



Crystal Weaver
Environmental Specialist
NMOCD District II

March 8, 2018

Re: RDU 45 – Case # 2RP-4519

Dear Ms. Weaver,

The purpose of this letter is to propose site characterization and workplan of an unauthorized release of 5bbls of oil emulsion at the Ross Draw Unit 45 well pad which occurred on and December 2, 2017.

This release was immediately mapped with a Trimble to define the horizontal extent of the impacts. Impacted soils on well pad surface were scraped, and the flowline was uncovered to repair the area where the release originated. The point of origin was also recorded with a Trimble, as indicated on attached map. Samples of the cleanup area were collected on 12/14/2017 to a depth of 7' and are summarized on attached table. Further excavation was performed on the area surrounding the release on 1/18/2018 under direction of an environmental consultant. Samples were collected post cleanup and are also summarized on attached table.

Based on the information obtained from the NMOSE web site, the closest surface water feature (ephemeral drainage) is located more than 2000' southwest of the spill site. Based on the OSE ground water data, the Trend Map and the site elevation, depth to groundwater is more than 100'. There are no private domestic water sources within 1000' of the site. Therefore, the ranking for this site is 0. See attached OSE report for wells located within 5000m from the pad site.

Sampling was performed around the point of origin and several samples were collected in the cardinal directions on the outside of the spill area to establish horizontal delineation. All sampling results near line break indicate that levels of TPH, Benzene and BTEX fall below recommendations based on NMOCD guidelines for remediation.

However, additional sampling will be performed near sampling point S1, and within the fingers that extend both east and west. These sampling results will be reviewed and additional soil will be removed if required. Once results satisfy the NMOCD recommendations the lab reports will be submitted to OCD for closure of this incident.

Please call me if you have any questions.

Sincerely,

A handwritten signature in black ink, appearing to read "Jim Raley", with a stylized flourish at the end.

Jim Raley
WPX Energy
Environmental Specialist
(575) 689-7597
james.raley@wpxenergy.com



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Legend

 Point

 Line Break Point of Origin

 Area of Interest



RDU 45



RDU 45 Case# 2RP-4519

Date	Sample Point	Depth'	DRO mg/kg	ORO mg/kg	GRO mg/kg	Benzene mg/kg	Ethylbenzene mg/kg	Toluene mg/kg	Xylenes mg/kg	Chlorides mg/kg
12/14/2017	S1	0	1300	580	2400	1.9	4.4	18	22	19,000
12/14/2017	S1	1	ND	14	11	ND	ND	ND	ND	1400
12/14/2017	S1	2	ND	ND	5.9	ND	ND	ND	ND	390
12/14/2017	S1	4	Not Tested							1600
12/14/2017	S1	6	Not Tested							68
12/14/2017	S1	7	Not Tested							2300
1/18/2018	BH18-01	0-2	37	24	18	ND	ND	ND	ND	54
1/18/2018	BH18-01	2-4	ND	ND	ND	ND	ND	ND	ND	47
1/18/2018	BH18-01	4-6	ND	ND	ND	ND	ND	ND	ND	23
1/18/2018	BH18-02	0-2	ND	ND	ND	ND	ND	ND	ND	16
1/18/2018	BH18-02	2-4	ND	ND	ND	ND	ND	ND	ND	22
1/18/2018	BH18-02	4-6	ND	ND	ND	ND	ND	ND	ND	20
1/18/2018	BH18-03	0-2	ND	ND	ND	ND	ND	ND	ND	24
1/18/2018	BH18-03	2-4	ND	ND	ND	ND	ND	ND	ND	21
1/18/2018	BH18-03	4-6	ND	ND	ND	ND	ND	ND	ND	20
1/18/2018	BH18-04	0-2	ND	ND	ND	ND	ND	ND	ND	18
1/18/2018	BH18-04	2-4	ND	ND	ND	ND	ND	ND	ND	19
1/18/2018	BH18-04	4-6	ND	ND	ND	ND	ND	ND	ND	27
1/18/2018	BH18-05	0-2	ND	ND	ND	ND	ND	ND	ND	1000
1/18/2018	BH18-05	2-4	ND	ND	ND	ND	ND	ND	ND	1200
1/18/2018	BH18-05	4-6	ND	ND	ND	ND	ND	ND	ND	1100
1/18/2018	BH18-06	0-2	ND	ND	ND	ND	ND	ND	ND	12
1/18/2018	BH18-06	2-4	ND	ND	ND	ND	ND	ND	ND	21
1/18/2018	BH18-06	4-6	ND	ND	ND	ND	ND	ND	ND	110
1/18/2018	BH18-07	0-2	ND	ND	ND	ND	ND	ND	ND	110
1/18/2018	BH18-07	2-4	ND	ND	ND	ND	ND	ND	ND	14
1/18/2018	BH18-07	4-6	ND	ND	ND	ND	ND	ND	ND	27
1/18/2018	BH18-08	0-2	ND	ND	ND	ND	ND	ND	ND	15
1/18/2018	BH18-08	2-4	ND	ND	ND	ND	ND	ND	ND	64
1/18/2018	BH18-08	4-6	ND	ND	ND	ND	ND	ND	ND	20
1/18/2018	BH18-09	0-2	ND	ND	ND	ND	ND	ND	ND	73
1/18/2018	BH18-09	2-4	ND	ND	ND	ND	ND	ND	ND	130
1/18/2018	BH18-09	4-6	ND	ND	ND	ND	ND	ND	ND	17



22-Dec-2017

Karolina Blaney
WPX Energy
5315 Buena Vista Dr.
Carlsbad, NM 88220

Re: **RDU 45 Cleanup Confirmation**

Work Order: **17121004**

Dear Karolina,

ALS Environmental received 6 samples on 15-Dec-2017 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 industry accepted practices and Quality Control 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 20.

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

Sincerely,

A handwritten signature in black ink, appearing to read "Chad Whelton".

Electronically approved by: Chad Whelton

Chad Whelton
Project Manager

Certificate No: MN 998501

Report of Laboratory Analysis

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

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Environmental 

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RIGHT SOLUTIONS RIGHT PARTNER

Client: WPX Energy
Project: RDU 45 Cleanup Confirmation
Work Order: 17121004

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>
17121004-01	RDU 45 S1 0'	Soil		12/14/2017 11:00	12/15/2017 10:00	☐
17121004-02	RDU 45 S1 1'	Soil		12/14/2017 11:05	12/15/2017 10:00	☐
17121004-03	RDU 45 S1 2'	Soil		12/14/2017 11:10	12/15/2017 10:00	☐
17121004-04	RDU 45 S1 4'	Soil		12/14/2017 11:15	12/15/2017 10:00	☐
17121004-05	RDU 45 S1 6'	Soil		12/14/2017 11:20	12/15/2017 10:00	☐
17121004-06	RDU 45 S1 7'	Soil		12/14/2017 11:25	12/15/2017 10:00	☐

Client: WPX Energy
Project: RDU 45 Cleanup Confirmation
Work Order: 17121004

Case Narrative

Batch 112023, Method DRLVI_8015_S, Sample DLCSS1-112023: The LCS recovery was above the upper control limit for ORO. The sample results for this batch may be biased high.

Batch 112096, Method DRLVI_8015_S, Sample DLCSS1-112096: The LCS recovery was above the upper control limit for ORO. The sample results for this batch may be biased high.

Batch 112096, Method DRLVI_8015_S, Sample 17121004-01A: DRO surrogate recovery low due to sample matrix interference.

Client: WPX Energy
Project: RDU 45 Cleanup Confirmation
WorkOrder: 17121004

QUALIFIERS, ACRONYMS, UNITS

<u>Qualifier</u>	<u>Description</u>
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-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
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

<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
mg/Kg-dry	Milligrams per Kilogram Dry Weight

ALS Group, USA

Date: 22-Dec-17

Client: WPX Energy
Project: RDU 45 Cleanup Confirmation
Sample ID: RDU 45 S1 0'
Collection Date: 12/14/2017 11:00 AM

Work Order: 17121004
Lab ID: 17121004-01
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015C		Prep: SW3546 12/20/17 11:21	Analyst: MEB
DRO (C10-C28)	1,300		5.4	mg/Kg-dry	1	12/20/2017 08:18 PM
ORO (C28-C40)	580		5.4	mg/Kg-dry	1	12/20/2017 08:18 PM
Surr: 4-Terphenyl-d14	29.5	S	34-130	%REC	1	12/20/2017 08:18 PM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 12/19/17 00:00	Analyst: MEB
GRO (C6-C10)	2,400		59	mg/Kg-dry	10	12/20/2017 12:36 PM
Surr: Toluene-d8	96.8		71-123	%REC	10	12/20/2017 12:36 PM
VOLATILE ORGANIC COMPOUNDS						
			SW8260B		Prep: SW5035 12/19/17 10:26	Analyst: BG
Benzene	1.9		0.30	mg/Kg-dry	10	12/21/2017 05:27 AM
Ethylbenzene	4.4		0.30	mg/Kg-dry	10	12/21/2017 05:27 AM
m,p-Xylene	14		0.60	mg/Kg-dry	10	12/21/2017 05:27 AM
o-Xylene	8.6		0.30	mg/Kg-dry	10	12/21/2017 05:27 AM
Toluene	18		0.30	mg/Kg-dry	10	12/21/2017 05:27 AM
Xylenes, Total	22		0.90	mg/Kg-dry	10	12/21/2017 05:27 AM
Surr: 1,2-Dichloroethane-d4	89.0		70-130	%REC	10	12/21/2017 05:27 AM
Surr: 4-Bromofluorobenzene	113		70-130	%REC	10	12/21/2017 05:27 AM
Surr: Dibromofluoromethane	92.7		70-130	%REC	10	12/21/2017 05:27 AM
Surr: Toluene-d8	119		70-130	%REC	10	12/21/2017 05:27 AM
CHLORIDE						
			A4500-CL E-11		Prep: EXTRACT 12/18/17 15:20	Analyst: STP
Chloride	19,000		320	mg/Kg-dry	30	12/19/2017 04:30 PM
MOISTURE						
			SW3550C			Analyst: NW
Moisture	8.4		0.050	% of sample	1	12/20/2017 03:15 PM

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

ALS Group, USA

Date: 22-Dec-17

Client: WPX Energy
Project: RDU 45 Cleanup Confirmation
Sample ID: RDU 45 S1 1'
Collection Date: 12/14/2017 11:05 AM

Work Order: 17121004
Lab ID: 17121004-02
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015C		Prep: SW3546 12/20/17 11:21	Analyst: MEB
DRO (C10-C28)	ND		5.2	mg/Kg-dry	1	12/20/2017 08:47 PM
ORO (C28-C40)	14		5.2	mg/Kg-dry	1	12/20/2017 08:47 PM
Surr: 4-Terphenyl-d14	71.6		34-130	%REC	1	12/20/2017 08:47 PM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 12/19/17 00:00	Analyst: MEB
GRO (C6-C10)	11		5.6	mg/Kg-dry	1	12/20/2017 01:05 AM
Surr: Toluene-d8	95.1		71-123	%REC	1	12/20/2017 01:05 AM
VOLATILE ORGANIC COMPOUNDS						
			SW8260B		Prep: SW5035 12/19/17 10:26	Analyst: BG
Benzene	ND		0.034	mg/Kg-dry	1	12/21/2017 05:50 AM
Ethylbenzene	ND		0.034	mg/Kg-dry	1	12/21/2017 05:50 AM
m,p-Xylene	ND		0.068	mg/Kg-dry	1	12/21/2017 05:50 AM
o-Xylene	ND		0.034	mg/Kg-dry	1	12/21/2017 05:50 AM
Toluene	ND		0.034	mg/Kg-dry	1	12/21/2017 05:50 AM
Xylenes, Total	ND		0.10	mg/Kg-dry	1	12/21/2017 05:50 AM
Surr: 1,2-Dichloroethane-d4	90.2		70-130	%REC	1	12/21/2017 05:50 AM
Surr: 4-Bromofluorobenzene	98.9		70-130	%REC	1	12/21/2017 05:50 AM
Surr: Dibromofluoromethane	101		70-130	%REC	1	12/21/2017 05:50 AM
Surr: Toluene-d8	92.9		70-130	%REC	1	12/21/2017 05:50 AM
CHLORIDE						
			A4500-CL E-11		Prep: EXTRACT 12/18/17 15:20	Analyst: STP
Chloride	1,400		43	mg/Kg-dry	4	12/19/2017 04:30 PM
MOISTURE						
			SW3550C			Analyst: BTG
Moisture	6.1		0.050	% of sample	1	12/18/2017 09:00 AM

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

ALS Group, USA

Date: 22-Dec-17

Client: WPX Energy
Project: RDU 45 Cleanup Confirmation
Sample ID: RDU 45 S1 2'
Collection Date: 12/14/2017 11:10 AM

Work Order: 17121004
Lab ID: 17121004-03
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015C		Prep: SW3546 12/20/17 11:21	Analyst: MEB
DRO (C10-C28)	ND		5.1	mg/Kg-dry	1	12/20/2017 09:16 PM
ORO (C28-C40)	ND		5.1	mg/Kg-dry	1	12/20/2017 09:16 PM
Surr: 4-Terphenyl-d14	85.6		34-130	%REC	1	12/20/2017 09:16 PM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 12/19/17 00:00	Analyst: MEB
GRO (C6-C10)	5.9		5.8	mg/Kg-dry	1	12/20/2017 01:35 AM
Surr: Toluene-d8	92.8		71-123	%REC	1	12/20/2017 01:35 AM
VOLATILE ORGANIC COMPOUNDS						
			SW8260B		Prep: SW5035 12/19/17 10:26	Analyst: BG
Benzene	ND		0.030	mg/Kg-dry	1	12/21/2017 06:14 AM
Ethylbenzene	ND		0.030	mg/Kg-dry	1	12/21/2017 06:14 AM
m,p-Xylene	ND		0.060	mg/Kg-dry	1	12/21/2017 06:14 AM
o-Xylene	ND		0.030	mg/Kg-dry	1	12/21/2017 06:14 AM
Toluene	ND		0.030	mg/Kg-dry	1	12/21/2017 06:14 AM
Xylenes, Total	ND		0.090	mg/Kg-dry	1	12/21/2017 06:14 AM
Surr: 1,2-Dichloroethane-d4	105		70-130	%REC	1	12/21/2017 06:14 AM
Surr: 4-Bromofluorobenzene	100		70-130	%REC	1	12/21/2017 06:14 AM
Surr: Dibromofluoromethane	103		70-130	%REC	1	12/21/2017 06:14 AM
Surr: Toluene-d8	76.1		70-130	%REC	1	12/21/2017 06:14 AM
CHLORIDE						
			A4500-CL E-11		Prep: EXTRACT 12/18/17 15:20	Analyst: STP
Chloride	390		11	mg/Kg-dry	1	12/19/2017 04:30 PM
MOISTURE						
			SW3550C			Analyst: NW
Moisture	7.3		0.050	% of sample	1	12/20/2017 03:15 PM

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

ALS Group, USA**Date:** 22-Dec-17

Client: WPX Energy
Project: RDU 45 Cleanup Confirmation
Sample ID: RDU 45 S1 4'
Collection Date: 12/14/2017 11:15 AM

Work Order: 17121004
Lab ID: 17121004-04
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CHLORIDE			A4500-CL E-11	Prep: EXTRACT	12/18/17 15:20	Analyst: STP
Chloride	1,600		42	mg/Kg-dry	4	12/19/2017 04:30 PM
MOISTURE			SW3550C			Analyst: NW
Moisture	6.1		0.050	% of sample	1	12/20/2017 03:15 PM

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

ALS Group, USA**Date:** 22-Dec-17

Client: WPX Energy
Project: RDU 45 Cleanup Confirmation
Sample ID: RDU 45 S1 6'
Collection Date: 12/14/2017 11:20 AM

Work Order: 17121004
Lab ID: 17121004-05
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CHLORIDE			A4500-CL E-11	Prep: EXTRACT 12/18/17 15:20		Analyst: STP
Chloride	68		10	mg/Kg-dry	1	12/19/2017 04:30 PM
MOISTURE			SW3550C			Analyst: NW
Moisture	4.9		0.050	% of sample	1	12/20/2017 03:15 PM

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

ALS Group, USA**Date:** 22-Dec-17

Client: WPX Energy
Project: RDU 45 Cleanup Confirmation
Sample ID: RDU 45 S1 7'
Collection Date: 12/14/2017 11:25 AM

Work Order: 17121004
Lab ID: 17121004-06
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CHLORIDE			A4500-CL E-11	Prep: EXTRACT	12/18/17 15:20	Analyst: STP
Chloride	2,300		43	mg/Kg-dry	4	12/19/2017 04:30 PM
MOISTURE			SW3550C			Analyst: NW
Moisture	6.7		0.050	% of sample	1	12/20/2017 03:15 PM

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

Client: WPX Energy
Work Order: 17121004
Project: RDU 45 Cleanup Confirmation

QC BATCH REPORT

Batch ID: **112023** Instrument ID **GC8** Method: **SW8015C**

MBLK		Sample ID: DBLKS1-112023-112023				Units: mg/Kg		Analysis Date: 12/19/2017 01:22 PM		
Client ID:		Run ID: GC8_171219A				SeqNo: 4819666		Prep Date: 12/19/2017		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								
ORO (C28-C40)	ND	5.0								
Surr: 4-Terphenyl-d14	4	0	3.33	0	120	34-130	0			

LCS		Sample ID: DLCSS1-112023-112023				Units: mg/Kg		Analysis Date: 12/19/2017 01:52 PM		
Client ID:		Run ID: GC8_171219A				SeqNo: 4819667		Prep Date: 12/19/2017		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	298	5.0	333	0	89.5	65-122	0			
ORO (C28-C40)	407	5.0	333	0	122	81-116	0			S
Surr: 4-Terphenyl-d14	4.65	0	3.33	0	140	34-130	0			S

MS		Sample ID: 17121000-03A MS				Units: mg/Kg		Analysis Date: 12/19/2017 02:21 PM		
Client ID:		Run ID: GC8_171219A				SeqNo: 4819668		Prep Date: 12/19/2017		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	670.1	4.8	323	58.76	189	65-122	0			S
ORO (C28-C40)	552.9	4.8	323	43.85	158	81-116	0			S
Surr: 4-Terphenyl-d14	4.154	0	3.23	0	129	34-130	0			

MSD		Sample ID: 17121000-03A MSD				Units: mg/Kg		Analysis Date: 12/19/2017 02:50 PM		
Client ID:		Run ID: GC8_171219A				SeqNo: 4819671		Prep Date: 12/19/2017		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	426.5	4.9	326.2	58.76	113	65-122	670.1	44.4	30	R
ORO (C28-C40)	425.7	4.9	326.2	43.85	117	81-116	552.9	26	30	S
Surr: 4-Terphenyl-d14	4.016	0	3.262	0	123	34-130	4.154	3.39	30	

The following samples were analyzed in this batch:

17121004-01A	17121004-02A	17121004-03A
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Client: WPX Energy
 Work Order: 17121004
 Project: RDU 45 Cleanup Confirmation

QC BATCH REPORT

Batch ID: **112096** Instrument ID **GC8** Method: **SW8015C**

MBLK		Sample ID: DBLKS1-112096-112096				Units: mg/Kg		Analysis Date: 12/20/2017 11:41 A		
Client ID:		Run ID: GC8_171220A				SeqNo: 4821805		Prep Date: 12/20/2017		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

ORO (C28-C40)

ND

5.0

Surr: 4-Terphenyl-d14

2.983

0

3.33

0

89.6

34-130

0

LCS		Sample ID: DLCSS1-112096-112096				Units: mg/Kg		Analysis Date: 12/20/2017 12:10 PM		
Client ID:		Run ID: GC8_171220A				SeqNo: 4821806		Prep Date: 12/20/2017		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)

297.6

5.0

333

0

89.4

65-122

0

ORO (C28-C40)

409.2

5.0

333

0

123

81-116

0

S

Surr: 4-Terphenyl-d14

3.35

0

3.33

0

101

34-130

0

MS		Sample ID: 17121000-03A MS				Units: mg/Kg		Analysis Date: 12/20/2017 04:02 PM		
Client ID:		Run ID: GC8_171220A				SeqNo: 4823062		Prep Date: 12/20/2017		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)

313.2

4.9

325.2

16.76

91.2

65-122

0

ORO (C28-C40)

389.2

4.9

325.2

5.796

118

81-116

0

S

Surr: 4-Terphenyl-d14

2.946

0

3.252

0

90.6

34-130

0

MSD		Sample ID: 17121000-03A MSD				Units: mg/Kg		Analysis Date: 12/20/2017 05:24 PM		
Client ID:		Run ID: GC8_171220A				SeqNo: 4823063		Prep Date: 12/20/2017		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)

299.4

4.8

322.6

16.76

87.6

65-122

313.2

4.52

30

ORO (C28-C40)

371.4

4.8

322.6

5.796

113

81-116

389.2

4.67

30

Surr: 4-Terphenyl-d14

2.551

0

3.226

0

79.1

34-130

2.946

14.4

30

The following samples were analyzed in this batch:

17121004-01A

17121004-02A

17121004-03A

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

Client: WPX Energy
 Work Order: 17121004
 Project: RDU 45 Cleanup Confirmation

QC BATCH REPORT

Batch ID: **112037** Instrument ID **GC9** Method: **SW8015D**

MBLK		Sample ID: MBLK-112037-112037				Units: µg/Kg-dry		Analysis Date: 12/19/2017 05:36 PM		
Client ID:		Run ID: GC9_171219A				SeqNo: 4820367		Prep Date: 12/19/2017		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	ND	5,000								
Surr: Toluene-d8	4878	0	5000	0	97.6	71-123	0			

LCS		Sample ID: LCS-112037-112037				Units: µg/Kg-dry		Analysis Date: 12/19/2017 04:37 PM		
Client ID:		Run ID: GC9_171219A				SeqNo: 4820366		Prep Date: 12/19/2017		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	497100	5,000	500000	0	99.4	71-123	0			
Surr: Toluene-d8	4592	0	5000	0	91.8	71-123	0			

MS		Sample ID: 17121079-02A MS				Units: µg/Kg-dry		Analysis Date: 12/19/2017 06:06 PM		
Client ID:		Run ID: GC9_171219A				SeqNo: 4820368		Prep Date: 12/19/2017		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	653600	6,200	623600	16870	102	71-123	0			
Surr: Toluene-d8	6072	0	6236	0	97.4	71-123	0			

MSD		Sample ID: 17121079-02A MSD				Units: µg/Kg-dry		Analysis Date: 12/19/2017 06:35 PM		
Client ID:		Run ID: GC9_171219A				SeqNo: 4820369		Prep Date: 12/19/2017		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	706200	6,200	623600	16870	111	71-123	653600	7.74	30	
Surr: Toluene-d8	6242	0	6236	0	100	71-123	6072	2.75	30	

The following samples were analyzed in this batch:

17121004-01A	17121004-02A	17121004-03A
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Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: WPX Energy
 Work Order: 17121004
 Project: RDU 45 Cleanup Confirmation

QC BATCH REPORT

Batch ID: **112038** Instrument ID **VMS10** Method: **SW8260B**

MBLK		Sample ID: MBLK-112038-112038				Units: µg/Kg-dry		Analysis Date: 12/19/2017 04:22 PM		
Client ID:		Run ID: VMS10_171219A				SeqNo: 4820156		Prep Date: 12/19/2017		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	1044	0	1000	0	104	70-130	0			
Surr: 4-Bromofluorobenzene	986.5	0	1000	0	98.6	70-130	0			
Surr: Dibromofluoromethane	910	0	1000	0	91	70-130	0			
Surr: Toluene-d8	1000	0	1000	0	100	70-130	0			

LCS		Sample ID: LCS-112038-112038				Units: µg/Kg-dry		Analysis Date: 12/19/2017 10:05 A		
Client ID:		Run ID: VMS10_171219A				SeqNo: 4820155		Prep Date: 12/19/2017		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1090	30	1000	0	109	75-125	0			
Ethylbenzene	1067	30	1000	0	107	75-125	0			
m,p-Xylene	2154	60	2000	0	108	80-125	0			
o-Xylene	1098	30	1000	0	110	75-125	0			
Toluene	1059	30	1000	0	106	70-125	0			
Xylenes, Total	3252	90	3000	0	108	75-125	0			
Surr: 1,2-Dichloroethane-d4	1030	0	1000	0	103	70-130	0			
Surr: 4-Bromofluorobenzene	1032	0	1000	0	103	70-130	0			
Surr: Dibromofluoromethane	1021	0	1000	0	102	70-130	0			
Surr: Toluene-d8	1004	0	1000	0	100	70-130	0			

MS		Sample ID: 17121079-02A MS				Units: µg/Kg-dry		Analysis Date: 12/19/2017 06:10 PM		
Client ID:		Run ID: VMS10_171219A				SeqNo: 4820159		Prep Date: 12/19/2017		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1349	37	1247	0	108	75-125	0			
Ethylbenzene	1323	37	1247	3.118	106	75-125	0			
m,p-Xylene	2677	75	2494	38.66	106	80-125	0			
o-Xylene	1339	37	1247	0	107	75-125	0			
Toluene	1290	37	1247	0	103	70-125	0			
Xylenes, Total	4017	110	3742	39	106	75-125	0			
Surr: 1,2-Dichloroethane-d4	1292	0	1247	0	104	70-130	0			
Surr: 4-Bromofluorobenzene	1344	0	1247	0	108	70-130	0			
Surr: Dibromofluoromethane	1213	0	1247	0	97.2	70-130	0			
Surr: Toluene-d8	1249	0	1247	0	100	70-130	0			

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

Client: WPX Energy
 Work Order: 17121004
 Project: RDU 45 Cleanup Confirmation

QC BATCH REPORT

Batch ID: **112038** Instrument ID **VMS10** Method: **SW8260B**

MSD				Sample ID: 17121079-02A MSD			Units: µg/Kg-dry		Analysis Date: 12/19/2017 06:26 PM	
Client ID:				Run ID: VMS10_171219A			SeqNo: 4820160		Prep Date: 12/19/2017	
									DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1268	37	1247	0	102	75-125	1349	6.19	30	
Ethylbenzene	1216	37	1247	3.118	97.2	75-125	1323	8.45	30	
m,p-Xylene	2531	75	2494	38.66	99.9	80-125	2677	5.63	30	
o-Xylene	1254	37	1247	0	101	75-125	1339	6.59	30	
Toluene	1198	37	1247	0	96	70-125	1290	7.37	30	
Xylenes, Total	3785	110	3742	39	100	75-125	4017	5.95	30	
Surr: 1,2-Dichloroethane-d4	1304	0	1247	0	105	70-130	1292	0.913	30	
Surr: 4-Bromofluorobenzene	1306	0	1247	0	105	70-130	1344	2.87	30	
Surr: Dibromofluoromethane	1208	0	1247	0	96.8	70-130	1213	0.412	30	
Surr: Toluene-d8	1258	0	1247	0	101	70-130	1249	0.746	30	

The following samples were analyzed in this batch:

17121004-01A	17121004-02A	17121004-03A
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Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: WPX Energy
Work Order: 17121004
Project: RDU 45 Cleanup Confirmation

QC BATCH REPORT

Batch ID: **112009** Instrument ID **GALLERY** Method: **A4500-CI E-11**

MBLK		Sample ID: MBLK-112009-112009				Units: mg/Kg		Analysis Date: 12/19/2017 04:30 PM		
Client ID:		Run ID: GALLERY_171219D		SeqNo: 4819498		Prep Date: 12/18/2017		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chloride ND 10

MS		Sample ID: 17121003-04A MS				Units: mg/Kg		Analysis Date: 12/19/2017 04:30 PM		
Client ID:		Run ID: GALLERY_171219D		SeqNo: 4819504		Prep Date: 12/18/2017		DF: 2		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chloride 946.4 20 494.1 553.7 79.5 75-125 0

MSD		Sample ID: 17121003-04A MSD				Units: mg/Kg		Analysis Date: 12/19/2017 04:30 PM		
Client ID:		Run ID: GALLERY_171219D		SeqNo: 4819505		Prep Date: 12/18/2017		DF: 2		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chloride 1019 20 492.1 553.7 94.6 75-125 946.4 7.41 25

LCS1		Sample ID: LCS1-112009-112009				Units: mg/Kg		Analysis Date: 12/19/2017 04:30 PM		
Client ID:		Run ID: GALLERY_171219D		SeqNo: 4819514		Prep Date: 12/18/2017		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chloride 104.4 10 100 0 104 80-120 0

LCS2		Sample ID: LCS2-112009-112009				Units: mg/Kg		Analysis Date: 12/19/2017 04:30 PM		
Client ID:		Run ID: GALLERY_171219D		SeqNo: 4819515		Prep Date: 12/18/2017		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chloride 493.6 10 500 0 98.7 80-120 0

The following samples were analyzed in this batch:

17121004-01A	17121004-02A	17121004-03A
17121004-04A	17121004-05A	17121004-06A

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

Client: WPX Energy
Work Order: 17121004
Project: RDU 45 Cleanup Confirmation

QC BATCH REPORT

Batch ID: **R226757** Instrument ID **MOIST** Method: **SW3550C**

MBLK		Sample ID: WBLKS-R226757				Units: % of sample		Analysis Date: 12/18/2017 09:00 A		
Client ID:		Run ID: MOIST_171218A		SeqNo: 4817544		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-R226757				Units: % of sample		Analysis Date: 12/18/2017 09:00 A		
Client ID:		Run ID: MOIST_171218A		SeqNo: 4817543		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: 17121004-02A DUP				Units: % of sample		Analysis Date: 12/18/2017 09:00 A		
Client ID: RDU 45 S1 1'		Run ID: MOIST_171218A		SeqNo: 4817522		Prep Date:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 5.98 0.050 0 0 0 0-0 6.11 2.15 10

DUP		Sample ID: 1712981-10A DUP				Units: % of sample		Analysis Date: 12/18/2017 09:00 A		
Client ID:		Run ID: MOIST_171218A		SeqNo: 4817539		Prep Date:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 25.2 0.050 0 0 0 0-0 24.24 3.88 10

The following samples were analyzed in this batch:

17121004-02A

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

Client: WPX Energy
 Work Order: 17121004
 Project: RDU 45 Cleanup Confirmation

QC BATCH REPORT

Batch ID: **R226975** Instrument ID **MOIST** Method: **SW3550C**

MBLK		Sample ID: WBLKS-R226975				Units: % of sample		Analysis Date: 12/20/2017 03:15 PM		
Client ID:		Run ID: MOIST_171220A				SeqNo: 4823282		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	0.03	0.050								J

LCS		Sample ID: LCS-R226975				Units: % of sample		Analysis Date: 12/20/2017 03:15 PM		
Client ID:		Run ID: MOIST_171220A				SeqNo: 4823281		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: 17121016-01B DUP				Units: % of sample		Analysis Date: 12/20/2017 03:15 PM		
Client ID:		Run ID: MOIST_171220A				SeqNo: 4823277		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	4.84	0.050	0	0	0	0-0	4.77	1.46	10	

DUP		Sample ID: 17121016-02B DUP				Units: % of sample		Analysis Date: 12/20/2017 03:15 PM		
Client ID:		Run ID: MOIST_171220A				SeqNo: 4823279		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Moisture	6.11	0.050	0	0	0	0-0	6.17	0.977	10	

The following samples were analyzed in this batch:

17121004-01A	17121004-03A	17121004-04A
17121004-05A	17121004-06A	

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

WORKORDER
#

17121004

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:	QC PACKAGE (check below)							
	☒	LEVEL II (Standard QC)						
	☐	LEVEL III (Std QC + forms)						
	☐	LEVEL IV (Std QC + forms + raw data)						
	☐							
Preservative Key: 1-HCl 2-HNO ₃ 3-H ₂ SO ₄ 4-NaOH 5-NaHSO ₄ 6-Other 7-degrees C 8-50/35								

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY	<i>Karolina Blaney</i>	Karolina Blaney	7/17/2017	15:00
RECEIVED BY	<i>Nicole Fredericks</i>	Nicole Fredericks	12-15-17	1000
RELINQUISHED BY				
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				

46

Sample Receipt Checklist

Client Name: **WPX - NM**

Date/Time Received: **15-Dec-17 10:00**

Work Order: **17121004**

Received by: **NCF**

Checklist completed by Nicole Fredericks
eSignature

15-Dec-17
Date

Reviewed by: Chad Whelton
eSignature

18-Dec-17
Date

Matrices: **Soil**

Carrier name: **FedEx**

Shipping container/cooler in good condition? Yes ☒ No ☐ Not Present ☐

Custody seals intact on shipping container/cooler? Yes ☒ No ☐ Not Present ☐

Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒

Chain of custody present? Yes ☒ No ☐

Chain of custody signed when relinquished and received? Yes ☒ No ☐

Chain of custody agrees with sample labels? Yes ☒ No ☐

Samples in proper container/bottle? Yes ☒ No ☐

Sample containers intact? Yes ☒ No ☐

Sufficient sample volume for indicated test? Yes ☒ No ☐

All samples received within holding time? Yes ☒ No ☐

Container/Temp Blank temperature in compliance? Yes ☒ No ☐

Sample(s) received on ice? Yes ☒ No ☐

Temperature(s)/Thermometer(s): 4.6/4.6 SR2

Cooler(s)/Kit(s):

Date/Time sample(s) sent to storage: 12/15/2017 1:36:43 PM

Water - VOA vials have zero headspace? Yes ☐ No ☐ No VOA vials submitted ☒

Water - pH acceptable upon receipt? Yes ☒ No ☐ N/A ☐

pH adjusted? Yes ☐ No ☒ N/A ☐

pH adjusted by: -

Login Notes:

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction:



05-Feb-2018

James Raley
WPX Energy
5315 Buena Vista Dr.
Carlsbad, NM 88220

Re: **RDU 45**

Work Order: **18011348**

Dear James,

ALS Environmental received 27 samples on 26-Jan-2018 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 industry accepted practices and Quality Control 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 47.

