0069499

SAF-RC-047
100 & 300 Area Component of the RCBRA Sediment and Tissues
FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

Jill Thomson	H0-23	____KW 4/19/06 INITIAL/DATE
Jeanette Duncan	H9-02	___KW 4/19/06 INITIAL/DATE

COMMENTS:

SDG K0222 **SAF-RC-047**

Rad only Chem only X Rad & Chem

X Complete Partial

Waste Site: U-3, U-5, U-6, U-7, U-8 Sediment

RECEIVED
APR 2 8 2006
EDMC

EBERLINE SERVICES

RECEIVED APR 2006

April 14, 2006

Ms. Joan Kessner
Washington Closure Hanford
3190 George Washington Way
MSIN H9-02
Richland, WA 99352

Reference: **P.O. #630**
Eberline Services R6-02-096-7386, SDG K0222

Dear Ms. Kessner:

Enclosed is the data report for five solid (other solid) samples designated under SAF No. RC-047 received at Eberline Services on February 15, 2006. The samples were analyzed according to the accompanying chain-of-custody documents.

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 K0222 was composed of five solid (other solid) samples designated under SAF No. RC-047 with a Project Designation of: 100 & 300 Area Component of the RCBRA Sediment and Ti.

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 April 5, 2006.

2.0 ANALYSIS NOTES

2.1 Total Strontium Analysis

No problems were encountered during the course of the analyses.

2.2 Isotopic Thorium Analysis

No problems were encountered during the course of the analyses.

2.3 Isotopic Uranium Analysis

No problems were encountered during the course of the analyses.

2.4 Gamma Spectroscopy

No problems were encountered during the course of the analyses.

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

4/14/6

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 K0222

SDG	7386
Contact	Melissa C. Mannion

Client	Hanford
Contract	No. 630
Case no	SDG_K0222

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

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

About this section	1
Sample Summaries	3
Prep Batch Summary	5
Work Summary	6
Method Blanks	8
Lab Control Samples	9
Duplicates	10
Data Sheets	11
Method Summaries	16
Report Guides	23
End of Section	37

Prepared by

Reviewed by

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-TOC
Version	3.06
Report date	04/05/06

SDG 7386
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG_K0222

ABOUT THE DATA SUMMARY SECTION

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

The Data Summary Section has several groups of reports:

SAMPLE SUMMARIES

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

PREPARATION BATCH SUMMARY

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

WORK SUMMARY

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

METHOD BLANKS

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

LAB CONTROL SAMPLES

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

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 04/05/06

SDG	7386
Contact	Melissa C. Mannion

Client	Hanford
Contract	No. 630
Case no	SDG K0222

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.

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-RG
Version	3.06
Report date	04/05/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0222

SDG 7386
Contact Melissa C. Mannion

LAB SAMPLE SUMMARY

Client Hanford
Contract No. 630
Case no SDG K0222

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAF NO	CHAIN OF CUSTODY	COLLECTED
R602096-01	J11736	U6, Sediment	SOLID		RC-047	RC-047-112	02/13/06 11:45
R602096-02	J11741	U8, Sediment	SOLID		RC-047	RC-047-117	02/13/06 15:45
R602096-03	J11742	U3, Sediment	SOLID		RC-047	RC-047-118	02/13/06 14:45
R602096-04	J11743	U5, Sediment	SOLID		RC-047	RC-047-119	02/13/06 13:45
R602096-05	J11744	U7, Sediment	SOLID		RC-047	RC-047-120	02/13/06 12:45
R602096-06	Lab Control Sample		SOLID		RC-047		
R602096-07	Method Blank		SOLID		RC-047		
R602096-08	Duplicate (R602096-02)	U8, Sediment	SOLID		RC-047		02/13/06 15:45

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LS
Version 3.06
Report date 04/05/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0222

SDG 7386
Contact Melissa C. Mannion

QC SUMMARY

Client Hanford
Contract No. 630
Case no SDG K0222

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
7386	RC-047-112	J11736	SOLID	100.0	728.9 g		02/15/06	2	R602096-01	7386-001
	RC-047-117	J11741	SOLID	100.0	1480 g		02/15/06	2	R602096-02	7386-002
	RC-047-118	J11742	SOLID	100.0	1209 g		02/15/06	2	R602096-03	7386-003
	RC-047-119	J11743	SOLID	100.0	803.9 g		02/15/06	2	R602096-04	7386-004
	RC-047-120	J11744	SOLID	100.0	911.7 g		02/15/06	2	R602096-05	7386-005
		Method Blank	SOLID						R602096-07	7386-007
		Lab Control Sample	SOLID						R602096-06	7386-006
		Duplicate (R602096-02)	SOLID	100.0	1480 g		02/15/06	2	R602096-08	7386-008

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-QS
Version 3.06
Report date 04/05/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0222

SDG 7386
Contact Melissa C. Mannion

PREP BATCH SUMMARY

Client Hanford
Contract No. 630
Case no SDG K0222

TEST	MATRIX	METHOD	PREPARATION BATCH	ERROR 2σ %	PLANCHETS ANALYZED CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	MS/ORIG	QUALIFIERS
Alpha Spectroscopy												
TH	SOLID	Thorium, Isotopic in Solids	7169-157	5.0	5			1	1	1/1		
U	SOLID	Uranium, Isotopic in Solids	7169-157	5.0	5			1	1	1/1		
Beta Counting												
SR	SOLID	Total Strontium in Solids	7169-157	10.0	5			1	1	1/1		
Gamma Spectroscopy												
GAM	SOLID	Gamma Scan	7169-157	15.0	5			1	1	1/1		

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

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-PBS
Version 3.06
Report date 04/05/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0222

SDG 7386
Contact Melissa C. Mannion

LAB WORK SUMMARY

Client Hanford
Contract No. 630
Case no SDG K0222

LAB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
R602096-01	J11736			7386-001	GAM		03/23/06	03/27/06	CSS	Gamma Scan
02/13/06	U6, Sediment		SOLID	7386-001	SR		03/16/06	04/04/06	MWT	Total Strontium in Solids
02/15/06	RC-047-112	RC-047		7386-001	TH		03/27/06	04/04/06	MWT	Thorium, Isotopic in Solids
				7386-001	U		03/22/06	04/04/06	MWT	Uranium, Isotopic in Solids
R602096-02	J11741			7386-002	GAM		03/23/06	03/27/06	CSS	Gamma Scan
02/13/06	U8, Sediment		SOLID	7386-002	SR		03/16/06	04/04/06	MWT	Total Strontium in Solids
02/15/06	RC-047-117	RC-047		7386-002	TH		03/27/06	04/04/06	MWT	Thorium, Isotopic in Solids
				7386-002	U		03/22/06	04/04/06	MWT	Uranium, Isotopic in Solids
R602096-03	J11742			7386-003	GAM		03/23/06	03/27/06	CSS	Gamma Scan
02/13/06	U3, Sediment		SOLID	7386-003	SR		03/16/06	04/04/06	MWT	Total Strontium in Solids
02/15/06	RC-047-118	RC-047		7386-003	TH		03/27/06	04/04/06	MWT	Thorium, Isotopic in Solids
				7386-003	U		03/22/06	04/04/06	MWT	Uranium, Isotopic in Solids
R602096-04	J11743			7386-004	GAM		03/23/06	03/27/06	CSS	Gamma Scan
02/13/06	U5, Sediment		SOLID	7386-004	SR		03/16/06	04/04/06	MWT	Total Strontium in Solids
02/15/06	RC-047-119	RC-047		7386-004	TH		03/27/06	04/04/06	MWT	Thorium, Isotopic in Solids
				7386-004	U		03/22/06	04/04/06	MWT	Uranium, Isotopic in Solids
R602096-05	J11744			7386-005	GAM		03/23/06	03/27/06	CSS	Gamma Scan
02/13/06	U7, Sediment		SOLID	7386-005	SR		03/16/06	04/04/06	MWT	Total Strontium in Solids
02/15/06	RC-047-120	RC-047		7386-005	TH		03/27/06	04/04/06	MWT	Thorium, Isotopic in Solids
				7386-005	U		03/22/06	04/04/06	MWT	Uranium, Isotopic in Solids
R602096-06	Lab Control Sample			7386-006	GAM		03/23/06	03/27/06	CSS	Gamma Scan
			SOLID	7386-006	SR		03/16/06	04/04/06	MWT	Total Strontium in Solids
		RC-047		7386-006	TH		03/27/06	04/04/06	MWT	Thorium, Isotopic in Solids
				7386-006	U		03/22/06	04/04/06	MWT	Uranium, Isotopic in Solids
R602096-07	Method Blank			7386-007	GAM		03/24/06	03/27/06	CSS	Gamma Scan
			SOLID	7386-007	SR		03/16/06	04/04/06	MWT	Total Strontium in Solids
		RC-047		7386-007	TH		03/30/06	04/04/06	MWT	Thorium, Isotopic in Solids
				7386-007	U		03/30/06	04/04/06	MWT	Uranium, Isotopic in Solids
R602096-08	Duplicate (R602096-02)			7386-008	GAM		03/24/06	03/27/06	CSS	Gamma Scan
02/13/06	U8, Sediment		SOLID	7386-008	SR		03/16/06	04/04/06	MWT	Total Strontium in Solids
02/15/06		RC-047		7386-008	TH		03/30/06	04/04/06	MWT	Thorium, Isotopic in Solids
				7386-008	U		03/30/06	04/04/06	MWT	Uranium, Isotopic in Solids

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 04/05/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0222

SDG 7386
Contact Melissa C. Mannion

WORK SUMMARY, cont.

Client Hanford
Contract No. 630
Case no SDG K0222

COUNTS OF TESTS BY SAMPLE TYPE

TEST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
GAM	RC-047	Gamma Scan	GAMMA_GS	5			1	1	1	8
SR	RC-047	Total Strontium in Solids	SRTOT_SEP_PRECIP_GPC	5			1	1	1	8
TH	RC-047	Thorium, Isotopic in Solids	THISO_IE_PLATE_AEA	5			1	1	1	8
U	RC-047	Uranium, Isotopic in Solids	UISO_PLATE_AEA	5			1	1	1	8
TOTALS				20			4	4	4	32

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 04/05/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0222

7386-007 **Method Blank**

METHOD BLANK

SDG	7386	Client/Case no	Hanford	SDG K0222	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R602096-07	Client sample id	Method Blank		
Dept sample id	7386-007	Material/Matrix		SOLID	
		SAF No	RC-047		

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Total Strontium	SR-RAD	-0.022	0.088	0.19	1.0	U	SR
Thorium 228	14274-82-9	0	0.077	0.29	1.0	U	TH
Thorium 230	14269-63-7	-0.076	0.15	0.29	1.0	U	TH
Thorium 232	TH-232	0	0.076	0.29	1.0	U	TH
Uranium 233/234	U-233/234	0	0.051	0.20	1.0	U	U
Uranium 235	15117-96-1	0	0.062	0.24	1.0	U	U
Uranium 238	U-238	0	0.051	0.20	1.0	U	U
Potassium 40	13966-00-2	U		0.47		U	GAM
Cobalt 60	10198-40-0	U		0.016	0.050	U	GAM
Cesium 137	10045-97-3	U		0.016	0.10	U	GAM
Radium 226	13982-63-3	U		0.037	0.10	U	GAM
Radium 228	15262-20-1	U		0.078	0.20	U	GAM
Europium 152	14683-23-9	U		0.040	0.10	U	GAM
Europium 154	15585-10-1	U		0.049	0.10	U	GAM
Europium 155	14391-16-3	U		0.047	0.10	U	GAM
Thorium 228	14274-82-9	U		0.025		U	GAM
Thorium 232	TH-232	U		0.078		U	GAM
Uranium 235	15117-96-1	U		0.062		U	GAM
Uranium 238	U-238	U		1.9		U	GAM
Americium 241	14596-10-2	U		0.13		U	GAM
Beryllium 7	13966-02-4	U		0.11		U	GAM
Ruthenium 106	13967-48-1	U		0.13		U	GAM
Antimony 125	14234-35-6	U		0.036		U	GAM
Cesium 134	13967-70-9	U		0.018		U	GAM

100&300Area Compnt RCBRA Sediment&Ti

QC-BLANK #56226

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	04/05/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0222

7386-006

Lab Control Sample

LAB CONTROL SAMPLE

SDG 7386

Contact Melissa C. Mannion

Client/Case no Hanford SDG K0222

Contract No. 630

Lab sample id R602096-06

Dept sample id 7386-006

Client sample id Lab Control Sample

Material/Matrix SOLID

SAF No RC-047

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
Total Strontium	10.0	0.50	0.19	1.0		SR	9.83	0.39	102	82-118	80-120
Thorium 230	41.2	2.7	0.22	1.0		TH	40.4	1.6	102	86-114	80-120
Uranium 233/234	18.6	1.4	0.61	1.0		U	18.6	0.74	100	85-115	80-120
Uranium 235	14.7	1.2	0.11	1.0		U	15.1	0.60	97	85-115	80-120
Uranium 238	18.1	1.3	0.59	1.0		U	20.2	0.81	90	87-113	80-120
Cobalt 60	0.371	0.030	0.016	0.050		GAM	0.365	0.015	102	73-127	80-120
Cesium 137	0.386	0.025	0.018	0.10		GAM	0.373	0.015	104	74-126	80-120

100&300Area Compnt RCBRA Sediment&Ti

QC-LCS #56225

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LCS
Version 3.06
Report date 04/05/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0222

7386-008 J11741

DUPLICATE

SDG	7386			Client/Case no	Hanford SDG K0222
Contact	Melissa C. Mannion			Contract	No. 630
	DUPLICATE		ORIGINAL		
Lab sample id	R602096-08	Lab sample id	R602096-02	Client sample id	J11741
Dept sample id	7386-008	Dept sample id	7386-002	Location/Matrix	U8, Sediment SOLID
		Received	02/15/06	Collected/Weight	02/13/06 15:45 1480 g
% solids	100.0	% solids	100.0	Custody/SAF No	RC-047-117 RC-047

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
Total Strontium	-0.030	0.13	0.24	1.0	U	SR	-0.036	0.12	0.27	U	-		0.1
Thorium 228	1.07	0.55	0.64	1.0		TH	1.62	0.84	0.78		41	112	1.1
Thorium 230	0.332	0.40	0.51	1.0	U	TH	0.202	0.40	0.77	U	-		0.5
Thorium 232	0.199	0.27	0.51	1.0	U	TH	0.505	0.41	0.77	U	-		1.2
Uranium 233/234	1.34	0.34	0.14	1.0		U	1.46	0.29	0.098		9	49	0.5
Uranium 235	0.244	0.13	0.17	1.0		U	0.108	0.093	0.12	U	77	137	1.7
Uranium 238	1.46	0.34	0.14	1.0		U	1.16	0.26	0.098		23	50	1.4
Potassium 40	8.88	0.31	0.14			GAM	8.45	0.32	0.17		5	33	0.5
Cobalt 60	U		0.017	0.050	U	GAM	U		0.018	U	-		0.1
Cesium 137	0.039	0.016	0.019	0.10		GAM	0.042	0.011	0.015		7	79	0.3
Radium 226	0.598	0.037	0.034	0.10		GAM	0.553	0.031	0.029		8	34	0.7
Radium 228	0.720	0.076	0.075	0.20		GAM	0.768	0.070	0.067		6	38	0.5
Europium 152	0.081	0.026	0.038	0.10		GAM	0.063	0.022	0.034		25	78	1.0
Europium 154	U		0.054	0.10	U	GAM	U		0.054	U	-		0
Europium 155	U		0.057	0.10	U	GAM	U		0.075	U	-		0.4
Thorium 228	0.668	0.021	0.020			GAM	0.682	0.020	0.019		2	32	0.2
Thorium 232	0.720	0.076	0.075			GAM	0.768	0.070	0.067		6	38	0.5
Uranium 235	U		0.11		U	GAM	U		0.077	U	-		0.5
Uranium 238	U		2.9		U	GAM	U		1.9	U	-		0.6
Americium 241	U		0.14		U	GAM	U		0.14	U	-		0
Beryllium 7	U		0.17		U	GAM	U		0.18	U	-		0.1
Ruthenium 106	U		0.13		U	GAM	U		0.12	U	-		0.1
Antimony 125	U		0.036		U	GAM	U		0.036	U	-		0
Cesium 134	U		0.021		U	GAM	U		0.020	U	-		0.1

100&300Area Compnt RCBRA Sediment&Ti

QC-DUP#2 56227

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	04/05/06

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 K0222

7386-001 J11736

D A T A S H E E T

SDG	7386	Client/Case no	Hanford	SDG K0222	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R602096-01	Client sample id	J11736		
Dept sample id	7386-001	Location/Matrix	U6, Sediment	SOLID	
Received	02/15/06	Collected/Weight	02/13/06 11:45	728.9 g	
% solids	100.0	Custody/SAF No	RC-047-112	RC-047	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Total Strontium	SR-RAD	-0.019	0.12	0.26	1.0	U	SR
Thorium 228	14274-82-9	0.699	0.44	0.51	1.0		TH
Thorium 230	14269-63-7	0.482	0.43	0.41	1.0		TH
Thorium 232	TH-232	0.804	0.44	0.41	1.0		TH
Uranium 233/234	U-233/234	1.04	0.22	0.092	1.0		U
Uranium 235	15117-96-1	0.073	0.059	0.11	1.0	U	U
Uranium 238	U-238	1.20	0.25	0.092	1.0		U
Potassium 40	13966-00-2	10.8	0.46	0.15			GAM
Cobalt 60	10198-40-0	U		0.016	0.050	U	GAM
Cesium 137	10045-97-3	0.066	0.016	0.017	0.10		GAM
Radium 226	13982-63-3	0.665	0.034	0.028	0.10		GAM
Radium 228	15262-20-1	0.777	0.067	0.060	0.20		GAM
Europium 152	14683-23-9	U		0.037	0.10	U	GAM
Europium 154	15585-10-1	U		0.047	0.10	U	GAM
Europium 155	14391-16-3	U		0.066	0.10	U	GAM
Thorium 228	14274-82-9	0.675	0.021	0.019			GAM
Thorium 232	TH-232	0.777	0.067	0.060			GAM
Uranium 235	15117-96-1	U		0.15		U	GAM
Uranium 238	U-238	U		1.7		U	GAM
Americium 241	14596-10-2	U		0.084		U	GAM
Beryllium 7	13966-02-4	U		0.15		U	GAM
Ruthenium 106	13967-48-1	U		0.12		U	GAM
Antimony 125	14234-35-6	U		0.034		U	GAM
Cesium 134	13967-70-9	U		0.022		U	GAM

100&300Area Compnt RCBRA Sediment&Ti

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	04/05/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0222

7386-002 J11741

DATA SHEET

SDG	7386	Client/Case no	Hanford SDG_K0222
Contact	Melissa C. Mannion	Contract	No. 630
Lab sample id	R602096-02	Client sample id	J11741
Dept sample id	7386-002	Location/Matrix	U8, Sediment SOLID
Received	02/15/06	Collected/Weight	02/13/06 15:45 1480 g
% solids	100.0	Custody/SAF No	RC-047-117 RC-047

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Total Strontium	SR-RAD	-0.036	0.12	0.27	1.0	U	SR
Thorium 228	14274-82-9	1.62	0.84	0.78	1.0		TH
Thorium 230	14269-63-7	0.202	0.40	0.77	1.0	U	TH
Thorium 232	TH-232	0.505	0.41	0.77	1.0	U	TH
Uranium 233/234	U-233/234	1.46	0.29	0.098	1.0		U
Uranium 235	15117-96-1	0.108	0.093	0.12	1.0	U	U
Uranium 238	U-238	1.16	0.26	0.098	1.0		U
Potassium 40	13966-00-2	8.45	0.32	0.17			GAM
Cobalt 60	10198-40-0	U		0.018	0.050	U	GAM
Cesium 137	10045-97-3	0.042	0.011	0.015	0.10		GAM
Radium 226	13982-63-3	0.553	0.031	0.029	0.10		GAM
Radium 228	15262-20-1	0.768	0.070	0.067	0.20		GAM
Europium 152	14683-23-9	0.063	0.022	0.034	0.10		GAM
Europium 154	15585-10-1	U		0.054	0.10	U	GAM
Europium 155	14391-16-3	U		0.075	0.10	U	GAM
Thorium 228	14274-82-9	0.682	0.020	0.019			GAM
Thorium 232	TH-232	0.768	0.070	0.067			GAM
Uranium 235	15117-96-1	U		0.077		U	GAM
Uranium 238	U-238	U		1.9		U	GAM
Americium 241	14596-10-2	U		0.14		U	GAM
Beryllium 7	13966-02-4	U		0.18		U	GAM
Ruthenium 106	13967-48-1	U		0.12		U	GAM
Antimony 125	14234-35-6	U		0.036		U	GAM
Cesium 134	13967-70-9	U		0.020		U	GAM

100&300Area Compnt RCBRA Sediment&Ti

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	04/05/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0222

7386-003 J11742

DATA SHEET

SDG	7386	Client/Case no	Hanford SDG K0222
Contact	Melissa C. Mannion	Contract	No. 630
Lab sample id	R602096-03	Client sample id	J11742
Dept sample id	7386-003	Location/Matrix	U3, Sediment SOLID
Received	02/15/06	Collected/Weight	02/13/06 14:45 1209 g
% solids	100.0	Custody/SAF No	RC-047-118 RC-047

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Total Strontium	SR-RAD	0.054	0.14	0.28	1.0	U	SR
Thorium 228	14274-82-9	0.889	0.43	0.40	1.0		TH
Thorium 230	14269-63-7	0.469	0.42	0.40	1.0		TH
Thorium 232	TH-232	0.886	0.43	0.40	1.0		TH
Uranium 233/234	U-233/234	2.35	0.34	0.083	1.0		U
Uranium 235	15117-96-1	0.118	0.079	0.10	1.0		U
Uranium 238	U-238	2.21	0.32	0.083	1.0		U
Potassium 40	13966-00-2	15.6	0.65	0.18			GAM
Cobalt 60	10198-40-0	U		0.024	0.050	U	GAM
Cesium 137	10045-97-3	0.144	0.020	0.021	0.10		GAM
Radium 226	13982-63-3	1.15	0.044	0.038	0.10		GAM
Radium 228	15262-20-1	1.30	0.067	0.058	0.20		GAM
Europium 152	14683-23-9	0.114	0.030	0.044	0.10		GAM
Europium 154	15585-10-1	U		0.056	0.10	U	GAM
Europium 155	14391-16-3	U		0.089	0.10	U	GAM
Thorium 228	14274-82-9	1.21	0.030	0.025			GAM
Thorium 232	TH-232	1.30	0.067	0.058			GAM
Uranium 235	15117-96-1	U		0.17		U	GAM
Uranium 238	U-238	6.15	2.2	2.3			GAM
Americium 241	14596-10-2	U		0.19		U	GAM
Beryllium 7	13966-02-4	U		0.20		U	GAM
Ruthenium 106	13967-48-1	U		0.15		U	GAM
Antimony 125	14234-35-6	U		0.041		U	GAM
Cesium 134	13967-70-9	U		0.023		U	GAM

100&300Area Compnt RCBRA Sediment&Ti

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	04/05/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0222

7386-004 J11743

DATA SHEET

SDG	7386	Client/Case no	Hanford	SDG K0222	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R602096-04	Client sample id	J11743		
Dept sample id	7386-004	Location/Matrix	U5, Sediment	SOLID	
Received	02/15/06	Collected/Weight	02/13/06 13:45	803.9 g	
% solids	100.0	Custody/SAF No	RC-047-119	RC-047	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Total Strontium	SR-RAD	0.017	0.11	0.21	1.0	U	SR
Thorium 228	14274-82-9	0.863	0.23	0.22	1.0		TH
Thorium 230	14269-63-7	0.442	0.18	0.19	1.0		TH
Thorium 232	TH-232	0.985	0.23	0.11	1.0		TH
Uranium 233/234	U-233/234	1.46	0.29	0.12	1.0		U
Uranium 235	15117-96-1	0.123	0.093	0.12	1.0		U
Uranium 238	U-238	1.35	0.26	0.097	1.0		U
Potassium 40	13966-00-2	8.85	0.41	0.13			GAM
Cobalt 60	10198-40-0	U		0.012	0.050	U	GAM
Cesium 137	10045-97-3	0.077	0.014	0.015	0.10		GAM
Radium 226	13982-63-3	0.685	0.029	0.023	0.10		GAM
Radium 228	15262-20-1	0.915	0.058	0.050	0.20		GAM
Europium 152	14683-23-9	U		0.032	0.10	U	GAM
Europium 154	15585-10-1	U		0.039	0.10	U	GAM
Europium 155	14391-16-3	U		0.073	0.10	U	GAM
Thorium 228	14274-82-9	0.790	0.019	0.016			GAM
Thorium 232	TH-232	0.915	0.058	0.050			GAM
Uranium 235	15117-96-1	U		0.055		U	GAM
Uranium 238	U-238	U		2.1		U	GAM
Americium 241	14596-10-2	U		0.070		U	GAM
Beryllium 7	13966-02-4	U		0.13		U	GAM
Ruthenium 106	13967-48-1	U		0.098		U	GAM
Antimony 125	14234-35-6	U		0.028		U	GAM
Cesium 134	13967-70-9	U		0.018		U	GAM

100&300Area Compnt RCBRA Sediment&Ti

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	04/05/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0222

