0076848

SAF-RC-030
Remaining Sites Confirmation Sampling - Other Solid
FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

Kathy Wendt H4-21 KW 4/1/08
INITIAL/DATE

COMMENTS:

SDG K1131 **SAF-RC-030**

Rad only Chem only X Rad & Chem

X Complete Partial

Waste Site: 100-F-44:4

RECEIVED
APR 10 2008
EDMC

130

EBERLINE
SERVICES

RECEIVED
MAR 2008

March 14, 2008

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

Reference: **P.O. #630**
Eberline Services R8-02-184-7777, SDG K1131

Dear Ms. Kessner:

Enclosed is the data report for one solid (other solid) sample designated under SAF No. RC-030 received at Eberline Services on February 27, 2008. The sample was analyzed according to the accompanying chain-of-custody document.

Please call if you have any questions concerning this report.

Sincerely,

Melissa Mannion

Melissa C. Mannion
Senior Program Manager

MCM/njv

Enclosure: Data Package

Analytical Services
2030 Wright Avenue
P.O. Box 4040
Richmond, California 94804-0040
(510) 235-2633 Fax (510) 235-0438
Toll Free (800) 841-5487
www.eberlineservices.com

1.0 GENERAL

Washington Closure Hanford (WCH) Sample Delivery Group K1131 was composed of one solid (other solid) sample designated under SAF No. RC-030 with a Project Designation of: Remaining Site Confirmation Sampling-Other Solid.

The samples were received as stated on the Chain-of-Custody documents. Any discrepancies are noted on the Eberline Services Sample Receipt Checklist. The results were transmitted to WCH via e-mail on March 13, 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 Nickel-63 Analysis

No problems were encountered during the course of the analyses.

2.3 Total Strontium Analysis

No problems were encountered during the course of the analyses.

2.4 Technetium-99 Analysis

No problems were encountered during the course of the analyses.

2.5 Isotopic Uranium Analysis

No problems were encountered during the course of the analyses.

2.6 Total Uranium Analysis

No problems were encountered during the course of the analyses.

2.7 Isotopic Plutonium Analysis

No problems were encountered during the course of the analyses.

2.8 Americium-241 Analysis

No problems were encountered during the course of the analyses.

2.9 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

03/17/08
Date

E B E R L I N E S E R V I C E S / R I C H M O N D
SAMPLE DELIVERY GROUP K1131

SDG	7777
Contact	Melissa C. Mannion

Client	Hanford
Contract	No. 630
Case no	SDG_K1131

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

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

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Prepared by

Melissa Mannion

Reviewed by

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-TOC
Version	3.06
Report date	03/13/08

SDG 7777
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K1131

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 03/13/08

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 K1131

LAB SAMPLE SUMMARY

SDG 7777
Contact Melissa C. Mannion

Client Hanford
Contract No. 630
Case no SDG K1131

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAF NO	CHAIN OF CUSTODY	COLLECTED
R802184-01	J169P1	100-F-44:4	SOLID		RC-030	RC-030-072	02/25/08 09:10
R802184-02	Lab Control Sample		SOLID		RC-030		
R802184-03	Method Blank		SOLID		RC-030		
R802184-04	Duplicate (R802184-01)	100-F-44:4	SOLID		RC-030		02/25/08 09:10

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LS
Version 3.06
Report date 03/13/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1131

SDG 7777
Contact Melissa C. Mannion

QC SUMMARY

Client Hanford
Contract No. 630
Case no SDG K1131

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% SOLIDS	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED	DAYS SINCE COLL	LAB SAMPLE ID	DEPARTMENT SAMPLE ID
'777	RC-030-072	J169P1	SOLID	100.0	127 g		02/27/08	2	R802184-01	7777-001
		Method Blank	SOLID						R802184-03	7777-003
		Lab Control Sample	SOLID						R802184-02	7777-002
		Duplicate (R802184-01)	SOLID	100.0	127 g		02/27/08	2	R802184-04	7777-004

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-QS
Version 3.06
Report date 03/13/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1131

SDG 7777
Contact Melissa C. Mannion

PREP BATCH SUMMARY

Client Hanford
Contract No. 630
Case no SDG K1131

TEST	MATRIX	METHOD	PREPARATION BATCH	ERROR 2σ %	PLANCHETS ANALYZED CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	MS/ORIG	QUALIFIERS
Alpha Spectroscopy												
AM	SOLID	Americium 241 in Solids	6145-121	5.0	1			1	1	1/1		
PU	SOLID	Plutonium, Isotopic in Solids	6145-121	5.0	1			1	1	1/1		
U	SOLID	Uranium, Isotopic in Solids	6145-121	5.0	1			1	1	1/1		
Beta Counting												
SR	SOLID	Total Strontium in Solids	6145-121	10.0	1			1	1	1/1		
TC	SOLID	Technetium 99 in Solids	6145-121	10.0	1			1	1	1/1		
Gas Proportional Counting												
93A	SOLID	Gross Alpha in Solids	6145-121	20.0	1			1	1	1/1		
93B	SOLID	Gross Beta in Solids	6145-121	15.0	1			1	1	1/1		
Gamma Spectroscopy												
GAM	SOLID	Gamma Scan	6145-121	15.0	1			1	1	1/1		
Kinetic Phosphorimetry, ug												
U_T	SOLID	Uranium, Total in Solids	6145-121	9.0	1			1	1	1/1		
Liquid Scintillation Counting												
NI_L	SOLID	Nickel 63 in Solids	6145-121	10.0	1			1	1	1/1		

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

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-PBS
Version 3.06
Report date 03/13/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1131

SDG 7777
Contact Melissa C. Mannion

LAB WORK SUMMARY

Client Hanford
Contract No. 630
Case no SDG K1131

LAB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
802184-01	J169P1			7777-001	93A/93		03/06/08	03/10/08	BW	Gross Alpha in Solids
02/25/08	100-F-44:4		SOLID	7777-001	93B/93		03/06/08	03/10/08	BW	Gross Beta in Solids
02/27/08	RC-030-072	RC-030		7777-001	AM		03/05/08	03/05/08	BW	Americium 241 in Solids
				7777-001	GAM		03/05/08	03/10/08	CSS	Gamma Scan
				7777-001	NI_L		03/04/08	03/06/08	BW	Nickel 63 in Solids
				7777-001	PU		03/05/08	03/05/08	BW	Plutonium, Isotopic in Solids
				7777-001	SR		03/05/08	03/07/08	BW	Total Strontium in Solids
				7777-001	TC		03/08/08	03/12/08	BW	Technetium 99 in Solids
				7777-001	U		03/05/08	03/05/08	BW	Uranium, Isotopic in Solids
				7777-001	U_T		03/05/08	03/05/08	MWT	Uranium, Total in Solids
802184-02	Lab Control Sample			7777-002	93A/93		03/10/08	03/10/08	BW	Gross Alpha in Solids
			SOLID	7777-002	93B/93		03/10/08	03/10/08	BW	Gross Beta in Solids
		RC-030		7777-002	AM		03/05/08	03/05/08	BW	Americium 241 in Solids
				7777-002	GAM		03/05/08	03/10/08	CSS	Gamma Scan
				7777-002	NI_L		03/04/08	03/06/08	BW	Nickel 63 in Solids
				7777-002	PU		03/05/08	03/05/08	BW	Plutonium, Isotopic in Solids
				7777-002	SR		03/05/08	03/07/08	BW	Total Strontium in Solids
				7777-002	TC		03/07/08	03/12/08	BW	Technetium 99 in Solids
				7777-002	U		03/05/08	03/05/08	BW	Uranium, Isotopic in Solids
				7777-002	U_T		03/05/08	03/05/08	MWT	Uranium, Total in Solids
802184-03	Method Blank			7777-003	93A/93		03/10/08	03/10/08	BW	Gross Alpha in Solids
			SOLID	7777-003	93B/93		03/10/08	03/10/08	BW	Gross Beta in Solids
		RC-030		7777-003	AM		03/05/08	03/05/08	BW	Americium 241 in Solids
				7777-003	GAM		03/05/08	03/10/08	CSS	Gamma Scan
				7777-003	NI_L		03/04/08	03/06/08	BW	Nickel 63 in Solids
				7777-003	PU		03/05/08	03/05/08	BW	Plutonium, Isotopic in Solids
				7777-003	SR		03/05/08	03/07/08	BW	Total Strontium in Solids
				7777-003	TC		03/08/08	03/12/08	BW	Technetium 99 in Solids
				7777-003	U		03/05/08	03/05/08	BW	Uranium, Isotopic in Solids
				7777-003	U_T		03/05/08	03/05/08	MWT	Uranium, Total in Solids

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 03/13/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1131

SDG 7777
Contact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford
Contract No. 630
Case no SDG K1131

LAB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
R802184-04	Duplicate (R802184-01)			7777-004	93A/93		03/06/08	03/10/08	BW	Gross Alpha in Solids
02/25/08	100-F-44:4		SOLID	7777-004	93B/93		03/06/08	03/10/08	BW	Gross Beta in Solids
02/27/08		RC-030		7777-004	AM		03/05/08	03/05/08	BW	Americium 241 in Solids
				7777-004	GAM		03/06/08	03/10/08	CSS	Gamma Scan
				7777-004	NI_L		03/04/08	03/06/08	BW	Nickel 63 in Solids
				7777-004	PU		03/05/08	03/05/08	BW	Plutonium, Isotopic in Solids
				7777-004	SR		03/05/08	03/07/08	BW	Total Strontium in Solids
				7777-004	TC		03/11/08	03/12/08	BW	Technetium 99 in Solids
				7777-004	U		03/05/08	03/05/08	BW	Uranium, Isotopic in Solids
				7777-004	U_T		03/05/08	03/05/08	MWT	Uranium, Total in Solids

COUNTS OF TESTS BY SAMPLE TYPE

TEST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
93A/93	RC-030	Gross Alpha in Solids	900.0_ALPHABETA_GPC	1			1	1	1	4
93B/93	RC-030	Gross Beta in Solids	900.0_ALPHABETA_GPC	1			1	1	1	4
AM	RC-030	Americium 241 in Solids	AMCMISO_IE_PLATE_AEA	1			1	1	1	4
GAM	RC-030	Gamma Scan	GAMMA_GS	1			1	1	1	4
NI_L	RC-030	Nickel 63 in Solids	NI63_LSC	1			1	1	1	4
PU	RC-030	Plutonium, Isotopic in Solids	PUISO_PLATE_AEA	1			1	1	1	4
SR	RC-030	Total Strontium in Solids	SRTOT_SEP_PRECIP_GPC	1			1	1	1	4
TC	RC-030	Technetium 99 in Solids	TC99_TR_SEP_GPC	1			1	1	1	4
U	RC-030	Uranium, Isotopic in Solids	UISO_PLATE_AEA	1			1	1	1	4
U_T	RC-030	Uranium, Total in Solids	UTOT_KPA	1			1	1	1	4
TOTALS				10			10	10	10	40

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 03/13/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1131

7777-003 Method Blank

METHOD BLANK

SDG	7777	Client/Case no	Hanford	SDG_K1131	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R802184-03	Client sample id	Method Blank		
Dept sample id	7777-003	Material/Matrix		SOLID	
		SAF No	RC-030		

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	-0.730	2.7	6.73	10.0	U	93A
Gross Beta	12587-47-2	-1.16	3.0	5.64	15.0	U	93B
Nickel 63	13981-37-8	-0.382	1.7	2.88	30.0	U	NI_L
Total Strontium	SR-RAD	0.031	0.15	0.310	1.00	U	SR
Americium 241	14596-10-2	0	0.16	0.305	1.00	U	AM
Technetium 99	14133-76-7	-0.008	0.16	0.519	15.0	U	TC
Total Uranium (ug/g)	7440-61-1	0	0.006	0.014	1.00	U	U_T
Uranium 233/234	U-233/234	0	0.062	0.236	1.00	U	U
Uranium 235	15117-96-1	0	0.075	0.286	1.00	U	U
Uranium 238	U-238	0	0.062	0.236	1.00	U	U
Plutonium 238	13981-16-3	0.092	0.18	0.351	1.00	U	PU
Plutonium 239/240	PU-239/240	0.046	0.092	0.351	1.00	U	PU
Potassium 40	13966-00-2	U		0.281		U	GAM
Cobalt 60	10198-40-0	U		0.030	0.050	U	GAM
Cesium 137	10045-97-3	U		0.028	0.100	U	GAM
Radium 226	13982-63-3	U		0.056	0.100	U	GAM
Radium 228	15262-20-1	U		0.115	0.200	U	GAM
Europium 152	14683-23-9	U		0.067	0.100	U	GAM
Europium 154	15585-10-1	U		0.083	0.100	U	GAM
Europium 155	14391-16-3	U		0.053	0.100	U	GAM
Thorium 228	14274-82-9	U		0.042		U	GAM
Thorium 232	TH-232	U		0.115		U	GAM
Uranium 235	15117-96-1	U		0.097		U	GAM
Uranium 238	U-238	U		3.26		U	GAM
Americium 241	14596-10-2	U		0.032		U	GAM

RemainSitesConfirmSamp- Other Solid

QC-BLANK #64867

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	03/13/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1131

7777-002

Lab Control Sample

LAB CONTROL SAMPLE

SDG 7777

Contact Melissa C. Mannion

Client/Case no Hanford SDG K1131

Contract No. 630

Lab sample id R802184-02

Dept sample id 7777-002

Client sample id Lab Control Sample

Material/Matrix SOLID

SAF No RC-030

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	114	17	7.14	10.0		93A	102	4.1	112	58-142	70-130
Gross Beta	88.8	7.2	5.70	15.0		93B	93.8	3.8	95	75-125	80-120
Nickel 63	214	5.8	3.18	30.0		NI_L	222	8.9	96	84-116	80-120
Total Strontium	10.2	0.60	0.266	1.00		SR	9.38	0.38	109	80-120	80-120
Americium 241	22.0	2.7	0.306	1.00		AM	20.4	0.82	108	78-122	80-120
Technetium 99	102	2.6	0.545	15.0		TC	109	4.4	94	84-116	80-120
Total Uranium (ug/g)	30.8	3.6	0.135	1.00		U_T	33.0	1.3	93	79-121	80-120
Uranium 233/234	18.4	2.1	0.985	1.00		U	18.6	0.74	99	81-119	80-120
Uranium 235	15.8	1.9	0.243	1.00		U	15.1	0.60	105	79-121	80-120
Uranium 238	18.3	2.1	0.943	1.00		U	20.2	0.81	91	82-118	80-120
Plutonium 238	27.3	3.3	0.411	1.00		PU	23.4	0.94	117	76-124	80-120
Plutonium 239/240	27.8	3.3	0.329	1.00		PU	26.4	1.1	105	79-121	80-120
Cobalt 60	1.90	0.11	0.080	0.050		GAM	1.94	0.078	98	76-124	80-120
Cesium 137	2.10	0.10	0.080	0.100		GAM	2.05	0.082	102	75-125	80-120

RemainSitesConfirmSamp- Other Solid

QC-LCS #64866

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LCS
Version 3.06
Report date 03/13/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1131

7777-004 J169P1

DUPLICATE

SDG	7777			Client/Case no	Hanford SDG K1131
Contact	Melissa C. Mannion			Contract	No. 630
	DUPLICATE		ORIGINAL		
Lab sample id	R802184-04	Lab sample id	R802184-01	Client sample id	J169P1
Dept sample id	7777-004	Dept sample id	7777-001	Location/Matrix	100-F-44:4 SOLID
		Received	02/27/08	Collected/Weight	02/25/08 09:10 127 g
% solids	100.0	% solids	100.0	Custody/SAF No	RC-030-072 RC-030

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	10.4	3.8	3.31	10.0		93A	11.2	5.9	6.74		7	106	0.2
Gross Beta	23.4	3.1	3.62	15.0		93B	22.3	5.8	8.69		5	54	0.3
Nickel 63	0	1.9	3.28	30.0	U	NI_L	-1.00	1.9	3.36	U	-		0.7
Total Strontium	0.088	0.14	0.274	1.00	U	SR	0.084	0.15	0.286	U	-		0
Americium 241	0	0.15	0.286	1.00	U	AM	-0.058	0.12	0.320	U	-		0.6
Technetium 99	-0.133	0.15	0.452	15.0	U	TC	0.050	0.16	0.561	U	-		1.7
Total Uranium (ug/g)	1.04	0.12	0.014	1.00		U_T	1.10	0.13	0.014		6	31	0.5
Uranium 233/234	0.617	0.32	0.394	1.00		U	0.758	0.33	0.305		21	101	0.6
Uranium 235	0	0.12	0.476	1.00	U	U	0.145	0.19	0.369	U	-		1.3
Uranium 238	0.926	0.43	0.394	1.00		U	0.678	0.33	0.305		31	102	0.9
Plutonium 238	0	0.17	0.463	1.00	U	PU	0	0.14	0.336	U	-		0
Plutonium 239/240	0.126	0.17	0.321	1.00	U	PU	0.035	0.070	0.268	U	-		1.0
Potassium 40	11.5	0.95	0.513			GAM	10.6	0.73	0.508		8	36	0.7
Cobalt 60	U		0.055	0.050	U	GAM	U		0.042	U	-		0.4
Cesium 137	4.35	0.13	0.069	0.100		GAM	4.46	0.099	0.057		2	32	0.2
Radium 226	0.605	0.12	0.110	0.100		GAM	0.689	0.11	0.100		13	49	0.8
Radium 228	0.932	0.24	0.267	0.200		GAM	0.818	0.21	0.206		13	63	0.6
Europium 152	U		0.164	0.100	U	GAM	U		0.130	U	-		0.3
Europium 154	U		0.142	0.100	U	GAM	U		0.129	U	-		0.1
Europium 155	U		0.131	0.100	U	GAM	U		0.102	U	-		0.3
Thorium 228	0.830	0.077	0.077			GAM	0.763	0.060	0.063		8	37	0.7
Thorium 232	0.932	0.24	0.267			GAM	0.818	0.21	0.206		13	63	0.6
Uranium 235	U		0.226		U	GAM	U		0.180	U	-		0.3
Uranium 238	U		6.40		U	GAM	U		5.25	U	-		0.3
Americium 241	U		0.076		U	GAM	U		0.048	U	-		0.6

RemainSitesConfirmSamp- Other Solid

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	03/13/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1131

7777-004 J169P1

DUPLICATE, cont.

