



September 26, 2018

Spill Closure Report: East Pecos Federal 22-05H (Section 22 T26S R29E)
API: 30-015-42270

Prepared For: **WPX Energy Inc.**
5315 Buena Vista Drive
Carlsbad, New Mexico 88220

NMOCD District 2
811 South 1st Street
Artesia, NM 87410

Ms. James Raley/Karolina Blaney,

RKI Exploration, LLC, a subsidiary of WPX Energy Inc. retained Vertex Resource Services Inc. (Vertex) to conduct a Spill Assessment for a release that occurred at the East Pecos Federal 22-05H, API 30-015-42270 (hereafter referred to as “site”) production pad. The release was caused by the failure of a 1” valve. Oil emulsion (mixed fluid) was released on to the well pad surface. This letter provides a description of the Spill Assessment, Remediation Plan and includes this request for Spill Closure.

Site Information

The site is located approximately 38 miles east of Carlsbad, New Mexico. The legal location for the site is Section 22, Township 26 South and Range 29 East in Eddy County, New Mexico (approximately 32° 01' 16.4496"N 103° 58' 24.5856"W). The affected property is leased from the Bureau of Land Management (BLM). An aerial photograph and site schematic are included in Attachment 1.

The Geological Map of New Mexico (New Mexico Bureau of Geology and Mineral Resources, 2014-2017) indicates the site’s surface geology is comprised primarily Alluvium (Holocene to upper Plesitocene). The United States Department of Agriculture, Natural Resource Conservation Services, identifies the local soils as Upton-Simona Complex, 1 to 15 percent slopes, eroded. These soils are typically, sandy-gravelly loam, alluvial deposits. These descriptions are consistent with observations during the site visit. Site photographs obtained during the Spill Assessment are included in Attachment 2.

Incident Description

The spill, reported March 3, 2018, involved the release of oil emulsion (mixed fluids) on to the well pad surface. The release was caused by failure of 1” valve on the wellhead. The release was isolated and the damaged valve on the wellhead was replaced. A vacuum truck was immediately dispatched to remove any standing liquids. A backhoe was additionally dispatched to remove any saturated soils. The initial C-141 Report is included in Attachment 3.

Groundwater, Point of Diversion and Site Ranking

The New Mexico State Engineer website (New Mexico Water Rights Reporting System – Water Column Report) indicates that the nearest groundwater data available for Section 5 T26S R29E is approximately four miles northeast from the site. The groundwater in that area is reported to be at an average depth of 78 feet below ground surface (BGS). The referenced groundwater data are presented in Attachment 4.

Based on the information obtained, the ranking for the site in question is **0** based on the following:

Depth to Groundwater > 100 ft.
Wellhead Protection Area > 1,000 ft.
Distance to Surface Water Body > 1,000 ft.

Based on a site ranking of **0**, NMOCD Recommended Remedial Action Levels (RRALs) are 50 mg/kg for BTEX, 10 mg/kg for Benzene, and 5,000 mg/kg for total petroleum hydrocarbons. Based on previous communication with the NMOCD, 600 mg/kg for total chlorides is considered to be an acceptable threshold for remediation.

The New Mexico State Engineer web site (New Mexico Water Rights Reporting System – Active & Inactive Points of Diversion) indicates that there are no diversions within 1,000 feet (Attachment 5).

Remedial Actions Taken

All site visit was completed on March 29, 2018, which aimed to identify evidence of the spill specified in the initial C-141 Report and delineate the area of contamination. A total of six (6) test pits were advanced to delineate the vertical and horizontal impacts of the spill. Four (4) test pits were advanced to 6ft. below ground surface in the Cardinal directions (North, South, East, and West). Two (2) test pits were advanced within the boundaries of the spill area to determine vertical depth and volume of impacts. Soil samples taken during delineation activity were submitted to the lab and analyzed for hydrocarbons (volatile and extractable) and chlorides. The lab results are presented in Table 1 and can be found in Attachment 7.

The lab results from March 29, 2018, showed there was high concentrations of chlorides, which required remediation to below the remediation action levels. The Remediation Plan was developed on April 25, 2018, approved by the NMOCD, and executed on August 9, 2018. The approved plan is presented in Attachment 8. Remediation included the excavation of impacted soils, transportation by a licensed waste hauler and disposal at an approved waste management facility. These activities began on August 9, 2018 and finished on August 14, 2018. Excavation of soils was completed to 4 feet below ground surface as outlined in the Remediation Plan. Excavation on the horizontal plane was completed in conjunction with field screening results and was constrained on the North side by existing infrastructure. Soils were removed as close to this infrastructure as possible in compliance with safety guidance. In total, approximately 1,200 yards of contaminated soil was excavated and disposed of. Field screening for chlorides was completed during the excavation using the standardized saturated paste method with Quantabs and is documented in Table 2, along with the lab screening results. Discreet confirmatory samples were collected on August 13 and 14, 2018 and submitted for lab analysis. Lab analysis included hydrocarbons (volatile and extractable) and chlorides. Remediation activity can be viewed in Figure 1, Appendix 1, and site photos, documenting

the remedial activities in Attachment 2. Daily Field Reports of the excavation and sampling can be found in Attachment 6. The lab results are presented in Table 2 and can be found in Attachment 7.

The confirmatory sample results collected on August 13, and 14, 2018 identified areas on the west wall 2, east wall 2, and east wall 3 with above closure criteria chloride concentrations. The limits of the excavation area were extended and additional soil was excavated on August 24, 25 and 27, 2018 to address these areas of above closure criteria chlorides. Approximately 860 yards were removed and disposed of in an approved waste facility. Confirmatory samples were taken at these wall locations on August 28, 2018 and can be identified on Figure 1, Appendix 1, and site photos, documenting the remedial activities in Attachment 2. Lab analysis included hydrocarbons (volatile and extractable) and chlorides. Daily Field Report of the excavation and sampling can be found in Attachment 6. Lab screening results can be found in the Table 3 and Attachment 7.

The lab results from the collection on August 28, 2018 show hydrocarbons and chlorides are within the NMOCD Recommended Remediation Action Levels (RRAL) on each of the excavation walls. As identified in the Remediation Plan, a 30 Mil liner was installed on September 7, 2018 at 4 feet below the ground surface, to address those areas on the base of the excavation exceeding the 600 ppm chloride concentration. Pending closure approval, the liner will be sized to fit the base of the excavation, and backfilled with local caliche. Pictures of the liner installation can be found in Attachment 2.

Table 1. Soil Characterization Results – March 29 , 2018								
Sample Description			Field Screening		Petroleum Hydrocarbons		Inorganic	
Sample ID	Depth (ft.)	Date	Volatile Organic Compounds	Quantab Result (High/Low)	Volatile		Extractable	
					Benzene	BTEX (Total)	TPH	
			(ppm)	(+/-)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
BH18-01	0	3/29/2018	-	-	ND	ND	28	1700
BH18-01	2	3/29/2018	-	-	ND	ND	ND	360
BH18-01	4	3/29/2018	-	-	-	-	-	1100
BH18-01	6	3/29/2018	-	-	-	-	-	590
BH18-02	0	3/29/2018	-	-	ND	ND	18.3	89
BH18-02	2	3/29/2018	-	-	ND	ND	7.9	670
BH18-02	4	3/29/2018	-	-	-	-	-	500
BH18-02	6	3/29/2018	-	-	-	-	-	1000
BH18-03	0	3/29/2018	-	-	ND	ND	5.6	100
BH18-03	2	3/29/2018	-	-	ND	ND	5.3	380
BH18-03	4	3/29/2018	-	-	-	-	-	380
BH18-03	6	3/29/2018	-	-	-	-	-	1500
BH18-04	0	3/29/2018	-	-	ND	ND	28	310
BH18-04	2	3/29/2018	-	-	ND	ND	ND	260
BH18-04	4	3/29/2018	-	-	-	-	-	320
BH18-04	6	3/29/2018	-	-	-	-	-	220
BH18-05	0	3/29/2018	-	-	ND	ND	368.3	2000
BH18-05	2	3/29/2018	-	-	ND	ND	820	1700
BH18-05	4	3/29/2018	-	-	-	-	-	1600
BH18-05	6	3/29/2018	-	-	-	-	-	1100
BH18-06	0	3/29/2018	-	-	ND	ND	62	5500
BH18-06	2	3/29/2018	-	-	ND	ND	9.7	2200
BH18-06	4	3/29/2018	-	-	-	-	-	980
BH18-06	6	3/29/2018	-	-	-	-	-	660

RRALs - 50 mg/kg BTEX, 10 mg/kg Benzene, 5,000 mg/kg TPH, 600 mg/kg Chloride

Table 2. Soil Characterization Results – August 13 , 2018								
Sample Description			Field Screening		Petroleum Hydrocarbons		Extractable	Inorganic
Sample ID	Depth (ft.)	Date	Volatile Organic Compounds	Quantab Result (High/Low)	Volatile		TPH	Chloride
					Benzene	BTEX (Total)		
			(ppm)	(+/-)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
West Wall 1	4	8/13/2018	-	+72	ND	ND	ND	140
West Wall 2	4	8/13/2018	-	+353	ND	ND	ND	1000
East Wall 1	4	8/13/2018	-	+547	ND	ND	ND	290
East Wall 2	4	8/13/2018	-	+328	ND	ND	ND	600
North Wall 1	4	8/13/2018	-	+284	ND	ND	ND	430
North Wall 2	4	8/13/2018	-	+245	ND	ND	ND	34
South Wall 1	4	8/13/2018	-	+57	ND	ND	ND	82
Base 1	4	8/13/2018	-	+305	ND	ND	6.4	1400
Base 2	4	8/13/2018	-	+328	ND	ND	ND	870
Base 3	4	8/13/2018	-	+439	ND	ND	ND	720
Base 4	4	8/14/2018	-	+153	ND	ND	ND	260
Base 5	4	8/14/2018	-	+472	ND	ND	ND	1500
East Wall 3	4	8/14/2018	-	+57	ND	ND	ND	760
West Wall 3	4	8/14/2018	-	+180	ND	ND	ND	200

RRALs - 50 mg/kg BTEX, 10 mg/kg Benzene, 5,000 mg/kg TPH, 600 mg/kg Chloride

Table 3. Soil Characterization Results – August 28 , 2018								
Sample Description			Field Screening		Petroleum Hydrocarbons		Inorganic	
Sample ID	Depth (ft.)	Date	Volatile Organic Compounds	Quantab Result (High/Low)	Volatile		Extractable	
					Benzene	BTEX (Total)	TPH	Chloride
			(ppm)	(+/-)	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)
West Wall 2	4	8/28/2018	-	+306	ND	ND	24	21
East Wall 2	4	8/28/2018	-	+306	ND	ND	ND	310
East Wall 3	4	8/28/2018	-	+62	ND	ND	ND	340

RRALs - 50 mg/kg BTEX, 10 mg/kg Benzene, 5,000 mg/kg TPH, 600 mg/kg Chloride

Closure Request

Initial response addressed concerns that were readily accessible around existing infrastructure on the operating site. The spill occurred on the well pad and was contained within the boundary of the lease in proximity to the wellhead. The initial samples collected at the site identified, through lab analysis of hydrocarbons and chlorides, that there were high concentrations of chlorides which required remediation through excavation. A Remediation Plan was submitted and approved by the NMOCD. Initial excavation was confined on the North side by existing operating infrastructure. Upon completion of the initial excavation, confirmatory samples were collected from the walls and base. These samples were analyzed by the lab and identified that further excavation was required to remove all contaminated soils. Excavation was completed in these areas identified by confirmatory samples. A second set of confirmatory samples were collected on August 28, 2018 and analyzed by the lab for hydrocarbon and chloride concentrations. They were found to be below the NMOCD guidance for allowable chloride concentration on the walls of the excavation. Complete laboratory results are included in Attachment 7.

Remedial efforts have been completed to address delineated chloride concentrations above NMOCD guidance on the walls of the excavation. A 30 Mil liner has been installed on the base of the excavation to address any residual impacts at or below 4 ft. bgs. The excavation will be backfilled with local caliche soils pending closure approval. Given that the impact associated to this spill has been remediated to approved NMOCD levels, WPX Energy Inc. requests that this spill be closed.

Should you have any questions or concerns, please do not hesitate to contact the undersigned at 832.588.0674 or dhanton@vertex.ca.

Sincerely,



Dhugal Hanton
VICE PRESIDENT – US OPERATIONS

Attachments

- Attachment 1. Aerial Photograph
- Attachment 2. Site Photographs
- Attachment 3. Initial C-141 Report
- Attachment 4. Ground Water Information
- Attachment 5. Diversion Information
- Attachment 6. Site Visit Daily Field Report
- Attachment 7. Laboratory Results
- Attachment 8. NMOCD Approved Remediation Plan

References

- New Mexico Oil Conservation Division. (1993). *Guidelines for Remediation of Leaks, Spills and Releases*. Santa Fe, New Mexico.
- New Mexico Water Rights Reporting System. (2010). *Water Column/Average Depth to Water Report*. Retrieved from <http://nmwrrs.ose.state.nm.us/index.html>
- New Mexico Water Rights Reporting System. (2010). *Point of Diversion Location Report*. Retrieved from <http://nmwrrs.ose.state.nm.us/index.html>
- New Mexico Bureau of Geology and Mineral Resources. (2014-2017). *Interactive Geologic Map*. Retrieved from <http://geoinfo.nmt.edu>
- USDA Natural Resources Conservation Service. (2017) *Web Soil Survey*. Retrieved from <https://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx>

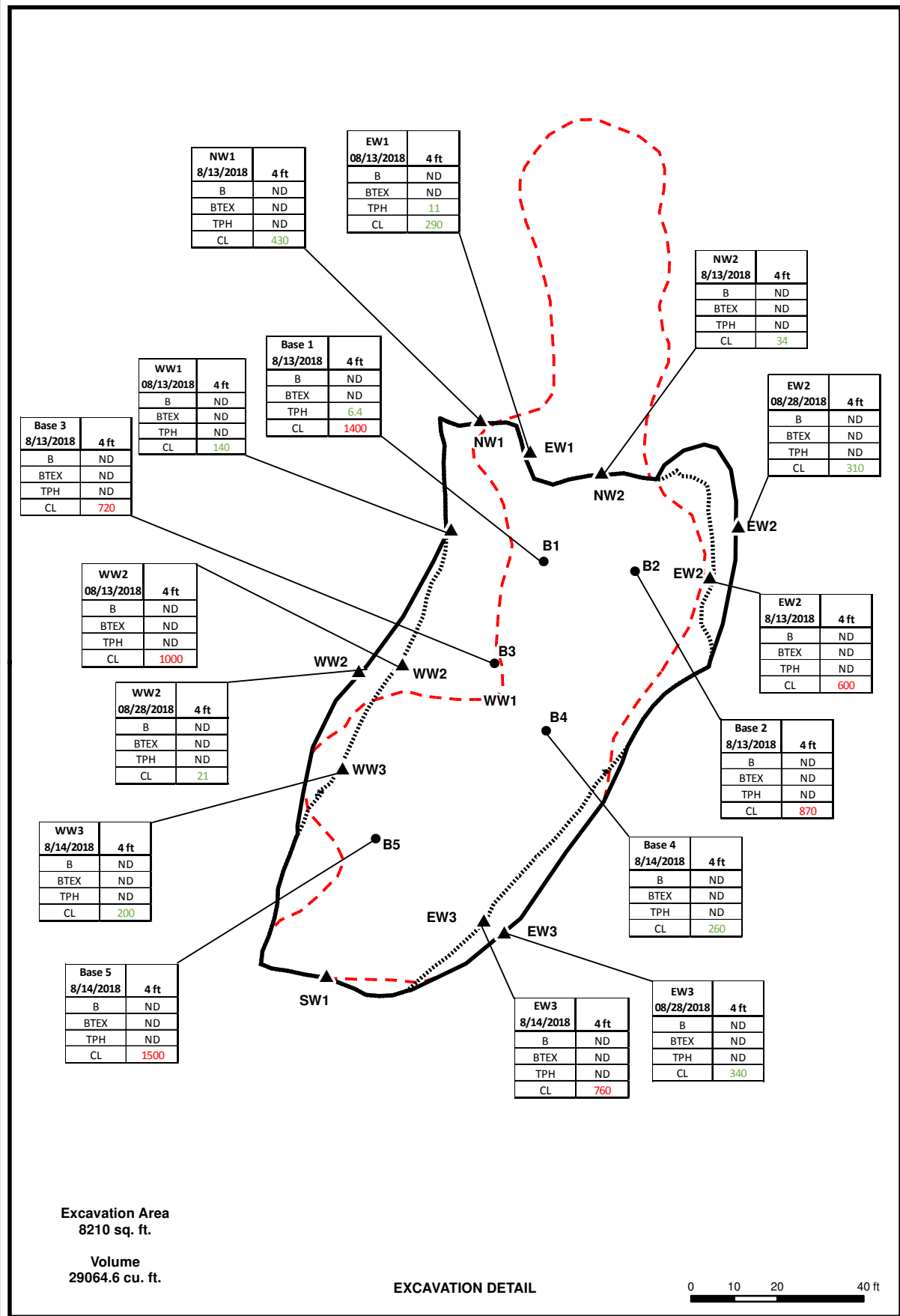
Limitations

This report has been prepared for the sole benefit of WPX Energy Inc. This document may not be used by any other person or entity, with the exception of the New Mexico Oil Conservation Division, without the express written consent of Vertex Resource Services Inc. (Vertex) and WPX Energy Inc. Any use of this report by a third party, or any reliance on decisions made based on it, or damages suffered as a result of the use of this report are the sole responsibility of the user.

