



PHOENIX
TECHNOLOGY SERVICES

March 10, 2015

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
AAO Federal SWD #1
Eddy County, NM
API #30-015-42549
Job No. 1412552

NM OIL CONSERVATION
ARTESIA DISTRICT
MAR 16 2015
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	
Lindsey Cantrell	43H	5,258	10,451	01/28/15	02/02/15	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: _____

7014 2120 0004 3423 7187

Phoenix Technology Services
SURVEY DATA CERTIFICATION



PHOENIX JOB NUMBER

1412552

OPERATOR

Apache

WELL NAME

AAO Federal SWD #1

COUNTY & STATE

Eddy County, NM

API WELL NUMBER

30-015-42549

PROPOSED DIRECTION

118:03

TIE-IN DATA						
MEASURED	VERTICAL			N-S	E-W	DATA
DEPTH	DEPTH	INCLIN	AZIMUTH	COORD	COORD	SOURCE
7,383 ft	7,378.45 ft	1.5 ft	170.0 ft	-3.96 ft	110.15 ft	MWD

FIRST	FIRST		
SURVEY	SURVEY		
DATE	DEPTH	INCLIN	AZIMUTH
16-Dec-14	7,482 ft	2.4	196.2

SURVEY INSTRUMENT
TYPE
Phoenix MWD

LAST	LAST		
SURVEY	SURVEY		
DATE	DEPTH	INCLIN	AZIMUTH
21-Dec-14	8,607 ft	0.1	32.9

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

PROJECTED	PROJECTED		
TD SURVEY	TD SURVEY		
DATE	DEPTH	INCLIN	AZIMUTH
21-Dec-14	8,656 ft	0.1	32.9

Dean Young

PRINT YOUR NAME ABOVE

Dean Young

SIGN YOUR NAME ABOVE

MAGNETIC DECLINATION OR TOTAL GRID

TOTAL CORRECTION USED	
	7.63
DECLINATION OR GRID	GRID

12/21/2014

TODAY'S DATE

MWD SUPERVISOR 1

Dean Young

DIRECTIONAL DRILLER 1

Joshua Ashley

MWD SUPERVISOR 2

N/A

DIRECTIONAL DRILLER 2

Hardy Gross

1805 Brittmore Road

Houston, Texas 77043

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



Apache Corporation

Eddy County, NM (NAD27 NME)

AAO Federal SWD

#1

WB2 / Job #1412259 / 1412552

Survey: Phoenix MWD Survey Job#1412552

Standard Survey Report

02 March, 2015



Company:	Apache Corporation	Local Co-ordinate Reference:	Well #1
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	KB @ 3644.00usft (Capstar 133)
Site:	AAO Federal SWD	MD Reference:	KB @ 3644.00usft (Capstar 133)
Well:	#1	North Reference:	Grid
Wellbore:	WB2 / Job #1412259 / 1412552	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Capstar 133)	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	AAO Federal SWD		
Site Position:	From: Map	Northing:	646,192.50 usft
		Easting:	531,531.10 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 46' 35.15814 N
		Longitude:	104° 13' 50.68027 W
		Grid Convergence:	0.06 °

Well	#1		
Well Position	+N/-S	0.00 usft	Northing:
	+E/-W	0.00 usft	Easting:
Position Uncertainty	0.00 usft	Wellhead Elevation:	0.00 usft
		Latitude:	32° 46' 35.15814 N
		Longitude:	104° 13' 50.68027 W
		Ground Level:	3,629.00 usft

Wellbore	WB2 / Job #1412259 / 1412552		
Magnetics	Model Name	Sample Date	Declination (°)
	BGGM2014	11/27/2014	7.68
			Dip Angle (°)
			60.49
			Field Strength (nT)
			48,477

Design	Surveys (Capstar 133)		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	4,475.65
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)
	0.00	0.00	0.00
			Direction (°)
			92.74

Survey Program	Date 3/2/2015		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name
60.70	4,475.65	Gyrodata Surveys (WB1 / Job #1412259)	NS-GYRO-MS
4,475.65	7,383.00	Phoenix MWD Survey Job#1412259 (WB2)	PHX+MWD+BGGM
7,482.00	8,656.00	Phoenix MWD Survey Job#1412552 (WB2)	PHX+MWD+BGGM
			Description
			North sensing gyrocompassing m/s
			PHX+MWD+BGGM v3:standard declination
			PHX+MWD+BGGM v3:standard declination

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)	
7,383.00	1.50	170.00	7,378.45	-3.96	110.15	110.21	0.00	0.00	0.00	
Tie-on to 7383' MD Survey										
7,482.00	2.40	196.20	7,477.40	-7.23	109.79	110.01	1.26	0.91	26.46	
First Phoenix MWD Survey										
7,577.00	2.50	196.90	7,572.31	-11.12	108.63	109.04	0.11	0.11	0.74	
7,652.00	3.10	192.20	7,647.22	-14.67	107.73	108.31	0.86	0.80	-6.27	
7,770.00	2.30	190.90	7,765.09	-20.11	106.61	107.45	0.68	-0.68	-1.10	
7,865.00	1.10	193.00	7,860.04	-22.87	106.04	107.01	1.26	-1.26	2.21	

Company:	Apache Corporation	Local Co-ordinate Reference:	Well #1
Project:	Eddy County, NM (NAD27 NME)	TVD Reference:	KB @ 3644.00usft (Capstar 133)
Site:	AAO Federal SWD	MD Reference:	KB @ 3644.00usft (Capstar 133)
Well:	#1	North Reference:	Grid
Wellbore:	WB2 / Job #1412259 / 1412552	Survey Calculation Method:	Minimum Curvature
Design:	Surveys (Capstar 133)	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)	
7,961.00	1.10	143.90	7,956.03	-24.52	106.38	107.43	0.95	0.00	-51.15	
8,056.00	1.50	95.80	8,051.01	-25.38	108.15	109.24	1.18	0.42	-50.63	
8,151.00	2.50	124.60	8,145.95	-26.68	111.10	112.24	1.46	1.05	30.32	
8,247.00	1.50	134.40	8,241.89	-28.75	113.72	114.96	1.10	-1.04	10.21	
8,342.00	1.60	157.00	8,336.86	-30.84	115.12	116.47	0.65	0.11	23.79	
8,437.00	1.60	162.30	8,431.82	-33.33	116.04	117.50	0.16	0.00	5.58	
8,532.00	0.20	215.10	8,526.81	-34.72	116.35	117.88	1.57	-1.47	55.58	
8,607.00	0.10	32.90	8,601.81	-34.78	116.31	117.84	0.40	-0.13	237.07	
Last Phoenix MWD Survey										
8,656.00	0.10	32.90	8,650.81	-34.70	116.36	117.88	0.00	0.00	0.00	
Projection to TD										

Survey Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
7,383.00	7,378.45	-3.96	110.15	Tie-on to 7383' MD Survey	
7,482.00	7,477.40	-7.23	109.79	First Phoenix MWD Survey	
8,607.00	8,601.81	-34.78	116.31	Last Phoenix MWD Survey	
8,656.00	8,650.81	-34.70	116.36	Projection to TD	

Checked By: _____ Approved By: _____ Date: _____

ACT I

NM OIL CONSERVATION

French Dr., Hobbs, NM 88240
(505) 393-6161 Fax: (505) 393-0720

ARTESIA DISTRICT

State of New Mexico

Energy, Minerals and Natural Resources Department

Form C-102

Revised August 1, 2011

Submit one copy to appropriate
District OfficeDISTRICT II
11 S. First St., Artesia, NM 88210
Phone (505) 748-1283 Fax: (505) 748-0720

AUG 01 2014

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

OIL CONSERVATION DIVISION

1220 South St. Francis Dr.
Santa Fe, New Mexico 87505

RECEIVED

DISTRICT IV
1220 S. St. Francis Dr., Santa Fe, NM 87505
Phone (505) 476-3450 Fax: (505) 476-3450

WELL LOCATION AND ACREAGE DEDICATION PLAT

☐ AMENDED REPORT

API Number 30-015-42549	Pool Code 98079	Pool Name SWD; WC-CISCO-CYN-STRAWN
Property Code 308903 313554	Property Name AAO FEDERAL SWD	Well Number 1
OGRIID No. 873	Operator Name APACHE CORPORATION	Elevation 3629'

Surface Location

UL or lot No.	Section	Township	Range	Lot Idn	Feet from the	North/South line	Feet from the	East/West line	County
G	1	18 S	27 E		2470	NORTH	2380	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
Dedicated Acres	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

BC Lot - N 32.783425' Long - W 104.240803' NMSPC-E 648754.8 E 568774.1 (NAD-83) Lot - N 32.783311' Long - W 104.240290' NMSPC-E 648692.0 E 526594.9 (NAD-27) LOT 4 LOT 3 LOT 2 LOT 1 BC Lot - N 32.783261' Long - W 104.223507' NMSPC-E 648700.1 E 575089.8 (NAD-83) Lot - N 32.783146' Long - W 104.222934' NMSPC-E 648637.2 E 533910.6 (NAD-27) SURFACE LOCATION Lot - N 32.776548' Long - W 104.231257' NMSPC-E 646255.3 E 572710.3 (NAD-83) Lot - N 32.776433' Long - W 104.230744' NMSPC-E 646192.5 E 531531.1 (NAD-27) BC Lot - N 32.776289' Long - W 104.240687' NMSPC-E 646158.7 E 569812.1 (NAD-83) Lot - N 32.776175' Long - W 104.240174' NMSPC-E 646095.9 E 528632.9 (NAD-27) BC Lot - N 32.769171' Long - W 104.240566' NMSPC-E 643588.8 E 568951.5 (NAD-83) Lot - N 32.769056' Long - W 104.240054' NMSPC-E 643505.0 E 528672.3 (NAD-27) BC Lot - N 32.769069' Long - W 104.232043' NMSPC-E 643534.2 E 572471.5 (NAD-83) Lot - N 32.768954' Long - W 104.231530' NMSPC-E 643471.5 E 511292.2 (NAD-27) BC Lot - N 32.768967' Long - W 104.223525' NMSPC-E 643499.7 E 575089.7 (NAD-83) Lot - N 32.768852' Long - W 104.223012' NMSPC-E 643436.9 E 533910.5 (NAD-27) BC	OPERATOR CERTIFICATION I hereby certify that the information contained 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 a 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> 3/11/14 Signature Date <i>Sorina L. Flores</i> Printed Name <i>sorina.flores@apachecorp.com</i> Email Address 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. Date Surveyed: <i>May 1, 2014</i> Signature of Professional Surveyor: <i>[Signature]</i> Certificate No. <i>7977</i> Scale: 1" = 1000' WO Num.: 29720
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