0078709

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

COMPLETE COPY OF DATA PACKAGE TO:

Rick Kerkow	L6-06	KW 9/2/08 Initials/Date
Kathy Wendt	H4-21	KW 9/2/08 Initials/Date

COMMENTS:

SDG K1289 SAF-RC-088

Rad only Chem only X Rad & Chem

X Complete Partial

WASTE SITE: 618-7 Burial Ground (drums)

RECEIVED
SEP 08 2008
EDMC

EBERLINE SERVICES

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

August 15, 2008

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

RECEIVED AUG 2008

Reference: **P.O. #S00W235A00**
Eberline Services R8-08-035-7859, SDG K1289

Dear Ms. Kessner:

Enclosed is the data report for one solid (other solid) sample designated under SAF No. RC-088 received at Eberline Services on August 5, 2008. The sample was analyzed according to the accompanying chain-of-custody document.

Please call if you have any questions concerning this report.

Sincerely,

Melissa Mannion

Melissa C. Mannion
Senior Program Manager

MCM/njv

Enclosure: Data Package

1.0 GENERAL

Washington Closure Hanford (WCH) Sample Delivery Group K1289 was composed of one solid (other solid) sample designated under SAF No. RC-088 with a Project Designation of: 618-7 Burial Grounds-Other Solid.

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

The sample was received as stated on the Chain-of-Custody document. Any discrepancies are noted on the Eberline Services Sample Receipt Checklist. The results were transmitted to WCH via e-mail on August 15, 2008.

2.0 ANALYSIS NOTES

2.1 Gross Alpha and Gross Beta Analysis

No problems were encountered during the course of the analyses.

2.2 Total Strontium Analysis

No problems were encountered during the course of the analyses.

2.3 Isotopic Thorium Analysis

No problems were encountered during the course of the analyses.

2.4 Isotopic Uranium Analysis

No problems were encountered during the course of the analyses.

2.5 Isotopic Plutonium Analysis

No problems were encountered during the course of the analyses.

2.6 Americium-241 Analysis

No problems were encountered during the course of the analyses.

2.7 Gamma Spectroscopy

The relative percent difference in the original and duplicate Th228 results was 31%, greater than the control limit of 27%; the DER was 3.5. No other problems were encountered during the course of the analyses.

3.0 Case Narrative Certification Statement

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

Melissa Mannion

Melissa C. Mannion
Senior Program Manager

08/15/08

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 K1289

SDG	7859
Contact	Melissa C. Mannion

Client	Hanford
Contract	No. S00W235A00
Case no	SDG_K1289

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

About this section	1
Sample Summaries	3
Prep Batch Summary	5
Work Summary	6
Method Blanks	8
Lab Control Samples	10
Duplicates	12
Data Sheets	14
Method Summaries	15
Report Guides	23
End of Section	37

Prepared by

Reviewed by

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-TOC
Version	3.06
Report date	08/15/08

SDG 7859
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1289

ABOUT THE DATA SUMMARY SECTION

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

The Data Summary Section has several groups of reports:

SAMPLE SUMMARIES

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

PREPARATION BATCH SUMMARY

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

WORK SUMMARY

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

METHOD BLANKS

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

LAB CONTROL SAMPLES

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

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 08/15/08

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 K1289

LAB SAMPLE SUMMARY

SDG 7859
Contact Melissa C. Mannion

Client Hanford
Contract No. S00W235A00
Case no SDG K1289

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAF NO	CHAIN OF CUSTODY	COLLECTED
R808035-01	J177M3	618-7 BurialGrnd(drums)	SOLID		RC-088	RC-088-055	07/30/08 13:45
R808035-02	Lab Control Sample		SOLID		RC-088		
R808035-03	Method Blank		SOLID		RC-088		
R808035-04	Duplicate (R808035-01)	618-7 BurialGrnd(drums)	SOLID		RC-088		07/30/08 13:45
R808042-03	Lab Control Sample		SOLID		RC-088		
R808042-04	Method Blank		SOLID		RC-088		

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LS
Version 3.06
Report date 08/15/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1289

QC SUMMARY

SDG 7859
Contact Melissa C. Mannion

Client Hanford
Contract No. S00W235A00
Case no SDG K1289

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% SOLIDS	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED	DAYS SINCE COLL	LAB SAMPLE ID	DEPARTMENT SAMPLE ID
7859	RC-088-055	J177M3	SOLID	100.0	682 g		08/05/08	6	R808035-01	7859-001
		Method Blank	SOLID						R808035-03	7859-003
		Lab Control Sample	SOLID						R808035-02	7859-002
		Duplicate (R808035-01)	SOLID	100.0	682 g		08/05/08	6	R808035-04	7859-004
7861		Method Blank	SOLID						R808042-04	7861-004
		Lab Control Sample	SOLID						R808042-03	7861-003

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-QS
Version 3.06
Report date 08/15/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1289

SDG 7859
Contact Melissa C. Mannion

PREP BATCH SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1289

TEST	MATRIX	METHOD	PREPARATION BATCH	ERROR 2σ %	PLANCHETS ANALYZED CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	MS/ORIG	QUALIFIERS
Alpha Spectroscopy												
AM	SOLID	Americium 241 in Solids	6160-056	8.0	1			1	1	1/1		
PU	SOLID	Plutonium, Isotopic in Solids	6160-056	8.0	1			1	1	1/1		
TH	SOLID	Thorium, Isotopic in Solids	6160-056	8.0	1			1	1	1/1		
U	SOLID	Uranium, Isotopic in Solids	6160-056	8.0	1			1	1	1/1		
Beta Counting												
SR	SOLID	Total Strontium in Solids	6160-056	10.4	1			1	1	1/1		
Gas Proportional Counting												
93A	SOLID	Gross Alpha in Solids	6160-061	20.6	1			1	1	1/1		
93B	SOLID	Gross Beta in Solids	6160-056	11.0	1			1	1	1/1		
Gamma Spectroscopy												
GAM	SOLID	Gamma Scan	6160-056	7.0	1			1	1	1/1		

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

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-PBS
Version 3.06
Report date 08/15/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1289

SDG 7859
Contact Melissa C. Mannion

LAB WORK SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1289

LAB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
R808035-01	J177M3			7859-001	93A/93		08/11/08	08/14/08	BW	Gross Alpha in Solids
07/30/08	618-7 BurialGrnd(drums)		SOLID	7859-001	93B/93		08/11/08	08/14/08	BW	Gross Beta in Solids
08/05/08	RC-088-055	RC-088		7859-001	AM		08/12/08	08/13/08	BW	Americium 241 in Solids
				7859-001	GAM		08/07/08	08/12/08	CSS	Gamma Scan
				7859-001	PU		08/12/08	08/13/08	BW	Plutonium, Isotopic in Solids
				7859-001	SR		08/09/08	08/12/08	BW	Total Strontium in Solids
				7859-001	TH		08/12/08	08/13/08	BW	Thorium, Isotopic in Solids
				7859-001	U		08/12/08	08/13/08	BW	Uranium, Isotopic in Solids
R808035-02	Lab Control Sample			7859-002	93B/93		08/12/08	08/14/08	BW	Gross Beta in Solids
			SOLID	7859-002	AM		08/12/08	08/13/08	BW	Americium 241 in Solids
		RC-088		7859-002	GAM		08/08/08	08/12/08	CSS	Gamma Scan
				7859-002	PU		08/12/08	08/13/08	BW	Plutonium, Isotopic in Solids
				7859-002	SR		08/09/08	08/12/08	BW	Total Strontium in Solids
				7859-002	TH		08/13/08	08/13/08	BW	Thorium, Isotopic in Solids
				7859-002	U		08/12/08	08/13/08	BW	Uranium, Isotopic in Solids
R808035-03	Method Blank			7859-003	93B/93		08/11/08	08/14/08	BW	Gross Beta in Solids
			SOLID	7859-003	AM		08/12/08	08/13/08	BW	Americium 241 in Solids
		RC-088		7859-003	GAM		08/08/08	08/12/08	CSS	Gamma Scan
				7859-003	PU		08/12/08	08/13/08	BW	Plutonium, Isotopic in Solids
				7859-003	SR		08/09/08	08/12/08	BW	Total Strontium in Solids
				7859-003	TH		08/12/08	08/13/08	BW	Thorium, Isotopic in Solids
				7859-003	U		08/12/08	08/13/08	BW	Uranium, Isotopic in Solids
R808035-04	Duplicate (R808035-01)			7859-004	93A/93		08/12/08	08/14/08	BW	Gross Alpha in Solids
07/30/08	618-7 BurialGrnd(drums)		SOLID	7859-004	93B/93		08/12/08	08/14/08	BW	Gross Beta in Solids
08/05/08		RC-088		7859-004	AM		08/12/08	08/13/08	BW	Americium 241 in Solids
				7859-004	GAM		08/08/08	08/12/08	CSS	Gamma Scan
				7859-004	PU		08/12/08	08/13/08	BW	Plutonium, Isotopic in Solids
				7859-004	SR		08/09/08	08/12/08	BW	Total Strontium in Solids
				7859-004	TH		08/12/08	08/13/08	BW	Thorium, Isotopic in Solids
				7859-004	U		08/12/08	08/13/08	BW	Uranium, Isotopic in Solids
R808042-03	Lab Control Sample			7861-003	93A/93		08/12/08	08/14/08	BW	Gross Alpha in Solids
			SOLID							
		RC-088								

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 08/15/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1289

SDG 7859
Contact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford
Contract No. S00W235A00
Case no SDG K1289

LAB SAMPLE / COLLECTED / RECEIVED	CLIENT SAMPLE ID / LOCATION / CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
R808042-04	Method Blank	RC-088	SOLID	7861-004	93A/93		08/12/08	08/14/08	BW	Gross Alpha 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	1			1	1	1	4
93B/93	RC-088	Gross Beta in Solids	900.0_ALPHABETA_GPC	1			1	1	1	4
AM	RC-088	Americium 241 in Solids	AMCMISO_IE_PLATE_AEA	1			1	1	1	4
GAM	RC-088	Gamma Scan	GAMMA_GS	1			1	1	1	4
PU	RC-088	Plutonium, Isotopic in Solids	PUISO_PLATE_AEA	1			1	1	1	4
SR	RC-088	Total Strontium in Solids	SRTOT_SEP_PRECIP_GPC	1			1	1	1	4
TH	RC-088	Thorium, Isotopic in Solids	THISO_IE_PLATE_AEA	1			1	1	1	4
U	RC-088	Uranium, Isotopic in Solids	UISO_PLATE_AEA	1			1	1	1	4
TOTALS				8			8	8	8	32

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 08/15/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1289

7859-003 Method Blank

METHOD BLANK

SDG	7859	Client/Case no	Hanford	SDG	K1289
Contact	Melissa C. Mannion	Contract	No. S00W235A00		
Lab sample id	R808035-03	Client sample id	Method Blank		
Dept sample id	7859-003	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 Beta	12587-47-2	0.847	3.2	5.35	15.0	U	93B
Total Strontium	SR-RAD	-0.048	0.10	0.230	1.00	U	SR
Americium 241	14596-10-2	0	0.13	0.254	1.00	U	AM
Thorium 228	14274-82-9	0	0.19	0.454	1.00	U	TH
Thorium 230	14269-63-7	-0.094	0.19	0.361	1.00	U	TH
Thorium 232	TH-232	0	0.094	0.361	1.00	U	TH
Uranium 233/234	U-233/234	-0.018	0.036	0.138	1.00	U	U
Uranium 235	15117-96-1	0.044	0.044	0.167	1.00	U	U
Uranium 238	U-238	-0.018	0.036	0.138	1.00	U	U
Plutonium 238	13981-16-3	-0.094	0.14	0.340	1.00	U	PU
Plutonium 239/240	PU-239/240	-0.024	0.047	0.181	1.00	U	PU
Potassium 40	13966-00-2	U		0.502		U	GAM
Cobalt 60	10198-40-0	U		0.035	0.050	U	GAM
Cesium 137	10045-97-3	U		0.020	0.100	U	GAM
Radium 226	13982-63-3	U		0.043	0.100	U	GAM
Radium 228	15262-20-1	U		0.091	0.200	U	GAM
Europium 152	14683-23-9	U		0.061	0.100	U	GAM
Europium 154	15585-10-1	U		0.054	0.100	U	GAM
Europium 155	14391-16-3	U		0.054	0.100	U	GAM
Thorium 228	14274-82-9	U		0.037		U	GAM
Thorium 232	TH-232	U		0.091		U	GAM
Uranium 235	15117-96-1	U		0.088		U	GAM
Uranium 238	U-238	U		2.26		U	GAM
Americium 241	14596-10-2	U		0.048		U	GAM

