



21-Jun-2016

Mark Mumby  
HRL Compliance Solutions, Inc  
2385 F 1/2 Road  
Grand Junction, CO 81505

Re: **WPX RGU 43-23-198 Produced Water Spill**

Work Order: **1606896**

Dear Mark,

ALS Environmental received 2 samples on 15-Jun-2016 09:30 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.

Sample results are compliant with NELAP standard requirements and QC results achieved 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 black ink, appearing to read "Chad Whelton".

Electronically approved by: Chad Whelton

Chad Whelton  
Project Manager



Certificate No: MN 998501

## Report of Laboratory Analysis

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

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Environmental 

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**Client:** HRL Compliance Solutions, Inc  
**Project:** WPX RGU 43-23-198 Produced Water Spill  
**Work Order:** 1606896

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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>
1606896-01	Point of Origin	Soil		6/11/2016 09:00	6/15/2016 09:30	<input type="checkbox"/>
1606896-02	End Point	Soil		6/11/2016 10:10	6/15/2016 09:30	<input type="checkbox"/>

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**Client:** HRL Compliance Solutions, Inc  
**Project:** WPX RGU 43-23-198 Produced Water Spill  
**Work Order:** 1606896

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**Case Narrative**

Batch 87471, Method DRO\_8015\_S, Samples 1606896-01B and -02B: The concentration in the Method Blank was greater than the quantitation limit. The sample result was greater than 5x the concentration in the Method Blank; therefore, no qualification is required.

Batch 87471, Method DRO\_8015\_S, Sample 1606896-01B MS/MSD: The MS and MSD recovery was below the lower control limit DRO. The corresponding result in the parent sample may be biased low.

Batch 87484, Method CR6\_7196\_S, Sample 1606896-02B MS/MSD: The MS and MSD recovery was below the lower control limit for Hexavalent Chromium. The corresponding result in the parent sample may be biased low.

<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 is present at an estimated concentration between the MDL and Report 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
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

<b><u>Acronym</u></b>	<b><u>Description</u></b>
DUP	Method Duplicate
LCS	Laboratory Control Sample
LCSD	Laboratory Control Sample Duplicate
LOD	Limit of Detection (see MDL)
LOQ	Limit of Quantitation (see PQL)
MBLK	Method Blank
MDL	Method Detection Limit
MS	Matrix Spike
MSD	Matrix Spike Duplicate
PQL	Practical Quantitation Limit
RPD	Relative Percent Difference
TDL	Target Detection Limit
TNTC	Too Numerous To Count
A	APHA Standard Methods
D	ASTM
E	EPA
SW	SW-846 Update III

<b><u>Units Reported</u></b>	<b><u>Description</u></b>
% of sample	Percent of Sample
µg/Kg-dry	Micrograms per Kilogram Dry Weight
mg/Kg-dry	Milligrams per Kilogram Dry Weight
mg/L	Milligrams per Liter
mmhos/cm @25°C	Millimhos-Centimeter at 25 Degrees Celcius
none	
s.u.	Standard Units

# ALS Group USA, Corp

Date: 21-Jun-16

**Client:** HRL Compliance Solutions, Inc  
**Project:** WPX RGU 43-23-198 Produced Water Spill  
**Sample ID:** Point of Origin  
**Collection Date:** 6/11/2016 09:00 AM

**Work Order:** 1606896  
**Lab ID:** 1606896-01  
**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>260</b>	B	<b>SW8015M</b>		Prep: SW3541 / 6/17/16	Analyst: <b>IT</b>
			<b>5.2</b>	<b>mg/Kg-dry</b>	1	6/18/2016 07:21 AM
Surr: 4-Terphenyl-d14	98.7		39-133	%REC	1	6/18/2016 07:21 AM
<b>GASOLINE RANGE ORGANICS BY GC-FID</b>						
<b>GRO (C6-C10)</b>	<b>ND</b>		<b>SW8015D</b>		Prep: SW5035 / 6/16/16	Analyst: <b>IT</b>
			<b>3.8</b>	<b>mg/Kg-dry</b>	1	6/16/2016 09:34 PM
Surr: Toluene-d8	98.6		50-150	%REC	1	6/16/2016 09:34 PM
<b>MERCURY BY CVAA</b>						
Mercury	ND		<b>SW7471B</b>		Prep: SW7471 / 6/16/16	Analyst: <b>LR</b>
			<b>0.017</b>	<b>mg/Kg-dry</b>	1	6/16/2016 04:07 PM
<b>METALS ANALYSIS BY ICP</b>						
<b>Arsenic</b>	<b>7.2</b>		<b>SW846 6010C</b>		Prep: SW3050B / 6/16/16	Analyst: <b>JEC</b>
			<b>0.49</b>	<b>mg/Kg-dry</b>	1	6/20/2016 11:23 AM
<b>Barium</b>	<b>410</b>		<b>0.49</b>	<b>mg/Kg-dry</b>	1	6/20/2016 11:23 AM
Cadmium	ND		0.39	mg/Kg-dry	1	6/20/2016 11:23 AM
<b>Chromium</b>	<b>80</b>		<b>0.49</b>	<b>mg/Kg-dry</b>	1	6/20/2016 11:23 AM
<b>Copper</b>	<b>49</b>		<b>0.49</b>	<b>mg/Kg-dry</b>	1	6/20/2016 11:23 AM
<b>Lead</b>	<b>9.6</b>		<b>0.49</b>	<b>mg/Kg-dry</b>	1	6/20/2016 11:23 AM
<b>Nickel</b>	<b>42</b>		<b>0.49</b>	<b>mg/Kg-dry</b>	1	6/20/2016 11:23 AM
Selenium	ND		0.49	mg/Kg-dry	1	6/20/2016 11:23 AM
Silver	ND		0.49	mg/Kg-dry	1	6/20/2016 11:23 AM
<b>Zinc</b>	<b>49</b>		<b>0.98</b>	<b>mg/Kg-dry</b>	1	6/20/2016 11:23 AM
<b>SOLUBLE CATIONS FOR SAR</b>						
			<b>SW846 6010C</b>		Prep: USDA Method 20B / 6/20/16	Analyst: <b>JEC</b>
<b>Calcium</b>	<b>140</b>		<b>5.0</b>	<b>mg/L</b>	10	6/20/2016 07:45 PM
<b>Magnesium</b>	<b>9.0</b>		<b>2.0</b>	<b>mg/L</b>	10	6/20/2016 07:45 PM
<b>Sodium</b>	<b>3,100</b>		<b>2.0</b>	<b>mg/L</b>	10	6/20/2016 07:45 PM
<b>SODIUM ADSORPTION RATIO</b>						
			<b>USDA H60 METHO</b>		Prep: USDA Method 20B / 6/20/16	Analyst: <b>JEC</b>
<b>Sodium Adsorption Ratio</b>	<b>67</b>		<b>0.010</b>	<b>none</b>	1	6/20/2016
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>						
			<b>SW846 8270D</b>		Prep: SW3541 / 6/20/16	Analyst: <b>RS</b>
Acenaphthene	ND		8.3	µg/Kg-dry	1	6/20/2016 10:58 PM
Acenaphthylene	ND		8.3	µg/Kg-dry	1	6/20/2016 10:58 PM
Anthracene	ND		8.3	µg/Kg-dry	1	6/20/2016 10:58 PM
Benzo(a)anthracene	ND		8.3	µg/Kg-dry	1	6/20/2016 10:58 PM
Benzo(a)pyrene	ND		8.3	µg/Kg-dry	1	6/20/2016 10:58 PM
Benzo(b)fluoranthene	ND		8.3	µg/Kg-dry	1	6/20/2016 10:58 PM
Benzo(g,h,i)perylene	ND		8.3	µg/Kg-dry	1	6/20/2016 10:58 PM
Benzo(k)fluoranthene	ND		8.3	µg/Kg-dry	1	6/20/2016 10:58 PM
Chrysene	ND		8.3	µg/Kg-dry	1	6/20/2016 10:58 PM

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

# ALS Group USA, Corp

Date: 21-Jun-16

**Client:** HRL Compliance Solutions, Inc  
**Project:** WPX RGU 43-23-198 Produced Water Spill  
**Sample ID:** Point of Origin  
**Collection Date:** 6/11/2016 09:00 AM

**Work Order:** 1606896  
**Lab ID:** 1606896-01  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Dibenzo(a,h)anthracene	ND		8.3	µg/Kg-dry	1	6/20/2016 10:58 PM
Fluoranthene	ND		8.3	µg/Kg-dry	1	6/20/2016 10:58 PM
Fluorene	ND		8.3	µg/Kg-dry	1	6/20/2016 10:58 PM
Indeno(1,2,3-cd)pyrene	ND		8.3	µg/Kg-dry	1	6/20/2016 10:58 PM
Naphthalene	ND		8.3	µg/Kg-dry	1	6/20/2016 10:58 PM
Pyrene	ND		8.3	µg/Kg-dry	1	6/20/2016 10:58 PM
Surr: 2-Fluorobiphenyl	77.3		12-100	%REC	1	6/20/2016 10:58 PM
Surr: 4-Terphenyl-d14	84.6		25-137	%REC	1	6/20/2016 10:58 PM
Surr: Nitrobenzene-d5	59.8		37-107	%REC	1	6/20/2016 10:58 PM
<b>VOLATILE ORGANIC COMPOUNDS</b>			<b>SW8260B</b>	Prep: SW5035 / 6/16/16		Analyst: <b>BJB</b>
Benzene	ND		0.046	mg/Kg-dry	1	6/17/2016 05:55 AM
Ethylbenzene	ND		0.046	mg/Kg-dry	1	6/17/2016 05:55 AM
m,p-Xylene	ND		0.092	mg/Kg-dry	1	6/17/2016 05:55 AM
o-Xylene	ND		0.046	mg/Kg-dry	1	6/17/2016 05:55 AM
Toluene	ND		0.046	mg/Kg-dry	1	6/17/2016 05:55 AM
Xylenes, Total	ND		0.14	mg/Kg-dry	1	6/17/2016 05:55 AM
Surr: 1,2-Dichloroethane-d4	104		70-130	%REC	1	6/17/2016 05:55 AM
Surr: 4-Bromofluorobenzene	100		70-130	%REC	1	6/17/2016 05:55 AM
Surr: Dibromofluoromethane	98.7		70-130	%REC	1	6/17/2016 05:55 AM
Surr: Toluene-d8	98.4		70-130	%REC	1	6/17/2016 05:55 AM
<b>ELECTRICAL CONDUCTIVITY (SAR)</b>			<b>USDA H60 METHO</b>	Prep: USDA Method 20B / 6/20/16		Analyst: <b>JB</b>
Electrical Conductivity @ Saturation	16		0.050	mmhos/cm @2	10	6/20/2016 01:40 PM
<b>CHROMIUM, TRIVALENT</b>			<b>CALCULATION</b>			Analyst: <b>JB</b>
Chromium, Trivalent	80		0.64	mg/Kg-dry	1	6/21/2016 01:15 PM
<b>CHROMIUM, HEXAVALENT</b>			<b>SW7196A</b>	Prep: SW3060A / 6/16/16		Analyst: <b>LW</b>
Chromium, Hexavalent	ND		1.2	mg/Kg-dry	1	6/17/2016 02:00 PM
<b>MOISTURE</b>			<b>SW3550C</b>			Analyst: <b>EDL</b>
Moisture	21		0.050	% of sample	1	6/15/2016 06:40 PM
<b>PH</b>			<b>SW9045D</b>	Prep: EXTRACT / 6/17/16		Analyst: <b>EDL</b>
pH	8.5		s.u.		1	6/17/2016 06:30 PM

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

# ALS Group USA, Corp

Date: 21-Jun-16

**Client:** HRL Compliance Solutions, Inc  
**Project:** WPX RGU 43-23-198 Produced Water Spill  
**Sample ID:** End Point  
**Collection Date:** 6/11/2016 10:10 AM

