

Quintana Energy Services

11390 FM 830
Willis, TX 77318
Phone: (936) 856-4332
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*Mewbourne
Forty Nine Ridge Unit 105H
30-015-44219*

Survey Certification Sheet

Company	Job Number	Date
Mewbourne Oil Company	WT-171146	1/12/2018

Lease	Well Name	County & State
SEC 22, T-23S, R30E	Forty Nine Ridge Unit #105H	Eddy County, New Mexico

API No.	Survey Depth Range	Survey Type
30-015-44219	434 feet to 19580 feet MD	MWD

Sidetrack Information	Directional Supervisor/Surveyor
Click here to enter text.	Ed Lucas

Certification Statement

The data and calculations for this survey have been checked by me and conform to the standards and procedures set forth by Quintana Energy Services (QES). This report represents a true and correct directional survey of this well based on the original data obtained at the well site. Wellbore coordinates are calculated using minimum curvature.

Christopher Hughes

Digitally signed by Christopher Hughes
DN: cn=Christopher Hughes, o=QES,
ou=compliance, email=chrish@qeslp.com, c=US
Date: 2018.01.19 10:20:56 -06'00'

Christopher Hughes
MWD Compliance Manager
Quintana Energy Services



Mewbourne Oil Company

Eddy County, New Mexico (Nad 83)

Sec 22, T23S, R30E

Forty Niner Ridge Unit #105H

Wellbore #1

Design: Wellbore #1

QES Survey Certification Report

14 November, 2017

RECEIVED

JAN 23 2018

**MEWBOURNE OIL CO.,
PERRYTON, TEXAS**





Mewbourne Oil Company

Eddy County, New Mexico (Nad 83)

Sec 22, T23S, R30E

Forty Niner Ridge Unit #105H

Wellbore #1

Design: Wellbore #1

QES Survey Report

27 November, 2017

NM OIL CONSERVATION
ARTESIA DISTRICT

APR 16 2018

RECEIVED





Survey Report



Company:	Mewbourne Oil Company	Local Co-ordinate Reference:	Well Forty Niner Ridge Unit #105H
Project:	Eddy County, New Mexico (Nad 83)	TVD Reference:	WELL @ 3286.0usft (Patterson #230)
Site:	Sec 22, T23S, R30E	MD Reference:	WELL @ 3286.0usft (Patterson #230)
Well:	Forty Niner Ridge Unit #105H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Project	Eddy County, New Mexico (Nad 83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	New Mexico Eastern Zone		

Site		Sec 22, T23S, R30E			
Site Position:		Northing:	467,607.04 usft	Latitude:	32° 17' 4.725 N
From:	Map	Easting:	687,029.16 usft	Longitude:	103° 51' 42.776 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.25 °

Well	Forty Niner Ridge Unit #105H					
Well Position	+N/-S	0.0 usft	Northing:	467,607.20 usft	Latitude:	32° 17' 4.724 N
	+E/-W	0.0 usft	Easting:	687,080.30 usft	Longitude:	103° 51' 42.180 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,259.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	10/11/2017	7.06	60.07	47,911.80932765

Design	Wellbore #1				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.0	0.0	0.0	0.38	

Survey Program	Date	11/27/2017			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
113.0	434.0	Surface Surveys (Wellbore #1)	MWD default	MWD - Standard	
482.0	19,580.0	QES MWD Surveys (Wellbore #1)	MWD default	MWD - Standard	

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
113.0	0.40	157.00	113.0	-0.4	0.2	-0.4	0.35	0.35	0.00
219.0	0.40	182.80	219.0	-1.1	0.3	-1.1	0.17	0.00	24.34
312.0	0.80	187.80	312.0	-2.0	0.2	-2.0	0.43	0.43	5.38
Tie in @ 434' MD / 434' TVD									
434.0	0.80	203.80	434.0	-3.7	-0.3	-3.7	0.18	0.00	13.11
482.0	0.90	190.70	482.0	-4.3	-0.5	-4.3	0.45	0.21	-27.29
571.0	0.90	190.50	571.0	-5.7	-0.7	-5.7	0.00	0.00	-0.22
663.0	1.20	179.80	662.9	-7.4	-0.9	-7.4	0.39	0.33	-11.63
755.0	1.30	186.10	754.9	-9.4	-1.0	-9.4	0.18	0.11	6.85