The information and conclusions contained in this report are based upon work undertaken by trained professional and technical staff in accordance with generally accepted scientific practices current at the time the work was performed. The conclusions and recommendations presented represent the best judgement of Vertex based on the data collected during the assessment. Due to the nature of the assessment and the data available, Vertex cannot warrant against undiscovered environmental liabilities. Conclusions and recommendations presented in this report should not be considered legal advice.

ATTACHMENT 1

Document Path: G:\1-Projects\US PROJECTS\WPX\17E-00049 Spill\Figure 1 Site Schematic East Pecos 22-5H LAB 3 (17E-00049).mxd



NOTE: Image from Bing, 2017



Site Schematic
East Pecos 22-5H



DRAWN: PS
APPROVED: KM
DATE: SEP 26/18

FIGURE:
1

VERSATILITY. EXPERTISE.

ATTACHMENT 2



Photo 1. Overview of spill area facing north

Photo Date: March 29, 2018 GPS: N: 32.021 W: 103.9736



Photo 2. Overview of spill area facing south

Photo Date: March 29, 2018 GPS: N: 32.021 W: 103.9736



Photo 3. Sample 5 in spill area

Photo Date: March 29, 2018

GPS: N: 32.021 W: 103.9736



Photo 4. Sample 5 in spill area filled in

Photo Date: March 29, 2018

GPS: N: 32.021 W: 103.9736



Photo 5. Sample 1 in spill area

Photo Date: March 29, 2018 GPS: N: 32.021 W: 103.9736



Photo 6. Sample 1 in spill area filled in

Photo Date: March 29, 2018 GPS: N: 32.021 W: 103.9736



Photo 1. Excavation looking west

Photo Date: August 9, 2018 GPS: N: 32.021 W: 103.9736



Photo 2. Excavation marked/blocked off looking west

Photo Date: August 9, 2018 GPS: N: 32.021 W: 103.9736



Photo 3. Excavator loading truck looking south

Photo Date: August 10, 2018 GPS: N: 32.021 W: 103.9736



Photo 4. Excavator loading truck looking east

Photo Date: August 10, 2018 GPS: N: 32.021 W: 103.9736



Photo 5. Excavation fenced off looking north

Photo Date: August 11, 2018 GPS: N: 32.021 W: 103.9736



Photo 6. East Wall 1 Sample area

Photo Date: August 13, 2018 GPS: N: 32.021 W: 103.9736



Photo 7. North Wall 1 sample point

Photo Date: August 13, 2018 GPS: N: 32.021 W: 103.9736



Photo 8. North Wall 2 sample point

Photo Date: August 13, 2018 GPS: N: 32.021 W: 103.9736



Photo 9. West Wall 1 sample point

Photo Date: August 13, 2018

GPS: N: 32.021 W: 103.9736



Photo 10. Base 1 and 2 sample point

Photo Date: August 13, 2018

GPS: N: 32.021 W: 103.9736



Photo 11. Base 3 sample point

Photo Date: August 13, 2018 GPS: N: 32.021 W: 103.9736



Photo 12. Base 5 sample point

Photo Date: August 14, 2018 GPS: N: 32.021 W: 103.9736



Photo 13. South Wall 1 sample point

Photo Date: August 14, 2018 GPS: N: 32.021 W: 103.9736



Photo 14. Base 4 sample point

Photo Date: August 14, 2018 GPS: N: 32.021 W: 103.9736



Photo 1. Excavation looking east

Photo Date: August 24, 2018 GPS: N: 32.021 W: 103.9736



Photo 2. Excavation looking southeast

Photo Date: August 24, 2018 GPS: N: 32.021 W: 103.9736



Photo 3. Excavation looking east

Photo Date: August 25, 2018 GPS: N: 32.021 W: 103.9736



Photo 4. Excavation looking southeast

Photo Date: August 25, 2018 GPS: N: 32.021 W: 103.9736



Photo 5. Excavation looking southeast

Photo Date: August 25, 2018 GPS: N: 32.021 W: 103.9736



Photo 6. Completed excavation looking south

Photo Date: August 27, 2018 GPS: N: 32.021 W: 103.9736



Photo 7. East Wall 2 sample point

Photo Date: August 28, 2018 GPS: N: 32.021 W: 103.9736



Photo 8. East Wall 3 sample point

Photo Date: August 28, 2018 GPS: N: 32.021 W: 103.9736



Photo 9. West Wall sample point 3

Photo Date: August 28, 2018

GPS: N: 32.021 W: 103.9736



Photo 1. Excavation with liner looking south

Photo Date: September 7, 2018 GPS: N: 32.021 W: 103.9736



Photo 2. Excavation with liner looking east

Photo Date: September 7, 2018 GPS: N: 32.021 W: 103.9736



Photo 3. Excavation with liner weighted down looking south

Photo Date: September 7, 2018 GPS: N: 32.021 W: 103.9736

ATTACHMENT 3

District I
1625 N. French Dr., Hobbs, NM 88240
District II
811 S. First St., Artesia, NM 88210
District III
1000 Rio Brazos Road, Aztec, NM 87410
District IV
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico
Energy Minerals and Natural Resources

Form C-141
Revised April 3, 2017

Oil Conservation Division
1220 South St. Francis Dr.
Santa Fe, NM 87505

Submit 1 Copy to appropriate District Office in
accordance with 19.15.29 NMAC.

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: RKI Exploration / WPX Energy	Contact: James Raley	
Address: 5315 Buena Vista Dr.	Telephone No: 575-689-7597	
Facility Name: East Pecos Federal 22-05H	Facility Type: Well Pad	
Surface Owner: Private	Mineral Owner: Federal	API No. 30-015-42270

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
N	22	26S	29E	250	South	2185	West	Eddy

Latitude 32.0212364 Longitude -103.9734955 NAD83

NATURE OF RELEASE

Type of Release: Oil emulsion release from wellhead	Volume of Release: 3 bbl	Volume Recovered: 2 bbl
Source of Release: 1" fitting on wellhead	Date and Hour of Occurrence 03/03/2018 8:00 AM	Date and Hour of Discovery 03/03/2018 12:00PM
Was Immediate Notice Given? ☐ Yes ☒ No ☐ Not Required	If YES, To Whom? Heather Patterson/Shelly Tucker	
By Whom?	Date and Hour:	
Was a Watercourse Reached? ☐ Yes ☒ No	If YES, Volume Impacting the Watercourse.	
If a Watercourse was Impacted, Describe Fully.* N/A		
Describe Cause of Problem and Remedial Action Taken.* Release was caused by failure of 1" valve, resulting in release of oil emulsion (mixed fluids) on to well pad surface. Leak was isolated and damaged valve on wellhead replaced. Vac truck was immediately dispatched to remove any standing liquids. Backhoe was dispatched to remove any saturated soils.		
Describe Area Affected and Cleanup Action Taken.* Well pad soils were impacted. Additional soils that display obvious impacts will be removed under supervision of environmental consultant. Samples will be collected when initial soil removal complete to evaluate if further remediation required. Spill area will be delineated both horizontally and vertically to determine impact depths.		
I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.		
Signature: 	OIL CONSERVATION DIVISION	
Printed Name: Jim Raley	Approved by Environmental Specialist:	
Title: Environmental Specialist	Approval Date:	Expiration Date:
E-mail Address: james.ralej@wpxenergy.com	Conditions of Approval:	Attached ☐
Date: 3/22/2018	Phone: 575-689-7597	

* Attach Additional Sheets If Necessary

ATTACHMENT 4



New Mexico Office of the State Engineer

Water Column/Average Depth to Water

(A CLW##### in the POD suffix indicates the POD has been replaced & no longer serves a water right file.)

(R=POD has been replaced, O=orphaned, C=the file is closed)

(quarters are 1=NW 2=NE 3=SW 4=SE)

(quarters are smallest to largest)

(NAD83 UTM in meters)

(In feet)

POD Number	POD Sub-Code	basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	Depth Well	Depth Water	Water Column
C 01354 X-3	CUB	ED		2	1	3	23	26S	29E	598323	3543837	2781	170		
C 03605 POD1	CUB	ED		4	2	3	27	26S	29E	596990	3541983	4267	45	0	45
C 03507 POD1	C	ED		1	3	3	05	26S	29E	593064	3548313	4390	140	78	62
C 03508 POD1	C	ED		1	3	3	05	26S	29E	593063	3548361	4413	140	75	65
C 02038	C	ED		3	2	4	26	26S	29E	599204	3541992*	4823	200		

Average Depth to Water: **51 feet**

Minimum Depth: **0 feet**

Maximum Depth: **78 feet**

Record Count: 5

UTMNAD83 Radius Search (in meters):

Easting (X): 596938.82

Northing (Y): 3546250

Radius: 5000

*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

ATTACHMENT 5



New Mexico Office of the State Engineer

Active & Inactive Points of Diversion

(with Ownership Information)

(acre ft per annum)										(R=POD has been replaced and no longer serves this file, (quarters are 1=NW 2=NE 3=SW 4=SE) C=the file is closed) (quarters are smallest to largest) (NAD83 UTM in meters)									
WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Code Grant	Source	q	q	q	6416 4	Sec	Tws	Rng	X	Y	Distance	
C 01569	C	STK		3 KATHRYN F PASCHAL	ED	C 01569			4	4	1	22	26S	29E		596978	3544093*	 2157	
C 01354	CUB	SRO		0 RECOVERY WATER COMPANY	ED	C 01354 X-6			1	4		22	26S	29E		597297	3543769*	 2506	
C 01355	CUB	EXP		0 GEORGE ROSS	ED	C 01355 X,6			1	4		22	26S	29E		597297	3543769*	 2506	
C 01354	CUB	SRO		0 RECOVERY WATER COMPANY	ED	C 01354 X-3			2	1	3	23	26S	29E		598323	3543837	 2781	
C 03481	C	PRO		0 ROSS-BRANTLEY JOINT VENTURE	ED	C 01354 X-3			2	1	3	23	26S	29E		598323	3543837	 2781	
C 01355	CUB	EXP		0 GEORGE ROSS	ED	C 01355 X-3			1	3		23	26S	29E		598121	3543721*	 2791	
					ED	C 01355 X-5			3	3		22	26S	29E		596479	3543421*	 2866	
C 01354	CUB	SRO		0 RECOVERY WATER COMPANY	ED	C 01354 X-5			3	3	3	22	26S	29E		596462	3543354	 2934	
C 03479	C	PRO		0 ROSS-BRANTLEY JOINT VENTURE	ED	C 01354 X-5			3	3	3	22	26S	29E		596462	3543354	 2934	
C 01354	CUB	SRO		0 RECOVERY WATER COMPANY	ED	C 01354 X-4			4	4		22	26S	29E		597713	3543339*	 3012	
C 01355	CUB	EXP		0 GEORGE ROSS	ED	C 01355 X-4			4	4		22	26S	29E		597713	3543339*	 3012	
C 01354	CUB	SRO		0 RECOVERY WATER COMPANY	ED	C 01354 X-7			1	2		27	26S	29E		597289	3542964*	 3304	
C 01355	CUB	EXP		0 GEORGE ROSS	ED	C 01355 X-7			1	2		27	26S	29E		597289	3542964*	 3304	
C 01354	CUB	SRO		0 RECOVERY WATER COMPANY	ED	C 01354 X			3	1		26	26S	29E		598093	3542499*	 3924	
C 01355	CUB	EXP		0 GEORGE ROSS	ED	C 01355 X			3	1		26	26S	29E		598093	3542499*	 3924	
C 04182	CUB	EXP		0 BRAD BENNETT	ED	C 04182 POD3			4	2	3	05	26S	29E		593617	3548447	 3982	
					ED	C 04182 POD4			1	4	3	05	26S	29E		593487	3548301	 4014	
C 01354	CUB	SRO		0 RECOVERY WATER COMPANY	ED	C 01354			1	4		27	26S	29E		597263	3542160*	 4102	

*UTM location was derived from PLSS - see Help

(R=POD has been replaced
and no longer serves this file, (quarters are 1=NW 2=NE 3=SW 4=SE)
C=the file is closed) (quarters are smallest to largest) (NAD83 UTM in meters)

(acre ft per annum)					C=the file is closed)			(quarters are smallest to largest)							(NAD83 UTM in meters)			
WR File Nbr	Sub basin	Use	Diversion	Owner	County	POD Number	Code Grant	Source	6416	4	Sec	Tws	Rng	X	Y	Distance		
C 01355	CUB	EXP		0 GEORGE ROSS	ED	C 01355			1	4	27	26S	29E	597263	3542160*		4102	
C 04182	CUB	EXP		0 BRAD BENNETT	ED	C 04182 POD2			1	2	3	05	26S	29E	593404	3548605		4247
C 03605	CUB	MON		0 CIMAREX	ED	C 03605 POD1			4	2	3	27	26S	29E	596989	3541983		4267
C 01570	C	STK		3 JACKIE C PASCHAL	ED	C 01570			1	3	26	26S	29E	598077	3542093*		4310	
C 03507	C	STK		3 M. BRAD BENNETT	ED	C 03507 POD1		Shallow	1	3	3	05	26S	29E	593063	3548313		4390
C 03508	C	STK		3 M. BRAD BENNETT	ED	C 03508 POD1		Shallow	1	3	3	05	26S	29E	593063	3548361		4413
C 04182	CUB	EXP		0 BRAD BENNETT	ED	C 04182 POD1			2	1	3	05	26S	29E	593185	3548635		4447
C 01354	CUB	SRO		0 RECOVERY WATER COMPANY	ED	C 01354 X-2			1	4	26	26S	29E	598895	3542093*		4594	
C 01355	CUB	EXP		0 GEORGE ROSS	ED	C 01355 X-2			1	4	26	26S	29E	598895	3542093*		4594	
SP 03254	CUB	COM		6418 RED BLUFF WATER CONTROL DIST.	ED	SP 03254			3	1	05	26S	29E	593172	3549004*		4666	
C 02038	C	PRO		3 J.C. WILLIAMSON	ED	C 02038		Shallow	3	2	4	26	26S	29E	599204	3541992*		4823

Record Count: 29

UTMNAD83 Radius Search (in meters):

Easting (X): 596938.82

Northing (Y): 3546250

Radius: 5000

Sorted by: Distance

*UTM location was derived from PLSS - see Help

The data is furnished by the NMOSE/ISC and is accepted by the recipient with the expressed understanding that the OSE/ISC make no warranties, expressed or implied, concerning the accuracy, completeness, reliability, usability, or suitability for any particular purpose of the data.

ATTACHMENT 6

Client: WPX
Site Location: East Pecos 22-5H
Project Owner: Robyn Fisher
Project Manager: Carl Davison

Date: 3/29/2018
Project #: 17E-00043
API: 30-015-42270

Summary of Daily Operations

In the afternoon delineated East Pecos 22-5H. Collected samples and put in jars provided by ALS Laboratories.

Planned Activities and Recommendations

No planned activities or recommendations

Photo Log

Picture Number (Camera Label)	Viewing Direction	Description

Date:	8/9/2018
Project #:	17E-00043
API:	30-015-42270

- Leave Carlsbad for East Pecos 22-5H - 5:45 hrs
- Arrive on site 07:00 hrs
- Begin work at 08:30 when crew arrives
- Trucks 1 and 2 filled and sent to dispose of dirt at 10:30. Approx. 40 yards.
- Trucks 3 and 4 filled and sent to dispose of dirt at 12:30 Approx. 40 yards.
- Trucks 1 and 2 filled with another load and sent to dispose of dirt at 14:30 Approx. 40 yards.
- Flag off open excavation and leave site at 15:45 and arrive back in Carlsbad at 17:00
- 120 yards of soil hauled off.