618-7 Burial Ground - Other Solid

QC-BLANK #66742

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	08/15/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1289

7861-004 Method Blank

METHOD BLANK

SDG	7859	Client/Case no	Hanford	SDG K1289	
Contact	Melissa C. Mannion	Contract	No. S00W235A00		
Lab sample id	R808042-04	Client sample id	Method Blank		
Dept sample id	7861-004	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	1.87	3.7	6.47	10.0	U	93A
Gross Beta	12587-47-2	N.A.			15.0		93B
Total Strontium	SR-RAD	N.A.			1.00		SR
Americium 241	14596-10-2	N.A.			1.00		AM
Thorium 228	14274-82-9	N.A.			1.00		TH
Thorium 230	14269-63-7	N.A.			1.00		TH
Thorium 232	TH-232	N.A.			1.00		TH
Uranium 233/234	U-233/234	N.A.			1.00		U
Uranium 235	15117-96-1	N.A.			1.00		U
Uranium 238	U-238	N.A.			1.00		U
Plutonium 238	13981-16-3	N.A.			1.00		PU
Plutonium 239/240	PU-239/240	N.A.			1.00		PU

618-7 Burial Ground - Other Solid

QC-BLANK #66748

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	08/15/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1289

7859-002

Lab Control Sample

LAB CONTROL SAMPLE

SDG 7859

Contact Melissa C. Mannion

Client/Case no Hanford SDG K1289

Contract No. S00W235A00

Lab sample id R808035-02

Dept sample id 7859-002

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 Beta	111	7.8	5.60	15.0		93B	111	4.4	100	80-120	80-120
Total Strontium	9.97	0.68	0.339	1.00		SR	10.2	0.41	98	81-119	80-120
Americium 241	24.0	2.2	0.272	1.00		AM	22.4	0.90	107	80-120	80-120
Thorium 230	41.2	5.0	0.496	1.00		TH	41.6	1.7	99	78-122	80-120
Uranium 233/234	17.8	1.4	0.604	1.00		U	19.3	0.77	92	83-117	80-120
Uranium 235	13.9	1.2	0.110	1.00		U	15.7	0.63	89	83-117	80-120
Uranium 238	18.1	1.4	0.577	1.00		U	21.0	0.84	86	84-116	80-120
Plutonium 238	25.4	2.5	0.296	1.00		PU	25.8	1.0	98	80-120	80-120
Plutonium 239/240	30.2	2.8	0.204	1.00		PU	29.0	1.2	104	80-120	80-120
Cobalt 60	1.21	0.062	0.029	0.050		GAM	1.12	0.045	108	85-115	80-120
Cesium 137	1.42	0.059	0.040	0.100		GAM	1.28	0.051	111	85-115	80-120

618-7 Burial Ground - Other Solid

QC-LCS #66741

Lab id EBRLNE

Protocol Hanford1

Version Ver 1.0

Form DVD-LCS

Version 3.06

Report date 08/15/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1289

7861-003

Lab Control Sample

LAB CONTROL SAMPLE

SDG 7859

Contact Melissa C. Mannion

Client/Case no Hanford SDG K1289

Contract No. S00W235A00

Lab sample id R808042-03

Dept sample id 7861-003

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	104	17	6.26	10.0		93A	102	4.1	102	59-141	70-130
Gross Beta	N.A.			15.0		93B					80-120
Total Strontium	N.A.			1.00		SR					80-120
Americium 241	N.A.			1.00		AM					80-120
Thorium 230	N.A.			1.00		TH					80-120
Uranium 233/234	N.A.			1.00		U					80-120
Uranium 235	N.A.			1.00		U					80-120
Uranium 238	N.A.			1.00		U					80-120
Plutonium 238	N.A.			1.00		PU					80-120
Plutonium 239/240	N.A.			1.00		PU					80-120

618-7 Burial Ground - Other Solid

QC-LCS #66747

Lab id EBRLNE

Protocol Hanford1

Version Ver 1.0

Form DVD-LCS

Version 3.06

Report date 08/15/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1289

7859-004 J177M3

DUPLICATE

SDG	7859			Client/Case no	Hanford SDG K1289
Contact	Melissa C. Mannion			Contract	No. S00W235A00
	DUPLICATE		ORIGINAL		
Lab sample id	R808035-04	Lab sample id	R808035-01	Client sample id	J177M3
Dept sample id	7859-004	Dept sample id	7859-001	Location/Matrix	618-7 BurialGrnd(drums) SOLID
		Received	08/05/08	Collected/Weight	07/30/08 13:45 682 g
% solids	100.0	% solids	100.0	Custody/SAF No	RC-088-055 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	11.3	3.0	2.66	10.0		93A	9.60	6.0	7.28		16	106	0.5
Gross Beta	17.2	2.1	2.70	15.0		93B	15.1	4.3	5.89		13	50	0.8
Total Strontium	-0.054	0.16	0.346	1.00	U	SR	0.106	0.13	0.240	U	-		1.6
Americium 241	0	0.068	0.258	1.00	U	AM	-0.082	0.25	0.506	U	-		0.6
Thorium 228	0.594	0.32	0.379	1.00		TH	0.626	0.34	0.320		5	116	0.1
Thorium 230	0.315	0.32	0.302	1.00		TH	0.458	0.34	0.318		37	182	0.6
Thorium 232	0.315	0.24	0.302	1.00		TH	0.374	0.25	0.318		17	152	0.3
Uranium 233/234	0.286	0.16	0.156	1.00		U	0.457	0.16	0.120		46	93	1.5
Uranium 235	0	0.049	0.189	1.00	U	U	0	0.038	0.146	U	-		0
Uranium 238	0.674	0.25	0.156	1.00		U	0.898	0.26	0.120		28	71	1.2
Plutonium 238	0	0.12	0.296	1.00	U	PU	0	0.10	0.280	U	-		0
Plutonium 239/240	0.031	0.062	0.236	1.00	U	PU	0.076	0.10	0.193	U	-		0.8
Potassium 40	11.4	0.67	0.344			GAM	9.73	0.70	0.318		16	20	2.3
Cobalt 60	U		0.030	0.050	U	GAM	U		0.042	U	-		0.5
Cesium 137	1.57	0.061	0.038	0.100		GAM	1.57	0.068	0.044		0	17	0
Radium 226	0.286	0.065	0.065	0.100		GAM	0.291	0.073	0.081		2	53	0.1
Radium 228	0.526	0.14	0.139	0.200		GAM	0.403	0.14	0.146		26	66	1.2
Europium 152	U		0.083	0.100	U	GAM	U		0.109	U	-		0.4
Europium 154	U		0.093	0.100	U	GAM	U		0.128	U	-		0.4
Europium 155	U		0.073	0.100	U	GAM	U		0.090	U	-		0.3
Thorium 228	0.585	0.062	0.063			GAM	0.427	0.042	0.049		31	27	3.5
Thorium 232	0.526	0.14	0.139			GAM	0.403	0.14	0.146		26	66	1.2
Uranium 235	U		0.123		U	GAM	U		0.146	U	-		0.2
Uranium 238	U		3.41		U	GAM	U		4.61	U	-		0.4
Americium 241	U		0.044		U	GAM	U		0.157	U	-		1.4

618-7 Burial Ground - Other Solid

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	08/15/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1289

7859-004 J177M3

DUPLICATE, cont.

SDG	7859			Client/Case no	Hanford SDG K1289
Contact	Melissa C. Mannion			Contract	No. S00W235A00
	DUPLICATE		ORIGINAL		
Lab sample id	R808035-04	Lab sample id	R808035-01	Client sample id	J177M3
Dept sample id	7859-004	Dept sample id	7859-001	Location/Matrix	618-7 BurialGrnd(drums) SOLID
		Received	08/05/08	Collected/Weight	07/30/08 13:45 682 g
% solids	100.0	% solids	100.0	Custody/SAF No	RC-088-055 RC-088

QC-DUP#1 66743

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	08/15/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1289

7859-001 J177M3

DATA SHEET

SDG	7859	Client/Case no	Hanford	SDG K1289	
Contact	Melissa C. Mannion	Contract	No. S00W235A00		
Lab sample id	R808035-01	Client sample id	J177M3		
Dept sample id	7859-001	Location/Matrix	618-7 BurialGrnd(drums)	SOLID	
Received	08/05/08	Collected/Weight	07/30/08 13:45	682 g	
% solids	100.0	Custody/SAF No	RC-088-055	RC-088	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	9.60	6.0	7.28	10.0		93A
Gross Beta	12587-47-2	15.1	4.3	5.89	15.0		93B
Total Strontium	SR-RAD	0.106	0.13	0.240	1.00	U	SR
Americium 241	14596-10-2	-0.082	0.25	0.506	1.00	U	AM
Thorium 228	14274-82-9	0.626	0.34	0.320	1.00		TH
Thorium 230	14269-63-7	0.458	0.34	0.318	1.00		TH
Thorium 232	TH-232	0.374	0.25	0.318	1.00		TH
Uranium 233/234	U-233/234	0.457	0.16	0.120	1.00		U
Uranium 235	15117-96-1	0	0.038	0.146	1.00	U	U
Uranium 238	U-238	0.898	0.26	0.120	1.00		U
Plutonium 238	13981-16-3	0	0.10	0.280	1.00	U	PU
Plutonium 239/240	PU-239/240	0.076	0.10	0.193	1.00	U	PU
Potassium 40	13966-00-2	9.73	0.70	0.318			GAM
Cobalt 60	10198-40-0	U		0.042	0.050	U	GAM
Cesium 137	10045-97-3	1.57	0.068	0.044	0.100		GAM
Radium 226	13982-63-3	0.291	0.073	0.081	0.100		GAM
Radium 228	15262-20-1	0.403	0.14	0.146	0.200		GAM
Europium 152	14683-23-9	U		0.109	0.100	U	GAM
Europium 154	15585-10-1	U		0.128	0.100	U	GAM
Europium 155	14391-16-3	U		0.090	0.100	U	GAM
Thorium 228	14274-82-9	0.427	0.042	0.049			GAM
Thorium 232	TH-232	0.403	0.14	0.146			GAM
Uranium 235	15117-96-1	U		0.146		U	GAM
Uranium 238	U-238	U		4.61		U	GAM
Americium 241	14596-10-2	U		0.157		U	GAM

618-7 Burial Ground - Other Solid

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	08/15/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1289

Test AM Matrix SOLID
SDG 7859
Contact Melissa C. Mannion

LAB METHOD SUMMARY

AMERICIUM 241 IN SOLIDS

ALPHA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1289

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Americium 241	
Preparation batch 6160-056						
R808035-01			7859-001	J177M3	U	
R808035-02			7859-002	Lab Control Sample	ok	
R808035-03			7859-003	Method Blank	U	
R808035-04			7859-004	Duplicate (R808035-01)	-	U

Nominal values and limits from method RDLs (pCi/g) 1.00
618-7 Burial Ground - Other Solid

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6160-056			2σ prep error 8.0 %	Reference Lab Notebook #6160, pg. 056												
R808035-01			J177M3	0.506	0.500			36		153			13	08/09/08	08/12	SS-036
R808035-02			Lab Control Sample	0.272	0.500			63		155				08/09/08	08/12	SS-056
R808035-03			Method Blank	0.254	0.500			50		156				08/09/08	08/12	SS-065
R808035-04			Duplicate (R808035-01)	0.258	0.500			53		156			13	08/09/08	08/12	SS-066
Nominal 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 12

AVERAGES ± 2 SD	MDA	0.322 ±	0.245
FOR 4 SAMPLES	YIELD	50 ±	22

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 08/15/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1289

Test PU Matrix SOLID
SDG 7859
Contact Melissa C. Mannion

LAB METHOD SUMMARY

PLUTONIUM, ISOTOPIC IN SOLIDS

ALPHA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1289

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Plutonium 238		Plutonium 239/240	
Preparation batch 6160-056								
R808035-01			7859-001	J177M3	U		U	
R808035-02			7859-002	Lab Control Sample	ok		ok	
R808035-03			7859-003	Method Blank	U		U	
R808035-04			7859-004	Duplicate (R808035-01)	-	U	-	U
Nominal values and limits from method				RDLs (pCi/g)	1.00		1.00	
618-7 Burial Ground - Other Solid								

