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Soil Assessment and Remediation Work Plan

East Pecos Federal Com 22 #006H

API #30-015-42281 * 2RP-4577

Talon Project No. 702331.001.01

Prepared For:

WPX Energy

5315 Buena Vista Drive

Carlsbad, New Mexico 88220

Prepared By:

TALON/LPE

408 W. Texas Avenue

Artesia, New Mexico 88210

February 28, 2018

Mr. Mike Bratcher
NMOCD District 2
811 S. 1st Street
Artesia, NM 88210

Subject: **Soil Assessment and Remediation Work Plan**
East Pecos Federal Com 22 #006H
API # 30-015-42281 ** 2RP-4577

Dear Mr. Bratcher,

WPX Energy (WPX) has contracted Talon/LPE (Talon) to perform soil assessment and remediation services at the above referenced location. The results of our soil assessment and proposed remediation activities consist of the following.

Site Information

The East Pecos Federal Com 22 #006H is located approximately seventy-five (75) miles south of Artesia, New Mexico. The legal location for this release is Unit Letter B, Section 27, Township 26 South and Range 29 East in Eddy County, New Mexico. More specifically the latitude and longitude for the release are 32.019925 North and -103.968057 West. A site plan is presented in [Appendix I](#).

According to the soil survey provided by the United States Department of Agriculture National Resources Conservation Services (NRCS) the soil in this area is made up of Upton-Simona complex, 1 to 15 percent slopes, eroded. The local surface and shallow geology, Paleozoic Age sedimentary deposits, is comprised of the Upper Permian Group, Quartermaster and Rustler formations, which are made up of residuum-weathered limestone underlain by very gravelly loam and hard caliches. Drainage courses in this area are normally dry.

Ground Water and Site Ranking

The New Mexico Office of the State Engineer (NMOSE) database indicates there is no published groundwater information within 5,000 meters of the release area. However according to the Chevron Texaco Groundwater Trend Map, the groundwater in this area is between 50 to 100 feet below ground surface (BGS). A photocopy of Township 26S and Range 29E from the Trend Map is attached in [Appendix II](#).

Therefore, the ranking for this site is a **10** based on the following:

Depth to ground water	50-100'
Wellhead Protection Area	>1000'
Distance to surface water body	>1000'

Based upon the site ranking of **10**, New Mexico Oil Conservation Division (NMOCD) Recommended Remedial Action Levels (RRAL) are 50 mg/kg for BTEX, 10 mg/kg for Benzene and 1,000 mg/kg for TPH. Per the meeting between NMOCD District II and WPX it was determined that WPX will delineate chlorides to 600 mg/kg and the clean up criteria will be 1,000 mg/kg within the impacted areas of this release.

Incident Description and Initial Remedial Actions Taken

On December 31, 2017, a valve failed resulting in the release of approximately 230 bbls of produced water. A vacuum truck was immediately called to the location and recovered 180 barrels of fluid. The GPS coordinates of 32.019925 N, -103.968057 W are the initial point of release. The produced water flowed down gradient to the south along the existing pipeline right-of-way approximately 1,050-feet. The fluid pooled at the end of the ROW in a low spot where the pipeline and lease road intersect. The release then flowed eastward along the pipeline for approximately 800-feet to a final pooling area as represented on the attached site plan. See [Appendix II](#). An initial C-141 was filed with NMOCD and is attached in [Appendix II](#).

WPX contacted Talon on December 31, 2017 for the correction of this release. Talon mobilized personnel to conduct a preliminary assessment of the release area and surrounding locations. Talon returned to the location on January 2, 2018, to continue assessment activities and begin collecting the initial soil samples for the construction of a work plan. Grab soil samples were collected from within the impacted areas and perimeter utilizing a hand auger. Refusal was encountered at most locations from 1-2-feet (BGS). Talon subsequently brought in a backhoe and additional personnel to obtain samples at greater depths. An excavator and loader were utilized to remove the saturated soil from the surface to a depth of 3.5-feet deep in some areas. The excavated material represented the most visibly impacted soil in order to prevent the contamination from migrating deeper. All excavated soil was transported to R360, a NMOCD approved solid waste disposal facility. Additional soil samples were taken for vertical and horizontal delineation to define the extent of contamination. A site plan illustrating the work area and sampling locations is presented in [Appendix I](#).

It should be noted that during the excavation that two (2) buried flowlines were discovered along the ROW not belonging to WPX, at a depth of approximately 3-feet BGS. The flowlines appear to have been abandoned. An abandoned well pad, Amoco Federal No. 006, API #30-015-24923, owned by Cimarex Energy, is located approximately 300-feet from where the lines were discovered. According to the NMOCD records, the location has been plugged and abandoned, but is awaiting vegetation growth before being submitted for final approval to close.

Laboratory Results

Talon personnel wearing clean nitrile gloves collected all soil samples. The soil samples were placed in laboratory provided sample containers, iced and transported to Cardinal Laboratories in Hobbs, New Mexico for analysis. The samples were tested for TPH Extended Range (Total Petroleum Hydrocarbons) using EPA Method 8015M and volatile organics (BTEX) using EPA Method 8021B. The chloride samples were analyzed using Method SM4500Cl-B. The results are presented in Data Table 1-5 in [Appendix III](#). The complete laboratory reports are attached in [Appendix IV](#).

Approximately six (6) sample locations appear to show increased levels chloride concentrations at deeper depths which is non-indicative of the WPX release. The chloride concentration levels appear to increase at greater depths for sample locations S-12, S-14-16, S-18 and C-1 as opposed to decreasing. This increasing chloride trend may represent a historical release.

On February 14, 2018, a meeting was held at the NMOCD District II office in Artesia, NM between NMOCD representatives Mike Bratcher and Crystal Weaver, and WPX personnel Jim Raley and Robert Raup regarding the clean-up criteria for total chlorides. The NMOCD determined that for this release, total chlorides will be delineated to 600 mg/kg and be remediated to a standard of 1,000 mg/kg. The installation of a 20-mil liner was approved in those areas where chloride concentrations are greater than 1,000 mg/kg at depths of 4-feet and greater.

Proposed Remedial Actions

- Also agreed upon during the NMOCD and WPX meeting referenced herein, WPX is only required to remediate within the aerial extent of the flow path of this incident. Most of the areas within the flow path have already been excavated (to varying depths) during the initial remedial actions. The excavation depths described afterwards represent total excavation depths.
- The impacted area in the vicinity of sample location S-1 will be excavated to a depth of 4.5-feet BGS.
- The impacted area near S-2/TP-4 and S-3 will be excavated to 3.5-feet.
- The impacted soil in the vicinity of S-4 will be excavated to 4.5-feet deep.
- The flow path will be excavated 3.5-feet near S-5 and to 2.5-feet deep in the vicinity of sample location S-6/TP-2.
- The flow path that includes sample locations S-7, S-8, S-9 will be excavated to a depth of 4-feet below land surface and a 20-mil liner will be installed. Prior to the liner installation, a test pit will be advanced in this location with the excavator to determine the vertical extent of the produced water impacts as directed by the NMOCD.
- The impacted area in the vicinity of S-10 will be excavated 3.5-feet deep. The area surrounding S-11 will be excavated 4-feet deep and a 20-mil liner will be installed. S-12 area will be excavated to a depth of 3.5-feet. S-13 will be excavated to depth of 0.5-feet.
- The impacted areas in the southwest corner of the flow path encompassing test pit location TP-1 and sample location C-2 will be excavated 4-feet below land surface and a 20-mil liner will be installed in each area. Additionally C-3 will be scraped 0.5-feet deep.
- No further excavation is required near sample location S-14 as this area has already been excavated to at least 1.5-feet deep during initial remedial actions. However, a confirmation sample will be collected to verify that no further excavation is warranted.
- Excavation depths of 2.0-feet will continue in the vicinity of S-15 increasing to a depth of 3.5-feet near sample location S-21.

- No further excavation is required near sample location S-16 as this area has already been excavated to 2-feet deep.
- The impacted area within the flow path near TP-3 will be excavated to 2.5 feet deep and S-19 will be excavated 4-feet below land surface and a 20-mil liner installed.
- The area in the vicinity of sample location S-17 extending westward including S-20 will be excavated 2.5-feet deep.
- The pooling area at the end of the release flow path (S-18) will be excavated to a depth of 4-feet and a 20-mil liner will be placed into the bottom of the excavation.
- Excavation will begin at the furthestmost impacted areas (southwest end of flow path) working our way back to the release point. Logistically this approach seems most feasible so as not to send truck or equipment traffic over previously remediated work areas.
- The excavated soil will be loaded directly into transport trucks to be disposed of at R360 Waste Disposal Facility. Once all trucks have been loaded, the operator will continue to excavate, stockpiling the impacted soil on plastic or on impacted areas to be loaded onto trucks during the next round and hauled off site.
- Field titration screening will be utilized to test the sidewalls of the excavation throughout the release area to guide the horizontal extent of the excavation. Once the screening results indicate the chlorides levels are under 1,000 mg/kg, confirmation samples will be collected from sidewalls and bottom of the excavation and sent directly to the laboratory for analysis. Upon receipt of the laboratory data, the results will be immediately forwarded to the NMOCD District II office for approval to backfill each area.
- Once NMOCD approval has been attained, the excavation will be backfilled with clean, like material obtained locally. The work area will be contoured to match the surrounding terrain and mechanically seeded using BLM recommended seed mixture for the area.