- Return at 07:00 tomorrow morning to continue excavation

[illegible]

Client: WPX
 Site Location: East Pecos 22-5H
 Project Owner: Jason Crabtree
 Project Manager: Dhugal Hanton

Date: 8/10/2018
 Project #: 17E-00043
 API: 30-015-42270

Summary of Daily Operations

- Leave Carlsbad for East Pecos 22-5H - 06:00 hrs
- Arrive on site 07:15 hrs
- Begin excavating and loading trucks to dispose of dirt, Trucks 1 and 2 done 08:00. Approx. 40 yards.
- Trucks 3 and 4 filled and sent to dispose of dirt at 08:45. Approx. 40 yards.
- Trucks 5 and 6 filled and sent to dispose of dirt at 09:30. Approx. 40 yards.
- Trucks 7, 8, and 9 filled and sent to dispose of dirt at 10:30. Approx. 60 yards.
- Trucks 10 and 11 filled and sent to dispose of dirt at 11:15. Approx. 40 yards.
- Trucks 3, 4, and 6 filled with 2nd load and sent off at 1:45. Approx. 60 yards.
- Excavation flagged/blocked off for the day and arrive back in Carlsbad at 3:30
- 280 yards of soil hauled off

Planned Activities and Recommendations

- Return at 07:00 tomorrow morning to continue excavation

Photo Log

Picture Number (Camera Label)	Viewing Direction	Description
IMG_1124	W	Close picture of excavation south of pumpjack
IMG_1126	S	Excavator loading a truck for disposal
IMG_1127	SSW	Excavator loading a truck for disposal
IMG_1128	SSW	Excavator loading a truck for disposal
IMG_1129	W	Excavation south of pumpjack
IMG_1130	N	Excavation south of pumpjack
IMG_1131	NE	Excavation being marked off
IMG_1132	NW	Excavation being marked off

Client: WPX
 Site Location: East Pecos 22-5H
 Project Owner: Jason Crabtree
 Project Manager: Dhugal Hanton

Date: 8/11/2018
 Project #: 17E-00043
 API: 30-015-42270

Summary of Daily Operations

- Leave Carlsbad for East Pecos 22-5H - 05:30 hrs
- Arrive on site 06:30 hrs
- Begin excavating and loading trucks to dispose of dirt, all 3 trucks done 09:00. Approx. 60 yards.
- All 3 trucks return at 11:15, truck 1 takes 2nd load at 11:40. Approx. 20 yards.
- Truck 2 takes 2nd load at 12:00, truck 3 at 12:20. Approx. 40 yards.
- Truck 1 returns at 13:20, truck 2 at 13:40, and truck 3 at 14:00
- Truck 1 leaves with 3rd load at 13:45, truck 2 at 14:20, and truck 3 at 14:45. Approx. 60 yards.
- Only 3 loads per truck today, fenced off excavation and left the site at 15:30 arriving back in carlsbad at 17:00
- Approx 180 yards of soil hauled off.

Planned Activities and Recommendations

- Robyn will continue working on excavation on Monday

Photo Log

Picture Number (Camera Label)	Viewing Direction	Description
IMG_1133	W	Excavator loading a truck for disposal
IMG_1134	S	Excavator loading a truck for disposal
IMG_1135	E	Excavation looking east
IMG_1139	S	Excavation fenced off
IMG_1140	E	Excavation fenced off
IMG_1141	N	Excavation fenced off

Client: WPX
 Site Location: East Pecos 22-5H
 Project Owner: Robyn Fisher
 Project Manager: Dhugal Hanton

Date: 8/13/2018
 Project #: 17E-00043
 API: 30-015-42270

Summary of Daily Operations

- Leave Carlsbad for East Pecos 22-5H - 6:00 hrs
- Arrive on site 07:40 hrs
- Equipment Contractor AR had started work upon arrival. Safety Forms were filled out and then signed. As trucks came in they signed the forms as well.
- 4 elements trucks were loaded and departed at 8:16
- Contacted thier Forman scott to confirm they have a permit to dump in Texas. They do not have a permit.
- 4 Elements trucks Arrived back on site and unloaded soil at 10:00
- Tr Trucking (Contractor) #49, #777, #52 left at 10. Approx. 60 yards soil
- Gold speed (Contractor) #8 left at 11, truck #24 left at 11:20 approx 40 yards soil
- AA trucking (Contractor) truck #324 Left at 12:00 Approx. 20yards soil
- Tr Trucking (Contractor) #777 left at 13:20, truck #49 left at 13:40, truck #52 left at 15:00 Approx 60 yards soil
- Gold speed (Contractor) #8 left at 14:25, truck #24 left at 14:35 Approx 40 yards soil.
- AA trucking (Contractor) #324 Left at 14:50 Approx 20 yards soil.
- Sampled and field screened in between trucks. See field screening form.
- Flag off open excavation and leave site at 15:50 and arrive back in Carlsbad at 17:15
- Total Approx. Volume= 240 yards.

Planned Activites and Recommendations

- Return at 07:00 tomorrow morning to continue excavation

Picture Number (Camera Label)	Viewing Direction	Description
IMG_0925	S	Excavation after being flagged off for the day
IMG_0926	W	Excavation after being flagged off for the day
IMG_0928	E	Sample area from East Wall 1
IMG_0929	E	Sample area from East Wall 2
IMG_0930	N	Sample area from North Wall 1
IMG_0931	N	Sample area from North Wall 2
IMG_0932	W	Sample area from West Wall 1
IMG_0933	W	Sample area from West Wall 2
IMG_0934	E	Sample area from Base 1,2
IMG_0935	E	Sample area from Base 3

Client: WPX
 Site Location: East Pecos 22-5H
 Project Owner: Robyn Fisher
 Project Manager: Dhugal Hanton

Date: 8/14/2018
 Project #: 17E-00043
 API: 30-015-42270

Summary of Daily Operations

- Leave Carlsbad for East Pecos 22-5H - 6:00 hrs
- Arrive on site 07:20 hrs
- Equipment Contractor AR had started work upon arrival. Safety Forms were filled out and then signed. As trucks came in they signed the forms as well.
- Tr Trucking (Contractor) #49 left at 07:45, #104 left at 08:30, #103 left at 08:55, #52 left at 09:15. Approx. 80 yards soil
- Gold speed (Contractor) #24 left at 10:00, truck #8 left at 10:15, truck #6 left at 10:30 Approx. 60 yards soil
- Tr Trucking (Contractor) #104 left at 11:04, #49 left at 11:25, #103 left at 12:00, #52 left at 12:20. Approx. 80 yards soil
- Gold speed (Contractor) #24 left at 12:50, truck #8 left at 13:10, truck #6 left at 13:45 Approx. 60 yards soil
- Tr Trucking (Contractor) #104 left at 14:05, #49 left at 14:25, #103 left at 15:30, #52 left at 16:00. Approx. 80 yards soil
- Tr Trucking (Contractor) #49 left at 17:00. Approx. 20 yards soil
- Sampled and field screened in between trucks. See field screening form.
- Flag off open excavation and leave site at 17:10 and arrive back in Carlsbad at 18:30
- Total Approx. Volume= 380 yards.

Planned Activities and Recommendations

Sending out samples tomorrow.

Picture Number (Camera Label)	Viewing Direction	Description
IMG_0936	S	Spill Area North of pump jack
IMG_0937	S	Spill Area North of pump jack
IMG_0938	S	Spill Area North of pump jack
IMG_0939	S	Spill Area North of pump jack
IMG_0940	S	Spill Area North of pump jack
IMG_0943	N/A	Site Placard
IMG_0944	SE	Over View of spill area
IMG_0945	SE	Over View of spill area
IMG_0949	W	West Wall 3
IMG_0950	E	Base 5
IMG_0951	S	South Wall 1
IMG_0952	E	Base 4
IMG_0955	E	East Wall 3

Cont'd on Page 2

Client: WPX
Site Location: East Pecos 22-5H
Project Owner: Robyn Fisher
Project Manager: Dhugal Hanton

Date: 8/24/2018
Project #: 17E-00043
API: 30-015-42270

Summary of Daily Operations

- Leave Carlsbad for East Pecos 22-5H - 8:00 hrs
- Arrive on site 09:10 hrs
- Continued with excavation with Wescom.
- Andrews Pump was onsite at 13:00 to drop off the liner.
- Got back to town at 20:00
- 320 yard removed

Planned Activities and Recommendations

Picture Number (Camera Label)	Viewing Direction	Description
IMG_1014	SE	Excavation Area
IMG_1015	E	Excavation Area

Daily Field Report

Client: WPX
 Site Location: East Pecos 22-5H
 Project Owner: Robyn Fisher
 Project Manager: Dhugal Hanton

Date: 8/14/2018
 Project #: 17E-00043
 API: 30-015-42270

Photo Log		
Picture Number (Camera Label)	Viewing Direction	Description
IMG_0956	N	Excavated Area
IMG_0957	NE	Excavated Area
IMG_0958	NW	Excavated Area
IMG_0959	W	Excavated Area
IMG_0960	W	Excavated Area
IMG_0961	SE	Excavated Area
IMG_0962	S	Excavated Area
IMG_0963	SW	Excavated Area

Client: WPX
 Site Location: East Pecos 22-5H
 Project Owner: Robyn Fisher
 Project Manager: Dhugal Hanton

Date: 8/25/2018
 Project #: 17E-00043
 API: 30-015-42270

Summary of Daily Operations

- Leave Carlsbad for East Pecos 22-5H - 6:00 hrs, Arrive on site 07:20 hrs
- Equipment Contractor Wescom was getting backhoes ready for work for the day. Safety Forms were filled out and then signed. As trucks came in they signed the forms as well.
- Gold speed (Contractor) #24 left at 9:47, truck #8 left at 9:47, truck #5 left at 9:47 Approx. 60 yards soil
- G & R trucking (Contractor) #102 left at 9:47. Appox. 20 yards soil
- Munoz truck (Contractor) no number left at 11:30. Appox. 20 yards soil
- Gold speed (Contractor) truck #8 left at 11:30, #24 left at 11:45, truck #5 left at 11:45, Approx. 60 yards soil
- G & R trucking (Contractor) #102 left at 11:50. Appox. 20 yards soil
- AA trucking (Contractor) #324 left at 13:00. Appox. 20 yards soil
- Gold speed (Contractor) #5 left at 13:03, truck #8 left at 13:15, truck #24 left at 13:20 Approx. 60 yards soil
- Munoz truck (Contractor) no number left at 13:25. Appox. 20 yards soil
- AA trucking (Contractor) #324 left at 14:40. Appox. 20 yards soil
- Gold speed (Contractor) #5 left at 14:30, truck #8 left at 14:45, truck #24 left at 15:00 Approx. 60 yards soil
- Munoz truck (Contractor) no number left at 15:20. Appox. 20 yards soil
- AA trucking (Contractor) #324 left at 16:30. Appox. 20 yards soil
- Gold speed (Contractor) #5 left at 16:00, truck #24 left at 16:40 Approx. 40 yards soil
- Munoz truck (Contractor) no number left at 16:45. Appox. 20 yards soil
- Gold speed (Contractor) #5 left at 17:25. Appox. 20 yards soil
- Sampled and field screened in between trucks. See field screening form.
- Flag off open excavation and leave site at 18:10 and arrive back in Carlsbad at 19:30
- Total Approx. Volume= 480 yards.

Planned Activities and Recommendations

Will come back to sample with OCD on Tuesday

Picture Number (Camera Label)	Viewing Direction	Description
IMG_1016	SE	Excavation Area
IMG_1017	E	Excavation Area
IMG_1018	SE	Excavation Area
IMG_1019	NE	Excavation Area
IMG_1020	SE	Excavation Area
IMG_1021	SE	Excavation Area
IMG_1022	S	Excavation Area
IMG_1023	S	Soil Pile

Client: WPX
 Site Location: East Pecos 22-5H/Haley 38-6 SW
 Project Owner: Jason Crabtree
 Project Manager: Dhugal Hanton

Date: 8/27/2018
 Project #: 17E-00043
 API: 30-015-42270

Summary of Daily Operations

- Leave Carlsbad for East Pecos 22-5H - 06:30 hrs
- Arrive on site 08:00 hrs
- Begin loading trucks to dispose of dirt, all 3 trucks done 10:00. Approx 60 yards.
- All 3 trucks return at 13:30 to dump a load of caliche
- Get call about spill on Haley 38-6 SWD, head that way at 14:30
- Truck window is broken on the way down by debris from passing truck, call Karolina and tell her I can not GPS spill today
- Get window all taped up and secured and arrive back in Carlsbad by 19:30

Planned Activities and Recommendations

- Meet OCD on site at 10:00 tomorrow (August 28) to discuss plan and collect confirmation samples

Photo Log

Picture Number (Camera Label)	Viewing Direction	Description
IMG_1150	SE	Completed Excavation
IMG_1151	E	Completed Excavation
IMG_1152	S	Completed Excavation
IMG_1153	W	Liner waiting to be installed

Client: WPX
Site Location: East Pecos 22-5H
Project Owner: Jason Crabtree
Project Manager: Dhugal Hanton

Date: 8/28/2018
Project #: 17E-00043
API: 30-015-42270

Summary of Daily Operations

- Leave Carlsbad for East Pecos 22-5H - 08:00 hrs
- Arrive on site 09:30 hrs
- Discuss work plan with Maria Pruett from OCD
- Begin collecting and field testing samples
- Field Testing: EW2- 353 ppm chlorides, EW3- 508 ppm chlorides, WW2- 37 ppm chlorides
- Arrive back in Carlsbad and drop samples off at FedEx by 13:30

Planned Activities and Recommendations

- Meet with Karolina tomorrow after getting truck window replaced

Photo Log

Picture Number (Camera Label)	Viewing Direction	Description
IMG_1154	E	East Wall 2 Sample point
IMG_1155	E	East Wall 3 Sample point
IMG_1156	W	West Wall 2 Sample point

ATTACHMENT 7



11-Apr-2018

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

Re: **East Pecos 22-5H**

Work Order: **1804168**

Dear James,

ALS Environmental received 24 samples on 04-Apr-2018 for the analyses presented in the following report.

The analytical data provided relates directly to the samples received by ALS Environmental - Holland 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 42.

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

ADDRESS: 3352 128th Avenue, Holland, MI, USA
PHONE: +1 (616) 399-6070 FAX: +1 (616) 399-6185

Sincerely,

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

Electronically approved by: Chad Whelton

Chad Whelton
Project Manager

Report of Laboratory Analysis

Certificate No: MN 998501

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

Environmental

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RIGHT SOLUTIONS RIGHT PARTNER

Client: WPX Energy
Project: East Pecos 22-5H
Work Order: 1804168

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>
1804168-01	BH18-01 (0)	Soil		3/29/2018	4/4/2018 10:00	☐
1804168-02	BH18-01 (2)	Soil		3/29/2018	4/4/2018 10:00	☐
1804168-03	BH18-01 (4)	Soil		3/29/2018	4/4/2018 10:00	☐
1804168-04	BH18-01 (6)	Soil		3/29/2018	4/4/2018 10:00	☐
1804168-05	BH18-02 (0)	Soil		3/29/2018	4/4/2018 10:00	☐
1804168-06	BH18-02 (2)	Soil		3/29/2018	4/4/2018 10:00	☐
1804168-07	BH18-02 (4)	Soil		3/29/2018	4/4/2018 10:00	☐
1804168-08	BH18-02 (6)	Soil		3/29/2018	4/4/2018 10:00	☐
1804168-09	BH18-03 (0)	Soil		3/29/2018	4/4/2018 10:00	☐
1804168-10	BH18-03 (2)	Soil		3/29/2018	4/4/2018 10:00	☐
1804168-11	BH18-03 (4)	Soil		3/29/2018	4/4/2018 10:00	☐
1804168-12	BH18-03 (6)	Soil		3/29/2018	4/4/2018 10:00	☐
1804168-13	BH18-04 (0)	Soil		3/29/2018	4/4/2018 10:00	☐
1804168-14	BH18-04 (2)	Soil		3/29/2018	4/4/2018 10:00	☐
1804168-15	BH18-04 (4)	Soil		3/29/2018	4/4/2018 10:00	☐
1804168-16	BH18-04 (6)	Soil		3/29/2018	4/4/2018 10:00	☐
1804168-17	BH18-05 (0)	Soil		3/29/2018	4/4/2018 10:00	☐
1804168-18	BH18-05 (2)	Soil		3/29/2018	4/4/2018 10:00	☐
1804168-19	BH18-05 (4)	Soil		3/29/2018	4/4/2018 10:00	☐
1804168-20	BH18-05 (6)	Soil		3/29/2018	4/4/2018 10:00	☐
1804168-21	BH18-06 (0)	Soil		3/29/2018	4/4/2018 10:00	☐
1804168-22	BH18-06 (2)	Soil		3/29/2018	4/4/2018 10:00	☐
1804168-23	BH18-06 (4)	Soil		3/29/2018	4/4/2018 10:00	☐
1804168-24	BH18-06 (6)	Soil		3/29/2018	4/4/2018 10:00	☐

Client: WPX Energy
Project: East Pecos 22-5H
Work Order: 1804168

Case Narrative

Batch 116417, Method CL_4500C_S, Sample 1804168-20A MSD: The MSD recovery was outside of the control limit for Chloride. However, the MS recovery and the RPD between the MS and MSD was in control. No qualification is required.