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MAX MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6160-056			2σ prep error 8.0 %	Reference Lab Notebook #6160, pg. 056												
R808035-01			J177M3	0.280	0.500			62		154			13	08/09/08	08/12	SS-038
R808035-02			Lab Control Sample	0.296	0.500			63		156				08/09/08	08/12	SS-062
R808035-03			Method Blank	0.340	0.500			57		165				08/09/08	08/12	SS-055
R808035-04			Duplicate (R808035-01)	0.296	0.500			60		138			13	08/09/08	08/12	SS-028
Nominal values and limits from method				1.00	0.500			20-105		100	100		180			

PROCEDURES	REFERENCE	PUISO_PLATE_AEA
	SPP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	CP-941	Plutonium in Water and Dissolved Samples by Extraction Chromatography, rev 3
	CP-008	Heavy Element Electroplating, rev 12

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 0.303 ± 0.052
YIELD 60 ± 5

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 08/15/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1289

Test TH Matrix SOLID
SDG 7859
Contact Melissa C. Mannion

LAB METHOD SUMMARY

THORIUM, ISOTOPIC IN SOLIDS

ALPHA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1289

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Thorium 230
Preparation batch 6160-056					
R808035-01			7859-001	J177M3	0.458
R808035-02			7859-002	Lab Control Sample	ok
R808035-03			7859-003	Method Blank	U
R808035-04			7859-004	Duplicate (R808035-01)	ok
Nominal values and limits from method				RDLs (pCi/g)	1.00
618-7 Burial Ground - Other Solid					

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MAX MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6160-056			2σ prep error 8.0 % Reference Lab Notebook #6160, pg. 056													
R808035-01			J177M3	0.320	0.250			88		152			13	08/09/08	08/12	SS-031
R808035-02			Lab Control Sample	0.496	0.250			56		201				08/09/08	08/13	SS-063
R808035-03			Method Blank	0.454	0.250			74		177				08/09/08	08/12	SS-040
R808035-04			Duplicate (R808035-01)	0.379	0.250			78		178			13	08/09/08	08/12	SS-042
Nominal 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 12

AVERAGES ± 2 SD FOR 4 SAMPLES				
	MDA	0.412	±	0.157
	YIELD	74	±	27

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 08/15/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1289

Test U Matrix SOLID
SDG 7859
Contact Melissa C. Mannion

LAB METHOD SUMMARY

URANIUM, ISOTOPIC IN SOLIDS

ALPHA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1289

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	1: Uranium 233/234	2: Uranium 235	3: Uranium 238	RESULT RATIOS (%) 1+3	2σ	2+3	2σ
Preparation batch 6160-056											
R808035-01			7859-001	J177M3	0.457	U	0.898	51	23	0	4
R808035-02			7859-002	Lab Control Sample	ok	ok	ok				
R808035-03			7859-003	Method Blank	U	U	U				
R808035-04			7859-004	Duplicate (R808035-01)	ok	- U	ok	42	28	0	7
Nominal values and limits from method				RDLs (pCi/g)	1.00	1.00	1.00	100		4	
618-7 Burial Ground - Other Solid								Averages 47		0	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MAX MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6160-056			2σ prep error 8.0 %	Reference Lab Notebook #6160, pg. 056												
R808035-01			J177M3	0.146	0.500			92		155			13	08/08/08	08/12	SS-057
R808035-02			Lab Control Sample	0.604	0.500			86		215				08/08/08	08/12	SS-058
R808035-03			Method Blank	0.167	0.500			86		152				08/08/08	08/12	SS-033
R808035-04			Duplicate (R808035-01)	0.189	0.500			93		152			13	08/08/08	08/12	SS-034
Nominal 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 12

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 0.276 ± 0.438
YIELD 89 ± 8

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 08/15/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1289

Test	SR
Matrix	SOLID
SDG	7859
Contact	Melissa C. Mannion

LAB METHOD SUMMARY

TOTAL STRONTIUM IN SOLIDS

BETA COUNTING

Client	Hanford
Contract	No. S00W235A00
Contract	SDG K1289

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Total Strontium	
Preparation batch 6160-056						
R808035-01			7859-001	J177M3	U	
R808035-02			7859-002	Lab Control Sample	ok	
R808035-03			7859-003	Method Blank	U	
R808035-04			7859-004	Duplicate (R808035-01)	-	U
Nominal values and limits from method				RDLs (pCi/g)	1.00	
618-7 Burial Ground - Other Solid						

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6160-056			2σ prep error 10.4 % Reference Lab Notebook #6160, pg. 056													
R808035-01			J177M3	0.240	1.00			96		100			10	08/09/08	08/09	GRB-203
R808035-02			Lab Control Sample	0.339	1.00			85		100				08/09/08	08/09	GRB-232
R808035-03			Method Blank	0.230	1.00			90		100				08/09/08	08/09	GRB-218
R808035-04			Duplicate (R808035-01)	0.346	1.00			99		100			10	08/09/08	08/09	GRB-224
Nominal 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-381	Strontium in Solids, rev 1

AVERAGES ± 2 SD FOR 4 SAMPLES	MDA	0.289	± 0.125
	YIELD	92	± 12

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	08/15/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1289

Test 93A Matrix SOLID
SDG 7859
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GROSS ALPHA IN SOLIDS

GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. S00W235A00
Contract SDG K1289

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Alpha
Preparation batch 6160-061					
R808035-01	93		7859-001	J177M3	9.60
R808035-04	93		7859-004	Duplicate (R808035-01)	ok
R808042-03	93		7861-003	Lab Control Sample	ok
R808042-04	93		7861-004	Method Blank	U
Nominal values and limits from method				RDLs (pCi/g)	10.0
618-7 Burial Ground - Other Solid					

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6160-061			2σ prep error 20.6 % Reference Lab Notebook #6160, pg. 61													
R808035-01	93		J177M3	7.28	0.100			50		100			12	08/09/08	08/11	GRB-105
R808035-04	93		Duplicate (R808035-01)	2.66	0.100			50		400			13	08/09/08	08/12	GRB-112
R808042-03	93		Lab Control Sample	6.26	0.100			62		100				08/09/08	08/12	GRB-109
R808042-04	93		Method Blank	6.47	0.100			60		100				08/09/08	08/12	GRB-110
Nominal values and limits from method				10.0	0.100			5-250		100			180			

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

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 5.67 ± 4.11
RESIDUE 56 ± 13

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 08/15/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1289

Test 93B	Matrix SOLID
SDG 7859	
Contact Melissa C. Mannion	

LAB METHOD SUMMARY

GROSS BETA IN SOLIDS

GAS PROPORTIONAL COUNTING

Client	Hanford
Contract	No. S00W235A00
Contract	SDG K1289

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Beta
Preparation batch 6160-056					
R808035-01	93		7859-001	J177M3	15.1
R808035-02	93		7859-002	Lab Control Sample	ok
R808035-03	93		7859-003	Method Blank	U
R808035-04	93		7859-004	Duplicate (R808035-01)	ok
Nominal values and limits from method				RDLs (pCi/g)	15.0
618-7 Burial Ground - Other Solid					

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6160-056			2σ prep error 11.0 % Reference Lab Notebook #6160, pg. 056													
R808035-01	93		J177M3	5.89	0.100			50		100			12	08/09/08	08/11	GRB-105
R808035-02	93		Lab Control Sample	5.60	0.100			59		100				08/09/08	08/12	GRB-112
R808035-03	93		Method Blank	5.35	0.100			60		100				08/09/08	08/11	GRB-109
R808035-04	93		Duplicate (R808035-01)	2.70	0.100			50		400			13	08/09/08	08/12	GRB-112
Nominal values and limits from method				15.0	0.100			5-250		100			180			

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

AVERAGES ± 2 SD	MDA	4.88	± 2.95
FOR 4 SAMPLES	RESIDUE	55	± 11

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	08/15/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1289

Test GAM Matrix SOLID
SDG 7859
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GAMMA SCAN

GAMMA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1289

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Cobalt 60		Cesium 137
Preparation batch 6160-056							
R808035-01			7859-001	J177M3	U		1.57
R808035-02			7859-002	Lab Control Sample	ok		ok
R808035-03			7859-003	Method Blank	U		U
R808035-04			7859-004	Duplicate (R808035-01)	-	U	ok
Nominal values and limits from method				RDLs (pCi/g)	0.050		0.100
618-7 Burial Ground - Other Solid							

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6160-056			2σ prep error 7.0 %	Reference Lab Notebook #6160, pg. 056												
R808035-01			J177M3	8.39	219					437			8	08/06/08	08/07	JR,05,00
R808035-02			Lab Control Sample	0.029	219					427				08/06/08	08/08	JR,01,00
R808035-03			Method Blank	4.52	219					415				08/06/08	08/08	JR,02,00
R808035-04			Duplicate (R808035-01)	7.58	219					427			9	08/06/08	08/08	JR,07,00
Nominal values and limits from method				0.050	219					100			180			

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

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 5.13 ± 7.57
YIELD ____ ± ____

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 08/15/08

SDG 7859
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1289

SAMPLE SUMMARY

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

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

The following notes apply to these reports:

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

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

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

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

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

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

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 08/15/08

SDG 7859
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1289

PREPARATION BATCH SUMMARY

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

The following notes apply to this report:

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

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

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

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

  These qualifiers should be reviewed as follows:

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

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

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

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

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 08/15/08

SDG 7859
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1289

WORK SUMMARY

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

The following notes apply to this report:

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

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

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

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

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

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

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 08/15/08

SDG 7859
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1289

DATA SHEET

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

The following notes apply to this report:

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

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

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

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

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

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

The following qualifiers are defined by the DVD system:

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

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 08/15/08

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 7859
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. S00W235A00
Case no SDG K1289

DATA SHEET

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

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

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

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 08/15/08

SDG 7859
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1289

LAB CONTROL SAMPLE

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

The following notes apply to this report:

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

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

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

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

* The first, computed limits for the recovery reflect:

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

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

  2. The error of ADDED.

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

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

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

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 08/15/08

SDG 7859
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1289

DUPLICATE

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

The following notes apply to this report:

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

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

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

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

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

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

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

  This value reported for this limit is at most 999.

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

  1. A fixed percentage specified in the protocol.

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 08/15/08

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 7859
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1289

MATRIX SPIKE

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

The following notes apply to this report:

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

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

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

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

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

* The first, computed limits for the recovery reflect:

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

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

  2. The error of ADDED.

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

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

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 08/15/08

SDG 7859
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. S00W235A00
Case no SDG K1289

MATRIX SPIKE

for the recovery.

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

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

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 08/15/08

SDG 7859
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1289

METHOD SUMMARY

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

The following notes apply to this report:

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

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

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

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

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

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

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

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

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 08/15/08

METHOD SUMMARY

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

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

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

  MDAs are underlined if greater than the printed RDL.

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

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

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

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

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

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

METHOD SUMMARY

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

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

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

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

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

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

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

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

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

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

METHOD SUMMARY

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

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

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

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-088-055	Page 1 of 1

Collector B. Lawrence / E. Harries	**Company Contact** Joan Kessner	**Telephone No.** 509-375-4688	**Project Coordinator** KESSNER, JH
Price Code ~~8F~~ 9F	**Data Turnaround** ~~15~~ 7 Days RTC 7/30/08		
Project Designation 618-7 Burial Ground - Other	**Sampling Location** 618-7 Burial Ground (drums) K1289 (7859)		**SAF No.** RC-088
Ice Chest No. ERC-02-003	**Field Logbook No.** EL-1395-12	**COA** RG61878500	**Method of Shipment** Fed Ex
Shipped To EBERLINE SERVICES / LIONVILLE	**Offsite Property No.** A080323		**Bill of Lading/Air Bill No.** SECOSPC

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	1 0	1 0	1 0	1						
Volume	250mL	125mL	125mL	60mL	500mL						
SAMPLE ANALYSIS	Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions.	Ignitability - 1010	See item (2) in Special Instructions.						PFN#
Sample No.	Matrix *	Sample Date	Sample Time								
~~J177M1~~	~~OTHER LIQUID~~										
~~J177M2~~	~~OTHER LIQUID~~	7/30/08	1310				X			DRUM	5146
J177M3	OTHER ~~LIQUID~~ solid	7/30/08	1315				X			B-10	3118

MCM 8/6/08

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[signature]	1500 7-30-08	RTCOFFMAN / RTCoffman	1500 7/30/08
RTCOFFMAN / RTCoffman	1700 7/30/08	REFER #1A, 1060	1700 7/30/08
1060/1A	0930 AUG 04 2008	MSTANKOUCH	0930 AUG 04 2008
MSTANKOUCH	0930 AUG 04 2008	FED EX	
FED EX		[signature]	08/05/08 09:00

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL) {Aluminum, Antimony, Barium, Beryllium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Magnesium, Manganese, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc}; ICP Metals - 6010A (Add-on) {Arsenic, Lead, Selenium, Thallium, Tin, Zirconium}; Mercury - 7471 - (CV)
(2) Gross Alpha; Gross Beta; Gamma Spectroscopy (TCL List) {Cesium-137, 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.

JPD

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

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

WCH-EE-011

EBERLINE

RICHMOND, CA LABORATORY

SAMPLE RECEIPT CHECKLIST

HL 8/5/08

Client: W.C. HANFORD City RICHLAND State WA

Date/Time received 08/05/08 09:00 CoC No. RC-088-055

Container I.D. No. ERC-02-003 Requested TAT (Days) 7 P.O. Received Yes [ ] No [X]

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: 1 Sample Matrix X SOLID
7. Number of containers per sample: 1 (Or see CoC _____)
8. Samples are in correct container Yes [X] No [ ]
9. Paperwork agrees with samples? Yes [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: J177M3 – SOLID
14. Was P.M. notified of any anomalies? Yes [ ] No [ ] Date _____
15. Inspected by [signature] Date: 08/05/08 Time: 10:15

Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	Wipe	Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	wipe
J177M3	<60						

Ion Chamber Ser. No. _____ Calibration date _____

Alpha Meter Ser. No. _____ Calibration date _____

Beta/Gamma Meter Ser. No. 100482 Calibration date 10JUL08

RECEIVED
AUG 2008

29 August 2008

Joan Kessner
WC-Hanford, Inc.
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 #	0808L007
SDG #	K1289
SAF #	RC-088
Date Received	8/5/08
# Samples	2
Matrix	OTHER
Volatiles	
Semivolatiles	X
Pest/PCB	X
Glycols	
DRO/KRO/GRO	
GC Alcohols	
Herbicides	
Metals	X
Inorganics	X

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

Sincerely,
Lionville Laboratory Incorporated

Orlette S. Johnson
Project Manager
r:\[illegible]\orlette\tnu-hanford\data\b_ltrs.doc

LIONVILLE LABORATORY INC.

RECEIVED 2008

Lionville Laboratory, Inc.
BNA ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-088 K1289

DATE RECEIVED: 08/05/08 LVL LOT # :0808L007

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J177M3	002	S	08LE0372	07/30/08	08/07/08	08/12/08
J177M3	002 MS	S	08LE0372	07/30/08	08/07/08	08/12/08
J177M3	002 MSD	S	08LE0372	07/30/08	08/07/08	08/12/08

LAB QC:

SBLKWS	MB1	S	08LE0372	N/A	08/07/08	08/12/08
SBLKWS	MB1 BS	S	08LE0372	N/A	08/07/08	08/12/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: WC-HANFORD RC-088
LVL #: 0808L007
SDG/SAF # K1289 / RC-088

W.O. #: 11343-606-001-9999-00
Date Received: 08-05-2008

SEMIVOLATILE

One (1) soil sample was collected on 07-30-2008.

The sample and its associated QC samples were extracted according to Lionville Laboratory SOPs based on SW 846 method 3540C on 08-07-2008 and analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 08-12-2008.

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

2. Samples were extracted and analyzed within holding time.

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

4. All surrogate recoveries were within acceptance criteria.

5. Ten (10) of one hundred twenty-eight (128) matrix spike recoveries outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR# 08MS178) has been enclosed.

6. One (1) of sixty-four (64) blank spike recoveries was outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR# 08MS178) has been enclosed.

7. The method blank contained the common laboratory contaminants Bis (2-Ethylhexy) phthalate, Di-n-butylphthalate, and Carbazole at levels less than the CRQL.

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

r:\group\data\2008\bna\mu\0808-007cs1.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 14 pages.

LIONVILLE LABORATORY INC.

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

10. Internal standard area and retention time criteria were met.

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

12. 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.

13. I certify, that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. 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

8/13/08
Date

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 08MS174

Initiator: Shawn Saylor
Date: 8-13-08
Client: WC-Hanford RC088 K1289

Batch: 08OFL007
Samples: MS, MSD, BS
Method: SW846/MCAWW/CLP/

Parameter: 8270
Matrix: SOLID
Prep Batch: 08LE0372

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)

① low recovery of 1,2,4-trichlorobenzene in the BS

② low recovery of several spike analytes in the MS, MSD, BS

2. Known or Probable Causes(s) acidic phenols are subject to erratic chromatographic behavior especially if the GC system is contaminated with high boiling material. Others sporadic. All other spikes/surrogates within criteria

3. Discussion and Proposed Action Other Description:
__ Re-log
__ Entire Batch
__ Following Samples: _____
__ Re-leach
__ Re-extract
__ Re-digest
__ Revise EDD
__ Change Test Code to _____
__ Place On/Take Off Hold (circle)

4. Project Manager Instructions...signature/date: 8/13/08
__ 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: Kelly 8/13/08 Other Explanation:
__ Verified re-[log][leach][extract][digest][analysis] (circle)
✓ Included in Case Narrative
__ Hard Copy COC Revised
__ Electronic COC Revised
__ EDD Corrections Completed

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

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

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

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.

Semivolatiles by GC/MS, HSL List

RFW Batch Number: 0808L007 Client: WC-HANFORD RC-088 K1289 Work Order: 60049001001 Report Date: 08/13/08 10:47 Page: 1a

	Cust ID:	J177M3	J177M3	J177M3	SBLKWS	SBLKWS BS
Sample Information	RFW#:	002	002 MS	002 MSD	08LE0372-MB1	08LE0372-MB1
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00
	Units:	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Surrogate Recovery	Nitrobenzene-d5	42 %	61 %	63 %	76 %	66 %
	2-Fluorobiphenyl	45 %	70 %	71 %	80 %	71 %
	Terphenyl-d14	57 %	92 %	93 %	88 %	84 %
	Phenol-d5	44 %	71 %	70 %	80 %	70 %
	2-Fluorophenol	44 %	66 %	67 %	78 %	69 %
	2,4,6-Tribromophenol	51 %	83 %	83 %	73 %	37 %
Phenol		330 U	69 %	71 %	330 U	66 %
bis(2-Chloroethyl)ether		330 U	51 %	54 %	330 U	60 %
2-Chlorophenol		330 U	61 %	63 %	330 U	63 %
1,3-Dichlorobenzene		330 U	48 * %	47 * %	330 U	55 %
1,4-Dichlorobenzene		330 U	49 * %	48 * %	330 U	56 %
1,2-Dichlorobenzene		330 U	50 %	51 %	330 U	57 %
2-Methylphenol		330 U	68 %	73 %	330 U	66 %
2,2'-oxybis(1-Chloropropane)		330 U	55 %	57 %	330 U	64 %
3/4 Methylphenol		330 U	74 %	77 %	330 U	68 %
N-Nitroso-di-n-propylamine		330 U	58 %	64 %	330 U	62 %
Hexachloroethane		330 U	45 * %	47 * %	330 U	54 %
Nitrobenzene		330 U	54 %	58 %	330 U	60 %
Isophorone		330 U	61 %	66 %	330 U	61 %
2-Nitrophenol		330 U	56 %	60 %	330 U	63 %
2,4-Dimethylphenol		330 U	76 %	82 %	330 U	64 %
bis(2-Chloroethoxy)methane		330 U	61 %	64 %	330 U	63 %
2,4-Dichlorophenol		330 U	65 %	70 %	330 U	62 %
1,2,4-Trichlorobenzene		330 U	53 * %	55 * %	330 U	58 * %
Naphthalene		330 U	56 %	58 %	330 U	61 %
4-Chloroaniline		330 U	27 %	40 %	330 U	50 %
Hexachlorobutadiene		330 U	53 %	56 %	330 U	60 %
4-Chloro-3-methylphenol		330 U	73 %	82 %	330 U	67 %
2-Methylnaphthalene		330 U	60 %	64 %	330 U	62 %
Hexachlorocyclopentadiene		330 U	36 %	41 %	330 U	57 %
2,4,6-Trichlorophenol		330 U	71 %	81 %	330 U	44 %
2,4,5-Trichlorophenol		830 U	80 %	87 %	830 U	66 %

*= Outside of EPA CLP QC limits.

000000008

Cust ID:	J177M3		J177M3		J177M3		SBLKWS		SBLKWS BS	
RFW#:	002		002 MS		002 MSD		08LE0372-MB1		08LE0372-MB1	
2-Chloronaphthalene	330	U	66	%	68	%	330	U	69	%
2-Nitroaniline	830	U	81	%	89	%	830	U	79	%
Dimethylphthalate	330	U	76	%	81	%	330	U	72	%
Acenaphthylene	330	U	66	%	71	%	330	U	69	%
2,6-Dinitrotoluene	330	U	75	%	82	%	330	U	72	%
3-Nitroaniline	830	U	54	%	69	%	830	U	79	%
Acenaphthene	330	U	66	%	71	%	330	U	68	%
2,4-Dinitrophenol	830	U	12 *	%	27	%	830	U	42	%
4-Nitrophenol	830	U	79	%	84	%	830	U	71	%
Dibenzofuran	330	U	70	%	74	%	330	U	65	%
2,4-Dinitrotoluene	330	U	76	%	83	%	330	U	72	%
Diethylphthalate	330	U	77	%	82	%	330	U	74	%
4-Chlorophenyl-phenylether	330	U	71	%	74	%	330	U	70	%
Fluorene	330	U	77	%	81	%	330	U	77	%
4-Nitroaniline	830	U	74	%	79	%	830	U	78	%
4,6-Dinitro-2-methylphenol	830	U	30 *	%	55	%	830	U	48	%
N-Nitrosodiphenylamine (1)	330	U	63	%	64	%	330	U	60	%
4-Bromophenyl-phenylether	330	U	66	%	65	%	330	U	61	%
Hexachlorobenzene	330	U	69	%	71	%	330	U	67	%
Pentachlorophenol	830	U	83	%	91	%	830	U	39	%
Phenanthrene	330	U	74	%	75	%	330	U	69	%
Anthracene	330	U	74	%	76	%	330	U	70	%
Carbazole	330	U	77	%	79	%	17	J	72	%
Di-n-butylphthalate	40	JB	77	%	82	%	47	J	74	%
Fluoranthene	330	U	76	%	78	%	330	U	72	%
Pyrene	330	U	77	%	82	%	330	U	73	%
Butylbenzylphthalate	330	U	80	%	82	%	330	U	79	%
3,3'-Dichlorobenzidine	330	U	42	%	51	%	330	U	58	%
Benzo(a)anthracene	330	U	74	%	77	%	330	U	72	%
Chrysene	330	U	74	%	76	%	330	U	71	%
bis(2-Ethylhexyl)phthalate	210	JB	80	%	82	%	84	J	83	%
Di-n-octyl phthalate	330	U	89	%	93	%	330	U	82	%
Benzo(b)fluoranthene	330	U	78	%	80	%	330	U	72	%
Benzo(k)fluoranthene	330	U	73	%	77	%	330	U	69	%
Benzo(a)pyrene	330	U	72	%	76	%	330	U	68	%
Indeno(1,2,3-cd)pyrene	330	U	73	%	77	%	330	U	68	%
Dibenz(a,h)anthracene	330	U	76	%	80	%	330	U	69	%
Benzo(g,h,i)perylene	330	U	73	%	77	%	330	U	69	%

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

000000009

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J177M3

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

Client: WC-HANFORD RC-088 K1289

Matrix: (soil/water) SOIL

Lab Sample ID: 0808L007-002

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

Lab File ID: C081205

Level: (low/med) LOW

Date Received: 08/05/08

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

Date Extracted: 08/07/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 08/12/08

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

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

Number TICs found: 4

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	ALDOL CONDENSATE	6.330	80	JA
2.	ALDOL CONDENSATE	7.605	700	JAB
3.	UNKNOWN	8.216	20000	JB
4.	ALDOL CONDENSATE	9.749	100	JAB

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SBLKWS

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

Client: WC-HANFORD RC-088 K1289

Matrix: (soil/water) SOIL

Lab Sample ID: 08LE0372-MB1

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

Lab File ID: C081204

Level: (low/med) LOW

Date Received: 08/07/08

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

Date Extracted: 08/07/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 08/12/08

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	7.162	200	J
2.	ALDOL CONDENSATE	7.619	2000	JA
3.	UNKNOWN	8.265	40000	J
4.	ALDOL CONDENSATE	9.746	500	JA
5.	UNKNOWN	22.632	80	J

onville Laboratory Use Only

08081007

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI BONSTED LABORATORY INC

ent TNU HANFORD SAF# RC-088

t. Final Proj. Sampling Date

oject# 11343-606-001-9999-00

oject Contact/Phone#

onville Laboratory Project Manager O. JOHNSON

Spec SW846 Del Std TAT 7Day

ate Rec'd 8/5/08 Date Due 8/12/08

Refrigerator #			A 2													
#/Type Container	Liquid / Solid		1G													
Volume			250													
Preservatives																
ANALYSES REQUESTED			ORGANIC						INORG							
			VOA	BNA	~~Pest~~ PCB	Herb			~~Icp~~ Metal	Hg	CN	Ignitability				
			Lionville Laboratory Use Only													
				CLP54	OPCB				METO			ITGN				

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected
001	~~T177M2~~ ~~8-5-08~~			oil	~~7-30-08~~	1310
002	T177M3			↓	↓	1345

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

Special Instructions: X=OTHER LIQUID (oil)

TO = Al, Sb, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Mg, Mn, Ni, K, Ag, Na, V, Zn, As, Pb, Se, Tl, Sn, Zr, ~~Ag~~ Hg

Special Instructions:

8-8-08 1. per Client -001 is biphasic and needs moved to 08081015-003+004

↓ 2. -002 changed matrix to Soil.

3.

4.

5.

6.

Relinquished by	Received by	Date	Time
		8/5/08	0940

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
original rewritten	composite waste		

000000012

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-088-055 | Page 1 of 1

Collector: B. Lawrence / E. Harries	Company Contact: Joan Kessner	Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH
Project Designation: 618-7 Burial Ground - Other	Sampling Location: 618-7 Burial Ground (drums)		SAF No.: RC-088
Ice Chest No.: AFS-04-052	Field Logbook No.: EL-1395-12	COA: RG61878500	Method of Shipment: FedEx
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A080310		Bill of Lading/Air Bill No.: See OSPC

Price Code: 8F

Data Turnaround: ~~15~~ Days 7 RC 7/30/08

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	1	1	1	1					
Volume	250mL	125mL	125mL	60mL	500mL					
SAMPLE ANALYSIS	Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions.	Ignitability - 1010	See item (2) in Special Instructions.					

RC 7/30/08

Sample No.	Matrix *	Sample Date	Sample Time										PIN #
~~77M1~~	~~OTHER LIQUID~~												
77M2	OTHER LIQUID	7/30/08	1310	X	X	X	X					DRUM	5146
77M3	OTHER LIQUID	7/30/08	1325	X	X	X	X					B-12	3118

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: Lawrence	7-30-08 1500	Received By/Stored In: RT Coffman / RT Coffman	7/30/08 1500
Relinquished By/Removed From: RT Coffman / RT Coffman	7/30/08 1700	Received By/Stored In: Refer # 1A, 1060	7/30/08 1700
Relinquished By/Removed From: 260/1A	0930 AUG 04 2008	Received By/Stored In: mstankovich	0930 AUG 04 2008
Relinquished By/Removed From: mstankovich	0930 AUG 04 2008	Received By/Stored In: FedEx	
Relinquished By/Removed From: FedEx	8/5/08 0942	Received By/Stored In: Victor Newman	8-5-08 0942
Relinquished By/Removed From:		Received By/Stored In:	

SPECIAL INSTRUCTIONS

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

(2) Gross Alpha; Gross Beta; Gamma Spectroscopy (TCL List) {Cesium-137, 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.

JPD

Matrix *

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

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

CH-EE-011

000000013

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD

Date: 8/5/08

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

LvLI Batch #: 0808L 007

Sample Custodian: Vicki Hernandez

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 798490423525
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 # AFS-04-053
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify):
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14. QC stickers placed on bottles designated by client?	☐ Yes	☐ No	☑ N/A
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A

Person Contacted _____ Date _____

LVLI LIONVILLE LABORATORY INC.

Lionville Laboratory, Inc.
PCB ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-088 K1289

RECEIVED
AUG 2008

DATE RECEIVED: 08/05/08 LVL LOT # :0808L007

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J177M3	002	S	08LE0371	07/30/08	08/07/08	08/11/08
J177M3	002 MS	S	08LE0371	07/30/08	08/07/08	08/11/08
J177M3	002 MSD	S	08LE0371	07/30/08	08/07/08	08/11/08

LAB QC:

PBLKTJ	MB1	S	08LE0371	N/A	08/07/08	08/11/08
PBLKTJ	MB1 BS	S	08LE0371	N/A	08/07/08	08/11/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: WC-HANFORD RC-088
LVL #: 0808L007
SDG/SAF # K1289 / RC-088

W.O. #: 11343-606-001-9999-00
Date Received: 08-05-2008

PCB

One (1) solid sample was collected on 07-30-2008.

The sample and its associated QC samples was extracted on 08-07-2008 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedure on 08-11-2008. 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. The sample was extracted and analyzed within required holding time.
2. The sample and its associated QC samples received Copper-Sulfur and Sulfuric Acid cleanups according to Lionville Laboratory SOPs based on SW846 methods 3660A and 3665A respectively.
3. The method blank was below the reporting limits for all target compounds.
4. All surrogate recoveries were within acceptance criteria.
5. All blank spike recoveries were within acceptance criteria.
6. All matrix spike recoveries were within acceptance criteria.
7. All initial calibrations associated with this data set were within acceptance criteria.
8. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

r:\group\data\2008\pest\tmu\0808-007csol1.pcb.doc

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

LIONVILLE LABORATORY INC.

9. The results for solid samples were reported on an 'as-received basis' as required by the project.

10. 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.

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

Ian Daniels
Laboratory Manager
Lionville Laboratory Incorporated

8/14/08
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: 08/12/08 08:55

RFW Batch Number: 0808L007 Client: WC-HANFORD RC-088 K1289 Work Order: 60049001001 Page: 1

	Cust ID:	J177M3	J177M3	J177M3	PBLKTJ	PBLKTJ BS
Sample Information	RFW#:	002	002 MS	002 MSD	08LE0371-MB1	08LE0371-MB1
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	101 %	106 %	110 %	94 %	102 %
	Decachlorobiphenyl	108 %	118 %	114 %	114 %	107 %
		fl	fl	fl	fl	fl fl
Aroclor-1016		13 U	95 %	94 %	13 U	86 %
Aroclor-1221		13 U	13 U	13 U	13 U	13 U
Aroclor-1232		13 U	13 U	13 U	13 U	13 U
Aroclor-1242		13 U	13 U	13 U	13 U	13 U
Aroclor-1248		13 U	13 U	13 U	13 U	13 U
Aroclor-1254		59	NR	NR	13 U	13 U
Aroclor-1260		49	140 %	129 %	13 U	104 %

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

000000005

Lionville Laboratory, Inc.

SAMPLE EXTRACTION RECORD

Sheet no.: 1

Extract. Date: 08/07/08 Extraction Batch No: 08LE0371 Analyst: MF Method: **** 5043540

Test: OPCB Cleanup Date: 08/08/08 Analyst: MF Client: WC-HANFORD RC-088

LIMS Report Date: 08/08/08 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
0808L007-	WC-HANFORD RC-088										
002	J177M3		30.0	1.0		10		1.0	N	0.00	333.3
002 -S	J177M3		30.0	1.0	1.0	10		1.0	N	0.00	333.3
002 -T	J177M3		30.0	1.0	1.0	10		1.0	N	0.00	333.3
0808L029-	CDM PORTSMOUTH										
011	CL551		30.0	1.0		10		1.0	N	0.0	333.3
012	CL552		30.0	1.0		10		1.0	N	0.0	333.3
013	CL553		30.0	1.0		10		1.0	N	0.0	333.3
014	CL554		30.0	1.0		10		1.0	N	0.0	333.3
014 -S	CL554		30.0	1.0	1.0	10		1.0	N	0.0	333.3
014 -T	CL554		30.0	1.0	1.0	10		1.0	N	0.0	333.3
015	CL555		30.0	1.0		10		1.0	N	0.0	333.3
08LE0371-MB1	PBLKTJ		30.0	1.0		10		1.0	N	100.00	333.3
08LE0371-MB1 -S	PBLKTJ		30.0	1.0	1.0	10		1.0	N	100.00	333.3

Comments:
Surrogate: 250 UL OLM PSURR 89916407
Spike: 250 UL AR1660 89916603

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
all	[signature]	8/8/08 1410	SZ	8/8/08 14:10	GC

000000000

onville Laboratory Use Only

08081007

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI

ent TNU HANFORD SAF# RC-088

Final Proj. Sampling Date

ject# 11343-606-001-9999-00

ject Contact/Phone#

nville Laboratory Project Manager O. JOHNSON

Spec Swerk Del Std TAT 7Day

we 8-5-08

te Rec'd 8/5/08 Date Due 8/12/08

Refrigerator #			A 2													
#/Type Container	Liquid / Solid		1G													
Volume			250													
Preservatives																
ANALYSES REQUESTED →			ORGANIC						INORG							
			VOA	BNA	~~Pest~~ PCB	Herb			Total Metal Hg	CN	~~Ignitability~~					
			Lionville Laboratory Use Only													
				OBASH	OPCB				METO		IGN					

TRIX DES: 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	OBASH	OPCB	METO	IGN
	001	T177M2 we 8-8-08			oil	7-30-08	1310	X	X	X	X
	002	T177M3			⊥	⊥	1345	X	X	X	X

Special Instructions: X=OTHER LIQUID (oil)

①=Al, Sb, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Mg, Mn, Ni, K, Ag, Na, V, Zn, As, Pb, Se, Tl, Sn, Zr, ~~Ag~~ Hg

Special Instructions:

8-8-08 1. per Client -001 is biphasic and needs moved to 08081015-003+004

⊥ 2. -002 changed matrix to Soil. we

3.

4.

5.

6.

Relinquished by	Received by	Date	Time
		7/30/08	0940

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
original rewritten	composite waste		

000000007

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-088-055

Collector: B. Lawrence / E. Harries	Company Contact: Joan Kessner	Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH
Price Code: 8F	Data Turnaround: ~~15~~ Days 7 RK		
Project Designation: 618-7 Burial Ground - Other	Sampling Location: 618-7 Burial Ground (drums)		SAF No.: RC-088
Ice Chest No.: AFS-04-053	Field Logbook No.: EL-1395-12	COA: RG61878500	Method of Shipment: Fed Ex 7/30/08
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A080310		Bill of Lading/Air Bill No.: SCF 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	1	1	1	1	
Volume	250mL	125mL	125mL	60mL	500mL	
SAMPLE ANALYSIS	Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions.	Ignitability - 1010	See item (2) in Special Instructions.	

RK 7/30/08

Sample No.	Matrix *	Sample Date	Sample Time									PIN #
~~177M1~~	~~OTHER LIQUID~~											
177M2	OTHER LIQUID	7/30/08	1310	X	X	X	X				DRUM	5146
177M3	OTHER LIQUID	7/30/08	1325	X	X	X	X				B-12	3118

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Lawrence	7-30-08 1500	RT Coffman / RT Coffman	7/30/08 1500
RT Coffman / RT Coffman	7/30/08 1700	Roger A / A, 1060	7/30/08 1700
260/1A	0930 AUG 04 2008	mstankovich	0930 AUG 04 2008
mstankovich	0930 AUG 04 2008	Fed Ex	
Fed Ex	8/5/08 0942	Peter Hunung	8-5-08 0942

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL) {Aluminum, Antimony, Barium, Beryllium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Magnesium, Manganese, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc}; ICP Metals - 6010A (Add-on) {Arsenic, Lead, Selenium, Thallium, Tin, Zirconium}; Mercury - 7471 - (CV)
(2) Gross Alpha; Gross Beta; Gamma Spectroscopy (TCL List) {Cesium-137, 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.

JPD

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

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD

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

Date: 8/5/08

LvLI Batch #: 0808L 007

Sample Custodian: Vicki Hernandez

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 798490423525
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 # AFS-04-053
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify):
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14. QC stickers placed on bottles designated by client?	☐ Yes	☐ No	☑ N/A
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A
Person Contacted _____		Date _____	

LVLI LIONVILLE LABORATORY INC.

RECEIVED
AUG 2008

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-088 K1289

DATE RECEIVED: 08/05/08 LVL LOT # :0808L007

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J177M3						
SILVER, TOTAL	002	S	08L0301	07/30/08	08/13/08	08/14/08
SILVER, TOTAL	002 REP	S	08L0301	07/30/08	08/13/08	08/14/08
SILVER, TOTAL	002 MS	S	08L0301	07/30/08	08/13/08	08/14/08
ALUMINUM, TOTAL	002	S	08L0301	07/30/08	08/13/08	08/14/08
ALUMINUM, TOTAL	002 REP	S	08L0301	07/30/08	08/13/08	08/14/08
ALUMINUM, TOTAL	002 MS	S	08L0301	07/30/08	08/13/08	08/14/08
ARSENIC, TOTAL	002	S	08L0301	07/30/08	08/13/08	08/14/08
ARSENIC, TOTAL	002 REP	S	08L0301	07/30/08	08/13/08	08/14/08
ARSENIC, TOTAL	002 MS	S	08L0301	07/30/08	08/13/08	08/14/08
BARIUM, TOTAL	002	S	08L0301	07/30/08	08/13/08	08/14/08
BARIUM, TOTAL	002 REP	S	08L0301	07/30/08	08/13/08	08/14/08
BARIUM, TOTAL	002 MS	S	08L0301	07/30/08	08/13/08	08/14/08
BERYLLIUM, TOTAL	002	S	08L0301	07/30/08	08/13/08	08/14/08
BERYLLIUM, TOTAL	002 REP	S	08L0301	07/30/08	08/13/08	08/14/08
BERYLLIUM, TOTAL	002 MS	S	08L0301	07/30/08	08/13/08	08/14/08
CALCIUM, TOTAL	002	S	08L0301	07/30/08	08/13/08	08/14/08
CALCIUM, TOTAL	002 REP	S	08L0301	07/30/08	08/13/08	08/14/08
CALCIUM, TOTAL	002 MS	S	08L0301	07/30/08	08/13/08	08/14/08
CADMIUM, TOTAL	002	S	08L0301	07/30/08	08/13/08	08/14/08
CADMIUM, TOTAL	002 REP	S	08L0301	07/30/08	08/13/08	08/14/08
CADMIUM, TOTAL	002 MS	S	08L0301	07/30/08	08/13/08	08/14/08
COBALT, TOTAL	002	S	08L0301	07/30/08	08/13/08	08/14/08
COBALT, TOTAL	002 REP	S	08L0301	07/30/08	08/13/08	08/14/08
COBALT, TOTAL	002 MS	S	08L0301	07/30/08	08/13/08	08/14/08
CHROMIUM, TOTAL	002	S	08L0301	07/30/08	08/13/08	08/14/08
CHROMIUM, TOTAL	002 REP	S	08L0301	07/30/08	08/13/08	08/14/08
CHROMIUM, TOTAL	002 MS	S	08L0301	07/30/08	08/13/08	08/14/08
COPPER, TOTAL	002	S	08L0301	07/30/08	08/13/08	08/14/08
COPPER, TOTAL	002 REP	S	08L0301	07/30/08	08/13/08	08/14/08
COPPER, TOTAL	002 MS	S	08L0301	07/30/08	08/13/08	08/14/08
IRON, TOTAL	002	S	08L0301	07/30/08	08/13/08	08/14/08
IRON, TOTAL	002 REP	S	08L0301	07/30/08	08/13/08	08/14/08
IRON, TOTAL	002 MS	S	08L0301	07/30/08	08/13/08	08/14/08
MERCURY, TOTAL	002	S	08C0143	07/30/08	08/15/08	08/15/08
MERCURY, TOTAL	002 REP	S	08C0143	07/30/08	08/15/08	08/15/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-088 K1289

DATE RECEIVED: 08/05/08 LVL LOT # :0808L007

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MERCURY, TOTAL	002 MS	S	08C0143	07/30/08	08/15/08	08/15/08
POTASSIUM, TOTAL	002	S	08L0301	07/30/08	08/13/08	08/14/08
POTASSIUM, TOTAL	002 REP	S	08L0301	07/30/08	08/13/08	08/14/08
POTASSIUM, TOTAL	002 MS	S	08L0301	07/30/08	08/13/08	08/14/08
MAGNESIUM, TOTAL	002	S	08L0301	07/30/08	08/13/08	08/14/08
MAGNESIUM, TOTAL	002 REP	S	08L0301	07/30/08	08/13/08	08/14/08
MAGNESIUM, TOTAL	002 MS	S	08L0301	07/30/08	08/13/08	08/14/08
MANGANESE, TOTAL	002	S	08L0301	07/30/08	08/13/08	08/14/08
MANGANESE, TOTAL	002 REP	S	08L0301	07/30/08	08/13/08	08/14/08
MANGANESE, TOTAL	002 MS	S	08L0301	07/30/08	08/13/08	08/14/08
SODIUM, TOTAL	002	S	08L0301	07/30/08	08/13/08	08/14/08
SODIUM, TOTAL	002 REP	S	08L0301	07/30/08	08/13/08	08/14/08
SODIUM, TOTAL	002 MS	S	08L0301	07/30/08	08/13/08	08/14/08
NICKEL, TOTAL	002	S	08L0301	07/30/08	08/13/08	08/14/08
NICKEL, TOTAL	002 REP	S	08L0301	07/30/08	08/13/08	08/14/08
NICKEL, TOTAL	002 MS	S	08L0301	07/30/08	08/13/08	08/14/08
LEAD, TOTAL	002	S	08L0301	07/30/08	08/13/08	08/14/08
LEAD, TOTAL	002 REP	S	08L0301	07/30/08	08/13/08	08/14/08
LEAD, TOTAL	002 MS	S	08L0301	07/30/08	08/13/08	08/14/08
ANTIMONY, TOTAL	002	S	08L0301	07/30/08	08/13/08	08/14/08
ANTIMONY, TOTAL	002 REP	S	08L0301	07/30/08	08/13/08	08/14/08
ANTIMONY, TOTAL	002 MS	S	08L0301	07/30/08	08/13/08	08/14/08
SELENIUM, TOTAL	002	S	08L0301	07/30/08	08/13/08	08/14/08
SELENIUM, TOTAL	002 REP	S	08L0301	07/30/08	08/13/08	08/14/08
SELENIUM, TOTAL	002 MS	S	08L0301	07/30/08	08/13/08	08/14/08
TIN, TOTAL	002	S	08L0301	07/30/08	08/13/08	08/14/08
TIN, TOTAL	002 REP	S	08L0301	07/30/08	08/13/08	08/14/08
TIN, TOTAL	002 MS	S	08L0301	07/30/08	08/13/08	08/14/08
THALLIUM, TOTAL	002	S	08L0301	07/30/08	08/13/08	08/14/08
THALLIUM, TOTAL	002 REP	S	08L0301	07/30/08	08/13/08	08/14/08
THALLIUM, TOTAL	002 MS	S	08L0301	07/30/08	08/13/08	08/14/08
VANADIUM, TOTAL	002	S	08L0301	07/30/08	08/13/08	08/14/08
VANADIUM, TOTAL	002 REP	S	08L0301	07/30/08	08/13/08	08/14/08
VANADIUM, TOTAL	002 MS	S	08L0301	07/30/08	08/13/08	08/14/08
ZINC, TOTAL	002	S	08L0301	07/30/08	08/13/08	08/14/08
ZINC, TOTAL	002 REP	S	08L0301	07/30/08	08/13/08	08/14/08
ZINC, TOTAL	002 MS	S	08L0301	07/30/08	08/13/08	08/14/08
ZIRCONIUM, TOTAL	002	S	08L0301	07/30/08	08/13/08	08/14/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-088 K1289

DATE RECEIVED: 08/05/08 LVL LOT # :0808L007

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
ZIRCONIUM, TOTAL	002 REP	S	08L0301	07/30/08	08/13/08	08/14/08
ZIRCONIUM, TOTAL	002 MS	S	08L0301	07/30/08	08/13/08	08/14/08

LAB QC:

SILVER LABORATORY	LC1 BS	S	08L0301	N/A	08/13/08	08/13/08
SILVER, TOTAL	MB1	S	08L0301	N/A	08/13/08	08/13/08
ALUMINUM LABORTORY	LC1 BS	S	08L0301	N/A	08/13/08	08/13/08
ALUMINUM, TOTAL	MB1	S	08L0301	N/A	08/13/08	08/13/08
ARSENIC LABORATORY	LC1 BS	S	08L0301	N/A	08/13/08	08/13/08
ARSENIC, TOTAL	MB1	S	08L0301	N/A	08/13/08	08/13/08
BARIUM LABORATORY	LC1 BS	S	08L0301	N/A	08/13/08	08/13/08
BARIUM, TOTAL	MB1	S	08L0301	N/A	08/13/08	08/13/08
BERYLLIUM LABORATORY	LC1 BS	S	08L0301	N/A	08/13/08	08/13/08
BERYLLIUM, TOTAL	MB1	S	08L0301	N/A	08/13/08	08/13/08
CALCIUM LABORATORY	LC1 BS	S	08L0301	N/A	08/13/08	08/13/08
CALCIUM, TOTAL	MB1	S	08L0301	N/A	08/13/08	08/13/08
CADMIUM LABORATORY	LC1 BS	S	08L0301	N/A	08/13/08	08/13/08
CADMIUM, TOTAL	MB1	S	08L0301	N/A	08/13/08	08/13/08
COBALT LABORATORY	LC1 BS	S	08L0301	N/A	08/13/08	08/13/08
COBALT, TOTAL	MB1	S	08L0301	N/A	08/13/08	08/13/08
CHROMIUM LABORATORY	LC1 BS	S	08L0301	N/A	08/13/08	08/13/08
CHROMIUM, TOTAL	MB1	S	08L0301	N/A	08/13/08	08/13/08
COPPER LABORATORY	LC1 BS	S	08L0301	N/A	08/13/08	08/13/08
COPPER, TOTAL	MB1	S	08L0301	N/A	08/13/08	08/13/08
IRON LABORATORY	LC1 BS	S	08L0301	N/A	08/13/08	08/13/08
IRON, TOTAL	MB1	S	08L0301	N/A	08/13/08	08/13/08
MERCURY LABORATORY	LC1 BS	S	08C0143	N/A	08/15/08	08/15/08
MERCURY, TOTAL	MB1	S	08C0143	N/A	08/15/08	08/15/08
POTASSIUM LABORATORY	LC1 BS	S	08L0301	N/A	08/13/08	08/13/08
POTASSIUM, TOTAL	MB1	S	08L0301	N/A	08/13/08	08/13/08
MAGNESIUM LABORATORY	LC1 BS	S	08L0301	N/A	08/13/08	08/13/08
MAGNESIUM, TOTAL	MB1	S	08L0301	N/A	08/13/08	08/13/08
MANGANESE LABORATORY	LC1 BS	S	08L0301	N/A	08/13/08	08/13/08
MANGANESE, TOTAL	MB1	S	08L0301	N/A	08/13/08	08/13/08
SODIUM LABORATORY	LC1 BS	S	08L0301	N/A	08/13/08	08/13/08
SODIUM, TOTAL	MB1	S	08L0301	N/A	08/13/08	08/13/08
NICKEL LABORATORY	LC1 BS	S	08L0301	N/A	08/13/08	08/13/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-088 K1289

DATE RECEIVED: 08/05/08 LVL LOT # :0808L007

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
NICKEL, TOTAL	MB1	S	08L0301	N/A	08/13/08	08/13/08
LEAD LABORATORY	LC1 BS	S	08L0301	N/A	08/13/08	08/13/08
LEAD, TOTAL	MB1	S	08L0301	N/A	08/13/08	08/13/08
ANTIMONY LABORATORY	LC1 BS	S	08L0301	N/A	08/13/08	08/13/08
ANTIMONY, TOTAL	MB1	S	08L0301	N/A	08/13/08	08/13/08
SELENIUM LABORATORY	LC1 BS	S	08L0301	N/A	08/13/08	08/13/08
SELENIUM, TOTAL	MB1	S	08L0301	N/A	08/13/08	08/13/08
TIN LABORATORY	LC1 BS	S	08L0301	N/A	08/13/08	08/13/08
TIN, TOTAL	MB1	S	08L0301	N/A	08/13/08	08/13/08
THALLIUM LABORATORY	LC1 BS	S	08L0301	N/A	08/13/08	08/13/08
THALLIUM, TOTAL	MB1	S	08L0301	N/A	08/13/08	08/13/08
VANADIUM LABORATORY	LC1 BS	S	08L0301	N/A	08/13/08	08/13/08
VANADIUM, TOTAL	MB1	S	08L0301	N/A	08/13/08	08/13/08
ZINC LABORATORY	LC1 BS	S	08L0301	N/A	08/13/08	08/13/08
ZINC, TOTAL	MB1	S	08L0301	N/A	08/13/08	08/13/08
ZIRCONIUM LABORATORY	LC1 BS	S	08L0301	N/A	08/13/08	08/13/08
ZIRCONIUM, TOTAL	MB1	S	08L0301	N/A	08/13/08	08/13/08

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-088
LVL#: 0808L007
SDG/SAF#: K1289/RC-088

W.O.#: 60049-001-001-0001-00
Date Received: 08-05-08

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 analysis of 1 soil sample.

