



March 25, 2020

Bradford Billings  
Hydrologist  
District 2 Artesia  
Oil Conservation Division  
Santa Fe, NM 87505

**Subject: Closure Letter Report  
ConocoPhillips  
1RP-4254  
Red Hills West State 16 W2 CTB Release  
Unit Letter A, Section 16, Township 26 South, Range 32 East  
Lea County, New Mexico**

Mr. Billings:

On behalf of ConocoPhillips, Tetra Tech, Inc. (Tetra Tech) submits the following Closure Report in response to a release that occurred at the ConocoPhillips' Red Hills West State 16 W2 Central Tank Battery (CTB). The C-141 states the site is in Unit Letter D, Section 16, Township 26 South, Range 32 East, in Lea County. However, based on the coordinates provided, the site is actually in Unit Letter A, Section 16, Township 26 South, Range 32 East in Lea County, New Mexico (Site). The approximate release Site coordinates are 32.047883°, -103.675105° and the Site is approximately 29.6 miles southeast of Lovington in southern Lea County, New Mexico (Figure 1).

## BACKGROUND

According to the State of New Mexico C-141 Initial Report (Attachment A), on April 14, 2016, during de-oiler operations the Multi Skill Operator (MSO) noticed steam coming from the pumps on the de-oiler skid. Water was leaking from one of the hoses into the containment, but some was splashing out onto the ground. The leak resulted in approximately 20 barrels (bbls) of produced water released in the lined containment and approximately 5 bbls of produced water released to ground surface. The MSO contacted de-oiler operators then shut down the pumps. Once the pumps were off and the area deemed safe, the water hauler on location recovered the 20 bbls released to containment. The release was assigned 1RP-4254.

## SITE CHARACTERIZATION

A site characterization was performed and no watercourses, lakebeds, sinkholes, playa lakes, residences, schools, hospitals, institutions, churches, springs, public or private domestic water wells, springs, wetlands, incorporated municipal boundaries, subsurface mines, or floodplains are located within the specified distances. However, the Site is located in a moderate karst potential area.

Based on data from the New Mexico Office of the State Engineer (NMOSE), there are no water wells located in Section 16, Township 17 South, Range 32 East. The nearest water wells are located in Section 21, Township 26 South, Range 35 East, and these wells indicate an average depth to groundwater of 152 feet for that area. The site characterization documents and karst potential map are shown in Attachment B.

## REGULATORY FRAMEWORK

A risk-based evaluation was performed for the Site in accordance with the NMOCD Guidelines for Remediation of Leaks, Spills, and Releases, updated August 14, 2018.

**TETRA TECH**

8911 N. Capital of Texas Hwy, Building 2, Suite 2310, Austin, TX, 78759

Tel 512-338-1667 Fax 512-338-1331 [www.tetrattech.com](http://www.tetrattech.com)

Bradford Billings  
NMOCD  
March 25, 2020

The guidelines require a risk-based evaluation of the site to determine recommended remedial action levels (RRALs) for benzene, toluene, ethylbenzene, and xylene (collectively referred to as BTEX), total petroleum hydrocarbons (TPH), and chlorides in soil.

Based on the moderate karst potential and the site characterization, the RRALs for the Site are as follows:

Constituent	RRAL
Chlorides	600 mg/kg
TPH (GRO+DRO+MRO)	100 mg/kg
BTEX	50 mg/kg
Benzene	10 mg/kg

### CORRECTIVE ACTION PLAN

The C-141 was approved for the Site on April 19, 2016. A Corrective Action Plan (CAP) for the release was submitted to the NMOCD on April 20, 2016 (Attachment C), and the CAP was subsequently approved by NMOCD. According to correspondence with ConocoPhillips and the approved CAP, proposed remedial activities involved scraping the impacted areas of the well pad to 6 inches below ground surface and proper disposal of the impacted material. The approved CAP also stated that three discrete samples would be collected from the excavation bottom for confirmation sampling.

### REMEDIAL ACTIVITIES AND CONFIRMATION SAMPLING

Confirmation samples were collected on August 5, 2016 at three (3) locations (SP-1 through SP-3) within the former release extent on the well pad to confirm the success of the remedial activities. The collected samples were submitted to Cardinal Laboratories in Hobbs, NM for TPH by Method 8015M, BTEX by Method 8021B, and chlorides by Method SM4500Cl-B analysis. Copies of the laboratory analytical report and chain-of-custody documentation are included in Attachment C. The soil boring locations are shown on Figure 2.

The results of the sampling event in August 2016 are summarized in Table 1. All analytical results associated with the confirmation samples were below the proposed RRALs for TPH, BTEX, benzene, and chlorides. As all soil sample results were below the closure criteria concentrations listed in Table 1 of the NMOCD Spill Rule (19.15.29 NMAC), remediation at the Site was completed. The excavated soil was taken to an NMOCD approved facility for disposal. The excavated area was backfilled with clean soil.

### CONCLUSION

Based on remediation work performed at the Site and the confirmation sampling results, ConocoPhillips requests closure for this release. The final C-141 form is enclosed in Attachment A.

Should you have any questions or comments regarding this report, please do not hesitate to contact me by telephone at 512-338-2861 or by email at [christian.llull@tetrattech.com](mailto:christian.llull@tetrattech.com).

Sincerely,



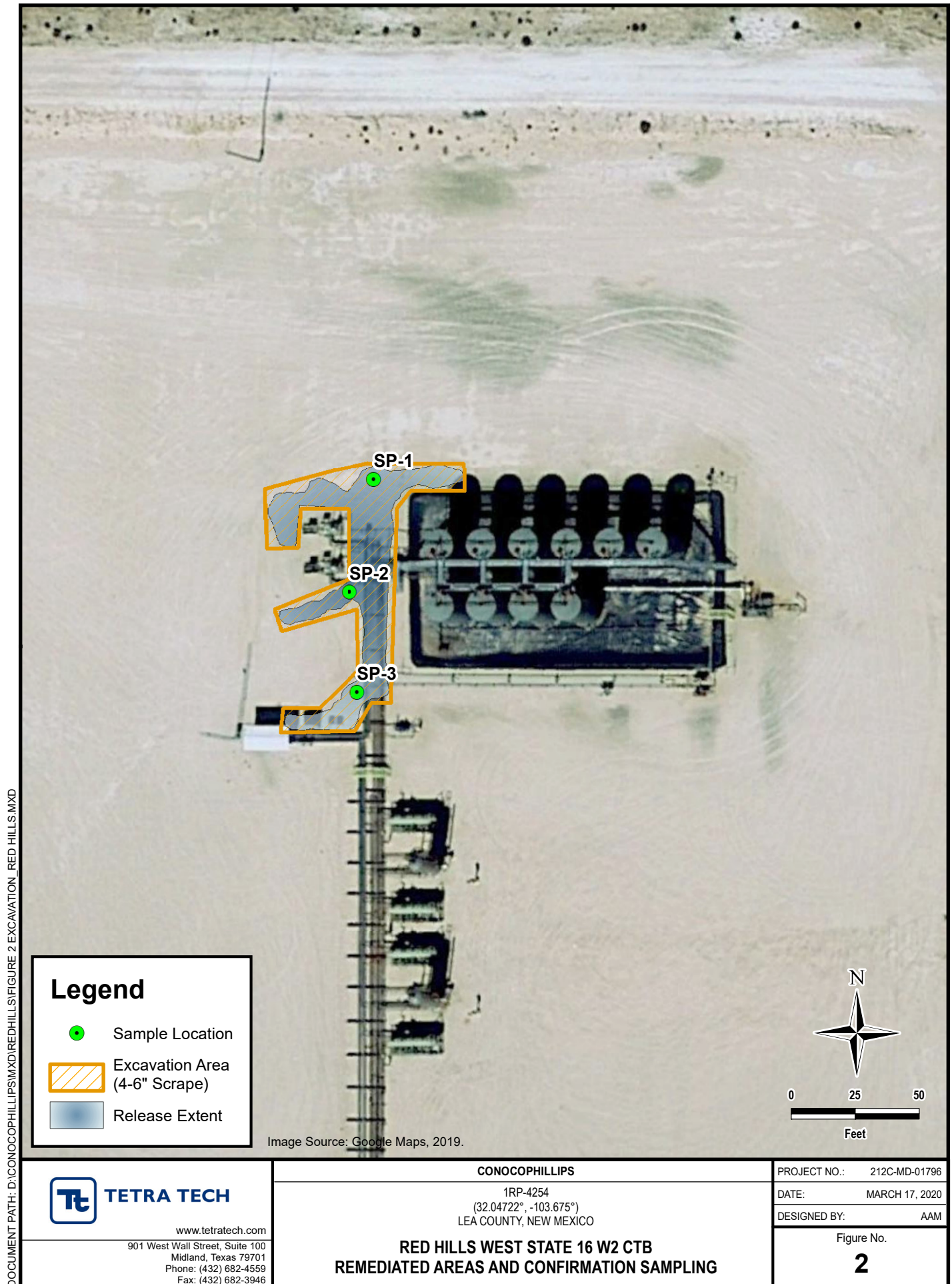
Christian M. Llull  
Project Manager  
Tetra Tech, Inc.

TETRA TECH

## **FIGURES**







## **TABLES**

TABLE 1  
SUMMARY OF ANALYTICAL RESULTS  
SOIL ASSESSMENT - 1RP-4254  
CONOCOPHILLIPS  
RED HILLS WEST STATE 16 W2 CTB  
LEA COUNTY, NEW MEXICO

Sample ID	Sample Date	Sample Depth	Chloride <sup>1</sup>		BTEX <sup>2</sup>														TPH <sup>3</sup>							
					Benzene		Toluene		Ethylbenzene		m,p-Xylenes		o-Xylenes		Total Xylenes		Total BTEX		GRO		DRO		ORO		Total TPH	
					C <sub>6</sub> - C <sub>12</sub>		C <sub>12</sub> - C <sub>28</sub>		C <sub>28</sub> - C <sub>35</sub>		C <sub>6</sub> - C <sub>35</sub>															
		in. bgs	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q	mg/kg	Q
SP-1	08/05/16	4	263		< 0.00150		< 0.00200		< 0.00200		< 0.00200		< 0.00300		< 0.00200		< 0.00150		< 25.0		< 25.0		< 25.0		< 25.0	
SP-2	08/05/16	4	72.4		< 0.00150		< 0.00200		< 0.00200		< 0.00200		< 0.00299		< 0.00200		< 0.01500		< 24.9		< 24.9		< 24.9		< 24.9	
SP-3	08/05/16	4	45.7		< 0.01500		< 0.00200		< 0.00200		< 0.00200		< 0.00299		< 0.00200		< 0.00150		< 24.9		< 24.9		< 24.9		< 24.9	

## NOTES:

in. Inches

bgs Below ground surface

mg/kg Milligrams per kilogram

TPH Total Petroleum Hydrocarbons

GRO Gasoline Range Organics

DRO Diesel Range Organics

ORO Oil Range Organics

1 EPA Method 300/300.1

2 EPA Method 8021B

3 Texas Method 1500

## **ATTACHMENT A C-141 Forms**



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

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

**RECEIVED**

By JKeyes at 9:15 am, Apr 19, 2016

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: <b>ConocoPhillips</b>	Contact: <b>Philip Lee</b>
Address: <b>3695 Highway 285, Orla TX</b>	Telephone No. <b>432-238-1050</b>
Facility Name: <b>Red Hills West State 16 W2 CTB</b>	Facility Type: <b>Central Tank Battery</b>
Surface Owner: <b>NMOCD</b>	Mineral Owner: <b>NMOCD</b>
API No.	

**LOCATION OF RELEASE**

Unit Letter <b>D</b>	Section <b>16</b>	Township <b>26S</b>	Range <b>32E</b>	Feet from the <b>North</b>	North/South Line <b>North</b>	Feet from the <b>West</b>	East/West Line <b>West</b>	County <b>LEA</b>
-------------------------	----------------------	------------------------	---------------------	-------------------------------	----------------------------------	------------------------------	-------------------------------	----------------------

Latitude N32°2'50" Longitude W103°40'30"

**NATURE OF RELEASE**

Type of Release: <b>Spill</b>	Volume of Release: <b>25 BBLS</b>	Volume Recovered: <b>20 BBLS</b>
Source of Release: <b>Ruptured hose off of a de-oiler unit (see Lat/Long above).</b>	Date and Hour of Occurrence <b>04/14/2016 03:45 am</b>	Date and Hour of Discovery <b>04/14/2016 03:45 am</b>
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? <b>Jamie Keyes, NMOCD</b>	
By Whom? <b>Philip Lee</b>	Date and Hour: <b>04/14/2016 09:10 am</b>	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\* ☐

Describe Area Affected and Cleanup Action Taken.\*

A 25 BBL Produced Water release occurred on the ConocoPhillips Red Hills W2 CTB located in Lea County, New Mexico: During de-oiler operations our MSO noticed steam coming from the pumps on the de-oiler skid. Upon closer inspection noticed that water that was leaking from one of the hoses. The water was leaking into the containment but some of the water was splashing out onto the ground. MSO contacted de-oiler operators then shut down the pumps. Once the pumps were off and the area deemed safe, the water hauler on location recovered the produced water in containment. The leak resulted in approximately 20 BBLS of produced water spilled to lined containment (with all recovered) and 5 BBLS of produced water spilled to ground. Location will be remediated in accordance with NMOCD and COPC policies with confirmation soil samples.

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:		<b>OIL CONSERVATION DIVISION</b>	
Printed Name: <b>Philip Lee</b>		Approved by Environmental Specialist: <i>Jamie Keyes</i>	
Title: <b>HSE</b>	Approval Date: <b>04/19/2016</b>	Expiration Date: <b>06/19/2016</b>	
E-mail Address: <b>philip.p.lee@conocophillips.com</b>	Conditions of Approval: <b>Discrete site samples only. Delineate and remediate per NMOCD guidelines.</b>		Attached <input type="checkbox"/> <b>IRP 4254</b>
Date: <b>04/18/2016</b>	Phone: <b>432-238-1050</b>	<b>nJXK1611033145</b> <b>pJXK1611033239</b>	

\* Attach Additional Sheets If Necessary

Incident ID	
District RP	
Facility ID	
Application ID	

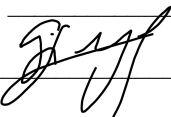
## Closure

The responsible party must attach information demonstrating they have complied with all applicable closure requirements and any conditions or directives of the OCD. This demonstration should be in the form of a comprehensive report (electronic submittals in .pdf format are preferred) including a scaled site map, sampling diagrams, relevant field notes, photographs of any excavation prior to backfilling, laboratory data including chain of custody documents of final sampling, and a narrative of the remedial activities. Refer to 19.15.29.12 NMAC.

**Closure Report Attachment Checklist:** *Each of the following items must be included in the closure report.*

- ☐ A scaled site and sampling diagram as described in 19.15.29.11 NMAC
- ☐ Photographs of the remediated site prior to backfill or photos of the liner integrity if applicable (Note: appropriate OCD District office must be notified 2 days prior to liner inspection)
- ☐ Laboratory analyses of final sampling (Note: appropriate ODC District office must be notified 2 days prior to final sampling)
- ☐ Description of remediation activities

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to OCD 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 OCD does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to groundwater, surface water, human health or the environment. In addition, OCD 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. The responsible party acknowledges they must substantially restore, reclaim, and re-vegetate the impacted surface area to the conditions that existed prior to the release or their final land use in accordance with 19.15.29.13 NMAC including notification to the OCD when reclamation and re-vegetation are complete.

