



27-Mar-2017

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

Re: **RDU 12**

Work Order: **17031099**

Dear Karolina,

ALS Environmental received 4 samples on 20-Mar-2017 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 14.

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 12
Work Order: 17031099

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>
17031099-01	RDU 12-S5 2'	Soil		3/15/2017 13:00	3/20/2017 09:30	<input type="checkbox"/>
17031099-02	RDU 12-S5 4'	Soil		3/15/2017 13:05	3/20/2017 09:30	<input type="checkbox"/>
17031099-03	RDU 12-S5 6'	Soil		3/15/2017 13:10	3/20/2017 09:30	<input type="checkbox"/>
17031099-04	RDU 12-S5 7'	Soil		3/15/2017 13:15	3/20/2017 09:30	<input type="checkbox"/>

Client: WPX Energy

Project: RDU 12

Work Order: 17031099

Case Narrative

Samples arrived outside of temperature compliance. Results should be considered estimated.

Client: WPX Energy
Project: RDU 12
WorkOrder: 17031099

**QUALIFIERS,
ACRONYMS, UNITS**

<u>Qualifier</u>	<u>Description</u>
*	Value exceeds Regulatory Limit
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: 27-Mar-17

Client: WPX Energy

Project: RDU 12

Sample ID: RDU 12-S5 2'

Collection Date: 3/15/2017 01:00 PM

Work Order: 17031099

Lab ID: 17031099-01

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CHLORIDE			A4500-CL E-97		Prep: EXTRACT / 3/21/17	Analyst: EVB
Chloride	340		14	mg/Kg-dry	1	3/23/2017 06:51 PM
MOISTURE			SW3550C			Analyst: EDL
Moisture	31		0.050	% of sample	1	3/20/2017 03:31 PM

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

ALS Group, USA

Date: 27-Mar-17

Client: WPX Energy

Project: RDU 12

Sample ID: RDU 12-S5 4'

Collection Date: 3/15/2017 01:05 PM

Work Order: 17031099

Lab ID: 17031099-02

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CHLORIDE			A4500-CL E-97		Prep: EXTRACT / 3/21/17	Analyst: EVB
Chloride	97		12	mg/Kg-dry	1	3/23/2017 06:51 PM
MOISTURE			SW3550C			Analyst: EDL
Moisture	19		0.050	% of sample	1	3/20/2017 04:31 PM

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

ALS Group, USA

Date: 27-Mar-17

Client: WPX Energy

Project: RDU 12

Sample ID: RDU 12-S5 6'

Collection Date: 3/15/2017 01:10 PM

Work Order: 17031099

Lab ID: 17031099-03

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CHLORIDE			A4500-CL E-97		Prep: EXTRACT / 3/21/17	Analyst: EVB
Chloride	17		14	mg/Kg-dry	1	3/23/2017 06:51 PM
MOISTURE			SW3550C			Analyst: EDL
Moisture	31		0.050	% of sample	1	3/20/2017 04:31 PM

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

ALS Group, USA

Date: 27-Mar-17

Client: WPX Energy

Project: RDU 12

Sample ID: RDU 12-S5 7'

Collection Date: 3/15/2017 01:15 PM

Work Order: 17031099

Lab ID: 17031099-04

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CHLORIDE			A4500-CL E-97		Prep: EXTRACT / 3/22/17	Analyst: EVB
Chloride	55		14	mg/Kg-dry	1	3/24/2017 10:56 AM
MOISTURE			SW3550C			Analyst: EDL
Moisture	32		0.050	% of sample	1	3/20/2017 04:31 PM

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

Client: WPX Energy
 Work Order: 17031099
 Project: RDU 12

QC BATCH REPORT

Batch ID: **99621** Instrument ID **GALLERY** Method: **A4500-CI E-97**

MBLK		Sample ID: MBLK-99621-99621				Units: mg/Kg		Analysis Date: 3/23/2017 06:51 PM		
Client ID:		Run ID: GALLERY_170323B		SeqNo: 4340775		Prep Date: 3/21/2017		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: 17031099-03A MS				Units: mg/Kg		Analysis Date: 3/23/2017 06:51 PM		
Client ID: RDU 12-S5 6'		Run ID: GALLERY_170323B		SeqNo: 4340834		Prep Date: 3/21/2017		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chloride 550.1 9.9 493.1 11.94 109 75-125 0

