

NM OIL CONSERVATION
ARTESIA DISTRICT

FEB 04 2019

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Mewbourne Oil Company

Eddy County, New Mexico (Nad 83)

Sec 2, T24S, R28E

Skynyrd 2 W0CN Fee #1H

30.015-44801

Wellbore #1

Design: Wellbore #1

QES Survey Report

10 September, 2018





Survey Report



Company:	Mewbourne Oil Company	Local Co-ordinate Reference:	Well Skynyrd 2 W0CN Fee #1H
Project:	Eddy County, New Mexico (Nad 83)	TVD Reference:	WELL @ 3043.0usft (Patterson #243)
Site:	Sec 2, T24S, R28E	MD Reference:	WELL @ 3043.0usft (Patterson #243)
Well:	Skynyrd 2 W0CN Fee #1H	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 2, T24S, R28E				
Site Position:		Northing:	456,163.00 usft	Latitude:	32° 15' 13.596 N
From:	Map	Easting:	625,124.70 usft	Longitude:	104° 3' 44.254 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.14 °

Well	Skynyrd 2 W0CN Fee #1H					
Well Position	+N/-S	0.0 usft	Northing:	456,163.00 usft	Latitude:	32° 15' 13.596 N
	+E/-W	0.0 usft	Easting:	625,124.70 usft	Longitude:	104° 3' 44.254 W
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,016.0 usft	

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	8/17/2018	7.06	60.00	47,786.54231497

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	169.40	

Survey Program	Date	9/10/2018		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
65.0	65.0	Phoenix Tech Gyro (Wellbore #1)	GYRO-NS	OWSG Gyrocompass Gyro
204.0	14,445.0	QES MWD Surveys (Wellbore #1)	OWSG (Rev2) MWD	OWSG 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
Gyro Tie-In @ 65.0' MD / 65.0' TVD									
65.0	0.46	312.79	65.0	0.2	-0.2	-0.2	0.71	0.71	0.00
204.0	0.70	325.30	204.0	1.3	-1.1	-1.4	0.19	0.17	9.00
358.0	1.90	41.90	358.0	3.9	0.1	-3.8	1.21	0.78	49.74
540.0	2.30	52.40	539.8	8.4	5.0	-7.3	0.30	0.22	5.77
727.0	2.40	48.80	726.7	13.3	10.9	-11.0	0.10	0.05	-1.93
854.0	2.50	51.70	853.6	16.7	15.1	-13.7	0.13	0.08	2.28
1,045.0	2.50	48.60	1,044.4	22.1	21.5	-17.7	0.07	0.00	-1.62
1,235.0	2.10	35.70	1,234.2	27.6	26.6	-22.3	0.34	-0.21	-6.79