Batch 116515, Method DRLVI_8015_S, Sample 1804168-02A: Low DRO surrogate recovery due to sample matrix effects confirmed by re-extraction.

VOC and GRO sample were not preserved in methanol within hold time.

Client: WPX Energy
Project: East Pecos 22-5H
WorkOrder: 1804168

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: 11-Apr-18

Client: WPX Energy

Project: East Pecos 22-5H

Sample ID: BH18-01 (0)

Collection Date: 3/29/2018

Work Order: 1804168

Lab ID: 1804168-01

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015C		Prep: SW3546 4/9/18 14:38	Analyst: MEB
DRO (C10-C28)	10		5.1	mg/Kg-dry	1	4/10/2018 01:56 AM
ORO (C28-C40)	18		5.1	mg/Kg-dry	1	4/10/2018 01:56 AM
Surr: 4-Terphenyl-d14	49.0		34-130	%REC	1	4/10/2018 01:56 AM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 4/6/18 15:37	Analyst: MEB
GRO (C6-C10)	ND		5.3	mg/Kg-dry	1	4/10/2018 06:30 AM
Surr: Toluene-d8	87.3		71-123	%REC	1	4/10/2018 06:30 AM
VOLATILE ORGANIC COMPOUNDS						
			SW8260B		Prep: SW5035 4/6/18 15:37	Analyst: EMR
Benzene	ND		0.032	mg/Kg-dry	1	4/10/2018 12:22 PM
Ethylbenzene	ND		0.032	mg/Kg-dry	1	4/10/2018 12:22 PM
m,p-Xylene	ND		0.063	mg/Kg-dry	1	4/10/2018 12:22 PM
o-Xylene	ND		0.032	mg/Kg-dry	1	4/10/2018 12:22 PM
Toluene	ND		0.032	mg/Kg-dry	1	4/10/2018 12:22 PM
Xylenes, Total	ND		0.095	mg/Kg-dry	1	4/10/2018 12:22 PM
Surr: 1,2-Dichloroethane-d4	83.8		70-130	%REC	1	4/10/2018 12:22 PM
Surr: 4-Bromofluorobenzene	103		70-130	%REC	1	4/10/2018 12:22 PM
Surr: Dibromofluoromethane	86.2		70-130	%REC	1	4/10/2018 12:22 PM
Surr: Toluene-d8	99.2		70-130	%REC	1	4/10/2018 12:22 PM
CHLORIDE						
			A4500-CL C-11		Prep: EXTRACT 4/5/18 11:55	Analyst: STP
Chloride	1,700		31	mg/Kg-dry	1	4/10/2018 11:35 AM
MOISTURE						
			SW3550C			Analyst: NW
Moisture	2.7		0.050	% of sample	1	4/8/2018 12:45 AM

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

ALS Group, USA

Date: 11-Apr-18

Client: WPX Energy

Project: East Pecos 22-5H

Sample ID: BH18-01 (2)

Collection Date: 3/29/2018

Work Order: 1804168

Lab ID: 1804168-02

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015C		Prep: SW3546 4/9/18 14:38	Analyst: MEB
DRO (C10-C28)	ND		5.4	mg/Kg-dry	1	4/10/2018 02:25 AM
ORO (C28-C40)	ND		5.4	mg/Kg-dry	1	4/10/2018 02:25 AM
Surr: 4-Terphenyl-d14	27.5	S	34-130	%REC	1	4/10/2018 02:25 AM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 4/6/18 15:37	Analyst: MEB
GRO (C6-C10)	ND		5.8	mg/Kg-dry	1	4/10/2018 06:56 AM
Surr: Toluene-d8	89.8		71-123	%REC	1	4/10/2018 06:56 AM
VOLATILE ORGANIC COMPOUNDS						
			SW8260B		Prep: SW5035 4/6/18 15:37	Analyst: EMR
Benzene	ND		0.035	mg/Kg-dry	1	4/10/2018 12:37 PM
Ethylbenzene	ND		0.035	mg/Kg-dry	1	4/10/2018 12:37 PM
m,p-Xylene	ND		0.070	mg/Kg-dry	1	4/10/2018 12:37 PM
o-Xylene	ND		0.035	mg/Kg-dry	1	4/10/2018 12:37 PM
Toluene	ND		0.035	mg/Kg-dry	1	4/10/2018 12:37 PM
Xylenes, Total	ND		0.10	mg/Kg-dry	1	4/10/2018 12:37 PM
Surr: 1,2-Dichloroethane-d4	90.0		70-130	%REC	1	4/10/2018 12:37 PM
Surr: 4-Bromofluorobenzene	102		70-130	%REC	1	4/10/2018 12:37 PM
Surr: Dibromofluoromethane	87.8		70-130	%REC	1	4/10/2018 12:37 PM
Surr: Toluene-d8	97.4		70-130	%REC	1	4/10/2018 12:37 PM
CHLORIDE						
			A4500-CL C-11		Prep: EXTRACT 4/5/18 11:55	Analyst: STP
Chloride	360		32	mg/Kg-dry	1	4/10/2018 11:35 AM
MOISTURE						
			SW3550C			Analyst: NW
Moisture	7.6		0.050	% of sample	1	4/8/2018 12:45 AM

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

ALS Group, USA

Date: 11-Apr-18

Client: WPX Energy

Project: East Pecos 22-5H

Sample ID: BH18-01 (4)

Collection Date: 3/29/2018

Work Order: 1804168

Lab ID: 1804168-03

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CHLORIDE			A4500-CL C-11	Prep: EXTRACT 4/5/18 11:55		Analyst: STP
Chloride	1,100		32	mg/Kg-dry	1	4/10/2018 11:35 AM
MOISTURE			SW3550C			Analyst: NW
Moisture	7.9		0.050	% of sample	1	4/8/2018 12:45 AM

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

ALS Group, USA

Date: 11-Apr-18

Client: WPX Energy

Project: East Pecos 22-5H

Sample ID: BH18-01 (6)

Collection Date: 3/29/2018

Work Order: 1804168

Lab ID: 1804168-04

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CHLORIDE			A4500-CL C-11	Prep: EXTRACT 4/5/18 11:55		Analyst: STP
Chloride	590		31	mg/Kg-dry	1	4/10/2018 11:35 AM
MOISTURE			SW3550C			Analyst: NW
Moisture	5.3		0.050	% of sample	1	4/8/2018 12:45 AM

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

ALS Group, USA

Date: 11-Apr-18

Client: WPX Energy

Project: East Pecos 22-5H

Sample ID: BH18-02 (0)

Collection Date: 3/29/2018

Work Order: 1804168

Lab ID: 1804168-05

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015C		Prep: SW3546 4/6/18 12:59	Analyst: MEB
DRO (C10-C28)	5.8		4.8	mg/Kg-dry	1	4/6/2018 08:10 PM
ORO (C28-C40)	13		4.8	mg/Kg-dry	1	4/6/2018 08:10 PM
Surr: 4-Terphenyl-d14	34.5		34-130	%REC	1	4/6/2018 08:10 PM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 4/6/18 15:37	Analyst: MEB
GRO (C6-C10)	ND		5.2	mg/Kg-dry	1	4/10/2018 07:22 AM
Surr: Toluene-d8	87.7		71-123	%REC	1	4/10/2018 07:22 AM
VOLATILE ORGANIC COMPOUNDS						
			SW8260B		Prep: SW5035 4/6/18 15:37	Analyst: EMR
Benzene	ND		0.031	mg/Kg-dry	1	4/10/2018 12:53 PM
Ethylbenzene	ND		0.031	mg/Kg-dry	1	4/10/2018 12:53 PM
m,p-Xylene	ND		0.062	mg/Kg-dry	1	4/10/2018 12:53 PM
o-Xylene	ND		0.031	mg/Kg-dry	1	4/10/2018 12:53 PM
Toluene	ND		0.031	mg/Kg-dry	1	4/10/2018 12:53 PM
Xylenes, Total	ND		0.093	mg/Kg-dry	1	4/10/2018 12:53 PM
Surr: 1,2-Dichloroethane-d4	84.4		70-130	%REC	1	4/10/2018 12:53 PM
Surr: 4-Bromofluorobenzene	105		70-130	%REC	1	4/10/2018 12:53 PM
Surr: Dibromofluoromethane	80.3		70-130	%REC	1	4/10/2018 12:53 PM
Surr: Toluene-d8	98.6		70-130	%REC	1	4/10/2018 12:53 PM
CHLORIDE						
			A4500-CL C-11		Prep: EXTRACT 4/5/18 11:55	Analyst: STP
Chloride	89		30	mg/Kg-dry	1	4/10/2018 11:35 AM
MOISTURE						
			SW3550C			Analyst: NW
Moisture	1.7		0.050	% of sample	1	4/8/2018 12:45 AM

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

ALS Group, USA

Date: 11-Apr-18

Client: WPX Energy

Project: East Pecos 22-5H

Sample ID: BH18-02 (2)

Collection Date: 3/29/2018

Work Order: 1804168

Lab ID: 1804168-06

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015C		Prep: SW3546 4/9/18 14:38	Analyst: MEB
DRO (C10-C28)	7.9		5.3	mg/Kg-dry	1	4/10/2018 02:54 AM
ORO (C28-C40)	ND		5.3	mg/Kg-dry	1	4/10/2018 02:54 AM
Surr: 4-Terphenyl-d14	41.5		34-130	%REC	1	4/10/2018 02:54 AM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 4/6/18 15:37	Analyst: MEB
GRO (C6-C10)	ND		5.8	mg/Kg-dry	1	4/10/2018 07:48 AM
Surr: Toluene-d8	89.5		71-123	%REC	1	4/10/2018 07:48 AM
VOLATILE ORGANIC COMPOUNDS						
			SW8260B		Prep: SW5035 4/6/18 15:37	Analyst: EMR
Benzene	ND		0.035	mg/Kg-dry	1	4/10/2018 01:08 AM
Ethylbenzene	ND		0.035	mg/Kg-dry	1	4/10/2018 01:08 AM
m,p-Xylene	ND		0.070	mg/Kg-dry	1	4/10/2018 01:08 AM
o-Xylene	ND		0.035	mg/Kg-dry	1	4/10/2018 01:08 AM
Toluene	ND		0.035	mg/Kg-dry	1	4/10/2018 01:08 AM
Xylenes, Total	ND		0.10	mg/Kg-dry	1	4/10/2018 01:08 AM
Surr: 1,2-Dichloroethane-d4	87.2		70-130	%REC	1	4/10/2018 01:08 AM
Surr: 4-Bromofluorobenzene	102		70-130	%REC	1	4/10/2018 01:08 AM
Surr: Dibromofluoromethane	84.8		70-130	%REC	1	4/10/2018 01:08 AM
Surr: Toluene-d8	97.2		70-130	%REC	1	4/10/2018 01:08 AM
CHLORIDE						
			A4500-CL C-11		Prep: EXTRACT 4/5/18 11:55	Analyst: STP
Chloride	670		32	mg/Kg-dry	1	4/10/2018 11:35 AM
MOISTURE						
			SW3550C			Analyst: RZM
Moisture	7.4		0.050	% of sample	1	4/9/2018 04:49 PM

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

ALS Group, USA

Date: 11-Apr-18

Client: WPX Energy

Project: East Pecos 22-5H

Sample ID: BH18-02 (4)

Collection Date: 3/29/2018

Work Order: 1804168

Lab ID: 1804168-07

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CHLORIDE			A4500-CL C-11	Prep: EXTRACT 4/5/18 11:55		Analyst: STP
Chloride	500		32	mg/Kg-dry	1	4/10/2018 11:35 AM
MOISTURE			SW3550C			Analyst: NW
Moisture	7.0		0.050	% of sample	1	4/8/2018 12:45 AM

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

ALS Group, USA

Date: 11-Apr-18

Client: WPX Energy

Project: East Pecos 22-5H

Sample ID: BH18-02 (6)

Collection Date: 3/29/2018

Work Order: 1804168

Lab ID: 1804168-08

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CHLORIDE			A4500-CL C-11	Prep: EXTRACT 4/5/18 11:55		Analyst: STP
Chloride	1,000		32	mg/Kg-dry	1	4/10/2018 11:35 AM
MOISTURE			SW3550C			Analyst: NW
Moisture	6.7		0.050	% of sample	1	4/8/2018 12:45 AM

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

ALS Group, USA

Date: 11-Apr-18

Client: WPX Energy

Project: East Pecos 22-5H

Sample ID: BH18-03 (0)

Collection Date: 3/29/2018

Work Order: 1804168

Lab ID: 1804168-09

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015C		Prep: SW3546 4/6/18 12:59	Analyst: MEB
DRO (C10-C28)	5.6		5.1	mg/Kg-dry	1	4/6/2018 09:09 PM
ORO (C28-C40)	ND		5.1	mg/Kg-dry	1	4/6/2018 09:09 PM
Surr: 4-Terphenyl-d14	34.0		34-130	%REC	1	4/6/2018 09:09 PM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 4/6/18 15:37	Analyst: MEB
GRO (C6-C10)	ND		5.4	mg/Kg-dry	1	4/10/2018 08:14 AM
Surr: Toluene-d8	89.8		71-123	%REC	1	4/10/2018 08:14 AM
VOLATILE ORGANIC COMPOUNDS						
			SW8260B		Prep: SW5035 4/6/18 15:37	Analyst: EMR
Benzene	ND		0.032	mg/Kg-dry	1	4/10/2018 01:24 AM
Ethylbenzene	ND		0.032	mg/Kg-dry	1	4/10/2018 01:24 AM
m,p-Xylene	ND		0.065	mg/Kg-dry	1	4/10/2018 01:24 AM
o-Xylene	ND		0.032	mg/Kg-dry	1	4/10/2018 01:24 AM
Toluene	ND		0.032	mg/Kg-dry	1	4/10/2018 01:24 AM
Xylenes, Total	ND		0.097	mg/Kg-dry	1	4/10/2018 01:24 AM
Surr: 1,2-Dichloroethane-d4	89.2		70-130	%REC	1	4/10/2018 01:24 AM
Surr: 4-Bromofluorobenzene	102		70-130	%REC	1	4/10/2018 01:24 AM
Surr: Dibromofluoromethane	82.6		70-130	%REC	1	4/10/2018 01:24 AM
Surr: Toluene-d8	98.4		70-130	%REC	1	4/10/2018 01:24 AM
CHLORIDE						
			A4500-CL C-11		Prep: EXTRACT 4/5/18 11:55	Analyst: STP
Chloride	100		31	mg/Kg-dry	1	4/10/2018 11:35 AM
MOISTURE						
			SW3550C			Analyst: NW
Moisture	3.8		0.050	% of sample	1	4/8/2018 12:45 AM

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

ALS Group, USA

Date: 11-Apr-18

Client: WPX Energy

Project: East Pecos 22-5H

Sample ID: BH18-03 (2)

Collection Date: 3/29/2018

Work Order: 1804168

Lab ID: 1804168-10

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015C		Prep: SW3546 4/6/18 12:59	Analyst: MEB
DRO (C10-C28)	5.3	J	5.3	mg/Kg-dry	1	4/6/2018 09:38 PM
ORO (C28-C40)	ND		5.3	mg/Kg-dry	1	4/6/2018 09:38 PM
Surr: 4-Terphenyl-d14	45.0		34-130	%REC	1	4/6/2018 09:38 PM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 4/6/18 15:37	Analyst: MEB
GRO (C6-C10)	ND		5.9	mg/Kg-dry	1	4/10/2018 08:40 AM
Surr: Toluene-d8	94.0		71-123	%REC	1	4/10/2018 08:40 AM
VOLATILE ORGANIC COMPOUNDS						
			SW8260B		Prep: SW5035 4/6/18 15:37	Analyst: EMR
Benzene	ND		0.036	mg/Kg-dry	1	4/10/2018 01:39 AM
Ethylbenzene	ND		0.036	mg/Kg-dry	1	4/10/2018 01:39 AM
m,p-Xylene	ND		0.071	mg/Kg-dry	1	4/10/2018 01:39 AM
o-Xylene	ND		0.036	mg/Kg-dry	1	4/10/2018 01:39 AM
Toluene	ND		0.036	mg/Kg-dry	1	4/10/2018 01:39 AM
Xylenes, Total	ND		0.11	mg/Kg-dry	1	4/10/2018 01:39 AM
Surr: 1,2-Dichloroethane-d4	88.0		70-130	%REC	1	4/10/2018 01:39 AM
Surr: 4-Bromofluorobenzene	101		70-130	%REC	1	4/10/2018 01:39 AM
Surr: Dibromofluoromethane	84.8		70-130	%REC	1	4/10/2018 01:39 AM
Surr: Toluene-d8	94.3		70-130	%REC	1	4/10/2018 01:39 AM
CHLORIDE						
			A4500-CL C-11		Prep: EXTRACT 4/5/18 11:55	Analyst: STP
Chloride	380		33	mg/Kg-dry	1	4/10/2018 11:35 AM
MOISTURE						
			SW3550C			Analyst: NW
Moisture	8.6		0.050	% of sample	1	4/8/2018 12:45 AM