7386-005 J11744

DATA SHEET

SDG	7386	Client/Case no	Hanford	SDG K0222	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R602096-05	Client sample id	J11744		
Dept sample id	7386-005	Location/Matrix	U7, Sediment	SOLID	
Received	02/15/06	Collected/Weight	02/13/06 12:45	911.7 g	
% solids	100.0	Custody/SAF No	RC-047-120	RC-047	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Total Strontium	SR-RAD	0.029	0.10	0.21	1.0	U	SR
Thorium 228	14274-82-9	0.430	0.17	0.16	1.0		TH
Thorium 230	14269-63-7	0.294	0.17	0.22	1.0		TH
Thorium 232	TH-232	0.331	0.15	0.14	1.0		TH
Uranium 233/234	U-233/234	0.250	0.11	0.083	1.0		U
Uranium 235	15117-96-1	0.013	0.026	0.10	1.0	U	U
Uranium 238	U-238	0.326	0.11	0.083	1.0		U
Potassium 40	13966-00-2	10.8	0.31	0.13			GAM
Cobalt 60	10198-40-0	U		0.015	0.050	U	GAM
Cesium 137	10045-97-3	0.049	0.014	0.016	0.10		GAM
Radium 226	13982-63-3	0.364	0.027	0.026	0.10		GAM
Radium 228	15262-20-1	0.557	0.064	0.064	0.20		GAM
Europium 152	14683-23-9	U		0.031	0.10	U	GAM
Europium 154	15585-10-1	U		0.052	0.10	U	GAM
Europium 155	14391-16-3	U		0.046	0.10	U	GAM
Thorium 228	14274-82-9	0.482	0.017	0.016			GAM
Thorium 232	TH-232	0.557	0.064	0.064			GAM
Uranium 235	15117-96-1	U		0.063		U	GAM
Uranium 238	U-238	U		1.8		U	GAM
Americium 241	14596-10-2	U		0.11		U	GAM
Beryllium 7	13966-02-4	U		0.18		U	GAM
Ruthenium 106	13967-48-1	U		0.11		U	GAM
Antimony 125	14234-35-6	U		0.030		U	GAM
Cesium 134	13967-70-9	U		0.018		U	GAM

100&300Area Compnt RCBRA Sediment&Ti

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	04/05/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0222

Test TH Matrix SOLID
SDG 7386
Contact Melissa C. Mannion

LAB METHOD SUMMARY

THORIUM, ISOTOPIC IN SOLIDS

ALPHA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG K0222

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Thorium 230
Preparation batch 7169-157					
R602096-01			7386-001	J11736	0.482
R602096-02			7386-002	J11741	U
R602096-03			7386-003	J11742	0.469
R602096-04			7386-004	J11743	0.442
R602096-05			7386-005	J11744	0.294
R602096-06			7386-006	LCS (QC ID=56225)	ok
R602096-07			7386-007	BLK (QC ID=56226)	U
R602096-08			7386-008	Duplicate (R602096-02)	- U
Nominal values and limits from method				RDLs (pCi/g)	1.0
100&300Area Compnt RCBRA Sediment&Ti					

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 7169-157			2σ prep error 5.0 %	Reference Lab Notebook No. 7169 pg.157												
R602096-01			J11736	0.51	0.250			64		154			42	03/25/06	03/27	SS-039
R602096-02			J11741	0.78	0.250			38		154			42	03/25/06	03/27	SS-040
R602096-03			J11742	0.40	0.250			64		155			42	03/25/06	03/27	SS-042
R602096-04			J11743	0.22	0.250			50		938			42	03/25/06	03/27	SS-039
R602096-05			J11744	0.22	0.250			52		939			42	03/25/06	03/27	SS-040
R602096-06			LCS (QC ID=56225)	0.22	0.250			36		939				03/25/06	03/27	SS-042
R602096-07			BLK (QC ID=56226)	0.29	0.250			79		171				03/25/06	03/30	SS-033
R602096-08			Duplicate (R602096-02) (QC ID=56227)	0.64	0.250			49		170			45	03/25/06	03/30	SS-034
Nominal values and limits from method				1.0	0.250			20-105		150			180			

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 04/05/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0222

Test	TH
Matrix	SOLID
SDG	7386
Contact	Melissa C. Mannion

LAB METHOD SUMMARY, cont.

THORIUM, ISOTOPIC IN SOLIDS

ALPHA SPECTROSCOPY

Client	Hanford
Contract	No. 630
Contract	SDG K0222

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

AVERAGES ± 2 SD	MDA	0.41	±	0.43
FOR 8 SAMPLES	YIELD	54	±	29

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	04/05/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0222

Test U Matrix SOLID
SDG 7386
Contact Melissa C. Mannion

LAB METHOD SUMMARY

URANIUM, ISOTOPIC IN SOLIDS

ALPHA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG K0222

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 7169-157											
R602096-01			7386-001	J11736	1.04	U	1.20	87	26	6	5
R602096-02			7386-002	J11741	1.46	U	1.16	126	38	9	8
R602096-03			7386-003	J11742	2.35	0.118	2.21	106	22	5	4
R602096-04			7386-004	J11743	1.46	0.123	1.35	108	30	9	7
R602096-05			7386-005	J11744	0.250	U	0.326	77	43	4	8
R602096-06			7386-006	LCS (QC ID=56225)	ok	ok	ok				
R602096-07			7386-007	BLK (QC ID=56226)	U	U	U				
R602096-08			7386-008	Duplicate (R602096-02)	ok	ok	ok	92	32	17	10
Nominal values and limits from method				RDLs (pCi/g)	1.0	1.0	1.0	100		4	
100&300Area Compnt RCBRA Sediment&Ti							Averages	99		8	

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 7169-157			2σ prep error 5.0 %	Reference Lab Notebook No. 7169 pg.157												
R602096-01			J11736	0.11	0.500			81		259			37	03/17/06	03/22	SS-027
R602096-02			J11741	0.12	0.500			79		259			37	03/17/06	03/22	SS-031
R602096-03			J11742	0.10	0.500			92		259			37	03/17/06	03/22	SS-032
R602096-04			J11743	0.12	0.500			82		260			37	03/17/06	03/22	SS-034
R602096-05			J11744	0.10	0.500			80		258			37	03/17/06	03/22	SS-035
R602096-06			LCS (QC ID=56225)	0.61	0.500			90		258				03/17/06	03/22	SS-039
R602096-07			BLK (QC ID=56226)	0.24	0.500			59		171				03/17/06	03/30	SS-032
R602096-08			Duplicate (R602096-02) (QC ID=56227)	0.17	0.500			78		171			45	03/17/06	03/30	SS-028
Nominal values and limits from method				1.0	0.500			20-105		100	100		180			

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 04/05/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0222

Test U	Matrix SOLID
SDG 7386	
Contact Melissa C. Mannion	

LAB METHOD SUMMARY, cont.

URANIUM, ISOTOPIC IN SOLIDS

ALPHA SPECTROSCOPY

Client Hanford	
Contract No. 630	
Contract SDG K0222	

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

AVERAGES ± 2 SD	MDA	0.20	±	0.35
FOR 8 SAMPLES	YIELD	80	±	20

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	04/05/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0222

Test SR Matrix SOLID
SDG 7386
Contact Melissa C. Mannion

LAB METHOD SUMMARY

TOTAL STRONTIUM IN SOLIDS

BETA COUNTING

Client Hanford
Contract No. 630
Contract SDG K0222

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Total Strontium	
Preparation batch 7169-157						
R602096-01			7386-001	J11736	U	
R602096-02			7386-002	J11741	U	
R602096-03			7386-003	J11742	U	
R602096-04			7386-004	J11743	U	
R602096-05			7386-005	J11744	U	
R602096-06			7386-006	LCS (QC ID=56225)	ok	
R602096-07			7386-007	BLK (QC ID=56226)	U	
R602096-08			7386-008	Duplicate (R602096-02)	-	U

Nominal values and limits from method RDLs (pCi/g) 1.0
100&300Area Compnt RCBRA Sediment&Ti

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 7169-157			2σ prep error 10.0 % Reference Lab Notebook No. 7169 pg.157													
R602096-01			J11736	0.26	1.00			98		100			31	03/16/06	03/16	GRB-202
R602096-02			J11741	0.27	1.00			96		100			31	03/16/06	03/16	GRB-203
R602096-03			J11742	0.28	1.00			97		100			31	03/16/06	03/16	GRB-204
R602096-04			J11743	0.21	1.00			97		100			31	03/16/06	03/16	GRB-201
R602096-05			J11744	0.21	1.00			90		100			31	03/16/06	03/16	GRB-202
R602096-06			LCS (QC ID=56225)	0.19	1.00			95		100				03/16/06	03/16	GRB-221
R602096-07			BLK (QC ID=56226)	0.19	1.00			95		100				03/16/06	03/16	GRB-224
R602096-08			Duplicate (R602096-02) (QC ID=56227)	0.24	1.00			97		100			31	03/16/06	03/16	GRB-226
Nominal values and limits from method				1.0	1.00			30-105		100			180			

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 04/05/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0222

Test SR	Matrix SOLID
SDG 7386	
Contact Melissa C. Mannion	

LAB METHOD SUMMARY, cont.

TOTAL STRONTIUM IN SOLIDS

BETA COUNTING

Client Hanford	
Contract No. 630	
Contract SDG K0222	

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

AVERAGES ± 2 SD	MDA	0.23	±	0.072
FOR 8 SAMPLES	YIELD	96	±	5

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	04/05/06

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K0222

Test GAM	Matrix SOLID
SDG 7386	
Contact Melissa C. Mannion	

LAB METHOD SUMMARY

GAMMA SCAN

GAMMA SPECTROSCOPY

Client Hanford	
Contract No. 630	
Contract SDG K0222	

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Cobalt 60		Cesium 137
Preparation batch 7169-157							
R602096-01			7386-001	J11736	U		0.066
R602096-02			7386-002	J11741	U		0.042
R602096-03			7386-003	J11742	U		0.144
R602096-04			7386-004	J11743	U		0.077
R602096-05			7386-005	J11744	U		0.049
R602096-06			7386-006	LCS (QC ID=56225)	ok		ok
R602096-07			7386-007	BLK (QC ID=56226)	U		U
R602096-08			7386-008	Duplicate (R602096-02)	-	U	ok
Nominal values and limits from method				RDLs (pCi/g)	0.050		0.10
100&300Area Compnt RCBRA Sediment&Ti							

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 7169-157			2σ prep error 15.0 % Reference Lab Notebook No. 7169 pg.157													
R602096-01			J11736	3.4	660					400			38	03/09/06	03/23	MB,08,00
R602096-02			J11741	3.2	996					414			38	03/09/06	03/23	MB,05,00
R602096-03			J11742	3.8	914					554			38	03/09/06	03/23	02,02,00
R602096-04			J11743	2.8	701					554			38	03/09/06	03/23	MB,08,00
R602096-05			J11744	2.8	842					554			38	03/09/06	03/23	MB,05,00
R602096-06			LCS (QC ID=56225)	0.016	660					407				03/09/06	03/23	01,03,00
R602096-07			BLK (QC ID=56226)	4.0	660					401				03/09/06	03/24	01,02,00
R602096-08			Duplicate (R602096-02) (QC ID=56227)	3.2	996					401			39	03/09/06	03/24	MB,05,00
Nominal values and limits from method				0.050	660					100			180			

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

AVERAGES ± 2 SD	MDA	2.9	± 2.5
FOR 8 SAMPLES	YIELD		±

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-LMS
Version	3.06
Report date	04/05/06

SDG 7386
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K0222

SAMPLE SUMMARY

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

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

The following notes apply to these reports:

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

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

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

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

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

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

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 04/05/06

SDG 7386
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K0222

PREPARATION BATCH SUMMARY

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

The following notes apply to this report:

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

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

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

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

  These qualifiers should be reviewed as follows:

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

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

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

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

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 04/05/06

SDG 7386
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG_K0222

WORK SUMMARY

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

The following notes apply to this report:

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

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

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

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

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

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

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 04/05/06

SDG 7386
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG_K0222

DATA SHEET

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

The following notes apply to this report:

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

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

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

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

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

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

The following qualifiers are defined by the DVD system:

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

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 04/05/06

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 7386
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG K0222

DATA SHEET

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

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

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

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 04/05/06

SDG 7386
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K0222

LAB CONTROL SAMPLE

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

The following notes apply to this report:

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

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

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

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

* The first, computed limits for the recovery reflect:

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

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

  2. The error of ADDED.

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

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

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

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 04/05/06

SDG 7386
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG_K0222

DUPLICATE

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

The following notes apply to this report:

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

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

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

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

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

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

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

  This value reported for this limit is at most 999.

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

  1. A fixed percentage specified in the protocol.

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 04/05/06

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 7386
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG_K0222

MATRIX SPIKE

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

The following notes apply to this report:

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

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

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

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

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

* The first, computed limits for the recovery reflect:

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

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

  2. The error of ADDED.

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

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

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 04/05/06

SDG 7386
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG_K0222

MATRIX SPIKE

for the recovery.

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

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

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 04/05/06

SDG 7386
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG_K0222

METHOD SUMMARY

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

The following notes apply to this report:

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

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

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

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

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

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

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

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

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 04/05/06

METHOD SUMMARY

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

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

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

  MDAs are underlined if greater than the printed RDL.

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

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

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

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

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

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

METHOD SUMMARY

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

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

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

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

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

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

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

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

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

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

METHOD SUMMARY

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

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

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

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-112	Page 1 of 1

Collector: TILLER JAMES BERNHARD	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9N	Data Turnaround: 45 Days	Air Quality ☐	
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: U6, SEDIMENT K0222 (7386)	SAF No.: RC-047	
Ice Chest No.: AFS-04-007	Field Logbook No.: EL-1597	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A060302	Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

~~COOL 4C~~ RZS
None 2-14-06

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On; TPH-Gasoline Range - WTPH-G		
Sample No.	Matrix *	Sample Date	Sample Time								
J11736	OTHER SOLID	2-13-06	1145	X	X						

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From: JAMES BERNHARD	2-13-06 1730	EAS LOCKED STORAGE	2-13-06 1730
Relinquished By/Removed From: EAS LOCKED STORAGE	02-14-06 0700	RZ Steffler	2-14-06 0700
Relinquished By/Removed From: RZ Steffler	2-14-06 1600	Fed Ex	
Relinquished By/Removed From: FED EX		Rex Kelley	2/15/06 10:00
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

gamma- Sb125, Be7, Co134, Ru106

MCM
3/23/06

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

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

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-117	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Price Code 9N	Data Turnaround 45 Days	Air Quality ☐	
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location U8. SEDIMENT K0222 (7386)	SAF No. RC-047	
Ice Chest No. AFS-04-007	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. A060302	Bill of Lading/Air Bill No. SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

~~COOL 4C~~ R25
None 2-14-06

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On; TPH-Gasoline Range - WTPH-G		
Sample No. / Matrix * / Sample Date / Sample Time										
J11741 / OTHER SOLID / 2-13-06 / 1545	X	X								

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS
Relinquished By/Removed From JAMES BERNHARD, Date/Time 1730 2-13-06	Received By/Stored In EAS LOCKED STORAGE, Date/Time 1730 2-13-06	gamma - Sb125, Be7, Co134, Ru106
Relinquished By/Removed From EAS LOCKED STORAGE, Date/Time 0700 02-14-06	Received By/Stored In RZ Steffler R.J. Steffler, Date/Time 0700 2-14-06	
Relinquished By/Removed From RZ Steffler R.J. Steffler, Date/Time 1600 2-14-06	Received By/Stored In Fed Ex, Date/Time	
Relinquished By/Removed From FED EX, Date/Time	Received By/Stored In Alex Reeve, Date/Time 2/15/06 10:00	
Relinquished By/Removed From, Date/Time	Received By/Stored In, Date/Time	
Relinquished By/Removed From, Date/Time	Received By/Stored In, Date/Time	

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

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-118	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location U3, SEDIMENT K0222 (7386)		SAF No. RC-047	Air Quality ☐	
Ice Chest No. AFS-04-007	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. A060302		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

~~COOL4C~~ None RZS 2-14-06

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On; TPH-Gasoline Range - WTPH-G		
Sample No. / Matrix * / Sample Date / Sample Time										
J11742 / OTHER SOLID / 2-13-06 / 1445	X	X								

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From JAMES BERNHARD	1730 2-13-06	Received By/Stored In EAS LOCKED STORAGE	1730 2-13-06
Relinquished By/Removed From EAS LOCKED STORAGE	0700 2-14-06	Received By/Stored In RZ Stoffler	2-14-06/0700
Relinquished By/Removed From RZ Stoffler	1600 2-14-06	Received By/Stored In Fed Ex	
Relinquished By/Removed From FED EX		Received By/Stored In	2/15/06 10:00
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

gamma - Sb125, Be7, Co134, Ru106

MCM 3/23/06

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

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

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-119	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N Air Quality ☐	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location U 5, SEDIMENT K0222 (7386)		SAF No. RC-047		
Ice Chest No. AFS-04-007	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A060302		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

~~COOL 4C~~ RZS 2-14-06
None

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On; TPH-Gasoline Range - WTPH-G		
Sample No. / Matrix * / Sample Date / Sample Time										
J11743 / OTHER SOLID / 2-13-06 / 1345	X	X								

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From JAMES BERNHARD	1732 2-13-06	Received By/Stored In EAS LOCKED STORAGE	1730 2-13-06
Relinquished By/Removed From EAS LOCKED STORAGE	0700 02-14-06	Received By/Stored In RZ Stettler	0700 2-14-06
Relinquished By/Removed From RZ Stettler	1600 2-14-06	Received By/Stored In Fed Ex	
Relinquished By/Removed From FED EX		Received By/Stored In Alex Kelley	2/15/06 10:00
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

gamma - Sb125, Be7, Co134, Ru106

MCM 3/23/6

Matrix *

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

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

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-120	Page 1 of 1

Collector: TILLER JAMES BERNHARD	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9N	Data Turnaround: 45 Days	Air Quality ☐	
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: U 7, SEDIMENT K0222 (7386)		SAF No.: RC-047
Ice Chest No.: AFS-04-007	Field Logbook No.: EL-1597	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A060302		Bill of Lading/Air Bill No.: SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

~~COOL 4C~~ RZS
None 2-14-06

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	Gamma Spec - (Full List)	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On; TPH-Gasoline Range - WTPH-G		
J11744	OTHER SOLID	2-13-06	1245	X	X								

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	1730 2-13-06	EAS LOCKED STORAGE	1730 2-13-06
EAS LOCKED STORAGE	0700 02-14-06	RZ Steffler	0700 2-14-06
RZ Steffler	1600 2-14-06	Fed Ex	
FED EX		Alex Kennedy	2/15/06 10:00

SPECIAL INSTRUCTIONS

gamma - Sb125, Be7, Co134, Ru106
MCM
3/23/6

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

BHI-EE-011 (08/29/2005)

EBERLINE SERVICES

RICHMOND, CA LABORATORY

SAMPLE RECEIPT CHECKLIST

Client: WC HANFORD City RICHLAND State WA

Date/Time received 2/15/06 10:00 CoC No. RC-047-112, 117-120

Container I.D. No. AFS-04-007 Requested TAT (Days) 45 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 [✓]
6. Number of samples in shipping container: 5 Sample Matrix OTHER SOLID
7. Number of containers per sample: 2 (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 AK Date: 2/15/06 Time: 11:50

Customer Sample No.	cpm	mR/hr	Wipe	Customer Sample No.	cpm	mR/hr	wipe

Ion Chamber Ser. No. _____ Calibration date _____

Alpha Meter Ser. No. _____ Calibration date _____

Beta/Gamma Meter Ser. No. _____ Calibration date _____

LIONVILLE LABORATORY INC.

28 March 2006

Joan Kessner
WC-Hanford
3190 Washington Way
MSIN H9-03
Richland, WA 99354

RECEIVED
APR 2006

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 #	0602L268
SDG #	K0222
SAF #	RC-047
Date Received	2/156
# Samples	5
Mat\rix	OTHER SOLID
Volatiles	
Semivolatiles	X
Pest/PCB	X
PAH	
DRO/KRO/GRO	X
GC Alcohols	
Herbicides	
Metals	X
Inorganics	X

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

Sincerely,
Lionville Laboratory Incorporated

Orlette S. Johnson
Project Manager

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

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

Lionville Laboratory, Inc.
BNA ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0222

RECEIVED
APR 2006

DATE RECEIVED: 02/15/06 LVL LOT # :06021268

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J11736	001	SO	06LE0125	02/13/06	02/16/06	02/20/06
J11736	001 MS	SO	06LE0125	02/13/06	02/16/06	02/20/06
J11736	001 MSD	SO	06LE0125	02/13/06	02/16/06	02/20/06
J11741	002	SO	06LE0125	02/13/06	02/16/06	02/20/06
J11742	003	SO	06LE0125	02/13/06	02/16/06	02/20/06
J11743	004	SO	06LE0125	02/13/06	02/16/06	02/20/06
J11744	005	SO	06LE0125	02/13/06	02/16/06	02/21/06

LAB QC:

SBLKTX	MB1	S	06LE0125	N/A	02/16/06	02/21/06
SBLKTX	MB1 BS	S	06LE0125	N/A	02/16/06	02/21/06

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-047
LVL #: 0602L268
SDG/SAF # K0211/RC-047

W.O. #: 11343-606-001-9999-00
Date Received: 02-15-2006

SEMIVOLATILE

Five (5) solid samples were collected on 02-13-2006.

The samples and their associated QC samples were extracted according to Lionville Laboratory SOPs based on SW 846 method 3540C on 02-16-2006 and analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 02-20,21-2006.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.
2. Samples were extracted and analyzed within required holding time.
3. Non-target compounds were detected in the samples.
4. All surrogate recoveries were within acceptance criteria.
5. All matrix spike recoveries were within acceptance criteria.
6. One (1) of sixty-four (64) blank spike recoveries was outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
7. The method blank contained the common laboratory contaminant Bis (2-Ethylhexyl) phthalate at a level less than the CRQL.
8. Internal standard area and retention time criteria were met.
9. 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").
10. LvLI is NELAP accredited by the state of Pennsylvania and holds over 20 additional state accreditations. 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.

for Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

2/23/06
Date

som\gorup\data\bna\tnu-hanford\0602-268.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 2 3 pages.

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 06M5059

Initiator: Robert Carden
Date: 2/23/06
Client: TNU Hanford RCAM

Batch: 06B02268
Samples: BS
Method: SW846/MCAWW/CLP/

Parameter: 8254
Matrix: Solid
Prep Batch: 06E02125

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)

2,4 dinitrophenol spike recovery in BS at/die QC criteria 14% (20-120%). MS/MSD OK. All other spike cmpds ok

2. Known or Probable Causes(s) This cmpd exhibits erractic chromatographic behavior especially if the GC system is contaminated with high boiling materials

3. Discussion and Proposed Action Other Description: Narrate

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

2/23/06

4. Project Manager Instructions...signature/date: _____

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

5. Final Action...signature/date: 2/23/06 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
1	X Project Mgr: Stone/Johnson		GC/LC: Kiger
__	__ Data Management: Stilwell	2	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.

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 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.

Lionville Laboratory, Inc.

Semivolatiles by GC/MS, HSL List

Report Date: 02/23/06 12:14

RFW Batch Number: 0602L268 Client: TNUHANFORD RC-047 K0222 Work Order: 11343606001 Page: 1a

	Cust ID:	J11736		J11736		J11736		J11741		J11742		J11743	
Sample Information	RFW#:	001		001 MS		001 MSD		002		003		004	
	Matrix:	SOLID		SOLID		SOLID		SOLID		SOLID		SOLID	
	D.F.:	1.00		1.00		1.00		1.00		1.00		1.00	
	Units:	ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg		ug/Kg	
Surrogate Recovery	Nitrobenzene-d5	58	%	69	%	67	%	31	%	65	%	62	%
	2-Fluorobiphenyl	59	%	71	%	70	%	32	%	62	%	63	%
	Terphenyl-d14	79	%	83	%	84	%	42	%	80	%	78	%
	Phenol-d5	61	%	73	%	71	%	34	%	68	%	66	%
	2-Fluorophenol	48	%	64	%	65	%	27	%	54	%	52	%
	2,4,6-Tribromophenol	63	%	67	%	67	%	35	%	67	%	66	%
			fl		fl		fl		fl		fl		fl
Phenol		400	U	82	%	85	%	440	U	410	U	400	U
bis(2-Chloroethyl)ether		400	U	82	%	83	%	440	U	410	U	400	U
2-Chlorophenol		400	U	80	%	81	%	440	U	410	U	400	U
1,3-Dichlorobenzene		400	U	72	%	69	%	440	U	410	U	400	U
1,4-Dichlorobenzene		400	U	74	%	71	%	440	U	410	U	400	U
1,2-Dichlorobenzene		400	U	79	%	75	%	440	U	410	U	400	U
2-Methylphenol		400	U	82	%	81	%	440	U	410	U	400	U
2,2'-oxybis(1-Chloropropane)		400	U	78	%	79	%	440	U	410	U	400	U
4-Methylphenol		400	U	79	%	80	%	440	U	410	U	400	U
N-Nitroso-di-n-propylamine		400	U	77	%	78	%	440	U	410	U	400	U
Hexachloroethane		400	U	70	%	66	%	440	U	410	U	400	U
Nitrobenzene		400	U	72	%	73	%	440	U	410	U	400	U
Isophorone		400	U	76	%	79	%	440	U	410	U	400	U
2-Nitrophenol		400	U	70	%	72	%	440	U	410	U	400	U
2,4-Dimethylphenol		400	U	70	%	74	%	440	U	410	U	400	U
bis(2-Chloroethoxy)methane		400	U	70	%	73	%	440	U	410	U	400	U
2,4-Dichlorophenol		400	U	69	%	70	%	440	U	410	U	400	U
1,2,4-Trichlorobenzene		400	U	65	%	65	%	440	U	410	U	400	U
Naphthalene		400	U	69	%	70	%	440	U	410	U	400	U
4-Chloroaniline		400	U	69	%	76	%	440	U	410	U	400	U
Hexachlorobutadiene		400	U	68	%	67	%	440	U	410	U	400	U
4-Chloro-3-methylphenol		400	U	73	%	75	%	440	U	410	U	400	U
2-Methylnaphthalene		400	U	74	%	76	%	440	U	410	U	400	U
Hexachlorocyclopentadiene		400	U	65	%	71	%	440	U	410	U	400	U
2,4,6-Trichlorophenol		400	U	71	%	74	%	440	U	410	U	400	U
2,4,5-Trichlorophenol		1000	U	74	%	76	%	1100	U	1000	U	1000	U

*= Outside of EPA CLP QC limits.