Survey Report



Company: Mewbourne Oil Company
Project: Eddy County, New Mexico (Nad 83)
Site: Sec 2, T24S, R28E
Well: Skynyrd 2 W0CN Fee #1H
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Skynyrd 2 W0CN Fee #1H
TVD Reference: WELL @ 3043.0usft (Patterson #243)
MD Reference: WELL @ 3043.0usft (Patterson #243)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
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)
1,425.0	1.90	40.30	1,424.1	32.9	30.7	-26.7	0.13	-0.11	2.42
1,616.0	2.40	38.40	1,615.0	38.4	35.2	-31.3	0.26	0.26	-0.99
1,807.0	2.50	70.90	1,805.8	42.9	41.6	-34.5	0.72	0.05	17.02
1,995.0	4.20	93.00	1,993.5	43.9	52.4	-33.5	1.12	0.90	11.76
2,182.0	4.30	105.00	2,180.0	41.7	66.0	-28.9	0.48	0.05	6.42
2,369.0	5.70	114.80	2,366.3	36.0	81.2	-20.5	0.87	0.75	5.24
2,475.0	6.20	117.60	2,471.7	31.2	91.1	-13.9	0.55	0.47	2.64
2,545.0	6.00	120.50	2,541.3	27.5	97.6	-9.1	0.52	-0.29	4.14
2,734.0	2.80	82.70	2,729.8	23.1	110.7	-2.4	2.20	-1.69	-20.00
2,921.0	6.30	79.90	2,916.1	25.5	125.3	-2.0	1.87	1.87	-1.50
3,107.0	5.50	56.50	3,101.2	32.2	142.8	-5.4	1.35	-0.43	-12.58
3,294.0	6.20	63.90	3,287.2	41.6	159.3	-11.6	0.55	0.37	3.96
3,481.0	5.30	63.30	3,473.3	49.9	176.1	-16.7	0.48	-0.48	-0.32
3,667.0	5.70	63.20	3,658.4	57.9	192.0	-21.6	0.22	0.22	-0.05
3,855.0	6.40	73.20	3,845.4	65.2	210.4	-25.4	0.67	0.37	5.32
4,042.0	5.30	67.00	4,031.4	71.6	228.3	-28.4	0.68	-0.59	-3.32
4,229.0	4.80	66.30	4,217.7	78.1	243.4	-32.0	0.27	-0.27	-0.37
4,417.0	4.70	66.30	4,405.0	84.4	257.7	-35.5	0.05	-0.05	0.00
4,604.0	4.80	68.30	4,591.4	90.3	272.0	-38.8	0.10	0.05	1.07
4,791.0	3.90	67.20	4,777.8	95.7	285.1	-41.6	0.48	-0.48	-0.59
4,980.0	4.60	67.60	4,966.3	101.1	298.0	-44.5	0.37	0.37	0.21
5,168.0	4.20	71.30	5,153.8	106.1	311.5	-47.0	0.26	-0.21	1.97
5,356.0	5.80	77.20	5,341.0	110.5	327.3	-48.4	0.89	0.85	3.14
5,544.0	4.90	79.20	5,528.2	114.1	344.5	-48.8	0.49	-0.48	1.06
5,732.0	4.70	66.50	5,715.6	118.6	359.4	-50.5	0.57	-0.11	-6.76
5,920.0	4.60	78.30	5,902.9	123.2	373.9	-52.4	0.51	-0.05	6.28
6,108.0	4.70	72.10	6,090.3	127.1	388.6	-53.5	0.27	0.05	-3.30
6,296.0	4.70	67.20	6,277.7	132.5	403.0	-56.1	0.21	0.00	-2.61
6,484.0	5.70	58.70	6,464.9	140.3	418.1	-61.0	0.67	0.53	-4.52
6,671.0	3.60	57.90	6,651.3	148.3	431.0	-66.5	1.12	-1.12	-0.43
6,860.0	5.40	67.60	6,839.7	154.8	444.2	-70.4	1.03	0.95	5.13
7,048.0	2.80	91.50	7,027.2	158.1	457.0	-71.3	1.63	-1.38	12.71
7,236.0	1.40	109.70	7,215.1	157.2	463.8	-69.2	0.82	-0.74	9.68
7,424.0	1.50	99.60	7,403.0	156.0	468.3	-67.2	0.15	0.05	-5.37
7,611.0	2.00	51.60	7,590.0	157.6	473.3	-67.8	0.80	0.27	-25.67
7,799.0	3.30	64.00	7,777.8	162.0	480.8	-70.8	0.75	0.69	6.60
7,987.0	2.90	93.90	7,965.5	164.1	490.4	-71.1	0.87	-0.21	15.90
8,176.0	3.70	107.30	8,154.2	161.9	501.0	-67.0	0.59	0.42	7.09
8,363.0	3.30	116.80	8,340.8	157.7	511.5	-60.9	0.38	-0.21	5.08
8,552.0	0.60	65.10	8,529.7	155.7	517.3	-57.9	1.57	-1.43	-27.35
8,739.0	1.70	61.60	8,716.7	157.4	520.6	-58.9	0.59	0.59	-1.87
8,929.0	0.80	69.30	8,906.6	159.2	524.3	-60.0	0.48	-0.47	4.05
9,116.0	0.00	282.40	9,093.6	159.7	525.5	-60.3	0.43	-0.43	0.00

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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)
9,147.0	0.10	277.80	9,124.6	159.7	525.5	-60.3	0.32	0.32	0.00
9,179.0	0.10	290.80	9,156.6	159.7	525.5	-60.3	0.07	0.00	40.63
9,210.0	1.40	161.10	9,187.6	159.3	525.6	-59.9	4.73	4.19	-418.39
9,241.0	5.20	154.60	9,218.6	157.7	526.3	-58.2	12.30	12.26	-20.97
9,273.0	9.60	152.10	9,250.3	154.0	528.2	-54.3	13.78	13.75	-7.81
9,304.0	14.60	149.60	9,280.6	148.4	531.3	-48.1	16.21	16.13	-8.06
9,335.0	19.60	149.80	9,310.2	140.5	535.9	-39.5	16.13	16.13	0.65
9,367.0	24.20	151.10	9,339.9	130.1	541.8	-28.2	14.45	14.38	4.06
9,398.0	29.50	154.90	9,367.5	117.6	548.1	-14.8	17.96	17.10	12.26
9,430.0	33.80	159.00	9,394.8	102.2	554.7	1.6	15.02	13.44	12.81
9,461.0	36.60	161.40	9,420.1	85.4	560.7	19.2	10.07	9.03	7.74
9,493.0	40.50	162.10	9,445.1	66.4	566.9	39.0	12.26	12.19	2.19
9,524.0	44.20	161.90	9,468.0	46.6	573.4	59.7	11.94	11.94	-0.65
9,556.0	46.70	162.10	9,490.5	24.9	580.4	82.3	7.83	7.81	0.63
9,587.0	49.40	162.10	9,511.2	3.0	587.5	105.2	8.71	8.71	0.00
9,618.0	53.00	162.50	9,530.6	-20.1	594.9	129.1	11.66	11.61	1.29
9,650.0	56.20	163.40	9,549.2	-45.0	602.5	155.1	10.26	10.00	2.81
9,681.0	58.70	163.20	9,565.8	-70.0	610.0	181.0	8.08	8.06	-0.65
9,712.0	62.00	162.80	9,581.2	-95.8	617.9	207.8	10.70	10.65	-1.29
9,744.0	65.10	162.10	9,595.4	-123.1	626.5	236.2	9.88	9.69	-2.19
9,775.0	67.60	161.80	9,607.9	-150.1	635.3	264.4	8.11	8.06	-0.97
Crossed 330° HL@ 9777.4' MD / 9608.8' TVD									
9,777.4	67.86	161.78	9,608.8	-152.2	636.0	266.6	10.66	10.64	-0.66
9,806.0	70.90	161.60	9,618.8	-177.6	644.4	293.1	10.66	10.65	-0.64
9,837.0	73.90	161.80	9,628.2	-205.7	653.7	322.4	9.70	9.68	0.65
9,850.0	74.70	161.80	9,631.7	-217.5	657.6	334.8	6.15	6.15	0.00
9,928.0	81.30	161.80	9,647.9	-290.0	681.4	410.4	8.46	8.46	0.00
10,022.0	88.20	164.20	9,656.5	-379.4	708.8	503.4	7.77	7.34	2.55
10,116.0	88.90	164.20	9,658.9	-469.9	734.4	596.9	0.74	0.74	0.00
10,210.0	86.50	164.90	9,662.7	-560.4	759.4	690.5	2.66	-2.55	0.74
10,304.0	87.00	164.90	9,668.0	-651.0	783.8	784.1	0.53	0.53	0.00
10,397.0	90.20	166.90	9,670.3	-741.2	806.5	876.9	4.06	3.44	2.15
10,491.0	90.90	166.90	9,669.4	-832.7	827.8	970.8	0.74	0.74	0.00
10,584.0	90.10	167.20	9,668.6	-923.3	848.6	1,063.7	0.92	-0.86	0.32
10,679.0	90.40	167.20	9,668.2	-1,016.0	869.7	1,158.6	0.32	0.32	0.00
10,772.0	92.80	167.90	9,665.6	-1,106.7	889.7	1,251.5	2.69	2.58	0.75
10,866.0	87.70	167.90	9,665.2	-1,198.6	909.4	1,345.5	5.43	-5.43	0.00
10,960.0	90.40	168.40	9,666.7	-1,290.6	928.7	1,439.4	2.92	2.87	0.53
11,054.0	91.20	170.00	9,665.4	-1,382.9	946.3	1,533.4	1.90	0.85	1.70
11,148.0	89.60	177.20	9,664.7	-1,476.3	956.8	1,627.1	7.85	-1.70	7.66
11,242.0	90.30	179.50	9,664.8	-1,570.2	959.5	1,719.9	2.56	0.74	2.45
11,336.0	87.40	178.80	9,666.7	-1,664.2	960.9	1,812.5	3.17	-3.09	-0.74
11,430.0	89.10	181.30	9,669.6	-1,758.1	960.8	1,904.9	3.22	1.81	2.66
11,523.0	90.80	182.00	9,669.7	-1,851.1	958.1	1,995.7	1.98	1.83	0.75

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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)
11,617.0	91.50	182.30	9,667.8	-1,945.0	954.6	2,087.4	0.81	0.74	0.32
11,711.0	91.40	182.70	9,665.4	-2,038.9	950.5	2,178.9	0.44	-0.11	0.43
11,805.0	91.40	183.00	9,663.1	-2,132.7	945.8	2,270.3	0.32	0.00	0.32
11,899.0	91.10	183.80	9,661.0	-2,226.5	940.3	2,361.5	0.91	-0.32	0.85
11,993.0	90.70	183.40	9,659.6	-2,320.3	934.4	2,452.6	0.60	-0.43	-0.43
12,087.0	92.00	184.10	9,657.4	-2,414.1	928.2	2,543.7	1.57	1.38	0.74
12,180.0	90.00	183.20	9,655.7	-2,506.9	922.3	2,633.8	2.36	-2.15	-0.97
12,275.0	89.10	183.00	9,656.5	-2,601.8	917.1	2,726.1	0.97	-0.95	-0.21
12,369.0	89.90	183.40	9,657.3	-2,695.6	911.9	2,817.4	0.95	0.85	0.43
12,463.0	89.90	183.40	9,657.5	-2,789.4	906.3	2,908.6	0.00	0.00	0.00
12,557.0	90.90	182.90	9,656.8	-2,883.3	901.2	2,999.9	1.19	1.06	-0.53
12,651.0	90.60	180.90	9,655.6	-2,977.2	898.0	3,091.6	2.15	-0.32	-2.13
12,745.0	91.50	181.60	9,653.9	-3,071.2	896.0	3,183.6	1.21	0.96	0.74
12,839.0	87.90	180.40	9,654.3	-3,165.2	894.4	3,275.7	4.04	-3.83	-1.28
12,933.0	88.90	180.90	9,657.0	-3,259.1	893.3	3,367.8	1.19	1.06	0.53
13,028.0	89.00	181.30	9,658.7	-3,354.1	891.5	3,460.8	0.43	0.11	0.42
13,122.0	91.00	180.10	9,658.7	-3,448.1	890.3	3,553.0	2.48	2.13	-1.28
13,216.0	91.40	180.90	9,656.7	-3,542.0	889.5	3,645.2	0.95	0.43	0.85
13,311.0	90.00	180.10	9,655.6	-3,637.0	888.7	3,738.4	1.70	-1.47	-0.84
13,404.0	91.00	180.80	9,654.8	-3,730.0	887.9	3,829.7	1.31	1.08	0.75
13,498.0	88.60	180.20	9,655.1	-3,824.0	887.1	3,921.9	2.63	-2.55	-0.64
13,592.0	89.70	180.20	9,656.5	-3,918.0	886.8	4,014.3	1.17	1.17	0.00
13,687.0	89.90	180.60	9,656.8	-4,013.0	886.1	4,107.5	0.47	0.21	0.42
13,782.0	89.90	180.90	9,657.0	-4,108.0	884.9	4,200.7	0.32	0.00	0.32
13,875.0	88.40	180.80	9,658.4	-4,201.0	883.5	4,291.8	1.62	-1.61	-0.11
13,970.0	88.50	181.10	9,660.9	-4,295.9	881.9	4,384.8	0.33	0.11	0.32
14,063.0	90.30	179.50	9,661.9	-4,388.9	881.4	4,476.2	2.59	1.94	-1.72
14,157.0	90.20	179.40	9,661.5	-4,482.9	882.3	4,568.7	0.15	-0.11	-0.11
14,252.0	90.80	179.40	9,660.7	-4,577.9	883.3	4,662.3	0.63	0.63	0.00
14,347.0	90.70	179.50	9,659.4	-4,672.9	884.3	4,755.8	0.15	-0.11	0.11
14,390.0	90.40	179.50	9,659.0	-4,715.9	884.6	4,798.1	0.70	-0.70	0.00
TD @ 14445.0' MD / 9658.6' TVD									
14,445.0	90.40	179.50	9,658.6	-4,770.9	885.1	4,852.3	0.00	0.00	0.00

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
65.0	65.0	0.2	-0.2	Gyro Tie-in @ 65.0' MD / 65.0' TVD
9,777.4	9,608.8	-152.2	636.0	Crossed 330' HL@ 9777.4' MD / 9608.8' TVD
14,445.0	9,658.6	-4,770.9	885.1	TD @ 14445.0' MD / 9658.6' TVD



Survey Report



Company:	Mewbourne Oil Company	Local Co-ordinate Reference:	Well Skynyrd 2 W0CN Fee #1H
Project:	Eddy County, New Mexico (Nad 83)	TVD Reference:	WELL @ 3043.0usft (Patterson #243)
Site:	Sec 2, T24S, R28E	MD Reference:	WELL @ 3043.0usft (Patterson #243)
Well:	Skynyrd 2 W0CN Fee #1H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Checked By: _____ Approved By: _____ Date: _____