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Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

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)
853.0	1.20	184.90	852.9	-11.5	-1.2	-11.5	0.11	-0.10	-1.22
948.0	1.10	193.50	947.9	-13.4	-1.5	-13.4	0.21	-0.11	9.05
1,043.0	1.10	182.10	1,042.9	-15.2	-1.7	-15.2	0.23	0.00	-12.00
1,138.0	0.80	180.00	1,137.9	-16.8	-1.8	-16.8	0.32	-0.32	-2.21
1,233.0	0.90	171.00	1,232.8	-18.2	-1.6	-18.2	0.18	0.11	-9.47
1,328.0	1.00	167.30	1,327.8	-19.7	-1.3	-19.7	0.12	0.11	-3.89
1,423.0	0.80	152.70	1,422.8	-21.1	-0.9	-21.1	0.32	-0.21	-15.37
1,518.0	0.90	165.20	1,517.8	-22.4	-0.4	-22.4	0.22	0.11	13.16
1,613.0	1.10	158.90	1,612.8	-24.0	0.2	-24.0	0.24	0.21	-6.63
1,708.0	1.00	161.00	1,707.8	-25.6	0.7	-25.6	0.11	-0.11	2.21
1,803.0	1.00	155.50	1,802.8	-27.2	1.4	-27.2	0.10	0.00	-5.79
1,900.0	1.10	163.80	1,899.7	-28.8	2.0	-28.8	0.19	0.10	8.56
1,995.0	1.30	167.50	1,994.7	-30.8	2.5	-30.7	0.23	0.21	3.89
2,089.0	1.30	171.20	2,088.7	-32.9	2.9	-32.8	0.09	0.00	3.94
2,184.0	1.40	165.90	2,183.7	-35.0	3.3	-35.0	0.17	0.11	-5.58
2,278.0	1.20	183.30	2,277.7	-37.1	3.5	-37.1	0.47	-0.21	18.51
2,373.0	1.10	184.70	2,372.6	-39.0	3.4	-39.0	0.11	-0.11	1.47
2,468.0	1.20	190.70	2,467.6	-40.9	3.1	-40.9	0.16	0.11	6.32
2,563.0	1.40	178.70	2,562.6	-43.1	3.0	-43.0	0.35	0.21	-12.63
2,657.0	1.40	190.70	2,656.6	-45.3	2.8	-45.3	0.31	0.00	12.77
2,751.0	1.50	191.60	2,750.5	-47.7	2.3	-47.7	0.11	0.11	0.96
2,846.0	1.50	199.10	2,845.5	-50.1	1.7	-50.1	0.21	0.00	7.89
2,940.0	1.60	198.10	2,939.5	-52.5	0.9	-52.5	0.11	0.11	-1.06
3,035.0	1.80	197.20	3,034.4	-55.2	0.0	-55.2	0.21	0.21	-0.95
3,129.0	2.50	178.20	3,128.4	-58.6	-0.4	-58.6	1.05	0.74	-20.21
3,223.0	2.00	121.10	3,222.3	-61.5	1.1	-61.5	2.33	-0.53	-60.74
3,318.0	2.80	91.50	3,317.2	-62.4	4.8	-62.4	1.53	0.84	-31.16
3,412.0	2.20	77.50	3,411.1	-62.1	8.9	-62.0	0.91	-0.64	-14.89
3,507.0	1.40	94.50	3,506.1	-61.8	11.8	-61.7	1.00	-0.84	17.89
3,601.0	1.60	120.00	3,600.0	-62.6	14.1	-62.5	0.73	0.21	27.13
3,662.0	1.30	121.90	3,661.0	-63.3	15.4	-63.2	0.50	-0.49	3.11
3,777.0	1.50	121.80	3,776.0	-64.8	17.8	-64.7	0.17	0.17	-0.09
3,872.0	2.10	82.70	3,870.9	-65.3	20.6	-65.1	1.40	0.63	-41.16
3,966.0	2.40	81.90	3,964.9	-64.8	24.3	-64.6	0.32	0.32	-0.85
4,060.0	2.60	80.10	4,058.8	-64.1	28.3	-63.9	0.23	0.21	-1.91
4,154.0	2.40	79.20	4,152.7	-63.4	32.4	-63.2	0.22	-0.21	-0.96
4,249.0	2.20	81.00	4,247.6	-62.7	36.1	-62.5	0.22	-0.21	1.89
4,344.0	2.40	78.50	4,342.5	-62.0	39.9	-61.8	0.24	0.21	-2.63
4,438.0	2.30	78.90	4,436.5	-61.3	43.6	-61.0	0.11	-0.11	0.43
4,533.0	2.20	77.10	4,531.4	-60.5	47.3	-60.2	0.13	-0.11	-1.89
4,627.0	3.10	49.00	4,625.3	-58.4	51.0	-58.1	1.65	0.96	-29.89
4,722.0	3.10	46.90	4,720.2	-55.0	54.8	-54.6	0.12	0.00	-2.21
4,816.0	2.90	46.90	4,814.0	-51.6	58.4	-51.3	0.21	-0.21	0.00

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Site:	Sec 22, T23S, R30E	MD Reference:	WELL @ 3286.0usft (Patterson #230)
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Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

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)
4,911.0	2.70	44.60	4,908.9	-48.4	61.7	-48.0	0.24	-0.21	-2.42
5,005.0	2.80	47.40	5,002.8	-45.3	64.9	-44.8	0.18	0.11	2.98
5,100.0	2.80	45.50	5,097.7	-42.1	68.3	-41.6	0.10	0.00	-2.00
5,194.0	2.70	47.80	5,191.6	-39.0	71.6	-38.5	0.16	-0.11	2.45
5,289.0	2.60	43.50	5,286.5	-35.9	74.7	-35.4	0.23	-0.11	-4.53
5,383.0	2.50	44.30	5,380.4	-32.9	77.6	-32.4	0.11	-0.11	0.85
5,478.0	2.50	47.80	5,475.3	-30.0	80.6	-29.5	0.16	0.00	3.68
5,572.0	2.40	45.30	5,569.2	-27.3	83.5	-26.7	0.16	-0.11	-2.66
5,666.0	2.20	45.10	5,663.1	-24.6	86.2	-24.0	0.21	-0.21	-0.21
5,761.0	2.20	46.70	5,758.1	-22.1	88.8	-21.5	0.06	0.00	1.68
5,855.0	2.40	45.50	5,852.0	-19.5	91.5	-18.8	0.22	0.21	-1.28
5,949.0	2.50	44.80	5,945.9	-16.6	94.4	-16.0	0.11	0.11	-0.74
6,044.0	2.20	47.40	6,040.8	-13.9	97.2	-13.3	0.34	-0.32	2.74
6,139.0	1.90	47.90	6,135.8	-11.6	99.7	-11.0	0.32	-0.32	0.53
6,231.0	1.90	45.70	6,227.7	-9.5	101.9	-8.9	0.08	0.00	-2.39
6,326.0	0.10	352.90	6,322.7	-8.4	103.0	-7.7	1.94	-1.89	-55.58
6,420.0	0.40	331.70	6,416.7	-8.0	102.9	-7.3	0.33	0.32	-22.55
6,514.0	0.40	316.00	6,510.7	-7.5	102.5	-6.8	0.12	0.00	-16.70
6,608.0	0.40	298.10	6,604.7	-7.1	102.0	-6.4	0.13	0.00	-19.04
6,703.0	0.40	296.70	6,699.7	-6.8	101.4	-6.1	0.01	0.00	-1.47
6,797.0	0.50	279.10	6,793.7	-6.6	100.7	-5.9	0.18	0.11	-18.72
6,892.0	0.70	271.50	6,888.7	-6.5	99.7	-5.8	0.23	0.21	-8.00
6,986.0	0.50	254.00	6,982.7	-6.6	98.7	-5.9	0.29	-0.21	-18.62
7,080.0	0.80	251.10	7,076.7	-6.9	97.7	-6.2	0.32	0.32	-3.09
7,175.0	0.90	243.90	7,171.7	-7.4	96.4	-6.8	0.15	0.11	-7.58
7,269.0	0.90	239.40	7,265.6	-8.1	95.1	-7.5	0.08	0.00	-4.79
7,364.0	1.00	234.60	7,360.6	-9.0	93.8	-8.4	0.13	0.11	-5.05
7,458.0	1.10	232.00	7,454.6	-10.0	92.4	-9.4	0.12	0.11	-2.77
7,553.0	1.10	223.70	7,549.6	-11.3	91.1	-10.6	0.17	0.00	-8.74
7,648.0	1.10	223.90	7,644.6	-12.6	89.8	-12.0	0.00	0.00	0.21
7,742.0	0.90	237.60	7,738.6	-13.6	88.6	-13.0	0.33	-0.21	14.57
7,837.0	0.60	226.20	7,833.6	-14.4	87.6	-13.8	0.35	-0.32	-12.00
7,931.0	0.60	214.10	7,927.6	-15.1	86.9	-14.5	0.13	0.00	-12.87
8,027.0	0.60	179.10	8,023.5	-16.0	86.7	-15.4	0.38	0.00	-36.46
8,121.0	0.80	218.30	8,117.5	-17.0	86.3	-16.5	0.54	0.21	41.70
8,216.0	0.40	229.70	8,212.5	-17.8	85.6	-17.2	0.44	-0.42	12.00
8,310.0	0.70	212.50	8,306.5	-18.5	85.0	-17.9	0.36	0.32	-18.30
8,405.0	0.80	210.90	8,401.5	-19.5	84.4	-19.0	0.11	0.11	-1.68
8,499.0	0.90	210.20	8,495.5	-20.7	83.7	-20.2	0.11	0.11	-0.74
8,594.0	1.30	207.70	8,590.5	-22.3	82.8	-21.8	0.42	0.42	-2.63
8,688.0	1.50	192.30	8,684.5	-24.5	82.0	-23.9	0.45	0.21	-16.38
8,782.0	1.80	187.20	8,778.4	-27.1	81.6	-26.6	0.36	0.32	-5.43
8,877.0	1.80	183.50	8,873.4	-30.1	81.3	-29.6	0.12	0.00	-3.89

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8,971.0	2.40	178.50	8,967.3	-33.5	81.3	-33.0	0.67	0.64	-5.32
9,066.0	1.90	167.30	9,062.3	-37.1	81.7	-36.5	0.69	-0.53	-11.79
9,160.0	1.90	155.30	9,156.2	-40.0	82.7	-39.5	0.42	0.00	-12.77
9,254.0	1.40	127.90	9,250.2	-42.1	84.2	-41.6	0.98	-0.53	-29.15
9,321.0	1.30	48.50	9,317.2	-42.1	85.4	-41.6	2.58	-0.15	-118.51
9,353.0	5.90	19.30	9,349.1	-40.3	86.3	-39.8	15.02	14.38	-91.25
9,384.0	10.60	14.70	9,379.8	-36.1	87.5	-35.5	15.30	15.16	-14.84
9,416.0	14.90	14.90	9,411.0	-29.2	89.3	-28.6	13.44	13.44	0.63
9,447.0	19.40	16.70	9,440.6	-20.5	91.8	-19.8	14.62	14.52	5.81
9,479.0	23.40	17.70	9,470.4	-9.3	95.3	-8.7	12.55	12.50	3.13
9,511.0	27.00	18.20	9,499.3	3.7	99.5	4.3	11.27	11.25	1.56
9,542.0	31.90	17.20	9,526.3	18.2	104.1	18.9	15.89	15.81	-3.23
9,573.0	37.00	13.00	9,551.9	35.1	108.6	35.8	18.14	16.45	-13.55
9,605.0	39.50	10.70	9,577.0	54.5	112.7	55.2	8.99	7.81	-7.19
9,636.0	41.80	8.40	9,600.5	74.4	116.0	75.2	8.85	7.42	-7.42
9,668.0	45.00	5.60	9,623.7	96.2	118.7	97.0	11.67	10.00	-8.75
9,699.0	49.00	3.60	9,644.9	118.8	120.5	119.6	13.74	12.90	-6.45
9,731.0	53.60	3.60	9,664.9	143.7	122.1	144.5	14.38	14.38	0.00
9,762.0	56.70	0.30	9,682.6	169.1	122.9	170.0	13.28	10.00	-10.65
9,794.0	59.50	357.00	9,699.5	196.3	122.3	197.1	12.38	8.75	-10.31
9,825.0	62.90	354.70	9,714.5	223.4	120.3	224.2	12.75	10.97	-7.42
9,857.0	65.60	353.30	9,728.4	252.0	117.3	252.8	9.31	8.44	-4.38
9,888.0	68.40	352.40	9,740.5	280.4	113.7	281.1	9.42	9.03	-2.90
9,920.0	71.10	351.70	9,751.5	310.1	109.6	310.8	8.68	8.44	-2.19
9,951.0	73.30	352.00	9,761.0	339.3	105.4	340.0	7.16	7.10	0.97
9,983.0	74.60	352.90	9,769.9	369.8	101.3	370.4	4.88	4.06	2.81
10,014.0	76.20	354.30	9,777.7	399.6	98.0	400.2	6.76	5.16	4.52
10,045.0	79.50	355.00	9,784.2	429.8	95.2	430.4	10.87	10.65	2.26
10,077.0	81.90	356.80	9,789.4	461.3	92.9	461.9	9.33	7.50	5.63
10,103.0	83.30	357.70	9,792.7	487.0	91.7	487.6	6.39	5.38	3.46
10,208.0	89.00	0.30	9,799.8	591.7	89.9	592.3	5.96	5.43	2.48
10,303.0	90.10	0.50	9,800.5	686.7	90.5	687.3	1.18	1.16	0.21
10,397.0	90.70	1.00	9,799.9	780.7	91.8	781.3	0.83	0.64	0.53
10,492.0	90.10	1.00	9,799.2	875.7	93.4	876.3	0.63	-0.63	0.00
10,587.0	91.60	0.80	9,797.8	970.6	94.9	971.3	1.59	1.58	-0.21
10,681.0	90.80	0.80	9,795.8	1,064.6	96.2	1,065.2	0.85	-0.85	0.00
10,776.0	90.70	0.80	9,794.6	1,159.6	97.5	1,160.2	0.11	-0.11	0.00
10,870.0	90.00	0.70	9,794.0	1,253.6	98.8	1,254.2	0.75	-0.74	-0.11
10,965.0	89.60	0.00	9,794.3	1,348.6	99.4	1,349.2	0.85	-0.42	-0.74
11,059.0	88.50	358.90	9,795.9	1,442.6	98.5	1,443.2	1.65	-1.17	-1.17
11,153.0	90.20	358.20	9,797.0	1,536.5	96.1	1,537.1	1.96	1.81	-0.74
11,248.0	89.90	357.00	9,796.9	1,631.4	92.1	1,632.0	1.30	-0.32	-1.26
11,343.0	89.20	356.60	9,797.6	1,726.3	86.8	1,726.8	0.85	-0.74	-0.42
11,437.0	91.10	357.00	9,797.4	1,820.1	81.6	1,820.6	2.07	2.02	0.43

Company:	Mewbourne Oil Company	Local Co-ordinate Reference:	Well Forty Niner Ridge Unit #105H
Project:	Eddy County, New Mexico (Nad 83)	TVD Reference:	WELL @ 3286.0usft (Patterson #230)
Site:	Sec 22, T23S, R30E	MD Reference:	WELL @ 3286.0usft (Patterson #230)
Well:	Forty Niner Ridge Unit #105H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

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)
11,531.0	91.90	357.00	9,794.9	1,914.0	76.6	1,914.4	0.85	0.85	0.00
11,626.0	92.70	357.00	9,791.1	2,008.8	71.7	2,009.2	0.84	0.84	0.00
11,720.0	91.20	358.20	9,787.9	2,102.6	67.7	2,103.0	2.04	-1.60	1.28
11,814.0	90.00	359.30	9,786.9	2,196.6	65.7	2,197.0	1.73	-1.28	1.17
11,909.0	90.40	359.40	9,786.6	2,291.6	64.6	2,292.0	0.43	0.42	0.11
12,003.0	90.00	358.90	9,786.3	2,385.6	63.2	2,385.9	0.68	-0.43	-0.53
12,098.0	89.70	358.50	9,786.5	2,480.6	61.1	2,480.9	0.53	-0.32	-0.42
12,192.0	90.70	359.80	9,786.2	2,574.5	59.7	2,574.9	1.74	1.06	1.38
12,287.0	91.50	359.60	9,784.4	2,669.5	59.2	2,669.9	0.87	0.84	-0.21
12,382.0	88.70	0.30	9,784.2	2,764.5	59.1	2,764.8	3.04	-2.95	0.74
12,477.0	89.40	0.30	9,785.8	2,859.5	59.6	2,859.8	0.74	0.74	0.00
12,571.0	90.00	0.80	9,786.3	2,953.5	60.5	2,953.8	0.83	0.64	0.53
12,665.0	90.40	0.30	9,785.9	3,047.5	61.4	3,047.8	0.68	0.43	-0.53
12,761.0	89.90	359.80	9,785.7	3,143.5	61.5	3,143.8	0.74	-0.52	-0.52
12,856.0	88.90	358.40	9,786.7	3,238.5	60.0	3,238.8	1.81	-1.05	-1.47
12,950.0	89.30	358.40	9,788.1	3,332.4	57.3	3,332.7	0.43	0.43	0.00
13,045.0	89.30	358.40	9,789.3	3,427.4	54.7	3,427.7	0.00	0.00	0.00
13,140.0	91.50	359.40	9,788.6	3,522.3	52.9	3,522.6	2.54	2.32	1.05
13,235.0	89.40	357.10	9,787.9	3,617.3	50.0	3,617.5	3.28	-2.21	-2.42
13,329.0	89.50	357.50	9,788.8	3,711.2	45.5	3,711.4	0.44	0.11	0.43
13,424.0	89.40	357.30	9,789.7	3,806.1	41.2	3,806.3	0.24	-0.11	-0.21
13,518.0	87.10	359.60	9,792.6	3,900.0	38.7	3,900.1	3.46	-2.45	2.45
13,613.0	88.20	1.20	9,796.5	3,994.9	39.4	3,995.1	2.04	1.16	1.68
13,708.0	87.50	1.40	9,800.0	4,089.8	41.5	4,090.0	0.77	-0.74	0.21
13,802.0	92.20	1.50	9,800.3	4,183.7	43.9	4,183.9	5.00	5.00	0.11
13,897.0	94.90	1.90	9,794.4	4,278.5	46.7	4,278.7	2.87	2.84	0.42
13,992.0	93.00	0.80	9,787.9	4,373.3	48.9	4,373.5	2.31	-2.00	-1.16
14,086.0	89.70	2.90	9,785.7	4,467.2	52.0	4,467.4	4.16	-3.51	2.23
14,181.0	90.50	3.60	9,785.5	4,562.0	57.4	4,562.3	1.12	0.84	0.74
14,276.0	91.70	3.80	9,783.7	4,656.8	63.5	4,657.1	1.28	1.26	0.21
14,370.0	89.10	2.20	9,783.0	4,750.6	68.4	4,751.0	3.25	-2.77	-1.70
14,465.0	92.00	4.20	9,782.1	4,845.5	73.7	4,845.9	3.71	3.05	2.11
14,559.0	88.70	0.80	9,781.5	4,939.4	77.8	4,939.8	5.04	-3.51	-3.62
14,654.0	87.00	359.60	9,785.1	5,034.3	78.1	5,034.7	2.19	-1.79	-1.26
14,748.0	88.20	359.40	9,789.0	5,128.2	77.3	5,128.6	1.29	1.28	-0.21
14,842.0	90.40	0.80	9,790.2	5,222.2	77.5	5,222.6	2.77	2.34	1.49
14,936.0	91.80	1.90	9,788.4	5,316.1	79.7	5,316.5	1.89	1.49	1.17
15,031.0	91.70	0.00	9,785.5	5,411.1	81.3	5,411.5	2.00	-0.11	-2.00
15,125.0	87.10	359.10	9,786.4	5,505.0	80.5	5,505.5	4.99	-4.89	-0.96
15,219.0	87.80	359.80	9,790.6	5,598.9	79.6	5,599.3	1.05	0.74	0.74
15,314.0	87.00	0.00	9,794.9	5,693.8	79.5	5,694.2	0.87	-0.84	0.21
15,408.0	87.40	359.80	9,799.5	5,787.7	79.3	5,788.1	0.48	0.43	-0.21
15,503.0	89.30	359.30	9,802.3	5,882.7	78.5	5,883.1	2.07	2.00	-0.53

