

State of Colorado  
**Oil and Gas Conservation Commission**

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



FOR OGCC USE ONLY

**RECEIVED**  
**8/23/2012**

**SITE INVESTIGATION AND REMEDIATION WORKPLAN**

This form shall be submitted to the Director for approval prior to the initiation of site investigation and remediation activities. Form 27 is intended to be used whenever possible. Additional documentation will be required when large volumes of soil and groundwater have been impacted or involve large facilities with multiple source areas. See Rule 910. Attach as many pages as needed to fully describe the proposed work.

**CAUSE OF CONDITION BEING INVESTIGATED AND REMEDIATED**

☐ Spill or Release ☐ Plug & Abandon ☐ Central Facility Closure ☐ Site/Facility Closure ☒ Other (describe): Pit Closure

OGCC Employee:

☐ Spill ☐ Complaint  
☐ Inspection ☐ NOAV

Tracking No:

OGCC Operator Number: 96850

Name of Operator: Williams Production RMT Company

Address: 1058 County Road 215

City: Parachute State: CO Zip: 81635

Contact Name and Telephone:

Karolina Blaney

No: 970-683-2295

Fax: 970-285-9573

API Number: \_\_\_\_\_

County: Garfield

Facility Name: Chevron TR 24-16-597

Facility Number: 279362

Well Name: Chevron TR 24-16-597

Well Number: N/A

Location: (QtrQtr, Sec, Twp, Rng, Meridian): SESW, Sec 16, T5S, R97W Latitude: 39.609152 Longitude: -108.285946

**TECHNICAL CONDITIONS**

Type of Waste Causing Impact (crude oil, condensate, produced water, etc): Produced Water

Site Conditions: Is location within a sensitive area (according to Rule 901e)? ☒ Y ☐ N If yes, attach evaluation.

Adjacent land use (cultivated, irrigated, dry land farming, industrial, residential, etc.): Rangeland, Non Crop Land

Soil type, if not previously identified on Form 2A or Federal Surface Use Plan: Parachute Irigul-Complex, 5-30% slopes

Potential receptors (water wells within 1/4 mi, surface waters, etc.): Tributaries to Short Gulch Creek lie approximately 850 feet to the west and approximately 1000 feet to the south. A tributary to Wet Fork Creek lies approximately 1,200 feet to the north.

Description of Impact (if previously provided, refer to that form or document):

Impacted Media (check):

- ☒ Soils  
☐ Vegetation  
☐ Groundwater  
☐ Surface Water

Extent of Impact:

Please refer to attached Notice of Completion Report for Remediation #5868

How Determined:

Visual observations, field screening, and analytical analysis

**REMEDIATION WORKPLAN**

Describe initial action taken (if previously provided, refer to that form or document):

Please refer to attached Notice of Completion Report for Remediation #5868

Describe how source is to be removed:

Please refer to attached Notice of Completion Report for Remediation #5868

Describe how remediation of existing impacts is to be accomplished, including removal and disposal at an injection well or licensed facility, land treatment on site, removal of impacted groundwater, insitu bioremediation, burning of oily vegetation, etc.:

Please refer to attached Notice of Completion Report for Remediation #5868



Page 2  
REMEDIAL WORKPLAN (Cont.)

Tracking Number: REM # 5868  
Name of Operator: \_\_\_\_\_  
OGCC Operator No: \_\_\_\_\_  
Received Date: \_\_\_\_\_  
Well Name & No: TR 24-16-597  
Facility Name & No: Pit Facility # 279362

OGCC Employee: \_\_\_\_\_

**If groundwater has been impacted, describe proposed monitoring plan** (# of wells or sample points, sampling schedule, analytical methods, etc.):

Please see attached Notice of Completion Report for Remediation # 5868

**Describe reclamation plan.** Discuss existing and new grade recontouring; method and testing of compaction alleviation; and reseeding program, including location of new seed, seed mix and noxious weed prevention. Attach diagram or drawing. Use additional sheet for description if required.

Please see attached Notice of Completion Report for Remediation # 5868

**Attach samples and analytical results taken to verify remediation of impacts. Show locations of samples on an onsite schematic or drawing.**

**Is further site investigation required?** ☐ Y ☒ N If yes, describe:

Please see attached Notice of Completion Report for Remediation # 5868

**Final disposition of E&P waste** (landtreated and disposed onsite, name of licensed disposal facility, recycling, reuse, etc.):

Please see attached Notice of Completion Report for Remediation # 5868

### IMPLEMENTATION SCHEDULE

Date Site Investigation Began: November 11, 2011 Date Site Investigation Completed: November 11, 2011 Date Remediation Plan Submitted: June 13, 2011  
Remediation Start Date: November 11, 2011 Anticipated Completion Date: May 23, 2012 Actual Completion Date: May 23, 2012

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

Print Name: Karolina Blaney Signed: Karolina Blaney  
Title: Environmental Specialist Date: 8/22/12

OGCC Approved:  Title: FOR Date: 08/23/2012  
Chris Camfield  
EPS NW Region

***WPX ENERGY ROCKY MOUNTAIN LLC  
TRAIL RIDGE FIELD  
NOTICE OF COMPLETION REPORT FOR  
TR 24-16-597 MULTI WELL PIT  
REMEDATION # 5868***

Prepared For:



1058 County Road 215  
P.O. Box 370  
Parachute, Colorado 81635

Prepared By:



2385 F ½ Road  
Grand Junction, CO 81505  
Phone: 970-243-3271  
Fax: 970-243-3280

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## **INTRODUCTION**

The purpose of this Notice of Completion report – for the closure of the TR 24-16-597 Multi Well Pit (COGCC Facility ID number 279362; hereinafter referred to as TR 24-16-597) – is to provide detailed information and result analysis for the previously submitted and approved remediation number 5868, Colorado Oil and Gas Conservation Commission (COGCC) Site Investigation and Remediation Workplan, Form 27. This report will provide the documentation necessary to demonstrate a comprehensive and diligent investigation of the pit and adjacent environment which was obtained as described and in accordance with all appropriate county, state and federal rules and regulations.

The subject Form 27 was delivered via electronic email on June 13, 2011. Preliminary approval to proceed with closure of the subject pit was issued by the COGCC and obtained by WPX Energy Rocky Mountain, LLC (WPX) on June 13, 2011; at which time the aforementioned remediation number was issued. Closure activities began on November 11, 2011 and were concluded on May 23, 2012. Information included in this report includes but is not limited to; field screening results, laboratory analytical, subliner soil remediation, soil treatment, and liner recycling.

## **EVACUATION OF PIT CONTENTS**

Produced water and free liquids were removed from the pit utilizing a vacuum truck. Once the liquids were removed from the pit the residual pit contents remaining on the liner were removed using a pressure washer. All pit fluids were transported to an approved disposal/evaporation facility located in the Piceance Basin area for further processing.

## **BACKGROUND SAMPLING**

Three grab samples were collected from the uphill undisturbed hillsides surrounding the pad. All three samples were analyzed for arsenic, as well as an additional analysis at one location which included inorganic parameters listed in COGCC Table 910-1. Refer to Table 4 and Appendix 3 for background sampling results.

## **PIT LINER INVESTIGATION AND INTEGRITY ASSESSMENT**

The pit liner system, which contained two layers of 30 mm poly synthetic material, was present within the pit upon pit liner investigation. The liner system revealed no large tears or rips. However, numerous small holes approximately 1 cm in diameter were observed over the surface of both the top and bottom liners. The liner holes were documented and mapped accordingly in order to assess soil impacts upon liner removal. It was concluded from the initial pit liner investigation that the integrity of the liner had been compromised and warranted additional soil investigation. A Form 19 was submitted on November 19, 2011 to the COGCC indicating that the a release had occurred, but the exact volume released was unknown.

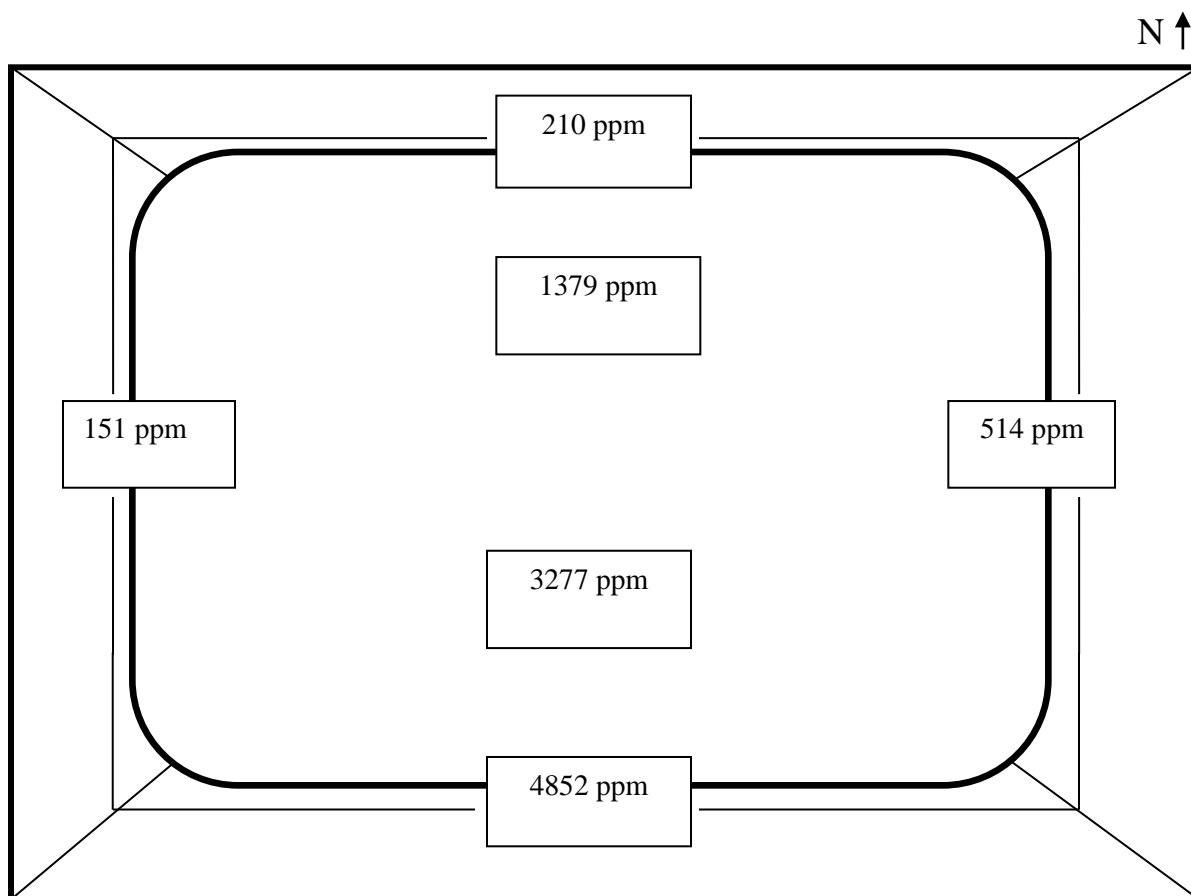
## PIT LINER REMOVAL

Once the pit liner was cleaned, the liner itself was removed from the pit. A track hoe was utilized to pull the liner off the ground surface and out of the pit. The liner material was moved to an earthen bermed containment cell where it was compacted, bailed and processed for transport to a recycling center.

## EVALUATION OF PIT SUB-SOILS

After the pit liner had been removed, the pit sub-soils were evaluated for evidence of contamination on November 11, 2011. In doing so, the pit was divided into a conceptual grid pattern in order to represent a composite characterization of the pit as a whole by investigating individual grid nodes. For each node, soils were visually inspected for impacts and field screened using a PetroFlag Hydrocarbon Detection Unit (PetroFlag) in order to determine any areas of impact. In addition, special consideration was paid to areas where holes were observed through a more detailed investigation process utilizing PetroFlag field screening instruments and visual observation. Samples were collected from the surface to six (6) inches below and analyzed for hydrocarbon concentrations. Figure 1 and Table 1 outlines the initial sub soil evaluation and field screening results.

**FIGURE 1: INITIAL SURFACE PETROFLAG FIELD SCREENING RESULTS**



**TABLE 1: INITIAL PETROFLAG<sup>®</sup> FIELD SCREENING RESULTS**

Sample ID	Results (0-6'')	Results (1')
North Wall	210	-
South Wall	4952	2019
East Wall	514	384
West Wall	151	-
Pit Bottom – North Half	1379	891
Pit Bottom – South Half	>5000	3277

Note: All results are in mg/kg

Highlighted numbers indicate areas that warranted additional inspection and analysis

Field screening of the pit surface exceeded COGCC criteria of 500 mg/kg on the south and eastern pit walls, and both the northern and southern pit bottom sections. A hand auger was used to collect an additional sample from one (1) foot below the pit bottom and side wall surface, results indicate that hydrocarbon concentration remain above COGCC criteria. Due to large rocks and frozen ground, field screening could not extent beyond one (1) foot utilizing hand equipment, and required mechanical equipment.

Based on the results from the field screening provided in Table 1 and Figure 1, as well as visual observations, it was determined that the soil on the pit bottom and adjacent four side walls contained hydrocarbon concentrations that exceeded constituents set forth in COGCC Table 910-1 standards and remediation activities were necessary.

#### **REMEDIATION ACTIVITIES**

Excavation of the impacted soils occurred on November 22, 2011 with a trackhoe removing approximately 3 feet from the southern and eastern side walls exceeding COGCC criteria and approximately 6 feet from the pit bottom, where bedrock was encountered. Field screening indicated that hydrocarbon concentrations were below constituents outlined in COGCC Table 910-1, and confirmation samples were collected. Excavated soils were placed inside an earthened bermed containment cell for bioremediation treatment and mixing.

- Confirmation samples were collected in accordance with Rule 905.b. (4), from all four walls at a position that was centered vertically and horizontally. These samples were collected for confirmation of compliance of COGCC Rule 910 for hydrocarbon concentrations; as well as verification of field screening analysis. One (1) additional grab sample was collected from the base of the pit, which included the low point of the base, to demonstrate compliance in accordance with Rule 905.b.(1).

- A Trimble Geo XT 2011 was used to satisfy requirements as outlined in COGCC Rule 215 for collecting GPS locations of each confirmation sample location from the pit walls and pit bottom.
- Visual inspection of the pit bottoms, field screening techniques, and sampling procedures were followed in accordance with WPX Pit Closure Plan (COGCC document #01175818).

## **WATER SAMPLING ANALYSIS**

As described in the pit status update Sundry Notice Form 4, submitted to the COGCC on December 9, 2011 (COGCC document # 2222892), the majority of the contaminated soil has been excavated (the pit bottom and two of the pit walls) to a depth where the hydrocarbon concentrations are below thresholds set forth in the COGCC Table 910-1.

The TR 24-16-597 multi-well pit is located in close proximity to the Short Gulch Creek and its tributaries. To ensure that the tributaries have not been impacted by the release, WPX sampled both tributaries during the runoff on April 5, 2012 (See Figure 2). In addition, the area downgradient (south) of the pit was inspected for any intermittent and/or perennial springs. Two springs/seeps were identified between the sampling points and the pit, and were sampled on April 5, 2012 as well. Samples were analyzed for constituents outlined in COGCC Table 910-1 for water, as well as pH, Alkalinity, and EC. Refer to Table 3 for analytical analysis and Appendix 3 for raw analytical data.

## **SAMPLE ANALYSIS**

Sampling was performed in accordance with WPX Pit Closure Plan, Phase IV, Task 2. See attached Table 2 for summary of initial excavation analytical results and Appendix 1 for raw analytical data.

## **MANAGEMENT OF STOCKPILED MATERIAL**

Excavated soils from within the pit was placed within a bermed containment cell and treated via bioremediation product and maintenance with water and mixed until hydrocarbon concentrations were below COGCC Table 910-1. Analytical results are presented in Table 5, with raw analytical results available in Appendix 3.

## **BACKFILL MATERIAL**

Material utilized to backfill the pit will be the original excavated soil from construction of the pit. The soil is currently stockpiled in the southeast corner of the pad.

## **EXCEPTIONS TO COGCC TABLE 910-1**

The only exceedances with COGCC Table 910-1 are within the inorganic and arsenic samples. Refer to the Sundry Notice for consideration of background inorganic and arsenic concentrations in the immediate area of the subject facility. Refer to Appendix 3 for submitted Sundry Notice.



Facility Name: TR 24-16-597  
Remediation: 5868  
Facility ID: 279362

Name of Operator: WPX Energy Rocky Mountain, LLC  
Latitude: 39.609152 Longitude -108.285946  
Location (QtrQty, Sec, Twp, Rng, Meridian): SESW, Sec 16, T5S, R97W, 6<sup>th</sup> PM

COGCC Operator # 96850  
County: Garfield

## **ANALYTICAL DATA MANAGEMENT**

Refer to Appendix 1 for the raw analytical analysis for samples collected along the pit bottom and side walls. Table 2 includes all analytical results of samples collected within the pit, highlighting areas exceeding COGCC Table 910-1 concentrations. Appendix 2 provides raw analytical data for the surface water and ground water seeps. Appendix 3 includes the background samples raw analytical results and Table 3 contains all background analytical results.

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County: Garfield

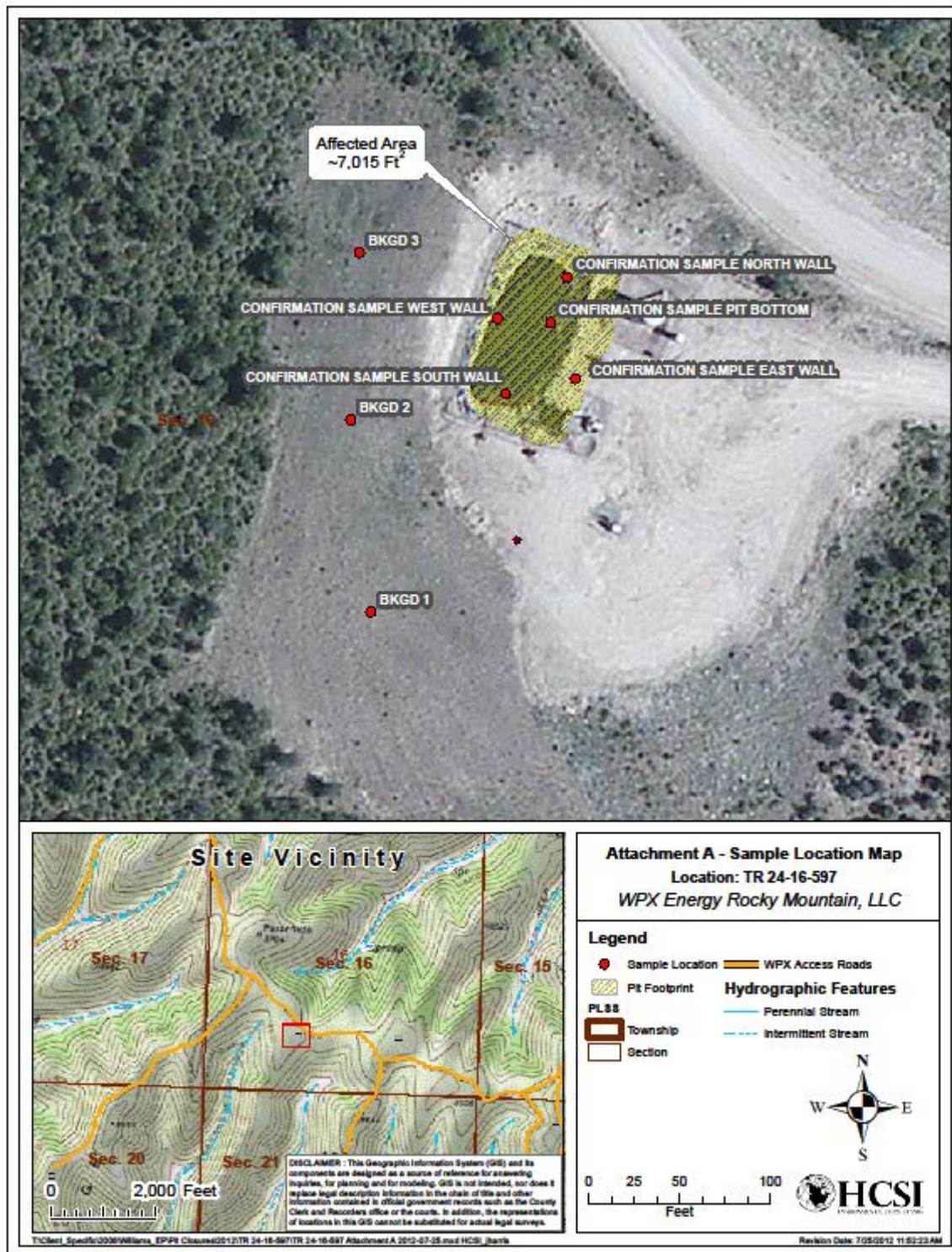
## **FIGURES**

Facility Name: TR 24-16-597  
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COGCC Operator # 96850  
County: Garfield

**FIGURE 2: GIS MAP OF PIT SAMPLE LOCATIONS**



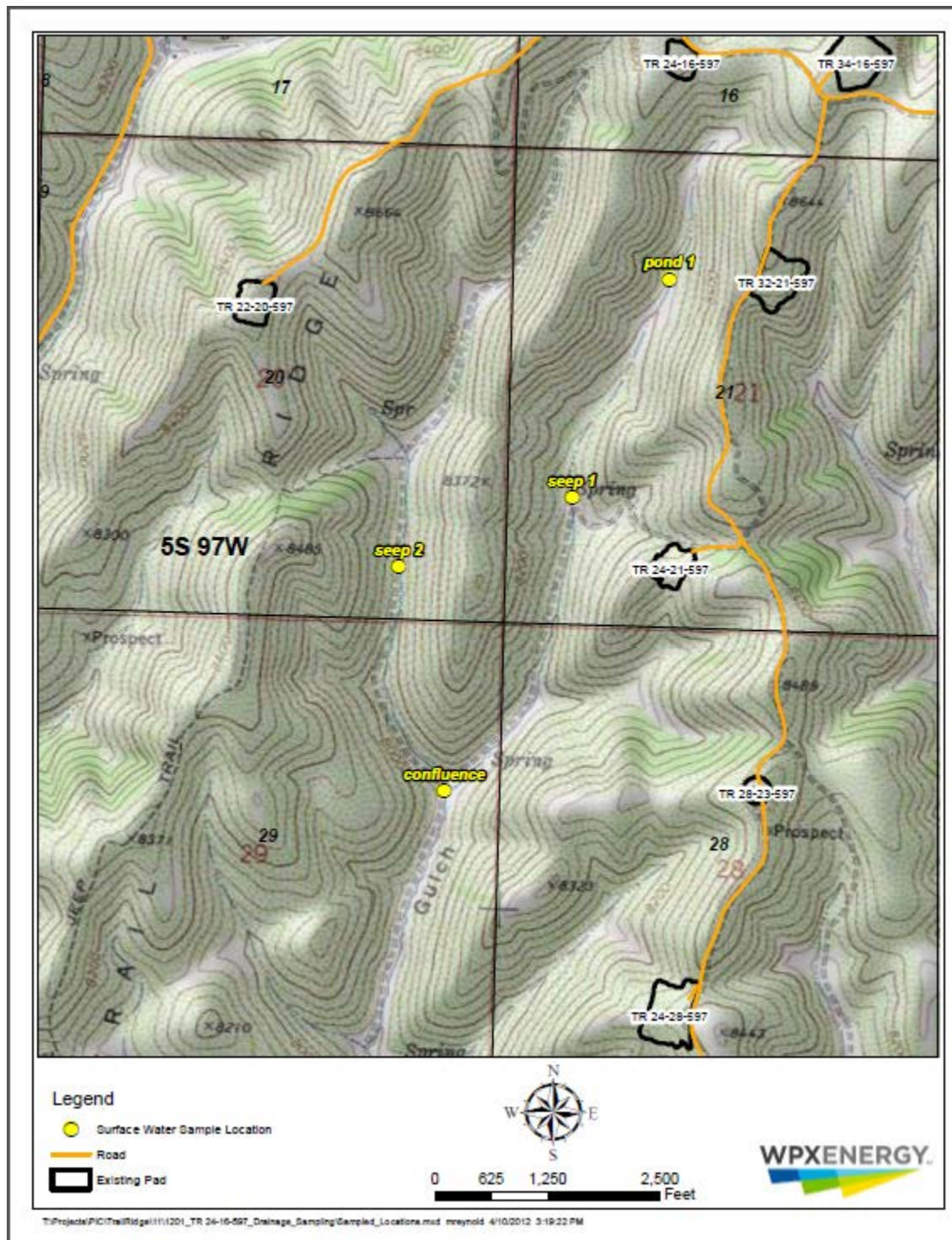


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COGCC Operator # 96850  
County: Garfield

**Figure 3: Surface Water and Seep Water Sampling Locations**



**FIGURE 4: EXCAVATION OF PIT**



Visual representation of the impacted soils on pit bottom and pit walls during excavation



Facility Name: TR 24-16-597  
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Location (QtrQty, Sec, Twp, Rng, Meridian): SESW, Sec 16, T5S, R97W, 6<sup>th</sup> PM

COGCC Operator # 96850  
County: Garfield

**FIGURE 5:**



Visual representation of the soils on pit bottom and pit walls post excavation

Facility Name: TR 24-16-597  
Remediation:5868  
Facility ID: 279362

Name of Operator: WPX Energy Rocky Mountain, LLC  
Latitude: 39.609152 Longitude -108.285946  
Location (QtrQty, Sec, Twp, Rng, Meridian): SESW, Sec 16, T5S, R97W, 6<sup>th</sup> PM

COGCC Operator # 96850  
County: Garfield

## **TABLES**

Facility Name: TR 24-16-597  
Remediation:5868  
Facility ID: 279362

Name of Operator: WPX Energy Rocky Mountain, LLC  
Latitude: 39.609152 Longitude -108.285946  
Location (QtrQty, Sec, Twp, Rng, Meridian): SESW, Sec 16, T5S, R97W, 6<sup>th</sup> PM

COGCC Operator # 96850  
County: Garfield

**TABLE 2: EXCAVATION PIT BOTTOM AND SIDE WALL ANALYTICAL RESULTS**

Pit Bottom and Walls	Sample Locations				
	North Wall	South Wall	East Wall	West Wall	Pit Bottom
TEPH (DRO)	89	56	32	21	22
TVPH (GRO)	ND	ND	ND	ND	ND
BENZENE	ND	ND	ND	ND	ND
TOLUENE	ND	ND	ND	ND	ND
ETHYLBENZENE	ND	ND	ND	ND	ND
XYLENE TOTAL	ND	ND	ND	ND	ND
ACENAPHTHENE	ND	ND	ND	ND	ND
ANTHRACENE	ND	ND	ND	ND	ND
BENZO(A)ANTHRACENE	ND	ND	ND	ND	ND
BENZO(A)PYRENE	ND	ND	ND	ND	ND
BENZO(B)FLUORANTHENE	ND	ND	ND	ND	ND
BENZO(G,H,I)PERYLEN	ND	ND	ND	ND	ND
BENZO(K)FLUORANTHENE	ND	ND	ND	ND	ND
CHRYSENE (mg/kg)	ND	ND	ND	ND	ND
DIBENZO(A,H)ANTHRACENE	ND	ND	ND	ND	ND
FLUORANTHENE	ND	ND	ND	ND	ND
FLUORENE	ND	ND	ND	ND	ND
INDENO(1,2,3-CD)PYRENE	ND	ND	ND	ND	ND
NAPHTHALENE	ND	ND	ND	ND	ND
PYRENE	ND	ND	ND	ND	ND
ARSENIC	-	-	-	-	3.6
BARIUM	-	-	-	-	390
CADMIUM	-	-	-	-	ND
CHROMIUM	-	-	-	-	44
CHROMIUM (III)	-	-	-	-	44
CHROMIUM (IV)	-	-	-	-	ND
COPPER	-	-	-	-	19
LEAD	-	-	-	-	17
MERCURY	-	-	-	-	0.030
NICKEL	-	-	-	-	23
SELENIUM	-	-	-	-	ND
SILVER	-	-	-	-	ND
ZINC	-	-	-	-	51
ELECTRICAL CONDUCTIVITY (EC) (mmho/cm)	-	-	-	-	0.29
pH	-	-	-	-	9.12
SODIUM ADSORPTION RATIO (SAR)	-	-	-	-	10.5

Readings above state limits are highlighted in yellow Note: all results are in, mg/kg = milligram per kilogram, unless noted otherwise. (-) represents analysis not conducted.



**TABLE 3: SURFACE WATER AND SEEP WATER ANALYTICAL RESULTS**

Pit Bottom and Walls	Sample Locations			
	Pond 1	Seep 1	Seep 2	Confluence
Calcium	2.0	56	48	47
Iron	0.67	ND	ND	ND
Magnesium	0.64	24	22	25
Manganese	0.0063	ND	0.014	ND
Potassium	5.1	0.72	0.85	0.64
Sodium	4.5	44	39	43
Benzene	ND	ND	ND	ND
Toluene	ND	ND	ND	ND
Ethylbenzene	ND	ND	ND	ND
Xylene Total	ND	ND	ND	ND
Alkalinity, Bicarbonate	26	270	280	280
Alkalinity, Carbonate	ND	ND	ND	ND
Alkalinity, Total	26	270	290	290
Bromide	ND	0.21	ND	ND
Chloride	1.5	37	3.2	18
Fluoride	0.11	0.14	0.16	0.16
Nitrogen, Nitrate	ND	0.77	0.60	0.37
Sulfate	1.6	60	47	64
Nitrogen, Nitrate-Nitrite	ND	0.77	0.60	0.37
Nitrogen – Nitrite	ND	ND	ND	ND
pH (s.u.)	6.86	7.74	8.01	8.35
Specific Conductance (µmhos/cm)	50	720	600	680
Total Dissolved Solids (TDS)	63	420	360	410

Note: Results are presented in mg/L, unless otherwise noted

**TABLE 4: BACKGROUND ANALYTICAL RESULTS**

	Arsenic (mg/kg)	Conductivity(mmho/cm)	Ph (s.u.)	Sodium Adsorbtion Ratio
BKGD 1	2.8	0.17	6.97	0.7
BKGD 2	2.8	-	-	-
BKGD 3	2.7	-	-	-

Readings above state limits are highlighted in yellow

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COGCC Operator # 96850  
 County: Garfield

Table 5: Landfarm Analytical Results

	Landfarm
TEPH (DRO)	160
TVPH (GRO)	ND
BENZENE	ND
TOLUENE	ND
ETHYLBENZENE	ND
XYLENE TOTAL	ND
ACENAPHTHENE	ND
ANTHRACENE	ND
BENZO(A)ANTHRACENE	ND
BENZO(A)PYRENE	ND
BENZO(B)FLUORANTHENE	ND
BENZO(G,H,I)PERYLEN	ND
BENZO(K)FLUORANTHENE	ND
CHRYSENE (mg/kg)	ND
DIBENZO(A,H)ANTHRACENE	ND
FLUORANTHENE	ND
FLUORENE	ND
INDENO(1,2,3-CD)PYRENE	ND
NAPHTHALENE	ND
PYRENE	ND
ARSENIC	3.2
BARIUM	650
CADMIUM	0.33
CHROMIUM	40
CHROMIUM (III)	40
CHROMIUM (IV)	ND
COPPER	18
LEAD	1617
MERCURY	0.090
NICKEL	20
SELENIUM	0.87
SILVER	ND
ZINC	47
ELECTRICAL CONDUCTIVITY (EC) (mmho/cm)	2.34
pH	14
SODIUM ADSORPTION RATIO (SAR)	15.7

Note: All results are presented in mg/kg, unless other indicated

## **APPENDIXES**

## **APPENDIX 1: PIT BOTTOM AND WALL SAMPLING RAW ANALYTICAL RESULTS**



22-Jun-2012

Kris Rowe  
HRL Compliance Solutions  
744 Horizon Ct. Suite 140  
Grand Junction, CO 81506

Re: **WPX TR 24-16-597 Pit Closure 6/11/12**

Work Order: **1206528**

Dear Kris,

ALS Environmental received 8 samples on 15-Jun-2012 02:45 PM 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 35.

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

Sincerely,

A handwritten signature in cursive script that reads "Ann Preston".

Electronically approved by: Ann Preston

Ann Preston  
Project Manager



Certificate No: MN331938

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185

ALS GROUP USA, CORP Part of the ALS Group A Campbell Brothers Limited Company

Environmental

[www.alsglobal.com](http://www.alsglobal.com)

RIGHT SOLUTIONS RIGHT PARTNER

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**Client:** HRL Compliance Solutions  
**Project:** WPX TR 24-16-597 Pit Closure 6/11/12  
**Work Order:** 1206528

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**Work Order Sample Summary**

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<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
1206528-01	Pit Wall North	Soil		6/11/2012 08:20	6/15/2012 14:45	<input type="checkbox"/>
1206528-02	Pit Wall South	Soil		6/11/2012 08:25	6/15/2012 14:45	<input type="checkbox"/>
1206528-03	Pit Wall East	Soil		6/11/2012 08:00	6/15/2012 14:45	<input type="checkbox"/>
1206528-04	Pit Wall West	Soil		6/11/2012 08:15	6/15/2012 14:45	<input type="checkbox"/>
1206528-05	Pit Bottom	Soil		6/11/2012 08:10	6/15/2012 14:45	<input type="checkbox"/>
1206528-06	BKGD 1	Soil		6/11/2012 09:00	6/15/2012 14:45	<input type="checkbox"/>
1206528-07	BKGD 2	Soil		6/11/2012 09:10	6/15/2012 14:45	<input type="checkbox"/>
1206528-08	BKGD 3	Soil		6/11/2012 09:15	6/15/2012 14:45	<input type="checkbox"/>

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**Client:** HRL Compliance Solutions  
**Project:** WPX TR 24-16-597 Pit Closure 6/11/12  
**Work Order:** 1206528

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**Case Narrative**

Batch 41768 MS/MSD data for Hexavalent Chromium is not related to this project's samples.

Batch 41779 sample BKGD 1 MS/MSD recoveries for Selenium were below control limits due to matrix interference. The result for Selenium in the parent sample may be biased low. The MS recoveries for Chromium and Zinc, and MSD recovery for Barium were outside control limits, however, the results in the parent sample were greater than 4x the spiked amount. No qualification is required for Barium, Chromium, or Zinc.

Batch 41805 MS/MSD data for Arsenic is not related to this project's samples.

**Client:** HRL Compliance Solutions  
**Project:** WPX TR 24-16-597 Pit Closure 6/11/12  
**WorkOrder:** 1206528

## **QUALIFIERS, ACRONYMS, UNITS**

<b><u>Qualifier</u></b>	<b><u>Description</u></b>
*	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

<b><u>Acronym</u></b>	<b><u>Description</u></b>
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

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



# ALS Group USA, Corp

Date: 22-Jun-12

Client: HRL Compliance Solutions

Project: WPX TR 24-16-597 Pit Closure 6/11/12

Sample ID: Pit Wall North

Collection Date: 6/11/2012 08:20 AM

Work Order: 1206528

Lab ID: 1206528-01

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>DIESEL RANGE ORGANICS BY GC-FID</b>						
<b>DRO (C10-C28)</b>	<b>89</b>		<b>SW8015M</b>		Prep Date: <b>6/19/2012</b>	Analyst: <b>CW</b>
			<b>4.2</b>	<b>mg/Kg-dry</b>	1	6/21/2012 03:47 PM
Surr: 4-Terphenyl-d14	62.4		39-115	%REC	1	6/21/2012 03:47 PM
<b>GASOLINE RANGE ORGANICS BY GC-FID</b>						
<b>GRO (C6-C10)</b>	<b>ND</b>		<b>SW8015</b>		Prep Date: <b>6/19/2012</b>	Analyst: <b>CW</b>
			<b>2.6</b>	<b>mg/Kg-dry</b>	50	6/19/2012 11:01 AM
Surr: Toluene-d8	108		50-150	%REC	50	6/19/2012 11:01 AM
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>						
<b>SW8270</b>					Prep Date: <b>6/19/2012</b>	Analyst: <b>RM</b>
Acenaphthene	ND		15	µg/Kg-dry	1	6/20/2012 05:43 PM
Anthracene	ND		15	µg/Kg-dry	1	6/20/2012 05:43 PM
Benzo(a)anthracene	ND		20	µg/Kg-dry	1	6/20/2012 05:43 PM
Benzo(a)pyrene	ND		20	µg/Kg-dry	1	6/20/2012 05:43 PM
Benzo(b)fluoranthene	ND		20	µg/Kg-dry	1	6/20/2012 05:43 PM
Benzo(g,h,i)perylene	ND		30	µg/Kg-dry	1	6/20/2012 05:43 PM
Benzo(k)fluoranthene	ND		30	µg/Kg-dry	1	6/20/2012 05:43 PM
Chrysene	ND		15	µg/Kg-dry	1	6/20/2012 05:43 PM
Dibenzo(a,h)anthracene	ND		18	µg/Kg-dry	1	6/20/2012 05:43 PM
Fluoranthene	ND		15	µg/Kg-dry	1	6/20/2012 05:43 PM
Fluorene	ND		15	µg/Kg-dry	1	6/20/2012 05:43 PM
Indeno(1,2,3-cd)pyrene	ND		20	µg/Kg-dry	1	6/20/2012 05:43 PM
Naphthalene	ND		15	µg/Kg-dry	1	6/20/2012 05:43 PM
Pyrene	ND		15	µg/Kg-dry	1	6/20/2012 05:43 PM
Surr: 2-Fluorobiphenyl	60.2		12-100	%REC	1	6/20/2012 05:43 PM
Surr: 4-Terphenyl-d14	92.2		25-137	%REC	1	6/20/2012 05:43 PM
Surr: Nitrobenzene-d5	58.2		37-107	%REC	1	6/20/2012 05:43 PM
<b>VOLATILE ORGANIC COMPOUNDS</b>						
<b>SW8260</b>					Prep Date: <b>6/18/2012</b>	Analyst: <b>RS</b>
Benzene	ND		31	µg/Kg-dry	1	6/19/2012 06:04 AM
Ethylbenzene	ND		31	µg/Kg-dry	1	6/19/2012 06:04 AM
m,p-Xylene	ND		62	µg/Kg-dry	1	6/19/2012 06:04 AM
o-Xylene	ND		31	µg/Kg-dry	1	6/19/2012 06:04 AM
Toluene	ND		31	µg/Kg-dry	1	6/19/2012 06:04 AM
Xylenes, Total	ND		93	µg/Kg-dry	1	6/19/2012 06:04 AM
Surr: 1,2-Dichloroethane-d4	91.9		70-130	%REC	1	6/19/2012 06:04 AM
Surr: 4-Bromofluorobenzene	92.0		70-130	%REC	1	6/19/2012 06:04 AM
Surr: Dibromofluoromethane	95.9		70-130	%REC	1	6/19/2012 06:04 AM
Surr: Toluene-d8	112		70-130	%REC	1	6/19/2012 06:04 AM
<b>MOISTURE</b>						
<b>A2540 G</b>					Prep Date: <b>6/18/2012</b>	Analyst: <b>CG</b>
<b>Moisture</b>	<b>2.7</b>		<b>0.050</b>	<b>% of sample</b>	1	6/18/2012 04:45 PM

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

# ALS Group USA, Corp

Date: 22-Jun-12

**Client:** HRL Compliance Solutions  
**Project:** WPX TR 24-16-597 Pit Closure 6/11/12  
**Sample ID:** Pit Wall South  
**Collection Date:** 6/11/2012 08:25 AM

**Work Order:** 1206528  
**Lab ID:** 1206528-02  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>DIESEL RANGE ORGANICS BY GC-FID</b>						
<b>DRO (C10-C28)</b>	<b>56</b>		<b>SW8015M</b>		Prep Date: <b>6/19/2012</b>	Analyst: <b>CW</b>
			<b>4.5</b>	<b>mg/Kg-dry</b>	1	6/21/2012 06:17 PM
Surr: 4-Terphenyl-d14	79.7		39-115	%REC	1	6/21/2012 06:17 PM
<b>GASOLINE RANGE ORGANICS BY GC-FID</b>						
<b>GRO (C6-C10)</b>	<b>ND</b>		<b>SW8015</b>		Prep Date: <b>6/19/2012</b>	Analyst: <b>CW</b>
			<b>2.7</b>	<b>mg/Kg-dry</b>	50	6/19/2012 11:26 AM
Surr: Toluene-d8	108		50-150	%REC	50	6/19/2012 11:26 AM
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>						
<b>SW8270</b>					Prep Date: <b>6/19/2012</b>	Analyst: <b>RM</b>
Acenaphthene	ND		16	µg/Kg-dry	1	6/20/2012 06:10 PM
Anthracene	ND		16	µg/Kg-dry	1	6/20/2012 06:10 PM
Benzo(a)anthracene	ND		22	µg/Kg-dry	1	6/20/2012 06:10 PM
Benzo(a)pyrene	ND		22	µg/Kg-dry	1	6/20/2012 06:10 PM
Benzo(b)fluoranthene	ND		22	µg/Kg-dry	1	6/20/2012 06:10 PM
Benzo(g,h,i)perylene	ND		33	µg/Kg-dry	1	6/20/2012 06:10 PM
Benzo(k)fluoranthene	ND		33	µg/Kg-dry	1	6/20/2012 06:10 PM
Chrysene	ND		16	µg/Kg-dry	1	6/20/2012 06:10 PM
Dibenzo(a,h)anthracene	ND		20	µg/Kg-dry	1	6/20/2012 06:10 PM
Fluoranthene	ND		16	µg/Kg-dry	1	6/20/2012 06:10 PM
Fluorene	ND		16	µg/Kg-dry	1	6/20/2012 06:10 PM
Indeno(1,2,3-cd)pyrene	ND		22	µg/Kg-dry	1	6/20/2012 06:10 PM
Naphthalene	ND		16	µg/Kg-dry	1	6/20/2012 06:10 PM
Pyrene	ND		16	µg/Kg-dry	1	6/20/2012 06:10 PM
Surr: 2-Fluorobiphenyl	71.5		12-100	%REC	1	6/20/2012 06:10 PM
Surr: 4-Terphenyl-d14	101		25-137	%REC	1	6/20/2012 06:10 PM
Surr: Nitrobenzene-d5	68.7		37-107	%REC	1	6/20/2012 06:10 PM
<b>VOLATILE ORGANIC COMPOUNDS</b>						
<b>SW8260</b>					Prep Date: <b>6/18/2012</b>	Analyst: <b>RS</b>
Benzene	ND		33	µg/Kg-dry	1	6/19/2012 06:30 AM
Ethylbenzene	ND		33	µg/Kg-dry	1	6/19/2012 06:30 AM
m,p-Xylene	ND		66	µg/Kg-dry	1	6/19/2012 06:30 AM
o-Xylene	ND		33	µg/Kg-dry	1	6/19/2012 06:30 AM
Toluene	ND		33	µg/Kg-dry	1	6/19/2012 06:30 AM
Xylenes, Total	ND		100	µg/Kg-dry	1	6/19/2012 06:30 AM
Surr: 1,2-Dichloroethane-d4	93.2		70-130	%REC	1	6/19/2012 06:30 AM
Surr: 4-Bromofluorobenzene	90.2		70-130	%REC	1	6/19/2012 06:30 AM
Surr: Dibromofluoromethane	96.2		70-130	%REC	1	6/19/2012 06:30 AM
Surr: Toluene-d8	109		70-130	%REC	1	6/19/2012 06:30 AM
<b>MOISTURE</b>						
<b>A2540 G</b>					Analyst: <b>CG</b>	
<b>Moisture</b>	<b>9.0</b>		<b>0.050</b>	<b>% of sample</b>	1	6/18/2012 04:45 PM

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

# ALS Group USA, Corp

Date: 22-Jun-12

Client: HRL Compliance Solutions

Project: WPX TR 24-16-597 Pit Closure 6/11/12

Sample ID: Pit Wall East

Collection Date: 6/11/2012 08:00 AM

Work Order: 1206528

Lab ID: 1206528-03

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>DIESEL RANGE ORGANICS BY GC-FID</b>						
<b>DRO (C10-C28)</b>	<b>32</b>		<b>SW8015M</b>		Prep Date: <b>6/19/2012</b>	Analyst: <b>CW</b>
			<b>4.9</b>	<b>mg/Kg-dry</b>	1	6/21/2012 06:42 PM
Surr: 4-Terphenyl-d14	67.8		39-115	%REC	1	6/21/2012 06:42 PM
<b>GASOLINE RANGE ORGANICS BY GC-FID</b>						
<b>GRO (C6-C10)</b>	<b>ND</b>		<b>SW8015</b>		Prep Date: <b>6/19/2012</b>	Analyst: <b>CW</b>
			<b>2.9</b>	<b>mg/Kg-dry</b>	50	6/19/2012 11:51 AM
Surr: Toluene-d8	106		50-150	%REC	50	6/19/2012 11:51 AM
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>						
<b>SW8270</b>					Prep Date: <b>6/19/2012</b>	Analyst: <b>RM</b>
Acenaphthene	ND		17	µg/Kg-dry	1	6/20/2012 06:37 PM
Anthracene	ND		17	µg/Kg-dry	1	6/20/2012 06:37 PM
Benzo(a)anthracene	ND		23	µg/Kg-dry	1	6/20/2012 06:37 PM
Benzo(a)pyrene	ND		23	µg/Kg-dry	1	6/20/2012 06:37 PM
Benzo(b)fluoranthene	ND		23	µg/Kg-dry	1	6/20/2012 06:37 PM
Benzo(g,h,i)perylene	ND		35	µg/Kg-dry	1	6/20/2012 06:37 PM
Benzo(k)fluoranthene	ND		35	µg/Kg-dry	1	6/20/2012 06:37 PM
Chrysene	ND		17	µg/Kg-dry	1	6/20/2012 06:37 PM
Dibenzo(a,h)anthracene	ND		21	µg/Kg-dry	1	6/20/2012 06:37 PM
Fluoranthene	ND		17	µg/Kg-dry	1	6/20/2012 06:37 PM
Fluorene	ND		17	µg/Kg-dry	1	6/20/2012 06:37 PM
Indeno(1,2,3-cd)pyrene	ND		23	µg/Kg-dry	1	6/20/2012 06:37 PM
Naphthalene	ND		17	µg/Kg-dry	1	6/20/2012 06:37 PM
Pyrene	ND		17	µg/Kg-dry	1	6/20/2012 06:37 PM
Surr: 2-Fluorobiphenyl	67.4		12-100	%REC	1	6/20/2012 06:37 PM
Surr: 4-Terphenyl-d14	80.5		25-137	%REC	1	6/20/2012 06:37 PM
Surr: Nitrobenzene-d5	67.7		37-107	%REC	1	6/20/2012 06:37 PM
<b>VOLATILE ORGANIC COMPOUNDS</b>						
<b>SW8260</b>					Prep Date: <b>6/18/2012</b>	Analyst: <b>RS</b>
Benzene	ND		35	µg/Kg-dry	1	6/19/2012 06:55 AM
Ethylbenzene	ND		35	µg/Kg-dry	1	6/19/2012 06:55 AM
m,p-Xylene	ND		71	µg/Kg-dry	1	6/19/2012 06:55 AM
o-Xylene	ND		35	µg/Kg-dry	1	6/19/2012 06:55 AM
Toluene	ND		35	µg/Kg-dry	1	6/19/2012 06:55 AM
Xylenes, Total	ND		110	µg/Kg-dry	1	6/19/2012 06:55 AM
Surr: 1,2-Dichloroethane-d4	90.2		70-130	%REC	1	6/19/2012 06:55 AM
Surr: 4-Bromofluorobenzene	89.5		70-130	%REC	1	6/19/2012 06:55 AM
Surr: Dibromofluoromethane	94.5		70-130	%REC	1	6/19/2012 06:55 AM
Surr: Toluene-d8	106		70-130	%REC	1	6/19/2012 06:55 AM
<b>MOISTURE</b>						
<b>A2540 G</b>					Analyst: <b>CG</b>	
Moisture	15		0.050	% of sample	1	6/18/2012 04:45 PM

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

# ALS Group USA, Corp

Date: 22-Jun-12

**Client:** HRL Compliance Solutions  
**Project:** WPX TR 24-16-597 Pit Closure 6/11/12  
**Sample ID:** Pit Wall West  
**Collection Date:** 6/11/2012 08:15 AM

**Work Order:** 1206528  
**Lab ID:** 1206528-04  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>DIESEL RANGE ORGANICS BY GC-FID</b>						
			<b>SW8015M</b>		Prep Date: <b>6/19/2012</b>	Analyst: <b>CW</b>
<b>DRO (C10-C28)</b>	<b>21</b>		<b>4.3</b>	<b>mg/Kg-dry</b>	<b>1</b>	6/21/2012 07:06 PM
Surr: 4-Terphenyl-d14	64.1		39-115	%REC	1	6/21/2012 07:06 PM
<b>GASOLINE RANGE ORGANICS BY GC-FID</b>						
			<b>SW8015</b>			Analyst: <b>CW</b>
<b>GRO (C6-C10)</b>	<b>ND</b>		<b>2.6</b>	<b>mg/Kg-dry</b>	<b>50</b>	6/18/2012 08:04 PM
Surr: Toluene-d8	99.6		50-150	%REC	50	6/18/2012 08:04 PM
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>						
			<b>SW8270</b>		Prep Date: <b>6/19/2012</b>	Analyst: <b>RM</b>
Acenaphthene	ND		15	µg/Kg-dry	1	6/20/2012 07:04 PM
Anthracene	ND		15	µg/Kg-dry	1	6/20/2012 07:04 PM
Benzo(a)anthracene	ND		21	µg/Kg-dry	1	6/20/2012 07:04 PM
Benzo(a)pyrene	ND		21	µg/Kg-dry	1	6/20/2012 07:04 PM
Benzo(b)fluoranthene	ND		21	µg/Kg-dry	1	6/20/2012 07:04 PM
Benzo(g,h,i)perylene	ND		31	µg/Kg-dry	1	6/20/2012 07:04 PM
Benzo(k)fluoranthene	ND		31	µg/Kg-dry	1	6/20/2012 07:04 PM
Chrysene	ND		15	µg/Kg-dry	1	6/20/2012 07:04 PM
Dibenzo(a,h)anthracene	ND		18	µg/Kg-dry	1	6/20/2012 07:04 PM
Fluoranthene	ND		15	µg/Kg-dry	1	6/20/2012 07:04 PM
Fluorene	ND		15	µg/Kg-dry	1	6/20/2012 07:04 PM
Indeno(1,2,3-cd)pyrene	ND		21	µg/Kg-dry	1	6/20/2012 07:04 PM
Naphthalene	ND		15	µg/Kg-dry	1	6/20/2012 07:04 PM
Pyrene	ND		15	µg/Kg-dry	1	6/20/2012 07:04 PM
Surr: 2-Fluorobiphenyl	60.9		12-100	%REC	1	6/20/2012 07:04 PM
Surr: 4-Terphenyl-d14	78.8		25-137	%REC	1	6/20/2012 07:04 PM
Surr: Nitrobenzene-d5	59.2		37-107	%REC	1	6/20/2012 07:04 PM
<b>VOLATILE ORGANIC COMPOUNDS</b>						
			<b>SW8260</b>		Prep Date: <b>6/18/2012</b>	Analyst: <b>RS</b>
Benzene	ND		32	µg/Kg-dry	1	6/19/2012 07:20 AM
Ethylbenzene	ND		32	µg/Kg-dry	1	6/19/2012 07:20 AM
m,p-Xylene	ND		64	µg/Kg-dry	1	6/19/2012 07:20 AM
o-Xylene	ND		32	µg/Kg-dry	1	6/19/2012 07:20 AM
Toluene	ND		32	µg/Kg-dry	1	6/19/2012 07:20 AM
Xylenes, Total	ND		95	µg/Kg-dry	1	6/19/2012 07:20 AM
Surr: 1,2-Dichloroethane-d4	93.2		70-130	%REC	1	6/19/2012 07:20 AM
Surr: 4-Bromofluorobenzene	91.0		70-130	%REC	1	6/19/2012 07:20 AM
Surr: Dibromofluoromethane	95.4		70-130	%REC	1	6/19/2012 07:20 AM
Surr: Toluene-d8	110		70-130	%REC	1	6/19/2012 07:20 AM
<b>MOISTURE</b>						
			<b>A2540 G</b>			Analyst: <b>CG</b>
<b>Moisture</b>	<b>4.9</b>		<b>0.050</b>	<b>% of sample</b>	<b>1</b>	6/18/2012 04:45 PM

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

# ALS Group USA, Corp

Date: 22-Jun-12

Client: HRL Compliance Solutions

Project: WPX TR 24-16-597 Pit Closure 6/11/12

Sample ID: Pit Bottom

Collection Date: 6/11/2012 08:10 AM

Work Order: 1206528

Lab ID: 1206528-05

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>DIESEL RANGE ORGANICS BY GC-FID</b>						
<b>DRO (C10-C28)</b>	<b>22</b>		<b>5.0</b>	<b>mg/Kg-dry</b>	<b>1</b>	<b>Analyst: CW</b> 6/21/2012 07:31 PM
Surr: 4-Terphenyl-d14	66.1		39-115	%REC	1	6/21/2012 07:31 PM
<b>GASOLINE RANGE ORGANICS BY GC-FID</b>						
<b>GRO (C6-C10)</b>	<b>ND</b>		<b>3.0</b>	<b>mg/Kg-dry</b>	<b>50</b>	<b>Analyst: CW</b> 6/18/2012 07:40 PM
Surr: Toluene-d8	98.8		50-150	%REC	50	6/18/2012 07:40 PM
<b>MERCURY BY CVAA</b>						
<b>Mercury</b>	<b>0.030</b>		<b>0.020</b>	<b>mg/Kg-dry</b>	<b>1</b>	<b>Analyst: LR</b> 6/20/2012 11:58 AM
<b>METALS BY ICP-MS</b>						
<b>Arsenic</b>	<b>3.6</b>		<b>0.92</b>	<b>mg/Kg-dry</b>	<b>2</b>	<b>Analyst: RH</b> 6/21/2012 12:44 AM
<b>Barium</b>	<b>390</b>		<b>4.6</b>	<b>mg/Kg-dry</b>	<b>10</b>	6/21/2012 12:08 PM
Cadmium	ND		0.37	mg/Kg-dry	2	6/21/2012 12:44 AM
<b>Chromium</b>	<b>44</b>		<b>0.92</b>	<b>mg/Kg-dry</b>	<b>2</b>	6/21/2012 12:44 AM
<b>Copper</b>	<b>19</b>		<b>0.92</b>	<b>mg/Kg-dry</b>	<b>2</b>	6/21/2012 12:44 AM
<b>Lead</b>	<b>17</b>		<b>0.92</b>	<b>mg/Kg-dry</b>	<b>2</b>	6/21/2012 12:44 AM
<b>Nickel</b>	<b>23</b>		<b>0.92</b>	<b>mg/Kg-dry</b>	<b>2</b>	6/21/2012 12:44 AM
Selenium	ND		0.92	mg/Kg-dry	2	6/21/2012 12:44 AM
Silver	ND		0.92	mg/Kg-dry	2	6/21/2012 12:44 AM
<b>Zinc</b>	<b>51</b>		<b>1.8</b>	<b>mg/Kg-dry</b>	<b>2</b>	6/21/2012 12:44 AM
<b>SUBCONTRACTED ANALYSES</b>						
<b>Subcontracted Analyses</b>	<b>Rcvd 6/20/12</b>		<b>SUBCONTRACT</b>		<b>Analyst: A&amp;LGL</b>	
			<b>as noted</b>		<b>1</b>	6/20/2012
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>						
<b>SW8270</b>					<b>Prep Date: 6/19/2012</b>	<b>Analyst: RM</b>
Acenaphthene	ND		18	µg/Kg-dry	1	6/20/2012 07:32 PM
Anthracene	ND		18	µg/Kg-dry	1	6/20/2012 07:32 PM
Benzo(a)anthracene	ND		24	µg/Kg-dry	1	6/20/2012 07:32 PM
Benzo(a)pyrene	ND		24	µg/Kg-dry	1	6/20/2012 07:32 PM
Benzo(b)fluoranthene	ND		24	µg/Kg-dry	1	6/20/2012 07:32 PM
Benzo(g,h,i)perylene	ND		36	µg/Kg-dry	1	6/20/2012 07:32 PM
Benzo(k)fluoranthene	ND		36	µg/Kg-dry	1	6/20/2012 07:32 PM
Chrysene	ND		18	µg/Kg-dry	1	6/20/2012 07:32 PM
Dibenzo(a,h)anthracene	ND		21	µg/Kg-dry	1	6/20/2012 07:32 PM
Fluoranthene	ND		18	µg/Kg-dry	1	6/20/2012 07:32 PM
Fluorene	ND		18	µg/Kg-dry	1	6/20/2012 07:32 PM
Indeno(1,2,3-cd)pyrene	ND		24	µg/Kg-dry	1	6/20/2012 07:32 PM
Naphthalene	ND		18	µg/Kg-dry	1	6/20/2012 07:32 PM
Pyrene	ND		18	µg/Kg-dry	1	6/20/2012 07:32 PM
Surr: 2-Fluorobiphenyl	66.1		12-100	%REC	1	6/20/2012 07:32 PM

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

# ALS Group USA, Corp

Date: 22-Jun-12

Client: HRL Compliance Solutions

Project: WPX TR 24-16-597 Pit Closure 6/11/12

Sample ID: Pit Bottom

Collection Date: 6/11/2012 08:10 AM

Work Order: 1206528

Lab ID: 1206528-05

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Surr: 4-Terphenyl-d14	80.5		25-137	%REC	1	6/20/2012 07:32 PM
Surr: Nitrobenzene-d5	65.5		37-107	%REC	1	6/20/2012 07:32 PM
<b>VOLATILE ORGANIC COMPOUNDS</b>			<b>SW8260</b>		Prep Date: 6/18/2012	Analyst: RS
Benzene	ND		36	µg/Kg-dry	1	6/19/2012 07:45 AM
Ethylbenzene	ND		36	µg/Kg-dry	1	6/19/2012 07:45 AM
m,p-Xylene	ND		73	µg/Kg-dry	1	6/19/2012 07:45 AM
o-Xylene	ND		36	µg/Kg-dry	1	6/19/2012 07:45 AM
Toluene	ND		36	µg/Kg-dry	1	6/19/2012 07:45 AM
Xylenes, Total	ND		110	µg/Kg-dry	1	6/19/2012 07:45 AM
Surr: 1,2-Dichloroethane-d4	91.0		70-130	%REC	1	6/19/2012 07:45 AM
Surr: 4-Bromofluorobenzene	92.0		70-130	%REC	1	6/19/2012 07:45 AM
Surr: Dibromofluoromethane	93.0		70-130	%REC	1	6/19/2012 07:45 AM
Surr: Toluene-d8	111		70-130	%REC	1	6/19/2012 07:45 AM
<b>CHROMIUM, TRIVALENT</b>			<b>CALCULATION</b>			Analyst: JJG
Chromium, Trivalent	44		0.60	mg/Kg-dry	1	6/21/2012 08:13 AM
<b>CHROMIUM, HEXAVALENT</b>			<b>SW7196A</b>		Prep Date: 6/18/2012	Analyst: MB
Chromium, Hexavalent	0.59		0.59	mg/Kg-dry	1	6/19/2012 02:30 PM
<b>MOISTURE</b>			<b>A2540 G</b>			Analyst: CG
Moisture	17		0.050	% of sample	1	6/18/2012 04:45 PM
<b>PH</b>			<b>SW9045D</b>			Analyst: JB
pH	9.12			s.u.	1	6/15/2012 10:30 AM

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

**ALS Group USA, Corp**

Date: 22-Jun-12

Client: HRL Compliance Solutions

Project: WPX TR 24-16-597 Pit Closure 6/11/12

Work Order: 1206528

Sample ID: BKGD 1

Lab ID: 1206528-06

Collection Date: 6/11/2012 09:00 AM

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>METALS BY ICP-MS</b>						
Arsenic	2.8		SW6020A 0.79	mg/Kg-dry	Prep Date: 6/20/2012 2	Analyst: RH 6/21/2012 12:50 AM
<b>SUBCONTRACTED ANALYSES</b>						
Subcontracted Analyses	Rcvd 6/20/12		SUBCONTRACT as noted		1	Analyst: A&LGL 6/20/2012
<b>MOISTURE</b>						
Moisture	5.5		A2540 G 0.050	% of sample	1	Analyst: CG 6/18/2012 04:45 PM
<b>PH</b>						
pH	6.97		SW9045D s.u.		1	Analyst: JB 6/15/2012 10:30 AM

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

# ALS Group USA, Corp

Date: 22-Jun-12

**Client:** HRL Compliance Solutions

**Project:** WPX TR 24-16-597 Pit Closure 6/11/12

**Work Order:** 1206528

**Sample ID:** BKGD 2

**Lab ID:** 1206528-07

**Collection Date:** 6/11/2012 09:10 AM

**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>METALS BY ICP-MS</b>			<b>SW6020A</b>		Prep Date: <b>6/20/2012</b>	Analyst: <b>RH</b>
Arsenic	2.8		0.78	mg/Kg-dry	2	6/21/2012 01:16 AM
<b>MOISTURE</b>			<b>A2540 G</b>			Analyst: <b>CG</b>
Moisture	3.1		0.050	% of sample	1	6/18/2012 04:45 PM

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



## ALS Group USA, Corp

Date: 22-Jun-12

**Client:** HRL Compliance Solutions

**Project:** WPX TR 24-16-597 Pit Closure 6/11/12

**Work Order:** 1206528

**Sample ID:** BKGD 3

**Lab ID:** 1206528-08

**Collection Date:** 6/11/2012 09:15 AM

**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>METALS BY ICP-MS</b>			<b>SW6020A</b>		Prep Date: <b>6/20/2012</b>	Analyst: <b>ML</b>
Arsenic	2.7		0.79	mg/Kg-dry	2	6/21/2012 09:10 PM
<b>MOISTURE</b>			<b>A2540 G</b>			Analyst: <b>CG</b>
Moisture	2.8		0.050	% of sample	1	6/18/2012 04:45 PM

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

Report Number: F12170-0219

Account 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: 1206528

DATE RECEIVED: 06/18/2012

DATE REPORTED: 06/20/2012

PAGE: 1

P.O. NUMBER: 20-1206528

ATTN: ANN PRESTON

## REPORT OF ANALYSIS

LAB NO.	SAMPLE ID	ANALYSIS	RESULT	UNIT	METHOD
37097	PIT BOTTOM	Sat'd Paste Extraction with DIW			USDA Handbook 60
		Conductivity (ECe)	0.29	mmho/cm	USDA Handbook 60
		Calcium (Sat'd Paste)	15	ppm	USDA Handbook 60
		Magnesium (Sat'd Paste)	4	ppm	USDA Handbook 60
		Sodium (Sat'd Paste)	177	ppm	USDA Handbook 60
		Sodium Adsorption Ratio (SAR)	10.5	-	USDA Handbook 60
37098	BKGD 1	Sat'd Paste Extraction with DIW			USDA Handbook 60
		Conductivity (ECe)	0.17	mmho/cm	USDA Handbook 60
		Calcium (Sat'd Paste)	22	ppm	USDA Handbook 60
		Magnesium (Sat'd Paste)	6	ppm	USDA Handbook 60
		Sodium (Sat'd Paste)	15	ppm	USDA Handbook 60
		Sodium Adsorption Ratio (SAR)	0.7	-	USDA Handbook 60

Client: HRL Compliance Solutions

Work Order: 1206528

Project: WPX TR 24-16-597 Pit Closure 6/11/12

# QC BATCH REPORT

Batch ID: 41749

Instrument ID GC8

Method: SW8015M

<b>MBLK</b>		Sample ID: <b>DBLKS1-41749-41749</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>6/19/2012 03:32 PM</b>		
Client ID:		Run ID: <b>GC8_120619A</b>				SeqNo: <b>2004634</b>		Prep Date: <b>6/19/2012</b>		DF: <b>1</b>
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	1.295	0	1.667	0	77.7	39-115	0			

<b>LCS</b>		Sample ID: <b>DLCSS1-41749-41749</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>6/19/2012 03:57 PM</b>		
Client ID:		Run ID: <b>GC8_120619A</b>				SeqNo: <b>2004635</b>		Prep Date: <b>6/19/2012</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	142.4	4.2	166.7	0	85.4	60-130	0			
Surr: 4-Terphenyl-d14	1.302	0	1.667	0	78.1	39-115	0			

<b>MS</b>		Sample ID: <b>1206417-13A MS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>6/19/2012 04:21 PM</b>		
Client ID:		Run ID: <b>GC8_120619A</b>				SeqNo: <b>2004636</b>		Prep Date: <b>6/19/2012</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	435.8	12	491.5	0	88.7	60-130	0			
Surr: 4-Terphenyl-d14	3.918	0	4.915	0	79.7	39-115	0			

<b>MSD</b>		Sample ID: <b>1206417-13A MSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>6/19/2012 04:46 PM</b>		
Client ID:		Run ID: <b>GC8_120619A</b>				SeqNo: <b>2004637</b>		Prep Date: <b>6/19/2012</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	438.8	12	479.6	0	91.5	60-130	435.8	0.677	30	
Surr: 4-Terphenyl-d14	3.811	0	4.796	0	79.5	39-115	3.918	2.76	30	

The following samples were analyzed in this batch:

1206528-01B	1206528-02B	1206528-03B
1206528-04B	1206528-05B	

**Client:** HRL Compliance Solutions  
**Work Order:** 1206528  
**Project:** WPX TR 24-16-597 Pit Closure 6/11/12

## QC BATCH REPORT

Batch ID: **R106112**      Instrument ID **GC9**      Method: **SW8015**

<b>MBLK</b>		Sample ID: <b>MBLK-R106112-R106112</b>				Units: <b>µg/L</b>		Analysis Date: <b>6/18/2012 12:15 PM</b>		
Client ID:		Run ID: <b>GC9_120618A</b>				SeqNo: <b>2002243</b>		Prep Date:		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	ND	200								
<i>Surr: Toluene-d8</i>	94.96	0	100	0	95	70-130	0			

<b>LCS</b>		Sample ID: <b>LCS-R106112-R106112</b>				Units: <b>µg/L</b>		Analysis Date: <b>6/18/2012 11:26 AM</b>		
Client ID:		Run ID: <b>GC9_120618A</b>				SeqNo: <b>2002242</b>		Prep Date:		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	24210	200	25000	0	96.8	70-130	0			
<i>Surr: Toluene-d8</i>	106.2	0	100	0	106	70-130	0			

<b>MS</b>		Sample ID: <b>1206563-01A MS</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>6/18/2012 08:29 PM</b>		
Client ID:		Run ID: <b>GC9_120618A</b>				SeqNo: <b>2002895</b>		Prep Date:		DF: <b>50</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	1257000	2,500	1250000	0	101	70-130	0			
<i>Surr: Toluene-d8</i>	4776	0	5000	0	95.5	50-150	0			

<b>MSD</b>		Sample ID: <b>1206563-01A MSD</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>6/18/2012 08:54 PM</b>		
Client ID:		Run ID: <b>GC9_120618A</b>				SeqNo: <b>2002896</b>		Prep Date:		DF: <b>50</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	1292000	2,500	1250000	0	103	70-130	1257000	2.77	30	
<i>Surr: Toluene-d8</i>	4763	0	5000	0	95.3	50-150	4776	0.284	30	

The following samples were analyzed in this batch:

1206528-04A	1206528-05A
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**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** HRL Compliance Solutions  
**Work Order:** 1206528  
**Project:** WPX TR 24-16-597 Pit Closure 6/11/12

## QC BATCH REPORT

Batch ID: **R106180**      Instrument ID **GC9**      Method: **SW8015**

<b>MBLK</b>		Sample ID: <b>MBLK-R106180-R106180</b>				Units: <b>µg/L</b>		Analysis Date: <b>6/19/2012 10:12 AM</b>		
Client ID:		Run ID: <b>GC9_120619A</b>				SeqNo: <b>2003914</b>		Prep Date:		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	ND	200								
<i>Surr: Toluene-d8</i>	<i>103.9</i>	<i>0</i>	<i>100</i>	<i>0</i>	<i>104</i>	<i>70-130</i>	<i>0</i>			

<b>LCS</b>		Sample ID: <b>LCS-R106180-R106180</b>				Units: <b>µg/L</b>		Analysis Date: <b>6/19/2012 09:23 AM</b>		
Client ID:		Run ID: <b>GC9_120619A</b>				SeqNo: <b>2003913</b>		Prep Date:		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	23240	200	25000	0	92.9	70-130	0			
<i>Surr: Toluene-d8</i>	<i>81.2</i>	<i>0</i>	<i>100</i>	<i>0</i>	<i>81.2</i>	<i>70-130</i>	<i>0</i>			

<b>MS</b>		Sample ID: <b>1206505-01A MS</b>				Units: <b>µg/L</b>		Analysis Date: <b>6/19/2012 07:53 PM</b>		
Client ID:		Run ID: <b>GC9_120619A</b>				SeqNo: <b>2004621</b>		Prep Date:		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	22420	200	25000	0	89.7	70-130	0			
<i>Surr: Toluene-d8</i>	<i>91.56</i>	<i>0</i>	<i>100</i>	<i>0</i>	<i>91.6</i>	<i>70-130</i>	<i>0</i>			

<b>MSD</b>		Sample ID: <b>1206505-01A MSD</b>				Units: <b>µg/L</b>		Analysis Date: <b>6/19/2012 08:18 PM</b>		
Client ID:		Run ID: <b>GC9_120619A</b>				SeqNo: <b>2004622</b>		Prep Date:		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	20510	200	25000	0	82	70-130	22420	8.9	30	
<i>Surr: Toluene-d8</i>	<i>96.83</i>	<i>0</i>	<i>100</i>	<i>0</i>	<i>96.8</i>	<i>70-130</i>	<i>91.56</i>	<i>5.59</i>	<i>30</i>	

The following samples were analyzed in this batch:

1206528-01A	1206528-02A	1206528-03A
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**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** HRL Compliance Solutions  
**Work Order:** 1206528  
**Project:** WPX TR 24-16-597 Pit Closure 6/11/12

## QC BATCH REPORT

Batch ID: **41752**      Instrument ID **HG1**      Method: **SW7471**

<b>MBLK</b>		Sample ID: <b>MBLK-41752-41752</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>6/20/2012 11:46 AM</b>		
Client ID:		Run ID: <b>HG1_120620A</b>				SeqNo: <b>2005354</b>		Prep Date: <b>6/19/2012</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury      0.01258      0.020      J

<b>LCS</b>		Sample ID: <b>LCS-41752-41752</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>6/20/2012 11:49 AM</b>		
Client ID:		Run ID: <b>HG1_120620A</b>				SeqNo: <b>2005355</b>		Prep Date: <b>6/19/2012</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury      0.1771      0.020      0.1665      0      106      80-120      0

<b>MS</b>		Sample ID: <b>1206523-01B MS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>6/20/2012 11:53 AM</b>		
Client ID:		Run ID: <b>HG1_120620A</b>				SeqNo: <b>2005357</b>		Prep Date: <b>6/19/2012</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury      0.1567      0.018      0.1465      0.01343      97.8      75-125      0

<b>MSD</b>		Sample ID: <b>1206523-01BMSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>6/20/2012 11:55 AM</b>		
Client ID:		Run ID: <b>HG1_120620A</b>				SeqNo: <b>2005358</b>		Prep Date: <b>6/19/2012</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury      0.1615      0.018      0.1484      0.01343      99.8      75-125      0.1567      3      35

The following samples were analyzed in this batch:

1206528-05B

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

**Client:** HRL Compliance Solutions  
**Work Order:** 1206528  
**Project:** WPX TR 24-16-597 Pit Closure 6/11/12

## QC BATCH REPORT

Batch ID: **41779**      Instrument ID **ICPMS2**      Method: **SW6020A**

<b>MBLK</b>		Sample ID: <b>MBLK-41779-41779</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>6/21/2012 12:34 AM</b>		
Client ID:		Run ID: <b>ICPMS2_120620A</b>				SeqNo: <b>2006847</b>		Prep Date: <b>6/20/2012</b>		DF: <b>1</b>
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	ND	0.10								
Chromium	ND	0.25								
Copper	0.05135	0.25								J
Lead	0.005215	0.25								J
Nickel	0.0281	0.25								J
Selenium	0.03466	0.25								J
Silver	ND	0.25								
Zinc	0.1254	0.50								J

<b>LCS</b>		Sample ID: <b>LCS-41779-41779</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>6/21/2012 12:39 AM</b>		
Client ID:		Run ID: <b>ICPMS2_120620A</b>				SeqNo: <b>2006848</b>		Prep Date: <b>6/20/2012</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	6.496	0.36	7.123	0	91.2	80-120	0			
Barium	6.974	0.36	7.123	0	97.9	80-120	0			
Cadmium	7.215	0.14	7.123	0	101	80-120	0			
Chromium	6.791	0.36	7.123	0	95.4	80-120	0			
Copper	6.649	0.36	7.123	0	93.4	80-120	0			
Lead	7.099	0.36	7.123	0	99.7	80-120	0			
Nickel	6.538	0.36	7.123	0	91.8	80-120	0			
Selenium	6.555	0.36	7.123	0	92	80-120	0			
Silver	7.007	0.36	7.123	0	98.4	80-120	0			
Zinc	6.778	0.71	7.123	0	95.2	80-120	0			

<b>MS</b>		Sample ID: <b>1206528-06BMS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>6/21/2012 01:00 AM</b>		
Client ID: <b>BKGD 1</b>		Run ID: <b>ICPMS2_120620A</b>				SeqNo: <b>2006852</b>		Prep Date: <b>6/20/2012</b>		DF: <b>2</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	8.212	0.70	6.964	2.617	80.3	80-120	0			
Barium	388.2	0.70	6.964	381.4	97.5	80-120	0			EO
Cadmium	6.901	0.28	6.964	0.3507	94.1	80-120	0			
Chromium	34.53	0.70	6.964	29.27	75.5	80-120	0			SO
Copper	20.84	0.70	6.964	15.25	80.3	80-120	0			
Lead	22.16	0.70	6.964	15.83	90.9	80-120	0			
Nickel	23.09	0.70	6.964	17.33	82.7	80-120	0			
Selenium	5.698	0.70	6.964	0.2732	77.9	80-120	0			S
Silver	5.985	0.70	6.964	0.0459	85.3	80-120	0			
Zinc	59.07	1.4	6.964	53.73	76.7	80-120	0			SO

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

**Client:** HRL Compliance Solutions  
**Work Order:** 1206528  
**Project:** WPX TR 24-16-597 Pit Closure 6/11/12

## QC BATCH REPORT

Batch ID: **41779**      Instrument ID **ICPMS2**      Method: **SW6020A**

MSD		Sample ID: <b>1206528-06BMSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>6/21/2012 01:05 AM</b>		
Client ID: <b>BKGD 1</b>		Run ID: <b>ICPMS2_120620A</b>				SeqNo: <b>2006853</b>		Prep Date: <b>6/20/2012</b>		DF: <b>2</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	7.916	0.66	6.562	2.617	80.8	80-120	8.212	3.67	25	
Barium	402	0.66	6.562	381.4	314	80-120	388.2	3.49	25	SEO
Cadmium	6.564	0.26	6.562	0.3507	94.7	80-120	6.901	5	25	
Chromium	34.95	0.66	6.562	29.27	86.5	80-120	34.53	1.21	25	O
Copper	21.31	0.66	6.562	15.25	92.5	80-120	20.84	2.26	25	
Lead	23.1	0.66	6.562	15.83	111	80-120	22.16	4.15	25	
Nickel	23.39	0.66	6.562	17.33	92.3	80-120	23.09	1.26	25	
Selenium	5.432	0.66	6.562	0.2732	78.6	80-120	5.698	4.78	25	S
Silver	5.78	0.66	6.562	0.0459	87.4	80-120	5.985	3.49	25	
Zinc	59.76	1.3	6.562	53.73	92	80-120	59.07	1.17	25	O

The following samples were analyzed in this batch:    1206528-05B    1206528-06B    1206528-07A

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



**Client:** HRL Compliance Solutions  
**Work Order:** 1206528  
**Project:** WPX TR 24-16-597 Pit Closure 6/11/12

## QC BATCH REPORT

Batch ID: **41805**      Instrument ID **ICPMS1**      Method: **SW6020A**

<b>MBLK</b>	Sample ID: <b>MBLK-41805-41805</b>					Units: <b>mg/Kg</b>		Analysis Date: <b>6/21/2012 03:39 PM</b>		
Client ID:	Run ID: <b>ICPMS1_120621A</b>				SeqNo: <b>2008259</b>		Prep Date: <b>6/20/2012</b>		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Arsenic      ND      0.25

<b>LCS</b>	Sample ID: <b>LCS-41805-41805</b>					Units: <b>mg/Kg</b>		Analysis Date: <b>6/21/2012 03:46 PM</b>		
Client ID:	Run ID: <b>ICPMS1_120621A</b>				SeqNo: <b>2008260</b>		Prep Date: <b>6/20/2012</b>		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Arsenic      4.08      0.25      5      0      81.6      80-120      0

<b>MS</b>	Sample ID: <b>1206636-11BMS</b>					Units: <b>mg/Kg</b>		Analysis Date: <b>6/21/2012 05:30 PM</b>		
Client ID:	Run ID: <b>ICPMS1_120621A</b>				SeqNo: <b>2008276</b>		Prep Date: <b>6/20/2012</b>		DF: <b>2</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Arsenic      7.486      0.75      7.508      2.494      66.5      80-120      0      S

<b>MSD</b>	Sample ID: <b>1206636-11BMSD</b>					Units: <b>mg/Kg</b>		Analysis Date: <b>6/21/2012 05:36 PM</b>		
Client ID:	Run ID: <b>ICPMS1_120621A</b>				SeqNo: <b>2008277</b>		Prep Date: <b>6/20/2012</b>		DF: <b>2</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Arsenic      7.259      0.78      7.812      2.494      61      80-120      7.486      3.08      25      S

The following samples were analyzed in this batch:

1206528-08A

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

**Client:** HRL Compliance Solutions  
**Work Order:** 1206528  
**Project:** WPX TR 24-16-597 Pit Closure 6/11/12

## QC BATCH REPORT

Batch ID: **41748**      Instrument ID **SVMS6**      Method: **SW8270**

<b>MBLK</b>		Sample ID: <b>SBLKS1-41748-41748</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>6/20/2012 04:57 PM</b>		
Client ID:		Run ID: <b>SVMS6_120620A</b>				SeqNo: <b>2007465</b>		Prep Date: <b>6/19/2012</b>		DF: <b>1</b>
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								
<i>Surr: 2-Fluorobiphenyl</i>	1237	0	1667	0	74.2	12-100	0			
<i>Surr: 4-Terphenyl-d14</i>	1863	0	1667	0	112	25-137	0			
<i>Surr: Nitrobenzene-d5</i>	1253	0	1667	0	75.2	37-107	0			

<b>MBLK</b>		Sample ID: <b>SBLKS1-41748-41748</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>6/20/2012 04:57 PM</b>		
Client ID:		Run ID: <b>SVMS4_120620A</b>				SeqNo: <b>2007484</b>		Prep Date: <b>6/19/2012</b>		DF: <b>1</b>
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								
<i>Surr: 2-Fluorobiphenyl</i>	1237	0	1667	0	74.2	12-100	0			
<i>Surr: 4-Terphenyl-d14</i>	1863	0	1667	0	112	25-137	0			
<i>Surr: Nitrobenzene-d5</i>	1253	0	1667	0	75.2	37-107	0			

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

**Client:** HRL Compliance Solutions  
**Work Order:** 1206528  
**Project:** WPX TR 24-16-597 Pit Closure 6/11/12

## QC BATCH REPORT

Batch ID: **41748**      Instrument ID: **SVMS6**      Method: **SW8270**

LCS Sample ID: <b>SLCSS1-41748-41748</b>				Units: <b>µg/Kg</b>			Analysis Date: <b>6/20/2012 02:41 PM</b>			
Client ID:		Run ID: <b>SVMS6_120620A</b>		SeqNo: <b>2007458</b>		Prep Date: <b>6/19/2012</b>		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	595	30	666.7	0	89.2	45-110	0			
Anthracene	636.7	30	666.7	0	95.5	55-105	0			
Benzo(a)anthracene	624.3	30	666.7	0	93.6	50-110	0			
Benzo(a)pyrene	656.7	30	666.7	0	98.5	50-110	0			
Benzo(b)fluoranthene	640.3	30	666.7	0	96	45-115	0			
Benzo(g,h,i)perylene	743.7	30	666.7	0	112	40-125	0			
Benzo(k)fluoranthene	648	30	666.7	0	97.2	45-115	0			
Chrysene	685.3	30	666.7	0	103	55-110	0			
Dibenzo(a,h)anthracene	704.7	30	666.7	0	106	40-125	0			
Fluoranthene	669	30	666.7	0	100	55-115	0			
Fluorene	607	30	666.7	0	91	50-110	0			
Indeno(1,2,3-cd)pyrene	717.7	30	666.7	0	108	40-120	0			
Naphthalene	578.7	30	666.7	0	86.8	40-105	0			
Pyrene	686.7	30	666.7	0	103	45-125	0			
Surr: 2-Fluorobiphenyl	1280	0	1667	0	76.8	12-100	0			
Surr: 4-Terphenyl-d14	1835	0	1667	0	110	25-137	0			
Surr: Nitrobenzene-d5	1294	0	1667	0	77.6	37-107	0			

LCS Sample ID: <b>SLCSS1-41748-41748</b>				Units: <b>µg/Kg</b>			Analysis Date: <b>6/20/2012 02:41 PM</b>			
Client ID:		Run ID: <b>SVMS4_120620A</b>		SeqNo: <b>2007480</b>		Prep Date: <b>6/19/2012</b>		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	595	30	666.7	0	89.2	45-110	0			
Anthracene	636.7	30	666.7	0	95.5	55-105	0			
Benzo(a)anthracene	624.3	30	666.7	0	93.6	50-110	0			
Benzo(a)pyrene	656.7	30	666.7	0	98.5	50-110	0			
Benzo(b)fluoranthene	640.3	30	666.7	0	96	45-115	0			
Benzo(g,h,i)perylene	743.7	30	666.7	0	112	40-125	0			
Benzo(k)fluoranthene	648	30	666.7	0	97.2	45-115	0			
Chrysene	685.3	30	666.7	0	103	55-110	0			
Dibenzo(a,h)anthracene	704.7	30	666.7	0	106	40-125	0			
Fluoranthene	669	30	666.7	0	100	55-115	0			
Fluorene	607	30	666.7	0	91	50-110	0			
Indeno(1,2,3-cd)pyrene	717.7	30	666.7	0	108	40-120	0			
Naphthalene	578.7	30	666.7	0	86.8	40-105	0			
Pyrene	686.7	30	666.7	0	103	45-125	0			
Surr: 2-Fluorobiphenyl	1280	0	1667	0	76.8	12-100	0			
Surr: 4-Terphenyl-d14	1835	0	1667	0	110	25-137	0			
Surr: Nitrobenzene-d5	1294	0	1667	0	77.6	37-107	0			

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

**Client:** HRL Compliance Solutions  
**Work Order:** 1206528  
**Project:** WPX TR 24-16-597 Pit Closure 6/11/12

## QC BATCH REPORT

Batch ID: **41748**      Instrument ID **SVMS6**      Method: **SW8270**

MS Sample ID: <b>1206417-13A MS</b>				Units: <b>µg/Kg</b>			Analysis Date: <b>6/20/2012 03:15 PM</b>			
Client ID:		Run ID: <b>SVMS6_120620A</b>		SeqNo: <b>2007459</b>		Prep Date: <b>6/19/2012</b>		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	1642	85	1888	0	86.9	45-110	0			
Anthracene	1801	85	1888	0	95.4	55-105	0			
Benzo(a)anthracene	1830	85	1888	79.3	92.7	50-110	0			
Benzo(a)pyrene	1921	85	1888	115.1	95.7	50-110	0			
Benzo(b)fluoranthene	1965	85	1888	151.8	96	45-115	0			
Benzo(g,h,i)perylene	1781	85	1888	87.03	89.7	40-125	0			
Benzo(k)fluoranthene	1824	85	1888	55.12	93.7	45-115	0			
Chrysene	1892	85	1888	115.1	94.1	55-110	0			
Dibenzo(a,h)anthracene	1695	85	1888	0	89.7	40-125	0			
Fluoranthene	1920	85	1888	105.4	96.1	55-115	0			
Fluorene	1737	85	1888	0	92	50-110	0			
Indeno(1,2,3-cd)pyrene	1797	85	1888	61.89	91.9	40-120	0			
Naphthalene	1414	85	1888	0	74.9	40-105	0			
Pyrene	1920	85	1888	126.7	95	45-125	0			
Surr: 2-Fluorobiphenyl	3448	0	4720	0	73	12-100	0			
Surr: 4-Terphenyl-d14	4775	0	4720	0	101	25-137	0			
Surr: Nitrobenzene-d5	3086	0	4720	0	65.4	37-107	0			

MS Sample ID: <b>1206417-13A MS</b>				Units: <b>µg/Kg</b>			Analysis Date: <b>6/20/2012 03:15 PM</b>			
Client ID:		Run ID: <b>SVMS4_120620A</b>		SeqNo: <b>2007481</b>		Prep Date: <b>6/19/2012</b>		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	1642	85	1888	0	86.9	45-110	0			
Anthracene	1801	85	1888	0	95.4	55-105	0			
Benzo(a)anthracene	1830	85	1888	79.3	92.7	50-110	0			
Benzo(a)pyrene	1921	85	1888	115.1	95.7	50-110	0			
Benzo(b)fluoranthene	1965	85	1888	151.8	96	45-115	0			
Benzo(g,h,i)perylene	1781	85	1888	87.03	89.7	40-125	0			
Benzo(k)fluoranthene	1824	85	1888	55.12	93.7	45-115	0			
Chrysene	1892	85	1888	115.1	94.1	55-110	0			
Dibenzo(a,h)anthracene	1695	85	1888	0	89.7	40-125	0			
Fluoranthene	1920	85	1888	105.4	96.1	55-115	0			
Fluorene	1737	85	1888	0	92	50-110	0			
Indeno(1,2,3-cd)pyrene	1797	85	1888	61.89	91.9	40-120	0			
Naphthalene	1414	85	1888	0	74.9	40-105	0			
Pyrene	1920	85	1888	126.7	95	45-125	0			
Surr: 2-Fluorobiphenyl	3448	0	4720	0	73	12-100	0			
Surr: 4-Terphenyl-d14	4775	0	4720	0	101	25-137	0			
Surr: Nitrobenzene-d5	3086	0	4720	0	65.4	37-107	0			

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

**Client:** HRL Compliance Solutions  
**Work Order:** 1206528  
**Project:** WPX TR 24-16-597 Pit Closure 6/11/12

## QC BATCH REPORT

Batch ID: **41748**      Instrument ID **SVMS6**      Method: **SW8270**

MSD Sample ID: <b>1206417-13A MSD</b>				Units: <b>µg/Kg</b>			Analysis Date: <b>6/20/2012 03:49 PM</b>			
Client ID:		Run ID: <b>SVMS6_120620A</b>		SeqNo: <b>2007461</b>		Prep Date: <b>6/19/2012</b>		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	1741	88	1952	0	89.2	45-110	1642	5.89	30	
Anthracene	1908	88	1952	0	97.7	55-105	1801	5.77	30	
Benzo(a)anthracene	1899	88	1952	79.3	93.2	50-110	1830	3.75	30	
Benzo(a)pyrene	2035	88	1952	115.1	98.4	50-110	1921	5.77	30	
Benzo(b)fluoranthene	2250	88	1952	151.8	107	45-115	1965	13.5	30	
Benzo(g,h,i)perylene	1644	88	1952	87.03	79.7	40-125	1781	8.04	30	
Benzo(k)fluoranthene	2174	88	1952	55.12	109	45-115	1824	17.5	30	
Chrysene	2020	88	1952	115.1	97.6	55-110	1892	6.53	30	
Dibenzo(a,h)anthracene	1645	88	1952	0	84.2	40-125	1695	2.98	30	
Fluoranthene	2061	88	1952	105.4	100	55-115	1920	7.05	30	
Fluorene	1805	88	1952	0	92.4	50-110	1737	3.83	30	
Indeno(1,2,3-cd)pyrene	1706	88	1952	61.89	84.2	40-120	1797	5.21	30	
Naphthalene	1536	88	1952	0	78.7	40-105	1414	8.28	30	
Pyrene	2020	88	1952	126.7	97	45-125	1920	5.09	30	
Surr: 2-Fluorobiphenyl	3667	0	4881	0	75.1	12-100	3448	6.17	40	
Surr: 4-Terphenyl-d14	5029	0	4881	0	103	25-137	4775	5.18	40	
Surr: Nitrobenzene-d5	3350	0	4881	0	68.6	37-107	3086	8.2	40	

MSD Sample ID: <b>1206417-13A MSD</b>				Units: <b>µg/Kg</b>			Analysis Date: <b>6/20/2012 03:49 PM</b>			
Client ID:		Run ID: <b>SVMS4_120620A</b>		SeqNo: <b>2007482</b>		Prep Date: <b>6/19/2012</b>		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	1741	88	1952	0	89.2	45-110	1642	5.89	30	
Anthracene	1908	88	1952	0	97.7	55-105	1801	5.77	30	
Benzo(a)anthracene	1899	88	1952	79.3	93.2	50-110	1830	3.75	30	
Benzo(a)pyrene	2035	88	1952	115.1	98.4	50-110	1921	5.77	30	
Benzo(b)fluoranthene	2250	88	1952	151.8	107	45-115	1965	13.5	30	
Benzo(g,h,i)perylene	1644	88	1952	87.03	79.7	40-125	1781	8.04	30	
Benzo(k)fluoranthene	2174	88	1952	55.12	109	45-115	1824	17.5	30	
Chrysene	2020	88	1952	115.1	97.6	55-110	1892	6.53	30	
Dibenzo(a,h)anthracene	1645	88	1952	0	84.2	40-125	1695	2.98	30	
Fluoranthene	2061	88	1952	105.4	100	55-115	1920	7.05	30	
Fluorene	1805	88	1952	0	92.4	50-110	1737	3.83	30	
Indeno(1,2,3-cd)pyrene	1706	88	1952	61.89	84.2	40-120	1797	5.21	30	
Naphthalene	1536	88	1952	0	78.7	40-105	1414	8.28	30	
Pyrene	2020	88	1952	126.7	97	45-125	1920	5.09	30	
Surr: 2-Fluorobiphenyl	3667	0	4881	0	75.1	12-100	3448	6.17	40	
Surr: 4-Terphenyl-d14	5029	0	4881	0	103	25-137	4775	5.18	40	
Surr: Nitrobenzene-d5	3350	0	4881	0	68.6	37-107	3086	8.2	40	

The following samples were analyzed in this batch:

1206528-01B	1206528-02B	1206528-03B
1206528-04B	1206528-05B	

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

**Client:** HRL Compliance Solutions  
**Work Order:** 1206528  
**Project:** WPX TR 24-16-597 Pit Closure 6/11/12

## QC BATCH REPORT

Batch ID: **41733**      Instrument ID **VMS9**      Method: **SW8260**

<b>MBLK</b>		Sample ID: <b>MBLK-41733-41733</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>6/18/2012 02:38 PM</b>		
Client ID:		Run ID: <b>VMS9_120618A</b>				SeqNo: <b>2003088</b>		Prep Date: <b>6/18/2012</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	ND	30								
Ethylbenzene	ND	30								
m,p-Xylene	ND	60								
o-Xylene	ND	30								
Toluene	ND	30								
Xylenes, Total	ND	90								
Surr: 1,2-Dichloroethane-d4	945.5	0	1000	0	94.6	70-130	0			
Surr: 4-Bromofluorobenzene	908.5	0	1000	0	90.8	70-130	0			
Surr: Dibromofluoromethane	964.5	0	1000	0	96.4	70-130	0			
Surr: Toluene-d8	990.5	0	1000	0	99	70-130	0			

<b>MBLK</b>		Sample ID: <b>MBLK-41733-41733</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>6/19/2012 10:25 PM</b>		
Client ID:		Run ID: <b>VMS9_120619A</b>				SeqNo: <b>2005273</b>		Prep Date: <b>6/18/2012</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	ND	30								
Ethylbenzene	ND	30								
m,p-Xylene	ND	60								
o-Xylene	ND	30								
Toluene	ND	30								
Xylenes, Total	ND	90								
Surr: 1,2-Dichloroethane-d4	980	0	1000	0	98	70-130	0			
Surr: 4-Bromofluorobenzene	917.5	0	1000	0	91.8	70-130	0			
Surr: Dibromofluoromethane	1012	0	1000	0	101	70-130	0			
Surr: Toluene-d8	1024	0	1000	0	102	70-130	0			

<b>MBLK</b>		Sample ID: <b>MBLK-41733-41733</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>6/20/2012 01:51 PM</b>		
Client ID:		Run ID: <b>VMS5_120620A</b>				SeqNo: <b>2007008</b>		Prep Date: <b>6/18/2012</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	ND	30								
Ethylbenzene	ND	30								
m,p-Xylene	ND	60								
o-Xylene	ND	30								
Toluene	ND	30								
Xylenes, Total	ND	90								
Surr: 1,2-Dichloroethane-d4	934	0	1000	0	93.4	70-130	0			
Surr: 4-Bromofluorobenzene	977.5	0	1000	0	97.8	70-130	0			
Surr: Dibromofluoromethane	930.5	0	1000	0	93	70-130	0			
Surr: Toluene-d8	1006	0	1000	0	101	70-130	0			

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

**Client:** HRL Compliance Solutions  
**Work Order:** 1206528  
**Project:** WPX TR 24-16-597 Pit Closure 6/11/12

## QC BATCH REPORT

Batch ID: **41733**      Instrument ID **VMS9**      Method: **SW8260**

LCS Sample ID: <b>LCS-41733-41733</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>6/18/2012 01:08 PM</b>				
Client ID:		Run ID: <b>VMS9_120618A</b>		SeqNo: <b>2003083</b>		Prep Date: <b>6/18/2012</b>		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	960.5	30	1000	0	96	75-125	0			
Ethylbenzene	1035	30	1000	0	104	75-125	0			
m,p-Xylene	1868	60	2000	0	93.4	80-125	0			
o-Xylene	903.5	30	1000	0	90.4	75-125	0			
Toluene	985.5	30	1000	0	98.6	70-125	0			
Xylenes, Total	2772	90	3000	0	92.4	75-125	0			
Surr: 1,2-Dichloroethane-d4	926	0	1000	0	92.6	70-130	0			
Surr: 4-Bromofluorobenzene	975	0	1000	0	97.5	70-130	0			
Surr: Dibromofluoromethane	968.5	0	1000	0	96.8	70-130	0			
Surr: Toluene-d8	969	0	1000	0	96.9	70-130	0			

LCS Sample ID: <b>LCS-41733-41733</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>6/19/2012 09:35 PM</b>				
Client ID:		Run ID: <b>VMS9_120619A</b>		SeqNo: <b>2005272</b>		Prep Date: <b>6/18/2012</b>		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	948	30	1000	0	94.8	75-125	0			
Ethylbenzene	1061	30	1000	0	106	75-125	0			
m,p-Xylene	2188	60	2000	0	109	80-125	0			
o-Xylene	1076	30	1000	0	108	75-125	0			
Toluene	1022	30	1000	0	102	70-125	0			
Xylenes, Total	3264	90	3000	0	109	75-125	0			
Surr: 1,2-Dichloroethane-d4	959.5	0	1000	0	96	70-130	0			
Surr: 4-Bromofluorobenzene	1028	0	1000	0	103	70-130	0			
Surr: Dibromofluoromethane	984.5	0	1000	0	98.4	70-130	0			
Surr: Toluene-d8	1037	0	1000	0	104	70-130	0			

LCS Sample ID: <b>LCS-41733-41733</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>6/20/2012 12:32 PM</b>				
Client ID:		Run ID: <b>VMS5_120620A</b>		SeqNo: <b>2007007</b>		Prep Date: <b>6/18/2012</b>		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	974.5	30	1000	0	97.4	75-125	0			
Ethylbenzene	1028	30	1000	0	103	75-125	0			
m,p-Xylene	2042	60	2000	0	102	80-125	0			
o-Xylene	1028	30	1000	0	103	75-125	0			
Toluene	991.5	30	1000	0	99.2	70-125	0			
Xylenes, Total	3070	90	3000	0	102	75-125	0			
Surr: 1,2-Dichloroethane-d4	891	0	1000	0	89.1	70-130	0			
Surr: 4-Bromofluorobenzene	981.5	0	1000	0	98.2	70-130	0			
Surr: Dibromofluoromethane	952	0	1000	0	95.2	70-130	0			
Surr: Toluene-d8	998.5	0	1000	0	99.8	70-130	0			

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

Client: HRL Compliance Solutions  
 Work Order: 1206528  
 Project: WPX TR 24-16-597 Pit Closure 6/11/12

## QC BATCH REPORT

Batch ID: **41733** Instrument ID **VMS9** Method: **SW8260**

MS Sample ID: <b>1206524-01A MS</b>				Units: <b>µg/Kg</b>			Analysis Date: <b>6/19/2012 08:36 AM</b>			
Client ID:		Run ID: <b>VMS9_120618B</b>		SeqNo: <b>2003447</b>		Prep Date: <b>6/18/2012</b>		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	919.5	30	1006	0	91.4	75-125	0			
Ethylbenzene	994	30	1006	0	98.8	75-125	0			
m,p-Xylene	1798	60	2012	72.43	85.8	80-125	0			
o-Xylene	874.2	30	1006	0	86.9	75-125	0			
Toluene	1002	30	1006	0	99.6	70-125	0			
Xylenes, Total	2673	91	3018	72	86.2	75-125	0			
Surr: 1,2-Dichloroethane-d4	902.4	0	1006	0	89.7	70-130	0			
Surr: 4-Bromofluorobenzene	1084	0	1006	0	108	70-130	0			
Surr: Dibromofluoromethane	947.7	0	1006	0	94.2	70-130	0			
Surr: Toluene-d8	1056	0	1006	0	105	70-130	0			

MSD Sample ID: <b>1206524-01A MSD</b>				Units: <b>µg/Kg</b>			Analysis Date: <b>6/19/2012 09:01 AM</b>			
Client ID:		Run ID: <b>VMS9_120618B</b>		SeqNo: <b>2003448</b>		Prep Date: <b>6/18/2012</b>		DF: <b>1</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	889.8	30	1006	0	88.4	75-125	919.5	3.28	30	
Ethylbenzene	968.8	30	1006	0	96.3	75-125	994	2.56	30	
m,p-Xylene	1764	60	2012	72.43	84.1	80-125	1798	1.92	30	
o-Xylene	858.1	30	1006	0	85.3	75-125	874.2	1.86	30	
Toluene	985.9	30	1006	0	98	70-125	1002	1.62	30	
Xylenes, Total	2622	91	3018	72	84.5	75-125	2673	1.9	30	
Surr: 1,2-Dichloroethane-d4	902.9	0	1006	0	89.8	70-130	902.4	0.0557	30	
Surr: 4-Bromofluorobenzene	1074	0	1006	0	107	70-130	1084	0.886	30	
Surr: Dibromofluoromethane	965.8	0	1006	0	96	70-130	947.7	1.89	30	
Surr: Toluene-d8	1062	0	1006	0	106	70-130	1056	0.522	30	

The following samples were analyzed in this batch:

1206528-01A	1206528-02A	1206528-03A
1206528-04A	1206528-05A	

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



**Client:** HRL Compliance Solutions  
**Work Order:** 1206528  
**Project:** WPX TR 24-16-597 Pit Closure 6/11/12

## QC BATCH REPORT

Batch ID: **41768**      Instrument ID **WETCHEM**      Method: **SW7196A**

<b>MBLK</b>	Sample ID: <b>MBLK-41768-41768</b>					Units: <b>mg/Kg</b>		Analysis Date: <b>6/19/2012 02:30 PM</b>		
Client ID:	Run ID: <b>WETCHEM_120619C</b>				SeqNo: <b>2004183</b>		Prep Date: <b>6/18/2012</b>		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      ND      0.50

<b>LCS</b>	Sample ID: <b>LCS-41768-41768</b>					Units: <b>mg/Kg</b>		Analysis Date: <b>6/19/2012 02:30 PM</b>		
Client ID:	Run ID: <b>WETCHEM_120619C</b>				SeqNo: <b>2004182</b>		Prep Date: <b>6/18/2012</b>		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      1.96      0.50      1.992      0      98.4      75-110      0

<b>MS</b>	Sample ID: <b>1206468-01B MS</b>					Units: <b>mg/Kg</b>		Analysis Date: <b>6/19/2012 02:30 PM</b>		
Client ID:	Run ID: <b>WETCHEM_120619C</b>				SeqNo: <b>2004177</b>		Prep Date: <b>6/18/2012</b>		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      1.184      0.49      1.961      0      60.4      60-130      0

<b>MSD</b>	Sample ID: <b>1206468-01B MSD</b>					Units: <b>mg/Kg</b>		Analysis Date: <b>6/19/2012 02:30 PM</b>		
Client ID:	Run ID: <b>WETCHEM_120619C</b>				SeqNo: <b>2004178</b>		Prep Date: <b>6/18/2012</b>		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      1.147      0.50      1.984      0      57.8      60-130      1.184      3.22      30      S

The following samples were analyzed in this batch:

1206528-05B

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

**Client:** HRL Compliance Solutions  
**Work Order:** 1206528  
**Project:** WPX TR 24-16-597 Pit Closure 6/11/12

## QC BATCH REPORT

Batch ID: **R106087**      Instrument ID **WETCHEM**      Method: **A4500-H B**

<b>LCS</b>	Sample ID: <b>WLCSW1-061512-R106087</b>					Units: <b>s.u.</b>		Analysis Date: <b>6/15/2012 10:30 AM</b>		
Client ID:	Run ID: <b>WETCHEM_120615N</b>				SeqNo: <b>2001524</b>		Prep Date:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

pH      4.11      0      4.4      0      93.4      90-110      0

<b>LCS</b>	Sample ID: <b>LCS-R106087-R106087</b>					Units: <b>s.u.</b>		Analysis Date: <b>6/15/2012 10:30 AM</b>		
Client ID:	Run ID: <b>WETCHEM_120615N</b>				SeqNo: <b>2001630</b>		Prep Date:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

pH      4.11      0      4.4      0      93.4      90-110      0

<b>DUP</b>	Sample ID: <b>1206533-01D DUP</b>					Units: <b>s.u.</b>		Analysis Date: <b>6/15/2012 10:30 AM</b>		
Client ID:	Run ID: <b>WETCHEM_120615N</b>				SeqNo: <b>2001527</b>		Prep Date:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

pH      7.75      0      0      0      0      0-0      7.75      0      20

<b>DUP</b>	Sample ID: <b>1206466-03C DUP</b>					Units: <b>s.u.</b>		Analysis Date: <b>6/15/2012 10:30 AM</b>		
Client ID:	Run ID: <b>WETCHEM_120615N</b>				SeqNo: <b>2001634</b>		Prep Date:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

pH      3.9      0      0      0      0      0-0      3.9      0      20

The following samples were analyzed in this batch:

1206528-05B      1206528-06B

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

**Client:** HRL Compliance Solutions  
**Work Order:** 1206528  
**Project:** WPX TR 24-16-597 Pit Closure 6/11/12

## QC BATCH REPORT

Batch ID: **R106166**      Instrument ID **MOIST**      Method: **A2540 G**

<b>MBLK</b>		Sample ID: <b>WBLKS1-R106166</b>				Units: % of sample		Analysis Date: <b>6/18/2012 04:45 PM</b>		
Client ID:		Run ID: <b>MOIST_120618C</b>				SeqNo: <b>2003605</b>		Prep Date:		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture      ND      0.050

<b>LCS</b>		Sample ID: <b>LCS-R106166</b>				Units: % of sample		Analysis Date: <b>6/18/2012 04:45 PM</b>		
Client ID:		Run ID: <b>MOIST_120618C</b>				SeqNo: <b>2003604</b>		Prep Date:		DF: <b>1</b>
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

<b>DUP</b>		Sample ID: <b>1206528-01BDUP</b>				Units: % of sample		Analysis Date: <b>6/18/2012 04:45 PM</b>		
Client ID: <b>Pit Wall North</b>		Run ID: <b>MOIST_120618C</b>				SeqNo: <b>2003586</b>		Prep Date:		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture      2.64      0.050      0      0      0      0-0      2.73      3.35      20

<b>DUP</b>		Sample ID: <b>1206546-02BDUP</b>				Units: % of sample		Analysis Date: <b>6/18/2012 04:45 PM</b>		
Client ID:		Run ID: <b>MOIST_120618C</b>				SeqNo: <b>2003597</b>		Prep Date:		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture      11.45      0.050      0      0      0      0-0      11.08      3.28      20

The following samples were analyzed in this batch:

1206528-01B	1206528-02B	1206528-03B
1206528-04B	1206528-05B	1206528-06B
1206528-07A	1206528-08A	

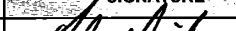

**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.



1206528

Form 202r8

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

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY		Luke Miley	6/13/2012	1700
RECEIVED BY		KEITH WIERENGA	6/15/12	1445
RELINQUISHED BY				
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				



Environmental

**Subcontractor:**

A & L Great Lakes Agricultural La

3505 Conestoga Dr

TEL: (260) 483-4759

FAX: (260) 483-5274

Ft. Wayne, IN 46808

Acct #: 91000

# CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Date: **16-Jun-12**

COC ID: **3715**

Due D **21-Jun-12**

Salesperson **Bruce Schlatter**

Customer Information		Project Information		Parameter/Method Request for Analysis										
Purchase Order		Project Name	1206528	A Subcontracted Analyses (SUBCONTRACT)										
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
1206528-05C	Pit Bottom	Soil	11/Jun/2012 8:10	(1) MISC	X									
1206528-06A	BKGD 1	Soil	11/Jun/2012 9:00	(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

Relinquished by:

Date/Time

Received by:

Date/Time

Std

Sample Receipt Checklist

Client Name: HRL

Date/Time Received: 15-Jun-12 14:45

Work Order: 1206528

Received by: KRW

Checklist completed by Keith Wurenga 15-Jun-12  
eSignature Date

Reviewed by: Ann Preston 16-Jun-12  
eSignature Date

Matrices: Soil

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>4.8 C</u>		
Cooler(s)/Kit(s):			
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:			
Login Notes:			

-----

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:

50C

CUSTODY SEAL

DATE 6/13/12

SIGNATURE [Signature]

QEC

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

FedEx NEW Package  
Express US Airbill

FedEx Tracking Number

8008 9259 9232

0200 Form ID No.

FedEx Retrieval Copy

1 From

Date 6/13/12

Sender's Name Luke Miley

Company HCSI

Phone 970 243-3271

Address 744 Horizon Ct. Ste 140

City Grand Junction

State CO

ZIP 81506

2 Your Internal Billing Reference

3 To

Recipient's Name Sample Receiving

Company ALS Group

Phone 616 347-6070

Address 3352 12th Ave

City Holland

State MI

ZIP 49424



8008 9259 9232

4 Express Package Service

NOTE: Service order has changed. Please select carefully.

- 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.

49 ☐ NEW FedEx 2Day A.M.  
Second business morning. \* Saturday Delivery NOT available.

03 ☐ 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 a 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. For residential deliveries only. Fee applies.

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

04 ☐ No  
As per attached Shipper's Declaration. Dangerous goods (including dry ice) cannot be shipped in FedEx packaging or placed in a FedEx Express Drop Box.

06 ☐ Dry Ice  
Dry Ice, 2, UN 1845

☐ Cargo Aircraft Only

7 Payment Bill to:

1 ☐ Sender  
Acct. No. in Section I will be billed.

2 ☒ Recipient

3 ☐ Third Party

Obtain recip. Acct. No.

4 ☐ Credit Card

5 ☐ Cash/Check

Total Packages

Total Weight

50 lbs.

Credit Card Auth.

67.7

## **APPENDIX 2: SURFACE WATER AND SEEP WATER RAW ANALYTICAL DATA**





16-Apr-2012

Mark Mumby  
HRL Compliance Solutions  
744 Horizon Ct. Suite 140  
Grand Junction, CO 81506

Re: **WPX TR 24-16-597 Down Gradient 4/5/12**

Work Order: **1204199**

Dear Mark,

ALS Environmental received 5 samples on 07-Apr-2012 11:15 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 26.

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

Sincerely,

A handwritten signature in cursive script that reads "Ann Preston".

Electronically approved by: Ann Preston

Ann Preston  
Project Manager



Certificate No: MN331938

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Environmental The ALS logo, a stylized blue triangle with a yellow flame inside.

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RIGHT SOLUTIONS RIGHT PARTNER

**Client:** HRL Compliance Solutions  
**Project:** WPX TR 24-16-597 Down Gradient 4/5/12  
**Work Order:** 1204199

## Work Order Sample Summary

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
1204199-01	TR 24-16-597 Pond 1	Water		4/5/2012 12:00	4/7/2012 11:15	<input type="checkbox"/>
1204199-02	TR 24-16-597 Seep 1	Water		4/5/2012 12:30	4/7/2012 11:15	<input type="checkbox"/>
1204199-03	TR 24-16-597 Confluence	Water		4/5/2012 13:00	4/7/2012 11:15	<input type="checkbox"/>
1204199-04	TR 24-16-597 Seep 2	Water		4/5/2012 14:00	4/7/2012 11:15	<input type="checkbox"/>
1204199-05	Trip Blank	Water		4/5/2012	4/7/2012 11:15	<input type="checkbox"/>

---

**Client:** HRL Compliance Solutions  
**Project:** WPX TR 24-16-597 Down Gradient 4/5/12  
**Work Order:** 1204199

---

**Case Narrative**

Batch R103422 sample TR 24-16-597 Seep 2 RPD between the Duplicate data for Total and Bicarbonate Alkalinity were above control limits. The individual results met quality control criteria.

Batch R103445 sample holding times for Nitrate expired prior to sample receipt. The samples were analyzed at the request of the client. Results should be considered estimated for Nitrate for all samples.

**Client:** HRL Compliance Solutions  
**Project:** WPX TR 24-16-597 Down Gradient 4/5/12  
**WorkOrder:** 1204199

## **QUALIFIERS, ACRONYMS, UNITS**

<b><u>Qualifier</u></b>	<b><u>Description</u></b>
*	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

<b><u>Acronym</u></b>	<b><u>Description</u></b>
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

<b><u>Units Reported</u></b>	<b><u>Description</u></b>
µg/L	Micrograms per Liter
µmhos/cm	Micromhos per Centimeter
mg/L	Milligrams per Liter
s.u.	Standard Units

# ALS Group USA, Corp

Date: 16-Apr-12

**Client:** HRL Compliance Solutions  
**Project:** WPX TR 24-16-597 Down Gradient 4/5/12  
**Sample ID:** TR 24-16-597 Pond 1  
**Collection Date:** 4/5/2012 12:00 PM

**Work Order:** 1204199  
**Lab ID:** 1204199-01  
**Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>METALS BY ICP-MS (DISSOLVED)</b>			<b>SW6020A</b>			Analyst: <b>RH</b>
Calcium	2.0		0.50	mg/L	1	4/12/2012 05:19 AM
Iron	0.67		0.080	mg/L	1	4/12/2012 05:19 AM
Magnesium	0.64		0.20	mg/L	1	4/12/2012 05:19 AM
Manganese	0.0063		0.0050	mg/L	1	4/12/2012 05:19 AM
Potassium	5.1		0.20	mg/L	1	4/12/2012 05:19 AM
Sodium	4.5		0.20	mg/L	1	4/12/2012 05:19 AM
<b>VOLATILE ORGANIC COMPOUNDS</b>			<b>SW8260</b>			Analyst: <b>CW</b>
Benzene	ND		1.0	µg/L	1	4/10/2012 05:34 AM
Ethylbenzene	ND		1.0	µg/L	1	4/10/2012 05:34 AM
m,p-Xylene	ND		2.0	µg/L	1	4/10/2012 05:34 AM
o-Xylene	ND		1.0	µg/L	1	4/10/2012 05:34 AM
Toluene	ND		1.0	µg/L	1	4/10/2012 05:34 AM
Xylenes, Total	ND		3.0	µg/L	1	4/10/2012 05:34 AM
Surr: 1,2-Dichloroethane-d4	99.9		70-120	%REC	1	4/10/2012 05:34 AM
Surr: 4-Bromofluorobenzene	94.2		75-120	%REC	1	4/10/2012 05:34 AM
Surr: Dibromofluoromethane	100		85-115	%REC	1	4/10/2012 05:34 AM
Surr: Toluene-d8	98.1		85-120	%REC	1	4/10/2012 05:34 AM
<b>ALKALINITY (AS CaCO3)</b>			<b>A2320 B</b>			Analyst: <b>NZ</b>
Alkalinity, Bicarbonate (as CaCO3)	26		10	mg/L	1	4/10/2012 03:30 PM
Alkalinity, Carbonate (as CaCO3)	ND		10	mg/L	1	4/10/2012 03:30 PM
Alkalinity, Total (as CaCO3)	26		12	mg/L	1	4/10/2012 03:30 PM
<b>ANIONS BY ION CHROMATOGRAPHY</b>			<b>SW9056</b>			Analyst: <b>ED</b>
Bromide	ND		0.10	mg/L	1	4/11/2012 04:28 PM
Chloride	1.5		1.0	mg/L	1	4/11/2012 04:28 PM
Fluoride	0.11		0.10	mg/L	1	4/11/2012 04:28 PM
Nitrogen, Nitrate	ND	H	0.020	mg/L	1	4/11/2012 04:28 PM
Sulfate	1.6		1.0	mg/L	1	4/11/2012 04:28 PM
Nitrogen, Nitrate-Nitrite	ND		0.020	mg/L	1	4/11/2012 04:28 PM
<b>NITROGEN, NITRITE</b>			<b>A4500-NO2 B</b>			Analyst: <b>KV</b>
Nitrogen, Nitrite	ND		0.020	mg/L	1	4/7/2012 06:00 PM
<b>PH</b>			<b>SW9040</b>			Analyst: <b>KV</b>
pH	6.86			s.u.	1	4/7/2012 01:55 PM
<b>SPECIFIC CONDUCTANCE</b>			<b>A2510</b>			Analyst: <b>JJG</b>
Specific Conductance	50		5.0	µmhos/cm	1	4/11/2012 10:55 AM
<b>TOTAL DISSOLVED SOLIDS</b>			<b>A2540 C</b>			Analyst: <b>CG</b>

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

## ALS Group USA, Corp

Date: 16-Apr-12

**Client:** HRL Compliance Solutions

**Project:** WPX TR 24-16-597 Down Gradient 4/5/12

**Work Order:** 1204199

**Sample ID:** TR 24-16-597 Pond 1

**Lab ID:** 1204199-01

**Collection Date:** 4/5/2012 12:00 PM

**Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Total Dissolved Solids	63		10	mg/L	1	4/10/2012 02:06 PM

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

# ALS Group USA, Corp

Date: 16-Apr-12

**Client:** HRL Compliance Solutions  
**Project:** WPX TR 24-16-597 Down Gradient 4/5/12  
**Sample ID:** TR 24-16-597 Seep 1  
**Collection Date:** 4/5/2012 12:30 PM

**Work Order:** 1204199  
**Lab ID:** 1204199-02  
**Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>METALS BY ICP-MS (DISSOLVED)</b>			<b>SW6020A</b>			Analyst: <b>RH</b>
Calcium	56		0.50	mg/L	1	4/12/2012 05:25 AM
Iron	ND		0.080	mg/L	1	4/12/2012 05:25 AM
Magnesium	24		0.20	mg/L	1	4/12/2012 05:25 AM
Manganese	ND		0.0050	mg/L	1	4/12/2012 05:25 AM
Potassium	0.72		0.20	mg/L	1	4/12/2012 05:25 AM
Sodium	44		0.20	mg/L	1	4/12/2012 05:25 AM
<b>VOLATILE ORGANIC COMPOUNDS</b>			<b>SW8260</b>			Analyst: <b>CW</b>
Benzene	ND		1.0	µg/L	1	4/10/2012 05:09 AM
Ethylbenzene	ND		1.0	µg/L	1	4/10/2012 05:09 AM
m,p-Xylene	ND		2.0	µg/L	1	4/10/2012 05:09 AM
o-Xylene	ND		1.0	µg/L	1	4/10/2012 05:09 AM
Toluene	ND		1.0	µg/L	1	4/10/2012 05:09 AM
Xylenes, Total	ND		3.0	µg/L	1	4/10/2012 05:09 AM
Surr: 1,2-Dichloroethane-d4	97.0		70-120	%REC	1	4/10/2012 05:09 AM
Surr: 4-Bromofluorobenzene	96.1		75-120	%REC	1	4/10/2012 05:09 AM
Surr: Dibromofluoromethane	97.0		85-115	%REC	1	4/10/2012 05:09 AM
Surr: Toluene-d8	97.2		85-120	%REC	1	4/10/2012 05:09 AM
<b>ALKALINITY (AS CaCO3)</b>			<b>A2320 B</b>			Analyst: <b>NZ</b>
Alkalinity, Bicarbonate (as CaCO3)	270		10	mg/L	1	4/10/2012 03:30 PM
Alkalinity, Carbonate (as CaCO3)	ND		10	mg/L	1	4/10/2012 03:30 PM
Alkalinity, Total (as CaCO3)	270		12	mg/L	1	4/10/2012 03:30 PM
<b>ANIONS BY ION CHROMATOGRAPHY</b>			<b>SW9056</b>			Analyst: <b>ED</b>
Bromide	0.21		0.10	mg/L	1	4/11/2012 04:48 PM
Chloride	37		1.0	mg/L	1	4/11/2012 04:48 PM
Fluoride	0.14		0.10	mg/L	1	4/11/2012 04:48 PM
Nitrogen, Nitrate	0.77	H	0.020	mg/L	1	4/11/2012 04:48 PM
Sulfate	60		10	mg/L	10	4/11/2012 05:08 PM
Nitrogen, Nitrate-Nitrite	0.77		0.020	mg/L	1	4/11/2012 04:48 PM
<b>NITROGEN, NITRITE</b>			<b>A4500-NO2 B</b>			Analyst: <b>KV</b>
Nitrogen, Nitrite	ND		0.020	mg/L	1	4/7/2012 06:00 PM
<b>PH</b>			<b>SW9040</b>			Analyst: <b>KV</b>
pH	7.74			s.u.	1	4/7/2012 01:55 PM
<b>SPECIFIC CONDUCTANCE</b>			<b>A2510</b>			Analyst: <b>JJG</b>
Specific Conductance	720		5.0	µmhos/cm	1	4/11/2012 10:55 AM
<b>TOTAL DISSOLVED SOLIDS</b>			<b>A2540 C</b>			Analyst: <b>CG</b>

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

## ALS Group USA, Corp

Date: 16-Apr-12

**Client:** HRL Compliance Solutions

**Project:** WPX TR 24-16-597 Down Gradient 4/5/12

**Work Order:** 1204199

**Sample ID:** TR 24-16-597 Seep 1

**Lab ID:** 1204199-02

**Collection Date:** 4/5/2012 12:30 PM

**Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Total Dissolved Solids	420		10	mg/L	1	4/10/2012 02:06 PM

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



# ALS Group USA, Corp

Date: 16-Apr-12

**Client:** HRL Compliance Solutions  
**Project:** WPX TR 24-16-597 Down Gradient 4/5/12  
**Sample ID:** TR 24-16-597 Confluence  
**Collection Date:** 4/5/2012 01:00 PM

**Work Order:** 1204199  
**Lab ID:** 1204199-03  
**Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>METALS BY ICP-MS (DISSOLVED)</b>			<b>SW6020A</b>			Analyst: <b>RH</b>
Calcium	47		0.50	mg/L	1	4/12/2012 05:31 AM
Iron	ND		0.080	mg/L	1	4/12/2012 05:31 AM
Magnesium	25		0.20	mg/L	1	4/12/2012 05:31 AM
Manganese	ND		0.0050	mg/L	1	4/12/2012 05:31 AM
Potassium	0.64		0.20	mg/L	1	4/12/2012 05:31 AM
Sodium	43		0.20	mg/L	1	4/12/2012 05:31 AM
<b>VOLATILE ORGANIC COMPOUNDS</b>			<b>SW8260</b>			Analyst: <b>CW</b>
Benzene	ND		1.0	µg/L	1	4/10/2012 04:44 AM
Ethylbenzene	ND		1.0	µg/L	1	4/10/2012 04:44 AM
m,p-Xylene	ND		2.0	µg/L	1	4/10/2012 04:44 AM
o-Xylene	ND		1.0	µg/L	1	4/10/2012 04:44 AM
Toluene	ND		1.0	µg/L	1	4/10/2012 04:44 AM
Xylenes, Total	ND		3.0	µg/L	1	4/10/2012 04:44 AM
Surr: 1,2-Dichloroethane-d4	96.0		70-120	%REC	1	4/10/2012 04:44 AM
Surr: 4-Bromofluorobenzene	95.4		75-120	%REC	1	4/10/2012 04:44 AM
Surr: Dibromofluoromethane	97.0		85-115	%REC	1	4/10/2012 04:44 AM
Surr: Toluene-d8	98.6		85-120	%REC	1	4/10/2012 04:44 AM
<b>ALKALINITY (AS CaCO3)</b>			<b>A2320 B</b>			Analyst: <b>NZ</b>
Alkalinity, Bicarbonate (as CaCO3)	280		10	mg/L	1	4/10/2012 03:30 PM
Alkalinity, Carbonate (as CaCO3)	ND		10	mg/L	1	4/10/2012 03:30 PM
Alkalinity, Total (as CaCO3)	290		12	mg/L	1	4/10/2012 03:30 PM
<b>ANIONS BY ION CHROMATOGRAPHY</b>			<b>SW9056</b>			Analyst: <b>ED</b>
Bromide	ND		0.10	mg/L	1	4/11/2012 05:28 PM
Chloride	18		1.0	mg/L	1	4/11/2012 05:28 PM
Fluoride	0.16		0.10	mg/L	1	4/11/2012 05:28 PM
Nitrogen, Nitrate	0.37	H	0.020	mg/L	1	4/11/2012 05:28 PM
Sulfate	64		10	mg/L	10	4/11/2012 05:48 PM
Nitrogen, Nitrate-Nitrite	0.37		0.020	mg/L	1	4/11/2012 05:28 PM
<b>NITROGEN, NITRITE</b>			<b>A4500-NO2 B</b>			Analyst: <b>KV</b>
Nitrogen, Nitrite	ND		0.020	mg/L	1	4/7/2012 06:00 PM
<b>PH</b>			<b>SW9040</b>			Analyst: <b>KV</b>
pH	8.35			s.u.	1	4/7/2012 01:55 PM
<b>SPECIFIC CONDUCTANCE</b>			<b>A2510</b>			Analyst: <b>JJG</b>
Specific Conductance	680		5.0	µmhos/cm	1	4/11/2012 10:55 AM
<b>TOTAL DISSOLVED SOLIDS</b>			<b>A2540 C</b>			Analyst: <b>CG</b>

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

## ALS Group USA, Corp

Date: 16-Apr-12

**Client:** HRL Compliance Solutions

**Project:** WPX TR 24-16-597 Down Gradient 4/5/12

**Work Order:** 1204199

**Sample ID:** TR 24-16-597 Confluence

**Lab ID:** 1204199-03

**Collection Date:** 4/5/2012 01:00 PM

**Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Total Dissolved Solids	410		10	mg/L	1	4/10/2012 02:06 PM

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

# ALS Group USA, Corp

Date: 16-Apr-12

**Client:** HRL Compliance Solutions  
**Project:** WPX TR 24-16-597 Down Gradient 4/5/12  
**Sample ID:** TR 24-16-597 Seep 2  
**Collection Date:** 4/5/2012 02:00 PM

**Work Order:** 1204199  
**Lab ID:** 1204199-04  
**Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>METALS BY ICP-MS (DISSOLVED)</b>			<b>SW6020A</b>			Analyst: <b>RH</b>
Calcium	48		0.50	mg/L	1	4/12/2012 05:37 AM
Iron	ND		0.080	mg/L	1	4/12/2012 05:37 AM
Magnesium	22		0.20	mg/L	1	4/12/2012 05:37 AM
Manganese	0.014		0.0050	mg/L	1	4/12/2012 05:37 AM
Potassium	0.85		0.20	mg/L	1	4/12/2012 05:37 AM
Sodium	39		0.20	mg/L	1	4/12/2012 05:37 AM
<b>VOLATILE ORGANIC COMPOUNDS</b>			<b>SW8260</b>			Analyst: <b>CW</b>
Benzene	ND		1.0	µg/L	1	4/10/2012 04:19 AM
Ethylbenzene	ND		1.0	µg/L	1	4/10/2012 04:19 AM
m,p-Xylene	ND		2.0	µg/L	1	4/10/2012 04:19 AM
o-Xylene	ND		1.0	µg/L	1	4/10/2012 04:19 AM
Toluene	ND		1.0	µg/L	1	4/10/2012 04:19 AM
Xylenes, Total	ND		3.0	µg/L	1	4/10/2012 04:19 AM
Surr: 1,2-Dichloroethane-d4	97.5		70-120	%REC	1	4/10/2012 04:19 AM
Surr: 4-Bromofluorobenzene	95.3		75-120	%REC	1	4/10/2012 04:19 AM
Surr: Dibromofluoromethane	95.7		85-115	%REC	1	4/10/2012 04:19 AM
Surr: Toluene-d8	98.0		85-120	%REC	1	4/10/2012 04:19 AM
<b>ALKALINITY (AS CaCO3)</b>			<b>A2320 B</b>			Analyst: <b>NZ</b>
Alkalinity, Bicarbonate (as CaCO3)	280		10	mg/L	1	4/10/2012 03:30 PM
Alkalinity, Carbonate (as CaCO3)	ND		10	mg/L	1	4/10/2012 03:30 PM
Alkalinity, Total (as CaCO3)	290		12	mg/L	1	4/10/2012 03:30 PM
<b>ANIONS BY ION CHROMATOGRAPHY</b>			<b>SW9056</b>			Analyst: <b>ED</b>
Bromide	ND		0.10	mg/L	1	4/11/2012 06:08 PM
Chloride	3.2		1.0	mg/L	1	4/11/2012 06:08 PM
Fluoride	0.16		0.10	mg/L	1	4/11/2012 06:08 PM
Nitrogen, Nitrate	0.60	H	0.020	mg/L	1	4/11/2012 06:08 PM
Sulfate	47		10	mg/L	10	4/11/2012 06:28 PM
Nitrogen, Nitrate-Nitrite	0.60		0.020	mg/L	1	4/11/2012 06:08 PM
<b>NITROGEN, NITRITE</b>			<b>A4500-NO2 B</b>			Analyst: <b>KV</b>
Nitrogen, Nitrite	ND		0.020	mg/L	1	4/7/2012 06:00 PM
<b>PH</b>			<b>SW9040</b>			Analyst: <b>KV</b>
pH	8.01			s.u.	1	4/7/2012 01:55 PM
<b>SPECIFIC CONDUCTANCE</b>			<b>A2510</b>			Analyst: <b>JJG</b>
Specific Conductance	600		5.0	µmhos/cm	1	4/11/2012 10:55 AM
<b>TOTAL DISSOLVED SOLIDS</b>			<b>A2540 C</b>			Analyst: <b>CG</b>

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

## ALS Group USA, Corp

Date: 16-Apr-12

**Client:** HRL Compliance Solutions

**Project:** WPX TR 24-16-597 Down Gradient 4/5/12

**Work Order:** 1204199

**Sample ID:** TR 24-16-597 Seep 2

**Lab ID:** 1204199-04

**Collection Date:** 4/5/2012 02:00 PM

**Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Total Dissolved Solids	360		10	mg/L	1	4/10/2012 02:06 PM

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

**ALS Group USA, Corp****Date:** 16-Apr-12**Client:** HRL Compliance Solutions**Project:** WPX TR 24-16-597 Down Gradient 4/5/12**Work Order:** 1204199**Sample ID:** Trip Blank**Lab ID:** 1204199-05**Collection Date:** 4/5/2012**Matrix:** WATER

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>VOLATILE ORGANIC COMPOUNDS</b>			<b>SW8260</b>			Analyst: <b>CW</b>
Benzene	ND		1.0	µg/L	1	4/10/2012 03:03 AM
Ethylbenzene	ND		1.0	µg/L	1	4/10/2012 03:03 AM
m,p-Xylene	ND		2.0	µg/L	1	4/10/2012 03:03 AM
o-Xylene	ND		1.0	µg/L	1	4/10/2012 03:03 AM
Toluene	ND		1.0	µg/L	1	4/10/2012 03:03 AM
Xylenes, Total	ND		3.0	µg/L	1	4/10/2012 03:03 AM
Surr: 1,2-Dichloroethane-d4	96.5		70-120	%REC	1	4/10/2012 03:03 AM
Surr: 4-Bromofluorobenzene	94.8		75-120	%REC	1	4/10/2012 03:03 AM
Surr: Dibromofluoromethane	96.6		85-115	%REC	1	4/10/2012 03:03 AM
Surr: Toluene-d8	97.5		85-120	%REC	1	4/10/2012 03:03 AM

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

Client: HRL Compliance Solutions

QC BATCH REPORT

Work Order: 1204199

Project: WPX TR 24-16-597 Down Gradient 4/5/12

Batch ID: R103428A Instrument ID ICPMS1 Method: SW6020A (Dissolve)

MS		Sample ID: 1204125-01AMS				Units: mg/L		Analysis Date: 4/12/2012 06:02 AM		
Client ID:		Run ID: ICPMS1_120411A				SeqNo: 1945880		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	37.43	0.50	10	28.89	85.4	80-120	0			
Iron	9.051	0.080	10	0.002831	90.5	80-120	0			
Magnesium	17.33	0.20	10	8.822	85.1	80-120	0			
Manganese	0.09509	0.0050	0.1	0.007168	87.9	80-120	0			
Potassium	9.704	0.20	10	0.7406	89.6	80-120	0			
Sodium	20.17	0.20	10	11.68	84.9	80-120	0			

MSD		Sample ID: 1204125-01AMSD				Units: mg/L		Analysis Date: 4/12/2012 06:08 AM		
Client ID:		Run ID: ICPMS1_120411A				SeqNo: 1945881		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	37.88	0.50	10	28.89	89.9	80-120	37.43	1.2	20	
Iron	8.972	0.080	10	0.002831	89.7	80-120	9.051	0.877	20	
Magnesium	17.47	0.20	10	8.822	86.5	80-120	17.33	0.805	20	
Manganese	0.09451	0.0050	0.1	0.007168	87.3	80-120	0.09509	0.612	20	
Potassium	9.738	0.20	10	0.7406	90	80-120	9.704	0.35	20	
Sodium	20.29	0.20	10	11.68	86.1	80-120	20.17	0.593	20	

The following samples were analyzed in this batch:

1204199-01B	1204199-02B	1204199-03B
1204199-04B		

**Client:** HRL Compliance Solutions  
**Work Order:** 1204199  
**Project:** WPX TR 24-16-597 Down Gradient 4/5/12

# QC BATCH REPORT

Batch ID: **R103369**      Instrument ID **VMS5**      Method: **SW8260**

<b>MBLK</b>		Sample ID: <b>VBLKW2-120409-R103369</b>				Units: <b>µg/L</b>		Analysis Date: <b>4/10/2012 01:23 AM</b>		
Client ID:		Run ID: <b>VMS5_120409B</b>				SeqNo: <b>1944459</b>		Prep Date:		DF: <b>1</b>
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	98.55	0	100	0	98.6	70-120	0			
Surr: 4-Bromofluorobenzene	95.44	0	100	0	95.4	75-120	0			
Surr: Dibromofluoromethane	99.73	0	100	0	99.7	85-115	0			
Surr: Toluene-d8	99.13	0	100	0	99.1	85-120	0			

<b>LCS</b>		Sample ID: <b>VLCSW2-120409-R103369</b>				Units: <b>µg/L</b>		Analysis Date: <b>4/10/2012 12:08 PM</b>		
Client ID:		Run ID: <b>VMS5_120409B</b>				SeqNo: <b>1944460</b>		Prep Date:		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	17.66	1.0	20	0	88.3	80-120	0			
Ethylbenzene	18.04	1.0	20	0	90.2	75-125	0			
m,p-Xylene	35.63	2.0	40	0	89.1	75-130	0			
o-Xylene	17.83	1.0	20	0	89.2	80-120	0			
Toluene	18.01	1.0	20	0	90	75-120	0			
Xylenes, Total	53.46	3.0	60	0	89.1	75-130	0			
Surr: 1,2-Dichloroethane-d4	97.69	0	100	0	97.7	70-120	0			
Surr: 4-Bromofluorobenzene	98.21	0	100	0	98.2	75-120	0			
Surr: Dibromofluoromethane	101.5	0	100	0	101	85-115	0			
Surr: Toluene-d8	97.68	0	100	0	97.7	85-120	0			

<b>LCSD</b>		Sample ID: <b>VLCSDW2-120409-R103369</b>				Units: <b>µg/L</b>		Analysis Date: <b>4/10/2012 12:33 PM</b>		
Client ID:		Run ID: <b>VMS5_120409B</b>				SeqNo: <b>1944461</b>		Prep Date:		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	17.23	1.0	20	0	86.2	80-120	17.66	2.46	30	
Ethylbenzene	17.26	1.0	20	0	86.3	75-125	18.04	4.42	30	
m,p-Xylene	34.11	2.0	40	0	85.3	75-130	35.63	4.36	30	
o-Xylene	17.11	1.0	20	0	85.6	80-120	17.83	4.12	30	
Toluene	17.18	1.0	20	0	85.9	75-120	18.01	4.72	30	
Xylenes, Total	51.22	3.0	60	0	85.4	75-130	53.46	4.28	30	
Surr: 1,2-Dichloroethane-d4	97.49	0	100	0	97.5	70-120	97.69	0.205	30	
Surr: 4-Bromofluorobenzene	97.5	0	100	0	97.5	75-120	98.21	0.726	30	
Surr: Dibromofluoromethane	101.2	0	100	0	101	85-115	101.5	0.266	30	
Surr: Toluene-d8	97.66	0	100	0	97.7	85-120	97.68	0.0205	30	

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

Client: HRL Compliance Solutions  
 Work Order: 1204199  
 Project: WPX TR 24-16-597 Down Gradient 4/5/12

## QC BATCH REPORT

Batch ID: **R103369** Instrument ID **VMS5** Method: **SW8260**

MS				Sample ID: <b>1204199-03A MS</b>			Units: <b>µg/L</b>		Analysis Date: <b>4/10/2012 08:55 AM</b>	
Client ID: <b>TR 24-16-597 Confluence</b>				Run ID: <b>VMS5_120409B</b>			SeqNo: <b>1944584</b>		Prep Date:	
									DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	17.85	1.0	20	0	89.2	80-120	0			
Ethylbenzene	17.91	1.0	20	0	89.6	75-125	0			
m,p-Xylene	34.89	2.0	40	0	87.2	75-130	0			
o-Xylene	17.35	1.0	20	0	86.8	80-120	0			
Toluene	17.76	1.0	20	0	88.8	75-120	0			
Xylenes, Total	52.24	3.0	60	0	87.1	75-130	0			
Surr: 1,2-Dichloroethane-d4	97.68	0	100	0	97.7	70-120	0			
Surr: 4-Bromofluorobenzene	94.74	0	100	0	94.7	75-120	0			
Surr: Dibromofluoromethane	100.5	0	100	0	101	85-115	0			
Surr: Toluene-d8	97.17	0	100	0	97.2	85-120	0			

MSD				Sample ID: <b>1204199-03A MSD</b>			Units: <b>µg/L</b>		Analysis Date: <b>4/10/2012 09:20 AM</b>	
Client ID: <b>TR 24-16-597 Confluence</b>				Run ID: <b>VMS5_120409B</b>			SeqNo: <b>1944586</b>		Prep Date:	
									DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	17.42	1.0	20	0	87.1	80-120	17.85	2.44	30	
Ethylbenzene	17.69	1.0	20	0	88.4	75-125	17.91	1.24	30	
m,p-Xylene	34.88	2.0	40	0	87.2	75-130	34.89	0.0287	30	
o-Xylene	17.23	1.0	20	0	86.2	80-120	17.35	0.694	30	
Toluene	17.63	1.0	20	0	88.2	75-120	17.76	0.735	30	
Xylenes, Total	52.11	3.0	60	0	86.8	75-130	52.24	0.249	30	
Surr: 1,2-Dichloroethane-d4	96.84	0	100	0	96.8	70-120	97.68	0.864	30	
Surr: 4-Bromofluorobenzene	97.53	0	100	0	97.5	75-120	94.74	2.9	30	
Surr: Dibromofluoromethane	101	0	100	0	101	85-115	100.5	0.457	30	
Surr: Toluene-d8	98.79	0	100	0	98.8	85-120	97.17	1.65	30	

The following samples were analyzed in this batch:

1204199-01A	1204199-02A	1204199-03A
1204199-04A	1204199-05A	

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



**Client:** HRL Compliance Solutions  
**Work Order:** 1204199  
**Project:** WPX TR 24-16-597 Down Gradient 4/5/12

## QC BATCH REPORT

Batch ID: **R103278** Instrument ID **WETCHEM** Method: **SW9040**

LCS		Sample ID: LCS-R103278-R103278					Units: s.u.		Analysis Date: 4/7/2012 01:55 PM		
Client ID:			Run ID: WETCHEM_120407A			SeqNo: 1942448		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
pH	4.22	0	4.4	0	95.9	90-110	0				

DUP				Sample ID: 1204199-01B DUP				Units: s.u.			Analysis Date: 4/7/2012 01:55 PM		
Client ID: TR 24-16-597 Pond 1				Run ID: WETCHEM_120407A				SeqNo: 1942450		Prep Date:		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual		
pH		6.86	0	0	0	0	0-0	6.86	0	20			

The following samples were analyzed in this batch:

1204199-01B	1204199-02B	1204199-03B
1204199-04B		

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

Client: HRL Compliance Solutions  
 Work Order: 1204199  
 Project: WPX TR 24-16-597 Down Gradient 4/5/12

## QC BATCH REPORT

Batch ID: **R103316** Instrument ID **WETCHEM** Method: **A4500-NO2 B**

<b>MBLK</b>	Sample ID: <b>MB-R103316-R103316</b>					Units: <b>mg/L</b>		Analysis Date: <b>4/7/2012 06:00 PM</b>		
Client ID:	Run ID: <b>WETCHEM_120407D</b>				SeqNo: <b>1943427</b>		Prep Date:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Nitrogen, Nitrite ND 0.020

<b>LCS</b>	Sample ID: <b>LCS-R103316-R103316</b>					Units: <b>mg/L</b>		Analysis Date: <b>4/7/2012 06:00 PM</b>		
Client ID:	Run ID: <b>WETCHEM_120407D</b>				SeqNo: <b>1943428</b>		Prep Date:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Nitrogen, Nitrite 0.1691 0.020 0.152 0 111 80-120 0

<b>LCSD</b>	Sample ID: <b>LCSD-R103316-R103316</b>					Units: <b>mg/L</b>		Analysis Date: <b>4/7/2012 06:00 PM</b>		
Client ID:	Run ID: <b>WETCHEM_120407D</b>				SeqNo: <b>1943435</b>		Prep Date:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Nitrogen, Nitrite 0.1613 0.020 0.152 0 106 80-120 0.1691 4.72 20

<b>MS</b>	Sample ID: <b>1204199-01B MS</b>					Units: <b>mg/L</b>		Analysis Date: <b>4/7/2012 06:00 PM</b>		
Client ID: <b>TR 24-16-597 Pond 1</b>	Run ID: <b>WETCHEM_120407D</b>				SeqNo: <b>1943430</b>		Prep Date:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Nitrogen, Nitrite 0.1392 0.020 0.152 0.0124 83.4 75-125 0

<b>MSD</b>	Sample ID: <b>1204199-01B MSD</b>					Units: <b>mg/L</b>		Analysis Date: <b>4/7/2012 06:00 PM</b>		
Client ID: <b>TR 24-16-597 Pond 1</b>	Run ID: <b>WETCHEM_120407D</b>				SeqNo: <b>1943431</b>		Prep Date:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Nitrogen, Nitrite 0.1385 0.020 0.152 0.0124 83 75-125 0.1392 0.504 20

The following samples were analyzed in this batch:

1204199-01B	1204199-02B	1204199-03B
1204199-04B		

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

**Client:** HRL Compliance Solutions  
**Work Order:** 1204199  
**Project:** WPX TR 24-16-597 Down Gradient 4/5/12

## QC BATCH REPORT

Batch ID: **R103404**      Instrument ID **TDS**      Method: **A2540 C**

<b>MBLK</b>	Sample ID: <b>BLANK-R103404</b>					Units: <b>mg/L</b>		Analysis Date: <b>4/10/2012 02:06 PM</b>		
Client ID:	Run ID: <b>TDS_120410B</b>				SeqNo: <b>1945124</b>		Prep Date:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Total Dissolved Solids      ND      10

<b>LCS</b>	Sample ID: <b>LCS-R103404</b>					Units: <b>mg/L</b>		Analysis Date: <b>4/10/2012 02:06 PM</b>		
Client ID:	Run ID: <b>TDS_120410B</b>				SeqNo: <b>1945125</b>		Prep Date:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Total Dissolved Solids      491      10      495      0      99.2      80-120      0

<b>LCSD</b>	Sample ID: <b>LCSD-R103404</b>					Units: <b>mg/L</b>		Analysis Date: <b>4/10/2012 02:06 PM</b>		
Client ID:	Run ID: <b>TDS_120410B</b>				SeqNo: <b>1945126</b>		Prep Date:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Total Dissolved Solids      488      10      495      0      98.6      80-120      491      0.613      20

<b>DUP</b>	Sample ID: <b>1204199-02BDUP</b>					Units: <b>mg/L</b>		Analysis Date: <b>4/10/2012 02:06 PM</b>		
Client ID: <b>TR 24-16-597 Seep 1</b>	Run ID: <b>TDS_120410B</b>				SeqNo: <b>1945119</b>		Prep Date:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Total Dissolved Solids      430      10      0      0      0      0-0      418      2.83      20

The following samples were analyzed in this batch:

1204199-01B	1204199-02B	1204199-03B
1204199-04B		

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

**Client:** HRL Compliance Solutions  
**Work Order:** 1204199  
**Project:** WPX TR 24-16-597 Down Gradient 4/5/12

## QC BATCH REPORT

Batch ID: **R103406**      Instrument ID **WETCHEM**      Method: **A2510**

<b>MBLK</b>	Sample ID: <b>WBLKW1-120411-R103406</b>					Units: <b>µmhos/cm</b>		Analysis Date: <b>4/11/2012 10:55 AM</b>		
Client ID:	Run ID: <b>WETCHEM_120411B</b>				SeqNo: <b>1945159</b>		Prep Date:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Specific Conductance      ND      5.0

<b>DUP</b>	Sample ID: <b>1203894-11A DUP</b>					Units: <b>µmhos/cm</b>		Analysis Date: <b>4/11/2012 10:55 AM</b>		
Client ID:	Run ID: <b>WETCHEM_120411B</b>				SeqNo: <b>1945162</b>		Prep Date:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Specific Conductance      512      5.0      0      0      0      0-0      515      0.584      5

<b>DUP</b>	Sample ID: <b>1204084-01A DUP</b>					Units: <b>µmhos/cm</b>		Analysis Date: <b>4/11/2012 10:55 AM</b>		
Client ID:	Run ID: <b>WETCHEM_120411B</b>				SeqNo: <b>1945164</b>		Prep Date:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Specific Conductance      0.56      5.0      0      0      0      0-0      0.55      0      5      J

<b>DUP</b>	Sample ID: <b>1204199-03B DUP</b>					Units: <b>µmhos/cm</b>		Analysis Date: <b>4/11/2012 10:55 AM</b>		
Client ID: <b>TR 24-16-597 Confluence</b>	Run ID: <b>WETCHEM_120411B</b>				SeqNo: <b>1945168</b>		Prep Date:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Specific Conductance      677      5.0      0      0      0      0-0      678      0.148      5

<b>LCS1</b>	Sample ID: <b>WLCSW1-120411-R103406</b>					Units: <b>µmhos/cm</b>		Analysis Date: <b>4/11/2012 10:55 AM</b>		
Client ID:	Run ID: <b>WETCHEM_120411B</b>				SeqNo: <b>1945160</b>		Prep Date:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Specific Conductance      9.5      5.0      10.16      0      93.5      85-107      0

<b>LCS2</b>	Sample ID: <b>WLCSW2-120411-R103406</b>					Units: <b>µmhos/cm</b>		Analysis Date: <b>4/11/2012 10:55 AM</b>		
Client ID:	Run ID: <b>WETCHEM_120411B</b>				SeqNo: <b>1945171</b>		Prep Date:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Specific Conductance      989      5.0      1000      0      98.9      85-107      0

The following samples were analyzed in this batch:

1204199-01B	1204199-02B	1204199-03B
1204199-04B		

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

**Client:** HRL Compliance Solutions  
**Work Order:** 1204199  
**Project:** WPX TR 24-16-597 Down Gradient 4/5/12

## QC BATCH REPORT

Batch ID: **R103422**      Instrument ID **WETCHEM**      Method: **A2320 B**

<b>MBLK</b>	Sample ID: <b>WBLKW1-120410-R103422</b>				Units: <b>mg/L</b>		Analysis Date: <b>4/10/2012 03:30 PM</b>			
Client ID:	Run ID: <b>WETCHEM_120410J</b>				SeqNo: <b>1945401</b>		Prep Date:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Alkalinity, Bicarbonate (as CaCO3)	ND	10								
Alkalinity, Carbonate (as CaCO3)	ND	10								
Alkalinity, Total (as CaCO3)	ND	12								

<b>LCS</b>	Sample ID: <b>WLCSW1-120410-R103422</b>				Units: <b>mg/L</b>		Analysis Date: <b>4/10/2012 03:30 PM</b>			
Client ID:	Run ID: <b>WETCHEM_120410J</b>				SeqNo: <b>1945402</b>		Prep Date:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Alkalinity, Bicarbonate (as CaCO3)	507.7	10	513	0	99	90-110	0			
Alkalinity, Carbonate (as CaCO3)	477.3	10	482	0	99	90-110	0			
Alkalinity, Total (as CaCO3)	990	12	1000	0	99	90-110	0			

<b>LCSD</b>	Sample ID: <b>WLCSDW1-120410-R103422</b>				Units: <b>mg/L</b>		Analysis Date: <b>4/10/2012 03:30 PM</b>			
Client ID:	Run ID: <b>WETCHEM_120410J</b>				SeqNo: <b>1945408</b>		Prep Date:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Alkalinity, Bicarbonate (as CaCO3)	512.9	10	513	0	100	90-110	507.7	1.02	6	
Alkalinity, Carbonate (as CaCO3)	482.1	10	482	0	100	90-110	477.3	1	6	
Alkalinity, Total (as CaCO3)	1000	12	1000	0	100	90-110	990	1.01	6	

<b>DUP</b>	Sample ID: <b>1204199-04B DUP</b>				Units: <b>mg/L</b>		Analysis Date: <b>4/10/2012 03:30 PM</b>			
Client ID: <b>TR 24-16-597 Seep 2</b>	Run ID: <b>WETCHEM_120410J</b>				SeqNo: <b>1945407</b>		Prep Date:		DF: <b>1</b>	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Alkalinity, Bicarbonate (as CaCO3)	214.4	10	0	0	0		283.8	27.9	20	R
Alkalinity, Carbonate (as CaCO3)	ND	10	0	0	0		2.1	0	20	
Alkalinity, Total (as CaCO3)	216	12	0	0	0		286	27.9	20	R

The following samples were analyzed in this batch:

1204199-01B	1204199-02B	1204199-03B
1204199-04B		

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

**Client:** HRL Compliance Solutions  
**Work Order:** 1204199  
**Project:** WPX TR 24-16-597 Down Gradient 4/5/12

## QC BATCH REPORT

Batch ID: **R103445**      Instrument ID **IC3**      Method: **SW9056**

<b>MBLK</b>		Sample ID: <b>CCB/MBLK-R103445</b>				Units: <b>mg/L</b>		Analysis Date: <b>4/11/2012 10:57 AM</b>		
Client ID:		Run ID: <b>IC3_120411A</b>				SeqNo: <b>1945944</b>		Prep Date:		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	ND	0.10								
Chloride	0.4829	1.0								J
Fluoride	ND	0.10								
Nitrogen, Nitrate	ND	0.020								
Sulfate	ND	1.0								
Nitrogen, Nitrate-Nitrite	ND	0.020								

<b>LCS</b>		Sample ID: <b>CCV/LCS-R103445</b>				Units: <b>mg/L</b>		Analysis Date: <b>4/11/2012 12:10 PM</b>		
Client ID:		Run ID: <b>IC3_120411A</b>				SeqNo: <b>1945945</b>		Prep Date:		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	2.012	0.10	2	0	101	88-113	0			
Chloride	9.658	1.0	10	0	96.6	88-107	0			
Fluoride	1.948	0.10	2	0	97.4	86-111	0			
Nitrogen, Nitrate	0.2343	0.020	0.25	0	93.7	81-116	0			
Sulfate	9.81	1.0	10	0	98.1	85-110	0			
Nitrogen, Nitrate-Nitrite	0.475	0.020	0.5	0	95	90-110	0			

<b>LCSD</b>		Sample ID: <b>CCV/LCSD-R103445</b>				Units: <b>mg/L</b>		Analysis Date: <b>4/11/2012 10:09 PM</b>		
Client ID:		Run ID: <b>IC3_120411A</b>				SeqNo: <b>1945983</b>		Prep Date:		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	2.016	0.10	2	0	101	88-113	2.012	0.169	20	
Chloride	9.66	1.0	10	0	96.6	88-107	9.658	0.0228	20	
Fluoride	2.112	0.10	2	0	106	86-111	1.948	8.09	20	
Nitrogen, Nitrate	0.2608	0.020	0.25	0	104	81-116	0.2343	10.7	20	
Sulfate	9.953	1.0	10	0	99.5	85-110	9.81	1.45	20	
Nitrogen, Nitrate-Nitrite	0.4967	0.020	0.5	0	99.3	90-110	0.475	4.47	20	

<b>MS</b>		Sample ID: <b>1204271-01A MS</b>				Units: <b>mg/L</b>		Analysis Date: <b>4/11/2012 02:48 PM</b>		
Client ID:		Run ID: <b>IC3_120411A</b>				SeqNo: <b>1945952</b>		Prep Date:		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Bromide	2.265	0.10	2	0.0942	109	75-125	0			
Chloride	25.43	1.0	10	15.35	101	75-125	0			
Fluoride	2.286	0.10	2	0.3306	97.8	75-125	0			
Nitrogen, Nitrate	0.4642	0.020	0.5	0	92.8	75-125	0			
Nitrogen, Nitrate-Nitrite	0.9462	0.020	1	0	94.6	75-125	0			

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

**Client:** HRL Compliance Solutions  
**Work Order:** 1204199  
**Project:** WPX TR 24-16-597 Down Gradient 4/5/12

## QC BATCH REPORT

Batch ID: **R103445**      Instrument ID **IC3**      Method: **SW9056**

<b>MS</b>		Sample ID: <b>1204271-01A MS</b>				Units: <b>mg/L</b>		Analysis Date: <b>4/11/2012 09:29 PM</b>		
Client ID:		Run ID: <b>IC3_120411A</b>				SeqNo: <b>1945979</b>		Prep Date:		DF: <b>2</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Sulfate	66.15	2.0	10	56.54	96.1	75-125	0			O
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<b>MSD</b>		Sample ID: <b>1204271-01A MSD</b>				Units: <b>mg/L</b>		Analysis Date: <b>4/11/2012 03:08 PM</b>		
Client ID:		Run ID: <b>IC3_120411A</b>				SeqNo: <b>1945953</b>		Prep Date:		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Bromide	2.338	0.10	2	0.0942	112	75-125	2.265	3.17	20	
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Chloride	25.52	1.0	10	15.35	102	75-125	25.43	0.33	20	
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Fluoride	2.29	0.10	2	0.3306	98	75-125	2.286	0.166	20	
----------	------	------	---	--------	----	--------	-------	-------	----	--

Nitrogen, Nitrate	0.4964	0.020	0.5	0	99.3	75-125	0.4642	6.7	20	
-------------------	--------	-------	-----	---	------	--------	--------	-----	----	--

Nitrogen, Nitrate-Nitrite	0.9881	0.020	1	0	98.8	75-125	0.9462	4.33	20	
---------------------------	--------	-------	---	---	------	--------	--------	------	----	--

<b>MSD</b>		Sample ID: <b>1204271-01A MSD</b>				Units: <b>mg/L</b>		Analysis Date: <b>4/11/2012 09:49 PM</b>		
Client ID:		Run ID: <b>IC3_120411A</b>				SeqNo: <b>1945981</b>		Prep Date:		DF: <b>2</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Sulfate	65.12	2.0	10	56.54	85.8	75-125	66.15	1.57	20	O
---------	-------	-----	----	-------	------	--------	-------	------	----	---

The following samples were analyzed in this batch:

1204199-01B	1204199-02B	1204199-03B
1204199-04B		

**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  
#

1204199

<b>PROJECT NAME</b>		<b>SAMPLER</b>		<b>DATE</b>		<b>PAGE</b>	
WPX TR 24-16-597 Down Gradient Water Sampling		Reed Wold		4/6/2012		1 of 1	
<b>PROJECT No.</b>		<b>SITE ID</b>		<b>TURNAROUND</b>		<b>DISPOSAL</b>	
		TR 24-16-597		5 day		By Lab or Return to Client	
<b>COMPANY NAME</b>		<b>EDD FORMAT</b>		See Comments Anions, Cations TDS, ALK, PH, SC BTEX			
HRL Compliance							
<b>BILL TO COMPANY</b>		<b>PURCHASE ORDER</b>					
WPX							
<b>INVOICE ATTN TO</b>		<b>ADDRESS</b>					
Karolina Blaney		1058 Co Rd 215					
<b>ADDRESS</b>		<b>CITY / STATE / ZIP</b>					
744 Horizon Ct Ste. 140		Parachure CO 81635					
<b>PHONE</b>		<b>PHONE</b>					
970-243-3271		970-683-2295					
<b>FAX</b>		<b>FAX</b>					
970-243-3280							
<b>E-MAIL</b>		<b>E-MAIL</b>					
mmumby@hrlcomp.com		Karolina.blaney@wpxenergy.com					
<b>Lab ID</b>	<b>Field ID</b>	<b>Matrix</b>	<b>Sample Date</b>	<b>Sample Time</b>	<b># Bottles</b>	<b>Pres.</b>	<b>QC</b>
1	TR 24-16-597 Pond 1	W	4/5/2012	12:00	6	8,1	X
2	TR 24-16-597 Seep 1	W	4/5/2012	12:30	5	8,1	X
3	TR 24-16-597 Confluence	W	4/5/2012	1:00	6	8,1	X
4	TR 24-16-597 Seep 2	W	4/5/2012	2:00	6	8,1	X
05	trip Blank						

\*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.

<b>Comments:</b> BTEX, TDS, as well as major cations/anions (chloride, fluoride, sulfate, sodium). Additionally, the samples will be analyzed for pH, Alkalinity, and EC. 4.6' c JWP	<b>QC PACKAGE (check below)</b>	
	X	LEVEL II (Standard QC)
		LEVEL III (Std QC + forms)
		LEVEL IV (Std QC + forms + raw data)
<b>Preservative Key:</b> 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035		

<b>SIGNATURE</b>	<b>PRINTED NAME</b>	<b>DATE</b>	<b>TIME</b>
Reed Wold	Reed Wold	4/6/12	5:00
Diane F Shaw	Diane F Shaw	4/7/12	11:15
<b>RELINQUISHED BY</b>	<b>RECEIVED BY</b>		
<b>RELINQUISHED BY</b>	<b>RECEIVED BY</b>		
<b>RELINQUISHED BY</b>	<b>RECEIVED BY</b>		



Sample Receipt Checklist

Client Name: HRL

Date/Time Received: 07-Apr-12 11:15

Work Order: 1204199

Received by: DS

Checklist completed by Diane Shaw 07-Apr-12  
eSignature Date

Reviewed by: Ann Preston 09-Apr-12  
eSignature Date

Matrices: Water

Carrier name: FedEx

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>4.6 c</u>		
Cooler(s)/Kit(s):			
Water - VOA vials have zero headspace?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:			
Login Notes:			

-----

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:

# FedEx Express NEW Package US Airbill

FedEx Tracking Number

8987 5943 7710

0200 Form ID No.

FedEx Retrieval Copy

## 1 From

Date 4/16/12

Sender's Name

Rec'd Wolf

Phone

970 243-2271

Company

HCSI

Address

744 Hdzon Ct Ste 140

Dept./Floor/Suite/Room

City

Indian Junction

State

CO

ZIP

81506

## 2 Your Internal Billing Reference

## 3 To

Recipient's Name

Sample Recipient

Phone

617-399-6070

Company

N.S. Group

Address

3252 128th Ave

Dept./Floor/Suite/Room

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 in select locations.

Address

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

City

Holland

State

MI

ZIP

49424



8987 5943 7710

## 4 Express Package Service

NOTE: Service order has changed. Please select carefully.

### 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.

## 5 Packaging

\* Declared value limit \$500.

06 ☐ FedEx Envelope\*

02 ☐ FedEx Pak\*

03 ☐ FedEx Box

04 ☐ FedEx Tube

07 ☐ Other

## 6 Special Handling and Delivery Signature Options

### 03 SATURDAY DELIVERY

☐ No Signature Required  
Package may be left without obtaining a 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. For residential deliveries only. Fee applies.

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

☒ No 04 ☐ Yes  
As per attached Shipper's Declaration.

Dangerous goods (including dry ice) cannot be shipped in FedEx packaging or placed in a FedEx Express Drop Box.

## 7 Payment Bill to:

1 ☐ Sender  
Acct. No. in Section 1 will be billed.

2 ☒ Recipient

3 ☐ Third Party

4 ☐ Credit Card

5 ☐ Cash/Check

Total Packages

Total Weight

lbs.

Credit Card Auth.

612

\*Our liability is limited to \$100 unless you declare a higher value. See the current FedEx Service Guide for details.

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### **APPENDIX 3: BACKGROUND RAW ANALYTICAL DATA**

**ALS Group USA, Corp****Date:** 22-Jun-12**Client:** HRL Compliance Solutions**Project:** WPX TR 24-16-597 Pit Closure 6/11/12**Work Order:** 1206528**Sample ID:** BKGD 1**Lab ID:** 1206528-06**Collection Date:** 6/11/2012 09:00 AM**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>METALS BY ICP-MS</b>						
Arsenic	2.8		SW6020A 0.79	mg/Kg-dry	Prep Date: 6/20/2012 2	Analyst: RH 6/21/2012 12:50 AM
<b>SUBCONTRACTED ANALYSES</b>						
Subcontracted Analyses	Rcvd 6/20/12		SUBCONTRACT as noted		1	Analyst: A&LGL 6/20/2012
<b>MOISTURE</b>						
Moisture	5.5		A2540 G 0.050	% of sample	1	Analyst: CG 6/18/2012 04:45 PM
<b>PH</b>						
pH	6.97		SW9045D s.u.		1	Analyst: JB 6/15/2012 10:30 AM

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

# ALS Group USA, Corp

Date: 22-Jun-12

**Client:** HRL Compliance Solutions

**Project:** WPX TR 24-16-597 Pit Closure 6/11/12

**Sample ID:** BKGD 2

**Collection Date:** 6/11/2012 09:10 AM

**Work Order:** 1206528

**Lab ID:** 1206528-07

**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>METALS BY ICP-MS</b>			<b>SW6020A</b>		Prep Date: <b>6/20/2012</b>	Analyst: <b>RH</b>
Arsenic	2.8		0.78	mg/Kg-dry	2	6/21/2012 01:16 AM
<b>MOISTURE</b>			<b>A2540 G</b>			Analyst: <b>CG</b>
Moisture	3.1		0.050	% of sample	1	6/18/2012 04:45 PM

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

## ALS Group USA, Corp

Date: 22-Jun-12

**Client:** HRL Compliance Solutions

**Project:** WPX TR 24-16-597 Pit Closure 6/11/12

**Work Order:** 1206528

**Sample ID:** BKGD 3

**Lab ID:** 1206528-08

**Collection Date:** 6/11/2012 09:15 AM

**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>METALS BY ICP-MS</b>			<b>SW6020A</b>		Prep Date: <b>6/20/2012</b>	Analyst: <b>ML</b>
Arsenic	2.7		0.79	mg/Kg-dry	2	6/21/2012 09:10 PM
<b>MOISTURE</b>			<b>A2540 G</b>			Analyst: <b>CG</b>
Moisture	2.8		0.050	% of sample	1	6/18/2012 04:45 PM

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

Report Number: F12170-0219

Account Number: 91000

# A & L GREAT LAKES LABORATORIES, INC.

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**QUALITY ANALYSES FOR INFORMED DECISIONS**

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

RE: 1206528

DATE RECEIVED: 06/18/2012

DATE REPORTED: 06/20/2012

PAGE: 1

P.O. NUMBER: 20-1206528

ATTN: ANN PRESTON

## REPORT OF ANALYSIS

LAB NO.	SAMPLE ID	ANALYSIS	RESULT	UNIT	METHOD
37097	PIT BOTTOM	Sat'd Paste Extraction with DIW			USDA Handbook 60
		Conductivity (ECe)	0.29	mmho/cm	USDA Handbook 60
		Calcium (Sat'd Paste)	15	ppm	USDA Handbook 60
		Magnesium (Sat'd Paste)	4	ppm	USDA Handbook 60
		Sodium (Sat'd Paste)	177	ppm	USDA Handbook 60
		Sodium Adsorption Ratio (SAR)	10.5	-	USDA Handbook 60
37098	BKGD 1	Sat'd Paste Extraction with DIW			USDA Handbook 60
		Conductivity (ECe)	0.17	mmho/cm	USDA Handbook 60
		Calcium (Sat'd Paste)	22	ppm	USDA Handbook 60
		Magnesium (Sat'd Paste)	6	ppm	USDA Handbook 60
		Sodium (Sat'd Paste)	15	ppm	USDA Handbook 60
		Sodium Adsorption Ratio (SAR)	0.7	-	USDA Handbook 60

#### **APPENDIX 4: LANDFARM RAW ANALYTICAL DATA**





23-Jul-2012

Kris Rowe  
HRL Compliance Solutions  
2385 F 1/2 Road  
Grand Junction, CO 81505

Re: **WPX TR 43-16 7/12/12**

Work Order: **1207394**

Dear Kris,

ALS Environmental received 1 sample on 14-Jul-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 26.

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

Sincerely,

A handwritten signature in cursive script that reads "Ann Preston".

Electronically approved by: Ann Preston

Ann Preston  
Project Manager



Certificate No: MN331938

ADDRESS 3352 128th Avenue Holland, Michigan 49424-9263 | PHONE (616) 399-6070 | FAX (616) 399-6185

ALS GROUP USA, CORP Part of the ALS Laboratory Group A Campbell Brothers Limited Company

Environmental 

[www.alsglobal.com](http://www.alsglobal.com)

RIGHT SOLUTIONS RIGHT PARTNER

---

**Client:** HRL Compliance Solutions  
**Project:** WPX TR 43-16 7/12/12  
**Work Order:** 1207394

**Work Order Sample Summary**

---

<u>Lab Samp ID</u>	<u>Client Sample ID</u>	<u>Matrix</u>	<u>Tag Number</u>	<u>Collection Date</u>	<u>Date Received</u>	<u>Hold</u>
1207394-01	Landfarm	Soil		7/12/2012 10:15	7/14/2012 10:30	<input type="checkbox"/>

---

**Client:** HRL Compliance Solutions**Project:** WPX TR 43-16 7/12/12**Work Order:** 1207394**Case Narrative**

---

Batch 42397 MS/MSD data for Hexavalent Chromium is not related to this project's samples. No data requires qualification.

Batch 42416 MS/MSD data for Metals is not related to this project's samples. No data requires qualification.

**Client:** HRL Compliance Solutions  
**Project:** WPX TR 43-16 7/12/12  
**WorkOrder:** 1207394

## **QUALIFIERS, ACRONYMS, UNITS**

<b><u>Qualifier</u></b>	<b><u>Description</u></b>
*	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

<b><u>Acronym</u></b>	<b><u>Description</u></b>
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
MBLK	Method Blank
MDL	Method Detection Limit
SQL	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

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

# ALS Group USA, Corp

Date: 23-Jul-12

Client: HRL Compliance Solutions

Project: WPX TR 43-16 7/12/12

Sample ID: Landfarm

Collection Date: 7/12/2012 10:15 AM

Work Order: 1207394

Lab ID: 1207394-01

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
<b>DIESEL RANGE ORGANICS BY GC-FID</b>						
<b>DRO (C10-C28)</b>	<b>160</b>		<b>SW8015M</b>		Prep Date: <b>7/18/2012</b>	Analyst: <b>CW</b>
			<b>4.8</b>	<b>mg/Kg-dry</b>	<b>1</b>	7/19/2012 11:30 AM
Surr: 4-Terphenyl-d14	78.5		39-115	%REC	1	7/19/2012 11:30 AM
<b>GASOLINE RANGE ORGANICS BY GC-FID</b>						
<b>GRO (C6-C10)</b>	<b>ND</b>		<b>SW8015</b>			Analyst: <b>CW</b>
			<b>2.9</b>	<b>mg/Kg-dry</b>	<b>50</b>	7/17/2012 11:26 PM
Surr: Toluene-d8	77.5		50-150	%REC	50	7/17/2012 11:26 PM
<b>MERCURY BY CVAA</b>						
<b>Mercury</b>	<b>0.090</b>		<b>SW7471</b>		Prep Date: <b>7/17/2012</b>	Analyst: <b>RH</b>
			<b>0.020</b>	<b>mg/Kg-dry</b>	<b>1</b>	7/17/2012 05:02 PM
<b>METALS BY ICP-MS</b>						
<b>Arsenic</b>	<b>3.2</b>		<b>SW6020A</b>		Prep Date: <b>7/19/2012</b>	Analyst: <b>ML</b>
			<b>0.79</b>	<b>mg/Kg-dry</b>	<b>2</b>	7/19/2012 03:29 PM
<b>Barium</b>	<b>650</b>		<b>4.0</b>	<b>mg/Kg-dry</b>	<b>10</b>	7/19/2012 05:58 PM
<b>Cadmium</b>	<b>0.33</b>		<b>0.32</b>	<b>mg/Kg-dry</b>	<b>2</b>	7/19/2012 03:29 PM
<b>Chromium</b>	<b>40</b>		<b>0.79</b>	<b>mg/Kg-dry</b>	<b>2</b>	7/19/2012 03:29 PM
<b>Copper</b>	<b>18</b>		<b>0.79</b>	<b>mg/Kg-dry</b>	<b>2</b>	7/19/2012 03:29 PM
<b>Lead</b>	<b>17</b>		<b>0.79</b>	<b>mg/Kg-dry</b>	<b>2</b>	7/19/2012 03:29 PM
<b>Nickel</b>	<b>20</b>		<b>0.79</b>	<b>mg/Kg-dry</b>	<b>2</b>	7/19/2012 03:29 PM
<b>Selenium</b>	<b>0.87</b>		<b>0.79</b>	<b>mg/Kg-dry</b>	<b>2</b>	7/19/2012 03:29 PM
<b>Silver</b>	<b>ND</b>		<b>0.79</b>	<b>mg/Kg-dry</b>	<b>2</b>	7/19/2012 03:29 PM
<b>Zinc</b>	<b>47</b>		<b>1.6</b>	<b>mg/Kg-dry</b>	<b>2</b>	7/19/2012 03:29 PM
<b>SUBCONTRACTED ANALYSES</b>						
<b>Subcontracted Analyses</b>	<b>Rcvd 7/20/12</b>		<b>SUBCONTRACT</b>			Analyst: <b>A&amp;LGL</b>
			<b>as noted</b>		<b>1</b>	7/20/2012
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>						
<b>Acenaphthene</b>	<b>ND</b>		<b>SW8270</b>		Prep Date: <b>7/18/2012</b>	Analyst: <b>RM</b>
			<b>17</b>	<b>µg/Kg-dry</b>	<b>1</b>	7/20/2012 12:30 PM
<b>Anthracene</b>	<b>ND</b>		<b>17</b>	<b>µg/Kg-dry</b>	<b>1</b>	7/20/2012 12:30 PM
<b>Benzo(a)anthracene</b>	<b>ND</b>		<b>23</b>	<b>µg/Kg-dry</b>	<b>1</b>	7/20/2012 12:30 PM
<b>Benzo(a)pyrene</b>	<b>ND</b>		<b>23</b>	<b>µg/Kg-dry</b>	<b>1</b>	7/20/2012 12:30 PM
<b>Benzo(b)fluoranthene</b>	<b>ND</b>		<b>23</b>	<b>µg/Kg-dry</b>	<b>1</b>	7/20/2012 12:30 PM
<b>Benzo(g,h,i)perylene</b>	<b>ND</b>		<b>34</b>	<b>µg/Kg-dry</b>	<b>1</b>	7/20/2012 12:30 PM
<b>Benzo(k)fluoranthene</b>	<b>ND</b>		<b>34</b>	<b>µg/Kg-dry</b>	<b>1</b>	7/20/2012 12:30 PM
<b>Chrysene</b>	<b>ND</b>		<b>17</b>	<b>µg/Kg-dry</b>	<b>1</b>	7/20/2012 12:30 PM
<b>Dibenzo(a,h)anthracene</b>	<b>ND</b>		<b>21</b>	<b>µg/Kg-dry</b>	<b>1</b>	7/20/2012 12:30 PM
<b>Fluoranthene</b>	<b>ND</b>		<b>17</b>	<b>µg/Kg-dry</b>	<b>1</b>	7/20/2012 12:30 PM
<b>Fluorene</b>	<b>ND</b>		<b>17</b>	<b>µg/Kg-dry</b>	<b>1</b>	7/20/2012 12:30 PM
<b>Indeno(1,2,3-cd)pyrene</b>	<b>ND</b>		<b>23</b>	<b>µg/Kg-dry</b>	<b>1</b>	7/20/2012 12:30 PM
<b>Naphthalene</b>	<b>ND</b>		<b>17</b>	<b>µg/Kg-dry</b>	<b>1</b>	7/20/2012 12:30 PM
<b>Pyrene</b>	<b>ND</b>		<b>17</b>	<b>µg/Kg-dry</b>	<b>1</b>	7/20/2012 12:30 PM
Surr: 2-Fluorobiphenyl	59.7		12-100	%REC	1	7/20/2012 12:30 PM

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

# ALS Group USA, Corp

Date: 23-Jul-12

Client: HRL Compliance Solutions

Project: WPX TR 43-16 7/12/12

Sample ID: Landfarm

Collection Date: 7/12/2012 10:15 AM

Work Order: 1207394

Lab ID: 1207394-01

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Surr: 4-Terphenyl-d14	110		25-137	%REC	1	7/20/2012 12:30 PM
Surr: Nitrobenzene-d5	70.7		37-107	%REC	1	7/20/2012 12:30 PM
<b>VOLATILE ORGANIC COMPOUNDS</b>			<b>SW8260</b>		Prep Date: 7/16/2012	Analyst: AK
Benzene	ND		35	µg/Kg-dry	1	7/20/2012 05:59 AM
Ethylbenzene	ND		35	µg/Kg-dry	1	7/20/2012 05:59 AM
m,p-Xylene	ND		70	µg/Kg-dry	1	7/20/2012 05:59 AM
o-Xylene	ND		35	µg/Kg-dry	1	7/20/2012 05:59 AM
Toluene	ND		35	µg/Kg-dry	1	7/20/2012 05:59 AM
Xylenes, Total	ND		100	µg/Kg-dry	1	7/20/2012 05:59 AM
Surr: 1,2-Dichloroethane-d4	100		70-130	%REC	1	7/20/2012 05:59 AM
Surr: 4-Bromofluorobenzene	101		70-130	%REC	1	7/20/2012 05:59 AM
Surr: Dibromofluoromethane	95.0		70-130	%REC	1	7/20/2012 05:59 AM
Surr: Toluene-d8	102		70-130	%REC	1	7/20/2012 05:59 AM
<b>CHROMIUM, TRIVALENT</b>			<b>CALCULATION</b>			Analyst: JJG
Chromium, Trivalent	40			mg/kg-dry	1	7/20/2012 07:08 AM
<b>CHROMIUM, HEXAVALENT</b>			<b>SW7196A</b>		Prep Date: 7/17/2012	Analyst: MB
Chromium, Hexavalent	ND		0.58	mg/Kg-dry	1	7/18/2012 11:00 AM
<b>MOISTURE</b>			<b>A2540 G</b>			Analyst: CG
Moisture	14		0.050	% of sample	1	7/16/2012 03:56 PM
<b>PH</b>			<b>SW9045D</b>			Analyst: KV
pH	8.90			s.u.	1	7/16/2012 11:00 AM

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

Report Number: F12200-0137

Account 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: PROJECT 1207394

DATE RECEIVED: 07/18/2012

DATE REPORTED: 07/20/2012

PAGE: 1

P.O. NUMBER: 20-1207394

ATTN: ANN PRESTON

## REPORT OF ANALYSIS

LAB NO.	SAMPLE ID	ANALYSIS	RESULT	UNIT	METHOD
65272	LANDFARM	Sat'd Paste Extraction with DIW	1		USDA Handbook 60
		Conductivity (ECe)	2.34	mmho/cm	USDA Handbook 60
		Calcium (Sat'd Paste)	102	ppm	USDA Handbook 60
		Magnesium (Sat'd Paste)	14	ppm	USDA Handbook 60
		Sodium (Sat'd Paste)	641	ppm	USDA Handbook 60
		Sodium Adsorption Ratio (SAR)	15.7	-	USDA Handbook 60

**Client:** HRL Compliance Solutions  
**Work Order:** 1207394  
**Project:** WPX TR 43-16 7/12/12

# QC BATCH REPORT

Batch ID: **42383** Instrument ID **GC8** Method: **SW8015M**

<b>MBLK</b>		Sample ID: <b>DBLKS1-42383-42383</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>7/18/2012 06:15 PM</b>		
Client ID:		Run ID: <b>GC8_120718A</b>				SeqNo: <b>2030766</b>		Prep Date: <b>7/18/2012</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	ND	4.2								
<i>Surr: 4-Terphenyl-d14</i>	1.158	0	1.667	0	69.5	39-115	0			

<b>LCS</b>		Sample ID: <b>DLCSS1-42383-42383</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>7/18/2012 06:44 PM</b>		
Client ID:		Run ID: <b>GC8_120718A</b>				SeqNo: <b>2030767</b>		Prep Date: <b>7/18/2012</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	135	4.2	166.7	0	81	60-130	0			
<i>Surr: 4-Terphenyl-d14</i>	1.201	0	1.667	0	72.1	39-115	0			

<b>MS</b>		Sample ID: <b>1207398-04B MS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>7/18/2012 07:13 PM</b>		
Client ID:		Run ID: <b>GC8_120718A</b>				SeqNo: <b>2030768</b>		Prep Date: <b>7/18/2012</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	396.7	12	490.8	65.08	67.6	60-130	0			
<i>Surr: 4-Terphenyl-d14</i>	3.403	0	4.908	0	69.3	39-115	0			

<b>MSD</b>		Sample ID: <b>1207398-04B MSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>7/18/2012 07:42 PM</b>		
Client ID:		Run ID: <b>GC8_120718A</b>				SeqNo: <b>2030769</b>		Prep Date: <b>7/18/2012</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	377.8	12	482.4	65.08	64.8	60-130	396.7	4.87	30	
<i>Surr: 4-Terphenyl-d14</i>	3.041	0	4.824	0	63	39-115	3.403	11.2	30	

The following samples were analyzed in this batch: | 1207394-01B |



Client: HRL Compliance Solutions  
 Work Order: 1207394  
 Project: WPX TR 43-16 7/12/12

## QC BATCH REPORT

Batch ID: **R107394** Instrument ID **GC10** Method: **SW8015**

<b>MBLK</b>		Sample ID: <b>MBLK-R107394-R107394</b>				Units: <b>µg/L</b>		Analysis Date: <b>7/17/2012 06:13 PM</b>		
Client ID:		Run ID: <b>GC10_120717A</b>				SeqNo: <b>2029691</b>		Prep Date:		DF: <b>1</b>
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	78.56	0	100	0	78.6	70-130	0			

<b>LCS</b>		Sample ID: <b>LCS-R107394-R107394</b>				Units: <b>µg/L</b>		Analysis Date: <b>7/17/2012 05:49 PM</b>		
Client ID:		Run ID: <b>GC10_120717A</b>				SeqNo: <b>2029690</b>		Prep Date:		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	9759	200	10000	0	97.6	70-130	0			
Surr: Toluene-d8	77.77	0	100	0	77.8	70-130	0			

<b>MS</b>		Sample ID: <b>1207431-05A MS</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>7/18/2012 02:36 AM</b>		
Client ID:		Run ID: <b>GC10_120717A</b>				SeqNo: <b>2029704</b>		Prep Date:		DF: <b>50</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	611600	2,500	500000	0	122	70-130	0			
Surr: Toluene-d8	3798	0	5000	0	76	50-150	0			

<b>MSD</b>		Sample ID: <b>1207431-05A MSD</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>7/18/2012 03:00 AM</b>		
Client ID:		Run ID: <b>GC10_120717A</b>				SeqNo: <b>2029705</b>		Prep Date:		DF: <b>50</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	625200	2,500	500000	0	125	70-130	611600	2.2	30	
Surr: Toluene-d8	3856	0	5000	0	77.1	50-150	3798	1.53	30	

The following samples were analyzed in this batch:

1207394-01A

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

**Client:** HRL Compliance Solutions  
**Work Order:** 1207394  
**Project:** WPX TR 43-16 7/12/12

## QC BATCH REPORT

Batch ID: **42365** Instrument ID **HG1** Method: **SW7471**

<b>MBLK</b>		Sample ID: <b>MBLK-42365-42365</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>7/17/2012 04:49 PM</b>		
Client ID:		Run ID: <b>HG1_120717B</b>				SeqNo: <b>2028772</b>		Prep Date: <b>7/17/2012</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury ND 0.020

<b>LCS</b>		Sample ID: <b>LCS-42365-42365</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>7/17/2012 04:51 PM</b>		
Client ID:		Run ID: <b>HG1_120717B</b>				SeqNo: <b>2028773</b>		Prep Date: <b>7/17/2012</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1855 0.020 0.1665 0 111 80-120 0

<b>MS</b>		Sample ID: <b>1207405-01AMS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>7/17/2012 05:07 PM</b>		
Client ID:		Run ID: <b>HG1_120717B</b>				SeqNo: <b>2028780</b>		Prep Date: <b>7/17/2012</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1752 0.017 0.145 0.0175 109 75-125 0

<b>MSD</b>		Sample ID: <b>1207405-01AMSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>7/17/2012 05:09 PM</b>		
Client ID:		Run ID: <b>HG1_120717B</b>				SeqNo: <b>2028781</b>		Prep Date: <b>7/17/2012</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1815 0.018 0.1523 0.0175 108 75-125 0.1752 3.53 35

The following samples were analyzed in this batch:

1207394-01B

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

**Client:** HRL Compliance Solutions  
**Work Order:** 1207394  
**Project:** WPX TR 43-16 7/12/12

## QC BATCH REPORT

Batch ID: **42416**      Instrument ID **ICPMS1**      Method: **SW6020A**

<b>MBLK</b>		Sample ID: <b>MBLK-42416-42416</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>7/19/2012 03:10 PM</b>		
Client ID:		Run ID: <b>ICPMS1_120719A</b>				SeqNo: <b>2030994</b>		Prep Date: <b>7/19/2012</b>		DF: <b>1</b>
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	ND	0.10								
Chromium	0.03322	0.25								J
Copper	ND	0.25								
Lead	ND	0.25								
Nickel	0.0321	0.25								J
Selenium	0.02052	0.25								J
Silver	ND	0.25								
Zinc	0.04594	0.50								J

<b>LCS</b>		Sample ID: <b>LCS-42416-42416</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>7/19/2012 03:23 PM</b>		
Client ID:		Run ID: <b>ICPMS1_120719A</b>				SeqNo: <b>2030996</b>		Prep Date: <b>7/19/2012</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	4.877	0.25	5	0	97.5	80-120	0			
Barium	4.882	0.25	5	0	97.6	80-120	0			
Cadmium	5.195	0.10	5	0	104	80-120	0			
Chromium	4.806	0.25	5	0	96.1	80-120	0			
Copper	4.829	0.25	5	0	96.6	80-120	0			
Lead	4.934	0.25	5	0	98.7	80-120	0			
Nickel	4.419	0.25	5	0	88.4	80-120	0			
Selenium	4.726	0.25	5	0	94.5	80-120	0			
Silver	4.874	0.25	5	0	97.5	80-120	0			
Zinc	5.035	0.50	5	0	101	80-120	0			

<b>MS</b>		Sample ID: <b>1207398-05BMS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>7/19/2012 03:48 PM</b>		
Client ID:		Run ID: <b>ICPMS1_120719A</b>				SeqNo: <b>2031000</b>		Prep Date: <b>7/19/2012</b>		DF: <b>4</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	15.22	1.4	6.784	9.205	88.7	75-125	0			
Barium	56.99	1.4	6.784	40.49	243	75-125	0			SO
Cadmium	6.868	0.54	6.784	0.1664	98.8	75-125	0			
Chromium	37.91	1.4	6.784	25.88	177	75-125	0			S
Copper	11.22	1.4	6.784	4.65	96.8	75-125	0			
Lead	11.92	1.4	6.784	5.358	96.7	75-125	0			
Nickel	24.81	1.4	6.784	17.1	114	75-125	0			
Selenium	6.621	1.4	6.784	0.5335	89.7	75-125	0			
Silver	6.176	1.4	6.784	-0.05839	91.9	75-125	0			
Zinc	75.82	2.7	6.784	54.32	317	75-125	0			SO

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

**Client:** HRL Compliance Solutions  
**Work Order:** 1207394  
**Project:** WPX TR 43-16 7/12/12

## QC BATCH REPORT

Batch ID: **42416**      Instrument ID **ICPMS1**      Method: **SW6020A**

MSD		Sample ID: <b>1207398-05BMSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>7/19/2012 03:54 PM</b>		
Client ID:		Run ID: <b>ICPMS1_120719A</b>				SeqNo: <b>2031001</b>		Prep Date: <b>7/19/2012</b>		DF: <b>4</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	14.16	1.3	6.739	9.205	73.6	75-125	15.22	7.21	25	S
Barium	54.42	1.3	6.739	40.49	207	75-125	56.99	4.61	25	SO
Cadmium	6.806	0.54	6.739	0.1664	98.5	75-125	6.868	0.913	25	
Chromium	35.31	1.3	6.739	25.88	140	75-125	37.91	7.1	25	S
Copper	11.04	1.3	6.739	4.65	94.8	75-125	11.22	1.62	25	
Lead	12.43	1.3	6.739	5.358	105	75-125	11.92	4.23	25	
Nickel	23.74	1.3	6.739	17.1	98.6	75-125	24.81	4.4	25	
Selenium	6.491	1.3	6.739	0.5335	88.4	75-125	6.621	2	25	
Silver	6.17	1.3	6.739	-0.05839	92.4	75-125	6.176	0.107	25	
Zinc	70.59	2.7	6.739	54.32	241	75-125	75.82	7.14	25	SO

The following samples were analyzed in this batch:      1207394-01B

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

Client: HRL Compliance Solutions  
 Work Order: 1207394  
 Project: WPX TR 43-16 7/12/12

## QC BATCH REPORT

Batch ID: **42382** Instrument ID **SVMS7** Method: **SW8270**

MBLK		Sample ID: <b>SBLKS1-42382-42382</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>7/19/2012 02:46 PM</b>		
Client ID:		Run ID: <b>SVMS7_120719A</b>				SeqNo: <b>2031789</b>		Prep Date: <b>7/18/2012</b>		DF: <b>1</b>
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-Fluorobiphenyl	1267	0	1667	0	76	12-100	0			
Surr: 4-Terphenyl-d14	1215	0	1667	0	72.9	25-137	0			
Surr: Nitrobenzene-d5	1299	0	1667	0	77.9	37-107	0			

LCS		Sample ID: <b>SLCSS1-42382-42382</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>7/19/2012 12:49 PM</b>		
Client ID:		Run ID: <b>SVMS7_120719A</b>				SeqNo: <b>2031784</b>		Prep Date: <b>7/18/2012</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	626	30	666.7	0	93.9	45-110	0			
Anthracene	666	30	666.7	0	99.9	55-105	0			
Benzo(a)anthracene	612.3	30	666.7	0	91.8	50-110	0			
Benzo(a)pyrene	602	30	666.7	0	90.3	50-110	0			
Benzo(b)fluoranthene	703.7	30	666.7	0	106	45-115	0			
Benzo(g,h,i)perylene	512	30	666.7	0	76.8	40-125	0			
Benzo(k)fluoranthene	653	30	666.7	0	97.9	45-115	0			
Chrysene	693	30	666.7	0	104	55-110	0			
Dibenzo(a,h)anthracene	507	30	666.7	0	76	40-125	0			
Fluoranthene	765.3	30	666.7	0	115	55-115	0			
Fluorene	628	30	666.7	0	94.2	50-110	0			
Indeno(1,2,3-cd)pyrene	532.3	30	666.7	0	79.8	40-120	0			
Naphthalene	598.7	30	666.7	0	89.8	40-105	0			
Pyrene	703.7	30	666.7	0	106	45-125	0			
Surr: 2-Fluorobiphenyl	1065	0	1667	0	63.9	12-100	0			
Surr: 4-Terphenyl-d14	1547	0	1667	0	92.8	25-137	0			
Surr: Nitrobenzene-d5	1256	0	1667	0	75.3	37-107	0			

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

Client: HRL Compliance Solutions  
 Work Order: 1207394  
 Project: WPX TR 43-16 7/12/12

## QC BATCH REPORT

Batch ID: 42382 Instrument ID SVMS7 Method: SW8270

MS Sample ID: 1207398-04B MS				Units: µg/Kg			Analysis Date: 7/19/2012 01:18 PM			
Client ID:		Run ID: SVMS7_120719A		SeqNo: 2031785		Prep Date: 7/18/2012		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	1580	88	1949	0	81	45-110	0			
Anthracene	1747	88	1949	0	89.6	55-105	0			
Benzo(a)anthracene	1631	88	1949	0	83.6	50-110	0			
Benzo(a)pyrene	1592	88	1949	0	81.6	50-110	0			
Benzo(b)fluoranthene	1958	88	1949	0	100	45-115	0			
Benzo(g,h,i)perylene	1315	88	1949	0	67.4	40-125	0			
Benzo(k)fluoranthene	1693	88	1949	0	86.8	45-115	0			
Chrysene	1758	88	1949	0	90.2	55-110	0			
Dibenzo(a,h)anthracene	1303	88	1949	0	66.8	40-125	0			
Fluoranthene	2036	88	1949	0	104	55-115	0			
Fluorene	1700	88	1949	0	87.2	50-110	0			
Indeno(1,2,3-cd)pyrene	1356	88	1949	0	69.5	40-120	0			
Naphthalene	1522	88	1949	0	78.1	40-105	0			
Pyrene	1772	88	1949	0	90.9	45-125	0			
Surr: 2-Fluorobiphenyl	2648	0	4873	0	54.3	12-100	0			
Surr: 4-Terphenyl-d14	4137	0	4873	0	84.9	25-137	0			
Surr: Nitrobenzene-d5	3205	0	4873	0	65.8	37-107	0			

MSD Sample ID: 1207398-04B MSD				Units: µg/Kg			Analysis Date: 7/19/2012 01:47 PM			
Client ID:		Run ID: SVMS7_120719A		SeqNo: 2031786		Prep Date: 7/18/2012		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	1713	85	1891	0	90.5	45-110	1580	8.06	30	
Anthracene	1860	85	1891	0	98.3	55-105	1747	6.29	30	
Benzo(a)anthracene	1713	85	1891	0	90.5	50-110	1631	4.9	30	
Benzo(a)pyrene	1683	85	1891	0	89	50-110	1592	5.59	30	
Benzo(b)fluoranthene	2096	85	1891	0	111	45-115	1958	6.78	30	
Benzo(g,h,i)perylene	1456	85	1891	0	77	40-125	1315	10.2	30	
Benzo(k)fluoranthene	1826	85	1891	0	96.5	45-115	1693	7.56	30	
Chrysene	1843	85	1891	0	97.4	55-110	1758	4.71	30	
Dibenzo(a,h)anthracene	1400	85	1891	0	74	40-125	1303	7.13	30	
Fluoranthene	2090	85	1891	0	110	55-115	2036	2.61	30	
Fluorene	1795	85	1891	0	94.9	50-110	1700	5.44	30	
Indeno(1,2,3-cd)pyrene	1452	85	1891	0	76.7	40-120	1356	6.82	30	
Naphthalene	1578	85	1891	0	83.4	40-105	1522	3.6	30	
Pyrene	2053	85	1891	0	109	45-125	1772	14.7	30	
Surr: 2-Fluorobiphenyl	2998	0	4728	0	63.4	12-100	2648	12.4	40	
Surr: 4-Terphenyl-d14	4765	0	4728	0	101	25-137	4137	14.1	40	
Surr: Nitrobenzene-d5	3344	0	4728	0	70.7	37-107	3205	4.25	40	

The following samples were analyzed in this batch: 1207394-01B

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

Client: HRL Compliance Solutions  
 Work Order: 1207394  
 Project: WPX TR 43-16 7/12/12

## QC BATCH REPORT

Batch ID: 42333 Instrument ID VMS9 Method: SW8260

MBLK		Sample ID: MBLK-42333-42333				Units: µg/Kg		Analysis Date: 7/16/2012 12:32 PM		
Client ID:		Run ID: VMS9_120716A				SeqNo: 2028039		Prep Date: 7/16/2012		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	ND	30								
Ethylbenzene	ND	30								
m,p-Xylene	ND	60								
o-Xylene	ND	30								
Toluene	ND	30								
Xylenes, Total	ND	90								
Surr: 1,2-Dichloroethane-d4	961.5	0	1000	0	96.2	70-130	0			
Surr: 4-Bromofluorobenzene	899.5	0	1000	0	90	70-130	0			
Surr: Dibromofluoromethane	950	0	1000	0	95	70-130	0			
Surr: Toluene-d8	914.5	0	1000	0	91.4	70-130	0			

MBLK		Sample ID: MBLK-42333-42333				Units: µg/Kg		Analysis Date: 7/17/2012 01:19 AM		
Client ID:		Run ID: VMS9_120716B				SeqNo: 2028436		Prep Date: 7/16/2012		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	ND	30								
Ethylbenzene	ND	30								
m,p-Xylene	ND	60								
o-Xylene	ND	30								
Toluene	ND	30								
Xylenes, Total	ND	90								
Surr: 1,2-Dichloroethane-d4	895	0	1000	0	89.5	70-130	0			
Surr: 4-Bromofluorobenzene	895.5	0	1000	0	89.6	70-130	0			
Surr: Dibromofluoromethane	869.5	0	1000	0	87	70-130	0			
Surr: Toluene-d8	1084	0	1000	0	108	70-130	0			

MBLK		Sample ID: MBLK-42333-42333				Units: µg/Kg		Analysis Date: 7/19/2012 03:37 AM		
Client ID:		Run ID: VMS7_120718B				SeqNo: 2030101		Prep Date: 7/16/2012		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	ND	30								
Ethylbenzene	ND	30								
m,p-Xylene	ND	60								
o-Xylene	ND	30								
Toluene	ND	30								
Xylenes, Total	ND	90								
Surr: 1,2-Dichloroethane-d4	1013	0	1000	0	101	70-130	0			
Surr: 4-Bromofluorobenzene	990	0	1000	0	99	70-130	0			
Surr: Dibromofluoromethane	977.5	0	1000	0	97.8	70-130	0			
Surr: Toluene-d8	990.5	0	1000	0	99	70-130	0			

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

Client: HRL Compliance Solutions  
 Work Order: 1207394  
 Project: WPX TR 43-16 7/12/12

## QC BATCH REPORT

Batch ID: 42333 Instrument ID VMS9 Method: SW8260

MBLK		Sample ID: MBLK-42333-42333				Units: µg/Kg		Analysis Date: 7/18/2012 11:26 PM		
Client ID:		Run ID: VMS6_120718A				SeqNo: 2030677		Prep Date: 7/16/2012		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	ND	30								
Ethylbenzene	ND	30								
m,p-Xylene	ND	60								
o-Xylene	ND	30								
Toluene	ND	30								
Xylenes, Total	ND	90								
Surr: 1,2-Dichloroethane-d4	955.5	0	1000	0	95.6	70-130	0			
Surr: 4-Bromofluorobenzene	947.5	0	1000	0	94.8	70-130	0			
Surr: Dibromofluoromethane	947	0	1000	0	94.7	70-130	0			
Surr: Toluene-d8	985.5	0	1000	0	98.6	70-130	0			

MBLK		Sample ID: MBLK-42333-42333				Units: µg/Kg		Analysis Date: 7/20/2012 04:22 AM		
Client ID:		Run ID: VMS6_120719B				SeqNo: 2031723		Prep Date: 7/16/2012		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	ND	30								
Ethylbenzene	ND	30								
m,p-Xylene	ND	60								
o-Xylene	ND	30								
Toluene	ND	30								
Xylenes, Total	ND	90								
Surr: 1,2-Dichloroethane-d4	962	0	1000	0	96.2	70-130	0			
Surr: 4-Bromofluorobenzene	984	0	1000	0	98.4	70-130	0			
Surr: Dibromofluoromethane	957.5	0	1000	0	95.8	70-130	0			
Surr: Toluene-d8	998.5	0	1000	0	99.8	70-130	0			

LCS		Sample ID: LCS-42333-42333				Units: µg/Kg		Analysis Date: 7/16/2012 11:16 AM		
Client ID:		Run ID: VMS9_120716A				SeqNo: 2028038		Prep Date: 7/16/2012		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	951.5	30	1000	0	95.2	75-125	0			
Ethylbenzene	992	30	1000	0	99.2	75-125	0			
m,p-Xylene	2021	60	2000	0	101	80-125	0			
o-Xylene	982	30	1000	0	98.2	75-125	0			
Toluene	998.5	30	1000	0	99.8	70-125	0			
Xylenes, Total	3003	90	3000	0	100	75-125	0			
Surr: 1,2-Dichloroethane-d4	948.5	0	1000	0	94.8	70-130	0			
Surr: 4-Bromofluorobenzene	966.5	0	1000	0	96.6	70-130	0			
Surr: Dibromofluoromethane	983	0	1000	0	98.3	70-130	0			
Surr: Toluene-d8	1018	0	1000	0	102	70-130	0			

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



Client: HRL Compliance Solutions  
 Work Order: 1207394  
 Project: WPX TR 43-16 7/12/12

## QC BATCH REPORT

Batch ID: 42333 Instrument ID VMS9 Method: SW8260

LCS		Sample ID: LCS-42333-42333				Units: µg/Kg		Analysis Date: 7/17/2012 12:03 PM		
Client ID:		Run ID: VMS9_120716B				SeqNo: 2028437		Prep Date: 7/16/2012		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	892	30	1000	0	89.2	75-125	0			
Ethylbenzene	1047	30	1000	0	105	75-125	0			
m,p-Xylene	2106	60	2000	0	105	80-125	0			
o-Xylene	1040	30	1000	0	104	75-125	0			
Toluene	1088	30	1000	0	109	70-125	0			
Xylenes, Total	3146	90	3000	0	105	75-125	0			
Surr: 1,2-Dichloroethane-d4	894.5	0	1000	0	89.4	70-130	0			
Surr: 4-Bromofluorobenzene	1011	0	1000	0	101	70-130	0			
Surr: Dibromofluoromethane	919	0	1000	0	91.9	70-130	0			
Surr: Toluene-d8	1131	0	1000	0	113	70-130	0			

LCS		Sample ID: LCS-42333-42333				Units: µg/Kg		Analysis Date: 7/19/2012 02:22 AM		
Client ID:		Run ID: VMS7_120718B				SeqNo: 2030100		Prep Date: 7/16/2012		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1122	30	1000	0	112	75-125	0			
Ethylbenzene	1123	30	1000	0	112	75-125	0			
m,p-Xylene	2198	60	2000	0	110	80-125	0			
o-Xylene	978.5	30	1000	0	97.8	75-125	0			
Toluene	1126	30	1000	0	113	70-125	0			
Xylenes, Total	3176	90	3000	0	106	75-125	0			
Surr: 1,2-Dichloroethane-d4	1019	0	1000	0	102	70-130	0			
Surr: 4-Bromofluorobenzene	987.5	0	1000	0	98.8	70-130	0			
Surr: Dibromofluoromethane	1041	0	1000	0	104	70-130	0			
Surr: Toluene-d8	1024	0	1000	0	102	70-130	0			

LCS		Sample ID: LCS-42333-42333				Units: µg/Kg		Analysis Date: 7/18/2012 10:13 PM		
Client ID:		Run ID: VMS6_120718A				SeqNo: 2030676		Prep Date: 7/16/2012		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	985.5	30	1000	0	98.6	75-125	0			
Ethylbenzene	1036	30	1000	0	104	75-125	0			
m,p-Xylene	2102	60	2000	0	105	80-125	0			
o-Xylene	1052	30	1000	0	105	75-125	0			
Toluene	1018	30	1000	0	102	70-125	0			
Xylenes, Total	3153	90	3000	0	105	75-125	0			
Surr: 1,2-Dichloroethane-d4	934	0	1000	0	93.4	70-130	0			
Surr: 4-Bromofluorobenzene	961.5	0	1000	0	96.2	70-130	0			
Surr: Dibromofluoromethane	962	0	1000	0	96.2	70-130	0			
Surr: Toluene-d8	978	0	1000	0	97.8	70-130	0			

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

Client: HRL Compliance Solutions  
 Work Order: 1207394  
 Project: WPX TR 43-16 7/12/12

## QC BATCH REPORT

Batch ID: 42333 Instrument ID VMS9 Method: SW8260

LCS Sample ID: LCS-42333-42333				Units: µg/Kg		Analysis Date: 7/20/2012 03:10 AM				
Client ID:		Run ID: VMS6_120719B		SeqNo: 2031722		Prep Date: 7/16/2012		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	937	30	1000	0	93.7	75-125	0			
Ethylbenzene	983.5	30	1000	0	98.4	75-125	0			
m,p-Xylene	1994	60	2000	0	99.7	80-125	0			
o-Xylene	988.5	30	1000	0	98.8	75-125	0			
Toluene	980.5	30	1000	0	98	70-125	0			
Xylenes, Total	2983	90	3000	0	99.4	75-125	0			
Surr: 1,2-Dichloroethane-d4	991	0	1000	0	99.1	70-130	0			
Surr: 4-Bromofluorobenzene	1038	0	1000	0	104	70-130	0			
Surr: Dibromofluoromethane	1028	0	1000	0	103	70-130	0			
Surr: Toluene-d8	1026	0	1000	0	103	70-130	0			

MS Sample ID: 1207295-10A MS				Units: µg/Kg		Analysis Date: 7/17/2012 10:12 AM				
Client ID:		Run ID: VMS9_120716B		SeqNo: 2028432		Prep Date: 7/16/2012		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	798.1	31	1022	0	78	75-125	0			
Ethylbenzene	969.8	31	1022	0	94.8	75-125	0			
m,p-Xylene	1990	61	2045	0	97.3	80-125	0			
o-Xylene	967.3	31	1022	0	94.6	75-125	0			
Toluene	915.6	31	1022	0	89.6	70-125	0			
Xylenes, Total	2958	92	3067	0	96.4	75-125	0			
Surr: 1,2-Dichloroethane-d4	958.6	0	1022	0	93.8	70-130	0			
Surr: 4-Bromofluorobenzene	983.6	0	1022	0	96.2	70-130	0			
Surr: Dibromofluoromethane	954	0	1022	0	93.3	70-130	0			
Surr: Toluene-d8	1029	0	1022	0	101	70-130	0			

MSD Sample ID: 1207295-10A MSD				Units: µg/Kg		Analysis Date: 7/17/2012 10:37 AM				
Client ID:		Run ID: VMS9_120716B		SeqNo: 2028433		Prep Date: 7/16/2012		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	786.3	31	1022	0	76.9	75-125	798.1	1.48	30	
Ethylbenzene	949.4	31	1022	0	92.8	75-125	969.8	2.13	30	
m,p-Xylene	1974	61	2045	0	96.5	80-125	1990	0.825	30	
o-Xylene	969.8	31	1022	0	94.8	75-125	967.3	0.264	30	
Toluene	879.9	31	1022	0	86	70-125	915.6	3.99	30	
Xylenes, Total	2944	92	3067	0	96	75-125	2958	0.468	30	
Surr: 1,2-Dichloroethane-d4	954.5	0	1022	0	93.4	70-130	958.6	0.428	30	
Surr: 4-Bromofluorobenzene	996.9	0	1022	0	97.5	70-130	983.6	1.34	30	
Surr: Dibromofluoromethane	938.1	0	1022	0	91.8	70-130	954	1.68	30	
Surr: Toluene-d8	1003	0	1022	0	98	70-130	1029	2.57	30	

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

**Client:** HRL Compliance Solutions  
**Work Order:** 1207394  
**Project:** WPX TR 43-16 7/12/12

## QC BATCH REPORT

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Batch ID: **42333**      Instrument ID **VMS9**      Method: **SW8260**

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**The following samples were analyzed in this batch:**

1207394-01A
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**Client:** HRL Compliance Solutions  
**Work Order:** 1207394  
**Project:** WPX TR 43-16 7/12/12

## QC BATCH REPORT

Batch ID: **42397**      Instrument ID **WETCHEM**      Method: **SW7196A**

<b>MBLK</b>		Sample ID: <b>MBLK-42397-42397</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>7/18/2012 11:00 AM</b>		
Client ID:		Run ID: <b>WETCHEM_120718G</b>				SeqNo: <b>2029403</b>		Prep Date: <b>7/17/2012</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      ND      0.50

<b>LCS</b>		Sample ID: <b>LCS-42397-42397</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>7/18/2012 11:00 AM</b>		
Client ID:		Run ID: <b>WETCHEM_120718G</b>				SeqNo: <b>2029402</b>		Prep Date: <b>7/17/2012</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      1.908      0.50      1.992      0      95.8      75-110      0

<b>MS</b>		Sample ID: <b>1207354-03B MS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>7/18/2012 11:00 AM</b>		
Client ID:		Run ID: <b>WETCHEM_120718G</b>				SeqNo: <b>2029398</b>		Prep Date: <b>7/17/2012</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      0.689      0.49      1.969      0      35      60-130      0      S

<b>MSD</b>		Sample ID: <b>1207354-03B MSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>7/18/2012 11:00 AM</b>		
Client ID:		Run ID: <b>WETCHEM_120718G</b>				SeqNo: <b>2029399</b>		Prep Date: <b>7/17/2012</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      0.5952      0.50      1.984      0      30      60-130      0.689      14.6      30      S

The following samples were analyzed in this batch:

1207394-01B

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

**Client:** HRL Compliance Solutions  
**Work Order:** 1207394  
**Project:** WPX TR 43-16 7/12/12

## QC BATCH REPORT

Batch ID: **R107276** Instrument ID **WETCHEM** Method: **SW9045D**

LCS					Sample ID: LCS-R107276-R107276					Units: s.u.			Analysis Date: 7/16/2012 11:00 AM		
Client ID:				Run ID: WETCHEM_120716E				SeqNo: 2027348			Prep Date:			DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				
pH		4.5	0	4.4	0	102	90-110	0							

DUP					Sample ID: 1207383-01A DUP					Units: s.u.			Analysis Date: 7/16/2012 11:00 AM			
Client ID:					Run ID: WETCHEM_120716E					SeqNo: 2027350			Prep Date:		DF: 1	
Analyte					Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual		
pH					7.76	0	0	0	0	0-0	7.76	0	20			

The following samples were analyzed in this batch:

1207394-01B

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

**Client:** HRL Compliance Solutions  
**Work Order:** 1207394  
**Project:** WPX TR 43-16 7/12/12

## QC BATCH REPORT

Batch ID: **R107326** Instrument ID **MOIST** Method: **A2540 G**

MBLK	Sample ID: WBLKS1-R107326					Units: % of sample			Analysis Date: 7/16/2012 03:56 PM		
Client ID:		Run ID: MOIST_120716C				SeqNo: 2028193		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-R107326					Units: % of sample		Analysis Date: 7/16/2012 03:56 PM		
Client ID:		Run ID: MOIST_120716C			SeqNo: 2028191		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: 1207400-01BDUP				Units: % of sample		Analysis Date: 7/16/2012 03:56 PM		
Client ID:		Run ID: MOIST_120716C			SeqNo: 2028178		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 13.86 0.050 0 0 0 0-0 14.04 1.29 20

DUP		Sample ID: 1207400-03BDUP				Units: % of sample		Analysis Date: 7/16/2012 03:56 PM		
Client ID:		Run ID: MOIST_120716C			SeqNo: 2028181		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 9.21 0.050 0 0 0 0-0 9.24 0.325 20

The following samples were analyzed in this batch:

1207394-01B

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



1207394



Form 202r8

PAGE	1	of	1
------	---	----	---

DISPOSAL ☒ By Lab ☐ or ☐ Return to Client

\*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.**

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY		Casey Richardson	7/13/2012	1700
RECEIVED BY		MIKE ARNOLD	7/14/12	1030
RELINQUISHED BY				
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				



Environmental

**Subcontractor:**

A & L Great Lakes Agricultural La

3505 Conestoga Dr

TEL: (260) 483-4759

FAX: (260) 483-5274

Ft. Wayne, IN 46808

Acct #: 91000

# CHAIN-OF-CUSTODY RECORD

Page 1 of 1

Date: 16-Jul-12

COC ID: 3754

Due D 20-Jul-12

Salesperson **Bruce Schlatter**

Customer Information		Project Information		Parameter/Method Request for Analysis										
Purchase Order		Project Name	1207394	A	Subcontracted Analyses (SUBCONTRACT) <b>SAR-EC</b>									
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
1207394-01C	Landfarm	Soil	12/Jul/2012 10:15	(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

Relinquished by:

Date/Time

Received by:

Date/Time

Std



Sample Receipt Checklist

Client Name: **HRL**

Date/Time Received: **14-Jul-12 10:30**

Work Order: **1207394**

Received by: **MA**

Checklist completed by Diane Shaw 16-Jul-12  
eSignature Date

Reviewed by: Ann Preston 16-Jul-12  
eSignature Date

Matrices: **Soil**

Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>4.2 c</u>		
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	<u>7/16/2012 8:39:49 AM</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:			
Login Notes:			

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:

CUSTODY SEAL

DATE 7.13.12

SIGNATURE *C. J. H.*Only Environmental Containers  
800-255-3950 • 304-255-1110FedEx  
ExpressNEW Package  
US AirbillFedEx  
Tracking  
Number

8001 2142 0462

0200

Copy

## 1 From

Date 7.13.12

Sender's Name ARRY RICHARDSON

Phone 470 242-2271

Company HCSI

Address 2385 FIVE RD.

City FARMINGTON

State CT ZIP 06030

## 2 Your Internal Billing Reference

## 3 To

Recipient's Name SAMPLE RECEIVING

Phone 476 249-6070

Company ALS GROUP

Address 2385 FIVE AVE

We cannot deliver to P.O. boxes or P.O. ZIP codes.

Dept./Floor/Suite/Room

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

City FARMINGTON

State CT

ZIP 06030

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

01

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

31

## 4 Express Package

NOTE: Service order has changed. Please select carefully.

06 ☐ FedEx First Overnight

Earliest next business morning delivery to select locations. Friday shipment will be delivered on Monday unless SATURDAY Delivery is selected.

03 ☒ FedEx Priority Overnight

Next business morning. Friday shipment will be delivered on Monday unless SATURDAY Delivery is selected.

05 ☐ FedEx Standard Overnight

Next business afternoon. Saturday Delivery NOT available.

## 5 Packaging

Declared value limit \$500.

06 ☐ FedEx Envelope02 ☐ FedEx Pak03 ☐ FedEx Box04 ☐ FedEx Tube01 ☒ Other

## 6 Special Handling and Delivery Signature Options

03 ☒ SATURDAY DELIVERYNo Signature Required  
Package will be delivered without a signature for delivery.101 ☐ Direct Signature  
Someone at the point of delivery may sign for delivery. Fee applies.Indirect Signature  
If no one is available at recipient's address, someone at a neighboring address may sign for delivery. Fee applies. Indirect signature only. Fee applies.

Does this shipment contain dangerous goods?

Yes

One box must be checked.

No

Yes

Shipper's Declaration

06 ☐ Dry Ice

Dry Ice Label

Dangerous goods labels required. Shipment must be shipped in FedEx packaging or placed in a FedEx Specialized Box.

Cargo Aircraft Only

## 7 Payment Bill to:

Enter FedEx Acct. No. or Credit Card No. below.

Output recip. Acct. No.

1 ☐ Sender Acct. No. in Service2 ☐ Recipient3 ☐ Third Party4 ☐ Credit Card5 ☐ Cash/Check

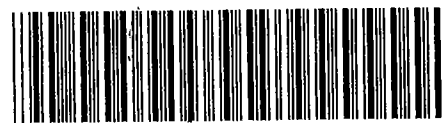
Total Packages

Total Weight

Credit Card Auth.

Our liability is limited to \$100 unless you declare a higher value. See the current FedEx Service Guide for details.

612



8001 2142 0462

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fedex.com 1800.GoFedEx 1800.463.3339

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**APPENDIX 5: SUNDRY NOTICE FORM 4 FOR BACKGROUND ARSENIC CONSIDERATIONS**

FORM  
4  
Rev 12/05State of Colorado  
Oil and Gas Conservation Commission

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



## 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: <b>96850</b>	4. Contact Name <b>Karolina Blaney</b>	Complete the Attachment Checklist  OP OGCC
2. Name of Operator: <b>WPX Energy Rocky Mountain</b>	Phone: <b>970-683-2295</b>	
3. Address: <b>1058 County Road 215</b>	Fax: <b>970-285-9573</b>	
City: <b>Parachute</b> State: <b>CO</b> Zip: <b>81635</b>		
5. API Number <b>05- N/A</b>	OGCC Facility ID Number <b>279362</b>	Survey Plat
6. Well/Facility Name: <b>Chevron TR 24-16-597</b>	7. Well/Facility Number <b>24-16-597</b>	Directional Survey
8. Location (Qtr/Qtr, Sec, Twp, Rng, Meridian): <b>SESW, Sec 16, T5S, R97W, 6th PM</b>		Surface Eqpm Diagram
9. County: <b>Garfield</b>	10. Field Name: <b>Trail Ridge</b>	Technical Info Page <input checked="" type="checkbox"/>
11. Federal, Indian or State Lease Number: _____		Other

## General Notice

<input type="checkbox"/> <b>CHANGE OF LOCATION:</b> Attach New Survey Plat (a change of surface qtr/qtr is substantive and requires a new permit)																	
Change of <b>Surface</b> Footage from Exterior Section Lines:	<table border="1"> <tr> <td></td> <td>FNL/FSL</td> <td></td> <td>FEL/FWL</td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td></td> <td></td> <td></td> <td></td> </tr> </table>		FNL/FSL		FEL/FWL												
	FNL/FSL		FEL/FWL														
Change of <b>Surface</b> Footage to Exterior Section Lines:																	
Change of <b>Bottomhole</b> Footage from Exterior Section Lines:																	
Change of <b>Bottomhole</b> Footage to Exterior Section Lines:																	
Bottomhole location Qtr/Qtr, Sec, Twp, Rng, Mer																	
Latitude	Distance to nearest property line																
Longitude	Distance to nearest bldg, public rd, utility or RR																
Ground Elevation	Distance to nearest lease line																
	Is location in a High Density Area (rule 603b)? Yes/No <input type="checkbox"/>																
	Distance to nearest well same formation																
	Surface owner consultation date: _____																
<b>GPS DATA:</b> Date of Measurement _____ PDOP Reading _____ Instrument Operator's Name _____																	
<input type="checkbox"/> <b>CHANGE SPACING UNIT</b> Formation _____ Formation Code _____ Spacing order number _____ Unit Acreage _____ Unit configuration _____	<input type="checkbox"/> <b>Remove from surface bond</b> Signed surface use agreement attached																
<input type="checkbox"/> <b>CHANGE OF OPERATOR (prior to drilling):</b> Effective Date: _____ Plugging Bond: <input type="checkbox"/> Blanket <input type="checkbox"/> Individual	<input type="checkbox"/> <b>CHANGE WELL NAME</b> NUMBER From: _____ To: _____ Effective Date: _____																
<input type="checkbox"/> <b>ABANDONED LOCATION:</b> Was location ever built? <input type="checkbox"/> Yes <input type="checkbox"/> No Is site ready for inspection? <input type="checkbox"/> Yes <input type="checkbox"/> No Date Ready for Inspection: _____	<input type="checkbox"/> <b>NOTICE OF CONTINUED SHUT IN STATUS</b> Date well shut in or temporarily abandoned: _____ Has Production Equipment been removed from site? <input type="checkbox"/> Yes <input type="checkbox"/> No MIT required if shut in longer than two years. Date of last MIT _____																
<input type="checkbox"/> <b>SPUD DATE:</b> _____	<input type="checkbox"/> <b>REQUEST FOR CONFIDENTIAL STATUS</b> (6 mos from date casing set)																
<input type="checkbox"/> <b>SUBSEQUENT REPORT OF STAGE, SQUEEZE OR REMEDIAL CEMENT WORK</b> Method used _____ Cementing tool setting/perf depth _____ Cement volume _____ Cement top _____ Cement bottom _____ Date _____ *submit cbl and cement job summaries																	
<input type="checkbox"/> <b>RECLAMATION:</b> Attach technical page describing final reclamation procedures per Rule 1004. Final reclamation will commence on approximately _____ <input type="checkbox"/> Final reclamation is completed and site is ready for inspection.																	

## Technical Engineering/Environmental Notice

<input type="checkbox"/> <b>Notice of Intent</b> Approximate Start Date: _____	<input type="checkbox"/> <b>Report of Work Done</b> Date Work Completed: _____
Details of work must be described in full on Technical Information Page (Page 2 must be submitted.)	
<input type="checkbox"/> Intent to Recomplete (submit form 2) <input type="checkbox"/> Change Drilling Plans <input type="checkbox"/> Gross Interval Changed? <input type="checkbox"/> Casing/Cementing Program Change	<input type="checkbox"/> Request to Vent or Flare <input type="checkbox"/> Repair Well <input type="checkbox"/> Rule 502 variance requested <input checked="" type="checkbox"/> Other: <b>Background</b>
<input type="checkbox"/> E&P Waste Disposal <input type="checkbox"/> Beneficial Reuse of E&P Waste <input type="checkbox"/> 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: Karolina Blaney Date: 8/22/2012 Email: Karolina.Blaney@wpxenergy.com  
 Print Name: Karolina Blaney Title: Environmental Specialist

COGCC Approved: \_\_\_\_\_ Title: \_\_\_\_\_ Date: \_\_\_\_\_

CONDITIONS OF APPROVAL, IF ANY:

TECHNICAL INFORMATION PAGE



FOR OGCC USE ONLY

1. OGCC Operator Number: 96850 API Number: N/A
2. Name of Operator: WPX Energy Rocky Mountain OGCC Facility ID # 279362
3. Well/Facility Name: Chevron TR 24-16-597 Well/Facility Number: 24-16-597
4. Location (QtrQtr, Sec, Twp, Rng, Meridian): SESW, Sec 16, T5S, R97W, 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**

This COGCC Form 4 is being submitted as a request to consider the background concentration levels for arsenic at the Chevron TR 24-16-597 well pad relative to the clouse of the reserve and completions pit at the subject facility in accordance with footnote 1 to the COGCC Table 9101-1.

The request is based on the analytical results below (see attached analytical)

Grab samples were collected from the lowest point of the pit bottom, approximately 20' to 20.6' below pad grade within the production pit.

Pit Bottom - 3.6 mg/kg

Three (3) grab samples were collected from nearby non-impacted, native soil from surface to 6" below to establish the background arsenic concentrations.

BKGD 1 - 2.8 mg/kg

BKGD 2 - 2.8 mg/kg

BKGD 3 - 2.7 mg/kg

WPX is requesting this approval in order to proceed with closure and reclamation of the production pit on the TR 24-16-597 well pad.