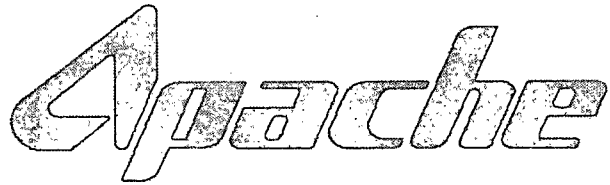


30-015-42361



Apache Corporation

Eddy County, New Mexico

Sec 1, T18S, R27E

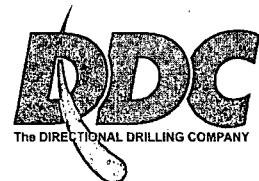
AAO Federal #25

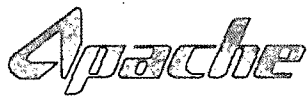
Wellbore #1

Plan: Design #3

DDC Well Planning Report

09 June, 2014





DDC
Well Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well AAO Federal #25
Company:	Apache Corporation	TVD Reference:	WELL @ 3587.0usft (Capstar #118)
Project:	Eddy County, New Mexico	MD Reference:	WELL @ 3587.0usft (Capstar #118)
Site:	Sec 1, T18S, R27E	North Reference:	Grid
Well:	AAO Federal #25	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #3		

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 1, T18S, R27E		
Site Position:		Northing:	645,438.80 usft
From:	Map	Easting:	530,705.90 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 46' 27.708 N
		Longitude:	104° 14' 0.354 W
		Grid Convergence:	0.05 °

Well	AAO Federal #25		
Well Position	+N/-S	54.3 usft	Northing:
	+E/-W	-1,042.2 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	Ground Level:
			3,576.0 usft

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF2010	12/20/2013	7.63
			Dip Angle
			(°)
			60.52
			Field Strength
			(nT)
			48,621

Design	Design #3		
Audit Notes:			
Version:	Phase:	PLAN	Tie On Depth:
			0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction
			(°)
			293.85

Plan Sections										
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Dogleg	Build	Turn	TFO	Target
Depth	(°)	(°)	Depth	(usft)	(usft)	Rate	Rate	Rate	(°)	
(usft)			(usft)			(°/100usft)	(°/100usft)	(°/100usft)		
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,046.8	10.94	293.85	1,043.5	21.0	-47.6	2.00	2.00	-12.10	293.85	
4,669.1	10.94	293.85	4,600.0	298.9	-676.1	0.00	0.00	0.00	0.00	PBHL Target AAO Fe



DDC
Well Planning Report



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Project:	Eddy County, New Mexico	MD Reference:	WELL @ 3587.0usft (Capstar #118)
Site:	Sec 1, T18S, R27E	North Reference:	Grid
Well:	AAO Federal #25	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #3		

Planned 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)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
Build @ 2°/100									
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	2.00	293.85	600.0	0.7	-1.6	1.7	2.00	2.00	0.00
700.0	4.00	293.85	699.8	2.8	-6.4	7.0	2.00	2.00	0.00
800.0	6.00	293.85	799.5	6.3	-14.4	15.7	2.00	2.00	0.00
900.0	8.00	293.85	898.7	11.3	-25.5	27.9	2.00	2.00	0.00
1,000.0	10.00	293.85	997.5	17.6	-39.8	43.5	2.00	2.00	0.00
End of Build @ 10.94° Inc									
1,046.8	10.94	293.85	1,043.5	21.0	-47.6	52.0	2.00	2.00	0.00
1,100.0	10.94	293.85	1,095.7	25.1	-56.8	62.1	0.00	0.00	0.00
1,200.0	10.94	293.85	1,193.9	32.8	-74.2	81.1	0.00	0.00	0.00
1,300.0	10.94	293.85	1,292.1	40.5	-91.5	100.1	0.00	0.00	0.00
1,400.0	10.94	293.85	1,390.3	48.1	-108.9	119.0	0.00	0.00	0.00
1,500.0	10.94	293.85	1,488.5	55.8	-126.2	138.0	0.00	0.00	0.00
1,600.0	10.94	293.85	1,586.6	63.5	-143.6	157.0	0.00	0.00	0.00
1,700.0	10.94	293.85	1,684.8	71.1	-160.9	175.9	0.00	0.00	0.00
1,800.0	10.94	293.85	1,783.0	78.8	-178.3	194.9	0.00	0.00	0.00
1,900.0	10.94	293.85	1,881.2	86.5	-195.6	213.9	0.00	0.00	0.00
2,000.0	10.94	293.85	1,979.4	94.2	-213.0	232.9	0.00	0.00	0.00
2,100.0	10.94	293.85	2,077.6	101.8	-230.3	251.8	0.00	0.00	0.00
2,200.0	10.94	293.85	2,175.7	109.5	-247.7	270.8	0.00	0.00	0.00
2,300.0	10.94	293.85	2,273.9	117.2	-265.0	289.8	0.00	0.00	0.00
2,400.0	10.94	293.85	2,372.1	124.8	-282.4	308.7	0.00	0.00	0.00
2,500.0	10.94	293.85	2,470.3	132.5	-299.7	327.7	0.00	0.00	0.00
2,600.0	10.94	293.85	2,568.5	140.2	-317.1	346.7	0.00	0.00	0.00
2,700.0	10.94	293.85	2,666.7	147.9	-334.4	365.7	0.00	0.00	0.00
2,800.0	10.94	293.85	2,764.8	155.5	-351.8	384.6	0.00	0.00	0.00
2,900.0	10.94	293.85	2,863.0	163.2	-369.1	403.6	0.00	0.00	0.00
3,000.0	10.94	293.85	2,961.2	170.9	-386.5	422.6	0.00	0.00	0.00
3,100.0	10.94	293.85	3,059.4	178.5	-403.8	441.5	0.00	0.00	0.00
3,200.0	10.94	293.85	3,157.6	186.2	-421.2	460.5	0.00	0.00	0.00
3,300.0	10.94	293.85	3,255.8	193.9	-438.5	479.5	0.00	0.00	0.00
Glorieta									
3,326.7	10.94	293.85	3,282.0	195.9	-443.2	484.6	0.00	0.00	0.00
3,400.0	10.94	293.85	3,354.0	201.5	-455.9	498.5	0.00	0.00	0.00
3,500.0	10.94	293.85	3,452.1	209.2	-473.2	517.4	0.00	0.00	0.00
3,600.0	10.94	293.85	3,550.3	216.9	-490.6	536.4	0.00	0.00	0.00
3,700.0	10.94	293.85	3,648.5	224.6	-507.9	555.4	0.00	0.00	0.00
3,800.0	10.94	293.85	3,746.7	232.2	-525.3	574.3	0.00	0.00	0.00
3,900.0	10.94	293.85	3,844.9	239.9	-542.7	593.3	0.00	0.00	0.00
4,000.0	10.94	293.85	3,943.1	247.6	-560.0	612.3	0.00	0.00	0.00
4,100.0	10.94	293.85	4,041.2	255.2	-577.4	631.3	0.00	0.00	0.00
4,200.0	10.94	293.85	4,139.4	262.9	-594.7	650.2	0.00	0.00	0.00
4,300.0	10.94	293.85	4,237.6	270.6	-612.1	669.2	0.00	0.00	0.00
4,400.0	10.94	293.85	4,335.8	278.3	-629.4	688.2	0.00	0.00	0.00
4,500.0	10.94	293.85	4,434.0	285.9	-646.8	707.1	0.00	0.00	0.00
4,600.0	10.94	293.85	4,532.2	293.6	-664.1	726.1	0.00	0.00	0.00
PBHL @ 4669° MD / 4600° TVD									
4,669.1	10.94	293.85	4,600.0	298.9	-676.1	739.2	0.00	0.00	0.00



DDC
Well Planning Report



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Project:	Eddy County New Mexico	MD Reference:	WELL @ 3587.0usft (Capstar #118)
Site:	Sec 1 T18S R27E	North Reference:	Grid
Well:	AAO Federal #25	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #3		

Planned 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)

Design Targets									
Target Name	hit/miss target	Dip Angle (°)	Dip Dir (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude Longitude
PBHL Target AAO Fede	- plan hits target center - Point	0.00	0.00	4,600.0	298.9	-676.1	645,792.00	528,987.60	32° 46' 31.218 N 104° 14' 20.476 W

Formations							Dip	Dip Direction
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)			
3,326.7	3,282.0	Glorieta		0.00	293.85			

Plan Annotations					Comment
Measured Depth (usft)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)		
500.0	500.0	0.0	0.0		Build @ 2°/100'
1,046.8	1,043.5	21.0	-47.6		End of Build @ 10.94° Inc.
4,669.1	4,600.0	298.9	-676.1		PBHL @ 4669' MD / 4600' TVD