



PHOENIX
TECHNOLOGY SERVICES

January 12, 2016

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

Dear District 2 - Artesia

Attention: Regulatory Department

Re: Apache Corporation
Tony Federal #57D
Eddy County, NM
API #30-015-43469
Job No. 1514756

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	
Bernard Caldwell	57D	3,540	6,385	12/18/15	12/20/15	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,

Claudia Carreon

Claudia Carreon
Operations Administrator

Certified mail receipt number: 7015 0640 0000 9907 5241

Phoenix Technology Services
SURVEY DATA CERTIFICATION



PHOENIX JOB NUMBER

1514756

ENERGY COMPANY Apache Corp

WELL NAME Tony Federal #57D

COUNTY & STATE

Eddy County, NM

API WELL NUMBER

30-015-43469

PROPOSED DIRECTION

266.08

TIE-IN DATA						
MEASURED DEPTH	VERTICAL DEPTH	INCLIN	AZIMUTH	N-S COORD	E-W COORD	DATA SOURCE
3,445.00 ft	3,442.76 ft	1.57	303.98	-26.16 ft	93.77 ft	Phoenix Gyro

FIRST SURVEY DATE	FIRST SURVEY DEPTH	INCLIN	AZIMUTH
18-Dec-15	3,540.00 ft	1.8°	63.2°

SURVEY INSTRUMENT TYPE
Phoenix MWD

LAST SURVEY DATE	LAST SURVEY DEPTH	INCLIN	AZIMUTH
20-Dec-15	6,385.00 ft	12.8°	275°

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
20-Dec-15	6,445.00 ft	12.8°	275°

Bernard Caldwell

PRINT YOUR NAME ABOVE

Bernard Caldwell

SIGN YOUR NAME ABOVE

MAGNETIC DECLINATION OR TOTAL GRID

TOTAL CORRECTION USED	7.40
DECLINATION OR GRID	GRID

12/20/15

TODAY'S DATE

MWD SUPERVISOR 1

Bernard Caldwell

DIRECTIONAL DRILLER 1

David Eddins

MWD SUPERVISOR 2

0

DIRECTIONAL DRILLER 2

0



Apache Corporation

Eddy County, NM (NAD27 NME)

Tony Federal

#57D

OH / Job #1514756

Survey: Phoenix MWD Surveys

Standard Survey Report

21 December, 2015



Company:	Apache Corporation	Local Co-ordinate Reference:	Well #57D
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	KB @ 3662.00usft (Capstar 114)
Site:	Tony Federal	MD Reference:	KB @ 3662.00usft (Capstar 114)
Well:	#57D	North Reference:	Grid
Wellbore:	OH / Job #1514756	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Capstar 114)	Database:	Compass 5000 GCR

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

Well	#57D				
Well Position	+N/-S	0.00 usft	Northing:	663,911.20 usft	Latitude: 32° 49' 28.01923 N
	+E/-W	0.00 usft	Easting:	631,247.40 usft	Longitude: 103° 54' 21.89507 W
Position Uncertainty	0.00 usft		Wellhead Elevation:	0.00 usft	Ground Level: 3,651.00 usft

Wellbore	OH / Job #1514756				
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	12/10/2015	7.63	60.77	48,532

Design	Surveys (Capstar 114)				
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Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00

Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	266.08

Survey Program		Date 12/21/2015			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
100.00	3,445.00	Phoenix Gyro Surveys (OH / Job #151475	PHX_SPT_GTD	PHX Continuous north-seeking gyro	
3,540.00	6,445.00	Phoenix MWD Surveys (OH / Job #151475	PHX+MWD+HDGM	PHX+OWSG MWD + HDGM	

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)
3,445.00	1.57	303.98	3,442.76	-26.16	93.77	-91.77	0.00	0.00	0.00
Tie In to Phoenix Gyro Surveys									
3,540.00	1.80	63.20	3,537.74	-24.76	94.03	-92.11	3.06	0.24	125.49
First Phoenix MWD Survey									
3,668.00	4.30	100.90	3,665.56	-24.76	100.54	-98.61	2.41	1.95	29.45
3,796.00	6.80	124.60	3,792.96	-29.97	111.49	-109.18	2.61	1.95	18.52
3,925.00	8.20	149.40	3,920.89	-42.23	122.46	-119.29	2.71	1.09	19.22
4,010.00	9.30	164.70	4,004.91	-54.08	127.36	-123.36	3.02	1.29	18.00
4,053.00	8.60	177.50	4,047.39	-60.64	128.42	-123.97	4.90	-1.63	29.77



Phoenix Technology Services LP

Survey Report



Company:	Apache Corporation	Local Co-ordinate Reference:	Well #57D
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	KB @ 3662.00usft (Capstar 114)
Site:	Tony Federal	MD Reference:	KB @ 3662.00usft (Capstar 114)
Well:	#57D	North Reference:	Grid
Wellbore:	OH / Job #1514756	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Capstar 114)	Database:	Compass 5000 GCR

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)
4,096.00	7.30	184.70	4,089.98	-66.58	128.33	-123.48	3.80	-3.02	16.74
4,138.00	6.90	192.60	4,131.66	-71.70	127.56	-122.36	2.51	-0.95	18.81
4,181.00	6.10	206.60	4,174.38	-76.26	125.98	-120.47	4.11	-1.86	32.56
4,223.00	5.00	224.60	4,216.19	-79.56	123.69	-117.96	4.87	-2.62	42.86
4,266.00	5.10	246.90	4,259.02	-81.65	120.62	-114.76	4.54	0.23	51.86
4,308.00	5.80	261.20	4,300.84	-82.70	116.80	-110.88	3.62	1.67	34.05
4,351.00	6.30	270.40	4,343.60	-83.02	112.30	-106.36	2.53	1.16	21.40
4,394.00	7.00	274.70	4,386.31	-82.79	107.33	-101.42	2.00	1.63	10.00
4,436.00	7.00	274.10	4,428.00	-82.39	102.22	-96.35	0.17	0.00	-1.43
4,479.00	7.00	272.80	4,470.68	-82.08	96.99	-91.16	0.37	0.00	-3.02
4,522.00	8.10	275.00	4,513.30	-81.69	91.36	-85.56	2.64	2.56	5.12
4,564.00	9.20	277.10	4,554.82	-81.01	85.08	-79.34	2.72	2.62	5.00
4,607.00	10.30	279.80	4,597.20	-79.94	77.88	-72.23	2.77	2.56	6.28
4,650.00	11.80	281.70	4,639.40	-78.39	69.79	-64.26	3.59	3.49	4.42
4,693.00	13.50	281.80	4,681.36	-76.47	60.57	-55.20	3.95	3.95	0.23
4,735.00	14.00	280.90	4,722.15	-74.51	50.78	-45.57	1.29	1.19	-2.14
4,778.00	14.00	280.40	4,763.88	-72.59	40.56	-35.50	0.28	0.00	-1.16
4,821.00	12.60	279.90	4,805.72	-70.84	30.82	-25.90	3.27	-3.26	-1.16
4,864.00	12.60	280.20	4,847.69	-69.20	21.58	-16.80	0.15	0.00	0.70
4,906.00	12.50	280.20	4,888.68	-67.59	12.60	-7.95	0.24	-0.24	0.00
4,949.00	12.70	280.60	4,930.65	-65.89	3.37	1.14	0.51	0.47	0.93
4,991.00	12.80	280.40	4,971.61	-64.20	-5.74	10.12	0.26	0.24	-0.48
5,034.00	11.80	277.20	5,013.63	-62.79	-14.79	19.05	2.81	-2.33	-7.44
5,077.00	11.70	276.00	5,055.72	-61.79	-23.49	27.65	0.61	-0.23	-2.79
5,119.00	11.70	276.60	5,096.85	-60.85	-31.95	36.04	0.29	0.00	1.43
5,162.00	11.50	276.60	5,138.97	-59.86	-40.54	44.54	0.47	-0.47	0.00
5,205.00	11.30	277.00	5,181.13	-58.85	-48.98	52.89	0.50	-0.47	0.93
5,248.00	11.30	276.50	5,223.29	-57.86	-57.35	61.17	0.23	0.00	-1.16
5,290.00	12.60	278.20	5,264.38	-56.74	-65.97	69.69	3.21	3.10	4.05
5,333.00	12.70	278.50	5,306.34	-55.37	-75.29	78.90	0.28	0.23	0.70
5,460.00	12.20	279.60	5,430.35	-51.07	-102.32	105.58	0.44	-0.39	0.87
5,588.00	11.70	280.00	5,555.58	-46.56	-128.44	131.32	0.40	-0.39	0.31
5,716.00	12.60	278.10	5,680.71	-42.34	-155.04	157.58	0.77	0.70	-1.48
5,844.00	12.40	278.40	5,805.67	-38.37	-182.46	184.66	0.16	-0.16	0.23
5,972.00	11.90	278.60	5,930.81	-34.39	-209.11	210.97	0.39	-0.39	0.16
6,100.00	14.30	274.70	6,055.47	-31.12	-237.92	239.49	2.00	1.88	-3.05
6,228.00	13.50	274.90	6,179.72	-28.55	-268.56	269.88	0.63	-0.63	0.16
6,356.00	12.80	275.30	6,304.36	-25.96	-297.56	298.64	0.55	-0.55	0.31
6,385.00	12.80	275.00	6,332.64	-25.38	-303.96	304.98	0.23	0.00	-1.03
Final Phoenix MWD Survey									
6,445.00	12.80	275.00	6,391.15	-24.23	-317.20	318.12	0.00	0.00	0.00
Projection to TD									



Phoenix Technology Services LP

Survey Report



Company:	Apache Corporation	Local Co-ordinate Reference:	Well #57D
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	KB @ 3662.00usft (Capstar 114)
Site:	Tony Federal	MD Reference:	KB @ 3662.00usft (Capstar 114)
Well:	#57D	North Reference:	Grid
Wellbore:	OH / Job #1514756	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Capstar 114)	Database:	Compass 5000 GCR

Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
3,445.00	3,442.76	-26.16	93.77	Tie In to Phoenix Gyro Surveys
3,540.00	3,537.74	-24.76	94.03	First Phoenix MWD Survey
6,385.00	6,332.64	-25.38	-303.96	Final Phoenix MWD Survey
6,445.00	6,391.15	-24.23	-317.20	Projection to TD

Checked By: _____	Approved By: _____	Date: _____
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DISTRICT I
1625 N. French Dr., Hobbs, NM 88240
Phone: (505) 393-6161 Fax: (505) 393-0720

DISTRICT II
811 S. First St., Artesia, NM 88210
Phone: (505) 746-1283 Fax: (505) 746-9720

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

DAMENDED REPORT

WELL LOCATION AND ACREAGE DEDICATION PLAT

API Number 30-015-43469	Pool Code 96831	Pool Name Cedar Lake; Glorieta - Yeso
Property Code 308738	Property Name TONY FEDERAL	Well Number 57A
GRID No. 873	Operator Name APACHE CORPORATION	Elevation 3651'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	19	17-S	31-E		970	NORTH	1890	EAST	EDDY

Bottom Hole Location If Different From Surface

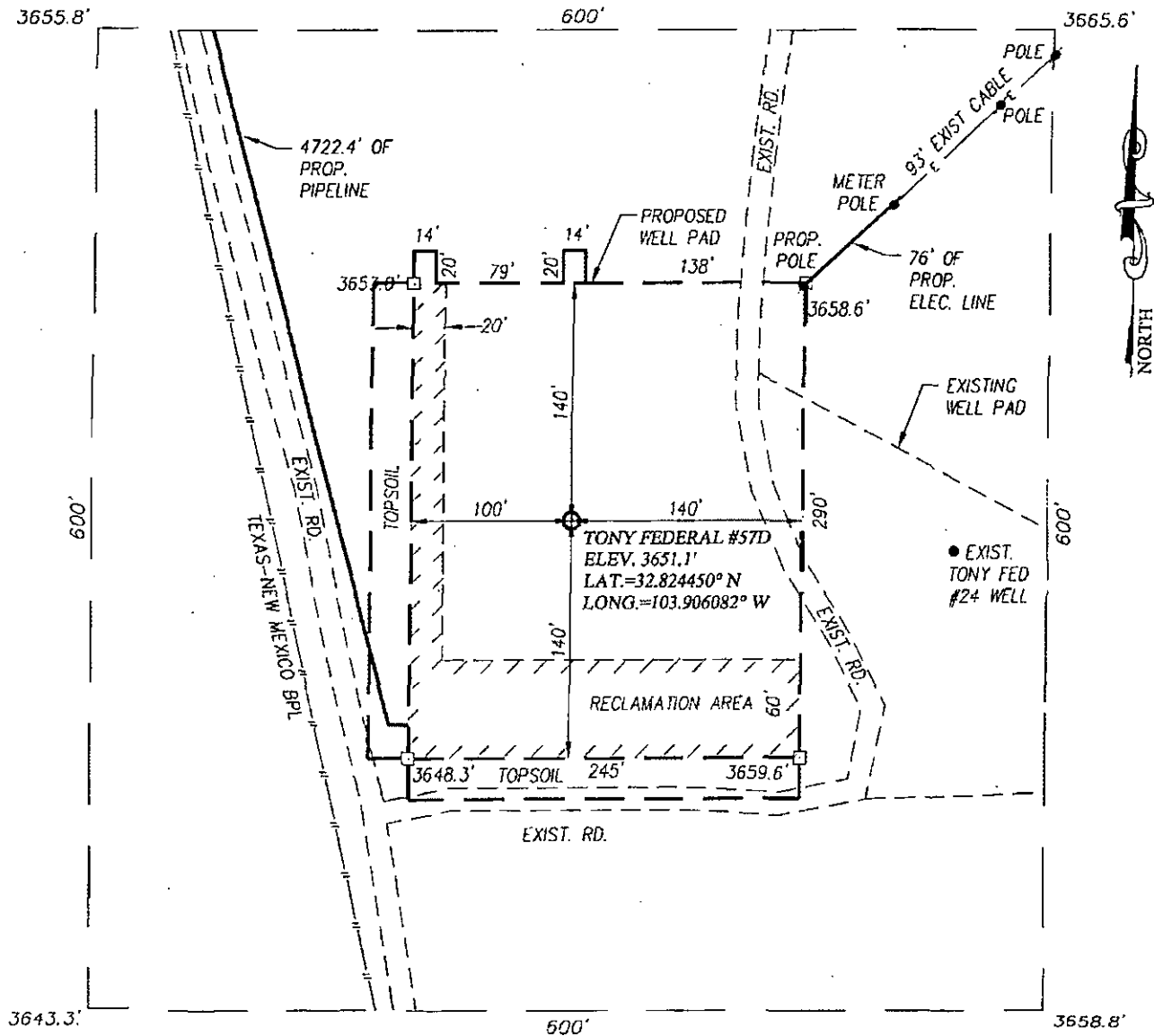
UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
B	19	17-S	31-E		990	NORTH	2210	EAST	EDDY

Dedicated Acres	Joint or Infill	Consolidation Code	Order No.
40			

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

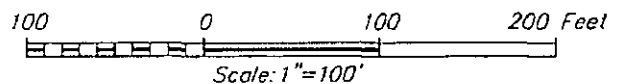
		OPERATOR CERTIFICATION I hereby certify that the information herein is true and complete to the best of my knowledge and belief, and that this organization either owns a working interest or unleased mineral interest in the land including the proposed bottom hole location or has a right to drill this 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. <u>Sorina L Flores</u> 3/19/15 Signature Date <u>Sorina L Flores</u> Printed Name <u>Sorina.Flores@apachecorp.com</u> E-mail Address	
32.41 AC. 2 GEODETIC COORDINATES NAD 27 NME BOTTOM HOLE LOCATION Y= 663889.3 N X= 630927.6 E LAT.=32.824393° N LONG.=103.907123° W LAT.=32°49'28" N LONG.=103°54'26" W	32.51 AC. 3 GEODETIC COORDINATES NAD 27 NME SURFACE LOCATION Y= 663911.2 N X= 631247.4 E LAT.=32.824450° N LONG.=103.906082° W LAT.=32°49'28" N LONG.=103°54'22" W	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. AUGUST 22, 2012 Date of Survey <u>Ronald J. Eidson</u> Signature & Seal of Professional Surveyor 3239 <u>Ronald J. Eidson</u> 3/19/2015 Certificate Number Gary G. Eidson 12641 Ronald J. Eidson 3239	
32.61 AC. 4 GEODETIC COORDINATES NAD 83 NME BOTTOM HOLE LOCATION Y= 663953.1 N X= 672106.4 E LAT.=32.824511° N LONG.=103.907630° W LAT.=32°49'28" N LONG.=103°54'27" W	32.71 AC. 4 GEODETIC COORDINATES NAD 83 NME SURFACE LOCATION Y= 663975.0 N X= 672426.1 E LAT.=32.824567° N LONG.=103.906589° W LAT.=32°49'28" N LONG.=103°54'24" W	CORNER COORDINATES TABLE NAD 27 NME A - Y= 664876.4 N, X= 630492.1 E B - Y= 664884.5 N, X= 631812.0 E C - Y= 663564.1 N, X= 631819.4 E D - Y= 663556.2 N, X= 630499.4 E CORNER COORDINATES TABLE NAD 83 NME A - Y= 664940.2 N, X= 671670.8 E B - Y= 664948.3 N, X= 672990.7 E C - Y= 663627.9 N, X= 672998.2 E D - Y= 663620.0 N, X= 671678.2 E	

EXHIBIT #1C



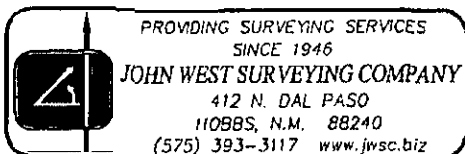
DIRECTIONS TO LOCATION

FROM THE INTERSECTION OF U.S. HIGHWAY 82 AND STATE HIGHWAY 529, GO WEST ON HIGHWAY 82 APPROX 1.3 MILES. TURN RIGHT GO NORTH APPROX 0.2 MILES. TURN LEFT GO WEST APPROX 0.5 MILES. TURN RIGHT GO NORTH APPROX 0.2 MILES THIS LOCATION IS EAST APPROX 160 FEET.



APACHE CORPORATION

TONY FEDERAL #57D WELL
LOCATED 970 FEET FROM THE NORTH LINE
AND 1890 FEET FROM THE EAST LINE OF SECTION 19,
TOWNSHIP 17 SOUTH, RANGE 31 EAST, N.M.P.M.,
EDDY COUNTY, NEW MEXICO



Survey Date: 8/22/12	CAD Date: 3/10/15	Drawn By: LSL
W.O. No.: 15130384	Rev.:	Rel. W.O.: 15110197
		Sheet 1 of 1