL	002	SO	08L0166	04/08/08	04/23/08	04/24/08
CALCIUM, TOTAL	002	SO	08L0166	04/08/08	04/23/08	04/24/08
CADMIUM, TOTAL	002	SO	08L0166	04/08/08	04/23/08	04/24/08
COBALT, TOTAL	002	SO	08L0166	04/08/08	04/23/08	04/24/08
CHROMIUM, TOTAL	002	SO	08L0166	04/08/08	04/23/08	04/24/08
COPPER, TOTAL	002	SO	08L0166	04/08/08	04/23/08	04/24/08
IRON, TOTAL	002	SO	08L0166	04/08/08	04/23/08	04/24/08
MERCURY, TOTAL	002	SO	08C0072	04/08/08	04/18/08	04/18/08
POTASSIUM, TOTAL	002	SO	08L0166	04/08/08	04/23/08	04/24/08
MAGNESIUM, TOTAL	002	SO	08L0166	04/08/08	04/23/08	04/24/08
MANGANESE, TOTAL	002	SO	08L0166	04/08/08	04/23/08	04/24/08
SODIUM, TOTAL	002	SO	08L0166	04/08/08	04/23/08	04/24/08
NICKEL, TOTAL	002	SO	08L0166	04/08/08	04/23/08	04/24/08
LEAD, TOTAL	002	SO	08L0166	04/08/08	04/23/08	04/24/08
ANTIMONY, TOTAL	002	SO	08L0166	04/08/08	04/23/08	04/24/08
SELENIUM, TOTAL	002	SO	08L0166	04/08/08	04/23/08	04/24/08
TIN, TOTAL	002	SO	08L0166	04/08/08	04/23/08	04/24/08
THALLIUM, TOTAL	002	SO	08L0166	04/08/08	04/23/08	04/24/08
VANADIUM, TOTAL	002	SO	08L0166	04/08/08	04/23/08	04/24/08
ZINC, TOTAL	002	SO	08L0166	04/08/08	04/23/08	04/24/08
ZIRCONIUM, TOTAL	002	SO	08L0166	04/08/08	04/23/08	04/24/08
LAB QC:						
SILVER LABORATORY	LC1 BS	S	08L0166	N/A	04/23/08	04/24/08
SILVER, TOTAL	MB1	S	08L0166	N/A	04/23/08	04/24/08
ALUMINUM LABORTORY	LC1 BS	S	08L0166	N/A	04/23/08	04/24/08
ALUMINUM, TOTAL	MB1	S	08L0166	N/A	04/23/08	04/24/08
ARSENIC LABORATORY	LC1 BS	S	08L0166	N/A	04/23/08	04/24/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-088 K1181

DATE RECEIVED: 04/11/08 LVL LOT # :0804L900

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
ARSENIC, TOTAL	MB1	S	08L0166	N/A	04/23/08	04/24/08
BARIUM LABORATORY	LC1 BS	S	08L0166	N/A	04/23/08	04/24/08
BARIUM, TOTAL	MB1	S	08L0166	N/A	04/23/08	04/24/08
BERYLLIUM LABORATORY	LC1 BS	S	08L0166	N/A	04/23/08	04/24/08
BERYLLIUM, TOTAL	MB1	S	08L0166	N/A	04/23/08	04/24/08
CALCIUM LABORATORY	LC1 BS	S	08L0166	N/A	04/23/08	04/24/08
CALCIUM, TOTAL	MB1	S	08L0166	N/A	04/23/08	04/24/08
CADMIUM LABORATORY	LC1 BS	S	08L0166	N/A	04/23/08	04/24/08
CADMIUM, TOTAL	MB1	S	08L0166	N/A	04/23/08	04/24/08
COBALT LABORATORY	LC1 BS	S	08L0166	N/A	04/23/08	04/24/08
COBALT, TOTAL	MB1	S	08L0166	N/A	04/23/08	04/24/08
CHROMIUM LABORATORY	LC1 BS	S	08L0166	N/A	04/23/08	04/24/08
CHROMIUM, TOTAL	MB1	S	08L0166	N/A	04/23/08	04/24/08
COPPER LABORATORY	LC1 BS	S	08L0166	N/A	04/23/08	04/24/08
COPPER, TOTAL	MB1	S	08L0166	N/A	04/23/08	04/24/08
IRON LABORATORY	LC1 BS	S	08L0166	N/A	04/23/08	04/24/08
IRON, TOTAL	MB1	S	08L0166	N/A	04/23/08	04/24/08
MERCURY LABORATORY	LC1 BS	S	08C0072	N/A	04/18/08	04/18/08
MERCURY, TOTAL	MB1	S	08C0072	N/A	04/18/08	04/18/08
POTASSIUM LABORATORY	LC1 BS	S	08L0166	N/A	04/23/08	04/24/08
POTASSIUM, TOTAL	MB1	S	08L0166	N/A	04/23/08	04/24/08
MAGNESIUM LABORATORY	LC1 BS	S	08L0166	N/A	04/23/08	04/24/08
MAGNESIUM, TOTAL	MB1	S	08L0166	N/A	04/23/08	04/24/08
MANGANESE LABORATORY	LC1 BS	S	08L0166	N/A	04/23/08	04/24/08
MANGANESE, TOTAL	MB1	S	08L0166	N/A	04/23/08	04/24/08
SODIUM LABORATORY	LC1 BS	S	08L0166	N/A	04/23/08	04/24/08
SODIUM, TOTAL	MB1	S	08L0166	N/A	04/23/08	04/24/08
NICKEL LABORATORY	LC1 BS	S	08L0166	N/A	04/23/08	04/24/08
NICKEL, TOTAL	MB1	S	08L0166	N/A	04/23/08	04/24/08
LEAD LABORATORY	LC1 BS	S	08L0166	N/A	04/23/08	04/24/08
LEAD, TOTAL	MB1	S	08L0166	N/A	04/23/08	04/24/08
ANTIMONY LABORATORY	LC1 BS	S	08L0166	N/A	04/23/08	04/24/08
ANTIMONY, TOTAL	MB1	S	08L0166	N/A	04/23/08	04/24/08
SELENIUM LABORATORY	LC1 BS	S	08L0166	N/A	04/23/08	04/24/08
SELENIUM, TOTAL	MB1	S	08L0166	N/A	04/23/08	04/24/08
TIN LABORATORY	LC1 BS	S	08L0166	N/A	04/23/08	04/24/08
TIN, TOTAL	MB1	S	08L0166	N/A	04/23/08	04/24/08
THALLIUM LABORATORY	LC1 BS	S	08L0166	N/A	04/23/08	04/24/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-088 K1181

DATE RECEIVED: 04/11/08 LVL LOT # :0804L900

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
THALLIUM, TOTAL	MB1	S	08L0166	N/A	04/23/08	04/24/08
VANADIUM LABORATORY	LC1 BS	S	08L0166	N/A	04/23/08	04/24/08
VANADIUM, TOTAL	MB1	S	08L0166	N/A	04/23/08	04/24/08
ZINC LABORATORY	LC1 BS	S	08L0166	N/A	04/23/08	04/24/08
ZINC, TOTAL	MB1	S	08L0166	N/A	04/23/08	04/24/08
ZIRCONIUM LABORATORY	LC1 BS	S	08L0166	N/A	04/23/08	04/24/08
ZIRCONIUM, TOTAL	MB1	S	08L0166	N/A	04/23/08	04/24/08

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-088
LVL#: 0804L900
SDG/SAF#: K1181/RC-088

W.O.#: 11343-606-001-9999-00
Date Received: 04-11-08

METALS CASE NARRATIVE

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

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

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

2. The samples were prepared and analyzed in accordance with methods checked on the attached glossary. The samples were reported on a wet weight, 'as-received' basis.

   All samples were reported with 3-fold dilutions for all ICP analytes due to sample matrix. Potassium and Sodium were rerun on a different instrument and reported from file PS0424C for all samples due to sample matrix and Sodium CCVs that were outside control limits.

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

4. Please refer to the Sample Receipt Check List for sample discrepancies in LvLI's sample acceptance policy.

5. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits (80-120% for Mercury) for all data contained within this report.

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

7. The preparation/method blank 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 results for Sodium were 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.

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.

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.

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

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

10. The matrix spike (MS) recoveries for 3 analytes were outside the 75-125% control limits. Refer to the Inorganics Accuracy Report.

11. 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
J169N4	Aluminum	22,000	98.5
	Antimony	100	99.0
	Iron	22,000	95.5

12. The duplicate analysis for 1 analyte was outside the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.

13. 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.

14. 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.

15. 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

5/7/08
Date

LIONVILLE LABORATORY INC.

METALS METHOD GLOSSARY

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

Lot#: 08041900

Leaching Procedure: __1310 __1311 __1312 __Other:_____

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

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

Metals Analysis Methods

	SW846		EPA		STD MTD	EPA OSWR	USATHAMA
Aluminum	✓6010B		__200.7				__99
Antimony	✓6010B	__7041 [5]	__200.7	__204.2			__99
Arsenic	✓6010B	__7060A [5]	__200.7	__206.2	__3113B		__99
Barium	✓6010B		__200.7				__99
Beryllium	✓6010B		__200.7				__99
Bismuth	__6010B [1]		__200.7 [1]			__1620	__99
Boron	__6010B		__200.7				__99
Cadmium	✓6010B	__7131A [5]	__200.7	__213.2			__99
Calcium	✓6010B		__200.7				__99
Chromium	✓6010B	__7191 [5]	__200.7	__218.2			__SS17
Cobalt	✓6010B		__200.7				__99
Copper	✓6010B	__7211 [5]	__200.7	__220.2			__99
Iron	✓6010B		__200.7				__99
Lead	✓6010B	__7421 [5]	__200.7	__239.2	__3113B		__99
Lithium	__6010B	__7430 [4]	__200.7			__1620	__99
Magnesium	✓6010B		__200.7				__99
Manganese	✓6010B		__200.7				__99
Mercury	__7470A [3]	✓7471A [3]	__245.1 [2]	__245.5 [2]			__99
Molybdenum	__6010B		__200.7				__99
Nickel	✓6010B		__200.7				__99
Potassium	✓6010B	__7610 [4]	__200.7	__258.1 [4]			__99
Rare Earths	__6010B [1]		__200.7 [1]			__1620	__99
Selenium	✓6010B	__7740 [5]	__200.7	__270.2	__3113B		__99
Silicon	__6010B [1]		__200.7			__1620	__99
Silica	__6010B		__200.7			__1620	__99
Silver	✓6010B	__7761 [5]	__200.7	__272.2			__99
Sodium	✓6010B	__7770 [4]	__200.7	__273.1 [4]			__99
Strontium	__6010B		__200.7				__99
Thallium	✓6010B	__7841 [5]	__200.7	__279.2	__200.9		__99
Tin	✓6010B		__200.7				__99
Titanium	__6010B		__200.7				__99
Uranium	__6010B [1]		__200.7 [1]			__1620	__99
Vanadium	✓6010B		__200.7				__99
Zinc	✓6010B		__200.7				__99
Zirconium	✓6010B [1]		__200.7 [1]			__1620	__99

Other:_____ Method:_____

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

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

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

ABBREVIATIONS

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

ANALYTICAL METAL METHODS

1. Not included in the method element list.

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

3. Flame AA.

4. Graphite Furnace AA.

L-WI-033/N-04/98

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 05/05/08

CLIENT: TNUHANFORD RC-088 K1181 LVL LOT #: 0804L900

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J169N4	Silver, Total	0.25 u	MG/KG	0.25	3.0
		Aluminum, Total	4970	MG/KG	10.1	3.0
		Arsenic, Total	2.1	MG/KG	1.3	3.0
		Barium, Total	58.3	MG/KG	0.25	3.0
		Beryllium, Total	0.56	MG/KG	0.13	3.0
		Calcium, Total	5070	MG/KG	10.1	3.0
		Cadmium, Total	0.13 u	MG/KG	0.13	3.0
		Cobalt, Total	6.6	MG/KG	0.50	3.0
		Chromium, Total	7.7	MG/KG	0.50	3.0
		Copper, Total	11.4	MG/KG	0.50	3.0
		Iron, Total	19400	MG/KG	11.3	3.0
		Mercury, Total	0.009u	MG/KG	0.009	1.0
		Potassium, Total	879	MG/KG	124	3.0
		Magnesium, Total	3380	MG/KG	6.3	3.0
		Manganese, Total	265	MG/KG	0.10	3.0
		Sodium, Total	152	MG/KG	5.0	3.0
		Nickel, Total	8.2	MG/KG	0.50	3.0
		Lead, Total	9.8	MG/KG	0.76	3.0
		Antimony, Total	0.76 u	MG/KG	0.76	3.0
		Selenium, Total	1.5 u	MG/KG	1.5	3.0
		Tin, Total	1.5 u	MG/KG	1.5	3.0
		Thallium, Total	1.5 u	MG/KG	1.5	3.0
		Vanadium, Total	50.7	MG/KG	0.35	3.0
		Zinc, Total	37.6	MG/KG	1.5	3.0
		Zirconium, Total	20.3	MG/KG	12.6	3.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 05/05/08

CLIENT: TNUHANFORD RC-088 K1181 LVL LOT #: 0804L900

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-002	J169N7	Silver, Total	0.23 u	MG/KG	0.23	3.0
		Aluminum, Total	3880	MG/KG	9.3	3.0
		Arsenic, Total	2.2	MG/KG	1.2	3.0
		Barium, Total	57.0	MG/KG	0.23	3.0
		Beryllium, Total	0.56	MG/KG	0.12	3.0
		Calcium, Total	5790	MG/KG	9.3	3.0
		Cadmium, Total	0.12 u	MG/KG	0.12	3.0
		Cobalt, Total	8.1	MG/KG	0.46	3.0
		Chromium, Total	76.8	MG/KG	0.46	3.0
		Copper, Total	48.7	MG/KG	0.46	3.0
		Iron, Total	28400	MG/KG	10.5	3.0
		Mercury, Total	0.04	MG/KG	0.009	1.0
		Potassium, Total	640	MG/KG	115	3.0
		Magnesium, Total	3290	MG/KG	5.8	3.0
		Manganese, Total	297	MG/KG	0.09	3.0
		Sodium, Total	272	MG/KG	4.6	3.0
		Nickel, Total	131	MG/KG	0.46	3.0
		Lead, Total	13.3	MG/KG	0.70	3.0
		Antimony, Total	0.70 u	MG/KG	0.70	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	48.3	MG/KG	0.33	3.0
		Zinc, Total	174	MG/KG	1.4	3.0
		Zirconium, Total	25.2	MG/KG	11.6	3.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 05/05/08

CLIENT: TNUHANFORD RC-088 K1181 LVL LOT #: 0804L900

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	08L0166-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	0.10	u	MG/KG	0.10	1.0
		Beryllium, Total	0.05	u	MG/KG	0.05	1.0
		Calcium, Total	4.0	u	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	4.5	u	MG/KG	4.5	1.0
		Potassium, Total	49.3	u	MG/KG	49.3	1.0
		Magnesium, Total	2.5	u	MG/KG	2.5	1.0
		Manganese, Total	0.04	u	MG/KG	0.04	1.0
		Sodium, Total	14.1		MG/KG	2.0	1.0
		Nickel, Total	0.20	u	MG/KG	0.20	1.0
		Lead, Total	0.30	u	MG/KG	0.30	1.0
		Antimony, Total	0.30	u	MG/KG	0.30	1.0
		Selenium, Total	0.60	u	MG/KG	0.60	1.0
		Tin, Total	0.80		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	08C0072-MB1	Mercury, Total	0.01	u	MG/KG	0.01	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 05/05/08

