



Marshall & Winston, Inc

Lea County, NM

Sec 27, T21S, R34E

Slick Mesa State 27 #2H

Wellbore #1

Plan: Design #1

DDC Well Planning Report

02 October, 2013



OCT 30 2014

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well Slick Mesa State 27 #2H
Company:	Marshall & Winston, Inc	TVD Reference:	WELL @ 3716.0usft (Original Well Elev)
Project:	Lea County, NM	MD Reference:	WELL @ 3716.0usft (Original Well Elev)
Site:	Sec 27, T21S, R34E	North Reference:	Grid
Well:	Slick Mesa State 27 #2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Project:	Lea County, NM		
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 27, T21S, R34E		
Site Position:		Northing:	526,476.10 usft
From:	Map	Easting:	769,600.90 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 28' 39.708 N
		Longitude:	103° 27' 33.882 W
		Grid Convergence:	0.47 "

Well:	Slick Mesa State 27 #2H		
Well Position	+N/-S	-142.2 usft	Northing:
	+E/-W	-1,318.1 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	Ground Level:
			3,716.0 usft

Wellbore:	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination
	IGRF2010	10/1/2013	7.27
			Dip Angle
			60.35
			Field Strength
			48,529

Design:	Design #1		
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:
			359.51

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
10,762.5	0.00	0.00	10,762.5	0.0	0.0	0.00	0.00	0.00	0.00	
11,512.5	90.00	359.51	11,240.0	477.4	-4.1	12.00	12.00	0.00	359.51	
15,454.4	90.00	359.51	11,240.0	4,419.2	-37.7	0.00	0.00	0.00	0.00	PBHL - Slick Mesa St

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Site:	Sec 27, T21S, R34E	North Reference:	Grid
Well:	Slick Mesa State 27 #2H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

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)
Build @ 12°/100'									
10,762.5	0.00	0.00	10,762.5	0.0	0.0	0.0	0.00	0.00	0.00
10,800.0	4.50	359.51	10,800.0	1.5	0.0	1.5	12.00	12.00	0.00
10,900.0	16.50	359.51	10,898.1	19.7	-0.2	19.7	12.00	12.00	0.00
11,000.0	28.50	359.51	10,990.3	57.8	-0.5	57.8	12.00	12.00	0.00
11,100.0	40.50	359.51	11,072.6	114.4	-1.0	114.4	12.00	12.00	0.00
11,200.0	52.50	359.51	11,141.3	186.8	-1.6	186.8	12.00	12.00	0.00
11,300.0	64.50	359.51	11,193.5	271.9	-2.3	271.9	12.00	12.00	0.00
11,400.0	76.50	359.51	11,228.8	366.0	-3.1	366.0	12.00	12.00	0.00
11,500.0	88.50	359.51	11,239.8	464.9	-4.0	464.9	12.00	12.00	0.00
EOB @ 11513' MD / 90° Inc / 11240' TVD									
11,512.5	90.00	359.51	11,240.0	477.4	-4.1	477.5	12.00	12.00	0.00
11,600.0	90.00	359.51	11,240.0	564.9	-4.8	564.9	0.00	0.00	0.00
11,700.0	90.00	359.51	11,240.0	664.9	-5.7	664.9	0.00	0.00	0.00
11,800.0	90.00	359.51	11,240.0	764.9	-6.5	764.9	0.00	0.00	0.00
11,900.0	90.00	359.51	11,240.0	864.9	-7.4	864.9	0.00	0.00	0.00
12,000.0	90.00	359.51	11,240.0	964.9	-8.2	964.9	0.00	0.00	0.00
12,100.0	90.00	359.51	11,240.0	1,064.9	-9.1	1,064.9	0.00	0.00	0.00
12,200.0	90.00	359.51	11,240.0	1,164.9	-9.9	1,164.9	0.00	0.00	0.00
12,300.0	90.00	359.51	11,240.0	1,264.9	-10.8	1,264.9	0.00	0.00	0.00
12,400.0	90.00	359.51	11,240.0	1,364.9	-11.6	1,364.9	0.00	0.00	0.00
12,500.0	90.00	359.51	11,240.0	1,464.9	-12.5	1,464.9	0.00	0.00	0.00
12,600.0	90.00	359.51	11,240.0	1,564.9	-13.3	1,564.9	0.00	0.00	0.00
12,700.0	90.00	359.51	11,240.0	1,664.9	-14.2	1,664.9	0.00	0.00	0.00
12,800.0	90.00	359.51	11,240.0	1,764.9	-15.1	1,764.9	0.00	0.00	0.00
12,900.0	90.00	359.51	11,240.0	1,864.9	-15.9	1,864.9	0.00	0.00	0.00
13,000.0	90.00	359.51	11,240.0	1,964.9	-16.8	1,964.9	0.00	0.00	0.00
13,100.0	90.00	359.51	11,240.0	2,064.9	-17.6	2,064.9	0.00	0.00	0.00
13,200.0	90.00	359.51	11,240.0	2,164.9	-18.5	2,164.9	0.00	0.00	0.00
13,300.0	90.00	359.51	11,240.0	2,264.8	-19.3	2,264.9	0.00	0.00	0.00
13,400.0	90.00	359.51	11,240.0	2,364.8	-20.2	2,364.9	0.00	0.00	0.00
13,500.0	90.00	359.51	11,240.0	2,464.8	-21.0	2,464.9	0.00	0.00	0.00
13,600.0	90.00	359.51	11,240.0	2,564.8	-21.9	2,564.9	0.00	0.00	0.00
13,700.0	90.00	359.51	11,240.0	2,664.8	-22.7	2,664.9	0.00	0.00	0.00
13,800.0	90.00	359.51	11,240.0	2,764.8	-23.6	2,764.9	0.00	0.00	0.00
13,900.0	90.00	359.51	11,240.0	2,864.8	-24.4	2,864.9	0.00	0.00	0.00
14,000.0	90.00	359.51	11,240.0	2,964.8	-25.3	2,964.9	0.00	0.00	0.00
14,100.0	90.00	359.51	11,240.0	3,064.8	-26.1	3,064.9	0.00	0.00	0.00
14,200.0	90.00	359.51	11,240.0	3,164.8	-27.0	3,164.9	0.00	0.00	0.00
14,300.0	90.00	359.51	11,240.0	3,264.8	-27.9	3,264.9	0.00	0.00	0.00
14,400.0	90.00	359.51	11,240.0	3,364.8	-28.7	3,364.9	0.00	0.00	0.00
14,500.0	90.00	359.51	11,240.0	3,464.8	-29.6	3,464.9	0.00	0.00	0.00
14,600.0	90.00	359.51	11,240.0	3,564.8	-30.4	3,564.9	0.00	0.00	0.00
14,700.0	90.00	359.51	11,240.0	3,664.8	-31.3	3,664.9	0.00	0.00	0.00
14,800.0	90.00	359.51	11,240.0	3,764.8	-32.1	3,764.9	0.00	0.00	0.00
14,900.0	90.00	359.51	11,240.0	3,864.8	-33.0	3,864.9	0.00	0.00	0.00
15,000.0	90.00	359.51	11,240.0	3,964.8	-33.8	3,964.9	0.00	0.00	0.00
15,100.0	90.00	359.51	11,240.0	4,064.8	-34.7	4,064.9	0.00	0.00	0.00
15,200.0	90.00	359.51	11,240.0	4,164.8	-35.5	4,164.9	0.00	0.00	0.00
15,300.0	90.00	359.51	11,240.0	4,264.8	-36.4	4,264.9	0.00	0.00	0.00
15,400.0	90.00	359.51	11,240.0	4,364.8	-37.2	4,364.9	0.00	0.00	0.00
TD @ 15454' MD / 11240' TVD									
15,454.4	90.00	359.51	11,240.0	4,419.2	-37.7	4,419.4	0.00	0.00	0.00

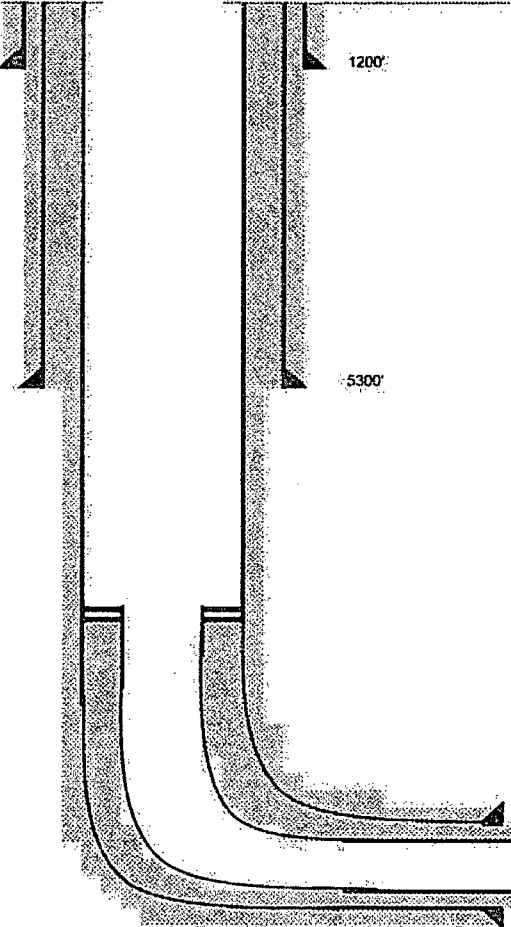
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Design Targets

Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Hit/Miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
Shape									
PBHL - Slick Mesa State	0.00	0.00	11,240.0	4,419.2	-37.7	530,753.10	768,245.10	32° 27' 22.137 N	103° 27' 49.296 W
- plan hits target center									
- Point									

Plan Annotations

Measured	Vertical	Local Coordinates		
Depth	Depth	+N/-S	+E/-W	Comment
(usft)	(usft)	(usft)	(usft)	
10,762.5	10,762.5	0.0	0.0	Build @ 12"/100'
11,512.5	11,240.0	477.4	-4.1	EOB @ 11513' MD / 90° Inc / 11240' TVD
15,454.4	11,240.0	4,419.2	-37.7	TD @ 15454' MD / 11240' TVD

AFE No. API # Permit No. Project No.	 Slick Mesa 27 State 2H Lea County, NM Proposed Wellbore Sketch	AFE Information Dry Hole: Days: Proposed TD: 15,454' TMD 11,240' TVD v
 Drill 17.5" Hole with 8.4-8.6 Spud Mud 13-3/8" 54.5# J-55 STC Surface at 1200' Cement to surface Drill out with 12-1/4" Bit with 10# Salt Saturated Water Run "9-5/8" 40# N-80 LTC Casing at 5300' to surface. Cement to surface Drill with 8-3/4" to KOP with 8.4# - 9.5# Cut Brine Vis 28-29 Liner Hanger at 10,600' Kick off with 8-3/4" bit at about 10,762' Land Curve at 11,512' TMD 11,240' TVD. 7" 26# P-110 from 11,512 to surface Cement to surface Penetration Point of Production Lateral (1008' FSL & 622' FWL) Drill out with 6-1/8" bit to TD Run 4-1/2" P-110 13.5# Casing TMD 15.454'		
Well Information Surface Location: Lea County, NM Section 27 T21S R34E		