

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

COMPLETE COPY OF DATA PACKAGE TO:

Kathy Wendt

H4-21

KW 10/21/14
INITIAL/DATE

COMMENTS:

SDG XP0143

SAF RC-074

Rad only

Chem only

Rad & Chem

Complete

Partial

**Waste Site: 100-D-75:1, 151-D, Primary Electrical
substation**



October 13, 2014

Joan Kessner
WC-Hanford, Inc.
2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354

Re: RC-074 Soil
Work Order: 358495
SDG: XP0143

Dear Joan Kessner:

GEL Laboratories, LLC (GEL) appreciates the opportunity to provide the enclosed analytical results for the sample(s) we received on October 08, 2014. This original data report has been prepared and reviewed in accordance with GEL's standard operating procedures.

Our policy is to provide high quality, personalized analytical services to enable you to meet your analytical needs on time every time. We trust that you will find everything in order and to your satisfaction. If you have any questions, please do not hesitate to call me at (843) 556-8171, ext. 1616.

Sincerely,

Orlette Johnson
Project Manager

Purchase Order: 1510
Chain of Custody: RC-074-681 and RC-074-682
Enclosures



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Case Narrative

**Receipt Narrative
for
WC-HANFORD, INC.
SDG: XP0143
Work Order: 358495**

October 13, 2014

Laboratory Identification:

GEL Laboratories LLC
2040 Savage Road
Charleston, South Carolina 29407
(843) 556-8171

Summary:

Sample receipt: The samples arrived at GEL Laboratories LLC, Charleston, South Carolina on October 08, 2014 for analysis.

Sample Identification: The laboratory received the following samples:

<u>Laboratory ID</u>	<u>Client ID</u>
358495001	J1V0M3
358495002	J1V0M4
358495003	J1V0M5
358495004	J1V0M6
358495005	J1V0M7
358495006	J1V0M8
358495007	J1V0M9
358495008	J1V0N0
358495009	J1V0N1
358495010	J1V0N2

Case Narrative:

Sample analyses were conducted using methodology as outlined in GEL's Standard Operating Procedures. Any technical or administrative problems during analysis, data review, and reduction are contained in the analytical case narratives in the enclosed data package.

The enclosed data package contains the following sections: Case Narrative, Chain of Custody, Cooler Receipt Checklist, Data Package Qualifier Definitions and data from the following fractions: Diesel Range Organics and GC Semivolatile PCB.



Orlette Johnson
Project Manager

Chain of Custody and Supporting Documentation

Washington Closure Hanford

Collector *H. W. Weber*
 Company Contact
 Joan Kessner
 Telephone No.
 375-4688
 Sampling Location
 100-D-75-1, 151-D Primary electrical substation
 Field Logbook No.
 EL-1662-03
 Offsite Property No. *MS 10-7-14*

CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST

Project Coordinator
 KESSNER, JH
 Project No.
 RC-074
 Method of Shipment
 Commercial Carrier
 Bill of Lading/Air Bill No.
See DSC

RC-074-681

Price Code

3 days

Data Turnaround

Ice Chest No.
ERC-02-007

COA
 01D7512600

Shipped To
GEL Laboratories Charleston

ERC

A131 257

Other Labs Shipped To

N/A

POSSIBLE SAMPLE HAZARDS/REMARKS

None

Special Handling and/or Storage

None

Sample No.	Matrix	Sample Date	Sample Time	Preservation		No. of Container(s)	Volume	Sample Analysis
				Cool 4C	Cool 4C			
J1V0M3	SOIL	10/07/14	0833	X	4C	1	125mL	TPH-Diesel Range - WTPH.D +
J1V0M4	SOIL	10/07/14	0837	X	4C	1	125mL	PCBS - 8082
J1V0M5	SOIL	10/07/14	0840	X	4C	1	125mL	
J1V0M6	SOIL	10/07/14	0844	X	4C	1	125mL	
J1V0M7	SOIL	10/07/14	0848	X	4C	1	125mL	

SPECIAL INSTRUCTIONS

CHAIN OF POSSESSION		Sign/Print Names	
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
<i>H. W. Weber</i>	10/07/2014 0955	<i>DUSHEA</i>	10/7/14 0955
<i>DUSHEA</i>	10/7/14 1134	<i>SM Sextal</i>	10/7/14 1134
<i>SM Sextal</i>	10/7/14 1140	<i>FED EX</i>	
<i>FED EX</i>	10/7/14	<i>P. Nient Patricia Dent</i>	10/8/14
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time
Relinquished By/Removed From	Date/Time	Received By/Stored In	Date/Time

358495



XP0143

FINAL SAMPLE DISPOSITION

Disposed By

Date/Time

WCH-EE-011

Washington Closure Hanford **CHAIN OF CUSTODY/SAMPLE ANALYSIS REQUEST** RC-074-682 Price Code Data Turnaround

Collector: *A. Wood* Company Contact: *Joan Kessner* Telephone No.: 375-4688 Project Coordinator: *KESSNER, JH* SAF No.: *RC-074* Method of Shipment: *Red Ex*

Project Designation: *100-D/DR Field Remediation* Sampling Location: *100-D-75-1, 151-D Primary electrical substation* Field Logbook No.: *EL-1662-03* COA: *01D7512600* Bill of Lading/Air Bill No.: *see OSC*

Ice Chest No.: *ERC-02-007* Offsite Property No.: *A13257*

Shipped To: **GEL Laboratories Charlston**

Other Labs Shipped To: *N/A*

Sample No.	Matrix	Sample Date	Sample Time	Preservation	Cool 4C	Cool 4C	Type of Container	No. of Container(s)	Volume	Sample Analysis
J1V0M8	SOIL	10/07/14	0851	ag	1	125mL	1	1	125mL	TPH-Diesel Range - WTPHD +
J1V0M9	SOIL	10/07/14	0856							
J1V0N0	SOIL	10/07/14	0859							
J1V0N1	SOIL	10/07/14	0903							
J1V0N2	SOIL	10/07/14	0906							

POSSIBLE SAMPLE HAZARDS/REMARKS

None

Special Handling and/or Storage

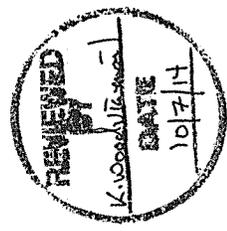
None

CHAIN OF POSSESSION

Reinquinshed By/Removed From	Date/Time	Sign/Print Names	Date/Time
<i>W. Wood</i>	10/07/14 0955	<i>D. Wood</i>	10/07/14 0955
<i>W. Wood</i>	10/07/14 1134	<i>SM Sexton</i>	10/07/14 1134
<i>SM Sexton</i>	10/07/14 1140	<i>FED EX</i>	10/07/14 1140
<i>FED EX</i>	10/07/14 0905	<i>P. Wood</i>	10/07/14 0905

SPECIAL INSTRUCTIONS

None



XP0143

FINAL SAMPLE DISPOSITION

Disposal Method: _____

Disposed By: _____

Date/Time: _____

Client: <i>WCHN</i>		SDG/AR/COC/Work Order:	
Received By: <i>P. Ibert</i>		Date Received: <i>10/8/14</i>	
Suspected Hazard Information	Yes	No	*If Net Counts > 100cpm on samples not marked "radioactive", contact the Radiation Safety Group for further investigation.
COC/Samples marked as radioactive?		<input checked="" type="checkbox"/>	Maximum Net Counts Observed* (Observed Counts - Area Background Counts): <i>0 cpm</i>
Classified Radioactive II or III by RSO?		<input checked="" type="checkbox"/>	If yes, Were swipes taken of sample containers < action levels?
COC/Samples marked containing PCBs?		<input checked="" type="checkbox"/>	
Package, COC, and/or Samples marked as beryllium or asbestos containing?		<input checked="" type="checkbox"/>	If yes, samples are to be segregated as Safety Controlled Samples, and opened by the GEL Safety Group.
Shipped as a DOT Hazardous?		<input checked="" type="checkbox"/>	Hazard Class Shipped: UN#:
Samples identified as Foreign Soil?		<input checked="" type="checkbox"/>	

Sample Receipt Criteria	Yes	NA	No	Comments/Qualifiers (Required for Non-Conforming Items)
1 Shipping containers received intact and sealed?	<input checked="" type="checkbox"/>			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
2 Samples requiring cold preservation within (0 ≤ 6 deg. C)?*	<input checked="" type="checkbox"/>			Preservation Method: <u>Ice bags</u> Blue ice Dry ice None Other (describe) <i>2c</i> *all temperatures are recorded in Celsius
2a Daily check performed and passed on IR temperature gun?	<input checked="" type="checkbox"/>			Temperature Device Serial #: Secondary Temperature Device Serial # (If Applicable): <i>130462966</i>
3 Chain of custody documents included with shipment?	<input checked="" type="checkbox"/>			
4 Sample containers intact and sealed?	<input checked="" type="checkbox"/>			Circle Applicable: Seals broken Damaged container Leaking container Other (describe)
5 Samples requiring chemical preservation at proper pH?		<input checked="" type="checkbox"/>		Sample ID's, containers affected and observed pH: If Preservation added, Lot#:
6 VOA vials free of headspace (defined as < 6mm bubble)?		<input checked="" type="checkbox"/>		Sample ID's and containers affected:
7 Are Encore containers present?			<input checked="" type="checkbox"/>	(If yes, immediately deliver to Volatiles laboratory)
8 Samples received within holding time?	<input checked="" type="checkbox"/>			ID's and tests affected:
9 Sample ID's on COC match ID's on bottles?	<input checked="" type="checkbox"/>			Sample ID's and containers affected:
10 Date & time on COC match date & time on bottles?	<input checked="" type="checkbox"/>			Sample ID's affected:
11 Number of containers received match number indicated on COC?	<input checked="" type="checkbox"/>			Sample ID's affected:
12 Are sample containers identifiable as GEL provided?			<input checked="" type="checkbox"/>	
13 COC form is properly signed in relinquished/received sections?	<input checked="" type="checkbox"/>			
14 Carrier and tracking number.				Circle Applicable: <u>FedEx Air</u> FedEx Ground UPS Field Services Courier Other <i>7714 1300 1488 - 2c</i>

Comments (Use Continuation Form if needed):

Laboratory Certifications

List of current GEL Certifications as of 13 October 2014

State	Certification
Alaska	UST-110
Arkansas	88-0651
CLIA	42D0904046
California NELAP	01151CA
Colorado	SC00012
Connecticut	PH-0169
Delaware	SC000122013-10
DoD ELAP/ ISO17025 A2LA	2567.01
Florida NELAP	E87156
Foreign Soils Permit	P330-12-00283, P330-12-00284
Georgia	SC00012
Georgia SDWA	967
Hawaii	SC000122013-10
Idaho Chemistry	SC00012
Idaho Radiochemistry	SC00012
Illinois NELAP	200029
Indiana	C-SC-01
Kansas NELAP	E-10332
Kentucky	90129
Louisiana NELAP	03046 (AI33904)
Louisiana SDWA	LA130005
Maryland	270
Massachusetts	M-SC012
Michigan	9976
Mississippi	SC000122013-10
Nebraska	NE-OS-26-13
Nevada	SC000122014-1
New Hampshire NELAP	2054
New Jersey NELAP	SC002
New Mexico	SC00012
New York NELAP	11501
North Carolina	233
North Carolina SDWA	45709
Oklahoma	9904
Pennsylvania NELAP	68-00485
Plant Material Permit	PDEP-12-00260
South Carolina Chemistry	10120001
South Carolina GVL	23611001
South Carolina Radiochemi	10120002
Tennessee	TN 02934
Texas NELAP	T104704235-14-9
Utah NELAP	SC000122014-14
Vermont	VT87156
Virginia NELAP	460202
Washington	C780-12
Wisconsin	999887790

FID Diesel Range Organics Analysis

Case Narrative

**FID Diesel Range Organics
WC-HANFORD, INC. (WCHN)
SDG XP0143**

Method/Analysis Information

Procedure: Analysis of Diesel Range Organics by Flame Ionization Detector

Analytical Method: NWTPH-Dx in Soil

Prep Method: SW846 3541

Analytical Batch Number: 1425706

Prep Batch Number: 1425704

Sample Analysis

The following samples were analyzed using the analytical protocol as established in NWTPH-Dx in Soil:

Sample ID	Client ID
358495001	J1V0M3
358495002	J1V0M4
358495003	J1V0M5
358495004	J1V0M6
358495005	J1V0M7
358495006	J1V0M8
358495007	J1V0M9
358495008	J1V0N0
358495009	J1V0N1
358495010	J1V0N2
1203183629	MB for batch 1425704
1203183630	Laboratory Control Sample (LCS)
1203183633	358495001(J1V0M3) Matrix Spike (MS)
1203183634	358495001(J1V0M3) Matrix Spike Duplicate (MSD)

The samples in this SDG were analyzed on a "dry weight" basis.

Preparation/Analytical Method Verification

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-OA-E-003 REV# 24.

Raw data reports are processed and reviewed by the analyst using the Chemstation software package. False positives have been removed from the quantitation reports per standard operating procedures (SOP).

Calibration Information

Initial Calibration

All initial calibration requirements have been met for this sample delivery group (SDG).

Continuing Calibration Verification (CCV) Requirements

The associated calibration verification standards (ICV or CCV) bracketing all WCHN environmental samples in SDG XP0143 met the acceptance criteria. Analyte peaks eluted within the established retention time windows for this method.

Quality Control (QC) Information

Method Blank (MB) Statement

The MB analyzed with this SDG met the acceptance criteria.

Surrogate Recoveries

Sample 358495003 (J1V0M5) did not meet surrogate recovery acceptance criteria due to dilution.

Laboratory Control Sample (LCS) Recovery

The LCS spike recoveries met the acceptance limits.

QC Sample Designation

Sample 358495001 (J1V0M3) was selected for the matrix spike and matrix spike duplicate analysis.

Matrix Spike (MS) Recovery Statement

The MS recovery was not within the established acceptance limits due to extraction efficiency issue.

Matrix Spike Duplicate (MSD) Recovery Statement

The MSD recovery was within the established acceptance limits.

MS/MSD Relative Percent Difference (RPD) Statement

The RPD between the MS and MSD met the acceptance limits.

Technical Information

Holding Time Specifications

GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection of sample receipt. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification

All procedures were performed as stated in the SOP. Analyte peaks eluted within the established retention time windows for this method.

Sample Dilutions

Sample 358495003 (J1V0M5) was diluted due to the presence of over-range target analytes.

Sample Re-extraction/Re-analysis

Re-extractions or re-analyses were not required in this SDG.

Miscellaneous Information

Electronic Package Comment

This package was generated using an electronic data processing program referred to as "virtual packaging". In an effort to increase quality and efficiency, the laboratory is developing systems to eventually generate all data packages electronically. The following change from "traditional" packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative.

Data Exception (DER) Documentation

Data exception report (DER) is generated to document procedural anomalies that may deviate from referenced SOP or contractual documents. DER #1342962 was generated for this SDG.

Manual Integrations

Certain standards and samples may have required manual integration to correctly position the baseline as set in the calibration standard injections. If manual integration was performed, copies of all manual integration peak profiles are included in the raw data section of this fraction.

Additional Comments

The additional comments field is used to address special issues associated with each analysis, clarify method/contractual issues pertaining to the analysis, and to list any report documents generated as a result of sample analysis or review. The additional comments were not required.

System Configuration

The Diesel Range Organics analysis was performed on the following instrument configuration:

Instrument ID	Instrument	System Configuration	Column ID	Column Description
FID7.I	Agilent Gas Chromatograph	Agilent 6890N GC/FID	DB-5MS	30m x 0.25mm, 0.25um(J&W)

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

DATA EXCEPTION REPORT

Mo.Day Yr. 11-OCT-14	Division: Federal	Quality Criteria: Specifications	Type: Process
Instrument Type: GC/FID	Test / Method: NWTPH-Dx in Soil	Matrix Type: Solid	Client Code: WCHN
Batch ID: 1425706	Sample Numbers: See Below		

Potentially affected work order(s)(SDG): 358491(XP0142),358495(XP0143)

Application Issues:

- Failed Recovery for MS/PS
- Failed RPD for MS/MSD, or PS/PSD
- Failed Yield for Surrogates

Specification and Requirements Exception Description:	DER Disposition:
<ol style="list-style-type: none"> 1. Sample 358495003 did not meet surrogate recovery acceptance limits. 2. The MS(1203183631) and MSD(1203183632) did not meet spike recovery acceptance limits for diesel range organics and motor oil. Please see the data report for specific failures. 	<ol style="list-style-type: none"> 1. Sample was diluted 1:10 due to over-range target analyte. As a result, the surrogate was diluted out of its acceptance limits. Data were reported. 2. As the MSD exhibited similar(but passing) recoveries, the failures were attributed to matrix interference and the data were reported.

Originator's Name:
Benjamin Taft 11-OCT-14

Data Validator/Group Leader:
Cameron Bearden 13-OCT-14

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Qualifier Definition Report for

WCHN001 WC-HANFORD, INC.

Client SDG: XP0143 GEL Work Order: 358495 Project: RC-074 Soil

The Qualifiers in this report are defined as follows:

D Results are reported from a diluted aliquot of sample.

J The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate). Value is estimated

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.

DL Indicates that sample is diluted.

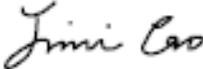
RA Indicates that sample is re-analyzed without re-extraction.

RE Indicates that sample is re-extracted.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: 

Name: Jimin Cao

Date: 17 OCT 2014

Title: Data Validator

Sample Data Summary

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: October 13, 2014

Company : WC-Hanford, Inc.
 Address : 2620 Fermi Avenue
 MSIN H4-21
 Richland, Washington 99354
 Contact: Joan Kessner
 Project: RC-074 Soil

Client SDG: XP0143

Client Sample ID: J1V0M3	Project: WCHN00716
Sample ID: 358495001	Client ID: WCHN001
Matrix: Soil	
Collect Date: 07-OCT-14 08:33	
Receive Date: 08-OCT-14	
Collector: Client	
Moisture: 2.34%	

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Diesel Range Organics											
SW 3541/NWTPH-Dx in Soil "Dry Weight Corrected"											
Diesel Range Organics (C10-C20)		15100	2190	6750	ug/kg	1	BYT1	10/10/14	0426	1425706	1
Motor Oil (C20-C36)		14400	2190	6750	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	3541 DRO IN SOIL PREP	MXD2	10/09/14	1018	1425704

The following Analytical Methods were performed:

Method	Description	Analyst	Result	Nominal	Recovery%	Acceptable Limits
1	NWTPH-Dx in Soil					
Surrogate/Tracer Recovery	Test		Result	Nominal	Recovery%	Acceptable Limits
o-Terphenyl	SW 3541/NWTPH-Dx in Soil "Dry Weight Corrected"		441 ug/kg	675	65.4	(50%-150%)

Notes:

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: October 13, 2014

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354

Contact: Joan Kessner
Project: RC-074 Soil

Client SDG: XP0143

Client Sample ID: J1V0M5
Sample ID: 358495003
Matrix: Soil
Collect Date: 07-OCT-14 08:40
Receive Date: 08-OCT-14
Collector: Client
Moisture: 3.58%

Project: WCHN00716
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Diesel Range Organics											
SW 3541/NWTPH-Dx in Soil "Dry Weight Corrected"											
Diesel Range Organics (C10-C20)	D	293000	22300	68700	ug/kg	10	BYT1	10/10/14	1411	1425706	1
Motor Oil (C20-C36)	D	175000	22300	68700	ug/kg	10					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	3541 DRO IN SOIL PREP	MXD2	10/09/14	1018	1425704

The following Analytical Methods were performed:

Method	Description	Analyst	Comments
1	NWTPH-Dx in Soil		

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
o-Terphenyl	SW 3541/NWTPH-Dx in Soil "Dry Weight Corrected"	0.00 ug/kg	687	0.00*	(50%-150%)

Notes:

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: October 13, 2014

Company : WC-Hanford, Inc.
 Address : 2620 Fermi Avenue
 MSIN H4-21
 Richland, Washington 99354
 Contact: Joan Kessner
 Project: RC-074 Soil

Client SDG: XP0143

Client Sample ID: J1V0M6	Project: WCHN00716
Sample ID: 358495004	Client ID: WCHN001
Matrix: Soil	
Collect Date: 07-OCT-14 08:44	
Receive Date: 08-OCT-14	
Collector: Client	
Moisture: 3.48%	

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Diesel Range Organics											
SW 3541/NWTPH-Dx in Soil "Dry Weight Corrected"											
Diesel Range Organics (C10-C20)	U	2240	2240	6910	ug/kg	1	BYT1	10/10/14	0820	1425706	1
Motor Oil (C20-C36)	J	2530	2240	6910	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	3541 DRO IN SOIL PREP	MXD2	10/09/14	1018	1425704

The following Analytical Methods were performed:

Method	Description	Analyst	Comments
1	NWTPH-Dx in Soil		

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
o-Terphenyl	SW 3541/NWTPH-Dx in Soil "Dry Weight Corrected"	504 ug/kg	691	72.9	(50%-150%)

Notes:

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: October 13, 2014

Company : WC-Hanford, Inc.
 Address : 2620 Fermi Avenue
 MSIN H4-21
 Richland, Washington 99354
 Contact: Joan Kessner
 Project: RC-074 Soil

Client SDG: XP0143

Client Sample ID: J1V0M7	Project: WCHN00716
Sample ID: 358495005	Client ID: WCHN001
Matrix: Soil	
Collect Date: 07-OCT-14 08:48	
Receive Date: 08-OCT-14	
Collector: Client	
Moisture: 1.86%	

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Diesel Range Organics											
SW 3541/NWTPH-Dx in Soil "Dry Weight Corrected"											
Diesel Range Organics (C10-C20)	U	2190	2190	6730	ug/kg	1	BYT1	10/10/14	0859	1425706	1
Motor Oil (C20-C36)		7650	2190	6730	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	3541 DRO IN SOIL PREP	MXD2	10/09/14	1018	1425704

The following Analytical Methods were performed:

Method	Description	Analyst Comments			
1	NWTPH-Dx in Soil				

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
o-Terphenyl	SW 3541/NWTPH-Dx in Soil "Dry Weight Corrected"	501 ug/kg	673	74.4	(50%-150%)

Notes:

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: October 13, 2014

Company : WC-Hanford, Inc.
 Address : 2620 Fermi Avenue
 MSIN H4-21
 Richland, Washington 99354
 Contact: Joan Kessner
 Project: RC-074 Soil

Client SDG: XP0143

Client Sample ID: J1V0M8	Project: WCHN00716
Sample ID: 358495006	Client ID: WCHN001
Matrix: Soil	
Collect Date: 07-OCT-14 08:51	
Receive Date: 08-OCT-14	
Collector: Client	
Moisture: 2.63%	

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Diesel Range Organics											
SW 3541/NWTPH-Dx in Soil "Dry Weight Corrected"											
Diesel Range Organics (C10-C20)	J	3680	2220	6830	ug/kg	1	BYT1	10/10/14	1056	1425706	1
Motor Oil (C20-C36)		11100	2220	6830	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	3541 DRO IN SOIL PREP	MXD2	10/09/14	1018	1425704

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	NWTPH-Dx in Soil	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
o-Terphenyl	SW 3541/NWTPH-Dx in Soil "Dry Weight Corrected"	450 ug/kg	683	65.9	(50%-150%)

Notes:

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Certificate of Analysis

Report Date: October 13, 2014

Company : WC-Hanford, Inc.
 Address : 2620 Fermi Avenue
 MSIN H4-21
 Richland, Washington 99354
 Contact: Joan Kessner
 Project: RC-074 Soil

Client SDG: XP0143

Client Sample ID: J1V0M9	Project: WCHN00716
Sample ID: 358495007	Client ID: WCHN001
Matrix: Soil	
Collect Date: 07-OCT-14 08:56	
Receive Date: 08-OCT-14	
Collector: Client	
Moisture: 1.92%	

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Diesel Range Organics											
SW 3541/NWTPH-Dx in Soil "Dry Weight Corrected"											
Diesel Range Organics (C10-C20)	U	2200	2200	6750	ug/kg	1	BYT1	10/10/14	1135	1425706	1
Motor Oil (C20-C36)	J	5150	2200	6750	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	3541 DRO IN SOIL PREP	MXD2	10/09/14	1018	1425704

The following Analytical Methods were performed:

Method	Description	Analyst Comments			
1	NWTPH-Dx in Soil				

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
o-Terphenyl	SW 3541/NWTPH-Dx in Soil "Dry Weight Corrected"	465 ug/kg	675	68.8	(50%-150%)

Notes:

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Certificate of Analysis

Report Date: October 13, 2014

Company : WC-Hanford, Inc.
Address : 2620 Fermi Avenue
MSIN H4-21
Richland, Washington 99354
Contact: Joan Kessner
Project: RC-074 Soil

Client SDG: XP0143

Client Sample ID: J1V0N0
Sample ID: 358495008
Matrix: Soil
Collect Date: 07-OCT-14 08:59
Receive Date: 08-OCT-14
Collector: Client
Moisture: 2%

Project: WCHN00716
Client ID: WCHN001

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Diesel Range Organics											
SW 3541/NWTPH-Dx in Soil "Dry Weight Corrected"											
Diesel Range Organics (C10-C20)	U	2200	2200	6770	ug/kg	1	BYT1	10/10/14	1214	1425706	1
Motor Oil (C20-C36)	J	3070	2200	6770	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	3541 DRO IN SOIL PREP	MXD2	10/09/14	1018	1425704

The following Analytical Methods were performed:

Method	Description	Analyst	Comments
1	NWTPH-Dx in Soil		

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
o-Terphenyl	SW 3541/NWTPH-Dx in Soil "Dry Weight Corrected"	416 ug/kg	677	61.5	(50%-150%)

Notes:

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Certificate of Analysis

Report Date: October 13, 2014

Company : WC-Hanford, Inc.
 Address : 2620 Fermi Avenue
 MSIN H4-21
 Richland, Washington 99354
 Contact: Joan Kessner
 Project: RC-074 Soil

Client SDG: XP0143

Client Sample ID: J1V0N2	Project: WCHN00716
Sample ID: 358495010	Client ID: WCHN001
Matrix: Soil	
Collect Date: 07-OCT-14 09:06	
Receive Date: 08-OCT-14	
Collector: Client	
Moisture: 6.86%	

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Diesel Range Organics											
SW 3541/NWTPH-Dx in Soil "Dry Weight Corrected"											
Diesel Range Organics (C10-C20)	U	2320	2320	7140	ug/kg	1	BYT1	10/10/14	1332	1425706	1
Motor Oil (C20-C36)	U	2320	2320	7140	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	3541 DRO IN SOIL PREP	MXD2	10/09/14	1018	1425704

The following Analytical Methods were performed:

Method	Description	Analyst	Result	Nominal	Recovery%	Acceptable Limits
1	NWTPH-Dx in Soil					
Surrogate/Tracer Recovery	Test		Result	Nominal	Recovery%	Acceptable Limits
o-Terphenyl	SW 3541/NWTPH-Dx in Soil "Dry Weight Corrected"		357 ug/kg	714	50.0	(50%-150%)

Notes:

Quality Control Summary

GEL LABORATORIES LLC

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QC Summary

Report Date: October 13, 2014

Page 1 of 2

WC-Hanford, Inc.
2620 Fermi Avenue
MSIN H4-21
Richland, Washington
Contact: Joan Kessner

Workorder: 358495

Client SDG: XP0143

Project Description: RC-074 Soil

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Diesel Range Organics											
Batch	1425706										
QC1203183630	LCS										
Diesel Range Organics (C10-C20)	66600			48300	ug/kg		72.4	(70%-130%)	BYT1	10/09/14	20:02
Motor Oil (C20-C36)	66600			55000	ug/kg		82.6	(70%-130%)			
**o-Terphenyl	666			500	ug/kg		75	(50%-150%)			
QC1203183629	MB										
Diesel Range Organics (C10-C20)			U	2160	ug/kg					10/09/14	19:23
Motor Oil (C20-C36)			U	2160	ug/kg						
**o-Terphenyl	666			347	ug/kg		52.1	(50%-150%)			
QC1203183633	358495001 MS										
Diesel Range Organics (C10-C20)	67500	15100		63600	ug/kg		71.9	(70%-130%)		10/10/14	05:05
Motor Oil (C20-C36)	67500	14400		75800	ug/kg		90.9	(70%-130%)			
**o-Terphenyl	675	441		537	ug/kg		79.6	(50%-150%)			
QC1203183634	358495001 MSD										
Diesel Range Organics (C10-C20)	67900	15100		64700	ug/kg	1.76	73.1	(0%-20%)		10/10/14	05:43
Motor Oil (C20-C36)	67900	14400		78400	ug/kg	3.35	94.1	(0%-20%)			
**o-Terphenyl	679	441		523	ug/kg		76.9	(50%-150%)			

Notes:

The Qualifiers in this report are defined as follows:

- A The TIC is a suspected aldol-condensation product
- B The analyte was detected in both the associated QC blank and in the sample.
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of sample.
- E Concentration exceeds the calibration range of the instrument
- J The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate). Value is estimated

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QC Summary

Workorder: 358495

Client SDG: XP0143

Project Description: RC-074 Soil

Page 2 of 2

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
P	Aroclor target analyte with greater than 25% difference between column analyses.										
T	Spike and/or spike duplicate sample recovery is outside control limits.										
U	Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.										
X	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier										
Y	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier										
Z	Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier										
o	Analyte failed to recover within LCS limits (Organics only)										

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.

^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

* Indicates that a Quality Control parameter was not within specifications.

For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Miscellaneous

Prep Logbook

Extraction of Semivolatile and Nonvolatile Organic Compounds from Soil, Sludge, and Other Miscellaneous Solid Samples

Batch ID: 1425704 Verified by: _____
 Analyst: Mia DeLee
 Method: SW846 3541

Lab SOP: GL-OA-E-010 REV# 22
 Instrument: Semi-Volatiles Manual

Sample ID	Run Date	Aliquot (g)	Prepped Aliquot (mL)	Prepped Factor (mL/g)
1203183629 MB	09-OCT-2014 10:18:00	30.04	1	0.03329
1203183630 LCS	09-OCT-2014 10:18:00	30.02	1	0.03331
358491001	09-OCT-2014 10:18:00	30	1	0.03333
1203183631 MS (358491001)	09-OCT-2014 10:18:00	30	1	0.03333
1203183632 MSD (358491001)	09-OCT-2014 10:18:00	30.01	1	0.03332
358491002	09-OCT-2014 10:18:00	30.63	1	0.03265
358491003	09-OCT-2014 10:18:00	30.02	1	0.03331
358491004	09-OCT-2014 10:18:00	30.02	1	0.03331
358491005	09-OCT-2014 10:18:00	30.01	1	0.03332
358491006	09-OCT-2014 10:18:00	30.06	1	0.03327
358491007	09-OCT-2014 10:18:00	30.18	1	0.03313
358491008	09-OCT-2014 10:18:00	30.42	1	0.03287
358495001	09-OCT-2014 10:18:00	30.34	1	0.03296
1203183633 MS (358495001)	09-OCT-2014 10:18:00	30.33	1	0.03297
1203183634 MSD (358495001)	09-OCT-2014 10:18:00	30.14	1	0.03318
358495002	09-OCT-2014 10:18:00	30.03	1	0.0333
358495003	09-OCT-2014 10:18:00	30.18	1	0.03313
358495004	09-OCT-2014 10:18:00	30	1	0.03333
358495005	09-OCT-2014 10:18:00	30.29	1	0.03301
358495006	09-OCT-2014 10:18:00	30.06	1	0.03327
358495007	09-OCT-2014 10:18:00	30.19	1	0.03312
358495008	09-OCT-2014 10:18:00	30.16	1	0.03316
358495009	09-OCT-2014 10:18:00	30.24	1	0.03307
358495010	09-OCT-2014 10:18:00	30.09	1	0.03323

Type	Sample Id	Description	Serial Number	Spike Amt	Units	Comments:
LCS	1203183630	AZDRO SPIKE LCS STD,4000ug/ml	WFI140918-62	1	mL	Final Solvent: CH2Cl2
MS	1203183631	AZDRO SPIKE LCS STD,4000ug/ml	WFI140918-62	1	mL	Verified by: SJW
MS	1203183633	AZDRO SPIKE LCS STD,4000ug/ml	WFI140918-62	1	mL	All samples consisted of a mixture of soil and rocks (large and small).
MSD	1203183632	AZDRO SPIKE LCS STD,4000ug/ml	WFI140918-62	1	mL	
MSD	1203183634	AZDRO SPIKE LCS STD,4000ug/ml	WFI140918-62	1	mL	

Prep Logbook

Batch ID: 1425704
Analyst: Mia DeLee
Method: SW846 3541

Verified by: _____

Lab SOP: GL-OA-E-010 REV# 22
Instrument: Semi-Volatiles Manual

Sample ID	Run Date	Aliquot (g)	Prepped Aliquot (mL)	Prepped Factor (mL/g)	
SURR All	20 ppm surrogate		WE140819-04	1	mL
REGNT All	Methylene Chloride		2165776-D	120	mL
SOURC All	SODIUM SULFATE		2148821	30	g

PCB Analysis

Case Narrative

**PCB Case Narrative
WC-HANFORD, INC. (WCHN)
SDG XP0143**

Method/Analysis Information

Procedure: Analysis of Polychlorinated Biphenyls by ECD
Analytical Method: SW846 3541/8082A
Prep Method: SW846 3541
Analytical Batch Number: 1425709
Prep Batch Number: 1425708

Sample Analysis

The following samples were analyzed using the analytical protocol as established in SW846 3541/8082A:

Sample ID	Client ID
358495001	J1V0M3
358495002	J1V0M4
358495003	J1V0M5
358495004	J1V0M6
358495005	J1V0M7
358495006	J1V0M8
358495007	J1V0M9
358495008	J1V0N0
358495009	J1V0N1
358495010	J1V0N2
1203183635	MB for batch 1425708
1203183636	Laboratory Control Sample (LCS)
1203183639	358495002(J1V0M4) Matrix Spike (MS)
1203183640	358495002(J1V0M4) Matrix Spike Duplicate (MSD)

The samples in this SDG were analyzed on a "dry weight" basis.

Preparation/Analytical Method Verification

SOP Reference

Procedure for preparation, analysis and reporting of analytical data are controlled by GEL Laboratories LLC as Standard Operating Procedure (SOP). The data discussed in this narrative has been analyzed in accordance with GL-OA-E-040 REV# 20.

Raw data reports are processed and reviewed by the analyst using the Chemstation software package. False positives have been removed from the quantitation reports per standard operating procedures (SOP).

Calibration Information

A complete list of the initial calibration data files are shown in the Calibration History report located in the Standard Data section of the data package.

Initial Calibration

All initial calibration requirements have been met for this sample delivery group (SDG).

Continuing Calibration Verification (CCV) Requirements

All associated calibration verification standards (ICV or CCV) met the acceptance criteria. All analytes were within the established retention time windows for this method.

One or more of the five quantified peaks did not meet recovery acceptance criteria in Aroclor-1260 standards analyzed for the samples in this batch; however, the average concentration of the five quantified peaks met the acceptance criteria.

Quality Control (QC) Information

Method Blank (MB) Statement

The MB analyzed with this SDG met the acceptance criteria.

Surrogate Recoveries

All surrogate recoveries were within the established acceptance criteria for the samples in this SDG in this batch.

Laboratory Control Sample (LCS) Recovery

The LCS spike recoveries met the acceptance limits.

QC Sample Designation

Sample 358495002 (J1V0M4) was selected for the matrix spike and matrix spike duplicate analysis.

Matrix Spike (MS) Recovery Statement

The MS recoveries for this SDG were within the established acceptance limits.

Matrix Spike Duplicate (MSD) Recovery Statement

The MSD recoveries for this SDG were within the established acceptance limits.

MS/MSD Relative Percent Difference (RPD) Statement

The RPD between the MS and MSD met the acceptance limits.

Technical Information

Holding Time Specifications

GEL assigns holding times based on the associated methodology, which assigns the date and time from sample collection of sample receipt. Those holding times expressed in hours are calculated in the AlphaLIMS system. Those holding times expressed as days expire at midnight on the day of expiration. All samples in this SDG met the specified holding time.

Preparation/Analytical Method Verification

All procedures were performed as stated in the SOP. All reported analyte detections in client and quality control samples were within the established retention time windows. Reported analyte concentrations were confirmed on dissimilar columns. All sample extracts were cleaned using alumina.

Sample Dilutions

The samples in this SDG in this batch did not require dilutions.

Sample Re-extraction/Re-analysis

Re-extractions or re-analyses were not required in this SDG in this batch.

Miscellaneous Information

Electronic Package Comment

The following package was generated using an electronic data processing program referred to as "virtual packaging". In an effort to increase quality and efficiency, the laboratory is developing systems to eventually generate all data packages electronically. The following change from "traditional" packages should be noted:

Analyst/peer reviewer initials and dates are not present on the electronic data files. Presently, all initials and dates are present on the original raw data. These hard copies are temporarily stored in the laboratory. The data validator will always sign and date the case narrative. Data that are not generated electronically, such as hand written pages, will be scanned and inserted into the electronic package.

Data Exception (DER) Documentation

Data exception report (DER) is generated to document procedural anomalies that may deviate from referenced SOP or contractual documents. A DER was not required for the samples in this SDG in this batch.

Manual Integrations

Certain standards and samples may have required manual integration to correctly position the baseline as set in the calibration standard injections. If manual integration was performed, copies of all manual integration peak profiles are included in the raw data section of this PCB fraction.

Additional Comments

The additional comments field is used to address special issues associated with each analysis, clarify method/contractual issues pertaining to the analysis, and to list any report documents generated as a result of sample analysis or review. The following additional comments were required:

The higher results from either column have been chosen and reported in the data package for the client samples, MB and LCS. The data reported for the MS and MSD are from the same analytical column as the parent sample.

Due to software issue, the surrogate recovery range was not indicated or possibly indicated incorrectly in Quantitation Report. Please see Surrogate Recovery Report for correct surrogate acceptance limits.

Due to rounding differences in the calculation between the forms, the data reported in Sample Summary (form 1) and Spike Recovery Report (form 3) may differ slightly from the data reported in Identification Summary (form 10).

Aroclors quantitated on the raw data report by ChemStation data system do not necessarily represent positive Aroclor identification. In order for positive identification to be made, the Aroclor must match in pattern and retention time; as well as quantitate relatively close between the primary and confirmation columns, as specified in SW846 method 8000. When these conditions are not met, the Aroclor is reported as a non-detect on the data report.

System Configuration

The Semi-Volatiles-PCB analysis was performed on the following instrument configuration:

Instrument ID	Instrument	System Configuration	Column ID	Column Description
----------------------	-------------------	-----------------------------	------------------	---------------------------

ECD9A.I_1	Agilent 7890A Gas Chromatograph/Dual ECD w/ 7693 Autosampler	7890A GC/ECD	Restek Rtx-CLPest 1	30m x 0.25mm, 0.25um
ECD9A.I_2	Agilent 7890A Gas Chromatograph/Dual ECD w/ 7693 Autosampler	7890A GC/ECD	Restek Rtx-CLPest 2	30m x 0.25mm, 0.20um

Certification Statement

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless otherwise noted in the analytical case narrative.

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Qualifier Definition Report for

WCHN001 WC-HANFORD, INC.

Client SDG: XP0143 GEL Work Order: 358495 Project: RC-074 Soil

The Qualifiers in this report are defined as follows:

J The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate). Value is estimated

U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.

DL Indicates that sample is diluted.

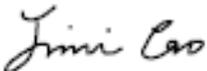
RA Indicates that sample is re-analyzed without re-extraction.

RE Indicates that sample is re-extracted.

Review/Validation

GEL requires all analytical data to be verified by a qualified data reviewer. In addition, all CLP-like deliverables receive a third level review of the fractional data package.

The following data validator verified the information presented in this data report:

Signature: 

Name: Jimin Cao

Date: 17 OCT 2014

Title: Data Validator

Sample Data Summary

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: October 10, 2014

Company : WC-Hanford, Inc.
 Address : 2620 Fermi Avenue
 MSIN H4-21
 Richland, Washington 99354
 Contact: Joan Kessner
 Project: RC-074 Soil

Client SDG: XP0143

Client Sample ID: J1V0M3	Project: WCHN00716
Sample ID: 358495001	Client ID: WCHN001
Matrix: Soil	
Collect Date: 07-OCT-14 08:33	
Receive Date: 08-OCT-14	
Collector: Client	
Moisture: 2.34%	

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB											
SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"											
Aroclor-1016	U	1.14	1.14	3.41	ug/kg	1	YS1	10/09/14	1115	1425709	1
Aroclor-1221	U	1.14	1.14	3.41	ug/kg	1					
Aroclor-1232	U	1.14	1.14	3.41	ug/kg	1					
Aroclor-1242	U	1.14	1.14	3.41	ug/kg	1					
Aroclor-1248	U	1.14	1.14	3.41	ug/kg	1					
Aroclor-1254	U	1.14	1.14	3.41	ug/kg	1					
Aroclor-1260		6.77	1.14	3.41	ug/kg	1					
Aroclor-1262	U	1.14	1.14	3.41	ug/kg	1					
Aroclor-1268		3.62	1.14	3.41	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	AXV1	10/08/14	1714	1425708

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3541/8082A	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"	5.85 ug/kg	6.82	85.9	(29%-106%)
Decachlorobiphenyl	SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"	6.51 ug/kg	6.82	95.5	(25%-131%)

Notes:

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: October 10, 2014

Company : WC-Hanford, Inc.
 Address : 2620 Fermi Avenue
 MSIN H4-21
 Richland, Washington 99354
 Contact: Joan Kessner
 Project: RC-074 Soil

Client SDG: XP0143

Client Sample ID: J1V0M4	Project: WCHN00716
Sample ID: 358495002	Client ID: WCHN001
Matrix: Soil	
Collect Date: 07-OCT-14 08:37	
Receive Date: 08-OCT-14	
Collector: Client	
Moisture: 1.49%	

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB											
SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"											
Aroclor-1016	U	1.12	1.12	3.38	ug/kg	1	YS1	10/09/14	1129	1425709	1
Aroclor-1221	U	1.12	1.12	3.38	ug/kg	1					
Aroclor-1232	U	1.12	1.12	3.38	ug/kg	1					
Aroclor-1242	U	1.12	1.12	3.38	ug/kg	1					
Aroclor-1248	U	1.12	1.12	3.38	ug/kg	1					
Aroclor-1254	U	1.12	1.12	3.38	ug/kg	1					
Aroclor-1260		7.28	1.12	3.38	ug/kg	1					
Aroclor-1262	U	1.12	1.12	3.38	ug/kg	1					
Aroclor-1268	J	3.17	1.12	3.38	ug/kg	1	YS1	10/09/14	1129	1425709	2

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	AXV1	10/08/14	1714	1425708

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3541/8082A	
2	SW846 3541/8082A	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"	4.71 ug/kg	6.76	69.7	(29%-106%)
Decachlorobiphenyl	SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"	5.57 ug/kg	6.76	82.4	(25%-131%)

Notes:

GEL LABORATORIES LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

Certificate of Analysis

Report Date: October 10, 2014

Company : WC-Hanford, Inc.
 Address : 2620 Fermi Avenue
 MSIN H4-21
 Richland, Washington 99354
 Contact: Joan Kessner
 Project: RC-074 Soil

Client SDG: XP0143

Client Sample ID: J1V0M5	Project: WCHN00716
Sample ID: 358495003	Client ID: WCHN001
Matrix: Soil	
Collect Date: 07-OCT-14 08:40	
Receive Date: 08-OCT-14	
Collector: Client	
Moisture: 3.58%	

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB											
SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"											
Aroclor-1016	U	1.15	1.15	3.46	ug/kg	1	YS1	10/09/14	1209	1425709	1
Aroclor-1221	U	1.15	1.15	3.46	ug/kg	1					
Aroclor-1232	U	1.15	1.15	3.46	ug/kg	1					
Aroclor-1242	U	1.15	1.15	3.46	ug/kg	1					
Aroclor-1248	U	1.15	1.15	3.46	ug/kg	1					
Aroclor-1254	U	1.15	1.15	3.46	ug/kg	1					
Aroclor-1260		6.86	1.15	3.46	ug/kg	1					
Aroclor-1262	U	1.15	1.15	3.46	ug/kg	1					
Aroclor-1268	U	1.15	1.15	3.46	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	AXV1	10/08/14	1714	1425708

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3541/8082A	
2	SW846 3541/8082A	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"	4.84 ug/kg	6.91	70.0	(29%-106%)
Decachlorobiphenyl	SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"	5.14 ug/kg	6.91	74.4	(25%-131%)

Notes:

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Certificate of Analysis

Report Date: October 10, 2014

Company : WC-Hanford, Inc.
 Address : 2620 Fermi Avenue
 MSIN H4-21
 Richland, Washington 99354
 Contact: Joan Kessner
 Project: RC-074 Soil

Client SDG: XP0143

Client Sample ID: J1V0M6	Project: WCHN00716
Sample ID: 358495004	Client ID: WCHN001
Matrix: Soil	
Collect Date: 07-OCT-14 08:44	
Receive Date: 08-OCT-14	
Collector: Client	
Moisture: 3.48%	

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB											
SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"											
Aroclor-1016	U	1.15	1.15	3.45	ug/kg	1	YS1	10/09/14	1222	1425709	1
Aroclor-1221	U	1.15	1.15	3.45	ug/kg	1					
Aroclor-1232	U	1.15	1.15	3.45	ug/kg	1					
Aroclor-1242	U	1.15	1.15	3.45	ug/kg	1					
Aroclor-1248	U	1.15	1.15	3.45	ug/kg	1					
Aroclor-1254	U	1.15	1.15	3.45	ug/kg	1					
Aroclor-1260	U	1.15	1.15	3.45	ug/kg	1					
Aroclor-1262	U	1.15	1.15	3.45	ug/kg	1					
Aroclor-1268	U	1.15	1.15	3.45	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	AXV1	10/08/14	1714	1425708

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3541/8082A	
2	SW846 3541/8082A	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"	6.37 ug/kg	6.91	92.2	(29%-106%)
Decachlorobiphenyl	SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"	7.23 ug/kg	6.91	105	(25%-131%)

Notes:

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Certificate of Analysis

Report Date: October 10, 2014

Company : WC-Hanford, Inc.
 Address : 2620 Fermi Avenue
 MSIN H4-21
 Richland, Washington 99354
 Contact: Joan Kessner
 Project: RC-074 Soil

Client SDG: XP0143

Client Sample ID: J1V0M7	Project: WCHN00716
Sample ID: 358495005	Client ID: WCHN001
Matrix: Soil	
Collect Date: 07-OCT-14 08:48	
Receive Date: 08-OCT-14	
Collector: Client	
Moisture: 1.86%	

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB											
SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"											
Aroclor-1016	U	1.13	1.13	3.39	ug/kg	1	YS1	10/09/14	1236	1425709	1
Aroclor-1221	U	1.13	1.13	3.39	ug/kg	1					
Aroclor-1232	U	1.13	1.13	3.39	ug/kg	1					
Aroclor-1242	U	1.13	1.13	3.39	ug/kg	1					
Aroclor-1248	U	1.13	1.13	3.39	ug/kg	1					
Aroclor-1254	U	1.13	1.13	3.39	ug/kg	1					
Aroclor-1260		4.41	1.13	3.39	ug/kg	1					
Aroclor-1262	U	1.13	1.13	3.39	ug/kg	1					
Aroclor-1268	U	1.13	1.13	3.39	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	AXV1	10/08/14	1714	1425708

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3541/8082A	
2	SW846 3541/8082A	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"	5.79 ug/kg	6.77	85.5	(29%-106%)
Decachlorobiphenyl	SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"	6.20 ug/kg	6.77	91.6	(25%-131%)

Notes:

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Certificate of Analysis

Report Date: October 10, 2014

Company : WC-Hanford, Inc.
 Address : 2620 Fermi Avenue
 MSIN H4-21
 Richland, Washington 99354
 Contact: Joan Kessner
 Project: RC-074 Soil

Client SDG: XP0143

Client Sample ID: J1V0M8	Project: WCHN00716
Sample ID: 358495006	Client ID: WCHN001
Matrix: Soil	
Collect Date: 07-OCT-14 08:51	
Receive Date: 08-OCT-14	
Collector: Client	
Moisture: 2.63%	

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB											
SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"											
Aroclor-1016	U	1.14	1.14	3.41	ug/kg	1	YS1	10/09/14	1249	1425709	1
Aroclor-1221	U	1.14	1.14	3.41	ug/kg	1					
Aroclor-1232	U	1.14	1.14	3.41	ug/kg	1					
Aroclor-1242	U	1.14	1.14	3.41	ug/kg	1					
Aroclor-1248	U	1.14	1.14	3.41	ug/kg	1					
Aroclor-1254	U	1.14	1.14	3.41	ug/kg	1					
Aroclor-1262	U	1.14	1.14	3.41	ug/kg	1					
Aroclor-1260		17.1	1.14	3.41	ug/kg	1	YS1	10/09/14	1249	1425709	2
Aroclor-1268		14.7	1.14	3.41	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	AXV1	10/08/14	1714	1425708

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3541/8082A	
2	SW846 3541/8082A	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"	5.90 ug/kg	6.82	86.5	(29%-106%)
Decachlorobiphenyl	SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"	6.53 ug/kg	6.82	95.7	(25%-131%)

Notes:

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Report Date: October 10, 2014

Company : WC-Hanford, Inc.
 Address : 2620 Fermi Avenue
 MSIN H4-21
 Richland, Washington 99354
 Contact: Joan Kessner
 Project: RC-074 Soil

Client SDG: XP0143

Client Sample ID: J1V0M9	Project: WCHN00716
Sample ID: 358495007	Client ID: WCHN001
Matrix: Soil	
Collect Date: 07-OCT-14 08:56	
Receive Date: 08-OCT-14	
Collector: Client	
Moisture: 1.92%	

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB											
SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"											
Aroclor-1016	U	1.13	1.13	3.39	ug/kg	1	YS1	10/09/14	1325	1425709	1
Aroclor-1221	U	1.13	1.13	3.39	ug/kg	1					
Aroclor-1232	U	1.13	1.13	3.39	ug/kg	1					
Aroclor-1242	U	1.13	1.13	3.39	ug/kg	1					
Aroclor-1248	U	1.13	1.13	3.39	ug/kg	1					
Aroclor-1254	U	1.13	1.13	3.39	ug/kg	1					
Aroclor-1262	U	1.13	1.13	3.39	ug/kg	1					
Aroclor-1268	U	1.13	1.13	3.39	ug/kg	1					
Aroclor-1260		4.50	1.13	3.39	ug/kg	1	YS1	10/09/14	1325	1425709	2

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	AXV1	10/08/14	1714	1425708

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3541/8082A	
2	SW846 3541/8082A	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"	6.17 ug/kg	6.79	90.8	(29%-106%)
Decachlorobiphenyl	SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"	7.03 ug/kg	6.79	104	(25%-131%)

Notes:

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Certificate of Analysis

Report Date: October 10, 2014

Company : WC-Hanford, Inc.
 Address : 2620 Fermi Avenue
 MSIN H4-21
 Richland, Washington 99354
 Contact: Joan Kessner
 Project: RC-074 Soil

Client SDG: XP0143

Client Sample ID: J1V0N0	Project: WCHN00716
Sample ID: 358495008	Client ID: WCHN001
Matrix: Soil	
Collect Date: 07-OCT-14 08:59	
Receive Date: 08-OCT-14	
Collector: Client	
Moisture: 2%	

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB											
SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"											
Aroclor-1016	U	1.13	1.13	3.39	ug/kg	1	YS1	10/09/14	1339	1425709	1
Aroclor-1221	U	1.13	1.13	3.39	ug/kg	1					
Aroclor-1232	U	1.13	1.13	3.39	ug/kg	1					
Aroclor-1242	U	1.13	1.13	3.39	ug/kg	1					
Aroclor-1248	U	1.13	1.13	3.39	ug/kg	1					
Aroclor-1254	U	1.13	1.13	3.39	ug/kg	1					
Aroclor-1260	J	1.59	1.13	3.39	ug/kg	1					
Aroclor-1262	U	1.13	1.13	3.39	ug/kg	1					
Aroclor-1268	U	1.13	1.13	3.39	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	AXV1	10/08/14	1714	1425708

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3541/8082A	
2	SW846 3541/8082A	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"	5.26 ug/kg	6.78	77.6	(29%-106%)
Decachlorobiphenyl	SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"	5.91 ug/kg	6.78	87.1	(25%-131%)

Notes:

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Certificate of Analysis

Report Date: October 10, 2014

Company : WC-Hanford, Inc.
 Address : 2620 Fermi Avenue
 MSIN H4-21
 Richland, Washington 99354
 Contact: Joan Kessner
 Project: RC-074 Soil

Client SDG: XP0143

Client Sample ID: J1V0N1	Project: WCHN00716
Sample ID: 358495009	Client ID: WCHN001
Matrix: Soil	
Collect Date: 07-OCT-14 09:03	
Receive Date: 08-OCT-14	
Collector: Client	
Moisture: 4.85%	

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB											
SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"											
Aroclor-1016	U	1.16	1.16	3.49	ug/kg	1	YS1	10/09/14	1352	1425709	1
Aroclor-1221	U	1.16	1.16	3.49	ug/kg	1					
Aroclor-1232	U	1.16	1.16	3.49	ug/kg	1					
Aroclor-1242	U	1.16	1.16	3.49	ug/kg	1					
Aroclor-1248	U	1.16	1.16	3.49	ug/kg	1					
Aroclor-1254	U	1.16	1.16	3.49	ug/kg	1					
Aroclor-1260	U	1.16	1.16	3.49	ug/kg	1					
Aroclor-1262	U	1.16	1.16	3.49	ug/kg	1					
Aroclor-1268	U	1.16	1.16	3.49	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	AXV1	10/08/14	1714	1425708

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3541/8082A	
2	SW846 3541/8082A	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"	6.33 ug/kg	6.99	90.5	(29%-106%)
Decachlorobiphenyl	SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"	7.51 ug/kg	6.99	108	(25%-131%)

Notes:

GEL LABORATORIES LLC

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Certificate of Analysis

Report Date: October 10, 2014

Company : WC-Hanford, Inc.
 Address : 2620 Fermi Avenue
 MSIN H4-21
 Richland, Washington 99354
 Contact: Joan Kessner
 Project: RC-074 Soil

Client SDG: XP0143

Client Sample ID: J1V0N2	Project: WCHN00716
Sample ID: 358495010	Client ID: WCHN001
Matrix: Soil	
Collect Date: 07-OCT-14 09:06	
Receive Date: 08-OCT-14	
Collector: Client	
Moisture: 6.86%	

Parameter	Qualifier	Result	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Semi-Volatiles-PCB											
SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"											
Aroclor-1016	U	1.19	1.19	3.57	ug/kg	1	YS1	10/09/14	1405	1425709	1
Aroclor-1221	U	1.19	1.19	3.57	ug/kg	1					
Aroclor-1232	U	1.19	1.19	3.57	ug/kg	1					
Aroclor-1242	U	1.19	1.19	3.57	ug/kg	1					
Aroclor-1248	U	1.19	1.19	3.57	ug/kg	1					
Aroclor-1254	U	1.19	1.19	3.57	ug/kg	1					
Aroclor-1260	U	1.19	1.19	3.57	ug/kg	1					
Aroclor-1262	U	1.19	1.19	3.57	ug/kg	1					
Aroclor-1268	U	1.19	1.19	3.57	ug/kg	1					

The following Prep Methods were performed:

Method	Description	Analyst	Date	Time	Prep Batch
SW846 3541	Prep Method 3541 PCB Prep Soil	AXV1	10/08/14	1714	1425708

The following Analytical Methods were performed:

Method	Description	Analyst Comments
1	SW846 3541/8082A	
2	SW846 3541/8082A	

Surrogate/Tracer Recovery	Test	Result	Nominal	Recovery%	Acceptable Limits
4cmx	SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"	6.60 ug/kg	7.13	92.5	(29%-106%)
Decachlorobiphenyl	SW846 3541/8082A PCB - 3 day TAT "Dry Weight Corrected"	7.95 ug/kg	7.13	112	(25%-131%)

Notes:

Quality Control Summary

GEL LABORATORIES LLC

2040 Savage Road Charleston, SC 29407 - (843) 556-8171 - www.gel.com

QC Summary

Report Date: October 10, 2014

Page 1 of 2

WC-Hanford, Inc.
2620 Fermi Avenue
MSIN H4-21
Richland, Washington
Contact: Joan Kessner

Workorder: 358495

Client SDG: XP0143

Project Description: RC-074 Soil

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatiles-PCB											
Batch	1425709										
QC1203183636	LCS										
Aroclor-1016	33.3			23.9	ug/kg		71.9	(44%-97%)	YS1	10/09/14	08:27
Aroclor-1260	33.3			23.6	ug/kg		71	(49%-109%)			
**4cmx	6.66			5.31	ug/kg		79.7	(29%-106%)			
**Decachlorobiphenyl	6.66			6.18	ug/kg		92.7	(25%-131%)			
QC1203183635	MB										
Aroclor-1016			U	1.11	ug/kg					10/09/14	08:16
Aroclor-1221			U	1.11	ug/kg						
Aroclor-1232			U	1.11	ug/kg						
Aroclor-1242			U	1.11	ug/kg						
Aroclor-1248			U	1.11	ug/kg						
Aroclor-1254			U	1.11	ug/kg						
Aroclor-1260			U	1.11	ug/kg						
Aroclor-1262			U	1.11	ug/kg						
Aroclor-1268			U	1.11	ug/kg						
**4cmx	6.65			5.40	ug/kg		81.2	(29%-106%)			
**Decachlorobiphenyl	6.65			6.40	ug/kg		96.2	(25%-131%)			
QC1203183639	358495002	MS									
Aroclor-1016	33.8	U	1.12	21.8	ug/kg		64.3	(22%-127%)		10/09/14	11:42
Aroclor-1260	33.8		7.28	33.0	ug/kg		76.1	(18%-130%)			
**4cmx	6.76		4.71	4.97	ug/kg		73.5	(29%-106%)			
**Decachlorobiphenyl	6.76		5.57	5.84	ug/kg		86.3	(25%-131%)			

GEL LABORATORIES LLC

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QC Summary

Workorder: 358495

Client SDG: XP0143

Project Description: RC-074 Soil

Page 2 of 2

Parmname	NOM	Sample	Qual	QC	Units	RPD%	REC%	Range	Anlst	Date	Time
Semi-Volatiles-PCB											
Batch	1425709										
QC1203183640	358495002	MSD									
Aroclor-1016	33.8	U	1.12	20.1	ug/kg	8.09	59.4	(0%-30%)	YS1	10/09/14	11:55
Aroclor-1260	33.8		7.28	26.1	ug/kg	23.6	55.6	(0%-30%)			
**4cmx	6.76		4.71	4.54	ug/kg		67.2	(29%-106%)			
**Decachlorobiphenyl	6.76		5.57	5.32	ug/kg		78.8	(25%-131%)			

Notes:

The Qualifiers in this report are defined as follows:

- A The TIC is a suspected aldol-condensation product
- B The analyte was detected in both the associated QC blank and in the sample.
- C Analyte has been confirmed by GC/MS analysis
- D Results are reported from a diluted aliquot of sample.
- E Concentration exceeds the calibration range of the instrument
- J The analyte was detected at a value less than the contract required detection limit (RDL), but greater than or equal to the IDL/MDL (as appropriate). Value is estimated
- P Aroclor target analyte with greater than 25% difference between column analyses.
- T Spike and/or spike duplicate sample recovery is outside control limits.
- U Analyzed for but not detected above limiting criteria. Includes MDL, MDA, PQL, zero, counting error, and total analytical error.
- X Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Y Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- Z Consult Case Narrative, Data Summary package, or Project Manager concerning this qualifier
- o Analyte failed to recover within LCS limits (Organics only)

N/A indicates that spike recovery limits do not apply when sample concentration exceeds spike conc. by a factor of 4 or more or %RPD not applicable.
 ^ The Relative Percent Difference (RPD) obtained from the sample duplicate (DUP) is evaluated against the acceptance criteria when the sample is greater than five times (5X) the contract required detection limit (RL). In cases where either the sample or duplicate value is less than 5X the RL, a control limit of +/- the RL is used to evaluate the DUP result.

* Indicates that a Quality Control parameter was not within specifications.
 For PS, PSD, and SDILT results, the values listed are the measured amounts, not final concentrations.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the QC Summary.

Miscellaneous

Prep Logbook

Automated Soxhlet Extraction

Batch ID: 1425708 Verified by: _____
 Analyst: Alberto Velasco
 Method: SW846 3541

Lab SOP: GL-OA-E-066 REV# 5
 Instrument: Semi-Volatiles Manual

Sample ID	Run Date	Aliquot (g)	Clean Up 1 Amount 1 (mL)	Clean Up Post Clean Up Amount 1 (mL)	Final Volume (mL)	Prepped Factor (mL/g)
1203183635 MB	08-OCT-2014 17:14:00	30.06	H2SO4/KM 2 nO4	9	1	0.03327
1203183636 LCS	08-OCT-2014 17:14:00	30.02	H2SO4/KM 2 nO4	9	1	0.03331
358491001	08-OCT-2014 17:14:00	30.04	H2SO4/KM 2 nO4	9	1	0.03329
358491002	08-OCT-2014 17:14:00	30.08	H2SO4/KM 2 nO4	9	1	0.03324
1203183637 MS (358491002)	08-OCT-2014 17:14:00	30.01	H2SO4/KM 2 nO4	9	1	0.03332
1203183638 MSD (358491002)	08-OCT-2014 17:14:00	30.03	H2SO4/KM 2 nO4	9	1	0.0333
358491003	08-OCT-2014 17:14:00	30.08	H2SO4/KM 2 nO4	9	1	0.03324
358491004	08-OCT-2014 17:14:00	30.12	H2SO4/KM 2 nO4	9	1	0.0332
358491005	08-OCT-2014 17:14:00	30.02	H2SO4/KM 2 nO4	9	1	0.03331
358491006	08-OCT-2014 17:14:00	30.01	H2SO4/KM 2 nO4	9	1	0.03332
358491007	08-OCT-2014 17:14:00	30.03	H2SO4/KM 2 nO4	9	1	0.0333
358491008	08-OCT-2014 17:14:00	30.06	H2SO4/KM 2 nO4	9	1	0.03327
358495001	08-OCT-2014 17:14:00	30.04	H2SO4/KM 2 nO4	9	1	0.03329
358495002	08-OCT-2014 17:14:00	30.05	H2SO4/KM 2 nO4	9	1	0.03328
1203183639 MS (358495002)	08-OCT-2014 17:14:00	30.01	H2SO4/KM 2 nO4	9	1	0.03332
1203183640 MSD (358495002)	08-OCT-2014 17:14:00	30.04	H2SO4/KM 2 nO4	9	1	0.03329
358495003	08-OCT-2014 17:14:00	30.01	H2SO4/KM 2 nO4	9	1	0.03332
358495004	08-OCT-2014 17:14:00	30.01	H2SO4/KM 2 nO4	9	1	0.03332
358495005	08-OCT-2014 17:14:00	30.09	H2SO4/KM 2 nO4	9	1	0.03323
358495006	08-OCT-2014 17:14:00	30.1	H2SO4/KM 2 nO4	9	1	0.03322
358495007	08-OCT-2014 17:14:00	30.04	H2SO4/KM 2 nO4	9	1	0.03329
358495008	08-OCT-2014 17:14:00	30.1	H2SO4/KM 2 nO4	9	1	0.03322
358495009	08-OCT-2014 17:14:00	30.08	H2SO4/KM 2 nO4	9	1	0.03324
358495010	08-OCT-2014 17:14:00	30.11	H2SO4/KM 2 nO4	9	1	0.03321

Prep Logbook

Batch ID: 1425708
Analyst: Alberto Velasco
Method: SW846 3541

Verified by: _____

Lab SOP: GL-OA-E-066 REV# 5
Instrument: Semi-Volatiles Manual

Sample ID	Run Date	Aliquot (g)	Clean Up 1 Amount 1 (mL)	Clean Up Amount 1 (mL)	Post Clean Up Amount 1 (mL)	Final Volume (mL)	Prepped Factor (mL/g)
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Type	Sample Id	Description	Serial Number	Spike Amt	Units	Comments:
LCS	1203183636	PCB Laboratory Control	WE141001-06	1	mL	Final Solvent: Hexane Clean up Initials: AV Verified By: SJW Clean up SOP: GL-OA-E-037 Clean up Date: 10-8-14
MS	1203183637	PCB Laboratory Control	WE141001-06	1	mL	
MS	1203183639	PCB Laboratory Control	WE141001-06	1	mL	
MSD	1203183638	PCB Laboratory Control	WE141001-06	1	mL	
MSD	1203183640	PCB Laboratory Control	WE141001-06	1	mL	
SURR	All	PEST LOW LEVEL SURROGATE 200 UG/L	WE140922-01	1	mL	
REGNT	All	5% Potassium Permanganate	2159385	5	mL	
REGNT	All	1:1 sulfuric acid	2159476	5	mL	
REGNT	All	Hexane	2160260-B10	120	mL	
SOURC	All	SODIUM SULFATE	2148821	30	g	