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

ALS Group, USA

Date: 11-Apr-18

Client: WPX Energy

Project: East Pecos 22-5H

Sample ID: BH18-03 (4)

Collection Date: 3/29/2018

Work Order: 1804168

Lab ID: 1804168-11

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CHLORIDE			A4500-CL C-11	Prep: EXTRACT 4/5/18 11:55		Analyst: STP
Chloride	380		33	mg/Kg-dry	1	4/10/2018 11:35 AM
MOISTURE			SW3550C			Analyst: NW
Moisture	8.5		0.050	% of sample	1	4/8/2018 12:45 AM

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

ALS Group, USA

Date: 11-Apr-18

Client: WPX Energy

Project: East Pecos 22-5H

Sample ID: BH18-03 (6)

Collection Date: 3/29/2018

Work Order: 1804168

Lab ID: 1804168-12

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CHLORIDE			A4500-CL C-11	Prep: EXTRACT 4/5/18 11:55		Analyst: STP
Chloride	1,500		33	mg/Kg-dry	1	4/10/2018 11:35 AM
MOISTURE			SW3550C			Analyst: NW
Moisture	10		0.050	% of sample	1	4/8/2018 12:45 AM

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

ALS Group, USA

Date: 11-Apr-18

Client: WPX Energy

Project: East Pecos 22-5H

Sample ID: BH18-04 (0)

Collection Date: 3/29/2018

Work Order: 1804168

Lab ID: 1804168-13

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015C		Prep: SW3546 4/9/18 14:38	Analyst: MEB
DRO (C10-C28)	11		5.2	mg/Kg-dry	1	4/10/2018 03:53 AM
ORO (C28-C40)	9.3		5.2	mg/Kg-dry	1	4/10/2018 03:53 AM
Surr: 4-Terphenyl-d14	41.5		34-130	%REC	1	4/10/2018 03:53 AM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 4/6/18 15:37	Analyst: MEB
GRO (C6-C10)	8.2		5.5	mg/Kg-dry	1	4/10/2018 09:06 AM
Surr: Toluene-d8	82.2		71-123	%REC	1	4/10/2018 09:06 AM
VOLATILE ORGANIC COMPOUNDS						
			SW8260B		Prep: SW5035 4/6/18 15:37	Analyst: EMR
Benzene	ND		0.033	mg/Kg-dry	1	4/10/2018 01:54 AM
Ethylbenzene	ND		0.033	mg/Kg-dry	1	4/10/2018 01:54 AM
m,p-Xylene	ND		0.066	mg/Kg-dry	1	4/10/2018 01:54 AM
o-Xylene	ND		0.033	mg/Kg-dry	1	4/10/2018 01:54 AM
Toluene	ND		0.033	mg/Kg-dry	1	4/10/2018 01:54 AM
Xylenes, Total	ND		0.098	mg/Kg-dry	1	4/10/2018 01:54 AM
Surr: 1,2-Dichloroethane-d4	86.6		70-130	%REC	1	4/10/2018 01:54 AM
Surr: 4-Bromofluorobenzene	102		70-130	%REC	1	4/10/2018 01:54 AM
Surr: Dibromofluoromethane	80.3		70-130	%REC	1	4/10/2018 01:54 AM
Surr: Toluene-d8	101		70-130	%REC	1	4/10/2018 01:54 AM
CHLORIDE						
			A4500-CL C-11		Prep: EXTRACT 4/5/18 11:55	Analyst: STP
Chloride	310		31	mg/Kg-dry	1	4/10/2018 11:35 AM
MOISTURE						
			SW3550C			Analyst: NW
Moisture	4.5		0.050	% of sample	1	4/8/2018 12:45 AM

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

ALS Group, USA

Date: 11-Apr-18

Client: WPX Energy

Project: East Pecos 22-5H

Sample ID: BH18-04 (2)

Collection Date: 3/29/2018

Work Order: 1804168

Lab ID: 1804168-14

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015C		Prep: SW3546 4/6/18 12:59	Analyst: MEB
DRO (C10-C28)	ND		5.2	mg/Kg-dry	1	4/6/2018 10:36 PM
ORO (C28-C40)	ND		5.2	mg/Kg-dry	1	4/6/2018 10:36 PM
Surr: 4-Terphenyl-d14	49.0		34-130	%REC	1	4/6/2018 10:36 PM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 4/6/18 15:37	Analyst: MEB
GRO (C6-C10)	ND		5.8	mg/Kg-dry	1	4/10/2018 09:32 AM
Surr: Toluene-d8	92.9		71-123	%REC	1	4/10/2018 09:32 AM
VOLATILE ORGANIC COMPOUNDS						
			SW8260B		Prep: SW5035 4/6/18 15:37	Analyst: EMR
Benzene	ND		0.035	mg/Kg-dry	1	4/10/2018 02:10 AM
Ethylbenzene	ND		0.035	mg/Kg-dry	1	4/10/2018 02:10 AM
m,p-Xylene	ND		0.070	mg/Kg-dry	1	4/10/2018 02:10 AM
o-Xylene	ND		0.035	mg/Kg-dry	1	4/10/2018 02:10 AM
Toluene	ND		0.035	mg/Kg-dry	1	4/10/2018 02:10 AM
Xylenes, Total	ND		0.11	mg/Kg-dry	1	4/10/2018 02:10 AM
Surr: 1,2-Dichloroethane-d4	86.2		70-130	%REC	1	4/10/2018 02:10 AM
Surr: 4-Bromofluorobenzene	102		70-130	%REC	1	4/10/2018 02:10 AM
Surr: Dibromofluoromethane	84.3		70-130	%REC	1	4/10/2018 02:10 AM
Surr: Toluene-d8	98.0		70-130	%REC	1	4/10/2018 02:10 AM
CHLORIDE						
			A4500-CL C-11		Prep: EXTRACT 4/5/18 11:55	Analyst: STP
Chloride	260		32	mg/Kg-dry	1	4/10/2018 11:35 AM
MOISTURE						
			SW3550C			Analyst: NW
Moisture	7.7		0.050	% of sample	1	4/8/2018 12:45 AM

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

ALS Group, USA

Date: 11-Apr-18

Client: WPX Energy

Project: East Pecos 22-5H

Sample ID: BH18-04 (4)

Collection Date: 3/29/2018

Work Order: 1804168

Lab ID: 1804168-15

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CHLORIDE			A4500-CL C-11	Prep: EXTRACT 4/5/18 11:55		Analyst: STP
Chloride	320		32	mg/Kg-dry	1	4/10/2018 11:35 AM
MOISTURE			SW3550C			Analyst: NW
Moisture	8.0		0.050	% of sample	1	4/8/2018 12:45 AM

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

ALS Group, USA

Date: 11-Apr-18

Client: WPX Energy

Project: East Pecos 22-5H

Sample ID: BH18-04 (6)

Collection Date: 3/29/2018

Work Order: 1804168

Lab ID: 1804168-16

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CHLORIDE			A4500-CL C-11	Prep: EXTRACT 4/5/18 11:55		Analyst: STP
Chloride	220		33	mg/Kg-dry	1	4/10/2018 11:35 AM
MOISTURE			SW3550C			Analyst: NW
Moisture	11		0.050	% of sample	1	4/8/2018 12:45 AM

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

ALS Group, USA

Date: 11-Apr-18

Client: WPX Energy

Project: East Pecos 22-5H

Sample ID: BH18-05 (0)

Collection Date: 3/29/2018

Work Order: 1804168

Lab ID: 1804168-17

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015C		Prep: SW3546 4/6/18 12:59	Analyst: MEB
DRO (C10-C28)	180		5.4	mg/Kg-dry	1	4/6/2018 11:05 PM
ORO (C28-C40)	180		5.4	mg/Kg-dry	1	4/6/2018 11:05 PM
Surr: 4-Terphenyl-d14	99.6		34-130	%REC	1	4/6/2018 11:05 PM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 4/6/18 15:37	Analyst: MEB
GRO (C6-C10)	8.3		5.8	mg/Kg-dry	1	4/10/2018 10:51 AM
Surr: Toluene-d8	86.4		71-123	%REC	1	4/10/2018 10:51 AM
VOLATILE ORGANIC COMPOUNDS						
			SW8260B		Prep: SW5035 4/6/18 15:37	Analyst: EMR
Benzene	ND		0.035	mg/Kg-dry	1	4/10/2018 02:25 AM
Ethylbenzene	ND		0.035	mg/Kg-dry	1	4/10/2018 02:25 AM
m,p-Xylene	0.42		0.069	mg/Kg-dry	1	4/10/2018 02:25 AM
o-Xylene	0.13		0.035	mg/Kg-dry	1	4/10/2018 02:25 AM
Toluene	ND		0.035	mg/Kg-dry	1	4/10/2018 02:25 AM
Xylenes, Total	0.55		0.10	mg/Kg-dry	1	4/10/2018 02:25 AM
Surr: 1,2-Dichloroethane-d4	85.0		70-130	%REC	1	4/10/2018 02:25 AM
Surr: 4-Bromofluorobenzene	108		70-130	%REC	1	4/10/2018 02:25 AM
Surr: Dibromofluoromethane	83.8		70-130	%REC	1	4/10/2018 02:25 AM
Surr: Toluene-d8	98.2		70-130	%REC	1	4/10/2018 02:25 AM
CHLORIDE						
			A4500-CL C-11		Prep: EXTRACT 4/5/18 11:55	Analyst: STP
Chloride	2,000		32	mg/Kg-dry	1	4/10/2018 11:35 AM
MOISTURE						
			SW3550C			Analyst: NW
Moisture	7.2		0.050	% of sample	1	4/8/2018 12:45 AM

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

ALS Group, USA

Date: 11-Apr-18

Client: WPX Energy

Project: East Pecos 22-5H

Sample ID: BH18-05 (2)

Collection Date: 3/29/2018

Work Order: 1804168

Lab ID: 1804168-18

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015C		Prep: SW3546 4/9/18 14:38	Analyst: MEB
DRO (C10-C28)	290		5.5	mg/Kg-dry	1	4/10/2018 04:22 AM
ORO (C28-C40)	530		5.5	mg/Kg-dry	1	4/10/2018 04:22 AM
Surr: 4-Terphenyl-d14	51.6		34-130	%REC	1	4/10/2018 04:22 AM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 4/6/18 15:37	Analyst: MEB
GRO (C6-C10)	ND		6.1	mg/Kg-dry	1	4/10/2018 11:17 AM
Surr: Toluene-d8	88.7		71-123	%REC	1	4/10/2018 11:17 AM
VOLATILE ORGANIC COMPOUNDS						
			SW8260B		Prep: SW5035 4/6/18 15:37	Analyst: EMR
Benzene	ND		0.037	mg/Kg-dry	1	4/10/2018 02:41 AM
Ethylbenzene	ND		0.037	mg/Kg-dry	1	4/10/2018 02:41 AM
m,p-Xylene	ND		0.073	mg/Kg-dry	1	4/10/2018 02:41 AM
o-Xylene	ND		0.037	mg/Kg-dry	1	4/10/2018 02:41 AM
Toluene	ND		0.037	mg/Kg-dry	1	4/10/2018 02:41 AM
Xylenes, Total	ND		0.11	mg/Kg-dry	1	4/10/2018 02:41 AM
Surr: 1,2-Dichloroethane-d4	85.0		70-130	%REC	1	4/10/2018 02:41 AM
Surr: 4-Bromofluorobenzene	104		70-130	%REC	1	4/10/2018 02:41 AM
Surr: Dibromofluoromethane	86.4		70-130	%REC	1	4/10/2018 02:41 AM
Surr: Toluene-d8	99.2		70-130	%REC	1	4/10/2018 02:41 AM
CHLORIDE						
			A4500-CL C-11		Prep: EXTRACT 4/5/18 11:55	Analyst: STP
Chloride	1,700		33	mg/Kg-dry	1	4/10/2018 11:35 AM
MOISTURE						
			SW3550C			Analyst: NW
Moisture	10		0.050	% of sample	1	4/8/2018 12:45 AM

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

ALS Group, USA

Date: 11-Apr-18

Client: WPX Energy

Project: East Pecos 22-5H

Sample ID: BH18-05 (4)

Collection Date: 3/29/2018

Work Order: 1804168

Lab ID: 1804168-19

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CHLORIDE			A4500-CL C-11	Prep: EXTRACT 4/5/18 11:55		Analyst: STP
Chloride	1,600		33	mg/Kg-dry	1	4/10/2018 11:35 AM
MOISTURE			SW3550C			Analyst: NW
Moisture	9.9		0.050	% of sample	1	4/8/2018 12:45 AM

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

ALS Group, USA

Date: 11-Apr-18

Client: WPX Energy

Project: East Pecos 22-5H

Sample ID: BH18-05 (6)

Collection Date: 3/29/2018

Work Order: 1804168

Lab ID: 1804168-20

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CHLORIDE			A4500-CL C-11	Prep: EXTRACT 4/5/18 12:35		Analyst: STP
Chloride	1,100		33	mg/Kg-dry	1	4/9/2018 05:40 PM
MOISTURE			SW3550C			Analyst: RZM
Moisture	8.5		0.050	% of sample	1	4/9/2018 04:49 PM

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

ALS Group, USA

Date: 11-Apr-18

Client: WPX Energy

Project: East Pecos 22-5H

Sample ID: BH18-06 (0)

Collection Date: 3/29/2018

Work Order: 1804168

Lab ID: 1804168-21

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015C		Prep: SW3546 4/10/18 14:59	Analyst: MEB
DRO (C10-C28)	28		7.7	mg/Kg-dry	1	4/10/2018 06:08 PM
ORO (C28-C40)	34		7.7	mg/Kg-dry	1	4/10/2018 06:08 PM
Surr: 4-Terphenyl-d14	43.0		34-130	%REC	1	4/10/2018 06:08 PM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 4/6/18 15:37	Analyst: MEB
GRO (C6-C10)	ND		5.6	mg/Kg-dry	1	4/10/2018 11:43 AM
Surr: Toluene-d8	92.3		71-123	%REC	1	4/10/2018 11:43 AM
VOLATILE ORGANIC COMPOUNDS						
			SW8260B		Prep: SW5035 4/6/18 15:37	Analyst: EMR
Benzene	ND		0.033	mg/Kg-dry	1	4/10/2018 02:56 AM
Ethylbenzene	ND		0.033	mg/Kg-dry	1	4/10/2018 02:56 AM
m,p-Xylene	ND		0.067	mg/Kg-dry	1	4/10/2018 02:56 AM
o-Xylene	ND		0.033	mg/Kg-dry	1	4/10/2018 02:56 AM
Toluene	ND		0.033	mg/Kg-dry	1	4/10/2018 02:56 AM
Xylenes, Total	ND		0.10	mg/Kg-dry	1	4/10/2018 02:56 AM
Surr: 1,2-Dichloroethane-d4	84.7		70-130	%REC	1	4/10/2018 02:56 AM
Surr: 4-Bromofluorobenzene	105		70-130	%REC	1	4/10/2018 02:56 AM
Surr: Dibromofluoromethane	83.2		70-130	%REC	1	4/10/2018 02:56 AM
Surr: Toluene-d8	95.7		70-130	%REC	1	4/10/2018 02:56 AM
CHLORIDE						
			A4500-CL C-11		Prep: EXTRACT 4/5/18 12:35	Analyst: STP
Chloride	5,500		32	mg/Kg-dry	1	4/9/2018 05:40 PM
MOISTURE						
			SW3550C			Analyst: RZM
Moisture	5.4		0.050	% of sample	1	4/9/2018 04:49 PM

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

ALS Group, USA

Date: 11-Apr-18

Client: WPX Energy

Project: East Pecos 22-5H

Sample ID: BH18-06 (2)

Collection Date: 3/29/2018

Work Order: 1804168

Lab ID: 1804168-22

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015C		Prep: SW3546 4/10/18 14:59	Analyst: MEB
DRO (C10-C28)	9.7		8.3	mg/Kg-dry	1	4/10/2018 06:37 PM
ORO (C28-C40)	ND		8.3	mg/Kg-dry	1	4/10/2018 06:37 PM
Surr: 4-Terphenyl-d14	45.0		34-130	%REC	1	4/10/2018 06:37 PM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 4/6/18 15:37	Analyst: MEB
GRO (C6-C10)	ND		6.1	mg/Kg-dry	1	4/10/2018 12:09 PM
Surr: Toluene-d8	89.3		71-123	%REC	1	4/10/2018 12:09 PM
VOLATILE ORGANIC COMPOUNDS						
			SW8260B		Prep: SW5035 4/6/18 15:37	Analyst: EMR
Benzene	ND		0.036	mg/Kg-dry	1	4/10/2018 03:12 AM
Ethylbenzene	ND		0.036	mg/Kg-dry	1	4/10/2018 03:12 AM
m,p-Xylene	ND		0.073	mg/Kg-dry	1	4/10/2018 03:12 AM
o-Xylene	ND		0.036	mg/Kg-dry	1	4/10/2018 03:12 AM
Toluene	ND		0.036	mg/Kg-dry	1	4/10/2018 03:12 AM
Xylenes, Total	ND		0.11	mg/Kg-dry	1	4/10/2018 03:12 AM
Surr: 1,2-Dichloroethane-d4	81.6		70-130	%REC	1	4/10/2018 03:12 AM
Surr: 4-Bromofluorobenzene	103		70-130	%REC	1	4/10/2018 03:12 AM
Surr: Dibromofluoromethane	83.5		70-130	%REC	1	4/10/2018 03:12 AM
Surr: Toluene-d8	96.9		70-130	%REC	1	4/10/2018 03:12 AM
CHLORIDE						
			A4500-CL C-11		Prep: EXTRACT 4/5/18 12:35	Analyst: STP
Chloride	2,200		33	mg/Kg-dry	1	4/9/2018 05:40 PM
MOISTURE						
			SW3550C			Analyst: RZM
Moisture	9.6		0.050	% of sample	1	4/9/2018 04:49 PM

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

ALS Group, USA

Date: 11-Apr-18

Client: WPX Energy

Project: East Pecos 22-5H

Sample ID: BH18-06 (4)

Collection Date: 3/29/2018

Work Order: 1804168

Lab ID: 1804168-23

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CHLORIDE			A4500-CL C-11	Prep: EXTRACT 4/5/18 12:35		Analyst: STP
Chloride	980		32	mg/Kg-dry	1	4/9/2018 05:40 PM
MOISTURE			SW3550C			Analyst: RZM
Moisture	7.2		0.050	% of sample	1	4/9/2018 04:49 PM

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

ALS Group, USA

Date: 11-Apr-18

Client: WPX Energy

Project: East Pecos 22-5H

Sample ID: BH18-06 (6)

Collection Date: 3/29/2018

Work Order: 1804168

Lab ID: 1804168-24

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
CHLORIDE			A4500-CL C-11	Prep: EXTRACT 4/5/18 12:35		Analyst: STP
Chloride	660		31	mg/Kg-dry	1	4/9/2018 05:40 PM
MOISTURE			SW3550C			Analyst: RZM
Moisture	4.8		0.050	% of sample	1	4/9/2018 04:49 PM

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

Client: WPX Energy

Work Order: 1804168

Project: East Pecos 22-5H

QC BATCH REPORT

Batch ID: **116472**

Instrument ID **GC8**

Method: **SW8015C**

MBLK		Sample ID: DBLKS1-116472-116472				Units: mg/Kg		Analysis Date: 4/6/2018 02:50 PM		
Client ID:		Run ID: GC8_180406A				SeqNo: 4971907		Prep Date: 4/6/2018		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: DLCSS1-116472-116472				Units: mg/Kg		Analysis Date: 4/6/2018 03:19 PM		
Client ID:		Run ID: GC8_180406A				SeqNo: 4971908		Prep Date: 4/6/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)

307.8

5.0

333

0

92.4

65-122

0

ORO (C28-C40)

342.8

5.0

333

0

103

81-116

0

Surr: 4-Terphenyl-d14

3.317

0

3.33

0

99.6

34-130

0

MS		Sample ID: 1804190-01A MS				Units: mg/Kg		Analysis Date: 4/6/2018 04:17 PM		
Client ID:		Run ID: GC8_180406A				SeqNo: 4971910		Prep Date: 4/6/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)

298.9

4.9

324.6

5.174

90.5

65-122

0

ORO (C28-C40)

322.8

4.9

324.6

0

99.4

81-116

0

Surr: 4-Terphenyl-d14

2.649

0

3.246

0

81.6

34-130

0

MSD		Sample ID: 1804190-01A MSD				Units: mg/Kg		Analysis Date: 4/6/2018 04:47 PM		
Client ID:		Run ID: GC8_180406A				SeqNo: 4971911		Prep Date: 4/6/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)

298.4

5.0

330.6

5.174

88.7

65-122

298.9

0.162

30

ORO (C28-C40)

325.2

5.0

330.6

0

98.4

81-116

322.8

0.746

30

Surr: 4-Terphenyl-d14

2.498

0

3.306

0

75.6

34-130

2.649

5.84

30

The following samples were analyzed in this batch:

1804168-01A	1804168-02A	1804168-05A
1804168-06A	1804168-09A	1804168-10A
1804168-13A	1804168-14A	1804168-17A

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

Client: WPX Energy
 Work Order: 1804168
 Project: East Pecos 22-5H

QC BATCH REPORT

Batch ID: **116515** Instrument ID **GC8** Method: **SW8015C**

MBLK		Sample ID: DBLKS1-116515-116515				Units: mg/Kg		Analysis Date: 4/9/2018 11:01 PM		
Client ID:		Run ID: GC8_180409B				SeqNo: 4973957		Prep Date: 4/9/2018		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>	<i>2.133</i>	<i>0</i>	<i>3.33</i>	<i>0</i>	<i>64.1</i>	<i>34-130</i>	<i>0</i>			

LCS		Sample ID: DLCSS1-116515-116515				Units: mg/Kg		Analysis Date: 4/9/2018 11:31 PM		
Client ID:		Run ID: GC8_180409B				SeqNo: 4973958		Prep Date: 4/9/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	304.9	5.0	333	0	91.6	65-122	0			
ORO (C28-C40)	340.2	5.0	333	0	102	81-116	0			
<i>Surr: 4-Terphenyl-d14</i>	<i>2.35</i>	<i>0</i>	<i>3.33</i>	<i>0</i>	<i>70.6</i>	<i>34-130</i>	<i>0</i>			

MS		Sample ID: 1804227-01B MS				Units: mg/Kg		Analysis Date: 4/10/2018 12:29 PM		
Client ID:		Run ID: GC8_180409B				SeqNo: 4973977		Prep Date: 4/9/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	254.6	5.0	332	8.829	74	65-122	0			
ORO (C28-C40)	270.8	5.0	332	1.67	81	81-116	0			
<i>Surr: 4-Terphenyl-d14</i>	<i>1.279</i>	<i>0</i>	<i>3.32</i>	<i>0</i>	<i>38.5</i>	<i>34-130</i>	<i>0</i>			

MSD		Sample ID: 1804227-01B MSD				Units: mg/Kg		Analysis Date: 4/10/2018 12:58 PM		
Client ID:		Run ID: GC8_180409B				SeqNo: 4973978		Prep Date: 4/9/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	292.9	5.0	330.5	8.829	86	65-122	254.6	14	30	
ORO (C28-C40)	315.2	5.0	330.5	1.67	94.9	81-116	270.8	15.2	30	
<i>Surr: 4-Terphenyl-d14</i>	<i>3.49</i>	<i>0</i>	<i>3.305</i>	<i>0</i>	<i>106</i>	<i>34-130</i>	<i>1.279</i>	<i>92.7</i>	<i>30</i>	<i>R</i>

The following samples were analyzed in this batch:

1804168-01A	1804168-02A	1804168-06A
1804168-13A	1804168-18A	1804168-21A
1804168-22A		

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

Client: WPX Energy
Work Order: 1804168
Project: East Pecos 22-5H

QC BATCH REPORT

Batch ID: **116603** Instrument ID **GC8** Method: **SW8015C**

MBLK		Sample ID: DBLKS1-116603-116603				Units: mg/Kg		Analysis Date: 4/10/2018 04:40 PM		
Client ID:		Run ID: GC8_180410C				SeqNo: 4976304		Prep Date: 4/10/2018		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>	<i>2.117</i>	<i>0</i>	<i>3.33</i>	<i>0</i>	<i>63.6</i>	<i>34-130</i>	<i>0</i>			

LCS		Sample ID: DLCSS1-116603-116603				Units: mg/Kg		Analysis Date: 4/10/2018 05:09 PM		
Client ID:		Run ID: GC8_180410C				SeqNo: 4976305		Prep Date: 4/10/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	292.6	5.0	333	0	87.9	65-122	0			
ORO (C28-C40)	320.1	5.0	333	0	96.1	81-116	0			
<i>Surr: 4-Terphenyl-d14</i>	<i>2.283</i>	<i>0</i>	<i>3.33</i>	<i>0</i>	<i>68.6</i>	<i>34-130</i>	<i>0</i>			

LCSD		Sample ID: DLCSDS1-116603-116603				Units: mg/Kg		Analysis Date: 4/10/2018 05:38 PM		
Client ID:		Run ID: GC8_180410C				SeqNo: 4976306		Prep Date: 4/10/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
DRO (C10-C28)	316.1	5.0	333	0	94.9	65-122	292.6	7.73	30	
ORO (C28-C40)	337	5.0	333	0	101	81-116	320.1	5.13	30	
<i>Surr: 4-Terphenyl-d14</i>	<i>3.017</i>	<i>0</i>	<i>3.33</i>	<i>0</i>	<i>90.6</i>	<i>34-130</i>	<i>2.283</i>	<i>27.7</i>	<i>30</i>	

The following samples were analyzed in this batch:

1804168-21A	1804168-22A
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Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: WPX Energy
 Work Order: 1804168
 Project: East Pecos 22-5H

QC BATCH REPORT

Batch ID: **116489** Instrument ID **GC10** Method: **SW8015D**

MBLK		Sample ID: MBLK-116489-116489				Units: µg/Kg-dry		Analysis Date: 4/10/2018 06:04 AM		
Client ID:		Run ID: GC10_180409B				SeqNo: 4974756		Prep Date: 4/6/2018		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	4442	0	5000	0	88.8	71-123	0			

LCS		Sample ID: LCS-116489-116489				Units: µg/Kg-dry		Analysis Date: 4/10/2018 05:12 AM		
Client ID:		Run ID: GC10_180409B				SeqNo: 4974755		Prep Date: 4/6/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	514300	5,000	500000	0	103	71-123	0			
Surr: Toluene-d8	4342	0	5000	0	86.8	71-123	0			

MS		Sample ID: 1804168-09A MS				Units: µg/Kg-dry		Analysis Date: 4/10/2018 04:58 PM		
Client ID: BH18-03 (0)		Run ID: GC10_180409B				SeqNo: 4975925		Prep Date: 4/6/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	484500	5,400	539500	0	89.8	71-123	0			
Surr: Toluene-d8	4847	0	5395	0	89.8	71-123	0			

MSD		Sample ID: 1804168-09A MSD				Units: µg/Kg-dry		Analysis Date: 4/10/2018 05:24 PM		
Client ID: BH18-03 (0)		Run ID: GC10_180409B				SeqNo: 4975927		Prep Date: 4/6/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	510700	5,400	539500	0	94.7	71-123	484500	5.26	30	
Surr: Toluene-d8	4732	0	5395	0	87.7	71-123	4847	2.41	30	

The following samples were analyzed in this batch:

1804168-01A	1804168-02A	1804168-05A
1804168-06A	1804168-09A	1804168-10A
1804168-13A	1804168-14A	1804168-17A
1804168-18A	1804168-21A	1804168-22A

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

Client: WPX Energy
Work Order: 1804168
Project: East Pecos 22-5H

QC BATCH REPORT

Batch ID: **116488** Instrument ID **VMS8** Method: **SW8260B**

Sample ID: MBLK-116488-116488				Units: µg/Kg-dry			Analysis Date: 4/9/2018 03:01 PM			
Client ID:		Run ID: VMS8_180409A			SeqNo: 4973783		Prep Date: 4/6/2018		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>886.5</i>	<i>0</i>	<i>1000</i>	<i>0</i>	<i>88.6</i>	<i>70-130</i>	<i>0</i>			
<i>Surr: 4-Bromofluorobenzene</i>	<i>1045</i>	<i>0</i>	<i>1000</i>	<i>0</i>	<i>104</i>	<i>70-130</i>	<i>0</i>			
<i>Surr: Dibromofluoromethane</i>	<i>920</i>	<i>0</i>	<i>1000</i>	<i>0</i>	<i>92</i>	<i>70-130</i>	<i>0</i>			
<i>Surr: Toluene-d8</i>	<i>1003</i>	<i>0</i>	<i>1000</i>	<i>0</i>	<i>100</i>	<i>70-130</i>	<i>0</i>			

LCS				Sample ID: LCS-116488-116488			Units: µg/Kg-dry		Analysis Date: 4/9/2018 02:15 PM		
Client ID:			Run ID: VMS8_180409A			SeqNo: 4973779		Prep Date: 4/6/2018		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	1004	30	1000	0	100	75-125	0				
Ethylbenzene	968.5	30	1000	0	96.8	75-125	0				
m,p-Xylene	1864	60	2000	0	93.2	80-125	0				
o-Xylene	958	30	1000	0	95.8	75-125	0				
Toluene	951.5	30	1000	0	95.2	70-125	0				
Xylenes, Total	2822	90	3000	0	94	75-125	0				
Surr: 1,2-Dichloroethane-d4	906	0	1000	0	90.6	70-130	0				
Surr: 4-Bromofluorobenzene	1042	0	1000	0	104	70-130	0				
Surr: Dibromofluoromethane	970.5	0	1000	0	97	70-130	0				
Surr: Toluene-d8	963.5	0	1000	0	96.4	70-130	0				

MS					Sample ID: 1804168-09A MS			Units: µg/Kg-dry		Analysis Date: 4/10/2018 05:00 AM	
Client ID: BH18-03 (0)			Run ID: VMS8_180409B			SeqNo: 4973999		Prep Date: 4/6/2018		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	915.5	32	1079	0	84.8	75-125	0				
Ethylbenzene	940.4	32	1079	0	87.2	75-125	0				
m,p-Xylene	1834	65	2158	0	85	80-125	0				
o-Xylene	939.3	32	1079	0	87	75-125	0				
Toluene	896.1	32	1079	0	83	70-125	0				
Xylenes, Total	2774	97	3237	0	85.7	75-125	0				
Surr: 1,2-Dichloroethane-d4	873.5	0	1079	0	81	70-130	0				
Surr: 4-Bromofluorobenzene	1093	0	1079	0	101	70-130	0				
Surr: Dibromofluoromethane	896.1	0	1079	0	83	70-130	0				
Surr: Toluene-d8	1066	0	1079	0	98.8	70-130	0				

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

Client: WPX Energy
Work Order: 1804168
Project: East Pecos 22-5H

QC BATCH REPORT

Batch ID: **116488** Instrument ID **VMS8** Method: **SW8260B**

MSD				Sample ID: 1804168-09A MSD			Units: µg/Kg-dry		Analysis Date: 4/10/2018 05:15 AM		
Client ID: BH18-03 (0)			Run ID: VMS8_180409B			SeqNo: 4974000		Prep Date: 4/6/2018		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	930.1	32	1079	0	86.2	75-125	915.5	1.58	30		
Ethylbenzene	947.4	32	1079	0	87.8	75-125	940.4	0.743	30		
m,p-Xylene	1877	65	2158	0	87	80-125	1834	2.33	30		
o-Xylene	933.3	32	1079	0	86.5	75-125	939.3	0.634	30		
Toluene	929.6	32	1079	0	86.2	70-125	896.1	3.66	30		
Xylenes, Total	2811	97	3237	0	86.8	75-125	2774	1.33	30		
Surr: 1,2-Dichloroethane-d4	876.1	0	1079	0	81.2	70-130	873.5	0.308	30		
Surr: 4-Bromofluorobenzene	1101	0	1079	0	102	70-130	1093	0.689	30		
Surr: Dibromofluoromethane	904.2	0	1079	0	83.8	70-130	896.1	0.899	30		
Surr: Toluene-d8	1055	0	1079	0	97.8	70-130	1066	1.02	30		

The following samples were analyzed in this batch:

1804168-01A	1804168-02A	1804168-05A
1804168-06A	1804168-09A	1804168-10A
1804168-13A	1804168-14A	1804168-17A
1804168-18A	1804168-21A	1804168-22A

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

Client: WPX Energy
Work Order: 1804168
Project: East Pecos 22-5H

QC BATCH REPORT

Batch ID: **116416** Instrument ID **WETCHEM** Method: **A4500-CI C-11**

MBLK		Sample ID: MBLK-116416-116416				Units: mg/Kg		Analysis Date: 4/10/2018 11:35 AM		
Client ID:		Run ID: WETCHEM_180410D		SeqNo: 4974160		Prep Date: 4/5/2018		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chloride ND 30

LCS		Sample ID: LCS-116416-116416				Units: mg/Kg		Analysis Date: 4/10/2018 11:35 AM		
Client ID:		Run ID: WETCHEM_180410D		SeqNo: 4974161		Prep Date: 4/5/2018		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chloride 519.8 30 500 0 104 87-112 0

MS		Sample ID: 1804168-03AMS				Units: mg/Kg		Analysis Date: 4/10/2018 11:35 AM		
Client ID: BH18-01 (4)		Run ID: WETCHEM_180410D		SeqNo: 4974166		Prep Date: 4/5/2018		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chloride 1527 29 487.3 989.8 110 87-112 0

MSD		Sample ID: 1804168-03AMSD				Units: mg/Kg		Analysis Date: 4/10/2018 11:35 AM		
Client ID: BH18-01 (4)		Run ID: WETCHEM_180410D		SeqNo: 4974167		Prep Date: 4/5/2018		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chloride 1482 30 494.1 989.8 99.6 87-112 1527 2.98 10

The following samples were analyzed in this batch:

1804168-01A	1804168-02A	1804168-03A
1804168-04A	1804168-05A	1804168-06A
1804168-07A	1804168-08A	1804168-09A
1804168-10A	1804168-11A	1804168-12A
1804168-13A	1804168-14A	1804168-15A
1804168-16A	1804168-17A	1804168-18A
1804168-19A		

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

Client: WPX Energy
Work Order: 1804168
Project: East Pecos 22-5H

QC BATCH REPORT

Batch ID: **116417** Instrument ID **WETCHEM** Method: **A4500-CI C-11**

MBLK		Sample ID: MBLK-116417-116417				Units: mg/Kg		Analysis Date: 4/9/2018 05:40 PM		
Client ID:		Run ID: WETCHEM_180409J		SeqNo: 4972912		Prep Date: 4/5/2018		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chloride ND 30

LCS		Sample ID: LCS-116417-116417				Units: mg/Kg		Analysis Date: 4/9/2018 05:40 PM		
Client ID:		Run ID: WETCHEM_180409J		SeqNo: 4972913		Prep Date: 4/5/2018		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chloride 529.8 30 500 0 106 87-112 0

MS		Sample ID: 1804168-20AMS				Units: mg/Kg		Analysis Date: 4/9/2018 05:40 PM		
Client ID: BH18-05 (6)		Run ID: WETCHEM_180409J		SeqNo: 4972915		Prep Date: 4/5/2018		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chloride 1590 30 497 1048 109 87-112 0

MSD		Sample ID: 1804168-20AMSD				Units: mg/Kg		Analysis Date: 4/9/2018 05:40 PM		
Client ID: BH18-05 (6)		Run ID: WETCHEM_180409J		SeqNo: 4972916		Prep Date: 4/5/2018		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chloride 1627 30 493.1 1048 117 87-112 1590 2.29 10 S

The following samples were analyzed in this batch:

1804168-20A	1804168-21A	1804168-22A
1804168-23A	1804168-24A	

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

Client: WPX Energy
Work Order: 1804168
Project: East Pecos 22-5H

QC BATCH REPORT

Batch ID: **R233331** Instrument ID **MOIST** Method: **SW3550C**

MBLK		Sample ID: WBLKS-R233331				Units: % of sample		Analysis Date: 4/8/2018 12:45 AM		
Client ID:		Run ID: MOIST_180408A				SeqNo: 4972166		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-R233331				Units: % of sample		Analysis Date: 4/8/2018 12:45 AM		
Client ID:		Run ID: MOIST_180408A				SeqNo: 4972165		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: 1804168-02A DUP				Units: % of sample		Analysis Date: 4/8/2018 12:45 AM		
Client ID: BH18-01 (2)		Run ID: MOIST_180408A				SeqNo: 4972146		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 7.53 0.050 0 0 0 0-0 7.56 0.398 10

DUP		Sample ID: 1804168-12A DUP				Units: % of sample		Analysis Date: 4/8/2018 12:45 AM		
Client ID: BH18-03 (6)		Run ID: MOIST_180408A				SeqNo: 4972156		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 10.68 0.050 0 0 0 0-0 10.3 3.62 10

The following samples were analyzed in this batch:

1804168-01A	1804168-02A	1804168-03A
1804168-04A	1804168-05A	1804168-07A
1804168-08A	1804168-09A	1804168-10A
1804168-11A	1804168-12A	1804168-13A
1804168-14A	1804168-15A	1804168-16A
1804168-17A	1804168-18A	1804168-19A

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

Client: WPX Energy
 Work Order: 1804168
 Project: East Pecos 22-5H

QC BATCH REPORT

Batch ID: **R233421** Instrument ID **MOIST** Method: **SW3550C**

MBLK		Sample ID: WBLKS-R233421				Units: % of sample		Analysis Date: 4/9/2018 04:49 PM		
Client ID:		Run ID: MOIST_180409A				SeqNo: 4974030		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-R233421				Units: % of sample		Analysis Date: 4/9/2018 04:49 PM		
Client ID:		Run ID: MOIST_180409A				SeqNo: 4974029		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: 1804173-04A DUP				Units: % of sample		Analysis Date: 4/9/2018 04:49 PM		
Client ID:		Run ID: MOIST_180409A				SeqNo: 4974017		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 51.32 0.050 0 0 0 0-0 49.23 4.16 10

DUP		Sample ID: 1804173-05A DUP				Units: % of sample		Analysis Date: 4/9/2018 04:49 PM		
Client ID:		Run ID: MOIST_180409A				SeqNo: 4974019		Prep Date:		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 19.74 0.050 0 0 0 0-0 16.9 15.5 10 R

The following samples were analyzed in this batch:

1804168-06A	1804168-20A	1804168-21A
1804168-22A	1804168-23A	1804168-24A

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

WORKORDER #	1804168
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[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: FED EX 2.8°C 	QC PACKAGE (check below)	
	X	LEVEL II (Standard QC)
		LEVEL III (Std QC + forms)
		LEVEL IV (Std QC + forms + raw data)
Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035		

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY		Robyn Fisher	03/04/2018	10:00
RECEIVED BY		PETE WESSON	4/4/18 4:13/10 PM	1000
RELINQUISHED BY				
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				

WORKORDER #	1304168
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Form 202r8

WORKORDER
#

1304168

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DISPOSAL

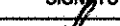
By Lab or Return to Client

		SAMPLER							DATE	03/04/2018							PAGE	2 of 3				
PROJECT NAME	East Pecos 22-5H	SITE ID	East Pecos 22-5H						TURNAROUND			5 days							DISPOSAL	By Lab or Return to Client		
PROJECT No.	17E-00043	EDD FORMAT							DRO + GRO + ORO BTX Chloride													
		PURCHASE ORDER																				
COMPANY NAME	WPX Energy	BILL TO COMPANY	WPX Energy																			
SEND REPORT TO	Jim Raley	INVOICE ATTN TO	Jim Raley																			
ADDRESS		ADDRESS	5315 Buena Vista Dr																			
CITY / STATE / ZIP		CITY / STATE / ZIP	Carlsbad, NM 88220																			
PHONE		PHONE	575-689-7595																			
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															
1804168-11	BH18-03 (4)	S	29/03/2018		2				x													
- 12	BH18-03 (6)	S	29/03/2018		2				x													
- 13	BH18-04 (0)	S	29/03/2018		2			x	x	x												
- 14	BH18-04 (2)	S	29/03/2018		2			x	x	x												
- 15	BH18-04 (4)	S	29/03/2018		2				x													
- 16	BH18-04 (6)	S	29/03/2018		2				x													
- 17	BH18-05 (0)	S	29/03/2018		2			x	x	x												
- 18	BH18-05 (2)	S	29/03/2018		2			x	x	x												
- 19	BH18-05 (4)	S	29/03/2018		2				x													
- 20	BH18-05 (6)	S	29/03/2018		2				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: FED EX 2.8°C Q	QC PACKAGE (check below)			
	X	LEVEL II (Standard QC)		
		LEVEL III (Std QC + forms)		
		LEVEL IV (Std QC + forms + raw data)		
Preservative Key: 1-HCl 2-HNO3 3-H2SO4 4-NaOH 5-NaHSO4 7-Other 8-4 degrees C 9-5035				

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY		Robyn Fisher	03/04/2018	10:00
RECEIVED BY		PETE WESSON	4/4/18 4/3/18 PM	1000
RELINQUISHED BY				
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				

WORKORDER #	1804168
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PAGE	3	of	3
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*Time Zone (Circle): EST CST MST PST Matrix: O = oil S = soil NS = non-soil solid W = water L = liquid E = extract F = filter

Comments: 	QC PACKAGE (check below)	
	X	LEVEL II (Standard QC)
		LEVEL III (Std QC + forms)
		LEVEL IV (Std QC + forms + raw data)
Preservative Key: 1-HCl 2-HNO ₃ 3-H ₂ SO ₄ 4-NaOH 5-NaHSO ₄ 7-Other 8-4 degrees C 9-5035		

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY		Robyn Fisher	03/04/2018	10:00
RECEIVED BY		PETE WESSON	4/4/18	1000
RELINQUISHED BY				
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				

Sample Receipt Checklist

Client Name: **WPX - NM**

Date/Time Received: **04-Apr-18 00:00**

Work Order: **1804168**

Received by: **PW**

Checklist completed by Pete Wesson 04-Apr-18
eSignature Date

Reviewed by: Chad Whelton 04-Apr-18
eSignature Date

Matrices: **SOIL**

Carrier name: **FedEx Std Overnight**

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>2.8°C</u> <u>IR</u>		
Cooler(s)/Kit(s):	<u>1</u>		
Date/Time sample(s) sent to storage:	<u>4/4/2018 14:30</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:



31-Aug-2018

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

Re: **East Pecos 22-5H**

Work Order: **18081783**

Dear Karolina,

ALS Environmental received 3 samples on 29-Aug-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 - Holland 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:

ADDRESS: 3352 128th Avenue, Holland, MI, USA
PHONE: +1 (616) 399-6070 FAX: +1 (616) 399-6185

Sincerely,

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

Electronically approved by: Chad Whelton

Chad Whelton
Project Manager

Report of Laboratory Analysis

Certificate No: MN 998501

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

Environmental

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Client: WPX Energy
Project: East Pecos 22-5H
Work Order: 18081783

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>
18081783-01	WW3 Confirmation (4ft)	Soil		8/28/2018 10:00	8/29/2018 09:30	☐
18081783-02	EW2 Confirmation (4ft)	Soil		8/28/2018 10:15	8/29/2018 09:30	☐
18081783-03	EW3 Confirmation (4ft)	Soil		8/28/2018 10:30	8/29/2018 09:30	☐

Client: WPX Energy
Project: East Pecos 22-5H
WorkOrder: 18081783

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
Hr	BOD/CBOD - Sample was reset outside Hold Time, value should be considered estimated.
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: 31-Aug-18

Client: WPX Energy
Project: East Pecos 22-5H
Sample ID: WW3 Confirmation (4ft)
Collection Date: 8/28/2018 10:00 AM

Work Order: 18081783
Lab ID: 18081783-01
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015C		Prep: SW3546 8/29/18 13:32	Analyst: RP
DRO (C10-C28)	ND		6.2	mg/Kg-dry	1	8/30/2018 02:04 AM
ORO (C28-C40)	24		6.2	mg/Kg-dry	1	8/30/2018 02:04 AM
Surr: 4-Terphenyl-d14	53.1		34-130	%REC	1	8/30/2018 02:04 AM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 8/29/18 12:55	Analyst: RP
GRO (C6-C10)	ND		7.8	mg/Kg-dry	1	8/29/2018 07:44 PM
Surr: Toluene-d8	95.9		71-123	%REC	1	8/29/2018 07:44 PM
VOLATILE ORGANIC COMPOUNDS						
			SW8260C		Prep: SW5035 8/29/18 12:55	Analyst: AK
Benzene	ND		0.047	mg/Kg-dry	1	8/29/2018 02:50 PM
Ethylbenzene	ND		0.047	mg/Kg-dry	1	8/29/2018 02:50 PM
m,p-Xylene	ND		0.094	mg/Kg-dry	1	8/29/2018 02:50 PM
o-Xylene	ND		0.047	mg/Kg-dry	1	8/29/2018 02:50 PM
Toluene	ND		0.047	mg/Kg-dry	1	8/29/2018 02:50 PM
Xylenes, Total	ND		0.14	mg/Kg-dry	1	8/29/2018 02:50 PM
Surr: 1,2-Dichloroethane-d4	101		70-130	%REC	1	8/29/2018 02:50 PM
Surr: 4-Bromofluorobenzene	103		70-130	%REC	1	8/29/2018 02:50 PM
Surr: Dibromofluoromethane	80.6		70-130	%REC	1	8/29/2018 02:50 PM
Surr: Toluene-d8	93.9		70-130	%REC	1	8/29/2018 02:50 PM
CHLORIDE						
			A4500-CL E-11		Prep: EXTRACT 8/29/18 20:30	Analyst: RLM
Chloride	21		12	mg/Kg-dry	1	8/30/2018 12:45 PM
MOISTURE						
			SW3550C			Analyst: DTS
Moisture	22		0.050	% of sample	1	8/29/2018 05:06 PM

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

ALS Group, USA

Date: 31-Aug-18

Client: WPX Energy

Project: East Pecos 22-5H

Sample ID: EW2 Confirmation (4ft)

Collection Date: 8/28/2018 10:15 AM

Work Order: 18081783

Lab ID: 18081783-02

Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015C		Prep: SW3546 8/29/18 13:32	Analyst: RP
DRO (C10-C28)	ND		6.2	mg/Kg-dry	1	8/30/2018 02:33 AM
ORO (C28-C40)	ND		6.2	mg/Kg-dry	1	8/30/2018 02:33 AM
Surr: 4-Terphenyl-d14	45.0		34-130	%REC	1	8/30/2018 02:33 AM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 8/29/18 12:55	Analyst: RP
GRO (C6-C10)	ND		7.8	mg/Kg-dry	1	8/29/2018 08:13 PM
Surr: Toluene-d8	93.3		71-123	%REC	1	8/29/2018 08:13 PM
VOLATILE ORGANIC COMPOUNDS						
			SW8260C		Prep: SW5035 8/29/18 12:55	Analyst: AK
Benzene	ND		0.047	mg/Kg-dry	1	8/29/2018 03:05 PM
Ethylbenzene	ND		0.047	mg/Kg-dry	1	8/29/2018 03:05 PM
m,p-Xylene	ND		0.094	mg/Kg-dry	1	8/29/2018 03:05 PM
o-Xylene	ND		0.047	mg/Kg-dry	1	8/29/2018 03:05 PM
Toluene	ND		0.047	mg/Kg-dry	1	8/29/2018 03:05 PM
Xylenes, Total	ND		0.14	mg/Kg-dry	1	8/29/2018 03:05 PM
Surr: 1,2-Dichloroethane-d4	99.4		70-130	%REC	1	8/29/2018 03:05 PM
Surr: 4-Bromofluorobenzene	97.0		70-130	%REC	1	8/29/2018 03:05 PM
Surr: Dibromofluoromethane	82.0		70-130	%REC	1	8/29/2018 03:05 PM
Surr: Toluene-d8	94.2		70-130	%REC	1	8/29/2018 03:05 PM
CHLORIDE						
			A4500-CL E-11		Prep: EXTRACT 8/29/18 20:30	Analyst: RLM
Chloride	310		13	mg/Kg-dry	1	8/30/2018 12:45 PM
MOISTURE						
			SW3550C			Analyst: DTS
Moisture	22		0.050	% of sample	1	8/29/2018 05:06 PM

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

ALS Group, USA

Date: 31-Aug-18

Client: WPX Energy
Project: East Pecos 22-5H
Sample ID: EW3 Confirmation (4ft)
Collection Date: 8/28/2018 10:30 AM

Work Order: 18081783
Lab ID: 18081783-03
Matrix: SOIL

Analyses	Result	Qual	Report Limit	Units	Dilution Factor	Date Analyzed
DIESEL RANGE ORGANICS BY GC-FID						
			SW8015C		Prep: SW3546 8/29/18 13:32	Analyst: RP
DRO (C10-C28)	ND		5.9	mg/Kg-dry	1	8/30/2018 03:31 AM
ORO (C28-C40)	ND		5.9	mg/Kg-dry	1	8/30/2018 03:31 AM
Surr: 4-Terphenyl-d14	52.6		34-130	%REC	1	8/30/2018 03:31 AM
GASOLINE RANGE ORGANICS BY GC-FID						
			SW8015D		Prep: SW5035 8/29/18 12:55	Analyst: RP
GRO (C6-C10)	ND		7.0	mg/Kg-dry	1	8/29/2018 08:42 PM
Surr: Toluene-d8	95.5		71-123	%REC	1	8/29/2018 08:42 PM
VOLATILE ORGANIC COMPOUNDS						
			SW8260C		Prep: SW5035 8/29/18 12:55	Analyst: AK
Benzene	ND		0.042	mg/Kg-dry	1	8/29/2018 03:19 PM
Ethylbenzene	ND		0.042	mg/Kg-dry	1	8/29/2018 03:19 PM
m,p-Xylene	ND		0.085	mg/Kg-dry	1	8/29/2018 03:19 PM
o-Xylene	ND		0.042	mg/Kg-dry	1	8/29/2018 03:19 PM
Toluene	ND		0.042	mg/Kg-dry	1	8/29/2018 03:19 PM
Xylenes, Total	ND		0.13	mg/Kg-dry	1	8/29/2018 03:19 PM
Surr: 1,2-Dichloroethane-d4	99.5		70-130	%REC	1	8/29/2018 03:19 PM
Surr: 4-Bromofluorobenzene	91.2		70-130	%REC	1	8/29/2018 03:19 PM
Surr: Dibromofluoromethane	85.4		70-130	%REC	1	8/29/2018 03:19 PM
Surr: Toluene-d8	94.4		70-130	%REC	1	8/29/2018 03:19 PM
CHLORIDE						
			A4500-CL E-11		Prep: EXTRACT 8/29/18 20:30	Analyst: RLM
Chloride	340		12	mg/Kg-dry	1	8/30/2018 12:45 PM
MOISTURE						
			SW3550C			Analyst: DTS
Moisture	17		0.050	% of sample	1	8/29/2018 05:06 PM

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

Client: WPX Energy

Work Order: 18081783

Project: East Pecos 22-5H

QC BATCH REPORT

Batch ID: **123619**

Instrument ID **GC8**

Method: **SW8015C**

MBLK		Sample ID: DBLKS1-123619-123619				Units: mg/Kg		Analysis Date: 8/29/2018 04:49 PM		
Client ID:		Run ID: GC8_180829A				SeqNo: 5228191		Prep Date: 8/29/2018		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

1.867

0

3.33

0

56.1

34-130

0

LCS		Sample ID: DLCSS1-123619-123619				Units: mg/Kg		Analysis Date: 8/29/2018 05:18 PM		
Client ID:		Run ID: GC8_180829A				SeqNo: 5228192		Prep Date: 8/29/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)

358.4

5.0

333

0

108

65-122

0

ORO (C28-C40)

376.6

5.0

333

0

113

81-116

0

Surr: 4-Terphenyl-d14

2.333

0

3.33

0

70.1

34-130

0

MS		Sample ID: 18081689-11B MS				Units: mg/Kg		Analysis Date: 8/29/2018 05:47 PM		
Client ID:		Run ID: GC8_180829A				SeqNo: 5228193		Prep Date: 8/29/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)

346.1

5.0

331.2

0

104

65-122

0

ORO (C28-C40)

356.3

5.0

331.2

0

108

81-116

0

Surr: 4-Terphenyl-d14

2.006

0

3.312

0

60.6

34-130

0

MSD		Sample ID: 18081689-11B MSD				Units: mg/Kg		Analysis Date: 8/29/2018 06:17 PM		
Client ID:		Run ID: GC8_180829A				SeqNo: 5228194		Prep Date: 8/29/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

DRO (C10-C28)

344.8

4.9

325

0

106

65-122

346.1

0.385

30

ORO (C28-C40)

314.7

4.9

325

0

96.8

81-116

356.3

12.4

30

Surr: 4-Terphenyl-d14

1.724

0

3.25

0

53.1

34-130

2.006

15.1

30

The following samples were analyzed in this batch:

18081783-01A

18081783-02A

18081783-03A

Client: WPX Energy
 Work Order: 18081783
 Project: East Pecos 22-5H

QC BATCH REPORT

Batch ID: **123643** Instrument ID **GC9** Method: **SW8015D**

MBLK		Sample ID: MBLK-123643-123643				Units: µg/Kg-dry		Analysis Date: 8/29/2018 06:17 PM		
Client ID:		Run ID: GC9_180829A				SeqNo: 5228501		Prep Date: 8/29/2018		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	4563	0	5000	0	91.3	71-123	0			

LCS		Sample ID: LCS-123643-123643				Units: µg/Kg-dry		Analysis Date: 8/29/2018 05:18 PM		
Client ID:		Run ID: GC9_180829A				SeqNo: 5228500		Prep Date: 8/29/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	598500	5,000	500000	0	120	71-123	0			
Surr: Toluene-d8	5265	0	5000	0	105	71-123	0			

MS		Sample ID: 18081779-01B MS				Units: µg/Kg-dry		Analysis Date: 8/29/2018 09:40 PM		
Client ID:		Run ID: GC9_180829A				SeqNo: 5228508		Prep Date: 8/29/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	569500	5,000	500000	9501	112	71-123	0			
Surr: Toluene-d8	5155	0	5000	0	103	71-123	0			

MSD		Sample ID: 18081779-01B MSD				Units: µg/Kg-dry		Analysis Date: 8/29/2018 10:09 PM		
Client ID:		Run ID: GC9_180829A				SeqNo: 5228509		Prep Date: 8/29/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
GRO (C6-C10)	509500	5,000	500000	9501	100	71-123	569500	11.1	30	
Surr: Toluene-d8	5648	0	5000	0	113	71-123	5155	9.13	30	

The following samples were analyzed in this batch:

18081783-01A	18081783-02A	18081783-03A
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Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: WPX Energy
Work Order: 18081783
Project: East Pecos 22-5H

QC BATCH REPORT

Batch ID: **123642** Instrument ID **VMS9** Method: **SW8260C**

MBLK		Sample ID: MBLK-123642-123642				Units: µg/Kg-dry		Analysis Date: 8/29/2018 11:34 AM		
Client ID:		Run ID: VMS9_180829A				SeqNo: 5228340		Prep Date: 8/29/2018		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								
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>1012</i>	<i>0</i>	<i>1000</i>	<i>0</i>	<i>101</i>	<i>70-130</i>	<i>0</i>			
<i>Surr: 4-Bromofluorobenzene</i>	<i>879</i>	<i>0</i>	<i>1000</i>	<i>0</i>	<i>87.9</i>	<i>70-130</i>	<i>0</i>			
<i>Surr: Dibromofluoromethane</i>	<i>911.5</i>	<i>0</i>	<i>1000</i>	<i>0</i>	<i>91.2</i>	<i>70-130</i>	<i>0</i>			
<i>Surr: Toluene-d8</i>	<i>936.5</i>	<i>0</i>	<i>1000</i>	<i>0</i>	<i>93.6</i>	<i>70-130</i>	<i>0</i>			

LCS		Sample ID: LCS-123642-123642				Units: µg/Kg-dry		Analysis Date: 8/29/2018 10:18 AM		
Client ID:		Run ID: VMS9_180829A				SeqNo: 5228331		Prep Date: 8/29/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1005	30	1000	0	100	75-125	0			
Ethylbenzene	1084	30	1000	0	108	75-125	0			
m,p-Xylene	2240	60	2000	0	112	80-125	0			
o-Xylene	1150	30	1000	0	115	75-125	0			
Toluene	1054	30	1000	0	105	70-125	0			
Xylenes, Total	3390	90	3000	0	113	75-125	0			
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>946</i>	<i>0</i>	<i>1000</i>	<i>0</i>	<i>94.6</i>	<i>70-130</i>	<i>0</i>			
<i>Surr: 4-Bromofluorobenzene</i>	<i>1038</i>	<i>0</i>	<i>1000</i>	<i>0</i>	<i>104</i>	<i>70-130</i>	<i>0</i>			
<i>Surr: Dibromofluoromethane</i>	<i>1020</i>	<i>0</i>	<i>1000</i>	<i>0</i>	<i>102</i>	<i>70-130</i>	<i>0</i>			
<i>Surr: Toluene-d8</i>	<i>981</i>	<i>0</i>	<i>1000</i>	<i>0</i>	<i>98.1</i>	<i>70-130</i>	<i>0</i>			

MS		Sample ID: 18081779-01B MS				Units: µg/Kg-dry		Analysis Date: 8/29/2018 05:56 PM		
Client ID:		Run ID: VMS9_180829A				SeqNo: 5228373		Prep Date: 8/29/2018		DF: 1
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual
Benzene	1272	43	1439	0	88.4	75-125	0			
Ethylbenzene	1351	43	1439	0	93.9	75-125	0			
m,p-Xylene	2913	86	2878	26.62	100	80-125	0			
o-Xylene	1534	43	1439	23.74	105	75-125	0			
Toluene	1288	43	1439	0	89.5	70-125	0			
Xylenes, Total	4447	130	4317	51	102	75-125	0			
<i>Surr: 1,2-Dichloroethane-d4</i>	<i>1433</i>	<i>0</i>	<i>1439</i>	<i>0</i>	<i>99.6</i>	<i>70-130</i>	<i>0</i>			
<i>Surr: 4-Bromofluorobenzene</i>	<i>1538</i>	<i>0</i>	<i>1439</i>	<i>0</i>	<i>107</i>	<i>70-130</i>	<i>0</i>			
<i>Surr: Dibromofluoromethane</i>	<i>1317</i>	<i>0</i>	<i>1439</i>	<i>0</i>	<i>91.5</i>	<i>70-130</i>	<i>0</i>			
<i>Surr: Toluene-d8</i>	<i>1382</i>	<i>0</i>	<i>1439</i>	<i>0</i>	<i>96</i>	<i>70-130</i>	<i>0</i>			

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

Client: WPX Energy
Work Order: 18081783
Project: East Pecos 22-5H

QC BATCH REPORT

Batch ID: **123642** Instrument ID **VMS9** Method: **SW8260C**

MSD				Sample ID: 18081779-01B MSD			Units: µg/Kg-dry		Analysis Date: 8/29/2018 06:11 PM		
Client ID:			Run ID: VMS9_180829A			SeqNo: 5228374		Prep Date: 8/29/2018		DF: 1	
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual	
Benzene	1457	43	1439	0	101	75-125	1272	13.6	30		
Ethylbenzene	1528	43	1439	0	106	75-125	1351	12.2	30		
m,p-Xylene	3149	86	2878	26.62	108	80-125	2913	7.81	30		
o-Xylene	1625	43	1439	23.74	111	75-125	1534	5.78	30		
Toluene	1431	43	1439	0	99.4	70-125	1288	10.5	30		
Xylenes, Total	4775	130	4317	51	109	75-125	4447	7.12	30		
Surr: 1,2-Dichloroethane-d4	1440	0	1439	0	100	70-130	1433	0.501	30		
Surr: 4-Bromofluorobenzene	1515	0	1439	0	105	70-130	1538	1.51	30		
Surr: Dibromofluoromethane	1296	0	1439	0	90	70-130	1317	1.6	30		
Surr: Toluene-d8	1392	0	1439	0	96.7	70-130	1382	0.674	30		

The following samples were analyzed in this batch:

18081783-01A	18081783-02A	18081783-03A
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Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: WPX Energy
 Work Order: 18081783
 Project: East Pecos 22-5H

QC BATCH REPORT

Batch ID: **123708** Instrument ID **GALLERY** Method: **A4500-CI E-11**

MBLK		Sample ID: MBLK-123708-123708				Units: mg/Kg		Analysis Date: 8/30/2018 12:45 PM		
Client ID:		Run ID: GALLERY_180830A		SeqNo: 5228950		Prep Date: 8/29/2018		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: 18081750-01AMS				Units: mg/Kg		Analysis Date: 8/30/2018 12:45 PM		
Client ID:		Run ID: GALLERY_180830A		SeqNo: 5228959		Prep Date: 8/29/2018		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chloride 543.5 9.9 494.1 60.14 97.8 75-125 0

MSD		Sample ID: 18081750-01AMSD				Units: mg/Kg		Analysis Date: 8/30/2018 12:45 PM		
Client ID:		Run ID: GALLERY_180830A		SeqNo: 5228960		Prep Date: 8/29/2018		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chloride 531.7 9.9 494.1 60.14 95.4 75-125 543.5 2.19 25

LCS1		Sample ID: LCS1-123708-123708				Units: mg/Kg		Analysis Date: 8/30/2018 12:45 PM		
Client ID:		Run ID: GALLERY_180830A		SeqNo: 5228951		Prep Date: 8/29/2018		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chloride 99.67 10 100 0 99.7 80-120 0

LCS2		Sample ID: LCS2-123708-123708				Units: mg/Kg		Analysis Date: 8/30/2018 12:45 PM		
Client ID:		Run ID: GALLERY_180830A		SeqNo: 5228958		Prep Date: 8/29/2018		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Chloride 478.4 10 500 0 95.7 80-120 0

The following samples were analyzed in this batch:

18081783-01A	18081783-02A	18081783-03A
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Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Client: WPX Energy
Work Order: 18081783
Project: East Pecos 22-5H

QC BATCH REPORT

Batch ID: **R243302** Instrument ID **MOIST** Method: **SW3550C**

MBLK		Sample ID: WBLKS-R243302				Units: % of sample		Analysis Date: 8/29/2018 05:06 PM		
Client ID:		Run ID: MOIST_180829E		SeqNo: 5228589		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-R243302				Units: % of sample		Analysis Date: 8/29/2018 05:06 PM		
Client ID:		Run ID: MOIST_180829E		SeqNo: 5228588		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: 18081665-11A DUP				Units: % of sample		Analysis Date: 8/29/2018 05:06 PM		
Client ID:		Run ID: MOIST_180829E		SeqNo: 5228569		Prep Date:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 6.74 0.050 0 0 0 0-0 7.3 7.98 10

DUP		Sample ID: 18081811-01A DUP				Units: % of sample		Analysis Date: 8/29/2018 05:06 PM		
Client ID:		Run ID: MOIST_180829E		SeqNo: 5228587		Prep Date:		DF: 1		
Analyte	Result	PQL	SPK Val	SPK Ref Value	%REC	Control Limit	RPD Ref Value	%RPD	RPD Limit	Qual

Moisture 69.39 0.050 0 0 0 0-0 70.52 1.62 10 H

The following samples were analyzed in this batch:

18081783-01A	18081783-02A	18081783-03A
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Note: See Qualifiers Page for a list of Qualifiers and their explanation.

Chain-of-Custody

Form 20258

WORKORDER
#

18081783

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: 8R2 4.4.C @	QC PACKAGE (check below)							
	X	LEVEL II (Standard QC)						
		LEVEL III (Std QC + forms)						
		LEVEL IV (Std QC + forms + raw data)						
Preservative Key: 1-HCl 2-HNO ₃ 3-H ₂ SO ₄ 4-NaOH 5-NaHSO ₄ 7-Other 8-4 degrees C 9-5035								

	SIGNATURE	PRINTED NAME	DATE	TIME
RELINQUISHED BY	<i>Karolina Blaney</i>	Karolina Blaney	8/28/2018	14:00
RECEIVED BY	<i>[Signature]</i>	<i>Diane F. Shen</i>	<i>8/29/18</i>	<i>0930</i>
RELINQUISHED BY				
RECEIVED BY				
RELINQUISHED BY				
RECEIVED BY				

Sample Receipt Checklist

Client Name: **WPX - NM**

Date/Time Received: **29-Aug-18 09:30**

Work Order: **18081783**

Received by: **DS**

Checklist completed by Diane Shaw 29-Aug-18
eSignature Date

Reviewed by: Chad Whelton 29-Aug-18
eSignature 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>4.4/4.4 c</u> <u>SR2</u>		
Cooler(s)/Kit(s):	<u></u>		
Date/Time sample(s) sent to storage:	<u>8/29/2018 11:55:25 AM</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: