



PHOENIX
TECHNOLOGY SERVICES

May 29, 2014

Oil Conservation Division
State of New Mexico
1625 N. French Drive
District 1 - Hobbs
Hobbs, New Mexico 88240

NM OIL CONSERVATION
ARTESIA DISTRICT

JUN 05 2014

RECEIVED

HOBBS OCD

Attention: Regulatory Department

JUN 02 2014

Re: Apache Corporation
Tony Federal #51
Lea County, NM
API #30-154-1990
Job No. 1410678

RECEIVED

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	
Greg Hurst	51	300	6,360	05/03/14	05/11/14	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 1998

HOBBS OCD

Phoenix Technology Services SURVEY DATA CERTIFICATION

JUN 02 2014


PHOENIX
TECHNOLOGY SERVICES

PHOENIX JOB NUMBER

1410678

RECEIVED

OPERATOR

APACHE

WELL NAME

TONY FEDERAL #51

COUNTY & STATE

Lea County, NM

API WELL NUMBER

30-154-1990

PROPOSED DIRECTION

181.46

TIE-IN DATA						
MEASURED	VERTICAL			N-S	E-W	DATA
DEPTH	DEPTH	INCLIN	AZIMUTH	COORD	COORD	SOURCE
250 ft	249.94 ft	2.75 ft	334.91 ft	4.33 ft	0.91 ft	Gyro

FIRST SURVEY	FIRST SURVEY		
DATE	DEPTH	INCLIN	AZIMUTH
3-May-14	300.00	3.4	332.4

SURVEY INSTRUMENT

TYPE

Phoenix MWD

LAST SURVEY	LAST SURVEY		
DATE	DEPTH	INCLIN	AZIMUTH
11-May-14	6,360 ft	3.3	179.9

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

PROJECTED TD SURVEY	PROJECTED TD SURVEY		
DATE	DEPTH	INCLIN	AZIMUTH
11-May-14	6,405 ft	3.3	179.9

Greg Hurst

PRINT YOUR NAME ABOVE

Greg Hurst

SIGN YOUR NAME ABOVE

MAGNETIC DECLINATION OR TOTAL GRID

TOTAL CORRECTION USED	
	7.33
DECLINATION OR GRID	GRID

5/11/2014

TODAY'S DATE

MWD SUPERVISOR 1

Greg Hurst

DIRECTIONAL DRILLER 1

DAVE SMITH

MWD SUPERVISOR 2

0

DIRECTIONAL DRILLER 2

CHRIS HUTLEY

1805 Brittmore Road

Houston, Texas 77043

(713)3370609 (Voice), (713)337-0599 (Fax)

NM OIL CONSERVATION ARTESIA DISTRICT

JUN 05 2014

Form C-102

Revised August 1, 2011

Submit one copy to appropriate
District Office

HOBBBS OCD

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AMENDED REPORT

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

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-015-41990	Pool Code 96831	Pool Name Cedar Lake; Glorieta - Yeso
Property Code 308738	Property Name TONY FEDERAL	Well Number 51
OGRU No. 873	Operator Name APACHE CORPORATION	Elevation 3750'

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	18	17-S	31-E		1340	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
N	18	17-S	31-E		990	SOUTH	2210	WEST	EDDY

Dedicated Acres 40	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

4	GEODETIC COORDINATES NAD 27 NME SURFACE LOCATION Y=666215.0 N X=630319.5 E 31.99 AC. 2 LAT.=32° 30' 72" N LONG.=103° 09' 07" W LAT.=32° 49' 51" N LONG.=103° 54' 33" W BOTTOM HOLE LOCATION Y=665865.0 N X=630310.6 E	CORNER COORDINATES TABLE A) Y=666189.9 N, X=629356.2 E B) Y=666197.8 N, X=630612.2 E C) Y=664869.4 N, X=629361.2 E D) Y=664877.2 N, X=630618.1 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. <i>Sorina L. Flores</i> 12/4/13 Signature Date Sorina L. Flores Printed Name Sorina.Flores@apachecorp.com E-mail Address
32.10 AC. 3	DETAIL 3754.9' 3756.2' 600' 3754.4' 3728.2'	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 30, 2012 Date of Survey Signature & Seal of Professional Surveyor: RONALD EIDSON NEW MEXICO 3239 Professional Seal Certification Number: Gary G. Eidson 12641 Ronald E. Eidson 3239 AF	
32.20 AC. 4	2220' 2210' 950' 1340' SEE DETAIL S.L. B.H. GRID AZ.=181° 27' 09" HORIZ. DIST.=350.2'		
32.31 AC.			



