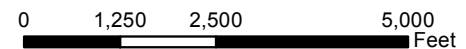


Legend

- Material Destination
- Current Material Location
- Existing Road
- Existing Pad

Land Farm Material Relocation Map April 13, 2015



Analytical Results

Contaminant of Concern ↓	COGCC standards	Location →	Clough 18 Batch 1	Clough 18 Batch 2	Clough 18 Batch 3	Clough 18 Batch 4	Clough 18 Batch 5	Clough 18 Batch 6
		Date Sampled	10/28/2014	10/28/2014	12/4/2014	12/4/2014	1/26/2015	2/12/2015
Organic Compounds in Soil								
TPH	500	mg/kg	494	400	237	151	166	170
DRO		mg/kg	420	310	200	140	140	170
GRO		mg/kg	74	90	37	11	26	0
Benzene	0.17	mg/kg	ND	ND	ND	ND	ND	ND
Toluene	85	mg/kg	ND	ND	ND	ND	ND	ND
Ethylbenzene	100	mg/kg	ND	ND	ND	ND	ND	ND
Xylenes (Total)	175	mg/kg	ND	ND	ND	ND	ND	ND
Acenaphthene	1,000	mg/kg	ND	0.0076	ND	ND	ND	ND
Anthracene	1,000	mg/kg	0.055	0.026	0.026	0.013	0.011	ND
Benzo(A)anthracene	0.22	mg/kg	ND	0.0087	ND	ND	ND	ND
Benzo(B)fluoranthene	0.22	mg/kg	ND	ND	ND	ND	ND	ND
Benzo(K)fluoranthene	2.2	mg/kg	ND	ND	ND	ND	ND	ND
Benzo(A)pyrene	0.022	mg/kg	ND	ND	ND	ND	ND	ND
Chrysene	22	mg/kg	ND	0.01	ND	ND	ND	ND
Dibenzo(A,H)anthracene	0.022	mg/kg	ND	ND	ND	ND	ND	ND
Fluoranthene	1,000	mg/kg	0.011	ND	ND	ND	ND	ND
Fluorene	1,000	mg/kg	0.093	0.053	0.043	0.015	0.015	0.048
Indeno(1,2,3-cd)pyrene	0.22	mg/kg	ND	ND	ND	ND	ND	ND
Naphthalene	23	mg/kg	0.021	0.025	0.018	ND	ND	0.059
Pyrene	1,000	mg/kg	0.021	0.0076	ND	ND	ND	0.0083
Inorganics in Soil								
EC	<4 or 2 x background	mmhos/cm	8.5	8.7	8.5	8.5	6.3	1.5
SAR	<12		19	19	15	12	14	14
pH	6-9		8.7	8.4	8.6	8.2	8.8	8
Metals in Soil								
Arsenic	0.39	mg/kg	7.9	7.5	11	6.9	8.7	7.5
Barium total	15,000	mg/kg	550	500	300	400	480	530
Cadmium	70	mg/kg	12	0.79	1.5	0.93	3.7	1.2
Chromium (III)	120,000	mg/kg	6.6	9.1	10	9.6	8.9	12
Chromium (VI)	23	mg/kg	ND	ND	ND	ND	ND	ND
Copper	3,100	mg/kg	8.8	11	13	10	11	11
Lead	400	mg/kg	19	19	15	13	15	16
Mercury	23	mg/kg	0.033	0.038	0.031	0.027	0.035	0.031
Nickel	1,600	mg/kg	9.3	13	15	13	13	15
Selenium	390	mg/kg	ND	0.38	0.62	ND	ND	ND
Silver	390	mg/kg	ND	ND	ND	ND	ND	ND
Zinc	23,000	mg/kg	49	60	65	62	64	52



04-Nov-2014

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

Re: **WPX Clough 18 Batch 1 10.28.14**

Work Order: **14101770**

Dear Mark,

ALS Environmental received 1 sample on 30-Oct-2014 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 24.

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: MN 532786

Report of Laboratory Analysis

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

RIGHT SOLUTIONS RIGHT PARTNER

Client: HRL Compliance Solutions, Inc
Project: WPX Clough 18 Batch 1 10.28.14
Work Order: 14101770

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>
14101770-01	Clough 18 Batch 1	Soil		10/28/2014 13:46	10/30/2014 09:30	<input type="checkbox"/>

Client: HRL Compliance Solutions, Inc
Project: WPX Clough 18 Batch 1 10.28.14
Work Order: 14101770

Case Narrative

Batch 64547 MS/MSD data for Metals is not related to this project's samples. No data requires qualification.

Batch 64560 MS/MSD data for Hexavalent Chromium is not related to this project's samples. No data requires qualification.

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

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

<u>Units Reported</u>	<u>Description</u>
% 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: 04-Nov-14

Client: HRL Compliance Solutions, Inc
Project: WPX Clough 18 Batch 1 10.28.14
Sample ID: Clough 18 Batch 1
Collection Date: 10/28/2014 01:46 PM

Work Order: 14101770
Lab ID: 14101770-01
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015M		Prep: SW3541 / 10/31/14	Analyst: IT
DRO (C10-C28)	420		4.5	mg/Kg-dry	1	10/31/2014 08:23 PM
<i>Surr: 4-Terphenyl-d14</i>	<i>110</i>		<i>39-133</i>	<i>%REC</i>	<i>1</i>	10/31/2014 08:23 PM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015		Prep: SW5035 / 10/31/14	Analyst: IT
GRO (C6-C10)	74		2.7	mg/Kg-dry	1	11/1/2014 10:42 AM
<i>Surr: Toluene-d8</i>	<i>124</i>		<i>50-150</i>	<i>%REC</i>	<i>1</i>	11/1/2014 10:42 AM
MERCURY BY CVAA						
			SW7471		Prep: SW7471 / 10/31/14	Analyst: LR
Mercury	0.033		0.016	mg/Kg-dry	1	10/31/2014 02:19 PM
METALS ANALYSIS BY ICP						
			SW846 6010C		Prep: SW3050B / 10/31/14	Analyst: JEC
Arsenic	7.9		0.39	mg/Kg-dry	1	10/31/2014 06:21 PM
Barium	550		0.39	mg/Kg-dry	1	10/31/2014 06:21 PM
Cadmium	12		0.31	mg/Kg-dry	1	10/31/2014 06:21 PM
Chromium	6.9		0.39	mg/Kg-dry	1	10/31/2014 06:21 PM
Copper	8.8		0.39	mg/Kg-dry	1	10/31/2014 06:21 PM
Lead	19		0.39	mg/Kg-dry	1	10/31/2014 06:21 PM
Nickel	9.3		0.39	mg/Kg-dry	1	10/31/2014 06:21 PM
Selenium	ND		0.39	mg/Kg-dry	1	10/31/2014 06:21 PM
Silver	ND		0.39	mg/Kg-dry	1	10/31/2014 06:21 PM
Zinc	49		0.79	mg/Kg-dry	1	10/31/2014 06:21 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 11/1/14	Analyst: JEC
Calcium	250		5.0	mg/L	10	11/3/2014 03:20 PM
Magnesium	70		2.0	mg/L	10	11/3/2014 03:20 PM
Sodium	1,300		2.0	mg/L	10	11/3/2014 03:20 PM
SODIUM ADSORPTION RATIO						
			USDA H60 METHOD		Prep: USDA Method 20B / 11/1/14	Analyst: JEC
Sodium Adsorption Ratio	19		0.010	none	1	11/3/2014
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3541 / 10/31/14	Analyst: RM
Acenaphthene	ND		7.3	µg/Kg-dry	1	11/3/2014 01:25 PM
Acenaphthylene	ND		7.3	µg/Kg-dry	1	11/3/2014 01:25 PM
Anthracene	55		7.3	µg/Kg-dry	1	11/3/2014 01:25 PM
Benzo(a)anthracene	ND		7.3	µg/Kg-dry	1	11/3/2014 01:25 PM
Benzo(a)pyrene	ND		7.3	µg/Kg-dry	1	11/3/2014 01:25 PM
Benzo(b)fluoranthene	ND		7.3	µg/Kg-dry	1	11/3/2014 01:25 PM
Benzo(g,h,i)perylene	ND		7.3	µg/Kg-dry	1	11/3/2014 01:25 PM
Benzo(k)fluoranthene	ND		7.3	µg/Kg-dry	1	11/3/2014 01:25 PM
Chrysene	ND		7.3	µg/Kg-dry	1	11/3/2014 01:25 PM

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

ALS Group USA, Corp

Date: 04-Nov-14

Client: HRL Compliance Solutions, Inc
Project: WPX Clough 18 Batch 1 10.28.14
Sample ID: Clough 18 Batch 1
Collection Date: 10/28/2014 01:46 PM

Work Order: 14101770
Lab ID: 14101770-01
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Dibenzo(a,h)anthracene	ND		7.3	µg/Kg-dry	1	11/3/2014 01:25 PM
Fluoranthene	11		7.3	µg/Kg-dry	1	11/3/2014 01:25 PM
Fluorene	93		7.3	µg/Kg-dry	1	11/3/2014 01:25 PM
Indeno(1,2,3-cd)pyrene	ND		7.3	µg/Kg-dry	1	11/3/2014 01:25 PM
Naphthalene	21		7.3	µg/Kg-dry	1	11/3/2014 01:25 PM
Pyrene	21		7.3	µg/Kg-dry	1	11/3/2014 01:25 PM
Surr: 2-Fluorobiphenyl	72.4		12-100	%REC	1	11/3/2014 01:25 PM
Surr: 4-Terphenyl-d14	96.3		25-137	%REC	1	11/3/2014 01:25 PM
Surr: Nitrobenzene-d5	65.0		37-107	%REC	1	11/3/2014 01:25 PM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035 / 10/31/14 Analyst: RS		
Benzene	ND		33	µg/Kg-dry	1	11/1/2014 03:13 AM
Ethylbenzene	ND		33	µg/Kg-dry	1	11/1/2014 03:13 AM
m,p-Xylene	ND		66	µg/Kg-dry	1	11/1/2014 03:13 AM
o-Xylene	ND		33	µg/Kg-dry	1	11/1/2014 03:13 AM
Toluene	ND		33	µg/Kg-dry	1	11/1/2014 03:13 AM
Xylenes, Total	ND		99	µg/Kg-dry	1	11/1/2014 03:13 AM
Surr: 1,2-Dichloroethane-d4	104		70-130	%REC	1	11/1/2014 03:13 AM
Surr: 4-Bromofluorobenzene	103		70-130	%REC	1	11/1/2014 03:13 AM
Surr: Dibromofluoromethane	97.5		70-130	%REC	1	11/1/2014 03:13 AM
Surr: Toluene-d8	101		70-130	%REC	1	11/1/2014 03:13 AM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHOD	Prep: USDA Method 20B / 11/1/14 Analyst: JB		
Electrical Conductivity @ Saturation	8.5		0.050	mmhos/cm @25	10	11/3/2014 02:00 PM
CHROMIUM, TRIVALENT			CALCULATION	Analyst: MB		
Chromium, Trivalent	6.6		0.55	mg/Kg-dry	1	11/3/2014 05:30 PM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A / 10/30/14 Analyst: MB		
Chromium, Hexavalent	ND		0.54	mg/Kg-dry	1	10/31/2014 04:00 PM
MOISTURE			A2540 G	Analyst: EVb		
Moisture	8.7		0.050	% of sample	1	10/30/2014 09:00 PM
PH			SW9045D	Prep: EXTRACT / 10/31/14 Analyst: JB		
pH	8.7			s.u.	1	10/31/2014 02:30 PM

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

ALS Group USA, Corp

Date: 04-Nov-14

Client: HRL Compliance Solutions, Inc
Work Order: 14101770
Project: WPX Clough 18 Batch 1 10.28.14

QC BATCH REPORT

Batch ID: **64524** Instrument ID **GC8** Method: **SW8015M**

MBLK		Sample ID: DBLKS1-64524-64524				Units: mg/Kg		Analysis Date: 10/31/2014 05:10 PM		
Client ID:		Run ID: GC8_141031A				SeqNo: 3013968		Prep Date: 10/31/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	ND	5.0								
Surr: 4-Terphenyl-d14	1.106	0	2	0	55.3	39-133	0			

LCS		Sample ID: DLCSS1-64524-64524				Units: mg/Kg		Analysis Date: 10/31/2014 05:37 PM		
Client ID:		Run ID: GC8_141031A				SeqNo: 3013969		Prep Date: 10/31/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	157.4	5.0	200	0	78.7	61-109	0			
Surr: 4-Terphenyl-d14	0.7984	0	2	0	39.9	39-133	0			

MS		Sample ID: 14101675-01A MS				Units: mg/Kg		Analysis Date: 10/31/2014 06:05 PM		
Client ID:		Run ID: GC8_141031A				SeqNo: 3013970		Prep Date: 10/31/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	332	7.9	315.7	32.31	94.9	48-110	0			
Surr: 4-Terphenyl-d14	1.621	0	3.157	0	51.3	39-133	0			

MSD		Sample ID: 14101675-01A MSD				Units: mg/Kg		Analysis Date: 10/31/2014 06:32 PM		
Client ID:		Run ID: GC8_141031A				SeqNo: 3013971		Prep Date: 10/31/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	296.1	7.9	316.6	32.31	83.3	48-110	332	11.4	30	
Surr: 4-Terphenyl-d14	1.796	0	3.166	0	56.7	39-133	1.621	10.2	30	

The following samples were analyzed in this batch: 14101770-01B

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

Client: HRL Compliance Solutions, Inc
Work Order: 14101770
Project: WPX Clough 18 Batch 1 10.28.14

QC BATCH REPORT

Batch ID: **64541** Instrument ID **GC9** Method: **SW8015**

MBLK		Sample ID: MBLK-64541-64541				Units: µg/Kg		Analysis Date: 11/1/2014 03:36 AM		
Client ID:		Run ID: GC9_141031A				SeqNo: 3013773		Prep Date: 10/31/2014		DF: 1
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>	4925	0	5000	0	98.5	50-150	0			

LCS		Sample ID: LCS-64541-64541				Units: µg/Kg		Analysis Date: 11/1/2014 03:11 AM		
Client ID:		Run ID: GC9_141031A				SeqNo: 3013772		Prep Date: 10/31/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	563600	2,500	500000	0	113	70-130	0			
<i>Surr: Toluene-d8</i>	4400	0	5000	0	88	50-150	0			

MS		Sample ID: 14101776-01B MS				Units: µg/Kg		Analysis Date: 11/1/2014 04:26 AM		
Client ID:		Run ID: GC9_141031A				SeqNo: 3013775		Prep Date: 10/31/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	584900	2,500	500000	0	117	70-130	0			
<i>Surr: Toluene-d8</i>	4868	0	5000	0	97.4	50-150	0			

MSD		Sample ID: 14101776-01B MSD				Units: µg/Kg		Analysis Date: 11/1/2014 04:52 AM		
Client ID:		Run ID: GC9_141031A				SeqNo: 3013776		Prep Date: 10/31/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	571300	2,500	500000	0	114	70-130	584900	2.36	30	
<i>Surr: Toluene-d8</i>	4797	0	5000	0	95.9	50-150	4868	1.46	30	

The following samples were analyzed in this batch: 14101770-01A

Client: HRL Compliance Solutions, Inc
Work Order: 14101770
Project: WPX Clough 18 Batch 1 10.28.14

QC BATCH REPORT

Batch ID: **64488** Instrument ID **HG1** Method: **SW7471**

MBLK		Sample ID: MBLK-64488-64488				Units: mg/Kg		Analysis Date: 10/31/2014 01:31 PM		
Client ID:		Run ID: HG1_141031A				SeqNo: 3011644		Prep Date: 10/31/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury ND 0.020

LCS		Sample ID: LCS-64488-64488				Units: mg/Kg		Analysis Date: 10/31/2014 01:34 PM		
Client ID:		Run ID: HG1_141031A				SeqNo: 3011645		Prep Date: 10/31/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1772 0.020 0.1665 0 106 80-120 0

MS		Sample ID: 14101776-02AMS				Units: mg/Kg		Analysis Date: 10/31/2014 01:38 PM		
Client ID:		Run ID: HG1_141031A				SeqNo: 3011647		Prep Date: 10/31/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1177 0.011 0.09259 0.003715 123 75-125 0

MSD		Sample ID: 14101776-02AMSD				Units: mg/Kg		Analysis Date: 10/31/2014 01:42 PM		
Client ID:		Run ID: HG1_141031A				SeqNo: 3011648		Prep Date: 10/31/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1153 0.011 0.09302 0.003715 120 75-125 0.1177 2.05 35

The following samples were analyzed in this batch:

14101770-01B

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

Client: HRL Compliance Solutions, Inc
Work Order: 14101770
Project: WPX Clough 18 Batch 1 10.28.14

QC BATCH REPORT

Batch ID: **64512** Instrument ID **ICP2** Method: **SW846 6010C**

DUP				Sample ID: 14101732-01C DUP				Units:mg/L			Analysis Date: 11/3/2014 03:08 PM		
Client ID:				Run ID: ICP2_141103A				SeqNo:3014890		Prep Date: 11/1/2014		DF: 10	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			
Calcium	311.1	5.0	0	0	0	0-0	317	1.88					
Magnesium	54.58	2.0	0	0	0	0-0	56.04	2.64					
Sodium	495.1	2.0	0	0	0	0-0	502.5	1.49					

DUP				Sample ID: 14101732-01C DUP				Units: none			Analysis Date: 11/3/2014			
Client ID:				Run ID: SAR_141103A				SeqNo: 3014935			Prep Date: 11/1/2014		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			
Sodium Adsorption Ratio		6.807	0.010	0	0	0		6.839	0.468	50				

The following samples were analyzed in this batch:

14101770-01C

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

Client: HRL Compliance Solutions, Inc
Work Order: 14101770
Project: WPX Clough 18 Batch 1 10.28.14

QC BATCH REPORT

Batch ID: **64547**

Instrument ID **ICP2**

Method: **SW846 6010C**

MBLK					Sample ID: MBLK-64547-64547			Units:mg/Kg		Analysis Date: 10/31/2014 05:59 PM		
Client ID:			Run ID: ICP2_141031B			SeqNo:3013182		Prep Date: 10/31/2014		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual		
Arsenic	ND	0.25										
Barium	ND	0.25										
Cadmium	ND	0.50										
Chromium	ND	0.25										
Copper	ND	0.50										
Lead	ND	0.25										
Nickel	ND	0.25										
Selenium	ND	0.50										
Silver	ND	0.25										
Zinc	0.1616	0.50								J		

LCS					Sample ID: LCS-64547-64547			Units:mg/Kg		Analysis Date: 10/31/2014 06:04 PM		
Client ID:			Run ID: ICP2_141031B			SeqNo:3013183		Prep Date: 10/31/2014		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual		
Arsenic	4.698	0.25	5	0	94	80-120	0					
Barium	4.693	0.25	5	0	93.9	80-120	0					
Cadmium	4.521	0.50	5	0	90.4	80-120	0					
Chromium	4.838	0.25	5	0	96.8	80-120	0					
Copper	4.869	0.50	5	0	97.4	80-120	0					
Lead	4.768	0.25	5	0	95.4	80-120	0					
Nickel	4.749	0.25	5	0	95	80-120	0					
Selenium	4.747	0.50	5	0	94.9	80-120	0					
Silver	4.927	0.25	5	0	98.5	80-120	0					
Zinc	5.021	0.50	5	0	100	80-120	0					

MS					Sample ID: 14101823-03AMS			Units: mg/Kg		Analysis Date: 10/31/2014 07:24 PM	
Client ID:			Run ID: ICP2_141031B			SeqNo: 3013197		Prep Date: 10/31/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Arsenic	15.46	0.38	7.508	7.58	105	75-125	0				
Barium	242.1	0.38	7.508	266	-318	75-125	0			SO	
Cadmium	7.121	0.75	7.508	0.1906	92.3	75-125	0				
Chromium	18.31	0.38	7.508	10.66	102	75-125	0				
Copper	19.91	0.75	7.508	13.2	89.3	75-125	0				
Lead	26.37	0.38	7.508	19.95	85.5	75-125	0				
Nickel	20.94	0.38	7.508	13.89	93.9	75-125	0				
Selenium	7.369	0.75	7.508	0.3791	93.1	75-125	0				
Silver	8.355	0.38	7.508	-0.03233	112	75-125	0				
Zinc	76.58	0.75	7.508	67.38	123	75-125	0			O	

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

Client: HRL Compliance Solutions, Inc
Work Order: 14101770
Project: WPX Clough 18 Batch 1 10.28.14

QC BATCH REPORT

Batch ID: **64547** Instrument ID **ICP2** Method: **SW846 6010C**

MSD		Sample ID: 14101823-03AMSD				Units: mg/Kg		Analysis Date: 10/31/2014 07:29 PM		
Client ID:		Run ID: ICP2_141031B				SeqNo: 3013198		Prep Date: 10/31/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	14.57	0.37	7.496	7.58	93.2	75-125	15.46	5.94	20	
Barium	268.5	0.37	7.496	266	33.6	75-125	242.1	10.3	20	SO
Cadmium	7.08	0.75	7.496	0.1906	91.9	75-125	7.121	0.577	20	
Chromium	17.9	0.37	7.496	10.66	96.5	75-125	18.31	2.25	20	
Copper	19.51	0.75	7.496	13.2	84	75-125	19.91	2.04	20	
Lead	25.67	0.37	7.496	19.95	76.3	75-125	26.37	2.7	20	
Nickel	20.24	0.37	7.496	13.89	84.8	75-125	20.94	3.38	20	
Selenium	7.556	0.75	7.496	0.3791	95.7	75-125	7.369	2.5	20	
Silver	8.241	0.37	7.496	-0.03233	110	75-125	8.355	1.38	20	
Zinc	74.71	0.75	7.496	67.38	97.9	75-125	76.58	2.47	20	O

The following samples were analyzed in this batch: 14101770-01B

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

Client: HRL Compliance Solutions, Inc
Work Order: 14101770
Project: WPX Clough 18 Batch 1 10.28.14

QC BATCH REPORT

Batch ID: **64523** Instrument ID **SVMS8** Method: **SW846 8270D**

MBLK		Sample ID: SBLKS1-64523-64523				Units: µg/Kg		Analysis Date: 11/3/2014 10:23 AM		
Client ID:		Run ID: SVMS8_141103A				SeqNo: 3014423		Prep Date: 10/31/2014		DF: 1
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>	1311	0	1667	0	78.7	12-100	0			
<i>Surr: 4-Terphenyl-d14</i>	1758	0	1667	0	105	25-137	0			
<i>Surr: Nitrobenzene-d5</i>	1172	0	1667	0	70.3	37-107	0			

LCS		Sample ID: SLCSS1-64523-64523				Units: µg/Kg		Analysis Date: 11/3/2014 10:43 AM		
Client ID:		Run ID: SVMS8_141103A				SeqNo: 3014431		Prep Date: 10/31/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	536.7	6.7	666.7	0	80.5	45-110	0			
Acenaphthylene	533	6.7	666.7	0	79.9	45-105	0			
Anthracene	625.3	6.7	666.7	0	93.8	55-105	0			
Benzo(a)anthracene	633.3	6.7	666.7	0	95	50-110	0			
Benzo(a)pyrene	713.7	6.7	666.7	0	107	50-110	0			
Benzo(b)fluoranthene	700.7	6.7	666.7	0	105	45-115	0			
Benzo(g,h,i)perylene	641.3	6.7	666.7	0	96.2	40-125	0			
Benzo(k)fluoranthene	688	6.7	666.7	0	103	45-115	0			
Chrysene	664	6.7	666.7	0	99.6	55-110	0			
Dibenzo(a,h)anthracene	691	6.7	666.7	0	104	40-125	0			
Fluoranthene	635	6.7	666.7	0	95.2	55-115	0			
Fluorene	545.3	6.7	666.7	0	81.8	50-110	0			
Indeno(1,2,3-cd)pyrene	699.7	6.7	666.7	0	105	40-120	0			
Naphthalene	523	6.7	666.7	0	78.4	40-105	0			
Pyrene	660	6.7	666.7	0	99	45-125	0			
<i>Surr: 2-Fluorobiphenyl</i>	1219	0	1667	0	73.2	12-100	0			
<i>Surr: 4-Terphenyl-d14</i>	1567	0	1667	0	94	25-137	0			
<i>Surr: Nitrobenzene-d5</i>	1147	0	1667	0	68.8	37-107	0			

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

Client: HRL Compliance Solutions, Inc
Work Order: 14101770
Project: WPX Clough 18 Batch 1 10.28.14

QC BATCH REPORT

Batch ID: **64523** Instrument ID **SVMS8** Method: **SW846 8270D**

MS				Sample ID: 14101675-01A MS				Units: µg/Kg		Analysis Date: 11/3/2014 11:03 AM	
Client ID:		Run ID: SVMS8_141103A			SeqNo:3014432		Prep Date: 10/31/2014		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	987.6	13	1313	0	75.2	45-110	0				
Acenaphthylene	1011	13	1313	0	77	45-105	0				
Anthracene	1150	13	1313	0	87.5	55-105	0				
Benzo(a)anthracene	1134	13	1313	0	86.3	50-110	0				
Benzo(a)pyrene	1309	13	1313	0	99.6	50-110	0				
Benzo(b)fluoranthene	1264	13	1313	0	96.2	45-115	0				
Benzo(g,h,i)perylene	1254	13	1313	0	95.4	40-125	0				
Benzo(k)fluoranthene	1265	13	1313	0	96.3	45-115	0				
Chrysene	1184	13	1313	0	90.1	55-110	0				
Dibenzo(a,h)anthracene	1323	13	1313	0	101	40-125	0				
Fluoranthene	1085	13	1313	0	82.6	55-115	0				
Fluorene	1039	13	1313	0	79.1	50-110	0				
Indeno(1,2,3-cd)pyrene	1329	13	1313	0	101	40-120	0				
Naphthalene	943.6	13	1313	0	71.8	40-105	0				
Pyrene	1284	13	1313	4.249	97.5	45-125	0				
Surr: 2-Fluorobiphenyl	2242	0	3283	0	68.3	12-100	0				
Surr: 4-Terphenyl-d14	2906	0	3283	0	88.5	25-137	0				
Surr: Nitrobenzene-d5	1991	0	3283	0	60.6	37-107	0				

MSD				Sample ID: 14101675-01A MSD				Units: µg/Kg		Analysis Date: 11/3/2014 11:24 AM	
Client ID:			Run ID: SVMS8_141103A			SeqNo:3014433		Prep Date: 10/31/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	957.2	13	1325	0	72.2	45-110	987.6	3.12	30		
Acenaphthylene	1017	13	1325	0	76.7	45-105	1011	0.552	30		
Anthracene	1096	13	1325	0	82.7	55-105	1150	4.76	30		
Benzo(a)anthracene	1146	13	1325	0	86.5	50-110	1134	1.05	30		
Benzo(a)pyrene	1365	13	1325	0	103	50-110	1309	4.18	30		
Benzo(b)fluoranthene	1235	13	1325	0	93.2	45-115	1264	2.29	30		
Benzo(g,h,i)perylene	1209	13	1325	0	91.2	40-125	1254	3.62	30		
Benzo(k)fluoranthene	1252	13	1325	0	94.5	45-115	1265	1.06	30		
Chrysene	1192	13	1325	0	90	55-110	1184	0.711	30		
Dibenzo(a,h)anthracene	1262	13	1325	0	95.2	40-125	1323	4.74	30		
Fluoranthene	1113	13	1325	0	84	55-115	1085	2.56	30		
Fluorene	960.5	13	1325	0	72.5	50-110	1039	7.89	30		
Indeno(1,2,3-cd)pyrene	1282	13	1325	0	96.7	40-120	1329	3.62	30		
Naphthalene	1017	13	1325	0	76.7	40-105	943.6	7.47	30		
Pyrene	1166	13	1325	4.249	87.7	45-125	1284	9.67	30		
Surr: 2-Fluorobiphenyl	2199	0	3312	0	66.4	12-100	2242	1.91	40		
Surr: 4-Terphenyl-d14	2663	0	3312	0	80.4	25-137	2906	8.72	40		
Surr: Nitrobenzene-d5	2050	0	3312	0	61.9	37-107	1991	2.93	40		

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

Client: HRL Compliance Solutions, Inc
Work Order: 14101770
Project: WPX Clough 18 Batch 1 10.28.14

QC BATCH REPORT

Batch ID: **64523** Instrument ID **SVMS8** Method: **SW846 8270D**

The following samples were analyzed in this batch:

14101770-01B

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

Client: HRL Compliance Solutions, Inc
Work Order: 14101770
Project: WPX Clough 18 Batch 1 10.28.14

QC BATCH REPORT

Batch ID: **64543** Instrument ID **VMS9** Method: **SW8260B**

Sample ID: MBLK-64543-64543				Units: µg/Kg			Analysis Date: 10/31/2014 04:10 PM			
Client ID:		Run ID: VMS9_141031A			SeqNo: 3012585		Prep Date: 10/31/2014		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								
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>984</i>	<i>0</i>	<i>1000</i>	<i>0</i>	<i>98.4</i>	<i>70-130</i>	<i>0</i>			
<i>Surr: 4-Bromofluorobenzene</i>	<i>948</i>	<i>0</i>	<i>1000</i>	<i>0</i>	<i>94.8</i>	<i>70-130</i>	<i>0</i>			
<i>Surr: Dibromofluoromethane</i>	<i>948.5</i>	<i>0</i>	<i>1000</i>	<i>0</i>	<i>94.8</i>	<i>70-130</i>	<i>0</i>			
<i>Surr: Toluene-d8</i>	<i>987</i>	<i>0</i>	<i>1000</i>	<i>0</i>	<i>98.7</i>	<i>70-130</i>	<i>0</i>			

LCS				Sample ID: LCS-64543-64543			Units: µg/Kg		Analysis Date: 10/31/2014 01:22 PM		
Client ID:			Run ID: VMS9_141031A			SeqNo:3012584		Prep Date: 10/31/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	1072	30	1000	0	107	75-125	0				
Ethylbenzene	1046	30	1000	0	105	75-125	0				
m,p-Xylene	2064	60	2000	0	103	80-125	0				
o-Xylene	1021	30	1000	0	102	75-125	0				
Toluene	1030	30	1000	0	103	70-125	0				
Xylenes, Total	3086	90	3000	0	103	75-125	0				
Surr: 1,2-Dichloroethane-d4	989.5	0	1000	0	99	70-130	0				
Surr: 4-Bromofluorobenzene	1029	0	1000	0	103	70-130	0				
Surr: Dibromofluoromethane	971.5	0	1000	0	97.2	70-130	0				
Surr: Toluene-d8	999.5	0	1000	0	100	70-130	0				

MS					Sample ID: 14101776-03B MS			Units: µg/Kg		Analysis Date: 11/1/2014 01:19 PM	
Client ID:			Run ID: VMS7_141031C			SeqNo:3012881		Prep Date: 10/31/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	1097	30	1000	0	110	75-125	0				
Ethylbenzene	1062	30	1000	0	106	75-125	0				
m,p-Xylene	2094	60	2000	0	105	80-125	0				
o-Xylene	1032	30	1000	0	103	75-125	0				
Toluene	1040	30	1000	0	104	70-125	0				
Xylenes, Total	3126	90	3000	0	104	75-125	0				
Surr: 1,2-Dichloroethane-d4	935.5	0	1000	0	93.6	70-130	0				
Surr: 4-Bromofluorobenzene	1034	0	1000	0	103	70-130	0				
Surr: Dibromofluoromethane	967.5	0	1000	0	96.8	70-130	0				
Surr: Toluene-d8	961	0	1000	0	96.1	70-130	0				

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

Client: HRL Compliance Solutions, Inc
Work Order: 14101770
Project: WPX Clough 18 Batch 1 10.28.14

QC BATCH REPORT

Batch ID: **64543** Instrument ID **VMS9** Method: **SW8260B**

MSD				Sample ID: 14101776-03B MSD				Units: µg/Kg		Analysis Date: 11/1/2014 01:44 PM	
Client ID:			Run ID: VMS7_141031C			SeqNo: 3012882		Prep Date: 10/31/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	1137	30	1000	0	114	75-125	1097	3.58	30		
Ethylbenzene	1092	30	1000	0	109	75-125	1062	2.79	30		
m,p-Xylene	2187	60	2000	0	109	80-125	2094	4.32	30		
o-Xylene	1080	30	1000	0	108	75-125	1032	4.59	30		
Toluene	1090	30	1000	0	109	70-125	1040	4.69	30		
Xylenes, Total	3268	90	3000	0	109	75-125	3126	4.41	30		
Surr: 1,2-Dichloroethane-d4	925.5	0	1000	0	92.6	70-130	935.5	1.07	30		
Surr: 4-Bromofluorobenzene	1028	0	1000	0	103	70-130	1034	0.631	30		
Surr: Dibromofluoromethane	976.5	0	1000	0	97.6	70-130	967.5	0.926	30		
Surr: Toluene-d8	962	0	1000	0	96.2	70-130	961	0.104	30		

The following samples were analyzed in this batch: 14101770-01A

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

Client: HRL Compliance Solutions, Inc
Work Order: 14101770
Project: WPX Clough 18 Batch 1 10.28.14

QC BATCH REPORT

Batch ID: **64512** Instrument ID **WETCHEM** Method: **USDA H60 Method**

DUP		Sample ID: 14101732-01C DUP				Units: mmhos/cm @25°C		Analysis Date: 11/3/2014 02:00 PM		
Client ID:		Run ID: WETCHEM_141103C				SeqNo: 3014032		Prep Date: 11/1/2014		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	4.38	0.050	0	0	0		4.52	3.15	50	

The following samples were analyzed in this batch:

14101770-01C

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

Client: HRL Compliance Solutions, Inc
Work Order: 14101770
Project: WPX Clough 18 Batch 1 10.28.14

QC BATCH REPORT

Batch ID: **64548** Instrument ID **WETCHEM** Method: **SW9045D**

LCS				Sample ID: LCS-64548-64548				Units: s.u.			Analysis Date: 10/31/2014 02:30 PM		
Client ID:				Run ID: WETCHEM_141031I				SeqNo: 3011817		Prep Date: 10/31/2014		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual		
pH		3.95	0	4	0	98.8	90-110	0					

DUP				Sample ID: 14101769-01B DUP				Units: s.u.			Analysis Date: 10/31/2014 02:30 PM		
Client ID:				Run ID: WETCHEM_141031I				SeqNo: 3011820		Prep Date: 10/31/2014		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual		
pH		8.54	0	0	0	0	0-0	8.67	1.51	20			

The following samples were analyzed in this batch:

14101770-01B

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

Client: HRL Compliance Solutions, Inc
Work Order: 14101770
Project: WPX Clough 18 Batch 1 10.28.14

QC BATCH REPORT

Batch ID: **64560** Instrument ID **WETCHEM** Method: **SW7196A**

MBLK		Sample ID: MBLK-64560-64560				Units: mg/Kg		Analysis Date: 10/31/2014 04:00 PM		
Client ID:		Run ID: WETCHEM_141031K				SeqNo: 3011912		Prep Date: 10/30/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent ND 0.50

LCS		Sample ID: LCS-64560-64560				Units: mg/Kg		Analysis Date: 10/31/2014 04:00 PM		
Client ID:		Run ID: WETCHEM_141031K				SeqNo: 3011911		Prep Date: 10/30/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 1.82 0.50 2 0 91 80-120 0

MS		Sample ID: 14101675-01A MS				Units: mg/Kg		Analysis Date: 10/31/2014 04:00 PM		
Client ID:		Run ID: WETCHEM_141031K				SeqNo: 3011897		Prep Date: 10/30/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent ND 0.50 1.992 0 0 75-125 0 S

MS		Sample ID: 14101675-01A MSI				Units: mg/Kg		Analysis Date: 10/31/2014 04:00 PM		
Client ID:		Run ID: WETCHEM_141031K				SeqNo: 3011899		Prep Date: 10/30/2014		DF: 100
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 502.4 49 699.6 0 71.8 75-125 0 S

MSD		Sample ID: 14101675-01A MSD				Units: mg/Kg		Analysis Date: 10/31/2014 04:00 PM		
Client ID:		Run ID: WETCHEM_141031K				SeqNo: 3011898		Prep Date: 10/30/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent ND 0.50 1.992 0 0 75-125 0 0 20 S

The following samples were analyzed in this batch:

14101770-01B

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

Client: HRL Compliance Solutions, Inc
Work Order: 14101770
Project: WPX Clough 18 Batch 1 10.28.14

QC BATCH REPORT

Batch ID: **R151570** Instrument ID **MOIST** Method: **A2540 G**

MBLK				Sample ID: WBLKS-R151570				Units: % of sample			Analysis Date: 10/30/2014 09:00 PM			
Client ID:				Run ID: MOIST_141030C				SeqNo: 3011991			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-R151570					Units: % of sample		Analysis Date: 10/30/2014 09:00 PM		
Client ID:			Run ID: MOIST_141030C			SeqNo: 3011990		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: 14101731-01ADUP				Units: % of sample			Analysis Date: 10/30/2014 09:00 PM												
Client ID:				Run ID: MOIST_141030C				SeqNo: 3011969			Prep Date:		DF: 1										
Analyte				Result		PQL		SPK Val		SPK Ref Value		%REC		Control Limit		RPD Ref Value		%RPD		RPD Limit		Qual	

Moisture 12.25 0.050 0 0 0 0-0 14.05 13.7 20

DUP		Sample ID: 14101763-01ADUP					Units: % of sample		Analysis Date: 10/30/2014 09:00 PM		
Client ID:			Run ID: MOIST_141030C			SeqNo: 3011977		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Moisture 18.52 0.050 0 0 0 0-0 20.92 12.2 20

The following samples were analyzed in this batch:

14101770-01B

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

Chain-of-Custody

WORKORDER
#

14101770

PAGE

1 of 1


DISPOSAL

By Lab or **Return to Client**

[illegible]

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

For metals or anions, please detail analytes below.

Comments: <i>Complete Calc Table</i> <i>910-1.</i>  <i>4.20.</i>	QC PACKAGE (check below)	
	<input checked="" type="checkbox"/>	LEVEL II (Standard QC)
	<input type="checkbox"/>	LEVEL III (Std QC + forms)
	<input type="checkbox"/>	LEVEL IV (Std QC + forms + raw data)
	<input type="checkbox"/>	
Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035		

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY	<i>Mike Lobato</i>	Mike Lobato	10/28/14	1611
RECEIVED BY	<i>mm</i>	<i>mm</i>	10/28	1611
RELINQUISHED BY	<i>mm</i>	<i>mm</i>	10/28	1630
RECEIVED BY	<i>D. F. Shea</i>	Diane F. Shea	10/30/14	0930
RELINQUISHED BY				
RECEIVED BY				

Sample Receipt Checklist

Client Name: **HRL**

Date/Time Received: **30-Oct-14 09:30**

Work Order: **14101770**

Received by: **DS**

Checklist completed by <u>Ann Preston</u>	30-Oct-14	Reviewed by: <u>Ann Preston</u>	30-Oct-14
eSignature	Date	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"/>	
Sample(s) received on ice?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>4.2°C</u>		
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:			
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:

From: (816) 399-8870
 Nick Martinez
 ALS Environmental
 127 E. 1st Street

Origin ID: RLA



Ship Date: 29OCT14
 Weight: 58.0 LB
 CAD: 2284040WNET3550

Dim: 14 X 26 X 15 IN

Parachute, CO 81433

SHIP TO: (816) 399-8870
 sample receiving
 ALS Laboratory Group
 3352 128TH AVE

HOLLAND, MI 49424

BILL BENDER

Delivery Address Bar Code



Ref # 102814-2
 Invoice #
 PO # Parachute
 Dept #

4 of 4

WED - 29 OCT 10:30A
 PRIORITY OVERNIGHT

MP# 7716 8054 8864

Met# 7716 8054 8550

6291

49424

MLM

GRR

XX HLMA



0230 LOPMAB03

After printing this label:

1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
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3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

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ALS Parachute Custody Seal

DATE 10/29/14

Time 17:37

Name



04-Nov-2014

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

Re: **WPX Clough 18 Batch 2 10.28.14**

Work Order: **14101772**

Dear Mark,

ALS Environmental received 1 sample on 30-Oct-2014 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 24.

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: MN 532786

Report of Laboratory Analysis

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

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Client: HRL Compliance Solutions, Inc
Project: WPX Clough 18 Batch 2 10.28.14
Work Order: 14101772

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>
14101772-01	Clough 18 Batch 2	Soil		10/28/2014 13:55	10/30/2014 09:30	<input type="checkbox"/>

Client: HRL Compliance Solutions, Inc
Project: WPX Clough 18 Batch 2 10.28.14
Work Order: 14101772

Case Narrative

Batch 64547 MS/MSD data for Metals is not related to this project's samples. No data requires qualification.

Batch 64560 MS/MSD data for Hexavalent Chromium is not related to this project's samples. No data requires qualification.

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

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

<u>Units Reported</u>	<u>Description</u>
% 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: 04-Nov-14

Client: HRL Compliance Solutions, Inc
Project: WPX Clough 18 Batch 2 10.28.14
Sample ID: Clough 18 Batch 2
Collection Date: 10/28/2014 01:55 PM

Work Order: 14101772
Lab ID: 14101772-01
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015M		Prep: SW3541 / 10/31/14	Analyst: IT
DRO (C10-C28)	310		4.5	mg/Kg-dry	1	10/31/2014 09:18 PM
<i>Surr: 4-Terphenyl-d14</i>	<i>80.4</i>		<i>39-133</i>	<i>%REC</i>	<i>1</i>	10/31/2014 09:18 PM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015		Prep: SW5035 / 10/31/14	Analyst: IT
GRO (C6-C10)	90		2.8	mg/Kg-dry	1	11/1/2014 11:32 AM
<i>Surr: Toluene-d8</i>	<i>135</i>		<i>50-150</i>	<i>%REC</i>	<i>1</i>	11/1/2014 11:32 AM
MERCURY BY CVAA						
			SW7471		Prep: SW7471 / 10/31/14	Analyst: LR
Mercury	0.038		0.014	mg/Kg-dry	1	10/31/2014 02:23 PM
METALS ANALYSIS BY ICP						
			SW846 6010C		Prep: SW3050B / 10/31/14	Analyst: JEC
Arsenic	7.5		0.36	mg/Kg-dry	1	10/31/2014 06:33 PM
Barium	500		0.36	mg/Kg-dry	1	10/31/2014 06:33 PM
Cadmium	0.79		0.28	mg/Kg-dry	1	10/31/2014 06:33 PM
Chromium	9.1		0.36	mg/Kg-dry	1	10/31/2014 06:33 PM
Copper	11		0.36	mg/Kg-dry	1	10/31/2014 06:33 PM
Lead	19		0.36	mg/Kg-dry	1	10/31/2014 06:33 PM
Nickel	13		0.36	mg/Kg-dry	1	10/31/2014 06:33 PM
Selenium	0.38		0.36	mg/Kg-dry	1	10/31/2014 06:33 PM
Silver	ND		0.36	mg/Kg-dry	1	10/31/2014 06:33 PM
Zinc	60		0.71	mg/Kg-dry	1	10/31/2014 06:33 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 11/1/14	Analyst: JEC
Calcium	290		5.0	mg/L	10	11/3/2014 03:33 PM
Magnesium	73		2.0	mg/L	10	11/3/2014 03:33 PM
Sodium	1,400		2.0	mg/L	10	11/3/2014 03:33 PM
SODIUM ADSORPTION RATIO						
			USDA H60 METHOD		Prep: USDA Method 20B / 11/1/14	Analyst: JEC
Sodium Adsorption Ratio	19		0.010	none	1	11/3/2014
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3541 / 10/31/14	Analyst: RM
Acenaphthene	7.6		7.2	µg/Kg-dry	1	11/3/2014 02:06 PM
Acenaphthylene	ND		7.2	µg/Kg-dry	1	11/3/2014 02:06 PM
Anthracene	26		7.2	µg/Kg-dry	1	11/3/2014 02:06 PM
Benzo(a)anthracene	8.7		7.2	µg/Kg-dry	1	11/3/2014 02:06 PM
Benzo(a)pyrene	ND		7.2	µg/Kg-dry	1	11/3/2014 02:06 PM
Benzo(b)fluoranthene	ND		7.2	µg/Kg-dry	1	11/3/2014 02:06 PM
Benzo(g,h,i)perylene	ND		7.2	µg/Kg-dry	1	11/3/2014 02:06 PM
Benzo(k)fluoranthene	ND		7.2	µg/Kg-dry	1	11/3/2014 02:06 PM
Chrysene	10		7.2	µg/Kg-dry	1	11/3/2014 02:06 PM

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

ALS Group USA, Corp

Date: 04-Nov-14

Client: HRL Compliance Solutions, Inc
Project: WPX Clough 18 Batch 2 10.28.14
Sample ID: Clough 18 Batch 2
Collection Date: 10/28/2014 01:55 PM

Work Order: 14101772
Lab ID: 14101772-01
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Dibenzo(a,h)anthracene	ND		7.2	µg/Kg-dry	1	11/3/2014 02:06 PM
Fluoranthene	ND		7.2	µg/Kg-dry	1	11/3/2014 02:06 PM
Fluorene	53		7.2	µg/Kg-dry	1	11/3/2014 02:06 PM
Indeno(1,2,3-cd)pyrene	ND		7.2	µg/Kg-dry	1	11/3/2014 02:06 PM
Naphthalene	25		7.2	µg/Kg-dry	1	11/3/2014 02:06 PM
Pyrene	7.6		7.2	µg/Kg-dry	1	11/3/2014 02:06 PM
Surr: 2-Fluorobiphenyl	71.4		12-100	%REC	1	11/3/2014 02:06 PM
Surr: 4-Terphenyl-d14	82.3		25-137	%REC	1	11/3/2014 02:06 PM
Surr: Nitrobenzene-d5	67.4		37-107	%REC	1	11/3/2014 02:06 PM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035 / 10/31/14 Analyst: RS		
Benzene	ND		33	µg/Kg-dry	1	11/1/2014 12:54 PM
Ethylbenzene	ND		33	µg/Kg-dry	1	11/1/2014 12:54 PM
m,p-Xylene	ND		66	µg/Kg-dry	1	11/1/2014 12:54 PM
o-Xylene	ND		33	µg/Kg-dry	1	11/1/2014 12:54 PM
Toluene	ND		33	µg/Kg-dry	1	11/1/2014 12:54 PM
Xylenes, Total	ND		99	µg/Kg-dry	1	11/1/2014 12:54 PM
Surr: 1,2-Dichloroethane-d4	95.0		70-130	%REC	1	11/1/2014 12:54 PM
Surr: 4-Bromofluorobenzene	105		70-130	%REC	1	11/1/2014 12:54 PM
Surr: Dibromofluoromethane	97.0		70-130	%REC	1	11/1/2014 12:54 PM
Surr: Toluene-d8	98.0		70-130	%REC	1	11/1/2014 12:54 PM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHOD	Prep: USDA Method 20B / 11/1/14 Analyst: JB		
Electrical Conductivity @ Saturation	8.7		0.050	mmhos/cm @25	10	11/3/2014 02:00 PM
CHROMIUM, TRIVALENT			CALCULATION	Analyst: MB		
Chromium, Trivalent	9.1		0.55	mg/Kg-dry	1	11/3/2014 05:30 PM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A / 10/30/14 Analyst: MB		
Chromium, Hexavalent	ND		0.55	mg/Kg-dry	1	10/31/2014 04:00 PM
MOISTURE			A2540 G	Analyst: EVb		
Moisture	9.1		0.050	% of sample	1	10/30/2014 09:00 PM
PH			SW9045D	Prep: EXTRACT / 10/31/14 Analyst: JB		
pH	8.4			s.u.	1	10/31/2014 02:30 PM

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

ALS Group USA, Corp

Date: 04-Nov-14

Client: HRL Compliance Solutions, Inc
Work Order: 14101772
Project: WPX Clough 18 Batch 2 10.28.14

QC BATCH REPORT

Batch ID: **64524** Instrument ID **GC8** Method: **SW8015M**

MBLK		Sample ID: DBLKS1-64524-64524				Units: mg/Kg		Analysis Date: 10/31/2014 05:10 PM		
Client ID:		Run ID: GC8_141031A				SeqNo: 3013968		Prep Date: 10/31/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	ND	5.0								
Surr: 4-Terphenyl-d14	1.106	0	2	0	55.3	39-133	0			

LCS		Sample ID: DLCSS1-64524-64524				Units: mg/Kg		Analysis Date: 10/31/2014 05:37 PM		
Client ID:		Run ID: GC8_141031A				SeqNo: 3013969		Prep Date: 10/31/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	157.4	5.0	200	0	78.7	61-109	0			
Surr: 4-Terphenyl-d14	0.7984	0	2	0	39.9	39-133	0			

MS		Sample ID: 14101675-01A MS				Units: mg/Kg		Analysis Date: 10/31/2014 06:05 PM		
Client ID:		Run ID: GC8_141031A				SeqNo: 3013970		Prep Date: 10/31/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	332	7.9	315.7	32.31	94.9	48-110	0			
Surr: 4-Terphenyl-d14	1.621	0	3.157	0	51.3	39-133	0			

MSD		Sample ID: 14101675-01A MSD				Units: mg/Kg		Analysis Date: 10/31/2014 06:32 PM		
Client ID:		Run ID: GC8_141031A				SeqNo: 3013971		Prep Date: 10/31/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	296.1	7.9	316.6	32.31	83.3	48-110	332	11.4	30	
Surr: 4-Terphenyl-d14	1.796	0	3.166	0	56.7	39-133	1.621	10.2	30	

The following samples were analyzed in this batch: 14101772-01B

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

Client: HRL Compliance Solutions, Inc
Work Order: 14101772
Project: WPX Clough 18 Batch 2 10.28.14

QC BATCH REPORT

Batch ID: **64541** Instrument ID **GC9** Method: **SW8015**

MBLK		Sample ID: MBLK-64541-64541				Units: µg/Kg		Analysis Date: 11/1/2014 03:36 AM		
Client ID:		Run ID: GC9_141031A				SeqNo: 3013773		Prep Date: 10/31/2014		DF: 1
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>	4925	0	5000	0	98.5	50-150	0			

LCS		Sample ID: LCS-64541-64541				Units: µg/Kg		Analysis Date: 11/1/2014 03:11 AM		
Client ID:		Run ID: GC9_141031A				SeqNo: 3013772		Prep Date: 10/31/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	563600	2,500	500000	0	113	70-130	0			
<i>Surr: Toluene-d8</i>	4400	0	5000	0	88	50-150	0			

MS		Sample ID: 14101776-01B MS				Units: µg/Kg		Analysis Date: 11/1/2014 04:26 AM		
Client ID:		Run ID: GC9_141031A				SeqNo: 3013775		Prep Date: 10/31/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	584900	2,500	500000	0	117	70-130	0			
<i>Surr: Toluene-d8</i>	4868	0	5000	0	97.4	50-150	0			

MSD		Sample ID: 14101776-01B MSD				Units: µg/Kg		Analysis Date: 11/1/2014 04:52 AM		
Client ID:		Run ID: GC9_141031A				SeqNo: 3013776		Prep Date: 10/31/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	571300	2,500	500000	0	114	70-130	584900	2.36	30	
<i>Surr: Toluene-d8</i>	4797	0	5000	0	95.9	50-150	4868	1.46	30	

The following samples were analyzed in this batch:

14101772-01A

Client: HRL Compliance Solutions, Inc
Work Order: 14101772
Project: WPX Clough 18 Batch 2 10.28.14

QC BATCH REPORT

Batch ID: **64488** Instrument ID **HG1** Method: **SW7471**

MBLK		Sample ID: MBLK-64488-64488				Units: mg/Kg		Analysis Date: 10/31/2014 01:31 PM		
Client ID:		Run ID: HG1_141031A				SeqNo: 3011644		Prep Date: 10/31/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury ND 0.020

LCS		Sample ID: LCS-64488-64488				Units: mg/Kg		Analysis Date: 10/31/2014 01:34 PM		
Client ID:		Run ID: HG1_141031A				SeqNo: 3011645		Prep Date: 10/31/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1772 0.020 0.1665 0 106 80-120 0

MS		Sample ID: 14101776-02AMS				Units: mg/Kg		Analysis Date: 10/31/2014 01:38 PM		
Client ID:		Run ID: HG1_141031A				SeqNo: 3011647		Prep Date: 10/31/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1177 0.011 0.09259 0.003715 123 75-125 0

MSD		Sample ID: 14101776-02AMSD				Units: mg/Kg		Analysis Date: 10/31/2014 01:42 PM		
Client ID:		Run ID: HG1_141031A				SeqNo: 3011648		Prep Date: 10/31/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1153 0.011 0.09302 0.003715 120 75-125 0.1177 2.05 35

The following samples were analyzed in this batch:

14101772-01B

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

Client: HRL Compliance Solutions, Inc
Work Order: 14101772
Project: WPX Clough 18 Batch 2 10.28.14

QC BATCH REPORT

Batch ID: **64512** Instrument ID **ICP2** Method: **SW846 6010C**

DUP		Sample ID: 14101732-01C DUP				Units: mg/L		Analysis Date: 11/3/2014 03:08 PM		
Client ID:		Run ID: ICP2_141103A				SeqNo: 3014890		Prep Date: 11/1/2014		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	311.1	5.0	0	0	0	0-0	317	1.88		
Magnesium	54.58	2.0	0	0	0	0-0	56.04	2.64		
Sodium	495.1	2.0	0	0	0	0-0	502.5	1.49		

DUP		Sample ID: 14101732-01C DUP				Units: none		Analysis Date: 11/3/2014		
Client ID:		Run ID: SAR_141103A				SeqNo: 3014935		Prep Date: 11/1/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium Adsorption Ratio	6.807	0.010	0	0	0		6.839	0.468	50	

The following samples were analyzed in this batch:

14101772-01C

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

Client: HRL Compliance Solutions, Inc
Work Order: 14101772
Project: WPX Clough 18 Batch 2 10.28.14

QC BATCH REPORT

Batch ID: **64547** Instrument ID **ICP2** Method: **SW846 6010C**

MBLK		Sample ID: MBLK-64547-64547				Units: mg/Kg		Analysis Date: 10/31/2014 05:59 PM		
Client ID:		Run ID: ICP2_141031B				SeqNo: 3013182		Prep Date: 10/31/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	ND	0.25								
Barium	ND	0.25								
Cadmium	ND	0.50								
Chromium	ND	0.25								
Copper	ND	0.50								
Lead	ND	0.25								
Nickel	ND	0.25								
Selenium	ND	0.50								
Silver	ND	0.25								
Zinc	0.1616	0.50								J

LCS		Sample ID: LCS-64547-64547				Units: mg/Kg		Analysis Date: 10/31/2014 06:04 PM		
Client ID:		Run ID: ICP2_141031B				SeqNo: 3013183		Prep Date: 10/31/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	4.698	0.25	5	0	94	80-120	0			
Barium	4.693	0.25	5	0	93.9	80-120	0			
Cadmium	4.521	0.50	5	0	90.4	80-120	0			
Chromium	4.838	0.25	5	0	96.8	80-120	0			
Copper	4.869	0.50	5	0	97.4	80-120	0			
Lead	4.768	0.25	5	0	95.4	80-120	0			
Nickel	4.749	0.25	5	0	95	80-120	0			
Selenium	4.747	0.50	5	0	94.9	80-120	0			
Silver	4.927	0.25	5	0	98.5	80-120	0			
Zinc	5.021	0.50	5	0	100	80-120	0			

MS		Sample ID: 14101823-03AMS				Units: mg/Kg		Analysis Date: 10/31/2014 07:24 PM		
Client ID:		Run ID: ICP2_141031B				SeqNo: 3013197		Prep Date: 10/31/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	15.46	0.38	7.508	7.58	105	75-125	0			
Barium	242.1	0.38	7.508	266	-318	75-125	0			SO
Cadmium	7.121	0.75	7.508	0.1906	92.3	75-125	0			
Chromium	18.31	0.38	7.508	10.66	102	75-125	0			
Copper	19.91	0.75	7.508	13.2	89.3	75-125	0			
Lead	26.37	0.38	7.508	19.95	85.5	75-125	0			
Nickel	20.94	0.38	7.508	13.89	93.9	75-125	0			
Selenium	7.369	0.75	7.508	0.3791	93.1	75-125	0			
Silver	8.355	0.38	7.508	-0.03233	112	75-125	0			
Zinc	76.58	0.75	7.508	67.38	123	75-125	0			O

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

Client: HRL Compliance Solutions, Inc
Work Order: 14101772
Project: WPX Clough 18 Batch 2 10.28.14

QC BATCH REPORT

Batch ID: **64547** Instrument ID **ICP2** Method: **SW846 6010C**

MSD		Sample ID: 14101823-03AMSD				Units: mg/Kg		Analysis Date: 10/31/2014 07:29 PM		
Client ID:		Run ID: ICP2_141031B				SeqNo: 3013198		Prep Date: 10/31/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	14.57	0.37	7.496	7.58	93.2	75-125	15.46	5.94	20	
Barium	268.5	0.37	7.496	266	33.6	75-125	242.1	10.3	20	SO
Cadmium	7.08	0.75	7.496	0.1906	91.9	75-125	7.121	0.577	20	
Chromium	17.9	0.37	7.496	10.66	96.5	75-125	18.31	2.25	20	
Copper	19.51	0.75	7.496	13.2	84	75-125	19.91	2.04	20	
Lead	25.67	0.37	7.496	19.95	76.3	75-125	26.37	2.7	20	
Nickel	20.24	0.37	7.496	13.89	84.8	75-125	20.94	3.38	20	
Selenium	7.556	0.75	7.496	0.3791	95.7	75-125	7.369	2.5	20	
Silver	8.241	0.37	7.496	-0.03233	110	75-125	8.355	1.38	20	
Zinc	74.71	0.75	7.496	67.38	97.9	75-125	76.58	2.47	20	O

The following samples were analyzed in this batch: 14101772-01B

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

Client: HRL Compliance Solutions, Inc
Work Order: 14101772
Project: WPX Clough 18 Batch 2 10.28.14

QC BATCH REPORT

Batch ID: **64523** Instrument ID **SVMS8** Method: **SW846 8270D**

MBLK		Sample ID: SBLKS1-64523-64523				Units: µg/Kg		Analysis Date: 11/3/2014 10:23 AM		
Client ID:		Run ID: SVMS8_141103A				SeqNo: 3014423		Prep Date: 10/31/2014		DF: 1
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>	1311	0	1667	0	78.7	12-100	0			
<i>Surr: 4-Terphenyl-d14</i>	1758	0	1667	0	105	25-137	0			
<i>Surr: Nitrobenzene-d5</i>	1172	0	1667	0	70.3	37-107	0			

LCS		Sample ID: SLCSS1-64523-64523				Units: µg/Kg		Analysis Date: 11/3/2014 10:43 AM		
Client ID:		Run ID: SVMS8_141103A				SeqNo: 3014431		Prep Date: 10/31/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	536.7	6.7	666.7	0	80.5	45-110	0			
Acenaphthylene	533	6.7	666.7	0	79.9	45-105	0			
Anthracene	625.3	6.7	666.7	0	93.8	55-105	0			
Benzo(a)anthracene	633.3	6.7	666.7	0	95	50-110	0			
Benzo(a)pyrene	713.7	6.7	666.7	0	107	50-110	0			
Benzo(b)fluoranthene	700.7	6.7	666.7	0	105	45-115	0			
Benzo(g,h,i)perylene	641.3	6.7	666.7	0	96.2	40-125	0			
Benzo(k)fluoranthene	688	6.7	666.7	0	103	45-115	0			
Chrysene	664	6.7	666.7	0	99.6	55-110	0			
Dibenzo(a,h)anthracene	691	6.7	666.7	0	104	40-125	0			
Fluoranthene	635	6.7	666.7	0	95.2	55-115	0			
Fluorene	545.3	6.7	666.7	0	81.8	50-110	0			
Indeno(1,2,3-cd)pyrene	699.7	6.7	666.7	0	105	40-120	0			
Naphthalene	523	6.7	666.7	0	78.4	40-105	0			
Pyrene	660	6.7	666.7	0	99	45-125	0			
<i>Surr: 2-Fluorobiphenyl</i>	1219	0	1667	0	73.2	12-100	0			
<i>Surr: 4-Terphenyl-d14</i>	1567	0	1667	0	94	25-137	0			
<i>Surr: Nitrobenzene-d5</i>	1147	0	1667	0	68.8	37-107	0			

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

Client: HRL Compliance Solutions, Inc
 Work Order: 14101772
 Project: WPX Clough 18 Batch 2 10.28.14

QC BATCH REPORT

Batch ID: 64523

Instrument ID SVMS8

Method: SW846 8270D

MS				Sample ID: 14101675-01A MS				Units: µg/Kg		Analysis Date: 11/3/2014 11:03 AM	
Client ID:		Run ID: SVMS8_141103A			SeqNo:3014432		Prep Date: 10/31/2014		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	987.6	13	1313	0	75.2	45-110	0				
Acenaphthylene	1011	13	1313	0	77	45-105	0				
Anthracene	1150	13	1313	0	87.5	55-105	0				
Benzo(a)anthracene	1134	13	1313	0	86.3	50-110	0				
Benzo(a)pyrene	1309	13	1313	0	99.6	50-110	0				
Benzo(b)fluoranthene	1264	13	1313	0	96.2	45-115	0				
Benzo(g,h,i)perylene	1254	13	1313	0	95.4	40-125	0				
Benzo(k)fluoranthene	1265	13	1313	0	96.3	45-115	0				
Chrysene	1184	13	1313	0	90.1	55-110	0				
Dibenzo(a,h)anthracene	1323	13	1313	0	101	40-125	0				
Fluoranthene	1085	13	1313	0	82.6	55-115	0				
Fluorene	1039	13	1313	0	79.1	50-110	0				
Indeno(1,2,3-cd)pyrene	1329	13	1313	0	101	40-120	0				
Naphthalene	943.6	13	1313	0	71.8	40-105	0				
Pyrene	1284	13	1313	4.249	97.5	45-125	0				
Surr: 2-Fluorobiphenyl	2242	0	3283	0	68.3	12-100	0				
Surr: 4-Terphenyl-d14	2906	0	3283	0	88.5	25-137	0				
Surr: Nitrobenzene-d5	1991	0	3283	0	60.6	37-107	0				

MSD				Sample ID: 14101675-01A MSD			Units: µg/Kg		Analysis Date: 11/3/2014 11:24 AM		
Client ID:			Run ID: SVMS8_141103A			SeqNo:3014433		Prep Date: 10/31/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Acenaphthene	957.2	13	1325	0	72.2	45-110	987.6	3.12	30		
Acenaphthylene	1017	13	1325	0	76.7	45-105	1011	0.552	30		
Anthracene	1096	13	1325	0	82.7	55-105	1150	4.76	30		
Benzo(a)anthracene	1146	13	1325	0	86.5	50-110	1134	1.05	30		
Benzo(a)pyrene	1365	13	1325	0	103	50-110	1309	4.18	30		
Benzo(b)fluoranthene	1235	13	1325	0	93.2	45-115	1264	2.29	30		
Benzo(g,h,i)perylene	1209	13	1325	0	91.2	40-125	1254	3.62	30		
Benzo(k)fluoranthene	1252	13	1325	0	94.5	45-115	1265	1.06	30		
Chrysene	1192	13	1325	0	90	55-110	1184	0.711	30		
Dibenzo(a,h)anthracene	1262	13	1325	0	95.2	40-125	1323	4.74	30		
Fluoranthene	1113	13	1325	0	84	55-115	1085	2.56	30		
Fluorene	960.5	13	1325	0	72.5	50-110	1039	7.89	30		
Indeno(1,2,3-cd)pyrene	1282	13	1325	0	96.7	40-120	1329	3.62	30		
Naphthalene	1017	13	1325	0	76.7	40-105	943.6	7.47	30		
Pyrene	1166	13	1325	4.249	87.7	45-125	1284	9.67	30		
Surr: 2-Fluorobiphenyl	2199	0	3312	0	66.4	12-100	2242	1.91	40		
Surr: 4-Terphenyl-d14	2663	0	3312	0	80.4	25-137	2906	8.72	40		
Surr: Nitrobenzene-d5	2050	0	3312	0	61.9	37-107	1991	2.93	40		

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

Client: HRL Compliance Solutions, Inc
Work Order: 14101772
Project: WPX Clough 18 Batch 2 10.28.14

QC BATCH REPORT

Batch ID: **64523** Instrument ID **SVMS8** Method: **SW846 8270D**

The following samples were analyzed in this batch:

14101772-01B

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

Client: HRL Compliance Solutions, Inc
Work Order: 14101772
Project: WPX Clough 18 Batch 2 10.28.14

QC BATCH REPORT

Batch ID: **64543** Instrument ID **VMS9** Method: **SW8260B**

Sample ID: MBLK-64543-64543				Units: µg/Kg			Analysis Date: 10/31/2014 04:10 PM			
Client ID:		Run ID: VMS9_141031A			SeqNo: 3012585		Prep Date: 10/31/2014		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								
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>984</i>	<i>0</i>	<i>1000</i>	<i>0</i>	<i>98.4</i>	<i>70-130</i>	<i>0</i>			
<i>Surr: 4-Bromofluorobenzene</i>	<i>948</i>	<i>0</i>	<i>1000</i>	<i>0</i>	<i>94.8</i>	<i>70-130</i>	<i>0</i>			
<i>Surr: Dibromofluoromethane</i>	<i>948.5</i>	<i>0</i>	<i>1000</i>	<i>0</i>	<i>94.8</i>	<i>70-130</i>	<i>0</i>			
<i>Surr: Toluene-d8</i>	<i>987</i>	<i>0</i>	<i>1000</i>	<i>0</i>	<i>98.7</i>	<i>70-130</i>	<i>0</i>			

LCS				Sample ID: LCS-64543-64543			Units: µg/Kg		Analysis Date: 10/31/2014 01:22 PM		
Client ID:			Run ID: VMS9_141031A			SeqNo:3012584		Prep Date: 10/31/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	1072	30	1000	0	107	75-125	0				
Ethylbenzene	1046	30	1000	0	105	75-125	0				
m,p-Xylene	2064	60	2000	0	103	80-125	0				
o-Xylene	1021	30	1000	0	102	75-125	0				
Toluene	1030	30	1000	0	103	70-125	0				
Xylenes, Total	3086	90	3000	0	103	75-125	0				
Surr: 1,2-Dichloroethane-d4	989.5	0	1000	0	99	70-130	0				
Surr: 4-Bromofluorobenzene	1029	0	1000	0	103	70-130	0				
Surr: Dibromofluoromethane	971.5	0	1000	0	97.2	70-130	0				
Surr: Toluene-d8	999.5	0	1000	0	100	70-130	0				

MS					Sample ID: 14101776-03B MS			Units: µg/Kg		Analysis Date: 11/1/2014 01:19 PM	
Client ID:			Run ID: VMS7_141031C			SeqNo:3012881		Prep Date: 10/31/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	1097	30	1000	0	110	75-125	0				
Ethylbenzene	1062	30	1000	0	106	75-125	0				
m,p-Xylene	2094	60	2000	0	105	80-125	0				
o-Xylene	1032	30	1000	0	103	75-125	0				
Toluene	1040	30	1000	0	104	70-125	0				
Xylenes, Total	3126	90	3000	0	104	75-125	0				
Surr: 1,2-Dichloroethane-d4	935.5	0	1000	0	93.6	70-130	0				
Surr: 4-Bromofluorobenzene	1034	0	1000	0	103	70-130	0				
Surr: Dibromofluoromethane	967.5	0	1000	0	96.8	70-130	0				
Surr: Toluene-d8	961	0	1000	0	96.1	70-130	0				

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

Client: HRL Compliance Solutions, Inc
Work Order: 14101772
Project: WPX Clough 18 Batch 2 10.28.14

QC BATCH REPORT

Batch ID: **64543** Instrument ID **VMS9** Method: **SW8260B**

MSD				Sample ID: 14101776-03B MSD			Units: µg/Kg		Analysis Date: 11/1/2014 01:44 PM	
Client ID:				Run ID: VMS7_141031C			SeqNo: 3012882		Prep Date: 10/31/2014	
									DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1137	30	1000	0	114	75-125	1097	3.58	30	
Ethylbenzene	1092	30	1000	0	109	75-125	1062	2.79	30	
m,p-Xylene	2187	60	2000	0	109	80-125	2094	4.32	30	
o-Xylene	1080	30	1000	0	108	75-125	1032	4.59	30	
Toluene	1090	30	1000	0	109	70-125	1040	4.69	30	
Xylenes, Total	3268	90	3000	0	109	75-125	3126	4.41	30	
<i>Surr: 1,2-Dichloroethane-d4</i>	925.5	0	1000	0	92.6	70-130	935.5	1.07	30	
<i>Surr: 4-Bromofluorobenzene</i>	1028	0	1000	0	103	70-130	1034	0.631	30	
<i>Surr: Dibromofluoromethane</i>	976.5	0	1000	0	97.6	70-130	967.5	0.926	30	
<i>Surr: Toluene-d8</i>	962	0	1000	0	96.2	70-130	961	0.104	30	

The following samples were analyzed in this batch: 14101772-01A

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

Client: HRL Compliance Solutions, Inc
Work Order: 14101772
Project: WPX Clough 18 Batch 2 10.28.14

QC BATCH REPORT

Batch ID: **64512** Instrument ID **WETCHEM** Method: **USDA H60 Method**

DUP		Sample ID: 14101732-01C DUP				Units: mmhos/cm @25°C		Analysis Date: 11/3/2014 02:00 PM		
Client ID:		Run ID: WETCHEM_141103C				SeqNo: 3014032		Prep Date: 11/1/2014		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	4.38	0.050	0	0	0		4.52	3.15	50	

The following samples were analyzed in this batch:

14101772-01C

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

Client: HRL Compliance Solutions, Inc
Work Order: 14101772
Project: WPX Clough 18 Batch 2 10.28.14

QC BATCH REPORT

Batch ID: **64548** Instrument ID **WETCHEM** Method: **SW9045D**

LCS		Sample ID: LCS-64548-64548				Units: s.u.		Analysis Date: 10/31/2014 02:30 PM		
Client ID:		Run ID: WETCHEM_141031I			SeqNo: 3011817		Prep Date: 10/31/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	3.95	0	4	0	98.8	90-110	0			

DUP		Sample ID: 14101769-01B DUP				Units: s.u.		Analysis Date: 10/31/2014 02:30 PM			
Client ID:		Run ID: WETCHEM_141031I				SeqNo: 3011820		Prep Date: 10/31/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
pH	8.54	0	0	0	0	0-0	8.67	1.51	20		

The following samples were analyzed in this batch:

14101772-01B

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

Client: HRL Compliance Solutions, Inc
 Work Order: 14101772
 Project: WPX Clough 18 Batch 2 10.28.14

QC BATCH REPORT

Batch ID: **64560** Instrument ID **WETCHEM** Method: **SW7196A**

MBLK		Sample ID: MBLK-64560-64560				Units: mg/Kg		Analysis Date: 10/31/2014 04:00 PM		
Client ID:		Run ID: WETCHEM_141031K				SeqNo: 3011912		Prep Date: 10/30/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent ND 0.50

LCS		Sample ID: LCS-64560-64560				Units: mg/Kg		Analysis Date: 10/31/2014 04:00 PM		
Client ID:		Run ID: WETCHEM_141031K				SeqNo: 3011911		Prep Date: 10/30/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 1.82 0.50 2 0 91 80-120 0

MS		Sample ID: 14101675-01A MS				Units: mg/Kg		Analysis Date: 10/31/2014 04:00 PM		
Client ID:		Run ID: WETCHEM_141031K				SeqNo: 3011897		Prep Date: 10/30/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent ND 0.50 1.992 0 0 75-125 0 S

MS		Sample ID: 14101675-01A MSI				Units: mg/Kg		Analysis Date: 10/31/2014 04:00 PM		
Client ID:		Run ID: WETCHEM_141031K				SeqNo: 3011899		Prep Date: 10/30/2014		DF: 100
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 502.4 49 699.6 0 71.8 75-125 0 S

MSD		Sample ID: 14101675-01A MSD				Units: mg/Kg		Analysis Date: 10/31/2014 04:00 PM		
Client ID:		Run ID: WETCHEM_141031K				SeqNo: 3011898		Prep Date: 10/30/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent ND 0.50 1.992 0 0 75-125 0 0 20 S

The following samples were analyzed in this batch:

14101772-01B

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

Client: HRL Compliance Solutions, Inc
Work Order: 14101772
Project: WPX Clough 18 Batch 2 10.28.14

QC BATCH REPORT

Batch ID: **R151570** Instrument ID **MOIST** Method: **A2540 G**

MBLK				Sample ID: WBLKS-R151570				Units: % of sample			Analysis Date: 10/30/2014 09:00 PM			
Client ID:				Run ID: MOIST_141030C				SeqNo: 3011991			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-R151570					Units: % of sample		Analysis Date: 10/30/2014 09:00 PM		
Client ID:			Run ID: MOIST_141030C			SeqNo: 3011990		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: 14101731-01ADUP				Units: % of sample			Analysis Date: 10/30/2014 09:00 PM			
Client ID:				Run ID: MOIST_141030C				SeqNo: 3011969			Prep Date:		DF: 1	
Analyte				Result		PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 12.25 0.050 0 0 0 0-0 14.05 13.7 20

DUP		Sample ID: 14101763-01ADUP					Units: % of sample		Analysis Date: 10/30/2014 09:00 PM		
Client ID:			Run ID: MOIST_141030C			SeqNo: 3011977		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Moisture 18.52 0.050 0 0 0 0-0 20.92 12.2 20

The following samples were analyzed in this batch:

14101772-01B

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

Sample Receipt Checklist

Client Name: **HRL**

Date/Time Received: **30-Oct-14 09:30**

Work Order: **14101772**

Received by: **DS**

Checklist completed by <u><i>Diane Shaw</i></u>	30-Oct-14	Reviewed by: <u><i>Ann Preston</i></u>	30-Oct-14
eSignature	Date	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"/>	
Sample(s) received on ice?	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>10/30/2014 3:28:03 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:			

Login Notes:

Client Contacted: Date Contacted: Person Contacted:

Contacted By: Regarding:

Comments:

CorrectiveAction:

From: (816) 399-9070
 Mark Martinez
 ALS Environmental
 127 E. 1st Street
 Parachute, CO 81835

Origin ID: RILA



Ship Date: 28OCT14
 Address: 58.0 LB
 CAD: 22848404NET3550

Dim: 14 X 29 X 19 IN

SHIP TO: (816) 399-9070
 sample receiving
 ALS Laboratory Group
 3352 128TH AVE

BILL BENDER

HOLLAND, MI 48424

Delivery Address Bar Code



Ref # 102814-2
 Invoice #
 PO # Parachute
 Dept #

4 of 4

WED - 29 OCT 10:30A
 PRIORITY OVERNIGHT

MP# 7718 8054 8884

Met# 7718 8054 8550

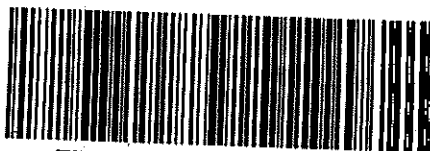
8291

49424

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GRR

XX HLMA



52310FF48AC3

After printing this label:

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ALS Parachute Custody Seal

DATE 10/28/14

Time 17:17

Name



10-Dec-2014

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

Re: **WPX Clough 18 Spill 12.4.14**

Work Order: **1412257**

Dear Mark,

ALS Environmental received 2 samples on 05-Dec-2014 09:00 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 cursive script that reads "Ann Preston".

Electronically approved by: Ann Preston

Ann Preston
Project Manager



Certificate No: MN 532786

Report of Laboratory Analysis

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

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Client: HRL Compliance Solutions, Inc
Project: WPX Clough 18 Spill 12.4.14
Work Order: 1412257**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>
1412257-01	Clough 18 Batch 3 N	Soil		12/4/2014 09:35	12/5/2014 09:00	<input type="checkbox"/>
1412257-02	Clough 18 Batch 4 S	Soil		12/4/2014 09:45	12/5/2014 09:00	<input type="checkbox"/>

Client: HRL Compliance Solutions, Inc
Project: WPX Clough 18 Spill 12.4.14
Work Order: 1412257

Case Narrative

Batch 65664 MS/MSD data for PAHs is not related to this project's samples. No data requires qualification.

Batch 65701 MS/MSD data for Metals is not related to this project's samples. No data requires qualification. Samples 1412257-01 and 1412257-02 reporting limits for Selenium were elevated due to dilution for high concentrations of non-target analytes.

Batch 65748 MS/MSD data for .Hexavalent Chromium is not related to this project's samples. No data requires qualification.

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

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

<u>Units Reported</u>	<u>Description</u>
% 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: 10-Dec-14

Client: HRL Compliance Solutions, Inc

Project: WPX Clough 18 Spill 12.4.14

Sample ID: Clough 18 Batch 3 N

Collection Date: 12/4/2014 09:35 AM

Work Order: 1412257

Lab ID: 1412257-01

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015M		Prep: SW3541 / 12/5/14	Analyst: IT
DRO (C10-C28)	200		4.6	mg/Kg-dry	1	12/6/2014 01:29 AM
Surr: 4-Terphenyl-d14	70.0		39-133	%REC	1	12/6/2014 01:29 AM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015		Prep: SW5035 / 12/5/14	Analyst: IT
GRO (C6-C10)	37		2.8	mg/Kg-dry	1	12/6/2014 02:11 AM
Surr: Toluene-d8	108		50-150	%REC	1	12/6/2014 02:11 AM
MERCURY BY CVAA						
			SW7471		Prep: SW7471 / 12/5/14	Analyst: LR
Mercury	0.031		0.014	mg/Kg-dry	1	12/5/2014 04:11 PM
METALS ANALYSIS BY ICP						
			SW846 6010C		Prep: SW3050B / 12/6/14	Analyst: JEC
Arsenic	11		0.40	mg/Kg-dry	1	12/8/2014 06:47 PM
Barium	300		0.40	mg/Kg-dry	1	12/8/2014 06:47 PM
Cadmium	1.5		0.32	mg/Kg-dry	1	12/8/2014 06:47 PM
Chromium	10		0.40	mg/Kg-dry	1	12/8/2014 06:47 PM
Copper	13		0.40	mg/Kg-dry	1	12/8/2014 06:47 PM
Lead	15		0.40	mg/Kg-dry	1	12/8/2014 06:47 PM
Nickel	15		0.40	mg/Kg-dry	1	12/8/2014 06:47 PM
Selenium	0.62		0.40	mg/Kg-dry	1	12/9/2014 01:14 PM
Silver	ND		0.40	mg/Kg-dry	1	12/9/2014 01:14 PM
Zinc	65		0.80	mg/Kg-dry	1	12/8/2014 06:47 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 12/10/14	Analyst: JEC
Calcium	250		5.0	mg/L	10	12/10/2014 04:38 PM
Magnesium	77		2.0	mg/L	10	12/10/2014 04:38 PM
Sodium	1,100		2.0	mg/L	10	12/10/2014 04:38 PM
SODIUM ADSORPTION RATIO						
			USDA H60 METHOD		Prep: USDA Method 20B / 12/10/14	Analyst: JEC
Sodium Adsorption Ratio	15		0.010	none	1	12/10/2014
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3541 / 12/5/14	Analyst: RM
Acenaphthene	ND		7.3	µg/Kg-dry	1	12/8/2014 05:57 PM
Acenaphthylene	ND		7.3	µg/Kg-dry	1	12/8/2014 05:57 PM
Anthracene	26		7.3	µg/Kg-dry	1	12/8/2014 05:57 PM
Benzo(a)anthracene	ND		7.3	µg/Kg-dry	1	12/8/2014 05:57 PM
Benzo(a)pyrene	ND		7.3	µg/Kg-dry	1	12/8/2014 05:57 PM
Benzo(b)fluoranthene	ND		7.3	µg/Kg-dry	1	12/8/2014 05:57 PM
Benzo(g,h,i)perylene	ND		7.3	µg/Kg-dry	1	12/8/2014 05:57 PM
Benzo(k)fluoranthene	ND		7.3	µg/Kg-dry	1	12/8/2014 05:57 PM
Chrysene	ND		7.3	µg/Kg-dry	1	12/8/2014 05:57 PM

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

ALS Group USA, Corp

Date: 10-Dec-14

Client: HRL Compliance Solutions, Inc

Project: WPX Clough 18 Spill 12.4.14

Sample ID: Clough 18 Batch 3 N

Collection Date: 12/4/2014 09:35 AM

Work Order: 1412257

Lab ID: 1412257-01

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Dibenzo(a,h)anthracene	ND		7.3	µg/Kg-dry	1	12/8/2014 05:57 PM
Fluoranthene	ND		7.3	µg/Kg-dry	1	12/8/2014 05:57 PM
Fluorene	43		7.3	µg/Kg-dry	1	12/8/2014 05:57 PM
Indeno(1,2,3-cd)pyrene	ND		7.3	µg/Kg-dry	1	12/8/2014 05:57 PM
Naphthalene	18		7.3	µg/Kg-dry	1	12/8/2014 05:57 PM
Pyrene	ND		7.3	µg/Kg-dry	1	12/8/2014 05:57 PM
Surr: 2-Fluorobiphenyl	59.6		12-100	%REC	1	12/8/2014 05:57 PM
Surr: 4-Terphenyl-d14	80.3		25-137	%REC	1	12/8/2014 05:57 PM
Surr: Nitrobenzene-d5	61.5		37-107	%REC	1	12/8/2014 05:57 PM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035 / 12/5/14		Analyst: BG
Benzene	ND		33	µg/Kg-dry	1	12/8/2014 12:40 PM
Ethylbenzene	ND		33	µg/Kg-dry	1	12/8/2014 12:40 PM
m,p-Xylene	ND		67	µg/Kg-dry	1	12/8/2014 12:40 PM
o-Xylene	ND		33	µg/Kg-dry	1	12/8/2014 12:40 PM
Toluene	ND		33	µg/Kg-dry	1	12/8/2014 12:40 PM
Xylenes, Total	ND		100	µg/Kg-dry	1	12/8/2014 12:40 PM
Surr: 1,2-Dichloroethane-d4	97.8		70-130	%REC	1	12/8/2014 12:40 PM
Surr: 4-Bromofluorobenzene	107		70-130	%REC	1	12/8/2014 12:40 PM
Surr: Dibromofluoromethane	87.5		70-130	%REC	1	12/8/2014 12:40 PM
Surr: Toluene-d8	109		70-130	%REC	1	12/8/2014 12:40 PM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHOD	Prep: USDA Method 20B / 12/10/14		Analyst: JB
Electrical Conductivity @ Saturation	8.2		0.050	mmhos/cm @25	10	12/10/2014 04:15 PM
CHROMIUM, TRIVALENT			CALCULATION			Analyst: MB
Chromium, Trivalent	10		0.56	mg/Kg-dry	1	12/9/2014 04:30 PM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A / 12/8/14		Analyst: DAH
Chromium, Hexavalent	ND		0.56	mg/Kg-dry	1	12/9/2014 02:30 PM
MOISTURE			A2540 G			Analyst: EVB
Moisture	10		0.050	% of sample	1	12/5/2014 04:00 PM
PH			SW9045D	Prep: EXTRACT / 12/8/14		Analyst: AXL
pH	8.6			s.u.	1	12/8/2014 05:00 PM

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

ALS Group USA, Corp

Date: 10-Dec-14

Client: HRL Compliance Solutions, Inc

Project: WPX Clough 18 Spill 12.4.14

Sample ID: Clough 18 Batch 4 S

Collection Date: 12/4/2014 09:45 AM

Work Order: 1412257

Lab ID: 1412257-02

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015M		Prep: SW3541 / 12/5/14	Analyst: IT
DRO (C10-C28)	140		4.5	mg/Kg-dry	1	12/6/2014 01:55 AM
Surr: 4-Terphenyl-d14	73.1		39-133	%REC	1	12/6/2014 01:55 AM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015		Prep: SW5035 / 12/5/14	Analyst: IT
GRO (C6-C10)	11		2.8	mg/Kg-dry	1	12/6/2014 02:35 AM
Surr: Toluene-d8	104		50-150	%REC	1	12/6/2014 02:35 AM
MERCURY BY CVAA						
			SW7471		Prep: SW7471 / 12/5/14	Analyst: LR
Mercury	0.027		0.014	mg/Kg-dry	1	12/5/2014 03:13 PM
METALS ANALYSIS BY ICP						
			SW846 6010C		Prep: SW3050B / 12/6/14	Analyst: JEC
Arsenic	6.9		0.38	mg/Kg-dry	1	12/8/2014 06:52 PM
Barium	400		0.38	mg/Kg-dry	1	12/8/2014 06:52 PM
Cadmium	0.93		0.30	mg/Kg-dry	1	12/8/2014 06:52 PM
Chromium	9.6		0.38	mg/Kg-dry	1	12/8/2014 06:52 PM
Copper	10		0.38	mg/Kg-dry	1	12/8/2014 06:52 PM
Lead	13		0.38	mg/Kg-dry	1	12/8/2014 06:52 PM
Nickel	13		0.38	mg/Kg-dry	1	12/8/2014 06:52 PM
Selenium	0.45		0.38	mg/Kg-dry	1	12/9/2014 01:20 PM
Silver	ND		0.38	mg/Kg-dry	1	12/9/2014 01:20 PM
Zinc	62		0.75	mg/Kg-dry	1	12/8/2014 06:52 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 12/10/14	Analyst: JEC
Calcium	360		5.0	mg/L	10	12/10/2014 04:43 PM
Magnesium	94		2.0	mg/L	10	12/10/2014 04:43 PM
Sodium	1,000		2.0	mg/L	10	12/10/2014 04:43 PM
SODIUM ADSORPTION RATIO						
			USDA H60 METHOD		Prep: USDA Method 20B / 12/10/14	Analyst: JEC
Sodium Adsorption Ratio	12		0.010	none	1	12/10/2014
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3541 / 12/5/14	Analyst: RM
Acenaphthene	ND		7.3	µg/Kg-dry	1	12/8/2014 06:18 PM
Acenaphthylene	ND		7.3	µg/Kg-dry	1	12/8/2014 06:18 PM
Anthracene	13		7.3	µg/Kg-dry	1	12/8/2014 06:18 PM
Benzo(a)anthracene	ND		7.3	µg/Kg-dry	1	12/8/2014 06:18 PM
Benzo(a)pyrene	ND		7.3	µg/Kg-dry	1	12/8/2014 06:18 PM
Benzo(b)fluoranthene	ND		7.3	µg/Kg-dry	1	12/8/2014 06:18 PM
Benzo(g,h,i)perylene	ND		7.3	µg/Kg-dry	1	12/8/2014 06:18 PM
Benzo(k)fluoranthene	ND		7.3	µg/Kg-dry	1	12/8/2014 06:18 PM
Chrysene	ND		7.3	µg/Kg-dry	1	12/8/2014 06:18 PM

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

ALS Group USA, Corp

Date: 10-Dec-14

Client: HRL Compliance Solutions, Inc

Project: WPX Clough 18 Spill 12.4.14

Sample ID: Clough 18 Batch 4 S

Collection Date: 12/4/2014 09:45 AM

Work Order: 1412257

Lab ID: 1412257-02

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Dibenzo(a,h)anthracene	ND		7.3	µg/Kg-dry	1	12/8/2014 06:18 PM
Fluoranthene	ND		7.3	µg/Kg-dry	1	12/8/2014 06:18 PM
Fluorene	15		7.3	µg/Kg-dry	1	12/8/2014 06:18 PM
Indeno(1,2,3-cd)pyrene	ND		7.3	µg/Kg-dry	1	12/8/2014 06:18 PM
Naphthalene	ND		7.3	µg/Kg-dry	1	12/8/2014 06:18 PM
Pyrene	ND		7.3	µg/Kg-dry	1	12/8/2014 06:18 PM
Surr: 2-Fluorobiphenyl	66.4		12-100	%REC	1	12/8/2014 06:18 PM
Surr: 4-Terphenyl-d14	81.8		25-137	%REC	1	12/8/2014 06:18 PM
Surr: Nitrobenzene-d5	70.4		37-107	%REC	1	12/8/2014 06:18 PM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035 / 12/5/14		Analyst: BG
Benzene	ND		34	µg/Kg-dry	1	12/8/2014 01:06 AM
Ethylbenzene	ND		34	µg/Kg-dry	1	12/8/2014 01:06 AM
m,p-Xylene	ND		67	µg/Kg-dry	1	12/8/2014 01:06 AM
o-Xylene	ND		34	µg/Kg-dry	1	12/8/2014 01:06 AM
Toluene	ND		34	µg/Kg-dry	1	12/8/2014 01:06 AM
Xylenes, Total	ND		100	µg/Kg-dry	1	12/8/2014 01:06 AM
Surr: 1,2-Dichloroethane-d4	99.6		70-130	%REC	1	12/8/2014 01:06 AM
Surr: 4-Bromofluorobenzene	100		70-130	%REC	1	12/8/2014 01:06 AM
Surr: Dibromofluoromethane	94.6		70-130	%REC	1	12/8/2014 01:06 AM
Surr: Toluene-d8	88.6		70-130	%REC	1	12/8/2014 01:06 AM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHOD	Prep: USDA Method 20B / 12/10/14		Analyst: JB
Electrical Conductivity @ Saturation	8.5		0.050	mmhos/cm @25	10	12/10/2014 04:15 PM
CHROMIUM, TRIVALENT			CALCULATION			Analyst: MB
Chromium, Trivalent	9.6		0.56	mg/Kg-dry	1	12/9/2014 04:30 PM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A / 12/8/14		Analyst: DAH
Chromium, Hexavalent	ND		0.56	mg/Kg-dry	1	12/9/2014 02:30 PM
MOISTURE			A2540 G			Analyst: EVB
Moisture	11		0.050	% of sample	1	12/5/2014 04:00 PM
PH			SW9045D	Prep: EXTRACT / 12/8/14		Analyst: AXL
pH	8.2			s.u.	1	12/8/2014 05:00 PM

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

ALS Group USA, Corp

Date: 10-Dec-14

Client: HRL Compliance Solutions, Inc
Work Order: 1412257
Project: WPX Clough 18 Spill 12.4.14

QC BATCH REPORT

Batch ID: **65665** Instrument ID **GC8** Method: **SW8015M**

MBLK		Sample ID: DBLKS1-65665-65665				Units: mg/Kg		Analysis Date: 12/5/2014 08:23 PM		
Client ID:		Run ID: GC8_141205A				SeqNo: 3064025		Prep Date: 12/5/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	ND	5.0								
Surr: 4-Terphenyl-d14	1.832	0	2	0	91.6	39-133	0			

LCS		Sample ID: DLCSS1-65665-65665				Units: mg/Kg		Analysis Date: 12/5/2014 08:48 PM		
Client ID:		Run ID: GC8_141205A				SeqNo: 3064026		Prep Date: 12/5/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	165.8	5.0	200	0	82.9	61-109	0			
Surr: 4-Terphenyl-d14	1.49	0	2	0	74.5	39-133	0			

MS		Sample ID: 1412197-01A MS				Units: mg/Kg		Analysis Date: 12/5/2014 09:14 PM		
Client ID:		Run ID: GC8_141205A				SeqNo: 3064027		Prep Date: 12/5/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	368	8.2	327.5	95.64	83.2	48-110	0			
Surr: 4-Terphenyl-d14	2.419	0	3.275	0	73.9	39-133	0			

MSD		Sample ID: 1412197-01A MSD				Units: mg/Kg		Analysis Date: 12/5/2014 09:39 PM		
Client ID:		Run ID: GC8_141205A				SeqNo: 3064028		Prep Date: 12/5/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	351.8	8.1	322.2	95.64	79.5	48-110	368	4.52	30	
Surr: 4-Terphenyl-d14	2.496	0	3.222	0	77.5	39-133	2.419	3.14	30	

The following samples were analyzed in this batch: | 1412257-01B | 1412257-02B |

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

Client: HRL Compliance Solutions, Inc
Work Order: 1412257
Project: WPX Clough 18 Spill 12.4.14

QC BATCH REPORT

Batch ID: **65691** Instrument ID **GC10** Method: **SW8015**

MBLK		Sample ID: MBLK-65691-65691				Units: µg/Kg		Analysis Date: 12/6/2014 12:58 PM		
Client ID:		Run ID: GC10_141205A				SeqNo: 3064022		Prep Date: 12/5/2014		DF: 1
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>	<i>5406</i>	<i>0</i>	<i>5000</i>	<i>0</i>	<i>108</i>	<i>50-150</i>	<i>0</i>			

LCS		Sample ID: LCS-65691-65691				Units: µg/Kg		Analysis Date: 12/6/2014 12:34 PM		
Client ID:		Run ID: GC10_141205A				SeqNo: 3064021		Prep Date: 12/5/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	566800	2,500	500000	0	113	70-130	0			
<i>Surr: Toluene-d8</i>	<i>5359</i>	<i>0</i>	<i>5000</i>	<i>0</i>	<i>107</i>	<i>50-150</i>	<i>0</i>			

MS		Sample ID: 1412255-01A MS				Units: µg/Kg		Analysis Date: 12/6/2014 05:00 AM		
Client ID:		Run ID: GC10_141205A				SeqNo: 3064019		Prep Date: 12/5/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	560400	2,500	500000	0	112	70-130	0			
<i>Surr: Toluene-d8</i>	<i>5296</i>	<i>0</i>	<i>5000</i>	<i>0</i>	<i>106</i>	<i>50-150</i>	<i>0</i>			

MSD		Sample ID: 1412255-01A MSD				Units: µg/Kg		Analysis Date: 12/6/2014 05:25 AM		
Client ID:		Run ID: GC10_141205A				SeqNo: 3064020		Prep Date: 12/5/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	543400	2,500	500000	0	109	70-130	560400	3.08	30	
<i>Surr: Toluene-d8</i>	<i>5240</i>	<i>0</i>	<i>5000</i>	<i>0</i>	<i>105</i>	<i>50-150</i>	<i>5296</i>	<i>1.05</i>	<i>30</i>	

The following samples were analyzed in this batch:

1412257-01A	1412257-02A
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Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions, Inc
Work Order: 1412257
Project: WPX Clough 18 Spill 12.4.14

QC BATCH REPORT

Batch ID: **65642** Instrument ID **HG1** Method: **SW7471**

MBLK		Sample ID: MBLK-65642-65642				Units: mg/Kg		Analysis Date: 12/5/2014 02:59 PM		
Client ID:		Run ID: HG1_141205A				SeqNo: 3063762		Prep Date: 12/5/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury ND 0.020

LCS		Sample ID: LCS-65642-65642				Units: mg/Kg		Analysis Date: 12/5/2014 03:02 PM		
Client ID:		Run ID: HG1_141205A				SeqNo: 3063763		Prep Date: 12/5/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1728 0.020 0.1665 0 104 80-120 0

MS		Sample ID: 1412257-02BMS				Units: mg/Kg		Analysis Date: 12/5/2014 03:15 PM		
Client ID: Clough 18 Batch 4 S		Run ID: HG1_141205A				SeqNo: 3063769		Prep Date: 12/5/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1431 0.013 0.1043 0.02382 114 75-125 0

MSD		Sample ID: 1412257-02BMSD				Units: mg/Kg		Analysis Date: 12/5/2014 03:18 PM		
Client ID: Clough 18 Batch 4 S		Run ID: HG1_141205A				SeqNo: 3063770		Prep Date: 12/5/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1473 0.012 0.103 0.02382 120 75-125 0.1431 2.9 35

The following samples were analyzed in this batch:

1412257-01B 1412257-02B

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

Client: HRL Compliance Solutions, Inc
Work Order: 1412257
Project: WPX Clough 18 Spill 12.4.14

QC BATCH REPORT

Batch ID: **65701** Instrument ID **ICP2** Method: **SW846 6010C**

MBLK		Sample ID: MBLK-65701-65701				Units: mg/L		Analysis Date: 12/8/2014 05:10 PM		
Client ID:		Run ID: ICP2_141208A				SeqNo: 3065721		Prep Date: 12/6/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	ND	0.25								
Barium	ND	0.25								
Cadmium	ND	0.50								
Chromium	ND	0.25								
Copper	ND	0.50								
Lead	ND	0.25								
Nickel	ND	0.25								
Selenium	ND	0.50								
Silver	ND	0.25								
Zinc	0.1439	0.50								J

MBLK		Sample ID: MBLK-65701-65701				Units: mg/Kg		Analysis Date: 12/9/2014 11:43 AM		
Client ID:		Run ID: ICP2_141209A				SeqNo: 3067281		Prep Date: 12/6/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Silver	ND	0.25								

LCS		Sample ID: LCS-65701-65701				Units: mg/Kg		Analysis Date: 12/8/2014 05:18 PM		
Client ID:		Run ID: ICP2_141208A				SeqNo: 3066193		Prep Date: 12/6/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	4.696	0.25	5	0	93.9	80-120	0			
Barium	4.847	0.25	5	0	96.9	80-120	0			
Cadmium	4.64	0.50	5	0	92.8	80-120	0			
Chromium	5.081	0.25	5	0	102	80-120	0			
Copper	5.006	0.50	5	0	100	80-120	0			
Lead	5.09	0.25	5	0	102	80-120	0			
Nickel	4.903	0.25	5	0	98.1	80-120	0			
Selenium	4.74	0.50	5	0	94.8	80-120	0			
Silver	4.378	0.25	5	0	87.6	80-120	0			
Zinc	4.936	0.50	5	0	98.7	80-120	0			

LCS		Sample ID: LCS-65701-65701				Units: mg/Kg		Analysis Date: 12/9/2014 11:49 AM		
Client ID:		Run ID: ICP2_141209A				SeqNo: 3067282		Prep Date: 12/6/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Silver	4.522	0.25	5	0	90.4	80-120	0			

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

Client: HRL Compliance Solutions, Inc
Work Order: 1412257
Project: WPX Clough 18 Spill 12.4.14

QC BATCH REPORT

Batch ID: **65701** Instrument ID **ICP2** Method: **SW846 6010C**

MS				Sample ID: 1412277-03AMS			Units: mg/Kg		Analysis Date: 12/8/2014 05:51 PM	
Client ID:		Run ID: ICP2_141208A			SeqNo: 3066199		Prep Date: 12/6/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	15.23	0.34	6.859	7.716	110	75-125	0			
Barium	129.3	0.34	6.859	115.9	195	75-125	0			SO
Cadmium	6.249	0.69	6.859	-0.04429	91.7	75-125	0			
Chromium	20.48	0.34	6.859	9.629	158	75-125	0			S
Copper	20.33	0.69	6.859	13.41	101	75-125	0			
Lead	22.56	0.34	6.859	15.18	108	75-125	0			
Nickel	22.89	0.34	6.859	15.69	105	75-125	0			
Selenium	8.366	0.69	6.859	1.348	102	75-125	0			
Zinc	92.75	0.69	6.859	81.28	167	75-125	0			SO

MS				Sample ID: 1412277-03AMS			Units: mg/Kg		Analysis Date: 12/9/2014 12:22 PM	
Client ID:		Run ID: ICP2_141209A			SeqNo: 3067288		Prep Date: 12/6/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Silver	6.838	0.34	6.859	-0.0769	101	75-125	0			

MSD				Sample ID: 1412277-03AMSD			Units: mg/Kg		Analysis Date: 12/8/2014 05:57 PM	
Client ID:		Run ID: ICP2_141208A			SeqNo: 3066200		Prep Date: 12/6/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	15.01	0.35	6.935	7.716	105	75-125	15.23	1.43	20	
Barium	117.4	0.35	6.935	115.9	21.5	75-125	129.3	9.62	20	SO
Cadmium	6.444	0.69	6.935	-0.04429	93.6	75-125	6.249	3.07	20	
Chromium	21.03	0.35	6.935	9.629	164	75-125	20.48	2.65	20	S
Copper	20.93	0.69	6.935	13.41	109	75-125	20.33	2.94	20	
Lead	22.62	0.35	6.935	15.18	107	75-125	22.56	0.265	20	
Nickel	23.88	0.35	6.935	15.69	118	75-125	22.89	4.25	20	
Selenium	8.269	0.69	6.935	1.348	99.8	75-125	8.366	1.16	20	
Zinc	95.06	0.69	6.935	81.28	199	75-125	92.75	2.45	20	SO

MSD				Sample ID: 1412277-03AMSD			Units: mg/Kg		Analysis Date: 12/9/2014 12:27 PM	
Client ID:		Run ID: ICP2_141209A			SeqNo: 3067289		Prep Date: 12/6/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Silver	6.985	0.35	6.935	-0.0769	102	75-125	6.838	2.12	20	

The following samples were analyzed in this batch:

1412257-01B 1412257-02B

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

Client: HRL Compliance Solutions, Inc
Work Order: 1412257
Project: WPX Clough 18 Spill 12.4.14

QC BATCH REPORT

Batch ID: **65781** Instrument ID **ICP2** Method: **SW846 6010C**

DUP				Sample ID: 1412255-01CDUP				Units:mg/L			Analysis Date: 12/10/2014 05:17 PM			
Client ID:				Run ID: ICP2_141210A				SeqNo:3070221			Prep Date: 12/10/2014		DF: 10	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				
Calcium	55.64	5.0	0	0	0	0-0	59.15	6.11						
Magnesium	41.13	2.0	0	0	0	0-0	44.65	8.21						
Sodium	384	2.0	0	0	0	0-0	406.3	5.62						

DUP				Sample ID: 1412255-01CDUP				Units:none			Analysis Date: 12/10/2014			
Client ID:				Run ID: SAR_141210A				SeqNo:3070226			Prep Date: 12/10/2014		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			
Sodium Adsorption Ratio		9.518	0.010	0	0	0		9.709	1.99	50				

The following samples were analyzed in this batch: | 1412257-01C | 1412257-02C |

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

Client: HRL Compliance Solutions, Inc
Work Order: 1412257
Project: WPX Clough 18 Spill 12.4.14

QC BATCH REPORT

Batch ID: **65664** Instrument ID **SVMS8** Method: **SW846 8270D**

Sample ID: SBLKS1-65664-65664				Units: µg/Kg			Analysis Date: 12/8/2014 01:32 PM			
Client ID:		Run ID: SVMS8_141208A			SeqNo: 3067936		Prep Date: 12/5/2014		DF: 1	
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>	<i>1301</i>	<i>0</i>	<i>1667</i>	<i>0</i>	<i>78.1</i>	<i>12-100</i>	<i>0</i>			
<i>Surr: 4-Terphenyl-d14</i>	<i>1806</i>	<i>0</i>	<i>1667</i>	<i>0</i>	<i>108</i>	<i>25-137</i>	<i>0</i>			
<i>Surr: Nitrobenzene-d5</i>	<i>1496</i>	<i>0</i>	<i>1667</i>	<i>0</i>	<i>89.7</i>	<i>37-107</i>	<i>0</i>			

LCS				Sample ID: SLCSS1-65664-65664				Units: µg/Kg		Analysis Date: 12/8/2014 01:52 PM		
Client ID:			Run ID: SVMS8_141208A			SeqNo:3067937		Prep Date: 12/5/2014		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual		
Acenaphthene	638.7	6.7	666.7	0	95.8	45-110	0					
Acenaphthylene	636.7	6.7	666.7	0	95.5	45-105	0					
Anthracene	689	6.7	666.7	0	103	55-105	0					
Benzo(a)anthracene	708.3	6.7	666.7	0	106	50-110	0					
Benzo(a)pyrene	719.3	6.7	666.7	0	108	50-110	0					
Benzo(b)fluoranthene	726	6.7	666.7	0	109	45-115	0					
Benzo(g,h,i)perylene	778.7	6.7	666.7	0	117	40-125	0					
Benzo(k)fluoranthene	719	6.7	666.7	0	108	45-115	0					
Chrysene	679.3	6.7	666.7	0	102	55-110	0					
Dibenzo(a,h)anthracene	778	6.7	666.7	0	117	40-125	0					
Fluoranthene	695	6.7	666.7	0	104	55-115	0					
Fluorene	605.7	6.7	666.7	0	90.8	50-110	0					
Indeno(1,2,3-cd)pyrene	784.3	6.7	666.7	0	118	40-120	0					
Naphthalene	603	6.7	666.7	0	90.4	40-105	0					
Pyrene	779.7	6.7	666.7	0	117	45-125	0					
Surr: 2-Fluorobiphenyl	1406	0	1667	0	84.4	12-100	0					
Surr: 4-Terphenyl-d14	1789	0	1667	0	107	25-137	0					
Surr: Nitrobenzene-d5	1622	0	1667	0	97.3	37-107	0					

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

Client: HRL Compliance Solutions, Inc
Work Order: 1412257
Project: WPX Clough 18 Spill 12.4.14

QC BATCH REPORT

Batch ID: **65664** Instrument ID **SVMS8** Method: **SW846 8270D**

MS				Sample ID: 1412195-04B MS			Units: µg/Kg		Analysis Date: 12/8/2014 02:33 PM	
Client ID:				Run ID: SVMS8_141208A			SeqNo: 3067938		Prep Date: 12/5/2014	
									DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	1178	13	1300	0	90.6	45-110	0			
Acenaphthylene	1211	13	1300	0	93.1	45-105	0			
Anthracene	1340	13	1300	0	103	55-105	0			
Benzo(a)anthracene	1375	13	1300	0	106	50-110	0			
Benzo(a)pyrene	1459	13	1300	0	112	50-110	0			S
Benzo(b)fluoranthene	1485	13	1300	0	114	45-115	0			
Benzo(g,h,i)perylene	1555	13	1300	0	120	40-125	0			
Benzo(k)fluoranthene	1480	13	1300	0	114	45-115	0			
Chrysene	1329	13	1300	0	102	55-110	0			
Dibenzo(a,h)anthracene	1490	13	1300	0	115	40-125	0			
Fluoranthene	1354	13	1300	0	104	55-115	0			
Fluorene	1198	13	1300	0	92.1	50-110	0			
Indeno(1,2,3-cd)pyrene	1493	13	1300	0	115	40-120	0			
Naphthalene	1148	13	1300	0	88.3	40-105	0			
Pyrene	1567	13	1300	0	120	45-125	0			
<i>Surr: 2-Fluorobiphenyl</i>	2607	0	3251	0	80.2	12-100	0			
<i>Surr: 4-Terphenyl-d14</i>	3601	0	3251	0	111	25-137	0			
<i>Surr: Nitrobenzene-d5</i>	3263	0	3251	0	100	37-107	0			

MSD				Sample ID: 1412195-04B MSD			Units: µg/Kg		Analysis Date: 12/8/2014 02:53 PM	
Client ID:				Run ID: SVMS8_141208A			SeqNo: 3067940		Prep Date: 12/5/2014	
									DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	1124	13	1266	0	88.7	45-110	1178	4.73	30	
Acenaphthylene	1172	13	1266	0	92.6	45-105	1211	3.21	30	
Anthracene	1262	13	1266	0	99.6	55-105	1340	6.02	30	
Benzo(a)anthracene	1299	13	1266	0	103	50-110	1375	5.69	30	
Benzo(a)pyrene	1383	13	1266	0	109	50-110	1459	5.33	30	
Benzo(b)fluoranthene	1415	13	1266	0	112	45-115	1485	4.84	30	
Benzo(g,h,i)perylene	1425	13	1266	0	113	40-125	1555	8.74	30	
Benzo(k)fluoranthene	1372	13	1266	0	108	45-115	1480	7.62	30	
Chrysene	1244	13	1266	0	98.2	55-110	1329	6.61	30	
Dibenzo(a,h)anthracene	1359	13	1266	0	107	40-125	1490	9.15	30	
Fluoranthene	1255	13	1266	0	99.1	55-115	1354	7.59	30	
Fluorene	1093	13	1266	0	86.3	50-110	1198	9.11	30	
Indeno(1,2,3-cd)pyrene	1421	13	1266	0	112	40-120	1493	4.96	30	
Naphthalene	1109	13	1266	0	87.6	40-105	1148	3.46	30	
Pyrene	1504	13	1266	0	119	45-125	1567	4.13	30	
<i>Surr: 2-Fluorobiphenyl</i>	2580	0	3165	0	81.5	12-100	2607	1.04	40	
<i>Surr: 4-Terphenyl-d14</i>	3297	0	3165	0	104	25-137	3601	8.81	40	
<i>Surr: Nitrobenzene-d5</i>	3115	0	3165	0	98.4	37-107	3263	4.64	40	

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

Client: HRL Compliance Solutions, Inc
Work Order: 1412257
Project: WPX Clough 18 Spill 12.4.14

QC BATCH REPORT

Batch ID: **65664** Instrument ID **SVMS8** Method: **SW846 8270D**

The following samples were analyzed in this batch:

1412257-01B	1412257-02B
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Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: HRL Compliance Solutions, Inc
Work Order: 1412257
Project: WPX Clough 18 Spill 12.4.14

QC BATCH REPORT

Batch ID: **65687** Instrument ID **VMS5** Method: **SW8260B**

MBLK				Sample ID: MBLK-65687-65687				Units: µg/Kg			Analysis Date: 12/6/2014 01:34 AM			
Client ID:				Run ID: VMS5_141205B				SeqNo:3064142			Prep Date: 12/5/2014		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	969	0	1000	0	96.9	70-130		0						
Surr: 4-Bromofluorobenzene	981	0	1000	0	98.1	70-130		0						
Surr: Dibromofluoromethane	995.5	0	1000	0	99.6	70-130		0						
Surr: Toluene-d8	992	0	1000	0	99.2	70-130		0						

LCS				Sample ID: LCS-65687-65687			Units: µg/Kg		Analysis Date: 12/6/2014 12:17 PM		
Client ID:			Run ID: VMS5_141205B			SeqNo:3064143		Prep Date: 12/5/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	1058	30	1000	0	106	75-125	0				
Ethylbenzene	1112	30	1000	0	111	75-125	0				
m,p-Xylene	2255	60	2000	0	113	80-125	0				
o-Xylene	1122	30	1000	0	112	75-125	0				
Toluene	1066	30	1000	0	107	70-125	0				
Xylenes, Total	3376	90	3000	0	113	75-125	0				
Surr: 1,2-Dichloroethane-d4	954.5	0	1000	0	95.4	70-130	0				
Surr: 4-Bromofluorobenzene	1034	0	1000	0	103	70-130	0				
Surr: Dibromofluoromethane	998.5	0	1000	0	99.8	70-130	0				
Surr: Toluene-d8	988	0	1000	0	98.8	70-130	0				

MS					Sample ID: 1412257-01A MS		Units: µg/Kg		Analysis Date: 12/8/2014 04:35 AM		
Client ID: Clough 18 Batch 3 N			Run ID: VMS6_141207A			SeqNo: 3064765		Prep Date: 12/5/2014		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	1005	30	1000	0	100	75-125	0				
Ethylbenzene	1047	30	1000	0	105	75-125	0				
m,p-Xylene	2102	60	2000	24	104	80-125	0				
o-Xylene	1086	30	1000	14	107	75-125	0				
Toluene	976	30	1000	0	97.6	70-125	0				
Xylenes, Total	3187	90	3000	38	105	75-125	0				
Surr: 1,2-Dichloroethane-d4	999	0	1000	0	99.9	70-130	0				
Surr: 4-Bromofluorobenzene	993.5	0	1000	0	99.4	70-130	0				
Surr: Dibromofluoromethane	979.5	0	1000	0	98	70-130	0				
Surr: Toluene-d8	986.5	0	1000	0	98.6	70-130	0				

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

Client: HRL Compliance Solutions, Inc
Work Order: 1412257
Project: WPX Clough 18 Spill 12.4.14

QC BATCH REPORT

Batch ID: **65687** Instrument ID **VMS5** Method: **SW8260B**

MSD				Sample ID: 1412257-01A MSD			Units: µg/Kg		Analysis Date: 12/8/2014 05:01 AM	
Client ID: Clough 18 Batch 3 N				Run ID: VMS6_141207A			SeqNo: 3064766		Prep Date: 12/5/2014	
							DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	908.5	30	1000	0	90.8	75-125	1005	10.1	30	
Ethylbenzene	1022	30	1000	0	102	75-125	1047	2.42	30	
m,p-Xylene	2038	60	2000	24	101	80-125	2102	3.09	30	
o-Xylene	1051	30	1000	14	104	75-125	1086	3.23	30	
Toluene	976	30	1000	0	97.6	70-125	976	0	30	
Xylenes, Total	3088	90	3000	38	102	75-125	3187	3.14	30	
Surr: 1,2-Dichloroethane-d4	895.5	0	1000	0	89.6	70-130	999	10.9	30	
Surr: 4-Bromofluorobenzene	1017	0	1000	0	102	70-130	993.5	2.34	30	
Surr: Dibromofluoromethane	934	0	1000	0	93.4	70-130	979.5	4.76	30	
Surr: Toluene-d8	1049	0	1000	0	105	70-130	986.5	6.14	30	

The following samples were analyzed in this batch: 1412257-01A 1412257-02A

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

Client: HRL Compliance Solutions, Inc
Work Order: 1412257
Project: WPX Clough 18 Spill 12.4.14

QC BATCH REPORT

Batch ID: **65748** Instrument ID **WETCHEM** Method: **SW7196A**

MBLK		Sample ID: MBLK-65748-65748				Units: mg/Kg		Analysis Date: 12/9/2014 02:30 PM		
Client ID:		Run ID: WETCHEM_141209L				SeqNo: 3067968		Prep Date: 12/8/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent ND 0.50

LCS		Sample ID: LCS-65748-65748				Units: mg/Kg		Analysis Date: 12/9/2014 02:30 PM		
Client ID:		Run ID: WETCHEM_141209L				SeqNo: 3067969		Prep Date: 12/8/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 1.772 0.50 2 0 88.6 80-120 0

MS		Sample ID: 1412255-01B MS				Units: mg/Kg		Analysis Date: 12/9/2014 02:30 PM		
Client ID:		Run ID: WETCHEM_141209L				SeqNo: 3067971		Prep Date: 12/8/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 1.508 0.50 1.984 0.368 57.5 75-125 0 S

MS		Sample ID: 1412255-01B MSI				Units: mg/Kg		Analysis Date: 12/9/2014 02:30 PM		
Client ID:		Run ID: WETCHEM_141209L				SeqNo: 3067973		Prep Date: 12/8/2014		DF: 100
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 656.2 50 692.3 0.368 94.7 75-125 0

MSD		Sample ID: 1412255-01B MSD				Units: mg/Kg		Analysis Date: 12/9/2014 02:30 PM		
Client ID:		Run ID: WETCHEM_141209L				SeqNo: 3067972		Prep Date: 12/8/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 1.62 0.50 2 0.368 62.6 75-125 1.508 7.17 20 S

The following samples were analyzed in this batch:

1412257-01B 1412257-02B

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

Client: HRL Compliance Solutions, Inc
Work Order: 1412257
Project: WPX Clough 18 Spill 12.4.14

QC BATCH REPORT

Batch ID: **65749** Instrument ID **WETCHEM** Method: **SW9045D**

LCS				Sample ID: LCS-65749-65749				Units: s.u.			Analysis Date: 12/8/2014 05:00 PM			
Client ID:				Run ID: WETCHEM_141208G				SeqNo: 3065632			Prep Date: 12/8/2014		DF: 1	
Analyte		Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual			
pH		4.03	0	4	0	101	90-110	0						

DUP		Sample ID: 1412273-01A dup				Units: s.u.		Analysis Date: 12/8/2014 05:00 PM		
Client ID:		Run ID: WETCHEM_141208G				SeqNo: 3065637		Prep Date: 12/8/2014		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
pH	7.73	0	0	0	0	0-0	7.69	0.519	20	

The following samples were analyzed in this batch:

1412257-01B 1412257-02B

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

Client: HRL Compliance Solutions, Inc
Work Order: 1412257
Project: WPX Clough 18 Spill 12.4.14

QC BATCH REPORT

Batch ID: **65781** Instrument ID **WETCHEM** Method: **USDA H60 Method**

DUP		Sample ID: 1412255-01C DUP				Units: mmhos/cm @25°C		Analysis Date: 12/10/2014 04:15 PM		
Client ID:		Run ID: WETCHEM_141210Q				SeqNo: 3070020		Prep Date: 12/10/2014		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	2.79	0.050	0	0	0		2.96	5.91	50	

The following samples were analyzed in this batch:

1412257-01C	1412257-02C
-------------	-------------

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

Client: HRL Compliance Solutions, Inc
Work Order: 1412257
Project: WPX Clough 18 Spill 12.4.14

QC BATCH REPORT

Batch ID: **R153789** Instrument ID **MOIST** Method: **A2540 G**

MBLK		Sample ID: WBLKS-R153789				Units: % of sample		Analysis Date: 12/5/2014 04:00 PM		
Client ID:		Run ID: MOIST_141205C				SeqNo: 3065063		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-R153789				Units: % of sample		Analysis Date: 12/5/2014 04:00 PM		
Client ID:		Run ID: MOIST_141205C				SeqNo: 3065061		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: 1412194-01A DUP				Units: % of sample		Analysis Date: 12/5/2014 04:00 PM		
Client ID:		Run ID: MOIST_141205C				SeqNo: 3065009		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 8.39 0.050 0 0 0 0-0 8.69 3.51 20

DUP		Sample ID: 1412253-01A DUP				Units: % of sample		Analysis Date: 12/5/2014 04:00 PM		
Client ID:		Run ID: MOIST_141205C				SeqNo: 3065041		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 10.11 0.050 0 0 0 0-0 10.03 0.794 20

The following samples were analyzed in this batch:







1412257-01B 1412257-02B

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



1412257

Form 2022a

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY		Matt Fought	12/4/14	1:00
RECEIVED BY			12-4-14	1:00
RELINQUISHED BY			12-4-14	1:10
RECEIVED BY		Diane E. Smith	12/5/14	0900
RELINQUISHED BY				
RECEIVED BY				

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

Sample Receipt Checklist

Client Name: **HRL**

Date/Time Received: **05-Dec-14 09:00**

Work Order: **1412257**

Received by: **DS**

Checklist completed by <u>Diane Shaw</u>	05-Dec-14	Reviewed by: <u>Ann Preston</u>	05-Dec-14
eSignature	Date	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"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>4.8 c</u>		
Cooler(s)/Kit(s):			
Date/Time sample(s) sent to storage:	<u>12/5/2014 11:04:47 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:

From: (616) 399-6870
 Nick Martinez
 ALS Environmental
 127 E. 1st Street
 PARACHUTE, MI 49424

Origin ID: HLMA



Ship Date: 04DEC14
 ActWgt: 50.0 LB
 CAD: 2264848/NET3550

Dims: 11 X 20 X 14 IN

Delivery Address Bar Code



SHIP TO: (616) 399-6870
 sample receiving
 ALS Laboratory Group
 3352 128TH AVE

BILL SENDER

HOLLAND, MI 49424

Ref # 120414-1
 Invoice #
 PO # Parachute
 Dept #

1 of 5
 FRI - 05 DEC 10:30A
 PRIORITY OVERNIGHT

TRK# 7721 0182 7326

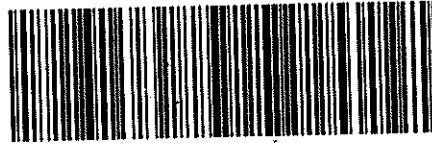
MASTER

49424

MI-US

GRR

68 HLMA



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ALS Parachute Custody Seal

DATE 12-31-14 Time 17:30

Name



03-Feb-2015

Karolina Blaney
WPX Energy Rocky Mountain, LLC
1058 Country Rd 215
Parachute, CO 81635

Re: **Clough 18 Batch 5 1.26.15**

Work Order: **15011080**

Dear Karolina,

ALS Environmental received 1 sample on 28-Jan-2015 10:00 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 23.

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: MN 532786

Report of Laboratory Analysis

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

www.alsglobal.com

RIGHT SOLUTIONS RIGHT PARTNER

Client: WPX Energy Rocky Mountain, LLC
Project: Clough 18 Batch 5 1.26.15
Work Order: 15011080

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>
15011080-01	Clough 18 batch 5	Soil		1/26/2015 11:00	1/28/2015 10:00	<input type="checkbox"/>

ALS Group USA, Corp

Date: 03-Feb-15

Client: WPX Energy Rocky Mountain, LLC

Project: Clough 18 Batch 5 1.26.15

Work Order: 15011080

Case Narrative

Batch 67254 MS/MSD data for PAHs is not related to this project's samples. No data requires qualification.

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

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

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

ALS Group USA, Corp

Date: 03-Feb-15

Client: WPX Energy Rocky Mountain, LLC

Project: Clough 18 Batch 5 1.26.15

Work Order: 15011080

Sample ID: Clough 18 batch 5

Lab ID: 15011080-01

Collection Date: 1/26/2015 11:00 AM

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015M		Prep: SW3541 / 1/29/15	Analyst: IT
DRO (C10-C28)	140		4.7	mg/Kg-dry	1	1/29/2015 08:44 PM
Surr: 4-Terphenyl-d14	68.7		39-133	%REC	1	1/29/2015 08:44 PM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015		Prep: SW5035 / 1/29/15	Analyst: IT
GRO (C6-C10)	24		2.9	mg/Kg-dry	1	1/29/2015 08:01 PM
Surr: Toluene-d8	120		50-150	%REC	1	1/29/2015 08:01 PM
MERCURY BY CVAA						
			SW7471		Prep: SW7471 / 1/28/15	Analyst: LR
Mercury	0.035		0.014	mg/Kg-dry	1	1/28/2015 08:11 PM
METALS ANALYSIS BY ICP						
			SW846 6010C		Prep: SW3050B / 1/30/15	Analyst: JEC
Arsenic	8.7		0.42	mg/Kg-dry	1	1/30/2015 11:39 PM
Barium	480		0.42	mg/Kg-dry	1	2/2/2015 02:20 PM
Cadmium	3.7		0.85	mg/Kg-dry	1	1/30/2015 11:39 PM
Chromium	8.9		0.42	mg/Kg-dry	1	1/30/2015 11:39 PM
Copper	11		0.85	mg/Kg-dry	1	1/30/2015 11:39 PM
Lead	15		0.42	mg/Kg-dry	1	1/30/2015 11:39 PM
Nickel	13		0.42	mg/Kg-dry	1	1/30/2015 11:39 PM
Selenium	ND		0.85	mg/Kg-dry	1	2/2/2015 02:20 PM
Silver	ND		0.42	mg/Kg-dry	1	1/30/2015 11:39 PM
Zinc	64		0.85	mg/Kg-dry	1	1/30/2015 11:39 PM
SOLUBLE CATIONS FOR SAR						
			SW846 6010C		Prep: USDA Method 20B / 1/30/15	Analyst: JEC
Calcium	180		5.0	mg/Kg	10	1/30/2015 10:44 PM
Magnesium	47		2.0	mg/Kg	10	1/30/2015 10:44 PM
Sodium	790		2.0	mg/Kg	10	1/30/2015 10:44 PM
SODIUM ADSORPTION RATIO						
			USDA H60 METHOD		Prep: USDA Method 20B / 1/30/15	Analyst: JEC
Sodium Adsorption Ratio	14		0.010	none	1	1/30/2015
SEMI-VOLATILE ORGANIC COMPOUNDS						
			SW846 8270D		Prep: SW3541 / 1/29/15	Analyst: RM
Acenaphthene	ND		7.5	µg/Kg-dry	1	1/30/2015 02:53 AM
Anthracene	11		7.5	µg/Kg-dry	1	1/30/2015 02:53 AM
Benzo(a)anthracene	ND		7.5	µg/Kg-dry	1	1/30/2015 02:53 AM
Benzo(a)pyrene	ND		7.5	µg/Kg-dry	1	1/30/2015 02:53 AM
Benzo(b)fluoranthene	ND		7.5	µg/Kg-dry	1	1/30/2015 02:53 AM
Benzo(g,h,i)perylene	ND		7.5	µg/Kg-dry	1	1/30/2015 02:53 AM
Benzo(k)fluoranthene	ND		7.5	µg/Kg-dry	1	1/30/2015 02:53 AM
Chrysene	ND		7.5	µg/Kg-dry	1	1/30/2015 02:53 AM
Dibenzo(a,h)anthracene	ND		7.5	µg/Kg-dry	1	1/30/2015 02:53 AM

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

ALS Group USA, Corp

Date: 03-Feb-15

Client: WPX Energy Rocky Mountain, LLC

Project: Clough 18 Batch 5 1.26.15

Work Order: 15011080

Sample ID: Clough 18 batch 5

Lab ID: 15011080-01

Collection Date: 1/26/2015 11:00 AM

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
Fluoranthene	ND		7.5	µg/Kg-dry	1	1/30/2015 02:53 AM
Fluorene	15		7.5	µg/Kg-dry	1	1/30/2015 02:53 AM
Indeno(1,2,3-cd)pyrene	ND		7.5	µg/Kg-dry	1	1/30/2015 02:53 AM
Naphthalene	ND		7.5	µg/Kg-dry	1	1/30/2015 02:53 AM
Pyrene	ND		7.5	µg/Kg-dry	1	1/30/2015 02:53 AM
Surr: 2,4,6-Tribromophenol	65.7		34-140	%REC	1	1/30/2015 02:53 AM
Surr: 2-Fluorobiphenyl	59.7		12-100	%REC	1	1/30/2015 02:53 AM
Surr: 2-Fluorophenol	66.7		33-117	%REC	1	1/30/2015 02:53 AM
Surr: 4-Terphenyl-d14	98.1		25-137	%REC	1	1/30/2015 02:53 AM
Surr: Nitrobenzene-d5	63.1		37-107	%REC	1	1/30/2015 02:53 AM
Surr: Phenol-d6	67.4		40-106	%REC	1	1/30/2015 02:53 AM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035 / 1/29/15	Analyst: BG	
Benzene	ND		35	µg/Kg-dry	1	1/29/2015 09:05 PM
Ethylbenzene	ND		35	µg/Kg-dry	1	1/29/2015 09:05 PM
m,p-Xylene	ND		70	µg/Kg-dry	1	1/29/2015 09:05 PM
o-Xylene	ND		35	µg/Kg-dry	1	1/29/2015 09:05 PM
Toluene	ND		35	µg/Kg-dry	1	1/29/2015 09:05 PM
Xylenes, Total	ND		100	µg/Kg-dry	1	1/29/2015 09:05 PM
Surr: 1,2-Dichloroethane-d4	98.8		70-130	%REC	1	1/29/2015 09:05 PM
Surr: 4-Bromofluorobenzene	93.4		70-130	%REC	1	1/29/2015 09:05 PM
Surr: Dibromofluoromethane	97.7		70-130	%REC	1	1/29/2015 09:05 PM
Surr: Toluene-d8	95.0		70-130	%REC	1	1/29/2015 09:05 PM
ELECTRICAL CONDUCTIVITY (SAR)			USDA H60 METHOD	Prep: USDA Method 20B / 1/30/15	Analyst: JB	
Electrical Conductivity @ Saturation	6.3		0.050	mmhos/cm @25	10	1/30/2015 03:00 PM
CHROMIUM, TRIVALENT			CALCULATION	Analyst: MB		
Chromium, Trivalent	8.9		0.58	mg/Kg-dry	1	2/2/2015 11:50 PM
CHROMIUM, HEXAVALENT			SW7196A	Prep: SW3060A / 1/29/15	Analyst: DAH	
Chromium, Hexavalent	ND		0.58	mg/Kg-dry	1	1/30/2015 12:00 PM
MOISTURE			E160.3M	Analyst: EVB		
Moisture	14		0.050	% of sample	1	1/30/2015 10:45 AM
PH			SW9045D	Prep: EXTRACT / 1/30/15	Analyst: JB	
pH	8.8		s.u.		1	1/30/2015 02:00 PM

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 15011080
Project: Clough 18 Batch 5 1.26.15

QC BATCH REPORT

Batch ID: **67255** Instrument ID **GC8** Method: **SW8015M**

MBLK		Sample ID: DBLKS1-67255-67255				Units: mg/Kg		Analysis Date: 1/29/2015 05:15 PM		
Client ID:		Run ID: GC8_150129A				SeqNo: 3128565		Prep Date: 1/29/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	ND	5.0								
Surr: 4-Terphenyl-d14	1.495	0	2	0	74.7	39-133	0			

LCS		Sample ID: DLCSS1-67255-67255				Units: mg/Kg		Analysis Date: 1/29/2015 05:45 PM		
Client ID:		Run ID: GC8_150129A				SeqNo: 3128566		Prep Date: 1/29/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	167.1	5.0	200	0	83.6	61-109	0			
Surr: 4-Terphenyl-d14	1.349	0	2	0	67.5	39-133	0			

MS		Sample ID: 15011079-01A MS				Units: mg/Kg		Analysis Date: 1/29/2015 06:15 PM		
Client ID:		Run ID: GC8_150129A				SeqNo: 3128568		Prep Date: 1/29/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	421.9	8.0	319.9	144.5	86.7	48-110	0			
Surr: 4-Terphenyl-d14	2.497	0	3.199	0	78.1	39-133	0			

MSD		Sample ID: 15011079-01A MSD				Units: mg/Kg		Analysis Date: 1/29/2015 06:45 PM		
Client ID:		Run ID: GC8_150129A				SeqNo: 3128570		Prep Date: 1/29/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	415.5	7.9	314.7	144.5	86.1	48-110	421.9	1.54	30	
Surr: 4-Terphenyl-d14	2.569	0	3.147	0	81.6	39-133	2.497	2.82	30	

The following samples were analyzed in this batch: | 15011080-01A |

Client: WPX Energy Rocky Mountain, LLC
Work Order: 15011080
Project: Clough 18 Batch 5 1.26.15

QC BATCH REPORT

Batch ID: **67258** Instrument ID **GC10** Method: **SW8015**

MS				Sample ID: 15011079-01A MS			Units: µg/Kg		Analysis Date: 1/29/2015 08:27 PM	
Client ID:				Run ID: GC10_150129A			SeqNo: 3128659		Prep Date: 1/29/2015	
									DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	503500	2,500	500000	23440	96	70-130	0			
<i>Surr: Toluene-d8</i>	<i>5313</i>	<i>0</i>	<i>5000</i>	<i>0</i>	<i>106</i>	<i>50-150</i>	<i>0</i>			

MSD				Sample ID: 15011079-01A MSD			Units: µg/Kg		Analysis Date: 1/29/2015 08:50 PM	
Client ID:				Run ID: GC10_150129A			SeqNo: 3128660		Prep Date: 1/29/2015	
									DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	495300	2,500	500000	23440	94.4	70-130	503500	1.64	30	
<i>Surr: Toluene-d8</i>	<i>5826</i>	<i>0</i>	<i>5000</i>	<i>0</i>	<i>117</i>	<i>50-150</i>	<i>5313</i>	<i>9.22</i>	<i>30</i>	

The following samples were analyzed in this batch: | 15011080-01A |

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 15011080
Project: Clough 18 Batch 5 1.26.15

QC BATCH REPORT

Batch ID: **67201** Instrument ID **HG1** Method: **SW7471**

MBLK		Sample ID: MBLK-67201-67201				Units: mg/Kg		Analysis Date: 1/28/2015 04:39 PM		
Client ID:		Run ID: HG1_150128A				SeqNo: 3126280		Prep Date: 1/28/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury ND 0.020

LCS		Sample ID: LCS-67201-67201				Units: mg/Kg		Analysis Date: 1/28/2015 04:41 PM		
Client ID:		Run ID: HG1_150128A				SeqNo: 3126281		Prep Date: 1/28/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1693 0.020 0.1665 0 102 80-120 0

MS		Sample ID: 1501918-25AMS				Units: mg/Kg		Analysis Date: 1/28/2015 04:46 PM		
Client ID:		Run ID: HG1_150128A				SeqNo: 3126283		Prep Date: 1/28/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1178 0.013 0.1065 0.01261 98.7 75-125 0

MSD		Sample ID: 1501918-25AMSD				Units: mg/Kg		Analysis Date: 1/28/2015 04:48 PM		
Client ID:		Run ID: HG1_150128A				SeqNo: 3126284		Prep Date: 1/28/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Mercury 0.1285 0.013 0.1114 0.01261 104 75-125 0.1178 8.72 35

The following samples were analyzed in this batch:

15011080-01A

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 15011080
Project: Clough 18 Batch 5 1.26.15

QC BATCH REPORT

Batch ID: **67273** Instrument ID **ICP2** Method: **SW846 6010C**

DUP		Sample ID: 15011079-01ADUP				Units: mg/L		Analysis Date: 1/30/2015 10:37 PM		
Client ID:		Run ID: ICP2_150130A				SeqNo: 3129919		Prep Date: 1/30/2015		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Calcium	287	5.0	0	0	0	0-0	0			
Magnesium	48.8	2.0	0	0	0	0-0	0			
Sodium	471	2.0	0	0	0	0-0	0			

DUP		Sample ID: 15011079-01ADUP				Units: none		Analysis Date: 1/30/2015		
Client ID:		Run ID: SAR_150130A				SeqNo: 3130513		Prep Date: 1/30/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Sodium Adsorption Ratio	6.766	0.010	0	0	0		6.312	6.94	50	

The following samples were analyzed in this batch: | 15011080-01A |

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 15011080
Project: Clough 18 Batch 5 1.26.15

QC BATCH REPORT

Batch ID: **67313** Instrument ID **ICP2** Method: **SW846 6010C**

MBLK		Sample ID: MBLK-67313-67313				Units: mg/L		Analysis Date: 2/2/2015 01:41 PM		
Client ID:		Run ID: ICP2_150202A				SeqNo: 3131172		Prep Date: 1/30/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Barium	0.1537	0.25								J
Lead	ND	0.25								
Selenium	ND	0.50								

LCS		Sample ID: LCS-67313-67313				Units: mg/L		Analysis Date: 2/2/2015 01:46 PM		
Client ID:		Run ID: ICP2_150202A				SeqNo: 3131173		Prep Date: 1/30/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Barium	4.832	0.25	5	0	96.6	80-120	0			
Lead	5.047	0.25	5	0	101	80-120	0			
Selenium	4.712	0.50	5	0	94.2	80-120	0			

MS		Sample ID: 1501995-01AMS				Units: mg/Kg		Analysis Date: 2/2/2015 02:58 PM		
Client ID:		Run ID: ICP2_150202A				SeqNo: 3131201		Prep Date: 1/30/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	6.835	0.33	6.545	-0.1107	106	75-125	0			
Barium	6.495	0.33	6.545	0.2939	94.7	75-125	0			
Cadmium	5.87	0.65	6.545	-0.1145	91.4	75-125	0			
Chromium	6.968	0.33	6.545	-0.003369	107	75-125	0			
Copper	6.558	0.65	6.545	-0.02144	101	75-125	0			
Lead	6.569	0.33	6.545	-0.03012	101	75-125	0			
Nickel	6.429	0.33	6.545	0.07622	97.1	75-125	0			
Selenium	9.611	0.65	6.545	1.708	121	75-125	0			
Silver	7.106	0.33	6.545	-0.004499	109	75-125	0			
Zinc	7.094	0.65	6.545	0.1809	106	75-125	0			

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 15011080
Project: Clough 18 Batch 5 1.26.15

QC BATCH REPORT

Batch ID: **67313** Instrument ID **ICP2** Method: **SW846 6010C**

MSD		Sample ID: 1501995-01AMSD				Units: mg/Kg		Analysis Date: 2/2/2015 03:03 PM		
Client ID:		Run ID: ICP2_150202A				SeqNo: 3131202		Prep Date: 1/30/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Arsenic	6.879	0.33	6.596	-0.1107	106	75-125	6.835	0.641	20	
Barium	6.53	0.33	6.596	0.2939	94.5	75-125	6.495	0.535	20	
Cadmium	5.834	0.66	6.596	-0.1145	90.2	75-125	5.87	0.617	20	
Chromium	7.013	0.33	6.596	-0.003369	106	75-125	6.968	0.655	20	
Copper	6.534	0.66	6.596	-0.02144	99.4	75-125	6.558	0.366	20	
Lead	6.539	0.33	6.596	-0.03012	99.6	75-125	6.569	0.456	20	
Nickel	6.399	0.33	6.596	0.07622	95.9	75-125	6.429	0.465	20	
Selenium	9.644	0.66	6.596	1.708	120	75-125	9.611	0.334	20	
Silver	7.119	0.33	6.596	-0.004499	108	75-125	7.106	0.179	20	
Zinc	6.725	0.66	6.596	0.1809	99.2	75-125	7.094	5.33	20	

The following samples were analyzed in this batch: | 15011080-01A |

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 15011080
Project: Clough 18 Batch 5 1.26.15

QC BATCH REPORT

Batch ID: **67254** Instrument ID **SVMS8** Method: **SW846 8270D**

MBLK		Sample ID: SBLKS1-67254-67254				Units: µg/Kg		Analysis Date: 1/29/2015 02:02 PM		
Client ID:		Run ID: SVMS8_150129A				SeqNo: 3128038		Prep Date: 1/29/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	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>	1026	0	1667	0	61.5	12-100	0			
<i>Surr: 4-Terphenyl-d14</i>	1953	0	1667	0	117	25-137	0			
<i>Surr: Nitrobenzene-d5</i>	1048	0	1667	0	62.9	37-107	0			

LCS		Sample ID: SLCSS1-67254-67254				Units: µg/Kg		Analysis Date: 1/29/2015 02:22 PM		
Client ID:		Run ID: SVMS8_150129A				SeqNo: 3128039		Prep Date: 1/29/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	439.7	6.7	666.7	0	65.9	45-110	0			
Anthracene	483	6.7	666.7	0	72.4	55-105	0			
Benzo(a)anthracene	526.7	6.7	666.7	0	79	50-110	0			
Benzo(a)pyrene	633	6.7	666.7	0	94.9	50-110	0			
Benzo(b)fluoranthene	664.7	6.7	666.7	0	99.7	45-115	0			
Benzo(g,h,i)perylene	513.3	6.7	666.7	0	77	40-125	0			
Benzo(k)fluoranthene	660.7	6.7	666.7	0	99.1	45-115	0			
Chrysene	535.7	6.7	666.7	0	80.3	55-110	0			
Dibenzo(a,h)anthracene	509	6.7	666.7	0	76.3	40-125	0			
Fluoranthene	484	6.7	666.7	0	72.6	55-115	0			
Fluorene	466.3	6.7	666.7	0	69.9	50-110	0			
Indeno(1,2,3-cd)pyrene	538.3	6.7	666.7	0	80.7	40-120	0			
Naphthalene	463.7	6.7	666.7	0	69.5	40-105	0			
Pyrene	574.3	6.7	666.7	0	86.1	45-125	0			
<i>Surr: 2-Fluorobiphenyl</i>	1090	0	1667	0	65.4	12-100	0			
<i>Surr: 4-Terphenyl-d14</i>	1763	0	1667	0	106	25-137	0			
<i>Surr: Nitrobenzene-d5</i>	1151	0	1667	0	69.1	37-107	0			

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 15011080
Project: Clough 18 Batch 5 1.26.15

QC BATCH REPORT

Batch ID: **67254** Instrument ID **SVMS8** Method: **SW846 8270D**

MS				Sample ID: 15011115-01A MS			Units: µg/Kg		Analysis Date: 1/29/2015 08:46 PM	
Client ID:		Run ID: SVMS8_150129A			SeqNo: 3128040		Prep Date: 1/29/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	785	13	1268	0	61.9	45-110	0			
Anthracene	956.8	13	1268	6.313	74.9	55-105	0			
Benzo(a)anthracene	1264	13	1268	14.29	98.5	50-110	0			
Benzo(a)pyrene	1430	13	1268	37.54	110	50-110	0			
Benzo(b)fluoranthene	1480	13	1268	35.88	114	45-115	0			
Benzo(g,h,i)perylene	1356	13	1268	34.22	104	40-125	0			
Benzo(k)fluoranthene	1269	13	1268	31.56	97.6	45-115	0			
Chrysene	1269	13	1268	11.3	99.2	55-110	0			
Dibenzo(a,h)anthracene	1087	13	1268	0	85.7	40-125	0			
Fluoranthene	1467	13	1268	14.95	115	55-115	0			
Fluorene	823	13	1268	0	64.9	50-110	0			
Indeno(1,2,3-cd)pyrene	1370	13	1268	43.19	105	40-120	0			
Naphthalene	664.5	13	1268	0	52.4	40-105	0			
Pyrene	1772	13	1268	18.61	138	45-125	0			S
Surr: 2-Fluorobiphenyl	1740	0	3170	0	54.9	12-100	0			
Surr: 4-Terphenyl-d14	2895	0	3170	0	91.3	25-137	0			
Surr: Nitrobenzene-d5	1614	0	3170	0	50.9	37-107	0			

MSD				Sample ID: 15011115-01A MSD			Units: µg/Kg		Analysis Date: 1/29/2015 09:07 PM	
Client ID:		Run ID: SVMS8_150129A			SeqNo: 3128041		Prep Date: 1/29/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Acenaphthene	723.3	13	1284	0	56.3	45-110	785	8.18	30	
Anthracene	868.3	13	1284	6.313	67.2	55-105	956.8	9.7	30	
Benzo(a)anthracene	960.7	13	1284	14.29	73.7	50-110	1264	27.2	30	
Benzo(a)pyrene	1135	13	1284	37.54	85.5	50-110	1430	23	30	
Benzo(b)fluoranthene	1157	13	1284	35.88	87.4	45-115	1480	24.5	30	
Benzo(g,h,i)perylene	1108	13	1284	34.22	83.6	40-125	1356	20.2	30	
Benzo(k)fluoranthene	1038	13	1284	31.56	78.4	45-115	1269	20	30	
Chrysene	969.7	13	1284	11.3	74.7	55-110	1269	26.8	30	
Dibenzo(a,h)anthracene	1047	13	1284	0	81.6	40-125	1087	3.75	30	
Fluoranthene	886.3	13	1284	14.95	67.9	55-115	1467	49.4	30	R
Fluorene	793.9	13	1284	0	61.8	50-110	823	3.61	30	
Indeno(1,2,3-cd)pyrene	1125	13	1284	43.19	84.3	40-120	1370	19.6	30	
Naphthalene	677.7	13	1284	0	52.8	40-105	664.5	1.97	30	
Pyrene	1097	13	1284	18.61	84	45-125	1772	47	30	R
Surr: 2-Fluorobiphenyl	1796	0	3209	0	56	12-100	1740	3.19	40	
Surr: 4-Terphenyl-d14	2855	0	3209	0	89	25-137	2895	1.39	40	
Surr: Nitrobenzene-d5	1747	0	3209	0	54.4	37-107	1614	7.93	40	

The following samples were analyzed in this batch: 15011080-01A

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 15011080
Project: Clough 18 Batch 5 1.26.15

QC BATCH REPORT

Batch ID: **67282** Instrument ID **VMS5** Method: **SW8260B**

MBLK				Sample ID: MBLK-67282-67282				Units: µg/Kg			Analysis Date: 1/30/2015 01:50 PM			
Client ID:				Run ID: VMS5_150130A				SeqNo: 3129793			Prep Date: 1/29/2015		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	993	0	1000	0	99.3	70-130	0							
Surr: 4-Bromofluorobenzene	938	0	1000	0	93.8	70-130	0							
Surr: Dibromofluoromethane	1026	0	1000	0	103	70-130	0							
Surr: Toluene-d8	983.5	0	1000	0	98.4	70-130	0							

LCS				Sample ID: LCS-67282-67282			Units: µg/Kg		Analysis Date: 1/30/2015 12:33 PM		
Client ID:			Run ID: VMS5_150130A			SeqNo: 3129788		Prep Date: 1/29/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	1061	30	1000	0	106	75-125	0				
Ethylbenzene	1070	30	1000	0	107	75-125	0				
m,p-Xylene	2144	60	2000	0	107	80-125	0				
o-Xylene	1079	30	1000	0	108	75-125	0				
Toluene	1034	30	1000	0	103	70-125	0				
Xylenes, Total	3224	90	3000	0	107	75-125	0				
Surr: 1,2-Dichloroethane-d4	1016	0	1000	0	102	70-130	0				
Surr: 4-Bromofluorobenzene	991.5	0	1000	0	99.2	70-130	0				
Surr: Dibromofluoromethane	1078	0	1000	0	108	70-130	0				
Surr: Toluene-d8	970	0	1000	0	97	70-130	0				

MS					Sample ID: 15011145-04A MS			Units: µg/Kg		Analysis Date: 1/31/2015 01:24 AM	
Client ID:			Run ID: VMS7_150130A			SeqNo: 3130379		Prep Date: 1/29/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	996.5	30	1000	0	99.6	75-125	0				
Ethylbenzene	984	30	1000	0	98.4	75-125	0				
m,p-Xylene	1984	60	2000	0	99.2	80-125	0				
o-Xylene	995.5	30	1000	0	99.6	75-125	0				
Toluene	995	30	1000	0	99.5	70-125	0				
Xylenes, Total	2980	90	3000	0	99.3	75-125	0				
Surr: 1,2-Dichloroethane-d4	981	0	1000	0	98.1	70-130	0				
Surr: 4-Bromofluorobenzene	999	0	1000	0	99.9	70-130	0				
Surr: Dibromofluoromethane	972.5	0	1000	0	97.2	70-130	0				
Surr: Toluene-d8	948.5	0	1000	0	94.8	70-130	0				

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 15011080
Project: Clough 18 Batch 5 1.26.15

QC BATCH REPORT

Batch ID: **67282** Instrument ID **VMS5** Method: **SW8260B**

MSD				Sample ID: 15011145-04A MSD			Units: µg/Kg		Analysis Date: 1/31/2015 01:50 AM	
Client ID:				Run ID: VMS7_150130A			SeqNo: 3130380		Prep Date: 1/29/2015	
									DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	902.5	30	1000	0	90.2	75-125	996.5	9.9	30	
Ethylbenzene	900	30	1000	0	90	75-125	984	8.92	30	
m,p-Xylene	1827	60	2000	0	91.4	80-125	1984	8.26	30	
o-Xylene	907.5	30	1000	0	90.8	75-125	995.5	9.25	30	
Toluene	911.5	30	1000	0	91.2	70-125	995	8.76	30	
Xylenes, Total	2734	90	3000	0	91.2	75-125	2980	8.59	30	
Surr: 1,2-Dichloroethane-d4	963.5	0	1000	0	96.4	70-130	981	1.8	30	
Surr: 4-Bromofluorobenzene	976	0	1000	0	97.6	70-130	999	2.33	30	
Surr: Dibromofluoromethane	952.5	0	1000	0	95.2	70-130	972.5	2.08	30	
Surr: Toluene-d8	944.5	0	1000	0	94.4	70-130	948.5	0.423	30	

The following samples were analyzed in this batch: 15011080-01A

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 15011080
Project: Clough 18 Batch 5 1.26.15

QC BATCH REPORT

Batch ID: **67273** Instrument ID **WETCHEM** Method: **USDA H60 Method**

DUP		Sample ID: 15011079-01A DUP				Units: mmhos/cm @25°C		Analysis Date: 1/30/2015 03:00 PM		
Client ID:		Run ID: WETCHEM_150130G				SeqNo: 3129115		Prep Date: 1/30/2015		DF: 10
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Electrical Conductivity @ Saturation	4.95	0.050	0	0	0		4.97	0.403	50	

The following samples were analyzed in this batch:

15011080-01A

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 15011080
Project: Clough 18 Batch 5 1.26.15

QC BATCH REPORT

Batch ID: **67314** Instrument ID **WETCHEM** Method: **SW9045D**

LCS					Sample ID: LCS-67314-67314					Units:s.u.			Analysis Date: 1/30/2015 02:00 PM				
Client ID:					Run ID: WETCHEM_150130H					SeqNo:3129118			Prep Date: 1/30/2015			DF: 1	
Analyte					Result		PQL	SPK Val	SPK Ref Value	%REC		Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
pH					3.97		0	4	0	99.2		90-110	0				

DUP					Sample ID: 15011027-01A DUP					Units:s.u.			Analysis Date: 1/30/2015 02:00 PM				
Client ID:					Run ID: WETCHEM_150130H					SeqNo:3129122			Prep Date: 1/30/2015			DF: 1	
Analyte					Result		PQL	SPK Val	SPK Ref Value	%REC		Control Limit	RPD Ref Value		%RPD	RPD Limit	Qual
pH					8.76		0	0	0	0		0-0	8.74		0.229	20	

Sample ID: 15011027-06A DUP					Units: s.u.		Analysis Date: 1/30/2015 02:00 PM				
Client ID:			Run ID: WETCHEM_150130H			SeqNo: 3129128		Prep Date: 1/30/2015		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
pH	8.77	0	0	0	0	0-0	8.7	0.801	20		

The following samples were analyzed in this batch:

15011080-01A

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 15011080
Project: Clough 18 Batch 5 1.26.15

QC BATCH REPORT

Batch ID: **67315** Instrument ID **WETCHEM** Method: **SW7196A**

MBLK		Sample ID: MBLK-67315-67315				Units: mg/Kg		Analysis Date: 1/30/2015 12:00 PM		
Client ID:		Run ID: WETCHEM_150130B				SeqNo: 3128523		Prep Date: 1/29/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent ND 0.50

LCS		Sample ID: LCS-67315-67315				Units: mg/Kg		Analysis Date: 1/30/2015 12:00 PM		
Client ID:		Run ID: WETCHEM_150130B				SeqNo: 3128522		Prep Date: 1/29/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 1.808 0.50 2 0 90.4 80-120 0

MS		Sample ID: 15011027-01A MS				Units: mg/Kg		Analysis Date: 1/30/2015 12:00 PM		
Client ID:		Run ID: WETCHEM_150130B				SeqNo: 3128509		Prep Date: 1/29/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 1.728 0.49 1.969 0.1514 80.1 75-125 0

MS		Sample ID: 15011027-01A MSI				Units: mg/Kg		Analysis Date: 1/30/2015 12:00 PM		
Client ID:		Run ID: WETCHEM_150130B				SeqNo: 3128511		Prep Date: 1/29/2015		DF: 100
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 729.6 50 862.4 0.1514 84.6 75-125 0

MSD		Sample ID: 15011027-01A MSD				Units: mg/Kg		Analysis Date: 1/30/2015 12:00 PM		
Client ID:		Run ID: WETCHEM_150130B				SeqNo: 3128510		Prep Date: 1/29/2015		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chromium, Hexavalent 1.889 0.49 1.976 0.1514 87.9 75-125 1.728 8.9 20

The following samples were analyzed in this batch:

15011080-01A

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

Client: WPX Energy Rocky Mountain, LLC
Work Order: 15011080
Project: Clough 18 Batch 5 1.26.15

QC BATCH REPORT

Batch ID: **R156865** Instrument ID **MOIST** Method: **E160.3M**

MBLK		Sample ID: WBLKS-R156865				Units: % of sample			Analysis Date: 1/30/2015 10:45 AM		
Client ID:		Run ID: MOIST_150130A				SeqNo: 3131015			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-R156865				Units: % of sample			Analysis Date: 1/30/2015 10:45 AM		
Client ID:		Run ID: MOIST_150130A				SeqNo: 3131014			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: 1501821-08A DUP				Units: % of sample			Analysis Date: 1/30/2015 10:45 AM		
Client ID:		Run ID: MOIST_150130A				SeqNo: 3130987			Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Moisture 20.93 0.050 0 0 0 20.67 1.25 20

DUP		Sample ID: 1501821-56A DUP				Units: % of sample			Analysis Date: 1/30/2015 10:45 AM		
Client ID:		Run ID: MOIST_150130A				SeqNo: 3131008			Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Moisture 17.88 0.050 0 0 0 17.73 0.842 20

The following samples were analyzed in this batch:

15011080-01A

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



ALS Laboratory Group

HOLLAND, Michigan 48424

Chain-of-Custody

Form 282r

WORKORDER #

15011080

PAGE

1 of 1

DISPOSAL

By Lab or Return to Client

SAMPLER

DATE

PROJECT NAME

Clough 18 batch 5

SITE ID

Clough 18 batch 5

TURNAROUND

5 day

PROJECT No.

EDD FORMAT

PURCHASE ORDER

COMPANY NAME

WPX Energy

BILL TO COMPANY

WPX Energy

SEND REPORT TO

Blaney

INVOICE ATTN TO

Karolina Blaney; Leo Braun

ADDRESS

ADDRESS

1058 Co Rd 215

CITY/STATE/ZIP

CITY/STATE/ZIP

Parachute CO 81635

PHONE

PHONE

970-883-2295

FAX

FAX

E-MAIL

Karolina.blaney@wpxenergy.com

E-MAIL

Karolina.blaney@wpxenergy.com;
leo.braun@wpxenergy.com

Lab ID

Field ID

Matrix

Sample Date

Sample Time

Bottles

Pres.

QC

01

Clough 18 batch 5

S

1/28/2015

11:00

1

none

x

x

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

For metals or anions, please detail analytes below.

Comments:

QC PACKAGE (check below)

X

LEVEL II (Standard QC)

LEVEL III (Std QC + forms)

LEVEL IV (Std QC + forms + raw data)

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

SIGNATURE

PRINTED NAME

DATE

TIME

RELINQUISHED BY

Blaney

Karolina Blaney

1/28/2015

16:00

RECEIVED BY

W

M

1-26

1501

RELINQUISHED BY

W

M

1-26

1501

RECEIVED BY

Wilson

1/28

1000

RELINQUISHED BY

RECEIVED BY

Sample Receipt Checklist

Client Name: **WPX**

Date/Time Received: **28-Jan-15 10:00**

Work Order: **15011080**

Received by: **SAW**

Checklist completed by Samantha Wilson
eSignature

28-Jan-15
Date

Reviewed by: Ann Preston
eSignature

28-Jan-15
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"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>4.6 C</u>		<u>SR2</u>
Cooler(s)/Kit(s):	<u></u>		
Date/Time sample(s) sent to storage:	<u>1/28/2015 12:22:52 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 checked="" type="checkbox"/>	No <input type="checkbox"/>	N/A <input type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	N/A <input type="checkbox"/>
pH adjusted by:	<u></u>		

Login Notes:

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:

From: (816) 298-1033
 Nick Martinez
 ALS Environmental
 127 E. 1st Street
 PARACHUTE, CO 81635

Origin ID: RLA



Ship Date: 26JAN15
 Actual: 04.0 LB
 CAD: 2204409MET3610

Dim: 14 X 28 X 15 IN

Delivery Address Bar Code



Ref # 012015-1
 Invoice #
 PO # Parachute
 Dept #

SHIP TO: (816) 399-4870
 sample receiving
 ALS Laboratory Group
 3352 128TH AVE

HOLLAND, MI 49424

BILL BENDER

4 of 4

TUE - 27 JAN 10:30A
 PRIORITY OVERNIGHT

MP# 7727 1754 0114

Metri 7727 1754 0272

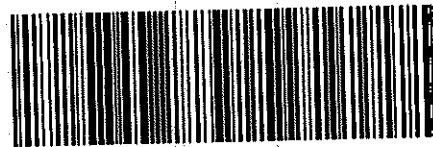
6281

49424

MS-US

GRR

XX HLMA



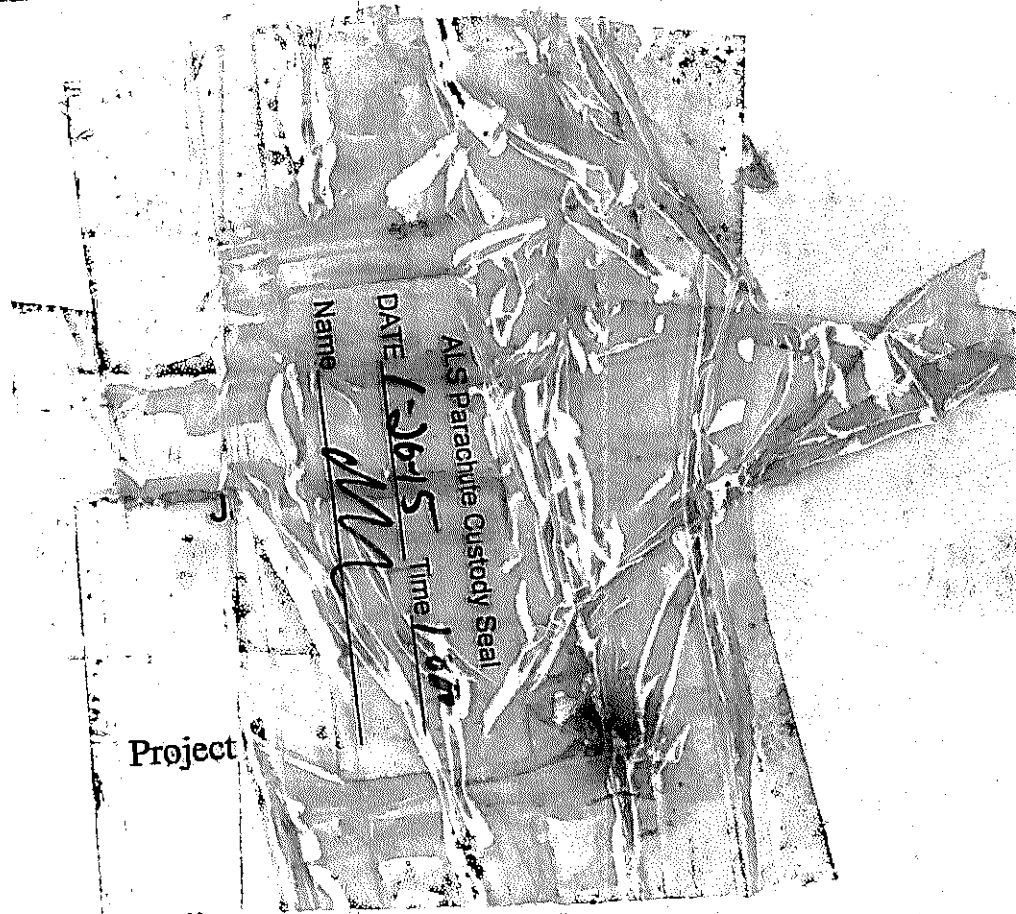
SOT 11/15/15EE-18

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Mt. Juliet, TN 37122
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1-800-767-5859
Fax (615) 758-5859

Tax I.D. 62-0814289

Est. 1970

Ms. Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

Report Summary

Monday February 23, 2015

Report Number: L748891

Samples Received: 02/13/15

Client Project: CLOUGH 18 BATCH 6

Description: Clough 18 Batch 6

The analytical results in this report are based upon information supplied by you, the client, and are for your exclusive use. If you have any questions regarding this data package, please do not hesitate to call.

