0077245

SAF-RC-006
100-N Ancillary Facilities & 190-DR Other Solid Sampling for ERDF Waste Designation
FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

Tom Edmundson	X0-18	KW 5/14/08 INITIAL/DATE
Amy Hood	X0-18	KW 5/14/08 INITIAL/DATE

COMMENTS:

SDG K1185 SAF-RC-006

Rad only Chem only X Rad & Chem

X Complete Partial

Waste Site(s): 183-ND Resin Disposal Pit

RECEIVED
MAY 19 2008
EDMC

EBERLINE SERVICES

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

April 28, 2008

RECEIVED APR 2008

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

Reference: **P.O. #S00W235A00**
Eberline Services R8-04-088-7796, SDG K1185

Dear Ms. Kessner:

Enclosed is the data report for five solid (other solid) samples designated under SAF No. RC-006 received at Eberline Services on April 16, 2008. The samples were analyzed according to the accompanying chain-of-custody document.

Please call if you have any questions concerning this report.

Sincerely,

Melissa Mannion

Melissa C. Mannion
Senior Program Manager

MCM/njv

Enclosure: Data Package

1.0 GENERAL

Washington Closure Hanford (WCH) Sample Delivery Group K1185 was composed of five solid (other solid) samples designated under SAF No. RC-006 with a Project Designation of: 100-N Ancillary Facilities & 190-DR Other Solid Sampling f.

The samples were received as stated on the Chain-of-Custody document. Any discrepancies are noted on the Eberline Services Sample Receipt Checklist. The results were transmitted to WCH via e-mail on April 28, 2008.

2.0 ANALYSIS NOTES

2.1 Gross Alpha and Gross Beta Analysis

No problems were encountered during the course of the analyses.

2.2 Gamma Spectroscopy

No problems were encountered during the course of the analyses.

3.0 Case Narrative Certification Statement

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

Melissa Mannion

Melissa C. Mannion
Senior Program Manager

04/28/08

Date

EBERLINE SERVICES/RICHMOND
SAMPLE DELIVERY GROUP K1185

SDG	7796
Contact	Melissa C. Mannion

Client	Hanford
Contract	No. S00W235A00
Case no	SDG K1185

SUMMARY DATA SECTION

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Prepared by

Melissa Mannion

Reviewed by

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

SDG 7796
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1185

ABOUT THE DATA SUMMARY SECTION

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

The Data Summary Section has several groups of reports:

SAMPLE SUMMARIES

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

PREPARATION BATCH SUMMARY

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

WORK SUMMARY

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

METHOD BLANKS

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

LAB CONTROL SAMPLES

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

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

ABOUT THE DATA SUMMARY SECTION

DUPLICATES

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

MATRIX SPIKES

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

DATA SHEETS

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

METHOD SUMMARIES

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

REPORT GUIDES

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1185

LAB SAMPLE SUMMARY

SDG 7796
ontact Melissa C. Mannion

Client Hanford
Contract No. S00W235A00
Case no SDG K1185

B MPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAF NO	CHAIN OF CUSTODY	COLLECTED
04088-01	J16MF8	183-ND ResinDisposal Pit	SOLID		RC-006	RC-006-172	04/14/08 09:50
04088-02	J16MF9	183-ND ResinDisposal Pit	SOLID		RC-006	RC-006-172	04/14/08 10:00
04088-03	J16MH0	183-ND ResinDisposal Pit	SOLID		RC-006	RC-006-172	04/14/08 10:20
04088-04	J16MH1	183-ND ResinDisposal Pit	SOLID		RC-006	RC-006-172	04/14/08 10:30
04088-05	J16ML8	183-ND ResinDisposal Pit	SOLID		RC-006	RC-006-172	04/14/08 10:40
04088-06	Lab Control Sample		SOLID		RC-006		
04088-07	Method Blank		SOLID		RC-006		
04088-08	Duplicate (R804088-03)	183-ND ResinDisposal Pit	SOLID		RC-006		04/14/08 10:20

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1185

SDG 7796
ontact Melissa C. Mannion

QC SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1185

ATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% SOLIDS	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED	DAYS SINCE COLL	LAB SAMPLE ID	DEPARTMENT SAMPLE ID
	RC-006-172	J16MF8	SOLID	100.0	1339 g		04/16/08	2	R804088-01	7796-001
		J16MF9	SOLID	100.0	1408 g		04/16/08	2	R804088-02	7796-002
		J16MH0	SOLID	100.0	1481 g		04/16/08	2	R804088-03	7796-003
		J16MH1	SOLID	100.0	1129 g		04/16/08	2	R804088-04	7796-004
		J16ML8	SOLID	100.0	1617 g		04/16/08	2	R804088-05	7796-005
		Method Blank	SOLID						R804088-07	7796-007
		Lab Control Sample	SOLID						R804088-06	7796-006
		Duplicate (R804088-03)	SOLID	100.0	1481 g		04/16/08	2	R804088-08	7796-008

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1185

SDG 7796
Contact Melissa C. Mannion

PREP BATCH SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1185

TEST	MATRIX	METHOD	PREPARATION BATCH	ERROR 2σ %	PLANCHETS ANALYZED CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	MS/ORIG	QUALIFIERS
Gas Proportional Counting												
93A	SOLID	Gross Alpha in Solids	6148-076	20.6	5			1	1	1/1		
93B	SOLID	Gross Beta in Solids	6148-076	11.0	5			1	1	1/1		
Gamma Spectroscopy												
GAM	SOLID	Gamma Scan	6148-076	7.0	5			1	1	1/1		

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

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1185

SDG 7796
ontact Melissa C. Mannion

LAB WORK SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1185

SAMPLE LLECTED ECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
088-01	J16MF8			7796-001	93A/93		04/24/08	04/24/08	BW	Gross Alpha in Solids
4/14/08	183-ND ResinDisposal Pit		SOLID	7796-001	93B/93		04/24/08	04/24/08	BW	Gross Beta in Solids
4/16/08	RC-006-172	RC-006		7796-001	GAM		04/18/08	04/21/08	CSS	Gamma Scan
088-02	J16MF9			7796-002	93A/93		04/24/08	04/24/08	BW	Gross Alpha in Solids
4/14/08	183-ND ResinDisposal Pit		SOLID	7796-002	93B/93		04/24/08	04/24/08	BW	Gross Beta in Solids
4/16/08	RC-006-172	RC-006		7796-002	GAM		04/18/08	04/21/08	CSS	Gamma Scan
088-03	J16MH0			7796-003	93A/93		04/24/08	04/24/08	BW	Gross Alpha in Solids
4/14/08	183-ND ResinDisposal Pit		SOLID	7796-003	93B/93		04/24/08	04/24/08	BW	Gross Beta in Solids
4/16/08	RC-006-172	RC-006		7796-003	GAM		04/18/08	04/21/08	CSS	Gamma Scan
088-04	J16MH1			7796-004	93A/93		04/24/08	04/24/08	BW	Gross Alpha in Solids
4/14/08	183-ND ResinDisposal Pit		SOLID	7796-004	93B/93		04/24/08	04/24/08	BW	Gross Beta in Solids
4/16/08	RC-006-172	RC-006		7796-004	GAM		04/18/08	04/21/08	CSS	Gamma Scan
088-05	J16ML8			7796-005	93A/93		04/24/08	04/24/08	BW	Gross Alpha in Solids
4/14/08	183-ND ResinDisposal Pit		SOLID	7796-005	93B/93		04/24/08	04/24/08	BW	Gross Beta in Solids
4/16/08	RC-006-172	RC-006		7796-005	GAM		04/18/08	04/21/08	CSS	Gamma Scan
088-06	Lab Control Sample			7796-006	93A/93		04/24/08	04/24/08	BW	Gross Alpha in Solids
			SOLID	7796-006	93B/93		04/24/08	04/24/08	BW	Gross Beta in Solids
		RC-006		7796-006	GAM		04/18/08	04/21/08	CSS	Gamma Scan
088-07	Method Blank			7796-007	93A/93		04/24/08	04/24/08	BW	Gross Alpha in Solids
			SOLID	7796-007	93B/93		04/24/08	04/24/08	BW	Gross Beta in Solids
		RC-006		7796-007	GAM		04/18/08	04/21/08	CSS	Gamma Scan
088-08	Duplicate (R804088-03)			7796-008	93A/93		04/24/08	04/24/08	BW	Gross Alpha in Solids
4/14/08	183-ND ResinDisposal Pit		SOLID	7796-008	93B/93		04/24/08	04/24/08	BW	Gross Beta in Solids
4/16/08		RC-006		7796-008	GAM		04/18/08	04/21/08	CSS	Gamma Scan

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1185

SDG 7796
ontact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford
Contract No. S00W235A00
Case no SDG K1185

COUNTS OF TESTS BY SAMPLE TYPE

ST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
A/93	RC-006	Gross Alpha in Solids	900.0_ALPHABETA_GPC	5			1	1	1	8
B/93	RC-006	Gross Beta in Solids	900.0_ALPHABETA_GPC	5			1	1	1	8
M	RC-006	Gamma Scan	GAMMA_GS	5			1	1	1	8
TALS				15			3	3	3	24

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1185

7796-007 Method Blank

METHOD BLANK

SDG	7796	Client/Case no	Hanford SDG K1185
Contact	Melissa C. Mannion	Contract	No. S00W235A00
Lab sample id	R804088-07	Client sample id	Method Blank
Dept sample id	7796-007	Material/Matrix	SOLID
		SAF No	RC-006

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	0.827	3.5	6.92	10.0	U	93A
Gross Beta	12587-47-2	-0.044	3.2	5.73	15.0	U	93B
Potassium 40	13966-00-2	U		0.168		U	GAM
Cobalt 60	10198-40-0	U		0.006	0.050	U	GAM
Cesium 137	10045-97-3	U		0.006	0.100	U	GAM
Radium 226	13982-63-3	U		0.014	0.100	U	GAM
Radium 228	15262-20-1	U		0.029	0.200	U	GAM
Europium 152	14683-23-9	U		0.015	0.100	U	GAM
Europium 154	15585-10-1	U		0.019	0.100	U	GAM
Europium 155	14391-16-3	U		0.015	0.100	U	GAM
Thorium 228	14274-82-9	U		0.009		U	GAM
Thorium 232	TH-232	U		0.029		U	GAM
Uranium 235	15117-96-1	U		0.025		U	GAM
Uranium 238	U-238	U		0.707		U	GAM
Americium 241	14596-10-2	U		0.017		U	GAM
Antimony 125	14234-35-6	U		0.013		U	GAM
Barium 133	13981-41-4	U		0.007		U	GAM

100-N AncillaryFac&190-DR OtherSolid

QC-BLANK #65389

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1185

7796-006

Lab Control Sample

LAB CONTROL SAMPLE

SDG 7796

Contact Melissa C. Mannion

Client/Case no Hanford SDG K1185

Contract No. S00W235A00

Lab sample id R804088-06

Dept sample id 7796-006

Client sample id Lab Control Sample

Material/Matrix SOLID

SAF No RC-006

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	116	17	7.33	10.0		93A	112	4.5	104	60-140	70-130
Gross Beta	106	7.7	5.72	15.0		93B	112	4.5	95	80-120	80-120
Cobalt 60	0.305	0.008	0.004	0.050		GAM	0.314	0.013	97	87-113	80-120
Cesium 137	0.363	0.008	0.005	0.100		GAM	0.346	0.014	105	87-113	80-120

100-N AncillaryFac&190-DR OtherSolid

QC-LCS #65388

Lab id EBRLNE

Protocol Hanford

Version Ver 1.0

Form DVD-LCS

Version 3.06

Report date 04/28/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1185

7796-008 J16MH0

DUPLICATE

SDG	7796			Client/Case no	Hanford SDG K1185
Contact	Melissa C. Mannion			Contract	No. S00W235A00
	DUPLICATE		ORIGINAL		
Lab sample id	R804088-08	Lab sample id	R804088-03	Client sample id	J16MH0
Dept sample id	7796-008	Dept sample id	7796-003	Location/Matrix	183-ND ResinDisposal Pit SOLID
		Received	04/16/08	Collected/Weight	04/14/08 10:20 1481 g
% solids	100.0	% solids	100.0	Custody/SAF No	RC-006-172 RC-006

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	12.6	5.8	5.39	10.0		93A	6.66	4.6	5.45		62	124	1.5
Gross Beta	17.1	5.7	8.73	15.0		93B	16.0	4.1	5.42		7	68	0.3
Potassium 40	10.9	0.18	0.064			GAM	10.6	0.67	0.204		3	18	0.5
Cobalt 60	U		0.009	0.050	U	GAM	U		0.021	U	-		1.0
Cesium 137	0.034	0.008	0.009	0.100		GAM	0.030	0.017	0.020		12	89	0.4
Radium 226	U		0.664	0.100	U	GAM	0.404	0.045	0.036		49	188	0.8
Radium 228	0.612	0.037	0.034	0.200		GAM	0.629	0.094	0.082		3	29	0.3
Europium 152	U		0.018	0.100	U	GAM	U		0.049	U	-		1.2
Europium 154	U		0.025	0.100	U	GAM	U		0.068	U	-		1.2
Europium 155	U		0.038	0.100	U	GAM	U		0.069	U	-		0.8
Thorium 228	0.618	0.011	0.009			GAM	0.585	0.028	0.025		5	17	1.0
Thorium 232	0.612	0.037	0.034			GAM	0.629	0.094	0.082		3	29	0.3
Uranium 235	U		0.035		U	GAM	U		0.082	U	-		1.1
Uranium 238	U		1.50		U	GAM	U		2.33	U	-		0.6
Americium 241	U		0.013		U	GAM	U		0.026	U	-		0.9
Antimony 125	U		0.016		U	GAM	U		0.047	U	-		1.2
Barium 133	U		0.009		U	GAM	U		0.025	U	-		1.2

.00-N AncillaryFac&190-DR OtherSolid

QC-DUP#3 65390

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1185

7796-001 J16MF8

DATA SHEET

SDG	7796	Client/Case no	Hanford	SDG_K1185	
Contact	Melissa C. Mannion	Contract	No. S00W235A00		
Lab sample id	R804088-01	Client sample id	J16MF8		
Dept sample id	7796-001	Location/Matrix	183-ND ResinDisposal Pit	SOLID	
Received	04/16/08	Collected/Weight	04/14/08 09:50	1339 g	
% solids	100.0	Custody/SAF No	RC-006-172	RC-006	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	9.33	5.2	5.47	10.0		93A
Gross Beta	12587-47-2	6.64	5.3	8.75	15.0	U	93B
Potassium 40	13966-00-2	5.56	0.83	0.203			GAM
Cobalt 60	10198-40-0	U		0.022	0.050	U	GAM
Cesium 137	10045-97-3	0.054	0.023	0.023	0.100		GAM
Radium 226	13982-63-3	0.445	0.047	0.038	0.100		GAM
Radium 228	15262-20-1	0.658	0.092	0.078	0.200		GAM
Europium 152	14683-23-9	U		0.048	0.100	U	GAM
Europium 154	15585-10-1	U		0.065	0.100	U	GAM
Europium 155	14391-16-3	U		0.069	0.100	U	GAM
Thorium 228	14274-82-9	0.607	0.027	0.024			GAM
Thorium 232	TH-232	0.658	0.092	0.078			GAM
Uranium 235	15117-96-1	U		0.090		U	GAM
Uranium 238	U-238	U		2.38		U	GAM
Antimony 125	14234-35-6	U		0.043		U	GAM
Barium 133	13981-41-4	U		0.028		U	GAM

100-N AncillaryFac&190-DR OtherSolid

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1185

7796-002 J16MF9

DATA SHEET

SDG	7796	Client/Case no	Hanford	SDG K1185	
Contact	Melissa C. Mannion	Contract	No. S00W235A00		
Lab sample id	R804088-02	Client sample id	J16MF9		
Dept sample id	7796-002	Location/Matrix	183-ND ResinDisposal Pit	SOLID	
Received	04/16/08	Collected/Weight	04/14/08 10:00	1408 g	
% solids	100.0	Custody/SAF No	RC-006-172	RC-006	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	14.9	6.7	6.27	10.0		93A
Gross Beta	12587-47-2	18.0	5.6	8.54	15.0		93B
Potassium 40	13966-00-2	11.0	0.53	0.236			GAM
Cobalt 60	10198-40-0	U		0.034	0.050	U	GAM
Cesium 137	10045-97-3	0.059	0.027	0.030	0.100		GAM
Radium 226	13982-63-3	0.442	0.045	0.041	0.100		GAM
Radium 228	15262-20-1	0.712	0.12	0.114	0.200		GAM
Europium 152	14683-23-9	U		0.059	0.100	U	GAM
Europium 154	15585-10-1	U		0.088	0.100	U	GAM
Europium 155	14391-16-3	U		0.074	0.100	U	GAM
Thorium 228	14274-82-9	0.590	0.033	0.033			GAM
Thorium 232	TH-232	0.712	0.12	0.114			GAM
Uranium 235	15117-96-1	U		0.110		U	GAM
Uranium 238	U-238	U		2.96		U	GAM
Americium 241	14596-10-2	U		0.163		U	GAM
Antimony 125	14234-35-6	U		0.053		U	GAM
Barium 133	13981-41-4	U		0.027		U	GAM

100-N AncillaryFac&190-DR OtherSolid

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1185

7796-003 J16MH0

DATA SHEET

SDG	7796	Client/Case no	Hanford	SDG_K1185
Contact	Melissa C. Mannion	Contract	No. S00W235A00	
Lab sample id	R804088-03	Client sample id	J16MH0	
Dept sample id	7796-003	Location/Matrix	183-ND ResinDisposal Pit	SOLID
Received	04/16/08	Collected/Weight	04/14/08 10:20	1481 g
% solids	100.0	Custody/SAF No	RC-006-172	RC-006

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	6.66	4.6	5.45	10.0		93A
Gross Beta	12587-47-2	16.0	4.1	5.42	15.0		93B
Potassium 40	13966-00-2	10.6	0.67	0.204			GAM
Cobalt 60	10198-40-0	U		0.021	0.050	U	GAM
Cesium 137	10045-97-3	0.030	0.017	0.020	0.100		GAM
Radium 226	13982-63-3	0.404	0.045	0.036	0.100		GAM
Radium 228	15262-20-1	0.629	0.094	0.082	0.200		GAM
Europium 152	14683-23-9	U		0.049	0.100	U	GAM
Europium 154	15585-10-1	U		0.068	0.100	U	GAM
Europium 155	14391-16-3	U		0.069	0.100	U	GAM
Thorium 228	14274-82-9	0.585	0.028	0.025			GAM
Thorium 232	TH-232	0.629	0.094	0.082			GAM
Uranium 235	15117-96-1	U		0.082		U	GAM
Uranium 238	U-238	U		2.33		U	GAM
Americium 241	14596-10-2	U		0.026		U	GAM
Antimony 125	14234-35-6	U		0.047		U	GAM
Barium 133	13981-41-4	U		0.025		U	GAM

100-N AncillaryFac&190-DR OtherSolid

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1185

7796-004 J16MH1

DATA SHEET

SDG	7796	Client/Case no	Hanford	SDG K1185
Contact	Melissa C. Mannion	Contract	No. S00W235A00	
Lab sample id	R804088-04	Client sample id	J16MH1	
Dept sample id	7796-004	Location/Matrix	183-ND ResinDisposal Pit	SOLID
Received	04/16/08	Collected/Weight	04/14/08 10:30	1129 g
% solids	100.0	Custody/SAF No	RC-006-172	RC-006

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	2.86	5.4	8.90	10.0	U	93A
Gross Beta	12587-47-2	19.5	5.3	7.44	15.0		93B
Potassium 40	13966-00-2	11.3	0.39	0.145			GAM
Cobalt 60	10198-40-0	U		0.034	0.050	U	GAM
Cesium 137	10045-97-3	0.057	0.017	0.019	0.100		GAM
Radium 226	13982-63-3	U		0.663	0.100	U	GAM
Radium 228	15262-20-1	0.603	0.079	0.077	0.200		GAM
Europium 152	14683-23-9	U		0.039	0.100	U	GAM
Europium 154	15585-10-1	U		0.053	0.100	U	GAM
Europium 155	14391-16-3	U		0.053	0.100	U	GAM
Thorium 228	14274-82-9	0.615	0.024	0.022			GAM
Thorium 232	TH-232	0.603	0.079	0.077			GAM
Uranium 235	15117-96-1	U		0.071		U	GAM
Uranium 238	U-238	U		2.17		U	GAM
Americium 241	14596-10-2	U		0.028		U	GAM
Antimony 125	14234-35-6	U		0.034		U	GAM
Barium 133	13981-41-4	U		0.019		U	GAM

100-N AncillaryFac&190-DR OtherSolid

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1185

7796-005 J16ML8

DATA SHEET

SDG	7796	Client/Case no	Hanford SDG K1185
Contact	Melissa C. Mannion	Contract	No. S00W235A00
Lab sample id	R804088-05	Client sample id	J16ML8
Dept sample id	7796-005	Location/Matrix	183-ND ResinDisposal Pit SOLID
Received	04/16/08	Collected/Weight	04/14/08 10:40 1617 g
% solids	100.0	Custody/SAF No	RC-006-172 RC-006