Printed Name: \_\_\_\_\_ Title: \_\_\_\_\_  
Signature:  \_\_\_\_\_ Date: \_\_\_\_\_  
email: \_\_\_\_\_ Telephone: \_\_\_\_\_

**OCD Only**

Received by: \_\_\_\_\_ Date: \_\_\_\_\_

Closure approval by the OCD does not relieve the responsible party of liability should their operations have failed to adequately investigate and remediate contamination that poses a threat to groundwater, surface water, human health, or the environment nor does not relieve the responsible party of compliance with any other federal, state, or local laws and/or regulations.

Closure Approved by: Ashley Maxwell Date: 10/02/2023  
Printed Name: Ashley Maxwell Title: Environmental Specialist

**ATTACHMENT B**  
**Site Characterization Data**



# New Mexico Office of the State Engineer

## Water Column/Average Depth to Water

---

No records found.

### PLSS Search:

**Section(s):** 16

**Township:** 26S

**Range:** 32E

---

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.

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Page 1 of 1

WATER COLUMN/ AVERAGE  
DEPTH TO WATER

3/16/2020



# 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	
<a href="#">C_02271</a>	R	CUB	LE	2	3	21	26S	32E	624449	3544111*		2414	150	125	25	
<a href="#">C_03595</a> POD1		CUB	LE	4	2	3	21	26S	32E	624423	3544045		2483	280	180	100
Average Depth to Water:														152 feet		
Minimum Depth:														125 feet		
Maximum Depth:														180 feet		

Record Count: 2

UTMNAD83 Radius Search (in meters):

Easting (X): 625094

Northing (Y): 3546437.28

Radius: 2500

\*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.



# Karst Potential Map

Red Hills West State 16 W2 CTB

## Legend

-  High
-  Low
-  Medium
-  Red Hills West State 16 W2 CTB

31

otash Mines Rd

aga

Jal Hwy

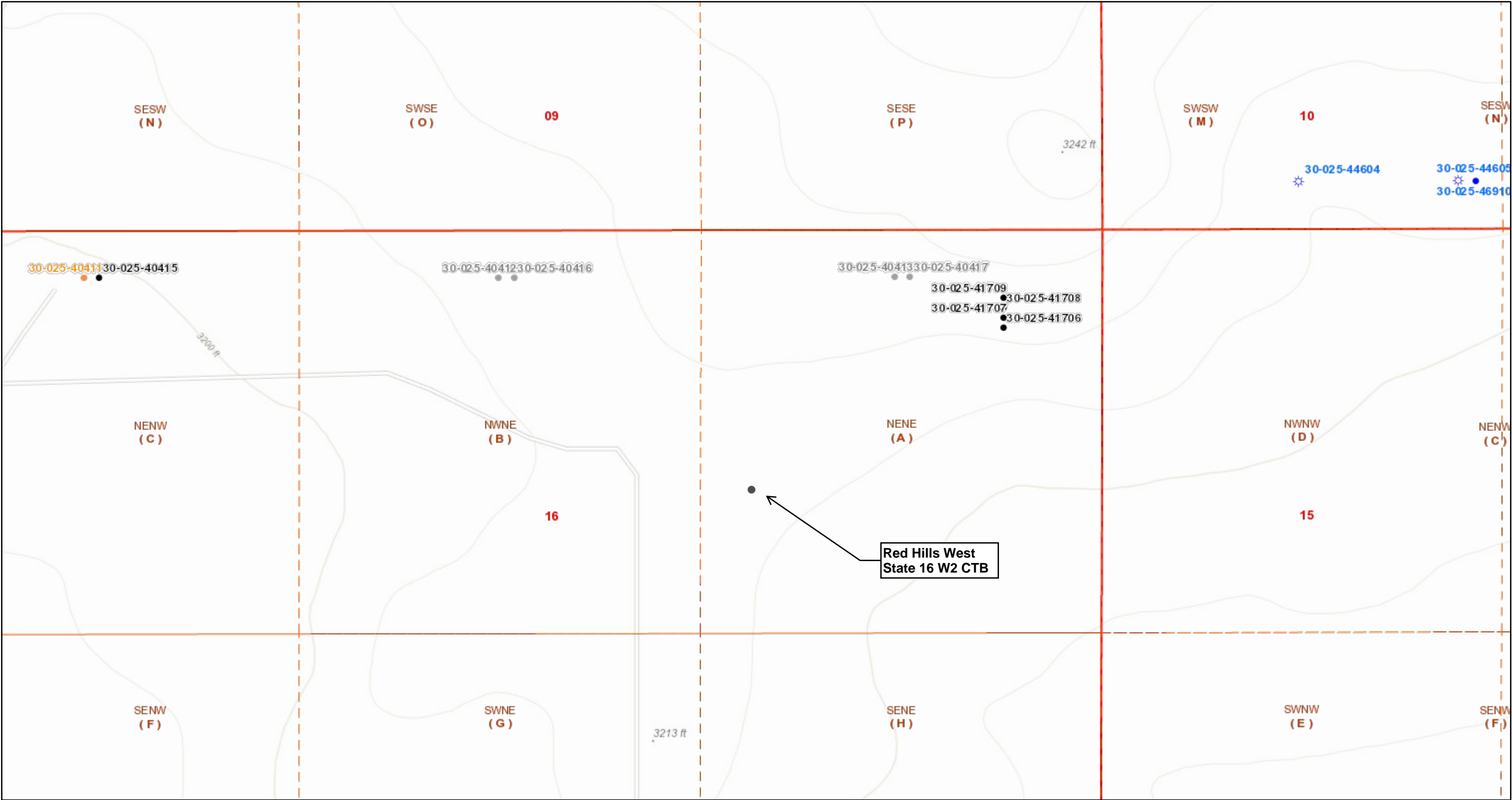
Red Hills West State 16 W2 CTB

Google Earth



10 mi

Red Hills CTB



3/19/2020, 11:15:21 PM

- Wells - Large Scale

?

 undefined

●

 Miscellaneous

⚙

 CO2, Active

⚙

 CO2, Cancelled

⚙

 CO2, New

⚙

 CO2, Plugged

⚙

 CO2, Temporarily Abandoned

⚙

 Gas, Active

⚙

 Gas, Cancelled

⚙

 Gas, New

⚙

 Gas, Plugged

⚙

 Gas, Temporarily Abandoned

⚙

 Injection, Active

⚙

 Injection, Cancelled

⚙

 Injection, New

⚙

 Injection, Plugged

⚙

 Injection, Temporarily Abandoned

●

 Oil, Active

●

 Oil, Cancelled

●

 Oil, New

●

 Oil, Plugged

●

 Oil, Temporarily Abandoned

⚙

 Salt Water Injection, Active

⚙

 Salt Water Injection, Cancelled

⚙

 Salt Water Injection, New

⚙

 Salt Water Injection, Plugged

⚙

 Salt Water Injection, Temporarily Abandoned

⚙

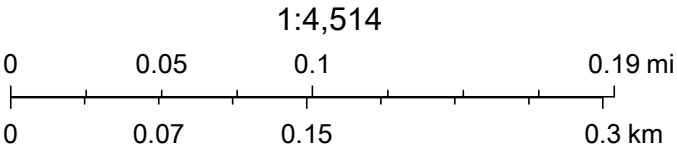
 Water, Active

⚙

 Water, Cancelled

⚙

 Water, New



Oil Conservation Division of the New Mexico Energy, Minerals and Natural Resources Department., Sources: Esri, HERE, Garmin, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI,

**ATTACHMENT C**  
**Corrective Action Plan /**  
**Laboratory Analytical Report**

**RECEIVED**

By JKeyes at 3:30 pm, Apr 20, 2016

**APPROVED**

# ConocoPhillips

P.O. Box 2197

Houston, TX 77252-2197

Phone 281.293.1000

## Red Hills West State 16 W2 CTB (RP-4254) Corrective Action Plan

Release Date: April 14, 2016

Unit D, Section 16, Township 26S, Range 32E

April 20, 2016

**Jamie Keyes**

Environmental Specialist – New Mexico Oil Conservation Division Energy, Minerals and Natural Resources Department  
1625 N. French Dr. Hobbs, NM 88240

**RE: Corrective Action Plan  
ConocoPhillips Red Hills West State 16 W2 CTB (RP-4254)**

Mr. Keyes:

ConocoPhillips (CoP) has prepared this Corrective Action Plan (CAP) to address potential environmental concerns at the above-referenced site.

