

Wendy S. Acosta Quintero Environmental Specialist Phone: (432) 688-9162 Cell: (432) 234-8050 Email: 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,

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Wendy S. Acosta Quintero Environmental Specialist

# SITE INFORMATION

1

	R	eport Type:	<b>Closure Re</b>	eport (2	RP-3236)	
<b>General Site Int</b>	formation:					
Site:		Stampede Fed	eral 34-1H			
Company:		ConocoPhillip				
Section, Towns	hip and Range	Sec 34	T 26S	R 31E		
Lease Number:		API No. 30-015			- <u> </u>	
County:		Eddy County				
GPS:			32.00572° N		T	103.77346° W
Surface Owner:		Federal				103.77540 14
Mineral Owner:					· · · · ·	
Directions:		]for 4.2 miles, turn	tion of US-285 and east onto Pipeline pad for 6.0 miles to	Rd for 6.9 mi	iles, turn south or	ounty, travel east on Longhorn n lease road for 6.0 miles, turn ad.
Release Data:						
Date Released:		7/22/2015				
Type Release:		Produced water	and oil			
Source of Contai	mination:	Separator Failur	e	· · · · ·		
Fluid Released:		11 bbls (9 bbls p	produced water/2	bbls oil)	<u> </u>	
luids Recovered	d:	6 bbls		/	· · · · ·	
Official Commu	nication:				The second	
lame:	Wendy Acosta Qui	ntero			Ike Tavarez	
Company:	ConocoPhillips Co.				Tetra Tech	
ddress:	3300 North A Stree	+				in a
					4000 N. Big Spr	
N54			<u> </u>		Ste 401	
	ity: Midland Texas, 79707				Midland, Texas	
Phone number:	(432) 688-9162				(432) 687-8110	
ax:						
mail:	wendy.acostaquir	tero@cop.com			Ike.Tavarez@t	tetratech.com
anking Criteria						
epth to Groundw	vater:		Ranking Score		Sil	te Data
50 ft			20			
0-99 ft 100 ft.			10			
100 n.			0			
ellHead Protecti	on:		Ranking Score			e Data
	000 ft., Private <200 ft		20			
	000 ft., Private >200 ft		0			0
urface Body of V	Vater:		Ranking Score			e Data
200 ft.			20			
00 ft - 1,000 ft.	·		10			
1,000 ft.			0			0
_						
T	otal Ranking Score	9:	0			
		Acceptabl	e Soil BRAL (mc	(ka)		
		Acceptable Benzene	e Soil RRAL (mg Total BTEX	<mark>/kg)</mark> TPH		



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 riskbased evaluation of the site to determine recommended remedial action levels (RRAL) for benzene, toluene, ethylbenzene and xylene (collectively referred to as

Tetra Tech



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 an 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.



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

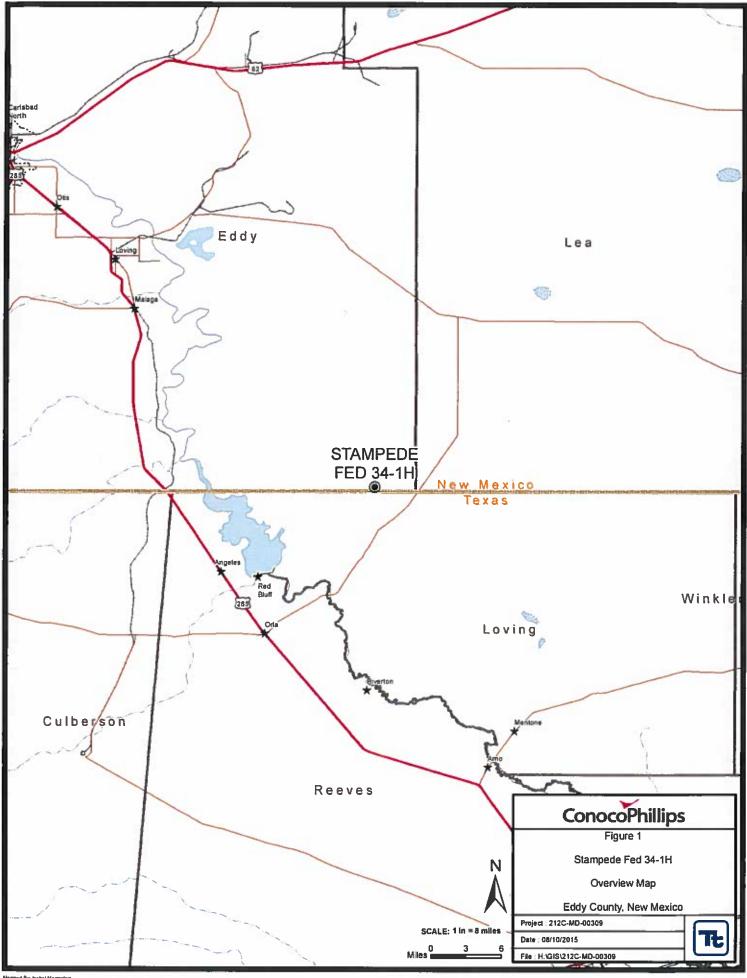
malo

Clair Gonzales, Geologist III

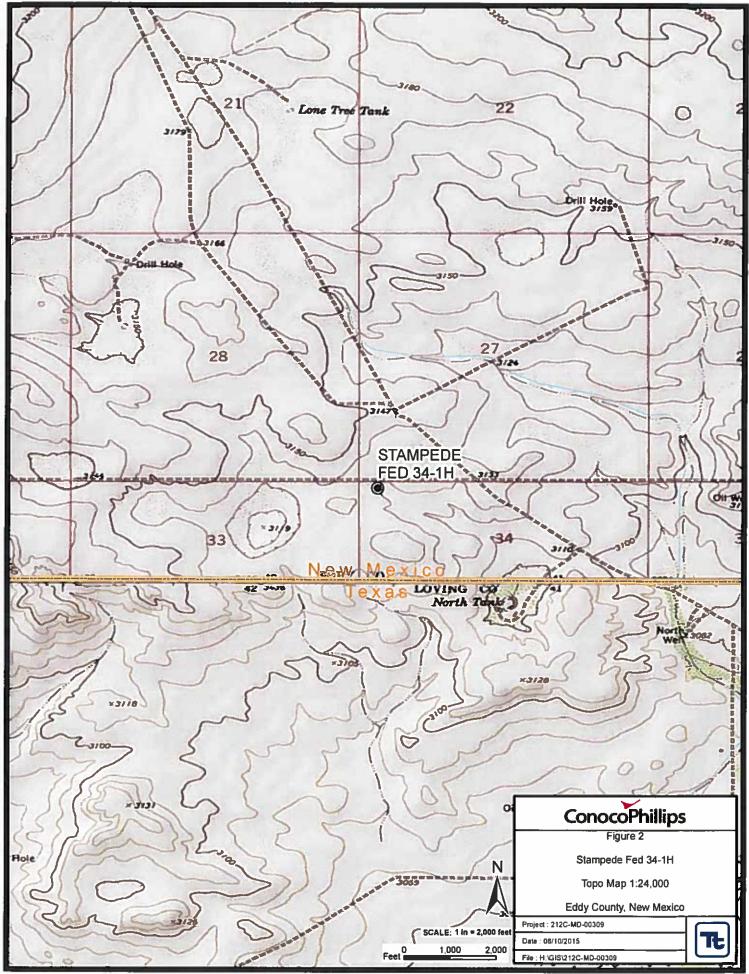
# Figures

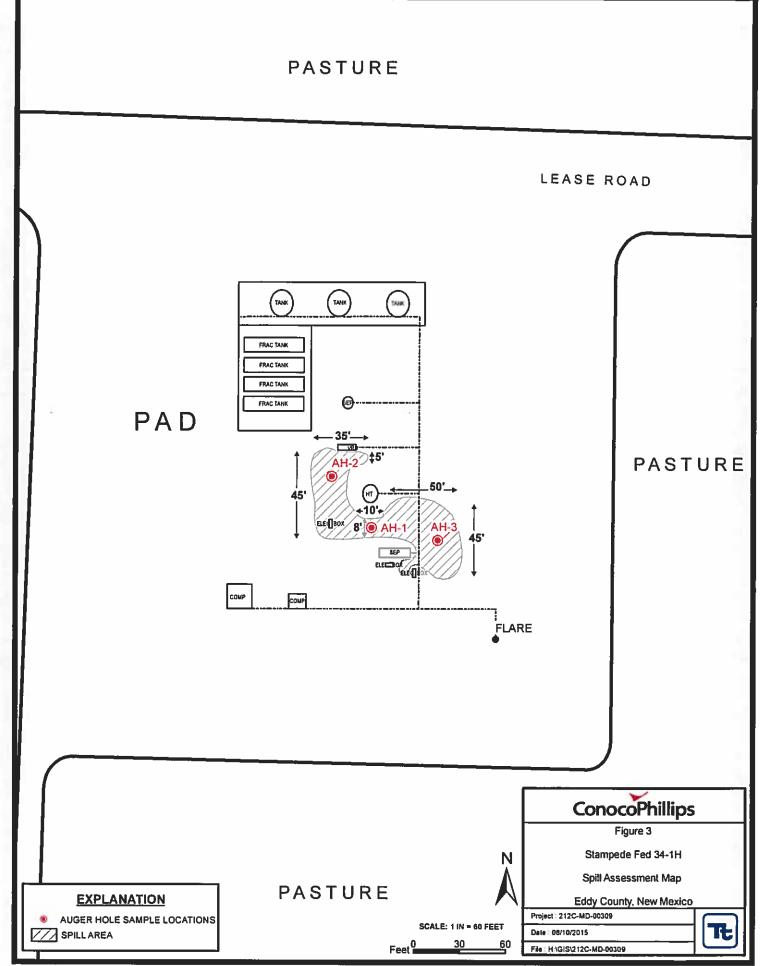
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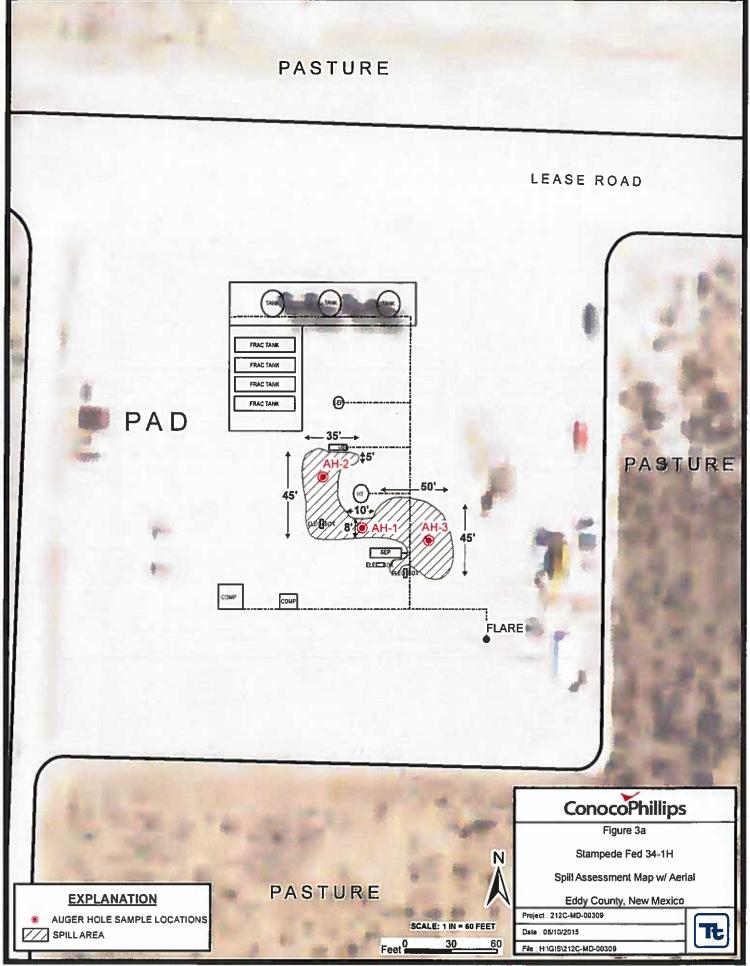
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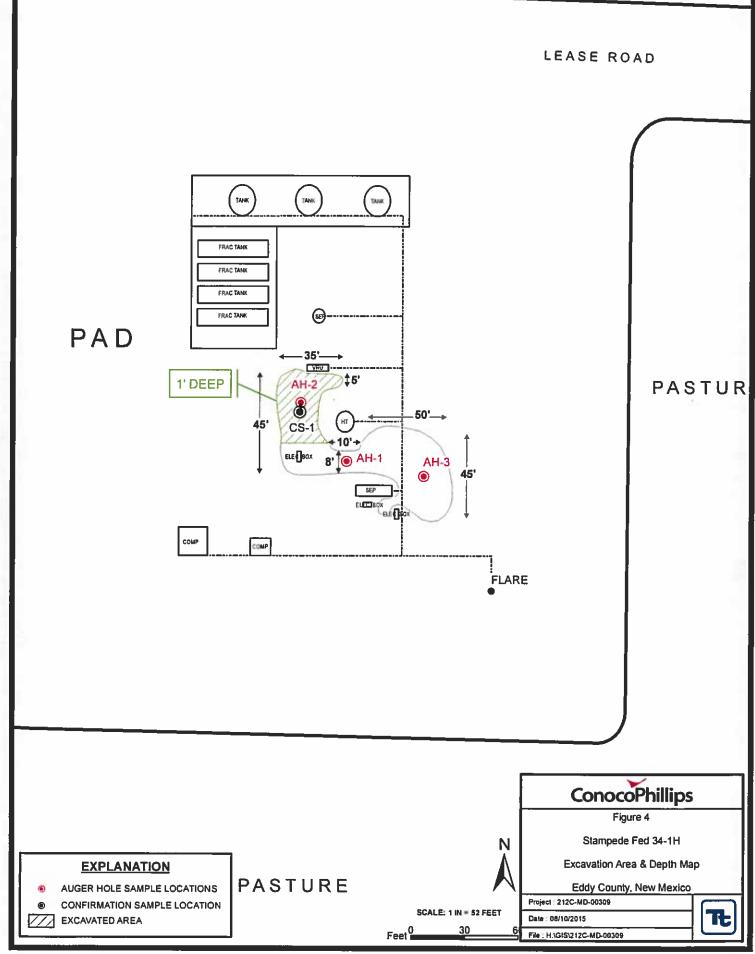
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# Tables

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

			Excavation	Soil Sta	Status	-	TPH (mg/kg)	(8	Benzene	Toluene	Ethivhanzana	Yulana	Total	Chlorida
Sample ID	Sample Date	Sample Depth (ft)	Bottom Depth (ft)	In-Situ R	Removed	GRO	DRO	Total	(mg/kg)	(mg/kg)	(mg/kg)	(mg/kg)	BTEX (mg/kg)	(mg/kg)
AH-1	8/5/2015	0-1	0	×		<4.00	265	265	<0.0200 <0.0200	<0.0200	<0.0200	<0.0200	<0.0200 <0.0200	228
	×	1-1.5	0	×	•	1	'	-	•	-	•		•	307
AH-2	8/5/2015	0-1	0		×	63.4	10,200	10,263	<0.100 <0.100	<0.100	<0.100	<0.100	<0.100 <0.100	376
CS-1	10/12/2015	0-1	-	×		<14.9	<14.9	<14.9	, ,					э
							_ 1							
AH-3	8/5/2015	0-1	0	×		<4.00	89.7	89.7	<0.0200 <0.0200	<0.0200	<0.0200	<0.0200	<0.0200 <0.0200	<50.0
BG-1	8/7/2015	0-1	0	×		-	•	-	-	-	1	•	•	<20.0

Not Analyzed • Below Excavation Bottom (BEB)

Excavation Depth / Soil Removed

Background Sample

**Confirmation Sample** BG SS

Photos

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

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**TETRA TECH** 



View West - Area of AH-1



View Northeast – Area of AH-2

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

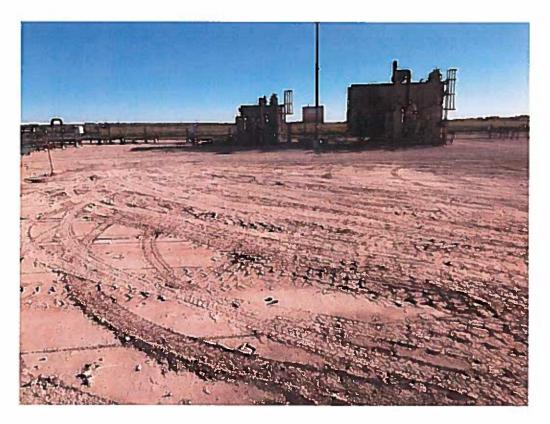


View Southwest – Area of AH-3



View North – Excavated area of AH-2

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



View South - Backfilled area of AH-2

# Appendix A

1625 N. French District II R11 S. First St					of New Mexico als and Natural Resourc	S Rev	Form C-14 ised August 8, 201
811 S. First St., District III 1000 Rio Brazo				Oil Con	servation Division	Submit I Copy to appropriate accordance with	District Office
District IV		-	-	1220 So	uth St. Francis Dr.	accordance with	19.15.29 NM/M
1220 S. St. Fran	icis Dr., Santa	a Fe, NM 8750:	>	Santa	Fe, NM 87505		
10	~ 1		Rele	ease Notificat	ion and Correctiv	e Action	
		53994			OPERATOR	X Initial Report	Final Rep
		ConocoPhi		217811	Contact Wendy Ac		
		<u>rtn A Stree</u> pede Feder		and, TX 79707 H	Telephone No.432-68 Facility Type Prod	8-9162 Iction_Facility	· · -
					· · · · · · · ·		DUT-117
Surface Ow	ner			Mineral Own	er	API No. 30-	015-42
			1		ON OF RELEASE		
Unit Letter	Section 34	Township 26S	Range	Feet from the No	orth/South Line   Feet from		0
	54		31E			Ed	dy
	37	501006	La	titude <u>32° 00' 03</u>	Longitude103°		
	JCr				RE OF RELEASE		
Type of Rele	ase oil/Pr	oduced water			Volume of Release 11	bbl Volume Recovered 6 bl	
Source of Re			· · · · · ·		Date and Hour of Occ		
Was Immedi	ate Notice (				If YES, To Whom?		
			Yes L	] No 🔲 Not Requi	INMOCD - TOILLAS OVE	ding, BLM - Jim Amis	
By Whom? Was a Water	Wendy Acc	ista Ouintero		·	Date and Hour 07/2	/2014 10 AM	
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NA Describe Cat At approxima noticed, well of Describe Arc After deeming noticed. It mad I hereby certi regulations a public health should their or the envirou federal, state, Signature: Printed Name Title: Gradu	use of Probl hely 4:00 PM was shut in. a Affected t safe condition de a hole on the ify that the in a safe condition de a hole on the ify that the in a safe condition de a hole on the ify that the in a safe condition operations in a safe condition operation operation operation operation operation operation operation operat	pacted, Deser em and Reme , separator pres and Cleanup A ons, lines were of the ground about information g are required to ronment. The lave failed to addition, NMC ws and/or rege	ibe Fully. dial Actio ssure was ad Action Tal thecked to h at two feet i iven above to report at acceptant adequately OCD accept ulations.	n Taken." justed, which caused the ken.* dentify leak source and a n diameter and 1 1/2 fee is true and complete bd/or file certain relea the of a C-141 report by investigate and reme	hole approximately 1 1/2 inches deep and spilled approximately to the best of my knowledge se notifications and perform y the NMOCD marked as "F diate contamination that post art does not relieve the operat OIL C Approved by Environme Approval Date: 93	SEP REC on a cloud of gas coming from one of the sec in diameter on the underside of the pipe fro 11 bbls (9 bbl produced water and 2 bbl oil) and understand that pursuant to NMOC orrective actions for releases which mo and Report does not relieve the operation a threat to ground water, surface water or of responsibility for compliance with ONSERVATION DIVISION tal Specialist:	0 2 2015 EIVED eparator lines was om the water leg w CD rules and ay endanger or of liability r, human health h any other
NA Describe Cat At approxima noticed, well of Describe Arc After deeming noticed. It mad I hereby certi regulations a public health should their or the envirou federal, state, Signature: Printed Name Title: Gradu	use of Probl hely 4:00 PM was shut in. a Affected t safe condition de a hole on the ify that the in a safe condition de a hole on the ify that the in a safe condition de a hole on the ify that the in a safe condition operations in a safe condition operation operation operation operation operation operation operation operat	pacted, Deser em and Reme separator pres and Cleanup / ons, lines were o the ground about information g arc required to ronment. The bave failed to ave failed to ws and/or regu- costa Quintero	ibe Fully. dial Actio ssure was ad Action Tal thecked to h at two feet i iven above to report at acceptant adequately OCD accept ulations.	n Taken." justed, which caused the ken.* dentify leak source and a n diameter and 1 1/2 fee is true and complete bd/or file certain relea the of a C-141 report by investigate and reme	hole approximately 1 1/2 inches deep and spilled approximately to the best of my knowledge se notifications and perform y the NMOCD marked as "F diate contamination that post art does not relieve the operat OIL C Approved by Environme Approval Date: 93	SEP REC on a cloud of gas coming from one of the sec in diameter on the underside of the pipe fro 11 bbls (9 bbl produced water and 2 bbl oil) and understand that pursuant to NMOC orrective actions for releases which m nul Report" does not relieve the operat- a threat to ground water, surface write or of responsibility for compliance with ONSERVATION DIVISION that Specialist: 5 Expiration Date: NA D. Rules & Guidelines acted	0 2 2015 EIVED eparator lines was om the water leg w CD rules and ay endanger or of liability r, human health h any other

N/A

2 bbl oil),

Signature:

Date:

### State of New Mexico **Energy Minerals and Natural Resources**

Form C-141 Revised October 10, 2003

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

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 ConocoPhillips Contact Wendy Acosta Ouintero Address 3300 North A Street, Midland, TX 79707 Telephone No. (432) 688-9162 Facility Name Stampede Federal 34-1H Facility Type Production Facility Surface Owner: Federal Mineral Owner API: 30-015-42123 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: Oil & Produced Water Volume of Release 11 bbls Volume Recovered 6 bbls Source of Release: Separator Date and Hour of Occurrence Date and Hour of Discovery 07/22/2015 07/22/2015 16:30 Was Immediate Notice Given? If YES, To Whom? 🛛 Yes 🔲 No 🔲 Not Required NMOCD - Thomas Oberding; BLM - Jim Amos By Whom? Wendy Acosta Ouintero Date and Hour 07/23/2015 10am If YES, Volume Impacting the Watercourse. Was a Watercourse Reached? 🗌 Yes 🖾 No N/A If a Watercourse was Impacted, Describe Fully,\* 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 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 Jaws and/or regulations. OIL CONSERVATION DIVISION Approved by District Supervisor: Printed Name: Ike Tavarez (Agent for ConocoPhillips) Title: Project Manager Approval Date: Expiration Date: E-mail Address: Ike.Tavarez@TetraTech.com Conditions of Approval: Attached 11-5-19 Phone: (432) 682-4559

Appendix B

2

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

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

	26 So	outh	30	) East	
6	5 179 180	4	3	2	1
7	8 172	9	10	11	12
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

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

	26 S	outh	3	1 Eas	t
6	5	4	3	2	1 335 287
7	8 295 275	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 SITE	35	36

	25 \$	South		32 Eas	t
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	32 290	33	34	35	36

	26 Sc	outh	32	East	
6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21 333 180	22	23	24
30	29	28	27	26	25
31 2 <mark>95</mark>	32	33	34	35	36

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, NMProject Name:Conoco Phillips-Stampede Fed. 34-1HProject Number:212C-MD-00309

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	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

		BT	TEX		TPH DRO	TPH GRO
	Benzene	Toluene	Ethylbenzene	Xylene	DRO	GRO
Sample - Field Code	(mg/Kg)	(ing/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
401356 - AH-1 0-1	<0.0200	<0.0200 gr	< 0.0200	<0.0200	<b>265</b> B	<4.00
401358 - AH-2 0-1	<0.100	<0.100 gr	< 0.100	<0.100	1 <b>0200</b> в	63.4
401359 - AH-3 0-1	<0.0200 2	< 0.0200 gr	< 0.0200	<0.0200	<b>89.7</b> 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

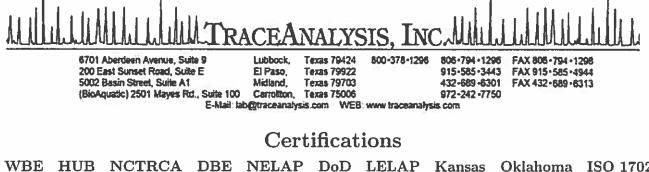
<sup>1</sup>dilution due to hydrocarbons.

<sup>2</sup>dilution due to hydrocarbons,

TraceAnalysis, Inc. • 6701 Aberdeen Ave., Suite 9 • Lubbock, TX 79424-1515 • (806) 794-1296 This is only a summary. Please, refer to the complete report package for quality control data.

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

TraceAnalysis, Inc. • 6701 Aberdeen Ave., Suite 9 • Lubbock, TX 79424-1515 • (806) 794-1296 This is only a summary. Please, refer to the complete report package for quality control data.



NELAP DoD LELAP Kansas

# Analytical and Quality Control Report

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

WBE

Report Date: August 14, 2015

Oklahoma ISO 17025

Work Order: 15080656 

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

DBE

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

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	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.

Blain Lepturch

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

# **Report Contents**

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Sample 401356 (AH-1 0-1)	5
Sample 401357 (AH-1 1-1.5)	6
Sample 401358 (AH-2 0-1)	6
Sample 401359 (AH-3 0-1)	7
Method Blanks	10
QC Batch 123934 - Method Blank (1)	10
QC Batch 123935 - Method Blank (1)	10
QC Batch 123977 - Method Blank (1)	10
QC Batch 123997 - Method Blank (1)	11
	12
	12
	12
	13
QC Batch 123997 - LCS (1)	13
Matrix Spikes	15
	15
	15
QC Batch 123977 - MS (1)	16
	16
Calibration Standards	18
	18
이 가지 않는 것이 같은 것이 같은 것이 같은 것이 같은 것이 없다. 것이 없는 것이 것이 없는 것이 없는 것이 없는 것이 없다.	18
	10
QC Batch 123935 - CCV $(1)$	18
	19
	19
이렇게 이렇게 한 사람이 있는 것을 만들었다. 그는 것을 만들었는 것을 만들었다. 것을 만들었다. 것을 만들었는 것을 가지 않는 것을 하는 것을 하는 것을 하는 것을 하는 것을 만들었다. 이 가슴을 물	19
QC Batch 123997 - CCV (1)	19
4.4	21
	21
	21
	21
	22
Attachments	<b>22</b>

# 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.

		Prep	Prep	QC	Analysis
Test	Method	Batch	Date	Batch	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.

Report Date: August 14, 2015 212C-MD-00309 Work Order: 15080656 Conoco Phillips-Stampede Fed. 34-1H Page Number: 5 of 22 Eddy Co, NM

# **Analytical Report**

#### Sample: 401356 - AH-1 0-1

Laboratory: Lubbock Analysis: BTEX QC Batch: 123934 Prep Batch: 104787		Analytica Date Ana Sample P	lyzed:	2015-08	8-11		Prep Metho Analyzed By Prepared By	7: JS
				RL				
Parameter	Flag	Cert		Result	Un	its	Dilution	RL
Benzene	U	1,2,3,4,5	-	< 0.0200	<b>mg</b> /1	Kg	1	0.0200
Toluene	Qr,U	1,2,3,4,5		< 0.0200	<b>mg</b> /1	Kg	1	0.0200
Ethylbenzene	σ	1,2,3,4,5		< 0.0200	mg/l	Kg	1	0.0200
Xylene	U	1,2,3,4,5		< 0.0200	<b>mg</b> /1	Kġ	1	0.0200
Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent	Recovery Limits
<u> </u>	riag	Cert			Dilution		Recovery	
Trifluorotoluene (TFT)		5	1.64	mg/Kg	I	2.00	82	65.6 - 125
4-Bromofluorobenzene (4-BFB)		5	1.93	mg/Kg	1	2.00	96	67.9 - 120

## Sample: 401356 - AH-1 0-1

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

### Sample: 401356 - AH-1 0-1

Laboratory: Analysis: QC Batch: Prep Batch:	Lubbock TPH DRO 123977 104822		Date Ar	cal Method aalyzed: Preparatio	2015-08-13	3	Prep Ma Analyze Prepare	d By: HJ
					RL			
Parameter		Flag	Cert	R	esult	Units	Dilution	$\mathbf{RL}$
DRO		Ð	1,2,3,4		265	mg/Kg	1	50.0
Surrogate	Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits
n-Tricosane		3	176	mg/Kg	1	150	117	48.9 - 172

Report Date: August 14, 2015 212C-MD-00309			Work Order: 15080656 Conoco Phillips-Stampede Fed. 34-1H						Page Number: 6 of 22 Eddy Co, NM	
Sample: 401356 - AH-1 0-1										
Laboratory: Lubbock Analysis: TPH GRO QC Batch: 123935 Prep Batch: 104787		Ι	Date Ana	al Method alyzed: Preparatio	2015-0	8-11		Prep Meth Analyzed I Prepared E	By: JS	
					RL					
Parameter	Flag		Cert	1	Result	Uni	ts	Dilution	RL	
GRO	U		1.2.3,4		<4.00	mg/K	g	1	4.00	
Surrogate		Flag	Cert	Result	Units	Dilution	Spike Amount	Percent Recovery	Recovery Limits	
Trifluorotoluene (TFT)	Qar	Qiz	3	1.51	mg/Kg	1	2.00	76	76.5 - 130	
4-Bromofluorobenzene (4-BFB)	-dist.	-411	з	1.78	mg/Kg	1	2.00	89	68.4 - 120	

# Sample: 401357 - AH-1 1-1.5

			$\mathbf{RL}$			
Parameter	Flag	Cert	Result	Units	Dilution	$\mathbf{RL}$
Chloride		1	307	mg/Kg	1	50.0

# Sample: 401358 - AH-2 0-1

Laboratory: Lubbock Analysis: BTEX QC Batch: 123934 Prep Batch: 104787		Analytica Date Ana Sample P	lyzed:	2015-08			Prep Metho Analyzed By Prepared By	r: JS
				$\mathbf{RL}$				
Parameter	Flag	Cert		Result	Unit	s	Dilution	$\mathbf{RL}$
Benzene		1,2,3,4,5		< 0.100	mg/K	g	5	0.0200
Toluene	Qr,U	1,2,3,4,5		<0.100	mg/K	g	5	0.0200
Ethylbenzene	U	1,2.3,4,5		<0.100	mg/K	g	5	0.0200
Xylene	U	1,2,3,4,5		<0.100	mg/K	g	5	0.0200
						Spike	Percent	Recovery
Surrogate	Flag	g Cert	Result	Units	Dilution	Amount	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

Report Date: August 14, 2015	Work Order: 15080656	Page Number: 7 of 22
212C-MD-00309	Conoco Phillips-Stampede Fed. 34-1H	Eddy Co, NM

# Sample: 401358 - AH-2 0-1

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

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

Laboratory: Lubbock Analysis: TPH DRO QC Batch: 123977 Prep Batch: 104822			Date A	cal Method nalyzed: Preparatio	2015-0			Prep Me Analyzec Preparec	By: HJ
					RL				
Parameter	Flag		Cert		esult	Un		Dilution	RL *
DRO	В		1,2,0,4	1(	3200	mg/l	۲g	1	50.0
Surrogate Fl	lag Co	ert F	Result	Units	Dilut		Spike mount	Percent Recovery	Recovery Limits
	9	3	370	mg/Kg	1		25.0	1480	48.9 - 172
Sample: 401358 - AH-2 Laboratory: Lubbock Analysis: TPH GRO QC Batch: 123935 Prep Batch: 104787	0-1	I	Date An	al Method: alyzed: Preparation		8-11		Prep Meth Analyzed I Prepared F	By: JS
Parameter	Flag		Cert	R	RL esult	Uni	te	Dilution	RL
GRO	1 105		1 2 3,4		63.4	mg/I		5	4.00
Surrogate Trifluorotoluene (TFT)	Qər	Flag	Cert	Result	Units mg/Kg	Dilution 5	Spike Amount 2.00	Percent Recovery 74	Recovery Limits 76.5 - 130
4-Bromofluorobenzene (4-B	•	-	3	2.38	mg/Kg	5	2.00	119	68.4 - 120

Report Date: August 14, 2015 212C-MD-00309		Work Order: 15080656 Conoco Phillips-Stampede Fed. 34-1H				Page Number: 8 of 22 Eddy Co, NM		
Sample: 401359 - AH-3 0-1								
Laboratory: Lubbock								
Analysis: BTEX	L. L	Analytical	Method	l: S 8021	B		Prep Meth	od: S 5035
QC Batch: 123934	1	Date Anal	yzed:	2015-08	8-11		Analyzed I	By: JS
Prep Batch: 104787	5	Sample Pi	reparatio	on: 2015-08	3-11		Prepared E	By: JS
				RL				
Parameter	Flag	Cert		Result	Un	its	Dilution	RL
Benzene <sup>2</sup>	U	1,2,3,4,5		< 0.0200	mg/l	Kg	1	0.0200
Toluene	Q1+U	1,2,3,4,5		< 0.0200	mg/l	Kg	1	0.0200
Ethylbenzene	U	1,2,3,4,5		< 0.0200	mg/l	Kg	1	0.0200
Xylene	U	1,2,3,4.5		< 0.0200	mg/l	Kg	1	0.0200
						Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)	- 19	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

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

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

Laboratory: Analysis: QC Batch: Prep Batch:	Lubbock TPH DRO 123977 104822	Prep Ma Analyze Prepare						
					RL			
Parameter		Flag	Cert	Re	sult	Units	Dilution	RL
DRO		в	1,2,3,4	8	9.7	mg/Kg	1	50.0
						Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
n-Tricosane		3	34.8	mg/Kg	1	25.0	139	48.9 - 172

Report Date: August 14, 2015 212C-MD-00309		Conoc	Work Or o Phillips-		Page Number: 9 of 22 Eddy Co, NM			
Sample: 401359 - AH-3 0-1								
Laboratory:LubbockAnalysis:TPH GROQC Batch:123935Prep Batch:104787		Date A	cal Metho nalyzed: Preparati	2015-0	08-11		Prep Meth Analyzed I Prepared I	By: JS
				RL				
Parameter	Flag	Cert		Result	Uni	its	Dilution	$\mathbf{RL}$
GRO	U	1,2,3,4		<4.00	mg/I	٢g	1	4.00
Surrogate	F	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

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

Method Blank (1)

# Method Blanks

QC Batch: 123934

QC Batch: 123934 Prep Batch: 104787			Analyzed: reparation:	2015-08- 2015-08-				ed By: JS ed By: JS
					MDL			
Parameter	Flag		Cert		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			1,3,3,4,5		< 0.00762		mg/Kg	0.02
Xylene			1.2.3,4.5		0.00600		mg/Kg	0.02
- A-					12	Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
Trifluorotoluene (TFT)		5	2.10	mg/Kg	1	2.00	105	65.6 - 125
4-Bromofluorobenzene (4-BFB)		5	2.13	mg/Kg	1	2.00	106	67.9 - 120

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

QC Batch: 123935 Prep Batch: 104787			Analyzed: reparation:	2015-08- 2015-08-			-	ed By: JS ed By: JS
					MDL			
Parameter	Flag		Cert		Result		Units	RL
GRO			1,2,3,4		<0.641		mg/Kg	4
						Spike	Percent	Recovery
Surrogate	Flag	Cert	Result	Units	Dilution	Amount	Recovery	Limits
Triffuorotoluene (TFT)		э	1.94	mg/Kg	1	2.00	97	76.5 - 130
4-Bromofluorobenzene (4-BFB)		з	1.95	mg/Kg	1	2.00	98	68.4 - 120

Method Bla	nnk (1)	QC Batch: 123977				
QC Batch:	123977		Date Analyzed:	2015-08-13	Analyzed By:	HJ
Prep Batch:	104822		QC Preparation:	2015-08-13	Prepared By:	HJ

Report Date: Aug 212C-MD-00309		Work Order: 15080656 Conoco Phillips-Stampede Fed. 34-1H					nber: 11 of 22 Eddy Co, NM	
Parameter		Fl	ag	Cert		IDL sult	Units	RL
DRO	В	В		1,2,3,4		16.2	mg/Kg	50
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

Method Blank (1)	QC Batch: 123997				
QC Batch: 123997 Prep Batch:		Date Analyzed: QC Preparation			zed By: red By:
		12 - C	MDL		
Parameter	Flag	Cert	Result	Units	$\mathbf{RL}$
Chloride		1	<31.4	mg/Kg	50

Work Order: 15080656 Conoco Phillips-Stampede Fed. 34-1H Page Number: 12 of 22 Eddy Co, NM

### Laboratory Control Spikes

### Laboratory Control Spike (LCS-1)

QC Batch:	123934	Date Analyzed:	2015-08-11	Analyzed By:	JS
Prep Batch:	104787	QC Preparation:	2015-08-11	Prepared By:	JS

			LCS			Spike	Matrix		Rec.
Param	F	С	Result	Units	Dil.	Amount	Result	Rec.	Limit
Benzene		1,2.0,4,5	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.

			LCSD			Spike	Matrix		Rec.		RPD
Param	F	С	Result	Units	Dil.	Amount	Result	Rec.	Limit	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.

		LCS	LCSD			Spike	LCS	LCSD	Rec.
Surrogate		Result	Result	Units	Dil.	Amount	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: Prep Batch:	123935 104787			ate Analyze C Preparat		-08-11 -08-11			*	ed By: JS ed By: JS
Param		F	С	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

Report Date: August 14, 2015 212C-MD-00309	5		Conoco	Work Ore Phillips-S			4-1H		Pa	-		13 of 22 Co, NM
control spikes continued												
Param	F	С	LCSD Result	Units	Dil.	Spike Amount	Matrix Result	Rec.	Re Lir		RPD	RPD Limit
			LCSD			Spike	Matrix		Re	ec.		RPD
Param	F	С	Result	Units	Dil.	Amount	Result	Rec.	Lin	nit	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	ne spil	ke resul	it. RPD is	based on	the spi	ke and sp	ike duplic	ate res	ult.			
			LCS	LCSD			Spik	e I	LCS	LCSD	)	Rec.
Surrogate			Result						Rec.	Rec.		Jimit
Trifluorotoluene (TFT)			1.86 a.a.	1.64	mg/		2.00		93	82		5 - 130
4-Bromofluorobenzene (4-BFB	)		a 2.02	2.05	mg/	/Kg 1	2.00	)	101	102	68.	4 - 120
Laboratory Control Spike (LCS-1)QC Batch:123977Date Analyzed:2015-08-13Analyzed By:HJPrep Batch:104822QC Preparation:2015-08-13Prepared By:HJ												
The batch 101022			QU I	cparation	. 4010	-00-10				теры	icu Dy	
Param		F		LCS esult	Units	Dil.	Spike Amount		atrix esult	Rec.		Rec. Jimit
			- V - 1	eautr	Omus	ALC: 4 A C	runouni					2111110
DRO	B	B			ng/Kg	1	500		6.2	103		9 - 130
			1.2.3,4	532 г	ng/Kg	1	500	1	6.2	_		
			1.2.3.4 t. RPD is	532 г	ng/Kg	1 ke and sp	500 ike duplic	1	6.2 ult.	103		9 - 130
Percent recovery is based on th		ke resul	1.2.3,4	532 г	ng/Kg the spi	1	500	1	6.2	103 ec.		
Percent recovery is based on th Param	ie spil	ke resul	1.2.3.4 lt. RPD is LCSD Result	532 r based on	ng/Kg the spi	1 ke and sp Spike	500 ike duplic Matrix	1 ate res	6.2 ult. Re	103 ec. nit	60.	9 - 130 RPD
DRO Percent recovery is based on th Param DRO Percent recovery is based on th	ie spil F B B	ce resul	1.2.3.4 It. RPD is LCSD Result 482	532 r based on Units mg/Kg	ng/Kg the spi Dil. 1	1 ke and sp Spike Amount 500	500 ike duplic Matrix Result 16.2	1 ate res Rec. 93	6.2 ault. Re Lin 60.9	103 ec. nit	60. RPD	9 - 130 RPD Limit
Percent recovery is based on th Param DRO	ie spil F B B ie spil	c C 1,2,3,4 ke resul	1.2.3.4 It. RPD is LCSD Result 482 It. RPD is	532 r based on Units mg/Kg	ng/Kg the spi Dil. 1	1 ke and sp Spike Amount 500 ke and sp	500 ike duplica Matrix Result 16.2 ike duplica	1 ate res Rec. 93 ate res	6.2 ault. Re Lin 60.9	103 ec. nit - 130	60. RPD 10	9 - 130 RPD Limit 20
Percent recovery is based on th Param DRO Percent recovery is based on th	ie spil F B B ie spil	ce resul	1.2.3.4 It. RPD is LCSD Result 482	532 r based on Units mg/Kg	ng/Kg the spi Dil. 1 the spi	1 Spike Amount 500 ke and sp	500 ike duplic Matrix Result 16.2	1 ate res Rec. 93	6.2 nult. Re Lin 60.9 - nult.	103 ec. nit	60. RPD 10	9 - 130 RPD Limit
Percent recovery is based on th Param DRO Percent recovery is based on th Surrogate	ie spil F B B ie spil I Ro	C 1,2,3,4 c resul	t. RPD is LCSD Result 482 LCSD is LCSD	532 r based on Units mg/Kg based on	ng/Kg the spi Dil. 1 the spi s I	1 Spike Amount 500 ke and sp	500 ike duplic: Matrix Result 16.2 ike duplic: Spike	1 ate res Rec. 93 ate res LCS	6.2 sult. Re Lin 60.9 - sult.	103 ec. nit - 130	60. RPD 10	9 - 130 RPD Limit 20 Rec.
Percent recovery is based on th Param DRO Percent recovery is based on th Surrogate	ne spil F B B ne spil I Ra 3	c result	t. RPD is LCSD Result 482 t. RPD is LCSD Result	532 r based on Units mg/Kg based on Units	ng/Kg the spi Dil. 1 the spi g	1 ke and sp Amount 500 ke and sp Dil. A 1	500 ike duplic: Matrix Result 16.2 ike duplic: Spike .mount	1 ate res 93 ate res LCS Rec.	6.2 sult. Re Lin 60.9 - sult.	103 ec. nit - 130 CSD Rec. 123	60. RPD 10	9 - 130 RPD Limit 20 Rec. .imit 9 - 172 By:
Percent recovery is based on th Param DRO Percent recovery is based on th Surrogate n-Tricosane 2 Laboratory Control Spike QC Batch: 123997 Prep Batch:	ne spil F B B ne spil I Ra 3	ce resul C 1.2.3.4 ce resul JCS esult 13.2 -1)	t. RPD is LCSD Result 482 t. RPD is LCSD Result 30.7	532 r based on Units mg/Kg based on Units mg/K Date Ana QC Prepa	ng/Kg the spi Dil. 1 the spi g lyzed: aration:	1 ke and sp Amount 500 ke and sp Dil. A 1	500 ike duplic: Matrix Result 16.2 ike duplic: Spike .mount	1 Rec. 93 ate res LCS Rec. 133	6.2 sult. Re Lin 60.9 - sult.	103 ec. nit - 130 CSD Rec. 123	60. RPD 10 I 48.	9 - 130 RPD Limit 20 Rec. .imit 9 - 172 By:
Percent recovery is based on th Param DRO Percent recovery is based on th Surrogate n-Tricosane Aboratory Control Spike QC Batch: 123997	ne spil F B B ne spil I Ra 3	c result	LCSD Result 482 t. RPD is LCSD Result 30.7	532 r based on Units mg/Kg based on Units mg/K Date Ana QC Prepa CS sult U	ng/Kg the spi Dil. 1 the spi g	1 ke and sp Amount 500 ke and sp Dil. A 1	500 ike duplic: Result 16.2 ike duplic: Spike mount 25.0	1 ate res 93 ate res LCS Rec. 133	6.2 ult. Re 60.9 -	103 ec. nit - 130 CSD Rec. 123	60. RPD 10 I 48.	9 - 130 RPD Limit 20 Rec. .imit 9 - 172 By: By:

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

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

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

### Matrix Spikes

Matrix Spike	e (MS-1)	Spiked	Sample:	401711
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QC Batch:	123934	Date Analyzed:	2015-08-11	Analyzed By:	JS
Prep Batch:	104787	QC Preparation:	2015-08-11	Prepared By:	JS

			MS			Spike	Matrix		Rec.
Param	F	С	Result	Units	Dil.	Amount	Result	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.

				MSD			Spike	Matrix		Rec.		RPD
Param		F	С	Result	Units	Dil.	Amount	Result	Rec.	Limit	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.

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

### Matrix Spike (MS-1) Spiked Sample: 401711

QC Batch: Prep Batch:	123935 104787			te Analyze C Preparati						l By: JS By: JS
Param		ਸ	С	MS	Units	Dil	Spike	Matrix	Dee	Rec.
		r	0	Result	Units	Dil.	Amount	Result	Rec.	Limit
GRO			1,2,3,4	15.0	mg/Kg	5	20.0	<3.20	75	25 - 139

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matrix spikes continued													
Daman		13	a	MSD	TT-te-	T):1	Spike	Matrix	D		ec.	מחת	RPD
Param		F	C	Result	Units	Dil.	Amoun	t Result	Rec.	Li	mit	RPD	Limit
				MSD			Spike	Matrix		R	ec.		RPD
Param		F	С	Result		Dil.	Amoun		Rec.		mit	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 of	n the s	pike	result	. RPD is	s based on	the sp	ike and s	pike duplic	ate res	ult.			
				N	IS MS	D		Sr	ike	MS	MSE	)	Rec.
Surrogate					sult Res		Units	-	ount	Rec.	Rec		Limit
Trifluorotoluene (TFT)		Qar	Qar	a 1.			ng/Kg		2	69	62		5 - 130
4-Bromofluorobenzene (4-B	FB)			a L	93 1.6	6 n	ng/Kg	5	2	96	83	68.	4 - 120
	0.41				÷.								12
Matrix Spike (MS-1)	Spiked	Sar	nple: 4	401356									
QC Batch: 123977				Date	Analyzed:	201	5-08-13				Analy	zed By	r: HJ
Prep Batch: 104822					reparation		5-08-13					red By	
·				Ŧ	-						-	•	
										+			-
					AIG				6.10				Rec
Param		1	F	C F	MS Result	Units	Dil.	Spike Amount	Ma Re		Rec.		Rec. Limit
Param DRO	ß		F B 1	C I	Result	Units mg/Kg	Dil.	Amount 500	Re	sult 65	Rec. 96	I	Rec. Limit 9 - 130
DRO		1	B 1	2,3,4	Result 746 i	mg/Kg	1	Amount 500	Re 2	sult 65		I	Limit
		1	B 1	2 3,4 . RPD is	Result 746 i	mg/Kg	ike and s	Amount 500 pike duplic	Re 2	sult 65 ult.	96	I	Limit 9 - 130
DRO Percent recovery is based or		ı pike	B 1 result	.2.0,4 . RPD is MSD	Result 746 1 s based on	mg/Kg the sp	ike and s Spike	Amount 500 pike duplic Matrix	Re 2 ate res	sult 65 ult. Re	96 ec.	<u> </u>	Limit 9 - 130 RPD
DRO Percent recovery is based or Param	n the sj	i pike F	<sup>B 1</sup> result C	. RPD is MSD Result	Result 746 1 s based on Units	mg/Kg the sp Dil.	ike and s Spike Amount	Amount 500 pike duplic Matrix Result	Re 2 ate res Rec.	sult 65 ult. Re Lir	96 ec. mit	I 47. RPD	Limit 9 - 130 RPD Limit
DRO Percent recovery is based or Param DRO	n the sp B	рike F в	B 1 result C	.2,3,4 . RPD is MSD Result 748	Result 746 1 5 based on Units mg/Kg	mg/Kg the sp Dil. 1	ike and s Spike Amount 500	Amount 500 pike duplic Matrix Result 265	Re 2 ate res Rec. 97	sult 65 ult. Re Lir 47.9	96 ec.	<u> </u>	Limit 9 - 130 RPD
DRO Percent recovery is based or Param	n the sp B	рike F в	B 1 result C	.2,3,4 . RPD is MSD Result 748	Result 746 1 5 based on Units mg/Kg	mg/Kg the sp Dil. 1	ike and s Spike Amount 500	Amount 500 pike duplic Matrix Result 265	Re 2 ate res Rec. 97	sult 65 ult. Re Lir 47.9	96 ec. mit	I 47. RPD	Limit 9 - 130 RPD Limit
DRO Percent recovery is based or Param DRO	n the sp B	рike F в	B 1 result C 1.2.3.4 result	.2,3,4 . RPD is MSD Result 748	Result 746 1 5 based on Units mg/Kg	mg/Kg the sp Dil. 1	ike and s Spike Amount 500	Amount 500 pike duplic Matrix Result 265 pike duplic	Re 2 ate res Rec. 97	sult 65 ult. Re Lin 47.9 ult.	96 ec. mit	1 47. RPD 0	Limit 9 - 130 RPD Limit
DRO Percent recovery is based or Param DRO	n the sp B	pike F B pike	B 1 result C 1,2,3,4 result S	2.3.4 RPD is MSD Result 748 . RPD is	Result 746 1 5 based on Units mg/Kg 5 based on	mg/Kg the sp Dil. 1 the sp	ike and s Spike Amount 500	Amount 500 pike duplic Matrix Result 265	Re 2 ate res Rec. 97 ate res	sult 65 ult. Re Lin 47.9 ult.	96 ec. nit - 130	<u>I</u> 47. <u>R.PD</u> 0	Limit 9 - 130 RPD Limit 20
DRO Percent recovery is based of Param DRO Percent recovery is based of	n the sp B	pike F B pike M	B 1 result C 1.2.3.4 result S sult	2.3.4 . RPD is MSD Result 748 . RPD is MSD	Result 746 1 s based on Units mg/Kg s based on	mg/Kg the sp Dil. 1 the sp	ike and s Spike Amount 500 ike and s	Amount 500 pike duplic Matrix Result 265 pike duplic Spike	Re 2 ate res Rec. 97 ate res MS	sult 65 ult. Ro Lir 47.9 ult.	96 ec. - 130 MSD	<u>I</u> 47. <u>RPD</u> 0	Limit 9 - 130 RPD Limit 20 Rec.
DRO Percent recovery is based of Param DRO Percent recovery is based of Surrogate	n the sj B n the sj	pike F B pike M Res	B 1 result C 1.2.3.4 result S sult	2.3.4 MSD is MSD Result 748 . RPD is MSD Result	Result 746 1 5 based on Units mg/Kg 5 based on Unit	mg/Kg the sp Dil. 1 the sp	ike and s Spike Amount 500 ike and s Dil.	Amount 500 pike duplic Matrix Result 265 pike duplic Spike Amount	Re 2 ate res Rec. 97 ate res MS Rec	sult 65 ult. Ro Lir 47.9 ult.	96 ec. - 130 MSD Rec.	<u>I</u> 47. <u>RPD</u> 0	Limit 9 - 130 RPD Limit 20 Rec.
DRO Percent recovery is based of Param DRO Percent recovery is based of Surrogate	n the sj B n the sj	pike F B pike M Res	B 1 result C 1.2.3.4 result S sult	2.3.4 MSD is MSD Result 748 . RPD is MSD Result	Result 746 1 5 based on Units mg/Kg 5 based on Unit	mg/Kg the sp Dil. 1 the sp	ike and s Spike Amount 500 ike and s Dil.	Amount 500 pike duplic Matrix Result 265 pike duplic Spike Amount	Re 2 ate res Rec. 97 ate res MS Rec	sult 65 ult. Ro Lir 47.9 ult.	96 ec. - 130 MSD Rec.	<u>I</u> 47. <u>RPD</u> 0	Limit 9 - 130 RPD Limit 20 Rec.
DRO Percent recovery is based of Param DRO Percent recovery is based of Surrogate n-Tricosane	n the sp B n the sp	F B pike M. Res 16	B 1 result C 1.2.3.4 result S sult 88	A RPD is MSD Result 748 RPD is MSD Result 172	Result 746 1 5 based on Units mg/Kg 5 based on Unit	mg/Kg the sp Dil. 1 the sp	ike and s Spike Amount 500 ike and s Dil.	Amount 500 pike duplic Matrix Result 265 pike duplic Spike Amount	Re 2 ate res Rec. 97 ate res MS Rec	sult 65 ult. Ro Lir 47.9 ult.	96 ec. - 130 MSD Rec.	<u>I</u> 47. <u>RPD</u> 0	Limit 9 - 130 RPD Limit 20 Rec.
DRO Percent recovery is based of Param DRO Percent recovery is based of Surrogate n-Tricosane	n the sj B n the sj	F B pike M. Res 16	B 1 result C 1.2.3.4 result S sult 88	A RPD is MSD Result 748 RPD is MSD Result 172	Result 746 1 5 based on Units mg/Kg 5 based on Unit	mg/Kg the sp Dil. 1 the sp	ike and s Spike Amount 500 ike and s Dil.	Amount 500 pike duplic Matrix Result 265 pike duplic Spike Amount	Re 2 ate res Rec. 97 ate res MS Rec	sult 65 ult. Ro Lir 47.9 ult.	96 ec. - 130 MSD Rec.	<u>I</u> 47. <u>RPD</u> 0	Limit 9 - 130 RPD Limit 20 Rec.
DRO Percent recovery is based of Param DRO Percent recovery is based of Surrogate n-Tricosane Matrix Spike (MS-1)	n the sp B n the sp	F B pike M. Res 16	B 1 result C 1.2.3.4 result S sult 88	A RPD is MSD Result 748 RPD is MSD Result 172	Result 746 1 s based on Units mg/Kg s based on Unit mg/I	mg/Kg the sp Dil. 1 the sp ts Kg	ike and s Spike Amount 500 ike and s Dil. 1	Amount 500 pike duplic Matrix Result 265 pike duplic Spike Amount	Re 2 ate res Rec. 97 ate res MS Rec	sult 65 ult. Ro Lir 47.9 ult.	96 ec. - 130 MSD Rec. 115	I 47. 0 0	Limit 9 - 130 RPD Limit 20 Rec. Limit 9 - 172
DRO Percent recovery is based of Param DRO Percent recovery is based of Surrogate n-Tricosane Matrix Spike (MS-1) QC Batch: 123997	n the sp B n the sp	F B pike M. Res 16	B 1 result C 1.2.3.4 result S sult 88	A RPD is MSD Result 748 RPD is MSD Result 172	Result 746 1 s based on Units mg/Kg s based on Unit mg/I Date An	mg/Kg the sp Dil. 1 the sp ts Kg	ike and s Spike Amount 500 ike and s Dil. 1	Amount 500 pike duplic Matrix Result 265 pike duplic Spike Amount	Re 2 ate res Rec. 97 ate res MS Rec	sult 65 ult. Ro Lir 47.9 ult.	96 ec. - 130 MSD Rec. 115	I A7. R.PD 0 I 48. alyzed	Limit 9 - 130 RPD Limit 20 Rec. Limit 9 - 172 By:
DRO Percent recovery is based of Param DRO Percent recovery is based of Surrogate n-Tricosane Matrix Spike (MS-1)	n the sp B n the sp	F B pike M. Res 16	B 1 result C 1.2.3.4 result S sult 88	A RPD is MSD Result 748 RPD is MSD Result 172	Result 746 1 s based on Units mg/Kg s based on Unit mg/I	mg/Kg the sp Dil. 1 the sp ts Kg	ike and s Spike Amount 500 ike and s Dil. 1	Amount 500 pike duplic Matrix Result 265 pike duplic Spike Amount	Re 2 ate res Rec. 97 ate res MS Rec	sult 65 ult. Ro Lir 47.9 ult.	96 ec. - 130 MSD Rec. 115	I 47. 0 0	Limit 9 - 130 RPD Limit 20 Rec. Limit 9 - 172 By:
DRO Percent recovery is based of Param DRO Percent recovery is based of Surrogate n-Tricosane Matrix Spike (MS-1) QC Batch: 123997	n the sp B n the sp	F B pike M. Res 16	B 1 result C 1.2.3.4 result S sult 88	A Constant of the second secon	Result 746 1 s based on Units mg/Kg s based on Unit mg/I mg/I Date Ana QC Prep	mg/Kg the sp Dil. 1 the sp ts Kg	ike and s Spike Amount 500 ike and s Dil. 1	Amount 500 pike duplic Matrix Result 265 pike duplic Spike Amount 150	Re 2 ate res 97 ate res MS Rec 112	sult 65 ult. Ro Lin 47.9 ult.	96 ec. - 130 MSD Rec. 115	I A7. R.PD 0 I 48. alyzed	Limit 9 - 130 RPD Limit 20 Rec. Limit 9 - 172 By: By:
DRO Percent recovery is based of Param DRO Percent recovery is based of Surrogate n-Tricosane Matrix Spike (MS-1) QC Batch: 123997 Prep Batch:	n the sp B n the sp	F B pike M Res 16	B 1 result C 1.2.3.4 result S sult i8	ACCESSION OF CONTRACT OF CONTR	Result 746 1 s based on Units mg/Kg s based on Unit mg/I mg/I MS	mg/Kg the sp Dil. 1 the sp ts Kg alyzed: aration	1 ike and s Amount 500 ike and s Dil. 1	Amount 500 pike duplic Matrix Result 265 pike duplic Spike Amount 150	Re 2 ate res 97 ate res MS Rec 112	sult 65 ult. Ro Lin 47.9 ult.	96 ec. - 130 MSD Rec. 115 An Pre	I <u>R.PD</u> 0 I 48. alyzed epared	Limit 9 - 130 RPD Limit 20 Rec. Limit 9 - 172 By: By: Rec.
DRO Percent recovery is based of Param DRO Percent recovery is based of Surrogate n-Tricosane Matrix Spike (MS-1) QC Batch: 123997	n the sp B n the sp	F B pike M Res 16	B 1 result C 1.2.3.4 result S sult 88	AC RC R	Result 746 1 s based on Units mg/Kg s based on Unit mg/I mg/I MS esult	mg/Kg the sp Dil. 1 the sp ts Kg	ike and s Spike Amount 500 ike and s Dil. 1	Amount 500 pike duplic Matrix Result 265 pike duplic Spike Amount 150	Rec. 2 ate rest 97 ate rest MS Rec 112	sult 65 ult. Ro Lin 47.9 ult.	96 ec. - 130 MSD Rec. 115	I 47. 0 1 48. alyzed epared	Limit 9 - 130 RPD Limit 20 Rec. Limit 9 - 172 By: By:

Report Date: August 14, 2015	Work Order: 15080656	Page Number: 17 of 22
212C-MD-00309	Conoco Phillips-Stampede Fed. 34-1H	Eddy Co, NM

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

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

### **Calibration Standards**

Standard (CCV-1)

QC Batch: 123934			Date An	alyzed: 20	Analy	yzed By: JS		
				CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	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 An	alyzed: 20	15-08-11		Analy	zed By: JS
				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	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		Anal	yzed By: JS
				CCVs	CCVs	CCVs	Percent	
				True	Found	Percent	Recovery	Date
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	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

212C-MD-0	te: August 14, 20 00309		Conoc	Work Orde o Phillips-St	Page Number: 19 of 22 Eddy Co, NM				
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	0.930	93	80 - 120	2015-08-11	
Standard	(CCV-1)								
QC Batch:	123977		Date	Analyzed:	2015-08-13		Analy	vzed By: HJ	
Param	Flag	Cert	Units	CCVs True Conc.	CCVs Found Conc.	CCVs Percent Recovery	Percent Recovery Limits	Date Analyzed	
DRO	1.00	1,2,3,4	mg/Kg	500	485	97	80 - 120	2015-08-13	
			Date	Analyzed:	2015-08-13		Analy	zed By: HJ	
Standard QC Batch:			Date	CCVs	CCVs	CCVs	Percent	-	
QC Batch: Param		Cert	Units	CCVs True Conc.	CCVs Found Cone.	Percent Recovery	Percent Recovery Limits	Date Analyzed	
QC Batch:	123977	Cert 1.2.3.4		CCVs True	CCVs Found	Percent	Percent Recovery	Date	
QC Batch: Param DRO	123977 Flag		Units	CCVs True Conc.	CCVs Found Cone.	Percent Recovery	Percent Recovery Limits	Date Analyzed	
QC Batch: Param	123977 Flag (ICV-1)		Units	CCVs True Conc.	CCVs Found Cone. 482	Percent Recovery	Percent Recovery Limits 80 - 120	Date Analyzed	
QC Batch: Param DRO Standard (	123977 Flag (ICV-1)		Units	CCVs True Conc. 500	CCVs Found Cone. 482	Percent Recovery	Percent Recovery Limits 80 - 120	Date Analyzed 2015-08-13	
QC Batch: Param DRO Standard (	123977 Flag (ICV-1)		Units	CCVs True Conc. 500 Date Anal ICVs	CCVs Found Cone. 482 yzed: ICVs	Percent Recovery 96 ICVs	Percent Recovery Limits 80 - 120 Ar Percent	Date Analyzed 2015-08-13	

### Standard (CCV-1)

QC Batch: 123997

Date Analyzed:

Analyzed By:

Report Date: A 212C-MD-0030	- ·	5	Conoco	Work Order	Page Number: 20 of 22 Eddy Co, NM				
				CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date	
Param	Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed	
Chloride		1	mg/Kg	100	100	100	85 - 115	2015-08-13	

Page Number: 21 of 22 Eddy Co, NM

### Appendix

### **Report Definitions**

NameDefinitionMDLMethod Detection LimitMQLMinimum Quantitation LimitSDLSample Detection Limit

### Laboratory Certifications

	Certifying	Certification	Laboratory
С	Authority	Number	Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
17	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
-	WBE	237019	TraceAnalysis
1	L-A-B	L2418	Lubbock
<b>2</b>	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 then 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.

Work Order: 15080656 Conoco Phillips-Stampede Fed. 34-1H Page Number: 22 of 22 Eddy Co, NM

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.

PAGE: OF:	(Circle or Specify Method No.)		0/625	xiatiles 240/8280 38 38 39 54 54 54 54 54 54 54 54 54 54 54 54 54	FCLP Volatile: PCLP Volatile: PCLS 56mi Vo PCLS 56mi PCLS 56mi PCLS 56mi PCLP Volatile PCLP Volatile PC			X					SAMPLED BY: (Print & Indria) Date: 23-33-55	2	HAND DELIVERED UPS OTHER: VERTATECH CONTACT PERSON: Results for	1	C	maka.	- Accounting receives Gold copy.
		44 54 Hg Se 24 50 Hg Se (Ext. to C35)		sA gA										SAMPLE SHI	HAND DEL	10	Z	50.5	29 Participation Copy
y Record			PRESERVATIVE				×						Time: 75 1	Date: Time:	Defe: Time:	N3 5.0	THE 750 S.T.	TEX 0 X COOCLO	964
Request of Chain of Custody		1910 N. Big Spri Midland, Texas (432) 682-4558 Fax	SITE MANAGEB:	edo Fed.	SAMPLE IDENTIFICATION	AH-1 0-1	AH-1 1-1.5	AH-2 0-1	AH-3 0-1			Date: E = [0 - E ] RECEIVED RY (Simmatrine)	MAION CIE	10:42	RECE	ZIP: DECENTION BY (SHOMALUNG)	REMARKS: FULL douber SOMOLOS	A of turb	5
Analysis Request of Ch	F		Ennorthilling	10-003	XIATAM	<u>8/5 8 X</u>	8/5 5 K	J.	8/5 S X				ansa byo			HECEVENG LABORATORY: Address: Citty: State:		Please fill out all copies - Lab	
An			CLIENT NAME	PROJECT NO.: 2170- D	LAB I.D. NUMBER	101356	40357	40358	401355			RELINGUSINED BY-(Signature	RELINQUISHED BY (Signature	ET MOULTSHEP BY ALTERNATION		ECEIVING LABO DORESS: JTY:	CONTACT:		

### **Summary Report**

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

Report Date: August 12, 2015

Work Order: 15080748

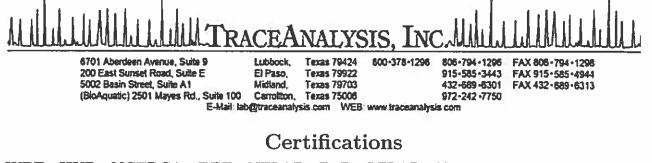
Project Location:Eddy Co, NMProject Name:Conoco Phillips-Stampede Fed 34-1HProject Number:212C-MD-00309

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	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

TraceAnalysis, Inc. • 6701 Aberdeen Ave., Suite 9 • Lubbock, TX 79424-1515 • (806) 794-1296 This is only a summary. Please, refer to the complete report package for quality control data.



WBE HUB NCTRCA DBE NELAP DoD LELAP Kansas Oklahoma ISO 17025

### Analytical and Quality Control 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, NMProject Name:Conoco Phillips-Stampede Fed 34-1HProject Number:212C-MD-00309

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

			Date	Time	Date
Sample	Description	Matrix	Taken	Taken	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.

Blain Leptinich

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

### **Report Contents**

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QC Batch 123957 - LCS (1)	7
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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.

		Ргер	Prep	$\mathbf{QC}$	Analysis
Test	Method	Batch	Date	Batch	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.

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: Analysis: QC Batch: Prep Batch:	Midland Chloride (Titration) 123957 104803	Da	alytical Method: te Analyzed: mple Preparation:	SM 4500-Cl B 2015-08-12 2015-08-12	Prep Method: Analyzed By: Prepared By:	AM
Deveryon		"	RL	tt	Dilation	DI
Parameter	F	'lag Cer	t Result	Units	Dilution	RL
Chloride		υ	<20.0	mg/Kg	5	4.00

Work Order: 15080748 Conoco Phillips-Stampede Fed 34-1H Page Number: 6 of 11 Eddy Co, NM

### Method Blanks

Chloride				<3.85	mg/Kg	4
Parameter		Flag	Cert	MDL Result	Units	RL
QC Batch: Prep Batch:	123957 104803		Date Analyzed: QC Preparation:	2015-08-12 2015-08-12	Analyzed By: Prepared By:	
Method Bl	ank (1)	QC Batch: 123957				

Work Order: 15080748 Conoco Phillips-Stampede Fed 34-1H Page Number: 7 of 11 Eddy Co, NM

### Laboratory Control Spikes

### Laboratory Control Spike (LCS-1)

QC Batch: Prep Batch:	123957 104803	Date Analyzed: 2015-08-12 QC Preparation: 2015-08-12							Analyzed By: Al Prepared By: Al			
				LCS			Spike	Ma	atrix		Rec.	
Param		F	С	Result	Units	Dil.	Amount	Re	sult	Rec.	Limit	
Chloride				2520	mg/Kg	5	2500	<	19.2	101	85 - 115	
Percent recov	ery is based on the spil	ke res	ult. RPI	) is based (	on the s	oike and sp	ike duplic	ate resu	ılt.			
			LCSI	21		Spike	Matrix		Rec.		RPD	
Param	I	r C	Resul	t Units	Dil.	Amount	Result	Rec.	Limit	RPD	Limit	
Chloride			2330	mg/Kg	5	2500	<19.2	93	85 - 115	8	20	

Work Order: 15080748 Conoco Phillips-Stampede Fed 34-1H Page Number: 8 of 11 Eddy Co, NM

### Matrix Spikes

		-	MS			Spike	Matrix			ec.
Param	F C	C Re	esult	Units	Dil.	Amount	Result	Rec.	Liı	nit
Chloride		2	720 1	mg/Kg	5	2500	194	101	78.9	- 121

### **Calibration Standards**

Standard (ICV-1)

QC Batch:	123957			Date A	Analyzed:	2015-08-12		Analy	zed By: AM
					ICVs	ICVs	ICVs	Percent	
					True	Found	Percent	Recovery	Date
Param		Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride				mg/Kg	100	99.0	99	85 - 115	2015-08-12

### Standard (CCV-1)

QC Batch:	123957			Date A	Analyzed:	2015-08-12		Analy	zed By: AM
					CCVs True	CCVs Found	CCVs Percent	Percent Recovery	Date
Param		Flag	Cert	Units	Conc.	Conc.	Recovery	Limits	Analyzed
Chloride				mg/Kg	100	101	101	85 - 115	2015-08-12

Page Number: 10 of 11 Eddy Co, NM

### Appendix

### **Report Definitions**

 Name
 Definition

 MDL
 Method Detection Limit

 MQL
 Minimum Quantitation Limit

 SDL
 Sample Detection Limit

### Laboratory Certifications

	Certifying	Certification	Laboratory
С	Authority .	Number	Location
-	NCTRCA	WFWB384444Y0909	TraceAnalysis
-	DBE	VN 20657	TraceAnalysis
-	HUB	1752439743100-86536	TraceAnalysis
<u> </u>	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
- Jb The analyte is positively identified and the value is approximated between the SDL and MQL. Sample contains less then 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.
- U The analyte is not detected above the SDL

### Attachments

Work Order: 15080748 Conoco Phillips-Stampede Fed 34-1H Page Number: 11 of 11 Eddy Co, NM

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

C	PAGE: C.	ANALYSIS REQUEST (Circle or Specify Method No.)	ес вн ад ис	g As Ba Cd ( g As Ba Cd / tiles tiles	PAH 8270 RCRA Metals A TCLP Metals A TCLP Volables TCLP Volables GC.MS Semi Vola GC.MS Semi Vo							SAMPLED A''s Dyint & Initial Date: S-7-1	Y: (Circle) BUS	TETRA TECH CONTACT PERSON: Results by:	harges red:	to Tetra Tech - Project Manager retaine Birk come	
: 15080/4K	Analysis Request of Chain of Custody Record		1910 N. Big Spring St. Midland, Texas 79705 (432) 682-4559 • Fax (432) 682-3946	PRESERVATIVE	TIME TAME SAMPLE IDE	401510 8/7 6 X 3/3 -1 0-1    X					01-1-8	Υ. Η	Time: necercular (septigina) Date: Decrementary on contention of the content of t	Time:	ONE:	17.7 REMARKIES AND AND FLORE COPY CODIES - LABORATORY REVENDED COPY	

### **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: AZ00989): Arizona (AZ0758)





19-OCT-15 Project Manager: Ike Tavarez

**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 Tavarez:

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,

Kms Roah

Kelsey Brooks Project Manager Recipient of the Prestigious Small Business Administration Award of Excellence in 1994. Certified and approved by numerous States and Agencies. A Small Business and Minority Status Company that delivers SERVICE and QUALITY

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

	Matrix	Date Collected	Sample Depth	Lab Sample Id
EB)	S	10-12-15 00:00	N/A	517289-001

Sample Id CS-1 0-1 (AH-2 I' BEB)



### 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 Location:** 

### Certificate of Analysis Summary 517289 Project Name: ConocoPhillips - Stampede Fed 34-1H Tetra Tech- Midland, Midland, TX



Date Received in Lah: Mon Oct-12-15 02:05 pm Project Manager: Kelsey Brooks Report Date: 19-0CT-15

	Lab Id:	517289-001		
A walnois Danactar	Field Id:	Field Id: CS-1 0-1 (AH-2 1' BEB)		
noiconhow ciclimuw	Depth:			
	Matrix:	SOLID		
	Sampled:	Oct-12-15 00:00		
TPH By SW8015B Mod	Extracted:	Oct-16-15 18 30		
	Analyzed:	Oct-17-15 08 17		
	Units/RL:	mg/kg RL		er mel
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 confudential use The interpretations and retustic expressed throughout this analytical report represent the best juggment of XFNCO Laboratones. XENCO Laboratones assumes no reponsibility and makes no warranty to the end use of the data hereby presented Our habdirly 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

Hurs Moah



### **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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(432) 563-1800	(432) 563-1713
(770) 449-8800	(770) 449-5477
(602) 437-0330	



### Form 2 - Surrogate Recoveries

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

Units:	mg/kg	Date Analyzed: 10/17/15 08:17	SU	<b>RROGATE</b> R	ECOVERY 9	STUDY	
	трн в	Sy SW8015B Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1-Chlorooc	tane		109	99.6	109	70-135	
o-Terpheny	1		52.4	49.8	105	70-135	
Lab Batch	#: 979371	Sample: 699640-1-BLK / BI	K Batel	1: 1 Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 10/17/15 05:27	SU	RROGATE R	ECOVERY S	STUDY	
	трн в	y SW8015B Mod Analytes	Amount Found  A	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
I-Chlorooc	tane	,	107	100	107	70-135	
o-Terpheny	1		51.4	50.0	103	70-135	
	#: 979371	Sample: 699640-1-BKS / BB		ı: 1 Matrix	Receiption 1		
Units:	p mg/kg	Date Analyzed: 10/17/15 05:51		RROGATE R	ECOVERY S	STUDY	
	трн в	y SW8015B Mod	Amount Found [A]	True Amount [B]	Recovery %R	Control Limits %R	Flags
		Analytes			[D]		
1-Chlorooc	lane		114	100	114	70-135	
o-Terpheny	1		52.6	50.0	105	70-135	
Lab Batch	#: 979371	Sample: 699640-1-BSD / BS	5D Batel	i: l Matrix	: Solid		
Units:	mg/kg	Date Analyzed: 10/17/15 06:14	SU	RROGATE R	ECOVERY S	STUDY	
	ТРН В	y SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
1-Chlorooc	tane		123	100	123	70-135	
o-Terpheny	l		52.8	50.0	106	70-135	
	#: 979371	Sample: 517289-001 S / MS	-				
Units:	mg/kg	Date Analyzed: 10/17/15 08:42		RROGATE R	ECOVERY S	STUDY	
	ТРН В	Sy SW8015B Mod Analytes	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flage
1-Chlorooc	lane		129	99.8	129	70-135	
				the second se			

\* 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 / BAll results are based on MDL and validated for QC purposes.



### Form 2 - Surrogate Recoveries

Project Name: ConocoPhillips - Stampede Fed 34-1H

	rders: 51728 #: 979371	9, Sample: 517289-001 SD / M	1SD Bate	-	: 212C-MD-0 :: Solid	0309	
Units:	mg/kg	Date Analyzed: 10/17/15 09:08	SU	RROGATE R	ECOVERY	STUDY	
	трн в	By SW8015B Mod	Amount Found [A]	True Amount [B]	Recovery %R [D]	Control Limits %R	Flags
		Analytes			1-1		
1-Chlorood	tane		118	99.9	118	70-135	
o-Terpheny	yl -		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

									•			
Analyst:	PJB		a	bate Prepare	Date Prepared: 10/16/2015	2			Date Analyzed: 10/17/2015	10/17/2015		
Lab Batcl	ab Batch ID: 979371	Sample: 699640-1-BKS	KS	Batch #: 1	#: 1				Matrix: Solid	Solid		
Units:	mg/kg			BLAN	<pre>K/BLANK 8</pre>	SPIKE/B	LANK S	PIKE DUP	BLANK/BLANK SPIKE/BLANK SPIKE DUPLICATE RECOVERY STUDY	ERY STUD	Υ	-
	TPH Rv SW8015R Mod	15R Mod	Blank	Spike	Blank Blank Snike Blank Blk. Snk	Blank	Snike	Blank	Bik. Sok	Control Control	Control	T

TPH By SW8015B Mod tes	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	1]ag
	<15.0	1000	854	85	1000	617	92	7	70-135	35	
	<15.0	1000	1000	100	1000	1080	108	80	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





Work Order # :	517289	
Lab Batch ID:	979371	QC- Sample ID
Date Analyzed:	10/17/2015	Date Prepared
<b>Reporting Units:</b>	mg/kg	

Project ID: 212C-MD-00309

 D:
 517289-001 S
 Batch #:
 1

 d:
 10/16/2015
 Analyst:
 PJB

I Matrix: Solid

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RECOVERY STUDY

TPH By SW8015B Mod	rarent Sample Result	Spike Addeđ	Spiked Sample S Result S [C]	Spiked Sample %R	Spike Added	Duplicate Spiked Sample Result [F]	Spiked Dup. %R	RPD %	Control Limits	Control Limits %RPD	Flag
Analytes	[V]	181		ā			<u>0</u>				
C6-C10 Gasoline Range Hydrocarbons	<15.0	998	0001	100	666	846	85	17	70-135	35	
C10-C28 Diesel Range Organics	<15.0	998	1170	117	666	1010	101	15	70-135	35	

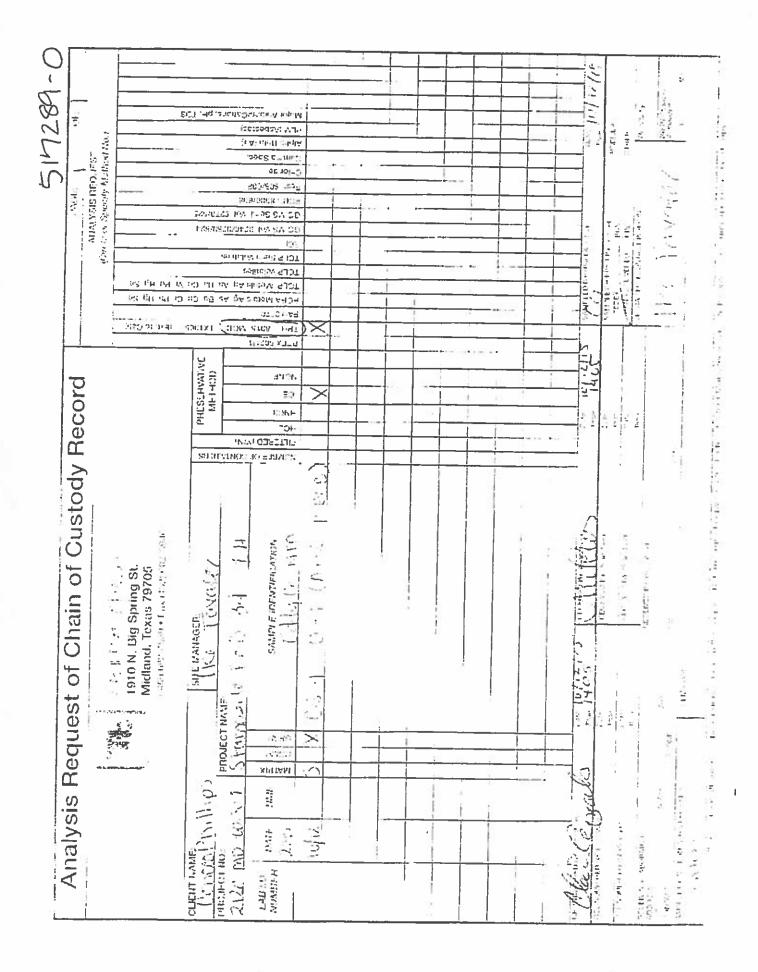
Matrix Spike Percent Recovery [D] = 100\*(C-A)/B Relative Percent Difference RPD = 200\*(C-F)(C+F)

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.

Final 1.000

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Final 1,000



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



Client: Tetra Tech- Midland	Acceptable Temperature Range: 0 - 6 degC
Date/ Time Received: 10/12/2015 02:05:00 PM	Air and Metal samples Acceptable Range: Ambient
Work Order #: 517289	Temperature Measuring device used :
Sample Rece	ipt 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?	Νο
#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? samples for the analysis of HEM or HEM-SGT which are veri analysts.	
#22 >10 for all samples preserved with NaAsO2+NaOH, Zn/	Ac+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: Murshoah Kelsey Brooks Checklist reviewed by: Murshoah Kelsey Brooks

Date: 10/12/2015

Date: 10/12/2015