



Apache Corporation

Eddy County, New Mexico

Sec 20, T17-S, R31-E 1920' FSL + 2220' FWL WL:K

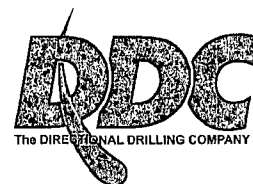
Lee Federal #71 Ap# 30-016-41348

Wellbore #1

Design: Wellbore #1

DDC Survey Report

11 March, 2014





DDC
Survey Report



Company:	Apache Corporation	Local Co-ordinate Reference:	Well Lee Federal #71
Project:	Eddy County, New Mexico	TVD Reference:	WELL @ 3689.0usft (Original Well Elev)
Site:	Sec 20, T17-S, R31-E	MD Reference:	WELL @ 3689.0usft (Original Well Elev)
Well:	Lee Federal #71	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Project:	Eddy County, New Mexico		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site:	Sec 20, T17-S, R31-E		
Site Position:		Northing:	661,172.80 usft
From:	Map	Easting:	634,332.20 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 49' 0.798 N
		Longitude:	103° 53' 45.878 W
		Grid Convergence:	0.24 °

Well:	Lee Federal #71		
Well Position	+N/-S	0.0 usft	Northing:
	+E/-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft
		Latitude:	32° 49' 4.488 N
		Longitude:	103° 53' 33.702 W
		Ground Level:	3,676.0 usft

Wellbore:	Wellbore #1		
Magnetics:	Model Name	Sample Date	Declination
	IGRF2010	1/7/2014	7.46
			Dip Angle
			60.62
			Field Strength
			48,680

Design:	Wellbore #1		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction
			(°)
			163.98

Survey Program	Date: 3/11/2014		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
290.0	6,408.0	MWD (Wellbore #1)	MWD default
			Description
			MWD - Standard

Survey:										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Vertical	Dogleg	Build	Turn	
Depth	(°)	(°)	Depth	(usft)	(usft)	Section	Rate	Rate	Rate	
(usft)			(usft)			(usft)	(°/100usft)	(°/100usft)	(°/100usft)	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00	
TIE IN @ 290' MD / 290' TVD										
290.0	0.51	131.71	290.0	-0.9	1.0	1.1	0.18	0.18	0.00	
416.0	1.20	111.20	416.0	-1.7	2.6	2.4	0.59	0.55	-16.28	
533.0	1.20	112.50	533.0	-2.6	4.9	3.9	0.02	0.00	1.11	
648.0	2.20	105.20	647.9	-3.7	8.1	5.8	0.89	0.87	-6.35	
804.0	1.10	100.80	803.8	-4.7	12.5	8.0	0.71	-0.71	-2.82	
975.0	0.90	70.80	974.8	-4.6	15.4	8.7	0.32	-0.12	-17.54	
1,103.0	0.70	138.80	1,102.8	-4.8	16.8	9.3	0.71	-0.16	53.13	
1,277.0	2.10	136.70	1,276.7	-8.0	19.7	13.1	0.81	0.80	-1.21	
1,406.0	1.10	155.80	1,405.7	-10.8	21.8	16.4	0.87	-0.78	14.81	



DDC
Survey Report



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Site:	Sec 20, T17-S, R31-E	MD Reference:	WELL @ 3689.0usft (Original Well Elev)
Well:	Lee Federal #71	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,449.0	0.70	171.30	1,448.7	-11.5	22.1	17.1	1.08	-0.93	36.05
1,492.0	0.60	174.10	1,491.7	-11.9	22.1	17.6	0.24	-0.23	6.51
1,534.0	0.50	168.90	1,533.7	-12.3	22.2	18.0	0.27	-0.24	-12.38
1,620.0	0.40	173.20	1,619.7	-13.0	22.3	18.6	0.12	-0.12	5.00
1,706.0	0.60	144.10	1,705.7	-13.7	22.6	19.4	0.37	0.23	-33.84
1,791.0	1.10	195.00	1,790.7	-14.8	22.6	20.5	1.01	0.59	59.88
1,834.0	1.60	197.80	1,833.7	-15.8	22.3	21.3	1.17	1.16	6.51
1,877.0	2.40	196.40	1,876.6	-17.2	21.9	22.6	1.86	1.86	-3.26
1,962.0	3.10	197.10	1,961.5	-21.1	20.7	26.0	0.82	0.82	0.82
2,133.0	3.10	199.80	2,132.3	-29.9	17.8	33.6	0.09	0.00	1.58
2,307.0	3.00	202.20	2,306.0	-38.5	14.5	41.0	0.09	-0.06	1.38
2,479.0	3.00	203.70	2,477.8	-46.8	11.0	48.0	0.05	0.00	0.87
2,650.0	3.10	203.10	2,648.6	-55.2	7.4	55.1	0.06	0.06	-0.35
2,778.0	3.00	204.10	2,776.4	-61.4	4.6	60.3	0.09	-0.08	0.78
2,821.0	3.20	206.90	2,819.3	-63.5	3.6	62.1	0.58	0.47	6.51
2,992.0	4.30	204.70	2,989.9	-73.6	-1.2	70.4	0.65	0.64	-1.29
3,121.0	5.90	174.70	3,118.5	-84.6	-2.6	80.6	2.37	1.24	-23.26
3,163.0	5.80	171.10	3,160.2	-88.8	-2.1	84.8	0.91	-0.24	-8.57
3,292.0	4.80	153.10	3,288.7	-100.1	1.4	96.6	1.49	-0.78	-13.95
3,459.0	4.00	167.90	3,455.2	-112.0	5.8	109.3	0.83	-0.48	8.86
3,517.0	3.80	168.50	3,513.1	-115.9	6.6	113.2	0.35	-0.34	1.03
3,603.0	4.40	134.10	3,598.9	-121.0	9.5	118.9	2.90	0.70	-40.00
3,731.0	1.70	165.30	3,726.7	-126.2	13.5	125.1	2.40	-2.11	24.38
3,860.0	4.00	138.20	3,855.5	-131.4	17.0	131.0	2.02	1.78	-21.01
3,988.0	3.70	139.00	3,983.2	-137.9	22.7	138.8	0.24	-0.23	0.63
4,117.0	3.80	137.90	4,111.9	-144.2	28.3	146.4	0.10	0.08	-0.85
4,245.0	3.90	137.80	4,239.7	-150.6	34.0	154.1	0.08	0.08	-0.08
4,374.0	2.70	161.10	4,368.4	-156.7	38.0	161.1	1.38	-0.93	18.06
4,502.0	2.30	161.30	4,496.3	-162.0	39.8	166.7	0.31	-0.31	0.16
4,630.0	2.20	157.00	4,624.2	-166.7	41.6	171.7	0.15	-0.08	-3.36
4,759.0	2.00	155.20	4,753.1	-171.0	43.5	176.3	0.16	-0.16	-1.40
4,887.0	2.20	151.60	4,881.1	-175.2	45.6	181.0	0.19	0.16	-2.81
5,061.0	2.20	150.40	5,054.9	-181.0	48.8	187.5	0.03	0.00	-0.69
5,189.0	2.50	174.50	5,182.8	-185.9	50.3	192.6	0.80	0.23	18.83
5,317.0	3.00	147.30	5,310.7	-191.5	52.4	198.5	1.08	0.39	-21.25
5,445.0	2.60	140.60	5,438.5	-196.6	56.0	204.4	0.40	-0.31	-5.23
5,573.0	3.70	151.20	5,566.3	-202.5	59.9	211.1	0.97	0.86	8.28
5,702.0	3.40	166.90	5,695.1	-209.8	62.7	219.0	0.79	-0.23	12.17
5,830.0	2.60	160.60	5,822.9	-216.3	64.6	225.7	0.68	-0.63	-4.92
5,958.0	2.60	152.50	5,950.8	-221.6	66.9	231.4	0.29	0.00	-6.33
6,086.0	4.00	159.50	6,078.6	-228.3	69.8	238.7	1.14	1.09	5.47
6,214.0	3.10	165.90	6,206.3	-235.9	72.2	246.6	0.77	-0.70	5.00
6,361.0	2.20	121.50	6,353.2	-241.2	75.5	252.7	1.48	-0.61	-30.20



DDC
Survey Report



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Well:	Lee Federal #71	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
TD @ 6408' MD / 6400' TVD									
6,408.0	2.20	121.50	6,400.1	-242.1	77.1	254.0	0.00	0.00	0.00

Target Name	hit/miss/target	Dip Angle (°)	Dip Dir (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
TIE IN		0.00	0.00	290.0	-0.9	0.4	661,549.24	635,370.14	32° 49' 4.480 N	103° 53' 33.697 W
- actual wellpath misses target center by 0.5usft at 290.0usft MD (290.0 TVD, -0.9 N, 1.0 E)										
- Point										

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
290.0	290.0	-0.9	1.0	TIE IN @ 290' MD / 290' TVD
6,408.0	6,400.1	-242.1	77.1	TD @ 6408' MD / 6400' TVD

Checked By: _____ Approved By: _____ Date: _____

Hydraulic Fracturing Fluid Product Component Information Disclosure

Last Fracture Date	02/04/2014
State	New Mexico
County	Eddy
API Number	30-015-41348
Operator Name	Apache Corp
Well Name and Number	Lee Federal 71
Longitude	-103.8936
Latitude	32.81756
Long/Lat Projection	
Production Type	Oil
True Vertical Depth (TVD)	6,280
Total Water Volume (gal)	448,560

Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
Water	Operator	Carrier	Water	7732-18-5	100.00%	83.98613%	
HCl, 10.1 - 15%	Baker Hughes	Acidizing	Hydrochloric Acid	7647-01-0	15.00%	0.16549%	SmartCare Product
			Water	7732-18-5	85.00%	0.93778%	
Activator, 330 gal tote	Baker Hughes	Activator	Alcohols, C12-14-Secondary, Ethoxylated	84133-50-6	70.00%	0.03483%	
			Methanol	67-56-1	50.00%	0.02488%	
Alpha 125	Baker Hughes	Biocide	Water	7732-18-5	75.00%	0.01997%	SmartCare Product
GBW-5	Baker Hughes	Breaker	Ammonium persulphate	7727-54-0	100.00%	0.00157%	SmartCare Product
GBW-15L	Baker Hughes	Breaker	Enzyme solution	Trade Secret	100.00%	0.04157%	SmartCare Product
ClayCare, tote	Baker Hughes	Clay Control	Choline Chloride	67-48-1	75.00%	0.03309%	SmartCare Product
			Water	7732-18-5	30.00%	0.01324%	
CI-14	Baker Hughes	Corrosion Inhibitor	Fatty Acids	Trade Secret	10.00%	0.00047%	SmartCare Product
			Methanol	67-56-1	100.00%	0.00472%	
			Olefin	Trade Secret	5.00%	0.00024%	
			Polyoxyalkylenes	Trade Secret	30.00%	0.00142%	
			Propargyl Alcohol	107-19-7	5.00%	0.00024%	
XLW-10A	Baker Hughes	Crosslinker	Ethylene Glycol	107-21-1	30.00%	0.03933%	
			Sodium Hydroxide	1310-73-2	10.00%	0.01311%	
			Sodium Tetraborate Decahydrate	1303-96-4	30.00%	0.03933%	

Hydraulic Fracturing Fluid Composition:

Trade Name	Supplier	Purpose	Ingredients	Chemical Abstract Service Number (CAS #)	Maximum Ingredient Concentration in Additive (% by mass)**	Maximum Ingredient Concentration in HF Fluid (% by mass)**	Comments
GW-4LDF	Baker Hughes	Gelling Agent	Guar Gum	9000-30-0	60.00%	0.31153%	SmartCare Product
			Petroleum Distillate Blend (1)	64742-47-8	70.00%	0.36345%	
			Petroleum Distillate Blend (3)	8042-47-5	70.00%	0.36345%	
			Petroleum Distillate Blend (2)	64742-55-8	70.00%	0.36345%	
Ferrotrol 280L	Baker Hughes	Iron Control	2-Mercaptoethanol	60-24-2	100.00%	0.00433%	
			Ammonium Hydroxide	1336-21-6	5.00%	0.00022%	
			Cupric Chloride	7447-39-4	5.00%	0.00022%	
NE-35, 330 gl tote	Baker Hughes	Non-emulsifier	Mixture of Surfactants	Trade Secret	50.00%	0.04523%	
			Propylene Glycol	57-55-6	30.00%	0.02714%	
Sand, Brown, 16/30	Baker Hughes	Proppant	Crystalline Silica (Quartz)	14808-60-7	100.00%	10.90298%	
SiberProp, 16/30	Baker Hughes	Proppant	Quartz (SiO2)	14808-60-7	100.00%	2.13019%	
InFlo 250G, 330 gl tote	Baker Hughes	Surfactant	Methanol	67-56-1	30.00%	0.02595%	
			Mixture of Surfactants	Trade Secret	50.00%	0.04325%	
			Water	7732-18-5	30.00%	0.02595%	
Ingredients shown above are subject to 29 CFR 1910.1200(i) and appear on Material Safety Data Sheets (MSDS). Ingredients shown below are Non-MSDS.							
			Formaldehyde	50-00-0		0.0000472141%	
			Glutaraldehyde	111-30-8		0.0079892288%	
			Hydrochloric Acid	7647-01-0		0.0000472141%	
			Methanol	67-56-1		0.0000665769%	
			Modified Thiorea Polymer	68527-49-1		0.0003304986%	
			Water	7732-18-5		0.0267865207%	

* Total Water Volume sources may include fresh water, produced water, and/or recycled water

** Information is based on the maximum potential for concentration and thus the total may be over 100%

All component information listed was obtained from the supplier's Material Safety Data Sheets (MSDS). As such, the Operator is not responsible for inaccurate and/or incomplete information. Any questions regarding the content of the MSDS should be directed to the supplier who provided it. The Occupational Safety and Health Administration's (OSHA) regulations govern the criteria for the disclosure of this information. Please note that Federal Law protects "proprietary", "trade secret", and "confidential business information" and the criteria for how this information is reported on an MSDS is subject to 29 CFR 1910.1200(i) and Appendix D.

Apache Corporation
303 Veterans Airpark Lane, #3000
Midland, TX 79705

Lee Federal #071 *API# 30-015-41348*
Eddy County, New Mexico *1920' FSL & 2220' FWL WL: K 20-17S-31E*

305

3.05

0.80

1.40

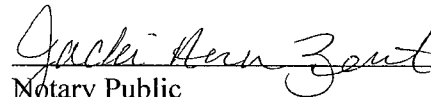
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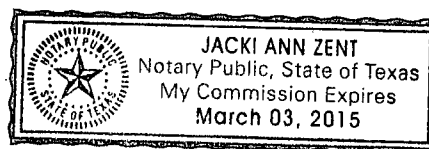
4.27



Archie Brown - General Manager

The attached instrument was acknowledged before me on the 30th day of January, 2014 by
Archie Brown - General Manager, CapStar Drilling, Inc.

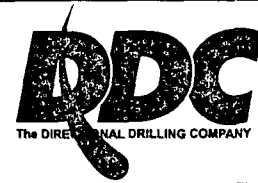

Notary Public



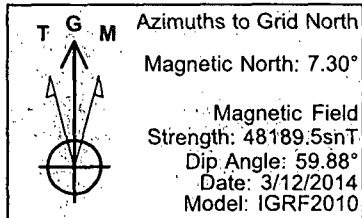
15-42081

Company Name: Mewbourne Oil Co
Delaware Ranch 12 MD Fed Com #1H
Eddy County, New Mexico
Rig: Patterson #75
Created By: James Dawson
Date: 4/14/2014

Delaware Ranch 12 MD Fed Com #1H
Eddy County, New Mexico
Q140279 & WT-140228
Design #2



Mewbourne Oil Company

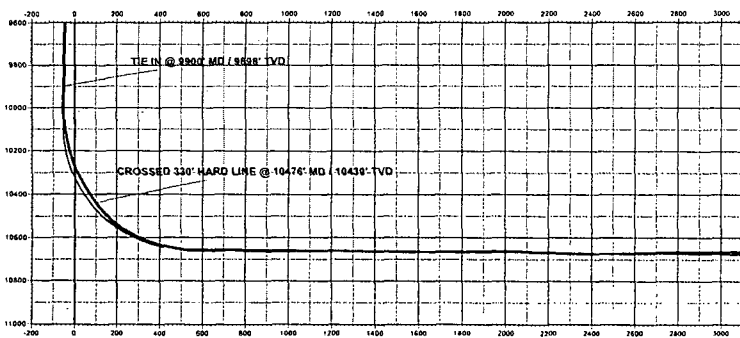


PROJECT DETAILS:		Eddy County, New Mexico	
Geodetic System:	US State Plane 1927 (Exact solution)		
Datum:	NAD 1927 (NADCON CONUS)		
Ellipsoid:	Clarke 1866		
Zone:	New Mexico East 3001		
System Datum:	Mean Sea Level		

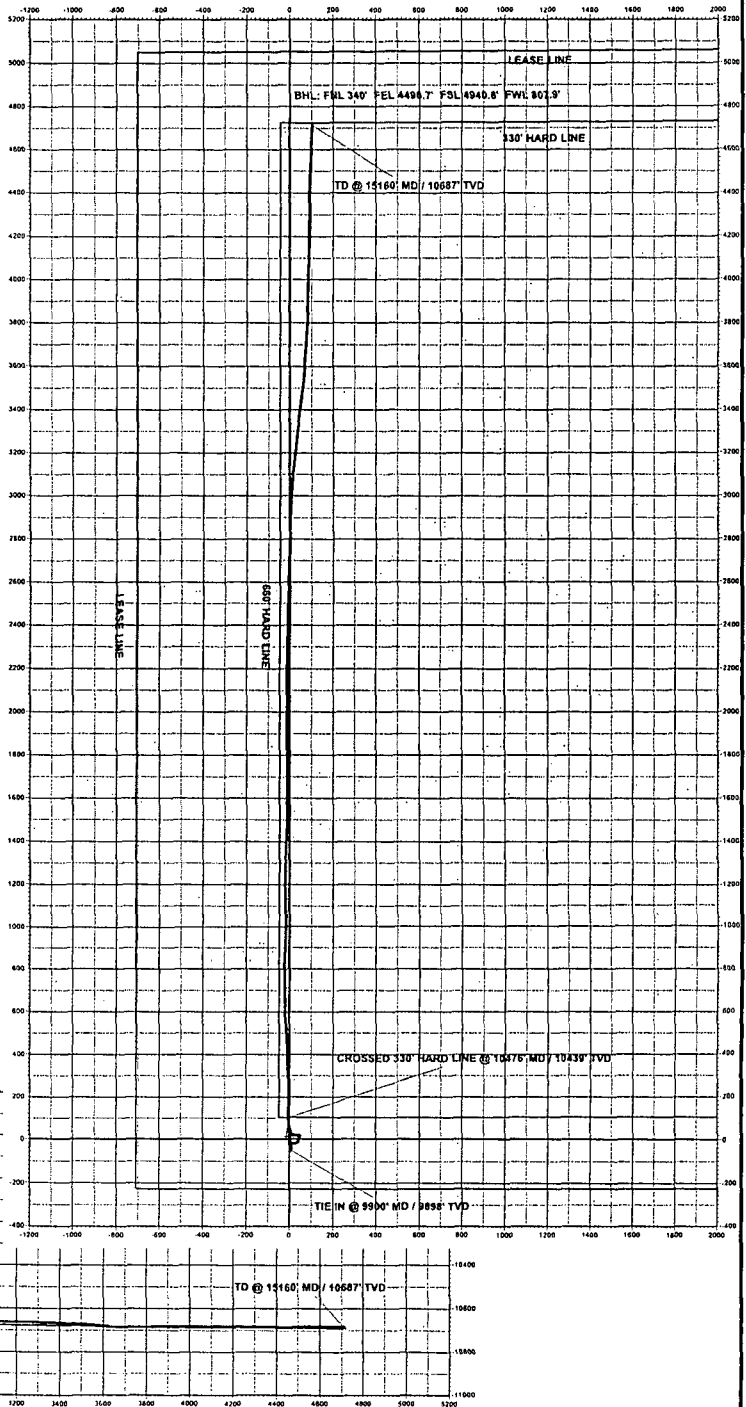
WELL DETAILS:		Delaware Ranch 12 MD Fed Com #1H	
	Ground Level:	2847.0	
+N/-S	+E/-W	Northing	Easting
0.0	0.0	382174.82	588852.66
		32° 3' 1.399 N	104° 2' 47.582 W

DESIGN TARGET DETAILS	
Name	TVD
PBHL Delaware Ranch 12 MD Fed Com #1H	10692.0
- plan misses target center by 40.8usft at 15183.3usft MD (10692.0 TVD, 4720.4 N, -4.7 E)	
PBHL Delaware Ranch 12 MD Fed Com #1H DF2	10692.0
- plan hits target center	

ANNOTATIONS	
MD	Inc
9900.0	1.15
10475.8	38.86
15160.0	89.60



Vertical Section at 359.94° (200 usft/in)



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

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

DISTRICT III
1000 Rio Brazos Road, Aztec, NM 87410
Phone: (505) 334-6178 Fax: (505) 334-6170

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone: (505) 476-3460 Fax: (505) 476-3462

State of New Mexico
Energy, Minerals & Natural Resources Department
OIL CONSERVATION DIVISION
1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

Form C-102
Revised August 1, 2011
Submit one copy to appropriate
District Office

AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-015-41348	Pool Code 96831	Pool Name Cedar Lake, Glorieta-Yeso
Property Code 308720	Property Name LEE FEDERAL	Well Number 071
OGRID No. 873	Operator Name APACHE CORPORATION	Elevation 3676'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
K	20	17-S	31-E		1920	SOUTH	2220	WEST	EDDY

Bottom Hole Location If Different From Surface

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
K	20	17-S	31-E		1678	SOUTH	2297	WEST	EDDY
Dedicated Acres 40.0	Joint or Infill	Consolidation Code	Order No.						

NO ALLOWABLE WILL BE ASSIGNED TO THIS COMPLETION UNTIL ALL INTERESTS HAVE BEEN CONSOLIDATED OR A NON-STANDARD UNIT HAS BEEN APPROVED BY THE DIVISION

	GEODETIC COORDINATES NAD 27 NME SURFACE LOCATION Y=661550.1 N X=635369.7 E LAT.=32.817913° N LONG.=103.892695° W LAT.=32° 49' 04" N LONG.=103° 53' 34" W BOTTOM HOLE LOCATION Y=661280.8 N X=635461.3 E	OPERATOR CERTIFICATION I hereby certify that the information herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this well at this location pursuant to a contract with an owner of such mineral or working interest, or to a voluntary pooling agreement or a compulsory pooling order heretofore entered by the division. Signature: <i>[Signature]</i> Date: 04/25/2014 Printed Name: Fatima Vasquez E-mail Address: Fatima.Vasquez@apachecorp.com
	CORNER COORDINATES TABLE A) Y=662261.6 N, X=634466.5 E B) Y=662272.0 N, X=635786.0 E C) Y=660942.9 N, X=634473.9 E D) Y=660952.9 N, X=635793.3 E	SURVEYOR CERTIFICATION I hereby certify that the well location shown on this plat was plotted from field notes of actual surveys made by me or under my supervision, and that the same is true and correct to the best of my belief. MAY 21, 2012 Date of Survey Signature & Seal of Professional Surveyor: <i>[Signature]</i> RONALD J. EIDSON Certificate Number: 3239 Gary J. Eidson 12641 Ronald J. Eidson 3239 AF PROFESSIONAL WSC W.O.: 12.11.0606