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

Sincerely,

A handwritten signature in black ink, appearing to read "Chad Whelton".

Electronically approved by: Chad Whelton

Chad Whelton
Project Manager

Certificate No: MN 998501

Report of Laboratory Analysis

ADDRESS 3352 128th Ave Holland, Michigan 49424 | 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: WPX Energy
Project: RDU 45
Work Order: 18011348

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>
18011348-01	BH18-01 (0-2 ft)	Soil		1/18/2018	1/26/2018 09:30	☐
18011348-02	BH18-01 (2-4 ft)	Soil		1/18/2018	1/26/2018 09:30	☐
18011348-03	BH18-01 (4-6 ft)	Soil		1/18/2018	1/26/2018 09:30	☐
18011348-04	BH18-02 (0-2 ft)	Soil		1/18/2018	1/26/2018 09:30	☐
18011348-05	BH18-02 (2-4 ft)	Soil		1/18/2018	1/26/2018 09:30	☐
18011348-06	BH18-02 (4-6 ft)	Soil		1/18/2018	1/26/2018 09:30	☐
18011348-07	BH18-03 (0-2 ft)	Soil		1/18/2018	1/26/2018 09:30	☐
18011348-08	BH18-03 (2-4 ft)	Soil		1/18/2018	1/26/2018 09:30	☐
18011348-09	BH18-03 (4-6 ft)	Soil		1/18/2018	1/26/2018 09:30	☐
18011348-10	BH18-04 (0-2 ft)	Soil		1/18/2018	1/26/2018 09:30	☐
18011348-11	BH18-04 (2-4 ft)	Soil		1/18/2018	1/26/2018 09:30	☐
18011348-12	BH18-04 (4-6 ft)	Soil		1/18/2018	1/26/2018 09:30	☐
18011348-13	BH18-05 (0-2 ft)	Soil		1/18/2018	1/26/2018 09:30	☐
18011348-14	BH18-05 (2-4 ft)	Soil		1/18/2018	1/26/2018 09:30	☐
18011348-15	BH18-05 (4-6 ft)	Soil		1/18/2018	1/26/2018 09:30	☐
18011348-16	BH18-06 (0-2 ft)	Soil		1/18/2018	1/26/2018 09:30	☐
18011348-17	BH18-06 (2-4 ft)	Soil		1/18/2018	1/26/2018 09:30	☐
18011348-18	BH18-06 (4-6 ft)	Soil		1/18/2018	1/26/2018 09:30	☐
18011348-19	BH18-07 (0-2 ft)	Soil		1/18/2018	1/26/2018 09:30	☐
18011348-20	BH18-07 (2-4 ft)	Soil		1/18/2018	1/26/2018 09:30	☐
18011348-21	BH18-07 (4-6 ft)	Soil		1/18/2018	1/26/2018 09:30	☐
18011348-22	BH18-08 (0-2 ft)	Soil		1/18/2018	1/26/2018 09:30	☐
18011348-23	BH18-08 (2-4 ft)	Soil		1/18/2018	1/26/2018 09:30	☐
18011348-24	BH18-08 (4-6 ft)	Soil		1/18/2018	1/26/2018 09:30	☐
18011348-25	BH18-09 (0-2 ft)	Soil		1/18/2018	1/26/2018 09:30	☐
18011348-26	BH18-09 (2-4 ft)	Soil		1/18/2018	1/26/2018 09:30	☐
18011348-27	BH18-09 (4-6 ft)	Soil		1/18/2018	1/26/2018 09:30	☐

Client: WPX Energy
Project: RDU 45
WorkOrder: 18011348

QUALIFIERS, ACRONYMS, UNITS

<u>Qualifier</u>	<u>Description</u>
*	Value exceeds Regulatory Limit
**	Estimated Value
a	Analyte is non-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
ND	Not Detected at the Reporting Limit
O	Sample amount is > 4 times amount spiked
P	Dual Column results percent difference > 40%
R	RPD above laboratory control limit
S	Spike Recovery outside laboratory control limits
U	Analyzed but not detected above the MDL
X	Analyte was detected in the Method Blank between the MDL and Reporting Limit, sample results may exhibit background or reagent contamination at the observed level.

<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
mg/Kg-dry	Milligrams per Kilogram Dry Weight

ALS Group, USA

Date: 05-Feb-18

Client: WPX Energy

Project: RDU 45

Sample ID: BH18-01 (0-2 ft)

Collection Date: 1/18/2018

Work Order: 18011348

Lab ID: 18011348-01

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015C		Prep: SW3546 1/31/18 12:25	Analyst: MEB
DRO (C10-C28)	37		6.3	mg/Kg-dry	1	2/1/2018 03:39 AM
ORO (C28-C40)	24		6.3	mg/Kg-dry	1	2/1/2018 03:39 AM
Surr: 4-Terphenyl-d14	48.0		34-130	%REC	1	2/1/2018 03:39 AM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 1/29/18 16:08	Analyst: MEB
GRO (C6-C10)	18		7.8	mg/Kg-dry	1	1/30/2018 03:22 PM
Surr: Toluene-d8	103		71-123	%REC	1	1/30/2018 03:22 PM
VOLATILE ORGANIC COMPOUNDS						
			SW8260B		Prep: SW5035 1/29/18 14:02	Analyst: LSY
Benzene	ND		0.047	mg/Kg-dry	1	1/30/2018 02:05 PM
Ethylbenzene	ND		0.047	mg/Kg-dry	1	1/30/2018 02:05 PM
m,p-Xylene	ND		0.094	mg/Kg-dry	1	1/30/2018 02:05 PM
o-Xylene	ND		0.047	mg/Kg-dry	1	1/30/2018 02:05 PM
Toluene	ND		0.047	mg/Kg-dry	1	1/30/2018 02:05 PM
Xylenes, Total	ND		0.14	mg/Kg-dry	1	1/30/2018 02:05 PM
Surr: 1,2-Dichloroethane-d4	98.0		70-130	%REC	1	1/30/2018 02:05 PM
Surr: 4-Bromofluorobenzene	100		70-130	%REC	1	1/30/2018 02:05 PM
Surr: Dibromofluoromethane	91.4		70-130	%REC	1	1/30/2018 02:05 PM
Surr: Toluene-d8	99.2		70-130	%REC	1	1/30/2018 02:05 PM
CHLORIDE						
			A4500-CL E-11		Prep: EXTRACT 1/29/18 17:45	Analyst: STP
Chloride	54		13	mg/Kg-dry	1	1/30/2018 06:30 PM
MOISTURE						
			SW3550C			Analyst: NW
Moisture	22		0.050	% of sample	1	1/31/2018 08:35 PM

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

ALS Group, USA

Date: 05-Feb-18

Client: WPX Energy

Project: RDU 45

Sample ID: BH18-01 (2-4 ft)

Collection Date: 1/18/2018

Work Order: 18011348

Lab ID: 18011348-02

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015C		Prep: SW3546 1/31/18 12:25	Analyst: MEB
DRO (C10-C28)	ND		6.2	mg/Kg-dry	1	2/1/2018 04:09 AM
ORO (C28-C40)	ND		6.2	mg/Kg-dry	1	2/1/2018 04:09 AM
Surr: 4-Terphenyl-d14	47.0		34-130	%REC	1	2/1/2018 04:09 AM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 1/29/18 16:08	Analyst: MEB
GRO (C6-C10)	ND		7.7	mg/Kg-dry	1	1/30/2018 03:51 PM
Surr: Toluene-d8	102		71-123	%REC	1	1/30/2018 03:51 PM
VOLATILE ORGANIC COMPOUNDS						
			SW8260B		Prep: SW5035 1/29/18 14:02	Analyst: WH
Benzene	ND		0.046	mg/Kg-dry	1	1/30/2018 12:57 PM
Ethylbenzene	ND		0.046	mg/Kg-dry	1	1/30/2018 12:57 PM
m,p-Xylene	ND		0.092	mg/Kg-dry	1	1/30/2018 12:57 PM
o-Xylene	ND		0.046	mg/Kg-dry	1	1/30/2018 12:57 PM
Toluene	ND		0.046	mg/Kg-dry	1	1/30/2018 12:57 PM
Xylenes, Total	ND		0.14	mg/Kg-dry	1	1/30/2018 12:57 PM
Surr: 1,2-Dichloroethane-d4	96.4		70-130	%REC	1	1/30/2018 12:57 PM
Surr: 4-Bromofluorobenzene	102		70-130	%REC	1	1/30/2018 12:57 PM
Surr: Dibromofluoromethane	90.2		70-130	%REC	1	1/30/2018 12:57 PM
Surr: Toluene-d8	94.2		70-130	%REC	1	1/30/2018 12:57 PM
CHLORIDE						
			A4500-CL E-11		Prep: EXTRACT 1/30/18 13:00	Analyst: STP
Chloride	47		13	mg/Kg-dry	1	1/30/2018 07:30 PM
MOISTURE						
			SW3550C			Analyst: NW
Moisture	21		0.050	% of sample	1	1/31/2018 08:35 PM

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

ALS Group, USA

Date: 05-Feb-18

Client: WPX Energy

Project: RDU 45

Sample ID: BH18-01 (4-6 ft)

Collection Date: 1/18/2018

Work Order: 18011348

Lab ID: 18011348-03

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015C		Prep: SW3546 1/31/18 12:25	Analyst: MEB
DRO (C10-C28)	ND		6.1	mg/Kg-dry	1	2/1/2018 04:38 AM
ORO (C28-C40)	ND		6.1	mg/Kg-dry	1	2/1/2018 04:38 AM
Surr: 4-Terphenyl-d14	54.1		34-130	%REC	1	2/1/2018 04:38 AM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 1/29/18 16:08	Analyst: MEB
GRO (C6-C10)	ND		7.5	mg/Kg-dry	1	1/30/2018 04:21 PM
Surr: Toluene-d8	103		71-123	%REC	1	1/30/2018 04:21 PM
VOLATILE ORGANIC COMPOUNDS						
			SW8260B		Prep: SW5035 1/29/18 14:02	Analyst: WH
Benzene	ND		0.045	mg/Kg-dry	1	1/30/2018 01:13 AM
Ethylbenzene	ND		0.045	mg/Kg-dry	1	1/30/2018 01:13 AM
m,p-Xylene	ND		0.090	mg/Kg-dry	1	1/30/2018 01:13 AM
o-Xylene	ND		0.045	mg/Kg-dry	1	1/30/2018 01:13 AM
Toluene	ND		0.045	mg/Kg-dry	1	1/30/2018 01:13 AM
Xylenes, Total	ND		0.14	mg/Kg-dry	1	1/30/2018 01:13 AM
Surr: 1,2-Dichloroethane-d4	94.0		70-130	%REC	1	1/30/2018 01:13 AM
Surr: 4-Bromofluorobenzene	101		70-130	%REC	1	1/30/2018 01:13 AM
Surr: Dibromofluoromethane	90.8		70-130	%REC	1	1/30/2018 01:13 AM
Surr: Toluene-d8	97.6		70-130	%REC	1	1/30/2018 01:13 AM
CHLORIDE						
			A4500-CL E-11		Prep: EXTRACT 1/30/18 13:00	Analyst: STP
Chloride	23		12	mg/Kg-dry	1	1/30/2018 07:30 PM
MOISTURE						
			SW3550C			Analyst: NW
Moisture	20		0.050	% of sample	1	1/31/2018 08:35 PM

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

ALS Group, USA

Date: 05-Feb-18

Client: WPX Energy

Project: RDU 45

Sample ID: BH18-02 (0-2 ft)

Collection Date: 1/18/2018

Work Order: 18011348

Lab ID: 18011348-04

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015C		Prep: SW3546 1/31/18 12:25	Analyst: MEB
DRO (C10-C28)	ND		5.8	mg/Kg-dry	1	2/1/2018 05:07 AM
ORO (C28-C40)	ND		5.8	mg/Kg-dry	1	2/1/2018 05:07 AM
Surr: 4-Terphenyl-d14	46.5		34-130	%REC	1	2/1/2018 05:07 AM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 1/29/18 16:08	Analyst: MEB
GRO (C6-C10)	15		7.2	mg/Kg-dry	1	1/30/2018 07:26 PM
Surr: Toluene-d8	100		71-123	%REC	1	1/30/2018 07:26 PM
VOLATILE ORGANIC COMPOUNDS						
			SW8260B		Prep: SW5035 1/29/18 14:02	Analyst: WH
Benzene	ND		0.043	mg/Kg-dry	1	1/30/2018 01:29 AM
Ethylbenzene	ND		0.043	mg/Kg-dry	1	1/30/2018 01:29 AM
m,p-Xylene	ND		0.086	mg/Kg-dry	1	1/30/2018 01:29 AM
o-Xylene	ND		0.043	mg/Kg-dry	1	1/30/2018 01:29 AM
Toluene	ND		0.043	mg/Kg-dry	1	1/30/2018 01:29 AM
Xylenes, Total	ND		0.13	mg/Kg-dry	1	1/30/2018 01:29 AM
Surr: 1,2-Dichloroethane-d4	93.5		70-130	%REC	1	1/30/2018 01:29 AM
Surr: 4-Bromofluorobenzene	99.8		70-130	%REC	1	1/30/2018 01:29 AM
Surr: Dibromofluoromethane	91.6		70-130	%REC	1	1/30/2018 01:29 AM
Surr: Toluene-d8	98.1		70-130	%REC	1	1/30/2018 01:29 AM
CHLORIDE						
			A4500-CL E-11		Prep: EXTRACT 1/30/18 13:00	Analyst: STP
Chloride	16		12	mg/Kg-dry	1	1/30/2018 07:30 PM
MOISTURE						
			SW3550C			Analyst: NW
Moisture	18		0.050	% of sample	1	1/31/2018 08:35 PM

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

ALS Group, USA

Date: 05-Feb-18

Client: WPX Energy

Project: RDU 45

Sample ID: BH18-02 (2-4 ft)

Collection Date: 1/18/2018

Work Order: 18011348

Lab ID: 18011348-05

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015C		Prep: SW3546 1/31/18 12:25	Analyst: MEB
DRO (C10-C28)	ND		6.4	mg/Kg-dry	1	2/1/2018 05:36 AM
ORO (C28-C40)	ND		6.4	mg/Kg-dry	1	2/1/2018 05:36 AM
Surr: 4-Terphenyl-d14	52.1		34-130	%REC	1	2/1/2018 05:36 AM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 1/29/18 16:08	Analyst: MEB
GRO (C6-C10)	ND		7.8	mg/Kg-dry	1	1/30/2018 07:55 PM
Surr: Toluene-d8	99.5		71-123	%REC	1	1/30/2018 07:55 PM
VOLATILE ORGANIC COMPOUNDS						
			SW8260B		Prep: SW5035 1/29/18 14:02	Analyst: WH
Benzene	ND		0.047	mg/Kg-dry	1	1/30/2018 01:44 AM
Ethylbenzene	ND		0.047	mg/Kg-dry	1	1/30/2018 01:44 AM
m,p-Xylene	ND		0.094	mg/Kg-dry	1	1/30/2018 01:44 AM
o-Xylene	ND		0.047	mg/Kg-dry	1	1/30/2018 01:44 AM
Toluene	ND		0.047	mg/Kg-dry	1	1/30/2018 01:44 AM
Xylenes, Total	ND		0.14	mg/Kg-dry	1	1/30/2018 01:44 AM
Surr: 1,2-Dichloroethane-d4	95.0		70-130	%REC	1	1/30/2018 01:44 AM
Surr: 4-Bromofluorobenzene	100		70-130	%REC	1	1/30/2018 01:44 AM
Surr: Dibromofluoromethane	93.4		70-130	%REC	1	1/30/2018 01:44 AM
Surr: Toluene-d8	97.3		70-130	%REC	1	1/30/2018 01:44 AM
CHLORIDE						
			A4500-CL E-11		Prep: EXTRACT 1/30/18 13:00	Analyst: STP
Chloride	ND		13	mg/Kg-dry	1	1/30/2018 07:30 PM
MOISTURE						
			SW3550C			Analyst: NW
Moisture	22		0.050	% of sample	1	1/31/2018 08:35 PM

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

ALS Group, USA

Date: 05-Feb-18

Client: WPX Energy

Project: RDU 45

Sample ID: BH18-02 (4-6 ft)

Collection Date: 1/18/2018

Work Order: 18011348

Lab ID: 18011348-06

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015C		Prep: SW3546 1/31/18 12:25	Analyst: MEB
DRO (C10-C28)	ND		6.1	mg/Kg-dry	1	2/1/2018 06:34 AM
ORO (C28-C40)	ND		6.1	mg/Kg-dry	1	2/1/2018 06:34 AM
Surr: 4-Terphenyl-d14	60.6		34-130	%REC	1	2/1/2018 06:34 AM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 1/29/18 16:08	Analyst: MEB
GRO (C6-C10)	ND		7.5	mg/Kg-dry	1	1/30/2018 08:25 PM
Surr: Toluene-d8	98.2		71-123	%REC	1	1/30/2018 08:25 PM
VOLATILE ORGANIC COMPOUNDS						
			SW8260B		Prep: SW5035 1/29/18 14:02	Analyst: WH
Benzene	ND		0.045	mg/Kg-dry	1	1/30/2018 02:00 AM
Ethylbenzene	ND		0.045	mg/Kg-dry	1	1/30/2018 02:00 AM
m,p-Xylene	ND		0.090	mg/Kg-dry	1	1/30/2018 02:00 AM
o-Xylene	ND		0.045	mg/Kg-dry	1	1/30/2018 02:00 AM
Toluene	ND		0.045	mg/Kg-dry	1	1/30/2018 02:00 AM
Xylenes, Total	ND		0.14	mg/Kg-dry	1	1/30/2018 02:00 AM
Surr: 1,2-Dichloroethane-d4	93.8		70-130	%REC	1	1/30/2018 02:00 AM
Surr: 4-Bromofluorobenzene	98.6		70-130	%REC	1	1/30/2018 02:00 AM
Surr: Dibromofluoromethane	89.5		70-130	%REC	1	1/30/2018 02:00 AM
Surr: Toluene-d8	97.8		70-130	%REC	1	1/30/2018 02:00 AM
CHLORIDE						
			A4500-CL E-11		Prep: EXTRACT 1/30/18 13:00	Analyst: STP
Chloride	ND		13	mg/Kg-dry	1	1/30/2018 07:30 PM
MOISTURE						
			SW3550C			Analyst: NW
Moisture	20		0.050	% of sample	1	1/31/2018 08:35 PM

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

ALS Group, USA

Date: 05-Feb-18

Client: WPX Energy

Project: RDU 45

Sample ID: BH18-03 (0-2 ft)

Collection Date: 1/18/2018

Work Order: 18011348

Lab ID: 18011348-07

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015C		Prep: SW3546 1/31/18 12:25	Analyst: MEB
DRO (C10-C28)	ND		6.2	mg/Kg-dry	1	2/1/2018 07:03 AM
ORO (C28-C40)	ND		6.2	mg/Kg-dry	1	2/1/2018 07:03 AM
Surr: 4-Terphenyl-d14	52.1		34-130	%REC	1	2/1/2018 07:03 AM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 1/29/18 16:08	Analyst: MEB
GRO (C6-C10)	ND		7.5	mg/Kg-dry	1	1/30/2018 08:54 PM
Surr: Toluene-d8	97.7		71-123	%REC	1	1/30/2018 08:54 PM
VOLATILE ORGANIC COMPOUNDS						
			SW8260B		Prep: SW5035 1/29/18 14:02	Analyst: WH
Benzene	ND		0.045	mg/Kg-dry	1	1/30/2018 02:16 AM
Ethylbenzene	ND		0.045	mg/Kg-dry	1	1/30/2018 02:16 AM
m,p-Xylene	ND		0.090	mg/Kg-dry	1	1/30/2018 02:16 AM
o-Xylene	ND		0.045	mg/Kg-dry	1	1/30/2018 02:16 AM
Toluene	ND		0.045	mg/Kg-dry	1	1/30/2018 02:16 AM
Xylenes, Total	ND		0.14	mg/Kg-dry	1	1/30/2018 02:16 AM
Surr: 1,2-Dichloroethane-d4	95.3		70-130	%REC	1	1/30/2018 02:16 AM
Surr: 4-Bromofluorobenzene	94.0		70-130	%REC	1	1/30/2018 02:16 AM
Surr: Dibromofluoromethane	88.9		70-130	%REC	1	1/30/2018 02:16 AM
Surr: Toluene-d8	98.0		70-130	%REC	1	1/30/2018 02:16 AM
CHLORIDE						
			A4500-CL E-11		Prep: EXTRACT 1/30/18 13:00	Analyst: STP
Chloride	24		13	mg/Kg-dry	1	1/30/2018 07:30 PM
MOISTURE						
			SW3550C			Analyst: NW
Moisture	20		0.050	% of sample	1	1/31/2018 08:35 PM

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

ALS Group, USA

Date: 05-Feb-18

Client: WPX Energy

Project: RDU 45

Sample ID: BH18-03 (2-4 ft)

Collection Date: 1/18/2018

Work Order: 18011348

Lab ID: 18011348-08

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015C		Prep: SW3546 1/31/18 14:29	Analyst: MEB
DRO (C10-C28)	ND		6.1	mg/Kg-dry	1	2/1/2018 09:58 AM
ORO (C28-C40)	ND		6.1	mg/Kg-dry	1	2/1/2018 09:58 AM
Surr: 4-Terphenyl-d14	63.1		34-130	%REC	1	2/1/2018 09:58 AM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 1/30/18 08:34	Analyst: MEB
GRO (C6-C10)	ND		7.7	mg/Kg-dry	1	1/31/2018 01:21 AM
Surr: Toluene-d8	99.0		71-123	%REC	1	1/31/2018 01:21 AM
VOLATILE ORGANIC COMPOUNDS						
			SW8260B		Prep: SW5035 1/30/18 08:34	Analyst: LSY
Benzene	ND		0.046	mg/Kg-dry	1	1/30/2018 11:44 AM
Ethylbenzene	ND		0.046	mg/Kg-dry	1	1/30/2018 11:44 AM
m,p-Xylene	ND		0.092	mg/Kg-dry	1	1/30/2018 11:44 AM
o-Xylene	ND		0.046	mg/Kg-dry	1	1/30/2018 11:44 AM
Toluene	ND		0.046	mg/Kg-dry	1	1/30/2018 11:44 AM
Xylenes, Total	ND		0.14	mg/Kg-dry	1	1/30/2018 11:44 AM
Surr: 1,2-Dichloroethane-d4	101		70-130	%REC	1	1/30/2018 11:44 AM
Surr: 4-Bromofluorobenzene	101		70-130	%REC	1	1/30/2018 11:44 AM
Surr: Dibromofluoromethane	96.9		70-130	%REC	1	1/30/2018 11:44 AM
Surr: Toluene-d8	96.2		70-130	%REC	1	1/30/2018 11:44 AM
CHLORIDE						
			A4500-CL E-11		Prep: EXTRACT 1/30/18 13:00	Analyst: STP
Chloride	ND		13	mg/Kg-dry	1	1/30/2018 07:30 PM
MOISTURE						
			SW3550C			Analyst: NW
Moisture	21		0.050	% of sample	1	1/31/2018 08:35 PM

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

ALS Group, USA

Date: 05-Feb-18

Client: WPX Energy

Project: RDU 45

Sample ID: BH18-03 (4-6 ft)

Collection Date: 1/18/2018

Work Order: 18011348

Lab ID: 18011348-09

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID			SW8015C	Prep: SW3546	1/31/18 14:29	Analyst: MEB
DRO (C10-C28)	ND		6.2	mg/Kg-dry	1	2/1/2018 10:27 AM
ORO (C28-C40)	ND		6.2	mg/Kg-dry	1	2/1/2018 10:27 AM
Surr: 4-Terphenyl-d14	58.6		34-130	%REC	1	2/1/2018 10:27 AM
GASOLINE RANGE ORGANICS BY GC-FID			SW8015D	Prep: SW5035	1/30/18 08:34	Analyst: MEB
GRO (C6-C10)	ND		7.5	mg/Kg-dry	1	1/31/2018 01:51 AM
Surr: Toluene-d8	97.8		71-123	%REC	1	1/31/2018 01:51 AM
VOLATILE ORGANIC COMPOUNDS			SW8260B	Prep: SW5035	1/30/18 08:34	Analyst: LSY
Benzene	ND		0.045	mg/Kg-dry	1	1/30/2018 11:59 AM
Ethylbenzene	ND		0.045	mg/Kg-dry	1	1/30/2018 11:59 AM
m,p-Xylene	ND		0.090	mg/Kg-dry	1	1/30/2018 11:59 AM
o-Xylene	ND		0.045	mg/Kg-dry	1	1/30/2018 11:59 AM
Toluene	ND		0.045	mg/Kg-dry	1	1/30/2018 11:59 AM
Xylenes, Total	ND		0.14	mg/Kg-dry	1	1/30/2018 11:59 AM
Surr: 1,2-Dichloroethane-d4	101		70-130	%REC	1	1/30/2018 11:59 AM
Surr: 4-Bromofluorobenzene	97.8		70-130	%REC	1	1/30/2018 11:59 AM
Surr: Dibromofluoromethane	99.6		70-130	%REC	1	1/30/2018 11:59 AM
Surr: Toluene-d8	97.0		70-130	%REC	1	1/30/2018 11:59 AM
CHLORIDE			A4500-CL E-11	Prep: EXTRACT	1/30/18 13:00	Analyst: STP
Chloride	ND		12	mg/Kg-dry	1	1/30/2018 07:30 PM
MOISTURE			SW3550C			Analyst: NW
Moisture	20		0.050	% of sample	1	1/31/2018 08:35 PM

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

ALS Group, USA

Date: 05-Feb-18

Client: WPX Energy

Project: RDU 45

Sample ID: BH18-04 (0-2 ft)

Collection Date: 1/18/2018

Work Order: 18011348

Lab ID: 18011348-10

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015C		Prep: SW3546 1/31/18 14:29	Analyst: MEB
DRO (C10-C28)	ND		5.8	mg/Kg-dry	1	2/1/2018 10:56 AM
ORO (C28-C40)	ND		5.8	mg/Kg-dry	1	2/1/2018 10:56 AM
Surr: 4-Terphenyl-d14	60.1		34-130	%REC	1	2/1/2018 10:56 AM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 1/30/18 08:34	Analyst: MEB
GRO (C6-C10)	ND		7.2	mg/Kg-dry	1	1/31/2018 02:20 AM
Surr: Toluene-d8	96.9		71-123	%REC	1	1/31/2018 02:20 AM
VOLATILE ORGANIC COMPOUNDS						
			SW8260B		Prep: SW5035 1/30/18 08:34	Analyst: LSY
Benzene	ND		0.043	mg/Kg-dry	1	1/30/2018 12:15 PM
Ethylbenzene	ND		0.043	mg/Kg-dry	1	1/30/2018 12:15 PM
m,p-Xylene	ND		0.086	mg/Kg-dry	1	1/30/2018 12:15 PM
o-Xylene	ND		0.043	mg/Kg-dry	1	1/30/2018 12:15 PM
Toluene	ND		0.043	mg/Kg-dry	1	1/30/2018 12:15 PM
Xylenes, Total	ND		0.13	mg/Kg-dry	1	1/30/2018 12:15 PM
Surr: 1,2-Dichloroethane-d4	100		70-130	%REC	1	1/30/2018 12:15 PM
Surr: 4-Bromofluorobenzene	96.1		70-130	%REC	1	1/30/2018 12:15 PM
Surr: Dibromofluoromethane	97.5		70-130	%REC	1	1/30/2018 12:15 PM
Surr: Toluene-d8	97.0		70-130	%REC	1	1/30/2018 12:15 PM
CHLORIDE						
			A4500-CL E-11		Prep: EXTRACT 1/30/18 13:00	Analyst: STP
Chloride	ND		12	mg/Kg-dry	1	1/30/2018 07:30 PM
MOISTURE						
			SW3550C			Analyst: NW
Moisture	18		0.050	% of sample	1	1/31/2018 08:35 PM

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

ALS Group, USA

Date: 05-Feb-18

Client: WPX Energy

Project: RDU 45

Sample ID: BH18-04 (2-4 ft)

Collection Date: 1/18/2018

Work Order: 18011348

Lab ID: 18011348-11

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015C		Prep: SW3546 1/31/18 14:29	Analyst: MEB
DRO (C10-C28)	ND		6.0	mg/Kg-dry	1	2/1/2018 03:43 PM
ORO (C28-C40)	ND		6.0	mg/Kg-dry	1	2/1/2018 03:43 PM
Surr: 4-Terphenyl-d14	59.1		34-130	%REC	1	2/1/2018 03:43 PM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 1/30/18 08:34	Analyst: MEB
GRO (C6-C10)	ND		7.3	mg/Kg-dry	1	1/31/2018 02:50 AM
Surr: Toluene-d8	97.1		71-123	%REC	1	1/31/2018 02:50 AM
VOLATILE ORGANIC COMPOUNDS						
			SW8260B		Prep: SW5035 1/30/18 08:34	Analyst: LSY
Benzene	ND		0.044	mg/Kg-dry	1	1/30/2018 12:30 PM
Ethylbenzene	ND		0.044	mg/Kg-dry	1	1/30/2018 12:30 PM
m,p-Xylene	ND		0.088	mg/Kg-dry	1	1/30/2018 12:30 PM
o-Xylene	ND		0.044	mg/Kg-dry	1	1/30/2018 12:30 PM
Toluene	ND		0.044	mg/Kg-dry	1	1/30/2018 12:30 PM
Xylenes, Total	ND		0.13	mg/Kg-dry	1	1/30/2018 12:30 PM
Surr: 1,2-Dichloroethane-d4	102		70-130	%REC	1	1/30/2018 12:30 PM
Surr: 4-Bromofluorobenzene	102		70-130	%REC	1	1/30/2018 12:30 PM
Surr: Dibromofluoromethane	102		70-130	%REC	1	1/30/2018 12:30 PM
Surr: Toluene-d8	97.4		70-130	%REC	1	1/30/2018 12:30 PM
CHLORIDE						
			A4500-CL E-11		Prep: EXTRACT 1/30/18 13:00	Analyst: STP
Chloride	ND		12	mg/Kg-dry	1	1/30/2018 07:30 PM
MOISTURE						
			SW3550C			Analyst: NW
Moisture	19		0.050	% of sample	1	1/31/2018 08:35 PM

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

ALS Group, USA

Date: 05-Feb-18

Client: WPX Energy

Project: RDU 45

Sample ID: BH18-04 (4-6 ft)

Collection Date: 1/18/2018

Work Order: 18011348

Lab ID: 18011348-12

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015C		Prep: SW3546 1/31/18 14:29	Analyst: MEB
DRO (C10-C28)	ND		6.0	mg/Kg-dry	1	2/1/2018 04:12 PM
ORO (C28-C40)	ND		6.0	mg/Kg-dry	1	2/1/2018 04:12 PM
Surr: 4-Terphenyl-d14	62.1		34-130	%REC	1	2/1/2018 04:12 PM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 1/30/18 08:34	Analyst: MEB
GRO (C6-C10)	ND		7.0	mg/Kg-dry	1	1/31/2018 03:20 AM
Surr: Toluene-d8	94.6		71-123	%REC	1	1/31/2018 03:20 AM
VOLATILE ORGANIC COMPOUNDS						
			SW8260B		Prep: SW5035 1/30/18 08:34	Analyst: LSY
Benzene	ND		0.042	mg/Kg-dry	1	1/30/2018 12:46 PM
Ethylbenzene	ND		0.042	mg/Kg-dry	1	1/30/2018 12:46 PM
m,p-Xylene	ND		0.085	mg/Kg-dry	1	1/30/2018 12:46 PM
o-Xylene	ND		0.042	mg/Kg-dry	1	1/30/2018 12:46 PM
Toluene	ND		0.042	mg/Kg-dry	1	1/30/2018 12:46 PM
Xylenes, Total	ND		0.13	mg/Kg-dry	1	1/30/2018 12:46 PM
Surr: 1,2-Dichloroethane-d4	102		70-130	%REC	1	1/30/2018 12:46 PM
Surr: 4-Bromofluorobenzene	98.2		70-130	%REC	1	1/30/2018 12:46 PM
Surr: Dibromofluoromethane	100		70-130	%REC	1	1/30/2018 12:46 PM
Surr: Toluene-d8	95.1		70-130	%REC	1	1/30/2018 12:46 PM
CHLORIDE						
			A4500-CL E-11		Prep: EXTRACT 1/30/18 13:00	Analyst: STP
Chloride	27		12	mg/Kg-dry	1	1/30/2018 07:30 PM
MOISTURE						
			SW3550C			Analyst: NW
Moisture	17		0.050	% of sample	1	1/31/2018 08:35 PM

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

ALS Group, USA

Date: 05-Feb-18

Client: WPX Energy
Project: RDU 45
Sample ID: BH18-05 (0-2 ft)
Collection Date: 1/18/2018