Apache Corporation

Eddy County, NM (NAD27 NME)

Tony Federal

#51

WB1/Job #1410678

Design: Surveys (Capstar 118)

Standard Survey Report

12 May, 2014

HOBBS OCD

JUN 02 2014

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NM OIL CONSERVATION
ARTESIA DISTRICT

JUN 05 2014

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PHOENIX
TECHNOLOGY SERVICES



Phoenix Technology Services

Survey Report



Company:	Apache Corporation	Local Co-ordinate Reference:	Well #51
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	KB @ 3761.00usft (Capstar 118)
Site:	Tony Federal	MD Reference:	KB @ 3761.00usft (Capstar 118)
Well:	#51	North Reference:	Grid
Wellbore:	WB1/Job #1410678	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Capstar 118)	Database:	GCR DB

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	Tony Federal		
Site Position:		Northing:	666,516.20 usft
From:	Map	Easting:	628,898.80 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 49' 53.88921 N
		Longitude:	103° 54' 49.29676 W
		Grid Convergence:	0.23 °

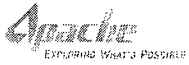
Well	#51		
Well Position	+N/-S	0.00 usft	Northing: 666,215.00 usft
	+E/-W	0.00 usft	Easting: 630,319.50 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	usft
		Ground Level:	3,750.00 usft
		Latitude:	32° 49' 50.85266 N
		Longitude:	103° 54' 32.66061 W

Wellbore	WB1/Job #1410678		
Magnetics	Model Name	Sample Date	Declination
	BGGM2013	04/15/14	7.56
			Dip Angle
			60.61
			Field Strength
			48,634

Design	Surveys (Capstar 118)		
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
			(°)
			181.46

Survey Program	Date 05/12/14		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
50.00	300.00	Gyro Survey (WB1/Job #1410678)	MWD
338.73	6,405.00	Phoenix MWD Survey (WB1/Job #141067)	MWD
			Description
			MWD - Standard
			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)
	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
	50.00	0.51	354.08	50.00	0.22	-0.02	-0.22	1.02	1.02	0.00
	100.00	0.67	10.50	100.00	0.73	0.01	-0.73	0.46	0.32	32.84
	150.00	0.93	3.03	149.99	1.42	0.08	-1.42	0.56	0.52	-14.94
	200.00	1.72	340.39	199.98	2.53	-0.15	-2.53	1.87	1.58	-45.28
	250.00	2.75	334.91	249.94	4.33	-0.91	-4.30	2.10	2.06	-10.96
	300.00	3.36	332.40	299.87	6.71	-2.10	-6.66	1.25	1.22	-5.02
	Tie-on to Gyro Survey									
	338.73	3.80	329.90	338.52	8.83	-3.27	-8.74	1.21	1.14	-6.45



Phoenix Technology Services

Survey Report



Company:	Apache Corporation	Local Co-ordinate Reference:	Well #51
Project:	Eddy County NM (NAD27 NME)	TVD Reference:	KB @ 3761.00usft (Capstar 118)
Site:	Tony Federal	MD Reference:	KB @ 3761.00usft (Capstar 118)
Well:	#51	North Reference:	Grid
Wellbore:	WB1/Job #1410678	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Capstar, 118)	Database:	GCR DB

Survey									
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)
First Phoenix MWD Survey									
367.29	3.70	329.50	367.02	10.44	-4.21	-10.33	0.36	-0.35	-1.40
396.39	3.10	322.70	396.07	11.88	-5.16	-11.74	2.48	-2.06	-23.37
427.27	2.40	310.80	426.91	12.96	-6.16	-12.80	2.91	-2.27	-38.54
457.69	2.20	296.30	457.31	13.64	-7.16	-13.45	2.02	-0.66	-47.67
487.25	1.90	285.70	486.85	14.02	-8.14	-13.81	1.63	-1.01	-35.86
516.86	1.30	274.00	516.45	14.18	-8.95	-13.95	2.30	-2.03	-39.51
559.57	1.00	235.60	559.15	14.00	-9.74	-13.75	1.89	-0.70	-89.91
602.25	1.00	212.70	601.83	13.48	-10.25	-13.21	0.93	0.00	-53.66
687.62	1.00	206.40	687.18	12.18	-10.98	-11.90	0.13	0.00	-7.38
773.02	1.60	160.70	772.56	10.39	-10.92	-10.11	1.35	0.70	-53.51
858.43	2.00	154.40	857.93	7.92	-9.88	-7.67	0.52	0.47	-7.38
943.76	2.20	147.50	943.20	5.20	-8.36	-4.98	0.38	0.23	-8.09
1,029.09	2.40	156.40	1,028.46	2.18	-6.76	-2.01	0.48	0.23	10.43
1,114.55	2.10	177.70	1,113.86	-1.03	-5.98	1.18	1.03	-0.35	24.92
1,199.99	2.30	177.80	1,199.24	-4.30	-5.86	4.45	0.23	0.23	0.12
1,285.52	2.80	178.20	1,284.68	-8.11	-5.72	8.25	0.58	0.58	0.47
1,370.95	3.20	174.70	1,369.99	-12.57	-5.44	12.70	0.51	0.47	-4.10
1,456.26	3.50	173.90	1,455.16	-17.53	-4.94	17.65	0.36	0.35	-0.94
1,541.67	3.90	178.80	1,540.39	-23.02	-4.60	23.13	0.60	0.47	5.74
1,627.12	3.90	180.00	1,625.64	-28.83	-4.54	28.94	0.10	0.00	1.40
1,712.56	4.00	178.90	1,710.88	-34.72	-4.49	34.82	0.15	0.12	-1.29
1,797.87	3.60	182.20	1,796.00	-40.37	-4.53	40.47	0.53	-0.47	3.87
1,883.31	3.60	184.20	1,881.27	-45.73	-4.83	45.83	0.15	0.00	2.34
1,968.73	3.90	183.60	1,966.51	-51.30	-5.21	51.42	0.35	0.35	-0.70
2,054.18	3.80	183.20	2,051.77	-57.03	-5.55	57.15	0.12	-0.12	-0.47
2,139.62	3.50	182.70	2,137.03	-62.46	-5.83	62.59	0.35	-0.35	-0.59
2,224.98	3.60	181.80	2,222.23	-67.74	-6.04	67.87	0.13	0.12	-1.05
2,310.32	3.80	181.60	2,307.39	-73.24	-6.20	73.38	0.23	0.23	-0.23
2,395.81	4.10	181.40	2,392.68	-79.13	-6.36	79.27	0.35	0.35	-0.23
2,481.24	3.70	183.70	2,477.91	-84.94	-6.61	85.08	0.50	-0.47	2.69
2,566.66	3.80	181.30	2,563.15	-90.52	-6.85	90.66	0.22	0.12	-2.81
2,652.00	4.00	179.90	2,648.29	-96.32	-6.91	96.46	0.26	0.23	-1.64
2,737.13	3.90	180.60	2,733.22	-102.18	-6.93	102.33	0.13	-0.12	0.82
2,822.85	4.20	180.60	2,818.73	-108.24	-7.00	108.38	0.35	0.35	0.00
2,908.30	4.00	180.30	2,903.96	-114.35	-7.05	114.49	0.24	-0.23	-0.35
2,993.73	3.70	180.60	2,989.19	-120.08	-7.09	120.22	0.35	-0.35	0.35
3,079.17	4.00	181.20	3,074.44	-125.82	-7.18	125.96	0.35	0.35	0.70
3,164.47	4.40	177.80	3,159.51	-132.06	-7.12	132.20	0.55	0.47	-3.99
3,249.94	4.30	178.60	3,244.74	-138.54	-6.91	138.67	0.14	-0.12	0.94
3,335.46	4.00	177.10	3,330.03	-144.73	-6.69	144.85	0.37	-0.35	-1.75
3,437.00	4.00	178.40	3,431.32	-151.80	-6.41	151.92	0.09	0.00	1.28
3,485.00	4.12	178.46	3,479.20	-155.20	-6.31	155.31	0.25	0.25	0.13



Phoenix Technology Services Survey Report



Company:	Apache Corporation	Local Co-ordinate Reference:	Well #51
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	KB @ 3761.00usft (Capstar 118)
Site:	Tony Federal	MD Reference:	KB @ 3761.00usft (Capstar 118)
Well:	#51	North Reference:	Grid
Wellbore:	WB1/Job #1410678	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Capstar 118)	Database:	GCR 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)
3,518.79	4.20	178.50	3,512.90	-157.65	-6.25	157.76	0.24	0.24	0.12
3,604.08	2.80	177.80	3,598.03	-162.85	-6.09	162.96	1.64	-1.64	-0.82
3,689.51	2.60	177.10	3,683.37	-166.88	-5.91	166.97	0.24	-0.23	-0.82
3,774.93	2.90	199.90	3,768.69	-170.84	-6.55	170.95	1.32	0.35	26.69
3,860.24	3.10	194.30	3,853.89	-175.11	-7.85	175.25	0.42	0.23	-6.56
3,945.84	4.00	185.00	3,939.32	-180.32	-8.68	180.49	1.24	1.05	-10.86
4,031.29	4.00	184.30	4,024.56	-186.26	-9.17	186.44	0.06	0.00	-0.82
4,116.67	3.50	174.10	4,109.76	-191.83	-9.12	192.00	0.97	-0.59	-11.95
4,202.07	3.60	175.30	4,195.00	-197.09	-8.63	197.25	0.15	0.12	1.41
4,287.46	4.40	184.70	4,280.18	-203.03	-8.68	203.18	1.21	0.94	11.01
4,372.91	4.10	182.50	4,365.39	-209.35	-9.08	209.51	0.40	-0.35	-2.57
4,458.13	4.10	182.90	4,450.40	-215.43	-9.37	215.60	0.03	0.00	0.47
4,543.41	4.10	180.60	4,535.46	-221.53	-9.56	221.70	0.19	0.00	-2.70
4,628.83	4.00	181.40	4,620.66	-227.56	-9.66	227.73	0.13	-0.12	0.94
4,714.26	4.10	183.50	4,705.88	-233.59	-9.92	233.76	0.21	0.12	2.46
4,799.69	4.30	182.10	4,791.08	-239.83	-10.23	240.02	0.26	0.23	-1.64
4,885.09	4.30	179.80	4,876.24	-246.24	-10.33	246.42	0.20	0.00	-2.69
4,970.27	4.30	176.50	4,961.18	-252.62	-10.13	252.79	0.29	0.00	-3.87
5,055.65	4.10	178.10	5,046.33	-258.86	-9.83	259.03	0.27	-0.23	1.87
5,140.67	4.20	179.20	5,131.13	-265.01	-9.68	265.17	0.15	0.12	1.29
5,226.08	3.50	178.80	5,216.35	-270.75	-9.59	270.90	0.82	-0.82	-0.47
5,311.50	3.40	177.20	5,301.61	-275.88	-9.41	276.03	0.16	-0.12	-1.87
5,396.90	3.00	178.70	5,386.88	-280.65	-9.23	280.79	0.48	-0.47	1.76
5,482.30	3.10	183.70	5,472.16	-285.18	-9.33	285.33	0.33	0.12	5.85
5,567.70	4.10	186.70	5,557.39	-290.52	-9.84	290.68	1.19	1.17	3.51
5,653.11	4.30	183.30	5,642.57	-296.75	-10.38	296.92	0.37	0.23	-3.98
5,738.46	4.10	185.50	5,727.69	-302.98	-10.85	303.16	0.30	-0.23	2.58
5,823.76	4.10	185.70	5,812.77	-309.05	-11.45	309.24	0.02	0.00	0.23
5,909.19	4.20	179.20	5,897.98	-315.22	-11.71	315.41	0.56	0.12	-7.61
5,994.61	4.10	179.10	5,983.17	-321.40	-11.62	321.59	0.12	-0.12	-0.12
6,080.06	4.10	179.00	6,068.40	-327.51	-11.52	327.70	0.01	0.00	-0.12
6,165.55	3.90	178.20	6,153.69	-333.47	-11.37	333.65	0.24	-0.23	-0.94
6,250.94	3.50	176.30	6,238.90	-338.97	-11.11	339.15	0.49	-0.47	-2.23
6,360.00	3.30	179.90	6,347.77	-345.43	-10.89	345.60	0.27	-0.18	3.30
*Last Phoenix MWD Survey									
6,405.00	3.30	179.90	6,392.69	-348.02	-10.89	348.19	0.00	0.00	0.00
*Projection to TD									



Phoenix Technology Services

Survey Report



Company:	Apache Corporation	Local Co-ordinate Reference:	Well #51
Project:	Eddy County, NM (NAD27, NME)	TVD Reference:	KB @ 3761.00usft (Capstar 118)
Site:	Tony Federal	MD Reference:	KB @ 3761.00usft (Capstar 118)
Well:	#51	North Reference:	Grid
Wellbore:	WB1/Job #1410678	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Capstar 118)	Database:	GCR DB

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
300.00	299.87	6.71	-2.10	Tie-on to Gyro Survey
338.73	338.52	8.83	-3.27	First Phoenix MWD Survey
6,360.00	6,347.77	-345.43	-10.89	Last Phoenix MWD Survey
6,405.00	6,392.69	-348.02	-10.89	Projection to TD

Checked By: _____	Approved By: _____	Date: _____
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