0077924

SAF-RC-074
100-D/DR Burial Grounds & Remaining Sites – Soil Quick Turn
FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

Kathy Wendt H4-21 KW 6/10/08
INITIAL/DATE

COMMENTS:

SDG K1195 SAF RC-074

Rad only Chem only X Rad & Chem

X Complete Partial

Waste Sites: 118-D-3, in process

RECEIVED
JUN 12 2008
EDMC

EBERLINE SERVICES

EBERLINE ANALYTICAL CORPORATION
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Richmond, California 94804-3849
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Toll Free (800) 841-5487
www.eberlineservices.com

May 12, 2008

RECEIVED
MAY 2008

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

Reference: **P.O. #S00W235A00**
Eberline Services R8-04-146-7806, SDG K1195

Dear Ms. Kessner:

Enclosed is a data report for one solid (soil) sample designated under SAF No. RC-074 received at Eberline Services on April 25, 2008. The sample was analyzed according to the accompanying chain-of-custody document.

Please call if you have any questions concerning this report.

Sincerely,

Melissa Mannion

Melissa C. Mannion
Senior Program Manager

MCM/njv

Enclosure: Data Package

1.0 GENERAL

Washington Closure Hanford (WCH) Sample Delivery Group K1195 was composed of one solid (soil) sample designated under SAF No. RC-074 with a Project Designation of: 100-D/DR Burial Grounds & Remaining Site-Soil Quick Turn.

The sample was received as stated on the Chain-of-Custody document. Any discrepancies are noted on the Eberline Services Sample Receipt Checklist. The results were transmitted to WCH via e-mail on May 12, 2008.

2.0 ANALYSIS NOTES

2.1 Tritium Analysis

No problems were encountered during the course of the analyses.

2.2 Carbon-14 Analysis

No problems were encountered during the course of the analyses.

2.3 Nickel-63 Analysis

No problems were encountered during the course of the analyses.

2.4 Total Strontium Analysis

No problems were encountered during the course of the analyses.

2.5 Gamma Spectroscopy

No problems were encountered during the course of the analyses.

3.0 Case Narrative Certification Statement

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

Melissa Mannion

Melissa C. Mannion
Senior Program Manager

05/12/08

Date

E B E R L I N E S E R V I C E S / R I C H M O N D
SAMPLE DELIVERY GROUP K1195

SDG	7806
Contact	Melissa C. Mannion

Client	Hanford
Contract	No. S00W235A00
Case no	SDG_K1195

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	05/12/08

SDG 7806
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1195

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 05/12/08

ABOUT THE DATA SUMMARY SECTION

DUPLICATES

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

MATRIX SPIKES

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

DATA SHEETS

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

METHOD SUMMARIES

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

REPORT GUIDES

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

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1195

SDG 7806
:ontact Melissa C. Mannion

LAB SAMPLE SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1195

ıB ıMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAF NO	CHAIN OF CUSTODY	COLLECTED
:04146-01	J16MR1	118-D-3, in process	SOIL		RC-074	RC-074-068	04/21/08 13:05
:04146-02	Lab Control Sample		SOIL		RC-074		
:04146-03	Method Blank		SOIL		RC-074		
:04146-04	Duplicate (R804146-01)	118-D-3, in process	SOIL		RC-074		04/21/08 13:05

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LS
Version 3.06
Report date 05/12/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1195

SDG 7806
Contact Melissa C. Mannion

QC SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1195

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
5	RC-074-068	J16MR1	SOIL	93.3	924 g		04/25/08	4	R804146-01	7806-001
		Method Blank	SOIL						R804146-03	7806-003
		Lab Control Sample	SOIL						R804146-02	7806-002
		Duplicate (R804146-01)	SOIL	93.3	924 g		04/25/08	4	R804146-04	7806-004

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-QS
Version 3.06
Report date 05/12/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1195

SDG 7806
Contact Melissa C. Mannion

PREP BATCH SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1195

TEST	MATRIX	METHOD	PREPARATION BATCH	ERROR 2σ %	PLANCHETS ANALYZED CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	MS/ORIG	QUALIFIERS
Beta Counting												
SR	SOIL	Total Strontium in Solids	6150-032	10.4	1			1	1	1/1		
Gamma Spectroscopy												
GAM	SOIL	Gamma Scan	6150-032	7.0	1			1	1	1/1		
Liquid Scintillation Counting												
C	SOIL	Carbon 14 in Solids	6150-032	10.0	1			1	1	1/1		
H	SOIL	Tritium in Solids	6150-032	10.0	1			1	1	1/1		
NI_L	SOIL	Nickel 63 in Solids	6150-032	11.2	1			1	1	1/1		

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

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-PBS
Version 3.06
Report date 05/12/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1195

SDG 7806
ontact Melissa C. Mannion

LAB WORK SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1195

SAMPLE ·LLECTED ·ECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
146-01	J16MR1			7806-001	C		05/04/08	05/06/08	BW	Carbon 14 in Solids
4/21/08	118-D-3, in process		SOIL	7806-001	GAM		04/30/08	05/01/08	CSS	Gamma Scan
·4/25/08	RC-074-068	RC-074		7806-001	H		05/04/08	05/06/08	BW	Tritium in Solids
				7806-001	NI_L		05/05/08	05/08/08	BW	Nickel 63 in Solids
				7806-001	SR		05/01/08	05/05/08	BW	Total Strontium in Solids
·146-02	Lab Control Sample			7806-002	C		05/04/08	05/06/08	BW	Carbon 14 in Solids
			SOIL	7806-002	GAM		04/30/08	05/01/08	CSS	Gamma Scan
		RC-074		7806-002	H		05/05/08	05/06/08	BW	Tritium in Solids
				7806-002	NI_L		05/05/08	05/08/08	BW	Nickel 63 in Solids
				7806-002	SR		05/01/08	05/05/08	BW	Total Strontium in Solids
·146-03	Method Blank			7806-003	C		05/04/08	05/06/08	BW	Carbon 14 in Solids
			SOIL	7806-003	GAM		04/30/08	05/01/08	CSS	Gamma Scan
		RC-074		7806-003	H		05/04/08	05/06/08	BW	Tritium in Solids
				7806-003	NI_L		05/05/08	05/08/08	BW	Nickel 63 in Solids
				7806-003	SR		05/01/08	05/05/08	BW	Total Strontium in Solids
·146-04	Duplicate (R804146-01)			7806-004	C		05/04/08	05/06/08	BW	Carbon 14 in Solids
)4/21/08	118-D-3, in process		SOIL	7806-004	GAM		04/30/08	05/01/08	CSS	Gamma Scan
)4/25/08		RC-074		7806-004	H		05/04/08	05/06/08	BW	Tritium in Solids
				7806-004	NI_L		05/05/08	05/08/08	BW	Nickel 63 in Solids
				7806-004	SR		05/01/08	05/05/08	BW	Total Strontium in Solids

COUNTS OF TESTS BY SAMPLE TYPE

·EST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
	RC-074	Carbon 14 in Solids	C14_COX_LSC	1			1	1	1	4
·M	RC-074	Gamma Scan	GAMMA_GS	1			1	1	1	4
	RC-074	Tritium in Solids	TRITIUM_COX_LSC	1			1	1	1	4
I_L	RC-074	Nickel 63 in Solids	NI63_LSC	1			1	1	1	4
R	RC-074	Total Strontium in Solids	SRTOT_SEP_PRECIP_GPC	1			1	1	1	4
)TALS				5			5	5	5	20

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 05/12/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1195

7806-003 Method Blank

METHOD BLANK

SDG	7806	Client/Case no	Hanford	SDG K1195	
Contact	Melissa C. Mannion	Contract	No. S00W235A00		
Lab sample id	R804146-03	Client sample id	Method Blank		
Dept sample id	7806-003	Material/Matrix		SOIL	
		SAF No	RC-074		

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	-1.24	3.4	6.01	400	U	H
Carbon 14	14762-75-5	0.681	2.6	4.43	50.0	U	C
Nickel 63	13981-37-8	-0.999	1.7	3.03	30.0	U	NI_L
Total Strontium	SR-RAD	-0.133	0.15	0.333	1.00	U	SR
Potassium 40	13966-00-2	U		0.617		U	GAM
Cobalt 60	10198-40-0	U		0.043	0.050	U	GAM
Cesium 137	10045-97-3	U		0.035	0.100	U	GAM
Radium 226	13982-63-3	U		0.066	0.100	U	GAM
Radium 228	15262-20-1	U		0.141	0.200	U	GAM
Europium 152	14683-23-9	U		0.089	0.100	U	GAM
Europium 154	15585-10-1	U		0.115	0.100	U	GAM
Europium 155	14391-16-3	U		0.074	0.100	U	GAM
Thorium 228	14274-82-9	U		0.053		U	GAM
Thorium 232	TH-232	U		0.141		U	GAM
Uranium 235	15117-96-1	U		0.131		U	GAM
Uranium 238	U-238	U		4.42		U	GAM
Americium 241	14596-10-2	U		0.141		U	GAM
Silver 108m	14391-65-2	U		0.027		U	GAM
Sodium 22	13966-32-0	U		0.036		U	GAM

100D/DR BurialGrnd&RemainSite-SoilQT

QC-BLANK #65532

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	05/12/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1195

7806-002

Lab Control Sample

LAB CONTROL SAMPLE

SDG 7806

Contact Melissa C. Mannion

Client/Case no Hanford SDG K1195

Contract No. S00W235A00

Lab sample id R804146-02

Dept sample id 7806-002

Client sample id Lab Control Sample

Material/Matrix SOIL

SAF No RC-074

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
Tritium	779	16	5.86	400		H	823	33	95	84-116	80-120
Carbon 14	1940	39	9.29	50.0		C	2130	85	91	85-115	80-120
Nickel 63	212	5.7	3.04	30.0		NI_L	220	8.8	96	82-118	80-120
Total Strontium	9.38	0.54	0.251	1.00		SR	9.34	0.37	100	81-119	80-120
Cobalt 60	0.946	0.070	0.045	0.050		GAM	0.920	0.037	103	83-117	80-120
Cesium 137	1.02	0.066	0.052	0.100		GAM	0.987	0.039	103	84-116	80-120

100D/DR BurialGrnd&RemainSite-SoilQT

QC-LCS #65531

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LCS
Version 3.06
Report date 05/12/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1195

7806-004 J16MR1

DUPLICATE

SDG	7806	Client/Case no	Hanford SDG K1195
Contact	Melissa C. Mannion	Contract	No. S00W235A00
DUPLICATE		ORIGINAL	
Lab sample id	R804146-04	Lab sample id	R804146-01
Dept sample id	7806-004	Dept sample id	7806-001
		Received	04/25/08
% solids	93.3	% solids	93.3
Client sample id	J16MR1		
Location/Matrix	118-D-3, in process SOIL		
Collected/Weight	04/21/08 13:05 924 g		
Custody/SAF No	RC-074-068 RC-074		

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
Tritium	-1.60	2.9	5.06	400	U	H	0.213	3.0	5.18	U	-		0.9
Carbon 14	-0.155	2.2	3.78	50.0	U	C	0.464	2.2	3.78	U	-		0.4
Nickel 63	7.55	2.3	3.44	30.0		NI_L	6.90	2.3	3.46		9	72	0.4
Total Strontium	12.0	0.64	0.249	1.00		SR	13.1	0.65	0.258		9	25	1.1
Potassium 40	9.86	1.1	0.414			GAM	9.86	0.73	0.400		0	25	0
Cobalt 60	0.261	0.077	0.065	0.050		GAM	0.256	0.056	0.054		2	57	0.1
Cesium 137	1.06	0.10	0.080	0.100		GAM	1.04	0.063	0.045		2	22	0.3
Radium 226	U		0.167	0.100	U	GAM	U		0.109	U	-		0.6
Radium 228	0.670	0.23	0.226	0.200		GAM	0.622	0.17	0.175		7	68	0.3
Europium 152	0.468	0.12	0.150	0.100		GAM	0.548	0.083	0.100		16	46	1.0
Europium 154	U		0.219	0.100	U	GAM	U		0.121	U	-		0.8
Europium 155	U		0.147	0.100	U	GAM	U		0.094	U	-		0.6
Thorium 228	0.478	0.069	0.077			GAM	0.512	0.051	0.055		7	30	0.7
Thorium 232	0.670	0.23	0.226			GAM	0.622	0.17	0.175		7	68	0.3
Uranium 235	U		0.244		U	GAM	U		0.157	U	-		0.6
Uranium 238	U		8.34		U	GAM	U		5.45	U	-		0.6
Americium 241	U		0.086		U	GAM	U		0.055	U	-		0.6
Silver 108m	U		0.045		U	GAM	U		0.031	U	-		0.5
Sodium 22	U		0.074		U	GAM	U		0.041	U	-		0.8

100D/DR BurialGrnd&RemainSite-SoilQT

QC-DUP#1 65533

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	05/12/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1195

7806-001 J16MR1

DATA SHEET

SDG	7806	Client/Case no	Hanford	SDG K1195	
Contact	Melissa C. Mannion	Contract	No. S00W235A00		
Lab sample id	R804146-01	Client sample id	J16MR1		
Dept sample id	7806-001	Location/Matrix	118-D-3, in process	SOIL	
Received	04/25/08	Collected/Weight	04/21/08 13:05	924 g	
% solids	93.3	Custody/SAF No	RC-074-068	RC-074	

ANALYTE	CAS NO	RESULT pCi/g	2σ ERR (COUNT)	MDA pCi/g	RDL pCi/g	QUALI-FIERS	TEST
Tritium	10028-17-8	0.213	3.0	5.18	400	U	H
Carbon 14	14762-75-5	0.464	2.2	3.78	50.0	U	C
Nickel 63	13981-37-8	6.90	2.3	3.46	30.0		NI_L
Total Strontium	SR-RAD	13.1	0.65	0.258	1.00		SR
Potassium 40	13966-00-2	9.86	0.73	0.400			GAM
Cobalt 60	10198-40-0	0.256	0.056	0.054	0.050		GAM
Cesium 137	10045-97-3	1.04	0.063	0.045	0.100		GAM
Radium 226	13982-63-3	U		0.109	0.100	U	GAM
Radium 228	15262-20-1	0.622	0.17	0.175	0.200		GAM
Europium 152	14683-23-9	0.548	0.083	0.100	0.100		GAM
Europium 154	15585-10-1	U		0.121	0.100	U	GAM
Europium 155	14391-16-3	U		0.094	0.100	U	GAM
Thorium 228	14274-82-9	0.512	0.051	0.055			GAM
Thorium 232	TH-232	0.622	0.17	0.175			GAM
Uranium 235	15117-96-1	U		0.157		U	GAM
Uranium 238	U-238	U		5.45		U	GAM
Americium 241	14596-10-2	U		0.055		U	GAM
Silver 108m	14391-65-2	U		0.031		U	GAM
Sodium 22	13966-32-0	U		0.041		U	GAM

100D/DR BurialGrnd&RemainSite-SoilQT

Lab id	EBRLNE
Protocol	Hanford
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	05/12/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1195

Test SR Matrix SOIL
SDG 7806
ontact Melissa C. Mannion

LAB METHOD SUMMARY

TOTAL STRONTIUM IN SOLIDS

BETA COUNTING

Client Hanford
Contract No. S00W235A00
Contract SDG K1195

SULTS

'LE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Total Strontium
aration batch 6150-032					
146-01			7806-001	J16MR1	13.1
146-02			7806-002	Lab Control Sample	ok
146-03			7806-003	Method Blank	U
146-04			7806-004	Duplicate (R804146-01)	ok
nal values and limits from method				RDLs (pCi/g)	1.00
)/DR BurialGrnd&RemainSite-SoilQT					

THOD PERFORMANCE

'LE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
aration batch 6150-032			2σ prep error 10.4 % Reference Lab Notebook #6150, pg. 13													
:146-01			J16MR1	0.258	1.00			96		98			10	05/01/08	05/01	GRB-227
:146-02			Lab Control Sample	0.251	1.00			87		120				05/01/08	05/01	GRB-230
:146-03			Method Blank	0.333	1.00			94		100				05/01/08	05/01	GRB-231
:146-04			Duplicate (R804146-01)	0.249	1.00			93		98			10	05/01/08	05/01	GRB-228
nal values and limits from method				1.00	1.00			30-105		100			180			

:OCEDURES	REFERENCE	SRTOT_SEP_PRECIP_GPC
	SPP-061	Determination of Moisture Content in Solid Samples rev 0
	SPP-071	Soil Dissolution, > 1.0g Aliquot, rev 5
	CP-383	Strontium in Dissolved Solid of < 5.0g Aliquot, rev 1

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 0.273 ± 0.081
YIELD 92 ± 8

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 05/12/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1195

Test GAM Matrix SOIL
SDG 7806
ontact Melissa C. Mannion

LAB METHOD SUMMARY

GAMMA SCAN

GAMMA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1195

SULTS

'LE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Cobalt 60	Cesium 137
aration batch 6150-032						
146-01			7806-001	J16MR1	0.256	1.04
146-02			7806-002	Lab Control Sample	ok	ok
146-03			7806-003	Method Blank	U	U
146-04			7806-004	Duplicate (R804146-01)	ok	ok
nal values and limits from method				RDLs (pCi/g)	0.050	0.100

)/DR BurialGrnd&RemainSite-SoilQT

THOD PERFORMANCE

'LE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
aration batch 6150-032			2σ prep error 7.0 % Reference Lab Notebook #6150, pg. 13													
:146-01			J16MR1	8.97	238					265			9	04/29/08	04/30	JR,07,00
:146-02			Lab Control Sample	0.045	238					266				04/29/08	04/30	JR,08,00
:146-03			Method Blank	8.18	238					189				04/29/08	04/30	JR,05,00
:146-04			Duplicate (R804146-01)	13.9	238					115			9	04/29/08	04/30	JR,07,00
nal values and limits from method				0.050	238					100			180			

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

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 7.77 ± 11.5
YIELD ____ ± ____

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 05/12/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1195

Test C Matrix SOIL
SDG 7806
:ontact Melissa C. Mannion

LAB METHOD SUMMARY

CARBON 14 IN SOLIDS

LIQUID SCINTILLATION COUNTING

Client Hanford
Contract No. S00W235A00
Contract SDG K1195

SULTS

'LE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Carbon 14
aration batch 6150-032					
:146-01			7806-001	J16MR1	U
:146-02			7806-002	Lab Control Sample	ok
:146-03			7806-003	Method Blank	U
:146-04			7806-004	Duplicate (R804146-01)	- U
nal values and limits from method				RDLs (pCi/g)	50.0
)/DR BurialGrnd&RemainSite-SoilQT					

THOD PERFORMANCE

'LE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
aration batch 6150-032			2σ prep error 10.0 % Reference Lab Notebook #6150, pg. 13													
:146-01			J16MR1	3.78	0.354			100		50			13	05/02/08	05/04	LSC-007
:146-02			Lab Control Sample	9.29	0.300			100		11				05/02/08	05/04	LSC-007
:146-03			Method Blank	4.43	0.300			100		50				05/02/08	05/04	LSC-007
:146-04			Duplicate (R804146-01)	3.78	0.356			100		50			13	05/02/08	05/04	LSC-007
nal values and limits from method				50.0	0.300					10			180			

:OCEDURES REFERENCE C14_COX_LSC
CP-251 Tritium/Carbon-14 Oxidation, rev 8

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 5.32 ± 5.33
YIELD 100 ± 0

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 05/12/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1195

Test H___ Matrix SOIL
SDG 7806
:ontact Melissa C. Mannion

LAB METHOD SUMMARY

TRITIUM IN SOLIDS

LIQUID SCINTILLATION COUNTING

Client Hanford
Contract No. S00W235A00
Contract SDG K1195

SULTS

'LE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Tritium	
aration batch 6150-032						
:146-01			7806-001	J16MR1	U	
:146-02			7806-002	Lab Control Sample	ok	
:146-03			7806-003	Method Blank	U	
:146-04			7806-004	Duplicate (R804146-01)	-	U

.nal values and limits from method RDLs (pCi/g) 400
)/DR BurialGrnd&RemainSite-SoilQT

THOD PERFORMANCE

'LE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
aration batch 6150-032			2σ prep error 10.0 % Reference Lab Notebook #6150, pg. 13													
:146-01			J16MR1	5.18	0.354			100		50			13	05/02/08	05/04	LSC-004
:146-02			Lab Control Sample	5.86	0.300			100		50				05/02/08	05/05	LSC-004
:146-03			Method Blank	6.01	0.300			100		50				05/02/08	05/04	LSC-004
:146-04			Duplicate (R804146-01)	5.06	0.356			100		50			13	05/02/08	05/04	LSC-004
.nal values and limits from method				400	0.300					25			180			

:OCEDURES REFERENCE TRITIUM_COX_LSC
CP-251 Tritium/Carbon-14 Oxidation, rev 8

AVERAGES ± 2 SD MDA 5.53 ± 0.954
FOR 4 SAMPLES YIELD 100 ± 0

Lab id EBRLNE
Protocol Hanford
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 05/12/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1195

Test NI L Matrix SOIL
SDG 7806
:ontact Melissa C. Mannion

LAB METHOD SUMMARY

NICKEL 63 IN SOLIDS

LIQUID SCINTILLATION COUNTING

Client Hanford
Contract No. S00W235A00
Contract SDG K1195

SULTS

'LE ID	RAW TEST	SUF- FIX	PLANCHET	CLIENT SAMPLE ID	Nickel 63
aration batch 6150-032					
:146-01			7806-001	J16MR1	6.90
:146-02			7806-002	Lab Control Sample	ok
:146-03			7806-003	Method Blank	U
:146-04			7806-004	Duplicate (R804146-01)	ok

.nal values and limits from method RDLs (pCi/g) 30.0
)/DR BurialGrnd&RemainSite-SoilQT

THOD PERFORMANCE

'LE ID	RAW TEST	SUF- FIX	CLIENT SAMPLE ID	MDA pCi/g	ALIQ g	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL- YZED	DETECTOR
aration batch 6150-032			2σ prep error 11.2 % Reference Lab Notebook #6150, pg. 13													
146-01			J16MR1	3.46	0.500			88		50			14	05/05/08	05/05	LSC-004
146-02			Lab Control Sample	3.04	0.500			98		50				05/05/08	05/05	LSC-004
146-03			Method Blank	3.03	0.500			99		50				05/05/08	05/05	LSC-004
146-04			Duplicate (R804146-01)	3.44	0.500			87		50			14	05/05/08	05/05	LSC-004
inal values and limits from method				30.0	0.500			30-105		25			180			

ROCEDURES REFERENCE NI63_LSC
SPP-071 Soil Dissolution, > 1.0g Aliquot, rev 5
CP-280 Nickel-63 Purification, rev 3

AVERAGES ± 2 SD MDA 3.24 ± 0.480
FOR 4 SAMPLES YIELD 93 ± 13

Lab id EBRLNE
Protocol Hanford
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Report date 05/12/08

SDG 7806
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1195

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.

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Protocol Hanford
Version Ver 1.0
Form DVD-RG
Version 3.06
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SDG 7806
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1195

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.

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REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1195

WORK SUMMARY

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

The following notes apply to this report:

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

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

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

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

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

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

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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
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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

Client Hanford
Contract No. S00W235A00
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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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REPORT GUIDE

Client Hanford
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DUPLICATE

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

The following notes apply to this report:

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

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

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

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

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

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

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

  This value reported for this limit is at most 999.

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

  1. A fixed percentage specified in the protocol.

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DUPLICATE

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

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

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

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

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

SDG 7806
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
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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.

SDG 7806
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
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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-074-068	Page 1 of 1

Collector: D.W. Shea/Sub-contractor SEC D. Everhart	Company Contact: D.W.Shea	Telephone No.: 521-6014	Project Coordinator: KESSNER, JH
Price Code: 8K	Data Turnaround: 15 days		
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Soil Quick Tu	Sampling Location: 118-D-3, in process K1195 (7806)		SAF No.: RC-074
Ice Chest No.: IERC-01-041	Field Logbook No.: EL-1607-3	COA: R118D32600	Method of Shipment: Fed Ex
Shipped To: EBERLINE SERVICES, LIONVILLE	Offsite Property No.: ~~See OPSC~~ 4/24/08 A080225		Bill of Lading/Air Bill No.: see OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Potentially radioactive

Special Handling and/or Storage

Preservation	None	None	None	None	None					
Type of Container	G/P	G/P	G/P	G/P	G/P					
No. of Container(s)	1	1	1	1	1					
Volume	60ml	500ml	60ml	60ml.	60ml					
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (2) in Special Instructions.	Carbon-14, Tritium - H3	Nickel-63; Strontium-89,90 -- Total Sr	See item (3) in Special Instructions.					
Sample No. / Matrix * / Sample Date / Sample Time										
J16MR1 / SOIL / 4/21/08 / 1305	DWS 4/21/08	✓	✓	✓	DWS 4/21/08					

CHAIN OF POSSESSION	Sign/Print Names	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Tammy C. Everhart	4-21-08 1312	DWShea DWShea	4/21/08 1312
Relinquished By/Removed From	DWShea DWSHEA	4/21/08 1750	Fridge IA	4/21/08 1750
Relinquished By/Removed From	1060/IA	4/24/08 1000	MSTankoard	4/24/08 1000
Relinquished By/Removed From	WCH MSTankoard	4/24/08 1000	Received By/Stored In	FedEx
Relinquished By/Removed From	FED EX		Received By/Stored In	04/25/08 09:30
Relinquished By/Removed From			Received By/Stored In	

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 (Full List) {Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc}
(2) Gamma Spec - Add-on {Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Silver-108 metastable, Sodium-22}
(3) RCF GEA Shipping Screen {Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155}

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

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

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

WCH-EE-011

EBERLINE

RICHMOND, CA LABORATORY

SAMPLE RECEIPT CHECKLIST

HK 4/25/08

Client: W.C. HANFORD City RICHLAND State WA

Date/Time received 04/25/08 09:32 CoC No. RC-074-068

Container I.D. No. ERC-01-041 Requested TAT (Days) 15 P.O. Received Yes [ ] No [ ]

INSPECTION

1. Custody seals on shipping container intact? Yes [X] No [ ] N/A [ ]
2. Custody seals on shipping container dated & signed? Yes [X] No [ ] N/A [ ]
3. Custody seals on sample containers intact? Yes [X] No [ ] N/A [ ]
4. Custody seals on sample containers dated & signed? Yes [X] No [ ] N/A [ ]
5. Packing material is: Wet [ ] Dry [X]
6. Number of samples in shipping container: 1 Sample Matrix S
7. Number of containers per sample: 3 (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 [signature] Date: 04/25/08 Time: 10:30

Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	Wipe	Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	wipe
J16MR1	<60						

Ion Chamber Ser. No. _____ Calibration date _____

Alpha Meter Ser. No. _____ Calibration date _____

Beta/Gamma Meter Ser. No. 100 48V Calibration date 09MAY07

LIONVILLE LABORATORY INC.

RECEIVED JUN 2008

2 June 2008

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

Subject: Analytical Data Package

Dear Ms. Kessner:

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

LvLI Batch #	0804L001
SDG #	K1195
SAF #	RC-074
Date Received	4/25/08
# Samples	1
Matrix	SOIL
Volatiles	
Semivolatiles	
Pest/PCB	
Glycols	
DRO/KRO/GRO	
GC Organics	
Herbicides	
Metals	X
Inorganics	

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\tmu-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-074 K1195

RECEIVED JUN 2008

DATE RECEIVED: 04/25/08 LVL LOT # :0804L001

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J16MR1						
SILVER, TOTAL	001	S	08L0185	04/21/08	05/06/08	05/06/08
SILVER, TOTAL	001 REP	S	08L0185	04/21/08	05/06/08	05/06/08
SILVER, TOTAL	001 MS	S	08L0185	04/21/08	05/06/08	05/06/08
ALUMINUM, TOTAL	001	S	08L0185	04/21/08	05/06/08	05/07/08
ALUMINUM, TOTAL	001 REP	S	08L0185	04/21/08	05/06/08	05/07/08
ALUMINUM, TOTAL	001 MS	S	08L0185	04/21/08	05/06/08	05/07/08
ARSENIC, TOTAL	001	S	08L0185	04/21/08	05/06/08	05/06/08
ARSENIC, TOTAL	001 REP	S	08L0185	04/21/08	05/06/08	05/06/08
ARSENIC, TOTAL	001 MS	S	08L0185	04/21/08	05/06/08	05/06/08
BORON, TOTAL	001	S	08L0185	04/21/08	05/06/08	05/06/08
BORON, TOTAL	001 REP	S	08L0185	04/21/08	05/06/08	05/06/08
BORON, TOTAL	001 MS	S	08L0185	04/21/08	05/06/08	05/06/08
BARIUM, TOTAL	001	S	08L0185	04/21/08	05/06/08	05/06/08
BARIUM, TOTAL	001 REP	S	08L0185	04/21/08	05/06/08	05/06/08
BARIUM, TOTAL	001 MS	S	08L0185	04/21/08	05/06/08	05/06/08
BERYLLIUM, TOTAL	001	S	08L0185	04/21/08	05/06/08	05/06/08
BERYLLIUM, TOTAL	001 REP	S	08L0185	04/21/08	05/06/08	05/06/08
BERYLLIUM, TOTAL	001 MS	S	08L0185	04/21/08	05/06/08	05/06/08
BISMUTH, TOTAL	001	S	08L0185	04/21/08	05/06/08	05/06/08
BISMUTH, TOTAL REP	001 REP	S	08L0185	04/21/08	05/06/08	05/06/08
BISMUTH, TOTAL SPIKE	001 MS	S	08L0185	04/21/08	05/06/08	05/06/08
CALCIUM, TOTAL	001	S	08L0185	04/21/08	05/06/08	05/06/08
CALCIUM, TOTAL	001 REP	S	08L0185	04/21/08	05/06/08	05/06/08
CALCIUM, TOTAL	001 MS	S	08L0185	04/21/08	05/06/08	05/06/08
CADMIUM, TOTAL	001	S	08L0185	04/21/08	05/06/08	05/06/08
CADMIUM, TOTAL	001 REP	S	08L0185	04/21/08	05/06/08	05/06/08
CADMIUM, TOTAL	001 MS	S	08L0185	04/21/08	05/06/08	05/06/08
COBALT, TOTAL	001	S	08L0185	04/21/08	05/06/08	05/06/08
COBALT, TOTAL	001 REP	S	08L0185	04/21/08	05/06/08	05/06/08
COBALT, TOTAL	001 MS	S	08L0185	04/21/08	05/06/08	05/06/08
CHROMIUM, TOTAL	001	S	08L0185	04/21/08	05/06/08	05/06/08
CHROMIUM, TOTAL	001 REP	S	08L0185	04/21/08	05/06/08	05/06/08
CHROMIUM, TOTAL	001 MS	S	08L0185	04/21/08	05/06/08	05/06/08
COPPER, TOTAL	001	S	08L0185	04/21/08	05/06/08	05/06/08
COPPER, TOTAL	001 REP	S	08L0185	04/21/08	05/06/08	05/06/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD RC-074

DATE RECEIVED: 04/25/08 LVL LOT # :0804L001

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
COPPER, TOTAL	001 MS	S	08L0185	04/21/08	05/06/08	05/06/08
IRON, TOTAL	001	S	08L0185	04/21/08	05/06/08	05/07/08
IRON, TOTAL	001 REP	S	08L0185	04/21/08	05/06/08	05/07/08
IRON, TOTAL	001 MS	S	08L0185	04/21/08	05/06/08	05/07/08
MERCURY, TOTAL	001	S	08C0078	04/21/08	05/05/08	05/07/08
MERCURY, TOTAL	001 REP	S	08C0078	04/21/08	05/05/08	05/07/08
MERCURY, TOTAL	001 MS	S	08C0078	04/21/08	05/05/08	05/07/08
POTASSIUM, TOTAL	001	S	08L0185	04/21/08	05/06/08	05/07/08
POTASSIUM, TOTAL	001 REP	S	08L0185	04/21/08	05/06/08	05/07/08
POTASSIUM, TOTAL	001 MS	S	08L0185	04/21/08	05/06/08	05/07/08
LITHIUM, TOTAL	001	S	08L0185	04/21/08	05/06/08	05/06/08
LITHIUM, TOTAL	001 REP	S	08L0185	04/21/08	05/06/08	05/06/08
LITHIUM, TOTAL	001 MS	S	08L0185	04/21/08	05/06/08	05/06/08
MAGNESIUM, TOTAL	001	S	08L0185	04/21/08	05/06/08	05/06/08
MAGNESIUM, TOTAL	001 REP	S	08L0185	04/21/08	05/06/08	05/06/08
MAGNESIUM, TOTAL	001 MS	S	08L0185	04/21/08	05/06/08	05/06/08
MANGANESE, TOTAL	001	S	08L0185	04/21/08	05/06/08	05/06/08
MANGANESE, TOTAL	001 REP	S	08L0185	04/21/08	05/06/08	05/06/08
MANGANESE, TOTAL	001 MS	S	08L0185	04/21/08	05/06/08	05/06/08
MOLYBDENUM, TOTAL	001	S	08L0185	04/21/08	05/06/08	05/06/08
MOLYBDENUM, TOTAL	001 REP	S	08L0185	04/21/08	05/06/08	05/06/08
MOLYBDENUM, TOTAL	001 MS	S	08L0185	04/21/08	05/06/08	05/06/08
SODIUM, TOTAL	001	S	08L0185	04/21/08	05/06/08	05/07/08
SODIUM, TOTAL	001 REP	S	08L0185	04/21/08	05/06/08	05/07/08
SODIUM, TOTAL	001 MS	S	08L0185	04/21/08	05/06/08	05/07/08
NICKEL, TOTAL	001	S	08L0185	04/21/08	05/06/08	05/06/08
NICKEL, TOTAL	001 REP	S	08L0185	04/21/08	05/06/08	05/06/08
NICKEL, TOTAL	001 MS	S	08L0185	04/21/08	05/06/08	05/06/08
PHOSPHORUS, TOTAL	001	S	08L0185	04/21/08	05/06/08	05/07/08
PHOSPHORUS, TOTAL	001 REP	S	08L0185	04/21/08	05/06/08	05/07/08
PHOSPHORUS, TOTAL	001 MS	S	08L0185	04/21/08	05/06/08	05/07/08
LEAD, TOTAL	001	S	08L0185	04/21/08	05/06/08	05/06/08
LEAD, TOTAL	001 REP	S	08L0185	04/21/08	05/06/08	05/06/08
LEAD, TOTAL	001 MS	S	08L0185	04/21/08	05/06/08	05/06/08
ANTIMONY, TOTAL	001	S	08L0185	04/21/08	05/06/08	05/06/08
ANTIMONY, TOTAL	001 REP	S	08L0185	04/21/08	05/06/08	05/06/08
ANTIMONY, TOTAL	001 MS	S	08L0185	04/21/08	05/06/08	05/06/08
SELENIUM, TOTAL	001	S	08L0185	04/21/08	05/06/08	05/06/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD RC-074

DATE RECEIVED: 04/25/08 LVL LOT # :0804L001

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SELENIUM, TOTAL	001 REP	S	08L0185	04/21/08	05/06/08	05/06/08
SELENIUM, TOTAL	001 MS	S	08L0185	04/21/08	05/06/08	05/06/08
SILICON, TOTAL	001	S	08L0185	04/21/08	05/06/08	05/06/08
SILICON, TOTAL	001 REP	S	08L0185	04/21/08	05/06/08	05/06/08
SILICON, TOTAL	001 MS	S	08L0185	04/21/08	05/06/08	05/06/08
TIN, TOTAL	001	S	08L0185	04/21/08	05/06/08	05/06/08
TIN, TOTAL	001 REP	S	08L0185	04/21/08	05/06/08	05/06/08
TIN, TOTAL	001 MS	S	08L0185	04/21/08	05/06/08	05/06/08
STRONTIUM, TOTAL	001	S	08L0185	04/21/08	05/06/08	05/06/08
STRONTIUM, TOTAL	001 REP	S	08L0185	04/21/08	05/06/08	05/06/08
STRONTIUM, TOTAL	001 MS	S	08L0185	04/21/08	05/06/08	05/06/08
THALLIUM, TOTAL	001	S	08L0185	04/21/08	05/06/08	05/06/08
THALLIUM, TOTAL	001 REP	S	08L0185	04/21/08	05/06/08	05/06/08
THALLIUM, TOTAL	001 MS	S	08L0185	04/21/08	05/06/08	05/06/08
URANIUM, TOTAL	001	S	08L0185	04/21/08	05/06/08	05/06/08
URANIUM, TOTAL	001 REP	S	08L0185	04/21/08	05/06/08	05/06/08
URANIUM, TOTAL	001 MS	S	08L0185	04/21/08	05/06/08	05/06/08
VANADIUM, TOTAL	001	S	08L0185	04/21/08	05/06/08	05/06/08
VANADIUM, TOTAL	001 REP	S	08L0185	04/21/08	05/06/08	05/06/08
VANADIUM, TOTAL	001 MS	S	08L0185	04/21/08	05/06/08	05/06/08
ZINC, TOTAL	001	S	08L0185	04/21/08	05/06/08	05/06/08
ZINC, TOTAL	001 REP	S	08L0185	04/21/08	05/06/08	05/06/08
ZINC, TOTAL	001 MS	S	08L0185	04/21/08	05/06/08	05/06/08

AB QC:

SILVER LABORATORY	LC1 BS	S	08L0185	N/A	05/06/08	05/06/08
SILVER, TOTAL	MB1	S	08L0185	N/A	05/06/08	05/06/08
ALUMINUM LABORTORY	LC1 BS	S	08L0185	N/A	05/06/08	05/07/08
ALUMINUM, TOTAL	MB1	S	08L0185	N/A	05/06/08	05/07/08
ARSENIC LABORATORY	LC1 BS	S	08L0185	N/A	05/06/08	05/06/08
ARSENIC, TOTAL	MB1	S	08L0185	N/A	05/06/08	05/06/08
BORON LABORATORY	LC1 BS	S	08L0185	N/A	05/06/08	05/06/08
BORON, TOTAL	MB1	S	08L0185	N/A	05/06/08	05/06/08
BARIUM LABORATORY	LC1 BS	S	08L0185	N/A	05/06/08	05/06/08
BARIUM, TOTAL	MB1	S	08L0185	N/A	05/06/08	05/06/08
BERYLLIUM LABORATORY	LC1 BS	S	08L0185	N/A	05/06/08	05/06/08
BERYLLIUM, TOTAL	MB1	S	08L0185	N/A	05/06/08	05/06/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD RC-074

DATE RECEIVED: 04/25/08 LVL LOT # :0804L001

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
BISMUTH, LCS	LC1 BS	S	08L0185	N/A	05/06/08	05/06/08
BISMUTH, TOTAL	MB1	S	08L0185	N/A	05/06/08	05/06/08
CALCIUM LABORATORY	LC1 BS	S	08L0185	N/A	05/06/08	05/06/08
CALCIUM, TOTAL	MB1	S	08L0185	N/A	05/06/08	05/06/08
CADMIUM LABORATORY	LC1 BS	S	08L0185	N/A	05/06/08	05/06/08
CADMIUM, TOTAL	MB1	S	08L0185	N/A	05/06/08	05/06/08
COBALT LABORATORY	LC1 BS	S	08L0185	N/A	05/06/08	05/06/08
COBALT, TOTAL	MB1	S	08L0185	N/A	05/06/08	05/06/08
CHROMIUM LABORATORY	LC1 BS	S	08L0185	N/A	05/06/08	05/06/08
CHROMIUM, TOTAL	MB1	S	08L0185	N/A	05/06/08	05/06/08
COPPER LABORATORY	LC1 BS	S	08L0185	N/A	05/06/08	05/06/08
COPPER, TOTAL	MB1	S	08L0185	N/A	05/06/08	05/06/08
IRON LABORATORY	LC1 BS	S	08L0185	N/A	05/06/08	05/07/08
IRON, TOTAL	MB1	S	08L0185	N/A	05/06/08	05/07/08
MERCURY LABORATORY	LC1 BS	S	08C0078	N/A	05/05/08	05/07/08
MERCURY, TOTAL	MB1	S	08C0078	N/A	05/05/08	05/07/08
POTASSIUM LABORATORY	LC1 BS	S	08L0185	N/A	05/06/08	05/07/08
POTASSIUM, TOTAL	MB1	S	08L0185	N/A	05/06/08	05/07/08
LITHIUM LABORATORY	LC1 BS	S	08L0185	N/A	05/06/08	05/06/08
LITHIUM, TOTAL	MB1	S	08L0185	N/A	05/06/08	05/06/08
MAGNESIUM LABORATORY	LC1 BS	S	08L0185	N/A	05/06/08	05/06/08
MAGNESIUM, TOTAL	MB1	S	08L0185	N/A	05/06/08	05/06/08
MANGANESE LABORATORY	LC1 BS	S	08L0185	N/A	05/06/08	05/06/08
MANGANESE, TOTAL	MB1	S	08L0185	N/A	05/06/08	05/06/08
MOLYBDENUM LABORATOR	LC1 BS	S	08L0185	N/A	05/06/08	05/06/08
MOLYBDENUM, TOTAL	MB1	S	08L0185	N/A	05/06/08	05/06/08
SODIUM LABORATORY	LC1 BS	S	08L0185	N/A	05/06/08	05/07/08
SODIUM, TOTAL	MB1	S	08L0185	N/A	05/06/08	05/07/08
NICKEL LABORATORY	LC1 BS	S	08L0185	N/A	05/06/08	05/06/08
NICKEL, TOTAL	MB1	S	08L0185	N/A	05/06/08	05/06/08
PHOSPHORUS LCS	LC1 BS	S	08L0185	N/A	05/06/08	05/07/08
PHOSPHORUS, TOTAL	MB1	S	08L0185	N/A	05/06/08	05/07/08
LEAD LABORATORY	LC1 BS	S	08L0185	N/A	05/06/08	05/06/08
LEAD, TOTAL	MB1	S	08L0185	N/A	05/06/08	05/06/08
ANTIMONY LABORATORY	LC1 BS	S	08L0185	N/A	05/06/08	05/06/08
ANTIMONY, TOTAL	MB1	S	08L0185	N/A	05/06/08	05/06/08
SELENIUM LABORATORY	LC1 BS	S	08L0185	N/A	05/06/08	05/06/08
SELENIUM, TOTAL	MB1	S	08L0185	N/A	05/06/08	05/06/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
TNU-HANFORD RC-074

DATE RECEIVED: 04/25/08 LVL LOT # :0804L001

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SILICON LABORATORY	LC1 BS	S	08L0185	N/A	05/06/08	05/06/08
SILICON, TOTAL	MB1	S	08L0185	N/A	05/06/08	05/06/08
TIN LABORATORY	LC1 BS	S	08L0185	N/A	05/06/08	05/06/08
TIN, TOTAL	MB1	S	08L0185	N/A	05/06/08	05/06/08
STRONTIUM LCS STANDA	LC1 BS	S	08L0185	N/A	05/06/08	05/06/08
STRONTIUM, TOTAL	MB1	S	08L0185	N/A	05/06/08	05/06/08
THALLIUM LABORATORY	LC1 BS	S	08L0185	N/A	05/06/08	05/06/08
THALLIUM, TOTAL	MB1	S	08L0185	N/A	05/06/08	05/06/08
URANIUM LABORATORY	LC1 BS	S	08L0185	N/A	05/06/08	05/06/08
URANIUM, TOTAL	MB1	S	08L0185	N/A	05/06/08	05/06/08
VANADIUM LABORATORY	LC1 BS	S	08L0185	N/A	05/06/08	05/06/08
VANADIUM, TOTAL	MB1	S	08L0185	N/A	05/06/08	05/06/08
ZINC LABORATORY	LC1 BS	S	08L0185	N/A	05/06/08	05/06/08
ZINC, TOTAL	MB1	S	08L0185	N/A	05/06/08	05/06/08

LIONVILLE LABORATORY INC.

Analytical Report

Client: TNU-HANFORD RC-074
LVL#: 0804L001
SDG/SAF#: K1195/RC-074

W.O.#: 11343-606-001-9999-00
Date Received: 04-25-08

METALS CASE NARRATIVE

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

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

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

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

   The sample was reported with a 3-fold dilution for all ICP analytes due to sample matrix. Aluminum, Iron, Potassium, and Sodium were run on a different instrument and reported from file PS0507A. Aluminum and Iron were rerun due to sample matrix and Potassium and Sodium were rerun due to ICVs and CCVs that were outside control limits.

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) for all data contained within this report.

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

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

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

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

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

8. All laboratory control samples (LCS) were within the 80-120% control with the exception of Silicon (39.2%). Refer to the Inorganics Laboratory Control Standards Report. The sample for Silicon may be biased low.

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

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

Sample ID	Element	PDS Concentration (ppb)	PDS % Recovery
J16MR1	Aluminum	66,000	101.3
	Antimony	300	98.6
	Iron	126,000	89.7
	Manganese	3,000	105.2
	Silicon	6,300	93.0

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

5/16/08
Date

alm/m04-001

METALS METHOD GLOSSARY

ne following methods are used as reference for the digestion and analysis of samples contained within th

ot#: 0804L001

eaching Procedure: __1310 __1311 __1312 __Other:_____

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

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

Metals Analysis Methods

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

__ Phosphorus Method: 6010B

L-WI000000008

METHOD REFERENCES AND DATA QUALIFIERS

DATA QUALIFIERS

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

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

ABBREVIATIONS

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

ANALYTICAL METAL METHODS

1. Not included in the method element list.

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

3. Flame AA.

4. Graphite Furnace AA.

L-WI-033/N-04/98

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 05/08/08

CLIENT: TNU-HANFORD RC-074 LVL LOT #: 0804L001

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J16MR1	Silver, Total	0.28 u	MG/KG	0.28	3.0
		Aluminum, Total	5620	MG/KG	11.3	3.0
		Arsenic, Total	2.8	MG/KG	1.4	3.0
		Boron, Total	1.6	MG/KG	1.4	3.0
		Barium, Total	56.6	MG/KG	0.28	3.0
		Beryllium, Total	0.67	MG/KG	0.14	3.0
		Bismuth, Total	1.7 u	MG/KG	1.7	3.0
		Calcium, Total	6090	MG/KG	11.3	3.0
		Cadmium, Total	0.14 u	MG/KG	0.14	3.0
		Cobalt, Total	8.3	MG/KG	0.56	3.0
		Chromium, Total	7.8	MG/KG	0.56	3.0
		Copper, Total	14.9	MG/KG	0.56	3.0
		Iron, Total	25000	MG/KG	12.7	3.0
		Mercury, Total	0.009u	MG/KG	0.009	1.0
		Potassium, Total	829	MG/KG	139	3.0
		Lithium, Total	5.3	MG/KG	0.11	3.0
		Magnesium, Total	4430	MG/KG	7.0	3.0
		Manganese, Total	319	MG/KG	0.11	3.0
		Molybdenum, Total	0.85 u	MG/KG	0.85	3.0
		Sodium, Total	236	MG/KG	5.6	3.0
		Nickel, Total	10.3	MG/KG	0.56	3.0
		Phosphorus, Total	1060	MG/KG	14.1	3.0
		Lead, Total	4.3	MG/KG	0.85	3.0
		Antimony, Total	0.85 u	MG/KG	0.85	3.0
		Selenium, Total	1.7 u	MG/KG	1.7	3.0
		Silicon, Total	457	MG/KG	11.3	3.0
		Tin, Total	1.7 u	MG/KG	1.7	3.0
		Strontium, Total	24.0	MG/KG	0.08	3.0
		Thallium, Total	1.7 u	MG/KG	1.7	3.0
		Uranium, Total	5.6 u	MG/KG	5.6	3.0
		Vanadium, Total	62.5	MG/KG	0.39	3.0
		Zinc, Total	43.7	MG/KG	1.7	3.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 05/08/08

CLIENT: TNU-HANFORD RC-074 LVL LOT #: 0804L001

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

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	08L0185-MB1	Silver, Total	0.10 u	MG/KG	0.10	1.0
		Aluminum, Total	4.0 u	MG/KG	4.0	1.0
		Arsenic, Total	0.50 u	MG/KG	0.50	1.0
		Boron, Total	0.50 u	MG/KG	0.50	1.0
		Barium, Total	0.10 u	MG/KG	0.10	1.0
		Beryllium, Total	0.05 u	MG/KG	0.05	1.0
		Bismuth, Total	0.60 u	MG/KG	0.60	1.0
		Calcium, Total	4.0 u	MG/KG	4.0	1.0
		Cadmium, Total	0.05 u	MG/KG	0.05	1.0
		Cobalt, Total	0.20 u	MG/KG	0.20	1.0
		Chromium, Total	1.5	MG/KG	0.20	1.0
		Copper, Total	0.20 u	MG/KG	0.20	1.0
		Iron, Total	8.3	MG/KG	4.5	1.0
		Potassium, Total	49.3 u	MG/KG	49.3	1.0
		Lithium, Total	0.12	MG/KG	0.04	1.0
		Magnesium, Total	2.5 u	MG/KG	2.5	1.0
		Manganese, Total	0.19	MG/KG	0.04	1.0
		Molybdenum, Total	0.30 u	MG/KG	0.30	1.0
		Sodium, Total	7.9	MG/KG	2.0	1.0
		Nickel, Total	0.67	MG/KG	0.20	1.0
		Phosphorus, Total	5.0 u	MG/KG	5.0	1.0
		Lead, Total	0.30 u	MG/KG	0.30	1.0
		Antimony, Total	0.30 u	MG/KG	0.30	1.0
		Selenium, Total	0.60 u	MG/KG	0.60	1.0
		Silicon, Total	4.0 u	MG/KG	4.0	1.0
		Tin, Total	0.61	MG/KG	0.60	1.0
		Strontium, Total	0.03 u	MG/KG	0.03	1.0
		Thallium, Total	0.60 u	MG/KG	0.60	1.0
		Uranium, Total	2.0 u	MG/KG	2.0	1.0
		Vanadium, Total	0.14 u	MG/KG	0.14	1.0
		Zinc, Total	0.60 u	MG/KG	0.60	1.0
BLANK1	08C0078-MB1	Mercury, Total	0.01 u	MG/KG	0.01	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 05/08/08

CLIENT: TNU-HANFORD RC-074 LVL LOT #: 0804L001

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J16MR1	Silver, Total	3.9	0.28u	4.6	84.8	3.0
		Aluminum, Total	6290	5620	183	366.3*	3.0
		Arsenic, Total	173	2.8	183	92.8	3.0
		Boron, Total	86.8	1.6	91.6	93.0	3.0
		Barium, Total	226	56.6	183	92.5	3.0
		Beryllium, Total	5.0	0.67	4.6	94.2	3.0
		Bismuth, Total	434	1.7 u	458	94.7	3.0
		Calcium, Total	8950	6090	2290	125.0	3.0
		Cadmium, Total	4.3	0.14u	4.6	93.5	3.0
		Cobalt, Total	51.6	8.3	45.8	94.5	3.0
		Chromium, Total	25.3	7.8	18.3	95.6	3.0
		Copper, Total	35.7	14.9	22.9	90.8	3.0
		Iron, Total	24700	25000	91.6	-320. *	3.0
		Mercury, Total	0.16	0.00u	0.14	114.1	1.0
		Potassium, Total	3050	829	2290	97.0	3.0
		Lithium, Total	95.0	5.3	91.6	97.9	3.0
		Magnesium, Total	6530	4430	2290	91.3	3.0
		Manganese, Total	353	319	45.8	74.9*	3.0
		Molybdenum, Total	82.8	0.85u	91.6	90.4	3.0
		Sodium, Total	2460	236	2290	97.1	3.0
		Nickel, Total	53.5	10.3	45.8	94.3	3.0
		Phosphorus, Total	1530	1060	458	101.9	3.0
		Lead, Total	46.9	4.3	45.8	93.0	3.0
		Antimony, Total	25.2	0.85u	45.8	55.0	3.0
		Selenium, Total	150	1.7 u	183	82.1	3.0
		Silicon, Total	661	457	91.6	222.7*	3.0
		Tin, Total	84.6	1.7 u	91.6	92.4	3.0
		Strontium, Total	119	24.0	91.6	103.7	3.0
		Thallium, Total	169	1.7 u	183	92.4	3.0
		Uranium, Total	429	5.6 u	458	93.7	3.0
		Vanadium, Total	106	62.5	45.8	93.9	3.0
		Zinc, Total	86.5	43.7	45.8	93.4	3.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 05/08/08

CLIENT: TNU-HANFORD RC-074 LVL LOT #: 0804L001

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

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	J16MR1	Silver, Total	0.28u	0.28u	NC	3.0
		Aluminum, Total	5620	5530	1.6	3.0
		Arsenic, Total	2.8	3.5	22.2	3.0
		Boron, Total	1.6	1.4 u	NC	3.0
		Barium, Total	56.6	63.8	12.0	3.0
		Beryllium, Total	0.67	0.64	3.8	3.0
		Bismuth, Total	1.7 u	1.7 u	NC	3.0
		Calcium, Total	6090	6420	5.4	3.0
		Cadmium, Total	0.14u	0.14u	NC	3.0
		Cobalt, Total	8.3	8.9	7.0	3.0
		Chromium, Total	7.8	8.1	3.8	3.0
		Copper, Total	14.9	16.8	12.0	3.0
		Iron, Total	25000	25200	0.99	3.0
		Mercury, Total	0.00u	0.00u	NC	1.0
		Potassium, Total	829	888	6.9	3.0
		Lithium, Total	5.3	5.2	1.9	3.0
		Magnesium, Total	4430	4560	2.9	3.0
		Manganese, Total	319	364	13.0	3.0
		Molybdenum, Total	0.85u	0.84u	NC	3.0
		Sodium, Total	236	248	5.0	3.0
		Nickel, Total	10.3	12.1	16.1	3.0
		Phosphorus, Total	1060	1160	8.4	3.0
		Lead, Total	4.3	4.4	2.3	3.0
		Antimony, Total	0.85u	0.84u	NC	3.0
		Selenium, Total	1.7 u	1.7 u	NC	3.0
		Silicon, Total	457	423	7.8	3.0
		Tin, Total	1.7 u	1.7 u	NC	3.0
		Strontium, Total	24.0	25.0	4.1	3.0
		Thallium, Total	1.7 u	1.7 u	NC	3.0
		Uranium, Total	5.6 u	5.6 u	NC	3.0
		Vanadium, Total	62.5	63.3	1.3	3.0
		Zinc, Total	43.7	45.2	3.4	3.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 05/08/08

CLIENT: TNU-HANFORD RC-074 LVL LOT #: 0804L001

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

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	08L0185-LC1	Silver, LCS	45.7	50.0	MG/KG	91.4
		Aluminum, LCS	450	500	MG/KG	89.9
		Arsenic, LCS	891	1000	MG/KG	89.1
		Boron, LCS	452	500	MG/KG	90.4
		Barium, LCS	456	500	MG/KG	91.3
		Beryllium, LCS	23.4	25.0	MG/KG	93.6
		Bismuth, LCS	454	500	MG/KG	90.8
		Calcium, LCS	2380	2500	MG/KG	95.2
		Cadmium, LCS	23.2	25.0	MG/KG	92.8
		Cobalt, LCS	232	250	MG/KG	93.0
		Chromium, LCS	46.6	50.0	MG/KG	93.2
		Copper, LCS	116	125	MG/KG	92.7
		Iron, LCS	458	500	MG/KG	91.6
		Potassium, LCS	2180	2500	MG/KG	87.4
		Lithium, LCS	486	500	MG/KG	97.1
		Magnesium, LCS	2300	2500	MG/KG	91.9
		Manganese, LCS	70.6	75.0	MG/KG	94.1
		Molybdenum, LCS	448	500	MG/KG	89.6
		Sodium, LCS	2260	2500	MG/KG	90.3
		Nickel, LCS	186	200	MG/KG	93.0
		Phosphorus, LCS	448	500	MG/KG	89.6
		Lead, LCS	231	250	MG/KG	92.3
		Antimony, LCS	267	300	MG/KG	89.0
		Selenium, LCS	871	1000	MG/KG	87.1
		Silicon, LCS	196	500	MG/KG	39.2
		Tin, LCS	463	500	MG/KG	92.7
		Strontium, LCS	460	500	MG/KG	91.9
		Thallium, LCS	908	1000	MG/KG	90.8
		Uranium, LCS	454	500	MG/KG	90.7
		Vanadium, LCS	230	250	MG/KG	92.1
		Zinc, LCS	92.1	100	MG/KG	92.1
LCS1	08C0078-LC1	Mercury, LCS	4.6	4.7	MG/KG	98.5

Lionville Laboratory Incorporated Logbook #: 440

SAMPLE DIGESTION RECORD

SOP: L-SPI-3020 Rev. 00

Digestion Batch #: 08L0185
Date/Time Initiated: 5/6/08 1000
Date/Time Completed:
Analyst(s): MW
Matrix: (Soil) Water Other:
Instr. Type: AA (ICP)
Parameters: See bottle

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

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

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

TMW

COC Batch #	Spike Vol(s) (mL)	Initial Wt/Vol (g/mL)	Final Vol (mL)	pH <2	Type: To/So/TC	Texture	Color/Appearance	Artifact	Turb
0804L989-002		1.16gr	100ml	<2	TO	coarse	brown soil	rocks, grass	(RB)
002R		1.22gr	↓	↓	↓	↓	↓	↓	↓
002S	1.0ml *	1.16gr	↓	↓	↓	↓	↓	↓	↓
0804L001-001		1.15gr	↓	↓	↓	↓	↓	rocks	
001R		1.16gr	↓	↓	↓	↓	↓	↓	
001S	1.0ml *	1.18gr	↓	↓	↓	↓	↓	↓	
08L0185-MB1		1.0gr	↓	↓	↓	↓	boiling days		
LC1	1.0ml *	1.0gr	↓	↓	↓	↓	↓		

MW 5/6/08

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

Reagent IDs:
HNO_3 W.E. E46025
HCL E45 G05039
H_2O_2 MW 5/6/08
1:1 HNO_3 9787-077-04
1:1 HCL

File ID#:

LIMS Transfer: Y N

Data Review By/Date: 5/7/08

* also 0.5ml 6072-076-06 (Bi)
0.5ml 6072-076-07 (P-)
0.5ml 6072-078-01 (U-)
0.5ml 6072-076-05 (Zr)

Lionville Laboratory Incorporated

MERCURY PREPARATION

Logbook # 422

Analyst: JEA
Date 5/5/08
Start Time/Temp: 1225 | 93°
End Time/Temp: 1255 | 99°

Instrument ID HG3.2
Balance #: B29 /NA
Pipette Calibration (Daily) Y ✓

Prep Batch: 08C0078
Worksheet: HG050702
SOP No. ME-HgCVAA, Rev. 02

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

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

LvLI Batch #	Container Number	Spike Volume (mL)	Spike Conc. (µg/L)	Initial Wt. or Volume (g or mL)	Final Sample Volume (mL)	Comments, % Solids, etc.
Blank	40			10mL	50mL	
0.2 µg/L	CTR	0.100				
1.0	205	0.500				
2.0	DX	1.000				
5.0	8/G	2.500				
10.0	K35	5.000				
ICV	GR	0.125	2.5			
CCV	E	0.250	5.0			
ICB/CCB	183/QN					90.502
MB1	3P			0.30		PBS178 100.00
LC1	818	*	*	0.31		LCSS178 ↓
0804L001-001	H			0.38		92.54
001R	C4D			0.36		↓
001S	DF	0.500	1.0	0.38		↓
0804L009-004	X8			0.32		100.00
0804L010-001	C15			0.35		97.38
001R	A4			0.33		↓
001S	C48	0.500	1.0	0.35		↓
002	3H			0.32		96.40
003	C9			0.37		R 97.86
004	3			0.32		↓ 97.25
0804L026-001	NB			0.34		93.81
002	411			0.35		96.56
0804L032-001	290			0.34		100.00
W.E. MJ 5/7/08 001R	LLT			0.35		↓
001S	LV	0.050	10.0	0.40		↓
002	886			0.40		↓

Standard:	ID	Prep Date/Time
ICAL/MS	RI 6072-78-14B	5/5/08 1040
ICV/CCV/LCS	US 6072-78-15A	↓

Reviewed By/Date: [signature] 5/8/08

see book # 9368 for std traceability information

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

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

ionville Laboratory
icorporated

MERCURY PREPARATION

Logbook # 422

Analyst: EA
Date 5/5/08
Start Time/Temp: see page
End Time/Temp: 092

Instrument ID HG3.2
Balance #: B29 /NA
Pipette Calibration (Daily) Y ✓

Prep Batch: 08C0078
Worksheet: HG050702
SOP No. ME-HgCVAA, Rev. 02

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

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

LvLI Batch #	Container Number	Spike Volume (mL)	Spike Conc. (µg/L)	Initial Wt. or Volume (g or mL)	Final Sample Volume (mL)	Comments, % Solids, etc.
0804L032-003	871			0.34	50mL	100.0
004	P18			0.39		
0804L020-001	A9			0.38		
001R	111E			0.34		
001S	1C	0.500	1.0	0.38		
001T	700	0.500	1.0	0.33		
TE 0805/06 0083	D4			0.30		
008	WN			0.34		
010	SE			0.31		
012	B2			0.35		
014	997			0.34		

EA 5/5/08

Standard:	ID	Prep Date/Time
ICAL/MS		
ICV/CCV/LCS	See page	092

Reviewed By/Date: [signature] 5/6/08

see book # 9368 for std traceability information

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

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

Lionville Laboratory Use Only

08041001

Custody Transfer Record/Lab Work Request

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI LIONVILLE LABORATORIES, INC.

000000018

Client: TNC HANFORD SAFH RC-074

Est. Final Proj. Sampling Date:

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

Project Contact/Phone#:

Lionville Laboratory Project Manager: O. Johnson

QC: SW846 Del: STD TAT: 15 days

Date Rec'd: 4-25-08 Date Due: 5-10-08

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

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected													
001	TIL6MB1	✓	✓	Sol	4-21-08	1305								✓					

Special Instructions:

met① = HSL + B, Bi, Li, Mo, P, Si, Sr, Sn, U

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

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	4/25/08	0955

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time

ORIGINAL COMPOSITE

Washington Closure Hanford	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST		RC-074-068	Page 1 of 1
Collector: D.W. Shea/Sub-contractor / D. Everhart SEC	Company Contact: D.W.Shea	Telephone No.: 521-6014	Project Coordinator: KESSNER, JH	Price Code: 8K
Project Designation: 100-D/DR Burial Grounds & Remaining Sites - Soil Quick Tu	Sampling Location: 118-D-3, in process		SAF No.: RC-074	Data Turnaround: 15 days
Ice Chest No.: AFS-04-053	Field Logbook No.: EL-1607-3	COA: R118D32600	Method of Shipment: Fed Ex	
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A080241 ~~See OPSC~~ 4/24/08		Bill of Lading/Air Bill No.: See OPSC	

POSSIBLE SAMPLE HAZARDS/REMARKS

Potentially radioactive

Special Handling and/or Storage

Preservation	None	None	None	None	None					
Type of Container	G/P	G/P	G/P	G/P	G/P					
No. of Container(s)	1	1	1	1	1					
Volume	60mL	500mL	60mL	60mL	60mL					
SAMPLE ANALYSIS	See item (1) in Special Instructions.	See item (2) in Special Instructions.	Carbon-14, Tritium-H3	Nickel-63, Strontium-90,90 -- Total Sr	See item (3) in Special Instructions.					
Sample No. / Matrix * / Sample Date / Sample Time										
116MR1 / SOIL / 4/21/08 / 1305	✓									

DWShea 4/21/08

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time 1312 4-21-08	Received By/Stored In DWShea DWShea	Date/Time 4/21/08 1312
Relinquished By/Removed From DWShea DWShea	Date/Time 4/21/08 1750	Received By/Stored In Fridge 1A	Date/Time 4/21/08 1750
Relinquished By/Removed From 360/1A 4/24/08	Date/Time 0915	Received By/Stored In MSTankovich 4/24/08	Date/Time 0915
Relinquished By/Removed From WCH MSTankovich 4/24/08	Date/Time 0915	Received By/Stored In	Date/Time FedEx
Relinquished By/Removed From FedEx	Date/Time 4-25/08 0955	Received By/Stored In V. Nimesh	Date/Time 4-25-08 0955
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

(1) ICP Metals - 6010 (Full List) [Aluminum, Antimony, Arsenic, Barium, Beryllium, Bismuth, Boron, Cadmium, Calcium, Chromium, Cobalt, Copper, Iron, Lead, Lithium, Magnesium, Manganese, Molybdenum, Nickel, Phosphorus, Potassium, Selenium, Silicon, Silver, Sodium, Strontium, Thallium, Tin, Uranium, Vanadium, Zinc] and log via CURA
(2) Gamma Spec - Add-on [Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Silver-108 metastable, Sodium-22]
(3) RCF GEA Shipping Screen [Americium-241, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155]

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

CH-EE-011

000000019

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: TNLL HANFORD

Project/SAF/SOW/Release #:

Date: 4/25/08

LvLI Batch #: 0804L 001

Sample Custodian: [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 7989272033 13
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 2°	°C	Cooler # AFS-04-053
How was the temperature taken?	☑ IR	☐ Temp. Blank	☐ Other (Specify):
Is the Temp. Criteria met for these samples? (Hg in soils @ 4°C)	☑ Yes	☐ No	
6. Custody seals on sample containers intact, signed and dated?	☑ Yes	☐ No	☐ No Seals
7. COC (Client & LvLI) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14. QC stickers placed on bottles designated by client?	☑ Yes	☐ No	☐ N/A
15. Shipment meets LvLI Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A

Person Contacted _____ Date _____

LvLI LIONVILLE LABORATORY INC.