Entire Report Reviewed By:

T. Alan Harvill , ESC Representative

Laboratory Certification Numbers

A2LA - 1461-01, AIHA - 100789, AL - 40660, CA - 01157CA, CT - PH-0197,
FL - E87487, GA - 923, IN - C-TN-01, KY - 90010, KYUST - 0016,
NC - ENV375/DW21704/BIO041, ND - R-140, NJ - TN002, NJ NELAP - TN002,
SC - 84004, TN - 2006, VA - 460132, WV - 233, AZ - 0612,
MN - 047-999-395, NY - 11742, WI - 998093910, NV - TN000032011-1,
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Tax I.D. 62-0814289

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REPORT OF ANALYSIS

February 23, 2015

Ms. Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

Date Received : February 13, 2015
Description : Clough 18 Batch 6
Sample ID : CLOUGH 18 BATCH 6
Collected By :
Collection Date : 02/12/15 10:00

ESC Sample # : L748891-01

Site ID : CLOUGH 18 BATCH 6

Project # : CLOUGH 18 BATCH 6

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Chromium, Hexavalent	BDL	2.0	mg/kg	3060A/7196A	02/16/15	1
Chromium, Trivalent	12.	2.0	mg/kg	Calc.	02/19/15	1
ORP	160		mV	2580 B-2011	02/20/15	1
pH	8.0	0.10	su	9045D	02/16/15	1
Sodium Adsorption Ratio	14.			Calc.	02/22/15	1
Specific Conductance	1500		umhos/cm	9050AMod	02/17/15	1
Mercury	0.031	0.020	mg/kg	7471A	02/18/15	1
Arsenic	7.5	2.0	mg/kg	6010B	02/18/15	1
Barium	530	0.50	mg/kg	6010B	02/18/15	1
Cadmium	1.2	0.50	mg/kg	6010B	02/18/15	1
Chromium	12.	1.0	mg/kg	6010B	02/18/15	1
Copper	11.	2.0	mg/kg	6010B	02/18/15	1
Lead	16.	0.50	mg/kg	6010B	02/18/15	1
Nickel	15.	2.0	mg/kg	6010B	02/18/15	1
Selenium	BDL	2.0	mg/kg	6010B	02/18/15	1
Silver	BDL	1.0	mg/kg	6010B	02/18/15	1
Zinc	52.	5.0	mg/kg	6010B	02/18/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 02/23/15 08:31 Printed: 02/23/15 08:31
L748891-01 (PH) - 8.0@21.6c



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Mt. Juliet, TN 37122
(615) 758-5858
1-800-767-5859
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Tax I.D. 62-0814289

Est. 1970

REPORT OF ANALYSIS

Ms. Karolina Blaney
WPX Energy
1058 County Road 215
Parachute, CO 81635

February 23, 2015

Date Received : February 13, 2015
Description : Clough 18 Batch 6
Sample ID : CLOUGH 18 BATCH 6
Collected By :
Collection Date : 02/12/15 10:00

ESC Sample # : L748891-02

Site ID : CLOUGH 18 BATCH 6

Project # : CLOUGH 18 BATCH 6

Parameter	Result	Det. Limit	Units	Method	Date	Dil.
Benzene	BDL	0.0025	mg/kg	8021	02/18/15	5
Toluene	BDL	0.025	mg/kg	8021	02/18/15	5
Ethylbenzene	BDL	0.0025	mg/kg	8021	02/18/15	5
Total Xylene	BDL	0.0075	mg/kg	8021	02/18/15	5
TPH (GC/FID) Low Fraction	BDL	0.50	mg/kg	8015	02/18/15	5
Surrogate Recovery-%						
a,a,a-Trifluorotoluene(FID)	102.		% Rec.	8015	02/18/15	1
a,a,a-Trifluorotoluene(PID)	101.		% Rec.	8021	02/18/15	1
TPH (GC/FID) High Fraction	170	4.0	mg/kg	3546/DRO	02/18/15	1
Surrogate recovery(%)						
o-Terphenyl	77.4		% Rec.	3546/DRO	02/18/15	1
Polynuclear Aromatic Hydrocarbons						
Anthracene	BDL	0.0060	mg/kg	8270C-SIM	02/15/15	1
Acenaphthene	BDL	0.0060	mg/kg	8270C-SIM	02/15/15	1
Benzo(a)anthracene	BDL	0.0060	mg/kg	8270C-SIM	02/15/15	1
Benzo(a)pyrene	BDL	0.0060	mg/kg	8270C-SIM	02/15/15	1
Benzo(b)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	02/15/15	1
Benzo(k)fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	02/15/15	1
Chrysene	BDL	0.0060	mg/kg	8270C-SIM	02/15/15	1
Dibenz(a,h)anthracene	BDL	0.0060	mg/kg	8270C-SIM	02/15/15	1
Fluoranthene	BDL	0.0060	mg/kg	8270C-SIM	02/15/15	1
Fluorene	0.048	0.0060	mg/kg	8270C-SIM	02/15/15	1
Indeno(1,2,3-cd)pyrene	BDL	0.0060	mg/kg	8270C-SIM	02/15/15	1
Naphthalene	0.059	0.020	mg/kg	8270C-SIM	02/15/15	1
Pyrene	0.0083	0.0060	mg/kg	8270C-SIM	02/15/15	1
Surrogate Recovery						
Nitrobenzene-d5	83.7		% Rec.	8270C-SIM	02/15/15	1
2-Fluorobiphenyl	73.6		% Rec.	8270C-SIM	02/15/15	1
p-Terphenyl-d14	72.1		% Rec.	8270C-SIM	02/15/15	1

BDL - Below Detection Limit

Det. Limit - Practical Quantitation Limit(PQL)

Note:

The reported analytical results relate only to the sample submitted.

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Reported: 02/23/15 08:31 Printed: 02/23/15 08:31



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Parachute, CO 81635

Quality Assurance Report
Level II

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Tax I.D. 62-0814289

Est. 1970

February 23, 2015

Analyte	Result	Laboratory Blank		Limit	Batch	Date Analyzed
		Units	% Rec			
Chromium, Hexavalent	< 2	mg/kg			WG770428	02/16/15 05:08
Acenaphthene	< .006	mg/kg			WG770585	02/15/15 02:18
Anthracene	< .006	mg/kg			WG770585	02/15/15 02:18
Benzo(a)anthracene	< .006	mg/kg			WG770585	02/15/15 02:18
Benzo(a)pyrene	< .006	mg/kg			WG770585	02/15/15 02:18
Benzo(b)fluoranthene	< .006	mg/kg			WG770585	02/15/15 02:18
Benzo(k)fluoranthene	< .006	mg/kg			WG770585	02/15/15 02:18
Chrysene	< .006	mg/kg			WG770585	02/15/15 02:18
Dibenz(a,h)anthracene	< .006	mg/kg			WG770585	02/15/15 02:18
Fluoranthene	< .006	mg/kg			WG770585	02/15/15 02:18
Fluorene	< .006	mg/kg			WG770585	02/15/15 02:18
Indeno(1,2,3-cd)pyrene	< .006	mg/kg			WG770585	02/15/15 02:18
Naphthalene	< .02	mg/kg			WG770585	02/15/15 02:18
Pyrene	< .006	mg/kg			WG770585	02/15/15 02:18
2-Fluorobiphenyl		% Rec.	74.80	38.2-135	WG770585	02/15/15 02:18
Nitrobenzene-d5		% Rec.	86.50	28.4-151	WG770585	02/15/15 02:18
p-Terphenyl-d14		% Rec.	75.30	34.2-141	WG770585	02/15/15 02:18
Specific Conductance	1.58	umhos/cm			WG770581	02/17/15 15:48
TPH (GC/FID) High Fraction	< 4	mg/kg			WG770396	02/17/15 21:53
o-Terphenyl		% Rec.	75.30	50-150	WG770396	02/17/15 21:53
Benzene	< .0005	mg/kg			WG770847	02/18/15 10:50
Ethylbenzene	< .0005	mg/kg			WG770847	02/18/15 10:50
Toluene	< .005	mg/kg			WG770847	02/18/15 10:50
TPH (GC/FID) Low Fraction	< .1	mg/kg			WG770847	02/18/15 10:50
Total Xylene	< .0015	mg/kg			WG770847	02/18/15 10:50
a,a,a-Trifluorotoluene(FID)		% Rec.	104.0	59-128	WG770847	02/18/15 10:50
a,a,a-Trifluorotoluene(PID)		% Rec.	102.0	54-144	WG770847	02/18/15 10:50
Arsenic	< 2	mg/kg			WG770627	02/18/15 14:38
Barium	< .5	mg/kg			WG770627	02/18/15 14:38
Cadmium	< .5	mg/kg			WG770627	02/18/15 14:38
Chromium	< 1	mg/kg			WG770627	02/18/15 14:38
Copper	< 2	mg/kg			WG770627	02/18/15 14:38
Lead	< .5	mg/kg			WG770627	02/18/15 14:38
Nickel	< 2	mg/kg			WG770627	02/18/15 14:38
Selenium	< 2	mg/kg			WG770627	02/18/15 14:38
Silver	< 1	mg/kg			WG770627	02/18/15 14:38
Zinc	< 5	mg/kg			WG770627	02/18/15 14:38
Mercury	< .02	mg/kg			WG770434	02/18/15 16:20

Analyte	Units	Result	Duplicate		RPD	Limit	Ref Samp	Batch
			Duplicate					
Chromium, Hexavalent	mg/kg	0.0	0.0		0.0	20	L748857-01	WG770428
pH	su	7.50	7.60		0.793	1	L748857-03	WG770430
pH	su	6.60	6.60		0.755	1	L748978-08	WG770430

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Analyte	Units	Result	Duplicate		RPD	Limit	Ref Samp	Batch
			Duplicate					
Specific Conductance	umhos/cm	140.	140.		2.12	20	L748857-01	WG770581
Specific Conductance	umhos/cm	820.	820.		0.365	20	L749077-02	WG770581
ORP	mV	62.0	61.0		1.63	20	L748817-01	WG770899
ORP	mV	160.	170.		2.99	20	L749077-02	WG770899

Analyte	Units	Laboratory Control Sample		% Rec	Limit	Batch
		Known Val	Result			
Chromium,Hexavalent	mg/kg	146	119.	81.5	80-120	WG770428
Acenaphthene	mg/kg	.08	0.0604	75.5	48.7-127	WG770585
Anthracene	mg/kg	.08	0.0604	75.5	51.3-136	WG770585
Benzo(a)anthracene	mg/kg	.08	0.0612	76.5	55-126	WG770585
Benzo(a)pyrene	mg/kg	.08	0.0542	67.8	51.9-127	WG770585
Benzo(b)fluoranthene	mg/kg	.08	0.0592	74.0	54-125	WG770585
Benzo(k)fluoranthene	mg/kg	.08	0.0688	85.9	53.9-132	WG770585
Chrysene	mg/kg	.08	0.0689	86.1	55.7-133	WG770585
Dibenz(a,h)anthracene	mg/kg	.08	0.0691	86.4	52.6-137	WG770585
Fluoranthene	mg/kg	.08	0.0602	75.2	54-132	WG770585
Fluorene	mg/kg	.08	0.0603	75.3	48.7-127	WG770585
Indeno(1,2,3-cd)pyrene	mg/kg	.08	0.0677	84.7	53.8-138	WG770585
Naphthalene	mg/kg	.08	0.0667	83.4	42-127	WG770585
Pyrene	mg/kg	.08	0.0712	89.0	54-129	WG770585
2-Fluorobiphenyl				74.80	38.2-135	WG770585
Nitrobenzene-d5				86.90	28.4-151	WG770585
p-Terphenyl-d14				73.50	34.2-141	WG770585
pH	su	5.9	5.90	100.	98.3-101.7	WG770430
Specific Conductance	umhos/cm	759	778.	103.	85-115	WG770581
TPH (GC/FID) High Fraction	mg/kg	60	45.7	76.2	50-150	WG770396
o-Terphenyl				69.50	50-150	WG770396
Benzene	mg/kg	.05	0.0416	83.2	70-130	WG770847
Ethylbenzene	mg/kg	.05	0.0463	92.7	70-130	WG770847
Toluene	mg/kg	.05	0.0455	91.0	70-130	WG770847
Total Xylene	mg/kg	.15	0.148	99.0	70-130	WG770847
a,a,a-Trifluorotoluene(PID)				102.0	54-144	WG770847
TPH (GC/FID) Low Fraction	mg/kg	5.5	5.23	95.1	63.5-137	WG770847
a,a,a-Trifluorotoluene(FID)				101.0	59-128	WG770847
Arsenic	mg/kg	100	102.	102.	80-120	WG770627
Barium	mg/kg	100	106.	106.	80-120	WG770627
Cadmium	mg/kg	100	103.	103.	80-120	WG770627
Chromium	mg/kg	100	99.9	100.	80-120	WG770627
Copper	mg/kg	100	101.	101.	80-120	WG770627
Lead	mg/kg	100	103.	103.	80-120	WG770627
Nickel	mg/kg	100	101.	101.	80-120	WG770627
Selenium	mg/kg	100	104.	104.	80-120	WG770627
Silver	mg/kg	100	99.9	100.	80-120	WG770627

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Analyte	Units	Laboratory Control		Sample	% Rec	Limit	Batch
		Known	Val	Result			
Zinc	mg/kg	100		100.	100.	80-120	WG770627
Mercury	mg/kg	.458		0.440	96.0	80-120	WG770434
ORP	mV	100		109.	109.	90-110	WG770899

Analyte	Units	Laboratory Control		Sample Duplicate	Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
Chromium, Hexavalent	mg/kg	120.	119.	82.0	80-120	0.837	20	WG770428
Acenaphthene	mg/kg	0.0642	0.0604	80.0	48.7-127	6.04	20	WG770585
Anthracene	mg/kg	0.0646	0.0604	81.0	51.3-136	6.75	20	WG770585
Benzo(a)anthracene	mg/kg	0.0653	0.0612	82.0	55-126	6.50	20	WG770585
Benzo(a)pyrene	mg/kg	0.0560	0.0542	70.0	51.9-127	3.21	20	WG770585
Benzo(b)fluoranthene	mg/kg	0.0652	0.0592	81.0	54-125	9.59	20	WG770585
Benzo(k)fluoranthene	mg/kg	0.0740	0.0688	92.0	53.9-132	7.39	20	WG770585
Chrysene	mg/kg	0.0730	0.0689	91.0	55.7-133	5.79	20	WG770585
Dibenz(a,h)anthracene	mg/kg	0.0744	0.0691	93.0	52.6-137	7.34	20	WG770585
Fluoranthene	mg/kg	0.0641	0.0602	80.0	54-132	6.29	20	WG770585
Fluorene	mg/kg	0.0635	0.0603	79.0	48.7-127	5.28	20	WG770585
Indeno(1,2,3-cd)pyrene	mg/kg	0.0729	0.0677	91.0	53.8-138	7.37	20	WG770585
Naphthalene	mg/kg	0.0712	0.0667	89.0	42-127	6.55	20	WG770585
Pyrene	mg/kg	0.0759	0.0712	95.0	54-129	6.43	20	WG770585
2-Fluorobiphenyl				79.80	38.2-135			WG770585
Nitrobenzene-d5				92.70	28.4-151			WG770585
p-Terphenyl-d14				78.60	34.2-141			WG770585
pH	su	5.90	5.90	100.	98.3-101.7	0.0	20	WG770430
Specific Conductance	umhos/	777.	778.	102.	85-115	0.129	20	WG770581
TPH (GC/FID) High Fraction	mg/kg	41.6	45.7	69.0	50-150	9.43	20	WG770396
o-Terphenyl				62.00	50-150			WG770396
Benzene	mg/kg	0.0425	0.0416	85.0	70-130	2.04	20	WG770847
Ethylbenzene	mg/kg	0.0471	0.0463	94.0	70-130	1.65	20	WG770847
Toluene	mg/kg	0.0462	0.0455	92.0	70-130	1.45	20	WG770847
Total Xylene	mg/kg	0.151	0.148	101.	70-130	1.78	20	WG770847
a,a,a-Trifluorotoluene(PID)				102.0	54-144			WG770847
TPH (GC/FID) Low Fraction	mg/kg	5.41	5.23	98.0	63.5-137	3.28	20	WG770847
a,a,a-Trifluorotoluene(FID)				102.0	59-128			WG770847
Arsenic	mg/kg	102.	102.	102.	80-120	0.0	20	WG770627
Barium	mg/kg	106.	106.	106.	80-120	0.0	20	WG770627
Cadmium	mg/kg	103.	103.	102.	80-120	0.0	20	WG770627
Chromium	mg/kg	101.	99.9	101.	80-120	1.00	20	WG770627
Copper	mg/kg	102.	101.	102.	80-120	1.00	20	WG770627
Lead	mg/kg	103.	103.	103.	80-120	0.0	20	WG770627
Nickel	mg/kg	101.	101.	101.	80-120	0.0	20	WG770627
Selenium	mg/kg	104.	104.	104.	80-120	0.0	20	WG770627

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Analyte	Units	Laboratory Control Sample Duplicate			Limit	RPD	Limit	Batch
		Result	Ref	%Rec				
Silver	mg/kg	101.	99.9	101.	80-120	1.00	20	WG770627
Zinc	mg/kg	99.9	100.	100.	80-120	0.0	20	WG770627
Mercury	mg/kg	0.451	0.440	98.0	80-120	2.00	20	WG770434
ORP	mV	108.	109.	108.	90-110	0.922	20	WG770899

Analyte	Units	MS Res	Matrix Spike		TV	% Rec	Limit	Ref Samp	Batch
			Ref	Res					
Chromium, Hexavalent	mg/kg	19.3	0.0		20	96.0	75-125	L748857-01	WG770428
TPH (GC/FID) High Fraction	mg/kg	406.	341.		60	110.	50-150	L748905-01	WG770396
o-Terphenyl						68.90	50-150		WG770396
Acenaphthene	mg/kg	0.0695	0.0		.08	87.0	39.4-132	L748897-02	WG770585
Anthracene	mg/kg	0.0751	0.0		.08	94.0	36.7-144	L748897-02	WG770585
Benzo(a)anthracene	mg/kg	0.0660	0.0		.08	82.0	28-144	L748897-02	WG770585
Benzo(a)pyrene	mg/kg	0.0608	0.0		.08	76.0	23.8-147	L748897-02	WG770585
Benzo(b)fluoranthene	mg/kg	0.0612	0.0		.08	77.0	18.2-147	L748897-02	WG770585
Benzo(k)fluoranthene	mg/kg	0.0599	0.0		.08	75.0	26.5-143	L748897-02	WG770585
Chrysene	mg/kg	0.0698	0.00301		.08	84.0	27.4-150	L748897-02	WG770585
Dibenz(a,h)anthracene	mg/kg	0.0665	0.0		.08	83.0	13.8-150	L748897-02	WG770585
Fluoranthene	mg/kg	0.0645	0.00269		.08	77.0	23.2-158	L748897-02	WG770585
Fluorene	mg/kg	0.104	0.0395		.08	81.0	30.8-139	L748897-02	WG770585
Indeno(1,2,3-cd)pyrene	mg/kg	0.0652	0.0		.08	81.0	10.7-155	L748897-02	WG770585
Naphthalene	mg/kg	0.124	0.0134		.08	140.*	34.9-133	L748897-02	WG770585
Pyrene	mg/kg	0.0775	0.00521		.08	90.0	22.6-151	L748897-02	WG770585
2-Fluorobiphenyl						75.10	38.2-135		WG770585
Nitrobenzene-d5						83.10	28.4-151		WG770585
p-Terphenyl-d14						74.00	34.2-141		WG770585
Benzene	mg/kg	0.181	0.000444		.05	72.0	49.7-127	L748857-02	WG770847
Ethylbenzene	mg/kg	0.189	0.000212		.05	76.0	40.8-141	L748857-02	WG770847
Toluene	mg/kg	0.191	0.000394		.05	76.0	49.8-132	L748857-02	WG770847
Total Xylene	mg/kg	0.601	0.00116		.15	80.0	41.2-140	L748857-02	WG770847
a,a,a-Trifluorotoluene(PID)						101.0	54-144		WG770847
TPH (GC/FID) Low Fraction	mg/kg	20.2	0.0		5.5	73.0	28.5-138	L748857-02	WG770847
a,a,a-Trifluorotoluene(FID)						98.30	59-128		WG770847
Lead	mg/kg	224.	87.5		100	140.*	75-125	L748838-03	WG770627
Mercury	mg/kg	0.425	0.00429		.458	92.0	75-125	L748506-41	WG770434

Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Chromium, Hexavalent	mg/kg	19.3	19.3	96.5	75-125	0.0	20	L748857-01	WG770428
TPH (GC/FID) High Fraction	mg/kg	367.	406.	42.4*	50-150	10.2	20	L748905-01	WG770396
o-Terphenyl				70.40	50-150				WG770396

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Analyte	Units	MSD	Matrix Spike Duplicate		Limit	RPD	Limit	Ref Samp	Batch
			Ref	%Rec					
Acenaphthene	mg/kg	0.0717	0.0695	89.6	39.4-132	3.02	20	L748897-02	WG770585
Anthracene	mg/kg	0.0776	0.0751	96.9	36.7-144	3.21	20.7	L748897-02	WG770585
Benzo(a)anthracene	mg/kg	0.0651	0.0660	81.4	28-144	1.33	24.7	L748897-02	WG770585
Benzo(a)pyrene	mg/kg	0.0587	0.0608	73.4	23.8-147	3.52	25.3	L748897-02	WG770585
Benzo(b)fluoranthene	mg/kg	0.0588	0.0612	73.5	18.2-147	4.06	29.5	L748897-02	WG770585
Benzo(k)fluoranthene	mg/kg	0.0588	0.0599	73.5	26.5-143	1.96	26.1	L748897-02	WG770585
Chrysene	mg/kg	0.0699	0.0698	83.6	27.4-150	0.120	25.7	L748897-02	WG770585
Dibenz(a,h)anthracene	mg/kg	0.0635	0.0665	79.4	13.8-150	4.49	25.8	L748897-02	WG770585
Fluoranthene	mg/kg	0.0648	0.0645	77.6	23.2-158	0.530	26	L748897-02	WG770585
Fluorene	mg/kg	0.112	0.104	90.8	30.8-139	7.30	20	L748897-02	WG770585
Indeno(1,2,3-cd)pyrene	mg/kg	0.0620	0.0652	77.5	10.7-155	5.02	26.9	L748897-02	WG770585
Naphthalene	mg/kg	0.114	0.124	125.	34.9-133	8.75	20.4	L748897-02	WG770585
Pyrene	mg/kg	0.0786	0.0775	91.8	22.6-151	1.45	25.1	L748897-02	WG770585
2-Fluorobiphenyl				78.10	38.2-135				WG770585
Nitrobenzene-d5				85.10	28.4-151				WG770585
p-Terphenyl-d14				76.40	34.2-141				WG770585
Benzene	mg/kg	0.203	0.181	81.2	49.7-127	11.9	23.5	L748857-02	WG770847
Ethylbenzene	mg/kg	0.215	0.189	85.8	40.8-141	12.5	23.8	L748857-02	WG770847
Toluene	mg/kg	0.218	0.191	87.0	49.8-132	13.3	23.5	L748857-02	WG770847
Total Xylene	mg/kg	0.677	0.601	90.1	41.2-140	11.9	23.7	L748857-02	WG770847
a,a,a-Trifluorotoluene(PID)				101.0	54-144				WG770847
TPH (GC/FID) Low Fraction	mg/kg	20.8	20.2	75.7	28.5-138	3.13	23.6	L748857-02	WG770847
a,a,a-Trifluorotoluene(FID)				96.70	59-128				WG770847
Lead	mg/kg	398.	224.	310.*	75-125	56.0*	20	L748838-03	WG770627
Mercury	mg/kg	0.424	0.425	91.6	75-125	0.0	20	L748506-41	WG770434

Post Spike

Serial Dilution

Batch number /Run number / Sample number cross reference

WG770428: R3020046: L748891-01
WG770585: R3020071: L748891-02
WG770430: R3020077: L748891-01
WG770581: R3020235: L748891-01
WG770396: R3020278 R3020478: L748891-02
WG770847: R3020388: L748891-02
WG770627: R3020455 R3020592: L748891-01
WG770434: R3020503: L748891-01
WG770899: R3020912: L748891-01
WG771000: R3021074: L748891-01

* * Calculations are performed prior to rounding of reported values.

* Performance of this Analyte is outside of established criteria.

For additional information, please see Attachment A 'List of Analytes with QC Qualifiers.'



YOUR LAB OF CHOICE

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Est. 1970

February 23, 2015

The data package includes a summary of the analytic results of the quality control samples required by the SW-846 or CWA methods. The quality control samples include a method blank, a laboratory control sample, and the matrix spike/matrix spike duplicate analysis. If a target parameter is outside the method limits, every sample that is effected is flagged with the appropriate qualifier in Appendix B of the analytic report.

Method Blank - an aliquot of reagent water carried through the entire analytic process. The method blank results indicate if any possible contamination exposure during the sample handling, digestion or extraction process, and analysis. Concentrations of target analytes above the reporting limit in the method blank are qualified with the "B" qualifier.

Laboratory Control Sample - is a sample of known concentration that is carried through the digestion/extraction and analysis process. The percent recovery, expressed as a percentage of the theoretical concentration, has statistical control limits indicating that the analytic process is "in control". If a target analyte is outside the control limits for the laboratory control sample or any other control sample, the parameter is flagged with a "J4" qualifier for all effected samples.

Matrix Spike and Matrix Spike Duplicate - is two aliquots of an environmental sample that is spiked with known concentrations of target analytes. The percent recovery of the target analytes also has statistical control limits. If any recoveries that are outside the method control limits, the sample that was selected for matrix spike/matrix spike duplicate analysis is flagged with either a "J5" or a "J6". The relative percent difference (%RPD) between the matrix spike and the matrix spike duplicate recoveries is all calculated. If the RPD is above the method limit, the effected samples are flagged with a "J3" qualifier.