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**Wendy S. Acosta Quintero**  
**Environmental Specialist**  
Phone: (432) 688-9162  
Cell: (432) 234-8050  
Email: [wendy.acostaquintero@cop.com](mailto:wendy.acostaquintero@cop.com)

**ConocoPhillips Company**  
3300 North A Street  
Building 3-278 E/F  
Midland, TX 79705-5421

November 5, 2015

Heather Patterson  
New Mexico Oil Conservation Division

**Re: ConocoPhillips Company  
Stampede Federal 34-1H  
Closure Report**

Enclosed, please find the analytical data and summary of remediation actions for the release at the Stampede Federal 34-1H that occurred on July 22, 2015. If you have any questions or require additional information, please contact me at (432) 688-9162.

Thank you.

Sincerely,

A handwritten signature in cursive script that reads "Wendy Acosta Q.".

Wendy S. Acosta Quintero  
Environmental Specialist

## SITE INFORMATION

### Report Type: Closure Report (2RP-3236)

#### General Site Information:

<b>Site:</b>	Stampede Federal 34-1H			
<b>Company:</b>	ConocoPhillips			
<b>Section, Township and Range</b>	Sec 34	T 26S	R 31E	
<b>Lease Number:</b>	API No. 30-015-42123			
<b>County:</b>	Eddy County			
<b>GPS:</b>	32.00572° N		103.77346° W	
<b>Surface Owner:</b>	Federal			
<b>Mineral Owner:</b>				
<b>Directions:</b>	From the intersection of US-285 and Longhorn Rd in Rural Eddy county, travel east on Longhorn Rd for 4.2 miles, turn east onto Pipeline Rd for 6.9 miles, turn south on lease road for 6.0 miles, turn east onto lease road for 6.0 miles to facility on south side of the road.			

#### Release Data:

<b>Date Released:</b>	7/22/2015
<b>Type Release:</b>	Produced water and oil
<b>Source of Contamination:</b>	Separator Failure
<b>Fluid Released:</b>	11 bbls (9 bbls produced water/2 bbls oil)
<b>Fluids Recovered:</b>	6 bbls

#### Official Communication:

<b>Name:</b>	Wendy Acosta Quintero	Ike Tavarez
<b>Company:</b>	ConocoPhillips Co.	Tetra Tech
<b>Address:</b>	3300 North A Street	4000 N. Big Spring Ste 401
<b>City:</b>	Midland Texas, 79707	Midland, Texas
<b>Phone number:</b>	(432) 688-9162	(432) 687-8110
<b>Fax:</b>		
<b>Email:</b>	wendy.acostaquintero@cop.com	Ike.Tavarez@tetratech.com

#### Ranking Criteria

Depth to Groundwater:	Ranking Score	Site Data
<50 ft	20	
50-99 ft	10	
>100 ft.	0	
<b>WellHead Protection:</b>		
Water Source	Ranking Score	Site Data
<1,000 ft., Private <200 ft.	20	
>1,000 ft., Private >200 ft.	0	0
<b>Surface Body of Water:</b>		
Surface Body of Water:	Ranking Score	Site Data
<200 ft.	20	
200 ft - 1,000 ft.	10	
>1,000 ft.	0	0
<b>Total Ranking Score:</b>		0

Acceptable Soil RRAL (mg/kg)		
Benzene	Total BTEX	TPH
10	50	5,000



**TETRA TECH**

November 3, 2015

Mr. Mike Bratcher  
Environmental Engineer Specialist  
Oil Conservation Division, District 2  
811 S. First Street  
Artesia, New Mexico 88210

**Re: Closure Report for the ConocoPhillips location Stampede Federal 34-1H, Section 34, Township 26 South, Range 31 East, Eddy County, New Mexico. 2RP-3236**

Mr. Bratcher:

Tetra Tech, Inc. (Tetra Tech) was contacted by ConocoPhillips to assess a spill from the Stampede Federal 34-1H, Section 34, Township 26 South, Range 31 East, Eddy County, New Mexico. (Site). The spill site coordinates are 32.00572° N, 103.77346° W. The site location is shown on Figures 1 and 2.

### **Background**

According to the State of New Mexico C-141 Initial Report, the leak was discovered on July 22, 2015, and released approximately 11 barrels of fluid (9 bbls of produced water and 2 bbls of oil) from a separator failure. Approximately 6 barrels of fluids were recovered. The spill initiated on the pad impacting an area of approximately 45' x 50' and 35' x 45'. The initial C-141 form is enclosed in Appendix A.

### **Groundwater**

No water wells were listed within Section 34. According to the NMOCD groundwater map, the average depth to groundwater in this area is between 150' and 175' below surface. The groundwater data is shown in Appendix B.

### **Regulatory**

A risk-based evaluation was performed for the Site in accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills and Releases, dated August 13, 1993. The guidelines require a risk-based evaluation of the site to determine recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as

**Tetra Tech**

4000 North Big Spring, Ste 401 Midland, TX 79705

**Tel** 432.682.4559 **Fax** 432.682.3946 [www.tetrattech.com](http://www.tetrattech.com)



BTEX) and total petroleum hydrocarbons (TPH) in soil. The proposed RRAL for benzene was determined to be 10 parts per million (ppm) or milligrams per kilogram (mg/kg) and 50 ppm for total BTEX (sum of benzene, toluene, ethylbenzene, and xylene). Based upon the depth to groundwater, the proposed RRAL for TPH is 5,000 mg/kg.

### **Soil Assessment and Analytical Results**

On August 5, 2015 Tetra Tech personnel installed three (3) auger holes (AH-1, AH-2, and AH-3) as well as one background sample (BG-1) using a stainless steel hand auger to assess the soils. Selected samples were analyzed for TPH analysis by EPA method 8015 modified, BTEX by EPA Method 8021B and chloride by EPA method 300.0. Copies of the laboratory analysis chain-of-custody documentation are included in Appendix C. The auger hole results are summarized in Table 1 and shown on Figure 3.

Referring to Table 1, the areas of auger holes (AH-1 and AH-3) did not exceed the RRAL's for TPH, however the area of auger hole (AH-2) showed an elevated TPH concentration of 10,263 mg/kg at 0'-1' below surface. Deeper samples were not collected in the area of auger hole (AH-2) due to a dense formation and the TPH impact was not vertically defined. None of the samples exceeded the RRAL for BTEX. The auger hole samples (AH-1, AH-2, and AH-3) showed minimal chloride impact with concentration highs of 307 mg/kg at 1'-1.5', 376 mg/kg at 0'-1', and <50.0 mg/kg at 0'-1' below surface, respectively. The background sample (BG-1) showed a chloride concentration of <20.0 mg/kg at 0'-1' below surface.

### **Remedial Activities**

ConocoPhillips removed the impacted material as highlighted (green) on Table 1 and shown on Figure 4. The area of auger hole (AH-2) was excavated to 1.0' below surface and the area measured approximately 35' x 40'. Tetra Tech was onsite on October 12, 2015 to collect a confirmation sample (CS-1) in the open excavation area of auger hole (AH-2) to confirm all impacted material was removed and to vertically delineate the TPH impact in that area. The confirmation sample (CS-1) was analyzed for TPH by EPA method 8015 modified. Copies of the laboratory analysis chain-of-custody documentation are included in Appendix C. The confirmation sample results are summarized in Table1 and shown on Figure 4.

Referring to Table1, the confirmation sample (CS-1) collected at 0'-1' below the excavation bottom showed a total TPH concentration below regulatory limits of <14.9 mg/kg.



**TETRA TECH**

Based on the results, the excavation was then backfilled with clean soil to grade. All of the excavated material was hauled to R360 for proper disposal.

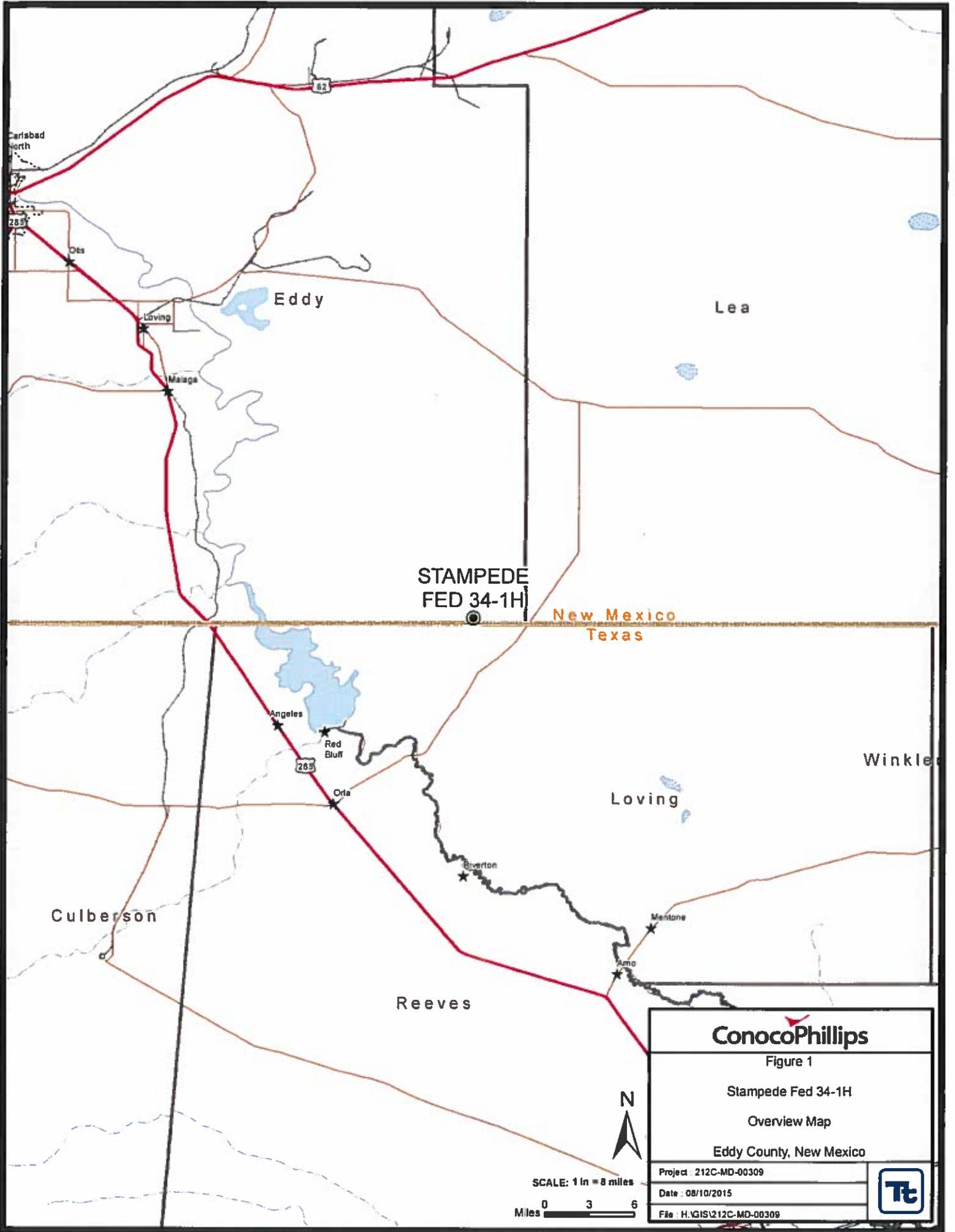
**Conclusion**

Based on the assessment and remedial activities, ConocoPhillips requests closure of the site. The Final C-141 is enclosed in Appendix A. If you have any questions or comments concerning the assessment or the remediation activities for this site, please call me at (432) 682-4559.

Respectfully submitted,  
TETRA TECH

Clair Gonzales,  
Geologist III

## Figures



STAMPEDE  
FED 34-1H

New Mexico  
Texas

**ConocoPhillips**

Figure 1

Stampede Fed 34-1H

Overview Map

Eddy County, New Mexico

Project 212C-MD-00309

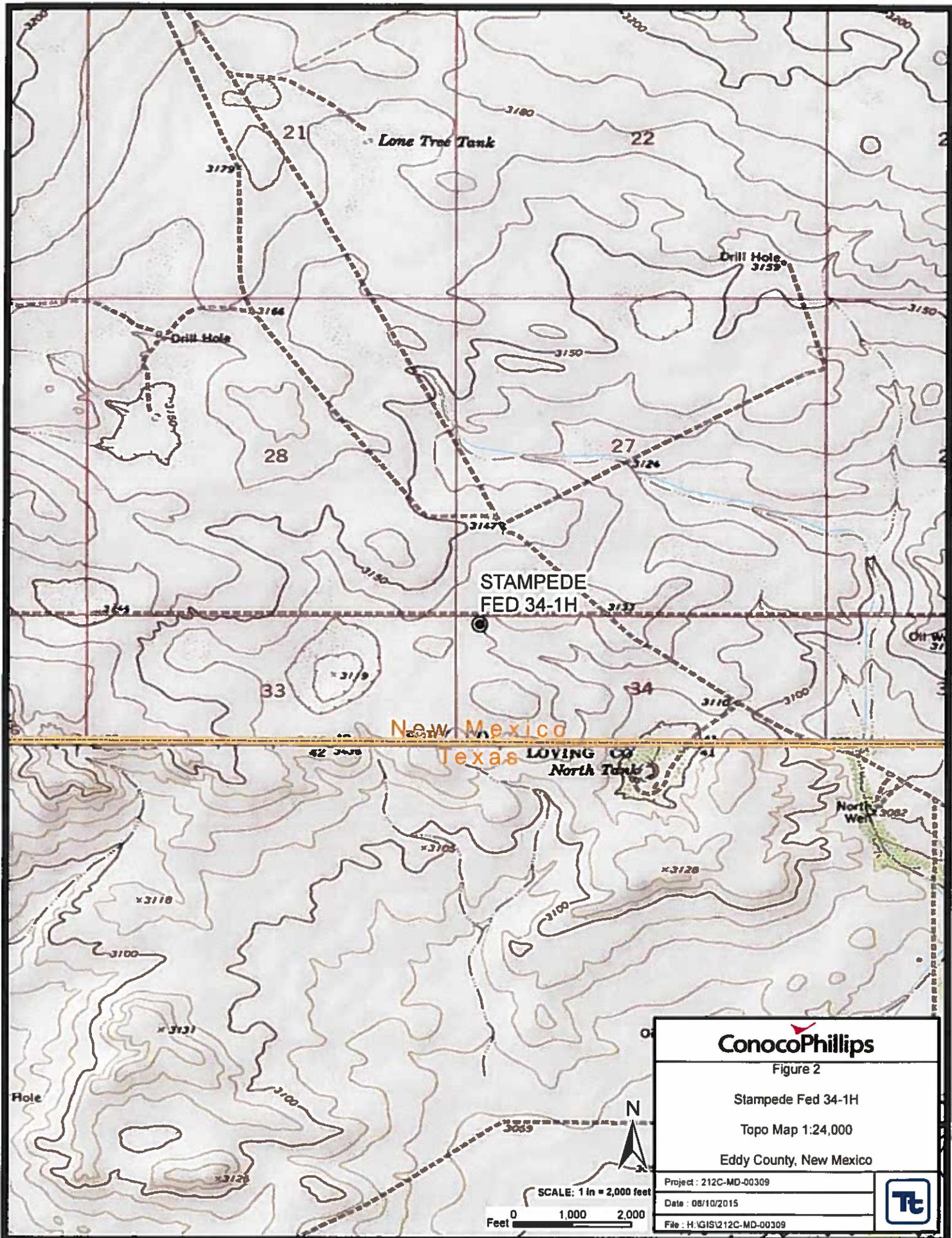
Date 08/10/2015

File H:GIS\212C-MD-00309



SCALE: 1 in = 8 miles



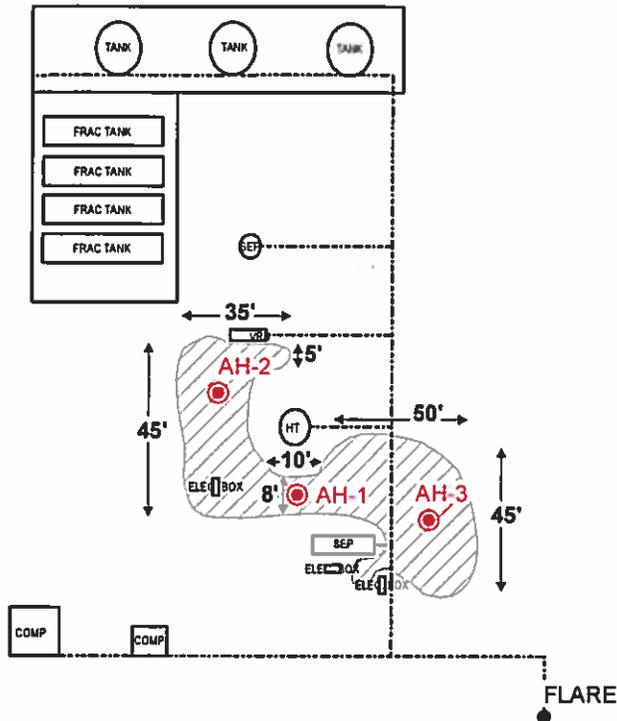


PASTURE

LEASE ROAD

PAD

PASTURE



**EXPLANATION**

- AUGER HOLE SAMPLE LOCATIONS
- ▨ SPILL AREA

PASTURE



SCALE: 1 IN = 60 FEET



**ConocoPhillips**

Figure 3

Stampede Fed 34-1H

Spill Assessment Map

Eddy County, New Mexico

Project: 212C-MD-00309

Date: 08/10/2015

File: H:GIS\212C-MD-00309

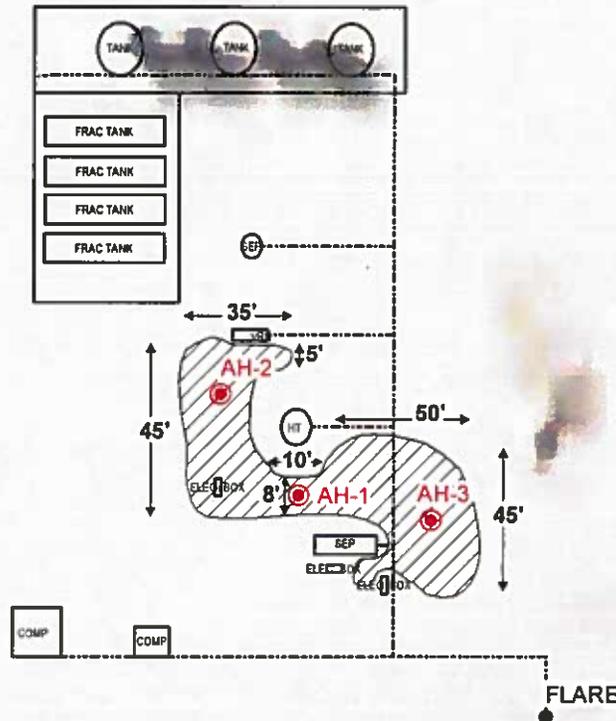


PASTURE

LEASE ROAD

PAD

PASTURE



**EXPLANATION**

- AUGER HOLE SAMPLE LOCATIONS
- SPILL AREA

PASTURE



SCALE: 1 IN = 60 FEET



**ConocoPhillips**

Figure 3a

Stampede Fed 34-1H

Spill Assessment Map w/ Aerial

Eddy County, New Mexico

Project 212C-MD-00309

Date 08/10/2015

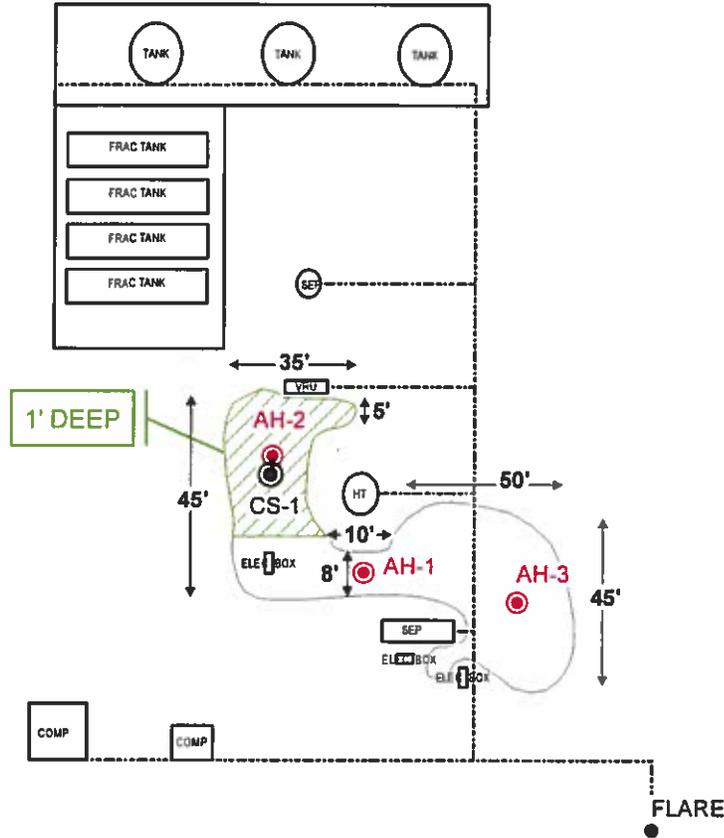
File H:\GIS\212C-MD-00309



LEASE ROAD

PAD

PASTURE



**EXPLANATION**

- AUGER HOLE SAMPLE LOCATIONS
- ⊙ CONFIRMATION SAMPLE LOCATION
- ▨ EXCAVATED AREA

PASTURE



SCALE: 1 IN = 52 FEET

Feet 0 30 60

**ConocoPhillips**

Figure 4

Stampede Fed 34-1H

Excavation Area & Depth Map

Eddy County, New Mexico

Project 212C-MD-00309

Date: 08/10/2015

File: H:\GIS\212C-MD-00309



# Tables

**Table 1  
ConocoPhillips  
Stampede Federal 34-1H  
Eddy County, New Mexico**

Sample ID	Sample Date	BEB Sample Depth (ft)	Excavation Bottom Depth (ft)	Soil Status		TPH (mg/kg)			Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Xylene (mg/kg)	Total BTEX (mg/kg)	Chloride (mg/kg)
				In-Situ	Removed	GRO	DRO	Total						
AH-1	8/5/2015	0-1	0	X		<4.00	265	265	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	228
	"	1-1.5	0	X		-	-	-	-	-	-	-	-	307
AH-2	8/5/2015	0-1	0		X	63.4	10,200	10,263	<0.100	<0.100	<0.100	<0.100	<0.100	376
CS-1	10/12/2015	0-1	1	X		<14.9	<14.9	<14.9	-	-	-	-	-	-
AH-3	8/5/2015	0-1	0	X		<4.00	89.7	89.7	<0.0200	<0.0200	<0.0200	<0.0200	<0.0200	<50.0
BG-1	8/7/2015	0-1	0	X		-	-	-	-	-	-	-	-	<20.0

( - ) Not Analyzed

( BEB )

Below Excavation Bottom

Excavation Depth / Soil Removed

BG Background Sample

CS Confirmation Sample

# Photos

ConocoPhillips Co.  
Stampede Federal 34-1H  
Eddy County, New Mexico



TETRA TECH



View West – Area of AH-1



View Northeast – Area of AH-2

ConocoPhillips Co.  
Stampede Federal 34-1H  
Eddy County, New Mexico



TETRA TECH



View Southwest – Area of AH-3



View North – Excavated area of AH-2

ConocoPhillips Co.  
Stampede Federal 34-1H  
Eddy County, New Mexico



TETRA TECH



View South – Backfilled area of AH-2

# Appendix A

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

*NAB1524653994*

OPERATOR

Initial Report  Final Report

Name of Company <i>ConocoPhillips 217817</i>	Contact <i>Wendy Acosta Quintero</i>
Address <i>3300 North A Street, Midland, TX 79707</i>	Telephone No. <i>432-688-9162</i>
Facility Name <i>Stampede Federal 34-1H</i>	Facility Type <i>Production Facility</i>

Surface Owner	Mineral Owner	API No. <i>30-015-42123</i>
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LOCATION OF RELEASE

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
	<i>34</i>	<i>26S</i>	<i>31E</i>					<i>Eddy</i>

*32.001006*      Latitude *32° 00' 03"*      Longitude *-103° 46' 24"*      *103.773846*

NATURE OF RELEASE

Type of Release <i>oil/Produced water</i>	Volume of Release <i>11 bbl</i>	Volume Recovered <i>6 bbl</i>
Source of Release <i>Separator</i>	Date and Hour of Occurrence	Date and Hour of Discovery <i>07/22 1630</i>
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? <i>NMOCD - Tomas Overding, BLM - Jim Amis</i>	
By Whom? <i>Wendy Acosta Quintero</i>	Date and Hour <i>07/23/2014 10 AM</i>	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse.	

**NM OIL CONSERVATION**  
ARTESIA-DISTRICT  
SEP 02 2015  
RECEIVED

If a Watercourse was Impacted, Describe Fully.\*  
NA

Describe Cause of Problem and Remedial Action Taken.\*  
At approximately 4:00 PM, separator pressure was adjusted, which caused the flare at the battery to go out. When a cloud of gas coming from one of the separator lines was noticed, well was shut in.

Describe Area Affected and Cleanup Action Taken.\*  
After deeming safe conditions, lines were checked to identify leak source and a hole approximately 1 1/2 inches in diameter on the underside of the pipe from the water leg was noticed. It made a hole on the ground about two feet in diameter and 1 1/2 feet deep and spilled approximately 11 bbls (9 bbl produced water and 2 bbl oil).

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: <i>Wendy Acosta Quintero</i>	Approved by Environmental Specialist: <i>[Signature]</i>	
Title: <i>Graduate Environmental Specialist</i>	Approval Date: <i>9/3/15</i>	Expiration Date: <i>N/A</i>
E-mail Address: <i>wendy.acostaquintero@cop.com</i>	Conditions of Approval: <b>Remediation per O.C.D. Rules &amp; Guidelines</b> <input type="checkbox"/> <b>SUBMIT REMEDIATION PROPOSAL NO</b>	
Date: <i>7/23/2015</i> Phone: <i>432-688-9162</i>	<b>LATER THAN: <i>10/4/15</i></b>	

*2RP-3236*

\* Attach Additional Sheets If Necessary

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Avenue, 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 October 10, 2003

Submit 2 Copies to appropriate  
District Office in accordance  
with Rule 116 on back  
side of form

**Release Notification and Corrective Action**

**OPERATOR**

Initial Report  Final Report

Name of Company <b>ConocoPhillips</b>	Contact <b>Wendy Acosta Quintero</b>
Address <b>3300 North A Street, Midland, TX 79707</b>	Telephone No. <b>(432) 688-9162</b>
Facility Name <b>Stampede Federal 34-1H</b>	Facility Type <b>Production Facility</b>
Surface Owner: <b>Federal</b>	Mineral Owner
API: <b>30-015-42123</b>	

**LOCATION OF RELEASE**

Unit Letter	Section	Township	Range	Feet from the	North/South Line	Feet from the	East/West Line	County
	34	26S	31E					Eddy

Latitude N 32.00572° Longitude W 103.77349°

**NATURE OF RELEASE**

Type of Release: <b>Oil &amp; Produced Water</b>	Volume of Release <b>11 bbls</b>	Volume Recovered <b>6 bbls</b>
Source of Release: <b>Separator</b>	Date and Hour of Occurrence <b>07/22/2015</b>	Date and Hour of Discovery <b>07/22/2015 16:30</b>
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? <b>NMOCD - Thomas Oberding; BLM - Jim Amos</b>	
By Whom? <b>Wendy Acosta Quintero</b>	Date and Hour <b>07/23/2015 10am</b>	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse. <b>N/A</b>	
If a Watercourse was Impacted, Describe Fully.* <b>N/A</b>		

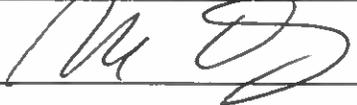
**Describe Cause of Problem and Remedial Action Taken.\***

At approximately 4:00 PM, separator pressure was adjusted, which caused the flare at the battery to go out. When a cloud of gas coming from one of the separator lines was noticed, well was shut in. After deeming safe conditions, lines were checked to identify leak source and a hole approximately 1 1/2 inches in diameter on the underside of the pipe from the water leg was noticed. It made a hole on the ground about two feet in diameter and 1 1/2 feet deep and spilled approximately 11 bbls (9 bbl produced water and 2 bbl oil).

**Describe Area Affected and Cleanup Action Taken.\***

Tetra Tech inspected site and collected samples to asses & define the spill extent. Soil that exceeded RRAL was removed and hauled away for proper disposal. Site was then brought up to surface grade with clean backfill material. Based on the results, Tetra Tech prepared closure report and submitted to NMOCD for review.

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>Ike Tavarez (Agent for ConocoPhillips)</b>	Approved by District Supervisor:	
Title: <b>Project Manager</b>	Approval Date:	Expiration Date:
E-mail Address: <b>Ike.Tavarez@TetraTech.com</b>	Conditions of Approval:	Attached <input type="checkbox"/>
Date: <b>11-5-15</b> Phone: <b>(432) 682-4559</b>		

## Appendix B

**Water Well Data**  
**Average Depth to Groundwater (ft)**  
**ConocoPhillips - Stampede Federal 34-1H**  
**Eddy County, New Mexico**

**25 South 30 East**

6	5	4	3	2	295	1
7	264	8	9	295	10	11
						12
18	17	16	15	14	13	
						390
19	20	21	265	22	23	24
			268			
30	29	28	27	26	25	
31	32	33	34	35	36	

**25 South 31 East**

6	5	4	3	2	1	
7	8	9	10	11	12	
18	17	16	15	14	13	
19	20	21	390	22	23	24
			290			
30	29	28	27	26	25	
31	32	33	34	35	36	

**25 South 32 East**

6	5	4	3	2	1	
7	8	9	10	11	12	
18	17	16	15	14	13	
19	20	21	22	23	24	
30	29	28	27	26	25	
31	32	33	34	35	36	
	290					

**26 South 30 East**

6	5	179	4	3	2	1
	180					
7	8	9	10	11	12	
	172					
18	17	16	15	14	13	
19	20	21	22	23	24	
					180	
30	29	28	27	26	25	
31	32	33	34	35	36	

**26 South 31 East**

6	5	4	3	2	1	335
						287
7	8	295	9	10	11	12
	275					
18	17	16	15	14	13	
19	20	21	22	23	24	
30	29	28	27	26	25	
31	32	33	34	35	36	
			SITE			

**26 South 32 East**

6	5	4	3	2	1	
7	8	9	10	11	12	
18	17	16	15	14	13	
19	20	21	333	22	23	24
			180			
30	29	28	27	26	25	
31	32	33	34	35	36	
295						

- 88** New Mexico State Engineers Well Reports
- 105** USGS Well Reports
- 90** Geology and Groundwater Conditions in Southern Lea, County, NM (Report 6)  
 Geology and Groundwater Resources of Eddy County, NM (Report 3)
- 34** NMOCD - Groundwater Data
- 123** Tetra Tech installed temporary wells and field water level
- 143** NMOCD Groundwater map well location

## Appendix C

# Summary Report

Ike Tavarez  
 Tetra Tech  
 1901 N. Big Spring St.  
 Midland, TX 79705

Report Date: August 14, 2015

Work Order: 15080656



Project Location: Eddy Co, NM  
 Project Name: Conoco Phillips-Stampede Fed. 34-1H  
 Project Number: 212C-MD-00309

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
401356	AH-1 0-1	soil	2015-08-05	00:00	2015-08-06
401357	AH-1 1-1.5	soil	2015-08-05	00:00	2015-08-06
401358	AH-2 0-1	soil	2015-08-05	00:00	2015-08-06
401359	AH-3 0-1	soil	2015-08-05	00:00	2015-08-06

Sample - Field Code	BTEX				TPH DRO	TPH GRO
	Benzene (mg/Kg)	Toluene (mg/Kg)	Ethylbenzene (mg/Kg)	Xylene (mg/Kg)	DRO (mg/Kg)	GRO (mg/Kg)
401356 - AH-1 0-1	<0.0200 <sup>1</sup>	<0.0200 Qr	<0.0200	<0.0200	265 B	<4.00
401358 - AH-2 0-1	<0.100	<0.100 Qr	<0.100	<0.100	10200 B	63.4
401359 - AH-3 0-1	<0.0200 <sup>2</sup>	<0.0200 Qr	<0.0200	<0.0200	89.7 B	<4.00

**Sample: 401356 - AH-1 0-1**

Param	Flag	Result	Units	RL
Chloride		228	mg/Kg	50

**Sample: 401357 - AH-1 1-1.5**

Param	Flag	Result	Units	RL
Chloride		307	mg/Kg	50

**Sample: 401358 - AH-2 0-1**

<sup>1</sup>dilution due to hydrocarbons.  
<sup>2</sup>dilution due to hydrocarbons.

---

Param	Flag	Result	Units	RL
Chloride		376	mg/Kg	50

---

**Sample: 401359 - AH-3 0-1**

Param	Flag	Result	Units	RL
Chloride		<50.0	mg/Kg	50

---



6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800-378-1296 806-794-1296 FAX 806-794-1296  
200 East Sunset Road, Suite E El Paso, Texas 79922 915-585-3443 FAX 915-585-4944  
5002 Basin Street, Suite A1 Midland, Texas 79703 432-689-6301 FAX 432-689-6313  
(BioAquatic) 2501 Mayes Rd., Suite 100 Carrollton, Texas 75006 972-242-7750  
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## Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

# Analytical and Quality Control Report

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Report Date: August 14, 2015

Work Order: 15080656



Project Location: Eddy Co, NM  
Project Name: Conoco Phillips-Stampede Fed. 34-1H  
Project Number: 212C-MD-00309

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
401356	AH-1 0-1	soil	2015-08-05	00:00	2015-08-06
401357	AH-1 1-1.5	soil	2015-08-05	00:00	2015-08-06
401358	AH-2 0-1	soil	2015-08-05	00:00	2015-08-06
401359	AH-3 0-1	soil	2015-08-05	00:00	2015-08-06

## Notes

• **Work Order 15080656:** Run deeper samples if TPH exceeds 5,000mg/kg, if Benzene exceeds 10mg/kg or total BTEX exceeds 50mg/kg

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

TraceAnalysis, Inc. uses the attached chain of custody (COC) as the laboratory check-in documentation which includes sample receipt, temperature, sample preservation method and condition, collection date and time, testing requested, company, sampler, contacts and any special remarks.

This report consists of a total of 22 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

*Blair Leftwich*

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Dr. Blair Leftwich, Director  
James Taylor, Assistant Director  
Brian Pellam, Operations Manager

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## Case Narrative

Samples for project Conoco Phillips-Stampede Fed. 34-1H were received by TraceAnalysis, Inc. on 2015-08-06 and assigned to work order 15080656. Samples for work order 15080656 were received intact at a temperature of 0.4 C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
BTEX	S 8021B	104787	2015-08-11 at 12:50	123934	2015-08-11 at 12:50
Chloride (Titration)	SM 4500-Cl B	104837	2015-08-13 at 11:48	123997	2015-08-13 at 11:49
TPH DRO	S 8015 D	104822	2015-08-13 at 09:08	123977	2015-08-13 at 09:13
TPH GRO	S 8015 D	104787	2015-08-11 at 12:50	123935	2015-08-11 at 12:50

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 15080656 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

# Analytical Report

Sample: 401356 - AH-1 0-1

Laboratory: Lubbock  
Analysis: BTEX  
QC Batch: 123934  
Prep Batch: 104787

Analytical Method: S 8021B  
Date Analyzed: 2015-08-11  
Sample Preparation: 2015-08-11

Prep Method: S 5035  
Analyzed By: JS  
Prepared By: JS

Parameter	Flag	Cert	Result	Units	Dilution	RL
Benzene	U	1,2,3,4,5	<0.0200	mg/Kg	1	0.0200
Toluene	Qr,U	1,2,3,4,5	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	U	1,2,3,4,5	<0.0200	mg/Kg	1	0.0200
Xylene	U	1,2,3,4,5	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		S	1.64	mg/Kg	1	2.00	82	65.6 - 125
4-Bromofluorobenzene (4-BFB)		S	1.93	mg/Kg	1	2.00	96	67.9 - 120

Sample: 401356 - AH-1 0-1

Parameter	Flag	Cert	Result	Units	Dilution	RL
Chloride		1	228	mg/Kg	1	50.0

Sample: 401356 - AH-1 0-1

Laboratory: Lubbock  
Analysis: TPH DRO  
QC Batch: 123977  
Prep Batch: 104822

Analytical Method: S 8015 D  
Date Analyzed: 2015-08-13  
Sample Preparation:

Prep Method: N/A  
Analyzed By: HJ  
Prepared By: HJ

Parameter	Flag	Cert	Result	Units	Dilution	RL
DRO	D	1,2,3,4	265	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		S	176	mg/Kg	1	150	117	48.9 - 172

**Sample: 401356 - AH-1 0-1**

Laboratory: Lubbock  
Analysis: TPH GRO  
QC Batch: 123935  
Prep Batch: 104787

Analytical Method: S 8015 D  
Date Analyzed: 2015-08-11  
Sample Preparation: 2015-08-11

Prep Method: S 5035  
Analyzed By: JS  
Prepared By: JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	1,2,3,4	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Q <sub>sr</sub>	3	1.51	mg/Kg	1	2.00	76	76.5 - 130
4-Bromofluorobenzene (4-BFB)		3	1.78	mg/Kg	1	2.00	89	68.4 - 120

**Sample: 401357 - AH-1 1-1.5**

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	307	mg/Kg	1	50.0

**Sample: 401358 - AH-2 0-1**

Laboratory: Lubbock  
Analysis: BTEX  
QC Batch: 123934  
Prep Batch: 104787

Analytical Method: S 8021B  
Date Analyzed: 2015-08-11  
Sample Preparation: 2015-08-11

Prep Method: S 5035  
Analyzed By: JS  
Prepared By: JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene		1,2,3,4,5	<0.100	mg/Kg	5	0.0200
Toluene	Q <sub>r,U</sub>	1,2,3,4,5	<0.100	mg/Kg	5	0.0200
Ethylbenzene	U	1,2,3,4,5	<0.100	mg/Kg	5	0.0200
Xylene	U	1,2,3,4,5	<0.100	mg/Kg	5	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		5	1.69	mg/Kg	5	2.00	84	65.6 - 125
4-Bromofluorobenzene (4-BFB)		5	1.92	mg/Kg	5	2.00	96	67.9 - 120

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**Sample: 401358 - AH-2 0-1**

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	376	mg/Kg	1	50.0

**Sample: 401358 - AH-2 0-1**

Laboratory: Lubbock  
 Analysis: TPH DRO                      Analytical Method: S 8015 D                      Prep Method: N/A  
 QC Batch: 123977                      Date Analyzed: 2015-08-13                      Analyzed By: HJ  
 Prep Batch: 104822                      Sample Preparation:                      Prepared By: HJ

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	B	1,2,3,4	10200	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane	Q <sub>or</sub>	Q <sub>or</sub>	370	mg/Kg	1	25.0	1480	48.9 - 172

**Sample: 401358 - AH-2 0-1**

Laboratory: Lubbock  
 Analysis: TPH GRO                      Analytical Method: S 8015 D                      Prep Method: S 5035  
 QC Batch: 123935                      Date Analyzed: 2015-08-11                      Analyzed By: JS  
 Prep Batch: 104787                      Sample Preparation: 2015-08-11                      Prepared By: JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO		1,2,3,4	63.4	mg/Kg	5	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)	Q <sub>or</sub>	Q <sub>or</sub>	1.47	mg/Kg	5	2.00	74	76.5 - 130
4-Bromofluorobenzene (4-BFB)			2.38	mg/Kg	5	2.00	119	68.4 - 120

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Sample: 401359 - AH-3 0-1

Laboratory: Lubbock  
Analysis: BTEX  
QC Batch: 123934  
Prep Batch: 104787

Analytical Method: S 8021B  
Date Analyzed: 2015-08-11  
Sample Preparation: 2015-08-11

Prep Method: S 5035  
Analyzed By: JS  
Prepared By: JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Benzene	U	1,2,3,4,5	<0.0200	mg/Kg	1	0.0200
Toluene	Q+,U	1,2,3,4,5	<0.0200	mg/Kg	1	0.0200
Ethylbenzene	U	1,2,3,4,5	<0.0200	mg/Kg	1	0.0200
Xylene	U	1,2,3,4,5	<0.0200	mg/Kg	1	0.0200

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		5	1.88	mg/Kg	1	2.00	94	65.6 - 125
4-Bromofluorobenzene (4-BFB)		5	1.90	mg/Kg	1	2.00	95	67.9 - 120

Sample: 401359 - AH-3 0-1

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride		1	<50.0	mg/Kg	1	50.0

Sample: 401359 - AH-3 0-1

Laboratory: Lubbock  
Analysis: TPH DRO  
QC Batch: 123977  
Prep Batch: 104822

Analytical Method: S 8015 D  
Date Analyzed: 2015-08-13  
Sample Preparation:

Prep Method: N/A  
Analyzed By: HJ  
Prepared By: HJ

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
DRO	B	1,2,3,4	89.7	mg/Kg	1	50.0

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		5	34.8	mg/Kg	1	25.0	139	48.9 - 172

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**Sample: 401359 - AH-3 0-1**

Laboratory: Lubbock  
Analysis: TPH GRO  
QC Batch: 123935  
Prep Batch: 104787

Analytical Method: S 8015 D  
Date Analyzed: 2015-08-11  
Sample Preparation: 2015-08-11

Prep Method: S 5035  
Analyzed By: JS  
Prepared By: JS

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
GRO	U	1,2,3,4	<4.00	mg/Kg	1	4.00

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		3	1.71	mg/Kg	1	2.00	86	76.5 - 130
4-Bromofluorobenzene (4-BFB)		3	1.75	mg/Kg	1	2.00	88	68.4 - 120

## Method Blanks

### Method Blank (1) QC Batch: 123934

QC Batch: 123934  
Prep Batch: 104787

Date Analyzed: 2015-08-11  
QC Preparation: 2015-08-11

Analyzed By: JS  
Prepared By: JS

Parameter	Flag	Cert	MDL Result	Units	RL
Benzene		1,2,3,4,5	<0.00444	mg/Kg	0.02
Toluene		1,2,3,4,5	<0.00457	mg/Kg	0.02
Ethylbenzene		1,2,3,4,5	<0.00762	mg/Kg	0.02
Xylene		1,2,3,4,5	0.00600	mg/Kg	0.02

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		s	2.10	mg/Kg	1	2.00	105	65.6 - 125
4-Bromofluorobenzene (4-BFB)		s	2.13	mg/Kg	1	2.00	106	67.9 - 120

### Method Blank (1) QC Batch: 123935

QC Batch: 123935  
Prep Batch: 104787

Date Analyzed: 2015-08-11  
QC Preparation: 2015-08-11

Analyzed By: JS  
Prepared By: JS

Parameter	Flag	Cert	MDL Result	Units	RL
GRO		1,2,3,4	<0.641	mg/Kg	4

Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
Trifluorotoluene (TFT)		s	1.94	mg/Kg	1	2.00	97	76.5 - 130
4-Bromofluorobenzene (4-BFB)		s	1.95	mg/Kg	1	2.00	98	68.4 - 120

### Method Blank (1) QC Batch: 123977

QC Batch: 123977  
Prep Batch: 104822

Date Analyzed: 2015-08-13  
QC Preparation: 2015-08-13

Analyzed By: HJ  
Prepared By: HJ

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Parameter	Flag	Cert	MDL Result	Units	RL
DRO	B	B	16.2	mg/Kg	50

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Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		3	30.3	mg/Kg	1	25.0	121	48.9 - 172

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Method Blank (1)    QC Batch: 123997

QC Batch: 123997  
Prep Batch:

Date Analyzed:  
QC Preparation:

Analyzed By:  
Prepared By:

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Parameter	Flag	Cert	MDL Result	Units	RL
Chloride		1	<31.4	mg/Kg	50

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## Laboratory Control Spikes

### Laboratory Control Spike (LCS-1)

QC Batch: 123934  
Prep Batch: 104787

Date Analyzed: 2015-08-11  
QC Preparation: 2015-08-11

Analyzed By: JS  
Prepared By: JS

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1,2,3,4,5	2.01	mg/Kg	1	2.00	<0.00444	100	71.4 - 120
Toluene		1,2,3,4,5	2.03	mg/Kg	1	2.00	<0.00457	102	71.8 - 120
Ethylbenzene		1,2,3,4,5	2.03	mg/Kg	1	2.00	<0.00762	102	71.1 - 120
Xylene		1,2,3,4,5	5.95	mg/Kg	1	6.00	0.006	99	72.5 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1,2,3,4,5	1.98	mg/Kg	1	2.00	<0.00444	99	71.4 - 120	2	20
Toluene		1,2,3,4,5	2.00	mg/Kg	1	2.00	<0.00457	100	71.8 - 120	2	20
Ethylbenzene		1,2,3,4,5	1.99	mg/Kg	1	2.00	<0.00762	100	71.1 - 120	2	20
Xylene		1,2,3,4,5	5.83	mg/Kg	1	6.00	0.006	97	72.5 - 120	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	F	C	LCS Result	LCSD Result	Units	Dil.	Spike Amount	LCS Rec.	LCSD Rec.	Rec. Limit
Trifluorotoluene (TFT)		5	1.94	1.93	mg/Kg	1	2.00	97	96	65.6 - 125
4-Bromofluorobenzene (4-BFB)		5	2.00	1.96	mg/Kg	1	2.00	100	98	67.9 - 120

### Laboratory Control Spike (LCS-1)

QC Batch: 123935  
Prep Batch: 104787

Date Analyzed: 2015-08-11  
QC Preparation: 2015-08-11

Analyzed By: JS  
Prepared By: JS

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1,2,3,4	16.2	mg/Kg	1	20.0	<0.641	81	60.3 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

*continued ...*

control spikes continued ...

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1,2,3,4	16.8	mg/Kg	1	20.0	<0.641	84	60.3 - 120	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	F	C	LCS Result	LCS Result	Units	Dil.	Spike Amount	LCS Rec.	LCS Rec.	Rec. Limit
Trifluorotoluene (TFT)		3	1.86	1.64	mg/Kg	1	2.00	93	82	76.5 - 130
4-Bromofluorobenzene (4-BFB)		3	2.02	2.05	mg/Kg	1	2.00	101	102	68.4 - 120

**Laboratory Control Spike (LCS-1)**

QC Batch: 123977  
Prep Batch: 104822

Date Analyzed: 2015-08-13  
QC Preparation: 2015-08-13

Analyzed By: HJ  
Prepared By: HJ

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	
DRO	B	B	1,2,3,4	532	mg/Kg	1	500	16.2	103	60.9 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit	
DRO	B	B	1,2,3,4	482	mg/Kg	1	500	16.2	93	60.9 - 130	10	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	F	C	LCS Result	LCS Result	Units	Dil.	Spike Amount	LCS Rec.	LCS Rec.	Rec. Limit
n-Tricosane		3	33.2	30.7	mg/Kg	1	25.0	133	123	48.9 - 172

**Laboratory Control Spike (LCS-1)**

QC Batch: 123997  
Prep Batch:

Date Analyzed:  
QC Preparation:

Analyzed By:  
Prepared By:

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	2380	mg/Kg	5	2500	<157	95	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	2380	mg/Kg	5	2500	<157	95	85 - 115	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

## Matrix Spikes

Matrix Spike (MS-1) Spiked Sample: 401711

QC Batch: 123934  
Prep Batch: 104787

Date Analyzed: 2015-08-11  
QC Preparation: 2015-08-11

Analyzed By: JS  
Prepared By: JS

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Benzene		1,2,3,4,5	1.89	mg/Kg	5	2.00	<0.0222	94	63.9 - 132
Toluene		1,2,3,4,5	1.93	mg/Kg	5	2.00	<0.0228	96	64 - 141
Ethylbenzene		1,2,3,4,5	1.90	mg/Kg	5	2.00	<0.0381	95	66.7 - 148
Xylene		1,2,3,4,5	5.63	mg/Kg	5	6.00	<0.0184	94	63.6 - 145

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Benzene		1,2,3,4,5	1.58	mg/Kg	5	2.00	<0.0222	79	63.9 - 132	18	20
Toluene	Qr	Qr 1,2,3,4,5	1.56	mg/Kg	5	2.00	<0.0228	78	64 - 141	21	20
Ethylbenzene		1,2,3,4,5	1.58	mg/Kg	5	2.00	<0.0381	79	66.7 - 148	18	20
Xylene		1,2,3,4,5	4.64	mg/Kg	5	6.00	<0.0184	77	63.6 - 145	19	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit
Trifluorotoluene (TFT)	s 2.07	1.71	mg/Kg	5	2	104	86	65.6 - 125
4-Bromofluorobenzene (4-BFB)	s 2.06	1.72	mg/Kg	5	2	103	86	67.9 - 120

Matrix Spike (MS-1) Spiked Sample: 401711

QC Batch: 123935  
Prep Batch: 104787

Date Analyzed: 2015-08-11  
QC Preparation: 2015-08-11

Analyzed By: JS  
Prepared By: JS

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
GRO		1,2,3,4	15.0	mg/Kg	5	20.0	<3.20	75	25 - 139

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

*continued ...*

matrix spikes continued ...

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
GRO		1,2,3,4	13.1	mg/Kg	5	20.0	<3.20	66	25 - 139	14	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit			
Trifluorotoluene (TFT)	Q <sub>sr</sub>	Q <sub>sr</sub>	3	1.38	1.24	mg/Kg	5	2	69	62	76.5 - 130
4-Bromofluorobenzene (4-BFB)			3	1.93	1.66	mg/Kg	5	2	96	83	68.4 - 120

**Matrix Spike (MS-1) Spiked Sample: 401356**

QC Batch: 123977  
Prep Batch: 104822

Date Analyzed: 2015-08-13  
QC Preparation: 2015-08-13

Analyzed By: HJ  
Prepared By: HJ

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	
DRO	D	D	1,2,3,4	746	mg/Kg	1	500	265	96	47.9 - 130

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit	
DRO	D	D	1,2,3,4	748	mg/Kg	1	500	265	97	47.9 - 130	0	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Surrogate	MS Result	MSD Result	Units	Dil.	Spike Amount	MS Rec.	MSD Rec.	Rec. Limit	
n-Tricosane	3	168	172	mg/Kg	1	150	112	115	48.9 - 172

**Matrix Spike (MS-1) Spiked Sample: 401672**

QC Batch: 123997  
Prep Batch:

Date Analyzed:  
QC Preparation:

Analyzed By:  
Prepared By:

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride		1	4600	mg/Kg	5	2500	2330	91	80 - 120

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride		1	4700	mg/Kg	5	2500	2330	95	80 - 120	2	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

## Calibration Standards

### Standard (CCV-1)

QC Batch: 123934

Date Analyzed: 2015-08-11

Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1,2,3,4,5	mg/kg	0.100	0.0991	99	80 - 120	2015-08-11
Toluene		1,2,3,4,5	mg/kg	0.100	0.0997	100	80 - 120	2015-08-11
Ethylbenzene		1,2,3,4,5	mg/kg	0.100	0.0997	100	80 - 120	2015-08-11
Xylene		1,2,3,4,5	mg/kg	0.300	0.291	97	80 - 120	2015-08-11

### Standard (CCV-2)

QC Batch: 123934

Date Analyzed: 2015-08-11

Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Benzene		1,2,3,4,5	mg/kg	0.100	0.0938	94	80 - 120	2015-08-11
Toluene		1,2,3,4,5	mg/kg	0.100	0.0932	93	80 - 120	2015-08-11
Ethylbenzene		1,2,3,4,5	mg/kg	0.100	0.0922	92	80 - 120	2015-08-11
Xylene		1,2,3,4,5	mg/kg	0.300	0.270	90	80 - 120	2015-08-11

### Standard (CCV-1)

QC Batch: 123935

Date Analyzed: 2015-08-11

Analyzed By: JS

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
GRO		1,2,3,4	mg/Kg	1.00	1.02	102	80 - 120	2015-08-11

### Standard (CCV-2)

QC Batch: 123935

Date Analyzed: 2015-08-11

Analyzed By: JS



Report Date: August 14, 2015  
212C-MD-00309

Work Order: 15080656  
Conoco Phillips-Stampede Fed. 34-1H

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Eddy Co, NM

---

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride		1	mg/Kg	100	100	100	85 - 115	2015-08-13

---

## Appendix

### Report Definitions

Name	Definition
MDL	Method Detection Limit
MQL	Minimum Quantitation Limit
SDL	Sample Detection Limit

### Laboratory Certifications

C	Certifying Authority	Certification Number	Laboratory Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	L-A-B	L2418	Lubbock
2	Kansas	Kansas E-10317	Lubbock
3	LELAP	LELAP-02003	Lubbock
4	NELAP	T104704219-15-11	Lubbock
5		2014-018	Lubbock

### Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
Jb	The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less than ten times the concentration found in the method blank. The result should be considered non-detect to the SDL.
Je	Estimated concentration exceeding calibration range.
MI1	Split peak or shoulder peak
MI2	Instrument software did not integrate
MI3	Instrument software misidentified the peak
MI4	Instrument software integrated improperly
MI5	Baseline correction
Qc	Calibration check outside of laboratory limits.
Qr	RPD outside of laboratory limits
Qs	Spike recovery outside of laboratory limits.
Qsr	Surrogate recovery outside of laboratory limits.

F Description

U The analyte is not detected above the SDL

---

## Result Comments

- 1 dilution due to hydrocarbons.
- 2 dilution due to hydrocarbons.

## Attachments

The scanned attachments will follow this page.  
Please note, each attachment may consist of more than one page.



## Summary Report

Ike Tavarez  
Tetra Tech  
1901 N. Big Spring St.  
Midland, TX 79705

Report Date: August 12, 2015

Work Order: 15080748



Project Location: Eddy Co, NM  
Project Name: Conoco Phillips-Stampede Fed 34-1H  
Project Number: 212C-MD-00309

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
401510	BG-1 (0-1)	soil	2015-08-07	00:00	2015-08-07

Sample: 401510 - BG-1 (0-1)

Param	Flag	Result	Units	RL
Chloride		<20.0	mg/Kg	4



6701 Aberdeen Avenue, Suite 9 Lubbock, Texas 79424 800-378-1296 806-794-1296 FAX 806-794-1296  
 200 East Sunset Road, Suite E El Paso, Texas 79922 915-585-3443 FAX 915-585-4944  
 5002 Basin Street, Suite A1 Midland, Texas 79703 432-689-6301 FAX 432-689-6313  
 (BioAquatic) 2501 Mayes Rd., Suite 100 Carrollton, Texas 75006 972-242-7750  
 E-Mail: lab@traceanalysis.com WEB: www.traceanalysis.com

## Certifications

WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

# Analytical and Quality Control Report

Ike Tavaréz  
 Tetra Tech  
 1901 N. Big Spring St.  
 Midland, TX, 79705

Report Date: August 12, 2015

Work Order: 15080748



Project Location: Eddy Co, NM  
 Project Name: Conoco Phillips-Stampede Fed 34-1H  
 Project Number: 212C-MD-00309

Enclosed are the Analytical Report and Quality Control Report for the following sample(s) submitted to TraceAnalysis, Inc.

Sample	Description	Matrix	Date Taken	Time Taken	Date Received
401510	BG-1 (0-1)	soil	2015-08-07	00:00	2015-08-07

## Notes

- **Work Order 15080748:** From the fields, on ice

These results represent only the samples received in the laboratory. The Quality Control Report is generated on a batch basis. All information contained in this report is for the analytical batch(es) in which your sample(s) were analyzed.

TraceAnalysis, Inc. uses the attached chain of custody (COC) as the laboratory check-in documentation which includes sample receipt, temperature, sample preservation method and condition, collection date and time, testing requested, company, sampler, contacts and any special remarks.

This report consists of a total of 11 pages and shall not be reproduced except in its entirety, without written approval of TraceAnalysis, Inc.

*Blair Leftwich*

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Dr. Blair Leftwich, Director  
James Taylor, Assistant Director  
Brian Pellam, Operations Manager

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## Case Narrative

Samples for project Conoco Phillips-Stampede Fed 34-1H were received by TraceAnalysis, Inc. on 2015-08-07 and assigned to work order 15080748. Samples for work order 15080748 were received intact at a temperature of 17.1 C.

Samples were analyzed for the following tests using their respective methods.

Test	Method	Prep Batch	Prep Date	QC Batch	Analysis Date
Chloride (Titration)	SM 4500-Cl B	104803	2015-08-12 at 13:11	123957	2015-08-12 at 13:27

Results for these samples are reported on a wet weight basis unless data package indicates otherwise.

A matrix spike (MS) and matrix spike duplicate (MSD) sample is chosen at random from each preparation batch. The MS and MSD will indicate if a site specific matrix problem is occurring, however, it may not pertain to the samples for work order 15080748 since the sample was chosen at random. Therefore, the validity of the analytical data reported has been determined by the laboratory control sample (LCS) and the method blank (MB). These quality control measures are performed with each preparation batch to ensure data integrity.

All other exceptions associated with this report have been footnoted on the appropriate analytical page to assist in general data comprehension. Please contact the laboratory directly if there are any questions regarding this project.

Report Date: August 12, 2015  
212C-MD-00309

Work Order: 15080748  
Conoco Phillips-Stampede Fed 34-1H

Page Number: 5 of 11  
Eddy Co, NM

# Analytical Report

Sample: 401510 - BG-1 (0-1)

Laboratory: Midland	Analytical Method: SM 4500-Cl B	Prep Method: N/A
Analysis: Chloride (Titration)	Date Analyzed: 2015-08-12	Analyzed By: AM
QC Batch: 123957	Sample Preparation: 2015-08-12	Prepared By: AM
Prep Batch: 104803		

Parameter	Flag	Cert	RL Result	Units	Dilution	RL
Chloride	u		<20.0	mg/Kg	5	4.00

## Method Blanks

Method Blank (1)      QC Batch: 123957

QC Batch: 123957  
Prep Batch: 104803

Date Analyzed: 2015-08-12  
QC Preparation: 2015-08-12

Analyzed By: AM  
Prepared By: AM

Parameter	Flag	Cert	MDL Result	Units	RL
Chloride			<3.85	mg/Kg	4

## Laboratory Control Spikes

### Laboratory Control Spike (LCS-1)

QC Batch: 123957  
Prep Batch: 104803

Date Analyzed: 2015-08-12  
QC Preparation: 2015-08-12

Analyzed By: AM  
Prepared By: AM

Param	F	C	LCS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2520	mg/Kg	5	2500	<19.2	101	85 - 115

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec. Limit	RPD	RPD Limit	
Chloride			2330	mg/Kg	5	2500	<19.2	93	85 - 115	8	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

## Matrix Spikes

Matrix Spike (MS-1) Spiked Sample: 401719

QC Batch: 123957  
Prep Batch: 104803

Date Analyzed: 2015-08-12  
QC Preparation: 2015-08-12

Analyzed By: AM  
Prepared By: AM

Param	F	C	MS Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit
Chloride			2720	mg/Kg	5	2500	194	101	78.9 - 121

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

Param	F	C	MSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Rec. Limit	RPD	RPD Limit
Chloride			2620	mg/Kg	5	2500	194	97	78.9 - 121	4	20

Percent recovery is based on the spike result. RPD is based on the spike and spike duplicate result.

## Calibration Standards

### Standard (ICV-1)

QC Batch: 123957

Date Analyzed: 2015-08-12

Analyzed By: AM

Param	Flag	Cert	Units	ICVs True Conc.	ICVs Found Conc.	ICVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	99.0	99	85 - 115	2015-08-12

### Standard (CCV-1)

QC Batch: 123957

Date Analyzed: 2015-08-12

Analyzed By: AM

Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed
Chloride			mg/Kg	100	101	101	85 - 115	2015-08-12

## Appendix

### Report Definitions

Name	Definition
MDL	Method Detection Limit
MQL	Minimum Quantitation Limit
SDL	Sample Detection Limit

### Laboratory Certifications

Certifying Authority	Certification Number	Laboratory Location
- NCTRCA	WFWB384444Y0909	TraceAnalysis
- DBE	VN 20657	TraceAnalysis
- HUB	1752439743100-86536	TraceAnalysis
- WBE	237019	TraceAnalysis

### Standard Flags

F	Description
B	Analyte detected in the corresponding method blank above the method detection limit
H	Analyzed out of hold time
J	Estimated concentration
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MI3	Instrument software misidentified the peak
MI4	Instrument software integrated improperly
MI5	Baseline correction
Qc	Calibration check outside of laboratory limits.
Qr	RPD outside of laboratory limits
Qs	Spike recovery outside of laboratory limits.
Qsr	Surrogate recovery outside of laboratory limits.
U	The analyte is not detected above the SDL

### Attachments

Report Date: August 12, 2015  
212C-MD-00309

Work Order: 15080748  
Conoco Phillips-Stampede Fed 34-1H

Page Number: 11 of 11  
Eddy Co, NM

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The scanned attachments will follow this page.  
Please note, each attachment may consist of more than one page.

WCD #: 15080748

# Analysis Request of Chain of Custody Record



**TETRA TECH**  
1910 N. Big Spring St.  
Midland, Texas 79705  
(432) 682-4559 • Fax (432) 682-3946

CLIENT NAME: Corea Phillips SITE MANAGER: Ke Alvarez

PROJECT NO.: Stamped Fed 34-111

LAB I.D. NUMBER: 2015 DATE: 2/7  
TIME: 8:17  
SAMPLE IDENTIFICATION: Eddy Co, NM  
GRAB: 6 X BG-1 0-1

NUMBER OF CONTAINERS: \_\_\_\_\_  
FILTERED (Y/N): \_\_\_\_\_  
PRESERVATIVE METHOD:  
HCL \_\_\_\_\_  
HNO3 \_\_\_\_\_  
ICE \_\_\_\_\_  
NONE \_\_\_\_\_

PAGE: \_\_\_\_\_  
ANALYSIS REQUEST  
(Circle or Specify Method No.)

BTX 8021 B	
TPH 8015 MOD. TX1005 (Ext. to C35)	
PAH 8270	
RCRA Metals Ag As Ba Cd Cr Pb Hg Se	
TCLP Metals Ag As Ba Cd Vr Pd Hg Se	
TCLP Volatiles	
TCLP Semi Volatiles	
RCI	
GC/MS Vol. 8240/8260/624	
GC/MS Seml. Vol. 8270/625	
PCB's 8080/608	
Pest. 808/608	
Chloro <u>X</u>	
Semta Spec.	
Alpha Beta (Air)	
PLM (Asbestos)	
Major Anions/Cations, pH, TDS	

RELINQUISHED BY: (Signature) [Signature] Date: 2-7-15 Time: 15:10  
 RECEIVED BY: (Signature) [Signature] Date: 2-7-15 Time: 15:10  
 RELINQUISHED BY: (Signature) \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 RECEIVED BY: (Signature) \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 RELINQUISHED BY: (Signature) \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 RECEIVED BY: (Signature) \_\_\_\_\_ Date: \_\_\_\_\_ Time: \_\_\_\_\_  
 RECEIVING LABORATORY: \_\_\_\_\_  
 ADDRESS: \_\_\_\_\_  
 CITY: \_\_\_\_\_ STATE: \_\_\_\_\_ PHONE: \_\_\_\_\_ ZIP: \_\_\_\_\_  
 SAMPLE CONDITION WHEN RECEIVED: 17.7 REMARKS: from the field

SAMPLED BY: (Print & Initial) [Initials] Date: 2-7-15 Time: \_\_\_\_\_  
 SAMPLE SHIPPED BY: (Circle) \_\_\_\_\_  
 FEDEX \_\_\_\_\_ BUS \_\_\_\_\_  
 HAND DELIVERED \_\_\_\_\_ UPS \_\_\_\_\_  
 OTHER: \_\_\_\_\_  
 AIRBILL #: \_\_\_\_\_  
 TETRA TECH CONTACT PERSON: \_\_\_\_\_  
 Results by: \_\_\_\_\_  
 RUSH Charges Authorized: Yes \_\_\_\_\_ No \_\_\_\_\_

# Analytical Report 517289

for  
**Tetra Tech- Midland**

**Project Manager: Ike Tavarez**

**ConocoPhillips - Stampede Fed 34-1H**

**212C-MD-00309**

**19-OCT-15**

Collected By: Client



**12600 West I-20 East Odessa, Texas 79765**

Xenco-Houston (EPA Lab code: TX00122):  
Texas (T104704215-15-19), Arizona (AZ0765), Florida (E871002), Louisiana (03054)  
Oklahoma (9218)

Xenco-Atlanta (EPA Lab Code: GA00046):  
Florida (E87429), North Carolina (483), South Carolina (98015), Kentucky (85), DoD ( L10-135)  
Texas (T104704477), Louisiana (04176), USDA (P330-07-00105)

Xenco-Lakeland: Florida (E84098)  
Xenco-Odessa (EPA Lab code: TX00158): Texas (T104704400-TX)  
Xenco-Dallas (EPA Lab code: TX01468): Texas (T104704295-TX)  
Xenco Phoenix (EPA Lab Code: AZ00901): Arizona(AZ0757)  
Xenco-Phoenix Mobile (EPA Lab code: AZ00901): Arizona (AZM757)  
Xenco Tucson (EPA Lab code:AZ000989): Arizona (AZ0758)



19-OCT-15

Project Manager: **Ike Tavaréz**  
**Tetra Tech- Midland**  
4000 N. Big Spring Suite 401  
Midland, TX 79705

Reference: XENCO Report No(s): **517289**  
**ConocoPhillips - Stampede Fed 34-1H**  
Project Address: Eddy Co., NM

**Ike Tavaréz:**

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) 517289. 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. 517289 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,

**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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Houston - Dallas - Odessa - San Antonio - Tampa - Lakeland - Atlanta - Phoenix - Oklahoma - Latin America



**Sample Cross Reference 517289**



**Tetra Tech- Midland, Midland, TX**

**ConocoPhillips - Stampede Fed 34-1H**

<b>Sample Id</b>	<b>Matrix</b>	<b>Date Collected</b>	<b>Sample Depth</b>	<b>Lab Sample Id</b>
CS-1 0-1 (AH-2 1' BEB)	S	10-12-15 00:00	N/A	517289-001



## CASE NARRATIVE



*Client Name: Tetra Tech- Midland*

*Project Name: ConocoPhillips - Stampede Fed 34-1H*

Project ID: 212C-MD-00309  
Work Order Number(s): 517289

Report Date: 19-OCT-15  
Date Received: 10/12/2015

---

**Sample receipt non conformances and comments:**

---

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

None



**Project Id:** 212C-MD-00309  
**Contact:** Ike Tavaraz  
**Project Location:** Eddy Co., NM

# Certificate of Analysis Summary 517289

Tetra Tech- Midland, Midland, TX

Project Name: ConocoPhillips - Stampede Fed 34-1H

**Date Received in Lab:** Mon Oct-12-15 02:05 pm  
**Report Date:** 19-OCT-15  
**Project Manager:** Kelsey Brooks

Analysis Requested	Lab Id:	517289-001				
	Field Id:	CS-1 0-1 (AHT-2 1' BEB)				
	Depth:					
	Matrix:	SOLID				
	Sampled:	Oct-12-15 00:00				
	Extracted:	Oct-16-15 18:30				
	Analyzed:	Oct-17-15 08:17				
	Units/RL:	mg/kg RL				
C6-C10 Gasoline Range Hydrocarbons		ND	14.9			
C10-C28 Diesel Range Organics		ND	14.9			
Total TPH		ND	14.9			

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      MQL 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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**Form 2 - Surrogate Recoveries**  
**Project Name: ConocoPhillips - Stampede Fed 34-1H**

**Work Orders :** 517289,

**Project ID:** 212C-MD-00309

**Lab Batch #:** 979371

**Sample:** 517289-001 / SMP

**Batch:** 1 **Matrix:** Solid

**Units:** mg/kg **Date Analyzed:** 10/17/15 08:17

**SURROGATE RECOVERY STUDY**

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	109	99.6	109	70-135	
o-Terphenyl	52.4	49.8	105	70-135	

**Lab Batch #:** 979371

**Sample:** 699640-1-BLK / BLK

**Batch:** 1 **Matrix:** Solid

**Units:** mg/kg **Date Analyzed:** 10/17/15 05:27

**SURROGATE RECOVERY STUDY**

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	107	100	107	70-135	
o-Terphenyl	51.4	50.0	103	70-135	

**Lab Batch #:** 979371

**Sample:** 699640-1-BKS / BKS

**Batch:** 1 **Matrix:** Solid

**Units:** mg/kg **Date Analyzed:** 10/17/15 05:51

**SURROGATE RECOVERY STUDY**

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	114	100	114	70-135	
o-Terphenyl	52.6	50.0	105	70-135	

**Lab Batch #:** 979371

**Sample:** 699640-1-BSD / BSD

**Batch:** 1 **Matrix:** Solid

**Units:** mg/kg **Date Analyzed:** 10/17/15 06:14

**SURROGATE RECOVERY STUDY**

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	123	100	123	70-135	
o-Terphenyl	52.8	50.0	106	70-135	

**Lab Batch #:** 979371

**Sample:** 517289-001 S / MS

**Batch:** 1 **Matrix:** Solid

**Units:** mg/kg **Date Analyzed:** 10/17/15 08:42

**SURROGATE RECOVERY STUDY**

TPH By SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooctane	129	99.8	129	70-135	
o-Terphenyl	55.5	49.9	111	70-135	

\* 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: ConocoPhillips - Stampede Fed 34-1H**

**Work Orders :** 517289,

**Project ID:** 212C-MD-00309

**Lab Batch #:** 979371

**Sample:** 517289-001 SD / MSD

**Batch:** 1 **Matrix:** Solid

**Units:** mg/kg

**Date Analyzed:** 10/17/15 09:08

**SURROGATE RECOVERY STUDY**

<b>TPH By SW8015B Mod</b>	<b>Amount Found [A]</b>	<b>True Amount [B]</b>	<b>Recovery %R [D]</b>	<b>Control Limits %R</b>	<b>Flags</b>
<b>Analytes</b>					
1-Chlorooctane	118	99.9	118	70-135	
o-Terphenyl	49.4	50.0	99	70-135	

\* 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: ConocoPhillips - Stampede Fed 34-1H

Work Order #: 517289

Project ID: 212C-MD-00309

Analyst: PJB

Date Prepared: 10/16/2015

Date Analyzed: 10/17/2015

Lab Batch ID: 979371

Batch #: 1

Sample: 699640-1-BKS

Matrix: Solid

Units: mg/kg

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

TPH By SW8015B Mod	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-C10 Gasoline Range Hydrocarbons	<15.0	1000	854	85	1000	917	92	7	70-135	35	
C10-C28 Diesel Range Organics	<15.0	1000	1000	100	1000	1080	108	8	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: ConocoPhillips - Stampede Fed 34-1H

Work Order #: 517289      Project ID: 212C-MD-00309  
 Lab Batch ID: 979371      Batch #: 1      Matrix: Solid  
 Date Analyzed: 10/17/2015      QC-Sample ID: 517289-001 S      Analyst: PJB  
 Reporting Units: mg/kg      Date Prepared: 10/16/2015

## MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

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-C10 Gasoline Range Hydrocarbons	<15.0	998	1000	100	999	846	85	17	70-135	35	
C10-C28 Diesel Range Organics	<15.0	998	1170	117	999	1010	101	15	70-135	35	

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





**XENCO Laboratories**  
**Prelogin/Nonconformance Report- Sample Log-In**



Client: Tetra Tech- Midland

Acceptable Temperature Range: 0 - 6 degC  
 Air and Metal samples Acceptable Range: Ambient

Date/ Time Received: 10/12/2015 02:05:00 PM

Temperature Measuring device used :

Work Order #: 517289

Sample Receipt Checklist	Comments
#1 *Temperature of cooler(s)?	5
#2 *Shipping container in good condition?	Yes
#3 *Samples received on ice?	Yes
#4 *Custody Seals intact on shipping container/ cooler?	N/A
#5 Custody Seals intact on sample bottles?	N/A
#6 *Custody Seals Signed and dated?	N/A
#7 *Chain of Custody present?	Yes
#8 Sample instructions complete on Chain of Custody?	Yes
#9 Any missing/extra samples?	No
#10 Chain of Custody signed when relinquished/ received?	Yes
#11 Chain of Custody agrees with sample label(s)?	Yes
#12 Container label(s) legible and intact?	Yes
#13 Sample matrix/ properties agree with Chain of Custody?	Yes
#14 Samples in proper container/ bottle?	Yes
#15 Samples properly preserved?	Yes
#16 Sample container(s) intact?	Yes
#17 Sufficient sample amount for indicated test(s)?	Yes
#18 All samples received within hold time?	Yes
#19 Subcontract of sample(s)?	Yes
#20 VOC samples have zero headspace (less than 1/4 inch bubble)?	N/A
#21 <2 for all samples preserved with HNO3,HCL, H2SO4? Except for samples for the analysis of HEM or HEM-SGT which are verified by the analysts.	N/A
#22 >10 for all samples preserved with NaAsO2+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: *Kelsey Brooks*  
 Kelsey Brooks

Date: 10/12/2015

Checklist reviewed by: *Kelsey Brooks*  
 Kelsey Brooks

Date: 10/12/2015