SDG	7777			Client/Case no	Hanford SDG K1131
Contact	Melissa C. Mannion			Contract	No. 630
	DUPLICATE		ORIGINAL		
Lab sample id	R802184-04	Lab sample id	R802184-01	Client sample id	J169P1
Dept sample id	7777-004	Dept sample id	7777-001	Location/Matrix	100-F-44:4 SOLID
		Received	02/27/08	Collected/Weight	02/25/08 09:10 127 g
% solids	100.0	% solids	100.0	Custody/SAF No	RC-030-072 RC-030

QC-DUP#1 64868

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	03/13/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1131

7777-001 J169P1

DATA SHEET

SDG	7777	Client/Case no	Hanford		SDG K1131
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R802184-01	Client sample id	J169P1		
Dept sample id	7777-001	Location/Matrix	100-F-44:4		SOLID
Received	02/27/08	Collected/Weight	02/25/08 09:10	127 g	
% solids	100.0	Custody/SAF No	RC-030-072	RC-030	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	11.2	5.9	6.74	10.0		93A
Gross Beta	12587-47-2	22.3	5.8	8.69	15.0		93B
Nickel 63	13981-37-8	-1.00	1.9	3.36	30.0	U	NI_L
Total Strontium	SR-RAD	0.084	0.15	0.286	1.00	U	SR
Americium 241	14596-10-2	-0.058	0.12	0.320	1.00	U	AM
Technetium 99	14133-76-7	0.050	0.16	0.561	15.0	U	TC
Total Uranium (ug/g)	7440-61-1	1.10	0.13	0.014	1.00		U_T
Uranium 233/234	U-233/234	0.758	0.33	0.305	1.00		U
Uranium 235	15117-96-1	0.145	0.19	0.369	1.00	U	U
Uranium 238	U-238	0.678	0.33	0.305	1.00		U
Plutonium 238	13981-16-3	0	0.14	0.336	1.00	U	PU
Plutonium 239/240	PU-239/240	0.035	0.070	0.268	1.00	U	PU
Potassium 40	13966-00-2	10.6	0.73	0.508			GAM
Cobalt 60	10198-40-0	U		0.042	0.050	U	GAM
Cesium 137	10045-97-3	4.46	0.099	0.057	0.100		GAM
Radium 226	13982-63-3	0.689	0.11	0.100	0.100		GAM
Radium 228	15262-20-1	0.818	0.21	0.206	0.200		GAM
Europium 152	14683-23-9	U		0.130	0.100	U	GAM
Europium 154	15585-10-1	U		0.129	0.100	U	GAM
Europium 155	14391-16-3	U		0.102	0.100	U	GAM
Thorium 228	14274-82-9	0.763	0.060	0.063			GAM
Thorium 232	TH-232	0.818	0.21	0.206			GAM
Uranium 235	15117-96-1	U		0.180		U	GAM
Uranium 238	U-238	U		5.25		U	GAM
Americium 241	14596-10-2	U		0.048		U	GAM

RemainSitesConfirmSamp- Other Solid

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	03/13/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1131

Test	AM
Matrix	SOLID
SDG	7777
Contact	Melissa C. Mannion

LAB METHOD SUMMARY

AMERICIUM 241 IN SOLIDS

ALPHA SPECTROSCOPY

Client	Hanford
Contract	No. 630
Contract	SDG K1131

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Americium 241
Preparation batch 6145-121					
R802184-01			7777-001	J169P1	U
R802184-02			7777-002	Lab Control Sample	ok
R802184-03			7777-003	Method Blank	U
R802184-04			7777-004	Duplicate (R802184-01)	- U

Nominal values and limits from method RDLs (pCi/g) 1.00

RemainSitesConfirmSamp- Other Solid

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6145-121			2σ prep error 5.0 %	Reference Lab Notebook #6145, pg. 121												
R802184-01			J169P1	0.320	0.500			74		101			9	03/04/08	03/05	SS-055
R802184-02			Lab Control Sample	0.306	0.500			56		101				03/04/08	03/05	SS-064
R802184-03			Method Blank	0.305	0.500			65		102				03/04/08	03/05	SS-065
R802184-04			Duplicate (R802184-01)	0.286	0.500			69		102			9	03/04/08	03/05	SS-032
Nominal values and limits from method				1.00	0.500			20-105		100	100		180			

PROCEDURES	REFERENCE	AMCMISO_IE_PLATE_AEA
	SPP-070	Soil Dissolution, < 1.0g Aliquot, rev 7
	CP-963	Americium and Curium in Water and Dissolved Samples by Extraction Chromatography, rev 6
	CP-008	Heavy Element Electroplating, rev 9

AVERAGES ± 2 SD	MDA	0.304	± 0.028
FOR 4 SAMPLES	YIELD	66	± 15

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	03/13/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1131

Test	PU
Matrix	SOLID
SDG	7777
Contact	Melissa C. Mannion

LAB METHOD SUMMARY

PLUTONIUM, ISOTOPIC IN SOLIDS

ALPHA SPECTROSCOPY

Client	Hanford
Contract	No. 630
Contract	SDG K1131

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Plutonium 238		Plutonium 239/240	
Preparation batch 6145-121								
R802184-01			7777-001	J169P1	U		U	
R802184-02			7777-002	Lab Control Sample	ok		ok	
R802184-03			7777-003	Method Blank	U		U	
R802184-04			7777-004	Duplicate (R802184-01)	-	U	-	U
Nominal values and limits from method				RDLs (pCi/g)	1.00		1.00	
RemainSitesConfirmSamp- Other Solid								

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MAX MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6145-121			2σ prep error 5.0 %	Reference Lab Notebook #6145, pg. 121												
R802184-01			J169P1	0.336	0.500			66		101			9	03/05/08	03/05	SS-061
R802184-02			Lab Control Sample	0.411	0.500			64		101				03/05/08	03/05	SS-062
R802184-03			Method Blank	0.351	0.500			63		101				03/05/08	03/05	SS-063
R802184-04			Duplicate (R802184-01)	0.463	0.500			52		101			9	03/05/08	03/05	SS-027
Nominal values and limits from method				1.00	0.500			20-105		100	100		180			

PROCEDURES	REFERENCE	PUISO_PLATE_AEA
	SPP-070	Soil Dissolution, < 1.0g Aliquot, rev 7
	CP-941	Plutonium in Water and Dissolved Samples by Extraction Chromatography, rev 3
	CP-008	Heavy Element Electroplating, rev 9

AVERAGES ± 2 SD FOR 4 SAMPLES	MDA	0.390	± 0.117
	YIELD	61	± 13

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	03/13/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1131

Test U	Matrix SOLID
SDG 7777	
Contact Melissa C. Mannion	

LAB METHOD SUMMARY

URANIUM, ISOTOPIC IN SOLIDS

ALPHA SPECTROSCOPY

Client Hanford	
Contract No. 630	
Contract SDG K1131	

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	1: Uranium 233/234	2: Uranium 235	3: Uranium 238	RESULT RATIOS (%) 1+3	2σ	2+3	2σ
Preparation batch 6145-121											
R802184-01			7777-001	J169P1	0.758	U	0.678	112	73	21	30
R802184-02			7777-002	Lab Control Sample	ok	ok	ok				
R802184-03			7777-003	Method Blank	U	U	U				
R802184-04			7777-004	Duplicate (R802184-01)	ok	- U	ok	67	46	0	13
Nominal values and limits from method				RDLs (pCi/g)	1.00	1.00	1.00	100		4	
RemainSitesConfirmSamp- Other Solid								Averages 89		11	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MAX MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6145-121			2σ prep error 5.0 %	Reference Lab Notebook #6145, pg. 121												
R802184-01			J169P1	0.369	0.500			58		101			9	03/05/08	03/05	SS-056
R802184-02			Lab Control Sample	0.985	0.500			82		102				03/05/08	03/05	SS-058
R802184-03			Method Blank	0.286	0.500			81		101				03/05/08	03/05	SS-028
R802184-04			Duplicate (R802184-01)	0.476	0.500			52		102			9	03/05/08	03/05	SS-031
Nominal values and limits from method				1.00	0.500			20-105		100	100		180			

PROCEDURES	REFERENCE	UISO_PLATE_AEA
	SPP-070	Soil Dissolution, < 1.0g Aliquot, rev 7
	CP-921	Uranium in Water and Dissolved Samples by Extraction Chromatography, rev 1
	CP-008	Heavy Element Electroplating, rev 9

AVERAGES ± 2 SD FOR 4 SAMPLES				
MDA	0.529	±	0.628
YIELD	68	±	31

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	03/13/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1131

Test SR Matrix SOLID
SDG 7777
Contact Melissa C. Mannion

LAB METHOD SUMMARY

TOTAL STRONTIUM IN SOLIDS

BETA COUNTING

Client Hanford
Contract No. 630
Contract SDG K1131

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Total Strontium	
Preparation batch 6145-121						
R802184-01			7777-001	J169P1	U	
R802184-02			7777-002	Lab Control Sample	ok	
R802184-03			7777-003	Method Blank	U	
R802184-04			7777-004	Duplicate (R802184-01)	-	U

Nominal values and limits from method RDLs (pCi/g) 1.00
RemainSitesConfirmSamp- Other Solid

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6145-121			2σ prep error 10.0 % Reference Lab Notebook #6145, pg. 121													
R802184-01			J169P1	0.286	1.00			98		100			9	03/05/08	03/05	GRB-221
R802184-02			Lab Control Sample	0.266	1.00			93		100				03/05/08	03/05	GRB-231
R802184-03			Method Blank	0.310	1.00			88		100				03/05/08	03/05	GRB-223
R802184-04			Duplicate (R802184-01)	0.274	1.00			100		100			9	03/05/08	03/05	GRB-224
Nominal values and limits from method				1.00	1.00			30-105		100			180			

PROCEDURES	REFERENCE	SRTOT_SEP_PRECIP_GPC
	SPP-070	Soil Dissolution, < 1.0g Aliquot, rev 7
	CP-383	Strontium in Dissolved Solid of < 5.0g Aliquot, rev 1

AVERAGES ± 2 SD FOR 4 SAMPLES				
MDA	0.284	±	0.038
YIELD	95	±	11

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 03/13/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1131

Test TC Matrix SOLID
SDG 7777
Contact Melissa C. Mannion

LAB METHOD SUMMARY

TECHNETIUM 99 IN SOLIDS

BETA COUNTING

Client Hanford
Contract No. 630
Contract SDG K1131

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Technetium 99	
Preparation batch 6145-121						
R802184-01			7777-001	J169P1	U	
R802184-02			7777-002	Lab Control Sample	ok	
R802184-03			7777-003	Method Blank	U	
R802184-04			7777-004	Duplicate (R802184-01)	-	U

Nominal values and limits from method RDLs (pCi/g) 15.0
RemainSitesConfirmSamp- Other Solid

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6145-121			2σ prep error 10.0 % Reference Lab Notebook #6145, pg. 121													
R802184-01			J169P1	0.561	1.00			94		50			12	03/04/08	03/08	GRB-221
R802184-02			Lab Control Sample	0.545	1.00			98		50				03/04/08	03/07	GRB-230
R802184-03			Method Blank	0.519	1.00			100		50				03/04/08	03/08	GRB-222
R802184-04			Duplicate (R802184-01)	0.452	1.00			87		85			15	03/04/08	03/11	GRB-221
Nominal values and limits from method				15.0	1.00			20-105		50			180			

PROCEDURES	REFERENCE	
	TC99_TR_SEP_GPC	
	SPP-062	Sample Aliquoting, rev 0
	CP-431	Technetium-99 Purification of Soil or Resin by Extraction Chromatography, rev 2
	CP-008	Heavy Element Electroplating, rev 9

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 0.519 ± 0.096
YIELD 95 ± 11

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 03/13/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1131

Test 93A Matrix SOLID
SDG 7777
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GROSS ALPHA IN SOLIDS
GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. 630
Contract SDG K1131

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Alpha
Preparation batch 6145-121					
R802184-01	93		7777-001	J169P1	11.2
R802184-02	93		7777-002	Lab Control Sample	ok
R802184-03	93		7777-003	Method Blank	U
R802184-04	93		7777-004	Duplicate (R802184-01)	ok
Nominal values and limits from method				RDLs (pCi/g)	10.0

RemainSitesConfirmSamp- Other Solid

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6145-121			2σ prep error 20.0 % Reference Lab Notebook #6145, pg. 121													
R802184-01	93		J169P1	6.74	0.100			38		100			10	03/02/08	03/06	GRB-213
R802184-02	93		Lab Control Sample	7.14	0.100			60		100				03/02/08	03/10	GRB-210
R802184-03	93		Method Blank	6.73	0.100			61		100				03/02/08	03/10	GRB-211
R802184-04	93		Duplicate (R802184-01)	3.31	0.100			38		200			10	03/02/08	03/06	GRB-109
Nominal values and limits from method				10.0	0.100			5-250		100			180			

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

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 5.98 ± 3.58
RESIDUE 49 ± 26

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 03/13/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1131

Test 93B Matrix SOLID	Client Hanford
SDG 7777	Contract No. 630
Contact Melissa C. Mannion	Contract SDG K1131

LAB METHOD SUMMARY

GROSS BETA IN SOLIDS

GAS PROPORTIONAL COUNTING

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Beta
Preparation batch 6145-121					
R802184-01	93		7777-001	J169P1	22.3
R802184-02	93		7777-002	Lab Control Sample	ok
R802184-03	93		7777-003	Method Blank	U
R802184-04	93		7777-004	Duplicate (R802184-01)	ok

Nominal values and limits from method RDLs (pCi/g) 15.0

RemainSitesConfirmSamp- Other Solid

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6145-121			2σ prep error 15.0 % Reference Lab Notebook #6145, pg. 121													
R802184-01	93		J169P1	8.69	0.100			38		100			10	03/02/08	03/06	GRB-213
R802184-02	93		Lab Control Sample	5.70	0.100			60		100				03/02/08	03/10	GRB-210
R802184-03	93		Method Blank	5.64	0.100			61		100				03/02/08	03/10	GRB-211
R802184-04	93		Duplicate (R802184-01)	3.62	0.100			38		200			10	03/02/08	03/06	GRB-109
Nominal values and limits from method				15.0	0.100			5-250		100			180			

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

AVERAGES ± 2 SD	MDA	5.91	± 4.18
FOR 4 SAMPLES	RESIDUE	49	± 26

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	03/13/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1131

Test GAM Matrix SOLID
SDG 7777
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GAMMA SCAN

GAMMA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG K1131

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Cobalt 60	Cesium 137
Preparation batch 6145-121						
R802184-01			7777-001	J169P1	U	4.46
R802184-02			7777-002	Lab Control Sample	ok	ok
R802184-03			7777-003	Method Blank	U	U
R802184-04			7777-004	Duplicate (R802184-01)	- U	ok
Nominal values and limits from method				RDLs (pCi/g)	0.050	0.100
RemainSitesConfirmSamp- Other Solid						

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6145-121			2σ prep error 15.0 % Reference Lab Notebook #6145, pg. 121													
R802184-01			J169P1	11.8	115					862			9	03/03/08	03/05	JR,01,00
R802184-02			Lab Control Sample	0.080	115					862				03/03/08	03/05	JR,06,00
R802184-03			Method Blank	7.21	115					862				03/03/08	03/05	JR,07,00
R802184-04			Duplicate (R802184-01)	15.3	115					412			10	03/03/08	03/06	JR,07,00
Nominal values and limits from method				0.050	115					100			180			

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

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 8.60 ± 13.1
YIELD ____ ± ____

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 03/13/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1131