**Background and Previous Work**

On Thursday April 14, 2016 at 0345, a release of produced water occurred due to a ruptured hose associated with de-oiler operations, resulting in the release of 25 BBLs of produced water (approximately 20 BBLs of produced water spilled to lined containment (with all recovered) and 5 BBLs of produced water spilled to ground). Immediate action was to shut down the pumps, recover produced water in containment, replace the hose, and return equipment back to service. NMOCD was notified of the release on April 14, 2016, and an initial C-141 was submitted (Appendix A).

COP personnel were on site to visually assess the release on April 15, 2016. The release was mapped and photographed (Appendix B). Based on the assessment, the release will be excavated down 6 inches bgs. Once the excavation is completed, a composite field screening sample from the bottom of the excavation will be taken and field tested for chlorides and organic vapors. If the field screening indicates that the composite will not achieve chloride, Gasoline Range Organics (GRO), Diesel Range Organics (DRO) and BTEX readings below regulatory standards, the excavation will be deepened until confirmation sampling (from three discrete samples collected from the excavation bottom) indicates that all constituents are below regulatory standards. The confirmation samples will be taken to a commercial laboratory to confirm that chloride, GRO, DRO and BTEX readings are below regulatory standards.

All excavated soils will be taken to a NMOCD approved facility for disposal. Clean soil will be imported to the site to serve as backfill and contoured to the surrounding location. A sample of the backfill soil will be taken to a commercial laboratory to confirm that the chloride reading is below regulatory standards.

Once these activities have been completed, a report will be sent to NMOCD requesting 'remediation termination' and site closure.

Please call me if you have any questions or wish to discuss the site. Sincerely,

Philip Lee, CIH, CSP  
HSE Senior Specialist  
(432) 688-6866



Attachments:

Figure 1 – Site Map

Appendix A – Initial C-141

Appendix B – Photo Documentation

# Figure 1 – Site Map



# **Appendix A – Initial C-141**

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

State of New Mexico  
Energy Minerals and Natural Resources

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

Form C-141  
Revised August 8, 2011

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: <b>ConocoPhillips</b>	Contact: <b>Philip Lee</b>
Address: <b>3695 Highway 285, Orla TX</b>	Telephone No. <b>432-238-1050</b>
Facility Name: <b>Red Hills West State 16 W2 CTB</b>	Facility Type: <b>Central Tank Battery</b>
Surface Owner: <b>NMOCD</b>	Mineral Owner: <b>NMOCD</b>
API No.	

#### LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
D	16	26S	32E		North		West	LEA

Latitude N32°2'50" Longitude W103°40'30"

#### NATURE OF RELEASE

Type of Release: <b>Spill</b>	Volume of Release: <b>25 BBLs</b>	Volume Recovered: <b>20 BBLs</b>
Source of Release: <b>Ruptured hose off of a de-oiler unit (see Lat/Long above).</b>	Date and Hour of Occurrence: <b>04/14/2016 03:45 am</b>	Date and Hour of Discovery: <b>04/14/2016 03:45 am</b>
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? <b>Jamie Keyes, NMOCD</b>	
By Whom? <b>Philip Lee</b>	Date and Hour: <b>04/14/2016 09:10 am</b>	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\* ☐

Describe Area Affected and Cleanup Action Taken.\*

A 25 BBL Produced Water release occurred on the ConocoPhillips Red Hills W2 CTB located in Lea County, New Mexico. During de-oiler operations our MSO noticed steam coming from the pumps on the de-oiler skid. Upon closer inspection noticed that water that was leaking from one of the hoses. The water was leaking into the containment but some of the water was splashing out onto the ground. MSO contacted de-oiler operators then shut down the pumps. Once the pumps were off and the area deemed safe, the water hauler on location recovered the produced water in containment. The leak resulted in approximately 20 BBLs of produced water spilled to lined containment (with all recovered) and 5 BBLs of produced water spilled to ground. Location will be remediated in accordance with NMOCD and COPC policies with confirmation soil samples.

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:		<b>OIL CONSERVATION DIVISION</b>	
Printed Name: <b>Philip Lee</b>		Approved by Environmental Specialist:	
Title: <b>HSE</b>	Approval Date:	Expiration Date:	
E-mail Address: <b>philip.p.lee@conocophillips.com</b>	Conditions of Approval:		Attached <input type="checkbox"/>
Date: <b>04/18/2016</b>	Phone: <b>432-238-1050</b>		

\* Attach Additional Sheets If Necessary

# **Appendix B – Photo Documentation**





View looking towards the south of the de-oiler skid (4/15/2016)







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

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

Form C-141  
Revised August 8, 2011

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: <b>ConocoPhillips</b>	Contact: <b>Philip Lee</b>
Address: <b>3695 Highway 285, Orla TX</b>	Telephone No. <b>432-238-1050</b>
Facility Name: <b>Red Hills West State 16 W2 CTB</b>	Facility Type: <b>Central Tank Battery</b>
Surface Owner: NMOCD	Mineral Owner: NMOCD
API No.	

### LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
D	16	26S	32E		North		West	LEA

Latitude N32°2'50" Longitude W103°40'30"

### NATURE OF RELEASE

Type of Release: <b>Spill</b>	Volume of Release: 25 BBLS	Volume Recovered: 20 BBLS
Source of Release: Ruptured hose off of a de-oiler unit (see Lat/Long above).	Date and Hour of Occurrence <b>04/14/2016 03:45 am</b>	Date and Hour of Discovery <b>04/14/2016 03:45 am</b>
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? <b>Jamie Keyes, NMOCD</b>	
By Whom? <b>Philip Lee</b>	Date and Hour: <b>04/14/2016 09:10 am</b>	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

If a Watercourse was Impacted, Describe Fully.\*

Describe Cause of Problem and Remedial Action Taken.\* ☐

Describe Area Affected and Cleanup Action Taken.\*

A 25 BBL Produced Water release occurred on the ConocoPhillips Red Hills W2 CTB located in Lea County, New Mexico: During de-oiler operations our MSO noticed steam coming from the pumps on the de-oiler skid. Upon closer inspection noticed that water that was leaking from one of the hoses. The water was leaking into the containment but some of the water was splashing out onto the ground. MSO contacted de-oiler operators then shut down the pumps. Once the pumps were off and the area deemed safe, the water hauler on location recovered the produced water in containment. The leak resulted in approximately 20 BBLS of produced water spilled to lined containment (with all recovered) and 5 BBLS of produced water spilled to ground. Location will be remediated in accordance with NMOCD and COPC policies with confirmation soil samples.

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:		<u>OIL CONSERVATION DIVISION</u>	
Printed Name: Philip Lee		Approved by Environmental Specialist:	
Title: HSE	Approval Date:	Expiration Date:	
E-mail Address: <b>philip.p.lee@conocophillips.com</b>	Conditions of Approval:		Attached <input type="checkbox"/>
Date: 04/18/2016	Phone: 432-238-1050		

\* Attach Additional Sheets If Necessary

# Analytical Report 534667

for  
**Conoco Phillips-Goldsmith**

**Project Manager: Bryan Clay**

**Red Hills WF2**

**11-AUG-16**

Collected By: Client



**1211 W. Florida Ave, Midland TX 79701**

Xenco-Houston (EPA Lab code: TX00122):  
Texas (T104704215), Arizona (AZ0765), Florida (E871002), Louisiana (03054)  
Oklahoma (9218)

Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295)  
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400)  
Xenco-San Antonio: Texas (T104704534)  
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)  
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)



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Sample Receipt Conformance Report	19





11-AUG-16

Project Manager: **Bryan Clay**  
**Conoco Phillips-Goldsmith**  
302 Plant Rd

Goldsmith, TX 79741

Reference: XENCO Report No(s): **534667**  
**Red Hills WF2**  
Project Address: Red Hills WF2

**Bryan Clay:**

We are reporting to you the results of the analyses performed on the samples received under the project name referenced above and identified with the XENCO Report Number(s) 534667. All results being reported under this Report Number apply to the samples analyzed and properly identified with a Laboratory ID number. Subcontracted analyses are identified in this report with either the NELAC certification number of the subcontract lab in the analyst ID field, or the complete subcontracted report attached to this report.

Unless otherwise noted in a Case Narrative, all data reported in this Analytical Report are in compliance with NELAC standards. The uncertainty of measurement associated with the results of analysis reported is available upon request. Should insufficient sample be provided to the laboratory to meet the method and NELAC Matrix Duplicate and Matrix Spike requirements, then the data will be analyzed, evaluated and reported using all other available quality control measures.

The validity and integrity of this report will remain intact as long as it is accompanied by this letter and reproduced in full, unless written approval is granted by XENCO Laboratories. This report will be filed for at least 5 years in our archives after which time it will be destroyed without further notice, unless otherwise arranged with you. The samples received, and described as recorded in Report No. 534667 will be filed for 60 days, and after that time they will be properly disposed without further notice, unless otherwise arranged with you. We reserve the right to return to you any unused samples, extracts or solutions related to them if we consider so necessary (e.g., samples identified as hazardous waste, sample sizes exceeding analytical standard practices, controlled substances under regulated protocols, etc).

We thank you for selecting XENCO Laboratories to serve your analytical needs. If you have any questions concerning this report, please feel free to contact us at any time.

Respectfully,

A handwritten signature in black ink, appearing to read 'Kelsey Brooks', written over a horizontal line.

**Kelsey Brooks**

Project Manager

***Recipient of the Prestigious Small Business Administration Award of Excellence in 1994.***

*Certified and approved by numerous States and Agencies.*

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**Sample Cross Reference 534667****Conoco Phillips-Goldsmith, Goldsmith, TX**

Red Hills WF2

Sample Id	Matrix	Date Collected	Sample Depth	Lab Sample Id
SP-1	S	08-05-16 12:13	- 4 In	534667-001
SP-2	S	08-05-16 12:23	- 4 In	534667-002
SP-3	S	08-05-16 12:30	- 4 In	534667-003



## CASE NARRATIVE

*Client Name: Conoco Phillips-Goldsmith*

*Project Name: Red Hills WF2*

Project ID:

Work Order Number(s): 534667

Report Date: 11-AUG-16

Date Received: 08/08/2016

---

**Sample receipt non conformances and comments:**

---

**Sample receipt non conformances and comments per sample:**

None

**Analytical non conformances and comments:**

Batch: LBA-999604 BTEX by EPA 8021B

Soil samples were not received in Terracore kits and therefore were prepared by method 5030.



## Hits Summary 534667



**Conoco Phillips-Goldsmith, Goldsmith, TX**  
Red Hills WF2

Sample Id : **SP-1** Matrix : Soil % Moisture :  
 Lab Sample Id : 534667-001 Date Collected : 08.05.16 12.13 Basis : Wet Weight  
 Sample Depth : 4 In Date Received : 08.08.16 16.55

Analytical Method : Inorganic Anions by EPA 300/300.1  
 Seq Number 999528

Prep Method: E300P  
 Date Prep: 08.09.16 17.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	263	mg/kg	08.10.16 01.05		1

Sample Id : **SP-2** Matrix : Soil % Moisture :  
 Lab Sample Id : 534667-002 Date Collected : 08.05.16 12.23 Basis : Wet Weight  
 Sample Depth : 4 In Date Received : 08.08.16 16.55

Analytical Method : Inorganic Anions by EPA 300/300.1  
 Seq Number 999528

Prep Method: E300P  
 Date Prep: 08.09.16 17.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	72.4	mg/kg	08.10.16 01.17		1

Sample Id : **SP-3** Matrix : Soil % Moisture :  
 Lab Sample Id : 534667-003 Date Collected : 08.05.16 12.30 Basis : Wet Weight  
 Sample Depth : 4 In Date Received : 08.08.16 16.55

Analytical Method : Inorganic Anions by EPA 300/300.1  
 Seq Number 999528

Prep Method: E300P  
 Date Prep: 08.09.16 17.00

Parameter	Cas Number	Result	Units	Analysis Date	Flag	Dil
Chloride	16887-00-6	45.7	mg/kg	08.10.16 01.29		1



# Certificate of Analysis Summary 534667

Conoco Phillips-Goldsmith, Goldsmith, TX

Project Name: Red Hills WF2



Project Id:

Contact: Bryan Clay

Project Location: Red Hills WF2

Date Received in Lab: Mon Aug-08-16 04:55 pm

Report Date: 11-AUG-16

Project Manager: Kelsey Brooks

<i>Analysis Requested</i>	<i>Lab Id:</i>	534667-001	534667-002	534667-003			
	<i>Field Id:</i>	SP-1	SP-2	SP-3			
	<i>Depth:</i>	4 In	4 In	4 In			
	<i>Matrix:</i>	SOIL	SOIL	SOIL			
	<i>Sampled:</i>	Aug-05-16 12:13	Aug-05-16 12:23	Aug-05-16 12:30			
<b>BTEX by EPA 8021B</b>	<i>Extracted:</i>	Aug-09-16 18:30	Aug-09-16 18:30	Aug-09-16 18:30			
	<i>Analyzed:</i>	Aug-10-16 09:28	Aug-10-16 09:44	Aug-10-16 10:01			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Benzene		ND 0.00150	ND 0.00150	ND 0.00150			
Toluene		ND 0.00200	ND 0.00200	ND 0.00200			
Ethylbenzene		ND 0.00200	ND 0.00200	ND 0.00200			
m_p-Xylenes		ND 0.00200	ND 0.00200	ND 0.00200			
o-Xylene		ND 0.00300	ND 0.00299	ND 0.00299			
Total Xylenes		ND 0.00200	ND 0.00200	ND 0.00200			
Total BTEX		ND 0.00150	ND 0.00150	ND 0.00150			
<b>Inorganic Anions by EPA 300/300.1</b>	<i>Extracted:</i>	Aug-09-16 17:00	Aug-09-16 17:00	Aug-09-16 17:00			
	<i>Analyzed:</i>	Aug-10-16 01:05	Aug-10-16 01:17	Aug-10-16 01:29			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
Chloride		263 10.0	72.4 10.0	45.7 10.0			
<b>TPH by Texas1005</b>	<i>Extracted:</i>	Aug-09-16 10:00	Aug-09-16 10:00	Aug-09-16 10:00			
	<i>Analyzed:</i>	Aug-10-16 01:03	Aug-10-16 01:28	Aug-10-16 01:52			
	<i>Units/RL:</i>	mg/kg RL	mg/kg RL	mg/kg RL			
C6-C12 Gasoline Range Hydrocarbons		ND 25.0	ND 24.9	ND 24.9			
C12-C28 Diesel Range Hydrocarbons		ND 25.0	ND 24.9	ND 24.9			
C28-C35 Oil Range Hydrocarbons		ND 25.0	ND 24.9	ND 24.9			
Total TPH 1005		ND 25.0	ND 24.9	ND 24.9			

This analytical report, and the entire data package it represents, has been made for your exclusive and confidential use. The interpretations and results expressed throughout this analytical report represent the best judgment of XENCO Laboratories. XENCO Laboratories assumes no responsibility and makes no warranty to the end use of the data hereby presented. Our liability is limited to the amount invoiced for this work order unless otherwise agreed to in writing.

Houston - Dallas - San Antonio - Atlanta - Tampa - Boca Raton - Latin America - Odessa - Corpus Christi

Kelsey Brooks  
Project Manager



## Flagging Criteria



- X** In our quality control review of the data a QC deficiency was observed and flagged as noted. MS/MSD recoveries were found to be outside of the laboratory control limits due to possible matrix /chemical interference, or a concentration of target analyte high enough to affect the recovery of the spike concentration. This condition could also affect the relative percent difference in the MS/MSD.
- B** A target analyte or common laboratory contaminant was identified in the method blank. Its presence indicates possible field or laboratory contamination.
- D** The sample(s) were diluted due to targets detected over the highest point of the calibration curve, or due to matrix interference. Dilution factors are included in the final results. The result is from a diluted sample.
- E** The data exceeds the upper calibration limit; therefore, the concentration is reported as estimated.
- F** RPD exceeded lab control limits.
- J** The target analyte was positively identified below the quantitation limit and above the detection limit.
- U** Analyte was not detected.
- L** The LCS data for this analytical batch was reported below the laboratory control limits for this analyte. The department supervisor and QA Director reviewed data. The samples were either reanalyzed or flagged as estimated concentrations.
- H** The LCS data for this analytical batch was reported above the laboratory control limits. Supporting QC Data were reviewed by the Department Supervisor and QA Director. Data were determined to be valid for reporting.
- K** Sample analyzed outside of recommended hold time.
- JN** A combination of the "N" and the "J" qualifier. The analysis indicates that the analyte is "tentatively identified" and the associated numerical value may not be consistent with the amount actually present in the environmental sample.

\*\* Surrogate recovered outside laboratory control limit.

**BRL** Below Reporting Limit.

**RL** Reporting Limit

**MDL** Method Detection Limit      **SDL** Sample Detection Limit      **LOD** Limit of Detection

**PQL** Practical Quantitation Limit      **SQL** Method Quantitation Limit      **LOQ** Limit of Quantitation

**DL** Method Detection Limit

**NC** Non-Calculable

+ NELAC certification not offered for this compound.

\* (Next to analyte name or method description) = Outside XENCO's scope of NELAC accreditation

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 5332 Blackberry Drive, San Antonio TX 78238  
 1211 W Florida Ave, Midland, TX 79701  
 2525 W. Huntington Dr. - Suite 102, Tempe AZ 85282

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(214) 902 0300	(214) 351-9139
(210) 509-3334	(210) 509-3335
(432) 563-1800	(432) 563-1713
(602) 437-0330	





## Form 2 - Surrogate Recoveries

Project Name: Red Hills WF2

Work Orders : 534667,

Lab Batch #: 999538

Sample: 534667-001 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08/10/16 01:03

## SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	94.9	99.8	95	70-135	
o-Terphenyl	42.9	49.9	86	70-130	

Lab Batch #: 999538

Sample: 534667-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08/10/16 01:28

## SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.5	99.7	92	70-135	
o-Terphenyl	40.5	49.9	81	70-130	

Lab Batch #: 999538

Sample: 534667-003 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08/10/16 01:52

## SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	91.0	99.6	91	70-135	
o-Terphenyl	40.3	49.8	81	70-130	

Lab Batch #: 999604

Sample: 534667-001 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08/10/16 09:28

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0296	0.0300	99	80-120	
4-Bromofluorobenzene	0.0293	0.0300	98	80-120	

Lab Batch #: 999604

Sample: 534667-002 / SMP

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08/10/16 09:44

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0298	0.0300	99	80-120	
4-Bromofluorobenzene	0.0263	0.0300	88	80-120	

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B

All results are based on MDL and validated for QC purposes.



## Form 2 - Surrogate Recoveries

Project Name: Red Hills WF2

Work Orders : 534667,

Lab Batch #: 999604

Sample: 534667-003 / SMP

Project ID:

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08/10/16 10:01

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0302	0.0300	101	80-120	
4-Bromofluorobenzene	0.0265	0.0300	88	80-120	

Lab Batch #: 999538

Sample: 711891-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08/08/16 15:18

## SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	93.1	100	93	70-135	
o-Terphenyl	44.2	50.0	88	70-130	

Lab Batch #: 999604

Sample: 711916-1-BLK / BLK

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08/10/16 08:55

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0305	0.0300	102	80-120	
4-Bromofluorobenzene	0.0266	0.0300	89	80-120	

Lab Batch #: 999538

Sample: 711891-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08/08/16 15:45

## SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	123	100	123	70-135	
o-Terphenyl	57.2	50.0	114	70-130	

Lab Batch #: 999604

Sample: 711916-1-BKS / BKS

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08/10/16 07:19

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0307	0.0300	102	80-120	
4-Bromofluorobenzene	0.0292	0.0300	97	80-120	

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B

All results are based on MDL and validated for QC purposes.



## Form 2 - Surrogate Recoveries

Project Name: Red Hills WF2

Work Orders : 534667,

Lab Batch #: 999538

Sample: 711891-1-BSD / BSD

Project ID:

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08/08/16 16:11

## SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	117	100	117	70-135	
o-Terphenyl	52.6	50.0	105	70-130	

Lab Batch #: 999604

Sample: 711916-1-BSD / BSD

Batch: 1 Matrix: Solid

Units: mg/kg

Date Analyzed: 08/10/16 07:36

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0311	0.0300	104	80-120	
4-Bromofluorobenzene	0.0289	0.0300	96	80-120	

Lab Batch #: 999538

Sample: 534645-001 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08/09/16 22:15

## SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	115	100	115	70-135	
o-Terphenyl	44.8	50.0	90	70-130	

Lab Batch #: 999604

Sample: 534668-003 S / MS

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08/10/16 11:54

## SURROGATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1,4-Difluorobenzene	0.0306	0.0300	102	80-120	
4-Bromofluorobenzene	0.0302	0.0300	101	80-120	

Lab Batch #: 999538

Sample: 534645-001 SD / MSD

Batch: 1 Matrix: Soil

Units: mg/kg

Date Analyzed: 08/09/16 22:38

## SURROGATE RECOVERY STUDY

TPH by Texas1005 Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	120	100	120	70-135	
o-Terphenyl	47.3	50.0	95	70-130	

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] = 100 \* A / B

All results are based on MDL and validated for QC purposes.

**Form 2 - Surrogate Recoveries****Project Name: Red Hills WF2****Work Orders :** 534667,**Project ID:****Lab Batch #:** 999604**Sample:** 534668-003 SD / MSD**Batch:** 1 **Matrix:** Soil**Units:** mg/kg**Date Analyzed:** 08/10/16 08:08**SURROGATE RECOVERY STUDY**

<b>BTEX by EPA 8021B</b>  <b>Analytes</b>	<b>Amount Found [A]</b>	<b>True Amount [B]</b>	<b>Recovery %R [D]</b>	<b>Control Limits %R</b>	<b>Flags</b>
1,4-Difluorobenzene	0.0303	0.0300	101	80-120	
4-Bromofluorobenzene	0.0300	0.0300	100	80-120	

\* Surrogate outside of Laboratory QC limits

\*\* Surrogates outside limits; data and surrogates confirmed by reanalysis

\*\*\* Poor recoveries due to dilution

Surrogate Recovery [D] =  $100 * A / B$ 

All results are based on MDL and validated for QC purposes.



## BS / BSD Recoveries

Project Name: Red Hills WF2

Work Order #: 534667

Project ID:

Analyst: PJB

Date Prepared: 08/09/2016

Date Analyzed: 08/10/2016

Lab Batch ID: 999604

Sample: 711916-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Benzene	<0.00150	0.100	0.0958	96	0.100	0.0972	97	1	70-130	35	
Toluene	<0.00200	0.100	0.0973	97	0.100	0.0989	99	2	70-130	35	
Ethylbenzene	<0.00200	0.100	0.0990	99	0.100	0.101	101	2	71-129	35	
m_p-Xylenes	<0.00200	0.200	0.196	98	0.200	0.199	100	2	70-135	35	
o-Xylene	<0.00300	0.100	0.0974	97	0.100	0.0993	99	2	71-133	35	

Analyst: MNR

Date Prepared: 08/09/2016

Date Analyzed: 08/09/2016

Lab Batch ID: 999528

Sample: 711879-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Analytes											
Chloride	<10.0	250	268	107	250	259	104	3	90-110	20	

Relative Percent Difference RPD =  $200 * |(C-F)/(C+F)|$ Blank Spike Recovery [D] =  $100 * (C)/[B]$ Blank Spike Duplicate Recovery [G] =  $100 * (F)/[E]$ 

All results are based on MDL and Validated for QC Purposes



## BS / BSD Recoveries

Project Name: Red Hills WF2

Work Order #: 534667

Project ID:

Analyst: ARM

Date Prepared: 08/08/2016

Date Analyzed: 08/08/2016

Lab Batch ID: 999538

Sample: 711891-1-BKS

Batch #: 1

Matrix: Solid

Units: mg/kg

## BLANK /BLANK SPIKE / BLANK SPIKE DUPLICATE RECOVERY STUDY

TPH by Texas1005  Analytes	Blank Sample Result [A]	Spike Added [B]	Blank Spike Result [C]	Blank Spike %R [D]	Spike Added [E]	Blank Spike Duplicate Result [F]	Blk. Spk Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	<25.0	1000	916	92	1000	902	90	2	70-135	35	
C12-C28 Diesel Range Hydrocarbons	<25.0	1000	947	95	1000	928	93	2	70-135	35	

Relative Percent Difference RPD =  $200 * |(C-F)/(C+F)|$ Blank Spike Recovery [D] =  $100 * (C)/[B]$ Blank Spike Duplicate Recovery [G] =  $100 * (F)/[E]$ 

All results are based on MDL and Validated for QC Purposes





## Form 3 - MS / MSD Recoveries



Project Name: Red Hills WF2

Work Order #: 534667

Project ID:

Lab Batch ID: 999604

QC- Sample ID: 534668-003 S

Batch #: 1 Matrix: Soil

Date Analyzed: 08/10/2016

Date Prepared: 08/09/2016

Analyst: PJB

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

BTEX by EPA 8021B Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Benzene	<0.00150	0.0998	0.0676	68	0.0998	0.0661	66	2	70-130	35	X
Toluene	<0.00200	0.0998	0.0644	65	0.0998	0.0605	61	6	70-130	35	X
Ethylbenzene	<0.00200	0.0998	0.0575	58	0.0998	0.0527	53	9	71-129	35	X
m_p-Xylenes	<0.00200	0.200	0.112	56	0.200	0.101	51	10	70-135	35	X
o-Xylene	<0.00299	0.0998	0.0570	57	0.0998	0.0486	49	16	71-133	35	X

Lab Batch ID: 999528

QC- Sample ID: 534642-004 S

Batch #: 1 Matrix: Soil

Date Analyzed: 08/09/2016

Date Prepared: 08/09/2016

Analyst: MNR

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<10.0	250	243	97	250	252	101	4	90-110	20	

Lab Batch ID: 999528

QC- Sample ID: 534643-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 08/09/2016

Date Prepared: 08/09/2016

Analyst: MNR

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

Inorganic Anions by EPA 300/300.1 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
Chloride	<10.0	250	223	89	250	252	101	12	90-110	20	X

Matrix Spike Percent Recovery  $[D] = 100 \times (C-A)/B$   
 Relative Percent Difference  $RPD = 200 \times |(C-F)/(C+F)|$

Matrix Spike Duplicate Percent Recovery  $[G] = 100 \times (F-A)/E$

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable

N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.



## Form 3 - MS / MSD Recoveries



Project Name: Red Hills WF2

Work Order # : 534667

Project ID:

Lab Batch ID: 999538

QC- Sample ID: 534645-001 S

Batch #: 1 Matrix: Soil

Date Analyzed: 08/09/2016

Date Prepared: 08/08/2016

Analyst: ARM

Reporting Units: mg/kg

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH by Texas1005 Analytes	Parent Sample Result [A]	Spike Added [B]	Spiked Sample Result [C]	Spiked Sample %R [D]	Spike Added [E]	Duplicate Spiked Sample Result [F]	Spiked Dup. %R [G]	RPD %	Control Limits %R	Control Limits %RPD	Flag
C6-C12 Gasoline Range Hydrocarbons	66.1	1000	1000	93	1000	1040	97	4	70-135	35	
C12-C28 Diesel Range Hydrocarbons	358	1000	1330	97	1000	1380	102	4	70-135	35	

Matrix Spike Percent Recovery  $[D] = 100 * (C - A) / B$   
 Relative Percent Difference  $RPD = 200 * |(C - F) / (C + F)|$

Matrix Spike Duplicate Percent Recovery  $[G] = 100 * (F - A) / E$

ND = Not Detected, J = Present Below Reporting Limit, B = Present in Blank, NR = Not Requested, I = Interference, NA = Not Applicable  
 N = See Narrative, EQL = Estimated Quantitation Limit, NC = Non Calculable - Sample amount is > 4 times the amount spiked.



Client: Conoco Phillips-Goldsmith

Date/ Time Received: 08/08/2016 04:55:00 PM

Work Order #: 534667

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

## Sample Receipt Checklist

## Comments

#1 *Temperature of cooler(s)?	5.7
#2 *Shipping container in good condition?	N/A
#3 *Samples received on ice?	Yes
#4 *Custody Seal present on shipping container/ cooler?	N/A
#5 *Custody Seals intact on shipping container/ cooler?	N/A
#6 Custody Seals intact on sample bottles?	N/A
#7 *Custody Seals Signed and dated?	N/A
#8 *Chain of Custody present?	Yes
#9 Sample instructions complete on Chain of Custody?	Yes
#10 Any missing/extra samples?	No
#11 Chain of Custody signed when relinquished/ received?	Yes
#12 Chain of Custody agrees with sample label(s)?	Yes
#13 Container label(s) legible and intact?	Yes
#14 Sample matrix/ properties agree with Chain of Custody?	Yes
#15 Samples in proper container/ bottle?	Yes
#16 Samples properly preserved?	Yes
#17 Sample container(s) intact?	Yes
#18 Sufficient sample amount for indicated test(s)?	Yes
#19 All samples received within hold time?	Yes
#20 Subcontract of sample(s)?	No
#21 VOC samples have zero headspace (less than 1/4 inch bubble)?	N/A
#22 <2 for all samples preserved with HNO <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> ? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	N/A
#23 >10 for all samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH?	N/A

\* Must be completed for after-hours delivery of samples prior to placing in the refrigerator

Analyst:

PH Device/Lot#:

Checklist completed by:

Mary Negron

Date: 08/09/2016

Checklist reviewed by:

Kelsey Brooks

Date: 08/09/2016

## CHAIN OF CUSTODY

Page \_\_\_\_\_ Of \_\_\_\_\_

Service Center - San Antonio, Texas (210-509-3334)

Xenco Quote #

[www.xenco.com](http://www.xenco.com)

[illegible]

C/F: 0 mL  
Corrected Temp: 5.7°C



## XENCO Laboratories

## Prelogin/Nonconformance Report- Sample Log-In

Client: Conoco Phillips-Goldsmith

Date/ Time Received: 08/08/2016 04:55:00 PM

Work Order #: 534667

Acceptable Temperature Range: 0 - 6 degC

Air and Metal samples Acceptable Range: Ambient

Temperature Measuring device used : R8

## Sample Receipt Checklist

## Comments

#1 *Temperature of cooler(s)?	5.7
#2 *Shipping container in good condition?	N/A
#3 *Samples received on ice?	Yes
#4 *Custody Seal present on shipping container/ cooler?	N/A
#5 *Custody Seals intact on shipping container/ cooler?	N/A
#6 Custody Seals intact on sample bottles?	N/A
#7 *Custody Seals Signed and dated?	N/A
#8 *Chain of Custody present?	Yes
#9 Sample instructions complete on Chain of Custody?	Yes
#10 Any missing/extra samples?	No
#11 Chain of Custody signed when relinquished/ received?	Yes
#12 Chain of Custody agrees with sample label(s)?	Yes
#13 Container label(s) legible and intact?	Yes
#14 Sample matrix/ properties agree with Chain of Custody?	Yes
#15 Samples in proper container/ bottle?	Yes
#16 Samples properly preserved?	Yes
#17 Sample container(s) intact?	Yes
#18 Sufficient sample amount for indicated test(s)?	Yes
#19 All samples received within hold time?	Yes
#20 Subcontract of sample(s)?	No
#21 VOC samples have zero headspace (less than 1/4 inch bubble)?	N/A
#22 <2 for all samples preserved with HNO <sub>3</sub> , HCL, H <sub>2</sub> SO <sub>4</sub> ? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	N/A
#23 >10 for all samples preserved with NaAsO <sub>2</sub> +NaOH, ZnAc+NaOH?	N/A

\* Must be completed for after-hours delivery of samples prior to placing in the refrigerator

Analyst:

PH Device/Lot#:

Checklist completed by:

  
 Mary Negron

Date: 08/09/2016

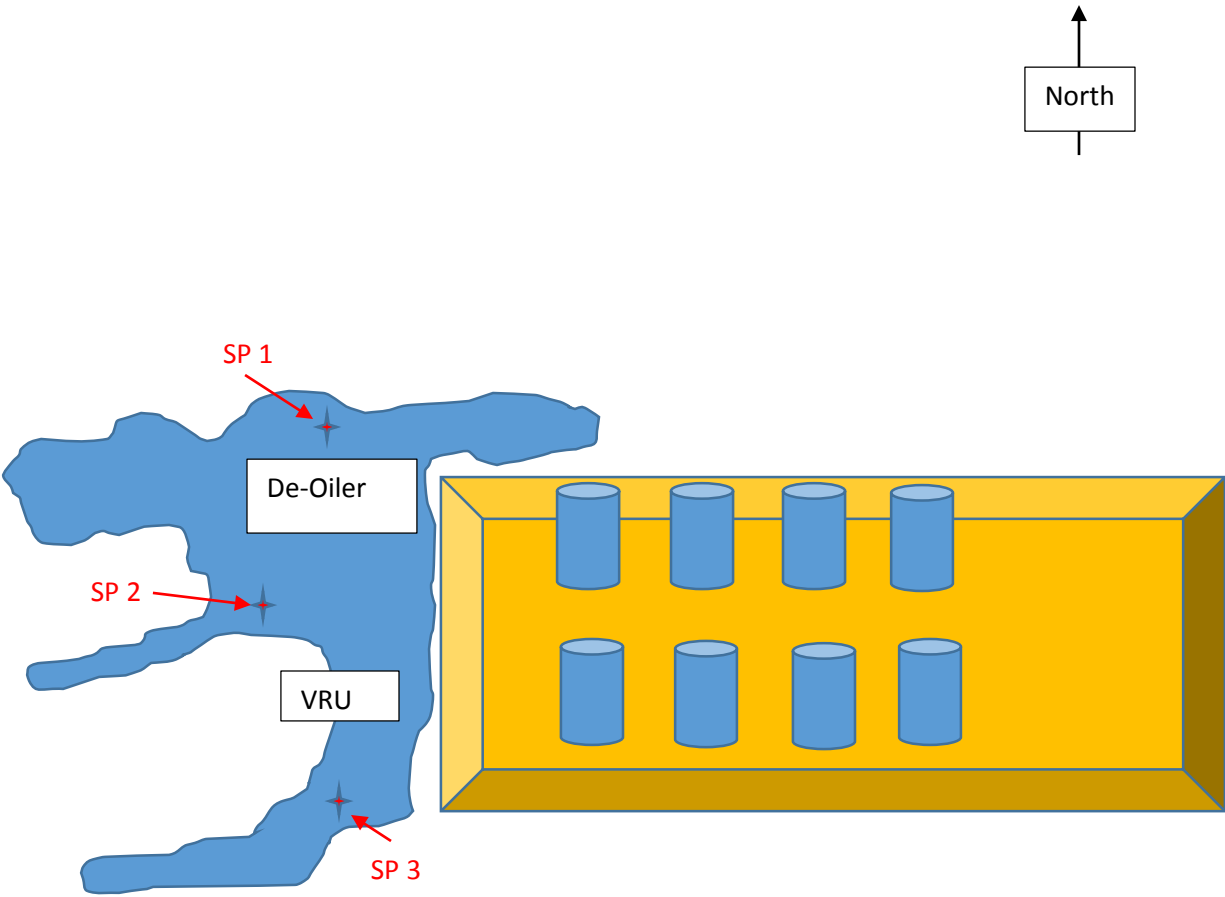
Checklist reviewed by:

  
 Kelsey Brooks

Date: 08/09/2016



Red Hills WF2 Release



**District I**  
1625 N. French Dr., Hobbs, NM 88240  
Phone:(575) 393-6161 Fax:(575) 393-0720

**District II**  
811 S. First St., Artesia, NM 88210  
Phone:(575) 748-1283 Fax:(575) 748-9720

**District III**  
1000 Rio Brazos Rd., Aztec, NM 87410  
Phone:(505) 334-6178 Fax:(505) 334-6170

**District IV**  
1220 S. St Francis Dr., Santa Fe, NM 87505  
Phone:(505) 476-3470 Fax:(505) 476-3462

State of New Mexico  
Energy, Minerals and Natural Resources  
Oil Conservation Division  
1220 S. St Francis Dr.  
Santa Fe, NM 87505

CONDITIONS  
  
Action 270321

CONDITIONS

Operator: CONOCOPHILLIPS COMPANY 600 W. Illinois Avenue Midland, TX 79701	OGRID: 217817
	Action Number: 270321
	Action Type: [C-141] Release Corrective Action (C-141)

CONDITIONS

Created By	Condition	Condition Date
amaxwell	None	10/2/2023