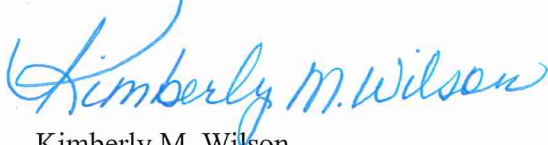
Closure

A Final Remediation and Closure Report documenting all remedial actions will be provided to the NMOCD Artesia Office along with a Final C-141 Form.

Should you have any questions or if further information is required, please do not hesitate to contact our office at (575)-746-8768.

Respectfully submitted,

TALON/LPE



Kimberly M. Wilson
Project Manager



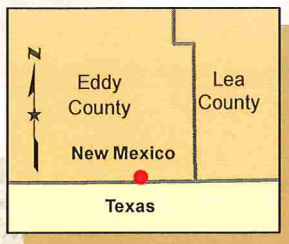
David J. Adkins
District Manager

Attachments:

Appendix I	Site Plan
Appendix II	Groundwater Data & Initial C-141
Appendix III	Data Tables
Appendix IV	Laboratory Results

APPENDIX I

SITE MAP



26S 29E

Section 22

Section 27



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

Legend

- Background
- Test Pit
- Sample Point
- Area of Interest



East Pecos Federal COM 22 #6H

API: 30-015-42281
NMOCD Case# 2RP-4577

APPENDIX II
GROUNDWATER DATA
INITIAL C-141



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	Code	POD Sub-basin	County	Q 64	Q 16	Q 4	Sec	Tws	Rng	X	Y	Distance	DepthWell	DepthWater	Water Column
C 01354 X-3		C	ED	2	1	3	23	26S	29E	598323	3543837	930	170		
C 03605 POD1		CUB	ED	4	2	3	27	26S	29E	596990	3541983	1400	45	0	45
C 02038		C	ED	3	2	4	26	26S	29E	599204	3541992*	2021	200		
Average Depth to Water:														0 feet	
Minimum Depth:														0 feet	
Maximum Depth:														0 feet	

Record Count:3

UTMNAD83 Radius Search (in meters):

Easting (X): 597612

Northing (Y): 3543238

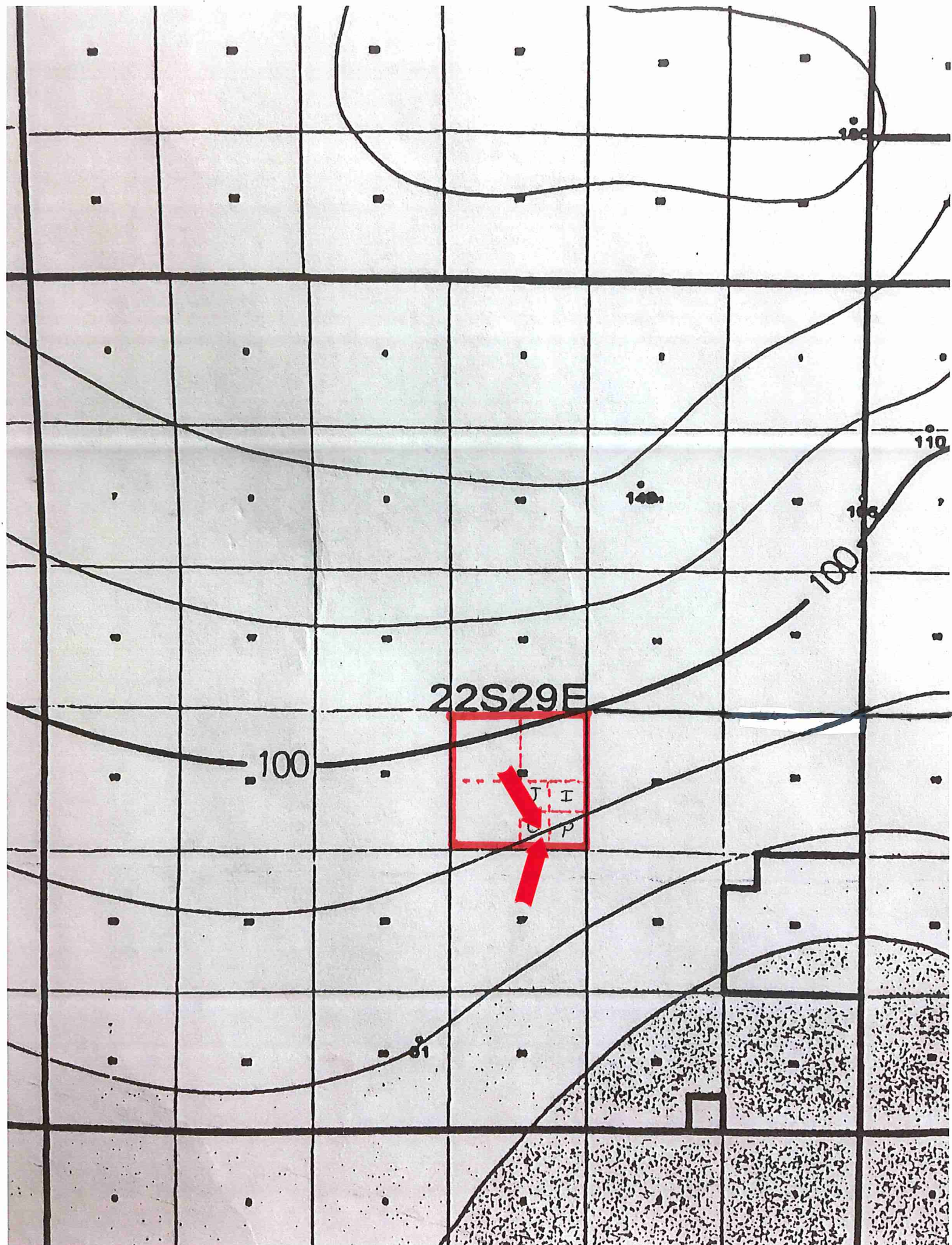
Radius: 3000

*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.

1/9/18 10:05 AM

WATER COLUMN/ AVERAGE DEPTH TO WATER



NM OIL CONSERVATION

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

ARTESIA DISTRICT

State of New Mexico

JAN 14 2018

Energy Minerals and Natural Resources

Oil Conservation Division

1220 South St. Francis Dr.

Santa Fe, NM 87505

RECEIVED

NM OIL CONSERVATION

ARTESIA DISTRICT

Form C-141
Revised April 3, 2017

JAN 14 2018
Submit Copy to appropriate District Office in accordance with 19.15.29 NMAC.

RECEIVED

Release Notification and Corrective Action

OPERATOR

☒ Initial Report ☐ Final Report

Name of Company: RKT Exploration / WPX Energy 2416289 Contact: James Raley
Address: 5315 Buena Vista Dr., Carlsbad, NM 88220 Telephone No: 575-689-7597
Facility Name: East Pecos Fed Com 22 #6H Facility Type: Battery

Surface Owner: Private Mineral Owner: Federal API No.: 30-015-42281

LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
O	22	26S	29E	250'	FSL	1840'	FEL	Eddy

Latitude 32.019925 N Longitude -103.968057 W

NATURE OF RELEASE

Type of Release: Produced Water	Volume of Release: 230 bbls PW	Volume Recovered: 180 bbls PW
Source of Release: Header Manifold	Date and Hour of Occurrence 12/31/2017 @ 09:15 AM	Date and Hour of Discovery 12/31/2017 @ AM
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? Artesia District I, NMOCD - Mike Bratcher	
By Whom? Jim Raley - WPX Energy	Date and Hour: 12/31/2017 @ 5:53 PM	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume/Impacting the Watercourse. N/A	

If a Watercourse was Impacted, Describe Fully.*
Describe Cause of Problem and Remedial Action Taken.*
A connecting piece on a produced water header failed, resulting in the release of approximately 230 bbls of produced water. A vac truck was immediately dispatched to location and recovered 180 bbls of fluids. Talon/LPE was contacted on 12/31/2017 and mobilized personnel to conduct initial site assessment.

Describe Area Affected and Cleanup Action Taken.*
The fluids migrated from the point of release along a pipeline ROW approx. 1400'. A one-call was placed for the impacted area and Talon/LPE mobilized equipment to perform soil sampling activities and remove visibly impacted soils. Removed soils were transported to disposal. Talon/LPE will develop a remediation plan based on sampling results.

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: 1/11/18	Expiration Date: N/A
E-mail Address: james.ralej@wpxenergy.com	Conditions of Approval: see attached	Attached <input checked="" type="checkbox"/> ARP-4577
Date: 1/13/2018	Phone: 575-689-7597	

* Attach Additional Sheets If Necessary//

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APPENDIX III
DATA TABLES

Laboratory Results

See [Appendix III](#) for complete report of laboratory results.

Subject: WPX * East Pecos Federal Com 22 #6
API #30-015-42281
DOR: 12/31/2017

January 8, 2018

Data Table 1

Sample ID	Depth (feet)	BTEX (mg/kg)	Chlorides (mg/kg)	TPH (mg/kg) GRO	TPH (mg/kg) DRO	TPH (mg/kg) EXT DRO	% Saturation
S-1	0.0	1.73	12900	10.3	14.2	<10	23.9
Refusal	1.0	<0.300	10300	<10	12.1	<10	24.6
S-2 / TP - 4	0.0	<0.300	11500	<10	<10	<10	22.8
Refusal	1.0	<0.300	9600	<10	<10	<10	22.6
S-3	0.0	<0.300	7860	<10	<10	<10	21.2
Refusal	1.0	<0.300	5280	<10	<10	<10	29.0
S-4	0.0	<0.300	7040	<10	<10	<10	28.3
	1.0	<0.300	7200	<10	<10	<10	28.4
Refusal	2.0	<0.300	5600	<10	<10	<10	25.2
S-5	0.0	<0.300	12300	<10	<10	<10	21.6
Refusal	0.5	<0.300	8400	<10	<10	<10	27.7
S-6 / TP - 2	0.0	<0.300	10100	<10	<10	<10	21.3
Refusal	0.5	<0.300	8000	<10	<10	<10	23.2
S-7	0.0	<0.300	13600	<10	<10	<10	22.3
Refusal	0.5	<0.300	14500	<10	<10	<10	24.8
S-8	0.0	<0.300	11900	<10	<10	<10	20.1
Refusal	0.5	<0.300	9730	<10	<10	<10	23.3
S-9	0.0	<0.300	10300	<10	<10	<10	26.9
	1.0	<0.300	5360	<10	<10	<10	21.2
	2.0	<0.300	3200	<10	<10	<10	22.0
	3.0	<0.300	2880	<10	<10	<10	25.8
	4.0	<0.300	1300	<10	<10	<10	25.0
S-10	0.0	<0.300	11900	<10	12.8	<10	22.1
Refusal	0.5	<0.300	7760	<10	<10	<10	22.6
S-11	0.0	<0.300	8930	<10	23.3	<10	19.5
Refusal	0.5	<0.300	9060	<10	<10	<10	23.3
S-12	0.0	<0.300	7860	<10	<10	<10	19.5
	1.0	<0.300	7060	<10	<10	<10	22.7
Refusal	1.5	<0.300	6400	<10	<10	<10	24.7
S-13	0.0	<0.300	6000	<10	<10	<10	26.7
Refusal	1.0	<0.300	160	<10	<10	<10	29.0

Data Table 1

Sample ID	Depth (feet)	BTEX (mg/kg)	Chlorides (mg/kg)	TPH (mg/kg) GRO	TPH (mg/kg) DRO	TPH (mg/kg) EXT DRO	% Saturation
S-14	0.0	<0.300	13500	<10	27.9	<10	22.1
	1.0	<0.300	3840	<10	<10	<10	21.4
S-15 Refusal	0.0	<0.300	7600	<10	<10	<10	20.1
	1.0	<0.300	4240	<10	<10	<10	23.4
S-16 Refusal	0.0	<0.300	7060	<10	<10	<10	21.0
	1.0	<0.300	4960	<10	<10	<10	20.4
S-17	0.0	<0.300	9860	<10	<10	<10	25.7
	1.0	<0.300	8530	<10	<10	<10	26.7
S-18	0.0	<0.300	10800	<10	<10	<10	17.8
	1.0	<0.300	10000	<10	<10	<10	19.0
TP - 4	2.0	<0.300	3560	<10	<10	<10	30.9
	3.0	<0.300	1100	<10	<10	<10	29.6
	4.0	<0.300	608	<10	<10	<10	23.1
	5.0	<0.300	640	<10	<10	<10	22.6
	7.0	<0.300	576	<10	<10	<10	22.2
	9.0	<0.300	432	<10	<10	<10	22.0
	11.0	<0.300	176	<10	<10	<10	22.8
	12.0	<0.300	224	<10	<10	<10	20.5
TP - 2	2.0	<0.300	2720	<10	<10	<10	33.2
	3.0	<0.300	64	<10	<10	<10	31.8
	4.0	<0.300	64	<10	<10	<10	25.8
	5.0	<0.300	64	<10	<10	<10	31.2
	7.0	<0.300	80	<10	<10	<10	28.9
	9.0	<0.300	208	<10	<10	<10	31.8
	11.0	<0.300	592	<10	<10	<10	28.4
	12.0	<0.300	528	<10	<10	<10	25.0
TP - 3	2.0	<0.300	3720	<10	<10	<10	21.1
	3.0	<0.300	64	<10	<10	<10	21.3
	4.0	<0.300	16	<10	<10	<10	19.4
	5.0	<0.300	80	<10	<10	<10	17.6
	7.0	<0.300	112	<10	<10	<10	18.3
	9.0	<0.300	32	<10	<10	<10	25.8
	11.0	<0.300	144	<10	<10	<10	38.0
	12.0	<0.300	64	<10	<10	<10	35.0
TP - 1	2.0	<0.300	9600	<10	<10	<10	21.5
	3.0	<0.300	9330	<10	<10	<10	24.6
	4.0	<0.300	7600	<10	<10	<10	23.3
	5.0	<0.300	9060	<10	<10	<10	25.5
	7.0	<0.300	6260	<10	<10	<10	35.7
	9.0	<0.300	112	<10	<10	<10	31.4
	11.0	<0.300	288	<10	<10	<10	32.6
	12.0	<0.300	1920	<10	<10	<10	32.4

Laboratory Results

See [Appendix III](#) for complete report of laboratory results.

Subject: WPX * East Pecos Federal Com 22 #6
API #30-015-42281
DOR: 12/31/2017

January 10, 2018

Data Table 2

Sample ID	Depth (feet)	BTEX (mg/kg)	Chlorides (mg/kg)	TPH (mg/kg) GRO	TPH (mg/kg) DRO	TPH (mg/kg) EXT DRO	% Saturation
BG-1	0.0	<0.300	<16	<10	<10	<10	19.5
BG-2	0.0	<0.300	<16	<10	<10	<10	20.4
Refusal	1.0	<0.300	<16	<10	<10	<10	23.5
BG-3	0.0	<0.300	16	<10	10.2	<10	17.6
BG-4	0.0	<0.300	<16	<10	<10	<10	22.1
	1.0	<0.300	16	<10	<10	<10	24.4
	2.0	<0.300	<16	<10	<10	<10	23.1
	3.0	<0.300	64	<10	<10	<10	25.5
BG-5	0.0	<0.300	<16	<10	<10	<10	20.0
BG-6	0.0	<0.300	<16	<10	<10	<10	18.3
BG-7	0.0	<0.300	<16	<10	<10	<10	19.1
	1.0	<0.300	48	<10	<10	<10	24.4
BG-8	0.0	<0.300	<16	<10	<10	<10	20.4
BG-9	0.0	<0.300	64	<10	<10	<10	18.8
	1.0	<0.300	384	<10	<10	<10	22.2
BG-10	0.0	<0.300	<16	<10	<10	<10	18.7
	1.0	<0.300	<16	<10	<10	<10	22.5
	2.0	<0.300	32	<10	<10	<10	22.8
BG-11	0.0	<0.300	<16	<10	<10	<10	18.7
BG-12	0.0	<0.300	<16	<10	<10	<10	20.6
	1.0	<0.300	<16	<10	<10	<10	23.6
	2.0	<0.300	<16	<10	<10	<10	24.3
	3.0	<0.300	96	<10	<10	<10	22.1
	4.0	<0.300	160	<10	<10	<10	23.2
BG -13	0.0	<0.300	<16	<10	<10	<10	19.0
	1.0	<0.300	16	<10	<10	<10	20.1
	2.0	<0.300	<16	<10	<10	<10	18.9
	3.0	<0.300	<16	<10	<10	<10	17.2
	4.0	<0.300	16	<10	<10	<10	21.1

Data Table 2

Sample ID	Depth (feet)	BTEX (mg/kg)	Chlorides (mg/kg)	TPH (mg/kg) GRO	TPH (mg/kg) DRO	TPH (mg/kg) EXT DRO	% Saturation
BG-14	0.0	<0.300	<16	<10	<10	<10	19.8
	1.0	<0.300	<16	<10	<10	<10	22.9
	2.0	<0.300	32	<10	<10	<10	21.5
	3.0	<0.300	80	<10	<10	<10	21.0
	4.0	<0.300	96.0	<10	<10	<10	20.1
BG-15	0.0	<0.300	32	<10	<10	<10	23.2
	1.0	<0.300	16	<10	<10	<10	25.9
	2.0	<0.300	<16	<10	<10	<10	24.4
	3.0	<0.300	<16	<10	<10	<10	22.7
BG-16	0.0	<0.300	32	<10	<10	<10	17.6
	1.0	<0.300	32	<10	<10	<10	19.0
	2.0	<0.300	<16	<10	<10	<10	17.9
S-17	0.0	<0.300	<16	<10	<10	<10	19.7
	1.0	<0.300	<16	<10	<10	<10	19.6
	2.0	<0.300	<16	<10	<10	<10	20.4
CBG	0.0	<0.300	<16	<10	<10	<10	19.6
	1.0	<0.300	32	<10	<10	<10	22.6
C-1 Refusal	0.0	<0.300	9200	<10	<10	<10	18.7
	0.5	<0.300	10300	<10	<10	<10	19.4
C-2 Refusal	0.0	<0.300	9860	<10	<10	<10	24.0
	1.0	<0.300	10400	<10	<10	<10	27.1
	2.0	<0.300	5330	<10	<10	<10	21.6
C-3	0.0	<0.300	5330	<10	<10	<10	21.9
	1.0	<0.300	352	<10	<10	<10	25.2
	2.0	<0.300	144	<10	<10	<10	23.6
	3.0	<0.300	160	<10	<10	<10	23.6
	4.0	<0.300	160	<10	<10	<10	31.4

Laboratory Results

See **Appendix III** for complete report of laboratory results.

Subject: WPX * East Pecos Federal Com 22 #6
API #30-015-42281
DOR: 12/31/2017

January 16, 2018

Data Table 3

Sample ID	Depth (feet)	BTEX (mg/kg)	Chlorides (mg/kg)	TPH (mg/kg) GRO	TPH (mg/kg) DRO	TPH (mg/kg) EXT DRO	% Saturation
S-1	3.0	--	4480	--	--	--	--
	4.0	--	1310	--	--	--	--
	5.0	--	480	--	--	--	--
	7.0	--	448	--	--	--	--
	9.0	--	240	--	--	--	--
	11.0	--	400	--	--	--	--
	12.0	--	144	--	--	--	--
S-3	2.0	--	8260	--	--	--	--
	3.0	--	1760	--	--	--	--
	4.0	--	816	--	--	--	--
	5.0	--	400	--	--	--	--
	7.0	--	352	--	--	--	--
	9.0	--	336	--	--	--	--
	11.0	--	80	--	--	--	--
S-4	3.0	--	3200	--	--	--	--
	4.0	--	1810	--	--	--	--
	5.0	--	848	--	--	--	--
	7.0	--	688	--	--	--	--
	9.0	--	416	--	--	--	--
	11.0	--	752	--	--	--	--
	12.0	--	720	--	--	--	--
S-5	3.0	--	1280	--	--	--	--
	4.0	--	640	--	--	--	--
	5.0	--	336	--	--	--	--
	7.0	--	432	--	--	--	--
	9.0	--	240	--	--	--	--
	11.0	--	272	--	--	--	--
	12.0	--	352	--	--	--	--
S-7	3.0	--	9330	--	--	--	--
	4.0	--	3840	--	--	--	--
	5.0	--	720	--	--	--	--
	7.0	--	224	--	--	--	--
	9.0	--	400	--	--	--	--
	11.0	--	416	--	--	--	--
	12.0	--	256	--	--	--	--

Data Table 3

Sample ID	Depth (feet)	BTEX (mg/kg)	Chlorides (mg/kg)	TPH (mg/kg) GRO	TPH (mg/kg) DRO	TPH (mg/kg) EXT DRO	% Saturation
S-10	3.0	--		--	--	--	--
	4.0	--	656	--	--	--	--
	5.0	--	464	--	--	--	--
	7.0	--	272	--	--	--	--
	9.0	--	368	--	--	--	--
	11.0	--	336				
	12.0	--	352	--	--	--	--
		--		--	--	--	--
S-11	2.0	--		--	--	--	--
	3.0		5860				
	4.0	--	1800	--	--	--	--
	5.0	--	1100	--	--	--	--
	7.0	--	1420	--	--	--	--
	9.0	--	1310	--	--	--	--
	11.0	--	720	--	--	--	--
	12.0	--	1200	--	--	--	--
S-12	3.0	--	4400	--	--	--	--
	4.0		48				
	5.0	--	416	--	--	--	--
	7.0	--	496	--	--	--	--
	9.0	--	512	--	--	--	--
	11.0	--	720	--	--	--	--
	12.0	--	768	--	--	--	--
S-14	2.0	--	80	--	--	--	--
	3.0	--	96	--	--	--	--
	4.0	--	32	--	--	--	--
	5.0	--	32	--	--	--	--
	7.0	--	112	--	--	--	--
	9.0	--	688	--	--	--	--
	11.0	--	816	--	--	--	--
	12.0	--	1540	--	--	--	--
S-15	2.0	--	1040	--	--	--	--
	3.0	--	624	--	--	--	--
	4.0	--	192	--	--	--	--
	5.0	--	208	--	--	--	--
	7.0	--	224	--	--	--	--
	9.0	--	656	--	--	--	--
	11.0	--	240	--	--	--	--
	12.0	--	240	--	--	--	--
S-16	2.0	--	48	--	--	--	--
	3.0	--	48	--	--	--	--
	4.0	--	32	--	--	--	--
	5.0	--	16	--	--	--	--
	7.0	--	80	--	--	--	--
	9.0	--	368	--	--	--	--
	11.0	--	432	--	--	--	--
	12.0	--	160	--	--	--	--

Data Table 3

Sample ID	Depth (feet)	BTEX (mg/kg)	Chlorides (mg/kg)	TPH (mg/kg) GRO	TPH (mg/kg) DRO	TPH (mg/kg) EXT DRO	% Saturation
S-17	2.0	--	4130	--	--	--	--
	3.0	--	64	--	--	--	--
	4.0	--	16	--	--	--	--
	5.0	--	64	--	--	--	--
	7.0	--	16	--	--	--	--
	9.0	--	32	--	--	--	--
	11.0	--	32	--	--	--	--
	12.0	--	32	--	--	--	--
S-18	2.0	--	3600	--	--	--	--
	3.0	--	3360	--	--	--	--
	4.0	--	3120	--	--	--	--
	5.0	--	3840	--	--	--	--
	7.0	--	2920	--	--	--	--
	9.0	--	6530	--	--	--	--
	11.0	--	784	--	--	--	--
	12.0	--	1340	--	--	--	--
S-19	4.0	--	2880	--	--	--	--
	5.0	--	32	--	--	--	--
	7.0	--	800	--	--	--	--
	9.0	--	4000	--	--	--	--
	11.0	--	16	--	--	--	--
	13.0	--	80	--	--	--	--
	16.0	--	48	--	--	--	--
C-1	2.0	--	16	--	--	--	--
	3.0	--	<16	--	--	--	--
	4.0	--	32	--	--	--	--
	5.0	--	128	--	--	--	--
	7.0	--	1640	--	--	--	--
	9.0	--	848	--	--	--	--
	11.0	--	1180	--	--	--	--
	12.0	--	1470	--	--	--	--

--Analyte Not Tested

Laboratory Results

See **Appendix III** for complete report of laboratory results.

Subject: WPX * East Pecos Federal Com 22 #6
API #30-015-42281
DOR: 12/31/2017

January 17, 2018

Data Table 4

Sample ID	Depth (feet)	BTEX (mg/kg)	Chlorides (mg/kg)	TPH (mg/kg) GRO	TPH (mg/kg) DRO	TPH (mg/kg) EXT DRO	% Saturation
C-2	2.0	--	8930	--	--	--	--
	3.0	--	1280	--	--	--	--
	4.0	--	4240	--	--	--	--
	5.0	--	1800	--	--	--	--
	7.0	--	32	--	--	--	--
	9.0	--	16	--	--	--	--
	11.0	--	48	--	--	--	--
	12.0	--	32	--	--	--	--
S-20	2.0	--	2440	--	--	--	--
	3.0	--	32	--	--	--	--
	4.0	--	48	--	--	--	--
	5.0	--	16	--	--	--	--
	7.0	--	32	--	--	--	--
	9.0	--	32	--	--	--	--
	11.0	--	<16	--	--	--	--
	12.0	--	32	--	--	--	--
S-21	2.0	--	1560	--	--	--	--
	3.0	--	1490	--	--	--	--
	4.0	--	944	--	--	--	--
	5.0	--	928	--	--	--	--
	7.0	--	832	--	--	--	--
	9.0	--	832	--	--	--	--
	11.0	--	576	--	--	--	--
	12.0	--	512	--	--	--	--

--Analyte Not Tested

Laboratory Results

See [Appendix III](#) for complete report of laboratory results.

Subject: WPX * East Pecos Federal Com 22 #6
API #30-015-42281
DOR: 12/31/2017

February 13, 2018

Data Table 5

Sample ID	Depth (feet)	BTEX (mg/kg)	Chlorides (mg/kg)	TPH (mg/kg) GRO	TPH (mg/kg) DRO	TPH (mg/kg) EXT DRO	% Saturation
BG-11	2.0	--	1120	--	--	--	--
	3.0	--	576	--	--	--	--
	5.0	--	208	--	--	--	--
	7.0	--	704	--	--	--	--
	9.0	--	832	--	--	--	--
	11.0	--	752	--	--	--	--
	12.0	--	992	--	--	--	--
	Refusal	14.5	--	688	--	--	--
BG-18	2.0	--	224	--	--	--	--
	3.0	--	496	--	--	--	--
	5.0	--	416	--	--	--	--
	7.0	--	272	--	--	--	--
	9.0	--	480	--	--	--	--
	11.0	--	560	--	--	--	--
	12.0	--	336	--	--	--	--
	Refusal	15.0	--	64	--	--	--
BG-19	3.0	--	720	--	--	--	--
	5.0	--	432	--	--	--	--
	7.0	--	1250	--	--	--	--
	9.0	--	928	--	--	--	--
	11.0	--	736	--	--	--	--
	12.0	--	656	--	--	--	--
	15.0	--	688	--	--	--	--
	Refusal	17.0	--	752	--	--	--

--Analyte Not Tested

APPENDIX IV
LABORATORY RESULTS