CLIENT: TNUHANFORD RC-088 K1181 LVL LOT #: 0804L900

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J169N4	Silver, Total	3.8	0.25u	4.3	88.4	3.0
		Aluminum, Total	5500	4970	171	315.4*	3.0
		Arsenic, Total	163	2.1	171	93.9	3.0
		Barium, Total	217	58.3	171	92.9	3.0
		Beryllium, Total	4.6	0.56	4.3	93.8	3.0
		Calcium, Total	7560	5070	2140	116.6	3.0
		Cadmium, Total	4.2	0.13u	4.3	97.7	3.0
		Cobalt, Total	46.9	6.6	42.7	94.4	3.0
		Chromium, Total	26.2	7.7	17.1	108.2	3.0
		Copper, Total	31.8	11.4	21.4	95.3	3.0
		Iron, Total	18700	19400	85.5	-810. *	3.0
		Mercury, Total	0.15	0.00u	0.14	105.6	1.0
		Potassium, Total	2880	879	2140	93.6	3.0
		Magnesium, Total	5450	3380	2140	96.9	3.0
		Manganese, Total	317	265	42.7	122.5*	3.0
		Sodium, Total	2220	152	2140	96.7	3.0
		Nickel, Total	50.0	8.2	42.7	97.9	3.0
		Lead, Total	54.1	9.8	42.7	103.7	3.0
		Antimony, Total	26.2	0.76u	42.7	61.4	3.0
		Selenium, Total	138	1.5 u	171	81.0	3.0
		Tin, Total	80.9	1.5 u	85.5	94.6	3.0
		Thallium, Total	157	1.5 u	171	91.7	3.0
		Vanadium, Total	86.0	50.7	42.7	82.7	3.0
		Zinc, Total	76.7	37.6	42.7	91.6	3.0
		Zirconium, Total	425	20.3	428	94.7	3.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 05/05/08

CLIENT: TNUHANFORD RC-088 K1181 LVL LOT #: 0804L900

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	J169N4	Silver, Total	0.25u	0.25u	NC	3.0
		Aluminum, Total	4970	5130	3.3	3.0
		Arsenic, Total	2.1	2.1	0.00	3.0
		Barium, Total	58.3	61.4	5.2	3.0
		Beryllium, Total	0.56	0.60	6.9	3.0
		Calcium, Total	5070	5500	8.1	3.0
		Cadmium, Total	0.13u	0.12u	NC	3.0
		Cobalt, Total	6.6	6.7	1.5	3.0
		Chromium, Total	7.7	8.8	13.3	3.0
		Copper, Total	11.4	12.0	5.1	3.0
		Iron, Total	19400	21100	8.7	3.0
		Mercury, Total	0.00u	0.00u	NC	1.0
		Potassium, Total	879	910	3.4	3.0
		Magnesium, Total	3380	3650	7.7	3.0
		Manganese, Total	265	292	9.8	3.0
		Sodium, Total	152	145	4.8	3.0
		Nickel, Total	8.2	9.5	14.7	3.0
		Lead, Total	9.8	24.2	84.7	3.0
		Antimony, Total	0.76u	0.75u	NC	3.0
		Selenium, Total	1.5 u	1.5 u	NC	3.0
		Tin, Total	1.5 u	1.5 u	NC	3.0
		Thallium, Total	1.5 u	1.5 u	NC	3.0
		Vanadium, Total	50.7	52.2	2.9	3.0
		Zinc, Total	37.6	41.4	9.6	3.0
		Zirconium, Total	20.3	21.3	4.8	3.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 05/05/08

CLIENT: TNUHANFORD RC-088 K1181 LVL LOT #: 0804L900

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	08L0166-LC1	Silver, LCS	46.4	50.0	MG/KG	92.8
		Aluminum, LCS	484	500	MG/KG	96.9
		Arsenic, LCS	929	1000	MG/KG	92.9
		Barium, LCS	470	500	MG/KG	94.1
		Beryllium, LCS	23.7	25.0	MG/KG	94.8
		Calcium, LCS	2420	2500	MG/KG	96.6
		Cadmium, LCS	23.4	25.0	MG/KG	93.6
		Cobalt, LCS	234	250	MG/KG	93.4
		Chromium, LCS	47.4	50.0	MG/KG	94.8
		Copper, LCS	119	125	MG/KG	95.4
		Iron, LCS	473	500	MG/KG	94.6
		Potassium, LCS	2220	2500	MG/KG	88.9
		Magnesium, LCS	2370	2500	MG/KG	94.8
		Manganese, LCS	71.8	75.0	MG/KG	95.7
		Sodium, LCS	2270	2500	MG/KG	90.6
		Nickel, LCS	189	200	MG/KG	94.4
		Lead, LCS	236	250	MG/KG	94.2
		Antimony, LCS	277	300	MG/KG	92.4
		Selenium, LCS	892	1000	MG/KG	89.2
		Tin, LCS	472	500	MG/KG	94.5
		Thallium, LCS	925	1000	MG/KG	92.5
		Vanadium, LCS	233	250	MG/KG	93.2
		Zinc, LCS	93.4	100	MG/KG	93.4
		Zirconium, LCS	482	500	MG/KG	96.3
LCS1	08C0072-LC1	Mercury, LCS	5.0	4.7	MG/KG	107.3

Lionville Laboratory Incorporated

Logbook #: 440

SAMPLE DIGESTION RECORD

SOP: L-SPI-3020 Rev. 00

Digestion Batch #: 08L0166
Date/Time Initiated: 4/23/08 1230
Date/Time Completed: 4/23/08 1830
Analyst(s): MW
Matrix: (Soil) Water Other:
Instr. Type: AA (ICP)
Parameters: See backlog

(Digested) / Undigested (circle one)
Balance #: B20
Balance Cal Verif: (Y) NA
Hot Plate Temp: 93°

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

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

4/23/08 Vista/TNV

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
0804L873-004	1*	1.16gr	100ml	<2	TO	coarse	brown soil	rocks	
005		1.21gr				fine			
006		1.18gr				⊥			
0804L904-001		1.08gr				coarse			
0804L900-001		1.19gr						RAD I	
001R		1.20gr							
001S	1.0ml *	1.17gr							
002		1.29gr					Sed, rocks,		
08L0166-MB1		1.0gr					boiling chips		
LC1	1.0ml *	1.0gr							

MW 4/23/08

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

Reagent IDs:
HNO_3 E46025
HCL E45047
H_2O_2 E44A06
1:1 HNO_3 9789-077-04
1:1 HCL

File ID#: IC016601 IC016602

LIMS Transfer: (Y) N Updated

Data Review By/Date: PMP, 04/23/08

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

Lionville Laboratory Incorporated

MERCURY PREPARATION

Logbook # 422

Analyst: CB
Date 4/18/08
Start Time/Temp: 1410 | 95°
End Time/Temp: 1440 | 97°

Instrument ID HG3.1|3.2
Balance #: B29 /NA
Pipette Calibration (Daily) Y ✓

Prep Batch: 08C0072
Worksheet: HG041801/02
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	205			10mL	50mL	
0.2 µg/L	Z4	0.100				
1.0	DR	0.500				
2.0	X3	1.000				
5.0	BB	2.500				
10.0	B32	5.000				
ICV	G7	0.125	2.5			
CCV	IV	0.250	5.0			
ICB|CCB	I94					90.80
MB1	416			0.30		PBS172 100.00
LC1	537	*	*	0.30		LCSS172
0804L813-001	X5			0.33		93.75
001R	114			0.34		
001S	5H	0.500	1.0	0.33		
0804L920-001	C9			0.30		R 100.00
001R	A9			0.32		
001S	OLN	0.500	1.0	0.30		
0804L904-001	B6			0.33		91.07
002	JB			0.40		96.96
003	PA			0.38		92.75
004	194			0.34		R 95.91
005	KX			0.32		97.05
006	BG			0.38		97.65
0804L900-001	X0			0.35		100.00
001R	GTR			0.39		
001S	40	0.500	1.0	0.35		
002	3P			0.35		

Standard:	ID	Prep Date/Time
ICAL/MS	R16072-75-07B	4/18/08 1130
ICV/CCV/LCS	US6072-75-08A	

Reviewed By/Date: [signature] 4/22/08

see book # 736Y 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

ME-HgCVAA-Prep1007

Page #:

000000017

onville Laboratory
corporated

MERCURY PREPARATION

Logbook # 422

nalyst: TLB
ate 4/18/08
tart Time/Temp:
nd Time/Temp: see page 080

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

Prep Batch: 08C0072
Worksheet: HG041802
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.
0804L905-001	H			0.37	50mL	R 93.49
001R	NB			0.34		
001S	AR	0.500	1.0	0.37		
001T	RZ	0.500	1.0	0.30		
002	508			0.35		97.84
003	3T			0.35		96.53
0804L911-001	92			0.31		96.82
002	PF			0.34		88.64
0804L929-001	OF			0.30		R 100.00
001R	290			0.32		
001S	D4	0.500	1.0	0.30		
0804L930-001	CB			0.34		
001R	WO			0.33		
001S	HR	0.050	10.0	0.34		
0804L931-001	AN			0.34		
002	H3			0.33		
002R	997			0.36		
002S	BZ	0.500	1.0	0.33		
003	461			0.38		

TLB 4/18/08

Standard:	ID	Prep Date/Time
ICAL/MS		
ICV/CCV/LCS	see page 080	

Reviewed By/Date: 4/22/08

see book # 9368 for std traceability information

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

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

ME-HgCVAA-Prep1007

Page #:

ville Laboratory Use Only

3041900

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

VLI

000000019

t TNU HANFORD SAF# RC-088

Final Proj. Sampling Date

ct# 11343-606-001-9999-00

ct Contact/Phone#

ille Laboratory Project Manager O-JOHNSON

SW846 Del STD TAT 15 days

Rec'd 4-11-08 Date Due 4-26-08

		A													
Refrigerator #		3													
#/Type Container	Liquid / Solid	1G													
Volume		250													
Preservatives															
ANALYSES REQUESTED →		ORGANIC: VOA	BNA	Pest/PCB	Herb		SIOS Sporadic		INORG: Metal HG	CN	Total				
Lionville Laboratory Use Only			0625H	OPCB			08015		Met(1)		IIEN				

MX / BS	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected												
Soil / Sediment / Solid / Sludge / Water / Oil / Air / Drum Solids / Drum Liquids / EP/TCLP / Leachate / Wipe / Other / Fish	001	J169N4			SOLID	4-8-08	0920		X	X			X		X		X		
	002	⊥ 7			⊥	⊥	0935		X	X			X		X		X		

cial Instructions:

met(1) = HSL + Sn, 2r

Special Instructions:

4/11/08 1. 08015 - report propylene + ethylene glycol

2.

3.

4.

5.

6.

Relinquished by	Received by	Date	Time
DEO	[illegible]	4/11/08	1115

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-088-005 | Page 1 of 1

Collector: R. Kerkow / B. Lawrence / W. Sexsmith	Company Contact: Joan Kessner	Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH
Price Code: 8G	Data Turnaround: 15 Days		
Project Designation: 618-7 Burial Ground - Other Liquids	Sampling Location: 618-7 Burial Ground (drums)		SAF No.: RC-088
Ice Chest No.: GRP-03-014	Field Logbook No.: EL-1395-12	COA: RG61872000	Method of Shipment: FedEx
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A080234		Bill of Lading/Air Bill No.: See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Radioactive contamination, potential beryllium contamination

Special Handling and/or Storage

None Cool 4°C

Preservation	Cool 4C	Cool 4C	None	None	None	
Type of Container	aG	aG	P	P	P	
No. of Container(s)	1	1	1	1	1	
Volume	~~125mL~~ 250 RTL	~~125mL~~ RTL	~~125mL~~ RTL	~~60mL~~ RTL	500mL	
SAMPLE ANALYSIS	Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions.	Ignitability - 1010	See item (2) in Special Instructions. RTL 4/8/08	

Sample No.	Matrix *	Sample Date	Sample Time									
69N4	OTHER LIQUID	4/8/08	0920	X	X	X	X			B12 #0077	GREEN	LIQUID
69N7	OTHER LIQUID	4/8/08	0935	X	X	X	X			B12 #0078	OILY	DRUM

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time 1025 4-8-08	Received By/Stored In	Date/Time 1025 4/8/08
Relinquished By/Removed From	Date/Time 1300 4/8/08	Received By/Stored In	Date/Time 1300 4/8/08
Relinquished By/Removed From	Date/Time 4/10/08 1020	Received By/Stored In	Date/Time 4/10/08 1020
Relinquished By/Removed From	Date/Time 4/10/08 1500	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time 4-11-08 1115	Received By/Stored In	Date/Time 4-11-08 1115
Relinquished By/Removed From	Date/Time 4-11-08 1115	Received By/Stored In	Date/Time 4-11-08 1115

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

ADD: ALCOHOLS, GLYCOLS, KETONES 8015M RBK 4/8/08

NOTE: SAMPLE MEDIA IS CONTAINED IN ONE 250mL CONTAINER. RBK 4/8/08

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

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

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

CH-EE-011

0000000020

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD

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

Date: 4/11/08

LvLI Batch #: 08044900

Sample Custodian: [signature]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 798917031410
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 2-3	°C	Cooler # GRP-03-014
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	Client CoC indicates Liquid Sample are Solids
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 O-V-		Date 4-11-08	

LvLI

Lionville Laboratory, Inc.
8015 ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD RC-088 K1181

RECEIVED
JUN 2008

DATE RECEIVED: 04/11/08 LVL LOT # :0804L900

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J169N4	001	SO	08GCX005	04/08/08	04/16/08	04/16/08
J169N7	002	SO	08GCX005	04/08/08	04/16/08	04/16/08

LAB QC:

BLK	MB1	S	08GCX005	N/A	04/16/08	04/16/08
BLK	MB1 BS	S	08GCX005	N/A	04/16/08	04/16/08
BLK	MB1 BSD	S	08GCX005	N/A	04/16/08	04/16/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-088
LVL #: 0804L900
SDG/SAF # K1181 / RC-088

W.O. #: 11343-606-001-9999-00
Date Received: 04-11-2008

GLYCOLS

Two (2) solid samples were collected on 04-08-2008.

The samples and their associated QC samples were extracted and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedure on 04-16-2008. The extraction and analysis procedures were based on method 8015B.

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

1. Discrepancies from the sample acceptance policy have been recorded on the Sample Receipt Checklist.

2. All required holding times for extraction and analysis have been met.

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

4. All obtainable surrogate recoveries were within acceptance criteria.

5. All blank spike recoveries were within acceptance criteria.

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

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

r:\group\data\2008\herb\tnu\0804-900csol2.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 8 pages.

LIONVILLE LABORATORY INC.

8. 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.

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

4/21/08
Date

GLOSSARY OF DATA

DATA QUALIFIERS

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

ABBREVIATIONS

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

Lionville Laboratory, Inc.

Nonhalogenated Volatiles by GC, Method 8015 Report Date: 04/17/08 08:54

RFW Batch Number: **0804L900** Client: **TNU-HANFORD RC-088** Work Order: 11343606001 Page: 1

000000005

	Cust ID:	J169N4	J169N7	BLK	BLK BS	BLK BSD
Sample Information	RFW#:	001	002	08GCX005-MB1	08GCX005-MB1	08GCX005-MB1
	Matrix:	SOLID	SOLID	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00
	Units:	mg/Kg	mg/Kg	mg/Kg	mg/Kg	mg/Kg
1,4-Butanediol		93 %	81 %	93 %	131 %	129 %
Propylene Glycol		40.0 U	40.0 U	40.0 U	111 %	124 %
Ethylene Glycol		40.0 U	40.0 U	40.0 U	109 %	125 %

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

Lionville Laboratory, Inc.

SAMPLE EXTRACTION RECORD

Sheet no.: 1

Extract. Date: 04/16/08 Extraction Batch No: 08GCX005 Analyst: SZ Method: N/A

Test: O801 Cleanup Date: Analyst: Client: TNU-HANFORD RC-088

LIMS Report Date: 04/16/08 Solvent: H2O Adsorbent:

Sample No:	Client Name Client ID	pH	Initial WT/VOL	Surr. Mult.	Spike Mult.	Final VOL	Final VOL	Split Mult.	GPC Y/N	% Solids	C/D FACTOR
0804L900-	TNU-HANFORD RC-088										
001 5	J169N4		1.0	1.0		2.0		1.0	N	100.00	2.0
002 5	J169N7		1.0	1.0		2.0		1.0	N	100.00	2.0
08GCX005-MB1 5	BLK		1.0	1.0		2.0		1.0	N	100.00	2.0
08GCX005-MB1 5S	BLK		1.0	1.0	1.0	2.0		1.0	N	100.00	2.0
08GCX005-MB1 5T	BLK		1.0	1.0	1.0	2.0		1.0	N	100.00	2.0

Comments:
Surrogate: 20 UL 90533801
Spike: 20 UL EACH 90533802,03,04

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer

000000006

ville Laboratory Use Only

3041900

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI

000000007

TNU HANFORD SAF# RC-088

Final Proj. Sampling Date

ct# 11343-606-001-9999-00

ct Contact/Phone#

ille Laboratory Project Manager O-JOHNSON

SW846 Del STD TAT 15 days

Rec'd 4-11-08 Date Due 4-26-08

Refrigerator #			A														
#/Type Container	Liquid / Solid		3														
Volume			1C														
Preservatives			250														
ANALYSES REQUESTED →			ORGANIC							INORG							
			VOA	BNA	Pest/PCB	Herb		8108 Sporting		Metal HG	CN	I/NOT.					
			Lionville Laboratory Use Only														
				0625H	OPCB			08015		Met(1)		IIGN					

IX S:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected
Soil Sediment Solid Sludge Water Oil Air Drum Solids Drum Liquids EP/TCLP Leachate Wipe Other Fish	001	J169N4			SOLID	4-8-08	0920
	002	⊥ 7			⊥	⊥	0930

	001	002
0625H	X	X
OPCB	X	X
08015	X	X
Met(1)	X	X
IIGN	X	X

cial Instructions:

net(1) = HSL + Sn, Zr

Special Instructions:

4/11/08 1. 08015 - report propylene + ethylene glycol

2.

3.

4.

5.

6.

Relinquished by	Received by	Date	Time
JEO	[signature]	4/11/08	1115

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-088-005 | Page 1 of 1

Collector: R. Kerkow / B. Lawrence / W. Sexsmith	Company Contact: Joan Kessner	Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH
Price Code: 8G	Data Turnaround: 15 Days		
Project Designation: 618-7 Burial Ground - Other Liquids	Sampling Location: 618-7 Burial Ground (drums)		SAF No.: RC-088
Ice Chest No.: GRP-03-014	Field Logbook No.: EL-1395-12	COA: RG61872000	Method of Shipment: FedEx
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A080234		Bill of Lading/Air Bill No.: See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Radioactive contamination, potential beryllium contamination

Special Handling and/or Storage

None Cool 4°C

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	~~125mL~~ 250 RTL	~~125mL~~ RTL	~~125mL~~ RTL	~~500mL~~ RTL	500mL						
SAMPLE ANALYSIS	Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions.	Ignitability - 1010	See item (2) in Special Instructions. RTL 4/8/08						
Sample No.	Matrix *	Sample Date	Sample Time								
169N4	OTHER LIQUID	4/8/08	0920	X	X	X	X			B12 #0077 / GREEN OILY LIQUID DRUM	
169N7	OTHER LIQUID	4/8/08	0935	X	X	X	X			B12 #0078 /	

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
B. Lawrence	1025 4-8-08	RJ Coffman / RJ Coffman	1025 4/8/08
J Coffman / RJ Coffman	4/8/08 1300	Reefer #1A	1300 4/8/08
200/1A	4/10/08 1020	MSlankovich	4/10/08 1020
MSlankovich	4/10/08 1500	FedEx	
[illegible]	4-11-08 1115	[illegible]	4-11-08 1115
[illegible]	4-11-08 1115	[illegible]	4-11-08 1115

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

ADD: ALCOHOLS, GLYCOLS, KETONES 8015M RBK 4/8/08

NOTE: SAMPLE MEDIA IS CONTAINED IN ONE 250mL CONTAINER. RBK 4/8/08

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

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

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

CH-EE-011

8000000000

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD

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

Date: 4/11/08

LvLI Batch #: 08044900

Sample Custodian: [signature]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FED EX		Airbill # 799891703 1410
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 2-3	°C	Cooler # GRP-03-014
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	Client CoC indicates liquid sample are solids
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 O.T.		Date 4-11-08	

LvLI

Lionville Laboratory, Inc.
PCB ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD RC-088 K1181

RECEIVED
JUN 2008

DATE RECEIVED: 04/11/08 LVL LOT # :08041900

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J169N4	001	SO	08LE0174	04/08/08	04/15/08	04/17/08
J169N4	001 MS	SO	08LE0174	04/08/08	04/15/08	04/17/08
J169N4	001 MSD	SO	08LE0174	04/08/08	04/15/08	04/17/08
J169N7	002	SO	08LE0174	04/08/08	04/15/08	04/17/08

LAB QC:

PBLKPC	MB1	S	08LE0174	N/A	04/15/08	04/16/08
PBLKPC	MB1 BS	S	08LE0174	N/A	04/15/08	04/16/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-088
LVL #: 0804L900
SDG/SAF # K1181 / RC-088

W.O. #: 11343-606-001-9999-00
Date Received: 04-11-2008

PCB

Two (2) solid samples were collected on 04-08-2008.

The samples and their associated QC samples were extracted on 04-15-2008 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedure on 04-16, 17-2008. 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. Discrepancies from the Sample acceptance policy have been recorded on the Sample Receipt Checklist.

2. The samples were extracted and analyzed within required holding time.

3. 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.

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

5. All surrogate recoveries were within acceptance criteria.

6. The blank spike recoveries were within acceptance criteria.

7. All matrix spike recoveries were within acceptance criteria.

8. Confirmation was not required because target compounds were not detected in any of the samples.

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

r:\group\data\2008\pest\tnu\0804-900csol2.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 10 pages.

LIONVILLE LABORATORY INC.

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

11. 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.

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

4/25/08
Date

GLOSSARY OF DATA

DATA QUALIFIERS

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

ABBREVIATIONS

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

Lionville Laboratory, Inc.

PCBs by GC

Report Date: 04/18/08 13:28

RFW Batch Number: **0804L900** Client: **TNU-HANFORD RC-088** Work Order: 11343606001 Page: 1

	Cust ID:	J169N4		J169N4		J169N4		J169N7		PBLKPC		PBLKPC BS	
Sample Information	RFW#:	001		001 MS		001 MSD		002		08LE0174-MB1		08LE0174-MB1	
	Matrix:	SOLID		SOLID		SOLID		SOLID		SOIL		SOIL	
	D.F.:	1.00		1.00		1.00		8.00		1.00		1.00	
	Units:	UG/KG		UG/KG		UG/KG		UG/KG		UG/KG		UG/KG	
Surrogate:	Tetrachloro-m-xylene	93	%	88	%	94	%	79	%	84	%	92	%
	Decachlorobiphenyl	96	%	92	%	93	%	71	%	85	%	93	%
			fl		fl		fl		fl		fl		fl
Aroclor-1016		13	U	90	%	94	%	110	U	13	U	86	%
Aroclor-1221		13	U	13	U	13	U	110	U	13	U	13	U
Aroclor-1232		13	U	13	U	13	U	110	U	13	U	13	U
Aroclor-1242		13	U	13	U	13	U	110	U	13	U	13	U
Aroclor-1248		180		NR		NR		1800		13	U	13	U
Aroclor-1254		13	U	13	U	13	U	110	U	13	U	13	U
Aroclor-1260		17		107	%	94	%	220		13	U	89	%

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

Lionville Laboratory, Inc.

SAMPLE EXTRACTION RECORD

Sheet no.: 1

Extract. Date: 04/15/08 Extraction Batch No: 08LE0174 Analyst: MF Method: **** SOX3540

Test: OPCB Cleanup Date: 04/16/08 Analyst: MF Client: LQA-I8082-1254

LIMS Report Date: 04/16/08 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
0803L795-	LQA-I8082-1254										
005	R1 SIDOC-1		30.0	1.0		10		1.0	N	0.00	333.3
006	R1 SIDOC-2		30.0	1.0		10		1.0	N	0.00	333.3
007	R1 SIDOC-3		30.0	1.0		10		1.0	N	0.00	333.3
008	R1 SIDOC-4		30.0	1.0		10		1.0	N	0.00	333.3
010	R1 S LOD CHECK		30.0	1.0		10		1.0	N	0.00	333.3
0803L826-	TNUHANFORD RC-054 K1164										
007	R1 J16J11		30.0	1.0		40.0		1.0	N	92.35	1443.8
0804L900-	TNU-HANFORD RC-088										
001	J169N4		30.0	1.0		10		1.0	N	0.00	333.3
001 -S	J169N4		30.0	1.0	1.0	10		1.0	N	0.00	333.3
001 -T	J169N4		30.0	1.0	1.0	10		1.0	N	0.00	333.3
002	J169N7		30.0	1.0		10		1.0	N	0.00	333.3
0804L904-	VISTA ENGINEERING										
001	B071		30.0	1.0		10		1.0	N	91.07	366.0
002	B072		30.0	1.0		10		1.0	N	96.96	343.8
003	B073		30.0	1.0		10		1.0	N	92.75	359.4
004	B075		30.0	1.0		10		1.0	N	95.91	347.5
005	B077		30.0	1.0		10		1.0	N	97.05	343.5
006	B078		30.0	1.0		10		1.0	N	97.65	341.4
0804L905-	VISTA ENGINEERING										
001	B079		30.0	1.0		10		1.0	N	93.49	356.5
001 -S	B079		30.0	1.0	1.0	10		1.0	N	93.49	356.5
001 -T	B079		30.0	1.0	1.0	10		1.0	N	93.49	356.5

Comments: DOC SPK/W 320 UL ,LOD SPK/W 60 UL AR1254 89916801
Surrogate: 250 UL OLM PSURR 89916504
Spike: 250 UL AR1660 89916602

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
all	[illegible]	4/16/08 1330	SZ	4/16/08 13:30	GC

000000006

Lionville Laboratory, Inc.

SAMPLE EXTRACTION RECORD

Sheet no.: 2

Extract. Date: 04/15/08 Extraction Batch No: 08LE0174 Analyst: MF Method: **** SW 3510

Test: OPCB Cleanup Date: 04/16/08 Analyst: MF Client: LQA-I8082-1254

LIMS Report Date: 04/16/08 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
0804L905-	VISTA ENGINEERING										
002	B080		30.0	1.0		10		1.0	N	97.84	340.7
003	B081		30.0	1.0		10		1.0	N	0.0	333.3
08LE0174-MB1	PBLKPC		30.0	1.0		10		1.0	N	100.00	333.3
08LE0174-MB1 -S	PBLKPC		30.0	1.0	1.0	10		1.0	N	100.00	333.3

Comments: DOC SPK/W 320 UL ,LOD SPK/W 60 UL AR1254 89916801
Surrogate: 250 UL OLM PSURR 89916504
Spike: 250 UL AR1660 89916602

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
all	[illegible]	4/16/08 1330	SZ	4/16/08 13:30	GC

000000007

nville Laboratory Use Only

8041900

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

VLI

nt TNU HANFORD SAF# RC-088

Final Proj. Sampling Date

ect# 11343-606-001-9999-00

ect Contact/Phone#

ville Laboratory Project Manager O-JOHNSON

SW846 Del STD TAT 15 days

Rec'd 4-11-08 Date Due 4-26-08

Refrigerator #		A	3												
#/Type Container	Liquid / Solid		1G												
Volume			250												
Preservatives															

ANALYSES REQUESTED →

	ORGANIC							INORG						
	VOA	BNA	~~Pest/~~ PCB	Herb		8015 Glycols		Metal HG	CN	TOTL				
Lionville Laboratory Use Only		8625H	OPCB			8015		METO		IIGN				

RIX ES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected												
Soil, Sediment, Solid, Sludge, Water, Oil, Air, Drum Solids, Drum Liquids, EP/TCLP, Leachate, Wipe, Other, Fish	001	J169N4			SOLID	4-8-08	0920		X	X			X		X		X		
	002	⊥ 7			⊥	⊥	0935		X	X			X		X		X		

ecial Instructions:

met ① = HSL + Sn, 2r

Special Instructions: 4/11/08

1. 8015 - report propylene + ethylene glycol
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
DEO	[signature]	4/11/08	1115

Relinquished by	Received by	Date	Time

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

8000000000

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-088-005 | Page 1 of 1

Collector R. Kerkow / B. Lawrence / W. Sexsmith	**Company Contact** Joan Kessner	**Telephone No.** 509-375-4688	**Project Coordinator** KESSNER, JH
Price Code 8G	**Data Turnaround** 15 Days		
Project Designation 618-7 Burial Ground - Other Liquids	**Sampling Location** 618-7 Burial Ground (drums)		**SAF No.** RC-088
Ice Chest No. GRP-03-014	**Field Logbook No.** EL-1395-12	**COA** RG61872000	**Method of Shipment** FedEx
Shipped To EBERLINE SERVICES / LIONVILLE	**Offsite Property No.** A080234		**Bill of Lading/Air Bill No.** See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Radioactive contamination, potential beryllium contamination

Special Handling and/or Storage

None Cool 4°C

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	~~125mL~~ 250 RTL	~~125mL~~ RTL	~~125mL~~ RTL	~~60mL~~ RTL	500mL						
SAMPLE ANALYSIS	Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions.	Ignitability - 1010	See item (2) in Special Instructions. RTL 4/8/08						
Sample No.	**Matrix ***	**Sample Date**	**Sample Time**								
169N4	OTHER LIQUID	4/8/08	0920	X	X	X	X			B12 #0077 / GREEN	LIQUID
169N7	OTHER LIQUID	4/8/08	0935	X	X	X	X			B12 #0078 / OILY	DRUM

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: B Lawrence	1025 4-8-08	RT Coffman / RT Coffman	1025 4/8/08
Relinquished By/Removed From: RT Coffman / RT Coffman	1300 4/8/08	Reefer #1A	1300 4/8/08
Relinquished By/Removed From: 060/1A	4/10/08 1020	MS Stankovich	4/10/08 1020
Relinquished By/Removed From: WCH MS Stankovich	4/10/08 1500	Received By/Stored In: FedEx	
Relinquished By/Removed From: FedEx	4-11-08 1115	Received By/Stored In: [illegible]	4-11-08 1115
Relinquished By/Removed From: FedEx	4-11-08 1115	Received By/Stored In: [illegible]	4-11-08 1115

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

ADD: ALCOHOLS, GLYCOLS, KETONES 8015M RBK 4/8/08

NOTE: SAMPLE MEDIA IS CONTAINED IN ONE 250mL CONTAINER. RBK 4/8/08

Matrix *

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

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

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

CH-EE-011

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD

Date: 4/11/08

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

LvLI Batch #: 08044900

Sample Custodian: [signature]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 79891703 1410
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 2-3	°C	Cooler # GRP-03-014
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 Client CoC indicates Liquid Sample are Solids.	
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 O.T.		Date 4-11-08	

LvLI

RECEIVED
JUN 2008

Lionville Laboratory, Inc.
BNA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-088 K1181

DATE RECEIVED: 04/11/08 LVL LOT # :0804L900

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J169N4	001	SO	08LE0177	04/08/08	04/16/08	04/22/08
J169N4	001 MS	SO	08LE0177	04/08/08	04/16/08	04/22/08
J169N4	001 MSD	SO	08LE0177	04/08/08	04/16/08	04/22/08
J169N7	002	SO	08LE0177	04/08/08	04/16/08	04/22/08

LAB QC:

SBLKTZ	MB1	S	08LE0177	N/A	04/16/08	04/18/08
SBLKTZ	MB1 BS	S	08LE0177	N/A	04/16/08	04/18/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-088
LVL #: 0804L900
SDG/SAF # K1181 / RC-088

W.O. #: 11343-606-001-9999-00
Date Received: 04-11-2008

SEMIVOLATILE

Two (2) solid samples were collected on 04-08-2008.

The samples and their associated QC samples were extracted according to Lionville Laboratory SOPs based on SW 846 method 3540C on 04-16-2008 and analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 04-18,22-2008.

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

1. All samples are reported on a wet weight basis, samples classified as solid.
2. Discrepancies from the sample acceptance policy have been recorded on the Sample Receipt Checklist.
3. Sample J169N7 had an elevated final volume of 2.0 mLs. Extract dark, would not concentrate down to 1.0 mL
4. The samples were extracted and analyzed within holding time.
5. Non-target compounds were detected in these samples.
6. All surrogate recoveries were wihtin acceptance criteria.
7. One (1) of one hundred and twenty-eight (128) obtainable matrix spike recoveries was outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
8. Three (3) of sixty-four (64) blank spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
9. The method blank was below the reporting limit for all target compounds.
10. All initial calibrations associated with this data set were within acceptance criteria.

r:\group\data\2008\bna\tnu\0804-900ksol2.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 15 pages.

LIONVILLE LABORATORY INC.

11. All continuing calibration standard analyzed prior to sample extracts were within acceptance criteria.

12. Internal standard area criteria were not met for samples 08LE0063-MB1T. The out of criteria sample was reanalyzed on 02-13-2008 with similar results and not reported.

13. 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").

14. 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.

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

4/28/08
Date

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 08m1088

Initiator: Sharon Saylor
Date: 4-24-08
Client: TMU RC080 K1181

Batch: 08041900
Samples: 001mid
Method: (SW846)/MCAWW/CLP/

Parameter: 8270
Matrix: SOLID
Prep Batch: 08IE0177

1. Reason for SDR

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

b. General Discrepancy

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

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

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

low recovery of hexachloroethane in the mid bottoms & gl are ok

2. Known or Probable Causes(s) Sporadic all other spikes surrogates within criteria RLW 4/28/08

3. Discussion and Proposed Action Other Description: narrate

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

4. Project Manager Instructions...signature/date: [signature] 4/28/08

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

5. Final Action...signature/date: [signature] 4-28-08 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 Specialist for distribution and filing.

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

QA-105-A-0805

GLOSSARY

DATA QUALIFIERS

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

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

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

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

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

I = Interference.

NQ = Result qualitatively confirmed but not able to quantify.

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

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

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

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

GLOSSARY

ABBREVIATIONS

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

TECHNICAL FLAGS FOR MANUAL INTEGRATION

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

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

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

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

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

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

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

Lionville Laboratory, Inc.

Semivolatiles by GC/MS, HSL List — Report Date: 04/24/08 15:42

RFW Batch Number: 0804L900 — Client: TNUHANFORD RC-088 K1181 — Work Order: 11343606001 — Page: 1a

	Cust ID:	J169N4	J169N4	J169N4	J169N7	SBLKTZ	SBLKTZ BS
Sample Information	RFW#:	001	001 MS	001 MSD	002	08LE0177-MB1	08LE0177-MB1
	Matrix:	SOLID	SOLID	SOLID	SOLID	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	2.00	1.00	1.00
	Units:	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Surrogate Recovery	Nitrobenzene-d5	48 %	75 %	64 %	78 %	67 %	87 %
	2-Fluorobiphenyl	55 %	87 %	74 %	95 %	68 %	93 %
	Terphenyl-d14	69 %	89 %	91 %	50 %	96 %	99 %
	Phenol-d5	57 %	83 %	67 %	77 %	63 %	84 %
	2-Fluorophenol	51 %	79 %	62 %	76 %	65 %	89 %
	2,4,6-Tribromophenol	53 %	75 %	59 %	76 %	63 %	78 %
		fl	fl	fl	fl	fl	fl
Phenol		330 U	81 %	71 %	670 U	330 U	83 %
bis(2-Chloroethyl)ether		330 U	68 %	56 %	670 U	330 U	78 %
2-Chlorophenol		330 U	83 %	72 %	670 U	330 U	91 %
1,3-Dichlorobenzene		330 U	63 %	51 %	670 U	330 U	85 %
1,4-Dichlorobenzene		330 U	67 %	54 %	670 U	330 U	86 %
1,2-Dichlorobenzene		330 U	68 %	57 %	670 U	330 U	94 %
2-Methylphenol		330 U	85 %	73 %	670 U	330 U	89 %
2,2'-oxybis(1-Chloropropane)		330 U	70 %	58 %	670 U	330 U	68 %
3/4 Methylphenol		330 U	85 %	76 %	670 U	330 U	91 %
N-Nitroso-di-n-propylamine		330 U	74 %	68 %	670 U	330 U	84 %
Hexachloroethane		330 U	63 %	49 * %	670 U	330 U	84 %
Nitrobenzene		330 U	72 %	66 %	670 U	330 U	82 %
Isophorone		330 U	82 %	78 %	670 U	330 U	87 %
2-Nitrophenol		330 U	79 %	73 %	670 U	330 U	97 %
2,4-Dimethylphenol		330 U	76 %	69 %	670 U	330 U	94 %
bis(2-Chloroethoxy)methane		330 U	75 %	73 %	670 U	330 U	81 %
2,4-Dichlorophenol		330 U	88 %	84 %	670 U	330 U	108 %
1,2,4-Trichlorobenzene		330 U	75 %	70 %	670 U	330 U	95 %
Naphthalene		330 U	75 %	67 %	670 U	330 U	83 %
4-Chloroaniline		330 U	44 %	46 %	670 U	330 U	83 %
Hexachlorobutadiene		330 U	78 %	72 %	670 U	330 U	115 %
4-Chloro-3-methylphenol		330 U	98 %	91 %	670 U	330 U	114 %
2-Methylnaphthalene		330 U	85 %	79 %	43 J	330 U	97 %
Hexachlorocyclopentadiene		330 U	42 %	35 %	670 U	330 U	87 %
2,4,6-Trichlorophenol		330 U	83 %	65 %	670 U	330 U	88 %
2,4,5-Trichlorophenol		830 U	100 %	77 %	1700 U	830 U	106 %

*= Outside of EPA CLP QC limits.