MSD		Sample ID: 17031099-03A MSD				Units: mg/Kg		Analysis Date: 3/23/2017 06:51 PM		
Client ID: RDU 12-S5 6'		Run ID: GALLERY_170323B		SeqNo: 4340835		Prep Date: 3/21/2017		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chloride 559.1 9.9 496 11.94 110 75-125 550.1 1.63 25

LCS1		Sample ID: LCS1-99621-99621				Units: mg/Kg		Analysis Date: 3/23/2017 06:51 PM		
Client ID:		Run ID: GALLERY_170323B		SeqNo: 4340776		Prep Date: 3/21/2017		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chloride 104.8 10 100 0 105 80-120 0

LCS2		Sample ID: LCS2-99621-99621				Units: mg/Kg		Analysis Date: 3/23/2017 06:51 PM		
Client ID:		Run ID: GALLERY_170323B		SeqNo: 4340811		Prep Date: 3/21/2017		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chloride 507.9 10 500 0 102 80-120 0

The following samples were analyzed in this batch:

17031099-01A	17031099-02A	17031099-03A
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Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: WPX Energy
 Work Order: 17031099
 Project: RDU 12

QC BATCH REPORT

Batch ID: 99628 Instrument ID GALLERY Method: A4500-CI E-97

MBLK		Sample ID: MBLK-99628-99628				Units: mg/Kg		Analysis Date: 3/24/2017 10:56 AM			
Client ID:		Run ID: GALLERY_170324A		SeqNo: 4341567		Prep Date: 3/22/2017		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: 17031102-03A MS				Units: mg/Kg		Analysis Date: 3/24/2017 10:56 AM			
Client ID:		Run ID: GALLERY_170324A		SeqNo: 4341678		Prep Date: 3/22/2017		DF: 4			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Chloride 3834 40 500 3557 55.4 75-125 0 SO

MSD		Sample ID: 17031102-03A MSD				Units: mg/Kg		Analysis Date: 3/24/2017 10:56 AM			
Client ID:		Run ID: GALLERY_170324A		SeqNo: 4341679		Prep Date: 3/22/2017		DF: 4			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Chloride 3853 40 500 3557 59.2 75-125 3834 0.5 25 SO

LCS1		Sample ID: LCS1-99628-99628				Units: mg/Kg		Analysis Date: 3/24/2017 10:56 AM			
Client ID:		Run ID: GALLERY_170324A		SeqNo: 4341568		Prep Date: 3/22/2017		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Chloride 98.43 10 100 0 98.4 80-120 0

LCS2		Sample ID: LCS2-99628-99628				Units: mg/Kg		Analysis Date: 3/24/2017 10:56 AM			
Client ID:		Run ID: GALLERY_170324A		SeqNo: 4341622		Prep Date: 3/22/2017		DF: 1			
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	

Chloride 496.8 10 500 0 99.4 80-120 0

The following samples were analyzed in this batch:

17031099-04A

Client: WPX Energy
 Work Order: 17031099
 Project: RDU 12

QC BATCH REPORT

Batch ID: **R208079** Instrument ID **MOIST** Method: **SW3550C**

MBLK		Sample ID: WBLKS-R208079				Units: % of sample			Analysis Date: 3/20/2017 03:31 PM		
Client ID:		Run ID: MOIST_170320B				SeqNo: 4333811		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-R208079				Units: % of sample			Analysis Date: 3/20/2017 03:31 PM		
Client ID:		Run ID: MOIST_170320B				SeqNo: 4333810		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: 17031090-05A DUP				Units: % of sample			Analysis Date: 3/20/2017 03:31 PM		
Client ID:		Run ID: MOIST_170320B				SeqNo: 4333794		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Moisture	8.36	0.050	0		0	0		9.87	16.6	5 R	

DUP		Sample ID: 17031093-05A DUP				Units: % of sample			Analysis Date: 3/20/2017 03:31 PM		
Client ID:		Run ID: MOIST_170320B				SeqNo: 4333801		Prep Date:		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Moisture	19.62	0.050	0		0	0		19.51	0.562	5	

The following samples were analyzed in this batch:

17031099-01A

Client: WPX Energy
 Work Order: 17031099
 Project: RDU 12

QC BATCH REPORT

Batch ID: **R208080** Instrument ID **MOIST** Method: **SW3550C**

MBLK	Sample ID: WBLKS-R208080				Units: % of sample			Analysis Date: 3/20/2017 04:31 PM		
Client ID:	Run ID: MOIST_170320C			SeqNo: 4333979		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-R208080				Units: % of sample			Analysis Date: 3/20/2017 04:31 PM		
Client ID:	Run ID: MOIST_170320C			SeqNo: 4333977		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: 17031101-02A DUP				Units: % of sample			Analysis Date: 3/20/2017 04:31 PM		
Client ID:	Run ID: MOIST_170320C			SeqNo: 4333948		Prep Date:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 8.29 0.050 0 0 0 8.64 4.13 5

DUP	Sample ID: 17031101-03A DUP				Units: % of sample			Analysis Date: 3/20/2017 04:31 PM		
Client ID:	Run ID: MOIST_170320C			SeqNo: 4333951		Prep Date:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 5.11 0.050 0 0 0 5.36 4.78 5

The following samples were analyzed in this batch:

17031099-02A	17031099-03A	17031099-04A
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Note: See Qualifiers Page for a list of Qualifiers and their explanation.



ALS Laboratory Group

HOLLAND, Michigan 49424

Chain-of-Custody

Form 2028

WORKORDER #	17031099
PAGE	1 of 1

PROJECT NAME	RDU 12	SAMPLER		DATE	3/16/2017	TURNAROUND		5 day	DISPOSAL	By Lab or Return to Client
PROJECT No.		SITE ID	RDU 12							
		EDD FORMAT								
		PURCHASE ORDER								
COMPANY NAME	WPX Energy	BILL TO COMPANY	WPX Energy							
SEND REPORT TO	Blaney	INVOICE ATTN TO	Karolina Blaney							
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	E-MAIL	Karolina.blaney@wpxenergy.com							
Lab ID	Field ID	Matrix	Sample Date	Sample Time	# Bottles	Pres.	QC	DRO, GRO, ORO	BTEX	Chloride
1	RDU 12 - S5 2'	S	3/15/2017	13:00	1	8	x		x	
2	RDU 12 - S5 4'	S	3/15/2017	13:05	1	8	x		x	
3	RDU 12 - S5 6'	S	3/15/2017	13:10	1	8	x		x	
4	RDU 12 - S5 7'	S	3/15/2017	13:15	1	8	x		x	

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

For metals or anions, please detail analytes below.

Comments:	DC PACKAGE (check below)
	<input checked="" type="checkbox"/> LEVEL II (Standard QC)
	<input type="checkbox"/> LEVEL III (Std QC + forma)
	<input type="checkbox"/> LEVEL IV (Std QC + forma + raw data)

120
-ice
walked
SR2

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	Karolina Blaney	Karolina Blaney	3/16/2017	16:00
RECEIVED BY	MBroadbent	MBroadbent	3/20/17	9:30
RELINQUISHED BY				
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				

Sample Receipt Checklist

Client Name: **WPX - NM**

Date/Time Received: **20-Mar-17 09:30**

Work Order: **17031099**

Received by: **MBB**

Checklist completed by Meghan Broadbent 20-Mar-17
eSignature Date

Reviewed by: Chad Whelton 20-Mar-17
eSignature Date

Matrices: soil
 Carrier name: FedEx

Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	Not Present <input type="checkbox"/>
Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Custody seals intact on sample bottles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	Not Present <input checked="" type="checkbox"/>
Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper container/bottle?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
All samples received within holding time?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Container/Temp Blank temperature in compliance?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Sample(s) received on ice?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Temperature(s)/Thermometer(s):	<u>12.0/12.0</u>		<u>SR2</u>
Cooler(s)/Kit(s):	<u> </u>		
Date/Time sample(s) sent to storage:	<u>3/20/2017 11:57:09 AM</u>		
Water - VOA vials have zero headspace?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	No VOA vials submitted <input checked="" type="checkbox"/>
Water - pH acceptable upon receipt?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	N/A <input checked="" type="checkbox"/>
pH adjusted by:	<u> </u>		

Login Notes: Ice melted

Client Contacted: _____ Date Contacted: _____ Person Contacted: _____
 Contacted By: _____ Regarding: _____

Comments:

CorrectiveAction: