OCTOBER 01, 2012

LIONVILLE LABORATORY
A division of Eberline Analytical Corporation

264 Welsh Pool Road
Exton, Pennsylvania 19341
Phone (610) 280-3000
Fax (610) 280-3041

1 October 2012

Mr. Scot Fitzgerald
CH2M Hill Plateau Remediation Company
P.O. Box 1600
Mail Stop - B6-06
Richland, WA 99352

Subject: Contract No. 630 - Analytical Data Package

Dear Mr. Fitzgerald:

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

LvL Batch #	1209033
SDG #	L0049
SAF #	X12-040
Date Received	09/12/2012
# Samples	1
Matrix	Water
Volatiles	X
Semivolatiles	
Pest/PCB	
DRO/GRO/KRO	
PAH	
Acrylamide	
Metals	
Inorganics	

The electronic data deliverable (EDD) has been uploaded to EDDPro. If you have any questions, please don't hesitate to contact me at (610) 280-3012.

Sincerely,

Lionville Laboratory
(A Division of Eberline Analytical Corporation)

Orlette S. Johnson
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 21 pages.

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OCTOBER 01, 2012

CHAIN OF CUSTODY

Lionville Laboratory Use Only

1209033

Custody Transfer Record/Lab Work Request

Page 1 of 1

FIELD PERSONNEL: COMPLETE ONLY SHADED AREAS

Lionville Laboratory
A Division of Eberline Analytical Corporation

Client: CHPRC SAF# X12-040

Est. Final Proj. Sampling Date:

Project#:

Project Contact/Phone#:

Lionville Laboratory Project Manager: O. Johnson

QC: SW Del: Std TAT: 30 days

Date Rec'd: 9/12/12 Date Due: 10/12/12

Refrigerator #		A-C
#/Type Container	Liquid	VOA
	Solid	3AG
Volume	Liquid	40
	Solid	
Preservatives		HCl

ANALYSES REQUESTED →

Lab ID	Client ID/Description	Matrix QC Chosen (✓) MS	MSD	Matrix	Date Collected	Time Collected	ORGANIC VOA	BNA	Pest/PCB	Herb	INORG Metal	CN
01	B2LXL4	✓	✓	W	9-11-12	0858	X					

Lionville Laboratory Use Only

MATRIX CODES:
W Water
WW Waste Water
GW Groundwater
WST Waste
WI Wipe
SO Solid
S Soil
SL Sludge
SE Sediment
PC Paint Chips
O Oil
NAL Non-Aqueous Liquid
L Leachate
A Air
T Tissue
F Fish

Special Instructions:

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

Relinquished by	Received by	Date	Time
Fed Ex	[signature]	9/12/12	1010

Relinquished by	Received by	Date	Time

Relinquished by	Received by	Date	Time

OCTOBER 01, 2012

000000003

CH2MHill Plateau Remediation Company	CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST	C.O.C. # X12-040-089
		Page 1 of 1

Collector	F. M. Hall	Contact/Requester	WATERS-HUSTED, K	Telephone No.	376-4650
SAF No.	X12-040	Sampling Origin	HANFORD SITE	Purchase Order/Charge Code	300071ES20
Project Title	Special Sampling GW Sitewide, July 201	Logbook No.	HNF-N-506 50194	Ice Chest No.	GWS-246
Shipped To (Lab)	Lionville Laboratory Incorporated	Method of Shipment	Commercial Carrier	Bill of Lading/Air Bill No.	7989 4091 7544
Protocol	SURV	Priority:	45 Days	Offsite Property No.	4028

POSSIBLE SAMPLE HAZARDS/REMARKS

Contains Radioactive Material at concentrations that may or may not be regulated for transportation per 49 CFR/IATA Dangerous Goods Regulations but are not releasable per DOE Order 458.1.

SPECIAL INSTRUCTIONS **Hold Time** Total Activity Exemption: Yes ☑ No ☐

Site Wide Generator Knowledge Information Form applies.
The CACN for all analytical work at WSCF is 401647.

Sample No.	Filter	*	Date	Time	No/Type Container	Sample Analysis	Holding Time	Preservative
B2LXL4	N	W	SEP 11 2012	0858	1x20-mL P	Activity Scan	6 Months	None
B2LXL4	N	W	SEP 11 2012	0858	3x40-mL aGs*	VOA - 8260A (TCL)	14 Days	HCl or H2SO4 to pH <2/Cool~4C

OCTOBER 01, 2012

Relinquished By	Print	Sign	Date/Time	Received By	Print	Sign	Date/Time
	F. M. Hall		SEP 11 2012		FED EX		SEP 11 2012
Relinquished By			9-12-12 1010	Received By	VICTOR HERNANDEZ		9-12-12 1010
Relinquished By			Date/Time	Received By			Date/Time
Relinquished By			Date/Time	Received By			Date/Time

Matrix *

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

FINAL SAMPLE DISPOSITION	Disposal Method (e.g., Return to customer, per lab procedure, used in process)	Disposed By	Date/Time

PRINTED ON 7/31/2012

A-6004-842 (REV 2)

OCTOBER 01, 2012

Lionville Laboratory

SAMPLE RECEIPT CHECKLIST (SRC)

CLIENT: CHPRC

Project/SAF/SOW/Release #: X12-040

Date: 9/12/12

LvL Batch #: 1209033

Sample Custodian: [signature]

NOTE: EXPLAIN ALL DISCREPANCIES

1. Samples Hand Delivered or Shipped?	Carrier FedEx		Airbill # 7989 4091 7544
2. Custody Seals on coolers or shipping containers intact, signed & dated?	☑ Yes	☐ No	☐ No Seals
3. Outside of coolers or shipping containers are free from damage?	☑ Yes	☐ No	*Comments:*
4. All expected paperwork received (coc & other client specific information) sealed in plactic bag and easily accessible?	☑ Yes	☐ No	
5. Samples received cooled or ambient?	Temp 2.4 °C		Cooler # GWS-246
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 & LvL) signed & dated?	☑ Yes	☐ No	
8. Sample containers are intact?	☑ Yes	☐ No	
9. All samples on COC received?	☑ Yes	☐ No	
All samples received on COC?	☑ Yes	☐ No	
10. All sample label information matches COC?	☑ Yes	☐ No	
11. Samples properly preserved? (If #5 is no, then this is no.)	☑ Yes	☐ No	
12. Samples received within hold times?	☑ Yes	☐ No	
Short holds taken to wet lab?	☐ Yes	☐ No	☑ N/A
13. VOA, TOC, TOX free of headspace?	☐ Yes	☐ No	☑ N/A
14. QC stickers placed on bottles designated by client?	☐ Yes	☐ No	☑ N/A
15. Shipment meets LvL Sample Acceptance Policy? (Identify all bottles that do not meet the policy, which is on the reverse of this page.)	☑ Yes	☐ No	
16. Project Manager contacted concerning any discrepancies?	☐ Yes	☐ No	☑ N/A

Person Contacted _____ Date _____

SR-002-B.doc

VOLATILES

OCTOBER 01, 2012

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264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
Fax: 610-280-3041

CHPRC Hanford	Project: X12-040	
PO Box 1600, Mail Stop - R3-60	Project Number: L0049	**Reported:**
Richland WA, 99352	Project Manager: Scot Fitzgerald	09/17/2012 14:26

Analytical Report for Volatile Organic Compounds by SW846 8260B

Sample ID	Laboratory ID	Matrix	Date Sampled	Date Received
B2LXL4	1209033-01	Water	09/11/2012 08:58	09/12/2012 10:10

OCTOBER 01, 2012

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Case Narrative

Client: CHPRC-Hanford X12-040 L0049
LVL #: 1209033

W.O. #: 60049-001-001-0001-00
Date Received: 09-12-2012

GC/MS VOLATILE

One (1) water sample was collected on 09-11-2012.

The sample and associated QC samples were prepared and analyzed 09-12-2012 according to criteria set forth in Lionville Laboratory SOPs. The preparation procedure was based on SW846 Method 5030B and the analysis procedure was based on SW846 Method 8260B for client specified compounds.

Lionville Laboratory (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. LvL certifies that all test results meet the requirements of NELAC with any exception noted in the following statements:

1. All results in this report are derived from a sample that met LvL's sample acceptance policy.
2. Samples were analyzed within holding time.
3. Non-target compounds were not detected in this sample.
4. All obtainable surrogate recoveries were within QC acceptance criteria
5. All obtainable matrix spike recoveries were within QC acceptance criteria.
6. All blank spike recoveries were within QC acceptance criteria.
7. The method blank was below the reporting limit for all target analytes.
8. All internal standard area and retention time criteria were met.
9. All initial calibrations associated with this data were within acceptance criteria using the mean RSD described in method 8000B. Per method 8000B/8260B, the attached Table 1 provides the mean RSD and indicates the target compounds where the RSD exceeded 15%; results for the indicated target compounds are considered to have greater uncertainty.
10. All continuing calibration standards analyzed prior to sample extracts were within acceptance criteria.
11. Internal standard area and retention time criteria were met.
12. 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").

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

Iain Daniels
LvL Laboratory Manager

9/30/12
Date

OCTOBER 01, 2012

TABLE 1

FULL LIST - 8000B/8260B COMPOUNDS WHERE THE MEAN %RSD IS USED TO MEET

CRITERIA FOR INITIAL CALIBRATION OF AN INDIVIDUAL COMPOUND

MEAN RSD USED FOR EVALUATION: 9.142 INSTRUMENT ID/DATE: 5973G 7/31/12

>15% RSD	Compound	>15% RSD	Compound	>15% RSD	Compound
	1,1,1,2-Tetrachloroethane		Carbon Disulfide		trans-1,4-Dichloro-2-butene
	1,1,1-Trichloroethane		Carbon Tetrachloride		Trichloroethene
	1,1,2,2-Tetrachloroethane		Chlorobenzene		Trichlorofluoromethane
	1,1,2-Trichloroethane		Chloroethane		Vinyl acetate
	1,1-Dichloroethane		Chloroform		Vinyl chloride
	1,1-Dichloroethene		Chloromethane		Xylenes, total
	1,1-Dichloropropene		cis-1,2-Dichloroethene		
	1,2,3-Trichlorobenzene		cis-1,3-Dichloropropene		
	1,2,3-Trichloropropane		Cyclohexane		
	1,2,3-Trimethylbenzene		Cyclohexanone		
	1,2,4-Trichlorobenzene		Dibromochloromethane		
	1,2,4-Trimethylbenzene		Dibromofluoromethane		
	1,2-Dibromo-3-chloropropane		Dibromomethane		
	1,2-Dibromoethane		Dichlorodifluoromethane		
	1,2-Dichlorobenzene		Diethyl Ether		
	1,2-Dichloroethane		Ethyl Acetate		
	1,2-Dichloroethene (total)		Ethyl Methacrylate		
	1,2-Dichloropropane		Ethylbenzene		**Surrogates:**
	1,2-Xylene		Ethylene oxide		1,2-Dichloroethane-d4
	1,3- and 1,4-Xylenes		Freon-113		Toluene-d8
	1,3,5-Trimethylbenzene		Freon-114		4-Bromofluorobenzene
	1,3-Dichlorobenzene		Hexachlorobutadiene		
	1,3-Dichloropropane		Hexane		
	1,3-Dichloropropene (total)		Iodomethane		
	1,4-Dichlorobenzene		Isobutyl alcohol		
	1,4-Dioxane		Isopropylbenzene		
	2,2-Dichloropropane		Methacrylonitrile		
	2-Butanone		Methyl Acetate		
	2-Chloro-1,3-butadiene		Methyl Methacrylate		
	2-Chloroethyl Vinyl Ether		Methylcyclohexane		
	2-Chlorotoluene		Methylene Chloride		
✓	2-Hexanone		Methyl-tert-Butyl Ether		
	2-Nitropropane		Naphthalene		
	3-Chloropropene		n-Butyl Alcohol		
	4-Chlorotoluene		n-Butylbenzene		
	4-Isopropyltoluene		n-Propylbenzene		
✓	4-Methyl-2-pentanone		Pentachloroethane		
	Acetone		Propionitrile		
	Acetonitrile		sec-Butylbenzene		
	Acrolein	✓	Styrene		
	Acrylonitrile		tert-Butyl alcohol		
	Benzene		tert-Butylbenzene		
	Bromobenzene		Tetrachloroethene		
	Bromochloromethane		Tetrahydrofuran		
	Bromodichloromethane		Toluene		
✓	Bromoform		trans-1,2-Dichloroethene		
	Bromomethane		trans-1,3-Dichloropropene		

GLOSSARY

DATA QUALIFIERS

U	=	Indicates that the 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 quantitation modifications 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 quantitation modifications:

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

PA - Peak Assignment: quantitation 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

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

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CHPRC Hanford	Project: X12-040	
PO Box 1600, Mail Stop - R3-60	Project Number: L0049	**Reported:**
Richland WA, 99352	Project Manager: Scot Fitzgerald	09/17/2012 14:26

B2LXL4
1209033-01 (Water)

Lionville Laboratory

Volatile Organic Compounds by SW846 8260B

Analyte	Result and Qualifier		Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
1,1,1-Trichloroethane	5.00	U	5.00	ug/L	1	L209089	09/12/2012	09/12/2012	8260B
1,1,2,2-Tetrachloroethane	5.00	U	5.00	ug/L	1	L209089	09/12/2012	09/12/2012	8260B
1,1,2-Trichloroethane	5.00	U	5.00	ug/L	1	L209089	09/12/2012	09/12/2012	8260B
1,1-Dichloroethane	5.00	U	5.00	ug/L	1	L209089	09/12/2012	09/12/2012	8260B
1,1-Dichloroethene	5.00	U	5.00	ug/L	1	L209089	09/12/2012	09/12/2012	8260B
1,2-Dichloroethane	5.00	U	5.00	ug/L	1	L209089	09/12/2012	09/12/2012	8260B
1,2-Dichloroethene (total)	5.00	U	5.00	ug/L	1	L209089	09/12/2012	09/12/2012	8260B
1,2-Dichloropropane	5.00	U	5.00	ug/L	1	L209089	09/12/2012	09/12/2012	8260B
2-Butanone	10.0	U	10.0	ug/L	1	L209089	09/12/2012	09/12/2012	8260B
2-Hexanone	10.0	U	10.0	ug/L	1	L209089	09/12/2012	09/12/2012	8260B
4-Methyl-2-pentanone	10.0	U	10.0	ug/L	1	L209089	09/12/2012	09/12/2012	8260B
Acetone	10.0	U	10.0	ug/L	1	L209089	09/12/2012	09/12/2012	8260B
Benzene	5.00	U	5.00	ug/L	1	L209089	09/12/2012	09/12/2012	8260B
Bromodichloromethane	5.00	U	5.00	ug/L	1	L209089	09/12/2012	09/12/2012	8260B
Bromoform	5.00	U	5.00	ug/L	1	L209089	09/12/2012	09/12/2012	8260B
Bromomethane	10.0	U	10.0	ug/L	1	L209089	09/12/2012	09/12/2012	8260B
Carbon Disulfide	5.00	U	5.00	ug/L	1	L209089	09/12/2012	09/12/2012	8260B
Carbon Tetrachloride	5.00	U	5.00	ug/L	1	L209089	09/12/2012	09/12/2012	8260B
Chlorobenzene	5.00	U	5.00	ug/L	1	L209089	09/12/2012	09/12/2012	8260B
Chloroethane	10.0	U	10.0	ug/L	1	L209089	09/12/2012	09/12/2012	8260B
Chloroform	5.00	U	5.00	ug/L	1	L209089	09/12/2012	09/12/2012	8260B
Chloromethane	10.0	U	10.0	ug/L	1	L209089	09/12/2012	09/12/2012	8260B
cis-1,2-Dichloroethene	5.00	U	5.00	ug/L	1	L209089	09/12/2012	09/12/2012	8260B
cis-1,3-Dichloropropene	5.00	U	5.00	ug/L	1	L209089	09/12/2012	09/12/2012	8260B
Dibromochloromethane	5.00	U	5.00	ug/L	1	L209089	09/12/2012	09/12/2012	8260B
Ethylbenzene	5.00	U	5.00	ug/L	1	L209089	09/12/2012	09/12/2012	8260B
Methylene Chloride	**4.38**	J	6.00	ug/L	1	L209089	09/12/2012	09/12/2012	8260B
Styrene	5.00	U	5.00	ug/L	1	L209089	09/12/2012	09/12/2012	8260B
Tetrachloroethene	5.00	U	5.00	ug/L	1	L209089	09/12/2012	09/12/2012	8260B
trans-1,2-Dichloroethene	5.00	U	5.00	ug/L	1	L209089	09/12/2012	09/12/2012	8260B
Toluene	5.00	U	5.00	ug/L	1	L209089	09/12/2012	09/12/2012	8260B
trans-1,3-Dichloropropene	5.00	U	5.00	ug/L	1	L209089	09/12/2012	09/12/2012	8260B
Trichloroethene	5.00	U	5.00	ug/L	1	L209089	09/12/2012	09/12/2012	8260B
Vinyl chloride	10.0	U	10.0	ug/L	1	L209089	09/12/2012	09/12/2012	8260B
Xylenes, total	5.00	U	5.00	ug/L	1	L209089	09/12/2012	09/12/2012	8260B
Surrogate: 1,2-Dichloroethane-d4	*104 %*		*60-140*			*L209089*	*09/12/2012*	*09/12/2012*	*8260B*

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CHPRC Hanford	Project: X12-040	
PO Box 1600, Mail Stop - R3-60	Project Number: L0049	**Reported:**
Richland WA, 99352	Project Manager: Scot Fitzgerald	09/17/2012 14:26

B2LXL4
1209033-01 (Water)

Analyte	Result and Qualifier	Reporting Limit	Units	Dilution	Batch	Prepared	Analyzed	Method
Lionville Laboratory								
Volatile Organic Compounds by SW846 8260B								
Surrogate: Toluene-d8	*98 %*	*65-120*			*L209089*	*09/12/2012*	*09/12/2012*	*8260B*
Surrogate: 4-Bromofluorobenzene	*98 %*	*75-130*			*L209089*	*09/12/2012*	*09/12/2012*	*8260B*

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CHPRC Hanford	Project: X12-040	
PO Box 1600, Mail Stop - R3-60	Project Number: L0049	**Reported:**
Richland WA, 99352	Project Manager: Scot Fitzgerald	09/17/2012 14:26

Volatile Organic Compounds by SW846 8260B - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers		Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L209089 - SW 5030B										
Blank (L209089-BLK1)				Prepared & Analyzed: 09/12/2012						
1,1,1-Trichloroethane	5.00	U	5.00	ug/L						
1,1,2,2-Tetrachloroethane	5.00	U	5.00	ug/L						
1,1,2-Trichloroethane	5.00	U	5.00	ug/L						
1,1-Dichloroethane	5.00	U	5.00	ug/L						
1,1-Dichloroethene	5.00	U	5.00	ug/L						
1,2-Dichloroethane	5.00	U	5.00	ug/L						
1,2-Dichloroethene (total)	5.00	U	5.00	ug/L						
1,2-Dichloropropane	5.00	U	5.00	ug/L						
2-Butanone	10.0	U	10.0	ug/L						
2-Hexanone	10.0	U	10.0	ug/L						
4-Methyl-2-pentanone	10.0	U	10.0	ug/L						
Acetone	10.0	U	10.0	ug/L						
Benzene	5.00	U	5.00	ug/L						
Bromodichloromethane	5.00	U	5.00	ug/L						
Bromoform	5.00	U	5.00	ug/L						
Bromomethane	10.0	U	10.0	ug/L						
Carbon Disulfide	5.00	U	5.00	ug/L						
Carbon Tetrachloride	5.00	U	5.00	ug/L						
Chlorobenzene	5.00	U	5.00	ug/L						
Chloroethane	10.0	U	10.0	ug/L						
Chloroform	5.00	U	5.00	ug/L						
Chloromethane	10.0	U	10.0	ug/L						
cis-1,2-Dichloroethene	5.00	U	5.00	ug/L						
cis-1,3-Dichloropropene	5.00	U	5.00	ug/L						
Dibromochloromethane	5.00	U	5.00	ug/L						
Ethylbenzene	5.00	U	5.00	ug/L						
Methylene Chloride	6.00	U	6.00	ug/L						
Styrene	5.00	U	5.00	ug/L						
Tetrachloroethene	5.00	U	5.00	ug/L						
trans-1,2-Dichloroethene	5.00	U	5.00	ug/L						
Toluene	5.00	U	5.00	ug/L						
trans-1,3-Dichloropropene	5.00	U	5.00	ug/L						
Trichloroethene	5.00	U	5.00	ug/L						
Vinyl chloride	10.0	U	10.0	ug/L						
Xylenes, total	5.00	U	5.00	ug/L						
Surrogate: 1,2-Dichloroethane-d4	*53.5*			*ug/L*	*50.000*		*107*	*60-140*		

OCTOBER 01, 2012

264 Welsh Pool Road
Exton, PA 19341
Phone: 610-280-3000
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CHPRC Hanford	Project: X12-040	
PO Box 1600, Mail Stop - R3-60	Project Number: L0049	**Reported:**
Richland WA, 99352	Project Manager: Scot Fitzgerald	09/17/2012 14:26

Volatile Organic Compounds by SW846 8260B - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L209089 - SW 5030B									
Blank (L209089-BLK1)			Prepared & Analyzed: 09/12/2012						
Surrogate: Toluene-d8	*48.9*		*ug/L*	*50.000*		*98*	*65-120*		
Surrogate: 4-Bromofluorobenzene	*49.4*		*ug/L*	*50.000*		*99*	*75-130*		
LCS (L209089-BS1)			Prepared & Analyzed: 09/12/2012						
1,1,1-Trichloroethane	53.7	5.00	ug/L	50.000		107	70-130		
1,1,2,2-Tetrachloroethane	44.2	5.00	ug/L	50.000		88	65-130		
1,1,2-Trichloroethane	44.9	5.00	ug/L	50.000		90	70-125		
1,1-Dichloroethane	50.2	5.00	ug/L	50.000		100	70-130		
1,1-Dichloroethene	47.1	5.00	ug/L	50.000		94	65-140		
1,2-Dichloroethane	52.2	5.00	ug/L	50.000		104	60-140		
1,2-Dichloroethene (total)	97.1	5.00	ug/L	100.00		97	70-130		
1,2-Dichloropropane	48.1	5.00	ug/L	50.000		96	75-125		
2-Butanone	48.1	10.0	ug/L	50.000		96	20-200		
2-Hexanone	49.0	10.0	ug/L	50.000		98	20-200		
4-Methyl-2-pentanone	41.4	10.0	ug/L	50.000		83	45-150		
Acetone	73.0	10.0	ug/L	50.000		146	20-220		
Benzene	48.4	5.00	ug/L	50.000		97	75-125		
Bromodichloromethane	51.7	5.00	ug/L	50.000		103	65-130		
Bromoform	48.6	5.00	ug/L	50.000		97	70-120		
Bromomethane	47.2	10.0	ug/L	50.000		94	50-150		
Carbon Disulfide	47.5	5.00	ug/L	50.000		95	50-150		
Carbon Tetrachloride	55.8	5.00	ug/L	50.000		112	65-130		
Chlorobenzene	47.6	5.00	ug/L	50.000		95	75-125		
Chloroethane	48.7	10.0	ug/L	50.000		97	65-140		
Chloroform	53.2	5.00	ug/L	50.000		106	75-125		
Chloromethane	51.1	10.0	ug/L	50.000		102	50-135		
cis-1,2-Dichloroethene	48.1	5.00	ug/L	50.000		96	70-125		
cis-1,3-Dichloropropene	43.6	5.00	ug/L	50.000		87	70-125		
Dibromochloromethane	48.8	5.00	ug/L	50.000		98	70-130		
Ethylbenzene	50.4	5.00	ug/L	50.000		101	75-125		
Methylene Chloride	47.4	6.00	ug/L	50.000		95	55-150		
Styrene	49.3	5.00	ug/L	50.000		99	75-130		
Tetrachloroethene	48.3	5.00	ug/L	50.000		97	70-130		
trans-1,2-Dichloroethene	49.0	5.00	ug/L	50.000		98	70-130		
Toluene	47.3	5.00	ug/L	50.000		95	70-130		
trans-1,3-Dichloropropene	48.9	5.00	ug/L	50.000		98	70-130		
Trichloroethene	48.9	5.00	ug/L	50.000		98	75-125		

OCTOBER 01, 2012

LIONVILLE LABORATORY
A division of Eberline Analytical Corporation

264 Welsh Pool Road
Exton, PA 19341
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CHPRC Hanford	Project: X12-040	
PO Box 1600, Mail Stop - R3-60	Project Number: L0049	Reported:
Richland WA, 99352	Project Manager: Scot Fitzgerald	09/17/2012 14:26

Volatile Organic Compounds by SW846 8260B - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L209089 - SW 5030B									
LCS (L209089-BS1)			Prepared & Analyzed: 09/12/2012						
Vinyl chloride	51.8	10.0	ug/L	50.000		104	55-135		
Xylenes, total	149	5.00	ug/L	150.00		99	70-130		
Surrogate: 1,2-Dichloroethane-d4	*51.6*		*ug/L*	*50.000*		*103*	*60-140*		
Surrogate: Toluene-d8	*48.0*		*ug/L*	*50.000*		*96*	*65-120*		
Surrogate: 4-Bromofluorobenzene	*48.7*		*ug/L*	*50.000*		*97*	*75-130*		
Matrix Spike (L209089-MS3)		**Source: 1209033-01**	Prepared & Analyzed: 09/12/2012						
1,1,1-Trichloroethane	51.7	5.00	ug/L	50.000	5.00 U	103	70-130		
1,1,2,2-Tetrachloroethane	41.4	5.00	ug/L	50.000	5.00 U	83	65-130		
1,1,2-Trichloroethane	45.8	5.00	ug/L	50.000	5.00 U	92	70-125		
1,1-Dichloroethane	49.7	5.00	ug/L	50.000	5.00 U	99	70-130		
1,1-Dichloroethene	48.3	5.00	ug/L	50.000	5.00 U	97	65-140		
1,2-Dichloroethane	52.3	5.00	ug/L	50.000	5.00 U	105	60-140		
1,2-Dichloroethene (total)	94.4	5.00	ug/L	100.00	5.00 U	94	70-130		
1,2-Dichloropropane	49.9	5.00	ug/L	50.000	5.00 U	100	75-125		
2-Butanone	39.0	10.0	ug/L	50.000	10.0 U	78	20-200		
2-Hexanone	36.2	10.0	ug/L	50.000	10.0 U	72	20-200		
4-Methyl-2-pentanone	38.6	10.0	ug/L	50.000	10.0 U	77	45-150		
Acetone	35.1	10.0	ug/L	50.000	10.0 U	70	20-220		
Benzene	48.3	5.00	ug/L	50.000	5.00 U	97	75-125		
Bromodichloromethane	52.2	5.00	ug/L	50.000	5.00 U	104	65-130		
Bromoform	48.0	5.00	ug/L	50.000	5.00 U	96	70-120		
Bromomethane	46.6	10.0	ug/L	50.000	10.0 U	93	50-150		
Carbon Disulfide	46.8	5.00	ug/L	50.000	5.00 U	94	50-150		
Carbon Tetrachloride	55.2	5.00	ug/L	50.000	5.00 U	110	65-130		
Chlorobenzene	49.3	5.00	ug/L	50.000	5.00 U	99	75-125		
Chloroethane	46.8	10.0	ug/L	50.000	10.0 U	94	65-140		
Chloroform	53.4	5.00	ug/L	50.000	5.00 U	107	75-125		
Chloromethane	44.0	10.0	ug/L	50.000	10.0 U	88	50-135		
cis-1,2-Dichloroethene	46.2	5.00	ug/L	50.000	5.00 U	92	70-125		
cis-1,3-Dichloropropene	42.6	5.00	ug/L	50.000	5.00 U	85	70-125		
Dibromochloromethane	50.5	5.00	ug/L	50.000	5.00 U	101	70-130		
Ethylbenzene	50.6	5.00	ug/L	50.000	5.00 U	101	75-125		
Methylene Chloride	51.2	6.00	ug/L	50.000	4.38	94	55-150		
Styrene	51.6	5.00	ug/L	50.000	5.00 U	103	75-130		
Tetrachloroethene	50.4	5.00	ug/L	50.000	5.00 U	101	70-130		
trans-1,2-Dichloroethene	48.2	5.00	ug/L	50.000	5.00 U	96	70-130		

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CHPRC Hanford	Project: X12-040	
PO Box 1600, Mail Stop - R3-60	Project Number: L0049	**Reported:**
Richland WA, 99352	Project Manager: Scot Fitzgerald	09/17/2012 14:26

Volatile Organic Compounds by SW846 8260B - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L209089 - SW 5030B									
Matrix Spike (L209089-MS3)		**Source: 1209033-01**	Prepared & Analyzed: 09/12/2012						
Toluene	47.9	5.00	ug/L	50.000	5.00 U	96	70-130		
trans-1,3-Dichloropropene	48.3	5.00	ug/L	50.000	5.00 U	97	70-130		
Trichloroethene	50.1	5.00	ug/L	50.000	5.00 U	100	75-125		
Vinyl chloride	44.4	10.0	ug/L	50.000	10.0 U	89	55-135		
Xylenes, total	155	5.00	ug/L	150.00	5.00 U	103	70-130		
Surrogate: 1,2-Dichloroethane-d4	*51.7*		*ug/L*	*50.000*		*103*	*60-140*		
Surrogate: Toluene-d8	*49.5*		*ug/L*	*50.000*		*99*	*65-120*		
Surrogate: 4-Bromofluorobenzene	*47.9*		*ug/L*	*50.000*		*96*	*75-130*		
Matrix Spike Dup (L209089-MSD3)		**Source: 1209033-01**	Prepared & Analyzed: 09/12/2012						
1,1,1-Trichloroethane	53.1	5.00	ug/L	50.000	5.00 U	106	70-130	3	20
1,1,2,2-Tetrachloroethane	41.8	5.00	ug/L	50.000	5.00 U	84	65-130	1	20
1,1,2-Trichloroethane	45.0	5.00	ug/L	50.000	5.00 U	90	70-125	2	20
1,1-Dichloroethane	50.9	5.00	ug/L	50.000	5.00 U	102	70-130	3	20
1,1-Dichloroethene	47.0	5.00	ug/L	50.000	5.00 U	94	65-140	3	20
1,2-Dichloroethane	51.7	5.00	ug/L	50.000	5.00 U	103	60-140	1	20
1,2-Dichloroethene (total)	93.2	5.00	ug/L	100.00	5.00 U	93	70-130	1	20
1,2-Dichloropropane	48.2	5.00	ug/L	50.000	5.00 U	96	75-125	3	20
2-Butanone	36.6	10.0	ug/L	50.000	10.0 U	73	20-200	6	20
2-Hexanone	35.6	10.0	ug/L	50.000	10.0 U	71	20-200	2	20
4-Methyl-2-pentanone	35.9	10.0	ug/L	50.000	10.0 U	72	45-150	7	20
Acetone	34.8	10.0	ug/L	50.000	10.0 U	70	20-220	0.8	20
Benzene	49.9	5.00	ug/L	50.000	5.00 U	100	75-125	3	20
Bromodichloromethane	51.7	5.00	ug/L	50.000	5.00 U	103	65-130	0.9	20
Bromoform	46.7	5.00	ug/L	50.000	5.00 U	93	70-120	3	20
Bromomethane	46.5	10.0	ug/L	50.000	10.0 U	93	50-150	0.1	20
Carbon Disulfide	46.6	5.00	ug/L	50.000	5.00 U	93	50-150	0.3	20
Carbon Tetrachloride	55.3	5.00	ug/L	50.000	5.00 U	111	65-130	0.2	20
Chlorobenzene	48.5	5.00	ug/L	50.000	5.00 U	97	75-125	2	20
Chloroethane	48.6	10.0	ug/L	50.000	10.0 U	97	65-140	4	20
Chloroform	52.5	5.00	ug/L	50.000	5.00 U	105	75-125	2	20
Chloromethane	46.6	10.0	ug/L	50.000	10.0 U	93	50-135	6	20
cis-1,2-Dichloroethene	46.0	5.00	ug/L	50.000	5.00 U	92	70-125	0.3	20
cis-1,3-Dichloropropene	42.5	5.00	ug/L	50.000	5.00 U	85	70-125	0.3	20
Dibromochloromethane	48.6	5.00	ug/L	50.000	5.00 U	97	70-130	4	20
Ethylbenzene	49.5	5.00	ug/L	50.000	5.00 U	99	75-125	2	20
Methylene Chloride	51.2	6.00	ug/L	50.000	4.38	94	55-150	0.005	20

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CHPRC Hanford	Project: X12-040	
PO Box 1600, Mail Stop - R3-60	Project Number: L0049	**Reported:**
Richland WA, 99352	Project Manager: Scot Fitzgerald	09/17/2012 14:26

Volatile Organic Compounds by SW846 8260B - Quality Control

Lionville Laboratory

Analyte	Result and Qualifiers	Reporting Limit	Units	Spike Level	Source Result	%REC	%REC Limits	RPD	RPD Limit
Batch L209089 - SW 5030B									
Matrix Spike Dup (L209089-MSD3)		**Source: 1209033-01**		Prepared & Analyzed: 09/12/2012					
Styrene	49.8	5.00	ug/L	50.000	5.00 U	100	75-130	4	20
Tetrachloroethene	46.9	5.00	ug/L	50.000	5.00 U	94	70-130	7	20
trans-1,2-Dichloroethene	47.2	5.00	ug/L	50.000	5.00 U	94	70-130	2	20
Toluene	47.5	5.00	ug/L	50.000	5.00 U	95	70-130	0.8	20
trans-1,3-Dichloropropene	47.6	5.00	ug/L	50.000	5.00 U	95	70-130	1	20
Trichloroethene	50.5	5.00	ug/L	50.000	5.00 U	101	75-125	0.8	20
Vinyl chloride	47.4	10.0	ug/L	50.000	10.0 U	95	55-135	6	20
Xylenes, total	150	5.00	ug/L	150.00	5.00 U	100	70-130	3	20
Surrogate: 1,2-Dichloroethane-d4	*53.2*		*ug/L*	*50.000*		*106*	*60-140*		
Surrogate: Toluene-d8	*49.1*		*ug/L*	*50.000*		*98*	*65-120*		
Surrogate: 4-Bromofluorobenzene	*49.9*		*ug/L*	*50.000*		*100*	*75-130*		

PREPARATION BENCH SHEET

L209089

Lionville Laboratory

Printed: 9/15/2012 11:21:57AM

Matrix: Water **Prepared using: VOAGCMS - SW 5030B** **Surrogate used: 0902344**

Lab Number	Analysis	Prepared	Initial (mL)	Final (mL)	Spike ID	Source ID	ul Spike	ul Surrogate	Client	Extraction Comments
1209025-01	8260B TCL VOC	09/12/2012 12:47	5	5				5	CHPRC Hanford	
1209026-02	8260B TCL VOC	09/12/2012 14:30	5	5				5	WC-Hanford, Inc.	
1209026-04	8260B TCL VOC	09/12/2012 15:03	5	5				5	WC-Hanford, Inc.	
1209033-01	8260B TCL VOC	09/12/2012 17:16	5	5				5	CHPRC Hanford	
L209089-BLK1	QC	09/12/2012 11:06	5	5				5		
L209089-BS1	QC	09/12/2012 10:33	5	5	1201029		5	5		
L209089-MS1	QC	09/12/2012 13:23	5	5	1201029	1209025-01	5	5		
L209089-MS2	QC	09/12/2012 15:36	5	5	1201029	1209026-04	5	5		
L209089-MS3	QC	09/12/2012 17:49	5	5	1201029	1209033-01	5	5		
L209089-MSD1	QC	09/12/2012 13:57	5	5	1201029	1209025-01	5	5		
L209089-MSD2	QC	09/12/2012 16:09	5	5	1201029	1209026-04	5	5		
L209089-MSD3	QC	09/12/2012 18:22	5	5	1201029	1209033-01	5	5		

OCTOBER 01, 2012

00000020

R 9/17/12

Extracts Relinquished By Date

NA 9/17/12

Extracts Received By Date