000000007

RFW Batch Number: 0602L268 Client: TNUHANFORD RC-047 K0222 Work Order: 11343606001 Page: 1b

Cust ID:	J11736		J11736		J11736		J11741		J11742		J11743	
RFW#:	001		001 MS		001 MSD		002		003		004	
2-Chloronaphthalene	400	U	74	%	76	%	440	U	410	U	400	U
2-Nitroaniline	1000	U	80	%	82	%	1100	U	1000	U	1000	U
Dimethylphthalate	400	U	75	%	79	%	440	U	410	U	400	U
Acenaphthylene	400	U	73	%	76	%	440	U	410	U	400	U
2,6-Dinitrotoluene	400	U	73	%	76	%	440	U	410	U	400	U
3-Nitroaniline	1000	U	79	%	83	%	1100	U	1000	U	1000	U
Acenaphthene	400	U	76	%	79	%	440	U	410	U	400	U
2,4-Dinitrophenol	1000	U	82	%	78	%	1100	U	1000	U	1000	U
4-Nitrophenol	1000	U	83	%	84	%	1100	U	1000	U	1000	U
Dibenzofuran	400	U	75	%	77	%	440	U	410	U	400	U
2,4-Dinitrotoluene	400	U	81	%	83	%	440	U	410	U	400	U
Diethylphthalate	400	U	73	%	78	%	440	U	410	U	400	U
4-Chlorophenyl-phenylether	400	U	73	%	75	%	440	U	410	U	400	U
Fluorene	400	U	82	%	85	%	440	U	410	U	400	U
4-Nitroaniline	1000	U	76	%	81	%	1100	U	1000	U	1000	U
4,6-Dinitro-2-methylphenol	1000	U	86	%	89	%	1100	U	1000	U	1000	U
N-Nitrosodiphenylamine (1)	400	U	63	%	69	%	440	U	410	U	400	U
4-Bromophenyl-phenylether	400	U	65	%	70	%	440	U	410	U	400	U
Hexachlorobenzene	400	U	74	%	78	%	440	U	410	U	400	U
Pentachlorophenol	1000	U	76	%	79	%	1100	U	1000	U	1000	U
Phenanthrene	400	U	75	%	81	%	440	U	410	U	400	U
Anthracene	400	U	76	%	82	%	440	U	410	U	400	U
Carbazole	400	U	73	%	79	%	440	U	410	U	400	U
Di-n-butylphthalate	400	U	74	%	80	%	440	U	410	U	400	U
Fluoranthene	400	U	75	%	78	%	440	U	410	U	400	U
Pyrene	400	U	83	%	89	%	440	U	410	U	400	U
Butylbenzylphthalate	400	U	82	%	89	%	440	U	410	U	400	U
3,3'-Dichlorobenzidine	400	U	39	%	67	%	440	U	410	U	400	U
Benzo(a)anthracene	400	U	76	%	81	%	440	U	410	U	400	U
Chrysene	400	U	76	%	80	%	440	U	410	U	400	U
bis(2-Ethylhexyl)phthalate	55	JB	80	%	84	%	26	JB	37	JB	180	JB
Di-n-octyl phthalate	400	U	82	%	88	%	440	U	410	U	400	U
Benzo(b)fluoranthene	400	U	81	%	89	%	440	U	410	U	400	U
Benzo(k)fluoranthene	400	U	75	%	80	%	440	U	410	U	400	U
Benzo(a)pyrene	400	U	76	%	82	%	440	U	410	U	400	U
Indeno(1,2,3-cd)pyrene	400	U	78	%	82	%	440	U	410	U	400	U
Dibenz(a,h)anthracene	400	U	71	%	75	%	440	U	410	U	400	U
Benzo(g,h,i)perylene	400	U	78	%	83	%	440	U	410	U	400	U

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

0000000008

Lionville Laboratory, Inc.

Semivolatiles by GC/MS, HSL List

RFW Batch Number: 0602L268 Client: TNUHANFORD RC-047 K0222 Work Order: 11343606001 Report Date: 02/23/06 12:14 Page: 2a

000000009

	Cust ID:	J11744		SBLKTX		SBLKTX BS	
Sample Information	RFW#:	005		06LE0125-MB1		06LE0125-MB1	
	Matrix:	SOLID		SOIL		SOIL	
	D.F.:	1.00		1.00		1.00	
	Units:	ug/Kg		ug/Kg		ug/Kg	
Surrogate Recovery	Nitrobenzene-d5	64	%	65	%	65	%
	2-Fluorobiphenyl	65	%	67	%	69	%
	Terphenyl-d14	79	%	78	%	82	%
	Phenol-d5	68	%	66	%	65	%
	2-Fluorophenol	56	%	54	%	56	%
	2,4,6-Tribromophenol	68	%	59	%	70	%
Phenol		430	U	330	U	72	%
bis(2-Chloroethyl)ether		430	U	330	U	74	%
2-Chlorophenol		430	U	330	U	69	%
1,3-Dichlorobenzene		430	U	330	U	65	%
1,4-Dichlorobenzene		430	U	330	U	67	%
1,2-Dichlorobenzene		430	U	330	U	70	%
2-Methylphenol		430	U	330	U	70	%
2,2'-oxybis(1-Chloropropane)		430	U	330	U	72	%
4-Methylphenol		430	U	330	U	73	%
N-Nitroso-di-n-propylamine		430	U	330	U	70	%
Hexachloroethane		430	U	330	U	63	%
Nitrobenzene		430	U	330	U	66	%
Isophorone		430	U	330	U	73	%
2-Nitrophenol		430	U	330	U	66	%
2,4-Dimethylphenol		430	U	330	U	64	%
bis(2-Chloroethoxy)methane		430	U	330	U	67	%
2,4-Dichlorophenol		430	U	330	U	61	%
1,2,4-Trichlorobenzene		430	U	330	U	62	%
Naphthalene		430	U	330	U	67	%
4-Chloroaniline		430	U	330	U	71	%
Hexachlorobutadiene		430	U	330	U	66	%
4-Chloro-3-methylphenol		430	U	330	U	67	%
2-Methylnaphthalene		430	U	330	U	72	%
Hexachlorocyclopentadiene		430	U	330	U	62	%
2,4,6-Trichlorophenol		430	U	330	U	68	%
2,4,5-Trichlorophenol		1100	U	830	U	67	%

*= Outside of EPA CLP QC limits.

Cust ID:	J11744		SBLKTX		SBLKTX BS	
RFW#:	005		06LE0125-MB1		06LE0125-MB1	
2-Chloronaphthalene	430	U	330	U	69	%
2-Nitroaniline	1100	U	830	U	72	%
Dimethylphthalate	430	U	330	U	73	%
Acenaphthylene	430	U	330	U	69	%
2,6-Dinitrotoluene	430	U	330	U	70	%
3-Nitroaniline	1100	U	830	U	78	%
Acenaphthene	430	U	330	U	73	%
2,4-Dinitrophenol	1100	U	830	U	14 *	%
4-Nitrophenol	1100	U	830	U	87	%
Dibenzofuran	430	U	330	U	72	%
2,4-Dinitrotoluene	430	U	330	U	79	%
Diethylphthalate	430	U	330	U	76	%
4-Chlorophenyl-phenylether	430	U	330	U	70	%
Fluorene	430	U	330	U	79	%
4-Nitroaniline	1100	U	830	U	80	%
4,6-Dinitro-2-methylphenol	1100	U	830	U	64	%
N-Nitrosodiphenylamine (1)	430	U	330	U	65	%
4-Bromophenyl-phenylether	430	U	330	U	65	%
Hexachlorobenzene	430	U	330	U	72	%
Pentachlorophenol	1100	U	830	U	66	%
Phenanthrene	430	U	330	U	76	%
Anthracene	430	U	330	U	77	%
Carbazole	430	U	330	U	76	%
Di-n-butylphthalate	430	U	330	U	78	%
Fluoranthene	430	U	330	U	76	%
Pyrene	430	U	330	U	82	%
Butylbenzylphthalate	430	U	330	U	83	%
3,3'-Dichlorobenzidine	430	U	330	U	79	%
Benzo(a)anthracene	430	U	330	U	77	%
Chrysene	430	U	330	U	77	%
bis(2-Ethylhexyl)phthalate	120	JB	60	J	81	%
Di-n-octyl phthalate	430	U	330	U	86	%
Benzo(b)fluoranthene	430	U	330	U	84	%
Benzo(k)fluoranthene	430	U	330	U	77	%
Benzo(a)pyrene	430	U	330	U	78	%
Indeno(1,2,3-cd)pyrene	430	U	330	U	82	%
Dibenz(a,h)anthracene	430	U	330	U	74	%
Benzo(g,h,i)perylene	430	U	330	U	82	%

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

000000010

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J11736

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

Client: TNUHANFORD RC-047 K0222

Matrix: (soil/water) SOLID

Lab Sample ID: 0602L268-001

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

Lab File ID: J022006

Level: (low/med) LOW

Date Received: 02/15/06

% Moisture: 17 decanted: (Y/N)__

Date Extracted: 02/16/06

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 02/20/06

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. 5076-19-7	TRIMETHYLOXIRANE	4.668	300	JBN
2. 110-82-7	CYCLOHEXANE	5.331	1000	JBN
3.	ALKANE	32.221	90	J
4.	UNKNOWN	39.635	100	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J11741

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

Client: TNUHANFORD RC-047 K0222

Matrix: (soil/water) SOLID

Lab Sample ID: 0602L268-002

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

Lab File ID: J022009

Level: (low/med) LOW

Date Received: 02/15/06

% Moisture: 24 decanted: (Y/N)__

Date Extracted: 02/16/06

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 02/20/06

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. 5076-19-7	TRIMETHYLOXIRANE	4.668	300	JBN
2. 110-82-7	CYCLOHEXANE	5.331	1000	JBN
3.	UNKNOWN	23.109	200	J
4.	ALKANE	27.096	300	J
5.	ALKANE	32.221	100	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J11742

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

Client: TNUHANFORD RC-047 K0222

Matrix: (soil/water) SOLID

Lab Sample ID: 0602L268-003

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

Lab File ID: J022010

Level: (low/med) LOW

Date Received: 02/15/06

% Moisture: 19 decanted: (Y/N)__

Date Extracted: 02/16/06

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 02/20/06

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. 5076-19-7	TRIMETHYLOXIRANE	4.668	400	JBN
2. 110-82-7	CYCLOHEXANE	5.330	1000	JBN
3.	UNKNOWN	25.149	100	J
4.	UNKNOWN	25.408	200	J
5.	ALKANE	32.211	100	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J11743

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

Client: TNUHANFORD RC-047 K0222

Matrix: (soil/water) SOLID

Lab Sample ID: 0602L268-004

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

Lab File ID: J022011

Level: (low/med) LOW

Date Received: 02/15/06

% Moisture: 17 decanted: (Y/N)__

Date Extracted: 02/16/06

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 02/20/06

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. 5076-19-7	TRIMETHYLOXIRANE	4.668	400	JBN
2. 110-82-7	CYCLOHEXANE	5.331	1000	JBN
3.	UNKNOWN	24.383	2000	J
4.	UNKNOWN	25.273	200	J
5.	UNKNOWN	26.267	2000	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J11744

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

Client: TNUHANFORD RC-047 K0222

Matrix: (soil/water) SOLID

Lab Sample ID: 0602L268-005

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

Lab File ID: J022012

Level: (low/med) LOW

Date Received: 02/15/06

% Moisture: 22 decanted: (Y/N)__

Date Extracted: 02/16/06

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 02/21/06

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. 5076-719-7	TRIMETHYLOXIRANE	4.668	400	JBN
2. 110-82-7	CYCLOHEXANE	5.331	2000	JBN
3.	UNKNOWN	5.424	200	J
4.	UNKNOWN	23.006	300	J
5.	UNKNOWN	24.446	300	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SBLKTX

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

Client: TNUHANFORD RC-047 K0222

Matrix: (soil/water) SOIL

Lab Sample ID: 06LE0125-MB1

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

Lab File ID: J022013

Level: (low/med) LOW

Date Received: 02/16/06

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

Date Extracted: 02/16/06

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 02/21/06

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: _____

Number TICs found: 2

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1. 5076-19-7	TRIMETHYLOXIRANE	4.658	300	JN
2. 110-82-7	CYCLOHEXANE	5.320	1000	JN

Lionville Laboratory Use Only: J6022268

Custody Transfer Record/Lab Work Request

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

See SRC

Client: TNU-HANFORD SAF# RC-047

Est. Final Proj. Sampling Date:

Project #: 11343-6006-001-9999-00

Project Contact/Phone #:

Lionville Laboratory Project Manager: OJ

QC: Spk Del: Std TAT: 30 Days

Date Rec'd: 2/15/06 Date Due: 3/17/06

		A	B	C	D	E	F
Refrigerator #		6	6	6	6	6	6
#/Type Container	Liquid						
	Solid	G	G	G	G	P	G
Volume	Liquid						
	Solid	509	509	509	509	159	509
Preservatives		—	—	—	—	—	—
ANALYSES REQUESTED		ORGANIC				INORG	
		VOA	BNA	~~Pest~~ PCB ~~Herb~~	TOT TPH	Metal	CN	TPH Diesel TPH GAS

Lionville Laboratory Use Only

MATRIX CODES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected		8025H	8082B	8008H		IPHC	METALS(1)		8015D 8021C				
S - Soil	001	J 11736			So	2-13-06	1145		1	1	1		1	1		1				
SE - Sediment	002	J 11741					1545		1	1	1		1	1		1				
SD - Solid	003	J 11742					1445		1	1	1		1	1		1				
SL - Sludge	004	J 11743					1345		1	1	1		1	1		1				
W - Water	005	J 11744					1245		1	1	1		1	1		1				
O - Oil																				
A - Air																				
DS - Drum Solids																				
DL - Drum Liquids																				
L - EP/TCLP Leachate																				
WI - Wipe																				
X - Other																				
F - Fish																				

Special Instructions:

METALS(1) = HSL + B, Li, Mo, Si, Sn, Ti, U, P, Zr

RUN MATRIX QC

DATE/REVISIONS:

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

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	2/15/06	0920

Relinquished by	Received by	Date	Time

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

0000000017

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-112	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location U G SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. ERC-02-001	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES, LIONVILLE	Offsite Property No. A060288		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	Gamma Spec - (Full List)	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On: TPH-Gasoline Range - WTPH-G		
J11736	OTHER SOLID	2-13-06	1145			X	X	X	X	X	X		

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS
Relinquished By/Removed From JAMES BERNHARD Date/Time 1730 2-13-06	Received By/Stored In EAS LOCKED STORAGE Date/Time 1730 2-13-06	
Relinquished By/Removed From EAS LOCKED STORAGE Date/Time 0700 02-14-06	Received By/Stored In RZ Stiffler Date/Time 2-14-06 / 0700	
Relinquished By/Removed From RZ Stiffler Date/Time 1600 2-14-06	Received By/Stored In Fed Ex Date/Time	
Relinquished By/Removed From Fed Ex 2-15-06 Date/Time 0920	Received By/Stored In Date/Time 2-15-06 0920	
Relinquished By/Removed From Date/Time	Received By/Stored In Date/Time	
Relinquished By/Removed From Date/Time	Received By/Stored In Date/Time	

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

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-117	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location U ℄, SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. ERC-02-001	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES, LIONVILLE	Offsite Property No. A060288		Bill of Lading/Air Bill No. SEE OSPC		

00000019

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Strontium-89.90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On; TPH-Gasoline Range - WTPH-G		
Sample No. / Matrix * / Sample Date / Sample Time										
J11741 / OTHER SOLID / 2-13-06 / 1545			X	X	X	X	X	X		

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS
Relinquished By/Removed From JAMES BERNHARD, Date/Time 1730 2-13-06	Received By/Stored In EAS LOCKED STORAGE, Date/Time 1730 2-13-06	
Relinquished By/Removed From EAS LOCKED STORAGE, Date/Time 0900 02-14-06	Received By/Stored In RE Steffler, Date/Time 0900 2-14-06	
Relinquished By/Removed From RE Steffler, Date/Time 1600 2-14-06	Received By/Stored In Fed Ex, Date/Time	
Relinquished By/Removed From Fed Ex, Date/Time 2-15-06 0920	Received By/Stored In, Date/Time 2-15-06 0920	
Relinquished By/Removed From, Date/Time	Received By/Stored In, Date/Time	
Relinquished By/Removed From, Date/Time	Received By/Stored In, Date/Time	

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

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-118	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location U S, SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. ERC-02-001	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES, LIONVILLE	Offsite Property No. A060288		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On; TPH-Gasoline Range - WTPH-G		
Sample No. / Matrix * / Sample Date / Sample Time										
J11742 / OTHER SOLID / 2-13-06 / 1445			X	X	X	X	X	X		

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS
Relinquished By/Removed From: JAMES BERNHARD, Date/Time 2-13-06 1730	Received By/Stored In: EAS LOCKED STORAGE, Date/Time 2-13-06 1730	
Relinquished By/Removed From: EAS LOCKED STORAGE, Date/Time 02-14-06 0700	Received By/Stored In: RZ Steffler, Date/Time 2-14-06 0700	
Relinquished By/Removed From: RZ Steffler, Date/Time 2-14-06 1600	Received By/Stored In: Fed Ex, Date/Time	
Relinquished By/Removed From: Fed Ex, Date/Time 2-15-06 0920	Received By/Stored In: 2-15-06 0920, Date/Time	
Relinquished By/Removed From, Date/Time	Received By/Stored In, Date/Time	
Relinquished By/Removed From, Date/Time	Received By/Stored In, Date/Time	

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

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-119	Page 1 of 1

Collector: TILLER JAMES BERNHARD	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9N	Data Turnaround: 45 Days	Air Quality: ☐	
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: U 5, SEDIMENT		SAF No.: RC-047
Ice Chest No.: ERC-02-001	Field Logbook No.: EL-1597	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: A060288		Bill of Lading/Air Bill No.: SEE OSPC

00000021

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	Gamma Spec - (Full List)	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On; TPH-Gasoline Range - WTPH-G		
J11743	OTHER SOLID	2-13-06	1345			X	X	X	X	X	X		

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	2-13-06 1730	EAS LOCKED STORAGE	2-13-06 1730
EAS LOCKED STORAGE	02-14-06 0700	RZ Steffler	2-14-06 0700
RZ Steffler	2-14-06 1600	Fed Ex	
Fed Ex	2-15-06 0930		2-15-06 0930

SPECIAL INSTRUCTIONS

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

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-120	Page 1 of 1

Collector: TILLER JAMES BERNHARD	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9N	Data Turnaround: 45 Days	Air Quality: ☐	
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: U 7, SEDIMENT	SAF No.: RC-047	
Ice Chest No.: ERC-02-001	Field Logbook No.: EL-1597	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES (LIONVILLE)	Offsite Property No.: A060288	Bill of Lading/Air Bill No.: SEE OSPC	

00000022

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	Gamma Spec - (Full List)	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On; TPH-Gasoline Range - WTPH-G		
J11744	OTHER SOLID	2-13-06	1245			X	X	X	X	X	X		

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	2-13-06 1730	EAS LOCKED STORAGE	2-13-06 1730
EAS LOCKED STORAGE	2-14-06 0700	RZ Stoffler	2-14-06 0700
RZ Stoffler	2-14-06 1600	Fed Ex	
Fed Ex	2-15-06 0920		2-15-06 0920

SPECIAL INSTRUCTIONS

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

BHI-EE-011 (08/29/2005)

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD **Date:** 2-15-06

Purchase Order / Project# / SAF# / SOW# / Release #: RC-047

LvLI Batch # : 06021268 **Sample Custodian:** V. Heeney

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped — Carrier Fed Ex — Airbill# 7903 2234 5004

2. Custody seals on coolers or shipping container intact, signed and dated?	☑ Yes	☐ No	☐ No Seals	Comments
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No		
4. All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible?	☑ Yes	☐ No		
5. Samples received cooled or ambient? IR	Temp 21	°C	Cooler # ERC. ~~02403~~ 02-001 M 2-15-06	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals	
7. coc signed and dated?	☑ Yes	☐ No		
8. Sample containers are intact?	☑ Yes	☐ No		
9. All samples on coc received? All samples received on coc?	☑ Yes	☐ No		
10. All sample label information matches coc?	☑ Yes	☐ No		
11. Samples properly preserved?	☑ Yes	☐ No		
12. Samples received within hold times? Short holds taken to wet lab?	☑ Yes	☐ No		
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 not within policy. See reverse side for policy)	☑ Yes	☐ No		
16. Project Manager contacted concerning discrepancies? name/date (or samples outside criteria)	☐ Yes	☐ No	☑ No Discrepancies	

SR-002-B

LVLI LIONVILLE LABORATORY INC.

RECEIVED
APR 2006

Lionville Laboratory, Inc.
PEST/PCB ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0222

DATE RECEIVED: 02/15/06 LVL LOT # :0602L268

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J11736	001	SO	06LE0124	02/13/06	02/16/06	02/21/06
J11741	002	SO	06LE0124	02/13/06	02/16/06	02/21/06
J11742	003	SO	06LE0124	02/13/06	02/16/06	02/21/06
J11743	004	SO	06LE0124	02/13/06	02/16/06	02/21/06
J11743	004 MS	SO	06LE0124	02/13/06	02/16/06	02/21/06
J11743	004 MSD	SO	06LE0124	02/13/06	02/16/06	02/21/06
J11744	005	SO	06LE0124	02/13/06	02/16/06	02/21/06

LAB QC:

PBLKBU	MB1	S	06LE0124	N/A	02/16/06	02/20/06
PBLKBU	MB1 BS	S	06LE0124	N/A	02/16/06	02/20/06

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-047
LVL #: 0602L268
SDG/SAF # K0222/RCS-047

W.O. #: 11343-606-001-9999-00
Date Received: 02-15-2006

CHLORINATED PESTICIDES

Five (5) solid samples were collected on 02-13-2006.

The samples and their associated QC samples were extracted on 02-16-2006 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedures on 02-20,21-2006. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8081A.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from samples that met LvLI's sample acceptance policy.
2. Samples were extracted and analyzed within required holding time.
3. The samples and their associated QC samples received a Copper-Sulfur cleanup according to Lionville Laboratory SOPs based on SW846 method 3660A.
4. The method blank was below the reporting limits for all target compounds.
5. Five (5) of eighteen (18) surrogate recoveries were outside acceptance criteria. However, the surrogate recovery acceptance criteria were met (i.e. no more than one outlier per sample.
6. All blank spike recoveries were within acceptance criteria.
7. All matrix spike recoveries were within acceptance criteria..
8. All samples required a 4-fold instrument dilutions due to matrix interference.
9. The initial calibrations associated with this data set were within acceptance criteria.
10. The continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
11. LvLI is NELAP accredited by the state of Pennsylvania and holds over 20 additional state accreditations. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.
12. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

3/17/06
Date

kim\r:\group\data\pest\tnu hanford\0602-268.pst

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.

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.
.1	=	Indicates an interference on one analytical column only. Result is reported from remaining analytical column.

ABBREVIATIONS

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

Lionville Laboratory, Inc.