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	13.3	6.7	6.62	10.0		93A
Gross Beta	12587-47-2	13.0	4.1	5.74	15.0		93B
Potassium 40	13966-00-2	6.67	0.48	0.154			GAM
Cobalt 60	10198-40-0	0.026	0.012	0.014	0.050		GAM
Cesium 137	10045-97-3	0.042	0.014	0.017	0.100		GAM
Radium 226	13982-63-3	0.616	0.035	0.030	0.100		GAM
Radium 228	15262-20-1	0.895	0.074	0.067	0.200		GAM
Europium 152	14683-23-9	U		0.043	0.100	U	GAM
Europium 154	15585-10-1	U		0.045	0.100	U	GAM
Europium 155	14391-16-3	U		0.078	0.100	U	GAM
Thorium 228	14274-82-9	0.830	0.026	0.022			GAM
Thorium 232	TH-232	0.895	0.074	0.067			GAM
Uranium 235	15117-96-1	U		0.087		U	GAM
Uranium 238	U-238	U		1.68		U	GAM
Americium 241	14596-10-2	U		0.109		U	GAM
Antimony 125	14234-35-6	U		0.038		U	GAM
Barium 133	13981-41-4	U		0.024		U	GAM

100-N AncillaryFac&190-DR OtherSolid

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1185

Test 93A Matrix SOLID
SDG 7796
ontact Melissa C. Mannion

LAB METHOD SUMMARY

GROSS ALPHA IN SOLIDS

GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. S00W235A00
Contract SDG K1185

SULTS

LE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Alpha
aration batch 6148-076					
088-01	93		7796-001	J16MF8	9.33
088-02	93		7796-002	J16MF9	14.9
088-03	93		7796-003	J16MH0	6.66
088-04	93		7796-004	J16MH1	U
088-05	93		7796-005	J16ML8	13.3
088-06	93		7796-006	Lab Control Sample	ok
088-07	93		7796-007	Method Blank	U
088-08	93		7796-008	Duplicate (R804088-03)	ok

nal values and limits from method RDLs (pCi/g) 10.0
N AncillaryFac&190-DR OtherSolid

THOD PERFORMANCE

LE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
aration batch 6148-076			2σ prep error 20.6 % Reference Lab Notebook #6148, pg. 76													
088-01	93		J16MF8	5.47	0.100			43		100			10	04/23/08	04/24	GRB-213
088-02	93		J16MF9	6.27	0.100			50		100			10	04/23/08	04/24	GRB-214
088-03	93		J16MH0	5.45	0.100			40		100			10	04/23/08	04/24	GRB-216
088-04	93		J16MH1	8.90	0.100			49		100			10	04/23/08	04/24	GRB-114
088-05	93		J16ML8	6.62	0.100			51		100			10	04/23/08	04/24	GRB-209
088-06	93		Lab Control Sample	7.33	0.100			60		100				04/23/08	04/24	GRB-210
088-07	93		Method Blank	6.92	0.100			60		100				04/23/08	04/24	GRB-211
088-08	93		Duplicate (R804088-03)	5.39	0.100			41		100			10	04/23/08	04/24	GRB-213
nal values and limits from method				10.0	0.100			5-250		100			180			

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

AVERAGES ± 2 SD MDA 6.54 ± 2.40
FOR 8 SAMPLES RESIDUE 49 ± 16

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1185

Test 93B Matrix SOLID
SDG 7796
ontact Melissa C. Mannion

LAB METHOD SUMMARY

GROSS BETA IN SOLIDS

GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. S00W235A00
Contract SDG K1185

SULTS

LE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Beta
aration batch 6148-076					
088-01	93		7796-001	J16MF8	U
088-02	93		7796-002	J16MF9	18.0
088-03	93		7796-003	J16MH0	16.0
088-04	93		7796-004	J16MH1	19.5
088-05	93		7796-005	J16ML8	13.0
088-06	93		7796-006	Lab Control Sample	ok
088-07	93		7796-007	Method Blank	U
088-08	93		7796-008	Duplicate (R804088-03)	ok

nal values and limits from method RDLs (pCi/g) 15.0
N AncillaryFac&190-DR OtherSolid

THOD PERFORMANCE

LE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
aration batch 6148-076			2σ prep error 11.0 % Reference Lab Notebook #6148, pg. 76													
088-01	93		J16MF8	8.75	0.100			43		100			10	04/23/08	04/24	GRB-213
088-02	93		J16MF9	8.54	0.100			50		100			10	04/23/08	04/24	GRB-214
088-03	93		J16MH0	5.42	0.100			40		100			10	04/23/08	04/24	GRB-216
088-04	93		J16MH1	7.44	0.100			49		100			10	04/23/08	04/24	GRB-114
088-05	93		J16ML8	5.74	0.100			51		100			10	04/23/08	04/24	GRB-209
088-06	93		Lab Control Sample	5.72	0.100			60		100				04/23/08	04/24	GRB-210
088-07	93		Method Blank	5.73	0.100			60		100				04/23/08	04/24	GRB-211
088-08	93		Duplicate (R804088-03)	8.73	0.100			41		100			10	04/23/08	04/24	GRB-213
nal values and limits from method				15.0	0.100			5-250		100			180			

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

AVERAGES ± 2 SD FOR 8 SAMPLES
MDA 7.01 ± 3.02
RESIDUE 49 ± 16

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1185

Test GAM Matrix SOLID
SDG 7796
ontact Melissa C. Mannion

LAB METHOD SUMMARY

GAMMA SCAN

GAMMA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1185

SULTS

LE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Cobalt 60	Cesium 137
aration batch 6148-076						
088-01			7796-001	J16MF8	U	0.054
088-02			7796-002	J16MF9	U	0.059
088-03			7796-003	J16MH0	U	0.030
088-04			7796-004	J16MH1	U	0.057
088-05			7796-005	J16ML8	0.026	0.042
088-06			7796-006	Lab Control Sample	ok	ok
088-07			7796-007	Method Blank	U	U
088-08			7796-008	Duplicate (R804088-03)	- U	ok
nal values and limits from method				RDLs (pCi/g)	0.050	0.100

N AncillaryFac&190-DR OtherSolid

THOD PERFORMANCE

LE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
aration batch 6148-076			2σ prep error 7.0 % Reference Lab Notebook #6148, pg. 76													
088-01			J16MF8	4.72	817					208			4	04/18/08	04/18	02,04,00
088-02			J16MF9	4.78	839					208			4	04/18/08	04/18	MB,05,00
088-03			J16MH0	4.12	892					209			4	04/18/08	04/18	MB,06,00
088-04			J16MH1	3.73	848					209			4	04/18/08	04/18	MB,07,00
088-05			J16ML8	3.42	975					209			4	04/18/08	04/18	MB,08,00
088-06			Lab Control Sample	0.004	816					903				04/18/08	04/18	01,02,00
088-07			Method Blank	1.62	816					903				04/18/08	04/18	01,04,00
088-08			Duplicate (R804088-03)	1.69	892					903			4	04/18/08	04/18	MB,07,00
nal values and limits from method				0.050	816					100			180			

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

AVERAGES ± 2 SD MDA 3.01 ± 3.44
FOR 8 SAMPLES YIELD ____ ± ____

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

SDG 7796
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1185

SAMPLE SUMMARY

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

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

The following notes apply to these reports:

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

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

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

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

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

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

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

SDG 7796
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1185

PREPARATION BATCH SUMMARY

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

The following notes apply to this report:

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

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

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

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

  These qualifiers should be reviewed as follows:

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

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

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

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

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

SDG 7796
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1185

WORK SUMMARY

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

The following notes apply to this report:

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

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

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

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

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

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

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

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).

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 7796
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GUIDE, cont.

Client Hanford
Contract No. S00W235A00
Case no SDG_K1185

DATA SHEET

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

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

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

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

SDG 7796
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1185

LAB CONTROL SAMPLE

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

The following notes apply to this report:

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

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

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

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

* The first, computed limits for the recovery reflect:

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

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

  2. The error of ADDED.

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

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

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

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

SDG 7796
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1185

DUPLICATE

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

The following notes apply to this report:

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

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

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

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

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

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

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

  This value reported for this limit is at most 999.

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

  1. A fixed percentage specified in the protocol.

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
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SDG 7796
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GUIDE, cont.

Client Hanford
Contract No. S00W235A00
Case no SDG_K1185

DUPLICATE

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

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

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

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

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

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

SDG 7796
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1185

MATRIX SPIKE

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

The following notes apply to this report:

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

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

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

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

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

* The first, computed limits for the recovery reflect:

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

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

  2. The error of ADDED.

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

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

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

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.

SDG 7796
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1185

METHOD SUMMARY

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

The following notes apply to this report:

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

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

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

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

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

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

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

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

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

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-006-172	Page 1 of 1

Collector: Amy Hood/ Larry J Sherman	Company Contact: Amy Hood	Telephone No.: 373-9759	Project Coordinator: KESSNER, JH
Price Code: 9K	Data Turnaround: 15 Days		
Project Designation: 100-N Ancillary Facilities & 190-DR Other Solid Sampling f	Sampling Location: 183-ND Resin Disposal Pit K1185 (7796)		SAF No.: RC-006
Ice Chest No.	Field Logbook No.: EL-1516-12	COA: RD4MXX2F00	Method of Shipment
Shipped To: ~~AH~~ 4.14.08 EBERLINE SERVICES ~~LIONVILLE~~	Offsite Property No.		Bill of Lading/Air Bill No.: SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

From Non Rad Area ~~AH~~ 4.14.08

Special Handling and/or Storage

N/A

Preservation	None	None	None	None	None	
Type of Container	G/P	G	~~G/P~~	~~G/P~~	~~G/P~~ G AH 4.14.08	
No. of Container(s)	1	1	~~1~~	~~1~~	~~1~~ 1	
Volume	15g	~~60g~~	~~5g~~	~~5g~~	~~750g~~ ~~AH~~ 1000 mL 4.14.08	
SAMPLE ANALYSIS	See item (1) in Special Instructions.	pH - 150.1	Gross Alpha	Gross Beta	See item (2) in Special Instructions.	

AH 4.14.08

Sample No.	Matrix *	Sample Date	Sample Time					
J16MF8	OTHER SOLID	4.14.08	0950	X	X	X	X	X
J16MF9	OTHER SOLID		1000	X	X	X	X	X
J16MH0	OTHER SOLID		1020	X	X	X	X	X
J16MH1	OTHER SOLID		1030	X	X	X	X	X
J16ML8	OTHER SOLID		1040	X	X	X	X	X

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
~~Larry J Sherman~~ Larry Sherman	4/14/08 1100	Amy Hood	4.14.08 1100
Amy Hood	4.14.08 1610	1060 3A	4.14.08 1610
FED EX			04/16/08 09:00

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Copper, Lead, Lithium, Manganese, Nickel, Selenium, Silver, Sodium, Thallium, Vanadium}; Mercury - 7471 - (CV)

(2) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Antimony-125, Barium-133, Radium-226, Radium-228}

perform GA/GB/GEA all from same 1L bottle.

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

Matrix *

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

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

WCH-EE-011

EBERLINE SERVICES

RICHMOND, CA LABORATORY

SAMPLE RECEIPT CHECKLIST

JK 4/16/08

Client: W.C. HANFORD City RICHLAND State WA

Date/Time received 04/16/08 09:00 CoC No. RC-006-172

Container I.D. No. ERC-02-407 Requested TAT (Days) 15 P.O. Received Yes [ ] No [ ]

INSPECTION

1. Custody seals on shipping container intact? Yes [X] No [ ] N/A [ ]
2. Custody seals on shipping container dated & signed? Yes [X] No [ ] N/A [ ]
3. Custody seals on sample containers intact? Yes [X] No [ ] N/A [ ]
4. Custody seals on sample containers dated & signed? Yes [X] No [ ] N/A [ ]
5. Packing material is: Wet [ ] Dry [X]
6. Number of samples in shipping container: 5 Sample Matrix X OTHER SOLID
7. Number of containers per sample: 1 (Or see CoC _____)
8. Samples are in correct container Yes [X] No [ ]
9. Paperwork agrees with samples? Yes [X] No [ ]
10. Samples have: Tape [ ] Hazard labels [ ] Rad labels [ ] Appropriate sample labels [X]
11. Samples are: In good condition [X] Leaking [ ] Broken Container [ ] Missing [ ]
12. Samples are: Preserved [ ] Not preserved [ ] pH _____ Preservative _____
13. Describe any anomalies: receive/
Fed Ex did not relinquish samples. CoC broken.
WCH is aware of broken CoC - process samples as usual, per Joan Kessner WCH mem
14. Was P.M. notified of any anomalies? 4/17/8 Yes [ ] No [ ] Date _____
15. Inspected by [signature] Date: 04/16/08 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
All Samples	<60						

Ion Chamber Ser. No. _____ Calibration date _____

Alpha Meter Ser. No. _____ Calibration date _____

Beta/Gamma Meter Ser. No. 100482 Calibration date 04 MAY 07

LIONVILLE LABORATORY INC.

13 May 2008

RECEIVED MAY 2008

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

Subject: Analytical Data Package

Dear Ms. Kessner:

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

LvLI Batch #	0804L932
SDG #	K1185
SAF #	RC-006
Date Received	4/16/08
# Samples	5
Matrix	OTHER SOLID
Volatiles	
Semivolatiles	
Pest/PCB	
Glycols	
DRO/KRO/GRO	
GC Alcohols	
Herbicides	
Metals	X
Inorganics	X

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

Sincerely,
Lionville Laboratory Incorporated

Orlette S. Johnson
Project Manager

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

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

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-006 K1185

RECEIVED MAY 2008

DATE RECEIVED: 04/16/08 LVL LOT # :0804[illegible]

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J16MF8						
SILVER, TOTAL	001	SO	08L0174	04/14/08	04/30/08	05/01/08
SILVER, TOTAL	001 REP	SO	08L0174	04/14/08	04/30/08	05/01/08
SILVER, TOTAL	001 MS	SO	08L0174	04/14/08	04/30/08	05/01/08
ARSENIC, TOTAL	001	SO	08L0174	04/14/08	04/30/08	05/01/08
ARSENIC, TOTAL	001 REP	SO	08L0174	04/14/08	04/30/08	05/01/08
ARSENIC, TOTAL	001 MS	SO	08L0174	04/14/08	04/30/08	05/01/08
BORON, TOTAL	001	SO	08L0174	04/14/08	04/30/08	05/01/08
BORON, TOTAL	001 REP	SO	08L0174	04/14/08	04/30/08	05/01/08
BORON, TOTAL	001 MS	SO	08L0174	04/14/08	04/30/08	05/01/08
BARIUM, TOTAL	001	SO	08L0174	04/14/08	04/30/08	05/01/08
BARIUM, TOTAL	001 REP	SO	08L0174	04/14/08	04/30/08	05/01/08
BARIUM, TOTAL	001 MS	SO	08L0174	04/14/08	04/30/08	05/01/08
BERYLLIUM, TOTAL	001	SO	08L0174	04/14/08	04/30/08	05/01/08
BERYLLIUM, TOTAL	001 REP	SO	08L0174	04/14/08	04/30/08	05/01/08
BERYLLIUM, TOTAL	001 MS	SO	08L0174	04/14/08	04/30/08	05/01/08
CALCIUM, TOTAL	001	SO	08L0174	04/14/08	04/30/08	05/01/08
CALCIUM, TOTAL	001 REP	SO	08L0174	04/14/08	04/30/08	05/01/08
CALCIUM, TOTAL	001 MS	SO	08L0174	04/14/08	04/30/08	05/01/08
CADMIUM, TOTAL	001	SO	08L0174	04/14/08	04/30/08	05/01/08
CADMIUM, TOTAL	001 REP	SO	08L0174	04/14/08	04/30/08	05/01/08
CADMIUM, TOTAL	001 MS	SO	08L0174	04/14/08	04/30/08	05/01/08
CHROMIUM, TOTAL	001	SO	08L0174	04/14/08	04/30/08	05/01/08
CHROMIUM, TOTAL	001 REP	SO	08L0174	04/14/08	04/30/08	05/01/08
CHROMIUM, TOTAL	001 MS	SO	08L0174	04/14/08	04/30/08	05/01/08
COPPER, TOTAL	001	SO	08L0174	04/14/08	04/30/08	05/01/08
COPPER, TOTAL	001 REP	SO	08L0174	04/14/08	04/30/08	05/01/08
COPPER, TOTAL	001 MS	SO	08L0174	04/14/08	04/30/08	05/01/08
MERCURY, TOTAL	001	SO	08C0075	04/14/08	04/28/08	04/29/08
MERCURY, TOTAL	001 REP	SO	08C0075	04/14/08	04/28/08	04/29/08
MERCURY, TOTAL	001 MS	SO	08C0075	04/14/08	04/28/08	04/29/08
LITHIUM, TOTAL	001	SO	08L0174	04/14/08	04/30/08	05/01/08
LITHIUM, TOTAL	001 REP	SO	08L0174	04/14/08	04/30/08	05/01/08
LITHIUM, TOTAL	001 MS	SO	08L0174	04/14/08	04/30/08	05/01/08
MANGANESE, TOTAL	001	SO	08L0174	04/14/08	04/30/08	05/01/08
MANGANESE, TOTAL	001 REP	SO	08L0174	04/14/08	04/30/08	05/01/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-006 K1185

DATE RECEIVED: 04/16/08 LVL LOT # :0804L932

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MANGANESE, TOTAL	001 MS	SO	08L0174	04/14/08	04/30/08	05/01/08
SODIUM, TOTAL	001	SO	08L0174	04/14/08	04/30/08	05/01/08
SODIUM, TOTAL	001 REP	SO	08L0174	04/14/08	04/30/08	05/01/08
SODIUM, TOTAL	001 MS	SO	08L0174	04/14/08	04/30/08	05/01/08
NICKEL, TOTAL	001	SO	08L0174	04/14/08	04/30/08	05/01/08
NICKEL, TOTAL	001 REP	SO	08L0174	04/14/08	04/30/08	05/01/08
NICKEL, TOTAL	001 MS	SO	08L0174	04/14/08	04/30/08	05/01/08
LEAD, TOTAL	001	SO	08L0174	04/14/08	04/30/08	05/01/08
LEAD, TOTAL	001 REP	SO	08L0174	04/14/08	04/30/08	05/01/08
LEAD, TOTAL	001 MS	SO	08L0174	04/14/08	04/30/08	05/01/08
ANTIMONY, TOTAL	001	SO	08L0174	04/14/08	04/30/08	05/01/08
ANTIMONY, TOTAL	001 REP	SO	08L0174	04/14/08	04/30/08	05/01/08
ANTIMONY, TOTAL	001 MS	SO	08L0174	04/14/08	04/30/08	05/01/08
SELENIUM, TOTAL	001	SO	08L0174	04/14/08	04/30/08	05/01/08
SELENIUM, TOTAL	001 REP	SO	08L0174	04/14/08	04/30/08	05/01/08
SELENIUM, TOTAL	001 MS	SO	08L0174	04/14/08	04/30/08	05/01/08
THALLIUM, TOTAL	001	SO	08L0174	04/14/08	04/30/08	05/01/08
THALLIUM, TOTAL	001 REP	SO	08L0174	04/14/08	04/30/08	05/01/08
THALLIUM, TOTAL	001 MS	SO	08L0174	04/14/08	04/30/08	05/01/08
VANADIUM, TOTAL	001	SO	08L0174	04/14/08	04/30/08	05/01/08
VANADIUM, TOTAL	001 REP	SO	08L0174	04/14/08	04/30/08	05/01/08
VANADIUM, TOTAL	001 MS	SO	08L0174	04/14/08	04/30/08	05/01/08
J16MF9						
SILVER, TOTAL	002	SO	08L0174	04/14/08	04/30/08	05/01/08
ARSENIC, TOTAL	002	SO	08L0174	04/14/08	04/30/08	05/01/08
BORON, TOTAL	002	SO	08L0174	04/14/08	04/30/08	05/01/08
BARIUM, TOTAL	002	SO	08L0174	04/14/08	04/30/08	05/01/08
BERYLLIUM, TOTAL	002	SO	08L0174	04/14/08	04/30/08	05/01/08
CALCIUM, TOTAL	002	SO	08L0174	04/14/08	04/30/08	05/01/08
CADMIUM, TOTAL	002	SO	08L0174	04/14/08	04/30/08	05/01/08
CHROMIUM, TOTAL	002	SO	08L0174	04/14/08	04/30/08	05/01/08
COPPER, TOTAL	002	SO	08L0174	04/14/08	04/30/08	05/01/08
MERCURY, TOTAL	002	SO	08C0075	04/14/08	04/28/08	04/29/08
LITHIUM, TOTAL	002	SO	08L0174	04/14/08	04/30/08	05/01/08
MANGANESE, TOTAL	002	SO	08L0174	04/14/08	04/30/08	05/01/08
SODIUM, TOTAL	002	SO	08L0174	04/14/08	04/30/08	05/01/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-006 K1185