**Work Order:** 1606896  
**Lab ID:** 1606896-02  
**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>51</b>	B	<b>SW8015M</b>		Prep: SW3541 / 6/17/16	Analyst: <b>IT</b>
			<b>5.0</b>	<b>mg/Kg-dry</b>	1	6/18/2016 07:51 AM
Surr: 4-Terphenyl-d14	97.6		39-133	%REC	1	6/18/2016 07:51 AM
<b>GASOLINE RANGE ORGANICS BY GC-FID</b>						
<b>GRO (C6-C10)</b>	<b>ND</b>		<b>SW8015D</b>		Prep: SW5035 / 6/16/16	Analyst: <b>IT</b>
			3.6	mg/Kg-dry	1	6/16/2016 01:42 PM
Surr: Toluene-d8	109		50-150	%REC	1	6/16/2016 01:42 PM
<b>MERCURY BY CVAA</b>						
Mercury	ND		<b>SW7471B</b>		Prep: SW7471 / 6/16/16	Analyst: <b>LR</b>
			0.016	mg/Kg-dry	1	6/16/2016 04:10 PM
<b>METALS ANALYSIS BY ICP</b>						
<b>Arsenic</b>	<b>5.0</b>		<b>SW846 6010C</b>		Prep: SW3050B / 6/16/16	Analyst: <b>JEC</b>
			0.46	mg/Kg-dry	1	6/20/2016 11:29 AM
<b>Barium</b>	<b>300</b>		0.46	mg/Kg-dry	1	6/20/2016 11:29 AM
Cadmium	ND		0.37	mg/Kg-dry	1	6/20/2016 11:29 AM
<b>Chromium</b>	<b>34</b>		0.46	mg/Kg-dry	1	6/20/2016 11:29 AM
<b>Copper</b>	<b>16</b>		0.46	mg/Kg-dry	1	6/20/2016 11:29 AM
<b>Lead</b>	<b>11</b>		0.46	mg/Kg-dry	1	6/20/2016 11:29 AM
<b>Nickel</b>	<b>24</b>		0.46	mg/Kg-dry	1	6/20/2016 11:29 AM
Selenium	ND		0.46	mg/Kg-dry	1	6/20/2016 11:29 AM
Silver	ND		0.46	mg/Kg-dry	1	6/20/2016 11:29 AM
<b>Zinc</b>	<b>62</b>		0.93	mg/Kg-dry	1	6/20/2016 11:29 AM
<b>SOLUBLE CATIONS FOR SAR</b>						
			<b>SW846 6010C</b>		Prep: USDA Method 20B / 6/20/16	Analyst: <b>JEC</b>
<b>Calcium</b>	<b>640</b>		5.0	mg/L	10	6/20/2016 07:57 PM
<b>Magnesium</b>	<b>42</b>		2.0	mg/L	10	6/20/2016 07:57 PM
<b>Sodium</b>	<b>2,200</b>		2.0	mg/L	10	6/20/2016 07:57 PM
<b>SODIUM ADSORPTION RATIO</b>						
			<b>USDA H60 METHO</b>		Prep: USDA Method 20B / 6/20/16	Analyst: <b>JEC</b>
<b>Sodium Adsorption Ratio</b>	<b>23</b>		0.010	none	1	6/20/2016
<b>SEMI-VOLATILE ORGANIC COMPOUNDS</b>						
			<b>SW846 8270D</b>		Prep: SW3541 / 6/20/16	Analyst: <b>RS</b>
Acenaphthene	ND		8.0	µg/Kg-dry	1	6/20/2016 11:26 PM
Acenaphthylene	ND		8.0	µg/Kg-dry	1	6/20/2016 11:26 PM
Anthracene	ND		8.0	µg/Kg-dry	1	6/20/2016 11:26 PM
Benzo(a)anthracene	ND		8.0	µg/Kg-dry	1	6/20/2016 11:26 PM
Benzo(a)pyrene	ND		8.0	µg/Kg-dry	1	6/20/2016 11:26 PM
Benzo(b)fluoranthene	ND		8.0	µg/Kg-dry	1	6/20/2016 11:26 PM
Benzo(g,h,i)perylene	ND		8.0	µg/Kg-dry	1	6/20/2016 11:26 PM
Benzo(k)fluoranthene	ND		8.0	µg/Kg-dry	1	6/20/2016 11:26 PM
Chrysene	ND		8.0	µg/Kg-dry	1	6/20/2016 11:26 PM

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

# ALS Group USA, Corp

Date: 21-Jun-16

**Client:** HRL Compliance Solutions, Inc  
**Project:** WPX RGU 43-23-198 Produced Water Spill  
**Sample ID:** End Point  
**Collection Date:** 6/11/2016 10:10 AM

**Work Order:** 1606896  
**Lab ID:** 1606896-02  
**Matrix:** SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Dibenzo(a,h)anthracene	ND		8.0	µg/Kg-dry	1	6/20/2016 11:26 PM
Fluoranthene	ND		8.0	µg/Kg-dry	1	6/20/2016 11:26 PM
Fluorene	ND		8.0	µg/Kg-dry	1	6/20/2016 11:26 PM
Indeno(1,2,3-cd)pyrene	ND		8.0	µg/Kg-dry	1	6/20/2016 11:26 PM
Naphthalene	ND		8.0	µg/Kg-dry	1	6/20/2016 11:26 PM
Pyrene	ND		8.0	µg/Kg-dry	1	6/20/2016 11:26 PM
Surr: 2-Fluorobiphenyl	73.6		12-100	%REC	1	6/20/2016 11:26 PM
Surr: 4-Terphenyl-d14	85.6		25-137	%REC	1	6/20/2016 11:26 PM
Surr: Nitrobenzene-d5	59.9		37-107	%REC	1	6/20/2016 11:26 PM
<b>VOLATILE ORGANIC COMPOUNDS</b>			<b>SW8260B</b>	Prep: SW5035 / 6/16/16		Analyst: <b>BJB</b>
Benzene	ND		0.043	mg/Kg-dry	1	6/17/2016 06:22 AM
Ethylbenzene	ND		0.043	mg/Kg-dry	1	6/17/2016 06:22 AM
m,p-Xylene	ND		0.086	mg/Kg-dry	1	6/17/2016 06:22 AM
o-Xylene	ND		0.043	mg/Kg-dry	1	6/17/2016 06:22 AM
Toluene	ND		0.043	mg/Kg-dry	1	6/17/2016 06:22 AM
Xylenes, Total	ND		0.13	mg/Kg-dry	1	6/17/2016 06:22 AM
Surr: 1,2-Dichloroethane-d4	102		70-130	%REC	1	6/17/2016 06:22 AM
Surr: 4-Bromofluorobenzene	97.8		70-130	%REC	1	6/17/2016 06:22 AM
Surr: Dibromofluoromethane	101		70-130	%REC	1	6/17/2016 06:22 AM
Surr: Toluene-d8	98.8		70-130	%REC	1	6/17/2016 06:22 AM
<b>ELECTRICAL CONDUCTIVITY (SAR)</b>			<b>USDA H60 METHO</b>	Prep: USDA Method 20B / 6/20/16		Analyst: <b>JB</b>
Electrical Conductivity @ Saturation	15		0.050	mmhos/cm @2	10	6/20/2016 01:40 PM
<b>CHROMIUM, TRIVALENT</b>			<b>CALCULATION</b>			Analyst: <b>JB</b>
Chromium, Trivalent	34		0.61	mg/Kg-dry	1	6/21/2016 01:15 PM
<b>CHROMIUM, HEXAVALENT</b>			<b>SW7196A</b>	Prep: SW3060A / 6/16/16		Analyst: <b>LW</b>
Chromium, Hexavalent	ND		1.2	mg/Kg-dry	1	6/17/2016 02:00 PM
<b>MOISTURE</b>			<b>SW3550C</b>			Analyst: <b>EDL</b>
Moisture	18		0.050	% of sample	1	6/15/2016 06:40 PM
<b>PH</b>			<b>SW9045D</b>	Prep: EXTRACT / 6/17/16		Analyst: <b>EDL</b>
pH	8.2		s.u.		1	6/17/2016 06:30 PM

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



# ALS Group USA, Corp

Date: 21-Jun-16

**Client:** HRL Compliance Solutions, Inc

## QC BATCH REPORT

**Work Order:** 1606896

**Project:** WPX RGU 43-23-198 Produced Water Spill

Batch ID: **87471**

Instrument ID **GC8**

Method: **SW8015M**

<b>MBLK</b>		Sample ID: <b>DBLKS1-87471-87471</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>6/18/2016 05:21 AM</b>		
Client ID:		Run ID: <b>GC8_160617A</b>				SeqNo: <b>3882312</b>		Prep Date: <b>6/17/2016</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)	9.163	5.0								
Surr: 4-Terphenyl-d14	1.522	0	2	0	76.1	39-133		0		

<b>LCS</b>		Sample ID: <b>DLCSS1-87471-87471</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>6/18/2016 05:51 AM</b>		
Client ID:		Run ID: <b>GC8_160617A</b>				SeqNo: <b>3882313</b>		Prep Date: <b>6/17/2016</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)	191.6	5.0	200	0	95.8	61-109		0		B
Surr: 4-Terphenyl-d14	1.486	0	2	0	74.3	39-133		0		

<b>MS</b>		Sample ID: <b>1606896-01B MS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>6/18/2016 06:21 AM</b>		
Client ID: <b>Point of Origin</b>		Run ID: <b>GC8_160617A</b>				SeqNo: <b>3882314</b>		Prep Date: <b>6/17/2016</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)	256.9	4.1	163	204.7	32	48-110		0		BS
Surr: 4-Terphenyl-d14	1.305	0	1.63	0	80.1	39-133		0		

<b>MSD</b>		Sample ID: <b>1606896-01B MSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>6/18/2016 06:51 AM</b>		
Client ID: <b>Point of Origin</b>		Run ID: <b>GC8_160617A</b>				SeqNo: <b>3882315</b>		Prep Date: <b>6/17/2016</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)	259.5	4.0	161.4	204.7	34	48-110	256.9	1	30	BS
Surr: 4-Terphenyl-d14	1.381	0	1.614	0	85.5	39-133	1.305	5.64	30	

The following samples were analyzed in this batch:

1606896-01B	1606896-02B
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**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1606896  
**Project:** WPX RGU 43-23-198 Produced Water Spill

## QC BATCH REPORT

Batch ID: **87398**      Instrument ID **GC9**      Method: **SW8015D**

<b>MBLK</b>		Sample ID: <b>MBLK-87398-87398</b>				Units: <b>µg/Kg-dry</b>		Analysis Date: <b>6/16/2016 12:53 PM</b>		
Client ID:		Run ID: <b>GC9_160616A</b>				SeqNo: <b>3879037</b>		Prep Date: <b>6/16/2016</b>		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	2,500								
<i>Surr: Toluene-d8</i>	5426	0	5000	0	109	50-150	0			

<b>LCS</b>		Sample ID: <b>LCS-87398-87398</b>				Units: <b>µg/Kg-dry</b>		Analysis Date: <b>6/16/2016 12:28 PM</b>		
Client ID:		Run ID: <b>GC9_160616A</b>				SeqNo: <b>3879036</b>		Prep Date: <b>6/16/2016</b>		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)	525800	2,500	500000	0	105	70-130	0			
<i>Surr: Toluene-d8</i>	5280	0	5000	0	106	50-150	0			

<b>MS</b>		Sample ID: <b>1606896-02A MS</b>				Units: <b>µg/Kg-dry</b>		Analysis Date: <b>6/16/2016 03:46 PM</b>		
Client ID: <b>End Point</b>		Run ID: <b>GC9_160616A</b>				SeqNo: <b>3879043</b>		Prep Date: <b>6/16/2016</b>		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)	671900	3,600	719500	0	93.4	70-130	0			
<i>Surr: Toluene-d8</i>	7774	0	7195	0	108	50-150	0			

<b>MSD</b>		Sample ID: <b>1606896-02A MSD</b>				Units: <b>µg/Kg-dry</b>		Analysis Date: <b>6/16/2016 04:11 PM</b>		
Client ID: <b>End Point</b>		Run ID: <b>GC9_160616A</b>				SeqNo: <b>3879044</b>		Prep Date: <b>6/16/2016</b>		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)	743600	3,600	719500	0	103	70-130	671900	10.1	30	
<i>Surr: Toluene-d8</i>	7820	0	7195	0	109	50-150	7774	0.591	30	

The following samples were analyzed in this batch:

1606896-01A	1606896-02A
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**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1606896  
**Project:** WPX RGU 43-23-198 Produced Water Spill

## QC BATCH REPORT

Batch ID: **87396**      Instrument ID **HG1**      Method: **SW7471B**

<b>MBLK</b>		Sample ID: <b>MBLK-87396-87396</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>6/16/2016 02:14 PM</b>		
Client ID:		Run ID: <b>HG1_160616A</b>				SeqNo: <b>3878501</b>		Prep Date: <b>6/16/2016</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-87396-87396</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>6/16/2016 02:16 PM</b>		
Client ID:		Run ID: <b>HG1_160616A</b>				SeqNo: <b>3878502</b>		Prep Date: <b>6/16/2016</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury      0.1808      0.020      0.1665      0      109      80-120      0

<b>MS</b>		Sample ID: <b>1606739-04AMS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>6/16/2016 02:29 PM</b>		
Client ID:		Run ID: <b>HG1_160616A</b>				SeqNo: <b>3878506</b>		Prep Date: <b>6/16/2016</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury      0.1287      0.013      0.1067      0.01643      105      75-125      0

<b>MSD</b>		Sample ID: <b>1606739-04AMSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>6/16/2016 02:31 PM</b>		
Client ID:		Run ID: <b>HG1_160616A</b>				SeqNo: <b>3878507</b>		Prep Date: <b>6/16/2016</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury      0.1266      0.013      0.1058      0.01643      104      75-125      0.1287      1.68      35

The following samples were analyzed in this batch:

1606896-01B      1606896-02B

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1606896  
**Project:** WPX RGU 43-23-198 Produced Water Spill

## QC BATCH REPORT

Batch ID: **87433** Instrument ID **ICP2** Method: **SW846 6010C**

<b>MBLK</b>		Sample ID: <b>MBLK-87433-87433</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>6/20/2016 10:06 AM</b>		
Client ID:		Run ID: <b>ICP2_160620A</b>				SeqNo: <b>3882728</b>		Prep Date: <b>6/16/2016</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	0.50								
Chromium	0.03283	0.25								J
Copper	ND	0.50								
Lead	ND	0.25								
Nickel	ND	0.25								
Selenium	ND	0.50								
Silver	ND	0.25								
Zinc	0.04518	0.50								J

<b>LCS</b>		Sample ID: <b>LCS-87433-87433</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>6/20/2016 10:11 AM</b>		
Client ID:		Run ID: <b>ICP2_160620A</b>				SeqNo: <b>3882729</b>		Prep Date: <b>6/16/2016</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	4.919	0.25	5	0	98.4	80-120	0			
Barium	4.902	0.25	5	0	98	80-120	0			
Cadmium	4.689	0.50	5	0	93.8	80-120	0			
Chromium	5.266	0.25	5	0	105	80-120	0			
Copper	4.996	0.50	5	0	99.9	80-120	0			
Lead	5.18	0.25	5	0	104	80-120	0			
Nickel	5.203	0.25	5	0	104	80-120	0			
Selenium	5.03	0.50	5	0	101	80-120	0			
Silver	4.526	0.25	5	0	90.5	80-120	0			
Zinc	5.185	0.50	5	0	104	80-120	0			

<b>MS</b>		Sample ID: <b>1606923-17CMS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>6/20/2016 10:22 AM</b>		
Client ID:		Run ID: <b>ICP2_160620A</b>				SeqNo: <b>3882731</b>		Prep Date: <b>6/16/2016</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	10.16	0.40	7.911	4.153	75.9	75-125	0			
Barium	66.47	0.40	7.911	115.9	-625	75-125	0			SO
Cadmium	7.568	0.79	7.911	0.4691	89.7	75-125	0			
Chromium	13.11	0.40	7.911	10.15	37.5	75-125	0			S
Copper	18.44	0.79	7.911	34.82	-207	75-125	0			SO
Lead	26.64	0.40	7.911	77.4	-642	75-125	0			SO
Nickel	13.38	0.40	7.911	9.246	52.3	75-125	0			S
Selenium	8.048	0.79	7.911	0.09228	101	75-125	0			
Silver	6.211	0.40	7.911	-0.8417	89.1	75-125	0			
Zinc	386.1	0.79	7.911	1541	-14600	75-125	0			SO

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1606896  
**Project:** WPX RGU 43-23-198 Produced Water Spill

## QC BATCH REPORT

Batch ID: **87433**      Instrument ID **ICP2**      Method: **SW846 6010C**

MSD				Sample ID: 1606923-17CMSD			Units: mg/Kg		Analysis Date: 6/20/2016 10:27 AM		
Client ID:			Run ID: ICP2_160620A			SeqNo: 3882732		Prep Date: 6/16/2016		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Arsenic	9.86	0.40	7.949	4.153	71.8	75-125	10.16	2.96	20	S	
Barium	63.51	0.40	7.949	115.9	-659	75-125	66.47	4.55	20	SO	
Cadmium	7.39	0.79	7.949	0.4691	87.1	75-125	7.568	2.38	20		
Chromium	13.39	0.40	7.949	10.15	40.8	75-125	13.11	2.07	20	S	
Copper	37.17	0.79	7.949	34.82	29.5	75-125	18.44	67.3	20	SRO	
Lead	52	0.40	7.949	77.4	-319	75-125	26.64	64.5	20	SRO	
Nickel	14.03	0.40	7.949	9.246	60.2	75-125	13.38	4.72	20	S	
Selenium	7.883	0.79	7.949	0.09228	98	75-125	8.048	2.08	20		
Silver	6.047	0.40	7.949	-0.8417	86.7	75-125	6.211	2.67	20		
Zinc	838.7	0.79	7.949	1541	-8840	75-125	386.1	73.9	20	SREO	

The following samples were analyzed in this batch:

1606896-01B      1606896-02B

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1606896  
**Project:** WPX RGU 43-23-198 Produced Water Spill

## QC BATCH REPORT

Batch ID: **87539**      Instrument ID **ICP2**      Method: **SW846 6010C**

<b>DUP</b>		Sample ID: <b>1606896-01CDUP</b>				Units: <b>mg/L</b>		Analysis Date: <b>6/20/2016 07:51 PM</b>		
Client ID: <b>Point of Origin</b>		Run ID: <b>ICP2_160620B</b>				SeqNo: <b>3884110</b>		Prep Date: <b>6/20/2016</b>		DF: <b>10</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	157.4	5.0	0	0	0	0-0	145	8.22		
Magnesium	10.04	2.0	0	0	0	0-0	9.001	10.9		
Sodium	3212	2.0	0	0	0	0-0	3078	4.24		

<b>DUP</b>		Sample ID: <b>1606896-01CDUP</b>				Units: <b>none</b>		Analysis Date: <b>6/20/2016</b>		
Client ID: <b>Point of Origin</b>		Run ID: <b>SAR_160620A</b>				SeqNo: <b>3884160</b>		Prep Date: <b>6/20/2016</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium Adsorption Ratio	67.05	0.010	0	0	0		67.05	0.00354	50	

The following samples were analyzed in this batch:      | 1606896-01C      1606896-02C      |

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1606896  
**Project:** WPX RGU 43-23-198 Produced Water Spill

## QC BATCH REPORT

Batch ID: **87542**      Instrument ID **SVMS4**      Method: **SW846 8270D**

MBLK		Sample ID: <b>SBLKS1-87542-87542</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>6/20/2016 06:20 PM</b>		
Client ID:		Run ID: <b>SVMS4_160620A</b>				SeqNo: <b>3884677</b>		Prep Date: <b>6/20/2016</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	6.7								
Acenaphthylene	ND	6.7								
Anthracene	ND	6.7								
Benzo(a)anthracene	ND	6.7								
Benzo(a)pyrene	ND	6.7								
Benzo(b)fluoranthene	ND	6.7								
Benzo(g,h,i)perylene	ND	6.7								
Benzo(k)fluoranthene	ND	6.7								
Chrysene	ND	6.7								
Dibenzo(a,h)anthracene	ND	6.7								
Fluoranthene	ND	6.7								
Fluorene	ND	6.7								
Indeno(1,2,3-cd)pyrene	ND	6.7								
Naphthalene	ND	6.7								
Pyrene	ND	6.7								
<i>Surr: 2-Fluorobiphenyl</i>	1187	0	1667	0	71.2	12-100	0			
<i>Surr: 4-Terphenyl-d14</i>	1381	0	1667	0	82.8	25-137	0			
<i>Surr: Nitrobenzene-d5</i>	1139	0	1667	0	68.3	37-107	0			

LCS		Sample ID: <b>SLCSS1-87542-87542</b>				Units: <b>µg/Kg</b>		Analysis Date: <b>6/20/2016 06:48 PM</b>		
Client ID:		Run ID: <b>SVMS4_160620A</b>				SeqNo: <b>3884678</b>		Prep Date: <b>6/20/2016</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	477	6.7	666.7	0	71.5	45-110	0			
Acenaphthylene	556.3	6.7	666.7	0	83.4	45-105	0			
Anthracene	579	6.7	666.7	0	86.8	55-105	0			
Benzo(a)anthracene	567.7	6.7	666.7	0	85.1	50-110	0			
Benzo(a)pyrene	637.3	6.7	666.7	0	95.6	50-110	0			
Benzo(b)fluoranthene	593.7	6.7	666.7	0	89	45-115	0			
Benzo(g,h,i)perylene	609	6.7	666.7	0	91.3	40-125	0			
Benzo(k)fluoranthene	608.3	6.7	666.7	0	91.2	45-115	0			
Chrysene	568	6.7	666.7	0	85.2	55-110	0			
Dibenzo(a,h)anthracene	608	6.7	666.7	0	91.2	40-125	0			
Fluoranthene	616.3	6.7	666.7	0	92.4	55-115	0			
Fluorene	537.3	6.7	666.7	0	80.6	50-110	0			
Indeno(1,2,3-cd)pyrene	628.7	6.7	666.7	0	94.3	40-120	0			
Naphthalene	424	6.7	666.7	0	63.6	40-105	0			
Pyrene	632	6.7	666.7	0	94.8	45-125	0			
<i>Surr: 2-Fluorobiphenyl</i>	1113	0	1667	0	66.8	12-100	0			
<i>Surr: 4-Terphenyl-d14</i>	1319	0	1667	0	79.1	25-137	0			
<i>Surr: Nitrobenzene-d5</i>	1001	0	1667	0	60.1	37-107	0			

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1606896  
**Project:** WPX RGU 43-23-198 Produced Water Spill

## QC BATCH REPORT

Batch ID: **87542**      Instrument ID **SVMS4**      Method: **SW846 8270D**

MS				Sample ID: <b>1606977-03B MS</b>			Units: <b>µg/Kg</b>		Analysis Date: <b>6/20/2016 08:12 PM</b>	
Client ID:				Run ID: <b>SVMS4_160620A</b>			SeqNo: <b>3885144</b>		Prep Date: <b>6/20/2016</b>	
							DF: <b>1</b>			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	486.2	6.7	666.5	0	72.9	45-110	0			
Acenaphthylene	556.2	6.7	666.5	0	83.4	45-105	0			
Anthracene	546.2	6.7	666.5	0	81.9	55-105	0			
Benzo(a)anthracene	578.2	6.7	666.5	0	86.7	50-110	0			
Benzo(a)pyrene	620.8	6.7	666.5	0	93.1	50-110	0			
Benzo(b)fluoranthene	589.2	6.7	666.5	0	88.4	45-115	0			
Benzo(g,h,i)perylene	630.8	6.7	666.5	0	94.6	40-125	0			
Benzo(k)fluoranthene	592.5	6.7	666.5	0	88.9	45-115	0			
Chrysene	569.8	6.7	666.5	0	85.5	55-110	0			
Dibenzo(a,h)anthracene	653.5	6.7	666.5	0	98	40-125	0			
Fluoranthene	585.8	6.7	666.5	0	87.9	55-115	0			
Fluorene	544.5	6.7	666.5	0	81.7	50-110	0			
Indeno(1,2,3-cd)pyrene	699.1	6.7	666.5	0	105	40-120	0			
Naphthalene	363.9	6.7	666.5	0	54.6	40-105	0			
Pyrene	642.1	6.7	666.5	0	96.3	45-125	0			
Surr: 2-Fluorobiphenyl	1134	0	1666	0	68.1	12-100	0			
Surr: 4-Terphenyl-d14	1334	0	1666	0	80.1	25-137	0			
Surr: Nitrobenzene-d5	863.1	0	1666	0	51.8	37-107	0			

MSD				Sample ID: <b>1606977-03B MSD</b>			Units: <b>µg/Kg</b>		Analysis Date: <b>6/20/2016 08:40 PM</b>	
Client ID:				Run ID: <b>SVMS4_160620A</b>			SeqNo: <b>3885145</b>		Prep Date: <b>6/20/2016</b>	
							DF: <b>1</b>			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	519.6	6.6	661.9	0	78.5	45-110	486.2	6.64	30	
Acenaphthylene	606	6.6	661.9	0	91.5	45-105	556.2	8.57	30	
Anthracene	556.6	6.6	661.9	0	84.1	55-105	546.2	1.9	30	
Benzo(a)anthracene	536.5	6.6	661.9	0	81	50-110	578.2	7.48	30	
Benzo(a)pyrene	586.4	6.6	661.9	0	88.6	50-110	620.8	5.7	30	
Benzo(b)fluoranthene	549.4	6.6	661.9	0	83	45-115	589.2	6.99	30	
Benzo(g,h,i)perylene	589.4	6.6	661.9	0	89	40-125	630.8	6.79	30	
Benzo(k)fluoranthene	540.1	6.6	661.9	0	81.6	45-115	592.5	9.25	30	
Chrysene	516.3	6.6	661.9	0	78	55-110	569.8	9.86	30	
Dibenzo(a,h)anthracene	596	6.6	661.9	0	90	40-125	653.5	9.2	30	
Fluoranthene	557.6	6.6	661.9	0	84.2	55-115	585.8	4.93	30	
Fluorene	557.6	6.6	661.9	0	84.2	50-110	544.5	2.38	30	
Indeno(1,2,3-cd)pyrene	643.7	6.6	661.9	0	97.2	40-120	699.1	8.26	30	
Naphthalene	496.4	6.6	661.9	0	75	40-105	363.9	30.8	30	R
Pyrene	634.4	6.6	661.9	0	95.8	45-125	642.1	1.21	30	
Surr: 2-Fluorobiphenyl	1248	0	1655	0	75.4	12-100	1134	9.54	40	
Surr: 4-Terphenyl-d14	1323	0	1655	0	80	25-137	1334	0.816	40	
Surr: Nitrobenzene-d5	1200	0	1655	0	72.5	37-107	863.1	32.7	40	

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



**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1606896  
**Project:** WPX RGU 43-23-198 Produced Water Spill

**QC BATCH REPORT**

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Batch ID: **87542**      Instrument ID **SVMS4**      Method: **SW846 8270D**

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

1606896-01B	1606896-02B
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**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1606896  
**Project:** WPX RGU 43-23-198 Produced Water Spill

## QC BATCH REPORT

Batch ID: **87397**      Instrument ID **VMS6**      Method: **SW8260B**

MBLK				Sample ID: MBLK-87397-87397				Units: µg/Kg-dry			Analysis Date: 6/18/2016 01:40 AM			
Client ID:				Run ID: VMS6_160617A				SeqNo: 3882423			Prep Date: 6/16/2016		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	1000	0	1000	0	100	70-130		0						
Surr: 4-Bromofluorobenzene	1016	0	1000	0	102	70-130		0						
Surr: Dibromofluoromethane	969.5	0	1000	0	97	70-130		0						
Surr: Toluene-d8	945.5	0	1000	0	94.6	70-130		0						

LCS				Sample ID: LCS-87397-87397			Units: µg/Kg-dry		Analysis Date: 6/18/2016 12:21 PM		
Client ID:			Run ID: VMS6_160617A			SeqNo: 3882480		Prep Date: 6/16/2016		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	891	30	1000	0	89.1	75-125	0				
Ethylbenzene	873.5	30	1000	0	87.4	75-125	0				
m,p-Xylene	1781	60	2000	0	89	80-125	0				
o-Xylene	877.5	30	1000	0	87.8	75-125	0				
Toluene	867	30	1000	0	86.7	70-125	0				
Xylenes, Total	2658	90	3000	0	88.6	75-125	0				
Surr: 1,2-Dichloroethane-d4	965	0	1000	0	96.5	70-130	0				
Surr: 4-Bromofluorobenzene	1060	0	1000	0	106	70-130	0				
Surr: Dibromofluoromethane	970	0	1000	0	97	70-130	0				
Surr: Toluene-d8	969	0	1000	0	96.9	70-130	0				

MS				Sample ID: 1606896-02A MS			Units: µg/Kg-dry		Analysis Date: 6/17/2016 09:26 AM		
Client ID: End Point			Run ID: VMS5_160616A			SeqNo: 3880166		Prep Date: 6/16/2016		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	1439	43	1439	0	100	75-125	0				
Ethylbenzene	1425	43	1439	0	99	75-125	0				
m,p-Xylene	2843	86	2878	0	98.8	80-125	0				
o-Xylene	1392	43	1439	0	96.7	75-125	0				
Toluene	1404	43	1439	0	97.6	70-125	0				
Xylenes, Total	4234	130	4317	0	98.1	75-125	0				
Surr: 1,2-Dichloroethane-d4	1397	0	1439	0	97	70-130	0				
Surr: 4-Bromofluorobenzene	1499	0	1439	0	104	70-130	0				
Surr: Dibromofluoromethane	1406	0	1439	0	97.7	70-130	0				
Surr: Toluene-d8	1426	0	1439	0	99.1	70-130	0				

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1606896  
**Project:** WPX RGU 43-23-198 Produced Water Spill

## QC BATCH REPORT

Batch ID: **87397**      Instrument ID **VMS6**      Method: **SW8260B**

MSD		Sample ID: <b>1606896-02A MSD</b>				Units: <b>µg/Kg-dry</b>		Analysis Date: <b>6/17/2016 09:52 AM</b>		
Client ID: <b>End Point</b>		Run ID: <b>VMS5_160616A</b>				SeqNo: <b>3880168</b>		Prep Date: <b>6/16/2016</b>		DF: <b>1</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1548	43	1439	0	108	75-125	1439	7.32	30	
Ethylbenzene	1522	43	1439	0	106	75-125	1425	6.64	30	
m,p-Xylene	3055	86	2878	0	106	80-125	2843	7.2	30	
o-Xylene	1515	43	1439	0	105	75-125	1392	8.51	30	
Toluene	1528	43	1439	0	106	70-125	1404	8.39	30	
Xylenes, Total	4570	130	4317	0	106	75-125	4234	7.63	30	
<i>Surr: 1,2-Dichloroethane-d4</i>	1448	0	1439	0	101	70-130	1397	3.64	30	
<i>Surr: 4-Bromofluorobenzene</i>	1479	0	1439	0	103	70-130	1499	1.35	30	
<i>Surr: Dibromofluoromethane</i>	1439	0	1439	0	100	70-130	1406	2.33	30	
<i>Surr: Toluene-d8</i>	1423	0	1439	0	98.9	70-130	1426	0.202	30	

The following samples were analyzed in this batch:

1606896-01A	1606896-02A
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**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1606896  
**Project:** WPX RGU 43-23-198 Produced Water Spill

## QC BATCH REPORT

Batch ID: **87484**      Instrument ID **WETCHEM**      Method: **SW7196A**

<b>MBLK</b>		Sample ID: <b>MBLK-87484-87484</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>6/17/2016 02:00 PM</b>		
Client ID:		Run ID: <b>WETCHEM_160617I</b>		SeqNo: <b>3880938</b>		Prep Date: <b>6/16/2016</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      0.96

<b>LCS</b>		Sample ID: <b>LCS-87484-87484</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>6/17/2016 02:00 PM</b>		
Client ID:		Run ID: <b>WETCHEM_160617I</b>		SeqNo: <b>3880939</b>		Prep Date: <b>6/16/2016</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      4.692      0.96      4.808      0      97.6      80-120      0

<b>MS</b>		Sample ID: <b>1606896-02B MS</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>6/17/2016 02:00 PM</b>		
Client ID: <b>End Point</b>		Run ID: <b>WETCHEM_160617I</b>		SeqNo: <b>3880944</b>		Prep Date: <b>6/16/2016</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      3.267      0.99      4.95      0.13      63.4      75-125      0      S

<b>MS</b>		Sample ID: <b>1606896-02B MSI</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>6/17/2016 02:00 PM</b>		
Client ID: <b>End Point</b>		Run ID: <b>WETCHEM_160617I</b>		SeqNo: <b>3880946</b>		Prep Date: <b>6/16/2016</b>		DF: <b>100</b>		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent      1524      100      2076      0.13      73.4      75-125      0      S

<b>MSD</b>		Sample ID: <b>1606896-02B MSD</b>				Units: <b>mg/Kg</b>		Analysis Date: <b>6/17/2016 02:00 PM</b>		
Client ID: <b>End Point</b>		Run ID: <b>WETCHEM_160617I</b>		SeqNo: <b>3880945</b>		Prep Date: <b>6/16/2016</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      3.108      0.98      4.902      0.13      60.7      75-125      3.267      5      20      S

The following samples were analyzed in this batch:

1606896-01B      1606896-02B

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1606896  
**Project:** WPX RGU 43-23-198 Produced Water Spill

## QC BATCH REPORT

Batch ID: **87504** Instrument ID **WETCHEM** Method: **SW9045D**

LCS		Sample ID: LCS-87504-87504					Units: s.u.		Analysis Date: 6/17/2016 06:30 PM		
Client ID:			Run ID: WETCHEM_160617L			SeqNo: 3881021		Prep Date: 6/17/2016		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

pH	3.99	0	4	0	99.8	90-110	0			
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DUP				Sample ID: 1606896-02B DUP				Units: s.u.			Analysis Date: 6/17/2016 06:30 PM			
Client ID: End Point				Run ID: WETCHEM_160617L				SeqNo: 3881028			Prep Date: 6/17/2016		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			

pH	8.18	0	0	0	0	0-0	8.15	0.367	20	
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DUP				Sample ID: 1606915-01A DUP				Units: s.u.			Analysis Date: 6/17/2016 06:30 PM			
Client ID:				Run ID: WETCHEM_160617L				SeqNo: 3881030			Prep Date: 6/17/2016		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			

pH	8.29	1.0	0	0	0		0			H
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The following samples were analyzed in this batch:

1606896-01B	1606896-02B
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**Note:** See Qualifiers Page for a list of Qualifiers and their explanation.

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1606896  
**Project:** WPX RGU 43-23-198 Produced Water Spill

## QC BATCH REPORT

Batch ID: **87539** Instrument ID **WETCHEM** Method: **USDA H60 Metho**

<b>DUP</b>		Sample ID: <b>1606896-01C DUP</b>				Units: <b>mmhos/cm @25°</b>		Analysis Date: <b>6/20/2016 01:40 PM</b>		
Client ID: <b>Point of Origin</b>		Run ID: <b>WETCHEM_160620G</b>				SeqNo: <b>3882848</b>		Prep Date: <b>6/20/2016</b>		DF: <b>10</b>
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	17.2	0.050	0	0	0		16.43	4.58	50	

The following samples were analyzed in this batch:

1606896-01C 1606896-02C

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

**Client:** HRL Compliance Solutions, Inc  
**Work Order:** 1606896  
**Project:** WPX RGU 43-23-198 Produced Water Spill

## QC BATCH REPORT

Batch ID: **R189659**      Instrument ID **MOIST**      Method: **SW3550C**

<b>MBLK</b>		Sample ID: <b>WBLKS-R189659</b>				Units: % of sample		Analysis Date: <b>6/15/2016 06:40 PM</b>		
Client ID:		Run ID: <b>MOIST_160615C</b>				SeqNo: <b>3878087</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-R189659</b>				Units: % of sample		Analysis Date: <b>6/15/2016 06:40 PM</b>		
Client ID:		Run ID: <b>MOIST_160615C</b>				SeqNo: <b>3878086</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>1606893-01B DUP</b>				Units: % of sample		Analysis Date: <b>6/15/2016 06:40 PM</b>		
Client ID:		Run ID: <b>MOIST_160615C</b>				SeqNo: <b>3878078</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      9.44      0.050      0      0      0      9.37      0.744      20

<b>DUP</b>		Sample ID: <b>1606897-01A DUP</b>				Units: % of sample		Analysis Date: <b>6/15/2016 06:40 PM</b>		
Client ID:		Run ID: <b>MOIST_160615C</b>				SeqNo: <b>3878085</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      23.28      0.050      0      0      0      23.69      1.75      20

The following samples were analyzed in this batch:

1606896-01B      1606896-02B

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





ORIGIN ID: RILA (616) 298-1033  
 NICK MARTINEZ  
 ALS ENVIRONMENTAL PARACHUTE  
 PARACHUTE SERVICE CENTER  
 127 EAST 1ST ST  
 PARACHUTE, CO 81635  
 UNITED STATES US

SHIP DATE: 13 JUN 10  
 ACTWGT: 38.00 LB  
 CAD: 2204840/PNET8730  
 DIMS: 13x20x14 IN  
 BILL SENDER

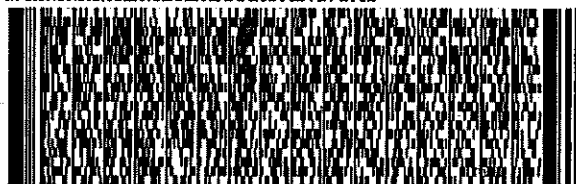
TO **SAMPLE RECEIVING**  
**ALS ENVIRONMENTAL HOLLAND LAB**  
**3352 128TH AVE**

**HOLLAND MI 49424**

(616) 399-6070  
 NV  
 PO: PARACHUTE

REF: 061316-1

DEPT:



REL#  
 3785346

3 of 3

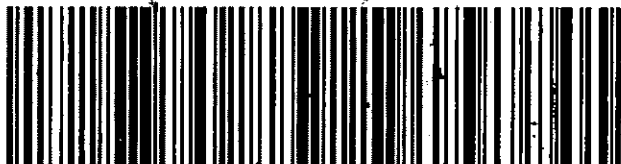
**TUE - 14 JUN 10:30A**  
**PRIORITY OVERNIGHT**

MPB#  
 0263 **7765 1097 7541**  
 Mstr# 7765 1097 6800

0201

**XX HLMA**

**49424**  
**GRR**  
 MI-US



540,026000/727F

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Sample Receipt Checklist

Client Name: HRL

Date/Time Received: 15-Jun-16 09:30

Work Order: 1606896

Received by: DS

Checklist completed by Diane Shaw 15-Jun-16  
eSignature Date

Reviewed by: Chad Whelton 16-Jun-16  
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 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"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>5.0/5.0 c</u> <u>SR2</u>		
Cooler(s)/Kit(s):	<u></u>		
Date/Time sample(s) sent to storage:	<u>6/15/2016 4:01:56 PM</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:	<u>-</u>		

Login Notes:

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Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction: