0074394

SAF-RC-031
100-F Burial Grounds Remaining Sites - Soil Quick Turn
FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

Randy Coffman	X9-07	KW 11/6/07 INITIAL/DATE
Jeanette Duncan	H4-21	KW 11/6/07 INITIAL/DATE

RECEIVED
NOV 14 2007
EDMC

COMMENTS:

SDG: K01007 **SAF-RC-031**

Rad only Chem only X Rad & Chem

X Complete Partial

Waste Site: 100-F-26:9 Pipeline

EBERLINE
SERVICES

RECEIVED
NOV 2007

October 31, 2007

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

Reference: **P.O. #630**
Eberline Services R7-10-151-7700, SDG K1007

Dear Ms. Kessner:

Enclosed is a data report for two solid (soil) samples designated under SAF No. RC-031 received at Eberline Services on October 25, 2007. The samples were analyzed according to the accompanying chain-of-custody document.

Please call if you have any questions concerning this report.

Sincerely,

For 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 K0994 was composed of one solid (other solid) sample designated under SAF No. RC-055 with a Project Designation of: 118-K-1 Burial Grounds-Other Solid Quick Turn.

The samples were received as stated on the Chain-of-Custody document. Any discrepancies are noted on the Eberline Services Sample Receipt Checklist. The results were transmitted to WCH via e-mail on October 30, 2007.

2.0 ANALYSIS NOTES

2.1 Gamma Spectroscopy

No problems were encountered during the course of the analyses.

3.0 Case Narrative Certification Statement

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

FOR **Melissa C. Mannion**
Senior Program Manager

10/31/07
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 K1007

SDG	7700
Contact	Melissa C. Mannion

Client	Hanford
Contract	No. 630
Case no	SDG_K1007

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

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

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Prepared by

Reviewed by

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-TOC
Version	3.06
Report date	10/30/07

SDG 7700
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K1007

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 10/30/07

ABOUT THE DATA SUMMARY SECTION

DUPLICATES

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

MATRIX SPIKES

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

DATA SHEETS

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

METHOD SUMMARIES

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

REPORT GUIDES

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1007

SDG 7700
Contact Melissa C. Mannion

LAB SAMPLE SUMMARY

Client Hanford
Contract No. 630
Case no SDG K1007

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAF NO	CHAIN OF CUSTODY	COLLECTED
R710151-01	J15W94	100-F-26:9 Pipeline	SOLID		RC-031	RC-031-110	10/23/07 14:00
R710151-02	J15W95	100-F-26:9 Pipeline	SOLID		RC-031	RC-031-110	10/23/07 14:00
R710151-03	Lab Control Sample		SOLID		RC-031		
R710151-04	Method Blank		SOLID		RC-031		
R710151-05	Duplicate (R710151-02)	100-F-26:9 Pipeline	SOLID		RC-031		10/23/07 14:00

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LS
Version 3.06
Report date 10/30/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1007

QC SUMMARY

SDG 7700
Contact Melissa C. Mannion

Client Hanford
Contract No. 630
Case no SDG K1007

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
7700	RC-031-110	J15W94	SOLID	83.3	1084 g		10/25/07	2	R710151-01	7700-001
		J15W95	SOLID	85.8	1109 g		10/25/07	2	R710151-02	7700-002
		Method Blank	SOLID						R710151-04	7700-004
		Lab Control Sample	SOLID						R710151-03	7700-003
		Duplicate (R710151-02)	SOLID	85.8	1109 g		10/25/07	2	R710151-05	7700-005

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-QS
Version 3.06
Report date 10/30/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1007

SDG 7700
Contact Melissa C. Mannion

PREP BATCH SUMMARY

Client Hanford
Contract No. 630
Case no SDG K1007

TEST	MATRIX	METHOD	PREPARATION BATCH	ERROR 2σ %	PLANCHETS ANALYZED CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	MS/ORIG	QUALIFIERS
Gamma Spectroscopy												
GAM	SOLID	Gamma Scan	6133-012	15.0	2			1	1	1/1		

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

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-PBS
Version 3.06
Report date 10/30/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1007

SDG 7700
Contact Melissa C. Mannion

LAB WORK SUMMARY

Client Hanford
Contract No. 630
Case no SDG K1007

LAB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
R710151-01 10/23/07 10/25/07	J15W94 100-F-26:9 Pipeline RC-031-110	RC-031	SOLID	7700-001	GAM		10/26/07	10/29/07	CSS	Gamma Scan
R710151-02 10/23/07 10/25/07	J15W95 100-F-26:9 Pipeline RC-031-110	RC-031	SOLID	7700-002	GAM		10/26/07	10/29/07	CSS	Gamma Scan
R710151-03	Lab Control Sample	RC-031	SOLID	7700-003	GAM		10/26/07	10/29/07	CSS	Gamma Scan
R710151-04	Method Blank	RC-031	SOLID	7700-004	GAM		10/26/07	10/29/07	CSS	Gamma Scan
R710151-05 10/23/07 10/25/07	Duplicate (R710151-02) 100-F-26:9 Pipeline	RC-031	SOLID	7700-005	GAM		10/27/07	10/29/07	CSS	Gamma Scan

COUNTS OF TESTS BY SAMPLE TYPE

TEST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
GAM	RC-031	Gamma Scan	GAMMA_GS	2			1	1	1	5
TOTALS				2			1	1	1	5

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 10/30/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1007

7700-004 Method Blank

METHOD BLANK

SDG	7700	Client/Case no	Hanford	SDG K1007	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R710151-04	Client sample id	Method Blank		
Dept sample id	7700-004	Material/Matrix		SOLID	
		SAF No	RC-031		

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Potassium 40	13966-00-2	U		0.169		U	GAM
Cobalt 60	10198-40-0	U		0.007	0.050	U	GAM
Cesium 137	10045-97-3	U		0.007	0.100	U	GAM
Radium 226	13982-63-3	U		0.014	0.100	U	GAM
Radium 228	15262-20-1	U		0.030	0.200	U	GAM
Europium 152	14683-23-9	U		0.019	0.100	U	GAM
Europium 154	15585-10-1	U		0.020	0.100	U	GAM
Europium 155	14391-16-3	U		0.014	0.100	U	GAM
Thorium 228	14274-82-9	U		0.010		U	GAM
Thorium 232	TH-232	U		0.030		U	GAM
Uranium 235	15117-96-1	U		0.027		U	GAM
Uranium 238	U-238	U		0.801		U	GAM
Americium 241	14596-10-2	U		0.008		U	GAM
Silver 108m	14391-65-2	U		0.005		U	GAM
Barium 133	13981-41-4	U		0.007		U	GAM

100-F BurialGrndsRemainSites-SoilQT

QC-BLANK #63317

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	10/30/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1007

7700-003

Lab Control Sample

LAB CONTROL SAMPLE

SDG 7700

Contact Melissa C. Mannion

Client/Case no Hanford SDG K1007

Contract No. 630

Lab sample id R710151-03

Dept sample id 7700-003

Client sample id Lab Control Sample

Material/Matrix SOLID

SAF No RC-031

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
Cobalt 60	0.657	0.015	0.005	0.050		GAM	0.641	0.026	102	76-124	80-120
Cesium 137	0.694	0.014	0.008	0.100		GAM	0.651	0.026	107	75-125	80-120

100-F BurialGrndsRemainSites-SoilQT

QC-LCS #63316

Lab id EBRLNE

Protocol Hanford

Version Ver 1.0

Form DVD-LCS

Version 3.06

Report date 10/30/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1007

7700-005 J15W95

DUPLICATE

SDG	7700			Client/Case no	Hanford SDG K1007
Contact	Melissa C. Mannion			Contract	No. 630
	DUPLICATE		ORIGINAL		
Lab sample id	R710151-05	Lab sample id	R710151-02	Client sample id	J15W95
Dept sample id	7700-005	Dept sample id	7700-002	Location/Matrix	100-F-26:9 Pipeline SOLID
		Received	10/25/07	Collected/Weight	10/23/07 14:00 1109 g
% solids	85.8	% solids	85.8	Custody/SAF No	RC-031-110 RC-031

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
Potassium 40	13.7	0.70	0.298			GAM	13.3	0.28	0.118		3	33	0.3
Cobalt 60	U		0.031	0.050	U	GAM	U		0.012	U	-		1.1
Cesium 137	U		0.031	0.100	U	GAM	U		0.011	U	-		1.2
Radium 226	0.419	0.062	0.062	0.100		GAM	0.426	0.022	0.022		2	39	0.1
Radium 228	0.718	0.14	0.136	0.200		GAM	0.668	0.057	0.054		7	46	0.5
Europium 152	U		0.076	0.100	U	GAM	U		0.029	U	-		1.1
Europium 154	U		0.105	0.100	U	GAM	U		0.042	U	-		1.1
Europium 155	U		0.089	0.100	U	GAM	U		0.050	U	-		0.8
Thorium 228	0.642	0.037	0.036			GAM	0.623	0.017	0.016		3	33	0.3
Thorium 232	0.718	0.14	0.136			GAM	0.668	0.057	0.054		7	46	0.5
Uranium 235	U		0.137		U	GAM	U		0.053	U	-		1.1
Uranium 238	U		3.58		U	GAM	U		1.41	U	-		1.1
Americium 241	U		0.204		U	GAM	U		0.095	U	-		1.0
Silver 108m	U		0.023		U	GAM	U		0.009	U	-		1.1
Barium 133	U		0.036		U	GAM	U		0.014	U	-		1.1

100-F BurialGrndsRemainSites-SoilQT

QC-DUP#2 63318

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	10/30/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1007

7700-001 J15W94

DATA SHEET

SDG	7700	Client/Case no	Hanford	SDG K1007	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R710151-01	Client sample id	J15W94		
Dept sample id	7700-001	Location/Matrix	100-F-26:9 Pipeline	SOLID	
Received	10/25/07	Collected/Weight	10/23/07 14:00	1084 g	
% solids	83.3	Custody/SAF No	RC-031-110	RC-031	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Potassium 40	13966-00-2	13.5	0.85	0.373			GAM
Cobalt 60	10198-40-0	U		0.037	0.050	U	GAM
Cesium 137	10045-97-3	U		0.034	0.100	U	GAM
Radium 226	13982-63-3	0.460	0.070	0.063	0.100		GAM
Radium 228	15262-20-1	0.681	0.13	0.127	0.200		GAM
Europium 152	14683-23-9	U		0.085	0.100	U	GAM
Europium 154	15585-10-1	U		0.123	0.100	U	GAM
Europium 155	14391-16-3	U		0.072	0.100	U	GAM
Thorium 228	14274-82-9	0.705	0.048	0.044			GAM
Thorium 232	TH-232	0.681	0.13	0.127			GAM
Uranium 235	15117-96-1	U		0.130		U	GAM
Uranium 238	U-238	U		4.27		U	GAM
Americium 241	14596-10-2	U		0.044		U	GAM
Silver 108m	14391-65-2	U		0.025		U	GAM
Barium 133	13981-41-4	U		0.038		U	GAM

100-F BurialGrndsRemainSites-SoilQT

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	10/30/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1007

7700-002 J15W95

DATA SHEET

SDG	7700	Client/Case no	Hanford	SDG K1007	
Contact	Melissa C. Mannion	Contract	No. 630		
Lab sample id	R710151-02	Client sample id	J15W95		
Dept sample id	7700-002	Location/Matrix	100-F-26:9 Pipeline	SOLID	
Received	10/25/07	Collected/Weight	10/23/07 14:00	1109 g	
% solids	85.8	Custody/SAF No	RC-031-110	RC-031	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Potassium 40	13966-00-2	13.3	0.28	0.118			GAM
Cobalt 60	10198-40-0	U		0.012	0.050	U	GAM
Cesium 137	10045-97-3	U		0.011	0.100	U	GAM
Radium 226	13982-63-3	0.426	0.022	0.022	0.100		GAM
Radium 228	15262-20-1	0.668	0.057	0.054	0.200		GAM
Europium 152	14683-23-9	U		0.029	0.100	U	GAM
Europium 154	15585-10-1	U		0.042	0.100	U	GAM
Europium 155	14391-16-3	U		0.050	0.100	U	GAM
Thorium 228	14274-82-9	0.623	0.017	0.016			GAM
Thorium 232	TH-232	0.668	0.057	0.054			GAM
Uranium 235	15117-96-1	U		0.053		U	GAM
Uranium 238	U-238	U		1.41		U	GAM
Americium 241	14596-10-2	U		0.095		U	GAM
Silver 108m	14391-65-2	U		0.009		U	GAM
Barium 133	13981-41-4	U		0.014		U	GAM

100-F BurialGrndsRemainSites-SoilQT

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	10/30/07

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1007

Test GAM Matrix SOLID
SDG 7700
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GAMMA SCAN

GAMMA SPECTROSCOPY

Client Hanford
Contract No. 630
Contract SDG K1007

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Cobalt 60		Cesium 137	
Preparation batch 6133-012								
R710151-01			7700-001	J15W94	U		U	
R710151-02			7700-002	J15W95	U		U	
R710151-03			7700-003	Lab Control Sample	ok		ok	
R710151-04			7700-004	Method Blank	U		U	
R710151-05			7700-005	Duplicate (R710151-02)	-	U	-	U
Nominal values and limits from method 100-F BurialGrndsRemainSites-SoilQT				RDLs (pCi/g)	0.050		0.100	

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 6133-012 2σ prep error 15.0 % Reference Lab Notebook #6133, pg. 12																
R710151-01			J15W94	7.32	730					102			3	10/26/07	10/26	MB,06,00
R710151-02			J15W95	2.42	755					986			3	10/26/07	10/26	MB,05,00
R710151-03			Lab Control Sample	0.005	730					986				10/26/07	10/26	MB,07,00
R710151-04			Method Blank	1.61	730					984				10/26/07	10/26	MB,06,00
R710151-05			Duplicate (R710151-02)	6.01	755					156			4	10/26/07	10/27	MB,05,00
Nominal values and limits from method				0.050	730					100			180			

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

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 3.47 ± 6.15
YIELD ____ ± ____

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 10/30/07

SDG 7700
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K1007

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 10/30/07

SDG 7700
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K1007

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 10/30/07

SDG 7700
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K1007

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 10/30/07

SDG 7700
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. 630
Case no SDG K1007

DATA SHEET

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

The following notes apply to this report:

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

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

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

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

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

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

The following qualifiers are defined by the DVD system:

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

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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.

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GUIDE, cont.

Client Hanford
Contract No. 630
Case no SDG K1007

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.

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REPORT GUIDE

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Case no SDG K1007

LAB CONTROL SAMPLE

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

The following notes apply to this report:

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

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

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

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

* The first, computed limits for the recovery reflect:

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

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

  2. The error of ADDED.

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

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

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

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Protocol Hanford
Version Ver 1.0
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Contract No. 630
Case no SDG K1007

DUPLICATE

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

The following notes apply to this report:

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

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

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

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

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

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

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

  This value reported for this limit is at most 999.

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

  1. A fixed percentage specified in the protocol.

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GUIDE, cont.

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DUPLICATE

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

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

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

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

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

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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

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MATRIX SPIKE

for the recovery.

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

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

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SDG 7700
Contact Melissa C. Mannion

REPORT GUIDE

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Contract No. 630
Case no SDG K1007

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'

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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-031-110	Page 1 of 1

Collector T. Welch-Koelling	Company Contact R T Coffman	Telephone No. 528-6409	Project Coordinator KESSNER, JH	Price Code 8A	Data Turnaround 3 DAY
Project Designation 100-F Burial Grounds Remaining Sites - Soil Quick Turn	Sampling Location 100-F-26:9 Pipeline K1007 (7700)		SAF No. RC-031		
Ice Chest No. AFS-04-006	Field Logbook No. EFL-1174-3	COA R10F262000	Method of Shipment Fed Ex		
Shipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. ~~AFS 04 006~~ A080011		Bill of Lading/Air Bill No. See DSPC		

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

NA

Preservation	None	Cool 4C	Cool 4C	None							
Type of Container	P	P	aG	P							
No. of Container(s)	1	1	1	1							
Volume	125mL	125mL	60mL	500mL							
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	Semi-VOA - 8270A (TCL)	See item (2) in Special Instructions.							

Sample No.	Matrix *	Sample Date	Sample Time										
J15W94	SOIL	10-23-07	1400				X						
J15W95	SOIL	10-23-07	1400				X						

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time 10/23/07 1420	Received By/Stored In	Date/Time 1420
Relinquished By/Removed From	Date/Time 1530	Received By/Stored In	Date/Time 1530
Relinquished By/Removed From	Date/Time	Received By/Stored In	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
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 (Client List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7470 - (CV)
(2) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241, Barium-133, Silver-108 metastable, Uranium-235, Uranium-238}

Sampler unavailable to relinquish samples from 3728 Ref # 2B
3728 Custodian removed samples for shipping on 10/24/07

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

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

WCH-EE-011

EBERLINE SERVICES

RICHMOND, CA LABORATORY

SAMPLE RECEIPT CHECKLIST

HK 10/25/07

Client: W.C. HANFORD City RICHLAND State WA

Date/Time received 10/25/07 09:15 CoC No. RC-031-110

Container I.D. No. AFS-04-006 Requested TAT (Days) 3 P.O. Received Yes [ ] No [ ]

INSPECTION

1. Custody seals on shipping container intact? Yes [X] No [ ] N/A [ ]
2. Custody seals on shipping container dated & signed? Yes [X] No [ ] N/A [ ]
3. Custody seals on sample containers intact? Yes [X] No [ ] N/A [ ]
4. Custody seals on sample containers dated & signed? Yes [X] No [ ] N/A [ ]
5. Packing material is: Wet [ ] Dry [X]
6. Number of samples in shipping container: 2 Sample Matrix S
7. Number of containers per sample: 1 (Or see CoC _____)
8. Samples are in correct container Yes [X] No [ ]
9. Paperwork agrees with samples? Yes [X] No [ ]
10. Samples have: Tape [ ] Hazard labels [ ] Rad labels [ ] Appropriate sample labels [X]
11. Samples are: In good condition [X] Leaking [ ] Broken Container [ ] Missing [ ]
12. Samples are: Preserved [ ] Not preserved [ ] pH _____ Preservative _____
13. Describe any anomalies:
14. Was P.M. notified of any anomalies? Yes [ ] No [ ] Date _____
15. Inspected by MZY Date: 10/25/07 Time: 10:15

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.

2 November 2007

RECEIVED
NOV 2007

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

Subject: Analytical Data Package

Dear Ms. Kessner:

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

LvLI Batch #	0710L101
SDG #	K1007
SAF #	RC-031
Date Received	10/25/07
# Samples	2
Matrix	OTHER SOLID
Volatiles	
Semivolatiles	X
Pest/PCB	
Glycols	
DRO/KRO/GRO	
GC Alcohols	
Herbicides	
Metals	X
Inorganics	X

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

Sincerely,
Lionville Laboratory Incorporated

Orlette S. Johnson
Project Manager

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

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

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD RC-031 K1007

RECEIVED
NOV 2007

DATE RECEIVED: 10/25/07 LVL LOT # :07L101

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J15W94						
SILVER, TOTAL	001	S	07L0554	10/23/07	10/26/07	10/29/07
SILVER, TOTAL	001 REP	S	07L0554	10/23/07	10/26/07	10/29/07
SILVER, TOTAL	001 MS	S	07L0554	10/23/07	10/26/07	10/29/07
ALUMINUM, TOTAL	001	S	07L0554	10/23/07	10/26/07	10/29/07
ALUMINUM, TOTAL	001 REP	S	07L0554	10/23/07	10/26/07	10/29/07
ALUMINUM, TOTAL	001 MS	S	07L0554	10/23/07	10/26/07	10/29/07
ARSENIC, TOTAL	001	S	07L0554	10/23/07	10/26/07	10/29/07
ARSENIC, TOTAL	001 REP	S	07L0554	10/23/07	10/26/07	10/29/07
ARSENIC, TOTAL	001 MS	S	07L0554	10/23/07	10/26/07	10/29/07
BORON, TOTAL	001	S	07L0554	10/23/07	10/26/07	10/29/07
BORON, TOTAL	001 REP	S	07L0554	10/23/07	10/26/07	10/29/07
BORON, TOTAL	001 MS	S	07L0554	10/23/07	10/26/07	10/29/07
BARIUM, TOTAL	001	S	07L0554	10/23/07	10/26/07	10/29/07
BARIUM, TOTAL	001 REP	S	07L0554	10/23/07	10/26/07	10/29/07
BARIUM, TOTAL	001 MS	S	07L0554	10/23/07	10/26/07	10/29/07
BERYLLIUM, TOTAL	001	S	07L0554	10/23/07	10/26/07	10/29/07
BERYLLIUM, TOTAL	001 REP	S	07L0554	10/23/07	10/26/07	10/29/07
BERYLLIUM, TOTAL	001 MS	S	07L0554	10/23/07	10/26/07	10/29/07
CALCIUM, TOTAL	001	S	07L0554	10/23/07	10/26/07	10/29/07
CALCIUM, TOTAL	001 REP	S	07L0554	10/23/07	10/26/07	10/29/07
CALCIUM, TOTAL	001 MS	S	07L0554	10/23/07	10/26/07	10/29/07
CADMIUM, TOTAL	001	S	07L0554	10/23/07	10/26/07	10/29/07
CADMIUM, TOTAL	001 REP	S	07L0554	10/23/07	10/26/07	10/29/07
CADMIUM, TOTAL	001 MS	S	07L0554	10/23/07	10/26/07	10/29/07
COBALT, TOTAL	001	S	07L0554	10/23/07	10/26/07	10/29/07
COBALT, TOTAL	001 REP	S	07L0554	10/23/07	10/26/07	10/29/07
COBALT, TOTAL	001 MS	S	07L0554	10/23/07	10/26/07	10/29/07
CHROMIUM, TOTAL	001	S	07L0554	10/23/07	10/26/07	10/29/07
CHROMIUM, TOTAL	001 REP	S	07L0554	10/23/07	10/26/07	10/29/07
CHROMIUM, TOTAL	001 MS	S	07L0554	10/23/07	10/26/07	10/29/07
COPPER, TOTAL	001	S	07L0554	10/23/07	10/26/07	10/29/07
COPPER, TOTAL	001 REP	S	07L0554	10/23/07	10/26/07	10/29/07
COPPER, TOTAL	001 MS	S	07L0554	10/23/07	10/26/07	10/29/07
IRON, TOTAL	001	S	07L0554	10/23/07	10/26/07	10/29/07
IRON, TOTAL	001 REP	S	07L0554	10/23/07	10/26/07	10/29/07

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD RC-031

DATE RECEIVED: 10/25/07 LVL LOT # :0710L101

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
IRON, TOTAL	001 MS	S	07L0554	10/23/07	10/26/07	10/29/07
MERCURY, TOTAL	001	S	07C0197	10/23/07	10/29/07	10/29/07
MERCURY, TOTAL	001 REP	S	07C0197	10/23/07	10/29/07	10/29/07
MERCURY, TOTAL	001 MS	S	07C0197	10/23/07	10/29/07	10/29/07
POTASSIUM, TOTAL	001	S	07L0554	10/23/07	10/26/07	10/29/07
POTASSIUM, TOTAL	001 REP	S	07L0554	10/23/07	10/26/07	10/29/07
POTASSIUM, TOTAL	001 MS	S	07L0554	10/23/07	10/26/07	10/29/07
MAGNESIUM, TOTAL	001	S	07L0554	10/23/07	10/26/07	10/29/07
MAGNESIUM, TOTAL	001 REP	S	07L0554	10/23/07	10/26/07	10/29/07
MAGNESIUM, TOTAL	001 MS	S	07L0554	10/23/07	10/26/07	10/29/07
MANGANESE, TOTAL	001	S	07L0554	10/23/07	10/26/07	10/29/07
MANGANESE, TOTAL	001 REP	S	07L0554	10/23/07	10/26/07	10/29/07
MANGANESE, TOTAL	001 MS	S	07L0554	10/23/07	10/26/07	10/29/07
MOLYBDENUM, TOTAL	001	S	07L0554	10/23/07	10/26/07	10/29/07
MOLYBDENUM, TOTAL	001 REP	S	07L0554	10/23/07	10/26/07	10/29/07
MOLYBDENUM, TOTAL	001 MS	S	07L0554	10/23/07	10/26/07	10/29/07
SODIUM, TOTAL	001	S	07L0554	10/23/07	10/26/07	10/29/07
SODIUM, TOTAL	001 REP	S	07L0554	10/23/07	10/26/07	10/29/07
SODIUM, TOTAL	001 MS	S	07L0554	10/23/07	10/26/07	10/29/07
NICKEL, TOTAL	001	S	07L0554	10/23/07	10/26/07	10/29/07
NICKEL, TOTAL	001 REP	S	07L0554	10/23/07	10/26/07	10/29/07
NICKEL, TOTAL	001 MS	S	07L0554	10/23/07	10/26/07	10/29/07
LEAD, TOTAL	001	S	07L0554	10/23/07	10/26/07	10/29/07
LEAD, TOTAL	001 REP	S	07L0554	10/23/07	10/26/07	10/29/07
LEAD, TOTAL	001 MS	S	07L0554	10/23/07	10/26/07	10/29/07
ANTIMONY, TOTAL	001	S	07L0554	10/23/07	10/26/07	10/29/07
ANTIMONY, TOTAL	001 REP	S	07L0554	10/23/07	10/26/07	10/29/07
ANTIMONY, TOTAL	001 MS	S	07L0554	10/23/07	10/26/07	10/29/07
SELENIUM, TOTAL	001	S	07L0554	10/23/07	10/26/07	10/29/07
SELENIUM, TOTAL	001 REP	S	07L0554	10/23/07	10/26/07	10/29/07
SELENIUM, TOTAL	001 MS	S	07L0554	10/23/07	10/26/07	10/29/07
SILICON, TOTAL	001	S	07L0554	10/23/07	10/26/07	10/29/07
SILICON, TOTAL	001 REP	S	07L0554	10/23/07	10/26/07	10/29/07
SILICON, TOTAL	001 MS	S	07L0554	10/23/07	10/26/07	10/29/07
VANADIUM, TOTAL	001	S	07L0554	10/23/07	10/26/07	10/29/07
VANADIUM, TOTAL	001 REP	S	07L0554	10/23/07	10/26/07	10/29/07
VANADIUM, TOTAL	001 MS	S	07L0554	10/23/07	10/26/07	10/29/07
ZINC, TOTAL	001	S	07L0554	10/23/07	10/26/07	10/29/07

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD RC-031 K1007

DATE RECEIVED: 10/25/07 LVL LOT # :0710L101

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
ZINC, TOTAL	001 REP	S	07L0554	10/23/07	10/26/07	10/29/07
ZINC, TOTAL	001 MS	S	07L0554	10/23/07	10/26/07	10/29/07
J15W95						
SILVER, TOTAL	002	S	07L0554	10/23/07	10/26/07	10/29/07
ALUMINUM, TOTAL	002	S	07L0554	10/23/07	10/26/07	10/29/07
ARSENIC, TOTAL	002	S	07L0554	10/23/07	10/26/07	10/29/07
BORON, TOTAL	002	S	07L0554	10/23/07	10/26/07	10/29/07
BARIUM, TOTAL	002	S	07L0554	10/23/07	10/26/07	10/29/07
BERYLLIUM, TOTAL	002	S	07L0554	10/23/07	10/26/07	10/29/07
CALCIUM, TOTAL	002	S	07L0554	10/23/07	10/26/07	10/29/07
CADMIUM, TOTAL	002	S	07L0554	10/23/07	10/26/07	10/29/07
COBALT, TOTAL	002	S	07L0554	10/23/07	10/26/07	10/29/07
CHROMIUM, TOTAL	002	S	07L0554	10/23/07	10/26/07	10/29/07
COPPER, TOTAL	002	S	07L0554	10/23/07	10/26/07	10/29/07
IRON, TOTAL	002	S	07L0554	10/23/07	10/26/07	10/29/07
MERCURY, TOTAL	002	S	07C0197	10/23/07	10/29/07	10/29/07
POTASSIUM, TOTAL	002	S	07L0554	10/23/07	10/26/07	10/29/07
MAGNESIUM, TOTAL	002	S	07L0554	10/23/07	10/26/07	10/29/07
MANGANESE, TOTAL	002	S	07L0554	10/23/07	10/26/07	10/29/07
MOLYBDENUM, TOTAL	002	S	07L0554	10/23/07	10/26/07	10/29/07
SODIUM, TOTAL	002	S	07L0554	10/23/07	10/26/07	10/29/07
NICKEL, TOTAL	002	S	07L0554	10/23/07	10/26/07	10/29/07
LEAD, TOTAL	002	S	07L0554	10/23/07	10/26/07	10/29/07
ANTIMONY, TOTAL	002	S	07L0554	10/23/07	10/26/07	10/29/07
SELENIUM, TOTAL	002	S	07L0554	10/23/07	10/26/07	10/29/07
SILICON, TOTAL	002	S	07L0554	10/23/07	10/26/07	10/29/07
VANADIUM, TOTAL	002	S	07L0554	10/23/07	10/26/07	10/29/07
ZINC, TOTAL	002	S	07L0554	10/23/07	10/26/07	10/29/07

LAB QC:

SILVER LABORATORY	LC1 BS	W	07L0554	N/A	10/26/07	10/29/07
SILVER, TOTAL	MB1	W	07L0554	N/A	10/26/07	10/29/07
ALUMINUM LABORTORY	LC1 BS	W	07L0554	N/A	10/26/07	10/29/07
ALUMINUM, TOTAL	MB1	W	07L0554	N/A	10/26/07	10/29/07
ARSENIC LABORATORY	LC1 BS	W	07L0554	N/A	10/26/07	10/29/07

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD RC-031

DATE RECEIVED: 10/25/07 LVL LOT # :0710L101

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
ARSENIC, TOTAL	MB1	W	07L0554	N/A	10/26/07	10/29/07
BORON LABORATORY	LC1 BS	W	07L0554	N/A	10/26/07	10/29/07
BORON, TOTAL	MB1	W	07L0554	N/A	10/26/07	10/29/07
BARIUM LABORATORY	LC1 BS	W	07L0554	N/A	10/26/07	10/29/07
BARIUM, TOTAL	MB1	W	07L0554	N/A	10/26/07	10/29/07
BERYLLIUM LABORATORY	LC1 BS	W	07L0554	N/A	10/26/07	10/29/07
BERYLLIUM, TOTAL	MB1	W	07L0554	N/A	10/26/07	10/29/07
CALCIUM LABORATORY	LC1 BS	W	07L0554	N/A	10/26/07	10/29/07
CALCIUM, TOTAL	MB1	W	07L0554	N/A	10/26/07	10/29/07
CADMIUM LABORATORY	LC1 BS	W	07L0554	N/A	10/26/07	10/29/07
CADMIUM, TOTAL	MB1	W	07L0554	N/A	10/26/07	10/29/07
COBALT LABORATORY	LC1 BS	W	07L0554	N/A	10/26/07	10/29/07
COBALT, TOTAL	MB1	W	07L0554	N/A	10/26/07	10/29/07
CHROMIUM LABORATORY	LC1 BS	W	07L0554	N/A	10/26/07	10/29/07
CHROMIUM, TOTAL	MB1	W	07L0554	N/A	10/26/07	10/29/07
COPPER LABORATORY	LC1 BS	W	07L0554	N/A	10/26/07	10/29/07
COPPER, TOTAL	MB1	W	07L0554	N/A	10/26/07	10/29/07
IRON LABORATORY	LC1 BS	W	07L0554	N/A	10/26/07	10/29/07
IRON, TOTAL	MB1	W	07L0554	N/A	10/26/07	10/29/07
MERCURY LABORATORY	LC1 BS	S	07C0197	N/A	10/29/07	10/29/07
MERCURY, TOTAL	MB1	S	07C0197	N/A	10/29/07	10/29/07
POTASSIUM LABORATORY	LC1 BS	W	07L0554	N/A	10/26/07	10/29/07
POTASSIUM, TOTAL	MB1	W	07L0554	N/A	10/26/07	10/29/07
MAGNESIUM LABORATORY	LC1 BS	W	07L0554	N/A	10/26/07	10/29/07
MAGNESIUM, TOTAL	MB1	W	07L0554	N/A	10/26/07	10/29/07
MANGANESE LABORATORY	LC1 BS	W	07L0554	N/A	10/26/07	10/29/07
MANGANESE, TOTAL	MB1	W	07L0554	N/A	10/26/07	10/29/07
MOLYBDENUM LABORATOR	LC1 BS	W	07L0554	N/A	10/26/07	10/29/07
MOLYBDENUM, TOTAL	MB1	W	07L0554	N/A	10/26/07	10/29/07
SODIUM LABORATORY	LC1 BS	W	07L0554	N/A	10/26/07	10/29/07
SODIUM, TOTAL	MB1	W	07L0554	N/A	10/26/07	10/29/07
NICKEL LABORATORY	LC1 BS	W	07L0554	N/A	10/26/07	10/29/07
NICKEL, TOTAL	MB1	W	07L0554	N/A	10/26/07	10/29/07
LEAD LABORATORY	LC1 BS	W	07L0554	N/A	10/26/07	10/29/07
LEAD, TOTAL	MB1	W	07L0554	N/A	10/26/07	10/29/07
ANTIMONY LABORATORY	LC1 BS	W	07L0554	N/A	10/26/07	10/29/07
ANTIMONY, TOTAL	MB1	W	07L0554	N/A	10/26/07	10/29/07
SELENIUM LABORATORY	LC1 BS	W	07L0554	N/A	10/26/07	10/29/07

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD RC-031

DATE RECEIVED: 10/25/07 LVL LOT # :0710L101

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SELENIUM, TOTAL	MB1	W	07L0554	N/A	10/26/07	10/29/07
SILICON LABORATORY	LC1 BS	W	07L0554	N/A	10/26/07	10/29/07
SILICON, TOTAL	MB1	W	07L0554	N/A	10/26/07	10/29/07
VANADIUM LABORATORY	LC1 BS	W	07L0554	N/A	10/26/07	10/29/07
VANADIUM, TOTAL	MB1	W	07L0554	N/A	10/26/07	10/29/07
ZINC LABORATORY	LC1 BS	W	07L0554	N/A	10/26/07	10/29/07
ZINC, TOTAL	MB1	W	07L0554	N/A	10/26/07	10/29/07

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-031
LVL#: 0710L101
SDG/SAF#: /RC-031

W.O.#: 11343-606-001-9999-00
Date Received: 10-25-07

METALS CASE NARRATIVE

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

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

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

2. The samples were prepared and analyzed in accordance with methods checked on the attached glossary. The samples were reported with 3-fold dilutions for ICP metals due to sample matrix.

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

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

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

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

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

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

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

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 18 pages.

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

Sample ID	Element	PDS Concentration (ppb)	PDS % Recovery
J15W94	Aluminum	36,000	102.2
	Iron	66,000	103.9
	Silicon	6,300	106.1

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

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

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

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

Iain Daniels
Laboratory Manager
Lionville Laboratory Incorporated

11/2/07
Date

jjw/m10-101

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#: 0710L101

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	X6010B		__200.7				__99
Antimony	X6010B	__7041 [5]	__200.7	__204.2			__99
Arsenic	X6010B	__7060A [5]	__200.7	__206.2	__3113B		__99
Barium	X6010B		__200.7				__99
Beryllium	X6010B		__200.7				__99
Bismuth	__6010B [1]		__200.7 [1]			__1620	__99
Boron	X6010B		__200.7				__99
Cadmium	X6010B	__7131A [5]	__200.7	__213.2			__99
Calcium	X6010B		__200.7				__99
Chromium	X6010B	__7191 [5]	__200.7	__218.2			__SS17
Cobalt	X6010B		__200.7				__99
Copper	X6010B	__7211 [5]	__200.7	__220.2			__99
Iron	X6010B		__200.7				__99
Lead	X6010B	__7421 [5]	__200.7	__239.2	__3113B		__99
Lithium	__6010B	__7430 [4]	__200.7			__1620	__99
Magnesium	X6010B		__200.7				__99
Manganese	X6010B		__200.7				__99
Mercury	__7470A [3]	X7471A [3]	__245.1 [2]	__245.5 [2]			__99
Molybdenum	X6010B		__200.7				__99
Nickel	X6010B		__200.7				__99
Potassium	X6010B	__7610 [4]	__200.7	__258.1 [4]			__99
Rare Earths	__6010B [1]		__200.7 [1]			__1620	__99
Selenium	X6010B	__7740 [5]	__200.7	__270.2	__3113B		__99
Silicon	X6010B [1]		__200.7			__1620	__99
Silica	__6010B		__200.7			__1620	__99
Silver	X6010B	__7761 [5]	__200.7	__272.2			__99
Sodium	X6010B	__7770 [4]	__200.7	__273.1 [4]			__99
Strontium	__6010B		__200.7				__99
Thallium	__6010B	__7841 [5]	__200.7	__279.2 __200.9			__99
Tin	__6010B		__200.7				__99
Titanium	__6010B		__200.7				__99
Uranium	__6010B [1]		__200.7 [1]			__1620	__99
Vanadium	X6010B		__200.7				__99
Zinc	X6010B		__200.7				__99
Zirconium	__6010B [1]		__200.7 [1]			__1620	__99

Other:_____ Method:_____

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

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

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

ABBREVIATIONS

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

ANALYTICAL METAL METHODS

1. Not included in the method element list.

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

3. Flame AA.

4. Graphite Furnace AA.

L-WI-033/N-04/98

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 11/01/07

CLIENT: TNU-HANFORD RC-031 LVL LOT #: 0710L101

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J15W94	Silver, Total	0.28 u	MG/KG	0.28	3.0
		Aluminum, Total	5420	MG/KG	11.1	3.0
		Arsenic, Total	2.7	MG/KG	1.4	3.0
		Boron, Total	9.4	MG/KG	1.4	3.0
		Barium, Total	69.9	MG/KG	0.28	3.0
		Beryllium, Total	0.14 u	MG/KG	0.14	3.0
		Calcium, Total	4000	MG/KG	11.1	3.0
		Cadmium, Total	0.28 u	MG/KG	0.28	3.0
		Cobalt, Total	5.3	MG/KG	0.56	3.0
		Chromium, Total	6.4	MG/KG	0.56	3.0
		Copper, Total	10.7	MG/KG	0.56	3.0
		Iron, Total	15600	MG/KG	12.5	3.0
		Mercury, Total	0.02U ~~0.01~~ *	MG/KG	* ~~0.006~~ 0.02	1.0
		Potassium, Total	1070	MG/KG	11.1	3.0
		Magnesium, Total	3280	MG/KG	6.9	3.0
		Manganese, Total	278	MG/KG	0.11	3.0
		Molybdenum, Total	0.83 u	MG/KG	0.83	3.0
		Sodium, Total	151	MG/KG	5.6	3.0
		Nickel, Total	8.8	MG/KG	0.56	3.0
		Lead, Total	3.6	MG/KG	0.83	3.0
		Antimony, Total	0.83 u	MG/KG	0.83	3.0
		Selenium, Total	1.7 u	MG/KG	1.7	3.0
		Silicon, Total	2710	MG/KG	11.1	3.0
		Vanadium, Total	35.2	MG/KG	0.39	3.0
		Zinc, Total	34.5	MG/KG	1.7	3.0

* recalculate
MW 11/1/07

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 11/01/07

CLIENT: TNU-HANFORD RC-031 LVL LOT #: 0710L101

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-002	J15W95	Silver, Total	0.29 u	MG/KG	0.29	3.0
		Aluminum, Total	6140	MG/KG	11.6	3.0
		Arsenic, Total	2.5	MG/KG	1.5	3.0
		Boron, Total	5.6	MG/KG	1.5	3.0
		Barium, Total	102	MG/KG	0.29	3.0
		Beryllium, Total	0.24	MG/KG	0.15	3.0
		Calcium, Total	5270	MG/KG	11.6	3.0
		Cadmium, Total	0.29 u	MG/KG	0.29	3.0
		Cobalt, Total	5.2	MG/KG	0.58	3.0
		Chromium, Total	11.2	MG/KG	0.58	3.0
		Copper, Total	10.8	MG/KG	0.58	3.0
		Iron, Total	16500	MG/KG	13.1	3.0
		Mercury, Total	0.02 ~~0.01~~ *	MG/KG	* ~~0.006~~ 0.02	1.0
		Potassium, Total	1110	MG/KG	11.6	3.0
		Magnesium, Total	3710	MG/KG	7.3	3.0
		Manganese, Total	286	MG/KG	0.12	3.0
		Molybdenum, Total	0.87 u	MG/KG	0.87	3.0
		Sodium, Total	207	MG/KG	5.8	3.0
		Nickel, Total	10.6	MG/KG	0.58	3.0
		Lead, Total	10.8	MG/KG	0.87	3.0
		Antimony, Total	0.87 u	MG/KG	0.87	3.0
		Selenium, Total	1.7 u	MG/KG	1.7	3.0
		Silicon, Total	1730	MG/KG	11.6	3.0
		Vanadium, Total	40.5	MG/KG	0.41	3.0
		Zinc, Total	39.7	MG/KG	1.7	3.0

* recalculate
MW 11/1/07

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 11/01/07

CLIENT: TNU-HANFORD RC-031 LVL LOT #: 0710L101

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	07L0554-MB1	Silver, Total	0.09 u	MG/KG	0.09	1.0
		Aluminum, Total	3.8 u	MG/KG	3.8	1.0
		Arsenic, Total	0.47 u	MG/KG	0.47	1.0
		Boron, Total	0.47 u	MG/KG	0.47	1.0
		Barium, Total	0.09 u	MG/KG	0.09	1.0
		Beryllium, Total	0.05 u	MG/KG	0.05	1.0
		Calcium, Total	10.8	MG/KG	3.8	1.0
		Cadmium, Total	0.09 u	MG/KG	0.09	1.0
		Cobalt, Total	0.19 u	MG/KG	0.19	1.0
		Chromium, Total	0.19 u	MG/KG	0.19	1.0
		Copper, Total	0.19 u	MG/KG	0.19	1.0
		Iron, Total	4.2 u	MG/KG	4.2	1.0
		Potassium, Total	3.8 u	MG/KG	3.8	1.0
		Magnesium, Total	2.4 u	MG/KG	2.4	1.0
		Manganese, Total	0.04	MG/KG	0.04	1.0
		Molybdenum, Total	0.28 u	MG/KG	0.28	1.0
		Sodium, Total	9.1	MG/KG	1.9	1.0
		Nickel, Total	0.19 u	MG/KG	0.19	1.0
		Lead, Total	0.28 u	MG/KG	0.28	1.0
		Antimony, Total	0.28 u	MG/KG	0.28	1.0
		Selenium, Total	0.57 u	MG/KG	0.57	1.0
		Silicon, Total	3.8 u	MG/KG	3.8	1.0
		Vanadium, Total	0.13 u	MG/KG	0.13	1.0
		Zinc, Total	0.92	MG/KG	0.57	1.0
BLANK1	07C0197-MB1	Mercury, Total	0.02U ~~0.005u~~ *	MG/KG	* ~~0.005~~ 0.02	1.0

* recalculate
pw 11/1/07

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 11/01/07

CLIENT: TNU-HANFORD RC-031 LVL LOT #: 0710L101

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J15W94	Silver, Total	4.1	0.28u	4.6	89.1	3.0
		Aluminum, Total	5760	5420	185	179.9*	3.0
		Arsenic, Total	179	2.7	185	95.2	3.0
		Boron, Total	90.4	9.4	92.6	87.5	3.0
		Barium, Total	238	69.9	185	90.7	3.0
		Beryllium, Total	4.6	0.14u	4.6	100	3.0
		Calcium, Total	6140	4000	2320	92.1	3.0
		Cadmium, Total	4.4	0.28u	4.6	95.7	3.0
		Cobalt, Total	49.1	5.3	46.3	94.6	3.0
		Chromium, Total	24.5	6.4	18.5	97.8	3.0
		Copper, Total	31.9	10.7	23.1	91.8	3.0
		Iron, Total	15900	15600	92.6	309.9*	3.0
		Mercury, Total	0.20	~~0.01~~ 0.020	0.20	93.0	1.0
		Potassium, Total	3120	1070 *	2320	88.5	3.0
		Magnesium, Total	5750	3280	2320	106.5	3.0
		Manganese, Total	319	278	46.3	90.1*	3.0
		Molybdenum, Total	84.0	0.83u	92.6	90.7	3.0
		Sodium, Total	2220	151	2320	89.3	3.0
		Nickel, Total	54.3	8.8	46.3	98.3	3.0
		Lead, Total	49.3	3.6	46.3	98.7	3.0
		Antimony, Total	34.9	0.83u	46.3	75.4	3.0
		Selenium, Total	158	1.7 u	185	85.3	3.0
		Silicon, Total	2840	2710	92.6	131.9*	3.0
		Vanadium, Total	78.7	35.2	46.3	94.0	3.0
		Zinc, Total	78.7	34.5	46.3	95.5	3.0

*recalculate
JW 11/1/07

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 11/01/07

CLIENT: TNU-HANFORD RC-031

LVL LOT #: 0710L101

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD		DILUTION FACTOR(REP)
-001REP	J15W94	Silver, Total	0.28u	0.28u	NC		3.0
		Aluminum, Total	5420	5780	6.3		3.0
		Arsenic, Total	2.7	2.9	7.1		3.0
		Boron, Total	9.4	2.0	129.8		3.0
		Barium, Total	69.9	72.9	4.2		3.0
		Beryllium, Total	0.14u	0.14u	NC		3.0
		Calcium, Total	4000	4140	3.4		3.0
		Cadmium, Total	0.28u	0.28u	NC		3.0
		Cobalt, Total	5.3	5.7	7.3		3.0
		Chromium, Total	6.4	7.1	10.4		3.0
		Copper, Total	10.7	10.4	2.8		3.0
		Iron, Total	15600	17800	13.2		3.0
		Mercury, Total	0.02u ~~0.01~~	0.02u ~~0.008~~	~~31.6~~	N/C recalculate MW 11/1/07	1.0
		Potassium, Total	1070	1140	6.1		3.0
		Magnesium, Total	3280	3650	10.8		3.0
		Manganese, Total	278	297	6.6		3.0
		Molybdenum, Total	0.83u	0.83u	NC		3.0
		Sodium, Total	151	175	14.8		3.0
		Nickel, Total	8.8	10.3	15.7		3.0
		Lead, Total	3.6	4.2	15.4		3.0
		Antimony, Total	0.83u	0.83u	NC		3.0
		Selenium, Total	1.7 u	1.7 u	NC		3.0
		Silicon, Total	2710	2730	0.42		3.0
		Vanadium, Total	35.2	42.4	18.6		3.0
		Zinc, Total	34.5	38.6	11.2		3.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 11/01/07

CLIENT: TNU-HANFORD RC-031 LVL LOT #: 0710L101

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	07L0554-LC1	Silver, LCS	46.4	50.0	MG/KG	92.8
		Aluminum, LCS	472	500	MG/KG	94.4
		Arsenic, LCS	952	1000	MG/KG	95.2
		Boron, LCS	471	500	MG/KG	94.2
		Barium, LCS	454	500	MG/KG	90.9
		Beryllium, LCS	24.9	25.0	MG/KG	99.6
		Calcium, LCS	2530	2500	MG/KG	101.3
		Cadmium, LCS	24.3	25.0	MG/KG	97.2
		Cobalt, LCS	241	250	MG/KG	96.4
		Chromium, LCS	49.1	50.0	MG/KG	98.2
		Copper, LCS	117	125	MG/KG	93.7
		Iron, LCS	475	500	MG/KG	95.0
		Potassium, LCS	2180	2500	MG/KG	87.1
		Magnesium, LCS	2300	2500	MG/KG	92.1
		Manganese, LCS	75.2	75.0	MG/KG	100.3
		Molybdenum, LCS	459	500	MG/KG	91.8
		Sodium, LCS	2090	2500	MG/KG	83.7
		Nickel, LCS	195	200	MG/KG	97.6
		Lead, LCS	246	250	MG/KG	98.5
		Antimony, LCS	283	300	MG/KG	94.2
		Selenium, LCS	918	1000	MG/KG	91.8
		Silicon, LCS	450	500	MG/KG	90.0
		Vanadium, LCS	236	250	MG/KG	94.5
		Zinc, LCS	97.3	100	MG/KG	97.3
LCS1	07C0197-LC1	Mercury, LCS	4.1	4.7	MG/KG	87.7

nville Laboratory Use Only

710L101

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

VLI

000000016

nt TNU HANFORD SAF# RC-031

Final Proj. Sampling Date

ect# 11343-606-001-9999-00

ect Contact/Phone#

nville Laboratory Project Manager O Johnson

SW846 Del STD TAT 3 Day

e Rec'd 10-25-07 Date Due 10-28-07

		A						B		C					
Refrigerator #		3						3		3					
#/Type Container	Liquid / Solid	1G						1P		1P					
Volume		60						125		125					
Preservatives		—						—		—					
ANALYSES REQUESTED		ORGANIC						INORG							
		VOA	BNA	Pest/PCB	Herb			Metal HG	CN	Hex CHRM					
		Lionville Laboratory Use Only													
			0625A					metO		ICR6					

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected													
001	J15W94			Soil	10-25-07	1400		X						X		X			
002	J15W95			↓	↓	↓		X						X		X			

ecial Instructions: Run matrix QC

metO = HSL + B, mo, Si (NOTL)

Special Instructions:

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

Relinquished by	Received by	Date	Time
[illegible]	Victor Hernandez	10/10	1010

Relinquished by	Received by	Date	Time

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

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	RC-031-110	Page 1 of 1

Collector T. Welch-Koelling	Company Contact R T Coffman	Telephone No. 528-6409	Project Coordinator KESSNER, JH
Project Designation 100-F Burial Grounds Remaining Sites - Soil Quick Turn	Sampling Location 100-F-26:9 Pipeline		SAF No. RC-031
Ice Chest No. ERC-04-003	Field Logbook No. EFL-1174-3	COA R10F262000	Method of Shipment Fed Ex
Shipped To EBERLINE SERVICES/ LIONVILLE	Offsite Property No. A080049		Bill of Lading/Air Bill No. See OSPC

Price Code: 8A

Data Turnaround: 3 DAY

POSSIBLE SAMPLE ~~HAZARDS/REMARKS~~

NA

Special Handling and/or Storage

NA

Preservation	None	Cool 4C	Cool 4C	None							
Type of Container	P	P	aG	P							
No. of Container(s)	1	1	1	1							
Volume	125mL	125mL	60mL	500mL							
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	Semi-VOA - 8270A (TCL)	See item (2) in Special Instructions.							

Sample No.	Matrix *	Sample Date	Sample Time										
J15W94	SOIL	10-23-07	1400	X	X	X							
J15W95	SOIL	10-23-07	1400	X	X	X							

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time 10/23/07 1420	Received By/Stored In	Date/Time 1420
Relinquished By/Removed From	Date/Time 1530	Received By/Stored In	Date/Time 1530
Relinquished By/Removed From	Date/Time 10-24-07 0915	Received By/Stored In	Date/Time 10-24-07 0915
Relinquished By/Removed From	Date/Time 10-24-07 1500	Received By/Stored In	Date/Time FED EX
Relinquished By/Removed From	Date/Time 10-25-07 1010	Received By/Stored In	Date/Time 10-25-07 1010
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 (Client List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7470 - (CV)
(2) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241, Barium-133, Silver-108 metastable, Uranium-235, Uranium-238}

Sampler unavailable to relinquish samples from 3728 Ref # 28
3728 Custodian removed samples for shipping on 10/24/07.

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

NCH-EE-011

0000000017

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD

Project/SAF/SOW/Release #:

Date: 10-25-07

LvLI Batch #: 0710L101

Sample Custodian: [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped? Carrier: FED EX Airbill # 7982 9356 4289

2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	Comments:
4. All expected paperwork received (coc & other client specific information) sealed in plastic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 4.3°	°C	Cooler # ERC-04-003
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify):
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14. QC stickers placed on bottles designated by client?	☐ Yes	☐ No	☑ N/A
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A

Person Contacted _____ Date _____

LvLI

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD RC-031 K1007

RECEIVED
NOV 2007

DATE RECEIVED: 10/25/07 LVL LOT # : 0710L101

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J15W94						
% SOLIDS	001	S	07L%S134	10/23/07	10/26/07	10/26/07
CHROMIUM VI	001	S	07LVI087	10/23/07	10/26/07	10/26/07
CHROMIUM VI	001 REP	S	07LVI087	10/23/07	10/26/07	10/26/07
CHROMIUM VI	001 MS	S	07LVI087	10/23/07	10/26/07	10/26/07
CHROMIUM VI	001 MSD	S	07LVI087	10/23/07	10/26/07	10/26/07
J15W95						
% SOLIDS	002	S	07L%S134	10/23/07	10/26/07	10/26/07
% SOLIDS	002 REP	S	07L%S134	10/23/07	10/26/07	10/26/07
CHROMIUM VI	002	S	07LVI087	10/23/07	10/26/07	10/26/07
LAB QC:						
CHROMIUM VI	MB1	S	07LVI087	N/A	10/26/07	10/26/07
CHROMIUM VI	MB1 BS	S	07LVI087	N/A	10/26/07	10/26/07
CHROMIUM VI	MB1 BSD	S	07LVI087	N/A	10/26/07	10/26/07

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-031
LVL#: 0710L101

W.O.#: 11343-606-001-9999-00
Date Received: 10-25-07

INORGANIC NARRATIVE

1. This narrative covers the analyses of 2 soil 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. For a complete list of accrediting authorities and the corresponding analytes/methods, please contact your Project Manager. LvLI certifies that all test results meet the requirements of NELAC with any exception noted in the following statements.

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

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

5. The method blank for Chromium VI was within the method criteria.

6. The Laboratory Control Samples (LCS) for Chromium VI were within the laboratory control limits.

7. The matrix spike recoveries for Chromium VI were within the 75-125% control limits.

8. The replicate analysis for Percent Solids was within the 20% Relative Percent Difference (RPD) control limit however replicate analysis for Chromium VI was outside the control limit that may be attributed to sample inhomogeneity.

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

11/1/07
Date

njp\i10-101

The results presented in this report relate to the analytical testing and conditions of the samples upon receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 11 pages.

Lionville Laboratory Incorporated

WET CHEMISTRY

METHODS GLOSSARY FOR SOIL/SOLIDS SAMPLE ANALYSIS

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

Other: **Method:**

Other: **Method**

L-WI-034/B-01/01

Lionville Laboratory Incorporated

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

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

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

ABBREVIATIONS

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

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

ANALYTICAL WET CHEMISTRY METHODS

1. ASTM Standard Methods.

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

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

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

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

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

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

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

f. Code of Federal Regulations.

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 10/29/07

CLIENT: TNU-HANFORD RC-031

LVL LOT #: 0710L101

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J15W94	% Solids	80.6	%	0.01	1.0
		Chromium VI	0.25 u	MG/KG	0.25	1.0
-002	J15W95	% Solids	84.5	%	0.01	1.0
		Chromium VI	0.47	MG/KG	0.24	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 10/29/07

CLIENT: TNU-HANFORD RC-031

LVL LOT #: 0710L101

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK10	07LVI087-MB1	Chromium VI	0.20 u	MG/KG	0.20	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 10/29/07

CLIENT: TNU-HANFORD RC-031

LVL LOT #: 0710L101

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J15W94	Soluble Chromium VI	4.9	0.25u	5.0	97.4	1.0
		Insoluble Chromium VI	1350	0.25u	1250	108.1	100
BLANK10	07LVI087-MB1	Soluble Chromium VI	4.1	0.20u	4.0	102.0	1.0
		Insoluble Chromium VI	1230	0.20u	1230	100.3	100

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 10/29/07

CLIENT: TNU-HANFORD RC-031 LVL LOT #: 0710L101

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	J15W94	Chromium VI	0.25u	0.31	131	1.0
-002REP	J15W95	% Solids	84.5	84.3	0.23	1.0

nville Laboratory Use Only

7/0L/01

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI

nt TNU HANFORD SAF# RC-031

Final Proj. Sampling Date

ect# 11343-606-001-9999-00

ect Contact/Phone#

vlle Laboratory Project Manager: O Johnson

SW846 Del STD TAT 3 Day

Rec'd 10-25-07 Date Due 10-28-07

		A						B		C					
Refrigerator #		3						3		3					
#/Type Container	Liquid														
	Solid	1G						1P		1P					
Volume		60						125		125					
Preservatives		—						—		—					
ANALYSES REQUESTED →		ORGANIC						INORG							
		VOA	BNA	Pest/PCB	Herb			Metal HG	CN	Hex Chrom					
		Lionville Laboratory Use Only													
			062507					Met ①		ICR6					

RIX EB:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected
Soil, Sediment, Solid, Sludge, Water, Oil, Air, Drum Solids, Drum Liquids, EP/TCLP Leachate, Wipe, Other, Fish	001	J15W94			Soil	10/25/07	1400
	002	J15W95			↓	↓	↓

cial Instructions: Run matrix QC

Met ① = HSL + B, Mo, Si (NOTL)

Special Instructions:

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

Relinquished by	Received by	Date	Time
	Victor Hernandez	10/25/07	1010

Relinquished by	Received by	Date	Time

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

0000000009

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-031-110 | Page 1 of 1

Collector: T. Welch-Koelling	Company Contact: R T Coffman	Telephone No.: 528-6409	Project Coordinator: KESSNER, JH
Price Code: 84	Data Turnaround: 3DAY		
Project Designation: 100-F Burial Grounds Remaining Sites - Soil Quick Turn	Sampling Location: 100-F-26:9 Pipeline		SAF No.: RC-031
Ice Chest No.: ERC-04-003	Field Logbook No.: EFL-1174-3	COA: R10F262000	Method of Shipment: Fed Ex
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A080049		Bill of Lading/Air Bill No.: SL 05PC

POSSIBLE SAMPLE ~~HAZARDS~~/REMARKS

NA

Special Handling and/or Storage

NA

Preservation	None	Cool 4C	Cool 4C	None							
Type of Container	P	P	aG	P							
No. of Container(s)	1	1	1	1							
Volume	125mL	125mL	60mL	500mL							
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	Semi-VOA - 8270A (TCL)	See item (2) in Special Instructions. 10-23							

Sample No.	Matrix *	Sample Date	Sample Time										
15W94	SOIL	10-23-07	1400	X	X	X							
15W95	SOIL	10-23-07	1400	X	X	X							

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time 10/23/07 1420	Received By/Stored In	Date/Time 1420
Relinquished By/Removed From	Date/Time 1530	Received By/Stored In	Date/Time 1530
Relinquished By/Removed From	Date/Time	Received By/Stored In	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
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 (Client List) (Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc); Mercury - 7470 - (CV)
(2) Gamma Spectroscopy (TCL List) (Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155); Gamma Spec - Add-on (Americium-241, Barium-133, Silver-108 metastable, Uranium-235, Uranium-238)

Sampler unavailable to relinquish samples from 3728 Ref # 28 3728 Custodian removed samples for shipping on 10/24/07.

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

ICH-EE-011

000000010

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD

Project/SAF/SOW/Release #:

Date: 10-25-07

LvLI Batch #: 0710L101

Sample Custodian: [signature]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped? Carrier [illegible] Airbill # 7982 9356 4289

2. Custody Seals on coolers or shipping containers intact, signed & dated? ☑ Yes ☐ No ☐ No Seals

3. Outside of coolers or shipping containers are free from damage? ☑ Yes ☐ No Comments:

4. All expected paperwork received (coc & other client specific information) sealed in plastic bag and easily accessible? ☑ Yes ☐ No

5. Samples received cooled or ambient? Temp 4.3° °C Cooler # ERC-04-003

How was the temperature taken? ☑ IR ☐ Temp. Blank ☐ Other (Specify):

Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C) ☑ Yes ☐ No

6. Custody seals on sample containers intact, signed and dated? ☑ Yes ☐ No ☐ No Seals

7. COC (Client & LvLI) signed & dated? ☑ Yes ☐ No

8. Sample containers are intact? ☑ Yes ☐ No

9. All samples on COC received? ☑ Yes ☐ No
All samples received on COC? ☑ Yes ☐ No

10. All sample label information matches COC? ☑ Yes ☐ No

11. Samples properly preserved? (If #5 is no, then this is no.) ☑ Yes ☐ No

12. Samples received within hold times? ☑ Yes ☐ No
Short holds taken to wet lab? ☐ Yes ☐ No ☑ N/A

13. VOA, TOC, TOX free of headspace? ☐ Yes ☐ No ☑ N/A

14. QC stickers placed on bottles designated by client? ☐ Yes ☐ No ☑ N/A

15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.) ☑ Yes ☐ No

16. Project Manager contacted concerning any discrepancies? ☐ Yes ☐ No ☑ N/A
Person Contacted _____ Date _____

LvLI

Lionville Laboratory, Inc.
BNA ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD RC-031 K1007

RECEIVED
NOV 2007

DATE RECEIVED: 10/25/07 LVL LOT # 0710L101

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J15W94	001	S	07LE0597	10/23/07	10/25/07	10/28/07
J15W94	001 MS	S	07LE0597	10/23/07	10/25/07	10/28/07
J15W94	001 MSD	S	07LE0597	10/23/07	10/25/07	10/28/07
J15W95	002	S	07LE0597	10/23/07	10/25/07	10/28/07

LAB QC:

SBLKPP	MB1	S	07LE0597	N/A	10/25/07	10/28/07
SBLKPP	MB1 BS	S	07LE0597	N/A	10/25/07	10/28/07

LIONVILLE LABORATORY INC.

Case Narrative

Client: TNU-HANFORD RC-031
LVL #: 0710L101
SDG/SAF # K1007 /RC-031

W.O. #: 11343-606-001-9999-00
Date Received: 10-25-2007

SEMIVOLATILE

Two (2) soil samples were collected on 10-23-2007.

The samples and their associated QC samples were extracted according to Lionville Laboratory SOPs based on SW 846 method 3540C on 10-25-2007 and analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 10-28-2007.

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

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

2. Non-target compounds were detected in the samples.

3. All surrogate recoveries were within acceptance criteria.

4. Ten (10) of one hundred and twenty-eight (128) matrix spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report has been enclosed.

5. Five (5) of sixty-four (64) blank spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report has been enclosed.

6. The method blank was below the reporting limit for all target compounds.

r:\group\data\bna\tnu-hanford\0710-101ks2.doc

The results presented in this report relate only to the analytical testing and conditions of the samples at receipt and during storage. All pages of this report are integral parts of the analytical data. Therefore, this report should only be reproduced in its entirety of 15 pages.

LIONVILLE LABORATORY INC.

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

8. 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").

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

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

11/1/07
Date

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 07MS222

Initiator: Sharon Saylor
Date: 10-29-07
Client: TNU RC031

Batch: 07IOL101
Samples: TNU
Method: SW846/MCAWW/CLP/

Parameter: 8270
Matrix: SOLID
Prep Batch: 07LE0597

1. Reason for SDR

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

b. General Discrepancy

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

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

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

low recovery of several spike analytes in the ms, msd + BS

2. Known or Probable Causes(s) chloroaniline, acidic phenols subject to erratic chromatographic behavior; others sporadic

3. Discussion and Proposed Action Other Description: none

__ 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: 10/29/07

__ 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: KAS 10-30-07 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.

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

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

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

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

GLOSSARY

ABBREVIATIONS

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

TECHNICAL FLAGS FOR MANUAL INTEGRATION

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

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

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

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

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

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

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

Semivolatiles by GC/MS, HSL List — Report Date: 10/29/07 12:36

RFW Batch Number: 0710L101 — Client: TNU-HANFORD RC-031 — Work Order: 11343606001 — Page: 1a

	Cust ID:	J15W94	J15W94	J15W94	J15W95	SBLKPP	SBLKPP BS
Sample Information	RFW#:	001	001 MS	001 MSD	002	07LE0597-MB1	07LE0597-MB1
	Matrix:	SOIL	SOIL	SOIL	SOIL	SOIL	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
Surrogate Recovery	Nitrobenzene-d5	72 %	54 %	55 %	69 %	73 %	55 %
	2-Fluorobiphenyl	72 %	89 %	94 %	66 %	75 %	76 %
	Terphenyl-d14	107 %	110 %	110 %	107 %	115 %	90 %
	Phenol-d5	63 %	75 %	82 %	62 %	69 %	71 %
	2-Fluorophenol	72 %	76 %	80 %	73 %	74 %	74 %
	2,4,6-Tribromophenol	52 %	60 %	82 %	57 %	50 %	73 %
		fl	fl	fl	fl	fl	fl
Phenol		410 U	74 %	84 %	390 U	330 U	67 %
bis(2-Chloroethyl)ether		410 U	64 %	72 %	390 U	330 U	57 %
2-Chlorophenol		410 U	71 %	82 %	390 U	330 U	66 %
1,3-Dichlorobenzene		410 U	57 %	64 %	390 U	330 U	54 %
1,4-Dichlorobenzene		410 U	60 %	65 %	390 U	330 U	56 %
1,2-Dichlorobenzene		410 U	65 %	72 %	390 U	330 U	60 %
2-Methylphenol		410 U	79 %	84 %	390 U	330 U	65 %
2,2'-oxybis(1-Chloropropane)		410 U	65 %	75 %	390 U	330 U	60 %
3/4 Methylphenol		410 U	83 %	91 %	390 U	330 U	70 %
N-Nitroso-di-n-propylamine		410 U	84 %	89 %	390 U	330 U	70 %
Hexachloroethane		410 U	58 %	62 %	390 U	330 U	51 %
Nitrobenzene		410 U	50 %	55 %	390 U	330 U	49 * %
Isophorone		410 U	63 %	67 %	390 U	330 U	58 * %
2-Nitrophenol		410 U	54 %	58 %	390 U	330 U	53 %
2,4-Dimethylphenol		410 U	64 %	65 %	390 U	330 U	48 * %
bis(2-Chloroethoxy)methane		410 U	55 %	58 %	390 U	330 U	51 %
2,4-Dichlorophenol		410 U	59 %	61 %	390 U	330 U	54 %
1,2,4-Trichlorobenzene		410 U	51 * %	55 * %	390 U	330 U	50 * %
Naphthalene		410 U	55 %	58 %	390 U	330 U	50 %
4-Chloroaniline		410 U	19 * %	22 %	390 U	330 U	41 %
Hexachlorobutadiene		410 U	55 %	59 %	390 U	330 U	50 %
4-Chloro-3-methylphenol		410 U	63 %	62 %	390 U	330 U	64 %
2-Methylnaphthalene		410 U	62 %	62 %	390 U	330 U	56 * %
Hexachlorocyclopentadiene		410 U	59 %	86 %	390 U	330 U	66 %
2,4,6-Trichlorophenol		410 U	63 %	91 %	390 U	330 U	71 %
2,4,5-Trichlorophenol		1000 U	84 %	104 %	990 U	830 U	76 %

*= Outside of EPA CLP QC limits.

0000000008

Cust ID:	J15W94		J15W94		J15W94		J15W95		SBLKPP		SBLKPP BS	
RFW#:	001		001 MS		001 MSD		002		07LE0597-MB1		07LE0597-MB1	
2-Chloronaphthalene	410	U	85	%	92	%	390	U	330	U	70	%
2-Nitroaniline	1000	U	98	%	103	%	990	U	830	U	85	%
Dimethylphthalate	410	U	98	%	103	%	390	U	330	U	83	%
Acenaphthylene	410	U	94	%	100	%	390	U	330	U	76	%
2,6-Dinitrotoluene	410	U	99	%	102	%	390	U	330	U	83	%
3-Nitroaniline	1000	U	50	%	70	%	990	U	830	U	81	%
Acenaphthene	410	U	91	%	99	%	390	U	330	U	75	%
2,4-Dinitrophenol	1000	U	146 *	%	150 *	%	990	U	830	U	83	%
4-Nitrophenol	1000	U	47	%	56	%	990	U	830	U	78	%
Dibenzofuran	410	U	100	%	106	%	390	U	330	U	82	%
2,4-Dinitrotoluene	410	U	110	%	114	%	390	U	330	U	89	%
Diethylphthalate	410	U	105	%	108	%	390	U	330	U	86	%
4-Chlorophenyl-phenylether	410	U	96	%	102	%	390	U	330	U	78	%
Fluorene	410	U	99	%	106	%	390	U	330	U	80	%
4-Nitroaniline	1000	U	83	%	93	%	990	U	830	U	79	%
4,6-Dinitro-2-methylphenol	1000	U	125	%	130	%	990	U	830	U	90	%
N-Nitrosodiphenylamine (1)	410	U	80	%	84	%	390	U	330	U	66	%
4-Bromophenyl-phenylether	410	U	82	%	86	%	390	U	330	U	69	%
Hexachlorobenzene	410	U	97	%	98	%	390	U	330	U	82	%
Pentachlorophenol	1000	U	106	%	98	%	990	U	830	U	82	%
Phenanthrene	300	J	106	%	157 *	%	330	J	330	U	82	%
Anthracene	40	J	104	%	109	%	53	J	330	U	84	%
Carbazole	410	U	96	%	102	%	390	U	330	U	75	%
Di-n-butylphthalate	26	JB	101	%	102	%	23	JB	21	J	84	%
Fluoranthene	580		113	%	190 *	%	520		330	U	86	%
Pyrene	400	J	107	%	159 *	%	420		330	U	81	%
Butylbenzylphthalate	410	U	103	%	105	%	390	U	330	U	82	%
3,3'-Dichlorobenzidine	410	U	40	%	50	%	390	U	330	U	66	%
Benzo(a)anthracene	200	J	102	%	142 *	%	200	J	330	U	83	%
Chrysene	270	J	102	%	143 *	%	270	J	330	U	82	%
bis(2-Ethylhexyl)phthalate	44	JB	104	%	108	%	55	JB	32	J	82	%
Di-n-octyl phthalate	410	U	99	%	98	%	390	U	330	U	74	%
Benzo(b)fluoranthene	230	J	95	%	130	%	220	J	330	U	76	%
Benzo(k)fluoranthene	190	J	94	%	117	%	230	J	330	U	77	%
Benzo(a)pyrene	190	J	98	%	126	%	180	J	330	U	81	%
Indeno(1,2,3-cd)pyrene	120	J	81	%	126	%	120	J	330	U	79	%
Dibenz(a,h)anthracene	58	J	81	%	115	%	58	J	330	U	79	%
Benzo(g,h,i)perylene	110	J	73	%	114	%	110	J	330	U	77	%

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

000000009

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J15W94

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

Client: TNU-HANFORD RC-031

Matrix: (soil/water) SOIL

Lab Sample ID: 0710L101-001

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

Lab File ID: N102712

Level: (low/med) LOW

Date Received: 10/25/07

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

Date Extracted: 10/25/07

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 10/28/07

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

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

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	5.013	700	J
2.	ALKANE	5.536	200	JB
3.	UNKNOWN	6.007	100000	JB
4.	UNKNOWN	20.158	600	J
5.	PAH	28.476	300	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J15W95

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

Client: TNU-HANFORD RC-031

Matrix: (soil/water) SOIL

Lab Sample ID: 0710L101-002

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

Lab File ID: N102715

Level: (low/med) LOW

Date Received: 10/25/07

% Moisture: 16 decanted: (Y/N)__

Date Extracted: 10/25/07

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 10/28/07

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.	ALKANE	5.537	300	JB
2.	UNKNOWN	5.668	300	JB
3.	UNKNOWN	5.956	50000	JB
4.	UNKNOWN	6.052	60000	J
5.	PAH	28.486	200	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SBLKPP

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

Client: TNU-HANFORD RC-031

Matrix: (soil/water) SOIL

Lab Sample ID: 07LE0597-MB1

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

Lab File ID: N102709

Level: (low/med) LOW

Date Received: 10/25/07

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

Date Extracted: 10/25/07

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 10/28/07

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.	ALKANE	5.422	200	J
2.	ALKANE	5.536	200	J
3.	UNKNOWN	5.675	200	J
4.	UNKNOWN	6.033	80000	J
5.	ALDOL CONDENSATE	7.245	200	JA

nville Laboratory Use Only

7/10L/01

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

VLI

000000013

nt TNU HANFORD SAF# RC-031

, Final Proj. Sampling Date

ject# 11343-606-001-9999-00

ject Contact/Phone#

nville Laboratory Project Manager O Johnson

SW846 Del STD TAT 3 Day

e Rec'd 10-25-07 Date Due 10-28-07

		A						B		C				
Refrigerator #		3						3		3				
#/Type Container	Liquid													
	Solid	1G						1P		1P				
Volume		60						125		125				
Preservatives		←						←		←				
ANALYSES REQUESTED →		ORGANIC						INORG						
		VOA	BNA	Pest/PCB	Herb			Metal Hg	CN	Hex Chrom				
		Lionville Laboratory Use Only												
			062584					Met①		ICR6				

RIX ES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected													
Soil, Sediment, Solid, Sludge, Water, Oil, Air, Drum Solids, Drum Liquids, EP/TCLP Leachate, Wipe, Other, Fish	001	I15W94			Soil	10-25-07	1400		X						X		X			
	002	I15W95			↓	↓	↓		X						X		X			

ecial Instructions: Run matrix QC

Met ① = HSL + B, mo, Si (NOTL)

Special Instructions:

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

Relinquished by	Received by	Date	Time
			1010

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN			

"COMPOSITE WASTE"

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-031-110 | Page 1 of 1

Collector: T. Welch-Koelling	Company Contact: R T Coffman	Telephone No.: 528-6409	Project Coordinator: KESSNER, JH
Price Code: 8A	Data Turnaround: 3DAY		
Project Designation: 100-F Burial Grounds Remaining Sites - Soil Quick Turn	Sampling Location: 100-F-26:9 Pipeline		SAF No.: RC-031
Ice Chest No.: ERC-04-003	Field Logbook No.: EFL-1174-3	COA: R10F262000	Method of Shipment: Fed Ex
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A080049		Bill of Lading/Air Bill No.: SEL 05PC

POSSIBLE SAMPLE HAZARDS/REMARKS

NA

Special Handling and/or Storage

NA

Preservation	None	Cool 4C	Cool 4C	None							
Type of Container	P	P	aG	P							
No. of Container(s)	1	1	1	1							
Volume	125mL	125mL	60mL	500mL							
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Chromium Hex - 7196	Semi-VOA - 8270A (TCL)	See item (2) in Special Instructions.							

Sample No.	Matrix *	Sample Date	Sample Time										
115W94	SOIL	10-23-07	1400	X	X	X							
115W95	SOIL	10-23-07	1400	X	X	X							

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[signature]	10/23/07 1420	JR DeBruyne JR DeBruyne	1420 10-23-07
JR DeBruyne JR DeBruyne	10-23-07 1530	3728/23	1530 10-23-07
3728/23 10-24-07	0915	[signature] 10-24-07	0915
[signature] 10-24-07	1500	FED EX	
[signature] 10-25-07	1010	[signature] 10-25-07	1010

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 (Client List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Magnesium, Manganese, Molybdenum, Nickel, Potassium, Selenium, Silicon, Silver, Sodium, Vanadium, Zinc}; Mercury - 7470 - (CV)
(2) Gamma Spectroscopy (TCL List) {Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}; Gamma Spec - Add-on {Americium-241, Barium-133, Silver-108 metastable, Uranium-235, Uranium-238}

Sampler unavailable to relinquish samples from 3728 Ref # 2B
3728 Custodian removed samples for shipping on 10/24/07.

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

ICH-EE-011

000000014

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNU HANFORD

Project/SAF/SOW/Release #:

Date: 10-25-07

LvLI Batch #: 0710L101

Sample Custodian: [signature]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier: FED EX		Airbill # 798293564289
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	Comments:
4. All expected paperwork received (coc & other client specific information) sealed in plastic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 4.3°	°C	Cooler # ERC-04-003
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify):
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14. QC stickers placed on bottles designated by client?	☐ Yes	☐ No	☑ N/A
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A

Person Contacted _____ Date _____

LvLI