DATE RECEIVED: 04/16/08 LVL LOT # :0804L932

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
NICKEL, TOTAL	002	SO	08L0174	04/14/08	04/30/08	05/01/08
LEAD, TOTAL	002	SO	08L0174	04/14/08	04/30/08	05/01/08
ANTIMONY, TOTAL	002	SO	08L0174	04/14/08	04/30/08	05/01/08
SELENIUM, TOTAL	002	SO	08L0174	04/14/08	04/30/08	05/01/08
THALLIUM, TOTAL	002	SO	08L0174	04/14/08	04/30/08	05/01/08
VANADIUM, TOTAL	002	SO	08L0174	04/14/08	04/30/08	05/01/08
J16MH0						
SILVER, TOTAL	003	SO	08L0174	04/14/08	04/30/08	05/01/08
ARSENIC, TOTAL	003	SO	08L0174	04/14/08	04/30/08	05/01/08
BORON, TOTAL	003	SO	08L0174	04/14/08	04/30/08	05/01/08
BARIUM, TOTAL	003	SO	08L0174	04/14/08	04/30/08	05/01/08
BERYLLIUM, TOTAL	003	SO	08L0174	04/14/08	04/30/08	05/01/08
CALCIUM, TOTAL	003	SO	08L0174	04/14/08	04/30/08	05/01/08
CADMIUM, TOTAL	003	SO	08L0174	04/14/08	04/30/08	05/01/08
CHROMIUM, TOTAL	003	SO	08L0174	04/14/08	04/30/08	05/01/08
COPPER, TOTAL	003	SO	08L0174	04/14/08	04/30/08	05/01/08
MERCURY, TOTAL	003	SO	08C0075	04/14/08	04/28/08	04/29/08
LITHIUM, TOTAL	003	SO	08L0174	04/14/08	04/30/08	05/01/08
MANGANESE, TOTAL	003	SO	08L0174	04/14/08	04/30/08	05/01/08
SODIUM, TOTAL	003	SO	08L0174	04/14/08	04/30/08	05/01/08
NICKEL, TOTAL	003	SO	08L0174	04/14/08	04/30/08	05/01/08
LEAD, TOTAL	003	SO	08L0174	04/14/08	04/30/08	05/01/08
ANTIMONY, TOTAL	003	SO	08L0174	04/14/08	04/30/08	05/01/08
SELENIUM, TOTAL	003	SO	08L0174	04/14/08	04/30/08	05/01/08
THALLIUM, TOTAL	003	SO	08L0174	04/14/08	04/30/08	05/01/08
VANADIUM, TOTAL	003	SO	08L0174	04/14/08	04/30/08	05/01/08
J16MH1						
SILVER, TOTAL	004	SO	08L0174	04/14/08	04/30/08	05/01/08
ARSENIC, TOTAL	004	SO	08L0174	04/14/08	04/30/08	05/01/08
BORON, TOTAL	004	SO	08L0174	04/14/08	04/30/08	05/01/08
BARIUM, TOTAL	004	SO	08L0174	04/14/08	04/30/08	05/01/08
BERYLLIUM, TOTAL	004	SO	08L0174	04/14/08	04/30/08	05/01/08
CALCIUM, TOTAL	004	SO	08L0174	04/14/08	04/30/08	05/01/08
CADMIUM, TOTAL	004	SO	08L0174	04/14/08	04/30/08	05/01/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-006 K1185

DATE RECEIVED: 04/16/08 LVL LOT # :0804L932

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
CHROMIUM, TOTAL	004	SO	08L0174	04/14/08	04/30/08	05/01/08
COPPER, TOTAL	004	SO	08L0174	04/14/08	04/30/08	05/01/08
MERCURY, TOTAL	004	SO	08C0075	04/14/08	04/28/08	04/29/08
LITHIUM, TOTAL	004	SO	08L0174	04/14/08	04/30/08	05/01/08
MANGANESE, TOTAL	004	SO	08L0174	04/14/08	04/30/08	05/01/08
SODIUM, TOTAL	004	SO	08L0174	04/14/08	04/30/08	05/01/08
NICKEL, TOTAL	004	SO	08L0174	04/14/08	04/30/08	05/01/08
LEAD, TOTAL	004	SO	08L0174	04/14/08	04/30/08	05/01/08
ANTIMONY, TOTAL	004	SO	08L0174	04/14/08	04/30/08	05/01/08
SELENIUM, TOTAL	004	SO	08L0174	04/14/08	04/30/08	05/01/08
THALLIUM, TOTAL	004	SO	08L0174	04/14/08	04/30/08	05/01/08
VANADIUM, TOTAL	004	SO	08L0174	04/14/08	04/30/08	05/01/08
J16ML8						
SILVER, TOTAL	005	SO	08L0174	04/14/08	04/30/08	05/01/08
ARSENIC, TOTAL	005	SO	08L0174	04/14/08	04/30/08	05/01/08
BORON, TOTAL	005	SO	08L0174	04/14/08	04/30/08	05/01/08
BARIUM, TOTAL	005	SO	08L0174	04/14/08	04/30/08	05/01/08
BERYLLIUM, TOTAL	005	SO	08L0174	04/14/08	04/30/08	05/01/08
CALCIUM, TOTAL	005	SO	08L0174	04/14/08	04/30/08	05/01/08
CADMIUM, TOTAL	005	SO	08L0174	04/14/08	04/30/08	05/01/08
CHROMIUM, TOTAL	005	SO	08L0174	04/14/08	04/30/08	05/01/08
COPPER, TOTAL	005	SO	08L0174	04/14/08	04/30/08	05/01/08
MERCURY, TOTAL	005	SO	08C0075	04/14/08	04/28/08	04/29/08
LITHIUM, TOTAL	005	SO	08L0174	04/14/08	04/30/08	05/01/08
MANGANESE, TOTAL	005	SO	08L0174	04/14/08	04/30/08	05/01/08
SODIUM, TOTAL	005	SO	08L0174	04/14/08	04/30/08	05/01/08
NICKEL, TOTAL	005	SO	08L0174	04/14/08	04/30/08	05/01/08
LEAD, TOTAL	005	SO	08L0174	04/14/08	04/30/08	05/01/08
ANTIMONY, TOTAL	005	SO	08L0174	04/14/08	04/30/08	05/01/08
SELENIUM, TOTAL	005	SO	08L0174	04/14/08	04/30/08	05/01/08
THALLIUM, TOTAL	005	SO	08L0174	04/14/08	04/30/08	05/01/08
VANADIUM, TOTAL	005	SO	08L0174	04/14/08	04/30/08	05/01/08

AB QC:

SILVER LABORATORY	LC1 BS	S	08L0174	N/A	04/30/08	04/30/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-006 K1185

DATE RECEIVED: 04/16/08 LVL LOT # :0804L932

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SILVER, TOTAL	MB1	S	08L0174	N/A	04/30/08	04/30/08
ARSENIC LABORATORY	LC1 BS	S	08L0174	N/A	04/30/08	04/30/08
ARSENIC, TOTAL	MB1	S	08L0174	N/A	04/30/08	04/30/08
BORON LABORATORY	LC1 BS	S	08L0174	N/A	04/30/08	04/30/08
BORON, TOTAL	MB1	S	08L0174	N/A	04/30/08	04/30/08
BARIUM LABORATORY	LC1 BS	S	08L0174	N/A	04/30/08	04/30/08
BARIUM, TOTAL	MB1	S	08L0174	N/A	04/30/08	04/30/08
BERYLLIUM LABORATORY	LC1 BS	S	08L0174	N/A	04/30/08	04/30/08
BERYLLIUM, TOTAL	MB1	S	08L0174	N/A	04/30/08	04/30/08
CALCIUM LABORATORY	LC1 BS	S	08L0174	N/A	04/30/08	04/30/08
CALCIUM, TOTAL	MB1	S	08L0174	N/A	04/30/08	04/30/08
CADMIUM LABORATORY	LC1 BS	S	08L0174	N/A	04/30/08	04/30/08
CADMIUM, TOTAL	MB1	S	08L0174	N/A	04/30/08	04/30/08
CHROMIUM LABORATORY	LC1 BS	S	08L0174	N/A	04/30/08	04/30/08
CHROMIUM, TOTAL	MB1	S	08L0174	N/A	04/30/08	04/30/08
COPPER LABORATORY	LC1 BS	S	08L0174	N/A	04/30/08	04/30/08
COPPER, TOTAL	MB1	S	08L0174	N/A	04/30/08	04/30/08
MERCURY LABORATORY	LC1 BS	S	08C0075	N/A	04/28/08	04/29/08
MERCURY, TOTAL	MB1	S	08C0075	N/A	04/28/08	04/29/08
LITHIUM LABORATORY	LC1 BS	S	08L0174	N/A	04/30/08	04/30/08
LITHIUM, TOTAL	MB1	S	08L0174	N/A	04/30/08	04/30/08
MANGANESE LABORATORY	LC1 BS	S	08L0174	N/A	04/30/08	04/30/08
MANGANESE, TOTAL	MB1	S	08L0174	N/A	04/30/08	04/30/08
SODIUM LABORATORY	LC1 BS	S	08L0174	N/A	04/30/08	05/01/08
SODIUM, TOTAL	MB1	S	08L0174	N/A	04/30/08	05/01/08
NICKEL LABORATORY	LC1 BS	S	08L0174	N/A	04/30/08	04/30/08
NICKEL, TOTAL	MB1	S	08L0174	N/A	04/30/08	04/30/08
LEAD LABORATORY	LC1 BS	S	08L0174	N/A	04/30/08	04/30/08
LEAD, TOTAL	MB1	S	08L0174	N/A	04/30/08	04/30/08
ANTIMONY LABORATORY	LC1 BS	S	08L0174	N/A	04/30/08	04/30/08
ANTIMONY, TOTAL	MB1	S	08L0174	N/A	04/30/08	04/30/08
SELENIUM LABORATORY	LC1 BS	S	08L0174	N/A	04/30/08	04/30/08
SELENIUM, TOTAL	MB1	S	08L0174	N/A	04/30/08	04/30/08
THALLIUM LABORATORY	LC1 BS	S	08L0174	N/A	04/30/08	04/30/08
THALLIUM, TOTAL	MB1	S	08L0174	N/A	04/30/08	04/30/08
VANADIUM LABORATORY	LC1 BS	S	08L0174	N/A	04/30/08	04/30/08
VANADIUM, TOTAL	MB1	S	08L0174	N/A	04/30/08	04/30/08

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-006
LVL#: 0804L932
SDG/SAF#: K1185/RC-006

W.O.#: 11343-606-001-9999-00
Date Received: 04-16-08

METALS CASE NARRATIVE

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

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

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

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

   All samples were rerun on a different instrument for Sodium. All reruns were due to out of control ICVs and CCVs for Sodium.

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

4. All Initial and Continuing Calibration Verifications (ICV/CCVs) were within the 90-110% control limits (80-120% for Mercury).

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

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

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

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

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 24 pages.

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

9. The matrix spike (MS) recoveries for 5 analytes were outside the 75-125% control limits. Refer to the Inorganics Accuracy Report.

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

Sample ID	Element	PDS Concentration (ppb)	PDS % Recovery
J16MF8	Boron	100	103.7
	Calcium	22,000	100.8
	Manganese	1,000	106.5
	Vanadium	1,000	103.7
	Antimony	100	95.2

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

12. For the purposes of this report, the data has been reported to the 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

5/7/08
Date

alm/m04-932

LvLI
LIONVILLE LABORATORY INC.

METALS METHOD GLOSSARY

he following methods are used as reference for the digestion and analysis of samples contained within tl

ot#: 0804L932

eaching Procedure: __1310 __1311 __1312 __Other:_____

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

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

Metals Analysis Methods

	SW846		EPA		STD MTD	EPA OSWR	USATHAMA
luminum	__6010B		__200.7				__99
ntimony	✓6010B	__7041 [5]	__200.7	__204.2			__99
rsenic	✓6010B	__7060A [5]	__200.7	__206.2	__3113B		__99
arium	✓6010B		__200.7				__99
eryllium	✓6010B		__200.7				__99
ismuth	__6010B [1]		__200.7 [1]			__1620	__99
oron	✓6010B		__200.7				__99
admium	✓6010B	__7131A [5]	__200.7	__213.2			__99
alcium	✓6010B		__200.7				__99
hromium	✓6010B	__7191 [5]	__200.7	__218.2			__SS17
obalt	__6010B		__200.7				__99
opper	✓6010B	__7211 [5]	__200.7	__220.2			__99
ron	__6010B		__200.7				__99
ead	✓6010B	__7421 [5]	__200.7	__239.2	__3113B		__99
ithium	✓6010B	__7430 [4]	__200.7			__1620	__99
agnesium	__6010B		__200.7				__99
anganese	✓6010B		__200.7				__99
ercury	__7470A [3]	✓7471A [3]	__245.1 [2]	__245.5 [2]			__99
olybdenum	__6010B		__200.7				__99
ickel	✓6010B		__200.7				__99
otassium	__6010B	__7610 [4]	__200.7	__258.1 [4]			__99
are Earths	__6010B [1]		__200.7 [1]			__1620	__99
elenium	✓6010B	__7740 [5]	__200.7	__270.2	__3113B		__99
ilicon	__6010B [1]		__200.7			__1620	__99
ilica	__6010B		__200.7			__1620	__99
ilver	✓6010B	__7761 [5]	__200.7	__272.2			__99
odium	✓6010B	__7770 [4]	__200.7	__273.1 [4]			__99
trontium	__6010B		__200.7				__99
hallium	✓6010B	__7841 [5]	__200.7	__279.2	__200.9		__99
in	__6010B		__200.7				__99
itanium	__6010B		__200.7				__99
ranium	__6010B [1]		__200.7 [1]			__1620	__99
anadium	✓6010B		__200.7				__99
inc	__6010B		__200.7				__99
irconium	__6010B [1]		__200.7 [1]			__1620	__99

Other:_____ Method:_____

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

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

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

ABBREVIATIONS

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

ANALYTICAL METAL METHODS

1. Not included in the method element list.

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

3. Flame AA.

4. Graphite Furnace AA.

L-WI-033/N-04/98

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 05/02/08

CLIENT: TNUHANFORD RC-006 K1185 LVL LOT #: 0804L932

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J16MF8	Silver, Total	0.06 u	MG/KG	0.06	1.0
		Arsenic, Total	4.0	MG/KG	0.29	1.0
		Boron, Total	43.2	MG/KG	0.29	1.0
		Barium, Total	38.3	MG/KG	0.06	1.0
		Beryllium, Total	0.09	MG/KG	0.03	1.0
		Calcium, Total	2390	MG/KG	2.3	1.0
		Cadmium, Total	0.48	MG/KG	0.03	1.0
		Chromium, Total	19.5	MG/KG	0.12	1.0
		Copper, Total	9.6	MG/KG	0.12	1.0
		Mercury, Total	0.009u	MG/KG	0.009	1.0
		Lithium, Total	3.9	MG/KG	0.02	1.0
		Manganese, Total	172	MG/KG	0.02	1.0
		Sodium, Total	167	MG/KG	1.2	1.0
		Nickel, Total	7.7	MG/KG	0.12	1.0
		Lead, Total	11.2	MG/KG	0.17	1.0
		Antimony, Total	0.17 u	MG/KG	0.17	1.0
		Selenium, Total	0.35 u	MG/KG	0.35	1.0
		Thallium, Total	0.35 u	MG/KG	0.35	1.0
		Vanadium, Total	24.9	MG/KG	0.08	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 05/02/08

CLIENT: TNUHANFORD RC-006 K1185 LVL LOT #: 0804L932

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-002	J16MF9	Silver, Total	0.1 u	MG/KG	0.1	1.0
		Arsenic, Total	1.9	MG/KG	0.48	1.0
		Boron, Total	3.3	MG/KG	0.48	1.0
		Barium, Total	39.3	MG/KG	0.1	1.0
		Beryllium, Total	0.07	MG/KG	0.05	1.0
		Calcium, Total	4190	MG/KG	3.8	1.0
		Cadmium, Total	0.08	MG/KG	0.05	1.0
		Chromium, Total	8.3	MG/KG	0.19	1.0
		Copper, Total	13.6	MG/KG	0.19	1.0
		Mercury, Total	0.009u	MG/KG	0.009	1.0
		Lithium, Total	4.5	MG/KG	0.04	1.0
		Manganese, Total	224	MG/KG	0.04	1.0
		Sodium, Total	128	MG/KG	1.9	1.0
		Nickel, Total	8.8	MG/KG	0.19	1.0
		Lead, Total	11.2	MG/KG	0.29	1.0
		Antimony, Total	0.29 u	MG/KG	0.29	1.0
		Selenium, Total	0.57 u	MG/KG	0.57	1.0
		Thallium, Total	0.57 u	MG/KG	0.57	1.0
		Vanadium, Total	41.2	MG/KG	0.13	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 05/02/08

CLIENT: TNUHANFORD RC-006 K1185 LVL LOT #: 0804L932

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-003	J16MH0	Silver, Total	0.09 u	MG/KG	0.09	1.0
		Arsenic, Total	2.5	MG/KG	0.44	1.0
		Boron, Total	2.1	MG/KG	0.44	1.0
		Barium, Total	48.5	MG/KG	0.09	1.0
		Beryllium, Total	0.08	MG/KG	0.04	1.0
		Calcium, Total	5810	MG/KG	3.5	1.0
		Cadmium, Total	0.11	MG/KG	0.04	1.0
		Chromium, Total	8.3	MG/KG	0.17	1.0
		Copper, Total	13.8	MG/KG	0.17	1.0
		Mercury, Total	0.009u	MG/KG	0.009	1.0
		Lithium, Total	6.1	MG/KG	0.03	1.0
		Manganese, Total	269	MG/KG	0.03	1.0
		Sodium, Total	188	MG/KG	1.7	1.0
		Nickel, Total	11.0	MG/KG	0.17	1.0
		Lead, Total	7.6	MG/KG	0.26	1.0
		Antimony, Total	0.26 u	MG/KG	0.26	1.0
		Selenium, Total	0.52 u	MG/KG	0.52	1.0
		Thallium, Total	0.52 u	MG/KG	0.52	1.0
		Vanadium, Total	44.7	MG/KG	0.12	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 05/02/08

CLIENT: TNUHANFORD RC-006 K1185 LVL LOT #: 0804L932

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-004	J16MH1	Silver, Total	0.08 u	MG/KG	0.08	1.0
		Arsenic, Total	2.4	MG/KG	0.41	1.0
		Boron, Total	3.5	MG/KG	0.41	1.0
		Barium, Total	65.7	MG/KG	0.08	1.0
		Beryllium, Total	0.14	MG/KG	0.04	1.0
		Calcium, Total	7230	MG/KG	3.3	1.0
		Cadmium, Total	0.24	MG/KG	0.04	1.0
		Chromium, Total	12.2	MG/KG	0.16	1.0
		Copper, Total	20.9	MG/KG	0.16	1.0
		Mercury, Total	0.07	MG/KG	0.009	1.0
		Lithium, Total	6.9	MG/KG	0.03	1.0
		Manganese, Total	276	MG/KG	0.03	1.0
		Sodium, Total	132	MG/KG	1.6	1.0
		Nickel, Total	12.3	MG/KG	0.16	1.0
		Lead, Total	14.8	MG/KG	0.25	1.0
		Antimony, Total	0.25 u	MG/KG	0.25	1.0
		Selenium, Total	0.49 u	MG/KG	0.49	1.0
		Thallium, Total	0.49 u	MG/KG	0.49	1.0
		Vanadium, Total	38.6	MG/KG	0.11	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 05/02/08

CLIENT: TNUHANFORD RC-006 K1185 LVL LOT #: 0804L932

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-005	J16ML8	Silver, Total	0.08 u	MG/KG	0.08	1.0
		Arsenic, Total	1.3	MG/KG	0.38	1.0
		Boron, Total	1.7	MG/KG	0.38	1.0
		Barium, Total	27.8	MG/KG	0.08	1.0
		Beryllium, Total	0.08	MG/KG	0.04	1.0
		Calcium, Total	1690	MG/KG	3.1	1.0
		Cadmium, Total	0.74	MG/KG	0.04	1.0
		Chromium, Total	7.1	MG/KG	0.15	1.0
		Copper, Total	9.2	MG/KG	0.15	1.0
		Mercury, Total	0.009u	MG/KG	0.009	1.0
		Lithium, Total	2.8	MG/KG	0.03	1.0
		Manganese, Total	183	MG/KG	0.03	1.0
		Sodium, Total	75.7	MG/KG	1.5	1.0
		Nickel, Total	7.8	MG/KG	0.15	1.0
		Lead, Total	9.8	MG/KG	0.23	1.0
		Antimony, Total	0.23 u	MG/KG	0.23	1.0
		Selenium, Total	0.46 u	MG/KG	0.46	1.0
		Thallium, Total	0.46 u	MG/KG	0.46	1.0
		Vanadium, Total	22.4	MG/KG	0.11	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 05/02/08

CLIENT: TNUHANFORD RC-006 K1185 LVL LOT #: 0804L932

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	08L0174-MB1	Silver, Total	0.10 u	MG/KG	0.10	1.0
		Arsenic, Total	0.50 u	MG/KG	0.50	1.0
		Boron, Total	0.50 u	MG/KG	0.50	1.0
		Barium, Total	0.21	MG/KG	0.10	1.0
		Beryllium, Total	0.05 u	MG/KG	0.05	1.0
		Calcium, Total	18.2	MG/KG	4.0	1.0
		Cadmium, Total	0.05 u	MG/KG	0.05	1.0
		Chromium, Total	0.20 u	MG/KG	0.20	1.0
		Copper, Total	0.20 u	MG/KG	0.20	1.0
		Lithium, Total	0.04 u	MG/KG	0.04	1.0
		Manganese, Total	0.06	MG/KG	0.04	1.0
		Sodium, Total	19.6	MG/KG	2.0	1.0
		Nickel, Total	0.20 u	MG/KG	0.20	1.0
		Lead, Total	0.30 u	MG/KG	0.30	1.0
		Antimony, Total	0.34	MG/KG	0.30	1.0
		Selenium, 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
BLANK1	08C0075-MB1	Mercury, Total	0.01 u	MG/KG	0.01	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 05/02/08

CLIENT: TNUHANFORD RC-006 K1185

LVL LOT #: 0804L932

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J16MF8	Silver, Total	2.2	0.06u	2.6	84.6	1.0
		Arsenic, Total	104	4.0	104	96.2	1.0
		Boron, Total	136	43.2	51.8	179.2	1.0
		Barium, Total	130	38.3	104	88.5	1.0
		Beryllium, Total	2.5	0.09	2.6	92.7	1.0
		Calcium, Total	8740	2390	1300	490.1	1.0
		Cadmium, Total	2.8	0.48	2.6	89.3	1.0
		Chromium, Total	32.2	19.5	10.4	122.1	1.0
		Copper, Total	20.6	9.6	13.0	84.6	1.0
		Mercury, Total	0.15	0.00u	0.15	98.7	1.0
		Lithium, Total	62.2	3.9	51.8	112.5	1.0
		Manganese, Total	168	172	25.9	-18. *	1.0
		Sodium, Total	1430	167	1300	97.5	1.0
		Nickel, Total	29.9	7.7	25.9	85.7	1.0
		Lead, Total	33.8	11.2	25.9	87.3	1.0
		Antimony, Total	11.0	0.17u	25.9	42.5	1.0
		Selenium, Total	80.2	0.35u	104	77.4	1.0
		Thallium, Total	92.1	0.35u	104	88.9	1.0
		Vanadium, Total	40.3	24.9	25.9	59.5	1.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 05/02/08

CLIENT: TNUHANFORD RC-006 K1185 LVL LOT #: 0804L932

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	J16MF8	Silver, Total	0.06u	0.06u	NC	1.0
		Arsenic, Total	4.0	2.1	62.3	1.0
		Boron, Total	43.2	49.7	14.0	1.0
		Barium, Total	38.3	32.4	16.7	1.0
		Beryllium, Total	0.09	0.08	15.3	1.0
		Calcium, Total	2390	2630	9.5	1.0
		Cadmium, Total	0.48	0.39	19.2	1.0
		Chromium, Total	19.5	17.1	13.1	1.0
		Copper, Total	9.6	7.9	19.4	1.0
		Mercury, Total	0.00u	0.01u	NC	1.0
		Lithium, Total	3.9	2.9	29.4	1.0
		Manganese, Total	172	146	16.8	1.0
		Sodium, Total	167	181	7.7	1.0
		Nickel, Total	7.7	6.5	16.9	1.0
		Lead, Total	11.2	8.4	28.6	1.0
		Antimony, Total	0.17u	0.19u	NC	1.0
		Selenium, Total	0.35u	0.38u	NC	1.0
		Thallium, Total	0.35u	0.38u	NC	1.0
		Vanadium, Total	24.9	19.2	25.9	1.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 05/02/08

CLIENT: TNUHANFORD RC-006 K1185 LVL LOT #: 0804L932

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	08L0174-LC1	Silver, LCS	46.3	50.0	MG/KG	92.6
		Arsenic, LCS	909	1000	MG/KG	90.9
		Boron, LCS	455	500	MG/KG	91.1
		Barium, LCS	467	500	MG/KG	93.3
		Beryllium, LCS	23.5	25.0	MG/KG	94.0
		Calcium, LCS	2360	2500	MG/KG	94.4
		Cadmium, LCS	23.2	25.0	MG/KG	92.8
		Chromium, LCS	47.1	50.0	MG/KG	94.2
		Copper, LCS	120	125	MG/KG	95.6
		Lithium, LCS	498	500	MG/KG	99.6
		Manganese, LCS	70.5	75.0	MG/KG	94.0
		Sodium, LCS	2170	2500	MG/KG	87.0
		Nickel, LCS	187	200	MG/KG	93.6
		Lead, LCS	232	250	MG/KG	92.6
		Antimony, LCS	270	300	MG/KG	90.0
		Selenium, LCS	876	1000	MG/KG	87.6
		Thallium, LCS	915	1000	MG/KG	91.5
		Vanadium, LCS	229	250	MG/KG	91.6
LCS1	08C0075-LC1	Mercury, LCS	4.9	4.7	MG/KG	103.4

Lionville Laboratory Incorporated Logbook #: 440

SAMPLE DIGESTION RECORD

SOP: L-SPI-3020 Rev. 00

Digestion Batch #: 08L0174
Date/Time Initiated: 4/30/08 1240
Date/Time Completed: 4/30/08 1405
Analyst(s): TEN
Matrix: Soil Water Other:
Instr. Type: AA ICP
Parameters: See Backlog

Digested Undigested (circle one)
Balance #: B20
Balance Cal Verif: Y NA
Hot Plate Temp: 95°

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

COC Batch #	Spike Vol(s) (mL)	Initial Wt/Vol (g/mL)	Final Vol (mL) (TNL)	pH <2	Type: To/So/TC (TEF)	Texture	Color/Appearance	Artifact	Turb
0804L929-001		1.21	100mL	NA	TOT	Fine	BROWN	NA	NA
~~TEN 4/30/08~~ 001R		1.09							
* 001S	1.0	1.26							
0804L930-001		1.10					OILY/BLACK		
001R		1.15							
* 001S	1.0	1.11							
0804L931-001		1.16					BROWN		
002		1.47							
002R		1.29							
** 002S	1.0	1.50							
003		1.21							
0804L932-001		1.72							
001R		1.60							
001S	1.0	1.93							
002		1.05							
003		1.15							
004		1.22							
005		1.30							
08L0174-MB1		1.0				NA	Clear		
* ** LC1	1.0								

TEN 4/30/08

Spiking IDs:
MS #: 8100-004-01
02
03
6072-78-07
LCS #: 08
09
10
11

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

File ID#: IC017401, IC017402, IC017403, IC017404
LIMS Transfer: Y N Updated
Data Review By/Date: PMP, 04/30/08

* Also spiked w/ 0.5 mL Zr: 6072-076-05
** Also spiked w/ 0.5mL Bi: 6072-076-06, P: 6072-076-07, Tl: 6072-078. TEN 4/30/08

L-SPI-3020-A-0601

ionville Laboratory
ncorporated

MERCURY PREPARATION

Logbook # 420

Analyst: TEB
Date 4/28/08
Start Time/Temp: 1540/93°
End Time/Temp: 1615/97°

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

Prep Batch: 080075
Worksheet: HG042901
SOP No. ME-HgCVAA, Rev. 02

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

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

LvLI Batch #	Container Number	Spike Volume (mL)	Spike Conc. (µg/L)	Initial Wt. or Volume (g or mL)	Final Sample Volume (mL)	Comments, % Solids, etc.
Blank	B6			10mL	50mL	
0.2 µg/L	E7	0.100				
1.0	X5	0.500				
2.0	P5	1.000				
5.0	W0	2.500				
10.0	G7	5.000				
ICV	3C	0.125	2.5			
CCV	G12	0.250	5.0			
ICB/CCB	8					9.50L
MB1	3VG			0.30		PBS175 100.00
LC1	PF	*	*	0.31		LCSS175
0804L932-001	JC			0.33		100.00
001R	HR			0.31		
001S	BB	0.500	1.0	0.33		
002	HH			0.32		
003	500			0.34		
004	SPRT			0.34		
005	N2			0.34		
0804L979-001	AH			0.34		99.95
002	114			0.33		94.40
002R	11A			0.31		
002S	AN	0.500	1.0	0.33		
003	Gd			0.35		94.30
004	Z4			0.33	R	97.22
005	B32			0.41		97.16
006	2B			0.32		97.67
007	L15			0.34		95.96

Standard:	ID	Prep Date/Time
CAL/MS	RI 6072-78-014B	4/28/08 1130
CV/CCV/LCS	US 6072-78-015 A	

Reviewed By/Date: [signature] 5/05/08

see book # 9368 for std traceability information

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

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

onville Laboratory
orporated

MERCURY PREPARATION

Logbook # 422

alyst: TEB
e 4/28/08
rt Time/Temp:
d Time/Temp: See page 086

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

Prep Batch: 08C0075
Worksheet: HG042901
SOP No. ME-HgCVAA, Rev. 02

pH < 2 for Liquids? __ Yes JA 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.
08041979-008	55			0.35	0.50mL	R 92.46
009	AHA			0.41		95.97
010	NJ			0.30		96.25
011	92			0.30		97.97
012	31			0.34		95.66

rd:	ID	Prep Date/Time
MS		
CV/LCS	See page 086	

Reviewed By/Date: 5/05/08

see book # 9368 for std traceability information

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

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

CVAA-Prep1007

Page #:

000000021

onville Laboratory Use Only

08041932

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI (Lionville Laboratory Inc.)

000000022

ent TNU Hanford RC-006

t. Final Proj. Sampling Date

oject# 11343-606-001-9999-00

oject Contact/Phone# Orlette Johnson

onville Laboratory Project Manager

: SW846 Del STD TAT 15 Days

ate Rec'd 4.16.08 Date Due 5-1-08

		A	B
Refrigerator #		3	3
#/Type Container	Liquid		
	Solid	1gl	1gl
Volume	Solid	60/120	120
Preservatives		—	—
ANALYSES REQUESTED → ORGANIC: VOA			
BNA			
Pest/PCB			
Herb			
INORG: Metal		Met(1)	
CN			
pH			IPH

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	Lionville Laboratory Use Only: Met(1)	IPH
001	J16MF8			SO	4.14.08	0950	X	X
002	J16MF9					1000	X	X
003	J16MH0					1030	X	X
004	J16MH1					1036	X	X
005	J16ML8					1040	X	X

Special Instructions:

Met(1) = Sb, As, Ba, Be, B, Cd, Ca, Cr, Cu, Pb, Li, Mn, Ni, Se, Ag, Na, Tl, V, ~~Z~~ Hg

4/16/08

Special Instructions:

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

Relinquished by	Received by	Date	Time
FedEx	[signature]	4.16.08	09:45

Relinquished by	Received by	Date	Time

Relinquished	Received by	Date	Time
ORIGINAL REWRITTEN		"COMPOSITE WASTE"	

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-006-172	1 of 1

Collector: Amy Hood/ Larry J Sherman	Company Contact: Amy Hood	Telephone No.: 373-9759	Project Coordinator: KESSNER, JH
Price Code: 9K	Data Turnaround: 15 Days		
Project Designation: 100-N Ancillary Facilities & 190-DR Other Solid Sampling f	Sampling Location: 183-ND Resin Disposal Pit		SAF No.: RC-006
Ice Chest No.: AFS-06-003	Field Logbook No.: EL-1516-12	COA: RD4MXX2F00	Method of Shipment: FedEx
Shipped To: ~~EBERLINE SERVICES~~ / LIONVILLE Dat 4.14.08	Offsite Property No.: A080236		Bill of Lading/Air Bill No.: SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

From Hm Rad Area dat 4.14.08

Special Handling and/or Storage

N/A

Preservation	None	None	None	None	None	
Type of Container	G/P	G	~~G/P~~	~~G/P~~	G/P Dat 4.14.08	
No. of Container(s)	1	1	1	1	1	
Volume	~~250g~~ 120 mL Dat 4.14.08	~~500~~ 120 mL	~~5g~~	~~5g~~ 50	~~750g~~ 1000 mL Dat 4.14.08	
SAMPLE ANALYSIS	See item (1) in Special Instructions.	pH - 150.1	Gross Alpha	Gross Beta	See item (2) in Special Instructions.	

All from one bottle Dat 4.14.08

Sample No.	Matrix *	Sample Date	Sample Time									
J16MF8	OTHER SOLID	4.14.08	0950	X	X	X	X	X				
J16MF9	OTHER SOLID		1000	X	X	X	X	X				
J16MH0	OTHER SOLID		1020	X	X	X	X	X				
J16MH1	OTHER SOLID		1030	X	X	X	X	X				
J16ML8	OTHER SOLID		1040	X	X	X	X	X				

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: Larry Sherman	4/14/08 1100	Amy Hood	4.14.08 1100
Relinquished By/Removed From: A. Hood	4.14.08 1610	Received By/Stored In: 1060 3K	4.14.08 1610
Relinquished By/Removed From: 1060/3M	4/15/08 0830	Received By/Stored In: MS Tankovich	4/15/08 0830
Relinquished By/Removed From: WCH MS Tankovich	4/15/08 1500	Received By/Stored In: FedEx	
Relinquished By/Removed From: FedEx	4-16-08 0945	Received By/Stored In: D Smith	4-16-08 0945
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Copper, Lead, Lithium, Manganese, Nickel, Selenium, Silver, Sodium, Thallium, Vanadium}; Mercury - 7471 - (CV)

(2) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Antimony-125, Barium-133, Radium-226, Radium-228}

perform GK/GB/GEA all from same 1L bottle.

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

Matrix *

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

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

WCH-EE-011

000000023

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU Hanford Date: 4.16.08

Project/SAF/SOW/Release #: RC-006

LvLI Batch #: 0804L932 Sample Custodian: D. Smith

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier (Fed) Ex		Airbill # 7993 0820 8309
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 2.0 °C		Cooler # AFS-06-003
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify):
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14. QC stickers placed on bottles designated by client?	☐ Yes	☐ No	☑ N/A
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A

Person Contacted _____ Date _____

LvLI LIONVILLE LABORATORY INC.

SR-002-B.doc

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD RC-006 K1185

RECEIVED MAY 2008

DATE RECEIVED: 04/16/08 LVL LOT # :0804L932

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J16MF8						
PH	001	SO	08LPH020	04/14/08	04/17/08	04/17/08
J16MF9						
PH	002	SO	08LPH020	04/14/08	04/17/08	04/17/08
PH	002 REP	SO	08LPH020	04/14/08	04/17/08	04/17/08
J16MH0						
PH	003	SO	08LPH020	04/14/08	04/17/08	04/17/08
J16MH1						
PH	004	SO	08LPH020	04/14/08	04/17/08	04/17/08
J16ML8						
PH	005	SO	08LPH020	04/14/08	04/17/08	04/17/08

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-006 K1185
LVL#: 0804L932

W.O.#: 11343-606-001-9999-00
Date Received: 04-16-08

INORGANIC NARRATIVE

1. This narrative covers the analysis of 5 solid samples.

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

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

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

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

5. The replicate analysis was within the 20% Relative Percent Difference (RPD) control limit.

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

Judy Stone

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

5/1/08
Date

njp\04-932

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 9 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 P 4-30-08	
Sulfide, Reactive		__ Section 7.3/9030B	
Sulfide		__ 9030B(mod)	
Specific Gravity	__ D1429-76C/	__ D5057-90	
Sulfur, Total		__ 9056	
Synthetic Preparation Leach		__ 1312	
Paint Filter		__ 9095A	
Other:	**Method:**		
Other:	**Method**		

L-WI-034/B-01/01

Lionville Laboratory Incorporated

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

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

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

ABBREVIATIONS

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

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

ANALYTICAL WET CHEMISTRY METHODS

1. ASTM Standard Methods.

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

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

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

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

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

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

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

f. Code of Federal Regulations.

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 04/23/08

CLIENT: TNU-HANFORD RC-006 K1185

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

LVL LOT #: 0804L932

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J16MF8	pH	5.7	PH UNIT	0.01	1.0
-002	J16MF9	pH	8.4	PH UNIT	0.01	1.0
-003	J16MH0	pH	8.4	PH UNIT	0.01	1.0
-004	J16MH1	pH	8.4	PH UNIT	0.01	1.0
-005	J16ML8	pH	7.3	PH UNIT	0.01	1.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 04/23/08

CLIENT: TNU-HANFORD RC-006 K1175 LVL LOT #: 0804L932
WORK ORDER: 11343-606-001-9999-00

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-002REP	J16MF9	pH	8.4	8.4	0.0	1.0

Lionville Laboratory Use Only

0804L932

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: TNU Hanford RC-006

Est. Final Proj. Sampling Date:

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

Project Contact/Phone#:

Lionville Laboratory Project Manager: Orlette Johnson

PO: SW846 Del: STD TAT: 15 Days

Date Rec'd: 4.16.08 Date Due: 5-1-08

Refrigerator #										A 3		B 3					
#/Type Container	Liquid / Solid									1gl		1gl					
Volume	Solid									60/120		120					
Preservatives										—		—					
ANALYSES REQUESTED →		ORGANIC								INORG							
		VOA	BNA	Pest/PCB	Herb					Metal	CN	pH					
		Lionville Laboratory Use Only								Met①		IPH					

MATRIX CODES:
- Soil
E- Sediment
O- Solid
L- Sludge
/- Water
- Oil
- Air
S- Drum Solids
L- Drum Liquids
- EP/TCLP Leachate
/- Wipe
- Other
- Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	Met①	IPH
001	J16MF8			SO	4.14.08	0950	X	X
002	J16MF9					1000	X	X
003	J16MH0					1020	X	X
004	J16MH1					1036	X	X
005	J16ML8					1040	X	X

Special Instructions:

Met① = Sb, As, Ba, Be, B, Cd, Ca, Cr, Cu, Pb, Li, Mn, Ni, Se, Ag, Na, Tl, V, ~~Z~~ Hg

4/16/08

Special Instructions:
1.
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
Fed Ex	[illegible]	4.16.08	0945

Relinquished by	Received by	Date	Time

Relinquished	Received by	Date	Time
ORIGINAL REWRITTEN		"COMPOSITE WASTE"	

0000000007

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-006-172	1 of 1

Collector: Amy Hood/ Larry J Sherman	Company Contact: Amy Hood	Telephone No.: 373-9759	Project Coordinator: KESSNER, JH
Price Code: 9K	Data Turnaround: 15 Days		
Project Designation: 100-N Ancillary Facilities & 190-DR Other Solid Sampling f	Sampling Location: 183-ND Resin Disposal Pit		SAF No.: RC-006
Ice Chest No.: AFS-06-003	Field Logbook No.: EL-1516-12	COA: RD4MXX2F00	Method of Shipment: FedEx
Shipped To: ~~EBERLINE SERVICES~~ LIONVILLE Dat 4.14.08	Offsite Property No.: A080236		Bill of Lading/Air Bill No.: SEE OSPC

All from one bottle

POSSIBLE SAMPLE HAZARDS/REMARKS

From Hm Rad Area Dat 4.14.08

Special Handling and/or Storage

N/A

Preservation	None	None	None	None	None						
Type of Container	G/P	G	~~G/P~~	~~G/P~~	~~G/P~~ G Dat 4.14.08						
No. of Container(s)	1	1	1	1	1						
Volume	~~1.5g~~ 120 mL Dat 4.14.08	~~60g~~ 120 mL	~~5g~~	~~5g~~	~~750g~~ 1000 mL Dat 4.14.08						
SAMPLE ANALYSIS	See item (1) in Special Instructions.	pH - 150.1	Gross Alpha	Gross Beta	See item (2) in Special Instructions.						
Sample No. / Matrix * / Sample Date / Sample Time											
J16MF8 / OTHER SOLID / 4.14.08 / 0950	X	X	X	X	X						
J16MF9 / OTHER SOLID / ↓ / 1000	X	X	X	X	X						
J16MH0 / OTHER SOLID / ↓ / 1020	X	X	X	X	X						
J16MH1 / OTHER SOLID / ↓ / 1030	X	X	X	X	X						
J16ML8 / OTHER SOLID / ↓ / 1040	X	X	X	X	X						

Dat 4.14.08

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Larry J Sherman	4/14/08 1100	Amy Hood	4.14.08 1100
A. Hodson	4.14.08 1610	1060 3A	4.14.08 1610
1060/3A	4/15/08 0830	MS Tankouch	4/15/08 0830
WCH / MS Tankouch	4/15/08 1500	FedEx	
FedEx	4-16-08 0945	D Smith	4-16-08 0945

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010TR (Client List) {Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Copper, Lead, Lithium, Manganese, Nickel, Selenium, Silver, Sodium, Thallium, Vanadium}; Mercury - 7471 - (CV)

(2) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Antimony-125, Barium-133, Radium-226, Radium-228}

perform GA/GB/GEA all from same 1L bottle.

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

Matrix *

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

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

WCH-EE-011

8000000000

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU Hanford Date: 4.16.08

Project/SAF/SOW/Release #: RC-006

LvLI Batch #: 08041932 Sample Custodian: D. Yunich

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier (Fed) Ex		Airbill # 7993 0820 8309
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 2.0 °C		Cooler # AFS-06-003
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify):
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14. QC stickers placed on bottles designated by client?	☐ Yes	☐ No	☑ N/A
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A

Person Contacted _____ Date _____

LvLI LIONVILLE LABORATORY INC.

SR-002-B.doc