Pesticide/PCBs by GC, CLP List

Report Date: 03/17/06 14:06

RFW Batch Number: **0602L268** Client: **TNUHANFORD RC-047 K0222** Work Order: 11343606001 Page: 1

000000004

	Cust ID:	J11736	J11741	J11742	J11743	J11743	J11743
Sample Information	RFW#:	001	002	003	004	004 MS	004 MSD
	Matrix:	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
	D.F.:	4.00	4.00	4.00	4.00	4.00	4.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	63 %	124 * %	118 %	77 %	87 %	89 %
	Decachlorobiphenyl	79 %	123 * %	135 * %	87 %	95 %	100 %
		fl	fl	fl	fl	fl	fl
Alpha-BHC		1.6 U	1.8 U	1.7 U	1.6 U	90 %	90 %
gamma-BHC (Lindane)		1.6 U	1.8 U	1.7 U	1.6 U	93 %	95 %
Beta-BHC		1.6 U	1.8 U	1.7 U	1.6 U	91 %	93 %
Heptachlor		1.6 U	1.8 U	1.7 U	1.6 U	88 %	91 %
Delta-BHC		1.6 U	1.8 U	1.7 U	1.6 U	81 %	85 %
Aldrin		1.6 U	1.8 U	1.7 U	1.6 U	84 %	88 %
Heptachlor epoxide		1.6 U	1.8 U	1.7 U	1.6 U	91 %	96 %
gamma-Chlordane		1.6 U	1.8 U	1.7 U	1.6 U	88 %	95 %
Endosulfan I		1.6 U	1.8 U	1.7 U	1.6 U	88 %	94 %
alpha-Chlordane		1.6 U	1.8 U	1.7 U	1.6 U	92 %	97 %
4,4'-DDE		1.6 U	1.8 U	1.7 U	1.6 U	89 %	96 %
Dieldrin		1.6 U	1.8 U	1.7 U	1.6 U	86 %	92 %
Endrin		1.6 U	1.8 U	1.7 U	1.6 U	94 %	102 %
4,4'-DDD		1.6 U	1.8 U	1.7 U	1.6 U	90 %	97 %
Endosulfan II		1.6 U	1.8 U	1.7 U	1.6 U	85 %	94 %
4,4'-DDT		1.6 U	1.8 U	1.7 U	1.6 U	88 %	95 %
Endrin aldehyde		1.6 U	1.8 U	1.7 U	1.6 U	77 %	82 %
Endosulfan sulfate		1.6 U	1.8 U	1.7 U	1.6 U	85 %	94 %
Methoxychlor		1.6 U	1.8 U	1.7 U	1.6 U	91 %	101 %
Endrin ketone		1.6 U	1.8 U	1.7 U	1.6 U	91 %	103 %
Toxaphene		16 U	18 U	17 U	16 U	16 U	16 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

Lionville Laboratory, Inc.

Pesticide/PCBs by GC, CLP List

Report Date: 03/17/06 14:06

RFW Batch Number: 0602L268 Client: TNUHANFORD RC-047 K0222 Work Order: 11343606001 Page: 1

	Cust ID:	J11736	J11741	J11742	J11743	J11743	J11743
Sample Information	RFW#:	001	002	003	004	004 MS	004 MSD
	Matrix:	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
	D.F.:	4.00	4.00	4.00	4.00	4.00	4.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate: Tetrachloro-m-xylene		63 %	124 * %	118 %	77 %	87 %	89 %
Decachlorobiphenyl		79 %	123 * %	135 * %	87 %	95 %	100 %
Alpha-BHC		1.6 U	1.8 U	1.7 U	1.6 U	90 %	90 %
gamma-BHC (Lindane)		1.6 U	1.8 U	1.7 U	1.6 U	93 %	95 %
Beta-BHC		1.6 U	1.8 U	1.7 U	1.6 U	91 %	93 %
Heptachlor		1.6 U	1.8 U	1.7 U	1.6 U	88 %	91 %
Delta-BHC		1.6 U	1.8 U	1.7 U	1.6 U	81 %	85 %
Aldrin		1.6 U	1.8 U	1.7 U	1.6 U	84 %	88 %
Heptachlor epoxide		1.6 U	1.8 U	1.7 U	1.6 U	91 %	96 %
gamma-Chlordane		1.6 U	1.8 U	1.7 U	1.6 U	88 %	95 %
Endosulfan I		1.6 U	1.8 U	1.7 U	1.6 U	88 %	94 %
alpha-Chlordane		1.6 U	1.8 U	1.7 U	1.6 U	92 %	97 %
4,4'-DDE		1.6 U	1.8 U	1.7 U	1.6 U	89 %	96 %
Dieldrin		1.6 U	1.8 U	1.7 U	1.6 U	86 %	92 %
Endrin		1.6 U	1.8 U	1.7 U	1.6 U	94 %	102 %
4,4'-DDD		1.6 U	1.8 U	1.7 U	1.6 U	90 %	97 %
Endosulfan II		1.6 U	1.8 U	1.7 U	1.6 U	85 %	94 %
4,4'-DDT		1.6 U	1.8 U	1.7 U	1.6 U	88 %	95 %
Endrin aldehyde		1.6 U	1.8 U	1.7 U	1.6 U	77 %	82 %
Endosulfan sulfate		1.6 U	1.8 U	1.7 U	1.6 U	85 %	94 %
Methoxychlor		1.6 U	1.8 U	1.7 U	1.6 U	91 %	101 %
Endrin ketone		1.6 U	1.8 U	1.7 U	1.6 U	91 %	103 %
Toxaphene		16 U	18 U	17 U	16 U	16 U	16 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

0000000005

Lionville Laboratory, Inc.

Pesticide/PCBs by GC, CLP List

Report Date: 03/17/06 14:06

RFW Batch Number: 0602L268 Client: TNUHANFORD RC-047 K0222 Work Order: 11343606001 Page: 2

000000006

	Cust ID:	J11744	PBLKBU	PBLKBU BS
Sample Information	RFW#:	005	06LE0124-MB1	06LE0124-MB1
	Matrix:	SOLID	SOIL	SOIL
	D.F.:	4.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG
Surrogate: Tetrachloro-m-xylene		15 * %	67 %	75 %
Decachlorobiphenyl		20 * %	72 %	76 %
Alpha-BHC		1.7 U	0.33 U	92 %
gamma-BHC (Lindane)		1.7 U	0.33 U	91 %
Beta-BHC		1.7 U	0.33 U	115 %
Heptachlor		1.7 U	0.33 U	84 %
Delta-BHC		1.7 U	0.33 U	87 %
Aldrin		1.7 U	0.33 U	89 %
Heptachlor epoxide		1.7 U	0.33 U	84 %
gamma-Chlordane		1.7 U	0.33 U	87 %
Endosulfan I		1.7 U	0.33 U	88 %
alpha-Chlordane		1.7 U	0.33 U	86 %
4,4'-DDE		1.7 U	0.33 U	92 %
Dieldrin		1.7 U	0.33 U	92 %
Endrin		1.7 U	0.33 U	92 %
4,4'-DDD		1.7 U	0.33 U	95 %
Endosulfan II		1.7 U	0.33 U	90 %
4,4'-DDT		1.7 U	0.33 U	92 %
Endrin aldehyde		1.7 U	0.33 U	92 %
Endosulfan sulfate		1.7 U	0.33 U	91 %
Methoxychlor		1.7 U	0.33 U	87 %
Endrin ketone		1.7 U	0.33 U	96 %
Toxaphene		17 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

Lionville Laboratory, Inc.

Pesticide/PCBs by GC, CLP List

Report Date: 03/17/06 14:06

RFW Batch Number: 0602L268 Client: TNUHANFORD RC-047 K0222 Work Order: 11343606001 Page: 2

	Cust ID:	J11744	PBLKBU	PBLKBU BS
Sample Information	RFW#:	005	06LE0124-MB1	06LE0124-MB1
	Matrix:	SOLID	SOIL	SOIL
	D.F.:	4.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG
Surrogate: Tetrachloro-m-xylene		15 * %	67 %	75 %
Decachlorobiphenyl		20 * %	72 %	76 %
Alpha-BHC		1.7 U	0.33 U	92 %
gamma-BHC (Lindane)		1.7 U	0.33 U	91 %
Beta-BHC		1.7 U	0.33 U	115 %
Heptachlor		1.7 U	0.33 U	84 %
Delta-BHC		1.7 U	0.33 U	87 %
Aldrin		1.7 U	0.33 U	89 %
Heptachlor epoxide		1.7 U	0.33 U	84 %
gamma-Chlordane		1.7 U	0.33 U	87 %
Endosulfan I		1.7 U	0.33 U	88 %
alpha-Chlordane		1.7 U	0.33 U	86 %
4,4'-DDE		1.7 U	0.33 U	92 %
Dieldrin		1.7 U	0.33 U	92 %
Endrin		1.7 U	0.33 U	92 %
4,4'-DDD		1.7 U	0.33 U	95 %
Endosulfan II		1.7 U	0.33 U	90 %
4,4'-DDT		1.7 U	0.33 U	92 %
Endrin aldehyde		1.7 U	0.33 U	92 %
Endosulfan sulfate		1.7 U	0.33 U	91 %
Methoxychlor		1.7 U	0.33 U	87 %
Endrin ketone		1.7 U	0.33 U	96 %
Toxaphene		17 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

000000007

Lionville Laboratory Use Only

J6022L268

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

See SRC

Client TNU- HANFORD SAF# RC-047

Est. Final Proj. Sampling Date

Project # 11343-606-001-9999-00

Project Contact/Phone #

Lionville Laboratory Project Manager OJ

QC Spec Del Std TAT 30 Days

Date Rec'd 2/15/06 Date Due 3/17/06

		A	B	C	D	E	F
Refrigerator #		6	6	6	6	6	6
#/Type Container	Liquid						
	Solid	G	G	G	G	P	G
Volume	Liquid						
	Solid	509	509	509	509	159	509
Preservatives		—	—	—	—	—	—
ANALYSES REQUESTED →		ORGANIC				INORG	
		VOA	BNA	PCB	TOT TPH	Metal	CN
							TPH DIESEL TPH GAS
Lionville Laboratory Use Only			0625H	0PCB	0608H	IPHC	METALS(1)	CYAN	0DRO

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	0625H	0PCB	0608H	IPHC	METALS(1)	CYAN	0DRO
001	J 11736			So	2-13-06	1145	1	1	1	1	1		1
002	J 11741					1545	1	1	1	1	1		1
003	J 11742					1445	1	1	1	1	1		1
004	J 11743					1345	1	1	1	1	1		1
005	J 11744					1245	1	1	1	1	1		1

Special Instructions:

METALS(1) = HSL+B, Li, Mo, Si, Sn, Ti, U, P, Zr

RUN MATRIX QC

DATE/REVISIONS:

1. 0608H
2. 0PCB
3.
4. 0DRO A
5. 0DRO B
6.

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	2/15/06	0920

Relinquished by	Received by	Date	Time

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-112	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location U Q SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. ERC-02-001	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. A060288		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Strontium-89,90 – Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On: TPH-Gasoline Range - WTPH-G		
Sample No. / Matrix * / Sample Date / Sample Time										
J11736 / OTHER SOLID / 2-13-06 / 1145			X	X	X	X	X	X		

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS
Relinquished By/Removed From: JAMES BERNHARD, Date/Time 1730 2-13-06	Received By/Stored In: EAS LOCKED STORAGE, Date/Time 1730 2-13-06	
Relinquished By/Removed From: EAS LOCKED STORAGE, Date/Time 0700 02-14-06	Received By/Stored In: RZ Stiffler, Date/Time 2-14-06 / 0700	
Relinquished By/Removed From: RZ Stiffler, Date/Time 1600 2-14-06	Received By/Stored In: Fed Ex, Date/Time	
Relinquished By/Removed From: Fed Ex 2-15-06, Date/Time 0920	Received By/Stored In: T. Hueman, Date/Time 2-15-06 0920	
Relinquished By/Removed From, Date/Time	Received By/Stored In, Date/Time	
Relinquished By/Removed From, Date/Time	Received By/Stored In, Date/Time	

Matrix *
S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquid
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

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-117	Page 1 of 1

Collector: TILLER JAMES BERNHARD	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9N	Data Turnaround: 45 Days	Air Quality: ☐	
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: U ∅, SEDIMENT		SAF No.: RC-047
Ice Chest No.: ERC-02-001	Field Logbook No.: EL-1597	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES (JONVILLE)	Offsite Property No.: A060288		Bill of Lading/Air Bill No.: SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		

SAMPLE ANALYSIS				Gamma Spec - (Full List)	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On: TPH-Gasoline Range - WTPH-G		
Sample No.	Matrix *	Sample Date	Sample Time										
J11741	OTHER SOLID	2-13-06	1545			X	X	X	X	X	X		

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS
Relinquished By/Removed From: JAMES BERNHARD — Date/Time: 2-13-06 1730	Received By/Stored In: EAS LOCKED STORAGE — Date/Time: 2-13-06 1730	
Relinquished By/Removed From: EAS LOCKED STORAGE — Date/Time: 02-14-06 0900	Received By/Stored In: RZ Stoffler — Date/Time: 2-14-06 0900	
Relinquished By/Removed From: RZ Stoffler — Date/Time: 2-14-06 1600	Received By/Stored In: Fed Ex — Date/Time:	
Relinquished By/Removed From: Fed Ex 2-15-06 — Date/Time: 0920	Received By/Stored In: — Date/Time: 2-15-06 0920	
Relinquished By/Removed From: — Date/Time:	Received By/Stored In: — Date/Time:	
Relinquished By/Removed From: — Date/Time:	Received By/Stored In: — Date/Time:	

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

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-118	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location U3, SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. ERC-02-001	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES, LIONVILLE	Offsite Property No. A060288		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On; TPH-Gasoline Range - WTPH-G		
Sample No.	Matrix *	Sample Date	Sample Time								
J11742	OTHER SOLID	2-13-06	1445			X	X	X	X	X	X

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS
Relinquished By/Removed From JAMES BERNHARD, Date/Time 1770 2-13-06	Received By/Stored In EAS LOCKED STORAGE, Date/Time 1730 2-13-06	
Relinquished By/Removed From EAS LOCKED STORAGE, Date/Time 0700 2-14-06	Received By/Stored In RZ Stoffler, Date/Time 0700 2-14-06	
Relinquished By/Removed From RZ Stoffler, Date/Time 1600 2-14-06	Received By/Stored In Fed Ex, Date/Time	
Relinquished By/Removed From Fed Ex, Date/Time 2-15-06 0920	Received By/Stored In, Date/Time 2-15-06 0920	
Relinquished By/Removed From, Date/Time	Received By/Stored In, Date/Time	
Relinquished By/Removed From, Date/Time	Received By/Stored In, Date/Time	

Matrix *
S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquid
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

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-119	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location U 5, SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. ERC-02-001	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. A060288		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	Gamma Spec - (Full List)	Strontium-89,90 – Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On: TPH-Gasoline Range - WTPH-G		
J11743	OTHER SOLID	2-13-06	1345			X	X	X	X	X	X		

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From JAMES BERNHARD	1730 2-13-06	Received By/Stored In EAS LOCKED STORAGE	1730 2-13-06
Relinquished By/Removed From EAS LOCKED STORAGE	0700 02-14-06	Received By/Stored In RZ Stoffler	0700 2-14-06
Relinquished By/Removed From RZ Stoffler	1600 2-14-06	Received By/Stored In Fed Ex	
Relinquished By/Removed From Fed Ex	2-15-06 0930	Received By/Stored In	2-15-06 0930
Relinquished By/Removed From		Received By/Stored In	
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

Matrix *
- SoSoil
- SDSediment
- SOSolid
- SlSludge
- W = Water
- OsOil
- AsAir
- DSDrum Solids
- DLDrum Liquid
- TsTissue
- WIWipe
- LsLiquid
- VsVegetation
- XOther

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

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-120	Page 1 of 1

Collector: TILLER JAMES BERNHARD	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH	Price Code: 9N	Data Turnaround: 45 Days
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: U 7, SEDIMENT		SAF No.: RC-047	Air Quality ☐	
Ice Chest No.: ERC-02-001	Field Logbook No.: EL-1597	COA: BESRAS6520	Method of Shipment: FED EX		
Shipped To: EBERLINE SERVICES ALIONVILLE	Offsite Property No.: A060288		Bill of Lading/Air Bill No.: SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Contaiuer(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		

SAMPLE ANALYSIS				Gamma Spec - (Full List)	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On; TPH-Gasoline Range - WTPH-G		
Sample No.	Matrix *	Sample Date	Sample Time										
J11744	OTHER SOLID	2-13-06	1245			X	X	X	X	X	X		

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	2-13-06 1730	EAS LOCKED STORAGE	2-13-06 1730
EAS LOCKED STORAGE	2-14-06 0700	RZ Stoffler	2-14-06 0700
RZ Stoffler	2-14-06 1600	Fed Ex	
Fed Ex	2-15-06 0920		2-15-06 0920

SPECIAL INSTRUCTIONS

Matrix *

B=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquid
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

BHI-EE-011 (08/29/2005)

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD **Date:** 2-15-06

Purchase Order / Project# / SAF# / SOW# / Release #: RC-047

LvLI Batch # : 06021268 **Sample Custodian:** V. Heeney

NOTE: EXPLAIN ALL DISCREPANCIES

1.	Samples Hand Delivered or Shipped	Carrier Fed Ex		Airbill# 7903 2234 5004	
2.	Custody seals on coolers or shipping container intact, signed and dated?	☑ Yes	☐ No	☐ No Seals	Comments
3.	Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No		
4.	All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible?	☑ Yes	☐ No		
5.	Samples received cooled or ambient? IR	Temp 2.1	°C	Cooler # ERC. ~~02403~~ 02-001 M 2-15-06	
6.	Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals	
7.	coc signed and dated?	☑ Yes	☐ No		
8.	Sample containers are intact?	☑ Yes	☐ No		
9.	All samples on coc received? All samples received on coc?	☑ Yes	☐ No		
10.	All sample label information matches coc?	☑ Yes	☐ No		
11.	Samples properly preserved?	☑ Yes	☐ No		
12.	Samples received within hold times? Short holds taken to wet lab?	☑ Yes	☐ No		
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 not within policy. See reverse side for policy)	☑ Yes	☐ No		
16.	Project Manager contacted concerning discrepancies? name/date (or samples outside criteria)	☐ Yes	☐ No	☑ No Discrepancies	

SR-002-B

LVLI LIONVILLE LABORATORY INC.

Lionville Laboratory, Inc.
PCB ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0222

RECEIVED APR 2006

DATE RECEIVED: 02/15/06 LVL LOT # :06021268

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J11736	001	SO	06LE0124	02/13/06	02/16/06	02/22/06
J11741	002	SO	06LE0124	02/13/06	02/16/06	02/22/06
J11742	003	SO	06LE0124	02/13/06	02/16/06	02/22/06
J11743	004	SO	06LE0124	02/13/06	02/16/06	02/22/06
J11744	005	SO	06LE0124	02/13/06	02/16/06	02/22/06
J11744	005 MS	SO	06LE0124	02/13/06	02/16/06	02/22/06
J11744	005 MSD	SO	06LE0124	02/13/06	02/16/06	02/22/06

LAB QC:

PBLKBU	MB1	S	06LE0124	N/A	02/16/06	02/22/06
PBLKBU	MB1 BS	S	06LE0124	N/A	02/16/06	02/22/06

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-047
LVL #: 0602L268
SDG/SAF # K0222/RC-047

W.O. #: 11343-606-001-9999-00
Date Received: 02-15-2006

PCB

Five (5) solid samples were collected on 02-13-2006.

The samples and their associated QC samples were extracted on 02-16-2006 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedures on 02-22-2006. The extraction procedure was based on method 3540C and the extracts were analyzed based on method 8082.

The following is a summary of the QC results accompanying the sample results and a description of any problems encountered during their analyses:

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

2. Samples were extracted and analyzed within required holding time.

3. The samples and their associated QC samples received Copper-Sulfur and Sulfuric Acid cleanups according to Lionville Laboratory SOPs based on SW846 methods 3660A and 3665A respectively.

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

5. One (1) of eighteen (18) surrogate recoveries was outside acceptance criteria. However, the surrogate recovery criteria were met (i.e., no more than one outlier per sample).

6. The blank spike recoveries were within acceptance criteria.

7. All matrix spike recoveries were within acceptance criteria.

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

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

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 1 1 pages.

LIONVILLE LABORATORY INC.

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

11. LvLI is NELAP accredited by the state of Pennsylvania and holds over 20 additional state accreditations. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

3/10/06
Date

som\r:\group\data\pest\tmu hanford\0602-268.pcbs

GLOSSARY OF DATA

DATA QUALIFIERS

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

ABBREVIATIONS

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

Lionville Laboratory, Inc.

PCBs by GC

Report Date: 03/07/06 14:11

RFW Batch Number: 0602L268 Client: TNUHANFORD RC-047 K0222 Work Order: 11343606001 Page: 1

0000000005

	Cust ID:	J11736	J11741	J11742	J11743	J11744	J11744
Sample Information	RFW#:	001	002	003	004	005	005 MS
	Matrix:	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	82 %	105 %	81 %	82 %	30 %	99 %
	Decachlorobiphenyl	93 %	106 %	100 %	98 %	34 * %	108 %
Aroclor-1016		40 U	44 U	41 U	40 U	43 U	106 %
Aroclor-1221		40 U	44 U	41 U	40 U	43 U	43 U
Aroclor-1232		40 U	44 U	41 U	40 U	43 U	43 U
Aroclor-1242		40 U	44 U	41 U	40 U	43 U	43 U
Aroclor-1248		40 U	44 U	41 U	40 U	43 U	43 U
Aroclor-1254		40 U	44 U	41 U	40 U	43 U	43 U
Aroclor-1260		40 U	44 U	41 U	40 U	43 U	109 %

	Cust ID:	J11744	PBLKBU	PBLKBU BS
Sample Information	RFW#:	005 MSD	06LE0124-MB1	06LE0124-MB1
	Matrix:	SOLID	SOIL	SOIL
	D.F.:	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG
Surrogate:	Tetrachloro-m-xylene	74 %	91 %	94 %
	Decachlorobiphenyl	83 %	97 %	104 %
Aroclor-1016		74 %	33 U	114 %
Aroclor-1221		43 U	33 U	33 U
Aroclor-1232		43 U	33 U	33 U
Aroclor-1242		43 U	33 U	33 U
Aroclor-1248		43 U	33 U	33 U
Aroclor-1254		43 U	33 U	33 U
Aroclor-1260		73 %	33 U	121 %

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 Use Only

J602L268

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

See SRC

Client TNU- HANFORD SAF# RC-047

Est. Final Proj. Sampling Date

Project # 11343-6006-001-9999-00

Project Contact/Phone #

Lionville Laboratory Project Manager OJ

QC SPRC Del STCL TAT 30 Days

Date Rec'd 2/15/06 Date Due 3/17/06

		A	B	C			D	E		F			
Refrigerator #		6	6	6			6	6		6			
#/Type Container	Liquid / Solid	G	G	G			G	P		G			
Volume	Liquid / Solid	509	509	509			509	159		509			
Preservatives		—	—	—			—	—		—			
ANALYSES REQUESTED →		ORGANIC					TOT TPH	INORG		TPH Diesel TPH GAS			
		VOA	BNA	PCB Pest Herb				Metal	CN				
		Lionville Laboratory Use Only											
		0625H	0PCB	0608H			IPHC	METALS(1)		0GRO 0DRC			

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	0625H	0PCB	0608H			IPHC	METALS(1)		0GRO 0DRC			
001	J11736			So	2-13-06	1145	1	1	1			1	1		1			
002	J11741					1545	1	1	1			1	1		1			
003	J11742					1445	1	1	1			1	1		1			
004	J11743					1345	1	1	1			1	1		1			
005	J11744					1245	1	1	1			1	1		1			

Special Instructions:

METALS(1) = HSL + B, Li, Mo, Si, Sn, Ti, U, P, Zr

RUN MATRIX QC

DATE/REVISIONS:

1. 0608H
2. 0PCB
3. 0DRO A
4. 0GRO B
5.
6.

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	2/15/06	0920

Relinquished by	Received by	Date	Time

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-112	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location U Ca SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. ERC-02-001	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES KIONVILLE	Offsite Property No. A060288		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	Gamma Spec - (Full List)	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On; TPH-Gasoline Range - WTPH-G		
J11736	OTHER SOLID	2-13-06	1145			X	X	X	X	X	X		

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	1730 2-13-06	EAS LOCKED STORAGE	1730 2-13-06
EAS LOCKED STORAGE	0700 02-14-06	RZ Stiffler	2-14-06 / 0700
RZ Stiffler	1600 WCH 2-14-06	Fed Ex	
Fed Ex	2-15-06 0930		2-15-06 0930

SPECIAL INSTRUCTIONS

Matrix *
S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquid
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

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-117	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location U 5, SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. ERC-02-001	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. A060288		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On; TPH-Gasoline Range - WTPH-G		
Sample No. / Matrix * / Sample Date / Sample Time										
J11741 / OTHER SOLID / 2-13-06 / 1545			X	X	X	X	X	X		

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	2-13-06 1730	EAS LOCKED STORAGE	2-13-06 1730
EAS LOCKED STORAGE	02-14-06 0900	RZ Steffler	2-14-06 0700
RZ Steffler	2-14-06 1600	Fed Ex	
Fed Ex	2-15-06 0920		2-15-06 0920

SPECIAL INSTRUCTIONS

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

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-118	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location U5, SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. ERC-02-001	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. A060288		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On; TPH-Gasoline Range - WTPH-G		
Sample No. / Matrix * / Sample Date / Sample Time										
J11742 / OTHER SOLID / 2-13-06 / 1445			X	X	X	X	X	X		

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS
Relinquished By/Removed From JAMES BERNHARD Date/Time 1730 2-13-06	Received By/Stored In EAS LOCKED STORAGE Date/Time 1730 2-13-06	
Relinquished By/Removed From EAS LOCKED STORAGE Date/Time 0700 02-14-06	Received By/Stored In RZ Stoffler Date/Time 0700 2-14-06	
Relinquished By/Removed From RZ Stoffler Date/Time 1600 2-14-06	Received By/Stored In Fed Ex Date/Time	
Relinquished By/Removed From Fed Ex Date/Time 2-15-06 0900	Received By/Stored In Date/Time 2-15-06 0900	
Relinquished By/Removed From Date/Time	Received By/Stored In Date/Time	
Relinquished By/Removed From Date/Time	Received By/Stored In Date/Time	

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

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-119	Page 1 of 1

Collector: TILLER JAMES BERNHARD	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9N	Data Turnaround: 45 Days	Air Quality ☐	
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: U 5, SEDIMENT	SAF No.: RC-047	
Ice Chest No.: ERC-02-001	Field Logbook No.: EL-1597	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: A060288	Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Strontium-89,90 – Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On; TPH-Gasoline Range - WTPH-G		
Sample No.	Matrix *	Sample Date	Sample Time								
J11743	OTHER SOLID	2-13-06	1345			X	X	X	X	X	X

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	2-13-06 1730	EAS LOCKED STORAGE	2-13-06 1730
EAS LOCKED STORAGE	02-14-06 0700	RE Steffler	2-14-06 0700
RE Steffler	2-14-06 1600	Fed Ex	
Fed Ex	2-15-06 0930		2-15-06 0930

SPECIAL INSTRUCTIONS

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

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

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-120	Page 1 of 1

Collector: TILLER JAMES BERNHARD	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9N	Data Turnaround: 45 Days	Air Quality: ☐	
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: U 7, SEDIMENT	SAF No.: RC-047	
Ice Chest No.: ERC-02-001	Field Logbook No.: EL-1597	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES (LIONVILLE)	Offsite Property No.: A060288	Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On; TPH-Gasoline Range - WTPH-G		
Sample No. / Matrix * / Sample Date / Sample Time										
J11744 / OTHER SOLID / 2-13-06 / 1245			X	X	X	X	X	X		

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS
Relinquished By/Removed From: JAMES BERNHARD — Date/Time: 2-13-06 1730	Received By/Stored In: EAS LOCKED STORAGE — Date/Time: 2-13-06 1730	
Relinquished By/Removed From: EAS LOCKED STORAGE — Date/Time: 2-14-06 0700	Received By/Stored In: R2 Steffler — Date/Time: 2-14-06 0700	
Relinquished By/Removed From: R2 Steffler — Date/Time: 2-14-06 1600	Received By/Stored In: Fed Ex — Date/Time:	
Relinquished By/Removed From: Fed Ex — Date/Time: 2-15-06 0920	Received By/Stored In: [illegible] — Date/Time: 2-15-06 0920	
Relinquished By/Removed From: — Date/Time:	Received By/Stored In: — Date/Time:	
Relinquished By/Removed From: — Date/Time:	Received By/Stored In: — Date/Time:	

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

BHI-EE-011 (08/29/2005)

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD **Date:** 2-15-06

Purchase Order / Project# / SAF# / SOW# / Release #: RC-047

LvLI Batch # : 06021268 **Sample Custodian:** V. Heeney

NOTE: EXPLAIN ALL DISCREPANCIES

1.	Samples Hand Delivered or Shipped	Carrier Fed Ex		Airbill# 7903 2234 5004	
2.	Custody seals on coolers or shipping container intact, signed and dated?	☑ Yes	☐ No	☐ No Seals	Comments
3.	Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No		
4.	All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible?	☑ Yes	☐ No		
5.	Samples received Cooled or ambient? IR	Temp 21	°C	Cooler # ERC. ~~02403~~ 02-001	2-15-06
6.	Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals	
7.	coc signed and dated?	☑ Yes	☐ No		
8.	Sample containers are intact?	☑ Yes	☐ No		
9.	All samples on coc received? All samples received on coc?	☑ Yes	☐ No		
10.	All sample label information matches coc?	☑ Yes	☐ No		
11.	Samples properly preserved?	☑ Yes	☐ No		
12.	Samples received within hold times? Short holds taken to wet lab?	☑ Yes	☐ No		
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 not within policy. See reverse side for policy)	☑ Yes	☐ No		
16.	Project Manager contacted concerning discrepancies? name/date (or samples outside criteria)	☐ Yes	☐ No	☑ No Discrepancies	

SR-002-B

LVLI LIONVILLE LABORATORY INC.

RECEIVED
APR 2006

Lionville Laboratory, Inc.
GRO ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0222

DATE RECEIVED: 02/15/06 LVL LOT # :0602L268

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J11736	001	SO	06LVJ301	02/13/06	N/A	03/01/06
J11741	002	SO	06LVJ301	02/13/06	N/A	03/01/06
J11742	003	SO	06LVJ301	02/13/06	N/A	03/01/06
J11743	004	SO	06LVJ301	02/13/06	N/A	03/01/06
J11744	005	SO	06LVJ301	02/13/06	N/A	03/01/06
LAB QC:						
TBLKYQ	MB1	S	06LVJ301	N/A	N/A	03/01/06
TBLKYQ	MB1 BS	S	06LVJ301	N/A	N/A	03/01/06
TBLKYQ	MB1 BSD	S	06LVJ301	N/A	N/A	03/01/06

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-047
LVL #: 0602L268
SDG/SAF # K0222/RC-047

W.O. #: 11343-606-001-9999-00
Date Received: 02-15-2006

GRO

Five (5) solid samples were collected on 02-13-2006.

The samples and their associated QC samples were analyzed according to Lionville Laboratory SOPs based on SW-846 method 8015B for Gasoline Range Organics (GRO) on 03-01-2006.

The following is a summary of the QC results accompanying these sample results and a description of any problems encountered during their analyses:

1. All results presented in this report are derived from samples that met LVLI's sample acceptance policy.
2. Samples were analyzed outside the holding time. A copy of the Sample Discrepancy Report (SDR) has been enclosed.
3. The method blank was below the reporting limits for the target compound.
4. All surrogate recoveries were within acceptance criteria.
5. The blank spike recoveries were within acceptance criteria.
6. Matrix spike QC was not performed on any samples in this data set. However, the blank spike QC was performed with these samples to demonstrate that systems were in control.
7. The initial calibrations associated with this data set were within acceptance criteria.
8. The continuing calibration standards analyzed prior to sample extracts were outside the acceptance criteria.
9. LvLI is NELAP accredited by the state of Pennsylvania and holds over 20 additional state accreditations. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.
10. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory Manager or a designee, as verified by the following signature.

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

4/5/06
Date

som\r\group\data\gro\tnu-hanford\0602-268.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 1 2 pages.

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 06GC100

Initiator: John Lach
Date: 3/31/06.
Client: TNV

Batch: 06021268
Samples: All
Method: SW846/MCAWW/CLP/

Parameter: GRO
Matrix: Soil.
Prep Batch: 06LV5301

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)

SAmples analyzed 2 Days past hold Time

2. Known or Probable Causes(s)

3. Discussion and Proposed Action

Other Description: Waste.

__ 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: 4/4/06

✓ 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: 4/19/06

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	__	__ MS: Rychlak/Daley
__	__ Sample Prep: Beegle/Kiger	__	__ Log-in: Perry
		__	__ Admin: _____
		__	__ Other: _____

QA-105-A-0805

GLOSSARY OF DATA

DATA QUALIFIERS

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

ABBREVIATIONS

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

Lionville Laboratory, Inc.

GAS RANGE ORGANICS

Report Date: 03/31/06 11:15

RFW Batch Number: 0602L268 Client: TNUHANFORD RC-047 K0222 Work Order: 11343606001 Page: 1

	Cust ID:	J11736	J11741	J11742	J11743	J11744	TBLKYQ
Sample Information	RFW#:	001	002	003	004	005	06LVJ301-MB1
	Matrix:	SOLID	SOLID	SOLID	SOLID	SOLID	SOIL
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG	UG/KG
Fluorobenzene		64 %	79 %	68 %	81 %	83 %	92 %
Gasoline Range Organics (GRO)		36 U	39 U	36 U	33 U	36 U	30 U

	Cust ID:	TBLKYQ BS	TBLKYQ BSD
Sample Information	RFW#:	06LVJ301-MB1	06LVJ301-MB1
	Matrix:	SOIL	SOIL
	D.F.:	1.00	1.00
	Units:	UG/KG	UG/KG
Fluorobenzene		96 %	97 %
Gasoline Range Organics (GRO)		111 %	109 %

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

3/31/6

Lionville Laboratory Use Only
J6021268

Custody Transfer Record/Lab Work Request

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

See SRC

Client TNU- HANFORD SAF# RC-047
Est. Final Proj. Sampling Date
Project # 11343-6006-001-9999-00
Project Contact/Phone #
Lionville Laboratory Project Manager OJ
QC Spk Del Std TAT 30 Days
Date Rec'd 2/15/06 Date Due 3/17/06

		A	B	C			D	E		F				
Refrigerator #		6	6	6			6	6		6				
#/Type Container	Liquid													
	Solid	G	G	G			G	P		G				
Volume	Liquid													
	Solid	509	509	509			509	159		509				
Preservatives		—	—	—			—	—		—				
ANALYSES REQUESTED →		ORGANIC					TOT TPH	INORG		TPH Diesel TPH GAS				
		VOA	BNA	~~Pest~~ PCB ~~Herb~~				Metal	CN					
							Lionville Laboratory Use Only							
			0625H	0PCB	0608H		IPHC	METALS		CCRO ODRC				

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected												
001	J 11736			So	2-13-06	1145		1	1	1			1	1		1		
002	J 11741			↓	↓	1545		1	1	1			1	1		1		
003	J 11742					1445		1	1	1			1	1		1		
004	J 11743					1345		1	1	1			1	1		1		
005	J 11744					1245		1	1	1			1	1		1		

Special Instructions:

METALS (1) = HSL + B, Li, Mo, Si, Sn, Ti, U, P, Zr

RUN MATRIX QC

DATE/REVISIONS:
1. 0608H j
2. 0PCB j
3.
4. ODRO A
5. ~~0GRO~~ B
6.

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	2/15/06	0920

Relinquished by	Received by	Date	Time

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-112	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Price Code 9N	Data Turnaround 45 Days	Air Quality ☐	
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location U ✓ SEDIMENT	SAF No. RC-047	
Ice Chest No. ERC-02-001	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES ALIONVILLE	Offsite Property No. A060288	Bill of Lading/Air Bill No. SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	Gamma Spec - (Full List)	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On: TPH-Gasoline Range - WTPH-G		
J11736	OTHER SOLID	2-13-06	1145			X	X	X	X	X	X		

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	1730 2-13-06	EAS LOCKED STORAGE	1730 2-13-06
EAS LOCKED STORAGE	0700 02-14-06	RZ Steffler	2-14-06 / 0700
RZ Steffler	1600 2-14-06	Fed Ex	
Fed Ex	2-15-06 0920	P. Hueman	2-15-06 0920

SPECIAL INSTRUCTIONS

Matrix *
S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Soli
DL=Drum Liq
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

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-117	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Price Code 9N	Data Turnaround 45 Days	Air Quality ☐	
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location U ~~8~~, SEDIMENT		SAF No. RC-047
Ice Chest No. ERC-02-001	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES, LIONVILLE	Offsite Property No. A060288		Bill of Lading/Air Bill No. SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On; TPH-Gasoline Range - WTPH-G		
Sample No. / Matrix * / Sample Date / Sample Time										
J11741 / OTHER SOLID / 2-13-06 / 1545			X	X	X	X	X	X		

CHAIN OF POSSESSION	Sign/Print Names	Date/Time
Relinquished By/Removed From JAMES BERNHARD	JG	2-13-06 1730
Received By/Stored In EAS LOCKED STORAGE	JG	2-13-06 1730
Relinquished By/Removed From EAS LOCKED STORAGE	Stiff	02-14-06 0700
Received By/Stored In	R.J. Stiffler R.J. Stiff	2-14-06 0700
Relinquished By/Removed From	R.J. Stiffler R.J. Stiff	2-14-06 1600
Received By/Stored In	Fed Ex	
Relinquished By/Removed From	Fed Ex	2-15-06 0920
Received By/Stored In	P. Nunnally	2-15-06 0920
Relinquished By/Removed From		
Received By/Stored In		
Relinquished By/Removed From		
Received By/Stored In		

SPECIAL INSTRUCTIONS

Matrix *
S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solid
DL=Drum Liquid
T=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

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-118	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location U5, SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. ERC-02-001	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. A060288		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On; TPH-Gasoline Range - WTPH-G		
Sample No. / Matrix * / Sample Date / Sample Time										
J11742 / OTHER SOLID / 2-13-06 / 1445			X	X	X	X	X	X		

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS
Relinquished By/Removed From JAMES BERNHARD Date/Time 1730 2-13-06	Received By/Stored In EAS LOCKED STORAGE Date/Time 1730 2-13-06	
Relinquished By/Removed From EAS LOCKED STORAGE Date/Time 0700 2-14-06	Received By/Stored In RZ Stoffler Date/Time 0700 2-14-06	
Relinquished By/Removed From RZ Stoffler Date/Time 1600 WCH 2-14-06	Received By/Stored In Fed Ex Date/Time	
Relinquished By/Removed From Fed Ex 2-15-06 Date/Time 0900	Received By/Stored In Date/Time 2-15-06 0900	
Relinquished By/Removed From Date/Time	Received By/Stored In Date/Time	
Relinquished By/Removed From Date/Time	Received By/Stored In Date/Time	

Matrix *
S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solid
DL=Drum Liqu
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

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-119	Page 1 of 1

Collector: TILLER JAMES BERNHARD	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9N	Data Turnaround: 45 Days	Air Quality ☐	
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: U 5, SEDIMENT	SAF No.: RC-047	
Ice Chest No.: ERC-02-001	Field Logbook No.: EL-1597	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES (LIONVILLE)	Offsite Property No.: A060288		Bill of Lading/Air Bill No.: SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On: TPH-Gasoline Range - WTPH-G		
Sample No. / Matrix * / Sample Date / Sample Time										
J11743 / OTHER SOLID / 2-13-06 / 1345			X	X	X	X	X	X		

CHAIN OF POSSESSION	Sign/Print Names	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From: JAMES BERNHARD		1730 2-13-06	EAS LOCKED STORAGE	1730 2-13-06
Relinquished By/Removed From: EAS LOCKED STORAGE		0700 02-14-06	Received By/Stored In: RZ Steffler	0700 2-14-06
Relinquished By/Removed From: RZ Steffler		1600 2-14-06	Received By/Stored In: Fed Ex	
Relinquished By/Removed From: Fed Ex		2-15-06 0930	Received By/Stored In:	2-15-06 0930
Relinquished By/Removed From			Received By/Stored In	
Relinquished By/Removed From			Received By/Stored In	

SPECIAL INSTRUCTIONS

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

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

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-120	Page 1 of 1

Collector: TILLER JAMES BERNHARD	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9N	Data Turnaround: 45 Days	Air Quality ☐	
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: U 9, SEDIMENT	SAF No.: RC-047	
Ice Chest No.: ERC-02-001	Field Logbook No.: EL-1597	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES KIONVILLE	Offsite Property No.: A060288	Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	Gamma Spec - (Full List)	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On; TPH-Gasoline Range - WTPH-G		
J11744	OTHER SOLID	2-13-06	1245			X	X	X	X	X	X		

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS
Relinquished By/Removed From: JAMES BERNHARD; Date/Time: 2-13-06 1730	Received By/Stored In: EAS LOCKED STORAGE; Date/Time: 2-13-06 1730	
Relinquished By/Removed From: EAS LOCKED STORAGE; Date/Time: 02-14-06 0700	Received By/Stored In: RZ Stoffler; Date/Time: 2-14-06 0700	
Relinquished By/Removed From: RZ Stoffler; Date/Time: 2-14-06 1600	Received By/Stored In: Fed Ex; Date/Time:	
Relinquished By/Removed From: Fed Ex; Date/Time: 2-15-06 0920	Received By/Stored In: [illegible] 2-15-06 0920	
Relinquished By/Removed From: Date/Time:	Received By/Stored In: Date/Time:	
Relinquished By/Removed From: Date/Time:	Received By/Stored In: Date/Time:	

Matrix *
S=Soil
SE=Sediment
SO=Solid
SI=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solid
DL=Drum Liqu
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

BHI-EE-011 (08/29/2005)

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD **Date:** 2-15-06

Purchase Order / Project# / SAF# / SOW# / Release #: RC-047

LvLI Batch # : 06021268 **Sample Custodian:** V. Heenan

NOTE: EXPLAIN ALL DISCREPANCIES

1.	Samples Hand Delivered or Shipped	Carrier Fed Ex		Airbill# 7903 2234 5004	
2.	Custody seals on coolers or shipping container intact, signed and dated?	☑ Yes	☐ No	☐ No Seals	Comments
3.	Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No		
4.	All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible?	☑ Yes	☐ No		
5.	Samples received cooled or ambient? IR	Temp 21	°C	Cooler # ERC · ~~02403~~ 02-001 2-15-06	
6.	Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals	
7.	coc signed and dated?	☑ Yes	☐ No		
8.	Sample containers are intact?	☑ Yes	☐ No		
9.	All samples on coc received? All samples received on coc?	☑ Yes	☐ No		
10.	All sample label information matches coc?	☑ Yes	☐ No		
11.	Samples properly preserved?	☑ Yes	☐ No		
12.	Samples received within hold times? Short holds taken to wet lab?	☑ Yes	☐ No		
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 not within policy. See reverse side for policy)	☑ Yes	☐ No		
16.	Project Manager contacted concerning discrepancies? name/date (or samples outside criteria)	☐ Yes	☐ No	☑ No Discrepancies	

SR-002-B

LVLI LIONVILLE LABORATORY INC

Lionville Laboratory, Inc.
DRO ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0222

RECEIVED APR 2006

DATE RECEIVED: 02/15/06 LVL LOT # :0602L268

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J11736	001	SO	06LE0146	02/13/06	02/27/06	03/04/06
J11736	001 MS	SO	06LE0146	02/13/06	02/27/06	03/04/06
J11736	001 MSD	SO	06LE0146	02/13/06	02/27/06	03/04/06
J11741	002	SO	06LE0146	02/13/06	02/27/06	03/04/06
J11742	003	SO	06LE0146	02/13/06	02/27/06	03/04/06
J11743	004	SO	06LE0146	02/13/06	02/27/06	03/04/06
J11744	005	SO	06LE0146	02/13/06	02/27/06	03/04/06

LAB QC:

BLK	MB1	S	06LE0146	N/A	02/27/06	03/04/06
BLK	MB1 BS	S	06LE0146	N/A	02/27/06	03/04/06

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

3/31/06
Date

kim\r:\group\data\dro\tnu hanford\0602-268.doc

LVLI
LIONVILLE LABORATORY INC.

GLOSSARY OF DATA

DATA QUALIFIERS

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

ABBREVIATIONS

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

Lionville Laboratory, Inc.

DIESEL RANGE ORGANICS BY GC

Report Date: 03/31/06 11:19

RFW Batch Number: 0602L268 Client: TNUHANFORD RC-047 K0222 Work Order: 11343606001 Page: 1

	Cust ID:	J11736	J11736	J11736	J11741	J11742	J11743
Sample Information	RFW#:	001	001 MS	001 MSD	002	003	004
	Matrix:	SOLID	SOLID	SOLID	SOLID	SOLID	SOLID
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
p-Terphenyl		108 %	72 %	83 %	80 %	90 %	102 %
Diesel Range Organics		8200 B	60 %	58 %	9600 B	4400 J	5300 B

	Cust ID:	J11744	BLK	BLK BS
Sample Information	RFW#:	005	06LE0146-MB1	06LE0146-MB1
	Matrix:	SOLID	SOIL	SOIL
	D.F.:	1.00	1.00	1.00
	Units:	ug/kg	ug/kg	ug/kg
p-Terphenyl		73 %	104 %	78 %
Diesel Range Organics		2900 J	1800 J	67 %

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

000000005

3/31/06

Lionville Laboratory Use Only

J602L268

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

See SRC

Client INW- HANFORD SAF# RC-047

Est. Final Proj. Sampling Date

Project # 11343-6006-001-9999-00

Project Contact/Phone #

Lionville Laboratory Project Manager OJ

QC Spkd Del Std TAT 30 Days

Date Rec'd 2/15/06 Date Due 3/17/06

		A	B	C	D	E	F
Refrigerator #		6	6	6	6	6	6
#/Type Container	Liquid						
	Solid	G	G	G	G	P	G
Volume	Liquid						
	Solid	50g	50g	50g	50g	15g	50g
Preservatives		—	—	—	—	—	—
ANALYSES REQUESTED →		ORGANIC: VOA	BNA	PCB	PEST	TOT TPH	INORG: Metal / CN / TPH Diesel TPH GAS

Lionville Laboratory Use Only

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	VOA	0625H	0PCB	0608H	PEST	TPHC	METALS①	CN	0GRO 0DRO				
001	J11736			So	2-13-06	1145		1	1	1		1	1		1				
002	J11741			↓	↓	1545		1	1	1		1	1		1				
003	J11742					1445		1	1	1		1	1		1				
004	J11743					1345		1	1	1		1	1		1				
005	J11744					1245		1	1	1		1	1		1				

Special Instructions:

METALS① = HSL+B, Li, Mo, Si, Sn, Ti, U, P, Zr

RUN MATRIX QC

DATE/REVISIONS:

1. 0608H J
2. 0PCB J
3.
4. 0DRO A
5. 0GRO B
6.

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	2/15/06	0920

Relinquished by	Received by	Date	Time

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

000000006

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-112	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location U 6 SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. ERC-02-001	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. A060288		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	Gamma Spec - (Full List)	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On: TPH-Gasoline Range - WTPH-G		
J11738	OTHER SOLID	2-13-06	1145			X	X	X	X	X	X		

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	2-13-06 1730	EAS LOCKED STORAGE	2-13-06 1730
EAS LOCKED STORAGE	02-14-06 0700	RZ Stiffler	2-14-06 0700
RZ Stiffler	2-14-06 1600	Fed Ex	
Fed Ex	2-15-06 0920	P. Hermann	2-15-06 0920

SPECIAL INSTRUCTIONS

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

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-117	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location U 5, SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. ERC-02-001	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. A060288		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On: TPH-Gasoline Range - WTPH-G		
Sample No.	Matrix *	Sample Date	Sample Time								
J11741	OTHER SOLID	2-13-06	1545			X	X	X	X	X	X

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS
Relinquished By/Removed From JAMES BERNHARD Date/Time 1730 2-13-06	Received By/Stored In EAS LOCKED STORAGE Date/Time 1730 2-13-06	
Relinquished By/Removed From EAS LOCKED STORAGE Date/Time 0900 02-14-06	Received By/Stored In RZ Stoffler Date/Time 0900 2-14-06	
Relinquished By/Removed From RZ Stoffler Date/Time 1600 2-14-06	Received By/Stored In Fed Ex Date/Time	
Relinquished By/Removed From Fed Ex Date/Time 2-15-06 0920	Received By/Stored In Date/Time 2-15-06 0920	
Relinquished By/Removed From Date/Time	Received By/Stored In Date/Time	
Relinquished By/Removed From Date/Time	Received By/Stored In Date/Time	

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

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-118	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location US, SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. ERC-02-001	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX		
Shipped To BBERLINE SERVICES LIONVILLE	Offsite Property No. A060288		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G	
No. of Container(s)	1	1	1	1	1	1	1	1	
Volume	750g	5g	15g	50g	50g	50g	50g	50g	

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	Gamma Spec - (Full List)	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On; TPH-Gasoline Range - WTPH-G		
J11742	OTHER SOLID	2-13-06	1445			X	X	X	X	X	X		

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	2-13-06 1730	EAS LOCKED STORAGE	2-13-06 1730
EAS LOCKED STORAGE	2-14-06 0700	RZ Steffler	2-14-06 0700
RZ Steffler	2-14-06 1600	Fed Ex	
Fed Ex	2-15-06 0900		2-15-06 0900

SPECIAL INSTRUCTIONS

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

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-119	Page 1 of 1

Collector TILLBR JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location U 5, SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. ERC-02-001	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. A060288		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	Gamma Spec - (Full List)	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List): Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On: TPH-Gasoline Range - WTPH-G		
J11743	OTHER SOLID	2-13-06	1345			X	X	X	X	X	X		

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From JAMES BERNHARD	1730 2-13-06	Received By/Stored In EAS LOCKED STORAGE	1730 2-13-06
Relinquished By/Removed From EAS LOCKED STORAGE	0700 02-14-06	Received By/Stored In RZ Steffler R.J. Steffler	0700 2-14-06
Relinquished By/Removed From RZ Steffler R.J. Steffler	1600 2-14-06	Received By/Stored In Fed Ex	Date/Time
Relinquished By/Removed From Fed Ex	Date/Time 2-15-06 0930	Received By/Stored In V. Neumann	Date/Time 2-15-06 0930
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

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

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

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-120	Page 1 of 1

Collector: TILLER JAMES BERNHARD	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9N	Data Turnaround: 45 Days	Air Quality ☐	
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: U 9, SEDIMENT	SAF No.: RC-047	
Ice Chest No.: ERC-02-001	Field Logbook No.: EL-1597	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: A060288	Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On; TPH-Gasoline Range - WTPH-G		
Sample No. / Matrix * / Sample Date / Sample Time										
J11744 / OTHER SOLID / 2-13-06 / 1245			X	X	X	X	X	X		

CHAIN OF POSSESSION	Sign/Print Names	Date/Time
Relinquished By/Removed From: JAMES BERNHARD		2-13-06 1730
Received By/Stored In: EAS LOCKED STORAGE		2-13-06 1730
Relinquished By/Removed From: EAS LOCKED STORAGE		02-14-06 0700
Received By/Stored In: RZ Stoffler R.J. Stoffler		2-14-06 0700
Relinquished By/Removed From: RZ Stoffler R.J. Stoffler		2-14-06 1600
Received By/Stored In: Fed Ex		
Relinquished By/Removed From: FedEx		2-15-06 0920
Received By/Stored In: [illegible]		2-15-06 0920
Relinquished By/Removed From		
Received By/Stored In		
Relinquished By/Removed From		
Received By/Stored In		

SPECIAL INSTRUCTIONS

Matrix *
S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W=Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquid
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

BHI-EE-011 (08/29/2005)

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD

Date: 2-15-06

Purchase Order / Project# / SAF# / SOW# / Release #: RC-047

LvLI Batch # : 06021268

Sample Custodian: V. Heenan

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped — Carrier Fed Ex — Airbill# 7903 2234 5004

2. Custody seals on coolers or shipping container intact, signed and dated?	☑ Yes	☐ No	☐ No Seals	Comments
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No		
4. All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible?	☑ Yes	☐ No		
5. Samples received cooled or ambient? IR	Temp 2.1	°C	Cooler # ERC. ~~02403~~ 02-001 M 2-15-06	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals	
7. coc signed and dated?	☑ Yes	☐ No		
8. Sample containers are intact?	☑ Yes	☐ No		
9. All samples on coc received? All samples received on coc?	☑ Yes	☐ No		
10. All sample label information matches coc?	☑ Yes	☐ No		
11. Samples properly preserved?	☑ Yes	☐ No		
12. Samples received within hold times? Short holds taken to wet lab?	☑ Yes	☐ No		
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 not within policy. See reverse side for policy)	☑ Yes	☐ No		
16. Project Manager contacted concerning discrepancies? name/date (or samples outside criteria)	☐ Yes	☐ No	☑ No Discrepancies	

SR-002-B

LVLI LABORATORY INC

RECEIVED
APR 2006

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0222

DATE RECEIVED: 02/15/06 LVL LOT # :0602L268

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J11736						
SILVER, TOTAL	001	SO	06L0122	02/13/06	02/23/06	03/03/06
SILVER, TOTAL	001 REP	SO	06L0122	02/13/06	02/23/06	03/03/06
SILVER, TOTAL	001 MS	SO	06L0122	02/13/06	02/23/06	03/03/06
ALUMINUM, TOTAL	001	SO	06L0122	02/13/06	02/23/06	03/03/06
ALUMINUM, TOTAL	001 REP	SO	06L0122	02/13/06	02/23/06	03/03/06
ALUMINUM, TOTAL	001 MS	SO	06L0122	02/13/06	02/23/06	03/03/06
ARSENIC, TOTAL	001	SO	06L0122	02/13/06	02/23/06	03/03/06
ARSENIC, TOTAL	001 REP	SO	06L0122	02/13/06	02/23/06	03/03/06
ARSENIC, TOTAL	001 MS	SO	06L0122	02/13/06	02/23/06	03/03/06
BORON, TOTAL	001	SO	06L0122	02/13/06	02/23/06	03/03/06
BORON, TOTAL	001 REP	SO	06L0122	02/13/06	02/23/06	03/03/06
BORON, TOTAL	001 MS	SO	06L0122	02/13/06	02/23/06	03/03/06
BARIUM, TOTAL	001	SO	06L0122	02/13/06	02/23/06	03/03/06
BARIUM, TOTAL	001 REP	SO	06L0122	02/13/06	02/23/06	03/03/06
BARIUM, TOTAL	001 MS	SO	06L0122	02/13/06	02/23/06	03/03/06
BERYLLIUM, TOTAL	001	SO	06L0122	02/13/06	02/23/06	03/03/06
BERYLLIUM, TOTAL	001 REP	SO	06L0122	02/13/06	02/23/06	03/03/06
BERYLLIUM, TOTAL	001 MS	SO	06L0122	02/13/06	02/23/06	03/03/06
CALCIUM, TOTAL	001	SO	06L0122	02/13/06	02/23/06	03/03/06
CALCIUM, TOTAL	001 REP	SO	06L0122	02/13/06	02/23/06	03/03/06
CALCIUM, TOTAL	001 MS	SO	06L0122	02/13/06	02/23/06	03/03/06
CADMIUM, TOTAL	001	SO	06L0122	02/13/06	02/23/06	03/03/06
CADMIUM, TOTAL	001 REP	SO	06L0122	02/13/06	02/23/06	03/03/06
CADMIUM, TOTAL	001 MS	SO	06L0122	02/13/06	02/23/06	03/03/06
COBALT, TOTAL	001	SO	06L0122	02/13/06	02/23/06	03/03/06
COBALT, TOTAL	001 REP	SO	06L0122	02/13/06	02/23/06	03/03/06
COBALT, TOTAL	001 MS	SO	06L0122	02/13/06	02/23/06	03/03/06
CHROMIUM, TOTAL	001	SO	06L0122	02/13/06	02/23/06	03/03/06
CHROMIUM, TOTAL	001 REP	SO	06L0122	02/13/06	02/23/06	03/03/06
CHROMIUM, TOTAL	001 MS	SO	06L0122	02/13/06	02/23/06	03/03/06
COPPER, TOTAL	001	SO	06L0122	02/13/06	02/23/06	03/03/06
COPPER, TOTAL	001 REP	SO	06L0122	02/13/06	02/23/06	03/03/06
COPPER, TOTAL	001 MS	SO	06L0122	02/13/06	02/23/06	03/03/06
IRON, TOTAL	001	SO	06L0122	02/13/06	02/23/06	03/03/06
IRON, TOTAL	001 REP	SO	06L0122	02/13/06	02/23/06	03/03/06

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0222

DATE RECEIVED: 02/15/06 LVL LOT # :0602L268

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
IRON, TOTAL	001 MS	SO	06L0122	02/13/06	02/23/06	03/03/06
MERCURY, TOTAL	001	SO	06C0030	02/13/06	02/16/06	02/17/06
MERCURY, TOTAL	001 REP	SO	06C0030	02/13/06	02/16/06	02/17/06
MERCURY, TOTAL	001 MS	SO	06C0030	02/13/06	02/16/06	02/17/06
POTASSIUM, TOTAL	001	SO	06L0122	02/13/06	02/23/06	03/13/06
POTASSIUM, TOTAL	001 REP	SO	06L0122	02/13/06	02/23/06	03/13/06
POTASSIUM, TOTAL	001 MS	SO	06L0122	02/13/06	02/23/06	03/13/06
LITHIUM, TOTAL	001	SO	06L0122	02/13/06	02/23/06	03/03/06
LITHIUM, TOTAL	001 REP	SO	06L0122	02/13/06	02/23/06	03/03/06
LITHIUM, TOTAL	001 MS	SO	06L0122	02/13/06	02/23/06	03/03/06
MAGNESIUM, TOTAL	001	SO	06L0122	02/13/06	02/23/06	03/03/06
MAGNESIUM, TOTAL	001 REP	SO	06L0122	02/13/06	02/23/06	03/03/06
MAGNESIUM, TOTAL	001 MS	SO	06L0122	02/13/06	02/23/06	03/03/06
MANGANESE, TOTAL	001	SO	06L0122	02/13/06	02/23/06	03/03/06
MANGANESE, TOTAL	001 REP	SO	06L0122	02/13/06	02/23/06	03/03/06
MANGANESE, TOTAL	001 MS	SO	06L0122	02/13/06	02/23/06	03/03/06
MOLYBDENUM, TOTAL	001	SO	06L0122	02/13/06	02/23/06	03/03/06
MOLYBDENUM, TOTAL	001 REP	SO	06L0122	02/13/06	02/23/06	03/03/06
MOLYBDENUM, TOTAL	001 MS	SO	06L0122	02/13/06	02/23/06	03/03/06
SODIUM, TOTAL	001	SO	06L0122	02/13/06	02/23/06	03/13/06
SODIUM, TOTAL	001 REP	SO	06L0122	02/13/06	02/23/06	03/13/06
SODIUM, TOTAL	001 MS	SO	06L0122	02/13/06	02/23/06	03/13/06
NICKEL, TOTAL	001	SO	06L0122	02/13/06	02/23/06	03/03/06
NICKEL, TOTAL	001 REP	SO	06L0122	02/13/06	02/23/06	03/03/06
NICKEL, TOTAL	001 MS	SO	06L0122	02/13/06	02/23/06	03/03/06
PHOSPHORUS, TOTAL	001	SO	06L0122	02/13/06	02/23/06	03/13/06
PHOSPHORUS, TOTAL	001 REP	SO	06L0122	02/13/06	02/23/06	03/13/06
PHOSPHORUS, TOTAL	001 MS	SO	06L0122	02/13/06	02/23/06	03/13/06
LEAD, TOTAL	001	SO	06L0122	02/13/06	02/23/06	03/03/06
LEAD, TOTAL	001 REP	SO	06L0122	02/13/06	02/23/06	03/03/06
LEAD, TOTAL	001 MS	SO	06L0122	02/13/06	02/23/06	03/03/06
ANTIMONY, TOTAL	001	SO	06L0122	02/13/06	02/23/06	03/03/06
ANTIMONY, TOTAL	001 REP	SO	06L0122	02/13/06	02/23/06	03/03/06
ANTIMONY, TOTAL	001 MS	SO	06L0122	02/13/06	02/23/06	03/03/06
SELENIUM, TOTAL	001	SO	06L0122	02/13/06	02/23/06	03/03/06
SELENIUM, TOTAL	001 REP	SO	06L0122	02/13/06	02/23/06	03/03/06
SELENIUM, TOTAL	001 MS	SO	06L0122	02/13/06	02/23/06	03/03/06
SILICON, TOTAL	001	SO	06L0122	02/13/06	02/23/06	03/03/06

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0222

DATE RECEIVED: 02/15/06 LVL LOT # :0602L268

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SILICON, TOTAL	001 REP	SO	06L0122	02/13/06	02/23/06	03/03/06
SILICON, TOTAL	001 MS	SO	06L0122	02/13/06	02/23/06	03/03/06
TIN, TOTAL	001	SO	06L0122	02/13/06	02/23/06	03/03/06
TIN, TOTAL	001 REP	SO	06L0122	02/13/06	02/23/06	03/03/06
TIN, TOTAL	001 MS	SO	06L0122	02/13/06	02/23/06	03/03/06
TITANIUM, TOTAL	001	SO	06L0122	02/13/06	02/23/06	03/03/06
TITANIUM, TOTAL	001 REP	SO	06L0122	02/13/06	02/23/06	03/03/06
TITANIUM, TOTAL	001 MS	SO	06L0122	02/13/06	02/23/06	03/03/06
THALLIUM, TOTAL	001	SO	06L0122	02/13/06	02/23/06	03/03/06
THALLIUM, TOTAL	001 REP	SO	06L0122	02/13/06	02/23/06	03/03/06
THALLIUM, TOTAL	001 MS	SO	06L0122	02/13/06	02/23/06	03/03/06
URANIUM, TOTAL	001	SO	06L0122	02/13/06	02/23/06	03/03/06
URANIUM, TOTAL	001 REP	SO	06L0122	02/13/06	02/23/06	03/03/06
URANIUM, TOTAL	001 MS	SO	06L0122	02/13/06	02/23/06	03/03/06
VANADIUM, TOTAL	001	SO	06L0122	02/13/06	02/23/06	03/03/06
VANADIUM, TOTAL	001 REP	SO	06L0122	02/13/06	02/23/06	03/03/06
VANADIUM, TOTAL	001 MS	SO	06L0122	02/13/06	02/23/06	03/03/06
ZINC, TOTAL	001	SO	06L0122	02/13/06	02/23/06	03/03/06
ZINC, TOTAL	001 REP	SO	06L0122	02/13/06	02/23/06	03/03/06
ZINC, TOTAL	001 MS	SO	06L0122	02/13/06	02/23/06	03/03/06
ZIRCONIUM, TOTAL	001	SO	06L0122	02/13/06	02/23/06	03/03/06
ZIRCONIUM, TOTAL	001 REP	SO	06L0122	02/13/06	02/23/06	03/03/06
ZIRCONIUM, TOTAL	001 MS	SO	06L0122	02/13/06	02/23/06	03/03/06
J11741						
SILVER, TOTAL	002	SO	06L0122	02/13/06	02/23/06	03/03/06
ALUMINUM, TOTAL	002	SO	06L0122	02/13/06	02/23/06	03/03/06
ARSENIC, TOTAL	002	SO	06L0122	02/13/06	02/23/06	03/03/06
BORON, TOTAL	002	SO	06L0122	02/13/06	02/23/06	03/03/06
BARIUM, TOTAL	002	SO	06L0122	02/13/06	02/23/06	03/03/06
BERYLLIUM, TOTAL	002	SO	06L0122	02/13/06	02/23/06	03/03/06
CALCIUM, TOTAL	002	SO	06L0122	02/13/06	02/23/06	03/03/06
CADMIUM, TOTAL	002	SO	06L0122	02/13/06	02/23/06	03/03/06
COBALT, TOTAL	002	SO	06L0122	02/13/06	02/23/06	03/03/06
CHROMIUM, TOTAL	002	SO	06L0122	02/13/06	02/23/06	03/03/06
COPPER, TOTAL	002	SO	06L0122	02/13/06	02/23/06	03/03/06
IRON, TOTAL	002	SO	06L0122	02/13/06	02/23/06	03/03/06

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0222

DATE RECEIVED: 02/15/06 LVL LOT # :0602L268

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MERCURY, TOTAL	002	SO	06C0030	02/13/06	02/16/06	02/17/06
POTASSIUM, TOTAL	002	SO	06L0122	02/13/06	02/23/06	03/13/06
LITHIUM, TOTAL	002	SO	06L0122	02/13/06	02/23/06	03/03/06
MAGNESIUM, TOTAL	002	SO	06L0122	02/13/06	02/23/06	03/03/06
MANGANESE, TOTAL	002	SO	06L0122	02/13/06	02/23/06	03/03/06
MOLYBDENUM, TOTAL	002	SO	06L0122	02/13/06	02/23/06	03/03/06
SODIUM, TOTAL	002	SO	06L0122	02/13/06	02/23/06	03/13/06
NICKEL, TOTAL	002	SO	06L0122	02/13/06	02/23/06	03/03/06
PHOSPHORUS, TOTAL	002	SO	06L0122	02/13/06	02/23/06	03/13/06
LEAD, TOTAL	002	SO	06L0122	02/13/06	02/23/06	03/03/06
ANTIMONY, TOTAL	002	SO	06L0122	02/13/06	02/23/06	03/03/06
SELENIUM, TOTAL	002	SO	06L0122	02/13/06	02/23/06	03/03/06
SILICON, TOTAL	002	SO	06L0122	02/13/06	02/23/06	03/03/06
TIN, TOTAL	002	SO	06L0122	02/13/06	02/23/06	03/03/06
TITANIUM, TOTAL	002	SO	06L0122	02/13/06	02/23/06	03/03/06
THALLIUM, TOTAL	002	SO	06L0122	02/13/06	02/23/06	03/03/06
URANIUM, TOTAL	002	SO	06L0122	02/13/06	02/23/06	03/03/06
VANADIUM, TOTAL	002	SO	06L0122	02/13/06	02/23/06	03/03/06
ZINC, TOTAL	002	SO	06L0122	02/13/06	02/23/06	03/03/06
ZIRCONIUM, TOTAL	002	SO	06L0122	02/13/06	02/23/06	03/03/06
J11742						
SILVER, TOTAL	003	SO	06L0122	02/13/06	02/23/06	03/03/06
ALUMINUM, TOTAL	003	SO	06L0122	02/13/06	02/23/06	03/03/06
ARSENIC, TOTAL	003	SO	06L0122	02/13/06	02/23/06	03/03/06
BORON, TOTAL	003	SO	06L0122	02/13/06	02/23/06	03/03/06
BARIUM, TOTAL	003	SO	06L0122	02/13/06	02/23/06	03/03/06
BERYLLIUM, TOTAL	003	SO	06L0122	02/13/06	02/23/06	03/03/06
CALCIUM, TOTAL	003	SO	06L0122	02/13/06	02/23/06	03/03/06
CADMIUM, TOTAL	003	SO	06L0122	02/13/06	02/23/06	03/03/06
COBALT, TOTAL	003	SO	06L0122	02/13/06	02/23/06	03/03/06
CHROMIUM, TOTAL	003	SO	06L0122	02/13/06	02/23/06	03/03/06
COPPER, TOTAL	003	SO	06L0122	02/13/06	02/23/06	03/03/06
IRON, TOTAL	003	SO	06L0122	02/13/06	02/23/06	03/03/06
MERCURY, TOTAL	003	SO	06C0030	02/13/06	02/16/06	02/17/06
POTASSIUM, TOTAL	003	SO	06L0122	02/13/06	02/23/06	03/13/06
LITHIUM, TOTAL	003	SO	06L0122	02/13/06	02/23/06	03/03/06

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0222

DATE RECEIVED: 02/15/06 LVL LOT # :0602L268

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MAGNESIUM, TOTAL	003	SO	06L0122	02/13/06	02/23/06	03/03/06
MANGANESE, TOTAL	003	SO	06L0122	02/13/06	02/23/06	03/03/06
MOLYBDENUM, TOTAL	003	SO	06L0122	02/13/06	02/23/06	03/03/06
SODIUM, TOTAL	003	SO	06L0122	02/13/06	02/23/06	03/13/06
NICKEL, TOTAL	003	SO	06L0122	02/13/06	02/23/06	03/03/06
PHOSPHORUS, TOTAL	003	SO	06L0122	02/13/06	02/23/06	03/13/06
LEAD, TOTAL	003	SO	06L0122	02/13/06	02/23/06	03/03/06
ANTIMONY, TOTAL	003	SO	06L0122	02/13/06	02/23/06	03/03/06
SELENIUM, TOTAL	003	SO	06L0122	02/13/06	02/23/06	03/03/06
SILICON, TOTAL	003	SO	06L0122	02/13/06	02/23/06	03/03/06
TIN, TOTAL	003	SO	06L0122	02/13/06	02/23/06	03/03/06
TITANIUM, TOTAL	003	SO	06L0122	02/13/06	02/23/06	03/03/06
THALLIUM, TOTAL	003	SO	06L0122	02/13/06	02/23/06	03/03/06
URANIUM, TOTAL	003	SO	06L0122	02/13/06	02/23/06	03/03/06
VANADIUM, TOTAL	003	SO	06L0122	02/13/06	02/23/06	03/03/06
ZINC, TOTAL	003	SO	06L0122	02/13/06	02/23/06	03/03/06
ZIRCONIUM, TOTAL	003	SO	06L0122	02/13/06	02/23/06	03/03/06
J11743						
SILVER, TOTAL	004	SO	06L0122	02/13/06	02/23/06	03/03/06
ALUMINUM, TOTAL	004	SO	06L0122	02/13/06	02/23/06	03/03/06
ARSENIC, TOTAL	004	SO	06L0122	02/13/06	02/23/06	03/03/06
BORON, TOTAL	004	SO	06L0122	02/13/06	02/23/06	03/03/06
BARIUM, TOTAL	004	SO	06L0122	02/13/06	02/23/06	03/03/06
BERYLLIUM, TOTAL	004	SO	06L0122	02/13/06	02/23/06	03/03/06
CALCIUM, TOTAL	004	SO	06L0122	02/13/06	02/23/06	03/03/06
CADMIUM, TOTAL	004	SO	06L0122	02/13/06	02/23/06	03/03/06
COBALT, TOTAL	004	SO	06L0122	02/13/06	02/23/06	03/03/06
CHROMIUM, TOTAL	004	SO	06L0122	02/13/06	02/23/06	03/03/06
COPPER, TOTAL	004	SO	06L0122	02/13/06	02/23/06	03/03/06
IRON, TOTAL	004	SO	06L0122	02/13/06	02/23/06	03/03/06
MERCURY, TOTAL	004	SO	06C0030	02/13/06	02/16/06	02/17/06
POTASSIUM, TOTAL	004	SO	06L0122	02/13/06	02/23/06	03/13/06
LITHIUM, TOTAL	004	SO	06L0122	02/13/06	02/23/06	03/03/06
MAGNESIUM, TOTAL	004	SO	06L0122	02/13/06	02/23/06	03/03/06
MANGANESE, TOTAL	004	SO	06L0122	02/13/06	02/23/06	03/03/06
MOLYBDENUM, TOTAL	004	SO	06L0122	02/13/06	02/23/06	03/03/06

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0222

DATE RECEIVED: 02/15/06 LVL LOT # :0602L268

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SODIUM, TOTAL	004	SO	06L0122	02/13/06	02/23/06	03/13/06
NICKEL, TOTAL	004	SO	06L0122	02/13/06	02/23/06	03/03/06
PHOSPHORUS, TOTAL	004	SO	06L0122	02/13/06	02/23/06	03/13/06
LEAD, TOTAL	004	SO	06L0122	02/13/06	02/23/06	03/03/06
ANTIMONY, TOTAL	004	SO	06L0122	02/13/06	02/23/06	03/03/06
SELENIUM, TOTAL	004	SO	06L0122	02/13/06	02/23/06	03/03/06
SILICON, TOTAL	004	SO	06L0122	02/13/06	02/23/06	03/03/06
TIN, TOTAL	004	SO	06L0122	02/13/06	02/23/06	03/03/06
TITANIUM, TOTAL	004	SO	06L0122	02/13/06	02/23/06	03/03/06
THALLIUM, TOTAL	004	SO	06L0122	02/13/06	02/23/06	03/03/06
URANIUM, TOTAL	004	SO	06L0122	02/13/06	02/23/06	03/03/06
VANADIUM, TOTAL	004	SO	06L0122	02/13/06	02/23/06	03/03/06
ZINC, TOTAL	004	SO	06L0122	02/13/06	02/23/06	03/03/06
ZIRCONIUM, TOTAL	004	SO	06L0122	02/13/06	02/23/06	03/03/06
J11744						
SILVER, TOTAL	005	SO	06L0122	02/13/06	02/23/06	03/03/06
ALUMINUM, TOTAL	005	SO	06L0122	02/13/06	02/23/06	03/03/06
ARSENIC, TOTAL	005	SO	06L0122	02/13/06	02/23/06	03/03/06
BORON, TOTAL	005	SO	06L0122	02/13/06	02/23/06	03/03/06
BARIUM, TOTAL	005	SO	06L0122	02/13/06	02/23/06	03/03/06
BERYLLIUM, TOTAL	005	SO	06L0122	02/13/06	02/23/06	03/03/06
CALCIUM, TOTAL	005	SO	06L0122	02/13/06	02/23/06	03/03/06
CADMIUM, TOTAL	005	SO	06L0122	02/13/06	02/23/06	03/03/06
COBALT, TOTAL	005	SO	06L0122	02/13/06	02/23/06	03/03/06
CHROMIUM, TOTAL	005	SO	06L0122	02/13/06	02/23/06	03/03/06
COPPER, TOTAL	005	SO	06L0122	02/13/06	02/23/06	03/03/06
IRON, TOTAL	005	SO	06L0122	02/13/06	02/23/06	03/03/06
MERCURY, TOTAL	005	SO	06C0030	02/13/06	02/16/06	02/17/06
POTASSIUM, TOTAL	005	SO	06L0122	02/13/06	02/23/06	03/13/06
LITHIUM, TOTAL	005	SO	06L0122	02/13/06	02/23/06	03/03/06
MAGNESIUM, TOTAL	005	SO	06L0122	02/13/06	02/23/06	03/03/06
MANGANESE, TOTAL	005	SO	06L0122	02/13/06	02/23/06	03/03/06
MOLYBDENUM, TOTAL	005	SO	06L0122	02/13/06	02/23/06	03/03/06
SODIUM, TOTAL	005	SO	06L0122	02/13/06	02/23/06	03/13/06
NICKEL, TOTAL	005	SO	06L0122	02/13/06	02/23/06	03/03/06
PHOSPHORUS, TOTAL	005	SO	06L0122	02/13/06	02/23/06	03/13/06

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0222

DATE RECEIVED: 02/15/06 LVL LOT # :0602L268

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
LEAD, TOTAL	005	SO	06L0122	02/13/06	02/23/06	03/03/06
ANTIMONY, TOTAL	005	SO	06L0122	02/13/06	02/23/06	03/03/06
SELENIUM, TOTAL	005	SO	06L0122	02/13/06	02/23/06	03/03/06
SILICON, TOTAL	005	SO	06L0122	02/13/06	02/23/06	03/03/06
TIN, TOTAL	005	SO	06L0122	02/13/06	02/23/06	03/03/06
TITANIUM, TOTAL	005	SO	06L0122	02/13/06	02/23/06	03/03/06
THALLIUM, TOTAL	005	SO	06L0122	02/13/06	02/23/06	03/03/06
URANIUM, TOTAL	005	SO	06L0122	02/13/06	02/23/06	03/03/06
VANADIUM, TOTAL	005	SO	06L0122	02/13/06	02/23/06	03/03/06
ZINC, TOTAL	005	SO	06L0122	02/13/06	02/23/06	03/03/06
ZIRCONIUM, TOTAL	005	SO	06L0122	02/13/06	02/23/06	03/03/06

LAB QC:

SILVER LABORATORY	LC1 BS	S	06L0122	N/A	02/23/06	03/03/06
SILVER, TOTAL	MB1	S	06L0122	N/A	02/23/06	03/03/06
ALUMINUM LABORTORY	LC1 BS	S	06L0122	N/A	02/23/06	03/03/06
ALUMINUM, TOTAL	MB1	S	06L0122	N/A	02/23/06	03/03/06
ARSENIC LABORATORY	LC1 BS	S	06L0122	N/A	02/23/06	03/03/06
ARSENIC, TOTAL	MB1	S	06L0122	N/A	02/23/06	03/03/06
BORON LABORATORY	LC1 BS	S	06L0122	N/A	02/23/06	03/03/06
BORON, TOTAL	MB1	S	06L0122	N/A	02/23/06	03/03/06
BARIUM LABORATORY	LC1 BS	S	06L0122	N/A	02/23/06	03/03/06
BARIUM, TOTAL	MB1	S	06L0122	N/A	02/23/06	03/03/06
BERYLLIUM LABORATORY	LC1 BS	S	06L0122	N/A	02/23/06	03/03/06
BERYLLIUM, TOTAL	MB1	S	06L0122	N/A	02/23/06	03/03/06
CALCIUM LABORATORY	LC1 BS	S	06L0122	N/A	02/23/06	03/03/06
CALCIUM, TOTAL	MB1	S	06L0122	N/A	02/23/06	03/03/06
CADMIUM LABORATORY	LC1 BS	S	06L0122	N/A	02/23/06	03/03/06
CADMIUM, TOTAL	MB1	S	06L0122	N/A	02/23/06	03/03/06
COBALT LABORATORY	LC1 BS	S	06L0122	N/A	02/23/06	03/03/06
COBALT, TOTAL	MB1	S	06L0122	N/A	02/23/06	03/03/06
CHROMIUM LABORATORY	LC1 BS	S	06L0122	N/A	02/23/06	03/03/06
CHROMIUM, TOTAL	MB1	S	06L0122	N/A	02/23/06	03/03/06
COPPER LABORATORY	LC1 BS	S	06L0122	N/A	02/23/06	03/03/06
COPPER, TOTAL	MB1	S	06L0122	N/A	02/23/06	03/03/06
IRON LABORATORY	LC1 BS	S	06L0122	N/A	02/23/06	03/03/06
IRON, TOTAL	MB1	S	06L0122	N/A	02/23/06	03/03/06

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0222

DATE RECEIVED: 02/15/06 LVL LOT # :0602L268

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
MERCURY LABORATORY	LC1 BS	S	06C0030	N/A	02/16/06	02/17/06
MERCURY, TOTAL	MB1	S	06C0030	N/A	02/16/06	02/17/06
POTASSIUM LABORATORY	LC1 BS	S	06L0122	N/A	02/23/06	03/13/06
POTASSIUM, TOTAL	MB1	S	06L0122	N/A	02/23/06	03/13/06
LITHIUM LABORATORY	LC1 BS	S	06L0122	N/A	02/23/06	03/03/06
LITHIUM, TOTAL	MB1	S	06L0122	N/A	02/23/06	03/03/06
MAGNESIUM LABORATORY	LC1 BS	S	06L0122	N/A	02/23/06	03/03/06
MAGNESIUM, TOTAL	MB1	S	06L0122	N/A	02/23/06	03/03/06
MANGANESE LABORATORY	LC1 BS	S	06L0122	N/A	02/23/06	03/03/06
MANGANESE, TOTAL	MB1	S	06L0122	N/A	02/23/06	03/03/06
MOLYBDENUM LABORATOR	LC1 BS	S	06L0122	N/A	02/23/06	03/03/06
MOLYBDENUM, TOTAL	MB1	S	06L0122	N/A	02/23/06	03/03/06
SODIUM LABORATORY	LC1 BS	S	06L0122	N/A	02/23/06	03/13/06
SODIUM, TOTAL	MB1	S	06L0122	N/A	02/23/06	03/13/06
NICKEL LABORATORY	LC1 BS	S	06L0122	N/A	02/23/06	03/03/06
NICKEL, TOTAL	MB1	S	06L0122	N/A	02/23/06	03/03/06
PHOSPHORUS LCS	LC1 BS	S	06L0122	N/A	02/23/06	03/13/06
PHOSPHORUS, TOTAL	MB1	S	06L0122	N/A	02/23/06	03/13/06
LEAD LABORATORY	LC1 BS	S	06L0122	N/A	02/23/06	03/03/06
LEAD, TOTAL	MB1	S	06L0122	N/A	02/23/06	03/03/06
ANTIMONY LABORATORY	LC1 BS	S	06L0122	N/A	02/23/06	03/03/06
ANTIMONY, TOTAL	MB1	S	06L0122	N/A	02/23/06	03/03/06
SELENIUM LABORATORY	LC1 BS	S	06L0122	N/A	02/23/06	03/03/06
SELENIUM, TOTAL	MB1	S	06L0122	N/A	02/23/06	03/03/06
SILICON LABORATORY	LC1 BS	S	06L0122	N/A	02/23/06	03/03/06
SILICON, TOTAL	MB1	S	06L0122	N/A	02/23/06	03/03/06
TIN LABORATORY	LC1 BS	S	06L0122	N/A	02/23/06	03/03/06
TIN, TOTAL	MB1	S	06L0122	N/A	02/23/06	03/03/06
TITANIUM LABORATORY	LC1 BS	S	06L0122	N/A	02/23/06	03/03/06
TITANIUM, TOTAL	MB1	S	06L0122	N/A	02/23/06	03/03/06
THALLIUM LABORATORY	LC1 BS	S	06L0122	N/A	02/23/06	03/03/06
THALLIUM, TOTAL	MB1	S	06L0122	N/A	02/23/06	03/03/06
URANIUM LABORATORY	LC1 BS	S	06L0122	N/A	02/23/06	03/03/06
URANIUM, TOTAL	MB1	S	06L0122	N/A	02/23/06	03/03/06
VANADIUM LABORATORY	LC1 BS	S	06L0122	N/A	02/23/06	03/03/06
VANADIUM, TOTAL	MB1	S	06L0122	N/A	02/23/06	03/03/06
ZINC LABORATORY	LC1 BS	S	06L0122	N/A	02/23/06	03/03/06
ZINC, TOTAL	MB1	S	06L0122	N/A	02/23/06	03/03/06

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0222

DATE RECEIVED: 02/15/06 LVL LOT # :0602L268

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
ZIRCONIUM LABORATORY	LC1 BS	S	06L0122	N/A	02/23/06	03/03/06
ZIRCONIUM, TOTAL	MB1	S	06L0122	N/A	02/23/06	03/03/06

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-047
LVL#: 0602L268
SDG/SAF#: K0222/RC-047

W.O.#: 11343-606-001-9999-00
Date Received: 02-15-06

METALS CASE NARRATIVE

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

2. The samples were prepared and analyzed in accordance with methods checked on the attached glossary. The samples were rerun for Potassium, Sodium, and Phosphorous due to sample matrix.

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

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

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

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

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

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

9. All laboratory control samples (LCS) were within the 80-120% control limits with the exception of Silicon at 64.2%. Refer to the Inorganics Laboratory Control Standards Report. Associated sample results may be biased low.

10. The matrix spike (MS) recoveries for 7 analytes were outside the 75-125% control limits. Refer to the Inorganics Accuracy Report.

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

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 29 pages.

Sample ID	Element	PDS Concentration (ppb)	PDS % Recovery
J11736	Aluminum	22,000	95.7
	Calcium	22,000	89.2
	Iron	22,000	95.5
	Phosphorous	2,000	95.6
	Antimony	100	91.1
	Silicon	2,100	91.0
	Titanium	2,500	99.3

12. The duplicate analyses for 9 analytes were outside the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.

13. For the purposes of this report, the data has been reported to the Instrument Detection Limit (IDL). Values between the IDL and the Practical Quantitation Limit (PQL) are acquired in a region of less-certain quantification.

14. LvLI is NELAP accredited by the state of Pennsylvania and holds over 20 additional state accreditations. For a complete listing of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

3/24/04
Date

jjw/m02-268

LVLI
LIONVILLE LABORATORY INC.

METALS METHOD GLOSSARY

The following methods are used as reference for the digestion and analysis of samples contained within t
Lot#: 0602L268

Leaching Procedure: __1310 __1311 __1312 __Other:_____

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

Metals Digestion Methods: __3005A __3010A __3015 __3020A X3050B __3051 __200.7 __SS17
__Other: _____

Metals Analysis Methods

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

Other: Phosphorous Method: 6010B

L-WI-033/M-03/01
000000012

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

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

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

ABBREVIATIONS

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

ANALYTICAL METAL METHODS

1. Not included in the method element list.

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

3. Flame AA.

4. Graphite Furnace AA.

L-WI-033/N-04/98

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 03/28/06

CLIENT: TNUHANFORD RC-047 K0222 LVL LOT #: 0602L268

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J11736	Silver, Total	0.16 u	MG/KG	0.16	1.0
		Aluminum, Total	5480	MG/KG	2.1	1.0
		Arsenic, Total	2.3	MG/KG	0.39	1.0
		Boron, Total	1.3	MG/KG	0.31	1.0
		Barium, Total	82.3	MG/KG	0.02	1.0
		Beryllium, Total	0.72	MG/KG	0.01	1.0
		Calcium, Total	4440	MG/KG	1.4	1.0
		Cadmium, Total	0.37	MG/KG	0.08	1.0
		Cobalt, Total	5.2	MG/KG	0.14	1.0
		Chromium, Total	9.6	MG/KG	0.18	1.0
		Copper, Total	12.9	MG/KG	0.14	1.0
		Iron, Total	14100	MG/KG	3.7	1.0
		Mercury, Total	0.03	MG/KG	0.02	1.0
		Potassium, Total	886	MG/KG	88.9	1.0
		Lithium, Total	5.6	MG/KG	0.03	1.0
		Magnesium, Total	3190	MG/KG	1.6	1.0
		Manganese, Total	206	MG/KG	0.02	1.0
		Molybdenum, Total	0.29	MG/KG	0.15	1.0
		Sodium, Total	85.3	MG/KG	2.9	1.0
		Nickel, Total	8.7	MG/KG	0.15	1.0
		Phosphorus, Total	876	MG/KG	1.0	1.0
		Lead, Total	8.8	MG/KG	0.36	1.0
		Antimony, Total	0.46 u	MG/KG	0.46	1.0
		Selenium, Total	0.42	MG/KG	0.42	1.0
		Silicon, Total	530	MG/KG	0.95	1.0
		Tin, Total	0.83	MG/KG	0.60	1.0
		Titanium, Total	885	MG/KG	0.05	1.0
		Thallium, Total	0.74 u	MG/KG	0.74	1.0
		Uranium, Total	2.4 u	MG/KG	2.4	1.0
		Vanadium, Total	32.8	MG/KG	0.10	1.0
		Zinc, Total	84.9	MG/KG	0.06	1.0
		Zirconium, Total	14.7	MG/KG	0.62	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 03/28/06

CLIENT: TNUHANFORD RC-047 K0222 LVL LOT #: 0602L268

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-002	J11741	Silver, Total	0.18 u	MG/KG	0.18	1.0
		Aluminum, Total	8440	MG/KG	2.3	1.0
		Arsenic, Total	6.2	MG/KG	0.43	1.0
		Boron, Total	1.9	MG/KG	0.34	1.0
		Barium, Total	189	MG/KG	0.03	1.0
		Beryllium, Total	0.78	MG/KG	0.01	1.0
		Calcium, Total	5270	MG/KG	1.5	1.0
		Cadmium, Total	0.43	MG/KG	0.09	1.0
		Cobalt, Total	7.5	MG/KG	0.15	1.0
		Chromium, Total	12.2	MG/KG	0.20	1.0
		Copper, Total	24.0	MG/KG	0.15	1.0
		Iron, Total	22500	MG/KG	4.0	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Potassium, Total	771	MG/KG	96.6	1.0
		Lithium, Total	8.8	MG/KG	0.04	1.0
		Magnesium, Total	3760	MG/KG	1.7	1.0
		Manganese, Total	508	MG/KG	0.03	1.0
		Molybdenum, Total	0.67	MG/KG	0.16	1.0
		Sodium, Total	116	MG/KG	3.1	1.0
		Nickel, Total	18.3	MG/KG	0.16	1.0
		Phosphorus, Total	1160	MG/KG	1.1	1.0
		Lead, Total	14.9	MG/KG	0.39	1.0
		Antimony, Total	0.50 u	MG/KG	0.50	1.0
		Selenium, Total	0.45 u	MG/KG	0.45	1.0
		Silicon, Total	441	MG/KG	1.0	1.0
		Tin, Total	2.9	MG/KG	0.65	1.0
		Titanium, Total	1610	MG/KG	0.05	1.0
		Thallium, Total	0.80 u	MG/KG	0.80	1.0
		Uranium, Total	2.6	MG/KG	2.6	1.0
		Vanadium, Total	40.3	MG/KG	0.11	1.0
		Zinc, Total	115	MG/KG	0.06	1.0
		Zirconium, Total	28.5	MG/KG	0.68	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 03/28/06

CLIENT: TNUHANFORD RC-047 K0222 LVL LOT #: 0602L268

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-003	J11742	Silver, Total	0.17 u	MG/KG	0.17	1.0
		Aluminum, Total	9560	MG/KG	2.2	1.0
		Arsenic, Total	9.4	MG/KG	0.41	1.0
		Boron, Total	1.4	MG/KG	0.32	1.0
		Barium, Total	209	MG/KG	0.02	1.0
		Beryllium, Total	0.90	MG/KG	0.01	1.0
		Calcium, Total	4390	MG/KG	1.4	1.0
		Cadmium, Total	0.59	MG/KG	0.08	1.0
		Cobalt, Total	7.2	MG/KG	0.14	1.0
		Chromium, Total	16.3	MG/KG	0.19	1.0
		Copper, Total	21.9	MG/KG	0.14	1.0
		Iron, Total	24300	MG/KG	3.8	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Potassium, Total	778	MG/KG	92.0	1.0
		Lithium, Total	13.0	MG/KG	0.04	1.0
		Magnesium, Total	3330	MG/KG	1.6	1.0
		Manganese, Total	494	MG/KG	0.02	1.0
		Molybdenum, Total	0.89	MG/KG	0.16	1.0
		Sodium, Total	111	MG/KG	3.0	1.0
		Nickel, Total	23.8	MG/KG	0.16	1.0
		Phosphorus, Total	1120	MG/KG	1.1	1.0
		Lead, Total	13.8	MG/KG	0.37	1.0
		Antimony, Total	0.48 u	MG/KG	0.48	1.0
		Selenium, Total	0.66	MG/KG	0.43	1.0
		Silicon, Total	497	MG/KG	0.98	1.0
		Tin, Total	1.6	MG/KG	0.62	1.0
		Titanium, Total	2030	MG/KG	0.05	1.0
		Thallium, Total	0.76 u	MG/KG	0.76	1.0
		Uranium, Total	6.8	MG/KG	2.5	1.0
		Vanadium, Total	60.6	MG/KG	0.11	1.0
		Zinc, Total	133	MG/KG	0.06	1.0
		Zirconium, Total	28.4	MG/KG	0.64	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 03/28/06

CLIENT: TNUHANFORD RC-047 K0222 LVL LOT #: 0602L268

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-004	J11743	Silver, Total	0.16 u	MG/KG	0.16	1.0
		Aluminum, Total	6550	MG/KG	2.1	1.0
		Arsenic, Total	4.8	MG/KG	0.38	1.0
		Boron, Total	0.80	MG/KG	0.31	1.0
		Barium, Total	146	MG/KG	0.02	1.0
		Beryllium, Total	0.74	MG/KG	0.01	1.0
		Calcium, Total	4640	MG/KG	1.3	1.0
		Cadmium, Total	0.53	MG/KG	0.08	1.0
		Cobalt, Total	6.0	MG/KG	0.14	1.0
		Chromium, Total	9.4	MG/KG	0.18	1.0
		Copper, Total	19.8	MG/KG	0.14	1.0
		Iron, Total	22900	MG/KG	3.6	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Potassium, Total	516	MG/KG	87.1	1.0
		Lithium, Total	8.1	MG/KG	0.03	1.0
		Magnesium, Total	3260	MG/KG	1.5	1.0
		Manganese, Total	446	MG/KG	0.02	1.0
		Molybdenum, Total	0.81	MG/KG	0.15	1.0
		Sodium, Total	106	MG/KG	2.8	1.0
		Nickel, Total	13.2	MG/KG	0.15	1.0
		Phosphorus, Total	1300	MG/KG	1.0	1.0
		Lead, Total	9.8	MG/KG	0.35	1.0
		Antimony, Total	0.45 u	MG/KG	0.45	1.0
		Selenium, Total	0.51	MG/KG	0.41	1.0
		Silicon, Total	368	MG/KG	0.93	1.0
		Tin, Total	1.8	MG/KG	0.59	1.0
		Titanium, Total	1690	MG/KG	0.05	1.0
		Thallium, Total	0.72 u	MG/KG	0.72	1.0
		Uranium, Total	2.3 u	MG/KG	2.3	1.0
		Vanadium, Total	46.3	MG/KG	0.10	1.0
		Zinc, Total	98.1	MG/KG	0.06	1.0
		Zirconium, Total	33.6	MG/KG	0.61	1.0

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 03/28/06

CLIENT: TNUHANFORD RC-047 K0222 LVL LOT #: 0602L268

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-005	J11744	Silver, Total	0.17 u	MG/KG	0.17	1.0
		Aluminum, Total	3110	MG/KG	2.3	1.0
		Arsenic, Total	2.7	MG/KG	0.42	1.0
		Boron, Total	0.39	MG/KG	0.33	1.0
		Barium, Total	43.3	MG/KG	0.02	1.0
		Beryllium, Total	0.41	MG/KG	0.01	1.0
		Calcium, Total	2210	MG/KG	1.5	1.0
		Cadmium, Total	0.09 u	MG/KG	0.09	1.0
		Cobalt, Total	3.2	MG/KG	0.15	1.0
		Chromium, Total	6.0	MG/KG	0.20	1.0
		Copper, Total	7.2	MG/KG	0.15	1.0
		Iron, Total	14500	MG/KG	4.0	1.0
		Mercury, Total	0.02 u	MG/KG	0.02	1.0
		Potassium, Total	444	MG/KG	95.1	1.0
		Lithium, Total	4.1	MG/KG	0.04	1.0
		Magnesium, Total	2540	MG/KG	1.7	1.0
		Manganese, Total	249	MG/KG	0.02	1.0
		Molybdenum, Total	0.46	MG/KG	0.16	1.0
		Sodium, Total	62.5	MG/KG	3.1	1.0
		Nickel, Total	7.4	MG/KG	0.16	1.0
		Phosphorus, Total	664	MG/KG	1.1	1.0
		Lead, Total	4.2	MG/KG	0.38	1.0
		Antimony, Total	0.49 u	MG/KG	0.49	1.0
		Selenium, Total	0.44 u	MG/KG	0.44	1.0
		Silicon, Total	479	MG/KG	1.0	1.0
		Tin, Total	1.6	MG/KG	0.64	1.0
		Titanium, Total	1120	MG/KG	0.05	1.0
		Thallium, Total	0.79 u	MG/KG	0.79	1.0
		Uranium, Total	2.5 u	MG/KG	2.5	1.0
		Vanadium, Total	36.9	MG/KG	0.11	1.0
		Zinc, Total	48.4	MG/KG	0.06	1.0
		Zirconium, Total	10.1	MG/KG	0.67	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 03/28/06

CLIENT: TNUHANFORD RC-047 K0222 LVL LOT #: 0602L268

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	06L0122-MB1	Silver, Total	0.14 u	MG/KG	0.14	1.0
		Aluminum, Total	1.8 u	MG/KG	1.8	1.0
		Arsenic, Total	0.34 u	MG/KG	0.34	1.0
		Boron, Total	0.27 u	MG/KG	0.27	1.0
		Barium, Total	0.02 u	MG/KG	0.02	1.0
		Beryllium, Total	0.01 u	MG/KG	0.01	1.0
		Calcium, Total	2.2	MG/KG	1.2	1.0
		Cadmium, Total	0.07 u	MG/KG	0.07	1.0
		Cobalt, Total	0.12 u	MG/KG	0.12	1.0
		Chromium, Total	0.16 u	MG/KG	0.16	1.0
		Copper, Total	0.12 u	MG/KG	0.12	1.0
		Iron, Total	3.2 u	MG/KG	3.2	1.0
		Potassium, Total	77.1 u	MG/KG	77.1	1.0
		Lithium, Total	0.03 u	MG/KG	0.03	1.0
		Magnesium, Total	1.4 u	MG/KG	1.4	1.0
		Manganese, Total	0.02 u	MG/KG	0.02	1.0
		Molybdenum, Total	0.13 u	MG/KG	0.13	1.0
		Sodium, Total	3.9	MG/KG	2.5	1.0
		Nickel, Total	0.13 u	MG/KG	0.13	1.0
		Phosphorus, Total	0.90 u	MG/KG	0.90	1.0
		Lead, Total	0.31 u	MG/KG	0.31	1.0
		Antimony, Total	0.40 u	MG/KG	0.40	1.0
		Selenium, Total	0.36 u	MG/KG	0.36	1.0
		Silicon, Total	0.82 u	MG/KG	0.82	1.0
		Tin, Total	0.70	MG/KG	0.52	1.0
		Titanium, Total	0.05	MG/KG	0.04	1.0
		Thallium, Total	0.64 u	MG/KG	0.64	1.0
		Uranium, Total	2.1 u	MG/KG	2.1	1.0
		Vanadium, Total	0.09 u	MG/KG	0.09	1.0
		Zinc, Total	0.05 u	MG/KG	0.05	1.0
		Zirconium, Total	0.54 u	MG/KG	0.54	1.0
BLANK1	06C0030-MB1	Mercury, Total	0.02 u	MG/KG	0.02	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 03/28/06

CLIENT: TNUHANFORD RC-047 K0222 LVL LOT #: 0602L268

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J11736	Silver, Total	5.8	0.16u	5.8	100	1.0
		Aluminum, Total	7070	5480	231	687.3*	1.0
		Arsenic, Total	206	2.3	231	88.6	1.0
		Boron, Total	100	1.3	115	85.7	1.0
		Barium, Total	302	82.3	231	95.1	1.0
		Beryllium, Total	6.3	0.72	5.8	96.2	1.0
		Calcium, Total	6510	4440	2880	72.0	1.0
		Cadmium, Total	5.7	0.37	5.8	92.0	1.0
		Cobalt, Total	59.0	5.2	57.6	93.4	1.0
		Chromium, Total	33.0	9.6	23.1	101.3	1.0
		Copper, Total	41.4	12.9	28.8	99.0	1.0
		Iron, Total	16400	14100	115	1975 *	1.0
		Mercury, Total	0.19	0.03	0.16	102.5	1.0
		Potassium, Total	3240	886	2880	81.5	1.0
		Lithium, Total	127	5.6	115	105.5	1.0
		Magnesium, Total	5980	3190	2880	96.8	1.0
		Manganese, Total	274	206	57.6	117.9	1.0
		Molybdenum, Total	108	0.29	115	93.2	1.0
		Sodium, Total	2550	85.3	2880	85.3	1.0
		Nickel, Total	61.8	8.7	57.6	92.2	1.0
		Phosphorus, Total	1190	876	576	54.4	1.0
		Lead, Total	62.1	8.8	57.6	92.5	1.0
		Antimony, Total	30.8	0.46u	57.6	53.5	1.0
		Selenium, Total	183	0.42	231	79.3	1.0
		Silicon, Total	893	530	115	314.7*	1.0
		Tin, Total	108	0.83	115	92.6	1.0
		Titanium, Total	1220	885	115	290.9*	1.0
		Thallium, Total	210	0.74u	231	91.3	1.0
		Uranium, Total	261	2.4 u	288	90.6	1.0
		Vanadium, Total	93.0	32.8	57.6	104.5	1.0
		Zinc, Total	134	84.9	57.6	85.6	1.0
		Zirconium, Total	520	14.7	576	87.6	1.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 03/28/06

CLIENT: TNUHANFORD RC-047 K0222 LVL LOT #: 0602L268

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	J11736	Silver, Total	0.16u	0.16u	NC	1.0
		Aluminum, Total	5480	5310	3.1	1.0
		Arsenic, Total	2.3	3.2	32.7	1.0
		Boron, Total	1.3	1.1	16.7	1.0
		Barium, Total	82.3	90.3	9.3	1.0
		Beryllium, Total	0.72	0.79	8.3	1.0
		Calcium, Total	4440	4620	3.9	1.0
		Cadmium, Total	0.37	0.32	13.1	1.0
		Cobalt, Total	5.2	5.5	5.6	1.0
		Chromium, Total	9.6	9.6	0.00	1.0
		Copper, Total	12.9	12.8	0.78	1.0
		Iron, Total	14100	16200	13.3	1.0
		Mercury, Total	0.03	0.02	24.0	1.0
		Potassium, Total	886	770	14.0	1.0
		Lithium, Total	5.6	5.1	9.3	1.0
		Magnesium, Total	3190	2980	6.9	1.0
		Manganese, Total	206	263	24.4	1.0
		Molybdenum, Total	0.29	0.38	25.9	1.0
		Sodium, Total	85.3	91.2	6.7	1.0
		Nickel, Total	8.7	8.6	1.2	1.0
		Phosphorus, Total	876	1070	19.6	1.0
		Lead, Total	8.8	9.6	8.7	1.0
		Antimony, Total	0.46u	0.46u	NC	1.0
		Selenium, Total	0.42	0.42u	~~NC~~ 200	1.0
		Silicon, Total	530	544	2.6	1.0
		Tin, Total	0.83	2.1	87.1	1.0
		Titanium, Total	885	1350	41.6	1.0
		Thallium, Total	0.74u	0.74u	NC	1.0
		Uranium, Total	2.4 u	2.4 u	NC	1.0
		Vanadium, Total	32.8	42.8	26.5	1.0
		Zinc, Total	84.9	89.8	5.6	1.0
		Zirconium, Total	14.7	20.0	30.5	1.0

correct entry NW 3/28/06

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 03/28/06

CLIENT: TNUHANFORD RC-047 K0222 LVL LOT #: 0602L268

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	06L0122-LC1	Silver, LCS	48.7	50.0	MG/KG	97.4
		Aluminum, LCS	479	500	MG/KG	95.8
		Arsenic, LCS	876	1000	MG/KG	87.6
		Boron, LCS	457	500	MG/KG	91.4
		Barium, LCS	487	500	MG/KG	97.3
		Beryllium, LCS	25.0	25.0	MG/KG	100
		Calcium, LCS	2420	2500	MG/KG	96.7
		Cadmium, LCS	23.9	25.0	MG/KG	95.6
		Cobalt, LCS	244	250	MG/KG	97.8
		Chromium, LCS	51.0	50.0	MG/KG	102.0
		Copper, LCS	125	125	MG/KG	99.8
		Iron, LCS	499	500	MG/KG	99.8
		Potassium, LCS	2260	2500	MG/KG	90.6
		Lithium, LCS	496	500	MG/KG	99.3
		Magnesium, LCS	2330	2500	MG/KG	93.3
		Manganese, LCS	77.5	75.0	MG/KG	103.3
		Molybdenum, LCS	498	500	MG/KG	99.7
		Sodium, LCS	2240	2500	MG/KG	89.6
		Nickel, LCS	192	200	MG/KG	96.0
		Phosphorus, LCS	446	500	MG/KG	89.1
		Lead, LCS	236	250	MG/KG	94.2
		Antimony, LCS	276	300	MG/KG	92.2
		Selenium, LCS	808	1000	MG/KG	80.8
		Silicon, LCS	321	500	MG/KG	64.2
		Tin, LCS	486	500	MG/KG	97.2
		Titanium, LCS	494	500	MG/KG	98.7
		Thallium, LCS	924	1000	MG/KG	92.4
		Uranium, LCS	239	250	MG/KG	95.5
		Vanadium, LCS	252	250	MG/KG	100.9
		Zinc, LCS	93.7	100	MG/KG	93.7
		Zirconium, LCS	489	500	MG/KG	97.8
LCS1	06C0030-LC1	Mercury, LCS	6.9	6.2	MG/KG	110.9

Lionville Laboratory Use Only

J6021268

Custody Transfer Record/Lab Work Request

LVL Laboratory

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

See SRC

Client TNU-HANFORD SAF# RC-047

Est. Final Proj. Sampling Date

Project # 11343-6006-001-9999-00

Project Contact/Phone #

Lionville Laboratory Project Manager OJ

QC Spec Del Std TAT 30 Days

Date Rec'd 2/15/06 Date Due 3/17/06

		A	B	C			D	E		F				
Refrigerator #		G	G	G			G	G		G				
#/Type Container	Liquid													
	Solid	G	G	G			G	P		G				
Volume	Liquid													
	Solid	500	500	500			500	150		500				
Preservatives		—	—	—			—	—		—				
ANALYSES REQUESTED →		ORGANIC					TOT TPH	INORG		TPH DIESEL TPH GAS				
		VOA	BNA	~~Pest~~ PCB ~~Pest~~ Herb				Metal	CN					
		Lionville Laboratory Use Only												
			0625H	0PCB	0608H			IPHC	METALS(1)		0GRO 0DRO			

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected		0625H	0PCB	0608H			IPHC	METALS(1)		0GRO 0DRO				
001	J11736			So	2-13-06	1145		1	1	1			1	1		1				
002	J11741			↓	↓	1545		1	1	1			1	1		1				
003	J11742			↓	↓	1445		1	1	1			1	1		1				
004	J11743			↓	↓	1345		1	1	1			1	1		1				
005	J11744			↓	↓	1245		1	1	1			1	1		1				

Special Instructions:

METALS(1) = HSL + B, Li, Mo, Si, Sn, Ti, U, P, Zr

RUN MATRIX QC

DATE/REVISIONS:

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

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	2/15/06	0920

Relinquished by	Received by	Date	Time

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

0000000023

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-112	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location U Q SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. ERC-02-001	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES ALIONVILLE	Offsite Property No. A060288		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	Gamma Spec - (Full List)	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On: TPH-Gasoline Range - WTPH-G		
J11736	OTHER SOLID	2-13-06	1145			X	X	X	X	X	X		

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	2-13-06 1730	EAS LOCKED STORAGE	2-13-06 1730
EAS LOCKED STORAGE	02-14-06 0700	RZ Stiffler	2-14-06 / 0700
RZ Stiffler	2-14-06 1600	Fed Ex	
Fed Ex	2-15-06 0920		2-15-06 0921

SPECIAL INSTRUCTIONS

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

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-117	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location U S. SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. ERC-02-001	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. A060288		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G	
No. of Container(s)	1	1	1	1	1	1	1	1	
Volume	750g	5g	15g	50g	50g	50g	50g	50g	

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	Gamma Spec - (Full List)	Strontium-89,90 – Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On; TPH-Gasoline Range - WTPH-G		
J11741	OTHER SOLID	2-13-06	1545			X	X	X	X	X	X		

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JC JAMES BERNHARD	1770 2-13-06	JC EAS LOCKED STORAGE	1730 2-13-06
EAS LOCKED STORAGE	0700 02-14-06	RZ Steffler K.J. Steffl	0700 2-14-06
RZ Steffler K.J. Steffl	1600 2-14-06	Fed Ex	
Fed Ex	2-15-06 0920	J. Nemoy	2-15-06 0920

SPECIAL INSTRUCTIONS

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

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-118	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location U5, SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. ERC-02-001	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES, LIONVILLE	Offsite Property No. A060288		Bill of Lading/Air Bill No. SEE OSPC		

000000026

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Strontium-89,90 – Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On; TPH-Gasoline Range - WTPH-G		
Sample No. / Matrix * / Sample Date / Sample Time										
J11742 / OTHER SOLID / 2-13-06 / 1445			X	X	X	X	X	X		

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS
Relinquished By/Removed From: JAMES BERNHARD, Date/Time 2-13-06 1730	Received By/Stored In: EAS LOCKED STORAGE, Date/Time 2-13-06 1730	
Relinquished By/Removed From: EAS LOCKED STORAGE, Date/Time 02-14-06 0700	Received By/Stored In: RZ Stoffler, Date/Time 2-14-06 0700	
Relinquished By/Removed From: RZ Stoffler, Date/Time 2-14-06 1600	Received By/Stored In: Fed Ex, Date/Time	
Relinquished By/Removed From: Fed Ex, Date/Time 2-15-06 0920	Received By/Stored In: [illegible], Date/Time 2-15-06 0920	
Relinquished By/Removed From, Date/Time	Received By/Stored In, Date/Time	
Relinquished By/Removed From, Date/Time	Received By/Stored In, Date/Time	

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

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-119	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location U 5, SEDIMENT		SAF No. RC-047
Ice Chest No. ERC-02-001	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. A060288		Bill of Lading/Air Bill No. SEE OSPC

Price Code 9N

Air Quality ☐

Data Turnaround 45 Days

00000027

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On: TPH-Gasoline Range - WTPH-G		
Sample No.	Matrix *	Sample Date	Sample Time								
J11743	OTHER SOLID	2-13-06	1345			X	X	X	X	X	X

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS
Relinquished By/Removed From JAMES BERNHARD Date/Time 1770 2-13-06	Received By/Stored In EAS LOCKED STORAGE Date/Time 1730 2-13-06	
Relinquished By/Removed From EAS LOCKED STORAGE Date/Time 0700 02-14-06	Received By/Stored In RZ Stoffler Date/Time 0700 2-14-06	
Relinquished By/Removed From RZ Stoffler Date/Time 1600 2-14-06	Received By/Stored In Fed Ex Date/Time	
Relinquished By/Removed From Fed Ex Date/Time 2-15-06 0930	Received By/Stored In Date/Time 2-15-06 0930	
Relinquished By/Removed From Date/Time	Received By/Stored In Date/Time	
Relinquished By/Removed From Date/Time	Received By/Stored In Date/Time	

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

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-120	Page 1 of 1

Collector: TILLER JAMES BERNHARD	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH
Price Code: 9N	Data Turnaround: 45 Days	Air Quality ☐	
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: U 9, SEDIMENT	SAF No.: RC-047	
Ice Chest No.: ERC-02-001	Field Logbook No.: EL-1597	COA: BESRAS6520	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES (LIONVILLE)	Offsite Property No.: A060288	Bill of Lading/Air Bill No.: SEE OSPC	

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On; TPH-Gasoline Range - WTPH-G		
Sample No. / Matrix * / Sample Date / Sample Time										
J11744 / OTHER SOLID / 2-13-06 / 1245			X	X	X	X	X	X		

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS
Relinquished By/Removed From: JAMES BERNHARD; Date/Time: 2-13-06 1730	Received By/Stored In: EAS LOCKED STORAGE; Date/Time: 2-13-06 1730	
Relinquished By/Removed From: EAS LOCKED STORAGE; Date/Time: 02-14-06 0700	Received By/Stored In: RZ Stoffler; Date/Time: 2-14-06 0700	
Relinquished By/Removed From: RZ Stoffler; Date/Time: 2-14-06 1600	Received By/Stored In: Fed Ex; Date/Time:	
Relinquished By/Removed From: FedEx; Date/Time: 2-15-06 0920	Received By/Stored In: [illegible] 2-15-06 0920	
Relinquished By/Removed From: Date/Time:	Received By/Stored In: Date/Time:	
Relinquished By/Removed From: Date/Time:	Received By/Stored In: Date/Time:	

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

BHI-EE-011 (08/29/2005)

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD **Date:** 2-15-06

Purchase Order / Project# / SAF# / SOW# / Release #: RC-047

LvLI Batch # : 06021268 **Sample Custodian:** V. Heenan

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped — Carrier Fed Ex — Airbill# 7903 2234 5004

2. Custody seals on coolers or shipping container intact, signed and dated?	☑ Yes	☐ No	☐ No Seals	Comments
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No		
4. All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible?	☑ Yes	☐ No		
5. Samples received cooled or ambient? IR	Temp 21	°C	Cooler # ERC-~~02403~~ 02-001 (2-15-06)	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals	
7. coc signed and dated?	☑ Yes	☐ No		
8. Sample containers are intact?	☑ Yes	☐ No		
9. All samples on coc received? All samples received on coc?	☑ Yes	☐ No		
10. All sample label information matches coc?	☑ Yes	☐ No		
11. Samples properly preserved?	☑ Yes	☐ No		
12. Samples received within hold times? Short holds taken to wet lab?	☑ Yes	☐ No		
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 not within policy. See reverse side for policy)	☑ Yes	☐ No		
16. Project Manager contacted concerning discrepancies? name/date (or samples outside criteria)	☐ Yes	☐ No	☑ No Discrepancies	

SR-002-B

LVLI LIONVILLE LABORATORY INC

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNUHANFORD RC-047 K0222

RECEIVED APR 2006

DATE RECEIVED: 02/15/06 LVL LOT # :06021268

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J11736						
% SOLIDS	001	SO	06L%S014	02/13/06	02/21/06	02/22/06
PETROLEUM HYDROCARBO	001	SO	06LHC021	02/13/06	03/08/06	03/10/06
PETROLEUM HYDROCARBO	001 REP	SO	06LHC021	02/13/06	03/08/06	03/10/06
PETROLEUM HYDROCARBO	001 MS	SO	06LHC021	02/13/06	03/08/06	03/10/06
J11741						
% SOLIDS	002	SO	06L%S014	02/13/06	02/21/06	02/22/06
PETROLEUM HYDROCARBO	002	SO	06LHC021	02/13/06	03/08/06	03/10/06
J11742						
% SOLIDS	003	SO	06L%S014	02/13/06	02/21/06	02/22/06
PETROLEUM HYDROCARBO	003	SO	06LHC021	02/13/06	03/08/06	03/10/06
J11743						
% SOLIDS	004	SO	06L%S014	02/13/06	02/21/06	02/22/06
PETROLEUM HYDROCARBO	004	SO	06LHC021	02/13/06	03/08/06	03/10/06
J11744						
% SOLIDS	005	SO	06L%S014	02/13/06	02/21/06	02/22/06
PETROLEUM HYDROCARBO	005	SO	06LHC021	02/13/06	03/08/06	03/10/06

LAB QC:

PETROLEUM HYDROCARBO	MB1	S	06LHC021	N/A	03/08/06	03/10/06
PETROLEUM HYDROCARBO	MB1 BS	S	06LHC021	N/A	03/08/06	03/10/06

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-047 K0222
LVL#: 0602L268

W.O.#: 11343-606-001-9999-00
Date Received: 02-15-06

INORGANIC NARRATIVE

1. This narrative covers the analyses of 6 solid samples.

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

   LvLI is NELAP accredited by the state of Pennsylvania and holds over 20 additional state accreditations. For a complete list of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager.

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

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

5. The method blank for Petroleum Hydrocarbons (PHC) was within the method criteria.

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

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

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

9. Results for solid samples are reported on a dry 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

3/24/06
Date

njp\i02-268

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 15 pages.

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

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**

Lionville Laboratory Incorporated

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

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

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

ABBREVIATIONS

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

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

ANALYTICAL WET CHEMISTRY METHODS

1. ASTM Standard Methods.

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

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

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

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

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

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

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

f. Code of Federal Regulations.

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 03/15/06

CLIENT: TNUHANFORD RC-047 K0222

LVL LOT #: 0602L268

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J11736	% Solids	83.4		%	0.01	1.0
		Petroleum Hydrocarbons	159	u	MG/KG	159	1.0
-002	J11741	% Solids	76.0		%	0.01	1.0
		Petroleum Hydrocarbons	175	u	MG/KG	175	1.0
-003	J11742	% Solids	80.6		%	0.01	1.0
		Petroleum Hydrocarbons	165	u	MG/KG	165	1.0
-004	J11743	% Solids	83.5		%	0.01	1.0
		Petroleum Hydrocarbons	159	u	MG/KG	159	1.0
-005	J11744	% Solids	78.0		%	0.01	1.0
		Petroleum Hydrocarbons	171	u	MG/KG	171	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 03/15/06

CLIENT: TNUHANFORD RC-047 K0222 LVL LOT #: 0602L268

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

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK10	06LHC021-MB1	Petroleum Hydrocarbons	133	u	MG/KG	133	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 03/15/06

CLIENT: TNUHANFORD RC-047 K0222 LVL LOT #: 0602L268

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J11736	Petroleum Hydrocarbons	702	51.2	671	96.9	1.0
BLANK10	06LHC021-MB1	Petroleum Hydrocarbons	595	133 u	560	106.2	1.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 03/15/06

CLIENT: TNUHANFORD RC-047 K0222 LVL LOT #: 0602L268

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT		REPLICATE		RPD	DILUTION FACTOR(REP)
-001REP	J11736	Petroleum Hydrocarbons	159	u	159	u	NC	1.0

Lionville Laboratory Use Only
J6021268

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

See SRC 09

Client: TNU- HANFORD SAF# RC-047

Est. Final Proj. Sampling Date:

Project #: 11343-6006-001-9999-00

Project Contact/Phone #:

Lionville Laboratory Project Manager: OJ

QC: Spec Del: Std TAT: 30 Days

Date Rec'd: 2/15/06 Date Due: 3/17/06

		A	B	C			D	E		F				
Refrigerator #		6	6	6			6	6		6				
#/Type Container	Liquid													
	Solid	G	G	G			G	P		G				
Volume	Liquid													
	Solid	509	509	509			509	159		509				
Preservatives		—	—	—			—	—		—				
ANALYSES REQUESTED →		ORGANIC					TOT TPH	INORG		TPH DIESEL TPH GAS				
		VOA	BNA	~~PEST~~ PCB PEST ~~Herb~~				Metal	CN					
		↓ Lionville Laboratory Use Only ↓												
		0625H	0PRB	0608H			IPHC	METALS		OGRD ODRC				

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	0625H	0PRB	0608H	IPHC	METALS	OGRD ODRC
001	J11736			So	2-13-06	1145	1	1	1	1	1	1
002	J11741			↓	↓	1545	1	1	1	1	1	1
003	J11742			↓	↓	1445	1	1	1	1	1	1
004	J11743			↓	↓	1345	1	1	1	1	1	1
005	J11744			↓	↓	1245	1	1	1	1	1	1

Special Instructions:

METALS(1) = HSL+B, Li, Mo, Si, Sn, Ti, U, P, Zr

RUN MATRIX QC

DATE/REVISIONS:
1.
2.
3.
4.
5.
6.

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	2/15/06	0920

Relinquished by	Received by	Date	Time

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-112	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location U Gr SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. ERC-02-001	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES LIONVILLE	Offsite Property No. A060288		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		

SAMPLE ANALYSIS				Gamma Spec - (Full List)	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On: TPH-Gasoline Range - WTPH-G		
Sample No.	Matrix *	Sample Date	Sample Time										
J11736	OTHER SOLID	2-13-06	1145			X	X	X	X	X	X		

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS
Relinquished By/Removed From JAMES BERNHARD Date/Time 1730 2-13-06	Received By/Stored In EAS LOCKED STORAGE Date/Time 1730 2-13-06	
Relinquished By/Removed From EAS LOCKED STORAGE Date/Time 0700 02-14-06	Received By/Stored In RZ Stiffler Date/Time 2-14-06 / 0700	
Relinquished By/Removed From RZ Stiffler Date/Time 1600 WCH 2-14-06	Received By/Stored In Fed Ex Date/Time	
Relinquished By/Removed From Fed Ex 2-15-06 Date/Time 0920	Received By/Stored In Date/Time 2-15-06 0920	
Relinquished By/Removed From Date/Time	Received By/Stored In Date/Time	
Relinquished By/Removed From Date/Time	Received By/Stored In Date/Time	

Matrix *

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

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

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-117	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH
Price Code 9N	Data Turnaround 45 Days	Air Quality ☐	
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location U &, SEDIMENT		SAF No. RC-047
Ice Chest No. ERC-02-001	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX
Shipped To EBERLINE SERVICES, LIONVILLE	Offsite Property No. A060288		Bill of Lading/Air Bill No. SEE OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	Gamma Spec - (Full List)	Strontium-89,90 – Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On; TPH-Gasoline Range - WTPH-G		
J11741	OTHER SOLID	2-13-06	1545			X	X	X	X	X	X		

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	1730 2-13-06	EAS LOCKED STORAGE	1730 2-13-06
EAS LOCKED STORAGE	0900 02-14-06	RZ Stoffler R.J. Stoffler	0900 2-14-06
RZ Stoffler R.J. Stoffler	1600 2-14-06	Fed Ex	
Fed Ex	2-15-06 0920	P. Neumann	2-15-06 0920

SPECIAL INSTRUCTIONS

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

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-118	Page 1 of 1

Collector TILLER JAMES BERNHARD	Company Contact JOAN KESSNER	Telephone No. 375-4688	Project Coordinator KESSNER, JH	Price Code 9N	Data Turnaround 45 Days
Project Designation 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location U S, SEDIMENT		SAF No. RC-047	Air Quality ☐	
Ice Chest No. ERC-02-001	Field Logbook No. EL-1597	COA BESRAS6520	Method of Shipment FED EX		
Shipped To EBERLINE SERVICES, LIONVILLE	Offsite Property No. A060288		Bill of Lading/Air Bill No. SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On; TPH-Gasoline Range - WTPH-G		
Sample No. / Matrix * / Sample Date / Sample Time										
J11742 / OTHER SOLID / 2-13-06 / 1445			X	X	X	X	X	X		

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS
Relinquished By/Removed From JAMES BERNHARD Date/Time 2-13-06 1730	Received By/Stored In EAS LOCKED STORAGE Date/Time 2-13-06 1730	
Relinquished By/Removed From EAS LOCKED STORAGE Date/Time 02-14-06 0700	Received By/Stored In RZ Stoffler Date/Time 2-14-06 0700	
Relinquished By/Removed From RZ Stoffler Date/Time 2-14-06 1600	Received By/Stored In Fed Ex Date/Time	
Relinquished By/Removed From Fed Ex Date/Time 2-15-06 0920	Received By/Stored In Date/Time 2-15-06 0920	
Relinquished By/Removed From Date/Time	Received By/Stored In Date/Time	
Relinquished By/Removed From Date/Time	Received By/Stored In Date/Time	

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

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-119	Page 1 of 1

Collector: TILLER JAMES BERNHARD	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH	Price Code: 9N	Data Turnaround: 45 Days
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: U 5, SEDIMENT		SAF No.: RC-047	Air Quality: ☐	
Ice Chest No.: ERC-02-001	Field Logbook No.: EL-1597	COA: BESRAS6520	Method of Shipment: FED EX		
Shipped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: A060288		Bill of Lading/Air Bill No.: SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		

SAMPLE ANALYSIS

Sample No.	Matrix *	Sample Date	Sample Time	Gamma Spec - (Full List)	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On: TPH-Gasoline Range - WTPH-G		
J11743	OTHER SOLID	2-13-06	1345			X	X	X	X	X	X		

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

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
JAMES BERNHARD	1730 2-13-06	EAS LOCKED STORAGE	1730 2-13-06
EAS LOCKED STORAGE	02-14-06 0700	RZ Steffler	0700 2-14-06
RZ Steffler	1600 2-14-06	Fed Ex	
Fed Ex	2-15-06 0930		2-15-06 0930

SPECIAL INSTRUCTIONS

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

BHI-EE-011 (08/29/2005)

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-047-120	Page 1 of 1

Collector: TILLER JAMES BERNHARD	Company Contact: JOAN KESSNER	Telephone No.: 375-4688	Project Coordinator: KESSNER, JH	Price Code: 9N	Data Turnaround: 45 Days
Project Designation: 100 & 300 Area Component of the RCBRA Sediment and Ti	Sampling Location: U ?, SEDIMENT		SAF No.: RC-047	Air Quality ☐	
Ice Chest No.: ERC-02-001	Field Logbook No.: EL-1597	COA: BESRAS6520	Method of Shipment: FED EX		
Shipped To: EBERLINE SERVICES (LIONVILLE)	Offsite Property No.: A060288		Bill of Lading/Air Bill No.: SEE OSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

POTENTIAL RADIOACTIVE <DOT LIMITS

Special Handling and/or Storage

COOL 4C

Preservation	None	None	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C	Cool 4C		
Type of Container	G/P	G/P	G/P	aG	aG	aG	G	G		
No. of Container(s)	1	1	1	1	1	1	1	1		
Volume	750g	5g	15g	50g	50g	50g	50g	50g		
SAMPLE ANALYSIS	Gamma Spec - (Full List)	Strontium-89,90 -- Total Sr; Isotopic Thorium; Isotopic Uranium -	ICP Metals - 6010 (Full List); Mercury - 7471 - (CV)	Pesticides - 8081	PCBs - 8082	Semi-VOA - 8270A (TCL)	TPH (Total) - 418.1	TPH-Diesel Range - WTPH-D - Add On: TPH-Gasoline Range - WTPH-G		
Sample No. / Matrix * / Sample Date / Sample Time										
J11744 / OTHER SOLID / 2-13-06 / 1245			X	X	X	X	X	X		

CHAIN OF POSSESSION	Sign/Print Names	SPECIAL INSTRUCTIONS
Relinquished By/Removed From: JAMES BERNHARD, Date/Time 2-13-06 1730	Received By/Stored In: EAS LOCKED STORAGE, Date/Time 2-13-06 1730	
Relinquished By/Removed From: EAS LOCKED STORAGE, Date/Time 02-14-06 0700	Received By/Stored In: RZ Stoffler, Date/Time 2-14-06 0700	
Relinquished By/Removed From: RZ Stoffler, Date/Time 2-14-06 1600	Received By/Stored In: Fed Ex, Date/Time	
Relinquished By/Removed From: Fed Ex, Date/Time 2-15-06 0920	Received By/Stored In: [illegible], Date/Time 2-15-06 0920	
Relinquished By/Removed From, Date/Time	Received By/Stored In, Date/Time	
Relinquished By/Removed From, Date/Time	Received By/Stored In, Date/Time	

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

BHI-EE-011 (08/29/2005)

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD

Date: 2-15-06

Purchase Order / Project# / SAF# / SOW# / Release #: RC-047

LvLI Batch # : 06021268

Sample Custodian: V. Heenan

NOTE: EXPLAIN ALL DISCREPANCIES

1.	Samples Hand Delivered or Shipped	Carrier Fed Ex		Airbill# 7903 2234 5004	
2.	Custody seals on coolers or shipping container intact, signed and dated?	☑ Yes	☐ No	☐ No Seals	Comments
3.	Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No		
4.	All expected paperwork received (coc and other client specific information) sealed in plastic bag and easily accessible?	☑ Yes	☐ No		
5.	Samples received cooled or ambient? IR	Temp 2.1	°C	Cooler # ERC. ~~02403~~ 02-001 M2-15-06	
6.	Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals	
7.	coc signed and dated?	☑ Yes	☐ No		
8.	Sample containers are intact?	☑ Yes	☐ No		
9.	All samples on coc received? All samples received on coc?	☑ Yes	☐ No		
10.	All sample label information matches coc?	☑ Yes	☐ No		
11.	Samples properly preserved?	☑ Yes	☐ No		
12.	Samples received within hold times? Short holds taken to wet lab?	☑ Yes	☐ No		
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 not within policy. See reverse side for policy)	☑ Yes	☐ No		
16.	Project Manager contacted concerning discrepancies? name/date (or samples outside criteria)	☐ Yes	☐ No	☑ No Discrepancies	

SR-002-B

LVLI LIONVILLE LABORATORY INC.