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

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

4. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits (80-120% for Mercury) with the exception of CCV4 for Potassium, Sodium, Calcium, and Cadmium in file TA0813A. All data reported is surrounded by in control CCVs.

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

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

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

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

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

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 20 pages.

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

Sample ID	Element	PDS Concentration (ppb)	PDS % Recovery
J177M3	Aluminum	20,000	98.0
	Iron	20,000	93.6
	Antimony	100	99.2

11. The duplicate analyses for 2 analytes were outside the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.

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

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

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

8/18/08
Date

alm/m08-007

LVLI
LIONVILLE LABORATORY INC.

METALS METHOD GLOSSARY

The following methods are used as reference for the digestion and analysis of samples contained within th
Lot#: 0808100 7

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

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 08/18/08

CLIENT: WC-HANFORD RC-088 K1289 LVL LOT #: 0808L007

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-002	J177M3	Silver, Total	0.09 u	MG/KG	0.09	1.0
		Aluminum, Total	5200	MG/KG	3.7	1.0
		Arsenic, Total	2.2	MG/KG	0.46	1.0
		Barium, Total	65.7	MG/KG	0.09	1.0
		Beryllium, Total	0.22	MG/KG	0.05	1.0
		Calcium, Total	7750	MG/KG	3.7	1.0
		Cadmium, Total	0.22	MG/KG	0.05	1.0
		Cobalt, Total	7.0	MG/KG	0.18	1.0
		Chromium, Total	7.1	MG/KG	0.18	1.0
		Copper, Total	14.0	MG/KG	0.18	1.0
		Iron, Total	20900	MG/KG	4.1	1.0
		Mercury, Total	0.008u	MG/KG	0.008	1.0
		Potassium, Total	978	MG/KG	3.7	1.0
		Magnesium, Total	3680	MG/KG	2.3	1.0
		Manganese, Total	294	MG/KG	0.04	1.0
		Sodium, Total	189	MG/KG	18.3	1.0
		Nickel, Total	8.9	MG/KG	0.18	1.0
		Lead, Total	3.2	MG/KG	0.28	1.0
		Antimony, Total	0.28 u	MG/KG	0.28	1.0
		Selenium, Total	0.55 u	MG/KG	0.55	1.0
		Tin, Total	0.55 u	MG/KG	0.55	1.0
		Thallium, Total	0.85	MG/KG	0.55	1.0
		Vanadium, Total	56.3	MG/KG	0.13	1.0
		Zinc, Total	39.6	MG/KG	0.55	1.0
		Zirconium, Total	20.5	MG/KG	4.6	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 08/18/08

CLIENT: WC-HANFORD RC-088 K1289

LVL LOT #: 0808L007

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	08L0301-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	0.15	MG/KG	0.10	1.0
		Beryllium, Total	0.05 u	MG/KG	0.05	1.0
		Calcium, Total	6.0	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	0.90	MG/KG	0.20	1.0
		Iron, Total	4.5 u	MG/KG	4.5	1.0
		Potassium, Total	4.0 u	MG/KG	4.0	1.0
		Magnesium, Total	3.3	MG/KG	2.5	1.0
		Manganese, Total	0.04 u	MG/KG	0.04	1.0
		Sodium, Total	20.0 u	MG/KG	20.0	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	0.60 u	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	08C0143-MB1	Mercury, Total	0.01 u	MG/KG	0.01	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 08/18/08

CLIENT: WC-HANFORD RC-088 K1289

LVL LOT #: 0808L007

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-002	J177M3	Silver, Total	3.9	0.09u	4.4	88.6	1.0
		Aluminum, Total	6400	5200	177	679.0*	1.0
		Arsenic, Total	163	2.2	177	90.6	1.0
		Barium, Total	224	65.7	177	89.2	1.0
		Beryllium, Total	4.8	0.22	4.4	104.2	1.0
		Calcium, Total	10300	7750	2210	115.0	1.0
		Cadmium, Total	4.3	0.22	4.4	92.7	1.0
		Cobalt, Total	47.5	7.0	44.3	91.4	1.0
		Chromium, Total	24.1	7.1	17.7	96.0	1.0
		Copper, Total	37.7	14.0	22.1	107.2	1.0
		Iron, Total	21800	20900	88.5	1065 *	1.0
		Mercury, Total	0.13	0.00u	0.12	107.2	1.0
		Potassium, Total	3040	978	2210	93.2	1.0
		Magnesium, Total	6120	3680	2210	110.4	1.0
		Manganese, Total	334	294	44.3	88.3*	1.0
		Sodium, Total	2320	189	2210	96.4	1.0
		Nickel, Total	49.6	8.9	44.3	91.9	1.0
		Lead, Total	43.7	3.2	44.3	91.4	1.0
		Antimony, Total	22.0	0.28u	44.3	49.7	1.0
		Selenium, Total	138	0.55u	177	77.9	1.0
		Tin, Total	79.1	0.55u	88.5	89.4	1.0
		Thallium, Total	160	0.85	177	89.7	1.0
		Vanadium, Total	97.4	56.3	44.3	92.8	1.0
		Zinc, Total	80.3	39.6	44.3	91.9	1.0
		Zirconium, Total	421	20.5	442	90.4	1.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 08/18/08

CLIENT: WC-HANFORD RC-088 K1289

LVL LOT #: 0808L007

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-002REP	J177M3	Silver, Total	0.09u	0.09u	NC	1.0
		Aluminum, Total	5200	5320	2.3	1.0
		Arsenic, Total	2.2	2.5	12.8	1.0
		Barium, Total	65.7	64.1	2.5	1.0
		Beryllium, Total	0.22	0.27	22.1	1.0
		Calcium, Total	7750	8260	6.4	1.0
		Cadmium, Total	0.22	0.22	0.36	1.0
		Cobalt, Total	7.0	7.1	1.4	1.0
		Chromium, Total	7.1	7.8	9.4	1.0
		Copper, Total	14.0	14.7	4.9	1.0
		Iron, Total	20900	20800	0.44	1.0
		Mercury, Total	0.00u	0.00u	NC	1.0
		Potassium, Total	978	962	1.6	1.0
		Magnesium, Total	3680	3850	4.5	1.0
		Manganese, Total	294	292	0.96	1.0
		Sodium, Total	189	206	9.0	1.0
		Nickel, Total	8.9	9.4	5.5	1.0
		Lead, Total	3.2	3.8	17.1	1.0
		Antimony, Total	0.28u	0.27u	NC	1.0
		Selenium, Total	0.55u	0.55u	NC	1.0
		Tin, Total	0.55u	0.55u	NC	1.0
		Thallium, Total	0.85	1.4	48.7	1.0
		Vanadium, Total	56.3	55.5	1.4	1.0
		Zinc, Total	39.6	39.5	0.25	1.0
		Zirconium, Total	20.5	20.4	0.49	1.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 08/18/08

CLIENT: WC-HANFORD RC-088 K1289 LVL LOT #: 0808L007

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	08L0301-LC1	Silver, LCS	44.3	50.0	MG/KG	88.6
		Aluminum, LCS	449	500	MG/KG	89.9
		Arsenic, LCS	860	1000	MG/KG	86.0
		Barium, LCS	443	500	MG/KG	88.7
		Beryllium, LCS	21.9	25.0	MG/KG	87.6
		Calcium, LCS	2220	2500	MG/KG	88.9
		Cadmium, LCS	21.6	25.0	MG/KG	86.4
		Cobalt, LCS	220	250	MG/KG	88.0
		Chromium, LCS	44.3	50.0	MG/KG	88.6
		Copper, LCS	112	125	MG/KG	89.4
		Iron, LCS	442	500	MG/KG	88.4
		Potassium, LCS	2110	2500	MG/KG	84.5
		Magnesium, LCS	2160	2500	MG/KG	86.4
		Manganese, LCS	66.6	75.0	MG/KG	88.8
		Sodium, LCS	2110	2500	MG/KG	84.4
		Nickel, LCS	176	200	MG/KG	87.8
		Lead, LCS	219	250	MG/KG	87.5
		Antimony, LCS	260	300	MG/KG	86.8
		Selenium, LCS	847	1000	MG/KG	84.7
		Tin, LCS	440	500	MG/KG	88.1
		Thallium, LCS	881	1000	MG/KG	88.1
		Vanadium, LCS	219	250	MG/KG	87.7
		Zinc, LCS	87.6	100	MG/KG	87.6
		Zirconium, LCS	442	500	MG/KG	88.5
LCS1	08C0143-LC1	Mercury, LCS	4.6	4.7	MG/KG	98.1

Lionville Laboratory Incorporated

Logbook #: 4cc

SAMPLE DIGESTION RECORD

SOP: L-SPI-3020 Rev. 00

Digestion Batch #: 08L0301
Date/Time Initiated: 08/13/08, 1:30
Date/Time Completed: 08/13/08,
Analyst(s): RMP
Matrix: (Soil) Water Other:
Instr. Type: AA (ICP)
Parameters: HSL+ Sn, Zr
(Digested) / Undigested (circle one)
Balance #: B-20
Balance Cal Verif: (Y) NA
Hot Plate Temp: 91°

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

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

(WC-Hanford)

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
08081007-002		1.09	100	N/A	TO	fine	Black soil	NONE	N/A
-002R		1.10							
-002S	1.0 ●	1.13							
08081015-002		1.11					metal Shavings		
-002R		1.19							
-002S	1.0 ●	1.12							
-003		1.08							
08081011-001		1.62					oil		
-001R		1.62							
-001S	1.0 ●	1.62							
-002		1.0 ●				fine	metal Shavings		
08L0301-MB1		1.00					Boiling chips		
-LC1	1.0 ●	1.00							

Preweigh
08-13-08

Spiking IDs:
MS #: 8100-04-01
-02
-03
6072-78-07
LCS #: 6072-078-08
-09
-10
-11

Reagent IDs:
HNO_3 G07057
HCL G15040
H_2O_2 G15A18
1:1 HNO_3 9789-81-03
1:1 HCL

File ID#: IC030101
LIMS Transfer: (Y) N Update
Data Review By/Date: Opm 8/15/08

● Also spike with 0.5 ml 22 (6072-079-13)

Lionville Laboratory Incorporated

MERCURY PREPARATION

Logbook # 455

Analyst: TCA
Date 8/15/08
Start Time/Temp: 1045 | 93°
End Time/Temp: 1115 | 98°

Instrument ID Hg3.1
Balance #: B29 /NA
Pipette Calibration (Daily) Y ✓

Prep Batch: 08C0143
Worksheet: Hg081501
SOP No. ME-HgCVAA, Rev. 02

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

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

LvLI Batch #	Container Number	Spike Volume (mL)	Spike Conc. (µg/L)	Initial Wt. or Volume (g or mL)	Final Sample Volume (mL)	Comments, % Solids, etc.
Blank	ET			10mL	50mL	
0.2 µg/L	B2	0.100				
1.0	508	0.500				
2.0	154	1.000				
5.0	N2	2.500				
10.0	A901	5.000				
ICV	L53	0.125				
CCV	857	0.250				
ICB/CCB	L15/Z4					9,501
MB1	AB			0.30		PBS143 100.0
LC1	CB	*	*	0.32		LCSS143
08081007-002	SPRT			0.40		R
002R	R			0.33		
002S	CR	0.500	1.0	0.40		
08081011-001	HS			0.34		
001R	JB			0.40		
001S	3	0.500	1.0	0.34		
002	B32			0.30		
002R	N4			0.32		
002S	B14	0.050	10.0	0.30		
08081015-002	P3			0.31		
002R	SH			0.34		
002S	M1	0.050	10.0	0.31		
003	31			0.32		
08072511-007	M8			0.21		Amt'd Sample
009	WN			0.33		
009S	K17	0.050	10.0	0.33		

Standard:	ID	Prep Date/Time
ICAL/MS	R1 6072-78-14B	8/15/08 0930
ICV/CCV/LCS	US 6072-78-15A	

Reviewed By/Date [signature] 8/18/08

see book # 2368 for std traceability information

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

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

Lionville Laboratory Incorporated

MERCURY PREPARATION

Logbook # 455

Analyst: TRO
Date 8/15/08
Start Time/Temp: See page 094
End Time/Temp:

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

Prep Batch: 08C0143
Worksheet: HG081501
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.
08071511 009T	461	0.050	10.0	0.32	50mL	100.00
0808L030-001	H			0.38		R 99.89
001R	C15			0.33		
001S	27	0.500	1.0	0.38		
0808L001-001	C7			0.39		97.20
001R	A94			0.35		
001S	P1	0.500	1.0	0.39		
002	S			0.36		84.10
0808L038-002	C4D			0.31		100.00
002S	8T	0.0500	10.0	0.31		
002T	L2	0.0500	10.0	0.32		
0808L033-001	OLN			0.30		R 98.18
001R	PA			0.38		
001S	514	0.500	1.0	0.32		

TRO 8/15/08

Standard:	ID	Prep Date/Time
ICAL/MS		
ICV/CCV/LCS	See page 094	

Reviewed By/Date: [signature] 8/18/08

see book # 9368 for std traceability information

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

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

Lionville Laboratory Use Only

08081007

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI

Client: TNCC HANFORD SAF# RC-088

Est. Final Proj. Sampling Date

Project# 11343-606-001-9999-00

Project Contact/Phone#

Lionville Laboratory Project Manager: C. JOHNSON

QC: Spec SW846 Del: Std TAT: 7Day

WR 8-5-08

Date Rec'd: 8/5/08 Date Due: 8/12/08

Refrigerator #			A 2													
#/Type Container	Liquid / Solid		1G													
Volume			250													
Preservatives																
ANALYSES REQUESTED →			ORGANIC						INORG							
			VOA	BNA	~~Pest~~ PCB	Herb			ICP Metal	Hg	CN					

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	VOA	BNA (OASH)	PCB (OPCB)	Herb			ICP Metal (METO)	Hg	CN (IIGN)				
001	J177M2 WR 8-5-08			Oil	7-30-08	1310		X	X				X		X				
002	J177M3			↓	↓	1345		X	X				X		X				

Special Instructions: X=OTHER LIQUID (oil)

TO=Al, Sb, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Mg, Mn, Ni, K, Ag, Na, V, Zn, As, Pb, Se, Tl, Sn, Zr, ~~Ag~~ Hg JPW/8

Special Instructions:

1. 8-8-08 per Client -001 is biphasic and needs moved to 08081015-003+004
2. ↓ -002 changed matrix to Soil. WR
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	8/5/08	0940

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
Original rewritten	composite waste		

000000017

nville Laboratory Use Only

8081007

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

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

Spec SW846 Del Std TAT 7Day

WR 8-5-08

e Rec'd 8/5/08 Date Due 8/12/08

Refrigerator #			A 2														
#/Type Container	Liquid		1G														
	Solid																
Volume			250														
Preservatives																	
ANALYSES REQUESTED →			ORGANIC							INORG							
			VOA	BNA	Pest/PCB	Herb				Tot Metal Hg	CN	Ignitability					

Lionville Laboratory Use Only

RIX EST	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected		CRASH	OPCB				METO		IGN				
Soil, Sediment, Solid, Sludge, Water, Oil, Air, Drum Solids, Drum Liquids, EP/TCLP Leachate, Wipe, Other, Fish	001	J177M2			oil	7-30-08	1310		X	X				X		X				
	002	J177M3			↓	↓	1345		X	X				X		X				

ecial Instructions: X=OTHER LIQUID (oil)

D=Al, Sb, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Mg, Mn, Ni, K, Ag, Na, V, Zn, As, Pb, Se, Tl, Sn, Zr, ~~Ag~~ Hg

Special Instructions:

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

Relinquished by	Received by	Date	Time
		8/5/08	0940

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
Original relinquished	composite waste		

000000018

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-088-055 | Page 1 of 1

Collector: B. Lawrence / E. Harries	Company Contact: Joan Kessner	Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH
Project Designation: 618-7 Burial Ground - Other	Sampling Location: 618-7 Burial Ground (drums)		SAF No.: RC-088
Ice Chest No.: AFS-04-053	Field Logbook No.: EL-1395-12	COA: RG61878500	Method of Shipment: Fed Ex
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A080310		Bill of Lading/Air Bill No.: SCF OSPC

Price Code: 8F

Data Turnaround: ~~15~~ 7 Days RC 7/30/08

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	1	1	1	1						
Volume	250mL	125mL	125mL	60mL	500mL						
SAMPLE ANALYSIS	Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions.	Ignitability - 1010	See item (2) in Special Instructions. RC 7/30/08						PIN #
Sample No. / Matrix * / Sample Date / Sample Time											
~~177M1~~ ~~OTHER LIQUID~~											
177M2 / OTHER LIQUID / 7/30/08 / 1310	X	X	X	X						DRUM	5146
177M3 / OTHER LIQUID / 7/30/08 / 1325	X	X	X	X						B-12	3118

CHAIN OF POSSESSION	Sign/Print Names	Date/Time
Relinquished By/Removed From	Received By/Stored In	
[illegible] 7-30-08	RT Coffman / RT Coffman 7/30/08	1500
Relinquished By/Removed From: RT Coffman / RT Coffman 7/30/08	Received By/Stored In: Refer #1A, 1060 7/30/08	1700
Relinquished By/Removed From: 260/1A 0930 AUG 04 2008	Received By/Stored In: mstankovich AUG 04 2008	0930
Relinquished By/Removed From: WCH mstankovich AUG 04 2008	Received By/Stored In: Fed Ex	
Relinquished By/Removed From: Fed Ex 8/5/08	Received By/Stored In: [illegible] 8-5-08	0942
Relinquished By/Removed From	Received By/Stored In	

SPECIAL INSTRUCTIONS

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

(2) Gross Alpha; Gross Beta; Gamma Spectroscopy (TCL List) (Cesium-137, 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.

JH

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

000000019

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD

Date: 8/5/08

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

LvLI Batch #: 0808L 007

Sample Custodian: Vicki Hernandez

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 798490423525
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 # AFS-04-053
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify):
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14. QC stickers placed on bottles designated by client?	☐ Yes	☐ No	☑ N/A
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A

Person Contacted _____ Date _____

LVLI LIONVILLE LABORATORY INC.

RECEIVED
AUG 2008

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-088 K1289

DATE RECEIVED: 08/05/08 LVL LOT # :0808L007

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J177M3						
IGNITABILITY	002	S	08LFP021	07/30/08	08/12/08	08/12/08

LIONVILLE LABORATORY INC.

Analytical Report

Client: WC-HANFORD RC-088 K1289
LVL#: 0808L007

W.O.#: 60049-001-001-0001-00
Date Received: 08-05-08

INORGANIC NARRATIVE

1. This narrative covers the analysis of 1 soil sample.

2. The sample was prepared and analyzed in accordance with the method checked on the attached glossary.

3. Sample holding time as required by the method and/or contract was met.

4. The result presented in this report is derived from a sample that met LvLI's sample acceptance policy.

5. The Laboratory Control Sample (LCS) was within the method criteria.

6. Insufficient sample volume was provided so as to perform replicate analysis.

7. 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

8/26/08
Date

njp\i08-007

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

Lionville Laboratory Incorporated

WET CHEMISTRY

METHODS GLOSSARY FOR SOIL/SOLIDS SAMPLE ANALYSIS

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

Other: **Method:**

Other: **Method**

L-WI-034/B-01/01

Lionville Laboratory Incorporated

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

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

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

ABBREVIATIONS

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

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

ANALYTICAL WET CHEMISTRY METHODS

1. ASTM Standard Methods.

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

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

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

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

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

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

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

f. Code of Federal Regulations.

Inorganic Data Summary Report
Physical Testing Observation

Client: WC-HANFORD RC-088 K1289
LVL#: 0808L007

W.O.#: 60049-001-001-0001-00
Date Received: 08-05-08

Analyte:

Ignitability

Observation:

Sample J177M3 did not ignite.

The sample was heated to approximately 210°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 82°F.

njp\i08-007.pt2

LIONVILLE LABORATORY INC.

Lionville Laboratory Use Only

08081007

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

WC-HANFORD RC-088 K 1289

Client ~~FNL HANFORD~~ WC 8-14-08 SAF# RC-088

Est. Final Proj. Sampling Date

Project# ~~11343-606-001~~ ~~9999-007~~ WC 8-14-08 600-49-001-001-0001-00

Project Contact/Phone#

Lionville Laboratory Project Manager O. JOHNSON

Spec SW846 Del Std TAT 7 Day

WC 8-5-08

Date Rec'd 8/5/08 Date Due 8/12/08

Refrigerator #			A													
#/Type Container	Liquid		2													
	Solid		1G													
Volume			250													
Preservatives																
ANALYSES REQUESTED			ORGANIC						INORG							
			VOA	BNA	~~Pest~~/PCB	Herb			ICP Metal Hg	CN						
			Lionville Laboratory Use Only													
				OMSH	OPCB				METO		IIGN					

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	OMSH	OPCB	METO	IIGN
001	T177M2 WC 8-8-08			oil	7-30-08	1310	X	X	X	X
002	T177M3			⊥	⊥	1345	X	X	X	X

Special Instructions: X=OTHER LIQUID (oil)

METO = Al, Sb, Ba, Be, Cd, Ca, Cr, Co, Cu, Fe, Mg, Mn, Ni, K, Ag, Na, V, Zn, As, Pb, Se, Tl, Sn, Zr, ~~Ag~~ Hg 8/8/08

Special Instructions:

8-8-08 1. per Client -001 is biphasic and needs moved to 08081015-003+004

⊥ 2. -002 changed matrix to Soil. WC

3.

4.

5.

6.

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	8/5/08	0940

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
original relinquished	composite waste		

000000006

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-088-055 | Page 1 of 1

Collector: B. Lawrence / E. Harries	Company Contact: Joan Kessner	Telephone No.: 509-375-4688	Project Coordinator: KESSNER, JH
Price Code: 8F	Data Turnaround: 15 Days 7 RC		
Project Designation: 618-7 Burial Ground - Other	Sampling Location: 618-7 Burial Ground (drums)		SAF No.: RC-088
Ice Chest No.: AFS-04-052	Field Logbook No.: EL-1395-12	COA: RG61878500	Method of Shipment: Fed Ex 7/30/08
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A080310		Bill of Lading/Air Bill No.: SCC 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	1	1	1	1						
Volume	250mL	125mL	125mL	60mL	500mL						
SAMPLE ANALYSIS	Semi-VOA - 8270A (TCL)	PCBs - 8082	See item (1) in Special Instructions.	Ignitability - 1010	See item (2) in Special Instructions.						

RC 7/30/08

Sample No.	Matrix *	Sample Date	Sample Time										PIN #
~~177M1~~	~~OTHER LIQUID~~												
177M2	OTHER LIQUID	7/30/08	1310	X	X	X	X					DRUM	5146
177M3	OTHER LIQUID	7/30/08	1315	X	X	X	X					B-12	3118

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: Laura [illegible]	7-30-08 1500	Received By/Stored In: RT Coffman / RT Coffman	7/30/08 1500
Relinquished By/Removed From: RT Coffman / RT Coffman	7/30/08 1700	Received By/Stored In: Rover #1A, 1060	7/30/08 1700
Relinquished By/Removed From: 060/1A	0930 AUG 04 2008	Received By/Stored In: mstankovich	0930 AUG 04 2008
Relinquished By/Removed From: WCH mstankovich	0930 AUG 04 2008	Received By/Stored In: Fed Ex	
Relinquished By/Removed From: Fed Ex	8/5/08 0942	Received By/Stored In: Peter Neuman	8-5-08 0942
Relinquished By/Removed From:		Received By/Stored In:	

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010A (TAL) {Aluminum, Antimony, Barium, Beryllium, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Magnesium, Manganese, Nickel, Potassium, Silver, Sodium, Vanadium, Zinc}; ICP Metals - 6010A (Add-on) {Arsenic, Lead, Selenium, Thallium, Tin, Zirconium}; Mercury - 7471 - (CV)
(2) Gross Alpha; Gross Beta; Gamma Spectroscopy (TCL List) {Cesium-137, 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.

JPD

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

00000007

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD

Date: 8/5/08

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

LvLI Batch #: 0808L 007

Sample Custodian: Vicki Hernandez

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier Fed Ex		Airbill # 798490423525
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 # AFS-04-053
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify):
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14. QC stickers placed on bottles designated by client?	☐ Yes	☐ No	☑ N/A
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A

Person Contacted _____ Date _____

LVLI LIONVILLE LABORATORY INC.