Test	U T
Matrix	SOLID
SDG	7777
Contact	Melissa C. Mannion

LAB METHOD SUMMARY

URANIUM, TOTAL IN SOLIDS

KINETIC PHOSPHORIMETRY, UG

Client	Hanford
Contract	No. 630
Contract	SDG K1131

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Total Uranium
Preparation batch 6145-121					
R802184-01			7777-001	J169P1	1.10
R802184-02			7777-002	Lab Control Sample	ok
R802184-03			7777-003	Method Blank	U
R802184-04			7777-004	Duplicate (R802184-01)	ok
Nominal values and limits from method				RDLs (ug/g)	1.00
RemainSitesConfirmSamp- Other Solid					

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA ug/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6145-121			2σ prep error 9.0 %	Reference Lab Notebook #6145, pg. 121												
R802184-01			J169P1	0.014	0.0500								9	03/05/08	03/05	KPA-001
R802184-02			Lab Control Sample	0.135	0.0500									03/05/08	03/05	KPA-001
R802184-03			Method Blank	0.014	0.0500									03/05/08	03/05	KPA-001
R802184-04			Duplicate (R802184-01)	0.014	0.0500								9	03/05/08	03/05	KPA-001
Nominal values and limits from method				1.00	0.0500								180			

PROCEDURES	REFERENCE	UTOT_KPA
	CP-929	Calibration of the Kinetic Phosphorimeter, rev 9
	SPP-070	Soil Dissolution, < 1.0g Aliquot, rev 7
	CP-928	Total Uranium by Kinetic Phosphorimetry, rev 8

AVERAGES ± 2 SD	MDA	0.044	± 0.121
FOR 4 SAMPLES	YIELD		±

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	03/13/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1131

Test NI L Matrix SOLID	
SDG 7777	
Contact Melissa C. Mannion	

LAB METHOD SUMMARY

NICKEL 63 IN SOLIDS

LIQUID SCINTILLATION COUNTING

Client Hanford	
Contract No. 630	
Contract SDG K1131	

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Nickel 63	
Preparation batch 6145-121						
R802184-01			7777-001	J169P1	U	
R802184-02			7777-002	Lab Control Sample	ok	
R802184-03			7777-003	Method Blank	U	
R802184-04			7777-004	Duplicate (R802184-01)	-	U
Nominal values and limits from method				RDLs (pCi/g)	30.0	
RemainSitesConfirmSamp- Other Solid						

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 6145-121			2σ prep error 10.0 % Reference Lab Notebook #6145, pg. 121													
R802184-01			J169P1	3.36	0.500			90		50			8	03/04/08	03/04	LSC-004
R802184-02			Lab Control Sample	3.18	0.500			96		50				03/04/08	03/04	LSC-004
R802184-03			Method Blank	2.88	0.500			96		50				03/04/08	03/04	LSC-004
R802184-04			Duplicate (R802184-01)	3.28	0.500			88		50			8	03/04/08	03/04	LSC-004
Nominal values and limits from method				30.0	0.500			30-105		25			180			

PROCEDURES	REFERENCE	NI63_LSC
	SPP-070	Soil Dissolution, < 1.0g Aliquot, rev 7
	CP-280	Nickel-63 Purification, rev 3

AVERAGES ± 2 SD	MDA	3.18	±	0.420
FOR 4 SAMPLES	YIELD	92	±	8

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	03/13/08

SDG 7777
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG_K1131

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 03/13/08

SDG 7777
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K1131

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 03/13/08

SDG 7777
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K1131

WORK SUMMARY

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

The following notes apply to this report:

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

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

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

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

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

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

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SDG 7777
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REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K1131

DATA SHEET

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

The following notes apply to this report:

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

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

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

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

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

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

The following qualifiers are defined by the DVD system:

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

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Version Ver 1.0
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DATA SHEET

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

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

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

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

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

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

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

P The RESULT is 'preliminary'.

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

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

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

The following values are underlined to indicate possible problems:

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

SDG 7777
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG K1131

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 03/13/08

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REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K1131

LAB CONTROL SAMPLE

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

The following notes apply to this report:

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

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

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

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

* The first, computed limits for the recovery reflect:

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

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

  2. The error of ADDED.

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

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

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

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Protocol Hanford
Version Ver 1.0
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REPORT GUIDE

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DUPLICATE

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

The following notes apply to this report:

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

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

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

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

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

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

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

  This value reported for this limit is at most 999.

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

  1. A fixed percentage specified in the protocol.

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DUPLICATE

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

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

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

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

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

SDG 7777
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K1131

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
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Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG_K1131

MATRIX SPIKE

for the recovery.

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

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

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Form DVD-RG
Version 3.06
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Contact Melissa C. Mannion

REPORT GUIDE

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Contract No. 630
Case no SDG K1131

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 03/13/08

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.

K1131 7777

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-030-072	Page 1 of 1

Collector Welch-Koelling / DeBuigne	**Company Contact** Matt Perrott	**Telephone No.** 372-9088	**Project Coordinator** KESSNER, JH
Price Code 9C	**Data Turnaround** 15 Days		
Project Designation Remaining Sites Confirmation Sampling - Other Solid	**Sampling Location** 100-F-44:4 K1131 (7777)		**SAF No.** RC-030
Ice Chest No. WCH-07-01	**Field Logbook No.** EL-1601-2	**COA** C00F44A000	**Method of Shipment** Fed Ex
Shipped To EBERLINE SERVICES / LIONVILLE	**Offsite Property No.** A080173		**Bill of Lading/Air Bill No.** See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container	G/P	G/P	aG	G	aG	G				
No. of Container(s)	1	1	1	1	1	1				
Volume	~~500mL~~ 125mL	60mL	60mL	60mL	60mL	250mL				
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (2) in Special Instructions.	PCBs - 8082; Pesticides - 8081; Chloro-Herbicides - EPA8151	VOA - 8260A (TCL)	SVOA - 8270A (TCL)	TPH (Total) - 418.1				

2/26/08

Sample No.	Matrix *	Sample Date	Sample Time										
J169P1	OTHER SOLID	2-25-08	0910	X									
~~J169P2~~	~~OTHER SOLID~~												
~~J169P3~~	~~OTHER SOLID~~												
~~J169P4~~	~~OTHER SOLID~~												
~~J169P5~~	~~OTHER SOLID~~												

25-08

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
DeBuigne	1030 2-25-08	1060/2A	1030 2-25-08
1060/2A	2/26/08 0930	MT / MSHankovich	2/26/08 0930
MT / MSHankovich	WCH 09:30 2/26/08	Fed Ex	
FED EX		Alex Kelnel	2/27/08 10:00

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241}; Americium-241; Gross Alpha & Gross Beta; Nickel-63; Isotopic Plutonium; Strontium-89.90 -- Total Sr; Technetium-99; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Total Uranium

(2) ICP Metals - 6010A (SW-846) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV)

Matrix *

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

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

WCH-EE-011

EBERLINE

RICHMOND, CA LABORATORY

SAMPLE RECEIPT CHECKLIST

Client: W. C. HANFORD City RICHLAND State WA

Date/Time received 2/27/08 10:00 CoC No. RC-030-072

Container I.D. No. WCH-07-01 Requested TAT (Days) 15 P.O. Received Yes [ ] No [ ]

INSPECTION

1. Custody seals on shipping container intact? Yes [✓] No [ ] N/A [ ]
2. Custody seals on shipping container dated & signed? Yes [✓] No [ ] N/A [ ]
3. Custody seals on sample containers intact? Yes [✓] No [ ] N/A [ ]
4. Custody seals on sample containers dated & signed? Yes [✓] No [ ] N/A [ ]
5. Packing material is: Wet [ ] Dry [ ] NA ✓
6. Number of samples in shipping container: 1 Sample Matrix OTHER SOLID
7. Number of containers per sample: 1 (Or see CoC _____)
8. Samples are in correct container Yes [✓] No [ ]
9. Paperwork agrees with samples? Yes [✓] No [ ]
10. Samples have: Tape [ ] Hazard labels [ ] Rad labels [ ] Appropriate sample labels [✓]
11. Samples are: In good condition [✓] Leaking [ ] Broken Container [ ] Missing [ ]
12. Samples are: Preserved [ ] Not preserved [ ] pH _____ Preservative _____
13. Describe any anomalies:
14. Was P.M. notified of any anomalies? Yes [ ] No [ ] Date _____
15. Inspected by JK Date: 2/27/08 Time: 10:40

Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	Wipe	Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	wipe
J169 P1	<60						

Ion Chamber Ser. No. _____ Calibration date _____

Alpha Meter Ser. No. _____ Calibration date _____

Beta/Gamma Meter Ser. No. 100482 Calibration date 9 may 2007

LvLI
LIONVILLE LABORATORY INC.

31 March 2008

RECEIVED
APR 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 #	0802L668
SDG #	K1131
SAF #	RC-030
Date Received	2/27/08
# Samples	1
Matrix	OTHER SOLID
Volatiles	X
Semivolatiles	X
Pest/PCB	X
Glycols	
DRO/KRO/GRO	
GC Alcohols	
Herbicides	X
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.
BNA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-030 K1131

RECEIVED 2008

DATE RECEIVED: 02/27/08 LVL LOT #: 0802L668

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J169P1	001	SO	08LE0120	02/25/08	03/10/08	03/24/08
LAB QC:						
SBLKTE	MB1	S	08LE0120	N/A	03/10/08	03/24/08
SBLKTE	MB1 BS	S	08LE0120	N/A	03/10/08	03/24/08
SBLKTE	MB1 BSD	S	08LE0120	N/A	03/10/08	03/24/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-030
LVL #: 0802L668
SDG/SAF # K1131 / RC-030

W.O. #: 11343-606-001-9999-00
Date Received: 03-11-2008

SEMIVOLATILE

One (1) solid sample was collected on 02-25-2008.

The sample and its associated QC samples were extracted according to Lionville Laboratory SOPs based on SW 846 method 3540C on 03-10-2008 and analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8270C for TCL Client Specified Semivolatile target compounds on 03-24-2008.

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

1. The results for solid samples were reported on an 'as-received basis'.
2. The sample was extracted and analyzed within holding time.
3. Non-target compounds were detected in these samples.
4. All surrogate recoveries were within acceptance criteria.
5. All matrix spike recoveries were within acceptance criteria.
6. Seven (7) of one hundred and twenty-eight (128) blank spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
7. The method blank was below the reporting limit for all target compounds.
8. All initial calibrations associated with this data set were within acceptance criteria.

r:\group\data\2008\bna\tnu\0802-668ksol1.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 14 pages.

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LIONVILLE LABORATORY INC.

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

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

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

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

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

3/27/08
Date

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 0F M5047

Initiator: Sharon Saylor
Date: 3-26-06
Client: TMU RC030 K1131

Batch: 0F02LLLF
Samples: BS BSD
Method: SW846/MCAWW/CLP/

Parameter: 8270
Matrix: SOLID
Prep Batch: 0F16D120

1. Reason for SDR

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

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

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

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

low recovery of several spike analytes in the BS + BSD

2. Known or Probable Causes(s)

3. Discussion and Proposed Action Other Description: normal

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

4. Project Manager Instructions...signature/date: 3/27/06
__ Concur with Proposed Action
__ Disagree with Proposed Action; See Instruction
✓ Include in Case Narrative
__ Client Contacted:
Date/Person _____
__ Add
__ Cancel

5. Final Action...signature/date: 3-27-06 Other Explanation:
__ Verified re-[log][leach][extract][digest][analysis] (circle)
✓ Included in Case Narrative
__ Hard Copy COC Revised
__ Electronic COC Revised
__ EDD Corrections Completed

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

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

QA-105-A-0805

GLOSSARY

DATA QUALIFIERS

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

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

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

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

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

I = Interference.

NQ = Result qualitatively confirmed but not able to quantify.

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

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

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

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

GLOSSARY

ABBREVIATIONS

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

TECHNICAL FLAGS FOR MANUAL INTEGRATION

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

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

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

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

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

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

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

Lionville Laboratory, Inc.

Semivolatiles by GC/MS, HSL List

Report Date: 03/27/08 12:01

RFW Batch Number: 0802L668 Client: TNUHANFORD RC-030 K1131 Work Order: 11343606001 Page: 1a

000000008

	Cust ID:	J169P1	SBLKTE	SBLKTE BS	SBLKTE BSD
Sample Information	RFW#:	001	08LE0120-MB1	08LE0120-MB1	08LE0120-MB1
	Matrix:	SOLID	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00
	Units:	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Surrogate Recovery	Nitrobenzene-d5	78 %	52 %	62 %	51 %
	2-Fluorobiphenyl	83 %	62 %	90 %	80 %
	Terphenyl-d14	97 %	77 %	85 %	83 %
	Phenol-d5	85 %	61 %	77 %	71 %
	2-Fluorophenol	84 %	59 %	81 %	71 %
	2,4,6-Tribromophenol	90 %	21 %	47 %	57 %
Phenol		330 U	330 U	77 %	74 %
bis(2-Chloroethyl)ether		330 U	330 U	66 %	60 %
2-Chlorophenol		330 U	330 U	78 %	73 %
1,3-Dichlorobenzene		330 U	330 U	80 %	66 %
1,4-Dichlorobenzene		330 U	330 U	80 %	68 %
1,2-Dichlorobenzene		330 U	330 U	82 %	70 %
2-Methylphenol		330 U	330 U	78 %	77 %
2,2'-oxybis(1-Chloropropane)		330 U	330 U	67 %	63 %
3/4 Methylphenol		330 U	330 U	77 %	77 %
N-Nitroso-di-n-propylamine		330 U	330 U	70 %	64 %
Hexachloroethane		330 U	330 U	78 %	62 %
Nitrobenzene		330 U	330 U	57 %	49 * %
Isophorone		330 U	330 U	63 %	58 * %
2-Nitrophenol		330 U	330 U	62 %	57 %
2,4-Dimethylphenol		330 U	330 U	52 %	49 * %
bis(2-Chloroethoxy)methane		330 U	330 U	57 %	53 %
2,4-Dichlorophenol		330 U	330 U	64 %	61 %
1,2,4-Trichlorobenzene		330 U	330 U	66 %	58 * %
Naphthalene		30 J	330 U	62 %	53 %
4-Chloroaniline		330 U	330 U	43 %	36 %
Hexachlorobutadiene		330 U	330 U	76 %	63 %
4-Chloro-3-methylphenol		330 U	330 U	61 %	62 %
2-Methylnaphthalene		32 J	330 U	64 %	60 %
Hexachlorocyclopentadiene		330 U	330 U	82 %	72 %
2,4,6-Trichlorophenol		330 U	330 U	55 %	60 %
2,4,5-Trichlorophenol		830 U	830 U	76 %	82 %

*= Outside of EPA CLP QC limits.

Cust ID:	J169P1		SBLKTE		SBLKTE BS		SBLKTE BSD	
RFW#:	001		08LE0120-MB1		08LE0120-MB1		08LE0120-MB1	
2-Chloronaphthalene	330	U	330	U	79	%	74	%
2-Nitroaniline	830	U	830	U	78	%	75	%
Dimethylphthalate	330	U	330	U	85	%	83	%
Acenaphthylene	330	U	330	U	81	%	77	%
2,6-Dinitrotoluene	330	U	330	U	86	%	83	%
3-Nitroaniline	830	U	830	U	83	%	81	%
Acenaphthene	330	U	330	U	80	%	74	%
2,4-Dinitrophenol	830	U	830	U	12 *	%	21	%
4-Nitrophenol	830	U	830	U	49	%	65	%
Dibenzofuran	330	U	330	U	88	%	83	%
2,4-Dinitrotoluene	330	U	330	U	96	%	97	%
Diethylphthalate	330	U	330	U	89	%	88	%
4-Chlorophenyl-phenylether	330	U	330	U	86	%	87	%
Fluorene	330	U	330	U	84	%	84	%
4-Nitroaniline	830	U	830	U	95	%	96	%
4,6-Dinitro-2-methylphenol	830	U	830	U	25 *	%	37 *	%
N-Nitrosodiphenylamine (1)	330	U	330	U	68	%	73	%
4-Bromophenyl-phenylether	330	U	330	U	80	%	87	%
Hexachlorobenzene	330	U	330	U	105	%	110	%
Pentachlorophenol	830	U	830	U	33	%	41	%
Phenanthrene	19	J	330	U	84	%	82	%
Anthracene	330	U	330	U	91	%	86	%
Carbazole	330	U	330	U	97	%	94	%
Di-n-butylphthalate	330	U	330	U	92	%	90	%
Fluoranthene	330	U	330	U	106	%	102	%
Pyrene	330	U	330	U	72	%	75	%
Butylbenzylphthalate	330	U	330	U	76	%	80	%
3,3'-Dichlorobenzidine	330	U	330	U	76	%	65	%
Benzo(a)anthracene	330	U	330	U	82	%	81	%
Chrysene	330	U	330	U	83	%	81	%
bis(2-Ethylhexyl)phthalate	50	JB	190	J	76	%	75	%
Di-n-octyl phthalate	330	U	330	U	73	%	80	%
Benzo(b)fluoranthene	330	U	330	U	80	%	83	%
Benzo(k)fluoranthene	330	U	330	U	83	%	80	%
Benzo(a)pyrene	330	U	330	U	84	%	81	%
Indeno(1,2,3-cd)pyrene	330	U	330	U	93	%	82	%
Dibenz(a,h)anthracene	330	U	330	U	92	%	80	%
Benzo(g,h,i)perylene	330	U	330	U	93	%	82	%

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

000000009

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J169P1

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

Client: TNUHANFORD RC-030 K1131

Matrix: (soil/water) SOLID

Lab Sample ID: 0802L668-001

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

Lab File ID: N032411

Level: (low/med) LOW

Date Received: 02/27/08

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

Date Extracted: 03/10/08

Concentrated Extract Volume: 1000 (uL)

Date Analyzed: 03/24/08

Injection Volume: 2.0 (uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: _____

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.450	700	JB
2.	UNKNOWN	5.540	200000	JB
3.	ALKANE	17.864	500	J
4.	UNKNOWN	20.357	300	J
5.	ALKANE	22.483	300	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SBLKTE

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

Client: TNUHANFORD RC-030 K1131

Matrix: (soil/water) SOIL

Lab Sample ID: 08LE0120-MB1

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

Lab File ID: N032410

Level: (low/med) LOW

Date Received: 03/10/08

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

Date Extracted: 03/10/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 03/24/08

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: _____

Number TICs found: 4

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	4.468	200	J
2.	ALDOL CONDENSATE	4.877	90	JA
3.	UNKNOWN	5.444	70000	J
4.	UNKNOWN	19.607	800	J

ville Laboratory Use Only
026 668

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

VLI

000000012

t: TNU HANFORD SAFH RC-030
inal Proj. Sampling Date
ct# 11343-606-001-9999-00
ct Contact/Phone#
ille Laboratory Project Manager O Johnson
SW846 Del STD TAT 15 days
Rec'd 2-27-08 Date Due 3-13-08

Refrigerator #									A								
#/Type Container	Liquid								2								
	Solid								1G								
Volume									120								
Preservatives									1								
ANALYSES REQUESTED →		ORGANIC							INORG								
		VOA	BNA	Pest/ PCB	~~Herb~~	TPH			Metal HG	CN							
		Lionville Laboratory Use Only															
		0624H	0625H	0608H OPCB	OHS6X	TPHC			MetO								

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	0624H	0625H	0608H OPCB	OHS6X	TPHC			MetO						
001	T169P1	/	/	X	2-25-08	0910	X	X	X	X	X			X						

ial Instructions: X=OTHER SOLID
ext O = HSL + B, Sn, Mo
(NOTL)

Special Instructions:
1. Run PCBs, VOA, SVOA, TPH, Pest, Chloro-Herb w/Matrix from ICP Metals
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-030-072	Page 1 of 1

llector Welch-Koelling / DeBuigne	Company Contact: Matt Perrott — Telephone No.: 372-9088	Project Coordinator: KESSNER, JH	Price Code: 9C — Data Turnaround: 15 Days
oject Designation: Remaining Sites Confirmation Sampling - Other Solid	Sampling Location: 100-F-44:4	SAF No.: RC-030	
Chest No.: ERC-96-006	Field Logbook No.: EL-1601-2 — COA: C00F44A000	Method of Shipment: Fed Ex	
ipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A080190 ~~ERC-96-006~~ WO 2/20/08	Bill of Lading/Air Bill No.: See OSPC	

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

SAMPLE ANALYSIS

Preservation				None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C				
Type of Container				G/P	G/P	G	G	G	G				
No. of Container(s)				3 JPD	1 2-25-08	1	1	1	1				
Volume				~~500mL~~ 125mL	~~60mL~~ 120mL	60mL	60mL	60mL	250mL				
				See item (1) in Special Instructions	See item (2) in Special Instructions	PCBs - 8082; Pesticides - 8081; Chloro-Herbicides - EPA8151	VOA - 8260A (TCL)	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1				
Sample No.	Matrix *	Sample Date	Sample Time										
69P1	OTHER SOLID	2-25-08	0910		X	X	X	X	X				
~~69P2~~	~~OTHER SOLID~~												
~~69P3~~	~~OTHER SOLID~~												
~~69P4~~	~~OTHER SOLID~~												
~~69P5~~	~~OTHER SOLID~~												

CHAIN OF POSSESSION	Sign/Print Names		
inquished By/Removed From	Date/Time 1030	Received By/Stored In	Date/Time
DeBuigne	2-25-08	1060/2A	2-25-08 1030
inquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
260/2A	2/26/08 0900	MSTankovich	2/26/08
inquished By/Removed From	Date/Time 1500	Received By/Stored In	Date/Time
MSTankovich	2/26/08	Fed Ex	
inquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Fed Ex	2-27-08 0940		2-27-08 0940
inquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
inquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy (TCL List) (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Americium-241); Americium-241; Gross Alpha & Gross Beta; Nickel-63; Isotopic Plutonium; Strontium-89,90 -- Total Sr; Technetium-99; Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Total Uranium

(2) ICP Metals - 6010A (SW-846) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc); Mercury - 7471 - (CV)

(3) Run PCBs, VOA, SVOA, TPH, Pesticides, Chloro Herbicides with material from ICP Metals.

samples from 3728 Ref # 2A
3728 Custodian removed samples for shipping on 2/26/08.
Sampler unavailable to relinquish

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

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

CH-EE-011

000000013

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD
Project/SAP/SOW/Release #: RC-030

Date: 2-27-08

LvLI Batch #: 08021668

Sample Custodian: [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 778883008979
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 3.9	°C	Cooler # ERC-96-006
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
TNUHANFORD RC-030 K1131

RECEIVED 2008 APR

DATE RECEIVED: 02/27/08 LVL LOT # 0802L668

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J169P1						
PETROLEUM HYDROCARBO	001	SO	08LHC009	02/25/08	03/06/08	03/11/08
PETROLEUM HYDROCARBO	001 REP	SO	08LHC009	02/25/08	03/06/08	03/11/08
PETROLEUM HYDROCARBO	001 MS	SO	08LHC009	02/25/08	03/06/08	03/11/08
LAB QC:						
PETROLEUM HYDROCARBO	MB1	S	08LHC009	N/A	03/06/08	03/11/08
PETROLEUM HYDROCARBO	MB1 BS	S	08LHC009	N/A	03/06/08	03/11/08

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-030 K1131
LVL#: 0802L668

W.O.#: 11343-606-001-9999-00
Date Received: 02-27-08

INORGANIC NARRATIVE

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

2. The sample was prepared and analyzed in accordance with the methods 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 time as required by the method and/or contract was met.

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

5. The method blank was within the method criteria.

6. The Laboratory Control Sample (LCS) was within the laboratory control limits.

7. The matrix spike recovery was within the 75-125% control limits.

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

9. Results for solid samples are reported on an "as-received" weight basis.

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

3/17/08
Date

njp\i02-668

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 11 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 (mod.)	✓ EPA 418.1 (mod.)
pH, Soil		__ 9045C	
Sulfide, Reactive		__ Section 7.3/9030B	
Sulfide		__ 9030B(mod)	
Specific Gravity	__ D1429-76C/	__ D5057-90	
Sulfur, Total		__ 9056	
Synthetic Preparation Leach		__ 1312	
Paint Filter		__ 9095A	

Other: **Method:**

Other: **Method**

L-WI-034/B-01/01

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

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

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

ABBREVIATIONS

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

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

ANALYTICAL WET CHEMISTRY METHODS

1. ASTM Standard Methods.

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

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

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

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

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

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

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

f. Code of Federal Regulations.

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 03/11/08

CLIENT: TNUHANFORD RC-030 K1131

LVL LOT #: 0802L668

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J169P1	Petroleum Hydrocarbons	133	u	MG/KG	133	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 03/11/08

CLIENT: TNUHANFORD RC-030 K1131 LVL LOT #: 0802L668

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK10	08LHC009-MB1	Petroleum Hydrocarbons	133	u	MG/KG	133	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 03/11/08

CLIENT: TNUHANFORD RC-030 K1131

LVL LOT #: 0802L668

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT		SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J169P1	Petroleum Hydrocarbons	536	10.3		554	94.9	1.0
BLANK10	08LHC009-MB1	Petroleum Hydrocarbons	543	133	u	558	97.2	1.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 03/11/08

CLIENT: TNUHANFORD RC-030 K1131

LVL LOT #: 0802L668

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT		REPLICATE		RPD	DILUTION FACTOR(REP)
-001REP	J169P1	Petroleum Hydrocarbons	133	u	133	u	NC	1.0

Lionville Laboratory Use Only
08026 668

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI

Client: INU HANFORD SAPH RC-030
Est. Final Proj. Sampling Date:
Project#: 11343-606-001-9999-00
Project Contact/Phone#:
Lionville Laboratory Project Manager: O Johnson
PO: SW846 Del: STD TAT: 15 days
Date Rec'd: 2-27-08 Date Due: 3-13-08

Refrigerator #									A 2								
#/Type Container	Liquid / Solid								1G								
Volume									120								
Preservatives									1								
ANALYSES REQUESTED →		ORGANIC: VOA	BNA	Pest/PCB	~~Chlor~~ Herb	TPH			INORG: Metal HG	CN							
Lionville Laboratory Use Only		0624H	0625H	0608H OPCB	OHBGX	IPHC			MetD								

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	0624H	0625H	0608H OPCB	OHBGX	IPHC			MetD						
001	J169P1	/	/	X	2-25-08	0910	X	X	X	X	X			X						

Special Instructions: X=OTHER SOLID
MetD = HSL + B, Sn, Mo
(NOTL)

Special Instructions:
1. Run PCBs, VOA, SVOA, TPH, Pest., Chloro-Herb w/Metals from ICP Metals
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time

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

000000009

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-030-072	Page 1 of 1

Collector: Welch-Koelling / DeBrigne	Company Contact: Matt Perrott	Telephone No.: 372-9088	Project Coordinator: KESSNER, JH
Price Code: 9C	Data Turnaround: 15 Days		
Project Designation: Remaining Sites Confirmation Sampling - Other Solid	Sampling Location: 100-F-44:4	SAF No.: RC-030	
Ice Chest No.: FRC-96-006	Field Logbook No.: EL-1601-2	COA: C00F44A000	Method of Shipment: FedEx
Shipped To: EBERLINE SERVICES / MONVILLE	Offsite Property No.: A080190 FRC-96-006 WO 2/26/08		Bill of Lading/Air Bill No.: See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

SAMPLE ANALYSIS

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C						
Type of Container	G/P	G/P	aG	G	aG	G						
No. of Container(s)	3	1 JPD 2-26-08	1	1	1	1						
Volume	~~500mL~~ ~~125mL~~	~~60mL~~ 120mL	60mL	60mL	60mL	250mL						
	See item (2) in Special Instructions	See item (2) in Special Instructions.	PCBs - 8082; Pesticides - 8081; Chloro-Herbicides - EPA8151	VOA - 8260A (TCL)	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1						
Sample No.	Matrix *	Sample Date	Sample Time									
J169P1	OTHER SOLID	2-25-08	0910		X	X	X	X	X			
~~J169P2~~	~~OTHER SOLID~~											
~~J169P3~~	~~OTHER SOLID~~											
~~J169P4~~	~~OTHER SOLID~~											
~~J169P5~~	~~OTHER SOLID~~											

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: DeBrigne	1030 2-25-08	1060/2A	2-25-08 1030
Relinquished By/Removed From: 1060/2A	2/26/08 0900	MSTankovich	2/26/08
Relinquished By/Removed From: MSTankovich	1500 2/26/08	Received By/Stored In: FedEx	
Relinquished By/Removed From: FedEx	2-27-08 0940	Received By/Stored In:	2-27-08 0940
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy (TCL List) (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Americium-241); Americium-241; Gross Alpha & Gross Beta; Nickel-63; Isotopic Plutonium; Strontium-89,90 -- Total Sr; Technetium-99; Isotopic Uranium (Uranium-233/234, Uranium-235, Uranium-238); Total Uranium
(2) ICP Metals - 6010A (SW-846) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc); Mercury - 7471 - (CV)
(3) Run PCBs, VOA, SVOA, TPH, Pesticides, Chloro Herbicides with material from ICP Metals.
samples from 3728 Ref # 2A
3728 Custodian removed samples for shipping on 2/26/08.
Sampler unavailable to relinquish

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

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

WCH-EE-011

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD
Project/SAP/SOW/Release #: RC-030

Date: 2-27-08

LvLI Batch #: 08021668

Sample Custodian: [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 798883008979
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 3.9	°C	Cooler # ERC-96-006
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.
PEST/PCB ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-030 K1131

RECEIVED 2008

DATE RECEIVED: 02/27/08 LVL LOT # :08021668

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J169P1	001	SO	08LE0121	02/25/08	03/10/08	03/11/08
J169P1	001 MS	SO	08LE0121	02/25/08	03/10/08	03/11/08

LAB QC:

PBLKNT	MB1	S	08LE0121	N/A	03/10/08	03/11/08
PBLKNT	MB1 BS	S	08LE0121	N/A	03/10/08	03/11/08
PBLKNT	MB1 BSD	S	08LE0121	N/A	03/10/08	03/11/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-030
LVL #: 0802L668
SDG/SAF # K1131 / RC-030

W.O. #: 11343-606-001-9999-00
Date Received: 02-27-2008

CHLORINATED PESTICIDES

One (1) solid sample was collected on 02-25-2008.

The sample and its associated QC samples were extracted on 03-10-2008 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedure on 03-11-2008. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8081A.

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

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

l:\group\data\pest\tnu\0802-668ksol1.pest.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 10 pages.

LIONVILLE LABORATORY INC.

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

3/19/08
Date

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

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 080600

Initiator: CAC
Date: 03/12/08
Client: TNU

Batch: 0802L668
Samples: 001MS
Method: SW846/MCAWW/CLP/

Parameter: Pest
Matrix: SOIL
Prep Batch:

1. Reason for SDR

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

b. General Discrepancy

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

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

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

Endrin Ketone recovery is low

2. Known or Probable Causes(s)

3. Discussion and Proposed Action

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

Other Description:

BS is good
Narrate
ID.

4. Project Manager Instructions...signature/date: [illegible] 3/19/08

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

5. Final Action...signature/date: KDS 3-18-08

Other Explanation:

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

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

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

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

QA-139-A-0208

GLOSSARY OF DATA

DATA QUALIFIERS

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

ABBREVIATIONS

BS	=	Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
BSD	=	Indicates blank spike duplicate.
MS	=	Indicates matrix spike.
MSD	=	Indicates matrix spike duplicate.
DL	=	Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
NA	=	Not Applicable.
DF	=	Dilution Factor.
NR	=	Not Required.
NS	=	Not Spiked.
SP	=	Indicates Spiked Compound.
P	=	This flag is used for an PESTICIDE/PCB target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".
D	=	This flag identifies all compounds identified in an analysis at a secondary dilution factor.
C	=	This flag applies to a compound that has been confirmed by GC/MS.

[illegible] for multi-component target analytes.

Lionville Laboratory, Inc.

Pesticide/PCBs by GC, CLP List

Report Date: 03/12/08 13:15

RFW Batch Number: 0802L668 Client: TNUHANFORD RC-030 K1131 Work Order: 11343606001 Page: 1

0000000006

	Cust ID:	J169P1	J169P1	PBLKNT	PBLKNT BS	PBLKNT BSD
Sample Information	RFW#:	001	001 MS	08LE0121-MB1	08LE0121-MB1	08LE0121-MB1
	Matrix:	SOLID	SOLID	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG

Surrogate:	Tetrachloro-m-xylene	85	%	68	%	86	%	83	%	90	%			
	Decachlorobiphenyl	75	%	63	%	77	%	75	%	82	%			
			fl		fl		fl		fl		fl		fl	
Alpha-BHC		1.0	U	77	%	0.33	U	92	%	102	%			
gamma-BHC (Lindane)		1.0	U	78	%	0.33	U	93	%	102	%			
Beta-BHC		1.0	J.I	73	%	0.33	U	91	%	100	%			
Heptachlor		1.0	U	79	%	0.33	U	87	%	99	%			
Delta-BHC		1.0	U	65	%	0.33	U	79	%	89	%			
Aldrin		1.0	U	79	%	0.33	U	92	%	102	%			
Heptachlor epoxide		1.0	U	89	%	0.33	U	92	%	102	%			
gamma-Chlordane		1.9	J	78	%	0.33	U	94	%	103	%			
Endosulfan I		1.0	U	83	%	0.33	U	93	%	103	%			
alpha-Chlordane		1.0	U	78	%	0.33	U	92	%	102	%			
4,4'-DDE		1.0	U	90	%	0.33	U	102	%	112	%			
Dieldrin		1.0	U	82	%	0.33	U	95	%	105	%			
Endrin		1.0	U	85	%	0.33	U	93	%	106	%			
4,4'-DDD		1.0	U	85	%	0.33	U	93	%	104	%			
Endosulfan II		1.0	U	80	%	0.33	U	93	%	104	%			
4,4'-DDT		1.0	U	90	%	0.33	U	102	%	116	%			
Endrin aldehyde		1.0	U	81	%	0.33	U	82	%	88	%			
Endosulfan sulfate		1.0	U	77	%	0.33	U	86	%	100	%			
Methoxychlor		1.0	U	93	%	0.33	U	95	%	111	%			
Endrin ketone		1.0	U	82 *	%	0.33	U	88	%	101	%			
Toxaphene		10	U	10	U	3.3	U	3.3	U	3.3	U			

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

SAMPLE EXTRACTION RECORD

Sheet no.: 1

Extract. Date: 03/10/08 Extraction Batch No: 08LE0121 Analyst: MF Method: ****

Test: O608 Cleanup Date: Analyst: Client: LQA-L8081A

LIMS Report Date: 03/12/08 Solvent: DCM/ACETONE,HEXANE Adsorbent:

Sample No:	Client Name / Client ID	pH	Initial WT/VOL	Surr. Mult.	Spike Mult.	Final VOL	Final VOL	Split Mult.	GPC Y/N	% Solid	Vis H2O	C/D FACTOR	Sulfur Clean?
0802L650-	LQA-L8081A												
002 H	LOD-3540C		30.0	1.0		10		1.0	N	0.00		333.3	
0802L668-	TNUHANFORD RC-030 K1131												
001 H	J169P1		10	1.0		10		1.0	N	0.00		1000.0	
001 HS	J169P1		10	1.0	1.0	10		1.0	N	0.00		1000.0	
08LE0121-MB1 H			30.0	1.0		10		1.0	N	100.00		333.3	
08LE0121-MB1 HS			30.0	1.0	1.0	10		1.0	N	100.00		333.3	
08LE0121-MB1 HT			30.0	1.0	1.0	10		1.0	N	100.00		333.3	

Comments:
Surrogate: 250 UL OLM PSURR 89916404
Spike: 250 UL FULL LIST SPK 89915509,MB2-100 UL 89915510

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
all	[illegible]	3/11/08	SZ	3/11/08 1550	GC

0000000007

onville Laboratory Use Only
8026668

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

VLI

000000008

nt INU HANFORD SAFF RC-030
. Final Proj. Sampling Date
ject# 11343-606-001-9999-00
ject Contact/Phone#
ville Laboratory Project Manager O Johnson
SW846 Del STD TAT 15 days
e Rec'd 2-27-08 Date Due 3-13-08

Refrigerator #									A 2							
#/Type Container	Liquid / Solid								1G							
Volume									120 1							
Preservatives																
ANALYSES REQUESTED →		ORGANIC: VOA	BNA	Pest/PCB	~~Herb~~	TPH			INORG: Metal HG	CN						
Lionville Laboratory Use Only		0624H	0625H	0608H OPCB	OHBGX	IPHC			MetD							

RIX
ES:
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	0624H	0625H	0608H OPCB	OHBGX	IPHC			MetD						
001	J169P1	/	/	X	2-25-08	0910	X	X	X	X	X			X						

ecial Instructions: X=OTHER SOLID
MetD = HSL + B, Si, Mo
(NOTL)

Special Instructions:
1. Run Pest, VOA, SVOA, TPH, Pest., Chloro-Herb w/ Metals from ICP metals
2.
3.
4.
5.
6.

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-030-072	Page 1 of 1

Collector: Welch-Koelling / DeBuigne	Company Contact: Matt Perrott	Telephone No.: 372-9088	Project Coordinator: KESSNER, JH
Project Designation: Remaining Sites Confirmation Sampling - Other Solid	Sampling Location: 100-F-44:4		SAF No.: RC-030
Ice Chest No.: ERC-96-006	Field Logbook No.: EL-1601-2	COA: C00F44A000	Method of Shipment: FedEx
Shipped To: EBERLINE SERVICES / MONVILLE	Offsite Property No.: A080190 ~~ERC-96-006~~ WO 2/26/08		Bill of Lading/Air Bill No.: See OSPC

Price Code: 9C

Data Turnaround: 15 Days

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C					
Type of Container	G/P	G/P	aG	G	aG	G					
No. of Container(s)	3 ~~1~~ JPD	1 2-25-08	1	1	1	1					
Volume	~~500mL~~ 125mL	~~60mL~~ 120mL	60mL	60mL	60mL	250mL					
SAMPLE ANALYSIS	See item (1) in Special Instructions	See item (2) in Special Instructions	PCBs - 8082; Pesticides - 8081; Chlorn-Herbicides - EPA8151	VOA - 8260A (TCL)	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1					

Sample No.	Matrix *	Sample Date	Sample Time										
169P1	OTHER SOLID	2-25-08	0910		X	X	X	X	X				
~~169P2~~	~~OTHER SOLID~~												
~~169P3~~	~~OTHER SOLID~~												
~~169P4~~	~~OTHER SOLID~~												
~~169P5~~	~~OTHER SOLID~~												

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: DeBuigne	1020 2-25-08	1060/2A	2-25-08 1030
Relinquished By/Removed From: 260/2A	2/26/08 0900	MSTankovich	2/26/08
Relinquished By/Removed From: MSTankovich	2/26/08 1500	Fed Ex	
Relinquished By/Removed From: Fed Ex	2-27-08 0940		2-27-08 0940
Relinquished By/Removed From			
Relinquished By/Removed From			

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy (TCL List) [Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155]; Gamma Spec - Add-on [Americium-241]; Americium-241; Gross Alpha & Gross Beta; Nickel-63; Isotopic Plutonium; Strontium-89,90 -- Total Sr; Technetium-99; Isotopic Uranium [Uranium-233/234, Uranium-235, Uranium-238]; Total Uranium

(2) ICP Metals - 6010A (SW-846) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc]; Mercury - 7471 - (CV)

(3) Run PCBs, VOA, SVOA, TPH, Pesticides, Chloro Herbicides with material from ICP Metals.

samples from 3728 Ref # 2A
3728 Custodian removed samples for shipping on 8/26/08.
Sampler unavailable to relinquish

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

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

CH-EE-011

000000009

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD

Project/SAP/SOW/Release #: RC-030

Date: 2-27-08

LvLI Batch #: 0802L668

Sample Custodian: [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 7788830089 79
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 3.9	°C	Cooler # ERC-96-006
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify):
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☑ Yes	☐ No	☐ N/A
14. QC stickers placed on bottles designated by client?	☑ Yes	☐ No	☐ N/A
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A

Person Contacted _____ Date _____

LvLI LIONVILLE LABORATORY, INC.

SR-002-B.doc

000000010

Lionville Laboratory, Inc.
VOA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-030 K1131

RECEIVED 2008

DATE RECEIVED: 02/27/08 LVL LOT # 08021668

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J169P1	001	SO	08LVK040	02/25/08	N/A	03/02/08
J169P1	001 MS	SO	08LVK040	02/25/08	N/A	03/02/08
J169P1	001 MSD	SO	08LVK040	02/25/08	N/A	03/02/08

LAB QC:

VBLKVL	MB1	S	08LVK040	N/A	N/A	03/02/08
VBLKVL	MB1 BS	S	08LVK040	N/A	N/A	03/02/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-030
LVL #: 0802L668
SDG/SAF # K1131/RC-030

W.O. #: 11343-606-001-9999-00
Date Received: 02-27-2008

GC/MS VOLATILE

One (1) solid sample was collected on 02-25-2008.

The sample and its associated QC samples were analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8260B for TCL volatile target compounds on 03-02-2008.

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

1. The sample was analyzed within required holding time.
2. Non-target compounds were detected in the samples.
3. One (1) of fifteen (15) surrogate recoveries was outside acceptance criteria. Associated matrix spike analyses fulfilled its reanalysis requirement.
4. Seven (7) of seventy (70) matrix spike recoveries were outside acceptance criteria.
5. All blank spike recoveries were within acceptance criteria.
6. The method blank was below the reporting limit for all target compounds.
7. All internal standard area and retention time criteria were met.

r:\group\data\2008\voa\tnu\0802-668ksol1.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 13 pages.

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LIONVILLE LABORATORY INC.

8. The result for the solid sample was reported on an 'as-received basis', due to the sample matrix.

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

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

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

3/17/08
Date

GLOSSARY

DATA QUALIFIERS

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

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

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

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

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

I = Interference.

NQ = Result qualitatively confirmed but not able to quantify.

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

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

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

GLOSSARY

ABBREVIATIONS

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

TECHNICAL FLAGS FOR MANUAL INTEGRATION

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

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

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

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

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

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

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

Richville Laboratory, Inc.
Volatiles by GC/MS, HSL List

Report Date: 03/12/08 12:19

RFW Batch Number: 0802L668 Client: TNUHANFORD RC-030 K1131 Work Order: 11343606001 Page: 1a

	Cust ID:	J169P1	J169P1	J169P1	VBLKVL	VBLKVL BS
Sample Information	RFW#:	001	001 MS	001 MSD	08LVK040-MB1	08LVK040-MB1
	Matrix:	SOLID	SOLID	SOLID	SOIL	SOIL
	D.F.:	0.943	1.04	0.980	1.00	1.00
	Units:	ug/Kg	ug/Kg	ug/Kg	ug/Kg	ug/Kg
Surrogate Recovery	Toluene-d8	106 %	103 %	102 %	98 %	101 %
	Bromofluorobenzene	129 * %	109 %	109 %	111 %	109 %
	1,2-Dichloroethane-d4	123 %	116 %	115 %	109 %	102 %
Chloromethane		9 U	65 %	72 %	10 U	78 %
Bromomethane		9 U	110 %	107 %	10 U	117 %
Vinyl Chloride		9 U	94 %	96 %	10 U	100 %
Chloroethane		9 U	127 %	122 %	10 U	131 %
Methylene Chloride		3 JB	76 %	76 %	3 J	74 %
Acetone		9 U	258 %	280 %	10 U	194 %
Carbon Disulfide		5 U	99 %	97 %	5 U	102 %
1,1-Dichloroethene		5 U	94 %	92 %	5 U	95 %
1,1-Dichloroethane		5 U	96 %	97 %	5 U	94 %
1,2-Dichloroethene (total)		5 U	94 %	93 %	5 U	92 %
Chloroform		5 U	104 %	104 %	5 U	100 %
1,2-Dichloroethane		5 U	114 %	111 %	5 U	99 %
2-Butanone		9 U	242 * %	233 * %	10 U	143 %
1,1,1-Trichloroethane		5 U	103 %	101 %	5 U	100 %
Carbon Tetrachloride		5 U	101 %	101 %	5 U	98 %
Bromodichloromethane		5 U	111 %	111 %	5 U	98 %
1,2-Dichloropropane		5 U	96 %	97 %	5 U	92 %
cis-1,3-Dichloropropene		5 U	114 %	107 %	5 U	99 %
Trichloroethene		5 U	95 %	96 %	5 U	94 %
Dibromochloromethane		5 U	122 %	111 %	5 U	100 %
1,1,2-Trichloroethane		5 U	119 %	108 %	5 U	95 %
Benzene		5 U	93 %	93 %	5 U	93 %
Trans-1,3-Dichloropropene		5 U	125 %	112 %	5 U	101 %
Bromoform		5 U	116 %	104 %	5 U	91 %
4-Methyl-2-pentanone		9 U	157 * %	153 * %	10 U	104 %
2-Hexanone		9 U	244 * %	237 * %	4 J	146 %
Tetrachloroethene		5 U	94 %	92 %	5 U	95 %
1,1,2,2-Tetrachloroethane		5 U	139 * %	128 %	5 U	104 %
Toluene		5 U	103 %	100 %	5 U	99 %

*= Outside of EPA CLP QC limits.

0000000007

Cust ID:	J169P1		J169P1		J169P1		VBLKVL		VBLKVL BS	
RFW#:	001		001 MS		001 MSD		08LVK040-MB1		08LVK040-MB1	
Chlorobenzene	5	U	104	%	98	%	5	U	97	%
Ethylbenzene	5	U	108	%	102	%	5	U	99	%
Styrene	5	U	102	%	95	%	5	U	95	%
Xylenes (total)	5	U	99	%	95	%	5	U	93	%
cis-1,2-dichloroethene	5	U	97	%	97	%	5	U	93	%
trans-1,2-dichloroethene	5	U	91	%	89	%	5	U	91	%

*= Outside of EPA CLP QC limits.

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

J169P1

Lab Name: Lionville Labs, Inc. Contract: 11343606001

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

Matrix: (soil/water) SOLID Lab Sample ID: 0802L668-001

Sample wt/vol: 5.30 (g/mL) G Lab File ID: K030207

Level: (low/med) LOW Date Received: 02/27/08

% Moisture: not dec. 0 Date Analyzed: 03/02/08

Column: (pack/cap) CAP Dilution Factor: 0.943

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	SILOXANE	17.020	5	JB

FORM 1 VOA-TIC 1/87 Rev.

1E
VOLATILE ORGANICS ANALYSIS SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

EPA SAMPLE NO.

VBLKVL

Lab Name: Lionville Labs, Inc. Contract: 11343606001

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

Matrix: (soil/water) SOIL Lab Sample ID: 08LVK040-MB1

Sample wt/vol: 5.00 (g/mL) G Lab File ID: K030204

Level: (low/med) LOW Date Received: 03/02/08

% Moisture: not dec. 0 Date Analyzed: 03/02/08

Column: (pack/cap) CAP Dilution Factor: 1.00

Number TICs found: 1

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	SILOXANE	17.016	5	J

FORM 1 VOA-TIC 1/87 Rev.

nville Laboratory Use Only
2024 668

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI

000000011

nt: TNU HANFORD SAFH RC-030
Final Proj. Sampling Date
ect# 11343-606-001-9999-00
ect Contact/Phone#
ville Laboratory Project Manager O Johnson
SW846 Del STD TAT 15 days
Rec'd 2-27-08 Date Due 3-13-08

Refrigerator #									A 2							
#/Type Container	Liquid / Solid								1G							
Volume									60							
Preservatives									1							
ANALYSES REQUESTED →		ORGANIC: VOA	BNA	Pest/PCB	Herb	TPH			INORG: Metal (HG)	CN						
Lionville Laboratory Use Only		0624H	0625H	0608H OPCB	OH8G	IPHC			MetO							

IX
S:
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	0624H	0625H	0608H OPCB	OH8G	IPHC			MetO					
001	T169P1	✓	✓	X	2-25-08	0910	X	X	X	X	X			X					

ial Instructions: X=OTHER SOLID
etO = HSL + B, Si, Mo
(NOTL)

Special Instructions:
1. Run PCBs, VOA, SVOA, TPH, Pest., Chloro-Herb w/ Material from ICP Metals
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-030-072	Page 1 of 1

Collector: Welch-Koelling / DeBrigne	Company Contact: Matt Perrott	Telephone No.: 372-9088	Project Coordinator: KESSNER, JH
Price Code: 9C	Data Turnaround: 15 Days		
Project Designation: Remaining Sites Confirmation Sampling - Other Solid	Sampling Location: 100-F-44:4		SAF No.: RC-030
Ice Chest No.: ERC-96-006	Field Logbook No.: EL-1601-2	COA: C00F44A000	Method of Shipment: FedEx
Shipped To: EBERLINE SERVICES / JONVILLE	Offsite Property No.: A080190 ~~ERC-96-006~~ WO 2/26/08		Bill of Lading/Air Bill No.: See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C					
Type of Container	G/P	G/P	aG	G	aG	G					
No. of Container(s)	3	1 JPD 2-25-08	1	1	1	1					
Volume	~~500mL~~ 125mL	~~60mL~~ 120mL	60mL	60mL	60mL	250mL					
SAMPLE ANALYSIS	See item (1) in Special Instructions	See item (2) in Special Instructions.	PCBs - 8082; Pesticides - 8081; Chloro-Herbicides - EPA8151	VOA - 8260A (TCL)	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1					
Sample No.	Matrix *	Sample Date	Sample Time								
169P1	OTHER SOLID	2-25-08	0910		X	X	X	X	X		
~~169P2~~	~~OTHER SOLID~~										
~~169P3~~	~~OTHER SOLID~~										
~~169P4~~	~~OTHER SOLID~~										
~~169P5~~	~~OTHER SOLID~~										

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
DeBrigne	2-25-08 1030	1060/2A	2-25-08 1030
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
260/2A	2/26/08 0900	MSTANKOVICH	2/26/08
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
MSTANKOVICH	2/26/08 1500	FedEx	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
FedEx	2-27-08 0940		2-27-08 0940
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy (TCL List) [Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155]; Gamma Spec - Add-on [Americium-241]; Americium-241; Gross Alpha & Gross Beta; Nickel-63; Isotopic Plutonium; Strontium-89,90 -- Total Sr; Technetium-99; Isotopic Uranium [Uranium-233/234, Uranium-235, Uranium-238]; Total Uranium

(2) ICP Metals - 6010A (SW-846) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc]; Mercury - 7471 - (CV)

(3) Run PCBs, VOA, SVOA, TPH, Pesticides, Chloro Herbicides with material from KP Metals.

samples from 3728 Ref# 2A
3728 Custodian removed samples for shipping on 8/26/08.
Sampler unavailable to relinquish

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

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

CH-EE-011

000000012

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD
Project/SAP/SOW/Release #: RC-030

Date: 2-27-08

LvLI Batch #: 08021668

Sample Custodian: V. Hem

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FEDEX		Airbill # 778883008979
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 3.9	°C	Cooler # ERC-96-006
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.
PCB ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-030 K1131

RECEIVED 2008

DATE RECEIVED: 02/27/08 LVL LOT # 0802L668

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J169P1	001	SO	08LE0121	02/25/08	03/10/08	03/12/08
J169Pi	001 MS	SO	08LE0121	02/25/08	03/10/08	03/12/08
LAB QC:						
PBLKNT	MB1	S	08LE0121	N/A	03/10/08	03/11/08
PBLKNT	MB1 BS	S	08LE0121	N/A	03/10/08	03/11/08
PBLKNT	MB1 BSD	S	08LE0121	N/A	03/10/08	03/11/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-030
LVL #: 0802L668
SDG/SAF # K1131 / RC-030

W.O. #: 11343-606-001-9999-00
Date Received: 02-27-2008

PCB

One (1) solid sample was collected on 02-25-2008.

The sample and its associated QC samples was extracted on 03-10-2008 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedure on 03-11,12-2008. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8082.

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

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

r:\group\data\2008\pest\tnu\0802-668sol1.pcb.doc

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

LIONVILLE LABORATORY INC.

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

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

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

3/17/08
Date

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

GLOSSARY OF DATA

DATA QUALIFIERS

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

ABBREVIATIONS

BS	=	Indicates blank spike in which reagent grade water is spiked with the CLP matrix spiking solutions and carried through all the steps in the method. Spike recoveries are reported.
BSD	=	Indicates blank spike duplicate.
MS	=	Indicates matrix spike.
MSD	=	Indicates matrix spike duplicate.
DL	=	Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
NA	=	Not Applicable.
DF	=	Dilution Factor.
NR	=	Not Required.
NS	=	Not Spiked.
SP	=	Indicates Spiked Compound.
P	=	This flag is used for an PESTICIDE/PCB target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".
D	=	This flag identifies all compounds identified in an analysis at a secondary dilution factor.
C	=	This flag applies to a compound that has been confirmed by GC/MS.

[illegible] for multi-component target analytes.

Lionville Laboratory, Inc.

PCBs by GC

Report Date: 03/12/08 13:22

RFW Batch Number: 0802L668 Client: TNUHANFORD RC-030 K1131 Work Order: 11343606001 Page: 1

000000005

	Cust ID:	J169P1	J169P1	PBLKNT	PBLKNT BS	PBLKNT BSD
Sample Information	RFW#:	001	001 MS	08LE0121-MB1	08LE0121-MB1	08LE0121-MB1
	Matrix:	SOLID	SOLID	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00
	Units:	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Surrogate:	Decachlorobiphenyl	95 %	100 %	86 %	95 %	94 %
	Tetrachloro-m-xylene	102 %	103 %	90 %	95 %	99 %
Aroclor-1016		10 U	84 %	3.3 U	76 %	77 %
Aroclor-1221		10 U	10 U	3.3 U	3.3 U	3.3 U
Aroclor-1232		10 U	10 U	3.3 U	3.3 U	3.3 U
Aroclor-1242		10 U	10 U	3.3 U	3.3 U	3.3 U
Aroclor-1248		10 U	10 U	3.3 U	3.3 U	3.3 U
Aroclor-1254		10 U	10 U	3.3 U	3.3 U	3.3 U
Aroclor-1260		10 U	86 %	3.3 U	77 %	80 %

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

Lionville Laboratory, Inc.

SAMPLE EXTRACTION RECORD

Sheet no.: 1

Extract. Date: 03/10/08 Extraction Batch No: 08LE0121 Analyst: MF Method: **** SOX3540

Test: OPCB Cleanup Date: 03/11/08 Analyst: MF Client: TNUHANFORD RC-030 K1131

LIMS Report Date: 03/11/08 Solvent: DCM/ACETONE,HEXANE Adsorbent: ACIDS

000000006

Sample No:	Client Name / Client ID	pH	Initial WT/VOL	Surr. Mult.	Spike Mult.	Final VOL	Final VOL	Split Mult.	GPC Y/N	% Solids	C/D FACTOR
0802L668-	TNUHANFORD RC-030 K1131										
001	J169P1		10	1.0		10		1.0	N	0.00	1000.0
001 -S	J169P1		10	1.0	1.0	10		1.0	N	0.00	1000.0
0803L723-	BECHTEL-BETTIS REL 4										
002	07-0771		0.5	1.0		10		1.0	N	0.00	20000
004	07-0773		0.5	1.0		10		1.0	N	0.00	20000
006	07-0775		0.5	1.0		10		1.0	N	0.00	20000
008	07-0777		0.5	1.0		10		1.0	N	0.00	20000
008 -S	07-0777		0.5	1.0	1.0	10		1.0	N	0.00	20000
008 -T	07-0777		0.5	1.0	1.0	10		1.0	N	0.00	20000
010	07-0779		0.5	1.0		10		1.0	N	0.00	20000
012	07-0781		0.5	1.0		10		1.0	N	0.00	20000
014	07-0783		0.5	1.0		10		1.0	N	0.00	20000
016	07-0785		0.5	1.0		10		1.0	N	0.00	20000
018	07-0788		0.5	1.0		10		1.0	N	0.00	20000
08LE0121-MB1	PBLKNT		30.0	1.0		10		1.0	N	100.00	333.3
08LE0121-MB1 -S	PBLKNT		30.0	1.0	1.0	10		1.0	N	100.00	333.3
08LE0121-MB1 -T	PBLKNT		30.0	1.0	1.0	10		1.0	N	100.00	333.3

Comments: L723 PAINT CHIPS RECV BOTH SILICA/ACID CLN UP
Surrogate: 250 UL OLM PSURR 89916404
Spike: 250 UL AR1660 89916602

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
[illegible]	[illegible]	3/11/08 1350	SZ 3/11/08 15:50	→	GC

ville Laboratory Use Only
024 668

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

VLI

000000007

t: INW HANFORD SAFH RC-030
Final Proj. Sampling Date
ct# 11343-606-001-9999-00
ot Contact/Phone#
ille Laboratory Project Manager O Johnson
SW846 Del STD TAT 15 days
Rec'd 2-27-08 Date Due 3-13-08

Refrigerator #									A 2							
#/Type Container	Liquid / Solid								1G							
Volume									120							
Preservatives									1							
ANALYSES REQUESTED →		ORGANIC							INORG							
		VOA	BNA	Pest/PCB	Chloro Herb	TPH			Metal HG	CN						
		Lionville Laboratory Use Only														
		0624H	0625H	0608H OPCB	OHS6X	TPHC			MetD							

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	0624H	0625H	0608H OPCB	OHS6X	TPHC			MetD						
001	J169P1	/	/	X	2-25-08	0910	X	X	X	X	X			X						

ix
S:
oil
sediment
solid
sludge
ater
il
ir
drum
solids
drum
liquids
P/TCLP
eachate
/pe
ther
sh

ial Instructions: X=OTHER SOLID
etD = HSL + B, Sn, Mo
(NOTL)

Special Instructions:
1. Run PCBs, VOA, SVOA, TPH, Pest., Chloro-Herb w/ Metals from ICP Metals
2.
3.
4.
5.
6.

Inquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time	Relinquished by	Received by	Date	Time

ORIGINAL REWRITTEN

"COMPOSITE WASTE"

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-030-072	Page 1 of 1

ollector Welch-Koelling / DeBuigne	Company Contact Matt Perrott	Telephone No. 372-9088	Project Coordinator KESSNER, JH	Price Code 9C	Data Turnaround 15 Days
rolect Designation Remaining Sites Confirmation Sampling - Other Solid	Sampling Location 100-F-44:4		SAF No. RC-030		
e Chest No. ERC-96-006	Field Logbook No. EL-1601-2	COA C00F44A000	Method of Shipment Fed Ex		
hipped To EBERLINE SERVICES / MONVILLE	Offsite Property No. WO 2/26/08 A080190 ~~ERC-96-006~~		Bill of Lading/Air Bill No. See OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C					
Type of Container	G/P	G/P	nG	G	nG	G					
No. of Container(s)	3 1 JPD	1 2-25-08	1	1	1	1					
Volume	~~500mL~~ 125mL	~~60mL~~ 120mL	60mL	60mL	60mL	250mL					
SAMPLE ANALYSIS	See item (2) in Special Instructions	See item (2) in Special Instructions.	PCBs - 8082; Pesticides - 8081; Chloro-Herbicides - EPA8151	VOA - 8260A (TCL)	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1					
Sample No.	Matrix *	Sample Date	Sample Time								
I69P1	OTHER SOLID	2-25-08	0910		X	X	X	X	X		
~~I69P2~~	~~OTHER SOLID~~										
~~I69P3~~	~~OTHER SOLID~~										
~~I69P4~~	~~OTHER SOLID~~										
~~I69P5~~	~~OTHER SOLID~~										

CHAIN OF POSSESSION		Sign/Print Names	
linquished By/Removed From	Date/Time 1030	Received By/Stored In	Date/Time
DeBuigne	2-25-08	1060/2A	2-25-08 1030
linquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
260/2A	2/26/08 0900	MSTankovich	2/26/08
linquished By/Removed From	Date/Time 1500	Received By/Stored In	Date/Time
MSTankovich	2/26/08	Fed Ex	
linquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Fed Ex	2-27-08 0940		2-27-08 0940
linquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
linquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241}; Americium-241; Gross Alpha & Gross Beta; Nickel-63; Isotopic Plutonium; Strontium-89,90 -- Total Sr; Technetium-99; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Total Uranium

(2) ICP Metals - 6010A (SW-846) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(3) Run PCBs, VOA, SVOA, TPH, Pesticides, Chloro Herbicides with material from ICP Metals.

samples from 3728 Ref # 2A
3728 Custodian removed samples for shipping on 8/26/08.
Sampler unavailable to relinquish

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

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

CH-EE-011

000000008

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD
Project/SAP/SOW/Release #: RC-030

Date: 2-27-08

LvLI Batch #: 08021668

Sample Custodian: V. Hernandez

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 798883008979
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 3.9	°C	Cooler # ERC-96-006
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.
HBGX ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-030 K1131

RECEIVED 2008

DATE RECEIVED: 02/27/08 LVL LOT #: 08021568

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J169P1	001	SO	08LE0124	02/25/08	03/10/08	03/11/08

LAB QC:

PBLKNS	MB1	S	08LE0124	N/A	03/10/08	03/11/08
PBLKNS	MB1 BS	S	08LE0124	N/A	03/10/08	03/11/08
PBLKNS	MB1 BSD	S	08LE0124	N/A	03/10/08	03/11/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-030
LVL #: 0802L668
SDG/SAF # K1131 / RC-030

W.O. #: 11343-606-001-9999-00
Date Received: 02-27-2008

HERBICIDE

One (1) solid sample was collected on 02-25-2008.

The sample and its associated QC samples were extracted on 03-10-2008 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedure on 03-11-2008. The extraction and analysis procedures were based on method 8151A.

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

1. All required holding times for extraction and analysis have been met.
2. The method blank was below the reporting limits for all target compounds.
3. All surrogate recoveries were within acceptance criteria.
4. All blank spike recoveries were within acceptance criteria.
5. The initial calibrations associated with this data set were within acceptance criteria.
6. The continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
7. 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.
8. The results for solid samples were reported on an 'as-received basis' as required by the project.

r:\group\data\2008\herb\tnu\0802-688ksol1.doc

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

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

LIONVILLE LABORATORY INC.

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

3/17/08
Date

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

GLOSSARY OF DATA

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E	=	Indicates that the compound was detected beyond the calibration range and was subsequently analyzed at a dilution.
I	=	Interference.
.I	=	Indicates an interference on one analytical column only. Result is reported from remaining analytical column.

ABBREVIATIONS

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MS	=	Indicates matrix spike.
MSD	=	Indicates matrix spike duplicate.
DL	=	Indicates that recoveries were not obtained because the extract had to be diluted for analysis.
NA	=	Not Applicable.
DF	=	Dilution Factor.
NR	=	Not Required.
NS	=	Not Spiked.
SP	=	Indicates Spiked Compound.
P	=	This flag is used for an PESTICIDE/PCB target analyte when there is greater than 25% difference for detected concentrations between the two GC columns (see Form X). The lower of the two values is reported on Form I and flagged with a "P".
D	=	This flag identifies all compounds identified in an analysis at a secondary dilution factor.
C	=	This flag applies to a compound that has been confirmed by GC/MS.

[illegible] for multi-component target analytes.

Lionville Laboratory, Inc.

Herbicides, Special List

Report Date: 03/13/08 14:04

RFW Batch Number: **0802L668** Client: **TNUHANFORD RC-030 K1131** Work Order: 11343606001 Page: 1

	Cust ID:	J169P1	PBLKNS	PBLKNS BS	PBLKNS BSD
Sample Information	RFW#:	001	08LE0124-MB1	08LE0124-MB1	08LE0124-MB1
	Matrix:	SOLID	SOIL	SOIL	SOIL
	D.F.:	1.00	1.00	1.00	1.00
	Units:	ug/kg	ug/kg	ug/kg	ug/kg

Surrogate:	DCAA	62 %	66 %	64 %	59 %
Dalapon		50 U	33 U	68 %	71 %
Dicamba		50 U	33 U	82 %	79 %
Dichloroprop		50 U	33 U	82 %	78 %
2,4-D		42	33 U	83 %	78 %
2,4,5-TP (Silvex)		25 U	17 U	82 %	79 %
2,4,5-T		25 U	17 U	85 %	83 %
Dinoseb		25 U	17 U	58 %	32 %
2,4-DB		25 U	17 U	86 %	79 %
Pentachlorophenol		25 U	17 U	60 %	61 %

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

5000000000

SAMPLE EXTRACTION RECORD

Sheet no.: 1

Extract. Date: 03/10/08 Extraction Batch No: 08LE0124 Analyst: MF Method: SONC3550

Test: OHBG Cleanup Date: Analyst: Client: TNUHANFORD RC-030 K1131

LIMS Report Date: 03/11/08 Solvent: DCM/ACETONE,HEXANE Adsorbent:

Sample No:	Client Name / Client ID	pH	Initial WT/VOL	Surr. Mult.	Spike Mult.	Final VOL	Final VOL	Split Mult.	GPC Y/N	% Solids	C/D FACTOR
0802L668-	TNUHANFORD RC-030 K1131										
001 X	J169P1		20	1.0		10		1.0	N	0.0	500.0
08LE0124-MB1 X	PBLKNS		30.0	1.0		10		1.0	N	100.00	333.3
08LE0124-MB1 XS	PBLKNS		30.0	1.0	1.0	10		1.0	N	100.00	333.3
08LE0124-MB1 XT	PBLKNS		30.0	1.0	1.0	10		1.0	N	100.00	333.3

Comments:
Surrogate: 100 UL HERB SURR 86971903
Spike: 100 UL HERB SPIKE 89916302

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
all	[illegible]	3/11/08 1550	[illegible]	3/11/08 15:50	GC

000000006

nville Laboratory Use Only

3024 668

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

nt INU HANFORD SAFH RC-030

Final Proj. Sampling Date

ect# 11343-606-001-9999-00

ect Contact/Phone#

ville Laboratory Project Manager O Johnson

SW846 Del STD TAT 15 days

Rec'd 2-27-08 Date Due 3-13-08

Refrigerator #								A 2							
#/Type Container	Liquid / Solid							16							
Volume								120							
Preservatives								1							
ANALYSES REQUESTED →		ORGANIC: VOA	BNA	Pest/PCB	~~Herb~~	TPH		INORG: Metal HG	CN						
Lionville Laboratory Use Only		0624H	0625H	0608H OPCB	CHB6X	TPHC		MetD							

RIX
ESI
Soil
Sediment
Solid
Sludge
Water
Oil
Air
Drum Solids
Drum Liquids
EP/TCLP
Leachate
Wipe
Other
Fish

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	0624H	0625H	0608H OPCB	CHB6X	TPHC			MetD						
001	T169P1	/	/	X	2-25-08	0910	X	X	X	X	X			X						

ecial Instructions: X=OTHER SOLID

MetD = HSL + B, Si, Mo

(NOTL)

Special Instructions:

1. Run PCBs, VOA, SVOA, TPH, Pest, Chloro-Herb w/ Method from ICP Metals
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time

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

000000007

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-030-072	Page 1 of 1

Collector: Welch-Koelling / DeBuigne	Company Contact: Matt Perrott	Telephone No.: 372-9088	Project Coordinator: KESSNER, JH
Price Code: 9C	Data Turnaround: 15 Days		
Project Designation: Remaining Sites Confirmation Sampling - Other Solid	Sampling Location: 100-F-44:4		SAF No.: RC-030
Ice Chest No.: ERC-96-006	Field Logbook No.: EL-1601-2	COA: C00F44A000	Method of Shipment: Fed Ex
Shipped To: EBERLINE SERVICES / MONVILLE	Offsite Property No.: A080190 ~~ERC-96-006~~ WO 2/26/08		Bill of Lading/Air Bill No.: See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C					
Type of Container	G/P	G/P	aG	G	aG	G					
No. of Container(s)	3 ~~1~~ JPD	1 2-25-08	1	1	1	1					
Volume	~~500mL~~ 125mL	~~60mL~~ 120mL	60mL.	60mL.	60mL.	250mL.					
SAMPLE ANALYSIS	See item (1) in Special Instructions	See item (2) in Special Instructions.	PCBs - 8082; Pesticides - 8081; Chloro-Herbicides - EPA8151	VOA - 8260A (TCL)	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1					

Sample No.	Matrix *	Sample Date	Sample Time										
169P1	OTHER SOLID	2-25-08	0910		X	X	X	X	X				
~~169P2~~	~~OTHER SOLID~~												
~~169P3~~	~~OTHER SOLID~~												
~~169P4~~	~~OTHER SOLID~~												
~~169P5~~	~~OTHER SOLID~~												

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time 1030 2-25-08	Received By/Stored In 1060/2A	Date/Time 2-25-08 1030
Relinquished By/Removed From 260/2A	Date/Time 2/26/08 0900	Received By/Stored In MSTankovich	Date/Time 2/26/08
Relinquished By/Removed From MSTankovich	Date/Time 1300 2/26/08	Received By/Stored In Fed Ex	Date/Time
Relinquished By/Removed From Fed Ex	Date/Time 2-27-08 0940	Received By/Stored In	Date/Time 2-27-08 0940
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241}; Americium-241; Gross Alpha & Gross Beta; Nickel-63; Isotopic Plutonium; Strontium-89,90 -- Total Sr; Technetium-99; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Total Uranium

(2) ICP Metals - 6010A (SW-846) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(3) Run PCBs, VOA, SVOA, TPH, Pesticides, Chloro Herbicides with material from KP metals.

samples from 3728 Ref # 2A
3728 Custodian removed samples for shipping on 3/26/08.
Sampler unavailable to relinquish

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

TCH-EE-011

0000000008

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD
Project/SAP/SOW/Release #: RC-030

Date: 2-27-08

LvLI Batch #: 08021668

Sample Custodian: V. Hem

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FEDEX		Airbill # 798883008979
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 3.9	°C	Cooler # ERC-96-006
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

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Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-030 K1131

RECEIVED APR 2008

DATE RECEIVED: 02/27/08 LVL LOT # :08021668

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J169P1						
SILVER, TOTAL	001	SO	08L0092	02/25/08	03/04/08	03/07/08
SILVER, TOTAL	001 REP	SO	08L0092	02/25/08	03/04/08	03/07/08
SILVER, TOTAL	001 MS	SO	08L0092	02/25/08	03/04/08	03/07/08
ALUMINUM, TOTAL	001	SO	08L0092	02/25/08	03/04/08	03/07/08
ALUMINUM, TOTAL	001 REP	SO	08L0092	02/25/08	03/04/08	03/07/08
ALUMINUM, TOTAL	001 MS	SO	08L0092	02/25/08	03/04/08	03/07/08
ARSENIC, TOTAL	001	SO	08L0092	02/25/08	03/04/08	03/07/08
ARSENIC, TOTAL	001 REP	SO	08L0092	02/25/08	03/04/08	03/07/08
ARSENIC, TOTAL	001 MS	SO	08L0092	02/25/08	03/04/08	03/07/08
BORON, TOTAL	001	SO	08L0092	02/25/08	03/04/08	03/07/08
BORON, TOTAL	001 REP	SO	08L0092	02/25/08	03/04/08	03/07/08
BORON, TOTAL	001 MS	SO	08L0092	02/25/08	03/04/08	03/07/08
BARIUM, TOTAL	001	SO	08L0092	02/25/08	03/04/08	03/07/08
BARIUM, TOTAL	001 REP	SO	08L0092	02/25/08	03/04/08	03/07/08
BARIUM, TOTAL	001 MS	SO	08L0092	02/25/08	03/04/08	03/07/08
BERYLLIUM, TOTAL	001	SO	08L0092	02/25/08	03/04/08	03/07/08
BERYLLIUM, TOTAL	001 REP	SO	08L0092	02/25/08	03/04/08	03/07/08
BERYLLIUM, TOTAL	001 MS	SO	08L0092	02/25/08	03/04/08	03/07/08
CALCIUM, TOTAL	001	SO	08L0092	02/25/08	03/04/08	03/07/08
CALCIUM, TOTAL	001 REP	SO	08L0092	02/25/08	03/04/08	03/07/08
CALCIUM, TOTAL	001 MS	SO	08L0092	02/25/08	03/04/08	03/07/08
CADMIUM, TOTAL	001	SO	08L0092	02/25/08	03/04/08	03/07/08
CADMIUM, TOTAL	001 REP	SO	08L0092	02/25/08	03/04/08	03/07/08
CADMIUM, TOTAL	001 MS	SO	08L0092	02/25/08	03/04/08	03/07/08
COBALT, TOTAL	001	SO	08L0092	02/25/08	03/04/08	03/07/08
COBALT, TOTAL	001 REP	SO	08L0092	02/25/08	03/04/08	03/07/08
COBALT, TOTAL	001 MS	SO	08L0092	02/25/08	03/04/08	03/07/08
CHROMIUM, TOTAL	001	SO	08L0092	02/25/08	03/04/08	03/07/08
CHROMIUM, TOTAL	001 REP	SO	08L0092	02/25/08	03/04/08	03/07/08
CHROMIUM, TOTAL	001 MS	SO	08L0092	02/25/08	03/04/08	03/07/08
COPPER, TOTAL	001	SO	08L0092	02/25/08	03/04/08	03/07/08
COPPER, TOTAL	001 REP	SO	08L0092	02/25/08	03/04/08	03/07/08
COPPER, TOTAL	001 MS	SO	08L0092	02/25/08	03/04/08	03/07/08
IRON, TOTAL	001	SO	08L0092	02/25/08	03/04/08	03/07/08
IRON, TOTAL	001 REP	SO	08L0092	02/25/08	03/04/08	03/07/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-030 K1131

DATE RECEIVED: 02/27/08 LVL LOT # :0802L668

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
IRON, TOTAL	001 MS	SO	08L0092	02/25/08	03/04/08	03/07/08
MERCURY, TOTAL	001	SO	08C0040	02/25/08	02/28/08	02/29/08
MERCURY, TOTAL	001 REP	SO	08C0040	02/25/08	02/28/08	02/29/08
MERCURY, TOTAL	001 MS	SO	08C0040	02/25/08	02/28/08	02/29/08
POTASSIUM, TOTAL	001	SO	08L0092	02/25/08	03/04/08	03/07/08
POTASSIUM, TOTAL	001 REP	SO	08L0092	02/25/08	03/04/08	03/07/08
POTASSIUM, TOTAL	001 MS	SO	08L0092	02/25/08	03/04/08	03/07/08
MAGNESIUM, TOTAL	001	SO	08L0092	02/25/08	03/04/08	03/07/08
MAGNESIUM, TOTAL	001 REP	SO	08L0092	02/25/08	03/04/08	03/07/08
MAGNESIUM, TOTAL	001 MS	SO	08L0092	02/25/08	03/04/08	03/07/08
MANGANESE, TOTAL	001	SO	08L0092	02/25/08	03/04/08	03/07/08
MANGANESE, TOTAL	001 REP	SO	08L0092	02/25/08	03/04/08	03/07/08
MANGANESE, TOTAL	001 MS	SO	08L0092	02/25/08	03/04/08	03/07/08
MOLYBDENUM, TOTAL	001	SO	08L0092	02/25/08	03/04/08	03/07/08
MOLYBDENUM, TOTAL	001 REP	SO	08L0092	02/25/08	03/04/08	03/07/08
MOLYBDENUM, TOTAL	001 MS	SO	08L0092	02/25/08	03/04/08	03/07/08
SODIUM, TOTAL	001	SO	08L0092	02/25/08	03/04/08	03/07/08
SODIUM, TOTAL	001 REP	SO	08L0092	02/25/08	03/04/08	03/07/08
SODIUM, TOTAL	001 MS	SO	08L0092	02/25/08	03/04/08	03/07/08
NICKEL, TOTAL	001	SO	08L0092	02/25/08	03/04/08	03/07/08
NICKEL, TOTAL	001 REP	SO	08L0092	02/25/08	03/04/08	03/07/08
NICKEL, TOTAL	001 MS	SO	08L0092	02/25/08	03/04/08	03/07/08
LEAD, TOTAL	001	SO	08L0092	02/25/08	03/04/08	03/07/08
LEAD, TOTAL	001 REP	SO	08L0092	02/25/08	03/04/08	03/07/08
LEAD, TOTAL	001 MS	SO	08L0092	02/25/08	03/04/08	03/07/08
ANTIMONY, TOTAL	001	SO	08L0092	02/25/08	03/04/08	03/07/08
ANTIMONY, TOTAL	001 REP	SO	08L0092	02/25/08	03/04/08	03/07/08
ANTIMONY, TOTAL	001 MS	SO	08L0092	02/25/08	03/04/08	03/07/08
SELENIUM, TOTAL	001	SO	08L0092	02/25/08	03/04/08	03/07/08
SELENIUM, TOTAL	001 REP	SO	08L0092	02/25/08	03/04/08	03/07/08
SELENIUM, TOTAL	001 MS	SO	08L0092	02/25/08	03/04/08	03/07/08
SILICON, TOTAL	001	SO	08L0092	02/25/08	03/04/08	03/06/08
SILICON, TOTAL	001 REP	SO	08L0092	02/25/08	03/04/08	03/06/08
SILICON, TOTAL	001 MS	SO	08L0092	02/25/08	03/04/08	03/06/08
VANADIUM, TOTAL	001	SO	08L0092	02/25/08	03/04/08	03/07/08
VANADIUM, TOTAL	001 REP	SO	08L0092	02/25/08	03/04/08	03/07/08
VANADIUM, TOTAL	001 MS	SO	08L0092	02/25/08	03/04/08	03/07/08
ZINC, TOTAL	001	SO	08L0092	02/25/08	03/04/08	03/07/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-030 K1131

DATE RECEIVED: 02/27/08 LVL LOT # :0802L668

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
ZINC, TOTAL	001 REP	SO	08L0092	02/25/08	03/04/08	03/07/08
ZINC, TOTAL	001 MS	SO	08L0092	02/25/08	03/04/08	03/07/08

LAB QC:

SILVER LABORATORY	LC1 BS	S	08L0092	N/A	03/04/08	03/07/08
SILVER, TOTAL	MB1	S	08L0092	N/A	03/04/08	03/07/08
ALUMINUM LABORTORY	LC1 BS	S	08L0092	N/A	03/04/08	03/07/08
ALUMINUM, TOTAL	MB1	S	08L0092	N/A	03/04/08	03/07/08
ARSENIC LABORATORY	LC1 BS	S	08L0092	N/A	03/04/08	03/07/08
ARSENIC, TOTAL	MB1	S	08L0092	N/A	03/04/08	03/07/08
BORON LABORATORY	LC1 BS	S	08L0092	N/A	03/04/08	03/07/08
BORON, TOTAL	MB1	S	08L0092	N/A	03/04/08	03/07/08
BARIUM LABORATORY	LC1 BS	S	08L0092	N/A	03/04/08	03/07/08
BARIUM, TOTAL	MB1	S	08L0092	N/A	03/04/08	03/07/08
BERYLLIUM LABORATORY	LC1 BS	S	08L0092	N/A	03/04/08	03/07/08
BERYLLIUM, TOTAL	MB1	S	08L0092	N/A	03/04/08	03/07/08
CALCIUM LABORATORY	LC1 BS	S	08L0092	N/A	03/04/08	03/07/08
CALCIUM, TOTAL	MB1	S	08L0092	N/A	03/04/08	03/07/08
CADMIUM LABORATORY	LC1 BS	S	08L0092	N/A	03/04/08	03/07/08
CADMIUM, TOTAL	MB1	S	08L0092	N/A	03/04/08	03/07/08
COBALT LABORATORY	LC1 BS	S	08L0092	N/A	03/04/08	03/07/08
COBALT, TOTAL	MB1	S	08L0092	N/A	03/04/08	03/07/08
CHROMIUM LABORATORY	LC1 BS	S	08L0092	N/A	03/04/08	03/07/08
CHROMIUM, TOTAL	MB1	S	08L0092	N/A	03/04/08	03/07/08
COPPER LABORATORY	LC1 BS	S	08L0092	N/A	03/04/08	03/07/08
COPPER, TOTAL	MB1	S	08L0092	N/A	03/04/08	03/07/08
IRON LABORATORY	LC1 BS	S	08L0092	N/A	03/04/08	03/07/08
IRON, TOTAL	MB1	S	08L0092	N/A	03/04/08	03/07/08
MERCURY LABORATORY	LC1 BS	S	08C0040	N/A	02/28/08	02/29/08
MERCURY, TOTAL	MB1	S	08C0040	N/A	02/28/08	02/29/08
POTASSIUM LABORATORY	LC1 BS	S	08L0092	N/A	03/04/08	03/07/08
POTASSIUM, TOTAL	MB1	S	08L0092	N/A	03/04/08	03/07/08
MAGNESIUM LABORATORY	LC1 BS	S	08L0092	N/A	03/04/08	03/07/08
MAGNESIUM, TOTAL	MB1	S	08L0092	N/A	03/04/08	03/07/08
MANGANESE LABORATORY	LC1 BS	S	08L0092	N/A	03/04/08	03/07/08
MANGANESE, TOTAL	MB1	S	08L0092	N/A	03/04/08	03/07/08
MOLYBDENUM LABORATOR	LC1 BS	S	08L0092	N/A	03/04/08	03/07/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-030 K1131

DATE RECEIVED: 02/27/08 LVL LOT # :0802L668

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MOLYBDENUM, TOTAL	MB1	S	08L0092	N/A	03/04/08	03/07/08
SODIUM LABORATORY	LC1 BS	S	08L0092	N/A	03/04/08	03/07/08
SODIUM, TOTAL	MB1	S	08L0092	N/A	03/04/08	03/07/08
NICKEL LABORATORY	LC1 BS	S	08L0092	N/A	03/04/08	03/07/08
NICKEL, TOTAL	MB1	S	08L0092	N/A	03/04/08	03/07/08
LEAD LABORATORY	LC1 BS	S	08L0092	N/A	03/04/08	03/07/08
LEAD, TOTAL	MB1	S	08L0092	N/A	03/04/08	03/07/08
ANTIMONY LABORATORY	LC1 BS	S	08L0092	N/A	03/04/08	03/07/08
ANTIMONY, TOTAL	MB1	S	08L0092	N/A	03/04/08	03/07/08
SELENIUM LABORATORY	LC1 BS	S	08L0092	N/A	03/04/08	03/07/08
SELENIUM, TOTAL	MB1	S	08L0092	N/A	03/04/08	03/07/08
SILICON LABORATORY	LC1 BS	S	08L0092	N/A	03/04/08	03/06/08
SILICON, TOTAL	MB1	S	08L0092	N/A	03/04/08	03/06/08
VANADIUM LABORATORY	LC1 BS	S	08L0092	N/A	03/04/08	03/07/08
VANADIUM, TOTAL	MB1	S	08L0092	N/A	03/04/08	03/07/08
ZINC LABORATORY	LC1 BS	S	08L0092	N/A	03/04/08	03/07/08
ZINC, TOTAL	MB1	S	08L0092	N/A	03/04/08	03/07/08

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-030
LVL#: 0802L668
SDG/SAF#: K1131/RC-030

W.O.#: 11343-606-001-9999-00
Date Received: 02-27-08

METALS CASE NARRATIVE

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

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

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

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

   The sample was analyzed with a 3-fold dilution for ICP metals due to sample matrix.

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

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

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

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

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

8. All laboratory control samples (LCS) were within the 80-120% control limits with the exception of Silicon at 23.9%. Refer to the Inorganics Laboratory Control Standards Report. Associated sample results may be biased low.

9. The matrix spike (MS) recoveries for 13 analytes were outside the 75-125% control limits.

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 19 pages.

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. The Mercury spike was not added to the original spike sample. There was insufficient sample volume to perform a Mercury spike redigestion. Please see SDR #: 08MR001A. A PDS was prepared at meaningful concentration level for the following analytes:

Sample ID	Element	PDS Concentration (ppb)	PDS % Recovery
J169P1	Silver	300	104.8
	Aluminum	66,000	99.1
	Boron	300	105.5
	Barium	3,300	99.7
	Calcium	66,000	91.2
	Copper	300	107.5
	Iron	66,000	72.0
	Magnesium	66,000	91.8
	Manganese	3,000	98.9
	Sodium	6,000	91.9
	Antimony	300	104.5
	Silicon	3,300	105.4

11. The duplicate analysis for 1 analyte was 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

3/13/08
Date

alm/m02-668

METALS METHOD GLOSSARY

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

Lot#: 08021668

Leaching Procedure: __1310 __1311 __1312 __Other:_____

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

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

Metals Analysis Methods

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

Other:_____ Method:_____

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

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

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

ABBREVIATIONS

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

ANALYTICAL METAL METHODS

1. Not included in the method element list.

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

3. Flame AA.

4. Graphite Furnace AA.

L-WI-033/N-04/98

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 08MR001A

Initiator: TLBRIDGES
Date: 3/12/08
Client: TNU

Batch: 08022668
Samples: -0015
Method: SW846/MCAWW/CLP/

Parameter: Hg
Matrix: Solid
Prep Batch: 08C0040

1. Reason for SDR

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

b. General Discrepancy

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

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

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

Appears missed spike for Hg. No sample left for Redig.

2. Known or Probable Causes(s)

did not spike

3. Discussion and Proposed Action

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

Other Description: Narrate.

4. Project Manager Instructions...signature/date: 3/12/08

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

5. Final Action...signature/date: 3/12/08

Other Explanation:

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

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

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

QA-105-A-0805

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 03/12/08

CLIENT: TNUHANFORD RC-030 K1131 LVL LOT #: 0802L668

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J169P1	Silver, Total	1.3	MG/KG	0.27	3.0
		Aluminum, Total	9870	MG/KG	10.9	3.0
		Arsenic, Total	4.9	MG/KG	1.4	3.0
		Boron, Total	48.4	MG/KG	1.4	3.0
		Barium, Total	383	MG/KG	0.27	3.0
		Beryllium, Total	0.54	MG/KG	0.14	3.0
		Calcium, Total	9210	MG/KG	10.9	3.0
		Cadmium, Total	0.58	MG/KG	0.14	3.0
		Cobalt, Total	7.5	MG/KG	0.55	3.0
		Chromium, Total	18.3	MG/KG	0.55	3.0
		Copper, Total	24.2	MG/KG	0.55	3.0
		Iron, Total	47900	MG/KG	12.3	3.0
		Mercury, Total	0.009u	MG/KG	0.009	1.0
		Potassium, Total	988	MG/KG	10.9	3.0
		Magnesium, Total	4470	MG/KG	6.8	3.0
		Manganese, Total	440	MG/KG	0.11	3.0
		Molybdenum, Total	3.1	MG/KG	0.82	3.0
		Sodium, Total	414	MG/KG	5.5	3.0
		Nickel, Total	19.8	MG/KG	0.55	3.0
		Lead, Total	18.8	MG/KG	0.82	3.0
		Antimony, Total	0.82 u	MG/KG	0.82	3.0
		Selenium, Total	1.6 u	MG/KG	1.6	3.0
		Silicon, Total	694	MG/KG	10.9	3.0
		Vanadium, Total	46.5	MG/KG	0.38	3.0
		Zinc, Total	42.4	MG/KG	1.6	3.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 03/12/08

CLIENT: TNUHANFORD RC-030 K1131 LVL LOT #: 0802L668

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	08L0092-MB1	Silver, Total	0.10 u	MG/KG	0.10	1.0
		Aluminum, Total	8.0	MG/KG	4.0	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	0.20	MG/KG	0.10	1.0
		Beryllium, Total	0.05 u	MG/KG	0.05	1.0
		Calcium, Total	16.7	MG/KG	4.0	1.0
		Cadmium, Total	0.05 u	MG/KG	0.05	1.0
		Cobalt, Total	0.20 u	MG/KG	0.20	1.0
		Chromium, Total	0.20 u	MG/KG	0.20	1.0
		Copper, Total	0.31	MG/KG	0.20	1.0
		Iron, Total	14.2	MG/KG	4.5	1.0
		Potassium, Total	4.4	MG/KG	4.0	1.0
		Magnesium, Total	4.7	MG/KG	2.5	1.0
		Manganese, Total	0.07	MG/KG	0.04	1.0
		Molybdenum, Total	0.30 u	MG/KG	0.30	1.0
		Sodium, Total	8.2	MG/KG	2.0	1.0
		Nickel, Total	0.28	MG/KG	0.20	1.0
		Lead, Total	0.30 u	MG/KG	0.30	1.0
		Antimony, Total	0.30 u	MG/KG	0.30	1.0
		Selenium, Total	0.60 u	MG/KG	0.60	1.0
		Silicon, Total	4.0	MG/KG	4.0	1.0
		Vanadium, Total	0.14 u	MG/KG	0.14	1.0
		Zinc, Total	1.2	MG/KG	0.60	1.0
BLANK1	08C0040-MB1	Mercury, Total	0.01 u	MG/KG	0.01	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 03/12/08

CLIENT: TNUHANFORD RC-030 K1131 LVL LOT #: 0802L668

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J169P1	Silver, Total	4.4	1.3	4.5	68.9	3.0
		Aluminum, Total	15400	9870	182	3048 *	3.0
		Arsenic, Total	175	4.9	182	93.3	3.0
		Boron, Total	225	48.4	90.9	194.1	3.0
		Barium, Total	1050	383	182	366.3	3.0
		Beryllium, Total	5.4	0.54	4.5	108.0	3.0
		Calcium, Total	20200	9210	2270	482.7*	3.0
		Cadmium, Total	4.6	0.58	4.5	89.4	3.0
		Cobalt, Total	50.5	7.5	45.4	94.7	3.0
		Chromium, Total	33.8	18.3	18.2	85.2	3.0
		Copper, Total	54.1	24.2	22.7	131.7	3.0
		Iron, Total	42800	47900	90.9	-5600. *	3.0
		Mercury, Total	0.01	0.00u	0.15	8.6	1.0
		Potassium, Total	3270	988	2270	100.4	3.0
		Magnesium, Total	7550	4470	2270	135.5	3.0
		Manganese, Total	460	440	45.4	44.7*	3.0
		Molybdenum, Total	85.8	3.1	90.9	91.0	3.0
		Sodium, Total	3550	414	2270	137.9	3.0
		Nickel, Total	62.4	19.8	45.4	93.8	3.0
		Lead, Total	58.7	18.8	45.4	87.9	3.0
		Antimony, Total	21.5	0.82u	45.4	47.4	3.0
		Selenium, Total	153	1.6 u	182	84.0	3.0
		Silicon, Total	1040	694	90.9	375.7*	3.0
		Vanadium, Total	91.4	46.5	45.4	98.9	3.0
		Zinc, Total	81.2	42.4	45.4	85.5	3.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 03/12/08

CLIENT: TNUHANFORD RC-030 K1131 LVL LOT #: 0802L668

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	J169P1	Silver, Total	1.3	0.27u	NC	3.0
		Aluminum, Total	9870	9470	4.2	3.0
		Arsenic, Total	4.9	4.5	8.5	3.0
		Boron, Total	48.4	48.4	0.00	3.0
		Barium, Total	383	528	31.8	3.0
		Beryllium, Total	0.54	0.50	7.5	3.0
		Calcium, Total	9210	9190	0.20	3.0
		Cadmium, Total	0.58	0.54	6.1	3.0
		Cobalt, Total	7.5	7.3	2.7	3.0
		Chromium, Total	18.3	17.5	4.5	3.0
		Copper, Total	24.2	24.9	2.9	3.0
		Iron, Total	47900	50900	6.0	3.0
		Mercury, Total	0.00u	0.01	NC	1.0
		Potassium, Total	988	1030	3.9	3.0
		Magnesium, Total	4470	4080	9.0	3.0
		Manganese, Total	440	447	1.6	3.0
		Molybdenum, Total	3.1	2.7	13.8	3.0
		Sodium, Total	414	392	5.4	3.0
		Nickel, Total	19.8	22.0	10.5	3.0
		Lead, Total	18.8	16.6	12.4	3.0
		Antimony, Total	0.82u	0.80u	NC	3.0
		Selenium, Total	1.6 u	1.6 u	NC	3.0
		Silicon, Total	694	713	2.7	3.0
		Vanadium, Total	46.5	42.6	8.8	3.0
		Zinc, Total	42.4	41.4	2.4	3.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 03/12/08

CLIENT: TNUHANFORD RC-030 K1131 LVL LOT #: 0802L668

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	08L0092-LC1	Silver, LCS	48.6	50.0	MG/KG	97.2
		Aluminum, LCS	503	500	MG/KG	100.6
		Arsenic, LCS	933	1000	MG/KG	93.3
		Boron, LCS	472	500	MG/KG	94.5
		Barium, LCS	490	500	MG/KG	98.0
		Beryllium, LCS	24.6	25.0	MG/KG	98.4
		Calcium, LCS	2410	2500	MG/KG	96.5
		Cadmium, LCS	24.0	25.0	MG/KG	96.0
		Cobalt, LCS	248	250	MG/KG	99.0
		Chromium, LCS	49.4	50.0	MG/KG	98.8
		Copper, LCS	124	125	MG/KG	99.5
		Iron, LCS	501	500	MG/KG	100.2
		Potassium, LCS	2300	2500	MG/KG	92.0
		Magnesium, LCS	2360	2500	MG/KG	94.4
		Manganese, LCS	73.5	75.0	MG/KG	98.0
		Molybdenum, LCS	480	500	MG/KG	96.0
		Sodium, LCS	2290	2500	MG/KG	91.4
		Nickel, LCS	194	200	MG/KG	97.0
		Lead, LCS	242	250	MG/KG	96.8
		Antimony, LCS	287	300	MG/KG	95.6
		Selenium, LCS	911	1000	MG/KG	91.1
		Silicon, LCS	119	500	MG/KG	23.9
		Vanadium, LCS	242	250	MG/KG	96.8
		Zinc, LCS	97.2	100	MG/KG	97.2
LCS1	08C0040-LC1	Mercury, LCS	4.9	4.7	MG/KG	105.0

Lionville Laboratory Incorporated

Logbook #: 371

SAMPLE DIGESTION RECORD

SOP: L-SPI-3020 Rev. 00

Digestion Batch #: 08L0092
Date/Time Initiated: 3/4/08 1130
Date/Time Completed: 3/4/08 1900
Analyst(s): MW
Matrix: (Soil) Water Other:
Instr. Type: AA (ICP)
Parameters: see tracklog

(Digested) / Undigested (circle one)
Balance #: B20
Balance Cal Verif: (Y) NA
Hot Plate Temp: 99°

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

TMW/NSTEC

COC Batch #	Spike Vol(s) (mL)	Initial Wt/Vol (g/mL)	Final Vol (mL)	pH <2	Type: To/So/TC	Texture	Color/Appearance	Artifact	Tu
(*) 0802L645-001	1.14gm		100ml		TO	coarse	brown/slag-like		
001R	1.09gm								
001S	1.14gm	1.0ml							
0802L668-001	1.10gm					fine	DK brown/a root + piece of metal		
001R	1.12gm								
001S	1.10gm	1.0ml							
0802L611-001	1.13gm					coarse	brown/sm. roots		
001R	1.22gm								
001S	1.13gm	1.0ml							
001T	1.08gm	1.0ml							
002	1.11gm						roots		
003	1.13gm								
08L0092-MB1	1.0gm						boiling chips		
LC1	1.0gm	1.0ml							

MW 3/4/08

Spiking IDs:
MS #: 8100-04-01
02
03
8072-072-01
LCS #: 02
03
04
05

Reagent IDs:
HNO_3 E22071
HCL E40060
H_2O_2 E44A06
1:1 HNO_3 9789-070-06
1:1 HCL

File ID#: IC009201 IC009202
LIMS Transfer: (Y) N
Data Review By/Date: update PMP, 03/04/08

(*) 645-001, R, S boiled over on hotplate - sample lost needs redigestion

L-SPI-3020-A-0601

Lionville Laboratory Incorporated

MERCURY PREPARATION

Logbook # 422

Analyst: EB
Date 2/28/08
Start Time/Temp: 1550 | 98°
End Time/Temp: 1620 | 97°

Instrument ID H631
Balance #: B29 /NA
Pipette Calibration (Daily) Y ✓

Prep Batch: 08C0040
Worksheet: HG022901
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	N4			10mL	50mL	
0.2 µg/L	SE	0.100				
1.0	AI	0.500				
2.0	HR	1.000				
5.0	3H	2.500				
10.0	CUR	5.000				
ICV	WN	0.125	2.5			
CCV	Z	0.250	5.0			
ICB/CCB	OLN					9.50L
MB1	28			0.30		PBS140 100.00
LC1	E7	*	*	0.31		LCSS140
08022667-001	55			0.39		94.65
001R	CT			0.38		
001S	616	0.500	1.0	0.39		
002	GR			0.35		97.12
003	L53			0.39		98.90
004	NR			0.36		97.84
005	40			0.34		97.86
08022666-001	81G			0.31		R 95.74
001R	AH			0.33		
001S	76	0.500	1.0	0.31		
002	G7			0.36		97.53
003	KX			0.35		95.75
08022668-001	6T			0.32		100.00
001R	411			0.33		
001S	27			0.33		
		EB	2/28/08			

Standard:	ID	Prep Date/Time
ICAL/MS	R16022-75-07A	2/28/08 1120
ICV/CCV/LCS	US 16022-75-08A	

Reviewed By/Date: RMP, 03/07/08

see book # 9368 for std traceability information

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

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

ME-HgCVAA-Prep1007

Page #:

nville Laboratory Use Only
3026 668

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

nt TNU HANFORD SAFH RC-030
Final Proj. Sampling Date
ect# 11343-606-001-9999-00
ect Contact/Phone#
ville Laboratory Project Manager O Johnson
SW846 Del STD TAT 15 days
Rec'd 2-27-08 Date Due 3-13-08

Refrigerator #									A 2							
#/Type Container	Liquid / Solid								1G							
Volume									60							
Preservatives									1							
ANALYSES REQUESTED →		ORGANIC: VOA	BNA	Pest/PCB	Chloro Herb	TPH			INORG: Metal (IG)	CN						
Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	Lionville Laboratory Use Only: 8624H	8625H	8081H OPCB	OHBGX	TPHC			MetO						
001	T169P1	✓	✓	X	2-25-08	0910	X	X	X	X	X			X						

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

cial Instructions: X=OTHER SOLID
ext ① = HSL + B, Si, Mo
(NOTL)

Special Instructions:
1. Run PCBs, VOA, SVOA, TPH, Pest., Chloro-Herb w/ Metals from ICP Metals
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time

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

000000017

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-030-072 | Page 1 of 1

Collector: Welch-Koelling / DeBrigne	Company Contact: Matt Perrott	Telephone No.: 372-9088	Project Coordinator: KESSNER, JH
Price Code: 9C	Data Turnaround: 15 Days		
Project Designation: Remaining Sites Confirmation Sampling - Other Solid	Sampling Location: 100-F-44:4		SAF No.: RC-030
Ice Chest No.: ERC-96-006	Field Logbook No.: EL-1601-2	COA: C00F44A000	Method of Shipment: Fed Ex
Shipped To: EBERLINE SERVICES / MONVILLE	Offsite Property No.: A080190 ~~ERC-96-006~~ MO 2/26/08		Bill of Lading/Air Bill No.: See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C					
Type of Container	G/P	G/P	aG	G	aG	G					
No. of Container(s)	3 1 JPD	1 2-25-08	1	1	1	1					
Volume	~~250mL~~ ~~125mL~~	~~60mL~~ 120mL	60mL	60mL	60mL	250mL					
SAMPLE ANALYSIS	See item (2) in Special Instructions	See item (2) in Special Instructions.	PCBs - 8082; Pesticides - 8081; Chloro-Herbicides - EPA8151	VOA - 8260A (TCL)	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1					

Sample No.	Matrix *	Sample Date	Sample Time										
169P1	OTHER SOLID	2-25-08	0910		X	X	X	X	X				
~~169P2~~	~~OTHER SOLID~~												
~~169P3~~	~~OTHER SOLID~~												
~~169P4~~	~~OTHER SOLID~~												
~~169P5~~	~~OTHER SOLID~~												

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
DeBrigne	1030 2-25-08	1060/2A	2-25-08 1030
1060/2A	2/26/08 0900	MSTankovich	2/26/08
MSTankovich	2/26/08 1500	Fed Ex	
Fed Ex	2-27-08 0940		2-27-08 0940

SPECIAL INSTRUCTIONS

(1) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241}; Americium-241; Gross Alpha & Gross Beta; Nickel-63; Isotopic Plutonium; Strontium-89,90 -- Total Sr; Technerium-99; Isotopic Uranium {Uranium-233/234, Uranium-235, Uranium-238}; Total Uranium

(2) ICP Metals - 6010A (SW-846) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7471 - (CV)

(3) Run PCBs, VOA, SVOA, TPH, Pesticides, Chloro Herbicides with material from KP Metals.

samples from 3728 Ref# 2A

3728 Custodian removed samples for shipping on 8/26/08.

Sampler unavailable to relinquish

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

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

CH-EE-011

000000018

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD
Project/SAP/SOW/Release #: RC-030

Date: 2-27-08

LvLI Batch #: 08021668

Sample Custodian: [signature]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 7788830089 79
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 3.9	°C	Cooler # ERC-96-006
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