

**NM OIL CONSERVATION**

ARTESIA DISTRICT

SEP 08 2017

RECEIVED

# **Mewbourne Oil Company**

Eddy County, New Mexico

Forty Niner Ridge Unit #105H

Sec 22, T23S, R30E

SL: 525' FSL & 445' FEL, Sec 22

BHL: 100' FNL & 330' FEL, Sec 15

Plan: Design #1

## **Standard Planning Report**

23 June, 2017

# Planning Report

**Database:** Hobbs  
**Company:** Mewbourne Oil Company  
**Project:** Eddy County, New Mexico  
**Site:** Forty Niner Ridge Unit #105H  
**Well:** Sec 22, T23S, R30E  
**Wellbore:** BHL: 100' FNL & 330' FEL, Sec 15  
**Design:** Design #1

**Local Co-ordinate Reference:** Site Forty Niner Ridge Unit #105H  
**TVD Reference:** WELL @ 3286.0usft (Original Well Elev)  
**MD Reference:** WELL @ 3286.0usft (Original Well Elev)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature

<b>Project</b>	Eddy County, New Mexico		
<b>Map System:</b>	US State Plane 1927 (Exact solution)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b>	New Mexico East 3001		

<b>Site</b>	Forty Niner Ridge Unit #105H			
<b>Site Position:</b>		<b>Northing:</b>	467,548.00 usft	<b>Latitude:</b> 32° 17' 4.285 N
<b>From:</b>	Map	<b>Easting:</b>	645,897.00 usft	<b>Longitude:</b> 103° 51' 40.422 W
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b> 0.25 °

<b>Well</b>	Sec 22, T23S, R30E			
<b>Well Position</b>	<b>+N/-S</b>	0.0 usft	<b>Northing:</b>	467,548.00 usft
	<b>+E/-W</b>	0.0 usft	<b>Easting:</b>	645,897.00 usft
<b>Position Uncertainty</b>	0.0 usft		<b>Wellhead Elevation:</b>	3,286.0 usft
			<b>Ground Level:</b>	3,259.0 usft

<b>Wellbore</b>	BHL: 100' FNL & 330' FEL, Sec 15				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination</b>	<b>Dip Angle</b>	<b>Field Strength</b>
	IGRF200510	12/31/2009	(°)	(°)	(nT)
			7.89	60.25	48,798

<b>Design</b>	Design #1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD)</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Direction</b>
	(usft)	(usft)	(usft)	(°)
	0.0	0.0	0.0	0.38

<b>Plan Sections</b>										
<b>Measured</b>	<b>Inclination</b>	<b>Azimuth</b>	<b>Vertical</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Dogleg</b>	<b>Build</b>	<b>Turn</b>	<b>TFO</b>	<b>Target</b>
<b>Depth</b>	(°)	(°)	<b>Depth</b>	(usft)	(usft)	<b>Rate</b>	<b>Rate</b>	<b>Rate</b>	(°)	
(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	
9,100.0	0.00	0.00	9,100.0	0.0	0.0	0.00	0.00	0.00	0.00	KOP @ 9100'
9,377.1	33.26	27.97	9,361.8	69.1	36.7	12.00	12.00	0.00	27.97	
9,901.5	90.12	359.73	9,604.0	500.0	110.0	11.68	10.85	-5.39	-32.67	LP: 1025' FSL & 330'
19,361.6	90.12	359.73	9,584.0	9,960.0	66.0	0.00	0.00	0.00	0.00	BHL: 100' FNL & 330'

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**MD Reference:** WELL @ 3286.0usft (Original Well Elev)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature

## 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
SL: 525' FSL & 445' FEL, Sec 22									
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
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	0.00
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	0.00
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	0.00
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	0.00
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	0.00
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	0.00
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	0.00
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	0.00
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	0.00
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	0.00
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	0.00
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	0.00
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	0.00
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	0.00
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	0.00
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	0.00
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	0.00
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	0.00
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	0.00
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	0.00
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	0.00
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	0.00
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	0.00
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	0.00
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	0.00
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	0.00
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	0.00
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	0.00
4,600.0	0.00	0.00	4,600.0	0.0	0.0	0.0	0.00	0.00	0.00
4,700.0	0.00	0.00	4,700.0	0.0	0.0	0.0	0.00	0.00	0.00
4,800.0	0.00	0.00	4,800.0	0.0	0.0	0.0	0.00	0.00	0.00
4,900.0	0.00	0.00	4,900.0	0.0	0.0	0.0	0.00	0.00	0.00
5,000.0	0.00	0.00	5,000.0	0.0	0.0	0.0	0.00	0.00	0.00
5,100.0	0.00	0.00	5,100.0	0.0	0.0	0.0	0.00	0.00	0.00
5,200.0	0.00	0.00	5,200.0	0.0	0.0	0.0	0.00	0.00	0.00

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5,300.0	0.00	0.00	5,300.0	0.0	0.0	0.0	0.00	0.00	0.00
5,400.0	0.00	0.00	5,400.0	0.0	0.0	0.0	0.00	0.00	0.00
5,500.0	0.00	0.00	5,500.0	0.0	0.0	0.0	0.00	0.00	0.00
5,600.0	0.00	0.00	5,600.0	0.0	0.0	0.0	0.00	0.00	0.00
5,700.0	0.00	0.00	5,700.0	0.0	0.0	0.0	0.00	0.00	0.00
5,800.0	0.00	0.00	5,800.0	0.0	0.0	0.0	0.00	0.00	0.00
5,900.0	0.00	0.00	5,900.0	0.0	0.0	0.0	0.00	0.00	0.00
6,000.0	0.00	0.00	6,000.0	0.0	0.0	0.0	0.00	0.00	0.00
6,100.0	0.00	0.00	6,100.0	0.0	0.0	0.0	0.00	0.00	0.00
6,200.0	0.00	0.00	6,200.0	0.0	0.0	0.0	0.00	0.00	0.00
6,300.0	0.00	0.00	6,300.0	0.0	0.0	0.0	0.00	0.00	0.00
6,400.0	0.00	0.00	6,400.0	0.0	0.0	0.0	0.00	0.00	0.00
6,500.0	0.00	0.00	6,500.0	0.0	0.0	0.0	0.00	0.00	0.00
6,600.0	0.00	0.00	6,600.0	0.0	0.0	0.0	0.00	0.00	0.00
6,700.0	0.00	0.00	6,700.0	0.0	0.0	0.0	0.00	0.00	0.00
6,800.0	0.00	0.00	6,800.0	0.0	0.0	0.0	0.00	0.00	0.00
6,900.0	0.00	0.00	6,900.0	0.0	0.0	0.0	0.00	0.00	0.00
7,000.0	0.00	0.00	7,000.0	0.0	0.0	0.0	0.00	0.00	0.00
7,100.0	0.00	0.00	7,100.0	0.0	0.0	0.0	0.00	0.00	0.00
7,200.0	0.00	0.00	7,200.0	0.0	0.0	0.0	0.00	0.00	0.00
7,300.0	0.00	0.00	7,300.0	0.0	0.0	0.0	0.00	0.00	0.00
7,400.0	0.00	0.00	7,400.0	0.0	0.0	0.0	0.00	0.00	0.00
7,500.0	0.00	0.00	7,500.0	0.0	0.0	0.0	0.00	0.00	0.00
7,600.0	0.00	0.00	7,600.0	0.0	0.0	0.0	0.00	0.00	0.00
7,700.0	0.00	0.00	7,700.0	0.0	0.0	0.0	0.00	0.00	0.00
7,800.0	0.00	0.00	7,800.0	0.0	0.0	0.0	0.00	0.00	0.00
7,900.0	0.00	0.00	7,900.0	0.0	0.0	0.0	0.00	0.00	0.00
8,000.0	0.00	0.00	8,000.0	0.0	0.0	0.0	0.00	0.00	0.00
8,100.0	0.00	0.00	8,100.0	0.0	0.0	0.0	0.00	0.00	0.00
8,200.0	0.00	0.00	8,200.0	0.0	0.0	0.0	0.00	0.00	0.00
8,300.0	0.00	0.00	8,300.0	0.0	0.0	0.0	0.00	0.00	0.00
8,400.0	0.00	0.00	8,400.0	0.0	0.0	0.0	0.00	0.00	0.00
8,500.0	0.00	0.00	8,500.0	0.0	0.0	0.0	0.00	0.00	0.00
8,600.0	0.00	0.00	8,600.0	0.0	0.0	0.0	0.00	0.00	0.00
8,700.0	0.00	0.00	8,700.0	0.0	0.0	0.0	0.00	0.00	0.00
8,800.0	0.00	0.00	8,800.0	0.0	0.0	0.0	0.00	0.00	0.00
8,900.0	0.00	0.00	8,900.0	0.0	0.0	0.0	0.00	0.00	0.00
9,000.0	0.00	0.00	9,000.0	0.0	0.0	0.0	0.00	0.00	0.00
9,100.0	0.00	0.00	9,100.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>KOP @ 9100'</b>									
9,200.0	12.00	27.97	9,199.3	9.2	4.9	9.2	12.00	12.00	0.00
9,300.0	24.00	27.97	9,294.2	36.5	19.4	36.6	12.00	12.00	0.00
9,377.1	33.26	27.97	9,361.8	69.1	36.7	69.3	12.00	12.00	0.00
9,400.0	35.53	25.49	9,380.7	80.6	42.5	80.9	11.68	9.94	-10.85
9,500.0	45.91	17.24	9,456.4	141.3	65.7	141.8	11.68	10.38	-8.25
9,600.0	56.71	11.51	9,518.9	216.9	84.8	217.4	11.68	10.80	-5.73
9,700.0	67.71	7.07	9,565.5	304.0	98.8	304.7	11.68	11.00	-4.44
9,800.0	78.81	3.29	9,594.2	399.2	107.4	399.9	11.68	11.10	-3.78
9,900.0	89.96	359.78	9,604.0	498.5	110.0	499.3	11.68	11.15	-3.50
9,901.5	90.12	359.73	9,604.0	500.0	110.0	500.7	11.68	11.15	-3.46
<b>LP: 1025' FSL &amp; 330' FEL</b>									
10,000.0	90.12	359.73	9,603.8	598.5	109.5	599.3	0.00	0.00	0.00
10,100.0	90.12	359.73	9,603.6	698.5	109.1	699.2	0.00	0.00	0.00
10,200.0	90.12	359.73	9,603.4	798.5	108.6	799.2	0.00	0.00	0.00

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## 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)
10,300.0	90.12	359.73	9,603.2	898.5	108.1	899.2	0.00	0.00	0.00
10,400.0	90.12	359.73	9,602.9	998.5	107.7	999.2	0.00	0.00	0.00
10,500.0	90.12	359.73	9,602.7	1,098.5	107.2	1,099.2	0.00	0.00	0.00
10,600.0	90.12	359.73	9,602.5	1,198.5	106.8	1,199.2	0.00	0.00	0.00
10,700.0	90.12	359.73	9,602.3	1,298.5	106.3	1,299.2	0.00	0.00	0.00
10,800.0	90.12	359.73	9,602.1	1,398.5	105.8	1,399.2	0.00	0.00	0.00
10,900.0	90.12	359.73	9,601.9	1,498.5	105.4	1,499.2	0.00	0.00	0.00
11,000.0	90.12	359.73	9,601.7	1,598.5	104.9	1,599.2	0.00	0.00	0.00
11,100.0	90.12	359.73	9,601.5	1,698.5	104.4	1,699.2	0.00	0.00	0.00
11,200.0	90.12	359.73	9,601.3	1,798.5	104.0	1,799.2	0.00	0.00	0.00
11,300.0	90.12	359.73	9,601.0	1,898.5	103.5	1,899.2	0.00	0.00	0.00
11,400.0	90.12	359.73	9,600.8	1,998.5	103.0	1,999.2	0.00	0.00	0.00
11,500.0	90.12	359.73	9,600.6	2,098.5	102.6	2,099.2	0.00	0.00	0.00
11,600.0	90.12	359.73	9,600.4	2,198.5	102.1	2,199.1	0.00	0.00	0.00
11,700.0	90.12	359.73	9,600.2	2,298.5	101.6	2,299.1	0.00	0.00	0.00
11,800.0	90.12	359.73	9,600.0	2,398.5	101.2	2,399.1	0.00	0.00	0.00
11,900.0	90.12	359.73	9,599.8	2,498.5	100.7	2,499.1	0.00	0.00	0.00
12,000.0	90.12	359.73	9,599.6	2,598.5	100.2	2,599.1	0.00	0.00	0.00
12,100.0	90.12	359.73	9,599.4	2,698.5	99.8	2,699.1	0.00	0.00	0.00
12,200.0	90.12	359.73	9,599.1	2,798.5	99.3	2,799.1	0.00	0.00	0.00
12,300.0	90.12	359.73	9,598.9	2,898.5	98.8	2,899.1	0.00	0.00	0.00
12,400.0	90.12	359.73	9,598.7	2,998.5	98.4	2,999.1	0.00	0.00	0.00
12,500.0	90.12	359.73	9,598.5	3,098.5	97.9	3,099.1	0.00	0.00	0.00
12,600.0	90.12	359.73	9,598.3	3,198.5	97.4	3,199.1	0.00	0.00	0.00
12,700.0	90.12	359.73	9,598.1	3,298.5	97.0	3,299.1	0.00	0.00	0.00
12,800.0	90.12	359.73	9,597.9	3,398.5	96.5	3,399.1	0.00	0.00	0.00
12,900.0	90.12	359.73	9,597.7	3,498.5	96.1	3,499.1	0.00	0.00	0.00
13,000.0	90.12	359.73	9,597.4	3,598.5	95.6	3,599.1	0.00	0.00	0.00
13,100.0	90.12	359.73	9,597.2	3,698.5	95.1	3,699.1	0.00	0.00	0.00
13,200.0	90.12	359.73	9,597.0	3,798.5	94.7	3,799.0	0.00	0.00	0.00
13,300.0	90.12	359.73	9,596.8	3,898.5	94.2	3,899.0	0.00	0.00	0.00
13,400.0	90.12	359.73	9,596.6	3,998.5	93.7	3,999.0	0.00	0.00	0.00
13,500.0	90.12	359.73	9,596.4	4,098.5	93.3	4,099.0	0.00	0.00	0.00
13,600.0	90.12	359.73	9,596.2	4,198.5	92.8	4,199.0	0.00	0.00	0.00
13,700.0	90.12	359.73	9,596.0	4,298.5	92.3	4,299.0	0.00	0.00	0.00
13,800.0	90.12	359.73	9,595.8	4,398.5	91.9	4,399.0	0.00	0.00	0.00
13,900.0	90.12	359.73	9,595.5	4,498.5	91.4	4,499.0	0.00	0.00	0.00
14,000.0	90.12	359.73	9,595.3	4,598.5	90.9	4,599.0	0.00	0.00	0.00
14,100.0	90.12	359.73	9,595.1	4,698.5	90.5	4,699.0	0.00	0.00	0.00
14,200.0	90.12	359.73	9,594.9	4,798.5	90.0	4,799.0	0.00	0.00	0.00
14,300.0	90.12	359.73	9,594.7	4,898.5	89.5	4,899.0	0.00	0.00	0.00
14,400.0	90.12	359.73	9,594.5	4,998.5	89.1	4,999.0	0.00	0.00	0.00
14,500.0	90.12	359.73	9,594.3	5,098.5	88.6	5,099.0	0.00	0.00	0.00
14,600.0	90.12	359.73	9,594.1	5,198.5	88.1	5,199.0	0.00	0.00	0.00
14,700.0	90.12	359.73	9,593.9	5,298.5	87.7	5,298.9	0.00	0.00	0.00
14,800.0	90.12	359.73	9,593.6	5,398.5	87.2	5,398.9	0.00	0.00	0.00
14,900.0	90.12	359.73	9,593.4	5,498.5	86.8	5,498.9	0.00	0.00	0.00
15,000.0	90.12	359.73	9,593.2	5,598.5	86.3	5,598.9	0.00	0.00	0.00
15,100.0	90.12	359.73	9,593.0	5,698.5	85.8	5,698.9	0.00	0.00	0.00
15,200.0	90.12	359.73	9,592.8	5,798.5	85.4	5,798.9	0.00	0.00	0.00
15,300.0	90.12	359.73	9,592.6	5,898.5	84.9	5,898.9	0.00	0.00	0.00
15,400.0	90.12	359.73	9,592.4	5,998.5	84.4	5,998.9	0.00	0.00	0.00
15,500.0	90.12	359.73	9,592.2	6,098.5	84.0	6,098.9	0.00	0.00	0.00
15,600.0	90.12	359.73	9,592.0	6,198.5	83.5	6,198.9	0.00	0.00	0.00

# Planning Report

**Database:** Hobbs  
**Company:** Mewbourne Oil Company  
**Project:** Eddy County, New Mexico  
**Site:** Forty Niner Ridge Unit #105H  
**Well:** Sec 22, T23S, R30E  
**Wellbore:** BHL: 100' FNL & 330' FEL, Sec 15  
**Design:** Design #1

**Local Co-ordinate Reference:** Site Forty Niner Ridge Unit #105H  
**TVD Reference:** WELL @ 3286.0usft (Original Well Elev)  
**MD Reference:** WELL @ 3286.0usft (Original Well Elev)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature

## 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)
15,700.0	90.12	359.73	9,591.7	6,298.5	83.0	6,298.9	0.00	0.00	0.00
15,800.0	90.12	359.73	9,591.5	6,398.5	82.6	6,398.9	0.00	0.00	0.00
15,900.0	90.12	359.73	9,591.3	6,498.5	82.1	6,498.9	0.00	0.00	0.00
16,000.0	90.12	359.73	9,591.1	6,598.5	81.6	6,598.9	0.00	0.00	0.00
16,100.0	90.12	359.73	9,590.9	6,698.5	81.2	6,698.9	0.00	0.00	0.00
16,200.0	90.12	359.73	9,590.7	6,798.5	80.7	6,798.8	0.00	0.00	0.00
16,300.0	90.12	359.73	9,590.5	6,898.5	80.2	6,898.8	0.00	0.00	0.00
16,400.0	90.12	359.73	9,590.3	6,998.5	79.8	6,998.8	0.00	0.00	0.00
16,500.0	90.12	359.73	9,590.0	7,098.5	79.3	7,098.8	0.00	0.00	0.00
16,600.0	90.12	359.73	9,589.8	7,198.5	78.8	7,198.8	0.00	0.00	0.00
16,700.0	90.12	359.73	9,589.6	7,298.5	78.4	7,298.8	0.00	0.00	0.00
16,800.0	90.12	359.73	9,589.4	7,398.5	77.9	7,398.8	0.00	0.00	0.00
16,900.0	90.12	359.73	9,589.2	7,498.5	77.4	7,498.8	0.00	0.00	0.00
17,000.0	90.12	359.73	9,589.0	7,598.5	77.0	7,598.8	0.00	0.00	0.00
17,100.0	90.12	359.73	9,588.8	7,698.4	76.5	7,698.8	0.00	0.00	0.00
17,200.0	90.12	359.73	9,588.6	7,798.4	76.1	7,798.8	0.00	0.00	0.00
17,300.0	90.12	359.73	9,588.4	7,898.4	75.6	7,898.8	0.00	0.00	0.00
17,400.0	90.12	359.73	9,588.1	7,998.4	75.1	7,998.8	0.00	0.00	0.00
17,500.0	90.12	359.73	9,587.9	8,098.4	74.7	8,098.8	0.00	0.00	0.00
17,600.0	90.12	359.73	9,587.7	8,198.4	74.2	8,198.8	0.00	0.00	0.00
17,700.0	90.12	359.73	9,587.5	8,298.4	73.7	8,298.7	0.00	0.00	0.00
17,800.0	90.12	359.73	9,587.3	8,398.4	73.3	8,398.7	0.00	0.00	0.00
17,900.0	90.12	359.73	9,587.1	8,498.4	72.8	8,498.7	0.00	0.00	0.00
18,000.0	90.12	359.73	9,586.9	8,598.4	72.3	8,598.7	0.00	0.00	0.00
18,100.0	90.12	359.73	9,586.7	8,698.4	71.9	8,698.7	0.00	0.00	0.00
18,200.0	90.12	359.73	9,586.5	8,798.4	71.4	8,798.7	0.00	0.00	0.00
18,300.0	90.12	359.73	9,586.2	8,898.4	70.9	8,898.7	0.00	0.00	0.00
18,400.0	90.12	359.73	9,586.0	8,998.4	70.5	8,998.7	0.00	0.00	0.00
18,500.0	90.12	359.73	9,585.8	9,098.4	70.0	9,098.7	0.00	0.00	0.00
18,600.0	90.12	359.73	9,585.6	9,198.4	69.5	9,198.7	0.00	0.00	0.00
18,700.0	90.12	359.73	9,585.4	9,298.4	69.1	9,298.7	0.00	0.00	0.00
18,800.0	90.12	359.73	9,585.2	9,398.4	68.6	9,398.7	0.00	0.00	0.00
18,900.0	90.12	359.73	9,585.0	9,498.4	68.1	9,498.7	0.00	0.00	0.00
19,000.0	90.12	359.73	9,584.8	9,598.4	67.7	9,598.7	0.00	0.00	0.00
19,100.0	90.12	359.73	9,584.6	9,698.4	67.2	9,698.7	0.00	0.00	0.00
19,200.0	90.12	359.73	9,584.3	9,798.4	66.8	9,798.6	0.00	0.00	0.00
19,300.0	90.12	359.73	9,584.1	9,898.4	66.3	9,898.6	0.00	0.00	0.00
19,361.6	90.12	359.73	9,584.0	9,960.0	66.0	9,960.2	0.00	0.00	0.00

BHL: 100' FNL & 330' FEL, Sec15

# Planning Report

**Database:** Hobbs  
**Company:** Mewbourne Oil Company  
**Project:** Eddy County, New Mexico  
**Site:** Forty Niner Ridge Unit #105H  
**Well:** Sec 22, T23S, R30E  
**Wellbore:** BHL: 100' FNL & 330' FEL, Sec 15  
**Design:** Design #1

**Local Co-ordinate Reference:** Site Forty Niner Ridge Unit #105H  
**TVD Reference:** WELL @ 3286.0usft (Original Well Elev)  
**MD Reference:** WELL @ 3286.0usft (Original Well Elev)  
**North Reference:** Grid  
**Survey Calculation Method:** Minimum Curvature

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SL: 525' FSL & 445' FEL - plan hits target center - Point	0.00	0.00	0.0	0.0	0.0	467,548.00	645,897.00	32° 17' 4.285 N	103° 51' 40.422 W
KOP @ 9100' - plan hits target center - Point	0.00	0.00	9,100.0	0.0	0.0	467,548.00	645,897.00	32° 17' 4.285 N	103° 51' 40.422 W
BHL: 100' FNL & 330' FE - plan hits target center - Point	0.00	0.00	9,584.0	9,960.0	66.0	477,508.00	645,963.00	32° 18' 42.845 N	103° 51' 39.142 W
LP: 1025' FSL & 330' FE - plan hits target center - Point	0.00	0.00	9,604.0	500.0	110.0	468,048.00	646,007.00	32° 17' 9.228 N	103° 51' 39.115 W

SEP 08 2017

**PECOS DISTRICT  
DRILLING OPERATIONS  
CONDITIONS OF APPROVAL**

RECEIVED

OPERATOR'S NAME:	Cimarex Energy Co.
LEASE NO.:	NMNM-114350
WELL NAME & NO.:	10H- KLEIN 33 FEDERAL COM
SURFACE HOLE FOOTAGE:	0210'FSL S & 0750'FEL
BOTTOM HOLE FOOTAGE	660'FNL & 0790 FEL Sec. 28, T. 26S, R 27 E
LOCATION:	Section 33 T.26 S., R.27 E., NMPM
COUNTY:	Eddy County, New Mexico

**All previous COAs still apply except the following:**

**Communitization Agreement**

- The operator will submit a Communitization Agreement to the Carlsbad Field Office, 620 E Greene St. Carlsbad, New Mexico 88220, at least 90 days before the anticipated date of first production from a well subject to a spacing order issued by the New Mexico Oil Conservation Division. The Communitization Agreement will include the signatures of all working interest owners in all Federal and Indian leases subject to the Communitization Agreement (i.e., operating rights owners and lessees of record), or certification that the operator has obtained the written signatures of all such owners and will make those signatures available to the BLM immediately upon request.
- If the operator does not comply with this condition of approval, the BLM may take enforcement actions that include, but are not limited to, those specified in 43 CFR 3163.1.
- In addition, the well sign shall include the surface and bottom hole lease numbers. When the Communitization Agreement number is known, it shall also be on the sign.

**A. DRILLING OPERATIONS REQUIREMENTS**

The BLM is to be notified in advance for a representative to witness:

- a. Spudding well ( minimum of 24 hours)
- b. Setting and/or Cementing of all casing strings ( minimum of 4 hours)
- c. BOPE tests ( minimum of 4 hours)

**X Eddy County**

Call the Carlsbad Field Station, 620 East Greene St., Carlsbad, NM 88220,  
(575) 361-2822



1. **Hydrogen Sulfide (H<sub>2</sub>S) monitors shall be installed prior to drilling out the surface shoe. If H<sub>2</sub>S is detected in concentrations greater than 100 ppm, the Hydrogen Sulfide area shall meet Onshore Order 6 requirements, which includes equipment and personnel/public protection items. If Hydrogen Sulfide is encountered, provide measured values and formations to the BLM.**
2. Unless the production casing has been run and cemented or the well has been properly plugged, the drilling rig shall not be removed from over the hole without prior approval. **If the drilling rig is removed without approval – an Incident of Non-Compliance will be written and will be a “Major” violation.**
3. When floor controls are required, (3M or Greater) controls will be on the rig floor, unobstructed, readily accessible to the driller and will be operational at all times during drilling and/or completion activities. Rig floor is defined as the area immediately around the rotary table; the area immediately above the substructure on which the draw works are located, this does not include the dog house or stairway area.
4. **The record of the drilling rate along with the GR/N well log run from TD to surface (horizontal well – vertical portion of hole) shall be submitted to the BLM office as well as all other logs run on the borehole 30 days from completion. If available, a digital copy of the logs is to be submitted in addition to the paper copies. The Rustler top and top and bottom of Salt are to be recorded on the Completion Report.**

## **B. CASING**

**Changes to the approved APD casing program need prior approval if the items substituted are of lesser grade or different casing size or are Non-API. The Operator can exchange the components of the proposal with that of superior strength (i.e. changing from J-55 to N-80, or from 36# to 40#). Changes to the approved cement program need prior approval if the altered cement plan has less volume or strength or if the changes are substantial (i.e. Multistage tool, ECP, etc.). The initial wellhead installed on the well will remain on the well with spools used as needed.**

**Centralizers required on surface casing per Onshore Order 2.III.B.1.f.**

### **Wait on cement (WOC) for Water Basin:**

**After cementing but before commencing any tests, the casing string shall stand cemented under pressure until both of the following conditions have been met: 1) cement reaches a minimum compressive strength of 500 psi at the shoe, 2) until cement has been in place at least 8 hours. WOC time will be recorded in the driller's log. See individual casing strings for details regarding lead cement slurry requirements.**

**No pea gravel permitted for remedial or fall back remedial without prior authorization from the BLM engineer.**

**Medium Cave/Karst**

**Possibility of water flows in the Delaware and Castile.**

**Possibility of lost circulation in the Salado, and Delaware.**

**Abnormal pressures may be encountered with in Bone Spring formations.**

1. The 13-3/8 inch surface casing shall be set at approximately 400 feet (**in a competent bed below the Magenta Dolomite, which is a Member of the Rustler, and if salt is encountered, set casing at least 25 feet above the salt**) and cemented to the surface.
  - a. If cement does not circulate to the surface, the appropriate BLM office shall be notified and a temperature survey utilizing an electronic type temperature survey with surface log readout will be used or a cement bond log shall be run to verify the top of the cement. Temperature survey will be run a minimum of six hours after pumping cement and ideally between 8-10 hours after completing the cement job. **Additional cement maybe required. Excess cement calculates only 20%.**
  - b. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry.**
  - c. Wait on cement (WOC) time for a remedial job will be a minimum of 4 hours after bringing cement to surface or 500 pounds compressive strength, whichever is greater.
  - d. If cement falls back, remedial cementing will be done prior to drilling out that string.

**Intermediate casing shall be kept fluid filled while running into hole to meet BLM minimum collapse requirements.**

2. The minimum required fill of cement behind the 9-5/8 inch intermediate casing which shall be set at approximately 2000 feet, is:
  - ☒ Cement to surface. If cement does not circulate see B.1.a, c-d above. **Wait on cement (WOC) time for a primary cement job is to include the lead cement slurry due to cave/karst.**
3. The minimum required fill of cement behind the 7 inch production casing is:
  - ☒ Cement should tie-back at least 200 feet into previous casing string. Operator shall provide method of verification. **Additional cement maybe required. Excess cement calculates only 10%.**

**Formation below the 7" shoe to be tested according to Onshore Order 2.III.B.i.i. Test to be done as a mud equivalency test using the mud weight necessary for the pore pressure of the formation below the shoe and the mud weight for the bottom of the hole. Report results to BLM office.**

4. The minimum required fill of cement behind the 4-1/2 inch production liner is:  
☒ Cement should tie-back at least 100 feet into previous casing string. Operator shall provide method of verification. **Additional cement maybe required. Excess cement calculates only 10%.**
5. If hardband drill pipe is rotated inside casing, returns will be monitored for metal. If metal is found in samples, drill pipe will be pulled and rubber protectors which have a larger diameter than the tool joints of the drill pipe will be installed prior to continuing drilling operations.

#### **C. PRESSURE CONTROL**

1. All blowout preventer (BOP) and related equipment (BOPE) shall comply with well control requirements as described in Onshore Oil and Gas Order No. 2 and API RP 53.
2. If a variance is approved for a flexible hose to be installed from the BOP to the choke manifold, the following requirements apply: The flex line must meet the requirements of API 16C. Check condition of flexible line from BOP to choke manifold, replace if exterior is damaged or if line fails test. Line to be as straight as possible with no hard bends and is to be anchored according to Manufacturer's requirements. The flexible hose can be exchanged with a hose of equal size and equal or greater pressure rating. Anchor requirements, specification sheet and hydrostatic pressure test certification matching the hose in service, to be onsite for review. These documents shall be posted in the company man's trailer and on the rig floor.

**Operator has proposed a multi-bowl wellhead assembly. This assembly will only be tested when installed on the surface casing. Minimum working pressure of the blowout preventer (BOP) and related equipment (BOPE) required for drilling below the surface casing shoe shall be 5000 (5M) psi.**

- a. Wellhead shall be installed by manufacturer's representatives, submit documentation with subsequent sundry.
- b. If the welding is performed by a third party, the manufacturer's representative shall monitor the temperature to verify that it does not exceed the maximum temperature of the seal.
- c. Manufacturer representative shall install the test plug for the initial BOP test.

**d. If the cement does not circulate and one inch operations would have been possible with a standard wellhead, the well head shall be cut off, cementing operations performed and another wellhead installed.**

3. The appropriate BLM office shall be notified a minimum of 4 hours in advance for a representative to witness the tests.
  - a. In a water basin, for all casing strings utilizing slips, these are to be set as soon as the crew and rig are ready and any fallback cement remediation has been done. The casing cut-off and BOP installation can be initiated four hours after installing the slips, which will be approximately six hours after bumping the plug. For those casing strings not using slips, the minimum wait time before cut-off is eight hours after bumping the plug. BOP/BOPE testing can begin after cut-off or once cement reaches 500 psi compressive strength (including lead when specified), whichever is greater. However, if the float does not hold, cut-off cannot be initiated until cement reaches 500 psi compressive strength (including lead when specified).
  - b. The tests shall be done by an independent service company utilizing a test plug.
  - c. The test shall be run on a 5000 psi chart for a 2-3M BOP/BOP, on a 10000 psi chart for a 5M BOP/BOPE and on a 15000 psi chart for a 10M BOP/BOPE. If a linear chart is used, it shall be a one hour chart. A circular chart shall have a maximum 2 hour clock. If a twelve hour or twenty-four hour chart is used, tester shall make a notation that it is run with a two hour clock.
  - d. The results of the test shall be reported to the appropriate BLM office.
  - e. All tests are required to be recorded on a calibrated test chart. **A copy of the BOP/BOPE test chart and a copy of independent service company test will be submitted to the appropriate BLM office.**
  - f. The BOP/BOPE test shall include a low pressure test from 250 to 300 psi. The test will be held for a minimum of 10 minutes if test is done with a test plug and 30 minutes without a test plug. This test shall be performed prior to the test at full stack pressure.
  - g. BOP/BOPE must be tested by an independent service company within 500 feet of the top of the Wolfcamp formation if the time between the setting of the intermediate casing and reaching this depth exceeds 20 days. This test does not exclude the test prior to drilling out the casing shoe as per Onshore Order No. 2.

**D. DRILL STEM TEST**

If drill stem tests are performed, Onshore Order 2.III.D shall be followed.

**E. WASTE MATERIAL AND FLUIDS**

All waste (i.e. drilling fluids, trash, salts, chemicals, sewage, gray water, etc.) created as a result of drilling operations and completion operations shall be safely contained and disposed of properly at a waste disposal facility. No waste material or fluid shall be disposed of on the well location or surrounding area.

Porto-johns and trash containers will be on-location during fracturing operations or any other crew-intensive operations.

**ZS 081717**