000000008

Cust ID:	J169N4		J169N4		J169N4		J169N7		SBLKTZ		SBLKTZ BS	
RFW#:	001		001 MS		001 MSD		002		08LE0177-MB1		08LE0177-MB1	
2-Chloronaphthalene	330	U	84	%	78	%	670	U	330	U	91	%
2-Nitroaniline	830	U	89	%	78	%	1700	U	830	U	101	%
Dimethylphthalate	330	U	95	%	85	%	670	U	330	U	110	%
Acenaphthylene	330	U	89	%	79	%	670	U	330	U	92	%
2,6-Dinitrotoluene	330	U	97	%	87	%	810		330	U	111 *	%
3-Nitroaniline	830	U	80	%	70	%	1700	U	830	U	111	%
Acenaphthene	330	U	85	%	78	%	670	U	330	U	92	%
2,4-Dinitrophenol	830	U	82	%	43	%	1700	U	830	U	71	%
4-Nitrophenol	830	U	106	%	46	%	1700	U	830	U	166 *	%
Dibenzofuran	330	U	94	%	85	%	670	U	330	U	102	%
2,4-Dinitrotoluene	330	U	104	%	91	%	670	U	330	U	125	%
Diethylphthalate	330	U	103	%	87	%	670	U	330	U	112	%
4-Chlorophenyl-phenylether	330	U	90	%	84	%	670	U	330	U	107	%
Fluorene	330	U	94	%	84	%	670	U	330	U	106	%
4-Nitroaniline	830	U	89	%	79	%	1700	U	830	U	129 *	%
4,6-Dinitro-2-methylphenol	830	U	90	%	67	%	1700	U	830	U	90	%
N-Nitrosodiphenylamine (1)	330	U	73	%	72	%	670	U	330	U	80	%
4-Bromophenyl-phenylether	330	U	81	%	85	%	670	U	330	U	95	%
Hexachlorobenzene	330	U	105	%	103	%	670	U	330	U	118	%
Pentachlorophenol	830	U	87	%	64	%	1700	U	830	U	90	%
Phenanthrene	330	U	90	%	90	%	120	J	330	U	103	%
Anthracene	330	U	97	%	91	%	670	U	330	U	105	%
Carbazole	330	U	96	%	87	%	670	U	330	U	114	%
Di-n-butylphthalate	330	U	98	%	86	%	52	J	330	U	103	%
Fluoranthene	330	U	112	%	91	%	670	U	330	U	119	%
Pyrene	330	U	82	%	90	%	670	U	330	U	90	%
Butylbenzylphthalate	330	U	88	%	87	%	670	U	330	U	98	%
3,3'-Dichlorobenzidine	330	U	65	%	67	%	670	U	330	U	104	%
Benzo(a)anthracene	330	U	93	%	90	%	670	U	330	U	99	%
Chrysene	330	U	97	%	90	%	670	U	330	U	98	%
bis(2-Ethylhexyl)phthalate	160	JB	97	%	89	%	480	JB	180	J	89	%
Di-n-octyl phthalate	330	U	85	%	77	%	620	J	330	U	108	%
Benzo(b)fluoranthene	330	U	94	%	92	%	670	U	330	U	109	%
Benzo(k)fluoranthene	330	U	103	%	82	%	670	U	330	U	113	%
Benzo(a)pyrene	330	U	96	%	87	%	670	U	330	U	110	%
Indeno(1,2,3-cd)pyrene	330	U	106	%	97	%	670	U	330	U	105	%
Dibenz(a,h)anthracene	330	U	107	%	98	%	670	U	330	U	108	%
Benzo(g,h,i)perylene	330	U	105	%	97	%	670	U	330	U	102	%

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

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1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J169N4

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

Client: TNUHANFORD RC-088 K1181

Matrix: (soil/water) SOLID

Lab Sample ID: 0804L900-001

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

Lab File ID: N042215

Level: (low/med) LOW

Date Received: 04/11/08

% Moisture: 100 decanted: (Y/N)__

Date Extracted: 04/16/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 04/22/08

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	3.722	80000	JB
2.	ALDOL CONDENSATE	4.812	400	JA
3.	TETRACHLOROBIPHENYL	19.582	500	J
4.	TETRACHLOROBIPHENYL	19.643	500	J
5.	TETRACHLOROBIPHENYL	19.887	400	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J169N7

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

Client: TNUHANFORD RC-088 K1181

Matrix: (soil/water) SOLID

Lab Sample ID: 0804L900-002

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

Lab File ID: N042218

Level: (low/med) LOW

Date Received: 04/11/08

% Moisture: 100 decanted: (Y/N)__

Date Extracted: 04/16/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 04/22/08

Injection Volume: 2.0(uL)

Dilution Factor: 2.00

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	3.659	100000	JB
2.	UNKNOWN	6.310	1000	J
3.	ALDOL CONDENSATE	7.121	1000	JA
4.	ALKANE	18.805	2000	J
5.	ALKANE	23.888	1000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SBLKTZ

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

Client: TNUHANFORD RC-088 K1181

Matrix: (soil/water) SOIL

Lab Sample ID: 08LE0177-MB1

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

Lab File ID: N041803

Level: (low/med) LOW

Date Received: 04/16/08

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

Date Extracted: 04/16/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 04/18/08

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	3.309	900	JA
2.	ALKANE	3.423	1000	J
3.	UNKNOWN	3.981	200000	J
4.	ALDOL CONDENSATE	5.053	700	JA
5.	UNKNOWN	17.853	300	J

nville Laboratory Use Only

8041900

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

VLI

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nt TNU HANFORD SAF# RC-088

Final Proj. Sampling Date

ect# 11343-606-001-9999-00

ect Contact/Phone#

vilie Laboratory Project Manager O-JOHNSON

SW846 Del STD TAT 15 days

Rec'd 4-11-08 Date Due 4-26-08

Refrigerator #			3													
#/Type Container	Liquid / Solid		1G													
Volume			250													
Preservatives																
ANALYSES REQUESTED		VOA	BNA	Pest/PCB	Herb		8015 Glycols		Metal HG	CN	I/DFT.					
			ORGANIC						INORG							
		Lionville Laboratory Use Only														
			0625H	OPCB			8015		Met(1)		IIGN					

MATRIX ESI: 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	T169N4			SOLID	4-8-08	0920		X	X			X		X		X			
	002	⊥ 7			⊥	⊥	0935		X	X			X		X		X			

cial Instructions:

met ① = HSL + Sn, 2r

Special Instructions: 4/11/08

1. 08015 - report propylene + ethylene glycol
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
JEO	[signature]	4/11/08	1115

Relinquished by	Received by	Date	Time

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

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-088-005 | Page 1 of 1

Collector: R. Kerkow / B. Lawrence / W. Sexsmith	Company Contact: Joan Kessner	Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH
Price Code: 8G	Data Turnaround: 15 Days		
Project Designation: 618-7 Burial Ground - Other Liquids	Sampling Location: 618-7 Burial Ground (drums)		SAF No.: RC-088
Ice Chest No.: GRP-03-014	Field Logbook No.: EL-1395-12	COA: RG61872000	Method of Shipment: FedEx
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A080234		Bill of Lading/Air Bill No.: See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Potential Radioactive contamination, potential beryllium contamination

Special Handling and/or Storage

None Cool 4°C

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	~~125mL~~ 250 RTC	~~125mL~~ RTC	~~125mL~~ RTC	~~60mL~~ RTC	500mL						
SAMPLE ANALYSIS	Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions.	Ignitability - 1010	See item (2) in Special Instructions. RTC 4/8/08						
Sample No.	Matrix *	Sample Date	Sample Time								
169N4	OTHER LIQUID	4/8/08	0920	X	X	X	X			B12 # 0077 / GREEN	LIQUID
169N7	OTHER LIQUID	4/8/08	0935	X	X	X	X			B12 # 0078 / OILY	DRUM

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Lawrence	1025 4-8-08	RT Coffman / RT Coffman	1025 4/8/08
T Coffman / RT Coffman	1300 4/8/08	Reefer # 1A	1300 4/8/08
260/1A	4/10/08 1020	MStankovich	4/10/08 1020
MStankovich	4/10/08 1500	FedEx	
	4-11-08 1115		4-11-08 1115
	4-11-08 1115		4-11-08 1115

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

ADD: ALCOHOLS, GLYCOLS, KETONES 8015M RBK 4/8/08

NOTE: SAMPLE MEDIA IS CONTAINED IN ONE 250 mL CONTAINER. RBK 4/8/08

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

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

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

CH-EE-011

000000014

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD

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

Date: 4/11/08

LvLI Batch #: 08044900

Sample Custodian: [signature]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 798917031410
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 2-3	°C	Cooler # GRP-03-014
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	Client CoC indicates Liquid Sample are Solids.
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 O-V-		Date 4-11-08	

LvLI