Company:	Mewbourne Oil Company	Local Co-ordinate Reference:	Well Forty Niner Ridge Unit #105H
Project:	Eddy County, New Mexico (Nad 83)	TVD Reference:	WELL @ 3286.0usft (Patterson #230)
Site:	Sec 22, T23S, R30E	MD Reference:	WELL @ 3286.0usft (Patterson #230)
Well:	Forty Niner Ridge Unit #105H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

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)
15,598.0	90.90	359.10	9,802.1	5,977.7	77.2	5,978.1	1.70	1.68	-0.21
15,692.0	92.70	357.70	9,799.1	6,071.6	74.6	6,071.9	2.43	1.91	-1.49
15,787.0	90.60	358.40	9,796.4	6,166.5	71.4	6,166.8	2.33	-2.21	0.74
15,881.0	88.30	357.80	9,797.3	6,260.4	68.3	6,260.7	2.53	-2.45	-0.64
15,976.0	90.30	357.70	9,798.5	6,355.3	64.5	6,355.6	2.11	2.11	-0.11
16,071.0	91.00	357.70	9,797.4	6,450.2	60.7	6,450.5	0.74	0.74	0.00
16,166.0	87.40	357.30	9,798.7	6,545.1	56.6	6,545.4	3.81	-3.79	-0.42
16,260.0	88.10	359.40	9,802.4	6,639.0	53.9	6,639.2	2.35	0.74	2.23
16,355.0	91.60	359.80	9,802.7	6,734.0	53.2	6,734.2	3.71	3.68	0.42
16,449.0	91.10	359.40	9,800.4	6,828.0	52.5	6,828.2	0.68	-0.53	-0.43
16,544.0	91.50	0.00	9,798.3	6,922.9	52.0	6,923.1	0.76	0.42	0.63
16,640.0	90.70	0.00	9,796.4	7,018.9	52.0	7,019.1	0.83	-0.83	0.00
16,735.0	91.40	0.30	9,794.7	7,113.9	52.3	7,114.1	0.80	0.74	0.32
16,831.0	88.20	358.70	9,795.0	7,209.9	51.5	7,210.1	3.73	-3.33	-1.67
16,926.0	90.00	0.80	9,796.5	7,304.9	51.0	7,305.0	2.91	1.89	2.21
17,021.0	90.90	1.90	9,795.8	7,399.8	53.3	7,400.0	1.50	0.95	1.16
17,117.0	94.40	0.80	9,791.4	7,495.7	55.5	7,495.9	3.82	3.65	-1.15
17,212.0	94.40	1.40	9,784.1	7,590.4	57.4	7,590.6	0.63	0.00	0.63
17,307.0	97.50	2.20	9,774.2	7,684.8	60.3	7,685.1	3.37	3.26	0.84
17,402.0	100.30	2.40	9,759.5	7,778.6	64.1	7,778.8	2.95	2.95	0.21
17,497.0	92.50	359.80	9,748.9	7,872.9	65.9	7,873.2	8.65	-8.21	-2.74
17,592.0	89.60	357.50	9,747.2	7,967.8	63.6	7,968.1	3.90	-3.05	-2.42
17,688.0	88.70	357.70	9,748.6	8,063.7	59.6	8,064.0	0.96	-0.94	0.21
17,783.0	88.90	357.70	9,750.6	8,158.7	55.8	8,158.8	0.21	0.21	0.00
17,878.0	88.70	358.00	9,752.6	8,253.6	52.3	8,253.7	0.38	-0.21	0.32
17,974.0	86.90	357.80	9,756.3	8,349.4	48.7	8,349.6	1.89	-1.88	-0.21
18,069.0	87.00	358.00	9,761.3	8,444.2	45.3	8,444.3	0.24	0.11	0.21
18,164.0	87.80	358.90	9,765.6	8,539.1	42.7	8,539.2	1.27	0.84	0.95
18,259.0	87.90	358.90	9,769.2	8,634.0	40.9	8,634.1	0.11	0.11	0.00
18,354.0	87.10	359.10	9,773.4	8,728.9	39.2	8,729.0	0.87	-0.84	0.21
18,449.0	87.80	0.50	9,777.6	8,823.8	38.9	8,823.9	1.65	0.74	1.47
18,544.0	90.70	1.70	9,778.8	8,918.8	40.7	8,918.8	3.30	3.05	1.26
18,639.0	90.50	0.80	9,777.8	9,013.7	42.8	9,013.8	0.97	-0.21	-0.95
18,734.0	91.50	1.50	9,776.2	9,108.7	44.7	9,108.8	1.28	1.05	0.74
18,829.0	88.70	1.90	9,776.0	9,203.6	47.5	9,203.8	2.98	-2.95	0.42
18,924.0	88.00	2.10	9,778.7	9,298.6	50.8	9,298.7	0.77	-0.74	0.21
19,020.0	87.80	0.30	9,782.3	9,394.5	52.8	9,394.6	1.89	-0.21	-1.88
19,115.0	89.90	357.50	9,784.2	9,489.4	51.0	9,489.5	3.68	2.21	-2.95
19,209.0	89.20	356.80	9,784.9	9,583.3	46.3	9,583.4	1.05	-0.74	-0.74
19,305.0	88.90	357.10	9,786.5	9,679.1	41.2	9,679.2	0.44	-0.31	0.31
19,399.0	92.60	356.30	9,785.3	9,773.0	35.8	9,773.0	4.03	3.94	-0.85
19,495.0	91.90	355.00	9,781.5	9,868.6	28.5	9,868.6	1.54	-0.73	-1.35
19,530.0	92.20	354.50	9,780.2	9,903.4	25.3	9,903.4	1.67	0.86	-1.43



Survey Report



Company:	Mewbourne Oil Company	Local Co-ordinate Reference:	Well Forty Niner Ridge Unit #105H
Project:	Eddy County, New Mexico (Nad 83)	TVD Reference:	WELL @ 3286.0usft (Patterson #230)
Site:	Sec 22, T23S, R30E	MD Reference:	WELL @ 3286.0usft (Patterson #230)
Well:	Forty Niner Ridge Unit #105H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

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)
TD @ 19580.0' MD / 9778.3' TVD									
19,580.0	92.20	354.50	9,778.3	9,953.2	20.6	9,953.1	0.00	0.00	0.00

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
434.0	434.0	-3.7	-0.3	Tie in @ 434' MD / 434' TVD	
19,580.0	9,778.3	9,953.2	20.6	TD @ 19580.0' MD / 9778.3' TVD	

Checked By: _____ Approved By: _____ Date: _____

Company Name: Mewbourne Oil Company
 Forty Niner Ridge Unit #105H
 Eddy County, New Mexico (Nad 83)
 Rig: Patterson #230
 Created By: Shane Robbins
 Date: 11/27/2017

Forty Niner Ridge Unit #105H
 Eddy County, New Mexico (Nad 83)
 Q171354 & WT-171146
 Design #1



Azimuths to Grid North

Correction: 6.81°
 Magnetic Field
 Strength: 47911.8snT
 Dip Angle: 60.07°
 Date: 10/11/2017
 Model: IGRF2015

PROJECT DETAILS: Eddy County, New Mexico (Nad 83)

Geodetic System: US State Plane 1983
 Datum: North American Datum 1983
 Ellipsoid: GRS 1980
 Zone: New Mexico Eastern Zone
 System Datum: Mean Sea Level

WELL DETAILS: Forty Niner Ridge Unit #105H					
			3259.0		
N-S	E-W	Northing	Easting	Latitude	Longitude
0.0	0.0	467607.30	687080.30	37° 17' 4.724 N	103° 51' 43.160 W

ANNOTATIONS							
MD	Inc	Azi	TVD	+N-S	+E-W	V-Sect	Departure
434.0	0.99	283.80	434.0	-3.7	-0.3	-3.7	3.8
15980.0	92.20	354.50	9778.3	8953.2	20.6	8953.1	10245.7

Tie in @ 434' MD / 434' TVD
 TD @ 15980.0' MD / 9778.3' TVD

