



PHOENIX
TECHNOLOGY SERVICES

November 10, 2014

Oil Conservation Division
State of New Mexico
811 S. First St.
Artesia, New Mexico 88210

NM OIL CONSERVATION
ARTESIA DISTRICT
NOV 20 2014

Dear District 2 - Artesia

Attention: Regulatory Department

RECEIVED

Re: Apache Corporation
Lee Federal #68
Eddy County, NM
API #30-015-42188
Job No. 1411889

Enclosed please find the Survey Data Certification, and the original Plat and one copy of the Survey Report performed on the above referenced Well by Phoenix Technology Services, Inc. (P-5 No. 664171). Other information required by your office is as follows:

Name & Title of Surveyor	Drain Hole Number	Surveyed Depths		Dates Performed		Type of Survey
		From	To	Start	End	
Mike Miller	68	488	6,361	10/19/14	10/26/14	MWD

A certified plat on which the bottom hole location is oriented both to the surface location and to the lease lines (or unit lines in case of pooling) is attached to the survey report. If any other information is required, please contact the undersigned at the letterhead address and phone number.

Best Regards,

Dana Robinson

Dana Robinson
Operations Administrator
Certified mail receipt number:

7011 1570 0001 4365 2582

Phoenix Technology Services SURVEY DATA CERTIFICATION



PHOENIX
TECHNOLOGY SERVICES

PHOENIX JOB NUMBER **1411889**

OPERATOR **Apache Corp**

WELL NAME **Lee Federal #68**

COUNTY & STATE **Eddy NM**

API WELL NUMBER **30-015-42188**

PROPOSED DIRECTION **167.78**

TIE-IN DATA						
MEASURED DEPTH	VERTICAL DEPTH	INCLIN	AZIMUTH	N-S COORD	E-W COORD	DATA SOURCE
327. ft	327.00 ft	0.14°	297.81°	-15 ft	54 ft	Gyro

FIRST SURVEY DATE	FIRST SURVEY DEPTH	INCLIN	AZIMUTH
19-Oct-14	488.00 ft	0.1°	86.7°

SURVEY INSTRUMENT TYPE
Phoenix MWD

LAST SURVEY DATE	LAST SURVEY DEPTH	INCLIN	AZIMUTH
26-Oct-14	6,361.00 ft	2.20°	184.60°

TO THE BEST OF MY KNOWLEDGE I
CERTIFY THIS SURVEY DATA TO BE
TRUE AND CORRECT.

PROJECTED TD SURVEY DATE	PROJECTED TD SURVEY DEPTH	INCLIN	AZIMUTH
26-Oct-14	6,411.00 ft	2.20°	184.60°

Mike Miller

PRINT YOUR NAME ABOVE

Mike Miller

SIGN YOUR NAME ABOVE

MAGNETIC DECLINATION OR TOTAL GRID

TOTAL CORRECTION USED	7.29
DECLINATION OR GRID	GRID

10/26/2014

TODAY'S DATE

MWD SUPERVISOR 1 **Mike Miller**

DIRECTIONAL DRILLER 1 **Brad Jones**

MWD SUPERVISOR 2 **0**

DIRECTIONAL DRILLER 2 **Jim Brost**

NOV 20 2014

Form C-102

Revised August 1, 2011

Submit one copy to appropriate District Office

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

RECEIVED

AMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number	Pool Code	Pool Name
Property Code	Property Name LEE FEDERAL	Well Number 68
OGRID No.	Operator Name APACHE CORPORATION	Elevation 3727'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
H	20	17-S	31-E		2120	NORTH	370	EAST	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
H	20	17-S	31-E		2310	NORTH	330	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
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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

<p>GEODETIC COORDINATES NAD 27 NME</p> <p>SURFACE LOCATION Y=662810.7 N X=638052.3 E</p> <p>LAT.=32° 82' 34.7" N LONG.=103° 88' 39.46" W</p> <p>LAT.=32° 49' 1.7" N LONG.=103° 53' 02.2" W</p> <p>BOTTOM HOLE LOCATION Y=662621.0 N X=638093.4 E</p>	
<p>CORNER COORDINATES TABLE</p> <p>A) Y=663602.6 N, X=637098.2 E</p> <p>B) Y=663612.8 N, X=638417.7 E</p> <p>C) Y=662282.4 N, X=637105.5 E</p> <p>D) Y=662292.8 N, X=638425.1 E</p>	<p>OPERATOR CERTIFICATION</p> <p>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.</p> <p>Signature: _____ Date: _____</p> <p>Printed Name: _____</p> <p>E-mail Address: _____</p>
	<p>SURVEYOR CERTIFICATION</p> <p>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.</p> <p>MAY 25, 2012</p> <p>Date of Survey: _____ Signature & Seal of Professional Surveyor: _____</p> <p>Certificate Number Gary G. Eidson 12641 Ronald J. Eidson 3239</p> <p>AF PROFESSIONAL SURVEYOR STATE OF NEW MEXICO W.O. 12.11.0603</p>



Apache Corporation

Eddy County, NM (NAD27 NME)

Lee Federal

#68

WB1 / Job #1411889

Survey: Phoenix MWD Survey

Standard Survey Report

27 October, 2014

NM OIL CONSERVATION
ARTESIA DISTRICT
NOV 20 2014
RECEIVED



PHOENIX
TECHNOLOGY SERVICES



Phoenix Technology Services

Survey Report



Company:	Apache Corporation	Local Co-ordinate Reference:	Well #68
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	KB @ 3738.00usft (Capstar 114)
Site:	Lee Federal	MD Reference:	KB @ 3738.00usft (Capstar 114)
Well:	#68	North Reference:	Grid
Wellbore:	WB1 / Job #1411889	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Capstar 114)	Database:	Compass 5000 GCR epdm

Project	Eddy County, NM (NAD27 NME)		
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	Lee Federal		
Site Position:	Northing:	664,811.60 usft	Latitude: 32° 49' 36.77792 N
From: Map	Easting:	634,967.00 usft	Longitude: 103° 53' 38.26184 W
Position Uncertainty:	0.00 usft	Slot Radius: 13-3/16 "	Grid Convergence: 0.24 °

Well	#68		
Well Position	+N-S	0.00 usft	Northing: 662,810.70 usft
	+E-W	0.00 usft	Easting: 638,052.30 usft
			Latitude: 32° 49' 16.85040 N
			Longitude: 103° 53' 2.20448 W
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft
			Ground Level: 3,727.00 usft

Wellbore	WB1 / Job #1411889		
Magnetics	Model Name	Sample Date	Declination
	BGGM2014	10/17/2014	(°) 7.54
			Dip Angle (°) 60.60
			Field Strength (nT) 48,560

Design	Surveys (Capstar 114)		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N-S	+E-W
	(usft)	(usft)	(usft)
	0.00	0.00	0.00
			Direction (°) 167.78

Survey Program		Date	10/27/2014		
From	To	Survey (Wellbore)	Tool Name	Description	
(usft)	(usft)				
100.00	327.00	Gyrodata Gyro Survey (WB1 / Job #14118	NS-GYRO-MS	North sensing gyrocompassing m/s	
327.00	6,411.00	Phoenix MWD Survey (WB1 / Job #14118	PHX+MWD+BGGM	PHX+MWD+BGGM v3:standard declination	

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)	
327.00	0.14	297.81	327.00	-0.15	-0.54	0.03	0.00	0.00	0.00	
Tie-on Gyrodata Gyro Survey										
488.00	0.10	86.70	488.00	-0.05	-0.57	-0.07	0.14	-0.02	92.48	
First Phoenix MWD Survey										
603.00	0.00	287.90	603.00	-0.04	-0.47	-0.06	0.09	-0.09	0.00	
732.00	0.20	13.50	732.00	0.18	-0.42	-0.26	0.16	0.16	0.00	
860.00	0.20	75.80	860.00	0.45	-0.15	-0.47	0.16	0.00	48.67	
988.00	0.80	85.30	987.99	0.58	0.95	-0.36	0.47	0.47	7.42	
1,117.00	0.90	80.60	1,116.98	0.82	2.85	-0.19	0.09	0.08	-3.64	

Company:	Apache Corporation	Local Co-ordinate Reference:	Well #68
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	KB @ 3738.00usft (Capstar 114)
Site:	Lee Federal	MD Reference:	KB @ 3738.00usft (Capstar 114)
Well:	#68	North Reference:	Grid
Wellbore:	WB1 / Job #1411889	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Capstar 114)	Database:	Compass 5000 GCR epdm

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)
1,245.00	1.00	88.20	1,244.96	1.01	4.96	0.06	0.13	0.08	5.94
1,377.00	1.40	119.70	1,376.93	0.25	7.51	1.34	0.57	0.30	23.86
1,505.00	1.90	160.40	1,504.88	-2.52	9.58	4.49	0.97	0.39	31.80
1,633.00	2.20	168.10	1,632.80	-6.92	10.80	9.05	0.32	0.23	6.02
1,762.00	1.90	183.40	1,761.72	-11.48	11.18	13.59	0.48	-0.23	11.86
1,890.00	2.00	176.30	1,889.65	-15.83	11.20	17.84	0.20	0.08	-5.55
2,018.00	1.90	187.10	2,017.57	-20.16	11.08	22.05	0.30	-0.08	8.44
2,146.00	1.90	191.20	2,145.50	-24.35	10.41	26.00	0.11	0.00	3.20
2,274.00	1.60	190.90	2,273.44	-28.19	9.66	29.59	0.23	-0.23	-0.23
2,402.00	2.20	173.40	2,401.37	-32.38	9.60	33.68	0.65	0.47	-13.67
2,530.00	2.20	176.70	2,529.28	-37.28	10.03	38.55	0.10	0.00	2.58
2,658.00	2.30	178.10	2,657.18	-42.30	10.25	43.51	0.09	0.08	1.09
2,787.00	2.30	178.10	2,786.08	-47.47	10.43	48.60	0.00	0.00	0.00
2,915.00	2.60	181.40	2,913.96	-52.94	10.44	53.95	0.26	0.23	2.58
3,043.00	2.70	189.60	3,041.82	-58.81	9.87	59.57	0.31	0.08	6.41
3,173.00	2.80	171.80	3,171.67	-64.98	9.81	65.58	0.66	0.08	-13.69
3,307.00	3.00	176.80	3,305.50	-71.72	10.47	72.31	0.24	0.15	3.73
3,447.00	3.00	179.60	3,445.31	-79.04	10.70	79.51	0.10	0.00	2.00
3,575.00	2.80	173.80	3,573.15	-85.50	11.06	85.90	0.28	-0.16	-4.53
3,703.00	2.30	131.20	3,701.03	-90.30	13.33	91.07	1.49	-0.39	-33.28
3,834.00	2.20	138.90	3,831.93	-93.92	16.96	95.38	0.24	-0.08	5.88
3,962.00	2.30	138.90	3,959.83	-97.71	20.27	99.79	0.08	0.08	0.00
4,090.00	2.30	130.90	4,087.73	-101.33	23.90	104.09	0.25	0.00	-6.25
4,222.00	2.60	167.80	4,219.62	-105.99	26.53	109.20	1.19	0.23	27.95
4,353.00	2.60	165.10	4,350.48	-111.76	27.92	115.14	0.09	0.00	-2.06
4,482.00	2.90	163.60	4,479.33	-117.72	29.60	121.32	0.24	0.23	-1.16
4,610.00	2.70	166.90	4,607.18	-123.76	31.20	127.56	0.20	-0.16	2.58
4,738.00	2.50	169.60	4,735.05	-129.45	32.38	133.37	0.18	-0.16	2.11
4,867.00	2.50	176.70	4,863.93	-135.02	33.05	138.96	0.24	0.00	5.50
4,995.00	2.60	169.40	4,991.80	-140.66	33.75	144.62	0.27	0.08	-5.70
5,124.00	2.30	166.40	5,120.68	-146.05	34.89	150.13	0.25	-0.23	-2.33
5,252.00	2.20	155.60	5,248.58	-150.79	36.51	155.10	0.34	-0.08	-8.44
5,380.00	2.00	160.80	5,376.50	-155.13	38.26	159.72	0.22	-0.16	4.06
5,511.00	1.90	155.60	5,507.42	-159.27	39.91	164.11	0.16	-0.08	-3.97
5,640.00	1.80	154.00	5,636.35	-163.04	41.68	168.17	0.09	-0.08	-1.24
5,768.00	1.70	148.80	5,764.30	-166.47	43.55	171.92	0.15	-0.08	-4.06
5,896.00	2.80	181.90	5,892.20	-171.22	44.43	176.74	1.30	0.86	25.86
6,023.00	2.60	178.00	6,019.06	-177.20	44.43	182.59	0.21	-0.16	-3.07
6,151.00	2.70	181.80	6,146.92	-183.11	44.43	188.37	0.16	0.08	2.97
6,280.00	2.40	184.30	6,275.79	-188.84	44.13	193.91	0.25	-0.23	1.94
6,361.00	2.20	184.60	6,356.73	-192.08	43.88	197.02	0.25	-0.25	0.37
Last Phoenix MWD Survey									
6,411.00	2.20	184.60	6,406.69	-194.00	43.73	198.86	0.00	0.00	0.00
Projection to TD									



Phoenix Technology Services
Survey Report



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Design:	Surveys (Capstar 114)	Database:	Compass 5000 GCR epdm

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)

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/S (usft)	+E/W (usft)	
327.00	327.00	-0.15	-0.54	Tie-on Gyrodata Gyro Survey
488.00	488.00	-0.05	-0.57	First Phoenix MWD Survey
6,361.00	6,356.73	-192.08	43.88	Last Phoenix MWD Survey
6,411.00	6,406.69	-194.00	43.73	Projecton to TD

Checked By: _____ Approved By: _____ Date: _____