Notice of Completion Report
COGCC Spill/Release Tracking #2221810
PDC Energy Puckett 34B-7 (Mesa 4) Well Pad
Garfield County Colorado

Prepared For:

PDC ENERGY

PDC Energy
120 Railroad Avenue, Suite D
Parachute, Colorado 81635
Phone: 970-285-9606

Prepared By:

HCSI
ENVIRONMENTAL CONSULTANTS

HRL Compliance Solutions, Inc.
2385 F1/2 Road
Grand Junction, Colorado 81505
Phone: 970-243-3271

Prepared July, 2012

Table of Contents

Tables

Figures

Appendices

Introduction

The purpose of this Notice of Completion report is to provide detailed information and analysis for the remediation of a flow back water release at the PDC Puckett 34B-7 (COGCC API Number 05-045-10274; hereinafter also referred to as the Mesa 4) well pad. This report will provide the documentation necessary to demonstrate a comprehensive and diligent investigation of the impacted soil and adjacent environment. All information described was obtained in accordance with all appropriate county, state, and federal rules and regulations.

The subject release occurred on October 25, 2011 (COGCC Spill/Release Tracking #2221810). All impacted media was isolated to the well pad. None of the released fluids left the well pad and no waters or wildlife were impacted by the release. Natural attenuation reduced the hydrocarbon concentrations to below COGCC Table 910-1 standards for soils before a remediation plan could be put into place. Confirmation samples were collected and submitted to an accredited analytical laboratory on April 11, 2012. Information in this report includes, but is not limited to, initial investigation, site characterization, field screening results, and laboratory analytical.

Impacted Soil Investigation and Activities

Impacted soils examined within and around the spill areas were inspected visually and through the use of specialized field screen equipment (PID and PetroFlag™ hydrocarbon test unit). Refer to Figure 2 for a photograph of the spill area during the initial investigation. The field screen equipment was utilized to identify areas which may exceed standards set forth in Table 910-1 of the COGCC 900 Series Rule for hydrocarbons in soil. See Table 1 for initial investigation field screen data.

Table 1: Initial Investigation Field Screen Data

Sample ID	PetroFlag™ (ppm)
October 2011 Release	3,240

**Highlighted numbers indicate elevated readings

Field screen results indicated that remediation was required due to TPH concentrations being above COGCC Table 910-1 standards. The release could not be fully characterized at the time of the initial investigation due to tanks being utilized for fracing operations located over the spill area.

Full site characterization was conducted upon removal of the frac tanks and when weather conditions would allow. The site characterization occurred on April 11, 2012. Seven (7) soil borings were advanced into the suspected impacted area to determine the lateral and vertical extent of the impact. The soil borings were advanced to a depth of zero (0) to approximately three (3) feet below the ground surface.

Field screen readings collected from each of the seven (7) soil borings were below COGCC Table 910-1 allowable standards for soil. Refer to Table 2 for field screen results.

Table 2: Confirmation Field Screen Data

Sample ID	PID (ppm)	PetroFlag™ (ppm)
BH 3	0.5	
BH 4	0.7	243
BH 5	0.6	
BH 6	0.4	
BH 7	1.5	153
BH 8	0.5	
BH 9	0.4	

Two (2) confirmation samples were collected and analyzed for COGCC Table 910-1 parameters.

- The confirmation samples were collected for confirmation of compliance with COGCC Rule 910 and Table 910-1, as well as verification of field screen results;
- A Trimble GPS unit was utilized to satisfy requirements outlined in COGCC Rule 215 for collecting GPS locations of each confirmation sample location from the impacted area;
- Visual inspection of the impacted area, field screening techniques, and sampling procedures were followed in accordance with PDC Energy.

Analytical data presented in the attached Table 3 provides results for the confirmation sampling performed within the impacted area. See Appendix A for raw analytical data.

It was determined that natural attenuation had reduced hydrocarbon levels to below COGCC Table 910-1 allowable standards before a remediation plan could be implemented. Refer to Figure 1 for a GIS map of the spill area as well as confirmation and background sample locations.

Background Sampling

Three (3) background samples were collected from the up-gradient, undisturbed hillside adjacent to the pad. All background samples were analyzed for arsenic. An additional analysis was conducted at one sample location for inorganic parameters of COGCC Table 910-1 (SAR, EC, pH). Refer to Table 4 for background sampling results.

Exceptions to the COGCC Table 910-1

The only exceedances with the COGCC Table 910-1 are within the confines of constituents listed for metals (arsenic). Refer to Appendix C for the Sundry Notice for consideration of background arsenic concentrations in the immediate area of the release.

Analytical Data Management

See Appendix A for confirmation sample analytical data and Appendix B for background analytical data.

Figures

Figure 1: GIS Map of Release Area and Sample Locations

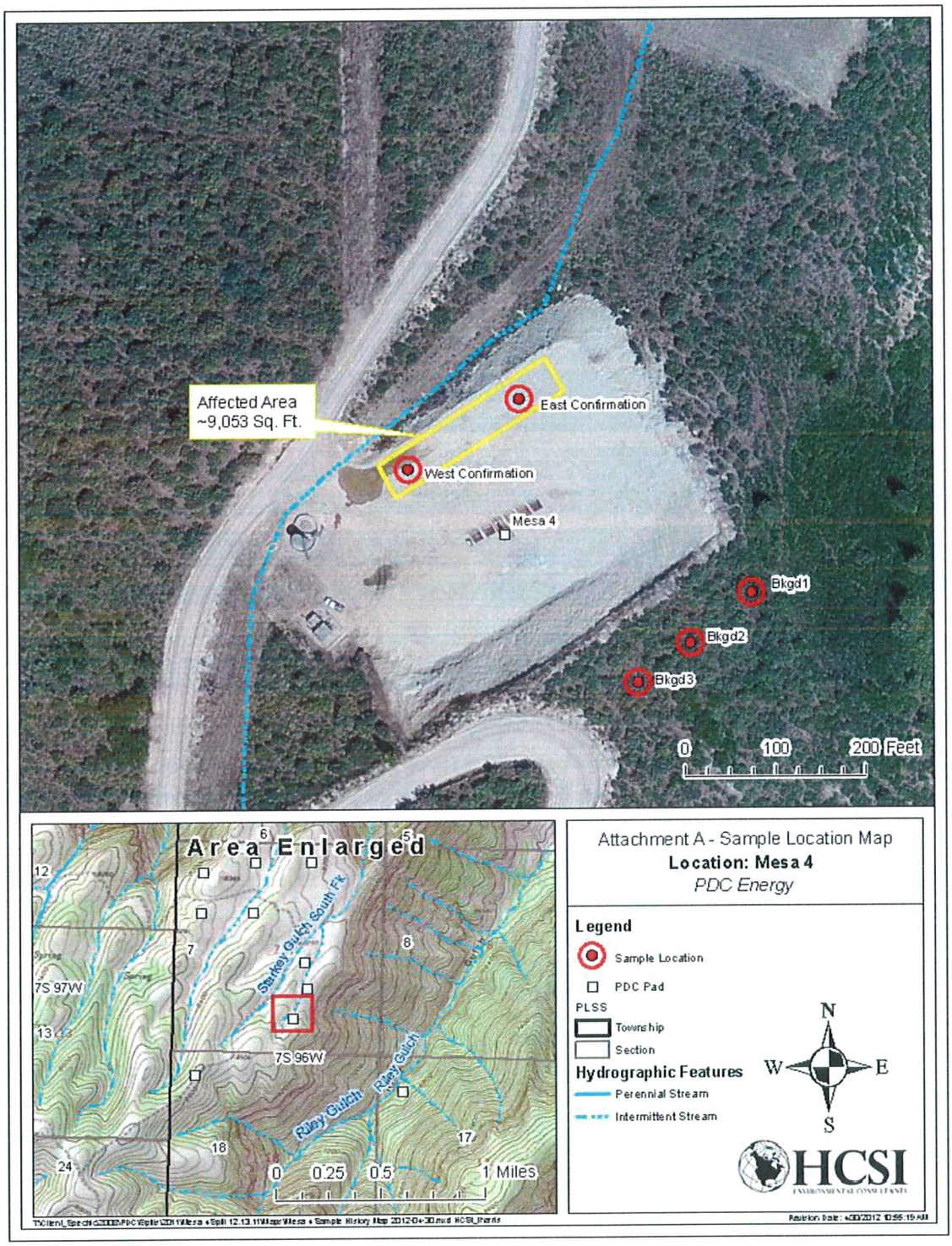


Figure 2: Photograph of Spill Area

Photograph of the October 2011 release during the initial investigation.

Tables

Table 3: Confirmation Sample Analytical Results

Spill Area, West	Confirmation
TEPH (DRO)	22
TVPH (GRO)	ND
BENZENE	ND
TOLUENE	ND
ETHYLBENZENE	ND
XYLENE TOTAL	ND
ACENAPHTHENE	ND
ACENAPHTHYLENE	ND
ANTHRACENE	0.065
BENZO(A)ANTRHACENE	ND
BENZO(A)PYRENE	ND
BENZO(B)FLUORANTHENE	ND
BENZO(G,H,I)PERYLENE	ND
BENZO(K)FLUORANTHENE	ND
CHRYSENE	ND
DIBENZO(A,H)ANTHRANCENE	ND
FLUORANTHENE	0.078
FLUORENE	ND
INDENO(1,2,3-CD)PYRENE	ND
NAPHTHALENE	ND
PYRENE	0.067
MERCURY	0.030
ARSENIC	7.5
BARIUM	310
CADMIUM	0.39
CHROMIUM	44
CHROMIUM (III)	44
CHROMIUM (IV)	ND
COPPER	22
LEAD	18
NICKEL	25
SELENIUM	1.2
SILVER	ND
ZINC	59
Sodium Absorption Ratio (unitless)	5.0
Electric Conductivity (mmho/cm)	0.17
pH (unitless)	8.61

Spill Area, East	Confirmation
TEPH (DRO)	28
TVPH (GRO)	ND
BENZENE	ND
TOLUENE	ND
ETHYLBENZENE	ND
XYLENE TOTAL	ND
ACENAPHTHENE	ND
ACENAPHTHYLENE	ND
ANTHRACENE	0.067
BENZO(A)ANTRHACENE	0.026
BENZO(A)PYRENE	ND
BENZO(B)FLUORANTHENE	ND
BENZO(G,H,I)PERYLENE	ND
BENZO(K)FLUORANTHENE	ND
CHRYSENE	0.037
DIBENZO(A,H)ANTHRANCENE	ND
FLUORANTHENE	0.099
FLUORENE	ND
INDENO(1,2,3-CD)PYRENE	ND
NAPHTHALENE	ND
PYRENE	0.078
MERCURY	0.028
ARSENIC	6.6
BARIUM	310
CADMIUM	0.42
CHROMIUM	38
CHROMIUM (III)	38
CHROMIUM (IV)	ND
COPPER	21
LEAD	16
NICKEL	24
SELENIUM	1.1
SILVER	ND
ZINC	60
Sodium Absorption Ratio (unitless)	10.1
Electric Conductivity (mmho/cm)	1.40
pH (unitless)	8.69

Note: all results are in, mg/kg = milligram per kilogram, unless noted
**highlighted numbers indicate elevated readings

Table 4: Background Sample Analytical Results

Sample ID	Arsenic (mg/kg)	Sodium Absorption Ratio (unitless)	Electric Conductivity (mmho/cm)	pH (unitless)
Background 1	5.7	0.6	0.48	7.41
Background 2	7.4			
Background 3	7.2			

**highlighted numbers indicate elevated readings

Appendices

Appendix A: Confirmation Analytical Data

ALS Environmental

22-May-2012

Herman Lucero
HRL Compliance Solutions
744 Horizon Ct. Suite 140
Grand Junction, CO 81506

Re: **PDC Mesa 4 Confirmation 11-273-3 4/11/12** Work Order: **1204357**

Dear Herman,

ALS Environmental received 3 samples on 13-Apr-2012 10:30 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

QC sample results for this data met laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 29.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

Ann Preston

Electronically approved by: Ann Preston

Ann Preston
Project Manager

ACCREDITED IN ACCORDANCE WITH nelac
Certificate No: MN331938

ALS Group USA, Corp

Date: 22-May-12

Client: HRL Compliance Solutions
Project: PDC Mesa 4 Confirmation 11-273-3 4/11/12
Work Order: **1204357**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1204357-01	Spill 1	Soil		4/11/2012 11:40	4/13/2012 10:30	☑
1204357-02	Spill 2, East	Soil		4/11/2012 12:10	4/13/2012 10:30	☐
1204357-03	Spill 2, West	Soil		4/11/2012 13:00	4/13/2012 10:30	☐

Client: HRL Compliance Solutions
Project: PDC Mesa 4 Confirmation 11-273-3 4/11/12
Work Order: 1204357

Case Narrative

Batch 40490 sample Spill 2, West MS/MSD recoveries for Barium and MSD recovery for Zinc were below control limits, however, the results in the parent sample were greater than 4x the spiked amount. No qualification is required for Barium and Zinc. The MS/MSD recoveries for Selenium and Silver were below control limits. The results for Selenium and Silver in the parent sample may be biased low due to matrix interference. The MSD recoveries for Arsenic, Copper and Nickel were below control limits. Both the MS recoveries and RPDs met quality control limits. No data requires qualification for these elements.

Batch R103608 MS/MSD data for Volatiles is not related to this project's samples.

ALS Group USA, Corp

Date: 22-May-12

Client: HRL Compliance Solutions
Project: PDC Mesa 4 Confirmation 11-273-3 4/11/12
WorkOrder: 1204357

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
SD	Serial Dilution
TDL	Target Detection Limit

Units Reported	Description
% of sample	Percent of Sample
µg/Kg-dry	Micrograms per Kilogram Dry Weight
as noted	
mg/Kg-dry	Milligrams per Kilogram Dry Weight
s.u.	Standard Units

ALS Group USA, Corp

Date: *22-May-12*

Client: HRL Compliance Solutions
Project: PDC Mesa 4 Confirmation 11-273-3 4/11/12
Sample ID: Spill 2, East
Collection Date: 4/11/2012 12:10 PM

Work Order: 1204357
Lab ID: 1204357-02
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			**SW8015M**		Prep Date: **4/18/2012**	Analyst: **RM**
DRO (C10-C28)	**28**		**5.2**	**mg/Kg-dry**	1	4/19/2012 06:23 PM
Surr: 4-Terphenyl-d14	*75.9*		*39-115*	*%REC*	1	4/19/2012 06:23 PM
GASOLINE RANGE ORGANICS BY GC-FID			**SW8015**			Analyst: **RM**
GRO (C6-C10)	ND		3.2	mg/Kg-dry	50	4/17/2012 07:25 PM
Surr: Toluene-d8	*103*		*50-150*	*%REC*	50	4/17/2012 07:25 PM
MERCURY BY CVAA			**SW7471**		Prep Date: **4/16/2012**	Analyst: **LR**
Mercury	**0.028**		**0.023**	**mg/Kg-dry**	1	4/17/2012 11:01 AM
METALS BY ICP-MS			**SW6020A**		Prep Date: **4/16/2012**	Analyst: **RH**
Arsenic	**6.6**		**0.89**	**mg/Kg-dry**	2	4/18/2012 02:06 AM
Barium	**310**		**8.9**	**mg/Kg-dry**	20	4/18/2012 05:32 PM
Cadmium	**0.42**		**0.35**	**mg/Kg-dry**	2	4/18/2012 02:06 AM
Chromium	**38**		**0.89**	**mg/Kg-dry**	2	4/18/2012 02:06 AM
Copper	**21**		**0.89**	**mg/Kg-dry**	2	4/18/2012 02:06 AM
Lead	**16**		**0.89**	**mg/Kg-dry**	2	4/18/2012 02:06 AM
Nickel	**24**		**0.89**	**mg/Kg-dry**	2	4/18/2012 02:06 AM
Selenium	**1.1**		**0.89**	**mg/Kg-dry**	2	4/18/2012 02:06 AM
Silver	ND		0.89	mg/Kg-dry	2	4/18/2012 02:06 AM
Zinc	**60**		**1.8**	**mg/Kg-dry**	2	4/18/2012 02:06 AM
SUBCONTRACTED ANALYSES			**SUBCONTRACT**			Analyst: **A&LGL**
Subcontracted Analyses	**Rcvd 4/19/12**			**as noted**	1	4/19/2012
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW8270**		Prep Date: **4/18/2012**	Analyst: **HL**
Acenaphthene	ND		19	µg/Kg-dry	1	4/19/2012 12:25 PM
Anthracene	**67**		**19**	**µg/Kg-dry**	1	4/19/2012 12:25 PM
Benzo(a)anthracene	**26**		**25**	**µg/Kg-dry**	1	4/19/2012 12:25 PM
Benzo(a)pyrene	ND		25	µg/Kg-dry	1	4/19/2012 12:25 PM
Benzo(b)fluoranthene	ND		25	µg/Kg-dry	1	4/19/2012 12:25 PM
Benzo(g,h,i)perylene	ND		37	µg/Kg-dry	1	4/19/2012 12:25 PM
Benzo(k)fluoranthene	ND		25	µg/Kg-dry	1	4/19/2012 12:25 PM
Chrysene	**37**		**19**	**µg/Kg-dry**	1	4/19/2012 12:25 PM
Dibenzo(a,h)anthracene	ND		22	µg/Kg-dry	1	4/19/2012 12:25 PM
Fluoranthene	**99**		**19**	**µg/Kg-dry**	1	4/19/2012 12:25 PM
Fluorene	ND		19	µg/Kg-dry	1	4/19/2012 12:25 PM
Indeno(1,2,3-cd)pyrene	ND		25	µg/Kg-dry	1	4/19/2012 12:25 PM
Naphthalene	ND		19	µg/Kg-dry	1	4/19/2012 12:25 PM
Pyrene	**78**		**25**	**µg/Kg-dry**	1	4/19/2012 12:25 PM
Surr: 2,4,6-Tribromophenol	*114*		*34-140*	*%REC*	1	4/19/2012 12:25 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *22-May-12*

Client: HRL Compliance Solutions
Project: PDC Mesa 4 Confirmation 11-273-3 4/11/12
Sample ID: Spill 2, East
Collection Date: 4/11/2012 12:10 PM

Work Order: 1204357
Lab ID: 1204357-02
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Surr: 2-Fluorobiphenyl	*68.9*		*12-100*	*%REC*	1	4/19/2012 12:25 PM
Surr: 2-Fluorophenol	*80.8*		*33-117*	*%REC*	1	4/19/2012 12:25 PM
Surr: 4-Terphenyl-d14	*86.2*		*25-137*	*%REC*	1	4/19/2012 12:25 PM
Surr: Nitrobenzene-d5	*61.3*		*37-107*	*%REC*	1	4/19/2012 12:25 PM
Surr: Phenol-d6	*71.6*		*40-106*	*%REC*	1	4/19/2012 12:25 PM
VOLATILE ORGANIC COMPOUNDS			**SW8260**			Analyst: **AK**
Benzene	ND		64	µg/Kg-dry	50	4/17/2012 01:17 AM
Ethylbenzene	ND		130	µg/Kg-dry	50	4/17/2012 01:17 AM
m,p-Xylene	ND		130	µg/Kg-dry	50	4/17/2012 01:17 AM
o-Xylene	ND		64	µg/Kg-dry	50	4/17/2012 01:17 AM
Toluene	ND		95	µg/Kg-dry	50	4/17/2012 01:17 AM
Xylenes, Total	ND		190	µg/Kg-dry	50	4/17/2012 01:17 AM
Surr: 1,2-Dichloroethane-d4	*98.8*		*70-120*	*%REC*	50	4/17/2012 01:17 AM
Surr: 4-Bromofluorobenzene	*94.2*		*75-120*	*%REC*	50	4/17/2012 01:17 AM
Surr: Dibromofluoromethane	*94.9*		*85-115*	*%REC*	50	4/17/2012 01:17 AM
Surr: Toluene-d8	*95.2*		*85-115*	*%REC*	50	4/17/2012 01:17 AM
CHROMIUM, TRIVALENT			**CALCULATION**			Analyst: **MB**
Chromium, Trivalent	**38**		**0.64**	**mg/Kg-dry**	1	4/19/2012 05:10 PM
CHROMIUM, HEXAVALENT			**SW7196A**		Prep Date: **4/16/2012**	Analyst: **MB**
Chromium, Hexavalent	ND		0.64	mg/Kg-dry	1	4/18/2012 03:30 PM
MOISTURE			**A2540 G**			Analyst: **CG**
Moisture	**21**		**0.050**	**% of sample**	1	4/13/2012 03:14 PM
PH			**SW9045D**			Analyst: **JJG**
pH	**8.69**			**s.u.**	1	4/13/2012 10:05 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *22-May-12*

Client: HRL Compliance Solutions
Project: PDC Mesa 4 Confirmation 11-273-3 4/11/12 **Work Order:** 1204357
Sample ID: Spill 2, West **Lab ID:** 1204357-03
Collection Date: 4/11/2012 01:00 PM **Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			**SW8015M**		Prep Date: **4/18/2012**	Analyst: **RM**
DRO (C10-C28)	**22**		**5.1**	**mg/Kg-dry**	1	4/19/2012 06:45 PM
Surr: 4-Terphenyl-d14	*64.3*		*39-115*	*%REC*	1	4/19/2012 06:45 PM
GASOLINE RANGE ORGANICS BY GC-FID			**SW8015**			Analyst: **RM**
GRO (C6-C10)	ND		3.1	mg/Kg-dry	50	4/17/2012 07:51 PM
Surr: Toluene-d8	*102*		*50-150*	*%REC*	50	4/17/2012 07:51 PM
MERCURY BY CVAA			**SW7471**		Prep Date: **4/16/2012**	Analyst: **LR**
Mercury	**0.030**		**0.021**	**mg/Kg-dry**	1	4/17/2012 11:04 AM
METALS BY ICP-MS			**SW6020A**		Prep Date: **4/16/2012**	Analyst: **RH**
Arsenic	**7.5**		**0.86**	**mg/Kg-dry**	2	4/17/2012 01:55 PM
Barium	**310**		**8.6**	**mg/Kg-dry**	20	4/18/2012 03:01 PM
Cadmium	**0.39**		**0.34**	**mg/Kg-dry**	2	4/17/2012 01:55 PM
Chromium	**44**		**0.86**	**mg/Kg-dry**	2	4/17/2012 01:55 PM
Copper	**22**		**0.86**	**mg/Kg-dry**	2	4/17/2012 01:55 PM
Lead	**18**		**0.86**	**mg/Kg-dry**	2	4/17/2012 01:55 PM
Nickel	**25**		**0.86**	**mg/Kg-dry**	2	4/17/2012 01:55 PM
Selenium	**1.2**		**0.86**	**mg/Kg-dry**	2	4/17/2012 01:55 PM
Silver	ND		0.86	mg/Kg-dry	2	4/17/2012 01:55 PM
Zinc	**59**		**1.7**	**mg/Kg-dry**	2	4/17/2012 01:55 PM
SUBCONTRACTED ANALYSES			**SUBCONTRACT**			Analyst: **A&LGL**
Subcontracted Analyses	**Rcvd 4/19/12**			**as noted**	1	4/19/2012
SEMI-VOLATILE ORGANIC COMPOUNDS			**SW8270**		Prep Date: **4/18/2012**	Analyst: **HL**
Acenaphthene	ND		18	µg/Kg-dry	1	4/19/2012 01:00 PM
Anthracene	**65**		**18**	**µg/Kg-dry**	1	4/19/2012 01:00 PM
Benzo(a)anthracene	ND		24	µg/Kg-dry	1	4/19/2012 01:00 PM
Benzo(a)pyrene	ND		24	µg/Kg-dry	1	4/19/2012 01:00 PM
Benzo(b)fluoranthene	ND		24	µg/Kg-dry	1	4/19/2012 01:00 PM
Benzo(g,h,i)perylene	ND		37	µg/Kg-dry	1	4/19/2012 01:00 PM
Benzo(k)fluoranthene	ND		24	µg/Kg-dry	1	4/19/2012 01:00 PM
Chrysene	ND		18	µg/Kg-dry	1	4/19/2012 01:00 PM
Dibenzo(a,h)anthracene	ND		22	µg/Kg-dry	1	4/19/2012 01:00 PM
Fluoranthene	**78**		**18**	**µg/Kg-dry**	1	4/19/2012 01:00 PM
Fluorene	ND		18	µg/Kg-dry	1	4/19/2012 01:00 PM
Indeno(1,2,3-cd)pyrene	ND		24	µg/Kg-dry	1	4/19/2012 01:00 PM
Naphthalene	ND		18	µg/Kg-dry	1	4/19/2012 01:00 PM
Pyrene	**67**		**24**	**µg/Kg-dry**	1	4/19/2012 01:00 PM
Surr: 2,4,6-Tribromophenol	*107*		*34-140*	*%REC*	1	4/19/2012 01:00 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *22-May-12*

Client: HRL Compliance Solutions
Project: PDC Mesa 4 Confirmation 11-273-3 4/11/12
Sample ID: Spill 2, West
Collection Date: 4/11/2012 01:00 PM

Work Order: 1204357
Lab ID: 1204357-03
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Surr: 2-Fluorobiphenyl	*58.6*		*12-100*	*%REC*	1	4/19/2012 01:00 PM
Surr: 2-Fluorophenol	*70.5*		*33-117*	*%REC*	1	4/19/2012 01:00 PM
Surr: 4-Terphenyl-d14	*81.5*		*25-137*	*%REC*	1	4/19/2012 01:00 PM
Surr: Nitrobenzene-d5	*53.1*		*37-107*	*%REC*	1	4/19/2012 01:00 PM
Surr: Phenol-d6	*61.1*		*40-106*	*%REC*	1	4/19/2012 01:00 PM
VOLATILE ORGANIC COMPOUNDS			**SW8260**			Analyst: **AK**
Benzene	ND		61	µg/Kg-dry	50	4/17/2012 01:42 AM
Ethylbenzene	ND		120	µg/Kg-dry	50	4/17/2012 01:42 AM
m,p-Xylene	ND		120	µg/Kg-dry	50	4/17/2012 01:42 AM
o-Xylene	ND		61	µg/Kg-dry	50	4/17/2012 01:42 AM
Toluene	ND		92	µg/Kg-dry	50	4/17/2012 01:42 AM
Xylenes, Total	ND		180	µg/Kg-dry	50	4/17/2012 01:42 AM
Surr: 1,2-Dichloroethane-d4	*98.2*		*70-120*	*%REC*	50	4/17/2012 01:42 AM
Surr: 4-Bromofluorobenzene	*92.2*		*75-120*	*%REC*	50	4/17/2012 01:42 AM
Surr: Dibromofluoromethane	*94.9*		*85-115*	*%REC*	50	4/17/2012 01:42 AM
Surr: Toluene-d8	*96.9*		*85-115*	*%REC*	50	4/17/2012 01:42 AM
CHROMIUM, TRIVALENT			**CALCULATION**			Analyst: **MB**
Chromium, Trivalent	**44**		**0.61**	**mg/Kg-dry**	1	4/19/2012 05:10 PM
CHROMIUM, HEXAVALENT			**SW7196A**		Prep Date: **4/16/2012**	Analyst: **MB**
Chromium, Hexavalent	ND		0.61	mg/Kg-dry	1	4/18/2012 03:30 PM
MOISTURE			**A2540 G**			Analyst: **CG**
Moisture	**18**		**0.050**	**% of sample**	1	4/13/2012 03:24 PM
PH			**SW9045D**			Analyst: **JJG**
pH	**8.61**			**s.u.**	1	4/13/2012 10:05 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Report Number: F12108-0255
Acount Number: 91000

A & L GREAT LAKES LABORATORIES, INC.

3505 Conestoga Drive • Fort Wayne, Indiana 46808-4413 • Phone 260-483-4759 • Fax 260-483-5274
www.algreatlakes.com • lab@algreatlakes.com

QUALITY ANALYSES FOR INFORMED DECISIONS

REPORT PRINTED 5/21/2012

TO: ALS LABORATORY GROUP
3352 128TH AVE
HOLLAND, MI 49424-9263

RE: 1204357

02C-03C

DATE RECEIVED: 04/17/2012
DATE REPORTED: 05/21/2012
PAGE: 1
P.O. NUMBER: 20-1204357

ATTN: ANN PRESTON

REPORT OF ANALYSIS

LAB NO.	SAMPLE ID	ANALYSIS	RESULT	UNIT	METHOD
43896	SPILL 2, EAST	Sat'd Paste Extraction with DIW	1		USDA Handbook 60
		Conductivity (ECe)	1.40	mmho/cm	USDA Handbook 60
		Calcium (Sat'd Paste)	148	ppm	USDA Handbook 60
		Magnesium (Sat'd Paste)	26	ppm	USDA Handbook 60
		Sodium (Sat'd Paste)	508	ppm	USDA Handbook 60
		Sodium Adsorption Ratio (SAR)	10.1	-	USDA Handbook 60
43897	SPILL 2, WEST	Sat'd Paste Extraction with DIW	1		USDA Handbook 60
		Conductivity (ECe)	0.17	mmho/cm	USDA Handbook 60
		Calcium (Sat'd Paste)	43	ppm	USDA Handbook 60
		Magnesium (Sat'd Paste)	10	ppm	USDA Handbook 60
		Sodium (Sat'd Paste)	141	ppm	USDA Handbook 60
		Sodium Adsorption Ratio (SAR)	5.0	-	USDA Handbook 60

ALS Group USA, Corp

Date: 22-May-12

Client: HRL Compliance Solutions

Work Order: 1204357

Project: PDC Mesa 4 Confirmation 11-273-3 4/11/12

QC BATCH REPORT

Batch ID: **40531** Instrument ID **GC8** Method: **SW8015M**

MBLK Sample ID: **DBLKS1-40531-40531** Units: **mg/Kg** Analysis Date: **4/19/2012 02:41 PM**

Client ID: Run ID: **GC8_120419B** SeqNo: **1953638** Prep Date: **4/18/2012** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	ND	4.2								
Surr: 4-Terphenyl-d14	*1.311*	0	*1.667*	0	*78.7*	*39-115*	0			

LCS Sample ID: **DLCSS1-40531-40531** Units: **mg/Kg** Analysis Date: **4/19/2012 01:35 PM**

Client ID: Run ID: **GC8_120419B** SeqNo: **1953636** Prep Date: **4/18/2012** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	134.2	4.2	166.7	0	80.5	60-130	0			
Surr: 4-Terphenyl-d14	*1.15*	0	*1.667*	0	*69*	*39-115*	0			

LCSD Sample ID: **DLCSDS1-40531-40531** Units: **mg/Kg** Analysis Date: **4/19/2012 01:35 PM**

Client ID: Run ID: **GC8_120419B** SeqNo: **1953652** Prep Date: **4/18/2012** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	139	4.2	166.7	0	83.4	60-130	134.2	3.5	30	
Surr: 4-Terphenyl-d14	*1.033*	0	*1.667*	0	*62*	*39-115*	1.15	*10.7*	*30*	

MS Sample ID: **1204396-06A MS** Units: **mg/Kg** Analysis Date: **4/19/2012 01:57 PM**

Client ID: Run ID: **GC8_120419B** SeqNo: **1953637** Prep Date: **4/18/2012** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	370.8	12	466.2	0	79.5	60-130	0			
Surr: 4-Terphenyl-d14	*2.891*	0	*4.662*	0	*62*	*39-115*	0			

MSD Sample ID: **1204396-06A MSD** Units: **mg/Kg** Analysis Date: **4/19/2012 01:57 PM**

Client ID: Run ID: **GC8_120419B** SeqNo: **1953653** Prep Date: **4/18/2012** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	377.6	12	489.6	0	77.1	60-130	370.8	1.81	30	
Surr: 4-Terphenyl-d14	*3.062*	0	*4.896*	0	*62.5*	*39-115*	2.891	*5.73*	*30*	

The following samples were analyzed in this batch: 1204357-01B 1204357-02B 1204357-03B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
Work Order: 1204357
Project: PDC Mesa 4 Confirmation 11-273-3 4/11/12

QC BATCH REPORT

Batch ID: **R103670** Instrument ID **GC9** Method: **SW8015**

MBLK Sample ID: **MBLK-R103670-R103670** Units: **µg/L** Analysis Date: **4/17/2012 02:02 PM**
Client ID: Run ID: **GC9_120417A** SeqNo: **1950631** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	ND	200								
Surr: Toluene-d8	*105.8*	0	*100*	0	*106*	*70-130*	0			

LCS Sample ID: **LCS-R103670-R103670** Units: **µg/L** Analysis Date: **4/17/2012 12:45 PM**
Client ID: Run ID: **GC9_120417A** SeqNo: **1950629** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	24920	200	25000	0	99.7	70-130	0			
Surr: Toluene-d8	*101.3*	0	*100*	0	*101*	*70-130*	0			

LCSD Sample ID: **LCSD-R103670-R103670** Units: **µg/L** Analysis Date: **4/17/2012 01:10 PM**
Client ID: Run ID: **GC9_120417A** SeqNo: **1950630** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	24380	200	25000	0	97.5	70-130	24920	2.18	30	
Surr: Toluene-d8	*95.46*	0	*100*	0	*95.5*	*70-130*	101.3	*5.93*	*30*	

MS Sample ID: **1204358-01A MS** Units: **µg/L** Analysis Date: **4/17/2012 08:17 PM**
Client ID: Run ID: **GC9_120417A** SeqNo: **1950638** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	24530	200	25000	0	98.1	70-130	0			
Surr: Toluene-d8	*86.35*	0	*100*	0	*86.4*	*70-130*	0			

MSD Sample ID: **1204358-01A MSD** Units: **µg/L** Analysis Date: **4/17/2012 08:43 PM**
Client ID: Run ID: **GC9_120417A** SeqNo: **1950639** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	23970	200	25000	0	95.9	70-130	24530	2.29	30	
Surr: Toluene-d8	*87.41*	0	*100*	0	*87.4*	*70-130*	86.35	*1.22*	*30*	

The following samples were analyzed in this batch: 1204357-01A 1204357-02A 1204357-03A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
Work Order: 1204357
Project: PDC Mesa 4 Confirmation 11-273-3 4/11/12

QC BATCH REPORT

Batch ID: **40483** Instrument ID **HG1** Method: **SW7471**

MBLK Sample ID: **MBLK-40483-40483** Units: **mg/Kg** Analysis Date: **4/17/2012 10:52 AM**
Client ID: Run ID: **HG1_120417A** SeqNo: **1949198** Prep Date: **4/16/2012** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	ND	0.020								

LCS Sample ID: **LCS-40483-40483** Units: **mg/Kg** Analysis Date: **4/17/2012 10:54 AM**
Client ID: Run ID: **HG1_120417A** SeqNo: **1949199** Prep Date: **4/16/2012** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.1752	0.020	0.1665	0	105	80-120	0			

LCSD Sample ID: **LCSD-40483-40483** Units: **mg/Kg** Analysis Date: **4/17/2012 10:56 AM**
Client ID: Run ID: **HG1_120417A** SeqNo: **1949200** Prep Date: **4/16/2012** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.1765	0.020	0.1665	0	106	80-120	0.1752	0.758	20	

MS Sample ID: **1204410-01BMS** Units: **mg/Kg** Analysis Date: **4/17/2012 11:11 AM**
Client ID: Run ID: **HG1_120417A** SeqNo: **1949206** Prep Date: **4/16/2012** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.1555	0.017	0.1433	0.01779	96.1	75-125	0			

MSD Sample ID: **1204410-01BMSD** Units: **mg/Kg** Analysis Date: **4/17/2012 11:13 AM**
Client ID: Run ID: **HG1_120417A** SeqNo: **1949207** Prep Date: **4/16/2012** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Mercury	0.1531	0.017	0.1389	0.01779	97.4	75-125	0.1555	1.6	35	

The following samples were analyzed in this batch: 1204357-01B 1204357-02B 1204357-03B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
Work Order: 1204357
Project: PDC Mesa 4 Confirmation 11-273-3 4/11/12

QC BATCH REPORT

Batch ID: **40490** Instrument ID **ICPMS1** Method: **SW6020A**

MBLK Sample ID: **MBLK-40490-40490** Units: **mg/Kg** Analysis Date: **4/17/2012 01:37 PM**
Client ID: Run ID: **ICPMS1_120417A** SeqNo: **1949735** Prep Date: **4/16/2012** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	ND	0.25								
Barium	ND	0.25								
Cadmium	0.002493	0.10								J
Chromium	ND	0.25								
Copper	ND	0.25								
Lead	0.002738	0.25								J
Nickel	ND	0.25								
Selenium	ND	0.25								
Silver	0.00122	0.25								J
Zinc	ND	0.50								

LCS Sample ID: **LCS-40490-40490** Units: **mg/Kg** Analysis Date: **4/17/2012 01:43 PM**
Client ID: Run ID: **ICPMS1_120417A** SeqNo: **1949736** Prep Date: **4/16/2012** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	4.35	0.25	5	0	87	80-120	0			
Barium	4.496	0.25	5	0	89.9	80-120	0			
Cadmium	4.65	0.10	5	0	93	80-120	0			
Chromium	4.56	0.25	5	0	91.2	80-120	0			
Copper	4.528	0.25	5	0	90.6	80-120	0			
Lead	4.523	0.25	5	0	90.5	80-120	0			
Nickel	4.474	0.25	5	0	89.5	80-120	0			
Selenium	4.205	0.25	5	0	84.1	80-120	0			
Silver	4.48	0.25	5	0	89.6	80-120	0			
Zinc	4.21	0.50	5	0	84.2	80-120	0			

LCSD Sample ID: **LCSD-40490-40490** Units: **mg/Kg** Analysis Date: **4/17/2012 01:49 PM**
Client ID: Run ID: **ICPMS1_120417A** SeqNo: **1949737** Prep Date: **4/16/2012** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	4.283	0.25	5	0	85.7	80-120	4.35	1.54	20	
Barium	4.442	0.25	5	0	88.8	80-120	4.496	1.22	20	
Cadmium	4.552	0.10	5	0	91	80-120	4.65	2.12	20	
Chromium	4.549	0.25	5	0	91	80-120	4.56	0.242	20	
Copper	4.49	0.25	5	0	89.8	80-120	4.528	0.854	20	
Lead	4.386	0.25	5	0	87.7	80-120	4.523	3.06	20	
Nickel	4.436	0.25	5	0	88.7	80-120	4.474	0.842	20	
Selenium	4.122	0.25	5	0	82.4	80-120	4.205	2.01	20	
Silver	4.43	0.25	5	0	88.6	80-120	4.48	1.11	20	
Zinc	4.138	0.50	5	0	82.8	80-120	4.21	1.71	20	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
Work Order: 1204357
Project: PDC Mesa 4 Confirmation 11-273-3 4/11/12

QC BATCH REPORT

Batch ID: **40490** Instrument ID **ICPMS1** Method: **SW6020A**

MS Sample ID: **1204357-03BMS** Units: **mg/Kg** Analysis Date: **4/17/2012 02:20 PM**
Client ID: **Spill 2, West** Run ID: **ICPMS1_120417A** SeqNo: **1949921** Prep Date: **4/16/2012** DF: **2**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	12.26	0.70	7.003	6.146	87.2	80-120	0			
Cadmium	6.629	0.28	7.003	0.3183	90.1	80-120	0			
Chromium	42.82	0.70	7.003	35.66	102	80-120	0			O
Copper	23.84	0.70	7.003	18.14	81.3	80-120	0			
Lead	21.3	0.70	7.003	14.55	96.4	80-120	0			
Nickel	27.11	0.70	7.003	20.87	89.1	80-120	0			
Selenium	6.133	0.70	7.003	0.9676	73.8	80-120	0			S
Silver	5.539	0.70	7.003	0.07446	78	80-120	0			S
Zinc	54.96	1.4	7.003	48.52	91.9	80-120	0			O

MS Sample ID: **1204357-03BMS** Units: **mg/Kg** Analysis Date: **4/18/2012 03:13 PM**
Client ID: **Spill 2, West** Run ID: **ICPMS1_120418A** SeqNo: **1951280** Prep Date: **4/16/2012** DF: **20**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Barium	265	7.0	7.003	251	200	80-120	0			SO

MSD Sample ID: **1204357-03BMSD** Units: **mg/Kg** Analysis Date: **4/17/2012 02:26 PM**
Client ID: **Spill 2, West** Run ID: **ICPMS1_120417A** SeqNo: **1949922** Prep Date: **4/16/2012** DF: **2**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	11.54	0.70	6.983	6.146	77.3	80-120	12.26	5.99	25	S
Cadmium	6.482	0.28	6.983	0.3183	88.3	80-120	6.629	2.24	25	
Chromium	41.49	0.70	6.983	35.66	83.5	80-120	42.82	3.13	25	O
Copper	23.38	0.70	6.983	18.14	75	80-120	23.84	1.94	25	S
Lead	20.46	0.70	6.983	14.55	84.7	80-120	21.3	4.03	25	
Nickel	26.12	0.70	6.983	20.87	75.1	80-120	27.11	3.75	25	S
Selenium	6.056	0.70	6.983	0.9676	72.9	80-120	6.133	1.27	25	S
Silver	5.388	0.70	6.983	0.07446	76.1	80-120	5.539	2.76	25	S
Zinc	53.98	1.4	6.983	48.52	78.2	80-120	54.96	1.79	25	SO

MSD Sample ID: **1204357-03BMSD** Units: **mg/Kg** Analysis Date: **4/18/2012 03:19 PM**
Client ID: **Spill 2, West** Run ID: **ICPMS1_120418A** SeqNo: **1951281** Prep Date: **4/16/2012** DF: **20**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Barium	256.6	7.0	6.983	251	79.9	80-120	265	3.23	25	SO

The following samples were analyzed in this batch: 1204357-01B 1204357-02B 1204357-03B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
Work Order: 1204357
Project: PDC Mesa 4 Confirmation 11-273-3 4/11/12

QC BATCH REPORT

Batch ID: **40530** Instrument ID **SVMS4** Method: **SW8270**

MBLK Sample ID: **SBLKS1-40530-40530** Units: **µg/Kg** Analysis Date: **4/19/2012 10:52 AM**
Client ID: Run ID: **SVMS4_120419A** SeqNo: **1951953** Prep Date: **4/18/2012** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	ND	30								
Anthracene	ND	30								
Benzo(a)anthracene	ND	30								
Benzo(a)pyrene	ND	30								
Benzo(b)fluoranthene	ND	30								
Benzo(g,h,i)perylene	ND	30								
Benzo(k)fluoranthene	ND	30								
Chrysene	ND	30								
Dibenzo(a,h)anthracene	ND	30								
Fluoranthene	ND	30								
Fluorene	ND	30								
Indeno(1,2,3-cd)pyrene	ND	30								
Naphthalene	ND	30								
Pyrene	ND	30								
Surr: 2,4,6-Tribromophenol	*1396*	0	*1667*	0	*83.7*	*34-140*	0			
Surr: 2-Fluorobiphenyl	*1131*	0	*1667*	0	*67.9*	*12-100*	0			
Surr: 2-Fluorophenol	*1275*	0	*1667*	0	*76.5*	*33-117*	0			
Surr: 4-Terphenyl-d14	*1339*	0	*1667*	0	*80.4*	*25-137*	0			
Surr: Nitrobenzene-d5	*1160*	0	*1667*	0	*69.6*	*37-107*	0			
Surr: Phenol-d6	*1298*	0	*1667*	0	*77.9*	*40-106*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
Work Order: 1204357
Project: PDC Mesa 4 Confirmation 11-273-3 4/11/12

QC BATCH REPORT

Batch ID: **40530** Instrument ID **SVMS4** Method: **SW8270**

LCS Sample ID: **SLCSS1-40530-40530** Units: **µg/Kg** Analysis Date: **4/19/2012 09:47 AM**
Client ID: Run ID: **SVMS4_120419A** SeqNo: **1951948** Prep Date: **4/18/2012** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	556	30	666.7	0	83.4	45-110	0			
Anthracene	593.3	30	666.7	0	89	55-105	0			
Benzo(a)anthracene	586	30	666.7	0	87.9	50-110	0			
Benzo(a)pyrene	644.7	30	666.7	0	96.7	50-110	0			
Benzo(b)fluoranthene	576.3	30	666.7	0	86.4	45-115	0			
Benzo(g,h,i)perylene	657	30	666.7	0	98.5	40-125	0			
Benzo(k)fluoranthene	648	30	666.7	0	97.2	45-115	0			
Chrysene	601.7	30	666.7	0	90.2	55-110	0			
Dibenzo(a,h)anthracene	672	30	666.7	0	101	40-125	0			
Fluoranthene	608	30	666.7	0	91.2	55-115	0			
Fluorene	576.7	30	666.7	0	86.5	50-110	0			
Indeno(1,2,3-cd)pyrene	658	30	666.7	0	98.7	40-120	0			
Naphthalene	548.7	30	666.7	0	82.3	40-105	0			
Pyrene	607.3	30	666.7	0	91.1	45-125	0			
Surr: 2,4,6-Tribromophenol	*1410*	0	*1667*	0	*84.6*	*34-140*	0			
Surr: 2-Fluorobiphenyl	*1254*	0	*1667*	0	*75.3*	*12-100*	0			
Surr: 2-Fluorophenol	*1338*	0	*1667*	0	*80.3*	*33-117*	0			
Surr: 4-Terphenyl-d14	*1330*	0	*1667*	0	*79.8*	*25-137*	0			
Surr: Nitrobenzene-d5	*1300*	0	*1667*	0	*78*	*37-107*	0			
Surr: Phenol-d6	*1381*	0	*1667*	0	*82.8*	*40-106*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
Work Order: 1204357
Project: PDC Mesa 4 Confirmation 11-273-3 4/11/12

QC BATCH REPORT

Batch ID: **40530** Instrument ID **SVMS4** Method: **SW8270**

LCSD Sample ID: **SLCSDS1-40530-40530** Units: **µg/Kg** Analysis Date: **4/19/2012 10:20 AM**
Client ID: Run ID: **SVMS4_120419A** SeqNo: **1951950** Prep Date: **4/18/2012** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	581	30	666.7	0	87.1	45-110	556	4.4	25	
Anthracene	616.3	30	666.7	0	92.4	55-105	593.3	3.8	25	
Benzo(a)anthracene	606.3	30	666.7	0	90.9	50-110	586	3.41	25	
Benzo(a)pyrene	667.3	30	666.7	0	100	50-110	644.7	3.46	25	
Benzo(b)fluoranthene	657.7	30	666.7	0	98.6	45-115	576.3	13.2	25	
Benzo(g,h,i)perylene	655	30	666.7	0	98.2	40-125	657	0.305	25	
Benzo(k)fluoranthene	701.3	30	666.7	0	105	45-115	648	7.91	25	
Chrysene	627.7	30	666.7	0	94.1	55-110	601.7	4.23	25	
Dibenzo(a,h)anthracene	689.7	30	666.7	0	103	40-125	672	2.59	25	
Fluoranthene	638.3	30	666.7	0	95.7	55-115	608	4.87	25	
Fluorene	610.3	30	666.7	0	91.5	50-110	576.7	5.67	25	
Indeno(1,2,3-cd)pyrene	668.7	30	666.7	0	100	40-120	658	1.61	25	
Naphthalene	573	30	666.7	0	85.9	40-105	548.7	4.34	25	
Pyrene	630.7	30	666.7	0	94.6	45-125	607.3	3.77	25	
Surr: 2,4,6-Tribromophenol	*1580*	0	*1667*	0	*94.8*	*34-140*	1410	*11.4*	*40*	
Surr: 2-Fluorobiphenyl	*1337*	0	*1667*	0	*80.2*	*12-100*	1254	*6.38*	*40*	
Surr: 2-Fluorophenol	*1464*	0	*1667*	0	*87.9*	*33-117*	1338	*8.99*	*40*	
Surr: 4-Terphenyl-d14	*1409*	0	*1667*	0	*84.5*	*25-137*	1330	*5.77*	*40*	
Surr: Nitrobenzene-d5	*1371*	0	*1667*	0	*82.3*	*37-107*	1300	*5.34*	*40*	
Surr: Phenol-d6	*1482*	0	*1667*	0	*88.9*	*40-106*	1381	*7.1*	*40*	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
Work Order: 1204357
Project: PDC Mesa 4 Confirmation 11-273-3 4/11/12

QC BATCH REPORT

Batch ID: **40530** Instrument ID **SVMS4** Method: **SW8270**

MS Sample ID: **1204396-06A MS** Units: **µg/Kg** Analysis Date: **4/19/2012 04:28 PM**
Client ID: Run ID: **SVMS4_120419A** SeqNo: **1953327** Prep Date: **4/18/2012** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	1724	89	1969	0	87.6	45-110	0			
Anthracene	1828	89	1969	39.4	90.8	55-105	0			
Benzo(a)anthracene	1902	89	1969	176.8	87.6	50-110	0			
Benzo(a)pyrene	2094	89	1969	225.8	94.9	50-110	0			
Benzo(b)fluoranthene	2246	89	1969	247	102	45-115	0			
Benzo(g,h,i)perylene	2038	89	1969	139.3	96.5	40-125	0			
Benzo(k)fluoranthene	1995	89	1969	176.8	92.4	45-115	0			
Chrysene	1898	89	1969	215.3	85.5	55-110	0			
Dibenzo(a,h)anthracene	1976	89	1969	52.85	97.7	40-125	0			
Fluoranthene	2094	89	1969	325.8	89.8	55-115	0			
Fluorene	1809	89	1969	0	91.9	50-110	0			
Indeno(1,2,3-cd)pyrene	1997	89	1969	124.9	95.1	40-120	0			
Naphthalene	1528	89	1969	0	77.6	40-105	0			
Pyrene	2024	89	1969	282.5	88.4	45-125	0			
Surr: 2,4,6-Tribromophenol	*4828*	0	*4921*	0	*98.1*	*34-140*	0			
Surr: 2-Fluorobiphenyl	*3832*	0	*4921*	0	*77.9*	*12-100*	0			
Surr: 2-Fluorophenol	*3849*	0	*4921*	0	*78.2*	*33-117*	0			
Surr: 4-Terphenyl-d14	*3885*	0	*4921*	0	*78.9*	*25-137*	0			
Surr: Nitrobenzene-d5	*3685*	0	*4921*	0	*74.9*	*37-107*	0			
Surr: Phenol-d6	*3972*	0	*4921*	0	*80.7*	*40-106*	0			

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
Work Order: 1204357
Project: PDC Mesa 4 Confirmation 11-273-3 4/11/12

QC BATCH REPORT

Batch ID: **40530** Instrument ID **SVMS4** Method: **SW8270**

MSD Sample ID: **1204396-06A MSD** Units: **µg/Kg** Analysis Date: **4/19/2012 05:01 PM**
Client ID: Run ID: **SVMS4_120419A** SeqNo: **1953328** Prep Date: **4/18/2012** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	1669	89	1979	0	84.3	45-110	1724	3.25	30	
Anthracene	1802	89	1979	39.4	89.1	55-105	1828	1.42	30	
Benzo(a)anthracene	1894	89	1979	176.8	86.8	50-110	1902	0.403	30	
Benzo(a)pyrene	2094	89	1979	225.8	94.4	50-110	2094	0.0326	30	
Benzo(b)fluoranthene	2246	89	1979	247	101	45-115	2246	0.00567	30	
Benzo(g,h,i)perylene	1880	89	1979	139.3	88	40-125	2038	8.08	30	
Benzo(k)fluoranthene	1965	89	1979	176.8	90.4	45-115	1995	1.51	30	
Chrysene	1909	89	1979	215.3	85.6	55-110	1898	0.585	30	
Dibenzo(a,h)anthracene	1837	89	1979	52.85	90.1	40-125	1976	7.34	30	
Fluoranthene	2155	89	1979	325.8	92.4	55-115	2094	2.9	30	
Fluorene	1757	89	1979	0	88.8	50-110	1809	2.9	30	
Indeno(1,2,3-cd)pyrene	1882	89	1979	124.9	88.8	40-120	1997	5.93	30	
Naphthalene	1487	89	1979	0	75.1	40-105	1528	2.68	30	
Pyrene	2004	89	1979	282.5	87	45-125	2024	0.986	30	
Surr: 2,4,6-Tribromophenol	*4664*	0	*4948*	0	*94.3*	*34-140*	4828	*3.46*	*40*	
Surr: 2-Fluorobiphenyl	*3755*	0	*4948*	0	*75.9*	*12-100*	3832	*2.02*	*40*	
Surr: 2-Fluorophenol	*3797*	0	*4948*	0	*76.7*	*33-117*	3849	*1.38*	*40*	
Surr: 4-Terphenyl-d14	*3729*	0	*4948*	0	*75.4*	*25-137*	3885	*4.08*	*40*	
Surr: Nitrobenzene-d5	*3627*	0	*4948*	0	*73.3*	*37-107*	3685	*1.6*	*40*	
Surr: Phenol-d6	*3919*	0	*4948*	0	*79.2*	*40-106*	3972	*1.34*	*40*	

The following samples were analyzed in this batch: 1204357-01B 1204357-02B 1204357-03B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
Work Order: 1204357
Project: PDC Mesa 4 Confirmation 11-273-3 4/11/12

QC BATCH REPORT

Batch ID: **R103608** Instrument ID **VMS9** Method: **SW8260**

MBLK Sample ID: **VBLKW2-120416-R103608** Units: **µg/L** Analysis Date: **4/16/2012 11:36 PM**
Client ID: Run ID: **VMS9_120416A** SeqNo: **1949827** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	ND	1.0								
Ethylbenzene	ND	1.0								
m,p-Xylene	ND	2.0								
o-Xylene	ND	1.0								
Toluene	ND	1.0								
Xylenes, Total	ND	3.0								
Surr: 1,2-Dichloroethane-d4	*100.7*	0	*100*	0	*101*	*70-120*	0			
Surr: 4-Bromofluorobenzene	*100.1*	0	*100*	0	*100*	*75-120*	0			
Surr: Dibromofluoromethane	*102.5*	0	*100*	0	*103*	*85-115*	0			
Surr: Toluene-d8	*91.76*	0	*100*	0	*91.8*	*85-120*	0			

LCS Sample ID: **VLCSW1-120416-R103608** Units: **µg/L** Analysis Date: **4/16/2012 10:21 PM**
Client ID: Run ID: **VMS9_120416A** SeqNo: **1949825** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	20.53	1.0	20	0	103	80-120	0			
Ethylbenzene	22.71	1.0	20	0	114	75-125	0			
m,p-Xylene	45.29	2.0	40	0	113	75-130	0			
o-Xylene	21.8	1.0	20	0	109	80-120	0			
Toluene	21.68	1.0	20	0	108	75-120	0			
Xylenes, Total	67.09	3.0	60	0	112	75-130	0			
Surr: 1,2-Dichloroethane-d4	*99.57*	0	*100*	0	*99.6*	*70-120*	0			
Surr: 4-Bromofluorobenzene	*99.03*	0	*100*	0	*99*	*75-120*	0			
Surr: Dibromofluoromethane	*101.6*	0	*100*	0	*102*	*85-115*	0			
Surr: Toluene-d8	*100.3*	0	*100*	0	*100*	*85-120*	0			

LCSD Sample ID: **VLCSDW1-120416-R103608** Units: **µg/L** Analysis Date: **4/16/2012 10:46 PM**
Client ID: Run ID: **VMS9_120416A** SeqNo: **1949826** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	19.53	1.0	20	0	97.6	80-120	20.53	4.99	30	
Ethylbenzene	20.91	1.0	20	0	105	75-125	22.71	8.25	30	
m,p-Xylene	41.82	2.0	40	0	105	75-130	45.29	7.97	30	
o-Xylene	20.45	1.0	20	0	102	80-120	21.8	6.39	30	
Toluene	20.12	1.0	20	0	101	75-120	21.68	7.46	30	
Xylenes, Total	62.27	3.0	60	0	104	75-130	67.09	7.45	30	
Surr: 1,2-Dichloroethane-d4	*100.1*	0	*100*	0	*100*	*70-120*	99.57	*0.541*	*30*	
Surr: 4-Bromofluorobenzene	*99.12*	0	*100*	0	*99.1*	*75-120*	99.03	*0.0908*	*30*	
Surr: Dibromofluoromethane	*102*	0	*100*	0	*102*	*85-115*	101.6	*0.403*	*30*	
Surr: Toluene-d8	*99.21*	0	*100*	0	*99.2*	*85-120*	100.3	*1.13*	*30*	

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
Work Order: 1204357
Project: PDC Mesa 4 Confirmation 11-273-3 4/11/12

QC BATCH REPORT

Batch ID: **R103608** Instrument ID **VMS9** Method: **SW8260**

MS Sample ID: **1204290-10A MS** Units: **µg/Kg** Analysis Date: **4/17/2012 08:26 AM**
Client ID: Run ID: **VMS9_120416A** SeqNo: **1949868** Prep Date: DF: **2000**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	716900	2,000	40000	741100	-60.4	75-125	0			SEO
Ethylbenzene	1880000	4,000	40000	2112000	-578	75-125	0			SEO
m,p-Xylene	114700	4,000	80000	35180	99.4	80-125	0			
o-Xylene	53880	2,000	40000	14960	97.3	75-125	0			
Toluene	137100	3,000	40000	99020	95.2	70-125	0			
Xylenes, Total	168600	6,000	120000	50140	98.7	75-125	0			
Surr: 1,2-Dichloroethane-d4	*192900*	0	*200000*	0	*96.5*	*70-120*	0			
Surr: 4-Bromofluorobenzene	*194900*	0	*200000*	0	*97.4*	*75-120*	0			
Surr: Dibromofluoromethane	*194500*	0	*200000*	0	*97.2*	*85-115*	0			
Surr: Toluene-d8	*196400*	0	*200000*	0	*98.2*	*85-115*	0			

MSD Sample ID: **1204290-10A MSD** Units: **µg/Kg** Analysis Date: **4/17/2012 08:51 AM**
Client ID: Run ID: **VMS9_120416A** SeqNo: **1949884** Prep Date: DF: **2000**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	749200	2,000	40000	741100	20.2	75-125	716900	4.4	30	SEO
Ethylbenzene	1972000	4,000	40000	2112000	-349	75-125	1880000	4.76	30	SEO
m,p-Xylene	119400	4,000	80000	35180	105	80-125	114700	4.03	30	
o-Xylene	57080	2,000	40000	14960	105	75-125	53880	5.77	30	
Toluene	143200	3,000	40000	99020	110	70-125	137100	4.38	30	
Xylenes, Total	176500	6,000	120000	50140	105	75-125	168600	4.59	30	
Surr: 1,2-Dichloroethane-d4	*195900*	0	*200000*	0	*97.9*	*70-120*	192900	*1.51*	*30*	
Surr: 4-Bromofluorobenzene	*193800*	0	*200000*	0	*96.9*	*75-120*	194900	*0.556*	*30*	
Surr: Dibromofluoromethane	*196700*	0	*200000*	0	*98.3*	*85-115*	194500	*1.1*	*30*	
Surr: Toluene-d8	*197000*	0	*200000*	0	*98.5*	*85-115*	196400	*0.264*	*30*	

The following samples were analyzed in this batch: 1204357-01A 1204357-02A 1204357-03A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
Work Order: 1204357
Project: PDC Mesa 4 Confirmation 11-273-3 4/11/12

QC BATCH REPORT

Batch ID: **40548** Instrument ID **WETCHEM** Method: **SW7196A**

MBLK Sample ID: **MBLK-40548-40548** Units: **mg/Kg** Analysis Date: **4/18/2012 03:30 PM**
Client ID: Run ID: **WETCHEM_120418J** SeqNo: **1951077** Prep Date: **4/16/2012** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	ND	0.50								

LCS Sample ID: **LCS-40548-40548** Units: **mg/Kg** Analysis Date: **4/18/2012 03:30 PM**
Client ID: Run ID: **WETCHEM_120418J** SeqNo: **1951075** Prep Date: **4/16/2012** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	1.98	0.50	2	0	99	75-110	0			

LCSD Sample ID: **LCSD-40548-40548** Units: **mg/Kg** Analysis Date: **4/18/2012 03:30 PM**
Client ID: Run ID: **WETCHEM_120418J** SeqNo: **1951076** Prep Date: **4/16/2012** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	1.868	0.50	2	0	93.4	75-110	1.98	5.82	20	

MS Sample ID: **1204357-01B MS** Units: **mg/Kg** Analysis Date: **4/18/2012 03:30 PM**
Client ID: **Spill 1** Run ID: **WETCHEM_120418J** SeqNo: **1951071** Prep Date: **4/16/2012** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	1.26	0.50	2	0	63	60-130	0			

MSD Sample ID: **1204357-01B MSD** Units: **mg/Kg** Analysis Date: **4/18/2012 03:30 PM**
Client ID: **Spill 1** Run ID: **WETCHEM_120418J** SeqNo: **1951072** Prep Date: **4/16/2012** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Chromium, Hexavalent	1.204	0.50	2	0	60.2	60-130	1.26	4.55	30	

The following samples were analyzed in this batch: 1204357-01B 1204357-02B 1204357-03B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
Work Order: 1204357
Project: PDC Mesa 4 Confirmation 11-273-3 4/11/12

QC BATCH REPORT

Batch ID: **R103550** Instrument ID **WETCHEM** Method: **SW9040**

LCS Sample ID: **LCS-R103550-R103550** Units: **s.u.** Analysis Date: **4/13/2012 10:05 AM**
Client ID: Run ID: **WETCHEM_120413M** SeqNo: **1947895** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	4.37	0	4.4	0	99.3	90-110	0			

LCS Sample ID: **LCS-R103550-R103550** Units: **s.u.** Analysis Date: **4/13/2012 10:05 AM**
Client ID: Run ID: **WETCHEM_120413M** SeqNo: **1947898** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	4.37	0	4.4	0	99.3	90-110	0			

DUP Sample ID: **1204347-01A DUP** Units: **s.u.** Analysis Date: **4/13/2012 10:05 AM**
Client ID: Run ID: **WETCHEM_120413M** SeqNo: **1947897** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	8.55	0	0	0	0	0-0	8.55	0	20	

DUP Sample ID: **1204357-03B DUP** Units: **s.u.** Analysis Date: **4/13/2012 10:05 AM**
Client ID: **Spill 2, West** Run ID: **WETCHEM_120413M** SeqNo: **1947903** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	8.61	0	0	0	0	0-0	8.61	0	20	

The following samples were analyzed in this batch: 1204357-01B 1204357-02B 1204357-03B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions

Work Order: 1204357

Project: PDC Mesa 4 Confirmation 11-273-3 4/11/12

QC BATCH REPORT

Batch ID: **R103561** Instrument ID **MOIST** Method: **A2540 G**

MBLK Sample ID: **WBLKS1-R103561** Units: **% of sample** Analysis Date: **4/13/2012 03:14 PM**

Client ID: Run ID: **MOIST_120413B** SeqNo: **1948239** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	ND	0.050								

LCS Sample ID: **LCS-R103561** Units: **% of sample** Analysis Date: **4/13/2012 03:14 PM**

Client ID: Run ID: **MOIST_120413B** SeqNo: **1948238** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	100	0.050	100	0	100	99.5-100.5	0			

DUP Sample ID: **1204351-08BDUP1** Units: **% of sample** Analysis Date: **4/13/2012 03:14 PM**

Client ID: Run ID: **MOIST_120413B** SeqNo: **1948230** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	3.12	0.050	0	0	0	0-0	3.23	3.46	20	

DUP Sample ID: **1204351-08BDUP2** Units: **% of sample** Analysis Date: **4/13/2012 03:14 PM**

Client ID: Run ID: **MOIST_120413B** SeqNo: **1948231** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	3.06	0.050	0	0	0	0-0	3.23	5.41	20	

DUP Sample ID: **1204350-01ADUP** Units: **% of sample** Analysis Date: **4/13/2012 03:14 PM**

Client ID: Run ID: **MOIST_120413B** SeqNo: **1948273** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	57.56	0.050	0	0	0	0-0	51.03	12	20	

The following samples were analyzed in this batch: 1204357-01B 1204357-02B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
Work Order: 1204357
Project: PDC Mesa 4 Confirmation 11-273-3 4/11/12

QC BATCH REPORT

Batch ID: **R103562** Instrument ID **MOIST** Method: **A2540 G**

MBLK Sample ID: **WBLKS1-R103562** Units: **% of sample** Analysis Date: **4/13/2012 03:24 PM**
Client ID: Run ID: **MOIST_120413C** SeqNo: **1948248** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	ND	0.050								

LCS Sample ID: **LCS-R103562** Units: **% of sample** Analysis Date: **4/13/2012 03:24 PM**
Client ID: Run ID: **MOIST_120413C** SeqNo: **1948247** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	100	0.050	100	0	100	99.5-100.5	0			

DUP Sample ID: **1204357-03BDUP** Units: **% of sample** Analysis Date: **4/13/2012 03:24 PM**
Client ID: **Spill 2, West** Run ID: **MOIST_120413C** SeqNo: **1948246** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	17.85	0.050	0	0	0	0-0	18.05	1.11	20	

The following samples were analyzed in this batch: 1204357-03B

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Laboratory Group

225 Commerce Drive, Fort Collins, Colorado 80524
TF: (800) 443-1511 PH: (970) 490-1511 FX: (970) 490-1522

Chain-of-Custody

Form 202r8

WORKORDER # 1204357

PAGE 1 of 1

DISPOSAL (By Lab) or Return to Client

PROJECT NAME	PDC Mesa 4 - Confirmation	SAMPLER	Casey Richardson
PROJECT No.	11-273-3	SITE ID	
		EDD FORMAT	
		PURCHASE ORDER	
COMPANY NAME	HRL Compliance Solutions, Inc.	BILL TO COMPANY	PDC Energy
SEND REPORT TO	Herman Lucero	INVOICE ATTN TO	Ed Winters
ADDRESS	744 Horizon Ct. Suite 140	ADDRESS	120 Railroad Ave. Suite D
CITY / STATE / ZIP	Grand Junction, CO. 81506	CITY / STATE / ZIP	Parachute, CO 81635
PHONE	970-243-3271	PHONE	970-285-9606
FAX	970-243-3280	FAX	
E-MAIL	hlucero@hrlcomp.com	E-MAIL	ewinters@petd.com

DATE 4/12/2012

TURNAROUND Standard

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	GRO	DRO	BTEX	TOTAL METALS - TABLE 910-1	SEMI VOLS - PAH	SAR	EC	pH
1	Spill 1	Soil	4/11/2012	1140	3	4° C		x	x	x	x	x	x	x	x
2	Spill 2, East	Soil	4/11/2012	1210	3	4° C		x	x	x	x	x	x	x	x
3	Spill 2, West	Soil	4/11/2012	1300	3	4° C		x	x	x	x	x	x	x	x

*Time Zone (Circle): EST CST (MST) PST Matrix: O = oil (S = soil) NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments: 3.2i

QC PACKAGE (check below)	
x	LEVEL II (Standard QC)
	LEVEL III (Std QC + forms)
	LEVEL IV (Std QC + forms + raw data)

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY		Casey Richardson	4/12/2012	1700
RECEIVED BY		Diane F Shaw	4/13/12	1030
RELINQUISHED BY				
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				

ALS Environmental

Subcontractor:
A & L Great Lakes Agricultural La
3505 Conestoga Dr
Ft. Wayne, IN 46808
TEL: (260) 483-4759
FAX: (260) 483-5274
Acct #: 91000

Salesperson **Debbie Fazio**

CHAIN-OF-CUSTODY RECORD

Date: 13-Apr-12
COC ID: 3559
Due D 19-Apr-12

Customer Information		Project Information		Parameter/Method Request for Analysis
Purchase Order		Project Name	1204357	A Subcontracted Analyses (SUBCONTRACT) SAR-EC
Work Order		Project Number		B
Company Name	ALS Group USA, Corp	Bill To Company	ALS Group USA, Corp	C
Send Report To	Ann Preston	Inv Attn	Accounts Payable	D
Address	3352 128th Avenue	Address	3352 128th Avenue	E
				F
City/State/Zip	Holland, Michigan 49424-9263	City/State/Zip	Holland, Michigan 49424-9263	G
Phone	(616) 399-6070	Phone	(616) 399-6070	H
Fax	(616) 399-6185	Fax	(616) 399-6185	I
eMail Address	ann.preston@alsglobal.com	eMail CC		J

ALS Sample ID	Client Sample ID	Matrix	Collection Date 24hr	Bottle	A	B	C	D	E	F	G	H	I	J
1204357-01C	Spill 1	Soil	11/Apr/2012 11:40	(1) MISC	X									
1204357-02C	Spill 2, East	Soil	11/Apr/2012 12:10	(1) MISC	X									
1204357-03C	Spill 2, West	Soil	11/Apr/2012 13:00	(1) MISC	X									

Comments:
Please analyze for SAR-EC. Email results to Ann Preston.

Relinquished by:	Date/Time	Received by:	Date/Time	Cooler IDs	Report/QC Level
[signature]	4/12/12	[signature]			Std
Relinquished by:	Date/Time	Received by:	Date/Time		

ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **HRL**

Date/Time Received: **13-Apr-12 10:30**

Work Order: **1204357**

Received by: **DS**

Checklist completed by Diane Shaw (eSignature) 13-Apr-12 (Date)

Reviewed by: Ann Preston (eSignature) 13-Apr-12 (Date)

Matrices: Soil

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	3.2 c		
Cooler(s)/Kit(s):			
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:	-		

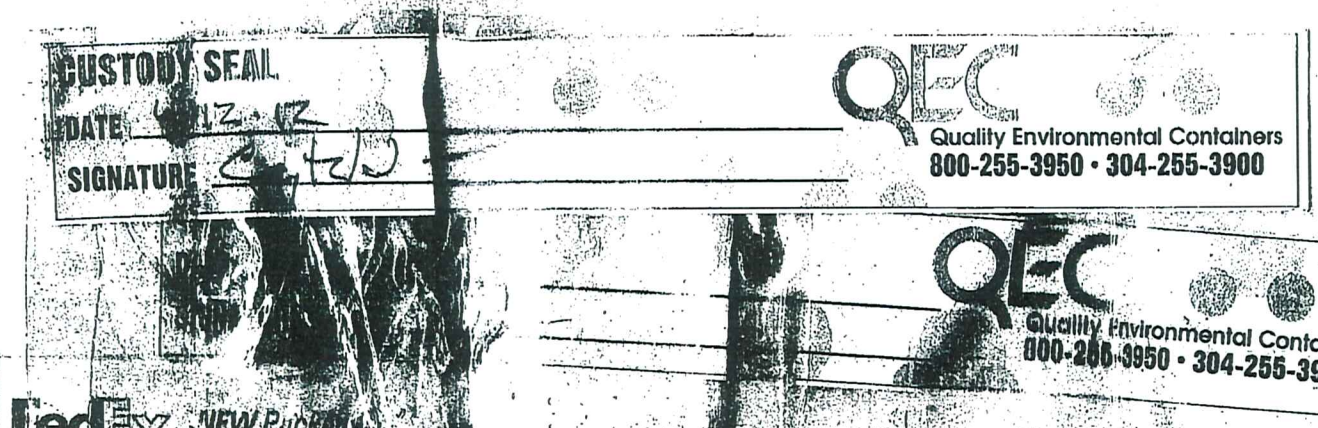
Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:



FedEx Express — NEW Packaging — US Airbill — 8987 5943 7618 — 0210 — FedEx Retrieval Copy

1 From

Date 4/12/13

Sender's Name [redacted] Phone [redacted]

Company [redacted]

Address [redacted] Dept/Floor/Suite/Room

City [redacted] State [redacted] ZIP 81504

2 Your Internal Billing Reference

3 To

Recipient's Name [redacted] Phone [redacted]

Company [redacted]

Address [redacted] Dept/Floor/Suite/Room
We cannot deliver to P.O. boxes or P.O. ZIP codes.

Address
Use this line for the HOLD location address or for continuation of your shipping address.

City [redacted] State [redacted] ZIP [redacted]

01 ☐ HOLD Weekday
FedEx location address REQUIRED. NOT available for FedEx First Overnight

31 ☐ HOLD Saturday
FedEx location address REQUIRED. Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations

8987 5943 7618

4 Express Package Service
Packages up to 150 lbs. Delivery commitment may be later in some areas. See Service Guide.

Next Business Day

06 ☐ FedEx First Overnight
Earliest next business morning delivery to select locations. Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

01 ☒ FedEx Priority Overnight
Next business morning. Friday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

05 ☐ FedEx Standard Overnight
Next business afternoon. Saturday Delivery NOT available.

2 Business Days

4 ☐ NEW FedEx 2Day A.M.
Second business morning. Saturday Delivery NOT available.

02 ☐ FedEx 2Day
Second business afternoon. Thursday shipments will be delivered on Monday unless SATURDAY Delivery is selected.

20 ☐ FedEx Express Saver
Third business day. Saturday Delivery NOT available.

5 Packaging * Declared value limit $500

06 ☐ FedEx Envelope* 02 ☐ FedEx Pak* 03 ☐ FedEx Box 04 ☐ FedEx Tube 01 ☒ Other

6 Special Handling and Delivery Signature Options

03 ☐ SATURDAY DELIVERY

☐ No Signature Required
Package may be left without obtaining signature for delivery.

10 ☐ Direct Signature
Someone at recipient's address may sign for delivery. Fee applies.

34 ☐ Indirect Signature
If no one is available at recipient's address, someone at a neighboring address may sign for delivery. Fee applies.

Does this shipment contain dangerous goods?
One box must be checked.

☒ 00 No
01 ☐ Yes
As per attached Shipper's Declaration.
02 ☐ Yes
Shipper's Declaration not required.
03 ☐ Dry Ice
UN 1845
Dangerous goods (including dry ice) cannot be shipped in FedEx packaging or placed in a FedEx Express shipment.
Cargo Aircraft Only

7 Payment Bill to:
Enter FedEx Acct. No. or Credit Card No. below.
Account Number

1 ☐ Sender
Acct. No in Section 1 will be billed.
2 ☐ Recipient
3 ☐ Third Party
4 ☐ Credit Card
5 ☐ Cash/Check

[redacted]

Total Packages Total Weight [redacted]

612

Rev. Date 11/10 • Part #163136 • ©1994–2010 FedEx • PRINTED IN U.S.A. SRY

fedex.com 1.800.GoFedEx 1.800.463.3339

fedex.com 1.800.GoFedEx 1.800.463.3339

Appendix B: Background Analytical Data

ALS Environmental

20-Apr-2012

Herman Lucero
HRL Compliance Solutions
744 Horizon Ct. Suite 140
Grand Junction, CO 81506

Re: **PDC Mesa 4-Background 11-273-3 4/11/12** Work Order: **1204356**

Dear Herman,

ALS Environmental received 3 samples on 13-Apr-2012 10:30 AM for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental and for only the analyses requested.

QC sample results for this data met laboratory specifications. Any exceptions are noted in the Case Narrative, or noted with qualifiers in the report or QC batch information. Should this laboratory report need to be reproduced, it should be reproduced in full unless written approval has been obtained from ALS Environmental. Samples will be disposed in 30 days unless storage arrangements are made.

The total number of pages in this report is 15.

If you have any questions regarding this report, please feel free to contact me.

Sincerely,

Ann Preston

Electronically approved by: Ann Preston

Ann Preston
Project Manager

ACCREDITED IN ACCORDANCE WITH nelac
Certificate No: MN331938

ALS Group USA, Corp

Date: 20-Apr-12

Client: HRL Compliance Solutions
Project: PDC Mesa 4-Background 11-273-3 4/11/12
Work Order: **1204356**

Work Order Sample Summary

Lab Samp ID	Client Sample ID	Matrix	Tag Number	Collection Date	Date Received	Hold
1204356-01	Background 1	Soil		4/11/2012 13:15	4/13/2012 10:30	☐
1204356-02	Background 2	Soil		4/11/2012 13:20	4/13/2012 10:30	☐
1204356-03	Background 3	Soil		4/11/2012 13:30	4/13/2012 10:30	☐

Client: HRL Compliance Solutions
Project: PDC Mesa 4-Background 11-273-3 4/11/12
Work Order: 1204356

Case Narrative

Batch 40490 MS/MSD data for Metals is not related to this project's samples.

ALS Group USA, Corp

Date: 20-Apr-12

Client: HRL Compliance Solutions
Project: PDC Mesa 4-Background 11-273-3 4/11/12
WorkOrder: 1204356

QUALIFIERS, ACRONYMS, UNITS

Qualifier	Description
*	Value exceeds Regulatory Limit
a	Not accredited
B	Analyte detected in the associated Method Blank above the Reporting Limit
E	Value above quantitation range
H	Analyzed outside of Holding Time
J	Analyte detected below quantitation limit
n	Not offered for accreditation
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL

Acronym	Description
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
MQL	Method Quantitation Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PDS	Post Digestion Spike
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
SD	Serial Dilution
TDL	Target Detection Limit

Units Reported	Description
% of sample	Percent of Sample
as noted	
mg/Kg-dry	Milligrams per Kilogram Dry Weight
s.u.	Standard Units

ALS Group USA, Corp

Date: *20-Apr-12*

Client: HRL Compliance Solutions
Project: PDC Mesa 4-Background 11-273-3 4/11/12
Sample ID: Background 1
Collection Date: 4/11/2012 01:15 PM

Work Order: 1204356
Lab ID: 1204356-01
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			SW6020A		Prep Date: **4/16/2012**	Analyst: **RH**
Arsenic	**5.7**		**0.89**	**mg/Kg-dry**	2	4/18/2012 01:29 AM
SUBCONTRACTED ANALYSES			SUBCONTRACT			Analyst: **A&LGL**
Subcontracted Analyses	**Rcvd 4/19/12**			**as noted**	1	4/19/2012
MOISTURE			A2540 G			Analyst: **CG**
Moisture	**27**		**0.050**	**% of sample**	1	4/13/2012 03:14 PM
PH			SW9045D			Analyst: **JJG**
pH	**7.41**			**s.u.**	1	4/13/2012 10:05 AM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *20-Apr-12*

Client: HRL Compliance Solutions
Project: PDC Mesa 4-Background 11-273-3 4/11/12
Work Order: 1204356
Sample ID: Background 2
Lab ID: 1204356-02
Collection Date: 4/11/2012 01:20 PM
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			**SW6020A**		Prep Date: **4/16/2012**	Analyst: **RH**
Arsenic	**7.4**		**0.89**	**mg/Kg-dry**	2	4/18/2012 01:48 AM
MOISTURE			**A2540 G**			Analyst: **CG**
Moisture	**26**		**0.050**	**% of sample**	1	4/13/2012 03:14 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

ALS Group USA, Corp

Date: *20-Apr-12*

Client: HRL Compliance Solutions
Project: PDC Mesa 4-Background 11-273-3 4/11/12
Sample ID: Background 3
Collection Date: 4/11/2012 01:30 PM

Work Order: 1204356
Lab ID: 1204356-03
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
METALS BY ICP-MS			**SW6020A**		Prep Date: **4/16/2012**	Analyst: **RH**
Arsenic	**7.2**		**0.89**	**mg/Kg-dry**	2	4/18/2012 01:54 AM
MOISTURE			**A2540 G**			Analyst: **CG**
Moisture	**27**		**0.050**	**% of sample**	1	4/13/2012 03:14 PM

Note: See Qualifiers page for a list of qualifiers and their definitions.

Report Number: F12108-0254
Acount Number: 91000

A & L GREAT LAKES LABORATORIES, INC.

3505 Conestoga Drive • Fort Wayne, Indiana 46808-4413 • Phone 260-483-4759 • Fax 260-483-5274
www.algreatlakes.com • lab@algreatlakes.com

QUALITY ANALYSES FOR INFORMED DECISIONS

TO: ALS LABORATORY GROUP
3352 128TH AVE
HOLLAND, MI 49424-9263

RE: 1204356

01B

DATE RECEIVED: 04/17/2012
DATE REPORTED: 04/19/2012
PAGE: 1
P.O. NUMBER: 20-1204356

ATTN: ANN PRESTON

REPORT OF ANALYSIS

LAB NO.	SAMPLE ID	ANALYSIS	RESULT	UNIT	METHOD
43898	BACKGROUND 1	Sat'd Paste Extraction with DIW	1		USDA Handbook 60
		Conductivity (ECe)	0.48	mmho/cm	USDA Handbook 60
		Calcium (Sat'd Paste)	19	ppm	USDA Handbook 60
		Magnesium (Sat'd Paste)	6	ppm	USDA Handbook 60
		Sodium (Sat'd Paste)	11	ppm	USDA Handbook 60
		Sodium Adsorption Ratio (SAR)	0.6	-	USDA Handbook 60

ALS Group USA, Corp

Date: 20-Apr-12

Client: HRL Compliance Solutions

QC BATCH REPORT

Work Order: 1204356

Project: PDC Mesa 4-Background 11-273-3 4/11/12

Batch ID: **40490** Instrument ID **ICPMS1** Method: **SW6020A**

MBLK Sample ID: **MBLK-40490-40490** Units: **mg/Kg** Analysis Date: **4/17/2012 01:37 PM**

Client ID: Run ID: **ICPMS1_120417A** SeqNo: **1949735** Prep Date: **4/16/2012** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	ND	0.25								

LCS Sample ID: **LCS-40490-40490** Units: **mg/Kg** Analysis Date: **4/17/2012 01:43 PM**

Client ID: Run ID: **ICPMS1_120417A** SeqNo: **1949736** Prep Date: **4/16/2012** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	4.35	0.25	5	0	87	80-120	0			

LCSD Sample ID: **LCSD-40490-40490** Units: **mg/Kg** Analysis Date: **4/17/2012 01:49 PM**

Client ID: Run ID: **ICPMS1_120417A** SeqNo: **1949737** Prep Date: **4/16/2012** DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	4.283	0.25	5	0	85.7	80-120	4.35	1.54	20	

MS Sample ID: **1204357-03BMS** Units: **mg/Kg** Analysis Date: **4/17/2012 02:20 PM**

Client ID: Run ID: **ICPMS1_120417A** SeqNo: **1949921** Prep Date: **4/16/2012** DF: **2**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	12.26	0.70	7.003	6.146	87.2	80-120	0			

MSD Sample ID: **1204357-03BMSD** Units: **mg/Kg** Analysis Date: **4/17/2012 02:26 PM**

Client ID: Run ID: **ICPMS1_120417A** SeqNo: **1949922** Prep Date: **4/16/2012** DF: **2**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	11.54	0.70	6.983	6.146	77.3	80-120	12.26	5.99	25	S

The following samples were analyzed in this batch: 1204356-01A 1204356-02A 1204356-03A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
Work Order: 1204356
Project: PDC Mesa 4-Background 11-273-3 4/11/12

QC BATCH REPORT

Batch ID: **R103550** Instrument ID **WETCHEM** Method: **SW9040**

LCS Sample ID: **LCS-R103550-R103550** Units: **s.u.** Analysis Date: **4/13/2012 10:05 AM**
Client ID: Run ID: **WETCHEM_120413M** SeqNo: **1947895** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	4.37	0	4.4	0	99.3	90-110	0			

LCS Sample ID: **LCS-R103550-R103550** Units: **s.u.** Analysis Date: **4/13/2012 10:05 AM**
Client ID: Run ID: **WETCHEM_120413M** SeqNo: **1947898** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	4.37	0	4.4	0	99.3	90-110	0			

DUP Sample ID: **1204347-01A DUP** Units: **s.u.** Analysis Date: **4/13/2012 10:05 AM**
Client ID: Run ID: **WETCHEM_120413M** SeqNo: **1947897** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	8.55	0	0	0	0	0-0	8.55	0	20	

DUP Sample ID: **1204357-03B DUP** Units: **s.u.** Analysis Date: **4/13/2012 10:05 AM**
Client ID: Run ID: **WETCHEM_120413M** SeqNo: **1947903** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	8.61	0	0	0	0	0-0	8.61	0	20	

The following samples were analyzed in this batch: 1204356-01A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions
Work Order: 1204356
Project: PDC Mesa 4-Background 11-273-3 4/11/12

QC BATCH REPORT

Batch ID: **R103561** Instrument ID **MOIST** Method: **A2540 G**

MBLK Sample ID: **WBLKS1-R103561** Units: **% of sample** Analysis Date: **4/13/2012 03:14 PM**
Client ID: Run ID: **MOIST_120413B** SeqNo: **1948239** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	ND	0.050								

LCS Sample ID: **LCS-R103561** Units: **% of sample** Analysis Date: **4/13/2012 03:14 PM**
Client ID: Run ID: **MOIST_120413B** SeqNo: **1948238** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	100	0.050	100	0	100	99.5-100.5	0			

DUP Sample ID: **1204351-08BDUP1** Units: **% of sample** Analysis Date: **4/13/2012 03:14 PM**
Client ID: Run ID: **MOIST_120413B** SeqNo: **1948230** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	3.12	0.050	0	0	0	0-0	3.23	3.46	20	

DUP Sample ID: **1204351-08BDUP2** Units: **% of sample** Analysis Date: **4/13/2012 03:14 PM**
Client ID: Run ID: **MOIST_120413B** SeqNo: **1948231** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	3.06	0.050	0	0	0	0-0	3.23	5.41	20	

DUP Sample ID: **1204350-01ADUP** Units: **% of sample** Analysis Date: **4/13/2012 03:14 PM**
Client ID: Run ID: **MOIST_120413B** SeqNo: **1948273** Prep Date: DF: **1**

Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	57.56	0.050	0	0	0	0-0	51.03	12	20	

The following samples were analyzed in this batch: 1204356-01A 1204356-02A 1204356-03A

Note: See Qualifiers Page for a list of Qualifiers and their explanation.

ALS Laboratory Group

225 Commerce Drive, Fort Collins, Colorado 80524
TF: (800) 443-1511 PH: (970) 490-1511 FX: (970) 490-1522

Chain-of-Custody

Form 202r8

WORKORDER # 1204356

PAGE 1 of 1

DISPOSAL (By Lab) or Return to Client

PROJECT NAME	PDC Mesa 4 - Background	SAMPLER	Casey Richardson	DATE	4/12/2012
PROJECT No.	11-273-3	SITE ID		TURNAROUND	Standard
		EDD FORMAT			
		PURCHASE ORDER			
COMPANY NAME	HRL Compliance Solutions, Inc.	BILL TO COMPANY	PDC Energy		
SEND REPORT TO	Herman Lucero	INVOICE ATTN TO	Ed Winters		
ADDRESS	744 Horizon Ct. Suite 140	ADDRESS	120 Railroad Ave. Suite D		
CITY / STATE / ZIP	Grand Junction, CO. 81506	CITY / STATE / ZIP	Parachute, CO 81635		
PHONE	970-243-3271	PHONE	970-285-9606		
FAX	970-243-3280	FAX			
E-MAIL	hlucero@hrlcomp.com	E-MAIL	ewinters@petd.com		

Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	ARSENIC	SAR	EC	pH
1	Background 1	Soil	4/11/2012	1315	2	4° C		x	x	x	x
2	Background 2	Soil	4/11/2012	1320	1	4° C		x			
3	Background 3	Soil	4/11/2012	1330	1	4° C		x			

*Time Zone (Circle): EST CST (MST) PST Matrix: O = oil (S = soil) NS = non-soil solid W = water L = liquid E = extract F = filter

For metals or anions, please detail analytes below.

Comments: 3.2°C

QC PACKAGE (check below)	
x	LEVEL II (Standard QC)
	LEVEL III (Std QC + forms)
	LEVEL IV (Std QC + forms + raw data)

Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY		Casey Richardson	4/12/2012	1700
RECEIVED BY		Diane F Shaw	4/13/12	1030
RELINQUISHED BY				
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				

ALS Environmental

Subcontractor:
A & L Great Lakes Agricultural La
3505 Conestoga Dr
Ft. Wayne, IN 46808
TEL: (260) 483-4759
FAX: (260) 483-5274
Acct #: 91000

Salesperson **Debbie Fazio**

CHAIN-OF-CUSTODY RECORD

Date: 13-Apr-12
COC ID: 3560
Due D 19-Apr-12

Customer Information		Project Information		Parameter/Method Request for Analysis	
Purchase Order		Project Name	1204356	A	Subcontracted Analyses (SUBCONTRACT) SHR-EC
Work Order		Project Number		B	
Company Name	ALS Group USA, Corp	Bill To Company	ALS Group USA, Corp	C	
Send Report To	Ann Preston	Inv Attn	Accounts Payable	D	
Address	3352 128th Avenue	Address	3352 128th Avenue	E	
				F	
City/State/Zip	Holland, Michigan 49424-9263	City/State/Zip	Holland, Michigan 49424-9263	G	
Phone	(616) 399-6070	Phone	(616) 399-6070	H	
Fax	(616) 399-6185	Fax	(616) 399-6185	I	
eMail Address	ann.preston@alsglobal.com	eMail CC		J	

ALS Sample ID	Client Sample ID	Matrix	Collection Date 24hr	Bottle	A	B	C	D	E	F	G	H	I	J
1204356-01B	Background 1	Soil	11/Apr/2012 13:15	(1) MISC	X									

Comments:

Please analyze for SAR-EC. Email results to Ann Preston.

Relinquished by:	Date/Time	Received by:	Date/Time	Cooler IDs	Report/QC Level
	4/16/12				Std
Relinquished by:	Date/Time	Received by:	Date/Time		

ALS Group USA, Corp

Sample Receipt Checklist

Client Name: **HRL**

Date/Time Received: **13-Apr-12 10:30**

Work Order: **1204356**

Received by: **DS**

Checklist completed by Diane Shaw (eSignature) 13-Apr-12 (Date)

Reviewed by: Ann Preston (eSignature) 13-Apr-12 (Date)

Matrices: Soil

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☑	No ☐	Not Present ☐
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☑
Chain of custody present?	Yes ☑	No ☐	
Chain of custody signed when relinquished and received?	Yes ☑	No ☐	
Chain of custody agrees with sample labels?	Yes ☑	No ☐	
Samples in proper container/bottle?	Yes ☑	No ☐	
Sample containers intact?	Yes ☑	No ☐	
Sufficient sample volume for indicated test?	Yes ☑	No ☐	
All samples received within holding time?	Yes ☑	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☑	No ☐	
Temperature(s)/Thermometer(s):	3.2 c		
Cooler(s)/Kit(s):			
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☑
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☑
pH adjusted?	Yes ☐	No ☐	N/A ☑
pH adjusted by:	-		

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

CUSTODY SEAL
DATE 4-12-12
SIGNATURE

QEC
Quality Environmental Containers
800-255-3950 • 304-255-3900

QEC
Quality Environmental Containers
800-255-3950 • 304-255-3900

FedEx Express — NEW Package US Airbill

8987 5943 7618 [redacted] 0200

FedEx Retrieval Copy

fedex.com 1.800.GoFedEx 1.800.463.3339

1 From
Date 4-12-12 [redacted]
Sender's Name — Phone
Company
Address — Dept./Floor/Suite/Room
City — State — ZIP

2 Your Internal Billing Reference

3 To
Recipient's Name — Phone
Company
Address — We cannot deliver to P.O. boxes or P.O. ZIP codes. — Dept./Floor/Suite/Room
01 HOLD Weekday — FedEx location address REQUIRED. NOT available for FedEx First Overnight
Address — Use this line for the HOLD location address or for continuation of your shipping address.
31 HOLD Saturday — FedEx location address REQUIRED. Available ONLY for FedEx Priority Overnight and FedEx 2Day to select locations.
City — State — ZIP

8987 5943 7618

4 Express Package Service — Packages up to 150 lbs.

Next Business Day:
06 ☐ FedEx First Overnight
01 ☒ FedEx Priority Overnight
05 ☐ FedEx Standard Overnight

2 or 3 Business Days:
49 ☐ NEW FedEx 2Day A.M.
03 ☐ FedEx 2Day
20 ☐ FedEx Express Saver

5 Packaging — *Declared value limit $500
06 ☐ FedEx Envelope* 02 ☐ FedEx Pak* 03 ☐ FedEx Box 04 ☐ FedEx Tube 01 ☒ Other

6 Special Handling and Delivery Signature Options
03 ☐ SATURDAY DELIVERY
☐ No Signature Required — 10 ☐ Direct Signature — 34 ☐ Indirect Signature

Does this shipment contain dangerous goods?
One box must be checked.
☒ No 04 ☐ Yes As per attached Shipper's Declaration ☐ Yes Shipper's Declaration not required ☐ Dry Ice
☐ Cargo Aircraft Only

7 Payment *Bill to:*
Enter FedEx Acct. No. or Credit Card No. below.
1 ☒ Sender (Acct. No. in Section 1 will be billed.) 2 ☐ Recipient 3 ☐ Third Party 4 ☐ Credit Card 5 ☐ Cash/Check
[redacted]

Total Packages 1 — Total Weight [redacted]

612

Rev. Date 11/10 • Part #163136 • ©1994–2010 FedEx • PRINTED IN U.S.A. SRY

fedex.com 1.800.GoFedEx 1.800.463.3339

Appendix C: Sundry Form 4

DOCUMENT #2145085

FORM 4 Rev 12/05

Page 1

State of Colorado
Oil and Gas Conservation Commission

1120 Lincoln Street, Suite 801, Denver, Colorado 80203 Phone: (303)894-2100 Fax:(303)894-2109

DE	ET	OE	ES

SUNDRY NOTICE

Submit original plus one copy. This form is to be used for general, technical and environmental sundry Information. For proposed or completed operations, describe in full on Technical Information Page (Page 2 of this form.) Identify well or other facility by API Number or by OGCC Facility ID. Operator shall send an informational copy of all sundry notices for wells located in High Density Areas to the Local Government Designee (Rule 603b.)

1. OGCC Operator Number: 69175
2. Name of Operator: PDC Energy
3. Address: 120 Railroad Ave. STE D
   City: Parachute State: CO Zip: 81635
4. Contact Name: Ed Winters
   Phone: 970-285-9606
   Fax: 970-285-9619
5. API Number 05- 045-10274 OGCC Facility ID Number 334691
6. Well/Facility Name: Puckett 7. Well/Facility Number 34B-7
8. Location (QtrQtr, Sec, Twp, Rng, Meridian): SWSE, Sec. 7, T7S, R96W, 6th PM
9. County: Garfield 10. Field Name: Grand Valley
11. Federal, Indian or State Lease Number:

Complete the Attachment Checklist

	OP	OGCC
Survey Plat		
Directional Survey		
Surface Eqpmt Diagram		
Technical Info Page	x	
Other	x	

General Notice

☐ **CHANGE OF LOCATION:** **Attach New Survey Plat** (a change of surface qtr/qtr is substantive and requires a new permit)

	FNL/FSL		FEL/FWL	
Change of **Surface** Footage **from** Exterior Section Lines:				
Change of **Surface** Footage **to** Exterior Section Lines:				
Change of **Bottomhole** Footage **from** Exterior Section Lines:				
Change of **Bottomhole** Footage **to** Exterior Section Lines:				attach directional survey

Bottomhole location Qtr/Qtr, Sec, Twp, Rng, Mer

Latitude Distance to nearest property line Distance to nearest bldg, public rd, utility or RR

Longitude Distance to nearest lease line Is location in a High Density Area (rule 603b)? Yes/No

Ground Elevation Distance to nearest well same formation Surface owner consultation date:

GPS DATA:

Date of Measurement PDOP Reading Instrument Operator's Name

☐ **CHANGE SPACING UNIT**

Formation	Formation Code	Spacing order number	Unit Acreage	Unit configuration

☐ **Remove from surface bond** Signed surface use agreement attached

☐ **CHANGE OF OPERATOR (prior to drilling):**
Effective Date:
Plugging Bond: ☐ Blanket ☐ Individual

☐ **CHANGE WELL NAME** NUMBER
From:
To:
Effective Date:

☐ **ABANDONED LOCATION:**
Was location ever built? ☐ Yes ☐ No
Is site ready for Inspection? ☐ Yes ☐ No
Date Ready for Inspection:

☐ **NOTICE OF CONTINUED SHUT IN STATUS**
Date well shut in or temporarily abandoned:
Has Production Equipment been removed from site? ☐ Yes ☐ No
MIT required if shut in longer than two years. Date of last MIT

☐ **SPUD DATE:**

☐ **REQUEST FOR CONFIDENTIAL STATUS** (6 mos from date casing set)

☐ **SUBSEQUENT REPORT OF STAGE, SQUEEZE OR REMEDIAL CEMENT WORK** *submit cbl and cement job summaries

Method used	Cementing tool setting/perf depth	Cement volume	Cement top	Cement bottom	Date

☐ **RECLAMATION:** Attach technical page describing final reclamation procedures per Rule 1004.
Final reclamation will commence on approximately ☐ Final reclamation is completed and site is ready for inspection.

Technical Engineering/Environmental Notice

☐ Notice of Intent Approximate Start Date:
☐ Report of Work Done Date Work Completed:

Details of work must be described in full on Technical Information Page (Page 2 must be submitted.)

☐ Intent to Recomplete (submit form 2)
☐ Change Drilling Plans
☐ Gross Interval Changed?
☐ Casing/Cementing Program Change
☐ Request to Vent or Flare
☐ Repair Well
☐ Rule 502 variance requested
☐ [x] Other: Closure
☐ E&P Waste Disposal
☐ Beneficial Reuse of E&P Waste
☐ Status Update/Change of Remediation Plans for Spills and Releases

I hereby certify that the statements made in this form are, to the best of my knowledge, true, correct and complete.

Signed: Date: 15 August 2012 Email: ewinters@pdcl.com

Print Name: Ed Winters Title: Environmental Field Coordinator

COGCC Approved: Chris Canfield, P.G. Title Date:

Digitally signed by Chris Canfield, P.G.
DN: cn=Chris Canfield, P.G., o=EPS Northwest Region, ou=COGCC, email=chris.canfield@state.co.us, c=US
Date: 2013.05.29 17:14:47 -06'00'

CONDITIONS OF APPROVAL, IF ANY:

FORM 4 Rev 12/05

TECHNICAL INFORMATION PAGE

FOR OGCC USE ONLY

1. OGCC Operator Number: 69175 API Number: 05-045-10274
2. Name of Operator: PDC Energy OGCC Facility ID # 334691
3. Well/Facility Name: Puckett Well/Facility Number: 34B-7
4. Location (QtrQtr, Sec, Twp, Rng, Meridian): SWSE, Sec. 7, T7S, R96W, 6th PM

This form is to be completed whenever a Sundry Notice is submitted requiring detailed report of work to be performed or completed. This form shall be transmitted within 30 days of work completed as a "subsequent" report and must accompany Form 4, page 1.

5. **DESCRIBE PROPOSED OR COMPLETED OPERATIONS**

PDC Energy is submitting this Form 4 for the closure of a flow back water release at the PDC Puckett 34B-7 (Mesa 4) well pad. Refer to the submitted Form 19 for initial response actions of each release (COGCC spill/release tracking #2221810). The release could not be characterized at the time of initial investigation due to tanks being utilized for fracing operations located over the spill area.

This COGCC Form 4 is being submitted as a request to consider the background concentration levels for arsenic at the PDC Puckett 34B-7 well pad. The request is relative to a flow back water release at the subject facility in accordance with footnote 1 to the COGCC Table 9101-1. See attached analytical.

Two (2) grab samples were collected from the impacted area at depths of approximately two (2) feet to ascertain the arsenic concentrations of the facility.

Samples collected at 1 to 2 feet.

Confirmation Spill Area East: 6.6 mg/kg
Confirmation Spill Area West: 7.5 mg/kg

Average: 7.05 mg/kg

Three (3) background samples were collected from the undisturbed , up-gradient hillside adjacent to the well pad. The samples were analyzed for arsenic with one sample also being analyzed for inorganic constituents, SAR, EC, and pH. Refer to the attached map for GIS locations of the sample locations. Confirmation and background analytical data is included in the closure report.

Background 1: 5.7 mg/kg
Background 2: 7.4 mg/kg
Background 3: 7.2 mg/kg

Average: 6.7 mg/kg

PDC Energy is requesting this approval in order to proceed with closure activities at the Puckett 34B-7 well pad.