Work Order: 18011348
Lab ID: 18011348-13
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015C		Prep: SW3546 1/31/18 14:29	Analyst: MEB
DRO (C10-C28)	ND		6.0	mg/Kg-dry	1	2/1/2018 04:41 PM
ORO (C28-C40)	ND		6.0	mg/Kg-dry	1	2/1/2018 04:41 PM
Surr: 4-Terphenyl-d14	61.1		34-130	%REC	1	2/1/2018 04:41 PM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 1/30/18 08:34	Analyst: MEB
GRO (C6-C10)	ND		7.0	mg/Kg-dry	1	1/31/2018 03:49 AM
Surr: Toluene-d8	100		71-123	%REC	1	1/31/2018 03:49 AM
VOLATILE ORGANIC COMPOUNDS						
			SW8260B		Prep: SW5035 1/30/18 08:34	Analyst: LSY
Benzene	ND		0.042	mg/Kg-dry	1	1/30/2018 01:02 PM
Ethylbenzene	ND		0.042	mg/Kg-dry	1	1/30/2018 01:02 PM
m,p-Xylene	ND		0.085	mg/Kg-dry	1	1/30/2018 01:02 PM
o-Xylene	ND		0.042	mg/Kg-dry	1	1/30/2018 01:02 PM
Toluene	ND		0.042	mg/Kg-dry	1	1/30/2018 01:02 PM
Xylenes, Total	ND		0.13	mg/Kg-dry	1	1/30/2018 01:02 PM
Surr: 1,2-Dichloroethane-d4	102		70-130	%REC	1	1/30/2018 01:02 PM
Surr: 4-Bromofluorobenzene	99.0		70-130	%REC	1	1/30/2018 01:02 PM
Surr: Dibromofluoromethane	97.6		70-130	%REC	1	1/30/2018 01:02 PM
Surr: Toluene-d8	97.4		70-130	%REC	1	1/30/2018 01:02 PM
CHLORIDE						
			A4500-CL E-11		Prep: EXTRACT 1/30/18 13:00	Analyst: STP
Chloride	1,000		12	mg/Kg-dry	1	1/30/2018 07:30 PM
MOISTURE						
			SW3550C			Analyst: NW
Moisture	17		0.050	% of sample	1	1/31/2018 08:35 PM

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

ALS Group, USA

Date: 05-Feb-18

Client: WPX Energy

Project: RDU 45

Sample ID: BH18-05 (2-4 ft)

Collection Date: 1/18/2018

Work Order: 18011348

Lab ID: 18011348-14

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015C		Prep: SW3546 1/31/18 14:29	Analyst: MEB
DRO (C10-C28)	ND		6.0	mg/Kg-dry	1	2/1/2018 05:10 PM
ORO (C28-C40)	ND		6.0	mg/Kg-dry	1	2/1/2018 05:10 PM
Surr: 4-Terphenyl-d14	45.5		34-130	%REC	1	2/1/2018 05:10 PM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 1/30/18 08:34	Analyst: MEB
GRO (C6-C10)	ND		7.3	mg/Kg-dry	1	1/31/2018 04:19 AM
Surr: Toluene-d8	99.0		71-123	%REC	1	1/31/2018 04:19 AM
VOLATILE ORGANIC COMPOUNDS						
			SW8260B		Prep: SW5035 1/30/18 08:34	Analyst: LSY
Benzene	ND		0.044	mg/Kg-dry	1	1/30/2018 01:17 PM
Ethylbenzene	ND		0.044	mg/Kg-dry	1	1/30/2018 01:17 PM
m,p-Xylene	ND		0.088	mg/Kg-dry	1	1/30/2018 01:17 PM
o-Xylene	ND		0.044	mg/Kg-dry	1	1/30/2018 01:17 PM
Toluene	ND		0.044	mg/Kg-dry	1	1/30/2018 01:17 PM
Xylenes, Total	ND		0.13	mg/Kg-dry	1	1/30/2018 01:17 PM
Surr: 1,2-Dichloroethane-d4	101		70-130	%REC	1	1/30/2018 01:17 PM
Surr: 4-Bromofluorobenzene	101		70-130	%REC	1	1/30/2018 01:17 PM
Surr: Dibromofluoromethane	99.4		70-130	%REC	1	1/30/2018 01:17 PM
Surr: Toluene-d8	95.6		70-130	%REC	1	1/30/2018 01:17 PM
CHLORIDE						
			A4500-CL E-11		Prep: EXTRACT 1/30/18 13:00	Analyst: STP
Chloride	1,200		12	mg/Kg-dry	1	1/30/2018 07:30 PM
MOISTURE						
			SW3550C			Analyst: NW
Moisture	19		0.050	% of sample	1	1/31/2018 08:35 PM

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

ALS Group, USA

Date: 05-Feb-18

Client: WPX Energy

Project: RDU 45

Sample ID: BH18-05 (4-6 ft)

Collection Date: 1/18/2018

Work Order: 18011348

Lab ID: 18011348-15

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015C		Prep: SW3546 1/31/18 14:29	Analyst: MEB
DRO (C10-C28)	ND		5.3	mg/Kg-dry	1	2/1/2018 05:39 PM
ORO (C28-C40)	ND		5.3	mg/Kg-dry	1	2/1/2018 05:39 PM
Surr: 4-Terphenyl-d14	49.0		34-130	%REC	1	2/1/2018 05:39 PM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 1/30/18 08:34	Analyst: MEB
GRO (C6-C10)	ND		5.9	mg/Kg-dry	1	1/31/2018 04:49 AM
Surr: Toluene-d8	96.7		71-123	%REC	1	1/31/2018 04:49 AM
VOLATILE ORGANIC COMPOUNDS						
			SW8260B		Prep: SW5035 1/30/18 08:34	Analyst: LSY
Benzene	ND		0.035	mg/Kg-dry	1	1/30/2018 01:33 PM
Ethylbenzene	ND		0.035	mg/Kg-dry	1	1/30/2018 01:33 PM
m,p-Xylene	ND		0.070	mg/Kg-dry	1	1/30/2018 01:33 PM
o-Xylene	ND		0.035	mg/Kg-dry	1	1/30/2018 01:33 PM
Toluene	ND		0.035	mg/Kg-dry	1	1/30/2018 01:33 PM
Xylenes, Total	ND		0.11	mg/Kg-dry	1	1/30/2018 01:33 PM
Surr: 1,2-Dichloroethane-d4	99.7		70-130	%REC	1	1/30/2018 01:33 PM
Surr: 4-Bromofluorobenzene	98.4		70-130	%REC	1	1/30/2018 01:33 PM
Surr: Dibromofluoromethane	100		70-130	%REC	1	1/30/2018 01:33 PM
Surr: Toluene-d8	98.1		70-130	%REC	1	1/30/2018 01:33 PM
CHLORIDE						
			A4500-CL E-11		Prep: EXTRACT 1/30/18 13:00	Analyst: STP
Chloride	1,100		11	mg/Kg-dry	1	1/30/2018 07:30 PM
MOISTURE						
			SW3550C			Analyst: NW
Moisture	8.0		0.050	% of sample	1	1/31/2018 08:35 PM

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

ALS Group, USA

Date: 05-Feb-18

Client: WPX Energy

Project: RDU 45

Sample ID: BH18-06 (0-2 ft)

Collection Date: 1/18/2018

Work Order: 18011348

Lab ID: 18011348-16

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015C		Prep: SW3546 1/31/18 14:29	Analyst: MEB
DRO (C10-C28)	ND		5.9	mg/Kg-dry	1	2/1/2018 06:08 PM
ORO (C28-C40)	ND		5.9	mg/Kg-dry	1	2/1/2018 06:08 PM
Surr: 4-Terphenyl-d14	61.1		34-130	%REC	1	2/1/2018 06:08 PM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 1/30/18 08:34	Analyst: MEB
GRO (C6-C10)	ND		7.2	mg/Kg-dry	1	1/31/2018 06:18 AM
Surr: Toluene-d8	98.4		71-123	%REC	1	1/31/2018 06:18 AM
VOLATILE ORGANIC COMPOUNDS						
			SW8260B		Prep: SW5035 1/30/18 08:34	Analyst: LSY
Benzene	ND		0.043	mg/Kg-dry	1	1/30/2018 01:49 PM
Ethylbenzene	ND		0.043	mg/Kg-dry	1	1/30/2018 01:49 PM
m,p-Xylene	ND		0.086	mg/Kg-dry	1	1/30/2018 01:49 PM
o-Xylene	ND		0.043	mg/Kg-dry	1	1/30/2018 01:49 PM
Toluene	ND		0.043	mg/Kg-dry	1	1/30/2018 01:49 PM
Xylenes, Total	ND		0.13	mg/Kg-dry	1	1/30/2018 01:49 PM
Surr: 1,2-Dichloroethane-d4	99.9		70-130	%REC	1	1/30/2018 01:49 PM
Surr: 4-Bromofluorobenzene	100		70-130	%REC	1	1/30/2018 01:49 PM
Surr: Dibromofluoromethane	99.1		70-130	%REC	1	1/30/2018 01:49 PM
Surr: Toluene-d8	97.2		70-130	%REC	1	1/30/2018 01:49 PM
CHLORIDE						
			A4500-CL E-11		Prep: EXTRACT 1/30/18 13:00	Analyst: STP
Chloride	12		12	mg/Kg-dry	1	1/30/2018 07:30 PM
MOISTURE						
			SW3550C			Analyst: NW
Moisture	18		0.050	% of sample	1	1/31/2018 08:35 PM

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

ALS Group, USA

Date: 05-Feb-18

Client: WPX Energy

Project: RDU 45

Sample ID: BH18-06 (2-4 ft)

Collection Date: 1/18/2018

Work Order: 18011348

Lab ID: 18011348-17

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015C		Prep: SW3546 1/31/18 14:29	Analyst: MEB
DRO (C10-C28)	ND		5.4	mg/Kg-dry	1	2/1/2018 06:37 PM
ORO (C28-C40)	ND		5.4	mg/Kg-dry	1	2/1/2018 06:37 PM
Surr: 4-Terphenyl-d14	61.6		34-130	%REC	1	2/1/2018 06:37 PM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 1/30/18 08:34	Analyst: MEB
GRO (C6-C10)	ND		5.8	mg/Kg-dry	1	1/31/2018 06:47 AM
Surr: Toluene-d8	98.8		71-123	%REC	1	1/31/2018 06:47 AM
VOLATILE ORGANIC COMPOUNDS						
			SW8260B		Prep: SW5035 1/30/18 08:34	Analyst: LSY
Benzene	ND		0.035	mg/Kg-dry	1	1/30/2018 02:04 PM
Ethylbenzene	ND		0.035	mg/Kg-dry	1	1/30/2018 02:04 PM
m,p-Xylene	ND		0.070	mg/Kg-dry	1	1/30/2018 02:04 PM
o-Xylene	ND		0.035	mg/Kg-dry	1	1/30/2018 02:04 PM
Toluene	ND		0.035	mg/Kg-dry	1	1/30/2018 02:04 PM
Xylenes, Total	ND		0.10	mg/Kg-dry	1	1/30/2018 02:04 PM
Surr: 1,2-Dichloroethane-d4	99.8		70-130	%REC	1	1/30/2018 02:04 PM
Surr: 4-Bromofluorobenzene	96.7		70-130	%REC	1	1/30/2018 02:04 PM
Surr: Dibromofluoromethane	98.6		70-130	%REC	1	1/30/2018 02:04 PM
Surr: Toluene-d8	96.4		70-130	%REC	1	1/30/2018 02:04 PM
CHLORIDE						
			A4500-CL E-11		Prep: EXTRACT 1/30/18 13:00	Analyst: STP
Chloride	21		11	mg/Kg-dry	1	1/30/2018 07:30 PM
MOISTURE						
			SW3550C			Analyst: NW
Moisture	7.6		0.050	% of sample	1	1/31/2018 08:35 PM

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

ALS Group, USA

Date: 05-Feb-18

Client: WPX Energy

Project: RDU 45

Sample ID: BH18-06 (4-6 ft)

Collection Date: 1/18/2018

Work Order: 18011348

Lab ID: 18011348-18

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015C		Prep: SW3546 1/31/18 14:29	Analyst: MEB
DRO (C10-C28)	ND		7.5	mg/Kg-dry	1	2/1/2018 07:06 PM
ORO (C28-C40)	ND		7.5	mg/Kg-dry	1	2/1/2018 07:06 PM
Surr: 4-Terphenyl-d14	60.1		34-130	%REC	1	2/1/2018 07:06 PM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 1/30/18 08:34	Analyst: MEB
GRO (C6-C10)	ND		5.7	mg/Kg-dry	1	1/31/2018 07:17 AM
Surr: Toluene-d8	99.2		71-123	%REC	1	1/31/2018 07:17 AM
VOLATILE ORGANIC COMPOUNDS						
			SW8260B		Prep: SW5035 1/30/18 08:34	Analyst: LSY
Benzene	ND		0.034	mg/Kg-dry	1	1/30/2018 02:20 PM
Ethylbenzene	ND		0.034	mg/Kg-dry	1	1/30/2018 02:20 PM
m,p-Xylene	ND		0.068	mg/Kg-dry	1	1/30/2018 02:20 PM
o-Xylene	ND		0.034	mg/Kg-dry	1	1/30/2018 02:20 PM
Toluene	ND		0.034	mg/Kg-dry	1	1/30/2018 02:20 PM
Xylenes, Total	ND		0.10	mg/Kg-dry	1	1/30/2018 02:20 PM
Surr: 1,2-Dichloroethane-d4	103		70-130	%REC	1	1/30/2018 02:20 PM
Surr: 4-Bromofluorobenzene	98.9		70-130	%REC	1	1/30/2018 02:20 PM
Surr: Dibromofluoromethane	95.4		70-130	%REC	1	1/30/2018 02:20 PM
Surr: Toluene-d8	95.2		70-130	%REC	1	1/30/2018 02:20 PM
CHLORIDE						
			A4500-CL E-11		Prep: EXTRACT 1/30/18 13:00	Analyst: STP
Chloride	110		11	mg/Kg-dry	1	1/30/2018 07:30 PM
MOISTURE						
			SW3550C			Analyst: NW
Moisture	6.4		0.050	% of sample	1	1/31/2018 08:35 PM

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

ALS Group, USA

Date: 05-Feb-18

Client: WPX Energy

Project: RDU 45

Sample ID: BH18-07 (0-2 ft)

Collection Date: 1/18/2018

Work Order: 18011348

Lab ID: 18011348-19

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015C		Prep: SW3546 1/31/18 14:29	Analyst: MEB
DRO (C10-C28)	ND		5.0	mg/Kg-dry	1	2/1/2018 07:36 PM
ORO (C28-C40)	ND		5.0	mg/Kg-dry	1	2/1/2018 07:36 PM
Surr: 4-Terphenyl-d14	53.1		34-130	%REC	1	2/1/2018 07:36 PM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 1/30/18 08:34	Analyst: MEB
GRO (C6-C10)	ND		5.6	mg/Kg-dry	1	1/31/2018 07:46 AM
Surr: Toluene-d8	98.7		71-123	%REC	1	1/31/2018 07:46 AM
VOLATILE ORGANIC COMPOUNDS						
			SW8260B		Prep: SW5035 1/30/18 08:34	Analyst: LSY
Benzene	ND		0.033	mg/Kg-dry	1	1/30/2018 02:36 PM
Ethylbenzene	ND		0.033	mg/Kg-dry	1	1/30/2018 02:36 PM
m,p-Xylene	ND		0.067	mg/Kg-dry	1	1/30/2018 02:36 PM
o-Xylene	ND		0.033	mg/Kg-dry	1	1/30/2018 02:36 PM
Toluene	ND		0.033	mg/Kg-dry	1	1/30/2018 02:36 PM
Xylenes, Total	ND		0.10	mg/Kg-dry	1	1/30/2018 02:36 PM
Surr: 1,2-Dichloroethane-d4	99.4		70-130	%REC	1	1/30/2018 02:36 PM
Surr: 4-Bromofluorobenzene	101		70-130	%REC	1	1/30/2018 02:36 PM
Surr: Dibromofluoromethane	97.6		70-130	%REC	1	1/30/2018 02:36 PM
Surr: Toluene-d8	98.8		70-130	%REC	1	1/30/2018 02:36 PM
CHLORIDE						
			A4500-CL E-11		Prep: EXTRACT 1/30/18 13:00	Analyst: STP
Chloride	110		11	mg/Kg-dry	1	1/30/2018 07:30 PM
MOISTURE						
			SW3550C			Analyst: NW
Moisture	5.3		0.050	% of sample	1	1/31/2018 08:35 PM

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

ALS Group, USA

Date: 05-Feb-18

Client: WPX Energy

Project: RDU 45

Sample ID: BH18-07 (2-4 ft)

Collection Date: 1/18/2018

Work Order: 18011348

Lab ID: 18011348-20

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015C		Prep: SW3546 1/31/18 14:29	Analyst: MEB
DRO (C10-C28)	ND		5.9	mg/Kg-dry	1	2/1/2018 08:04 PM
ORO (C28-C40)	ND		5.9	mg/Kg-dry	1	2/1/2018 08:04 PM
Surr: 4-Terphenyl-d14	56.1		34-130	%REC	1	2/1/2018 08:04 PM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 1/30/18 08:34	Analyst: MEB
GRO (C6-C10)	ND		7.2	mg/Kg-dry	1	1/31/2018 08:16 AM
Surr: Toluene-d8	94.7		71-123	%REC	1	1/31/2018 08:16 AM
VOLATILE ORGANIC COMPOUNDS						
			SW8260B		Prep: SW5035 1/30/18 08:34	Analyst: LSY
Benzene	ND		0.043	mg/Kg-dry	1	1/30/2018 02:51 PM
Ethylbenzene	ND		0.043	mg/Kg-dry	1	1/30/2018 02:51 PM
m,p-Xylene	ND		0.086	mg/Kg-dry	1	1/30/2018 02:51 PM
o-Xylene	ND		0.043	mg/Kg-dry	1	1/30/2018 02:51 PM
Toluene	ND		0.043	mg/Kg-dry	1	1/30/2018 02:51 PM
Xylenes, Total	ND		0.13	mg/Kg-dry	1	1/30/2018 02:51 PM
Surr: 1,2-Dichloroethane-d4	97.5		70-130	%REC	1	1/30/2018 02:51 PM
Surr: 4-Bromofluorobenzene	102		70-130	%REC	1	1/30/2018 02:51 PM
Surr: Dibromofluoromethane	95.1		70-130	%REC	1	1/30/2018 02:51 PM
Surr: Toluene-d8	100		70-130	%REC	1	1/30/2018 02:51 PM
CHLORIDE						
			A4500-CL E-11		Prep: EXTRACT 1/30/18 13:00	Analyst: STP
Chloride	14		12	mg/Kg-dry	1	1/30/2018 07:30 PM
MOISTURE						
			SW3550C			Analyst: NW
Moisture	18		0.050	% of sample	1	1/31/2018 08:35 PM

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

ALS Group, USA

Date: 05-Feb-18

Client: WPX Energy
Project: RDU 45
Sample ID: BH18-07 (4-6 ft)
Collection Date: 1/18/2018

Work Order: 18011348
Lab ID: 18011348-21
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015C		Prep: SW3546 1/31/18 14:29	Analyst: MEB
DRO (C10-C28)	ND		5.3	mg/Kg-dry	1	2/1/2018 09:02 PM
ORO (C28-C40)	ND		5.3	mg/Kg-dry	1	2/1/2018 09:02 PM
Surr: 4-Terphenyl-d14	59.1		34-130	%REC	1	2/1/2018 09:02 PM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 1/30/18 08:34	Analyst: MEB
GRO (C6-C10)	ND		5.6	mg/Kg-dry	1	1/31/2018 08:46 AM
Surr: Toluene-d8	97.4		71-123	%REC	1	1/31/2018 08:46 AM
VOLATILE ORGANIC COMPOUNDS						
			SW8260B		Prep: SW5035 1/30/18 08:34	Analyst: LSY
Benzene	ND		0.033	mg/Kg-dry	1	1/30/2018 03:07 PM
Ethylbenzene	ND		0.033	mg/Kg-dry	1	1/30/2018 03:07 PM
m,p-Xylene	ND		0.067	mg/Kg-dry	1	1/30/2018 03:07 PM
o-Xylene	ND		0.033	mg/Kg-dry	1	1/30/2018 03:07 PM
Toluene	ND		0.033	mg/Kg-dry	1	1/30/2018 03:07 PM
Xylenes, Total	ND		0.10	mg/Kg-dry	1	1/30/2018 03:07 PM
Surr: 1,2-Dichloroethane-d4	102		70-130	%REC	1	1/30/2018 03:07 PM
Surr: 4-Bromofluorobenzene	99.7		70-130	%REC	1	1/30/2018 03:07 PM
Surr: Dibromofluoromethane	97.3		70-130	%REC	1	1/30/2018 03:07 PM
Surr: Toluene-d8	97.6		70-130	%REC	1	1/30/2018 03:07 PM
CHLORIDE						
			A4500-CL E-11		Prep: EXTRACT 1/30/18 13:00	Analyst: STP
Chloride	27		10	mg/Kg-dry	1	1/30/2018 07:30 PM
MOISTURE						
			SW3550C			Analyst: NW
Moisture	5.5		0.050	% of sample	1	2/1/2018 03:55 PM

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

ALS Group, USA

Date: 05-Feb-18

Client: WPX Energy
Project: RDU 45
Sample ID: BH18-08 (0-2 ft)
Collection Date: 1/18/2018

Work Order: 18011348
Lab ID: 18011348-22
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015C		Prep: SW3546 1/31/18 14:29	Analyst: MEB
DRO (C10-C28)	ND		5.8	mg/Kg-dry	1	2/1/2018 09:31 PM
ORO (C28-C40)	ND		5.8	mg/Kg-dry	1	2/1/2018 09:31 PM
Surr: 4-Terphenyl-d14	48.5		34-130	%REC	1	2/1/2018 09:31 PM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 1/30/18 08:34	Analyst: MEB
GRO (C6-C10)	ND		7.0	mg/Kg-dry	1	1/31/2018 09:15 AM
Surr: Toluene-d8	98.4		71-123	%REC	1	1/31/2018 09:15 AM
VOLATILE ORGANIC COMPOUNDS						
			SW8260B		Prep: SW5035 1/30/18 08:34	Analyst: LSY
Benzene	ND		0.042	mg/Kg-dry	1	1/30/2018 03:23 PM
Ethylbenzene	ND		0.042	mg/Kg-dry	1	1/30/2018 03:23 PM
m,p-Xylene	ND		0.085	mg/Kg-dry	1	1/30/2018 03:23 PM
o-Xylene	ND		0.042	mg/Kg-dry	1	1/30/2018 03:23 PM
Toluene	ND		0.042	mg/Kg-dry	1	1/30/2018 03:23 PM
Xylenes, Total	ND		0.13	mg/Kg-dry	1	1/30/2018 03:23 PM
Surr: 1,2-Dichloroethane-d4	103		70-130	%REC	1	1/30/2018 03:23 PM
Surr: 4-Bromofluorobenzene	97.4		70-130	%REC	1	1/30/2018 03:23 PM
Surr: Dibromofluoromethane	98.2		70-130	%REC	1	1/30/2018 03:23 PM
Surr: Toluene-d8	96.7		70-130	%REC	1	1/30/2018 03:23 PM
CHLORIDE						
			A4500-CL E-11		Prep: EXTRACT 1/30/18 14:30	Analyst: STP
Chloride	15		12	mg/Kg-dry	1	1/31/2018 04:00 PM
MOISTURE						
			SW3550C			Analyst: NW
Moisture	17		0.050	% of sample	1	2/1/2018 03:55 PM

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

ALS Group, USA

Date: 05-Feb-18

Client: WPX Energy

Project: RDU 45

Sample ID: BH18-08 (2-4 ft)

Collection Date: 1/18/2018

Work Order: 18011348

Lab ID: 18011348-23

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015C		Prep: SW3546 1/31/18 14:29	Analyst: MEB
DRO (C10-C28)	ND		5.1	mg/Kg-dry	1	2/1/2018 10:01 PM
ORO (C28-C40)	ND		5.1	mg/Kg-dry	1	2/1/2018 10:01 PM
Surr: 4-Terphenyl-d14	59.1		34-130	%REC	1	2/1/2018 10:01 PM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 1/30/18 08:34	Analyst: MEB
GRO (C6-C10)	ND		5.5	mg/Kg-dry	1	1/31/2018 09:45 AM
Surr: Toluene-d8	98.8		71-123	%REC	1	1/31/2018 09:45 AM
VOLATILE ORGANIC COMPOUNDS						
			SW8260B		Prep: SW5035 1/30/18 08:34	Analyst: LSY
Benzene	ND		0.033	mg/Kg-dry	1	1/30/2018 03:38 PM
Ethylbenzene	ND		0.033	mg/Kg-dry	1	1/30/2018 03:38 PM
m,p-Xylene	ND		0.066	mg/Kg-dry	1	1/30/2018 03:38 PM
o-Xylene	ND		0.033	mg/Kg-dry	1	1/30/2018 03:38 PM
Toluene	ND		0.033	mg/Kg-dry	1	1/30/2018 03:38 PM
Xylenes, Total	ND		0.099	mg/Kg-dry	1	1/30/2018 03:38 PM
Surr: 1,2-Dichloroethane-d4	102		70-130	%REC	1	1/30/2018 03:38 PM
Surr: 4-Bromofluorobenzene	101		70-130	%REC	1	1/30/2018 03:38 PM
Surr: Dibromofluoromethane	98.2		70-130	%REC	1	1/30/2018 03:38 PM
Surr: Toluene-d8	98.0		70-130	%REC	1	1/30/2018 03:38 PM
CHLORIDE						
			A4500-CL E-11		Prep: EXTRACT 1/30/18 14:30	Analyst: STP
Chloride	64		10	mg/Kg-dry	1	1/31/2018 04:00 PM
MOISTURE						
			SW3550C			Analyst: NW
Moisture	5.0		0.050	% of sample	1	2/1/2018 03:55 PM

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

ALS Group, USA

Date: 05-Feb-18

Client: WPX Energy

Project: RDU 45

Sample ID: BH18-08 (4-6 ft)

Collection Date: 1/18/2018

Work Order: 18011348

Lab ID: 18011348-24

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015C		Prep: SW3546 1/31/18 14:29	Analyst: MEB
DRO (C10-C28)	ND		5.9	mg/Kg-dry	1	2/1/2018 10:30 PM
ORO (C28-C40)	ND		5.9	mg/Kg-dry	1	2/1/2018 10:30 PM
Surr: 4-Terphenyl-d14	58.1		34-130	%REC	1	2/1/2018 10:30 PM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 1/30/18 08:34	Analyst: MEB
GRO (C6-C10)	ND		7.2	mg/Kg-dry	1	1/31/2018 11:14 AM
Surr: Toluene-d8	101		71-123	%REC	1	1/31/2018 11:14 AM
VOLATILE ORGANIC COMPOUNDS						
			SW8260B		Prep: SW5035 1/30/18 08:34	Analyst: LSY
Benzene	ND		0.043	mg/Kg-dry	1	1/30/2018 03:54 PM
Ethylbenzene	ND		0.043	mg/Kg-dry	1	1/30/2018 03:54 PM
m,p-Xylene	ND		0.086	mg/Kg-dry	1	1/30/2018 03:54 PM
o-Xylene	ND		0.043	mg/Kg-dry	1	1/30/2018 03:54 PM
Toluene	ND		0.043	mg/Kg-dry	1	1/30/2018 03:54 PM
Xylenes, Total	ND		0.13	mg/Kg-dry	1	1/30/2018 03:54 PM
Surr: 1,2-Dichloroethane-d4	101		70-130	%REC	1	1/30/2018 03:54 PM
Surr: 4-Bromofluorobenzene	101		70-130	%REC	1	1/30/2018 03:54 PM
Surr: Dibromofluoromethane	97.6		70-130	%REC	1	1/30/2018 03:54 PM
Surr: Toluene-d8	98.8		70-130	%REC	1	1/30/2018 03:54 PM
CHLORIDE						
			A4500-CL E-11		Prep: EXTRACT 1/30/18 14:30	Analyst: STP
Chloride	20		12	mg/Kg-dry	1	1/31/2018 04:00 PM
MOISTURE						
			SW3550C			Analyst: NW
Moisture	18		0.050	% of sample	1	2/1/2018 03:55 PM

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

ALS Group, USA

Date: 05-Feb-18

Client: WPX Energy
Project: RDU 45
Sample ID: BH18-09 (0-2 ft)
Collection Date: 1/18/2018

Work Order: 18011348
Lab ID: 18011348-25
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015C		Prep: SW3546 1/31/18 14:29	Analyst: MEB
DRO (C10-C28)	ND		5.4	mg/Kg-dry	1	2/1/2018 10:59 PM
ORO (C28-C40)	ND		5.4	mg/Kg-dry	1	2/1/2018 10:59 PM
Surr: 4-Terphenyl-d14	58.1		34-130	%REC	1	2/1/2018 10:59 PM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 1/30/18 08:34	Analyst: MEB
GRO (C6-C10)	ND		5.9	mg/Kg-dry	1	1/31/2018 11:43 AM
Surr: Toluene-d8	96.3		71-123	%REC	1	1/31/2018 11:43 AM
VOLATILE ORGANIC COMPOUNDS						
			SW8260B		Prep: SW5035 1/30/18 08:34	Analyst: LSY
Benzene	ND		0.036	mg/Kg-dry	1	1/30/2018 04:10 PM
Ethylbenzene	ND		0.036	mg/Kg-dry	1	1/30/2018 04:10 PM
m,p-Xylene	ND		0.071	mg/Kg-dry	1	1/30/2018 04:10 PM
o-Xylene	ND		0.036	mg/Kg-dry	1	1/30/2018 04:10 PM
Toluene	ND		0.036	mg/Kg-dry	1	1/30/2018 04:10 PM
Xylenes, Total	ND		0.11	mg/Kg-dry	1	1/30/2018 04:10 PM
Surr: 1,2-Dichloroethane-d4	99.4		70-130	%REC	1	1/30/2018 04:10 PM
Surr: 4-Bromofluorobenzene	102		70-130	%REC	1	1/30/2018 04:10 PM
Surr: Dibromofluoromethane	94.9		70-130	%REC	1	1/30/2018 04:10 PM
Surr: Toluene-d8	99.0		70-130	%REC	1	1/30/2018 04:10 PM
CHLORIDE						
			A4500-CL E-11		Prep: EXTRACT 1/30/18 14:30	Analyst: STP
Chloride	73		11	mg/Kg-dry	1	1/31/2018 04:00 PM
MOISTURE						
			SW3550C			Analyst: NW
Moisture	8.5		0.050	% of sample	1	2/1/2018 03:55 PM

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

ALS Group, USA

Date: 05-Feb-18

Client: WPX Energy

Project: RDU 45

Sample ID: BH18-09 (2-4 ft)

Collection Date: 1/18/2018

Work Order: 18011348

Lab ID: 18011348-26

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015C		Prep: SW3546 1/31/18 14:29	Analyst: MEB
DRO (C10-C28)	ND		6.0	mg/Kg-dry	1	2/1/2018 08:31 AM
ORO (C28-C40)	ND		6.0	mg/Kg-dry	1	2/1/2018 08:31 AM
Surr: 4-Terphenyl-d14	62.1		34-130	%REC	1	2/1/2018 08:31 AM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 1/30/18 08:34	Analyst: MEB
GRO (C6-C10)	ND		7.0	mg/Kg-dry	1	1/31/2018 12:13 PM
Surr: Toluene-d8	96.5		71-123	%REC	1	1/31/2018 12:13 PM
VOLATILE ORGANIC COMPOUNDS						
			SW8260B		Prep: SW5035 1/30/18 08:34	Analyst: LSY
Benzene	ND		0.042	mg/Kg-dry	1	1/30/2018 04:25 PM
Ethylbenzene	ND		0.042	mg/Kg-dry	1	1/30/2018 04:25 PM
m,p-Xylene	ND		0.085	mg/Kg-dry	1	1/30/2018 04:25 PM
o-Xylene	ND		0.042	mg/Kg-dry	1	1/30/2018 04:25 PM
Toluene	ND		0.042	mg/Kg-dry	1	1/30/2018 04:25 PM
Xylenes, Total	ND		0.13	mg/Kg-dry	1	1/30/2018 04:25 PM
Surr: 1,2-Dichloroethane-d4	101		70-130	%REC	1	1/30/2018 04:25 PM
Surr: 4-Bromofluorobenzene	100		70-130	%REC	1	1/30/2018 04:25 PM
Surr: Dibromofluoromethane	96.9		70-130	%REC	1	1/30/2018 04:25 PM
Surr: Toluene-d8	96.3		70-130	%REC	1	1/30/2018 04:25 PM
CHLORIDE						
			A4500-CL E-11		Prep: EXTRACT 1/30/18 14:30	Analyst: STP
Chloride	130		12	mg/Kg-dry	1	1/31/2018 04:00 PM
MOISTURE						
			SW3550C			Analyst: NW
Moisture	17		0.050	% of sample	1	2/1/2018 03:55 PM

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

ALS Group, USA

Date: 05-Feb-18

Client: WPX Energy

Project: RDU 45

Sample ID: BH18-09 (4-6 ft)

Collection Date: 1/18/2018

Work Order: 18011348

Lab ID: 18011348-27

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015C		Prep: SW3546 1/31/18 14:29	Analyst: MEB
DRO (C10-C28)	ND		5.8	mg/Kg-dry	1	2/1/2018 11:28 PM
ORO (C28-C40)	ND		5.8	mg/Kg-dry	1	2/1/2018 11:28 PM
Surr: 4-Terphenyl-d14	58.1		34-130	%REC	1	2/1/2018 11:28 PM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 1/30/18 08:34	Analyst: MEB
GRO (C6-C10)	ND		7.0	mg/Kg-dry	1	1/31/2018 12:42 PM
Surr: Toluene-d8	101		71-123	%REC	1	1/31/2018 12:42 PM
VOLATILE ORGANIC COMPOUNDS						
			SW8260B		Prep: SW5035 1/30/18 08:34	Analyst: LSY
Benzene	ND		0.042	mg/Kg-dry	1	1/30/2018 04:41 PM
Ethylbenzene	ND		0.042	mg/Kg-dry	1	1/30/2018 04:41 PM
m,p-Xylene	ND		0.085	mg/Kg-dry	1	1/30/2018 04:41 PM
o-Xylene	ND		0.042	mg/Kg-dry	1	1/30/2018 04:41 PM
Toluene	ND		0.042	mg/Kg-dry	1	1/30/2018 04:41 PM
Xylenes, Total	ND		0.13	mg/Kg-dry	1	1/30/2018 04:41 PM
Surr: 1,2-Dichloroethane-d4	102		70-130	%REC	1	1/30/2018 04:41 PM
Surr: 4-Bromofluorobenzene	101		70-130	%REC	1	1/30/2018 04:41 PM
Surr: Dibromofluoromethane	99.4		70-130	%REC	1	1/30/2018 04:41 PM
Surr: Toluene-d8	96.4		70-130	%REC	1	1/30/2018 04:41 PM
CHLORIDE						
			A4500-CL E-11		Prep: EXTRACT 1/30/18 14:30	Analyst: STP
Chloride	17		12	mg/Kg-dry	1	1/31/2018 04:00 PM
MOISTURE						
			SW3550C			Analyst: NW
Moisture	17		0.050	% of sample	1	2/1/2018 03:55 PM

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

Client: WPX Energy
Work Order: 18011348
Project: RDU 45

QC BATCH REPORT

Batch ID: **113626** Instrument ID **GC8** Method: **SW8015C**

MBLK		Sample ID: DBLKS1-113626-113626				Units: mg/Kg		Analysis Date: 1/31/2018 06:26 PM		
Client ID:		Run ID: GC8_180131A				SeqNo: 4873503		Prep Date: 1/31/2018		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								
ORO (C28-C40)	ND	5.0								
Surr: 4-Terphenyl-d14	2.467	0	3.33	0	74.1	34-130	0			

LCS		Sample ID: DLCSS1-113626-113626				Units: mg/Kg		Analysis Date: 1/31/2018 06:55 PM		
Client ID:		Run ID: GC8_180131A				SeqNo: 4873504		Prep Date: 1/31/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	300	5.0	333	0	90.1	65-122	0			
ORO (C28-C40)	283.6	5.0	333	0	85.2	81-116	0			
Surr: 4-Terphenyl-d14	2.417	0	3.33	0	72.6	34-130	0			

MS		Sample ID: 18011341-13A MS				Units: mg/Kg		Analysis Date: 1/31/2018 08:23 PM		
Client ID:		Run ID: GC8_180131A				SeqNo: 4873506		Prep Date: 1/31/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	197.4	4.9	324.3	0	60.9	65-122	0			S
ORO (C28-C40)	172	4.9	324.3	1.539	52.5	81-116	0			S
Surr: 4-Terphenyl-d14	1.688	0	3.243	0	52.1	34-130	0			

MSD		Sample ID: 18011341-13A MSD				Units: mg/Kg		Analysis Date: 1/31/2018 08:52 PM		
Client ID:		Run ID: GC8_180131A				SeqNo: 4873507		Prep Date: 1/31/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)	197	4.9	329.2	0	59.8	65-122	197.4	0.204	30	S
ORO (C28-C40)	205.2	4.9	329.2	1.539	61.9	81-116	172	17.7	30	S
Surr: 4-Terphenyl-d14	1.714	0	3.292	0	52.1	34-130	1.688	1.5	30	

The following samples were analyzed in this batch:

18011348-01A	18011348-02A	18011348-03A
18011348-04A	18011348-05A	18011348-06A
18011348-07A		

Client: WPX Energy
Work Order: 18011348
Project: RDU 45

QC BATCH REPORT

Batch ID: **113627** Instrument ID **GC8** Method: **SW8015C**

MBLK		Sample ID: DBLKS1-113627-113627				Units: mg/Kg		Analysis Date: 2/1/2018 07:32 AM		
Client ID:		Run ID: GC8_180131A				SeqNo: 4873679		Prep Date: 1/31/2018		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								
ORO (C28-C40)	ND	5.0								
<i>Surr: 4-Terphenyl-d14</i>	2.167	0	3.33	0	65.1	34-130	0			

LCS		Sample ID: DLCSS1-113627-113627				Units: mg/Kg		Analysis Date: 2/1/2018 08:02 AM		
Client ID:		Run ID: GC8_180131A				SeqNo: 4873681		Prep Date: 1/31/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	331.4	5.0	333	0	99.5	65-122	0			
ORO (C28-C40)	307.1	5.0	333	0	92.2	81-116	0			
<i>Surr: 4-Terphenyl-d14</i>	2.133	0	3.33	0	64.1	34-130	0			

MS		Sample ID: 18011348-26A MS				Units: mg/Kg		Analysis Date: 2/1/2018 09:00 AM		
Client ID: BH18-09 (2-4 ft)		Run ID: GC8_180131A				SeqNo: 4873685		Prep Date: 1/31/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	263.8	5.0	330.5	0	79.8	65-122	0			
ORO (C28-C40)	278.7	5.0	330.5	0	84.3	81-116	0			
<i>Surr: 4-Terphenyl-d14</i>	1.985	0	3.305	0	60.1	34-130	0			

MSD		Sample ID: 18011348-26A MSD				Units: mg/Kg		Analysis Date: 2/1/2018 09:29 AM		
Client ID: BH18-09 (2-4 ft)		Run ID: GC8_180131A				SeqNo: 4873687		Prep Date: 1/31/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	274.7	5.0	331.4	0	82.9	65-122	263.8	4.04	30	
ORO (C28-C40)	285.9	5.0	331.4	0	86.3	81-116	278.7	2.56	30	
<i>Surr: 4-Terphenyl-d14</i>	2.106	0	3.314	0	63.6	34-130	1.985	5.92	30	

The following samples were analyzed in this batch:

18011348-08A	18011348-09A	18011348-10A
18011348-11A	18011348-12A	18011348-13A
18011348-14A	18011348-15A	18011348-16A
18011348-17A	18011348-18A	18011348-19A
18011348-20A	18011348-21A	18011348-22A
18011348-23A	18011348-24A	18011348-25A
18011348-26A	18011348-27A	

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

Client: WPX Energy
Work Order: 18011348
Project: RDU 45

QC BATCH REPORT

Batch ID: **113527** Instrument ID **GC9** Method: **SW8015D**

MBLK		Sample ID: MBLK-113527-113527				Units: µg/Kg-dry		Analysis Date: 1/29/2018 08:15 PM		
Client ID:		Run ID: GC9_180129A				SeqNo: 4870431		Prep Date: 1/29/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	ND	5,000								
Surr: Toluene-d8	5022	0	5000	0	100	71-123	0			

LCS		Sample ID: LCS-113527-113527				Units: µg/Kg-dry		Analysis Date: 1/29/2018 06:46 PM		
Client ID:		Run ID: GC9_180129A				SeqNo: 4870429		Prep Date: 1/29/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	484900	5,000	500000	0	97	71-123	0			
Surr: Toluene-d8	4458	0	5000	0	89.2	71-123	0			

MS		Sample ID: 18011339-01A MS				Units: µg/Kg-dry		Analysis Date: 1/30/2018 10:23 PM		
Client ID:		Run ID: GC9_180130A				SeqNo: 4871484		Prep Date: 1/29/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	649000	6,200	623600	0	104	71-123	0			
Surr: Toluene-d8	5676	0	6236	0	91	71-123	0			

MSD		Sample ID: 18011339-01A MSD				Units: µg/Kg-dry		Analysis Date: 1/30/2018 10:52 PM		
Client ID:		Run ID: GC9_180130A				SeqNo: 4871485		Prep Date: 1/29/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	652800	6,200	623600	0	105	71-123	649000	0.58	30	
Surr: Toluene-d8	5941	0	6236	0	95.3	71-123	5676	4.56	30	

The following samples were analyzed in this batch:

18011348-01A	18011348-02A	18011348-03A
18011348-04A	18011348-05A	18011348-06A
18011348-07A		

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

Client: WPX Energy
Work Order: 18011348
Project: RDU 45

QC BATCH REPORT

Batch ID: **113553** Instrument ID **GC9** Method: **SW8015D**

MBLK		Sample ID: MBLK-113553-113553				Units: µg/Kg-dry		Analysis Date: 1/31/2018 12:51 PM		
Client ID:		Run ID: GC9_180130A				SeqNo: 4871507		Prep Date: 1/30/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

GRO (C6-C10)	ND	5,000								
Surr: Toluene-d8	4977	0	5000	0	99.5	71-123	0			

LCS		Sample ID: LCS-113553-113553				Units: µg/Kg-dry		Analysis Date: 1/30/2018 11:52 PM		
Client ID:		Run ID: GC9_180130A				SeqNo: 4871486		Prep Date: 1/30/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

GRO (C6-C10)	527500	5,000	500000	0	106	71-123	0			
Surr: Toluene-d8	4739	0	5000	0	94.8	71-123	0			

MS		Sample ID: 18011348-08A MS				Units: µg/Kg-dry		Analysis Date: 1/31/2018 01:12 PM		
Client ID: BH18-03 (2-4 ft)		Run ID: GC9_180130A				SeqNo: 4871508		Prep Date: 1/30/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

GRO (C6-C10)	778100	7,700	765800	1975	101	71-123	0			
Surr: Toluene-d8	7357	0	7658	0	96.1	71-123	0			

MSD		Sample ID: 18011348-08A MSD				Units: µg/Kg-dry		Analysis Date: 1/31/2018 01:41 PM		
Client ID: BH18-03 (2-4 ft)		Run ID: GC9_180130A				SeqNo: 4871509		Prep Date: 1/30/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

GRO (C6-C10)	761000	7,700	765800	1975	99.1	71-123	778100	2.23	30	
Surr: Toluene-d8	7363	0	7658	0	96.1	71-123	7357	0.0728	30	

The following samples were analyzed in this batch:

18011348-08A	18011348-09A	18011348-10A
18011348-11A	18011348-12A	18011348-13A
18011348-14A	18011348-15A	18011348-16A
18011348-17A	18011348-18A	18011348-19A
18011348-20A	18011348-21A	18011348-22A
18011348-23A	18011348-24A	18011348-25A
18011348-26A	18011348-27A	

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

Client: WPX Energy
Work Order: 18011348
Project: RDU 45

QC BATCH REPORT

Batch ID: **113515** Instrument ID **VMS10** Method: **SW8260B**

MBLK		Sample ID: MBLK-113515-113515				Units: µg/Kg-dry		Analysis Date: 1/29/2018 09:20 PM		
Client ID:		Run ID: VMS10_180129B				SeqNo: 4868618		Prep Date: 1/29/2018		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	1036	0	1000	0	104	70-130	0			
Surr: 4-Bromofluorobenzene	944	0	1000	0	94.4	70-130	0			
Surr: Dibromofluoromethane	1006	0	1000	0	101	70-130	0			
Surr: Toluene-d8	975	0	1000	0	97.5	70-130	0			

LCS		Sample ID: LCS-113515-113515				Units: µg/Kg-dry		Analysis Date: 1/29/2018 08:33 PM		
Client ID:		Run ID: VMS10_180129B				SeqNo: 4868617		Prep Date: 1/29/2018		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	959	30	1000	0	95.9	75-125	0			
m,p-Xylene	1914	60	2000	0	95.7	80-125	0			
o-Xylene	958.5	30	1000	0	95.8	75-125	0			
Toluene	1058	30	1000	0	106	70-125	0			
Xylenes, Total	2872	90	3000	0	95.7	75-125	0			
Surr: 1,2-Dichloroethane-d4	963.5	0	1000	0	96.4	70-130	0			
Surr: 4-Bromofluorobenzene	1024	0	1000	0	102	70-130	0			
Surr: Dibromofluoromethane	1002	0	1000	0	100	70-130	0			
Surr: Toluene-d8	999.5	0	1000	0	100	70-130	0			

MS		Sample ID: 18011339-01A MS				Units: µg/Kg-dry		Analysis Date: 1/30/2018 02:31 AM		
Client ID:		Run ID: VMS10_180129B				SeqNo: 4868634		Prep Date: 1/29/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1298	37	1247	0	104	75-125	0			
Ethylbenzene	1156	37	1247	0	92.6	75-125	0			
m,p-Xylene	2363	75	2494	0	94.7	80-125	0			
o-Xylene	1192	37	1247	0	95.6	75-125	0			
Toluene	1245	37	1247	0	99.8	70-125	0			
Xylenes, Total	3555	110	3742	0	95	75-125	0			
Surr: 1,2-Dichloroethane-d4	1202	0	1247	0	96.4	70-130	0			
Surr: 4-Bromofluorobenzene	1333	0	1247	0	107	70-130	0			
Surr: Dibromofluoromethane	1166	0	1247	0	93.4	70-130	0			
Surr: Toluene-d8	1224	0	1247	0	98.2	70-130	0			

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

Client: WPX Energy
 Work Order: 18011348
 Project: RDU 45

QC BATCH REPORT

Batch ID: **113515** Instrument ID **VMS10** Method: **SW8260B**

MSD				Sample ID: 18011339-01A MSD			Units: µg/Kg-dry		Analysis Date: 1/30/2018 02:47 AM		
Client ID:			Run ID: VMS10_180129B			SeqNo: 4868635		Prep Date: 1/29/2018		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	1252	37	1247	0	100	75-125	1298	3.67	30		
Ethylbenzene	1175	37	1247	0	94.2	75-125	1156	1.71	30		
m,p-Xylene	2376	75	2494	0	95.2	80-125	2363	0.553	30		
o-Xylene	1207	37	1247	0	96.8	75-125	1192	1.2	30		
Toluene	1270	37	1247	0	102	70-125	1245	2.03	30		
Xylenes, Total	3583	110	3742	0	95.8	75-125	3555	0.769	30		
Surr: 1,2-Dichloroethane-d4	1171	0	1247	0	93.9	70-130	1202	2.58	30		
Surr: 4-Bromofluorobenzene	1359	0	1247	0	109	70-130	1333	1.95	30		
Surr: Dibromofluoromethane	1200	0	1247	0	96.2	70-130	1166	2.95	30		
Surr: Toluene-d8	1291	0	1247	0	104	70-130	1224	5.31	30		

The following samples were analyzed in this batch:

18011348-01A	18011348-02A	18011348-03A
18011348-04A	18011348-05A	18011348-06A
18011348-07A		

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

Client: WPX Energy
Work Order: 18011348
Project: RDU 45

QC BATCH REPORT

Batch ID: **113552** Instrument ID **VMS8** Method: **SW8260B**

Sample ID: MBLK-113552-113552				Units: µg/Kg-dry			Analysis Date: 1/30/2018 11:08 AM			
Client ID:		Run ID: VMS8_180130A			SeqNo: 4869492		Prep Date: 1/30/2018		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>978.5</i>	<i>0</i>	<i>1000</i>	<i>0</i>	<i>97.8</i>	<i>70-130</i>	<i>0</i>			
<i>Surr: 4-Bromofluorobenzene</i>	<i>988.5</i>	<i>0</i>	<i>1000</i>	<i>0</i>	<i>98.8</i>	<i>70-130</i>	<i>0</i>			
<i>Surr: Dibromofluoromethane</i>	<i>969</i>	<i>0</i>	<i>1000</i>	<i>0</i>	<i>96.9</i>	<i>70-130</i>	<i>0</i>			
<i>Surr: Toluene-d8</i>	<i>976.5</i>	<i>0</i>	<i>1000</i>	<i>0</i>	<i>97.6</i>	<i>70-130</i>	<i>0</i>			

LCS				Sample ID: LCS-113552-113552				Units: µg/Kg-dry			Analysis Date: 1/30/2018 10:21 AM			
Client ID:				Run ID: VMS8_180130A				SeqNo: 4869491			Prep Date: 1/30/2018		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual				
Benzene	1082	30	1000	0	108	75-125	0							
Ethylbenzene	1050	30	1000	0	105	75-125	0							
m,p-Xylene	2128	60	2000	0	106	80-125	0							
o-Xylene	1058	30	1000	0	106	75-125	0							
Toluene	1056	30	1000	0	106	70-125	0							
Xylenes, Total	3186	90	3000	0	106	75-125	0							
Surr: 1,2-Dichloroethane-d4	1024	0	1000	0	102	70-130	0							
Surr: 4-Bromofluorobenzene	996.5	0	1000	0	99.6	70-130	0							
Surr: Dibromofluoromethane	1020	0	1000	0	102	70-130	0							
Surr: Toluene-d8	967.5	0	1000	0	96.8	70-130	0							

MS				Sample ID: 18011348-08A MS				Units: µg/Kg-dry		Analysis Date: 1/30/2018 04:57 PM	
Client ID: BH18-03 (2-4 ft)			Run ID: VMS8_180130A			SeqNo: 4869513		Prep Date: 1/30/2018		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	1684	46	1532	0	110	75-125	0				
Ethylbenzene	1630	46	1532	0	106	75-125	0				
m,p-Xylene	3221	92	3063	0	105	80-125	0				
o-Xylene	1606	46	1532	0	105	75-125	0				
Toluene	1602	46	1532	0	105	70-125	0				
Xylenes, Total	4827	140	4595	0	105	75-125	0				
Surr: 1,2-Dichloroethane-d4	1556	0	1532	0	102	70-130	0				
Surr: 4-Bromofluorobenzene	1573	0	1532	0	103	70-130	0				
Surr: Dibromofluoromethane	1508	0	1532	0	98.4	70-130	0				
Surr: Toluene-d8	1472	0	1532	0	96.1	70-130	0				

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

Client: WPX Energy
 Work Order: 18011348
 Project: RDU 45

QC BATCH REPORT

Batch ID: **113552** Instrument ID **VMS8** Method: **SW8260B**

MSD				Sample ID: 18011348-08A MSD			Units: µg/Kg-dry		Analysis Date: 1/30/2018 05:12 PM		
Client ID: BH18-03 (2-4 ft)				Run ID: VMS8_180130A			SeqNo: 4869514		Prep Date: 1/30/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	1640	46	1532	0	107	75-125	1684	2.63	30		
Ethylbenzene	1546	46	1532	0	101	75-125	1630	5.3	30		
m,p-Xylene	3150	92	3063	0	103	80-125	3221	2.24	30		
o-Xylene	1558	46	1532	0	102	75-125	1606	3	30		
Toluene	1576	46	1532	0	103	70-125	1602	1.64	30		
Xylenes, Total	4708	140	4595	0	102	75-125	4827	2.49	30		
Surr: 1,2-Dichloroethane-d4	1567	0	1532	0	102	70-130	1556	0.687	30		
Surr: 4-Bromofluorobenzene	1552	0	1532	0	101	70-130	1573	1.32	30		
Surr: Dibromofluoromethane	1522	0	1532	0	99.4	70-130	1508	0.91	30		
Surr: Toluene-d8	1476	0	1532	0	96.4	70-130	1472	0.26	30		

The following samples were analyzed in this batch:

18011348-08A	18011348-09A	18011348-10A
18011348-11A	18011348-12A	18011348-13A
18011348-14A	18011348-15A	18011348-16A
18011348-17A	18011348-18A	18011348-19A
18011348-20A	18011348-21A	18011348-22A
18011348-23A	18011348-24A	18011348-25A
18011348-26A	18011348-27A	

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

Client: WPX Energy
 Work Order: 18011348
 Project: RDU 45

QC BATCH REPORT

Batch ID: **113545** Instrument ID **GALLERY** Method: **A4500-CI E-11**

MBLK		Sample ID: MBLK-113545-113545				Units: mg/Kg		Analysis Date: 1/30/2018 06:30 PM		
Client ID:		Run ID: GALLERY_180130F		SeqNo: 4869690		Prep Date: 1/29/2018		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chloride ND 10

MS		Sample ID: 18011339-04AMS				Units: mg/Kg		Analysis Date: 1/30/2018 06:30 PM		
Client ID:		Run ID: GALLERY_180130F		SeqNo: 4869692		Prep Date: 1/29/2018		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chloride 591.4 10 500 46.79 109 75-125 0

MSD		Sample ID: 18011339-04AMSD				Units: mg/Kg		Analysis Date: 1/30/2018 06:30 PM		
Client ID:		Run ID: GALLERY_180130F		SeqNo: 4869693		Prep Date: 1/29/2018		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chloride 604.7 10 500 46.79 112 75-125 591.4 2.22 25

LCS1		Sample ID: LCS1-113545-113545				Units: mg/Kg		Analysis Date: 1/30/2018 06:30 PM		
Client ID:		Run ID: GALLERY_180130F		SeqNo: 4869713		Prep Date: 1/29/2018		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chloride 96.95 10 100 0 96.9 80-120 0

LCS2		Sample ID: LCS2-113545-113545				Units: mg/Kg		Analysis Date: 1/30/2018 06:30 PM		
Client ID:		Run ID: GALLERY_180130F		SeqNo: 4869714		Prep Date: 1/29/2018		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chloride 531.6 10 500 0 106 80-120 0

The following samples were analyzed in this batch:

18011348-01A

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

Client: WPX Energy
Work Order: 18011348
Project: RDU 45

QC BATCH REPORT

Batch ID: **113586** Instrument ID **GALLERY** Method: **A4500-CI E-11**

MBLK		Sample ID: MBLK-113586-113586				Units: mg/Kg		Analysis Date: 1/30/2018 07:30 PM		
Client ID:		Run ID: GALLERY_180130G		SeqNo: 4869715		Prep Date: 1/30/2018		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chloride ND 10

MS		Sample ID: 18011348-02AMS				Units: mg/Kg		Analysis Date: 1/30/2018 07:30 PM		
Client ID: BH18-01 (2-4 ft)		Run ID: GALLERY_180130G		SeqNo: 4869717		Prep Date: 1/30/2018		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chloride 577.2 10 498 37.73 108 75-125 0

MSD		Sample ID: 18011348-02AMSD				Units: mg/Kg		Analysis Date: 1/30/2018 07:30 PM		
Client ID: BH18-01 (2-4 ft)		Run ID: GALLERY_180130G		SeqNo: 4869718		Prep Date: 1/30/2018		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chloride 561.5 9.9 497 37.73 105 75-125 577.2 2.75 25

LCS1		Sample ID: LCS1-113586-113586				Units: mg/Kg		Analysis Date: 1/30/2018 07:30 PM		
Client ID:		Run ID: GALLERY_180130G		SeqNo: 4869738		Prep Date: 1/30/2018		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chloride 93.16 10 100 0 93.2 80-120 0

LCS2		Sample ID: LCS2-113586-113586				Units: mg/Kg		Analysis Date: 1/30/2018 07:30 PM		
Client ID:		Run ID: GALLERY_180130G		SeqNo: 4869739		Prep Date: 1/30/2018		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chloride 507.6 10 500 0 102 80-120 0

The following samples were analyzed in this batch:

18011348-02A	18011348-03A	18011348-04A
18011348-05A	18011348-06A	18011348-07A
18011348-08A	18011348-09A	18011348-10A
18011348-11A	18011348-12A	18011348-13A
18011348-14A	18011348-15A	18011348-16A
18011348-17A	18011348-18A	18011348-19A
18011348-20A	18011348-21A	

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

Client: WPX Energy
 Work Order: 18011348
 Project: RDU 45

QC BATCH REPORT

Batch ID: **113587** Instrument ID **GALLERY** Method: **A4500-CI E-11**

MBLK		Sample ID: MBLK-113587-113587				Units: mg/Kg		Analysis Date: 1/31/2018 04:00 PM		
Client ID:		Run ID: GALLERY_180131A		SeqNo: 4871830		Prep Date: 1/30/2018		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chloride ND 10

MS		Sample ID: 18011348-22AMS				Units: mg/Kg		Analysis Date: 1/31/2018 04:00 PM		
Client ID: BH18-08 (0-2 ft)		Run ID: GALLERY_180131A		SeqNo: 4871832		Prep Date: 1/30/2018		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chloride 511 9.9 495 12.19 101 75-125 0

MSD		Sample ID: 18011348-22AMSD				Units: mg/Kg		Analysis Date: 1/31/2018 04:00 PM		
Client ID: BH18-08 (0-2 ft)		Run ID: GALLERY_180131A		SeqNo: 4871833		Prep Date: 1/30/2018		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chloride 526.9 9.9 495 12.19 104 75-125 511 3.07 25

LCS1		Sample ID: LCS1-113587-113587				Units: mg/Kg		Analysis Date: 1/31/2018 04:00 PM		
Client ID:		Run ID: GALLERY_180131A		SeqNo: 4871839		Prep Date: 1/30/2018		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chloride 93.36 10 100 0 93.4 80-120 0

LCS2		Sample ID: LCS2-113587-113587				Units: mg/Kg		Analysis Date: 1/31/2018 04:00 PM		
Client ID:		Run ID: GALLERY_180131A		SeqNo: 4871840		Prep Date: 1/30/2018		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chloride 494.2 10 500 0 98.8 80-120 0

The following samples were analyzed in this batch:

18011348-22A	18011348-23A	18011348-24A
18011348-25A	18011348-26A	18011348-27A

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

Client: WPX Energy
Work Order: 18011348
Project: RDU 45

QC BATCH REPORT

Batch ID: **R229229** Instrument ID **MOIST** Method: **SW3550C**

MBLK		Sample ID: WBLKS-R229229				Units: % of sample		Analysis Date: 1/31/2018 08:35 PM		
Client ID:		Run ID: MOIST_180131G		SeqNo: 4873618		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-R229229				Units: % of sample		Analysis Date: 1/31/2018 08:35 PM		
Client ID:		Run ID: MOIST_180131G		SeqNo: 4873617		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: 18011348-02A DUP				Units: % of sample		Analysis Date: 1/31/2018 08:35 PM		
Client ID: BH18-01 (2-4 ft)		Run ID: MOIST_180131G		SeqNo: 4873597		Prep Date:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 21.7 0.050 0 0 0 0-0 20.52 5.59 10

DUP		Sample ID: 18011348-11A DUP				Units: % of sample		Analysis Date: 1/31/2018 08:35 PM		
Client ID: BH18-04 (2-4 ft)		Run ID: MOIST_180131G		SeqNo: 4873607		Prep Date:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 18.92 0.050 0 0 0 0-0 19.23 1.63 10

The following samples were analyzed in this batch:

18011348-01A	18011348-02A	18011348-03A
18011348-04A	18011348-05A	18011348-06A
18011348-07A	18011348-08A	18011348-09A
18011348-10A	18011348-11A	18011348-12A
18011348-13A	18011348-14A	18011348-15A
18011348-16A	18011348-17A	18011348-18A
18011348-19A	18011348-20A	

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

Client: WPX Energy
Work Order: 18011348
Project: RDU 45

QC BATCH REPORT

Batch ID: **R229307** Instrument ID **MOIST** Method: **SW3550C**

MBLK		Sample ID: WBLKS-R229307				Units: % of sample		Analysis Date: 2/1/2018 03:55 PM		
Client ID:		Run ID: MOIST_180201A		SeqNo: 4875589		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-R229307				Units: % of sample		Analysis Date: 2/1/2018 03:55 PM		
Client ID:		Run ID: MOIST_180201A		SeqNo: 4875588		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: 18011348-22A DUP				Units: % of sample		Analysis Date: 2/1/2018 03:55 PM		
Client ID: BH18-08 (0-2 ft)		Run ID: MOIST_180201A		SeqNo: 4875568		Prep Date:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 17.41 0.050 0 0 0 0-0 16.62 4.64 10

DUP		Sample ID: 18011348-24A DUP				Units: % of sample		Analysis Date: 2/1/2018 03:55 PM		
Client ID: BH18-08 (4-6 ft)		Run ID: MOIST_180201A		SeqNo: 4875571		Prep Date:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 17.91 0.050 0 0 0 0-0 17.65 1.46 10

The following samples were analyzed in this batch:

18011348-21A	18011348-22A	18011348-23A
18011348-24A	18011348-25A	18011348-26A
18011348-27A		

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



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PROJECT NAME	RDU 45	SAMPLER						DATE	19/01/2018					DISPOSAL					By Lab or Return to Client								
PROJECT No.	17E-00043	SITE ID	RDU 45					TURNAROUND	5 days																		
		EDD FORMAT						DRO + GRO + ORO BTX Chloride Hold																			
		PURCHASE ORDER																									
COMPANY NAME	WPX Energy	BILL TO COMPANY	WPX Energy																								
SEND REPORT TO	Raley	INVOICE ATTN TO	Jim Raley																								
ADDRESS		ADDRESS	5315 Buena Vista Dr																								
CITY / STATE / ZIP		CITY / STATE / ZIP	Carlsbad, NM 88220																								
PHONE		PHONE	970 589 0743																								
FAX		FAX																									
E-MAIL	Karolina.blaney@wpxenergy.com; james.ralej@wpxenergy.com		E-MAIL					Karolina.blaney@wpxenergy.com; James.Raley@wpxenergy.com																			
Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC																				
10	BH18-04 (0-2 ft)	S	18/01/2018		2			x	x	x																	
11	BH18-04 (2-4 ft)	S	18/01/2018		2			x	x	x																	
12	BH18-04 (4-6 ft)	S	18/01/2018		2			x	x	x																	
13	BH18-05 (0-2 ft)	S	18/01/2018		2			x	x	x																	
14	BH18-05 (2-4 ft)	S	18/01/2018		2			x	x	x																	
15	BH18-05 (4-6 ft)	S	18/01/2018		2			x	x	x																	
16	BH18-06 (0-2 ft)	S	18/01/2018		2			x	x	x																	
17	BH18-06 (2-4 ft)	S	18/01/2018		2			x	x	x																	
18	BH18-06 (4-6 ft)	S	18/01/2018		2			x	x	x																	

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

For metals or anions, please detail analytes below.

Comments:	QC PACKAGE (check below)
	☒ 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 <i>Karolina Blaney</i>	Karolina Blaney	24/01/2018	15:00
RECEIVED BY <i>Kerry W. JENCKA</i>	Kerry W. JENCKA	1/26/18	0930
RELINQUISHED BY			
RECEIVED BY			
RELINQUISHED BY			
RECEIVED BY			



ALS Laboratory Group

HOLLAND, Michigan 49424

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PROJECT NAME	RDU 45	SAMPLER			DATE	19/01/2018				TURNAROUND	5 days		DISPOSAL	By Lab or Return to Client		
PROJECT No.	17E-00043	SITE ID	RDU 45													
		EDD FORMAT														
		PURCHASE ORDER														
COMPANY NAME	WPX Energy	BILL TO COMPANY	WPX Energy													
SEND REPORT TO	Raley	INVOICE ATTN TO	Jim Raley													
ADDRESS		ADDRESS	5315 Buena Vista Dr													
CITY / STATE / ZIP		CITY / STATE / ZIP	Carlsbad, NM 88220													
PHONE		PHONE	970 589 0743													
FAX		FAX														
E-MAIL	Karolina.blaney@wpxenergy.com; james.raley@wpxenergy.com	E-MAIL	Karolina.blaney@wpxenergy.com; James.Raley@wpxenergy.com													
Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	DRO + GRO + ORO	BTEX	Chloride	Hold					
19	BH18-07 (0-2 ft)	S	18/01/2018		2			x	x	x						
20	BH18-07 (2-4 ft)	S	18/01/2018		2			x	x	x						
21	BH18-07 (4-6 ft)	S	18/01/2018		2			x	x	x						
22	BH18-08 (0-2 ft)	S	18/01/2018		2			x	x	x						
23	BH18-08 (2-4 ft)	S	18/01/2018		2			x	x	x						
24	BH18-08 (4-6 ft)	S	18/01/2018		2			x	x	x						
25	BH18-09 (0-2 ft)	S	18/01/2018		2			x	x	x						
26	BH18-09 (2-4 ft)	S	18/01/2018		2			x	x	x						
27	BH18-09 (4-6 ft)	S	18/01/2018		2			x	x	x						

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

For metals or anions, please detail analytes below.

Comments:	QC PACKAGE (check below)
	☒ 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 <i>Karolina Blaney</i>	Karolina Blaney	24/01/2018	15:00
RECEIVED BY <i>Keith Wierencia</i>	Keith Wierencia	1/26/18	0930
RELINQUISHED BY			
RECEIVED BY			
RELINQUISHED BY			
RECEIVED BY			

Sample Receipt Checklist

Client Name: **WPX - NM**

Date/Time Received: **26-Jan-18 09:30**

Work Order: **18011348**

Received by: **KRW**

Checklist completed by Keith Wurenga
eSignature

26-Jan-18
Date

Reviewed by: Chad Whelton
eSignature

26-Jan-18
Date

Matrices: **Soil**

Carrier name: **FedEx**

Shipping container/cooler in good condition?	Yes ☒	No ☐	Not Present ☐
Custody seals intact on shipping container/cooler?	Yes ☐	No ☐	Not Present ☒
Custody seals intact on sample bottles?	Yes ☐	No ☐	Not Present ☒
Chain of custody present?	Yes ☒	No ☐	
Chain of custody signed when relinquished and received?	Yes ☒	No ☐	
Chain of custody agrees with sample labels?	Yes ☒	No ☐	
Samples in proper container/bottle?	Yes ☒	No ☐	
Sample containers intact?	Yes ☒	No ☐	
Sufficient sample volume for indicated test?	Yes ☒	No ☐	
All samples received within holding time?	Yes ☒	No ☐	
Container/Temp Blank temperature in compliance?	Yes ☒	No ☐	
Sample(s) received on ice?	Yes ☒	No ☐	
Temperature(s)/Thermometer(s):	<u>4.8/4.8 C</u>		<u>SR2</u>
Cooler(s)/Kit(s):	<u></u>		
Date/Time sample(s) sent to storage:	<u>1/26/2018 2:53:47 PM</u>		
Water - VOA vials have zero headspace?	Yes ☐	No ☐	No VOA vials submitted ☒
Water - pH acceptable upon receipt?	Yes ☐	No ☐	N/A ☒
pH adjusted?	Yes ☐	No ☐	N/A ☒
pH adjusted by:	<u>-</u>		

Login Notes:

Client Contacted:

Date Contacted:

Person Contacted:

Contacted By:

Regarding:

Comments:

CorrectiveAction: