0079269

SAF-RC-052
Remaining Sites Confirmation Sampling - Water
FINAL DATA PACKAGE

COMPLETE COPY OF DATA PACKAGE TO:

Kathy Wendt H4-21 KW 11/10/08
INITIAL/DATE

COMMENTS:

SDG K1341 **SAF-RC-052**

Rad only Chem only X Rad & Chem

X Complete Partial

Waste Site: 100-D-78

RECEIVED
NOV 13 2008
EDMC

EBERLINE SERVICES

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

October 2, 2008

RECEIVED
OCT 2008

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

Reference: **P.O. #S00W235A00**
Eberline Services R8-09-157-7701, SDG K1341

Dear Ms. Kessner:

Enclosed is the data report for one water sample designated under SAF No. RC-052 received at Eberline Services on September 19, 2008. The sample was 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

NJV

Enclosure: Data Package

1.0 GENERAL

Washington Closure Hanford (WCH) Sample Delivery Group K1341 was composed of one water sample designated under SAF No. RC-052 with a Project Designation of: Remaining Sites Confirmation Sampling-Water.

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 October 1, 2008.

2.0 ANALYSIS NOTES

2.1 Gross Alpha and Gross Beta Analysis

No problems were encountered during the course of the analyses.

2.2 Gamma Spectroscopy

No problems were encountered during the course of the analyses.

3.0 Case Narrative Certification Statement

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

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

10/2/08
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 K1341

SDG	7701
Contact	Melissa C. Mannion

Client	Hanford
Contract	No. S00W235A00
Case no	SDG_K1341

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	Hanford1
Version	Ver 1.0
Form	DVD-TOC
Version	3.06
Report date	10/02/08

SDG 7701
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1341

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 Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 10/02/08

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 K1341

SDG 7701
Contact Melissa C. Mannion

LAB SAMPLE SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1341

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAF NO	CHAIN OF CUSTODY	COLLECTED
R809157-01	J17J48	100-D-78	WATER		RC-052	RC-052-008	09/17/08 09:00
R809157-02	Lab Control Sample		WATER		RC-052		
R809157-03	Method Blank		WATER		RC-052		
R809157-04	Duplicate (R809157-01)	100-D-78	WATER		RC-052		09/17/08 09:00

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LS
Version 3.06
Report date 10/02/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1341

SDG 7701
Contact Melissa C. Mannion

QC SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1341

: 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
'01	RC-052-008	J17J48	WATER		1.7 L		09/19/08	2	R809157-01	7701-001
		Method Blank	WATER						R809157-03	7701-003
		Lab Control Sample	WATER						R809157-02	7701-002
		Duplicate (R809157-01)	WATER		1.7 L		09/19/08	2	R809157-04	7701-004

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-QS
Version 3.06
Report date 10/02/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1341

SDG 7701
Contact Melissa C. Mannion

PREP BATCH SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1341

TEST	MATRIX	METHOD	PREPARATION BATCH	ERROR 2σ %	PLANCHETS ANALYZED CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	MS/ORIG	QUALIFIERS
Gas Proportional Counting												
93A	WATER	Gross Alpha in Water	6160-193	20.6	1			1	1	1/1		
93B	WATER	Gross Beta in Water	6160-193	11.0	1			1	1	1/1		
Gamma Spectroscopy												
GAM	WATER	Gamma Emitters	6160-193	7.0	1			1	1	1/1		

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

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-PBS
Version 3.06
Report date 10/02/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1341

SDG 7701
Contact Melissa C. Mannion

LAB WORK SUMMARY

Client Hanford
Contract No. S00W235A00
Case no SDG K1341

LAB SAMPLE COLLECTED RECEIVED	CLIENT SAMPLE ID LOCATION CUSTODY	SAF No	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
809157-01	J17J48			7701-001	93A/93		09/30/08	09/30/08	BW	Gross Alpha in Water
09/17/08	100-D-78		WATER	7701-001	93B/93		09/30/08	09/30/08	BW	Gross Beta in Water
09/19/08	RC-052-008	RC-052		7701-001	GAM		09/25/08	09/29/08	CSS	Gamma Emitters
809157-02	Lab Control Sample			7701-002	93A/93		09/28/08	09/30/08	BW	Gross Alpha in Water
			WATER	7701-002	93B/93		09/28/08	09/30/08	BW	Gross Beta in Water
		RC-052		7701-002	GAM		09/26/08	09/29/08	CSS	Gamma Emitters
809157-03	Method Blank			7701-003	93A/93		09/30/08	09/30/08	BW	Gross Alpha in Water
			WATER	7701-003	93B/93		09/30/08	09/30/08	BW	Gross Beta in Water
		RC-052		7701-003	GAM		09/26/08	09/29/08	CSS	Gamma Emitters
809157-04	Duplicate (R809157-01)			7701-004	93A/93		09/30/08	09/30/08	BW	Gross Alpha in Water
09/17/08	100-D-78		WATER	7701-004	93B/93		09/30/08	09/30/08	BW	Gross Beta in Water
09/19/08		RC-052		7701-004	GAM		09/26/08	09/29/08	CSS	Gamma Emitters

COUNTS OF TESTS BY SAMPLE TYPE

TEST	SAF No	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
93A/93	RC-052	Gross Alpha in Water	900.0_ALPHABETA_GPC	1			1	1	1	4
93B/93	RC-052	Gross Beta in Water	900.0_ALPHABETA_GPC	1			1	1	1	4
GAM	RC-052	Gamma Emitters	GAMMA_GS	1			1	1	1	4
TOTALS				3			3	3	3	12

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 10/02/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1341

7701-003 Method Blank

METHOD BLANK

SDG	7701	Client/Case no	Hanford	SDG K1341	
Contact	Melissa C. Mannion	Contract	No. S00W235A00		
Lab sample id	R809157-03	Client sample id	Method Blank		
Dept sample id	7701-003	Material/Matrix		WATER	
		SAF No	RC-052		

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	2.87	19	40.4	3.00	U	93A
Gross Beta	12587-47-2	-24.6	22	39.9	4.00	U	93B
Potassium 40	13966-00-2	U		212		U	GAM
Cobalt 60	10198-40-0	U		8.27	25.0	U	GAM
Cesium 137	10045-97-3	U		8.00	15.0	U	GAM
Radium 226	13982-63-3	U		18.2		U	GAM
Radium 228	15262-20-1	U		36.6		U	GAM
Europium 152	14683-23-9	U		20.9	50.0	U	GAM
Europium 154	15585-10-1	U		22.5	50.0	U	GAM
Europium 155	14391-16-3	U		22.3	50.0	U	GAM
Thorium 228	14274-82-9	U		11.7		U	GAM
Thorium 232	TH-232	U		36.6		U	GAM
Uranium 235	15117-96-1	U		34.0		U	GAM
Uranium 238	U-238	U		978		U	GAM
Americium 241	14596-10-2	U		24.8		U	GAM
Beryllium 7	13966-02-4	U		54.2		U	GAM
Ruthenium 106	13967-48-1	U		64.5		U	GAM
Antimony 125	14234-35-6	U		19.9		U	GAM
Cesium 134	13967-70-9	U		9.06		U	GAM

Remaining Sites Confirmtn Samp-Water

QC-BLANK 67409

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	10/02/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1341

7701-002

Lab Control Sample

LAB CONTROL SAMPLE

SDG 7701

Contact Melissa C. Mannion

Client/Case no Hanford SDG K1341

Contract No. S00W235A00

Lab sample id R809157-02

Dept sample id 7701-002

Client sample id Lab Control Sample

Material/Matrix WATER

SAF No RC-052

ANALYTE	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST	ADDED pCi/L	2σ ERR pCi/L	REC %	3σ LMTS (TOTAL)	PROTOCOL LIMITS
Gross Alpha	719	110	54.3	3.00		93A	680	27	106	59-141	70-130
Gross Beta	581	49	40.1	4.00		93B	617	25	94	80-120	80-120
Cobalt 60	403	12	5.63	25.0		GAM	414	17	97	87-113	80-120
Cesium 137	494	11	7.37	15.0		GAM	466	19	106	87-113	80-120

Remaining Sites Confirmtn Samp-Water

QC-LCS 67408

Lab id EBRLNE

Protocol Hanford1

Version Ver 1.0

Form DVD-LCS

Version 3.06

Report date 10/02/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1341

7701-004 J17J48

DUPLICATE

SDG	7701			Client/Case no	Hanford SDG K1341
Contact	Melissa C. Mannion			Contract	No. S00W235A00
	DUPLICATE		ORIGINAL		
Lab sample id	R809157-04	Lab sample id	R809157-01	Client sample id	J17J48
Dept sample id	7701-004	Dept sample id	7701-001	Location/Matrix	100-D-78 WATER
		Received	09/19/08	Collected/Volume	09/17/08 09:00 1.7 L
				Custody/SAF No	RC-052-008 RC-052

ANALYTE	DUPLICATE pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST	ORIGINAL pCi/L	2σ ERR (COUNT)	MDA pCi/L	QUALI-FIERS	RPD %	3σ TOT	DER σ
Gross Alpha	43.4	63	99.8	3.00	U	93A	26.9	150	250	U	-		0.2
Gross Beta	47.8	29	44.1	4.00		93B	41.8	29	46.0	U	13	139	0.3
Potassium 40	U		147		U	GAM	U		264	U	-		0.8
Cobalt 60	U		8.49	25.0	U	GAM	U		8.82	U	-		0.1
Cesium 137	U		8.52	15.0	U	GAM	U		9.39	U	-		0.1
Radium 226	U		22.4		U	GAM	U		21.4	U	-		0.1
Radium 228	U		33.6		U	GAM	U		42.4	U	-		0.3
Europium 152	U		22.6	50.0	U	GAM	U		24.8	U	-		0.1
Europium 154	U		23.2	50.0	U	GAM	U		26.7	U	-		0.2
Europium 155	U		22.6	50.0	U	GAM	U		25.8	U	-		0.2
Thorium 228	U		22.1		U	GAM	U		14.0	U	-		0.6
Thorium 232	U		33.6		U	GAM	U		42.4	U	-		0.3
Uranium 235	U		34.0		U	GAM	U		35.2	U	-		0
Uranium 238	U		891		U	GAM	U		1140	U	-		0.3
Americium 241	U		61.3		U	GAM	U		29.4	U	-		0.9
Beryllium 7	U		65.0		U	GAM	U		69.2	U	-		0.1
Ruthenium 106	U		59.5		U	GAM	U		76.2	U	-		0.3
Antimony 125	U		18.7		U	GAM	U		20.5	U	-		0.1
Cesium 134	U		8.55		U	GAM	U		11.5	U	-		0.4

Remaining Sites Confirmtn Samp-Water

QC-DUP#1 67410

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DUP
Version	3.06
Report date	10/02/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1341

7701-001 J17J48

DATA SHEET

SDG	7701	Client/Case no	Hanford	SDG K1341	
Contact	Melissa C. Mannion	Contract	No. S00W235A00		
Lab sample id	R809157-01	Client sample id	J17J48		
Dept sample id	7701-001	Location/Matrix	100-D-78	WATER	
Received	09/19/08	Collected/Volume	09/17/08 09:00	1.7 L	
		Custody/SAF No	RC-052-008	RC-052	

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
Gross Alpha	12587-46-1	26.9	150	250	3.00	U	93A
Gross Beta	12587-47-2	41.8	29	46.0	4.00	U	93B
Potassium 40	13966-00-2	U		264		U	GAM
Cobalt 60	10198-40-0	U		8.82	25.0	U	GAM
Cesium 137	10045-97-3	U		9.39	15.0	U	GAM
Radium 226	13982-63-3	U		21.4		U	GAM
Radium 228	15262-20-1	U		42.4		U	GAM
Europium 152	14683-23-9	U		24.8	50.0	U	GAM
Europium 154	15585-10-1	U		26.7	50.0	U	GAM
Europium 155	14391-16-3	U		25.8	50.0	U	GAM
Thorium 228	14274-82-9	U		14.0		U	GAM
Thorium 232	TH-232	U		42.4		U	GAM
Uranium 235	15117-96-1	U		35.2		U	GAM
Uranium 238	U-238	U		1140		U	GAM
Americium 241	14596-10-2	U		29.4		U	GAM
Beryllium 7	13966-02-4	U		69.2		U	GAM
Ruthenium 106	13967-48-1	U		76.2		U	GAM
Antimony 125	14234-35-6	U		20.5		U	GAM
Cesium 134	13967-70-9	U		11.5		U	GAM

Remaining Sites Confirmtn Samp-Water

Lab id	EBRLNE
Protocol	Hanford1
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	10/02/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1341

Test 93A Matrix WATER
SDG 7701
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GROSS ALPHA IN WATER

GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. S00W235A00
Contract SDG K1341

ESULTS

AB AMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Alpha	
:eparation batch 6160-193						
109157-01	93		7701-001	J17J48	26.9	U
109157-02	93		7701-002	Lab Control Sample	ok	
109157-03	93		7701-003	Method Blank	U	
109157-04	93		7701-004	Duplicate (R809157-01)	-	U

ominal values and limits from method RDLs (pCi/L) 3.00
emaining Sites Confirmtn Samp-Water

ETHOD PERFORMANCE

AB AMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU-TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
:eparation batch 6160-193			2σ prep error 20.6 % Reference Lab Notebook #6160, pg. 193													
109157-01	93		J17J48	250	0.0150			202		100			13	09/27/08	09/30	GRB-110
109157-02	93		Lab Control Sample	54.3	0.0150			60		100				09/27/08	09/28	GRB-112
109157-03	93		Method Blank	40.4	0.0150			60		100				09/27/08	09/30	GRB-111
109157-04	93		Duplicate (R809157-01)	99.8	0.0150			209		100			13	09/27/08	09/30	GRB-112
ominal values and limits from method				3.00	0.0150			5-250		100			180			

PROCEDURES
REFERENCE 900.0_ALPHABETA_GPC
SPP-007 Aqueous Sample Receipt by Chemistry Laboratory, rev 0
SPP-120 Gross Alpha and Gross Beta in Water, rev 0

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 111 ± 192
RESIDUE 133 ± 168

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 10/02/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1341

Test 93B Matrix WATER
SDG 7701
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GROSS BETA IN WATER

GAS PROPORTIONAL COUNTING

Client Hanford
Contract No. S00W235A00
Contract SDG K1341

ESULTS

LB AMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Beta
:eparation batch 6160-193					
109157-01	93		7701-001	J17J48	41.8 U
109157-02	93		7701-002	Lab Control Sample	ok
109157-03	93		7701-003	Method Blank	U
109157-04	93		7701-004	Duplicate (R809157-01)	ok

ominal values and limits from method RDLs (pCi/L) 4.00
emaining Sites Confirmtn Samp-Water

ETHOD PERFORMANCE

LB AMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU-TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
:eparation batch 6160-193			2σ prep error 11.0 % Reference Lab Notebook #6160, pg. 193													
309157-01	93		J17J48	46.0	0.0150			202		100			13	09/27/08	09/30	GRB-110
309157-02	93		Lab Control Sample	40.1	0.0150			60		100				09/27/08	09/28	GRB-112
309157-03	93		Method Blank	39.9	0.0150			60		100				09/27/08	09/30	GRB-111
309157-04	93		Duplicate (R809157-01)	44.1	0.0150			209		100			13	09/27/08	09/30	GRB-112
ominal values and limits from method				4.00	0.0150			5-250		100			180			

PROCEDURES	REFERENCE	900.0_ALPHABETA_GPC
	SPP-007	Aqueous Sample Receipt by Chemistry Laboratory, rev 0
	SPP-120	Gross Alpha and Gross Beta in Water, rev 0

AVERAGES ± 2 SD	MDA	42.5	± 6.04
FOR 4 SAMPLES	RESIDUE	133	± 168

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 10/02/08

EBERLINE SERVICES/RICHMOND

SAMPLE DELIVERY GROUP K1341

Test GAM Matrix WATER
SDG 7701
Contact Melissa C. Mannion

LAB METHOD SUMMARY

GAMMA EMITTERS

GAMMA SPECTROSCOPY

Client Hanford
Contract No. S00W235A00
Contract SDG K1341

ESULTS

LB AMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Cobalt 60		Cesium 137	
:eparation batch 6160-193								
109157-01			7701-001	J17J48	U		U	
109157-02			7701-002	Lab Control Sample	ok		ok	
109157-03			7701-003	Method Blank	U		U	
109157-04			7701-004	Duplicate (R809157-01)	-	U	-	U
ominal values and limits from method				RDLs (pCi/L)	25.0		15.0	
emaining Sites Confirmtn Samp-Water								

:ETHOD PERFORMANCE

LB AMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
reparation batch 6160-193			2σ prep error 7.0 % Reference Lab Notebook #6160, pg. 193													
309157-01			J17J48	42.8	0.500					812			8	09/24/08	09/25	01,04,00
309157-02			Lab Control Sample	7.37	0.500					1004				09/24/08	09/26	01,02,00
309157-03			Method Blank	40.9	0.500					1005				09/24/08	09/26	01,04,00
309157-04			Duplicate (R809157-01)	38.9	0.500					1005			9	09/24/08	09/26	MB,05,00
ominal values and limits from method				15.0	0.500					100			180			

PROCEDURES	REFERENCE	GAMMA_GS
	SPP-007	Aqueous Sample Receipt by Chemistry Laboratory, rev 0
	SPP-100	Ge(Li) Preparation for Commercial Samples, rev 7

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 32.5 ± 33.6
YIELD ____ ± ____

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 10/02/08

SDG 7701
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1341

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 Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 10/02/08

SDG 7701
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1341

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 Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 10/02/08

SDG 7701
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1341

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 Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 10/02/08

SDG 7701
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1341

DATA SHEET

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

The following notes apply to this report:

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

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

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

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

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

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

The following qualifiers are defined by the DVD system:

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

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 10/02/08

DATA SHEET

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

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

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

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

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

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

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

P The RESULT is 'preliminary'.

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

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

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

The following values are underlined to indicate possible problems:

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

SDG 7701
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. S00W235A00
Case no SDG_K1341

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.

SDG 7701
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1341

LAB CONTROL SAMPLE

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

The following notes apply to this report:

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

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

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

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

* The first, computed limits for the recovery reflect:

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

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

  2. The error of ADDED.

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

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

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

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 10/02/08

SDG 7701
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG_K1341

DUPLICATE

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

The following notes apply to this report:

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

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

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

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

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

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

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

  This value reported for this limit is at most 999.

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

  1. A fixed percentage specified in the protocol.

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 10/02/08

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 7701
Contact Melissa C. Mannion

REPORT GUIDE

Client Hanford
Contract No. S00W235A00
Case no SDG K1341

MATRIX SPIKE

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

The following notes apply to this report:

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

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

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

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

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

* The first, computed limits for the recovery reflect:

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

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

  2. The error of ADDED.

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

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

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 10/02/08

SDG 7701
Contact Melissa C. Mannion

GUIDE, cont.

Client Hanford
Contract No. S00W235A00
Case no SDG_K1341

MATRIX SPIKE

for the recovery.

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

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

Lab id EBRLNE
Protocol Hanford1
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 10/02/08

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'

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-052-008	Page 1 of 2

Collector: Rios	Company Contact: Bill Hudson	Telephone No.: 372-9695	Project Coordinator: KESSNER, JH
Price Code: 7G	Data Turnaround: 15 Days		
Project Designation: Remaining Sites Confirmation Sampling - Water	Sampling Location: 100-D-78 K1341 (7701)		SAF No.: RC-052
Ice Chest No.: Delta 1	Field Logbook No.: EL-1601-2	COA: 010D78A000	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES, LIONVILLE	Offsite Property No.: A080362		Bill of Lading/Air Bill No.: SEE ASPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	Cool 4C	Cool 4C	Cool 4C	Cool 4C	HCl or H2SO4 to pH <2 Coo	NaOH to pH >= 12 Cool 4C	ZnAc+NaOH to pH >9 Cool
Type of Container	G/P	G/P	G/P	aG	aG	aG	aG	aGs*	G/P	G/P
No. of Container(s)	~~3~~ 2	~~1~~ 2	1	3	2	3	3	3	1	1
Volume	1000mL	1000mL	500mL	1000mL	1000mL	1000mL	1000mL	40mL	1000mL	500mL
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Gross Alpha; Gross Beta	See item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	PCBs - 8082	Pesticides - 8081	Chloro-Herbicides - EPA8151	VOA - 8260A (TCL)	Cyanide (Total) - 335.2	Sulfides - 9030

Sample No.	Matrix *	Sample Date	Sample Time									
J17J48	WATER	9/17/08	0900	X	X							

CHAIN OF POSSESSION	Date/Time	Sign/Print Names	Date/Time
Relinquished By/Removed From: [signature] 9-17-08	1132	Received By/Stored In: BILL HUDSON [signature]	1132 9/17/08
Relinquished By/Removed From: BILL HUDSON [signature]	9/17/08 1245	Received By/Stored In: 1060 #3C	9/17/08 1245
Relinquished By/Removed From: 1060 3C / J.E. Bernhard	1080 9-18-08	Received By/Stored In: J.E. Bernhard	1080 9-18-08
Relinquished By/Removed From: J.E. Bernhard [signature]	1035 9-18-08	Received By/Stored In: FED EX	
Relinquished By/Removed From: FED EX		Received By/Stored In: [signature]	09/19/08 09:20
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

BH 9/17/08

(1) Gamma Spec - (Full List) {Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106, Uranium-235, Uranium-238} Gross alpha Gross beta

(2) 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}; Mercury - 7470 - (CV)

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

Matrix *

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

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

MS

WCH-EE-011

ESBERLINE SERVICES

RICHMOND, CA LABORATORY

SAMPLE RECEIPT CHECKLIST

Client: W.C. HANFORD City RICHLAND State WA

Date/Time received 09/19/08 09:20 CoC No. RC-052-008

Container I.D. No. DELTA 1 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 W
7. Number of containers per sample: 2 (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 [X] Not preserved [ ] pH _____ Preservative _____
13. Describe any anomalies:
14. Was P.M. notified of any anomalies? Yes [ ] No [ ] Date _____
15. Inspected by [signature] Date: 09/19/08 Time: 11:50

Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	Wipe	Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	wipe
J17J48	<60						

Ion Chamber Ser. No. _____ Calibration date _____

Alpha Meter Ser. No. _____ Calibration date _____

Beta/Gamma Meter Ser. No. 100482 Calibration date 10 JUL 08

LIONVILLE LABORATORY INC.

RECEIVED NOV 2008

3 November 2008

Joan Kessner
WC-Hanford, Inc.
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 #	0809L144
SDG #	K1341
SAF #	RC-052
Date Received	9/19/08
# Samples	1
Matrix	WATER
Volatiles	X
Semivolatiles	X
Pest/PCB	X
PAH	
DRO/KRO/GRO	
GC Alcohols	
Herbicides	X
Metals	X
Inorganics	X

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

Sincerely,
Lionville Laboratory Incorporated

Orlette S. Johnson
Project Manager
r:\group\pm\orlette\hanford\data\b_ltrs.doc

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

RECEIVED
NOV 2008

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-052 K1341

DATE RECEIVED: 09/19/08 LVL LOT # :0809L144

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS	ANALYSIS TIME
J17J48							
BROMIDE BY IC	001	W	08LICC79	09/17/08	10/13/08	10/13/08	
BROMIDE BY IC	001 REP	W	08LICC79	09/17/08	10/13/08	10/13/08	
BROMIDE BY IC	001 MS	W	08LICC79	09/17/08	10/13/08	10/13/08	
CHLORIDE BY IC	001	W	08LICA79	09/17/08	10/13/08	10/13/08	
CHLORIDE BY IC	001 REP	W	08LICA79	09/17/08	10/13/08	10/13/08	
CHLORIDE BY IC	001 MS	W	08LICA79	09/17/08	10/13/08	10/13/08	
FLUORIDE BY IC	001	W	08LIC079	09/17/08	10/13/08	10/13/08	
FLUORIDE BY IC	001 REP	W	08LIC079	09/17/08	10/13/08	10/13/08	
FLUORIDE BY IC	001 MS	W	08LIC079	09/17/08	10/13/08	10/13/08	
NITRITE BY IC	001	W	08LICB79	09/17/08	10/13/08	10/13/08	2218
NITRITE BY IC	001 REP	W	08LICB79	09/17/08	10/13/08	10/13/08	2233
NITRITE BY IC	001 MS	W	08LICB79	09/17/08	10/13/08	10/13/08	2248
NITRATE BY IC	001	W	08LICD79	09/17/08	10/13/08	10/13/08	2218
NITRATE BY IC	001 REP	W	08LICD79	09/17/08	10/13/08	10/13/08	2233
NITRATE BY IC	001 MS	W	08LICD79	09/17/08	10/13/08	10/13/08	2248
TOTAL CYANIDE	001	W	08LC050	09/17/08	09/20/08	09/20/08	
TOTAL CYANIDE	001 REP	W	08LC050	09/17/08	09/20/08	09/20/08	
PHOSPHATE BY IC	001	W	08LICE79	09/17/08	10/13/08	10/13/08	2218
PHOSPHATE BY IC	001 REP	W	08LICE79	09/17/08	10/13/08	10/13/08	2233
PHOSPHATE BY IC	001 MS	W	08LICE79	09/17/08	10/13/08	10/13/08	2248
SULFATE BY IC	001	W	08LICF79	09/17/08	10/13/08	10/13/08	
SULFATE BY IC	001 REP	W	08LICF79	09/17/08	10/13/08	10/13/08	
SULFATE BY IC	001 MS	W	08LICF79	09/17/08	10/13/08	10/13/08	
IGNITABILITY	001	W	08LFP033	09/17/08	09/23/08	09/23/08	
NITRITE	001	W	08LN3030	09/17/08	10/12/08	10/12/08	1009
NITRITE	001 REP	W	08LN3030	09/17/08	10/12/08	10/12/08	1009
NITRITE	001 MS	W	08LN3030	09/17/08	10/12/08	10/12/08	1009
NITRATE	001	W	08LN3030	09/17/08	10/12/08	10/12/08	1149
NITRATE	001 REP	W	08LN3030	09/17/08	10/12/08	10/12/08	1149
NITRATE	001 MS	W	08LN3030	09/17/08	10/12/08	10/12/08	1149
PH	001	W	08LPH049	09/17/08	09/22/08	09/22/08	1342
PH	001 REP	W	08LPH049	09/17/08	09/22/08	09/22/08	1344
SULFIDE	001	W	08LSD054	09/17/08	09/22/08	09/22/08	
SULFIDE	001 REP	W	08LSD054	09/17/08	09/22/08	09/22/08	
TOTAL DISSOLVED SOLI	001	W	08LSS078	09/17/08	09/24/08	09/24/08	

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-052 K1341

DATE RECEIVED: 09/19/08 LVL LOT # :0809L144

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
TOTAL DISSOLVED SOLI	001 REP	W	08LSSA79	09/17/08	09/26/08	09/26/08
TOTAL SUSPENDED SOLI	001	W	08LSS077	09/17/08	09/22/08	09/22/08

LAB QC:

BROMIDE BY IC	MB1	W	08LICC79	N/A	10/13/08	10/13/08
BROMIDE BY IC	MB1 BS	W	08LICC79	N/A	10/13/08	10/13/08
CHLORIDE BY IC	MB1	W	08LICA79	N/A	10/13/08	10/13/08
CHLORIDE BY IC	MB1 BS	W	08LICA79	N/A	10/13/08	10/13/08
FLUORIDE BY IC	MB1	W	08LIC079	N/A	10/13/08	10/13/08
FLUORIDE BY IC	MB1 BS	W	08LIC079	N/A	10/13/08	10/13/08
NITRITE BY IC	MB1	W	08LICB79	N/A	10/13/08	10/13/08
NITRITE BY IC	MB1 BS	W	08LICB79	N/A	10/13/08	10/13/08
NITRATE BY IC	MB1	W	08LICD79	N/A	10/13/08	10/13/08
NITRATE BY IC	MB1 BS	W	08LICD79	N/A	10/13/08	10/13/08
TOTAL CYANIDE	LCS L	W	08LC050	N/A	09/20/08	09/20/08
TOTAL CYANIDE	LCS L	W	08LC050	N/A	09/20/08	09/20/08
TOTAL CYANIDE	MB1	W	08LC050	N/A	09/20/08	09/20/08
PHOSPHATE BY IC	MB1	W	08LICE79	N/A	10/13/08	10/13/08
PHOSPHATE BY IC	MB1 BS	W	08LICE79	N/A	10/13/08	10/13/08
SULFATE BY IC	MB1	W	08LICF79	N/A	10/13/08	10/13/08
SULFATE BY IC	MB1 BS	W	08LICF79	N/A	10/13/08	10/13/08
NITRITE	MB1	W	08LN3030	N/A	10/12/08	10/12/08
NITRITE	MB1 BS	W	08LN3030	N/A	10/12/08	10/12/08
NITRATE	MB1	W	08LN3030	N/A	10/12/08	10/12/08
NITRATE	MB1 BS	W	08LN3030	N/A	10/12/08	10/12/08
SULFIDE	MB1	W	08LSD054	N/A	09/22/08	09/22/08
SULFIDE	MB1 BS	W	08LSD054	N/A	09/22/08	09/22/08
SULFIDE	MB1 BSD	W	08LSD054	N/A	09/22/08	09/22/08
TOTAL DISSOLVED SOLI	MB1	W	08LSS078	N/A	09/24/08	09/24/08
TOTAL DISSOLVED SOLI	MB1 BS	W	08LSS078	N/A	09/24/08	09/24/08
TOTAL DISSOLVED SOLI	MB1 BSD	W	08LSS078	N/A	09/24/08	09/24/08
TOTAL DISSOLVED SOLI	MB1	W	08LSSA79	N/A	09/26/08	09/26/08
TOTAL DISSOLVED SOLI	MB1 BS	W	08LSSA79	N/A	09/26/08	09/26/08
TOTAL DISSOLVED SOLI	MB1 BSD	W	08LSSA79	N/A	09/26/08	09/26/08
TOTAL SUSPENDED SOLI	MB1	W	08LSS077	N/A	09/22/08	09/22/08
TOTAL SUSPENDED SOLI	MB1 BS	W	08LSS077	N/A	09/22/08	09/22/08
TOTAL SUSPENDED SOLI	MB1 BSD	W	08LSS077	N/A	09/22/08	09/22/08

LIONVILLE LABORATORY INC.

Analytical Report

Client: WC-HANFORD RC-0632 K1341
LVL#: 0809L144

W.O.#: 60128-002-999-9999-00
Date Received: 09-19-08

INORGANIC NARRATIVE

1. This narrative covers the analyses of 1 water sample.

2. The sample was prepared and analyzed in accordance with the methods indicated on the attached glossary. Elevated reporting limits for Bromide, Chloride, Fluoride, Nitrite, Nitrate and Phosphate are the result of the necessity to dilute the sample to diminish co-elution effects as well as matrix interferences caused by the high concentration of Sulfate present in the sample.

   Lionville Lab (LvL) 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. LvL 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 with the exception of Nitrite, Nitrate, Phospahte, pH and Total Dissolved Solids replicate analysis (see the sample chronology summary for analyses times for short hold samples).

4. The results presented in this report are derived from samples that met LvLI's sample acceptance policy with the exception of pH as noted on the Sample Receipt Checklist.

5. The method blanks were within the method criteria.

6. The Laboratory Control Samples (LCS) were within the laboratory control limits. The duplicate LCS were within the 20% Relative Percent Difference (RPD) control limit.

7. The matrix spike recoveries were within the 75-125% control limits with the exception of Phosphate and Nitrate (as N) that may be attributed to matrix interference.

8. The replicate analyses were within the 20% RPD control limit with the exception of Sulfate and Nitrate (as N) that may be attributed to sample inhomogenmeity.

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

Iain Daniels
Laboratory Manager
Lionville Laboratory

10/28/09
Date

njp\i09-144

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 18 pages.

Lionville Laboratory Incorporated

WET CHEMISTRY

METHODS GLOSSARY FOR WATER SAMPLE ANALYSIS

	EPA /600	SW846	OTHER
cidity	___ 305.1		
__Alkalinity ___Bicarbonate ___Carbonate	___ 310.1		
OD	___ 405.1		___ 5210B (b)
n Chromatography:			
✓ Bromide ✓ Chloride ✓ Fluoride	✓ 300.0	___ 9056	
✓ Nitrate ✓ Nitrite ✓ Phosphate	✓ 300.0	___ 9056	
✓ Sulfate ___Formate ___Acetate ___Oxalate	✓ 300.0	___ 9056	
hloride	___ 325.2	___ 9251	
horine, Residual	___ 330.5 (mod)		
yanide, Amenable to Chlorination	___ 335.2	___ 9010B	
yanide, Total	✓ 335.2	___ 9010B ___ 9014	___ ILMO4.0 (e)
yanide, Weak Acid Dissociable		___	___ 412 (a) ___ 4500CN-I (b
OD	___ 410.4(mod)		___ 5220C (b)
olor	___ 110.2		
orrosivity by Coupon		___ 1110(mod)	
hromium VI		___ 7196A	___ 3500Cr-D (b)
luoride	___ 340.2		___ 4500-FC
lardness, Calcium	___ 215.2		
lardness, Total	___ 130.2		
odide			___ ASTM D19P202 (1)
urfactant	___ 425.1		
__Nitrate-Nitrite ✓ Nitrate ✓ Nitrite	✓ 353.2		
mmonia	___ 350.3		
otal___ Kjeldahl ___ Organic Nitrogen	___ 351.3		
otal___ Organic ___ Inorganic Carbon	___ 415.1	___ 9060	
il & Grease	___ 413.1	___ 9070	
✓ pH ____ pH; paper	___ 150.1	✓ 9040B ___ 9041A	
etroleum Hydrocarbons, Total Recoverable	___ 418.1		
henol	___ 420.1 ___ 420.2	___ 9065 ___ 9066	
__Ortho ___Total Phosphate	___ 365.2		___ 4500-P B ___ C
alinity			___ 210A (a) ___ 2520 (b)
ettleable Solids	___ 160.5		
ulfide	___ 376.1	✓ ~~9030B~~/9034 (acid soluble)	
eactive ___Cyanide ___Sulfide		___ Section 7.3 (__9014__9030B)	
ilica	___ 370.1		
ulfite	___ 377.1		
ulfate	___ 375.4	___ 9038	
pecific Conductance	___ 120.1	___ 9050A	
pecific Gravity			___ D5057-90 ___ 213E (a)
ynthetic Precipitation Leach		1312	
otal ✓ Dissolved ✓ Suspended ___Solids	160 ✓.1	✓.2 ___.3	
otal Organic Halides	___ 450.1	___ 9020B	
urbidity	___ 180.1		
olatile Solids:			
__Total __Dissolved __Suspended	___ 160.4		

Other: Ignitability Method: SW1010

L-WI-034/A-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.

Inorganic Data Summary Report
Physical Testing Observation

Client: WC-HANFORD RC-052 K1341
LVL#: 0809L144

W.O.#: 60049-001-001-0001-00
Date Received: 09-19-08

Analyte:	**Observation:**
Ignitability	Sample J17J48 did not ignite. The sample was heated to approximately 210°F. p-Xylene was used to determined the accuracy of the ignitability apparatus. The p-Xylene will ignite at 81°F +/- 1°F. For this test, the p-Xylene ignited at 80°F.

njp\i09-144.pt2

LIONVILLE LABORATORY INC.

Lionville Laboratory, Inc.

INORGANICS DATA SUMMARY REPORT 10/27/08

CLIENT: WC-HANFORD RC-052 K1341 LVL LOT #: 0809L144

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J17J48	Bromide by IC	100	u	MG/L	100	400
		Chloride by IC	100	u	MG/L	100	400
		Fluoride by IC	100	u	MG/L	100	400
		Nitrite by IC	100	u	MG/L	100	400
		Nitrate by IC	100	u	MG/L	100	400
		Cyanide, Total	10.0	u	UG/L	10.0	1.0
		Phosphate by IC	100	u	MG/L	100	400
		Sulfate by IC	10500		MG/L	500	2000
		Nitrite, as N	0.20		MG/L	0.020	1.0
		Nitrate, as N	0.29		MG/L	0.020	1.0
		pH	3.5		PH UNIT	0.01	1.0
		Sulfide	2.6		MG/L	1.0	1.0
		Total Dissolved Solids	17200		MG/L	1000	1.0
		Total Suspended Solids	84.0		MG/L	5.00	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 10/27/08

CLIENT: WC-HANFORD RC-052 K1341 LVL LOT #: 0809L144

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK10	08LICC79-MB1	Bromide by IC	0.25 u	MG/L	0.25	1.0
BLANK10	08LICA79-MB1	Chloride by IC	0.25 u	MG/L	0.25	1.0
BLANK10	08LIC079-MB1	Fluoride by IC	0.25 u	MG/L	0.25	1.0
BLANK10	08LICB79-MB1	Nitrite by IC	0.25 u	MG/L	0.25	1.0
BLANK10	08LICD79-MB1	Nitrate by IC	0.25 u	MG/L	0.25	1.0
BLANK1	08LC050-MB1	Cyanide, Total	5.00 u	UG/L	5.00	1.0
BLANK10	08LICE79-MB1	Phosphate by IC	0.25 u	MG/L	0.25	1.0
BLANK10	08LICF79-MB1	Sulfate by IC	0.25 u	MG/L	0.25	1.0
BLANK10	08LN3030-MB1	Nitrite, as N	0.020u	MG/L	0.020	1.0
		Nitrate, as N	0.020u	MG/L	0.020	1.0
BLANK10	08LSD054-MB1	Sulfide	1.0 u	MG/L	1.0	1.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 10/27/08

CLIENT: WC-HANFORD RC-052 K1341 LVL LOT #: 0809L144
WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT	UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK10	08LSS078-MB1	Total Dissolved Solids	5.00 u	MG/L	5.00	1.0
BLANK10	08LSSA79-MB1	Total Dissolved Solids	5.00 u	MG/L	5.00	1.0
BLANK10	08LSS077-MB1	Total Suspended Solids	5.00 u	MG/L	5.00	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 10/27/08

CLIENT: WC-HANFORD RC-052 K1341 LVL LOT #: 0809L144

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J17J48	Bromide by IC	2060	0.00	2000	102.8	400
		Chloride by IC	2010	0.00	2000	100.6	400
		Fluoride by IC	2100	5.4	2000	104.6	400
		Nitrite by IC	2060	100 u	2000	103.1	400
		Nitrate by IC	2050	100 u	2000	102.6	400
		Phosphate by IC	1330	100 u	2000	66.6	400
		Sulfate by IC	29900	10500	20000	96.9	4000
		Nitrite, as N	0.51	0.20	0.50	61.8	1.0
		Nitrate, as N	0.69	0.29	0.50	78.6	1.0
BLANK10	08LICC79-MB1	Bromide by IC	4.9	0.25u	5.0	97.8	1.0
BLANK10	08LICA79-MB1	Chloride by IC	4.7	0.25u	5.0	94.8	1.0
BLANK10	08LIC079-MB1	Fluoride by IC	5.0	0.25u	5.0	99.0	1.0
BLANK10	08LICB79-MB1	Nitrite by IC	5.01	0.25u	5.00	100.1	1.0
BLANK10	08LICD79-MB1	Nitrate by IC	4.98	0.25u	5.00	99.5	1.0
BLANK10	08LICE79-MB1	Phosphate by IC	5.0	0.25u	5.0	100.4	1.0
BLANK10	08LICF79-MB1	Sulfate by IC	4.7	0.25u	5.0	93.4	1.0
BLANK10	08LN3030-MB1	Nitrite, as N	0.51	0.02u	0.50	102.6	1.0
		Nitrate, as N	0.51	0.02u	0.50	101.2	1.0
BLANK10	08LSD054-MB1	Sulfide	11.5	1.0 u	11.5	99.4	1.0
		Sulfide MSD	11.7	1.0 u	11.5	101.2	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 10/27/08

CLIENT: WC-HANFORD RC-052 K1341 LVL LOT #: 0809L144

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
BLANK10	08LSS078-MB1	Total Dissolved Solids	111	5.00u	100	111.0	1.0
		Total Dissolved Solids	103	5.00u	100	103.0	1.0
BLANK10	08LSSA79-MB1	Total Dissolved Solids	111	5.00u	100	111.0	1.0
		Total Dissolved Solids	110	5.00u	100	110.0	1.0
BLANK10	08LSS077-MB1	Total Suspended Solids	90.0	5.00u	100	90.0	1.0
		Total Suspended Solids	90.0	5.00u	100	90.0	1.0

Lionville Laboratory, Inc.

INORGANICS DUPLICATE SPIKE REPORT 10/27/08

CLIENT: WC-HANFORD RC-052 K1341 LVL LOT #: 0809L144

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	SPIKE#1 %RECOV	SPIKE#2 %RECOV	%DIFF
BLANK10	08LSD054-MB1	Sulfide	99.4	101.2	1.7
BLANK10	08LSS078-MB1	Total Dissolved Solids	111.0	103.0	7.5
BLANK10	08LSSA79-MB1	Total Dissolved Solids	111.0	110.0	0.90
BLANK10	08LSS077-MB1	Total Suspended Solids	90.0	90.0	0.00

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 10/27/08

CLIENT: WC-HANFORD RC-052 K1341 LVL LOT #: 0809L144

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT		REPLICATE		RPD	DILUTION FACTOR(REP)
-001REP	J17J48	Bromide by IC	100	u	100	u	NC	400
		Chloride by IC	100	u	100	u	NC	400
		Fluoride by IC	100	u	100	u	NC	400
		Nitrite by IC	100	u	100	u	NC	400
		Nitrate by IC	100	u	100	u	NC	400
		Cyanide, Total	10.0	u	10.0	u	NC	1.0
		Phosphate by IC	100	u	100	u	NC	400
		Sulfate by IC	10500		15300		37.3	2000
		Nitrite, as N	0.20		0.20		1.0	1.0
		Nitrate, as N	0.29		0.24		21.9	1.0
		pH	3.5		3.5		0.0	1.0
		Sulfide	2.6		2.8		7.4	1.0
		Total Dissolved Solids	17200		16200		6.0	1.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 10/27/08

CLIENT: WC-HANFORD RC-052 K1341 LVL LOT #: 0809L144

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCSS1	08LC050-LCS1	Cyanide, Total LCS	19.0	20.0	UG/L	94.9
LCSS2	08LC050-LCS2	Cyanide, Total LCS	99.5	100	UG/L	99.5

onville Laboratory Use Only

1809L 144

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

VLI

ent WC Hanford SAFH RC-052

. Final Proj. Sampling Date

ject# 60049-001-001-0001-00

ject Contact/Phone#

nville Laboratory Project Manager O Johnson

SW846 Del STP TAT 15 Day

te Rec'd 9-19-08 Date Due 10-4-08

		A-C	D-F	GH	IJ	KLM			N	O	P	Q	UR			
Refrigerator #		6	3	3	3	3			3	3	3	3	3			
#/Type Container	Liquid	3G	3G	2G	2G	3G			1P	1P	1P	1P	1P			
#/Type Container	Solid															
Volume		4L	L	L	L	L			500	500	500	250	1000			
Preservatives		HCl	—	—	—	—			HNO3	NaOH	NaOH/ZnAc	—	—			
ANALYSES REQUESTED	ORGANIC	VOA	BNA	Pest PCB	CHCl3 Herb	1,4-Dioxane 8081			INORG Metal Hg	CN TOT	Sulfide	TC TOC	TSS TDS	Turb Reality		

TRIX
DES:
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	8260	8270	8081 OPCB	8151 OHB6X	8082			Metals	ICNTO	ISFD	IPH	IC(1)	ITDS	ITSS	ITB6N		
001	J17J48	✓	✓	W	9-17-08	0900	X	X	X	X	X			X	X	X	X	X	X	X			

Lionville Laboratory Use Only

ecial Instructions:

net(1) = HSL + B, Bi, Li, Mo, P, Si, Sr, Sn, U,

IC(1) = Br, Cl, Fl, SO4, PO4, NO2, NO3

Special Instructions:

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

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	9/19/08	0940

Relinquished by	Received by	Date	Time

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

000000015

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-052-008

ollector: See D. Rios	Company Contact: Bill Hudson	Telephone No.: 372-9695	Project Coordinator: KESSNER, JH
Price Code: 7G	Data Turnaround: 15 Days		
roject Designation: Remaining Sites Confirmation Sampling - Water	Sampling Location: 100-D-78		SAF No.: RC-052
e Chest No.: AFS-06-001	Field Logbook No.: EL-1601-2	COA: 010D78A000	Method of Shipment: FED EX
hipped To: EBERLINE SERVICES LIONVILLE	Offsite Property No.: 1050353		Bill of Lading/Air Bill No.: See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	Cool 4C	Cool 4C	Cool 4C	Cool 4C	HCl or H2SO4 to pH <2 Coo	NaOH to pH >= 12 Cool 4C	ZnAc+NaOH to pH >9 Cool
Type of Container	G/P	G/P	G/P	aG	aG	aG	aG	aGs*	G/P	G/P
No. of Container(s)	3 BH 9/17/08	3 BH 9/17/08	1	3	2	3	2	3	1	1
Volume	1000mL	1000mL	500mL	1000mL	1000mL	1000mL	1000mL	40mL	~~1000~~ 500 mL BH 9-18-08	500mL
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Gross Alpha; Gross Beta	See item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	PCBs - 8082*	Pesticides - 8081	Chloro-Herbicides - EPA8151	VOA - 8260A (TCL)	Cyanide (Total) - 335.2	Sulfides - 9030

Sample No.	Matrix *	Sample Date	Sample Time										
17J48	WATER	9/17/08	0900	~~X~~ BH 9/17/08		X	X	X	X	X	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[signature]	9-17-08 1134	BILL HUDSON [signature]	9/17/08 1120
HUDSON [signature]	9/17/08 1245	1060 #3L	9/17/08 1245
1060 3L / J.E. Bernhard	9-18-08 0850	J.E. Bernhard	9-18-08 0850
J.E. Bernhard [signature]	9-18-08 0845	FED EX	
[signature]	9-19-08 0940	[signature]	9-19-08 0940

SPECIAL INSTRUCTIONS

BH 9/17/08 BH 9/17/08

~~(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106, Uranium-235, Uranium-238]; Gross alpha; Gross beta~~

(2) 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]; Mercury - 7470 - (CV)

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

RJC

Matrix *

S=Soil
SE=Sediment
SO=Solid
Sl=Sludge
W = Water
O=Oil
A=Air
DS=Drum Solids
DL=Drum Liquids
T=Tissue
Wl=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

000000016

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-052-008 | Page 2 of 2

ollector: Rios SEC D. Rios	Company Contact: Bill Hudson	Telephone No.: 372-9695	Project Coordinator: KESSNER, JH
Price Code: 7G	Data Turnaround: 15 Days		
roject Designation: Remaining Sites Confirmation Sampling - Water	Sampling Location: 100-D-78		SAF No.: RC-052
e Chest No.: AFS-06-001	Field Logbook No.: EL-1601-2	COA: 010D78A000	Method of Shipment: Fed Ex
hipped To: EBERLINE SERVICES (LIONVILLE)	Offsite Property No.: A080353		Bill of Lading/Air Bill No.: See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C											
Type of Container	P	P										
No. of Container(s)	1	2										
Volume	250mL	1000mL										
SAMPLE ANALYSIS (MS 9/17/08)	See item (B) in Special Instructions.	TSS, TSD, Ignitability										

Sample No.	Matrix *	Sample Date	Sample Time										
17J48	WATER	9/17/08	0900	X	X								

CHAIN OF POSSESSION	Sign/Print Names	
linquished By/Removed From: [signature]	Date/Time: 1132 9-17-08	Received By/Stored In: BILL HUDSON [signature]
Date/Time: 1132	Received By/Stored In: BILL HUDSON [signature]	Date/Time: 9/17/08
linquished By/Removed From: HUDSON [signature]	Date/Time: 9/17/08 1245	Received By/Stored In: 1060 #3C
Date/Time: 9/17/08 1245	linquished By/Removed From: 60 IC/J.E. Bernhard	Date/Time: 0880 9-18-08
Received By/Stored In: J.E. Bernhard	Date/Time: 0880 9-18-08	linquished By/Removed From: E. Bernhard
Date/Time: 0845 9-18-08	Received By/Stored In: FED EX	Date/Time:
inquished By/Removed From: [signature]	Date/Time: 9-19-08 0940	Received By/Stored In: [signature]
Date/Time: 9-19-08 0940	inquished By/Removed From:	Date/Time:
Received By/Stored In:	Date/Time:	

SPECIAL INSTRUCTIONS

BH 9/17/08

B) IC Anions - 300.0 {Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}; pH (Water) - 9040

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

Matrix *

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

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

CH-EE-011

0000000017

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: W.C. Hanford

Project/SAF/SOW/Release #: RC-052

Date: 9-19-08

LvLI Batch #: 0809L144

Sample Custodian: [signature]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 7980 1504 1505
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 3.1	°C	Cooler # AFS-06-001
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 ← PH out of Hold.	
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 See #12	
16. Project Manager contacted concerning any discrepancies?	☑ Yes	☐ No	☐ N/A
Person Contacted O-JOHNSON		Date 9-19-08	

LvLI

RECEIVED
NOV 2008

Lionville Laboratory, Inc.
VOA ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-052 K1341

DATE RECEIVED: 09/19/08 LVL LOT # :0809L144

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J17J48	001	W	08LVG165	09/17/08	N/A	09/23/08
J17J48	001 MS	W	08LVG165	09/17/08	N/A	09/23/08
J17J48	001 MSD	W	08LVG165	09/17/08	N/A	09/23/08
LAB QC:						
VBLKHP	MB1	W	08LVG165	N/A	N/A	09/23/08
VBLKHP	MB1 BS	W	08LVG165	N/A	N/A	09/23/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: WC-HANFORD RC-052
LVL #: 0809L144
SDG/SAF # K1341/RC-052

W.O. #: 60049-001-001-0001-00
Date Received: 09-19-2008

GC/MS VOLATILE

One (1) water sample was collected on 09-17-2008.

The sample and the associated QC samples were analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8260B for TCL Volatile target compounds on 09-23-2008.

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

1. The sample was analyzed within required holding time.
2. Non-target compounds were not detected in these samples.
3. All surrogate recoveries were within acceptance criteria.
4. All matrix spike recoveries were within acceptance criteria.
5. All blank spike recoveries were within acceptance criteria.
6. The method blank was below the reporting limit for all target compounds.
7. All internal standard area and retention time criteria were met.
8. Manual integrations are performed according to SOP QA-125 to produce quality data with utmost integrity. All manual integrations are required to be technically valid and properly documented. Appropriate technical flags are defined in the Glossary ("Technical Flags For Manual Integration").
9. LvL 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.

r:\group\data\2008\voa\tnu\0809-144cw1.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 12 pages.

LIONVILLE LABORATORY INC.

Case Narrative

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

10/9/08
Date

r:\group\data\2008\voa\tnu\0809-144cw1.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 pages.

GLOSSARY

DATA QUALIFIERS

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

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

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

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

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

I = Interference.

NQ = Result qualitatively confirmed but not able to quantify.

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

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

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

GLOSSARY

ABBREVIATIONS

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

TECHNICAL FLAGS FOR MANUAL INTEGRATION

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

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

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

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

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

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

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

Volatiles by GC/MS, HSL List

RFW Batch Number: 0809L144 Client: WC-HANFORD RC-052 K1341 Work Order: 60049001001 Page: 1a

Report Date: 10/02/08 12:12

	Cust ID:	J17J48	J17J48	J17J48	VBLKHP	VBLKHP BS
Sample Information	RFW#:	001	001 MS	001 MSD	08LVG165-MB1	08LVG165-MB1
	Matrix:	WATER	WATER	WATER	WATER	WATER
	D.F.:	1.00	1.00	1.00	1.00	1.00
	Units:	ug/L	ug/L	ug/L	ug/L	ug/L
Surrogate Recovery	Toluene-d8	107 %	104 %	104 %	105 %	108 %
	Bromofluorobenzene	111 %	110 %	116 * %	113 %	114 %
	1,2-Dichloroethane-d4	91 %	90 %	93 %	88 %	84 %
Chloromethane		10 U	62 %	66 %	10 U	76 %
Bromomethane		10 U	58 %	56 %	10 U	63 %
Vinyl Chloride		10 U	68 %	70 %	10 U	80 %
Chloroethane		10 U	105 %	104 %	10 U	112 %
Methylene Chloride		5 U	94 %	92 %	5 U	91 %
Acetone		17	95 %	90 %	10 U	94 %
Carbon Disulfide		5 U	105 %	104 %	5 U	111 %
1,1-Dichloroethene		5 U	104 %	102 %	5 U	112 %
1,1-Dichloroethane		5 U	92 %	92 %	5 U	90 %
1,2-Dichloroethene (total)		5 U	97 %	98 %	5 U	97 %
Chloroform		5 U	96 %	97 %	5 U	91 %
1,2-Dichloroethane		5 U	92 %	92 %	5 U	82 %
2-Butanone		10 U	84 %	88 %	10 U	80 %
1,1,1-Trichloroethane		5 U	86 %	86 %	5 U	86 %
Carbon Tetrachloride		5 U	88 %	87 %	5 U	90 %
Bromodichloromethane		5 U	95 %	94 %	5 U	88 %
1,2-Dichloropropane		5 U	98 %	94 %	5 U	91 %
cis-1,3-Dichloropropene		5 U	100 %	98 %	5 U	100 %
Trichloroethene		5 U	97 %	98 %	5 U	97 %
Dibromochloromethane		5 U	102 %	103 %	5 U	100 %
1,1,2-Trichloroethane		5 U	108 %	102 %	5 U	97 %
Benzene		5 U	92 %	92 %	5 U	89 %
Trans-1,3-Dichloropropene		5 U	101 %	98 %	5 U	95 %
Bromoform		5 U	101 %	102 %	5 U	98 %
4-Methyl-2-pentanone		6 J	103 %	105 %	10 U	90 %
2-Hexanone		10 U	94 %	95 %	10 U	88 %
Tetrachloroethene		5 U	96 %	92 %	5 U	97 %
1,1,2,2-Tetrachloroethane		5 U	103 %	104 %	5 U	97 %
Toluene		5 U	106 %	103 %	5 U	105 %

*= Outside of EPA CLP QC limits.

000000007

Cust ID:	J17J48		J17J48		J17J48		VBLKHP		VBLKHP BS	
RFW#:	001		001 MS		001 MSD		08LVG165-MB1		08LVG165-MB1	
Chlorobenzene	5	U	99	%	98	%	5	U	97	%
Ethylbenzene	5	U	110	%	104	%	5	U	106	%
Styrene	5	U	110	%	105	%	5	U	104	%
Xylenes (total)	5	U	106	%	102	%	5	U	103	%
cis-1,2-dichloroethene	5	U	99	%	99	%	5	U	97	%
trans-1,2-dichloroethene	5	U	96	%	97	%	5	U	97	%

*= Outside of EPA CLP QC limits.

Lionville Laboratory Use Only

0809L 144

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Client: W.C. Hanford SAF# RC-052

Est. Final Proj. Sampling Date:

Project#: 60049-001-001-0001-00

Project Contact/Phone#:

Lionville Laboratory Project Manager: O Johnson

QC: SW846 Del: STP TAT: 15 Day

Date Rec'd: 9-19-08 Date Due: 10-4-08

	A-C	D-F	G-H	I-J	K-L-M			N	O	P	Q	UR			
Refrigerator #	6	3	3	3	3			3	3	3	3	3			
#/Type Container (Liquid / Solid)	3G	3G	2G	2G	3G			1P	1P	1P	1P	1P			
Volume	40	L	L	L	L			500	500	500	250	1000			
Preservatives	HCl	—	—	—	—			HNO3	NaOH	NaOH/ZnAc	—	—			
ANALYSES REQUESTED	ORGANIC: VOA	BNA	Pest/PCB	Chlor Herb	PCST 8081			INORG: Metal Hg	CN TOT	Sulfide	IC Br/Cl/NO2/NO3	TSS TDS	Fp Reactivity		

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

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	0624H	0625H	0608H OPCB	0H86X	0608H			Met-O	ICNT-O	ISFD	IPH-I	ITDS	ITSS	IFGN		
001	J17-J48	✓	✓	W	9-17-08	0900	X	X	X	X	X			X	X	X	X	X	X	X		

Lionville Laboratory Use Only

Special Instructions:

Met① = HSL + B, Bi, Li, Mo, P, Si, Sr, Sn, U,

IC① = Br, Cl, Fl, SO4, PO4, NO2, NO3

Special Instructions:

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

Relinquished by	Received by	Date	Time
Fed Ex	[signature]	9/19/08	0940

Relinquished by	Received by	Date	Time

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

000000009

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-052-008 | Page 1 of 2

Collector: Rios (See D-R203)	Company Contact: Bill Hudson	Telephone No.: 372-9695	Project Coordinator: KESSNER, JH
Price Code: 7G	Data Turnaround: 15 Days		
Project Designation: Remaining Sites Confirmation Sampling - Water	Sampling Location: 100-D-78		SAF No.: RC-052
Ice Chest No.: AFS-06-001	Field Logbook No.: EL-1601-2	COA: 010D78A000	Method of Shipment: FED EX
Shipped To: EBERLINE SERVICES (LIONVILLE)	Offsite Property No.: 1090353		Bill of Lading/Air Bill No.: See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	Cool 4C	Cool 4C	Cool 4C	Cool 4C	HCl or H2SO4 to pH <2 Coo	NaOH to pH >= 12 Cool 4C	ZnAc+NaOH to pH >9 Cool
Type of Container	G/P	G/P	G/P	aG	aG	aG	aG	aGs*	G/P	G/P
No. of Container(s)	3 BH 9/17/08	2 BH 9/17/08	1	3	2	3	2	3	1	1
Volume	1000mL	1000mL	500mL	1000mL	1000mL	1000mL	1000mL	40mL	~~1000~~ 500mL BH 9-17-08	500mL
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Gross Alpha; Gross Beta	See item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	PCBs - 8082*	Pesticides - 8081	Chloro-Herbicides - EPA8151	VOA - 8260A (TCL)	Cyanide (Total) - 335.2	Sulfides - 9030

Sample No.	Matrix *	Sample Date	Sample Time										
J17J48	WATER	9/17/08	0900	~~X~~ BH 9/17/08		X	X	X	X	X	X	X	X

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time 1132 9-17-08	Received By/Stored In: BILL HUDSON Bill Hudson	Date/Time ~~1120~~ 1132 9/17/08
Relinquished By/Removed From: BHudson BHudson	Date/Time 1245 9/17/08	Received By/Stored In: 1060 #3L	Date/Time 9/17/08 1245
Relinquished By/Removed From: 1060 3L/J.E. Bernhard	Date/Time 0850 9-18-08	Received By/Stored In: J.E. Bernhard	Date/Time 0850 9-18-08
Relinquished By/Removed From: J.E. Bernhard with	Date/Time 0845 9-18-08	Received By/Stored In: FED EX	Date/Time
Relinquished By/Removed From: Fed Ex 9-19-08	Date/Time 0940	Received By/Stored In: 9-19-08	Date/Time 0940
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

BH 9/17/08

~~(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106, Uranium-235, Uranium-238) - Gross alpha, Gross beta~~

(2) 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}; Mercury - 7470 - (CV)

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

BH 9/17/08

RJC

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

000000010

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-052-008 | Page 1 of 1

Collector: Rios (SEC D. Rios)	Company Contact: Bill Hudson	Telephone No.: 372-9695	Project Coordinator: KESSNER, JH
Price Code: 7G	Data Turnaround: 15 Days		
Project Designation: Remaining Sites Confirmation Sampling - Water	Sampling Location: 100-D-78		SAF No.: RC-052
Ice Chest No.: AFS-06-001	Field Logbook No.: EL-1601-2	COA: 010D78A000	Method of Shipment: Fed Ex
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A080353		Bill of Lading/Air Bill No.: See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C										
Type of Container	P	P									
No. of Container(s)	1	2									
Volume	250mL	1000mL									
SAMPLE ANALYSIS (MS 9/17/08)	See item B in Special Instructions.	TSS, TSD, Ignitability									

Sample No.	Matrix *	Sample Date	Sample Time										
J17J48	WATER	9/17/08	0900	X	X								

CHAIN OF POSSESSION

Sign/Print Names 1132

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[signature]	1132 9-17-08	BILL HUDSON [signature]	~~1120~~ 9/17/08
BHUDSON [signature]	9/17/08 1245	1060 #3C	9/17/08 1245
1060 3C / J.E. Bernhard	0880 9-18-08	J.E. Bernhard	0880 9-18-08
J.E. Bernhard WCH	0845 9-18-08	FED EX	
FED EX	9-19-08 0940	[signature]	9-19-08 0940

SPECIAL INSTRUCTIONS

BH 9/17/08

B) IC Anions - 300.0 (Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate); pH (Water) - 9040

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

Matrix *

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

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

WCH-EE-011

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: W.C. Hanford

Project/SAF/SOW/Release #: RC-052

Date: 9-19-08

LvLI Batch #: 0809L144

Sample Custodian: [signature]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 7980 1504 1505
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 3.1°	°C	Cooler # AFS-06-001
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 ← PH out of Hold.	
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 O-JOHNSON Date 9-19-08

LVLI

Lionville Laboratory, Inc.
BNA ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-052 K1341

RECEIVED
NOV 2008

DATE RECEIVED: 09/19/08 LVL LOT # :0809L144

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J17J48	001	W	08LE0462	09/17/08	09/22/08	09/30/08
J17J48	001 MS	W	08LE0462	09/17/08	09/22/08	09/30/08
J17J48	001 MSD	W	08LE0462	09/17/08	09/22/08	09/30/08
LAB QC:						
SBLKYF	MB1	W	08LE0462	N/A	09/22/08	09/30/08
SBLKYF	MB1 BS	W	08LE0462	N/A	09/22/08	09/30/08
SBLKYF	MB1 BSD	W	08LE0462	N/A	09/22/08	09/30/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: WC-HANFORD RC-052 K1341
LVL #: 0809L144

W.O. #: 60049-001-001-0001-00
Date Received: 09-19-2008

SEMIVOLATILE

One (1) water sample was collected on 09-17-2008.

The sample and its associated QC samples were extracted according to Lionville Laboratory SOPs based on SW 846 method 3520C on 09-22-2008 and analyzed according to criteria set forth in Lionville Laboratory SOPs based on SW 846 Method 8270C for TCL Semivolatile target compounds on 09-30-2008.

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

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

2. Samples were extracted and analyzed within holding time.

3. Non-target compounds were detected in these samples.

4. All obtainable surrogate recoveries were within acceptance criteria.

5. Twelve (12) of one hundred twenty-eight (128) matrix spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR# 08MS219) has been enclosed.

6. Three (3) of one hundred twenty-eight (128) blank spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR# 08MS219) has been enclosed.

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

8. All initial calibrations associated with this data set were within acceptance criteria.

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

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

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

12. LVL 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.

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.

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

LIONVILLE LABORATORY INC.

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

Brian Daniels
Laboratory Manager
Lionville Laboratory

10/9/08
Date

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 08MS219

Initiator: Sharon Sayler
Date: 10-2-08
Client: WCHanford BC052 K1341

Batch: OF09L144
Samples: ms, msd, BS
Method: SW846/MCAWW/CLP/

Parameter: 8270
Matrix: Aqueous
Prep Batch: OF1E0462

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 spike recoveries in the ms, msd, BS

2. Known or Probable Causes(s) Acidic phenols, nitroanilines, chloroanilines are subject to erratic chromatographic behavior especially if the GC system is contaminated with high boiling material. Otherwise sporadic. All surrogates and other spikes within criteria

3. Discussion and Proposed Action Other Description:

narrate

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

4. Project Manager Instructions...signature/date: 10/2/08

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

5. Final Action...signature/date: 10/9/08 Other Explanation:

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

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

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

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

QA-139-A-0208

GLOSSARY

DATA QUALIFIERS

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

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

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

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

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

I = Interference.

NQ = Result qualitatively confirmed but not able to quantify.

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

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

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

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

GLOSSARY

ABBREVIATIONS

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

TECHNICAL FLAGS FOR MANUAL INTEGRATION

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

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

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

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

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

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

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

Lionville Laboratory, Inc.

Semivolatiles by GC/MS, HSL List

RFW Batch Number: 0809L144 Client: WC-HANFORD RC-052 K1341 Work Order: 60049001001 Report Date: 10/03/08 13:51 Page: 1a

000000008

	Cust ID:	J17J48	J17J48	J17J48	SBLKYF	SBLKYF BS	SBLKYF BSD
Sample Information	RFW#:	001	001 MS	001 MSD	08LE0462-MB1	08LE0462-MB1	08LE0462-MB1
	Matrix:	WATER	WATER	WATER	WATER	WATER	WATER
	D.F.:	1.00	1.00	1.00	1.00	1.00	1.00
	Units:	ug/L	ug/L	ug/L	ug/L	ug/L	ug/L
Surrogate Recovery	Nitrobenzene-d5	67 %	61 %	73 %	68 %	74 %	82 %
	2-Fluorobiphenyl	63 %	65 %	83 %	58 %	66 %	78 %
	Terphenyl-d14	60 %	88 %	64 %	89 %	74 %	87 %
	Phenol-d5	62 %	66 %	75 %	69 %	69 %	83 %
	2-Fluorophenol	64 %	64 %	79 %	69 %	69 %	78 %
	2,4,6-Tribromophenol	90 %	87 %	91 %	72 %	86 %	102 %
		fl	fl	fl	fl	fl	fl
Phenol		10 U	60 %	73 %	10 U	65 %	82 %
bis(2-Chloroethyl)ether		10 U	62 %	76 %	10 U	69 %	86 %
2-Chlorophenol		10 U	53 %	66 %	10 U	72 %	89 %
1,3-Dichlorobenzene		10 U	39 * %	52 %	10 U	45 %	50 %
1,4-Dichlorobenzene		10 U	39 * %	52 %	10 U	44 %	50 %
1,2-Dichlorobenzene		10 U	42 %	56 %	10 U	47 %	55 %
2-Methylphenol		10 U	56 %	71 %	10 U	63 %	78 %
2,2'-oxybis(1-Chloropropane)		10 U	63 %	78 %	10 U	67 %	82 %
3/4 Methylphenol		10 U	62 %	73 %	10 U	63 %	85 %
N-Nitroso-di-n-propylamine		10 U	64 %	80 %	10 U	65 %	88 %
Hexachloroethane		10 U	38 * %	50 %	10 U	47 %	51 %
Nitrobenzene		10 U	54 %	71 %	10 U	68 %	75 %
Isophorone		10 U	58 %	74 %	10 U	61 %	76 %
2-Nitrophenol		10 U	56 %	74 %	10 U	62 %	74 %
2,4-Dimethylphenol		10 U	64 %	79 %	10 U	78 %	94 %
bis(2-Chloroethoxy)methane		10 U	66 %	85 %	10 U	67 %	84 %
2,4-Dichlorophenol		10 U	58 * %	76 %	10 U	67 %	81 %
1,2,4-Trichlorobenzene		10 U	43 %	58 %	10 U	53 %	58 %
Naphthalene		10 U	49 * %	65 %	10 U	54 %	64 %
4-Chloroaniline		10 U	1 * %	8 * %	10 U	6 * %	23 %
Hexachlorobutadiene		10 U	42 %	55 %	10 U	54 %	59 %
4-Chloro-3-methylphenol		10 U	67 %	78 %	10 U	73 %	86 %
2-Methylnaphthalene		10 U	54 %	70 %	10 U	59 %	72 %
Hexachlorocyclopentadiene		10 U	31 %	41 %	10 U	39 %	47 %
2,4,6-Trichlorophenol		10 U	67 %	86 %	10 U	71 %	86 %
2,4,5-Trichlorophenol		25 U	69 %	87 %	25 U	73 %	86 %

*= Outside of EPA CLP QC limits.

RFW Batch Number: 0809L144 Client: WC-HANFORD RC-052 K1341 Work Order: 60049001001 Page: 1b

Cust ID:	J17J48		J17J48		J17J48		SBLKYF		SBLKYF BS		SBLKYF BSD	
RFW#:	001		001 MS		001 MSD		08LE0462-MB1		08LE0462-MB1		08LE0462-MB1	
2-Chloronaphthalene	10	U	58 *	%	77	%	10	U	61	%	74	%
2-Nitroaniline	25	U	69	%	81	%	25	U	78	%	82	%
Dimethylphthalate	10	U	78	%	94	%	10	U	87	%	97	%
Acenaphthylene	10	U	63	%	78	%	10	U	66	%	77	%
2,6-Dinitrotoluene	10	U	69	%	81	%	10	U	76	%	83	%
3-Nitroaniline	25	U	3 *	%	6 *	%	25	U	8 *	%	19	%
Acenaphthene	10	U	63	%	79	%	10	U	66	%	78	%
2,4-Dinitrophenol	25	U	92	%	102	%	25	U	81	%	88	%
4-Nitrophenol	25	U	70	%	78	%	25	U	73	%	75	%
Dibenzofuran	10	U	66	%	80	%	10	U	70	%	80	%
2,4-Dinitrotoluene	10	U	73	%	84	%	10	U	79	%	79	%
Diethylphthalate	10	U	80	%	92	%	10	U	95	%	99	%
4-Chlorophenyl-phenylether	10	U	75	%	87	%	10	U	85	%	98	%
Fluorene	10	U	68	%	80	%	10	U	75	%	85	%
4-Nitroaniline	25	U	29	%	30	%	25	U	18	%	31	%
4,6-Dinitro-2-methylphenol	25	U	89	%	103	%	25	U	83	%	97	%
N-Nitrosodiphenylamine (1)	10	U	58	%	75	%	10	U	43	%	52	%
4-Bromophenyl-phenylether	10	U	73	%	81	%	10	U	75	%	94	%
Hexachlorobenzene	10	U	74	%	75	%	10	U	75	%	91	%
Pentachlorophenol	25	U	105 *	%	116 *	%	25	U	103	%	115 *	%
Phenanthrene	10	U	75	%	82	%	10	U	76	%	86	%
Anthracene	10	U	73	%	80	%	10	U	74	%	86	%
Carbazole	10	U	78	%	90	%	10	U	67	%	71	%
Di-n-butylphthalate	0.6	J	88	%	87	%	10	U	100	%	109	%
Fluoranthene	10	U	76	%	75	%	10	U	88	%	91	%
Pyrene	10	U	75	%	76	%	10	U	65	%	81	%
Butylbenzylphthalate	10	U	90	%	89	%	10	U	86	%	102	%
3,3'-Dichlorobenzidine	10	U	0	%	3	%	10	U	0	%	1	%
Benzo(a)anthracene	10	U	75	%	71	%	10	U	77	%	86	%
Chrysene	10	U	75	%	72	%	10	U	80	%	89	%
bis(2-Ethylhexyl)phthalate	10	U	96	%	83	%	10	U	92	%	103	%
Di-n-octyl phthalate	10	U	86	%	76	%	10	U	88	%	109	%
Benzo(b)fluoranthene	10	U	73	%	66	%	10	U	74	%	87	%
Benzo(k)fluoranthene	10	U	73	%	66	%	10	U	82	%	84	%
Benzo(a)pyrene	10	U	71	%	64	%	10	U	74	%	79	%
Indeno(1,2,3-cd)pyrene	10	U	74	%	66	%	10	U	73	%	80	%
Dibenz(a,h)anthracene	10	U	77	%	69	%	10	U	76	%	81	%
Benzo(g,h,i)perylene	10	U	75	%	66	%	10	U	79	%	84	%

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

00000009

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

J17J48

Lab Name: Lionville Labs, Inc. Work Order: 60049001001

Client: WC-HANFORD RC-052 K1341

Matrix: (soil/water) WATER

Lab Sample ID: 0809L144-001

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: N093010

Level: (low/med) LOW

Date Received: 09/19/08

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

Date Extracted: 09/22/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 09/30/08

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 5

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.	UNKNOWN	5.267	4	J
2.	UNKNOWN	6.827	10	J
3.	UNKNOWN	6.958	4	J
4.	UNKNOWN	14.411	5	J
5.	UNKNOWN	17.367	20	J

1F

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET
TENTATIVELY IDENTIFIED COMPOUNDS

CLIENT SAMPLE NO.

SBLKYF

Lab Name: Lionville Labs, Inc. Work Order: 60049001001

Client: WC-HANFORD RC-052 K1341

Matrix: (soil/water) WATER

Lab Sample ID: 08LE0462-MB1

Sample wt/vol: 1000 (g/mL) ML

Lab File ID: N093007

Level: (low/med) LOW

Date Received: 09/22/08

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

Date Extracted: 09/22/08

Concentrated Extract Volume: 1000(uL)

Date Analyzed: 09/30/08

Injection Volume: 2.0(uL)

Dilution Factor: 1.00

GPC Cleanup: (Y/N) N

pH: 7.0

Number TICs found: 0

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

CAS NUMBER	COMPOUND NAME	RT	EST. CONC.	Q
1.				

onville Laboratory Use Only

1809L 144

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI Lionville Laboratories, Inc.

000000012

ent: W.C. Hanford SAFH RC-052

. Final Proj. Sampling Date

ject#: 60049-001-001-0001-00

ject Contact/Phone#:

nville Laboratory Project Manager: O Johnson

SW846 Del STP TAT 15D24

e Rec'd: 9-19-08 Date Due: 10-4-08

		A-C	D-F	G-H	I-J	K-L-M			N	O	P	Q	U-R			
Refrigerator #		6	3	3	3	3			3	3	3	3	3			
#/Type Container	Liquid	3G	3G	2G	2G	3G			1P	1P	1P	1P	1P			
#/Type Container	Solid															
Volume		40	L	L	L	L			500	500	500	250	1000			
Preservatives		HCl	—	—	—	—			HNO3	NaOH	NaOH/HCl	—	—			
ANALYSES REQUESTED	ORGANIC	VOA	BNA	Pest/PCB	Herb	PCST 8081			INORG Metal Hg	CN TOT	SO4 Cl	TC Br NO2 NO3	TSS TDS	Fl Ro Alg		

Lionville Laboratory Use Only

MATRIX CODES: Soil, Sediment, Solid, Sludge, Water, Oil, Air, Drum Solids, Drum Liquids, EP/TCLP, Leachate, Wipe, Other, Fish	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	06244	06254	06081 OPCB	0H86X	06084			Metal	ICNTO	ISFD	IC(1)	ITDS	ITSS	IFGN		
	001	J17-J48	✓	✓	W	9-17-08	0900	X	X	X	X	X			X	X	X	X	X	X			

Special Instructions:

not (1) = HSL + B, Bi, Li, Mo, P, Si, Sr, Sn, U,

IC (1) = Br, Cl, Fl, SO4, PO4, NO2, NO3

Special Instructions:

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

Relinquished by	Received by	Date	Time
JE	[signature]	9/19/08	0940

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGIN L REWRITTEN		COMPOSITE WASTE	

Washington Closure Hanford — CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST — RC 052 000

ollector: Rios (SEE D. Rios)	Company Contact: Bill Hudson	Telephone No.: 372-9695	Project Coordinator: KESSNER, JH
Price Code: 7G	Data Turnaround: 15 Days		
'oject Designation: Remaining Sites Confirmation Sampling - Water	Sampling Location: 100-D-78		SAF No.: RC-052
e Chest No.: AFS-06-001	Field Logbook No.: EL-1601-2	COA: 010D78A000	Method of Shipment: FED EX
hipped To: EBERLINE SERVICES (LIONVILLE)	Offsite Property No.: A080353		Bill of Lading/Air Bill No.: see OSPC

'OSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	Cool 4C	Cool 4C	Cool 4C	Cool 4C	HCl or H2SO4 to pH <2 Coo	NaOH to pH >= 12 Cool 4C	ZnAc+NaOH to pH >9 Cool
Type of Container	G/P	G/P	G/P	aG	aG	aG	aG	aGs*	G/P	G/P
No. of Container(s)	3 BH 9/17/08	3 BH 9/17/08	1	3	2	3	2	3	1	1
Volume	1000mL	1000mL	500mL	1000mL	1000mL	1000mL	1000mL	40mL	~~1000~~ 500mL ZEB 9-17-08	500mL

SAMPLE ANALYSIS

	See item (1) in Special Instructions.	Gross Alpha; Gross Beta	See item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	PCBs - 8082*	Pesticides - 8081	Chloro-Herbicides - EPA8151	VOA - 8260A (TCL)	Cyanide (Total) - 335.2	Sulfides - 9030
Sample No. / Matrix * / Sample Date / Sample Time										
17J48 / WATER / 9/17/08 / 0900	~~X~~ BH 9/17/08		X	X	X	X	X	X	X	X

CHAIN OF POSSESSION	Sign/Print Names		
Relinquished By/Removed From	Date/Time 1132 9-17-08	Received By/Stored In: BILL HUDSON Bill Hudson	Date/Time ~~1120~~ 9/17/08
Relinquished By/Removed From: BHUDSON BHudson	Date/Time 1245 9/17/08	Received By/Stored In: 1060 #3L	Date/Time 9/17/08 1245
Relinquished By/Removed From: 1060 3L / J.E. Bernhard	Date/Time 0850 9-18-08	Received By/Stored In: J.E. Bernhard	Date/Time 0850 9-18-08
Relinquished By/Removed From: J.E. Bernhard	Date/Time 0845 9-18-08	Received By/Stored In: FED EX	Date/Time
Relinquished By/Removed From:	Date/Time 9-19-08 0940	Received By/Stored In:	Date/Time 9-19-08 0940
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

BH 9/17/08 BH 9/17/08

~~(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106, Uranium-235, Uranium-238]; Gross alpha; gross beta~~

(2) 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]; Mercury - 7470 - (CV)

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

RJC

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

000000013

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-052-008 | Page 2 of 2

Collector: Rios SEC D. Rios	Company Contact: Bill Hudson	Telephone No.: 372-9695	Project Coordinator: KESSNER, JH
Price Code: 7G	Data Turnaround: 15 Days		
Project Designation: Remaining Sites Confirmation Sampling - Water	Sampling Location: 100-D-78		SAF No.: RC-052
Ice Chest No.: AFS-06-001	Field Logbook No.: EL-1601-2	COA: 010D78A000	Method of Shipment: Fed Ex
Shipped To: EBERLINE SERVICES ALIONVILLE	Offsite Property No.: A080353		Bill of Lading/Air Bill No.: See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C	
Type of Container	P	P
No. of Container(s)	1	2
Volume	250mL	1000mL
SAMPLE ANALYSIS (MS 9/17/08)	See item 8 in Special Instructions.	TSS, TSD, Ignitability

Sample No.	Matrix *	Sample Date	Sample Time										
117J48	WATER	9/17/08	0900	X	X								

CHAIN OF POSSESSION	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From: [signature]	9-17-08 1132	Received By/Stored In: BILL HUDSON [signature]	9/17/08 1132
Relinquished By/Removed From: BHUDSON [signature]	9/17/08 1245	Received By/Stored In: 1060 #3C	9/17/08 1245
Relinquished By/Removed From: 1060 3C / J.E. Bernhard	9-18-08 0830	Received By/Stored In: J.E. Bernhard	9-18-08 0830
Relinquished By/Removed From: J.E. Bernhard WCH	9-18-08 0845	Received By/Stored In: FED EX	
Relinquished By/Removed From: FED EX	9-19-08 0940	Received By/Stored In: [signature]	9-19-08 0940
Relinquished By/Removed From:		Received By/Stored In:	

Sign/Print Names

SPECIAL INSTRUCTIONS

B) 9/17/08

8) IC Anions - 300.0 (Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate); pH (Water) - 9040

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

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

000000014

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: W.C. Hanford

Project/SAF/SOW/Release #: RC-052

Date: 9-19-08

LvLI Batch #: 0809L144

Sample Custodian: [signature]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 7980 1504 1505
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 3.1	°C	Cooler # AFS-06-001
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 ← PH out of Hold.	
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 O-JOHNSON		Date 9-19-08	

LvLI

RECEIVED
NOV 2008

Lionville Laboratory, Inc.
PEST/PCB ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-052 K1341

DATE RECEIVED: 09/19/08 LVL LOT # :0809L144

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J17J48	001	W	08LE0458	09/17/08	09/22/08	09/23/08
J17J48	001 MS	W	08LE0458	09/17/08	09/22/08	09/23/08
J17J48	001 MSD	W	08LE0458	09/17/08	09/22/08	09/23/08

LAB QC:

PBLKVE	MB1	W	08LE0458	N/A	09/22/08	09/23/08
PBLKVE	MB1 BS	W	08LE0458	N/A	09/22/08	09/23/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: WC-HANFORD RC-052
LVL #: 0809L144
SDG/SAF # K1341 / RC-052

W.O. #: 60049-001-001-0001-00
Date Received: 09-19-2008

CHLORINATED PESTICIDES

One (1) water sample was collected on 09-17-2008.

The sample and associated QC samples were extracted on 09-22-2008 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedures on 09-23-2008. The extraction procedure was based on method 3520C and the extracts were analyzed based on method 8081A.

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

1. All required holding times for extraction and analysis have been met.
2. The method blank was below the reporting limits for all target compounds.
3. All surrogate recoveries were within acceptance criteria.
4. All blank spike recoveries were within acceptance criteria.
5. Eight (8) of forty (40) matrix spike recoveries were outside acceptance criteria. A copy of the Sample Discrepancy Report (SDR) #08GC123) is enclosed.
6. All initial calibrations associated with this data set were within acceptance criteria.
7. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.

r:\group\data\2008\pest-pcb\tnu\0809-036cs2.pest.doc

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

8. LvL 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.

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

Iain Daniels
Laboratory Manager
Lionville Laboratory

10/6/08
Date

LvLI
LIONVILLE LABORATORY INC.

Lionville Laboratory Sample Discrepancy Report (SDR)

SDR #: 08BC123

Initiator: CAC
Date: 10/01/08
Client: WC Hanford

Batch: 0809L144
Samples: 001 MS+MSD
Method: SW846/MCAWW/CLP/

Parameter: Pest
Matrix: water
Prep Batch: 08LE0458

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)

several spike recoveries outside qc limits

BS is good

2. Known or Probable Causes(s)

Matrix

3. Discussion and Proposed Action

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

Other Description:

Narrate DS.

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

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

5. Final Action...signature/date: _____

Other Explanation:

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

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

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

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

QA-139-A-0208

GLOSSARY OF DATA

DATA QUALIFIERS

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

ABBREVIATIONS

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

onville Laboratory Use Only

809L 144

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI Lionville Laboratory Inc.

nt W.C. Hanford SAFH RC-052

. Final Proj. Sampling Date

ject# 60049-001-001-0001-00

ject Contact/Phone#

nville Laboratory Project Manager O Johnson

S00846 Del STP TAT 15 Dy

te Rec'd 9-19-08 Date Due 10-4-08

		A-C	D-F	GH	IJ	KLM			N	O	P	Q	UR			
Refrigerator #		6	3	3	3	3			3	3	3	3	3	—		
#/Type Container	Liquid	3G	3G	2G	2G	3G			1P	1P	1P	1P	1P	—		
	Solid															
Volume		40	L	L	L	L			500	500	500	250	1000	—		
Preservatives		HCl	—	—	—	—			HNO3	NaOH	HNO3 NaOH	—	—	—		
ANALYSES REQUESTED		ORGANIC							INORG							
		VOA	BNA	OC Pest PCB	CHCl3 Herb	PCST 8081			TR Metal Hg	CN TOT		Sulfide	TC TOC TOX	TS TDS	TSS Rolling	

TRIX
DES:
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	062414	062514	0PCB	0HB6X	060814			MetHO	ICNTO	ISFO	ITOS	ITSS	ITGN		
001	J17J48	✓	✓	W	9-17-08	0900	X	X	X	X	X			X	X	X	X	X	X		

Lionville Laboratory Use Only

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

IC① = Br, Cl, Fl, SO4, PO4, NO2, NO3

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

Relinquished by	Received by	Date	Time
[illegible]	[illegible]	9/19/08	0940

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGIN L REWRITTEN		"COMPOSITE WASTE"	

000000006

llector Rios SEE D.RIOS	Company Contact Bill Hudson	Telephone No. 372-9695	Project Coordinator KESSNER, JH
Price Code 7G	Data Turnaround 15 Days		
oject Designation Remaining Sites Confirmation Sampling - Water	Sampling Location 100-D-78		SAF No. RC-052
: Chest No. AFS-06-001	Field Logbook No. EL-1601-2	COA 010D78A000	Method of Shipment FED EX
ipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. A080353		Bill of Lading/Air Bill No. SEE OSPC

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

Preservation	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	Cool 4C	Cool 4C	Cool 4C	Cool 4C	HCl or H2SO4 to pH <2 Coo	NaOH to pH >= 12 Cool 4C	ZnAc+NaOH to pH >9 Cool
Type of Container	G/P	G/P	G/P	aG	aG	aG	aG	aGs*	G/P	G/P
No. of Container(s)	3	3	1	3	2	3	2	3	1	1
Volume	1000mL	1000mL	500mL	1000mL	1000mL	1000mL	1000mL	40mL	~~1000~~mL 500	500mL
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Gross Alpha; Gross Beta	See item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	PCBs - 8082*	Pesticides - 8081	Chloro-Herbicides - EPA8151	VOA - 8260A (TCL)	Cyanide (Total) - 335.2	Sulfides - 9030

Sample No.	Matrix *	Sample Date	Sample Time										
17J48	WATER	9/17/08	0900	~~X~~		X	X	X	X	X	X	X	X

CHAIN OF POSSESSION — Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[signature]	9-17-08 1132	BILL HUDSON [signature]	9/17/08 1132
HUDSON [signature]	9/17/08 1245	1060 #3L	9/17/08 1245
SEE 3C / J.E. Bernhard	9-18-08 0850	J.E. Bernhard	9-18-08 0850
J.E. Bernhard WCH	9-18-08 0845	FED EX	
[signature]	9-19-08 0940	[signature]	9-19-08 0940

SPECIAL INSTRUCTIONS

BH 9/17/08 BH 9/17/08

~~(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106, Uranium-235, Uranium-238]; Gross alpha; Gross beta~~

(2) 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]; Mercury - 7470 - (CV)

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

RJC

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
Ve=Vegetation
X=Other

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

CH-EE-011

0000000007

ollector Rios SE C. D. Rios	Company Contact Bill Hudson	Telephone No. 372-9695	Project Coordinator KESSNER, JH
Price Code 7G	Data Turnaround 15 Days		
roject Designation Remaining Sites Confirmation Sampling - Water	Sampling Location 100-D-78		SAF No. RC-052
e Chest No. AFS-06-001	Field Logbook No. EL-1601-2	COA 010D78A000	Method of Shipment Fed Ex
hipped To EBERLINE SERVICES / LIONVILLE	Offsite Property No. A080353		Bill of Lading/Air Bill No. See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C	
Type of Container	P	P
No. of Container(s)	1	2
Volume	250mL	1000mL

SAMPLE ANALYSIS

MS 9/17/08

See item B in Special Instructions.	TSS, TSD, Ignitability	

Sample No.	Matrix *	Sample Date	Sample Time										
17J48	WATER	9/17/08	0900	X	X								

CHAIN OF POSSESSION	Date/Time	Sign/Print Names Received By/Stored In	Date/Time
elinquished By/Removed From	1132 9-17-08	Received By/Stored In: BILL HUDSON Bill Hudson	1132 9/17/08
elinquished By/Removed From: B HUDSON B Hudson	9/17/08 1245	Received By/Stored In: 1060 #3C	9/17/08 1245
elinquished By/Removed From: 060 IC / J.E. Bernhard	0830 9-18-08	Received By/Stored In: J.E. Bernhard	0830 9-18-08
elinquished By/Removed From: J.E. Bernhard	0845 9-18-08	Received By/Stored In: FED EX	
elinquished By/Removed From: Fed Ex	9-19-08 0940	Received By/Stored In	9-19-08 0940
elinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

B) 9/17/08
B) IC Anions - 300.0 {Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate}; pH (Water) - 9040

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

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

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: W.C. Hanford

Project/SAF/SOW/Release #: RC-052

Date: 9-19-08

LvLI Batch #: 0809L144

Sample Custodian: [signature]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 7980150415 05
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 3.1	°C	Cooler # AFS-06-001
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 ← PH out of Hold.	
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 O-JOHNSON		Date 9-19-08	

LvLI

Lionville Laboratory, Inc.

Pesticide/PCBs by GC, CLP List

Report Date: 09/30/08 13:16

RFW Batch Number: **0809L144** Client: **WC-HANFORD RC-052** Work Order: 60049001001 Page: 1

000000010

	Cust ID:	J17J48	J17J48	J17J48	PBLKVE	PBLKVE BS
Sample Information	RFW#:	001	001 MS	001 MSD	08LE0458-MB1	08LE0458-MB1
	Matrix:	WATER	WATER	WATER	WATER	WATER
	D.F.:	1.00	1.00	1.00	1.00	1.00
	Units:	UG/L	UG/L	UG/L	UG/L	UG/L
Surrogate:	Tetrachloro-m-xylene	68 %	59 %	64 %	61 %	66 %
	Decachlorobiphenyl	106 %	104 %	59 %	106 %	102 %
		fl	fl	fl	fl	fl fl
Alpha-BHC		0.050 U	86 %	88 %	0.050 U	102 %
gamma-BHC (Lindane)		0.050 U	86 %	91 %	0.050 U	102 %
Beta-BHC		0.050 U	I %	I %	0.050 U	107 %
Heptachlor		0.050 U	143 * %	163 * %	0.050 U	91 %
Delta-BHC		0.050 U	52 * %	58 * %	0.050 U	67 %
Aldrin		0.050 U	64 %	79 %	0.050 U	94 %
Heptachlor epoxide		0.050 U	138 * %	100 %	0.050 U	97 %
gamma-Chlordane		0.050 U	78 %	87 %	0.050 U	98 %
Endosulfan I		0.050 U	89 %	92 %	0.050 U	97 %
alpha-Chlordane		0.050 U	79 %	86 %	0.050 U	96 %
4,4'-DDE		0.050 U	66 * %	78 * %	0.050 U	104 %
Dieldrin		0.050 U	90 %	95 %	0.050 U	98 %
Endrin		0.050 U	95 %	100 %	0.050 U	101 %
4,4'-DDD		0.050 U	92 %	98 %	0.050 U	102 %
Endosulfan II		0.050 U	90 %	95 %	0.050 U	97 %
4,4'-DDT		0.050 U	65 * %	78 %	0.050 U	98 %
Endrin aldehyde		0.050 U	83 %	87 %	0.050 U	92 %
Endosulfan sulfate		0.050 U	78 %	81 %	0.050 U	84 %
Methoxychlor		0.050 U	84 %	95 %	0.050 U	100 %
Endrin ketone		0.050 U	90 %	93 %	0.050 U	95 %
Toxaphene		0.50 U	0.50 U	0.50 U	0.50 U	0.50 U

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

Lionville Laboratory, Inc.

SAMPLE EXTRACTION RECORD

Sheet no.: 1

Extract. Date: 09/22/08 Extraction Batch No: 08LE0458 Analyst: MF Method: CONT3520

Test: O608 Cleanup Date: Analyst: Client: BJC BYWO02389A

LIMS Report Date: 09/23/08 Solvent: DCM,HEXANE Adsorbent:

Sample No:	Client Name / Client ID	pH	Initial WT/VOL	Surr. Mult.	Spike Mult.	Final VOL	Final VOL	Split Mult.	GPC Y/N	% Solids	C/D FACTOR
0809L129-	BJC BYWO02389A										
003 X	EMWSW2288	7	1000	1.0		10		1.0	N	0.0	10.00
006 X	EMWSW2299	7	1000	1.0		10		1.0	N	0.0	10.00
0809L144-	WC-HANFORD RC-052										
001 H	J17J48	7	1000	1.0		10		1.0	N	0.0	10.00
001 HS	J17J48	7	1000	1.0	1.0	10		1.0	N	0.0	10.00
001 HT	J17J48	7	1000	1.0	1.0	10		1.0	N	0.0	10.00
08LE0458-MB1 H	PBLKVE	7	1000	1.0		10		1.0	N	0.0	10.00
08LE0458-MB1 HS	PBLKVE	7	1000	1.0	1.0	10		1.0	N	0.0	10.00
08LE0458-MB1 X	PBLKVE	7	1000	1.0		10		1.0	N	0.0	10.00
08LE0458-MB1 XS	PBLKVE	7	1000	1.0	1.0	10		1.0	N	0.0	10.00

Comments:
Surrogate: 250 UL OLM PSURR 89916408
Spike: 250 UL FULL LIST PEST SPIKE 89915509

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
[illegible]	[illegible]	9/23/08 1615	SZ	9/23/08 16:15	CE

000000011

RECEIVED NOV 2008

Lionville Laboratory, Inc.
PCB ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-052 K1341

DATE RECEIVED: 09/19/08 LVL LOT # :0809L144

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J17J48	001	W	08LE0458	09/17/08	09/22/08	09/24/08
J17J48	001 MS	W	08LE0458	09/17/08	09/22/08	09/24/08
J17J48	001 MSD	W	08LE0458	09/17/08	09/22/08	09/24/08

LAB QC:

PBLKVE	MB1	W	08LE0458	N/A	09/22/08	09/24/08
PBLKVE	MB1 BS	W	08LE0458	N/A	09/22/08	09/24/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: WC-HANFORD RC-052 K1341
LVL #: 0809L144

W.O. #: 60049-001-001-0001-00
Date Received: 09-19-2008

PCB

One (1) water sample was collected on 09-17-2008.

The sample and associated QC samples were extracted on 09-22-2008 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition procedures on 09-24-2008. The extraction procedure was based on method 3520C and the extracts were analyzed based on method 8082.

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

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

r:\group\data\2008\pest-pcb\tnu\0809-144jw2.pcb.doc

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

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

10/6/08
Date

LVLI
LIONVILLE LABORATORY INC.

nville Laboratory Use Only

809L 144

Custody Transfer Record/Lab Work Request

Page 1 of 1

LVLI Lionville Laboratory, Inc.

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

nt W.C. Hanford SAF# RC-052

Final Proj. Sampling Date

ect# 60049-001-001-0001-00

ect Contact/Phone#

nville Laboratory Project Manager O Johnson

S00846 Del STP TAT 15DAY

e Rec'd 9-19-08 Date Due 10-4-08

	A-C	D-F	GH	IJ	KLM			N	O	P	Q	UR			
Refrigerator #	6	3	3	3	3			3	3	3	3	3	—		
#/Type Container Liquid	3G	3G	2G	2G	3G			1P	1P	1P	1P	1P	—		
#/Type Container Solid															
Volume	4G	L	L	L	L			500	500	500	250	1000	—		
Preservatives	HCl	—	—	—	—			HNO3	NaOH	HNO3 NaOH	—	—	—		
ANALYSES REQUESTED	ORGANIC							INORG							
	VOA	BNA	Pest PCB	Chlor Herb	CST 8051			TPH Metal Hg	CN TOT	Sulfide	TC CN TOX	TSS TDS	Hg Reg		

RIX																					
ES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	Lionville Laboratory Use Only 062414	062514	0608 Pest 0608 PCB	0608 Herb	060814			MetHG	ICNTO	ISFD	IPH IC①	ITDS ITSS	ITOG		
Soil	001	J17-J48	✓	✓	W	9-17-08	0900	X	X	X	X	X			X	X	X	X	X	X		
Sediment																						
Solid																						
Sludge																						
Water																						
Oil																						
Air																						
Drum Solids																						
Drum Liquids																						
EP/TCLP																						
Leachate																						
Wipe																						
Other																						
Fish																						

ecial Instructions:

nit① = HSL + B, Bi, Li, Mo, P, Si, Sr, Sn, U,

IC① = Br, Cl, Fl, SO4, PO4 NO2, NO3

Special Instructions:

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

Relinquished by	Received by	Date	Time
[illegible]	[signature]	9/19/08	0940

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time
ORIGINAL REWRITTEN		COMPOSITE WASTE	

000000004

llector Rios SEE D. RIOS	Company Contact Bill Hudson	Telephone No. 372-9695	Project Coordinator KESSNER, JH
Price Code 7G	Data Turnaround 15 Days		
olect Designation Remaining Sites Confirmation Sampling - Water	Sampling Location 100-D-78		SAF No. RC-052
: Chest No. AFS-06-001	Field Logbook No. EL-1601-2	COA 010D78A000	Method of Shipment FED EX
ipped To EBERLINE SERVICES (LIONVILLE)	Offsite Property No. 1050353		Bill of Lading/Air Bill No. SEE OSPC

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

Preservation	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	Cool 4C	Cool 4C	Cool 4C	Cool 4C	HCl or H2SO4 to pH <2 Coo	NaOH to pH >= 12 Cool 4C	ZnAc+NaOH to pH >9 Cool
Type of Container	G/P	G/P	G/P	aG	aG	aG	aG	aGs*	G/P	G/P
No. of Container(s)	3 BH 9/17/08	3 BH 9/17/08	1	3	2	3	2	3	1	1
Volume	1000mL	1000mL	500mL	1000mL	1000mL	1000mL	1000mL	40mL	~~1000~~mL 500 JEB 9-19-08	500mL
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Gross Alpha; Gross Beta	See item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	PCBs - 8082*	Pesticides - 8081	Chloro-Herbicides - EPA8151	VOA - 8260A (TCL)	Cyanide (Total) - 335.2	Sulfides - 9030

Sample No.	Matrix *	Sample Date	Sample Time										
17J48	WATER	9/17/08	0900	~~X~~ BH 9/17/08		X	X	X	X	X	X	X	X

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
linquished By/Removed From	1132		1132
[illegible]	9-17-08	BILL HUDSON [illegible] Hudson	9/17/08
linquished By/Removed From	Date/Time 1245	Received By/Stored In	Date/Time
HUDSON [illegible] Hudson	9/17/08	1060 #3L	9/17/08 1245
linquished By/Removed From	Date/Time 0850	Received By/Stored In	Date/Time 0850
1060 3L / J.E. Bernhard	9-18-08	J.E. Bernhard	9-18-08
linquished By/Removed From	Date/Time 0845	Received By/Stored In	Date/Time
J.E. Bernhard WCH	9-18-08	FED EX	
linquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[illegible]	9-19-08 0940	[illegible]	9-19-08 0940
linquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

BH 9/17/08 BH 9/17/08

~~(1) Gamma Spec - (Full List) (Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106, Uranium-235, Uranium-238) - Gross alpha, Gross beta~~

(2) 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]; Mercury - 7470 - (CV)

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

RJC

Matrix *

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

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

CH-EE-011

000000005

Washington Closure Hanford — CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Collector: Rios (SEC. D. Rios)	Company Contact: Bill Hudson	Telephone No.: 372-9695	Project Coordinator: KESSNER, JH
Price Code: 7G	Data Turnaround: 15 Days		
Project Designation: Remaining Sites Confirmation Sampling - Water	Sampling Location: 100-D-78		SAF No.: RC-052
Ice Chest No.: AFS-06-001	Field Logbook No.: EL-1601-2	COA: 010D78A000	Method of Shipment: Fed Ex
Shipped To: EBERLINE SERVICES (LIONVILLE)	Offsite Property No.: A080353		Bill of Lading/Air Bill No.: See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

SAMPLE ANALYSIS

Preservation	Cool 4C											
Type of Container	P	P										
No. of Container(s)	1	2										
Volume	250mL	1000mL										
MS 9/17/08 See item B in Special Instructions.		TSS, TSD, Ignitability										
Sample No.	Matrix *	Sample Date	Sample Time									
17J48	WATER	9/17/08	0900	X	X							

CHAIN OF POSSESSION	Sign/Print Names	Date/Time
Relinquished By/Removed From	[signature]	1132 9-17-08
Received By/Stored In	BILL HUDSON [signature]	1130 9/17/08
Relinquished By/Removed From	B HUDSON [signature]	1245 9/17/08
Received By/Stored In	1060 #3C	1245 9/17/08
Relinquished By/Removed From	1060 IC / J.E. Bernhard	0830 9-18-08
Received By/Stored In	J.E. Bernhard	0830 9-18-08
Relinquished By/Removed From	J.E. Bernhard [signature]	0845 9-18-08
Received By/Stored In	FED EX	
Relinquished By/Removed From	Fed Ex	9-19-08 0940
Received By/Stored In	[signature]	9-19-08 0940
Relinquished By/Removed From		
Received By/Stored In		

SPECIAL INSTRUCTIONS

B) 9/17/08
B) IC Anions - 300.0 [Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate]; pH (Water) - 9040

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

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

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

/CH-EE-011

000000006

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: W.C. Hanford

Project/SAF/SOW/Release #: RC-052

Date: 9-19-08

LvLI Batch #: 0809L144

Sample Custodian: [signature]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FEDEX		Airbill # 7980 1504 1505
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 3.1	°C	Cooler # AFS-06-001
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 ← PH out of Hold.	
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 O-JOHNSON		Date 9-19-08	

LvLI

Lionville Laboratory, Inc.

PCBs by GC

Report Date: 09/30/08 15:23

RFW Batch Number: **0809L144** Client: **WC-HANFORD RC-052** Work Order: 60049001001 Page: 1

	Cust ID:	J17J48	J17J48	J17J48	PBLKVE	PBLKVE BS
Sample Information	RFW#:	001	001 MS	001 MSD	08LE0458-MB1	08LE0458-MB1
	Matrix:	WATER	WATER	WATER	WATER	WATER
	D.F.:	1.00	1.00	1.00	1.00	1.00
	Units:	UG/L	UG/L	UG/L	UG/L	UG/L
Surrogate:	Tetrachloro-m-xylene	86 %	86 %	87 %	66 %	67 %
	Decachlorobiphenyl	98 %	92 %	100 %	99 %	98 %
		fl	fl	fl	fl	fl
Aroclor-1016		0.40 U	97 %	95 %	0.40 U	87 %
Aroclor-1221		0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
Aroclor-1232		0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
Aroclor-1242		0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
Aroclor-1248		0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
Aroclor-1254		0.40 U	0.40 U	0.40 U	0.40 U	0.40 U
Aroclor-1260		0.40 U	98 %	103 %	0.40 U	99 %

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

000000008

Lionville Laboratory, Inc.

SAMPLE EXTRACTION RECORD

Sheet no.: 1

Extract. Date: 09/22/08 Extraction Batch No: 08LE0458 Analyst: MF Method: CONT3520

Test: OPCB Cleanup Date: 09/23/08 Analyst: MF Client: BJC BYWO02389A

LIMS Report Date: 09/23/08 Solvent: DCM,HEXANE Adsorbent: H2SO4

Sample No:	Client Name / Client ID	pH	Initial WT/VOL	Surr. Mult.	Spike Mult.	Final VOL	Final VOL	Split Mult.	GPC Y/N	% Solids	C/D FACTOR
0809L129-	BJC BYWO02389A										
003	EMWSW2288	7	1000	1.0		10		1.0	N	0.0	10.00
006	EMWSW2299	7	1000	1.0		10		1.0	N	0.0	10.00
0809L144-	WC-HANFORD RC-052										
001	J17J48	7	1000	1.0		10		1.0	N	0.0	10.00
001 -S	J17J48	7	1000	1.0	1.0	10		1.0	N	0.0	10.00
001 -T	J17J48	7	1000	1.0	1.0	10		1.0	N	0.0	10.00
08LE0458-MB1	PBLKVE	7	1000	1.0		10		1.0	N	0.0	10.00
08LE0458-MB1 -S	PBLKVE	7	1000	1.0	1.0	10		1.0	N	0.0	10.00

Comments:
Surrogate: 250 UL OLM PSURR 89916408
Spike: 250 UL AR1660 89916603

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
all	[illegible]	9/23/08 1615	GZ	9/23/08 16:15	GC

000000009

RECEIVED
NOV 2008

Lionville Laboratory, Inc.
HBGX ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-052 K1341

DATE RECEIVED: 09/19/08 LVL LOT # :0809L144

CLIENT ID	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J17J48	001	W	08LE0465	09/17/08	09/24/08	10/01/08
J17J48	001 MS	W	08LE0465	09/17/08	09/24/08	10/01/08
LAB QC:						
PBLKVL	MB1	W	08LE0465	N/A	09/24/08	10/01/08
PBLKVL	MB1 BS	W	08LE0465	N/A	09/24/08	10/01/08
PBLKVL	MB1 BSD	W	08LE0465	N/A	09/24/08	10/01/08

LIONVILLE LABORATORY INC.

Case Narrative

Client: WC-HANFORD RC-052 K1341
LVL #: 0809L006

W.O. #: 60049-001-001-0001
Date Received: 09-19-2008

HERBICIDE

One (1) water sample was collected on 09-17-2008.

The sample and its associated QC samples were extracted on 09-24-2008 and analyzed according to Lionville Laboratory SOPs based on SW846, 3rd Edition method 8151A on 10-01-2008.

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

1. All required holding times for extraction and analysis have been met.
2. The method blank was below the reporting limits for all target compounds.
3. All surrogate recoveries were within the acceptance criteria.
4. All blank spike recoveries were with acceptance criteria.
5. All matrix spike recoveries were within acceptance criteria.
6. The initial calibrations associated with this data set were within acceptance criteria.
7. The continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
8. LVL 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.
9. I certify that this sample data package is in compliance with SOW requirements, both technically and for completeness, other than the conditions detailed above. Release of the data contained in this hard-copy data package has been authorized by the laboratory manager or a designee, as verified by the following signature.

Judy Stma

Iain Daniels
Laboratory Manager
Lionville Laboratory

10/6/08
Date

r:\group\data\2008\herb\tnu\0809-006ojs1.doc

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

GLOSSARY OF DATA

DATA QUALIFIERS

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

ABBREVIATIONS

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

nville Laboratory Use Only

809L 144

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI

nt W.C. Hanford SAFH RC-052

Final Proj. Sampling Date

ect# 60049-001-001-0001-00

ect Contact/Phone#

vville Laboratory Project Manager O Johnson

SW846 Del STP TAT 15 Day

e Rec'd 9-19-08 Date Due 10-4-08

		A-C	D-F	G-H	I-J	K-L-M			N	O	P	Q	U-R			
Refrigerator #		6	3	3	3	3			3	3	3	3	3			
#/Type Container	Liquid	3G	3G	2G	2G	3G			1P	1P	1P	1P	1P			
#/Type Container	Solid															
Volume		40	L	L	L	L			500	500	500	250	1000			
Preservatives		HCl	—	—	—	—			HNO3	NaOH	HNO3 NaOH	—	—			
ANALYSES REQUESTED		ORGANIC							INORG							
		VOA	BNA	Pest PCB	Chlor Herb	PCST 8081			Metal Hg	CN TOT	Sulfide	IC Br, NO2	TS TDS	Fe Reality		
Lionville Laboratory Use Only		0624H	0625H	OPCB	OH86X	0608H			MetHO	ICNTO	ISFD	IPH IC①	ITOS ITSS	IFGN		

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected														
001	J17-J48	✓	✓	W	9-17-08	0900	X	X	X	X	X			X	X	X	X	X	X	

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

cial Instructions:

nut① = HSL + B, Bi, Li, Mo, P, Si, Sr, Sn, U,

IC① = Br, Cl, Fl, SO4, PO4, NO2, NO3

Special Instructions:

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

elinquished by	Received by	Date	Time
[illegible]	[illegible]	9/19/08	0940

Relinquished by	Received by	Date	Time

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

000000004

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC 052 005

lector Rios — SEC D. Rios	Company Contact: Bill Hudson	Telephone No.: 372-9695	Project Coordinator: KESSNER, JH
Price Code: 7G	Data Turnaround: 15 Days		
ject Designation: Remaining Sites Confirmation Sampling - Water	Sampling Location: 100-D-78		SAF No.: RC-052
Chest No.: AFS-06-001	Field Logbook No.: EL-1601-2	COA: 010D78A000	Method of Shipment: FED EX
ipped To: EBERLINE SERVICES (LIONVILLE)	Offsite Property No.: A050353		Bill of Lading/Air Bill No.: see OSPC

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

Preservation	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	Cool 4C	Cool 4C	Cool 4C	Cool 4C	HCl or H2SO4 to pH <2 Coo	NaOH to pH >= 12 Cool 4C	ZnAc+NaOH to pH >9 Cool
Type of Container	G/P	G/P	G/P	aG	aG	aG	aG	aGs*	G/P	G/P
No. of Container(s)	3 BH 9/17/08	3 BH 9/17/08	1	3	2	3	2	3	1	1
Volume	1000mL	1000mL	500mL	1000mL	1000mL	1000mL	1000mL	40mL	~~1000~~ 500 mL BH 9-17-08	500mL
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Gross Alpha; Gross Beta	See item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	PCBs - 8082*	Pesticides - 8081	Chloro-Herbicides - EPA8151	VOA - 8260A (TCL)	Cyanide (Total) - 335.2	Sulfides - 9030

Sample No.	Matrix *	Sample Date	Sample Time										
7J48	WATER	9/17/08	0900	~~X~~ BH 9/17/08		X	X	X	X	X	X	X	X

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
inquished By/Removed From	9-17-08 1132	BILL HUDSON Bill Hudson	9/17/08 1132
inquished By/Removed From: HUDSON BHudson	9/17/08 1245	Received By/Stored In: 1060 #3X	9/17/08 1245
inquished By/Removed From: 1060 3C J.E. Bernhard	9-18-08 0850	Received By/Stored In: J.E. Bernhard	9-18-08 0850
inquished By/Removed From: J.E. Bernhard	9-18-08 0845	Received By/Stored In: FED EX	
inquished By/Removed From:	9-19-08 0940	Received By/Stored In:	9-19-08 0940
inquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

BH 9/17/08 BH 9/17/08

~~(1) Gamma Spec - (Full List) [Americium-241, Antimony-125, Beryllium-7, Cesium-134, Cesium-137, Cobalt-60, Europium-152, Europium-154, Europium-155, Potassium-40, Ruthenium-106, Uranium-235, Uranium-238] - Gross alpha, gross beta~~

(2) 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]; Mercury - 7470 - (CV)

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

RJC

Matrix *

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

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

CH-EE-011

000000005

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-052-008 | Page 2 of 2

llector: Rios (SEC D. Rios)	Company Contact: Bill Hudson	Telephone No.: 372-9695	Project Coordinator: KESSNER, JH
Price Code: 7G	Data Turnaround: 15 Days		
oject Designation: Remaining Sites Confirmation Sampling - Water	Sampling Location: 100-D-78		SAF No.: RC-052
Chest No.: AFS-06-001	Field Logbook No.: EL-1601-2	COA: 010D78A000	Method of Shipment: Fed Ex
ipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A080353		Bill of Lading/Air Bill No.: See OSPC

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

Preservation	Cool 4C											
Type of Container	P	P										
No. of Container(s)	1	2										
Volume	250mL	1000mL										
SAMPLE ANALYSIS (MA 9/17/08)	See item 3 in Special Instructions.	TSS, TSD, Ignitability										

Sample No.	Matrix *	Sample Date	Sample Time										
7J48	WATER	9/17/08	0900	X	X								

CHAIN OF POSSESSION	Sign/Print Names	
inquished By/Removed From: [signature]	Date/Time: 1132 9-17-08	Received By/Stored In: BILL HUDSON [signature]
Date/Time: ~~1120~~ 9/17/08		
inquished By/Removed From: HUDSON [signature]	Date/Time: 9/17/08 1245	Received By/Stored In: 1060 #3C
Date/Time: 9/17/08 1245		
inquished By/Removed From: 60 IC / J.E. Bernhard	Date/Time: 0930 9-18-08	Received By/Stored In: J.E. Bernhard
Date/Time: 0930 9-18-08		
inquished By/Removed From: E. Bernhard WCH	Date/Time: 0945 9-18-08	Received By/Stored In: FED EX
Date/Time:		
inquished By/Removed From: FED EX	Date/Time: 9-19-08 0940	Received By/Stored In: [signature]
Date/Time: 9-19-08 0940		
inquished By/Removed From	Date/Time	Received By/Stored In
Date/Time		

1132

SPECIAL INSTRUCTIONS

BH 9/17/08

3) IC Anions - 300.0 [Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate]; pH (Water) - 9040

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

Matrix *

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

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

CH-EE-011

0000000006

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: W.C. Hanford

Project/SAF/SOW/Release #: RC-052

Date: 9-19-08

LvLI Batch #: 08096144

Sample Custodian: [illegible]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 798015041505
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 3.1	°C	Cooler # AFS-06-001
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 ← PH out of Hold.	
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 O-JOHNSON		Date 9-19-08	

LvLI

Lionville Laboratory, Inc.

Herbicides, Special List

Report Date: 10/03/08 13:45

RFW Batch Number: 0809L144 Client: WC-HANFORD RC-052 K1341 Work Order: 60049001001 Page: 1

	Cust ID:	J17J48	J17J48	PBLKVL	PBLKVL BS	PBLKVL BSD
Sample Information	RFW#:	001	001 MS	08LE0465-MB1	08LE0465-MB1	08LE0465-MB1
	Matrix:	WATER	WATER	WATER	WATER	WATER
	D.F.:	1.00	1.00	1.00	1.00	1.00
	Units:	ug/L	ug/L	ug/L	ug/L	ug/L

Surrogate:	DCAA	67 %	91 %	89 %	92 %	88 %
		fl	fl	fl	fl	fl
Dalapon		0.50 U	94 %	0.50 U	83 %	74 %
Dicamba		0.50 U	77 %	0.50 U	95 %	87 %
Dichloroprop		0.17 J.I	87 %	0.50 U	76 %	71 %
2,4-D		0.50 U	84 %	0.50 U	87 %	83 %
2,4,5-TP (Silvex)		0.35 J	94 %	0.50 U	98 %	91 %
2,4,5-T		0.50 U	84 %	0.50 U	81 %	72 %
Dinoseb		0.50 U	49 %	0.50 U	72 %	48 %
2,4-DB		0.16 J.I	74 %	0.50 U	99 %	89 %
Pentachlorophenol		0.50 U	83 %	0.50 U	99 %	91 %

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

000000008

Lionville Laboratory, Inc.

SAMPLE EXTRACTION RECORD

Sheet no.: 1

Extract. Date: 09/24/08 Extraction Batch No: 08LE0465 Analyst: MF Method: SEPF8151

Test: OHBG Cleanup Date: Analyst: Client: LQAM-8151W

LIMS Report Date: 10/01/08 Solvent: ETHER,HEXANE Adsorbent:

Sample No:	Client Name / Client ID	pH	Initial WT/VOL	Surr. Mult.	Spike Mult.	Final VOL	Final VOL	Split Mult.	GPC Y/N	% Solids	C/D FACTOR
0809L074-	LQAM-8151W										
001 X	MDL 1	7	1000	1.0		10		1.0	N	0.0	10.00
002 X	MDL 2	7	1000	1.0		10		1.0	N	0.0	10.00
003 X	MDL 3	7	1000	1.0		10		1.0	N	0.0	10.00
004 X	MDL 4	7	1000	1.0		10		1.0	N	0.0	10.00
005 X	MDL 5	7	1000	1.0		10		1.0	N	0.0	10.00
006 X	MDL 6	7	1000	1.0		10		1.0	N	0.0	10.00
007 X	MDL 7	7	1000	1.0		10		1.0	N	0.0	10.00
008 X	MDL 8	7	1000	1.0		10		1.0	N	0.0	10.00
009 X	MDL CHECK	7	1000	1.0		10		1.0	N	0.0	10.00
0809L144-	WC-HANFORD RC-052 K1341										
001 X	J17J48	7	1000	1.0		10		1.0	N	0.0	10.00
001 XS	J17J48	7	1000	1.0	1.0	10		1.0	N	0.0	10.00
08LE0465-MB1 X	PBLKVL	7	1000	1.0		10		1.0	N	0.0	10.00
08LE0465-MB1 XS	PBLKVL	7	1000	1.0	1.0	10		1.0	N	0.0	10.00
08LE0465-MB1 XT	PBLKVL	7	1000	1.0	1.0	10		1.0	N	0.0	10.00

Comments: 01-08 SP/W 50 UL 89916304,009 100 UL
Surrogate: 100 UL HERB SURR 86971904
Spike: 100 UL HERB SPIKE 89916303

Extracts Transferred	Relinquished By	Date Time	Received By	Date Time	Reason for Transfer
all	[illegible]	10/1/08 13:10	SZ	10/01/08 13:10	GC

000000009

RECEIVED NOV 2008

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-052 K1341

DATE RECEIVED: 09/19/08 LVL LOT # :0809L144

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
J17J48						
SILVER, TOTAL	001	W	08L0356	09/17/08	09/30/08	10/08/08
SILVER, TOTAL	001 REP	W	08L0356	09/17/08	09/30/08	10/08/08
SILVER, TOTAL	001 MS	W	08L0356	09/17/08	09/30/08	10/08/08
ALUMINUM, TOTAL	001	W	08L0356	09/17/08	09/30/08	10/07/08
ALUMINUM, TOTAL	001 REP	W	08L0356	09/17/08	09/30/08	10/07/08
ALUMINUM, TOTAL	001 MS	W	08L0356	09/17/08	09/30/08	10/07/08
ARSENIC, TOTAL	001	W	08L0356	09/17/08	09/30/08	10/08/08
ARSENIC, TOTAL	001 REP	W	08L0356	09/17/08	09/30/08	10/08/08
ARSENIC, TOTAL	001 MS	W	08L0356	09/17/08	09/30/08	10/08/08
BORON, TOTAL	001	W	08L0356	09/17/08	09/30/08	10/08/08
BORON, TOTAL	001 REP	W	08L0356	09/17/08	09/30/08	10/08/08
BORON, TOTAL	001 MS	W	08L0356	09/17/08	09/30/08	10/08/08
BARIUM, TOTAL	001	W	08L0356	09/17/08	09/30/08	10/08/08
BARIUM, TOTAL	001 REP	W	08L0356	09/17/08	09/30/08	10/08/08
BARIUM, TOTAL	001 MS	W	08L0356	09/17/08	09/30/08	10/08/08
BERYLLIUM, TOTAL	001	W	08L0356	09/17/08	09/30/08	10/08/08
BERYLLIUM, TOTAL	001 REP	W	08L0356	09/17/08	09/30/08	10/08/08
BERYLLIUM, TOTAL	001 MS	W	08L0356	09/17/08	09/30/08	10/08/08
BISMUTH, TOTAL	001	W	08L0356	09/17/08	09/30/08	10/08/08
BISMUTH, TOTAL REP	001 REP	W	08L0356	09/17/08	09/30/08	10/08/08
BISMUTH, TOTAL SPIKE	001 MS	W	08L0356	09/17/08	09/30/08	10/08/08
CALCIUM, TOTAL	001	W	08L0356	09/17/08	09/30/08	10/08/08
CALCIUM, TOTAL	001 REP	W	08L0356	09/17/08	09/30/08	10/08/08
CALCIUM, TOTAL	001 MS	W	08L0356	09/17/08	09/30/08	10/08/08
CADMIUM, TOTAL	001	W	08L0356	09/17/08	09/30/08	10/08/08
CADMIUM, TOTAL	001 REP	W	08L0356	09/17/08	09/30/08	10/08/08
CADMIUM, TOTAL	001 MS	W	08L0356	09/17/08	09/30/08	10/08/08
COBALT, TOTAL	001	W	08L0356	09/17/08	09/30/08	10/08/08
COBALT, TOTAL	001 REP	W	08L0356	09/17/08	09/30/08	10/08/08
COBALT, TOTAL	001 MS	W	08L0356	09/17/08	09/30/08	10/08/08
CHROMIUM, TOTAL	001	W	08L0356	09/17/08	09/30/08	10/08/08
CHROMIUM, TOTAL	001 REP	W	08L0356	09/17/08	09/30/08	10/08/08
CHROMIUM, TOTAL	001 MS	W	08L0356	09/17/08	09/30/08	10/08/08
COPPER, TOTAL	001	W	08L0356	09/17/08	09/30/08	10/08/08
COPPER, TOTAL	001 REP	W	08L0356	09/17/08	09/30/08	10/08/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-052 K1341

DATE RECEIVED: 09/19/08 LVL LOT # :0809L144

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
COPPER, TOTAL	001 MS	W	08L0356	09/17/08	09/30/08	10/08/08
IRON, TOTAL	001	W	08L0356	09/17/08	09/30/08	10/08/08
IRON, TOTAL	001 REP	W	08L0356	09/17/08	09/30/08	10/08/08
IRON, TOTAL	001 MS	W	08L0356	09/17/08	09/30/08	10/08/08
MERCURY, TOTAL	001	W	08C0168	09/17/08	09/23/08	09/24/08
MERCURY, TOTAL	001 REP	W	08C0168	09/17/08	09/23/08	09/24/08
MERCURY, TOTAL	001 MS	W	08C0168	09/17/08	09/23/08	09/24/08
POTASSIUM, TOTAL	001	W	08L0356	09/17/08	09/30/08	10/07/08
POTASSIUM, TOTAL	001 REP	W	08L0356	09/17/08	09/30/08	10/07/08
POTASSIUM, TOTAL	001 MS	W	08L0356	09/17/08	09/30/08	10/07/08
LITHIUM, TOTAL	001	W	08L0356	09/17/08	09/30/08	10/08/08
LITHIUM, TOTAL	001 REP	W	08L0356	09/17/08	09/30/08	10/08/08
LITHIUM, TOTAL	001 MS	W	08L0356	09/17/08	09/30/08	10/08/08
MAGNESIUM, TOTAL	001	W	08L0356	09/17/08	09/30/08	10/08/08
MAGNESIUM, TOTAL	001 REP	W	08L0356	09/17/08	09/30/08	10/08/08
MAGNESIUM, TOTAL	001 MS	W	08L0356	09/17/08	09/30/08	10/08/08
MANGANESE, TOTAL	001	W	08L0356	09/17/08	09/30/08	10/08/08
MANGANESE, TOTAL	001 REP	W	08L0356	09/17/08	09/30/08	10/08/08
MANGANESE, TOTAL	001 MS	W	08L0356	09/17/08	09/30/08	10/08/08
MOLYBDENUM, TOTAL	001	W	08L0356	09/17/08	09/30/08	10/08/08
MOLYBDENUM, TOTAL	001 REP	W	08L0356	09/17/08	09/30/08	10/08/08
MOLYBDENUM, TOTAL	001 MS	W	08L0356	09/17/08	09/30/08	10/08/08
SODIUM, TOTAL	001	W	08L0356	09/17/08	09/30/08	10/07/08
SODIUM, TOTAL	001 REP	W	08L0356	09/17/08	09/30/08	10/07/08
SODIUM, TOTAL	001 MS	W	08L0356	09/17/08	09/30/08	10/07/08
NICKEL, TOTAL	001	W	08L0356	09/17/08	09/30/08	10/08/08
NICKEL, TOTAL	001 REP	W	08L0356	09/17/08	09/30/08	10/08/08
NICKEL, TOTAL	001 MS	W	08L0356	09/17/08	09/30/08	10/08/08
PHOSPHORUS, TOTAL	001	W	08L0356	09/17/08	09/30/08	10/07/08
PHOSPHORUS, TOTAL	001 REP	W	08L0356	09/17/08	09/30/08	10/07/08
PHOSPHORUS, TOTAL	001 MS	W	08L0356	09/17/08	09/30/08	10/07/08
LEAD, TOTAL	001	W	08L0356	09/17/08	09/30/08	10/08/08
LEAD, TOTAL	001 REP	W	08L0356	09/17/08	09/30/08	10/08/08
LEAD, TOTAL	001 MS	W	08L0356	09/17/08	09/30/08	10/08/08
ANTIMONY, TOTAL	001	W	08L0356	09/17/08	09/30/08	10/08/08
ANTIMONY, TOTAL	001 REP	W	08L0356	09/17/08	09/30/08	10/08/08
ANTIMONY, TOTAL	001 MS	W	08L0356	09/17/08	09/30/08	10/08/08
SELENIUM, TOTAL	001	W	08L0356	09/17/08	09/30/08	10/08/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-052 K1341

DATE RECEIVED: 09/19/08 LVL LOT # :0809L144

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SELENIUM, TOTAL	001 REP	W	08L0356	09/17/08	09/30/08	10/08/08
SELENIUM, TOTAL	001 MS	W	08L0356	09/17/08	09/30/08	10/08/08
SILICON, TOTAL	001	W	08L0356	09/17/08	09/30/08	10/08/08
SILICON, TOTAL	001 REP	W	08L0356	09/17/08	09/30/08	10/08/08
SILICON, TOTAL	001 MS	W	08L0356	09/17/08	09/30/08	10/08/08
TIN, TOTAL	001	W	08L0356	09/17/08	09/30/08	10/08/08
TIN, TOTAL	001 REP	W	08L0356	09/17/08	09/30/08	10/08/08
TIN, TOTAL	001 MS	W	08L0356	09/17/08	09/30/08	10/08/08
STRONTIUM, TOTAL	001	W	08L0356	09/17/08	09/30/08	10/08/08
STRONTIUM, TOTAL	001 REP	W	08L0356	09/17/08	09/30/08	10/08/08
STRONTIUM, TOTAL	001 MS	W	08L0356	09/17/08	09/30/08	10/08/08
THALLIUM, TOTAL	001	W	08L0356	09/17/08	09/30/08	10/08/08
THALLIUM, TOTAL	001 REP	W	08L0356	09/17/08	09/30/08	10/08/08
THALLIUM, TOTAL	001 MS	W	08L0356	09/17/08	09/30/08	10/08/08
URANIUM, TOTAL	001	W	08L0356	09/17/08	09/30/08	10/08/08
URANIUM, TOTAL	001 REP	W	08L0356	09/17/08	09/30/08	10/08/08
URANIUM, TOTAL	001 MS	W	08L0356	09/17/08	09/30/08	10/08/08
VANADIUM, TOTAL	001	W	08L0356	09/17/08	09/30/08	10/08/08
VANADIUM, TOTAL	001 REP	W	08L0356	09/17/08	09/30/08	10/08/08
VANADIUM, TOTAL	001 MS	W	08L0356	09/17/08	09/30/08	10/08/08
ZINC, TOTAL	001	W	08L0356	09/17/08	09/30/08	10/08/08
ZINC, TOTAL	001 REP	W	08L0356	09/17/08	09/30/08	10/08/08
ZINC, TOTAL	001 MS	W	08L0356	09/17/08	09/30/08	10/08/08

LAB QC:

SILVER LABORATORY	LC1 BS	W	08L0356	N/A	09/30/08	10/07/08
SILVER, TOTAL	MB1	W	08L0356	N/A	09/30/08	10/07/08
ALUMINUM LABORTORY	LC1 BS	W	08L0356	N/A	09/30/08	10/07/08
ALUMINUM, TOTAL	MB1	W	08L0356	N/A	09/30/08	10/07/08
ARSENIC LABORATORY	LC1 BS	W	08L0356	N/A	09/30/08	10/07/08
ARSENIC, TOTAL	MB1	W	08L0356	N/A	09/30/08	10/07/08
BORON LABORATORY	LC1 BS	W	08L0356	N/A	09/30/08	10/07/08
BORON, TOTAL	MB1	W	08L0356	N/A	09/30/08	10/07/08
BARIUM LABORATORY	LC1 BS	W	08L0356	N/A	09/30/08	10/07/08
BARIUM, TOTAL	MB1	W	08L0356	N/A	09/30/08	10/07/08
BERYLLIUM LABORATORY	LC1 BS	W	08L0356	N/A	09/30/08	10/07/08
BERYLLIUM, TOTAL	MB1	W	08L0356	N/A	09/30/08	10/07/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-052 K1341

DATE RECEIVED: 09/19/08 LVL LOT # :0809L144

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
BISMUTH, LCS	LC1 BS	W	08L0356	N/A	09/30/08	10/07/08
BISMUTH, TOTAL	MB1	W	08L0356	N/A	09/30/08	10/07/08
CALCIUM LABORATORY	LC1 BS	W	08L0356	N/A	09/30/08	10/07/08
CALCIUM, TOTAL	MB1	W	08L0356	N/A	09/30/08	10/07/08
CADMIUM LABORATORY	LC1 BS	W	08L0356	N/A	09/30/08	10/07/08
CADMIUM, TOTAL	MB1	W	08L0356	N/A	09/30/08	10/07/08
COBALT LABORATORY	LC1 BS	W	08L0356	N/A	09/30/08	10/07/08
COBALT, TOTAL	MB1	W	08L0356	N/A	09/30/08	10/07/08
CHROMIUM LABORATORY	LC1 BS	W	08L0356	N/A	09/30/08	10/07/08
CHROMIUM, TOTAL	MB1	W	08L0356	N/A	09/30/08	10/07/08
COPPER LABORATORY	LC1 BS	W	08L0356	N/A	09/30/08	10/07/08
COPPER, TOTAL	MB1	W	08L0356	N/A	09/30/08	10/07/08
IRON LABORATORY	LC1 BS	W	08L0356	N/A	09/30/08	10/07/08
IRON, TOTAL	MB1	W	08L0356	N/A	09/30/08	10/07/08
MERCURY LABORATORY	LC1 BS	W	08C0168	N/A	09/23/08	09/24/08
MERCURY, TOTAL	MB1	W	08C0168	N/A	09/23/08	09/24/08
MERCURY, TCLP LEACHA	MB2	W	08C0168	N/A	09/23/08	09/24/08
POTASSIUM LABORATORY	LC1 BS	W	08L0356	N/A	09/30/08	10/07/08
POTASSIUM, TOTAL	MB1	W	08L0356	N/A	09/30/08	10/07/08
LITHIUM LABORATORY	LC1 BS	W	08L0356	N/A	09/30/08	10/07/08
LITHIUM, TOTAL	MB1	W	08L0356	N/A	09/30/08	10/07/08
MAGNESIUM LABORATORY	LC1 BS	W	08L0356	N/A	09/30/08	10/07/08
MAGNESIUM, TOTAL	MB1	W	08L0356	N/A	09/30/08	10/07/08
MANGANESE LABORATORY	LC1 BS	W	08L0356	N/A	09/30/08	10/07/08
MANGANESE, TOTAL	MB1	W	08L0356	N/A	09/30/08	10/07/08
MOLYBDENUM LABORATOR	LC1 BS	W	08L0356	N/A	09/30/08	10/07/08
MOLYBDENUM, TOTAL	MB1	W	08L0356	N/A	09/30/08	10/07/08
SODIUM LABORATORY	LC1 BS	W	08L0356	N/A	09/30/08	10/07/08
SODIUM, TOTAL	MB1	W	08L0356	N/A	09/30/08	10/07/08
NICKEL LABORATORY	LC1 BS	W	08L0356	N/A	09/30/08	10/07/08
NICKEL, TOTAL	MB1	W	08L0356	N/A	09/30/08	10/07/08
PHOSPHORUS LCS	LC1 BS	W	08L0356	N/A	09/30/08	10/07/08
PHOSPHORUS, TOTAL	MB1	W	08L0356	N/A	09/30/08	10/07/08
LEAD LABORATORY	LC1 BS	W	08L0356	N/A	09/30/08	10/07/08
LEAD, TOTAL	MB1	W	08L0356	N/A	09/30/08	10/07/08
ANTIMONY LABORATORY	LC1 BS	W	08L0356	N/A	09/30/08	10/07/08
ANTIMONY, TOTAL	MB1	W	08L0356	N/A	09/30/08	10/07/08
SELENIUM LABORATORY	LC1 BS	W	08L0356	N/A	09/30/08	10/07/08

Lionville Laboratory, Inc.
INORGANIC ANALYTICAL DATA PACKAGE FOR
WC-HANFORD RC-052 K1341

DATE RECEIVED: 09/19/08 LVL LOT # :0809L144

CLIENT ID /ANALYSIS	LVL #	MTX	PREP #	COLLECTION	EXTR/PREP	ANALYSIS
SELENIUM, TOTAL	MB1	W	08L0356	N/A	09/30/08	10/07/08
SILICON LABORATORY	LC1 BS	W	08L0356	N/A	09/30/08	10/07/08
SILICON, TOTAL	MB1	W	08L0356	N/A	09/30/08	10/07/08
TIN LABORATORY	LC1 BS	W	08L0356	N/A	09/30/08	10/07/08
TIN, TOTAL	MB1	W	08L0356	N/A	09/30/08	10/07/08
STRONTIUM LCS STANDA	LC1 BS	W	08L0356	N/A	09/30/08	10/07/08
STRONTIUM, TOTAL	MB1	W	08L0356	N/A	09/30/08	10/07/08
THALLIUM LABORATORY	LC1 BS	W	08L0356	N/A	09/30/08	10/07/08
THALLIUM, TOTAL	MB1	W	08L0356	N/A	09/30/08	10/07/08
URANIUM LABORATORY	LC1 BS	W	08L0356	N/A	09/30/08	10/07/08
URANIUM, TOTAL	MB1	W	08L0356	N/A	09/30/08	10/07/08
VANADIUM LABORATORY	LC1 BS	W	08L0356	N/A	09/30/08	10/07/08
VANADIUM, TOTAL	MB1	W	08L0356	N/A	09/30/08	10/07/08
ZINC LABORATORY	LC1 BS	W	08L0356	N/A	09/30/08	10/07/08
ZINC, TOTAL	MB1	W	08L0356	N/A	09/30/08	10/07/08

LIONVILLE LABORATORY INC.

Analytical Report

Client: WC-HANFORD RC-052
LVL#: 0809L144
SDG/SAF#: K1341/RC-052

W.O.#: 60049-001-001-0001-00
Date Received: 09-19-08

METALS CASE NARRATIVE

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

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

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

   The sample was reported with 3-fold dilutions for all ICP metals due to sample matrix and/or high concentration. The sample results for Aluminum, Potassium, and Sodium were reported from another instrument along with the Phosphorous analysis.

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

4. Please refer to the Sample Receipt Check List for sample discrepancies in LvLI's sample acceptance policy.

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

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

7. 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.

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

9. All laboratory control samples (LCS) were within the 80-120% control limits. Refer to the Inorganics Laboratory Control Standards 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 21 pages.

10. The matrix spike (MS) recoveries for 6 analytes were outside the 75-125% control limits. Refer to the Inorganics Accuracy Report.

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

Sample ID	Element	PDS Concentration (ppb)	PDS % Recovery
J17J48	Aluminum	132,000	102.5
	Barium	300	100.0
	Iron	66,000	87.2
	Manganese	7,500	88.1
	Silicon	7,800	112.8

12. The duplicate analyses for 2 analytes were outside the 20% Relative Percent Difference (RPD) control limits. Refer to the Inorganics Precision Report.

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

14. LvL 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.

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

Judy Stone
for Iain Daniels
Laboratory Manager
Lionville Laboratory

10/10/02
Date

jjw/m09-144

LvLI
LIONVILLE LABORATORY INC.

METALS METHOD GLOSSARY

The following methods are used as reference for the digestion and analysis of samples contained within th
Lot#: 0809L144

Leaching Procedure: __1310 __1311 __1312 __Other:_____

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

Metals Digestion Methods: X3005A __3010A __3015 __3020A __3050B __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	X6010B [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	X6010B	__7430 [4]	__200.7			__1620	__99
Magnesium	X6010B		__200.7				__99
Manganese	X6010B		__200.7				__99
Mercury	X7470A [3]	__7471A [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	X6010B		__200.7				__99
Thallium	X6010B	__7841 [5]	__200.7	__279.2	__200.9		__99
Tin	X6010B		__200.7				__99
Titanium	__6010B		__200.7				__99
Uranium	X6010B [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: Phosphorus Method: 6010B

L-V000000008

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 10/09/08

CLIENT: WC-HANFORD RC-052 K1341 LVL LOT #: 0809L144

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
-001	J17J48	Silver, Total	3.0	u	UG/L	3.0	3.0
		Aluminum, Total	935000		UG/L	120	3.0
		Arsenic, Total	47.3		UG/L	15.0	3.0
		Boron, Total	340		UG/L	15.0	3.0
		Barium, Total	626		UG/L	3.0	3.0
		Beryllium, Total	41.6		UG/L	1.5	3.0
		Bismuth, Total	18.0	u	UG/L	18.0	3.0
		Calcium, Total	553000		UG/L	120	3.0
		Cadmium, Total	333		UG/L	1.5	3.0
		Cobalt, Total	1960		UG/L	6.0	3.0
		Chromium, Total	451		UG/L	6.0	3.0
		Copper, Total	1950		UG/L	6.0	3.0
		Iron, Total	706000		UG/L	135	3.0
		Mercury, Total	4.0		UG/L	0.06	1.0
		Potassium, Total	15300		UG/L	1480	3.0
		Lithium, Total	986		UG/L	1.2	3.0
		Magnesium, Total	574000		UG/L	75.0	3.0
		Manganese, Total	77100		UG/L	1.2	3.0
		Molybdenum, Total	14.0		UG/L	9.0	3.0
		Sodium, Total	101000		UG/L	60.0	3.0
		Nickel, Total	1190		UG/L	6.0	3.0
		Phosphorus, Total	6010		UG/L	150	3.0
		Lead, Total	632		UG/L	9.0	3.0
		Antimony, Total	9.0	u	UG/L	9.0	3.0
		Selenium, Total	18.0	u	UG/L	18.0	3.0
		Silicon, Total	69800		UG/L	120	3.0
		Tin, Total	18.0	u	UG/L	18.0	3.0
		Strontium, Total	1390		UG/L	0.90	3.0
		Thallium, Total	66.4		UG/L	18.0	3.0
		Uranium, Total	60.0	u	UG/L	60.0	3.0
		Vanadium, Total	297		UG/L	4.2	3.0
		Zinc, Total	21400		UG/L	18.0	3.0

Lionville Laboratory, Inc.

INORGANICS METHOD BLANK DATA SUMMARY PAGE 10/09/08

CLIENT: WC-HANFORD RC-052 K1341 LVL LOT #: 0809L144

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	RESULT		UNITS	REPORTING LIMIT	DILUTION FACTOR
BLANK1	08L0356-MB1	Silver, Total	1.0	u	UG/L	1.0	1.0
		Aluminum, Total	40.0	u	UG/L	40.0	1.0
		Arsenic, Total	5.0	u	UG/L	5.0	1.0
		Boron, Total	5.0	u	UG/L	5.0	1.0
		Barium, Total	1.8		UG/L	1.0	1.0
		Beryllium, Total	0.50	u	UG/L	0.50	1.0
		Bismuth, Total	6.0	u	UG/L	6.0	1.0
		Calcium, Total	40.0	u	UG/L	40.0	1.0
		Cadmium, Total	0.50	u	UG/L	0.50	1.0
		Cobalt, Total	2.0	u	UG/L	2.0	1.0
		Chromium, Total	2.0	u	UG/L	2.0	1.0
		Copper, Total	2.3		UG/L	2.0	1.0
		Iron, Total	45.0	u	UG/L	45.0	1.0
		Potassium, Total	493	u	UG/L	493	1.0
		Lithium, Total	0.40	u	UG/L	0.40	1.0
		Magnesium, Total	25.0	u	UG/L	25.0	1.0
		Manganese, Total	1.0		UG/L	0.40	1.0
		Molybdenum, Total	3.0	u	UG/L	3.0	1.0
		Sodium, Total	56.7		UG/L	20.0	1.0
		Nickel, Total	2.0	u	UG/L	2.0	1.0
		Phosphorus, Total	50.0	u	UG/L	50.0	1.0
		Lead, Total	3.0	u	UG/L	3.0	1.0
		Antimony, Total	3.0	u	UG/L	3.0	1.0
		Selenium, Total	6.0	u	UG/L	6.0	1.0
		Silicon, Total	40.0	u	UG/L	40.0	1.0
		Tin, Total	6.0	u	UG/L	6.0	1.0
		Strontium, Total	0.30	u	UG/L	0.30	1.0
		Thallium, Total	6.0	u	UG/L	6.0	1.0
		Uranium, Total	20.0	u	UG/L	20.0	1.0
		Vanadium, Total	1.4	u	UG/L	1.4	1.0
		Zinc, Total	6.0	u	UG/L	6.0	1.0
BLANK1	08C0168-MB1	Mercury, Total	0.06	u	UG/L	0.06	1.0
BLANK2	08C0168-MB2	Mercury, TCLP Leachate	0.06	u	UG/L	0.06	1.0

Lionville Laboratory, Inc.

INORGANICS ACCURACY REPORT 10/09/08

CLIENT: WC-HANFORD RC-052 K1341 LVL LOT #: 0809L144

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	INITIAL RESULT	SPIKED AMOUNT	%RECOV	DILUTION FACTOR(SPK)
-001	J17J48	Silver, Total	45.8	3.0 u	50.0	91.6	3.0
		Aluminum, Total	945000	935000	2000	492.9*	3.0
		Arsenic, Total	1940	47.3	2000	94.5	3.0
		Boron, Total	1260	340	1000	91.7	3.0
		Barium, Total	830	626	2000	10.2	3.0
		Beryllium, Total	89.1	41.6	50.0	95.0	3.0
		Bismuth, Total	4710	18.0 u	5000	94.3	3.0
		Calcium, Total	577000	553000	25000	94.3*	3.0
		Cadmium, Total	380	333	50.0	92.8*	3.0
		Cobalt, Total	2420	1960	500	90.8	3.0
		Chromium, Total	636	451	200	92.2	3.0
		Copper, Total	2180	1950	250	93.4*	3.0
		Iron, Total	703000	706000	1000	-310. *	3.0
		Mercury, Total	4.4	4.0	1.0	49.7	1.0
		Potassium, Total	41000	15300	25000	103.0	3.0
		Lithium, Total	2090	986	1000	110.4	3.0
		Magnesium, Total	598000	574000	25000	96.2*	3.0
		Manganese, Total	77300	77100	500	32.8*	3.0
		Molybdenum, Total	880	14.0	1000	86.6	3.0
		Sodium, Total	129000	101000	25000	109.1*	3.0
		Nickel, Total	1670	1190	500	95.0	3.0
		Phosphorus, Total	10700	6010	5000	94.7	3.0
		Lead, Total	1100	632	500	93.3	3.0
		Antimony, Total	387	9.0 u	500	77.3	3.0
		Selenium, Total	1690	18.0 u	2000	84.4	3.0
		Silicon, Total	59100	69800	1000	-1100. *	3.0
		Tin, Total	770	18.0 u	1000	77.0	3.0
		Strontium, Total	2250	1390	1000	85.5	3.0
		Thallium, Total	1880	66.4	2000	90.8	3.0
		Uranium, Total	4550	60.0 u	5000	90.9	3.0
		Vanadium, Total	757	297	500	92.1	3.0
		Zinc, Total	21800	21400	500	90.5*	3.0

Lionville Laboratory, Inc.

INORGANICS PRECISION REPORT 10/09/08

CLIENT: WC-HANFORD RC-052 K1341 LVL LOT #: 0809L144

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	INITIAL RESULT	REPLICATE	RPD	DILUTION FACTOR(REP)
-001REP	J17J48	Silver, Total	3.0 u	3.0 u	NC	3.0
		Aluminum, Total	935000	939000	0.44	3.0
		Arsenic, Total	47.3	54.8	14.7	3.0
		Boron, Total	340	332	2.3	3.0
		Barium, Total	626	611	2.5	3.0
		Beryllium, Total	41.6	41.4	0.48	3.0
		Bismuth, Total	18.0 u	18.0 u	NC	3.0
		Calcium, Total	553000	550000	0.55	3.0
		Cadmium, Total	333	330	1.0	3.0
		Cobalt, Total	1960	1940	0.88	3.0
		Chromium, Total	451	449	0.62	3.0
		Copper, Total	1950	1930	0.99	3.0
		Iron, Total	706000	700000	0.99	3.0
		Mercury, Total	4.0	4.9	20.8	1.0
		Potassium, Total	15300	17300	12.4	3.0
		Lithium, Total	986	975	1.1	3.0
		Magnesium, Total	574000	568000	1.0	3.0
		Manganese, Total	77100	76400	0.89	3.0
		Molybdenum, Total	14.0	10.8	25.8	3.0
		Sodium, Total	101000	102000	0.92	3.0
		Nickel, Total	1190	1190	0.54	3.0
		Phosphorus, Total	6010	5860	2.5	3.0
		Lead, Total	632	641	1.4	3.0
		Antimony, Total	9.0 u	9.0 u	NC	3.0
		Selenium, Total	18.0 u	18.0 u	NC	3.0
		Silicon, Total	69800	57200	19.8	3.0
		Tin, Total	18.0 u	18.0 u	NC	3.0
		Strontium, Total	1390	1380	1.1	3.0
		Thallium, Total	66.4	73.8	10.6	3.0
		Uranium, Total	60.0 u	60.0 u	NC	3.0
		Vanadium, Total	297	295	0.51	3.0
		Zinc, Total	21400	21200	0.61	3.0

Lionville Laboratory, Inc.

INORGANICS LABORATORY CONTROL STANDARDS REPORT 10/09/08

CLIENT: WC-HANFORD RC-052 K1341 LVL LOT #: 0809L144

WORK ORDER: 60049-001-001-0001-00

SAMPLE	SITE ID	ANALYTE	SPIKED SAMPLE	SPIKED AMOUNT	UNITS	%RECOV
LCS1	08L0356-LC1	Silver, LCS	500	500	UG/L	100.0
		Aluminum, LCS	5040	5000	UG/L	100.7
		Arsenic, LCS	10200	10000	UG/L	101.8
		Boron, LCS	4970	5000	UG/L	99.4
		Barium, LCS	4970	5000	UG/L	99.4
		Beryllium, LCS	262	250	UG/L	104.9
		Bismuth, LCS	5000	5000	UG/L	99.9
		Calcium, LCS	26600	25000	UG/L	106.5
		Cadmium, LCS	257	250	UG/L	102.9
		Cobalt, LCS	2590	2500	UG/L	103.6
		Chromium, LCS	521	500	UG/L	104.1
		Copper, LCS	1240	1250	UG/L	99.0
		Iron, LCS	5070	5000	UG/L	101.4
		Potassium, LCS	24600	25000	UG/L	98.6
		Lithium, LCS	5260	5000	UG/L	105.1
		Magnesium, LCS	26000	25000	UG/L	103.8
		Manganese, LCS	791	750	UG/L	105.5
		Molybdenum, LCS	5110	5000	UG/L	102.2
		Sodium, LCS	25300	25000	UG/L	101.1
		Nickel, LCS	2100	2000	UG/L	104.9
		Phosphorus, LCS	4930	5000	UG/L	98.6
		Lead, LCS	2620	2500	UG/L	104.7
		Antimony, LCS	3000	3000	UG/L	100.1
		Selenium, LCS	10300	10000	UG/L	102.9
		Silicon, LCS	4990	5000	UG/L	99.7
		Tin, LCS	5200	5000	UG/L	103.9
		Strontium, LCS	4960	5000	UG/L	99.2
		Thallium, LCS	10300	10000	UG/L	103.0
		Uranium, LCS	5000	5000	UG/L	100.0
		Vanadium, LCS	2580	2500	UG/L	103.3
		Zinc, LCS	1040	1000	UG/L	104.2
LCS1	08C0168-LC1	Mercury, LCS	5.0	5.0	UG/L	100.9

SAMPLE DIGESTION RECORD

SOP: L-SPI-3020 Rev. 00

Digestion Batch #: 08L0356
Date/Time Initiated: 9/30/08 1100
Date/Time Completed: 9/30/08 1700
Analyst(s): MW
Matrix: Soil Water Other:
Instr. Type: AA ICP
Parameters: See Tracking

~~Digested~~ Undigested (circle one)
Balance #: N/A
Balance Cal Verif: Y N/A
Hot Plate Temp: 90°

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

BSC/TNW

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
0809L145-001		100 ml	100 ml	<2	TO	N/A	clear/colorless	N/A	
002									
003									
0809L144-001							dark gray red.		
001R									
001S	1.0 ml *								
08L0356-MB1							clear/colorless		
LC1	1.0 ml *								

MW 9/30/08

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

Reagent IDs:
HNO_3 G11022
HCL G26054
H_2O_2
1:1 HNO_3
1:1 HCL

File ID#: IC035601 IC035602
LIMS Transfer: Y N
Data Review By/Date: updated
Alm 10/7/08

* also 0.5 ml 6072-079-14 (P-)
0.5 ml 6072-078-01 (U-)
0.5 ml 6072-080-10 (B-)

Lionville Laboratory Incorporated

MERCURY PREPARATION

Logbook # 498

Analyst: CLB
Date 9/23/08
Start Time/Temp: 1405 | 97°
End Time/Temp: 1605 | 94°

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

Prep Batch: 08C0168
Worksheet: HG092402
SOP No. ME-HgCVAA, Rev. 02

pH < 2 for Liquids? ✓ Yes __ 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	B32			33mL	33mL	
0.2 ug/L	L15	0.0667				
1.0	3C	0.334				
2.0	81G	0.667				
5.0	JC	1.667				
10.0	5T	3.334				
ICV	Gd	0.0834	2.5			
CCV	B	0.167	5.0			
ICB/CCB	N60					
MB1	537					PBW168
LC1	R2	0.167	5.0			LCSW168
0809L145-001	6J					
001R	RH					
~~001S~~	AHA					
002	290					
003	PA					
0809L144-001	81Y					
001R	WK					
001S	CT	0.334	1.0			
0809L084-014	3					
014R	AP					
014S	X3	0.667	200			
015	NR					
016	5H					
017	AG4					
018	L53					
019	CB2					

Standard:	ID	Prep Date/Time
ICAL/MS	R1 6077-78-14B	9/23/08 1000
ICV/CCV/LCS	LS 6077-78-15A	

Reviewed By/Date [signature] 9/24

see book # 9368 for std traceability information

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

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

ME-HgCVAA-Prep1007

Page #:

000000016

Jacksonville Laboratory Incorporated

MERCURY PREPARATION

Logbook # 498

Analyst: TEB
Date: 9/23/08
Start Time/Temp: See page 034
End Time/Temp: 034

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

Prep Batch: 080168
Worksheet: HG092402
SOP No. ME-HgCVAA, Rev. 02

pH < 2 for Liquids? ✓ Yes __ 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.
080920084-020	N4			33mL	33mL	
021	K			↓	↓	
022	7B					
023	95					
024	41					
025	PI					
026	PO					
080920094-LB1	31					
9/24/08 MDL check	7	0.04	0.12	↓	↓	

TEB 9/23/08

Standard:	ID	Prep Date/Time
ICAL/MS	See page 034	
ICV/CCV/LCS		

Reviewed By/Date: [signature] 9/24/08

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

nville Laboratory Use Only

809L 144

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

LVLI Lionville Laboratory Inc.

000000018

nt WC Hanford SAFH RC-052

Final Proj. Sampling Date

ect# 60049-001-001-0001-00

ect Contact/Phone#

vville Laboratory Project Manager O Johnson

SW846 Del STP TAT 15 Day

Rec'd 9-19-08 Date Due 10-4-08

		A-C	D-F	G H	I J	K L M			N	O	P	Q	U R		
Refrigerator #		6	3	3	3	3			3	3	3	3	3		
#/Type Container	Liquid	3G	3G	2G	2G	3G			1P	1P	1P	1P	1P		
	Solid														
Volume		4oz	L	L	L	L			500	500	500	250	1000		
Preservatives		HCl	—	—	—	—			HNO3	NaOH	NaOH	—	—		
ANALYSES REQUESTED	ORGANIC	VOA	BNA	Pest PCB	Chlord Herb	PCST 8081			INORG Metal Hg	CN TOT	Sulfide	TC PH Nitr	TSS TDS	Turb Acidity	

RIX ES:	Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	06241H	06251H 06081H OPCB	OH86X	06081H			MetH0	ICNTO	ISFO PH IC(1)	ITDS ITSS	ITGN		
Soil Sediment Solid Sludge Water Oil Air Drum Solids Drum Liquids EP/TCLP Leachate Wipe Other Fish	001	J17J48	✓	✓	W	9-17-08	0900	X	X	X	X	X			X	X	X	X	X	X

Lionville Laboratory Use Only

cial Instructions:

net(1) = HSL + B, Bi, Li, Mo, P, Si, Sr, Sn, U,

IC(1) = Br, Cl, Fl, SO4, PO4, NO2, NO3

Special Instructions:

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

Relinquished by	Received by	Date	Time
JEO	[signature]	9/19/08	0940

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

lector: SEC / Rios / D.Rios	Company Contact: Bill Hudson	Telephone No.: 372-9695	Project Coordinator: KESSNER, JH
Price Code: 7G	Data Turnaround: 15 Days		
ject Designation: Remaining Sites Confirmation Sampling - Water	Sampling Location: 100-D-78		SAF No.: RC-052
Chest No.: AFS-06-001	Field Logbook No.: EL-1601-2	COA: 010D78A000	Method of Shipment: FED EX
ipped To: EBERLINE SERVICES (LIONVILLE)	Offsite Property No.: A080353		Bill of Lading/Air Bill No.: see OSPC

OSSIBLE SAMPLE HAZARDS/REMARKS

pecial Handling and/or Storage

Preservation	HNO3 to pH <2	HNO3 to pH <2	HNO3 to pH <2	Cool 4C	Cool 4C	Cool 4C	Cool 4C	HCl or H2SO4 to pH <2 Coo	NaOH to pH >= 12 Cool 4C	ZnAc+NaOH to pH >9 Cool
Type of Container	G/P	G/P	G/P	aG	aG	aG	aG	aGs*	G/P	G/P
No. of Container(s)	3 BH 9/17/08	2 BH 9/17/08	1	3	2	3	2	3	1	1
Volume	1000mL	1000mL	500mL	1000mL	1000mL	1000mL	1000mL	40mL	~~1000~~mL 500 JEA 9-17-08	500mL
SAMPLE ANALYSIS	See item (1) in Special Instructions.	Gross Alpha; Gross Beta	See item (2) in Special Instructions.	Semi-VOA - 8270A (TCL)	PCBs - 8082*	Pesticides - 8081	Chloro-Herbicides - EPA8151	VOA - 8260A (TCL)	Cyanide (Total) - 335.2	Sulfides - 9030

Sample No.	Matrix *	Sample Date	Sample Time										
7J48	WATER	9/17/08	0900	~~X~~ BH 9/17/08		X	X	X	X	X	X	X	X

CHAIN OF POSSESSION

Sign/Print Names

Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
[signature]	9-17-08 1132	BILL HUDSON [signature]	~~1120~~ 9/17/08
HUDSON [signature]	9/17/08 1245	1060 #3X	9/17/08 1245
40 3C / J.E. Bernhard	9-18-08 0850	J.E. Bernhard	9-18-08 0850
J.E. Bernhard WCH	9-18-08 0845	FED EX	
[signature]	9-19-08 0940	[signature]	9-19-08 0940
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

SPECIAL INSTRUCTIONS

BH 9/17/08

~~(1) Gamma Spec - (Full List) (Americium 241, Antimony 125, Beryllium 7, Cesium 134, Cesium 137, Cobalt 60, Europium 152, Europium 154, Europium 155, Potassium 40, Ruthenium 106, Uranium 235, Uranium 238) - Gross alpha, Gross beta~~

(2) 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); Mercury - 7470 - (CV)

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

RJC

Matrix *

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

ABORATORY SECTION	Received By	Title	Date/Time
NAL SAMPLE ISPOSITION	Disposal Method	Disposed By	Date/Time

CH-EE-011

000000019

Washington Closure Hanford

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

RC-052-000

Collector: Rios (SEC D. Rios)	Company Contact: Bill Hudson	Telephone No.: 372-9695	Project Coordinator: KESSNER, JH
Price Code: 7G	Data Turnaround: 15 Days		
Project Designation: Remaining Sites Confirmation Sampling - Water	Sampling Location: 100-D-78		SAF No.: RC-052
Ice Chest No.: AFS-06-001	Field Logbook No.: EL-1601-2	COA: 010D78A000	Method of Shipment: Fed Ex
Shipped To: EBERLINE SERVICES / LIONVILLE	Offsite Property No.: A080353		Bill of Lading/Air Bill No.: See OSPC

POSSIBLE SAMPLE HAZARDS/REMARKS

Special Handling and/or Storage

Preservation	Cool 4C											
Type of Container	P	P										
No. of Container(s)	1	2										
Volume	250mL	1000mL										
SAMPLE ANALYSIS	See Item B in Special Instructions, MS 9/17/08	TSS, TSD, Ignitability										

Sample No.	Matrix *	Sample Date	Sample Time										
7J48	WATER	9/17/08	0900	X	X								

CHAIN OF POSSESSION	Date/Time	Sign/Print Names: Received By/Stored In	Date/Time
Relinquished By/Removed From	1132 9-17-08	Received By/Stored In: BILL HUDSON Bill Hudson	1130 9/17/08
Relinquished By/Removed From: HUDSON Hudson	9/17/08 1245	Received By/Stored In: 1060 #3C	9/17/08 1245
Relinquished By/Removed From: 60 IC / J.E. Bernhard	0830 9-18-08	Received By/Stored In: J.E. Bernhard	0830 9-18-08
Relinquished By/Removed From: J.E. Bernhard	0845 9-18-08	Received By/Stored In: FED EX	
Relinquished By/Removed From: Fed Ex	9-19-08 0940	Received By/Stored In	9-19-08 0940
Relinquished By/Removed From		Received By/Stored In	

SPECIAL INSTRUCTIONS

B) 9/17/08
B) IC Anions - 300.0 [Bromide, Chloride, Fluoride, Nitrate, Nitrite, Phosphate, Sulfate]; pH (Water) - 9040

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

Matrix *

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

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

CH-EE-011

0000000020

Lionville Laboratory Incorporated

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: W.C. Hanford

Project/SAF/SOW/Release #: RC-052

Date: 9-19-08

LvLI Batch #: 08091144

Sample Custodian: [signature]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FED EX		Airbill # 7980 1504 1505
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 3.1°	°C	Cooler # AFS-06-001
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 ← PH out of Hold.	
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 O-JOHNSON		Date 9-19-08	

LvLI