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Mewbourne Oil Company

Eddy County, New Mexico (Nad 83)

Sec 11, T19S, R29E

Sapphire 11/12 B2NN State Com #1H

Wellbore #1

30-015-44053

Design: Wellbore #1

Survey Report - Geographic

05 October, 2018





Survey Report - Geographic



Company: Mewbourne Oil Company
Project: Eddy County, New Mexico (Nad 83)
Site: Sec 11, T19S, R29E
Well: Sapphire 11/12 B2NN State Com #1H
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Sapphire 11/12 B2NN State Com #1H
TVD Reference: WELL @ 3402.0usft (Patterson #230)
MD Reference: WELL @ 3402.0usft (Patterson #230)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
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 11, T19S, R29E		
Site Position:		Northing:	607,339.87 usft
From:	Map	Easting:	628,765.02 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 40' 9.484 N
		Longitude:	104° 2' 57.176 W
		Grid Convergence:	0.15 °

Well	Sapphire 11/12 B2NN State Com #1H		
Well Position	+N/-S	0.0 usft	Northing: 607,339.87 usft
	+E/-W	0.0 usft	Easting: 628,765.02 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft
		Latitude:	32° 40' 9.484 N
		Longitude:	104° 2' 57.176 W
		Ground Level:	3,375.0 usft

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination
	IGRF2015	9/14/2018	(°)
			7.08
			Dip Angle (°)
			60.38
			Field Strength (nT)
			48,023.03344068

Design	Wellbore #1		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.0	0.0	0.0
			Direction
			(°)
			91.87

Survey Program	Date 10/5/2018		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
478.0	1,403.0	Gryo Surveys (Wellbore #1)	OWSG (Rev2) MWD
1,507.0	14,310.0	MWD Surveys (Wellbore #1)	OWSG (Rev2) MWD
			Description
			OWSG MWD - Standard
			OWSG MWD - Standard

Survey									
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Map	Map		
Depth	(°)	(°)	Depth	(usft)	(usft)	Northing	Easting	Latitude	Longitude
(usft)			(usft)			(usft)	(usft)		
0.0	0.00	0.00	0.0	0.0	0.0	607,339.87	628,765.02	32° 40' 9.484 N	104° 2' 57.176 W
478.0	2.50	270.80	477.8	0.1	-10.4	607,340.01	628,754.59	32° 40' 9.486 N	104° 2' 57.298 W
547.0	2.00	275.00	546.8	0.3	-13.1	607,340.14	628,751.89	32° 40' 9.487 N	104° 2' 57.329 W
613.0	2.50	276.50	612.7	0.5	-15.7	607,340.40	628,749.31	32° 40' 9.490 N	104° 2' 57.359 W
728.0	2.00	287.70	727.7	1.4	-20.1	607,341.30	628,744.91	32° 40' 9.499 N	104° 2' 57.411 W
793.0	2.20	286.40	792.6	2.1	-22.4	607,341.99	628,742.63	32° 40' 9.506 N	104° 2' 57.438 W
856.0	1.40	286.90	855.6	2.7	-24.3	607,342.56	628,740.73	32° 40' 9.512 N	104° 2' 57.460 W
954.0	1.50	302.30	953.5	3.7	-26.5	607,343.59	628,738.50	32° 40' 9.522 N	104° 2' 57.486 W
1,045.0	0.10	311.90	1,044.5	4.4	-27.6	607,344.28	628,737.44	32° 40' 9.529 N	104° 2' 57.498 W
1,167.0	1.00	323.00	1,166.5	5.3	-28.3	607,345.20	628,736.72	32° 40' 9.538 N	104° 2' 57.507 W
1,238.0	0.70	336.00	1,237.5	6.2	-28.8	607,346.09	628,736.17	32° 40' 9.547 N	104° 2' 57.513 W



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Wellbore: Wellbore #1
Design: Wellbore #1

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MD Reference: WELL @ 3402.0usft (Patterson #230)
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)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
1,332.0	1.30	309.00	1,331.5	7.4	-29.9	607,347.29	628,735.11	32° 40' 9.559 N	104° 2' 57.525 W
1,403.0	1.40	312.00	1,402.5	8.5	-31.2	607,348.38	628,733.84	32° 40' 9.569 N	104° 2' 57.540 W
Gyro Tie In @ 1403.0' MD / 1402.5' TVD									
1,507.0	1.20	311.00	1,506.5	10.1	-32.9	607,349.94	628,732.07	32° 40' 9.585 N	104° 2' 57.561 W
1,602.0	1.90	226.60	1,601.4	9.6	-34.8	607,349.51	628,730.18	32° 40' 9.581 N	104° 2' 57.583 W
1,697.0	2.30	218.90	1,696.4	7.1	-37.2	607,346.95	628,727.83	32° 40' 9.555 N	104° 2' 57.611 W
1,791.0	2.30	210.80	1,790.3	4.0	-39.3	607,343.86	628,725.68	32° 40' 9.525 N	104° 2' 57.636 W
1,885.0	2.50	212.20	1,884.2	0.6	-41.4	607,340.50	628,723.63	32° 40' 9.492 N	104° 2' 57.660 W
1,980.0	4.00	183.40	1,979.1	-4.4	-42.7	607,335.44	628,722.32	32° 40' 9.442 N	104° 2' 57.675 W
2,075.0	4.30	174.60	2,073.8	-11.3	-42.6	607,328.59	628,722.46	32° 40' 9.374 N	104° 2' 57.674 W
2,170.0	4.70	179.50	2,168.5	-18.7	-42.2	607,321.15	628,722.83	32° 40' 9.300 N	104° 2' 57.670 W
2,264.0	2.60	166.20	2,262.3	-24.6	-41.6	607,315.23	628,723.37	32° 40' 9.242 N	104° 2' 57.664 W
2,359.0	2.70	151.10	2,357.2	-28.7	-40.0	607,311.18	628,724.97	32° 40' 9.202 N	104° 2' 57.645 W
2,454.0	2.30	154.90	2,452.1	-32.4	-38.2	607,307.49	628,726.86	32° 40' 9.165 N	104° 2' 57.623 W
2,548.0	2.80	154.90	2,546.0	-36.2	-36.4	607,303.71	628,728.63	32° 40' 9.128 N	104° 2' 57.602 W
2,643.0	1.00	120.50	2,641.0	-38.7	-34.7	607,301.18	628,730.33	32° 40' 9.103 N	104° 2' 57.583 W
2,738.0	1.30	58.60	2,736.0	-38.5	-33.1	607,301.32	628,731.97	32° 40' 9.104 N	104° 2' 57.564 W
2,833.0	1.10	53.70	2,831.0	-37.4	-31.4	607,302.42	628,733.62	32° 40' 9.115 N	104° 2' 57.544 W
2,927.0	1.40	50.20	2,924.9	-36.2	-29.8	607,303.69	628,735.23	32° 40' 9.127 N	104° 2' 57.525 W
3,022.0	1.40	69.80	3,019.9	-35.0	-27.8	607,304.84	628,737.21	32° 40' 9.139 N	104° 2' 57.502 W
3,116.0	1.70	60.00	3,113.9	-33.9	-25.5	607,305.93	628,739.50	32° 40' 9.149 N	104° 2' 57.475 W
3,211.0	1.70	50.20	3,208.8	-32.3	-23.2	607,307.54	628,741.80	32° 40' 9.165 N	104° 2' 57.448 W
3,306.0	1.20	56.80	3,303.8	-30.9	-21.3	607,308.98	628,743.72	32° 40' 9.179 N	104° 2' 57.426 W
3,400.0	0.10	250.60	3,397.8	-30.4	-20.6	607,309.50	628,744.46	32° 40' 9.184 N	104° 2' 57.417 W
3,495.0	3.00	221.00	3,492.7	-32.3	-22.3	607,307.59	628,742.75	32° 40' 9.166 N	104° 2' 57.437 W
3,590.0	4.60	222.40	3,587.5	-37.0	-26.5	607,302.90	628,738.55	32° 40' 9.119 N	104° 2' 57.486 W
3,684.0	3.30	227.70	3,681.3	-41.6	-31.0	607,298.30	628,734.01	32° 40' 9.074 N	104° 2' 57.540 W
3,779.0	2.80	225.20	3,776.2	-45.0	-34.7	607,294.82	628,730.34	32° 40' 9.040 N	104° 2' 57.583 W
3,873.0	2.70	220.70	3,870.1	-48.3	-37.8	607,291.53	628,727.27	32° 40' 9.007 N	104° 2' 57.619 W
3,967.0	2.50	202.00	3,964.0	-51.9	-40.0	607,287.95	628,725.06	32° 40' 8.972 N	104° 2' 57.645 W
4,062.0	2.00	214.30	4,058.9	-55.2	-41.7	607,284.66	628,723.35	32° 40' 8.939 N	104° 2' 57.665 W
4,157.0	1.30	219.30	4,153.9	-57.4	-43.3	607,282.45	628,721.73	32° 40' 8.917 N	104° 2' 57.684 W
4,251.0	2.50	253.00	4,247.8	-58.8	-45.9	607,281.03	628,719.09	32° 40' 8.903 N	104° 2' 57.715 W
4,346.0	4.00	245.60	4,342.7	-60.8	-50.9	607,279.05	628,714.09	32° 40' 8.884 N	104° 2' 57.773 W
4,441.0	4.60	245.60	4,437.4	-63.8	-57.4	607,276.11	628,707.61	32° 40' 8.855 N	104° 2' 57.849 W
4,535.0	4.30	253.40	4,531.1	-66.3	-64.2	607,273.55	628,700.80	32° 40' 8.830 N	104° 2' 57.929 W
4,630.0	3.30	270.20	4,625.9	-67.3	-70.4	607,272.54	628,694.65	32° 40' 8.820 N	104° 2' 58.001 W
4,725.0	4.20	246.70	4,720.7	-68.7	-76.3	607,271.17	628,688.72	32° 40' 8.807 N	104° 2' 58.070 W
4,819.0	2.50	219.60	4,814.5	-71.6	-80.8	607,268.23	628,684.25	32° 40' 8.778 N	104° 2' 58.123 W
4,914.0	2.50	213.30	4,909.4	-75.0	-83.2	607,264.90	628,681.79	32° 40' 8.745 N	104° 2' 58.152 W
5,009.0	1.90	228.80	5,004.4	-77.7	-85.5	607,262.13	628,679.47	32° 40' 8.718 N	104° 2' 58.179 W
5,103.0	2.10	228.40	5,098.3	-79.9	-88.0	607,259.96	628,677.01	32° 40' 8.696 N	104° 2' 58.208 W
5,198.0	2.20	224.90	5,193.3	-82.4	-90.6	607,257.52	628,674.42	32° 40' 8.672 N	104° 2' 58.238 W
5,293.0	1.90	242.80	5,288.2	-84.4	-93.3	607,255.51	628,671.73	32° 40' 8.652 N	104° 2' 58.270 W
5,388.0	1.90	250.60	5,383.1	-85.6	-96.2	607,254.26	628,668.85	32° 40' 8.640 N	104° 2' 58.304 W
5,483.0	3.60	214.00	5,478.0	-88.6	-99.3	607,251.27	628,665.69	32° 40' 8.610 N	104° 2' 58.340 W
5,577.0	4.00	215.00	5,571.8	-93.7	-102.9	607,246.13	628,662.16	32° 40' 8.560 N	104° 2' 58.382 W
5,672.0	3.90	214.70	5,666.6	-99.1	-106.6	607,240.76	628,658.42	32° 40' 8.507 N	104° 2' 58.426 W
5,766.0	3.30	222.40	5,760.4	-103.7	-110.2	607,236.14	628,654.78	32° 40' 8.461 N	104° 2' 58.469 W
5,861.0	3.00	232.30	5,855.3	-107.3	-114.1	607,232.60	628,650.97	32° 40' 8.426 N	104° 2' 58.513 W
5,956.0	2.90	231.20	5,950.1	-110.3	-117.9	607,229.57	628,647.13	32° 40' 8.396 N	104° 2' 58.558 W
6,051.0	3.30	241.80	6,045.0	-113.1	-122.2	607,226.77	628,642.84	32° 40' 8.369 N	104° 2' 58.609 W
6,145.0	3.20	248.10	6,138.9	-115.4	-127.0	607,224.52	628,638.03	32° 40' 8.346 N	104° 2' 58.665 W
6,240.0	3.00	256.20	6,233.7	-116.9	-131.9	607,222.94	628,633.15	32° 40' 8.331 N	104° 2' 58.722 W
6,334.0	2.50	261.50	6,327.6	-117.8	-136.3	607,222.05	628,628.74	32° 40' 8.322 N	104° 2' 58.774 W



Survey Report - Geographic



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Well: Sapphire 11/12 B2NN State Com #1H
Wellbore: Wellbore #1
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Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
6,429.0	2.90	237.50	6,422.5	-119.4	-140.4	607,220.45	628,624.66	32° 40' 8.306 N	104° 2' 58.822 W
6,523.0	2.80	242.10	6,516.4	-121.8	-144.4	607,218.10	628,620.62	32° 40' 8.283 N	104° 2' 58.869 W
6,618.0	3.00	215.00	6,611.3	-124.9	-147.9	607,214.97	628,617.15	32° 40' 8.252 N	104° 2' 58.910 W
6,712.0	4.00	203.10	6,705.1	-129.9	-150.6	607,209.94	628,614.45	32° 40' 8.203 N	104° 2' 58.941 W
6,807.0	4.00	209.40	6,799.9	-135.9	-153.5	607,204.01	628,611.52	32° 40' 8.144 N	104° 2' 58.976 W
6,902.0	3.60	214.00	6,894.7	-141.2	-156.8	607,198.65	628,608.23	32° 40' 8.091 N	104° 2' 59.014 W
6,996.0	2.60	216.40	6,988.5	-145.4	-159.7	607,194.49	628,605.31	32° 40' 8.050 N	104° 2' 59.049 W
7,090.0	2.10	210.80	7,082.4	-148.6	-161.9	607,191.29	628,603.17	32° 40' 8.019 N	104° 2' 59.074 W
7,185.0	2.00	203.40	7,177.4	-151.6	-163.4	607,188.27	628,601.62	32° 40' 7.989 N	104° 2' 59.092 W
7,279.0	3.00	159.10	7,271.3	-155.4	-163.2	607,184.47	628,601.84	32° 40' 7.951 N	104° 2' 59.090 W
7,374.0	3.40	142.30	7,366.2	-159.9	-160.6	607,179.92	628,604.45	32° 40' 7.906 N	104° 2' 59.059 W
7,468.0	2.90	152.80	7,460.0	-164.3	-157.8	607,175.60	628,607.24	32° 40' 7.863 N	104° 2' 59.027 W
7,500.0	2.10	157.00	7,492.0	-165.5	-157.2	607,174.34	628,607.84	32° 40' 7.851 N	104° 2' 59.020 W
7,600.0	5.30	132.60	7,591.8	-170.3	-153.1	607,169.52	628,611.96	32° 40' 7.803 N	104° 2' 58.972 W
7,631.0	8.70	118.70	7,622.5	-172.4	-149.9	607,167.43	628,615.07	32° 40' 7.782 N	104° 2' 58.935 W
7,663.0	13.60	109.40	7,653.9	-174.9	-144.3	607,165.02	628,620.75	32° 40' 7.758 N	104° 2' 58.869 W
7,694.0	18.20	100.60	7,683.7	-177.0	-136.1	607,162.91	628,628.95	32° 40' 7.737 N	104° 2' 58.773 W
7,726.0	21.70	90.90	7,713.8	-178.0	-125.2	607,161.90	628,639.78	32° 40' 7.727 N	104° 2' 58.646 W
7,757.0	26.00	84.10	7,742.2	-177.4	-112.7	607,162.51	628,652.28	32° 40' 7.732 N	104° 2' 58.500 W
7,789.0	30.30	78.10	7,770.4	-175.0	-97.9	607,164.90	628,667.17	32° 40' 7.756 N	104° 2' 58.326 W
7,820.0	34.30	76.30	7,796.6	-171.3	-81.7	607,168.58	628,683.31	32° 40' 7.792 N	104° 2' 58.137 W
7,852.0	39.20	77.20	7,822.2	-166.9	-63.1	607,172.96	628,701.94	32° 40' 7.834 N	104° 2' 57.919 W
7,883.0	42.20	77.40	7,845.7	-162.5	-43.4	607,177.40	628,721.66	32° 40' 7.878 N	104° 2' 57.688 W
7,915.0	45.20	79.20	7,868.8	-158.0	-21.7	607,181.87	628,743.31	32° 40' 7.922 N	104° 2' 57.435 W
7,946.0	48.40	81.30	7,890.1	-154.2	0.6	607,185.69	628,765.58	32° 40' 7.959 N	104° 2' 57.174 W
7,978.0	50.00	82.90	7,911.0	-150.9	24.6	607,189.01	628,789.57	32° 40' 7.991 N	104° 2' 56.893 W
8,010.0	51.00	84.30	7,931.3	-148.1	49.1	607,191.76	628,814.11	32° 40' 8.018 N	104° 2' 56.606 W
8,041.0	51.60	86.20	7,950.7	-146.1	73.2	607,193.76	628,838.21	32° 40' 8.037 N	104° 2' 56.324 W
8,073.0	53.60	86.70	7,970.1	-144.5	98.6	607,195.34	628,863.59	32° 40' 8.052 N	104° 2' 56.027 W
8,104.0	56.80	86.60	7,987.8	-143.0	124.0	607,196.83	628,888.99	32° 40' 8.066 N	104° 2' 55.730 W
8,135.0	61.60	88.10	8,003.7	-141.8	150.6	607,198.05	628,915.59	32° 40' 8.077 N	104° 2' 55.419 W
8,167.0	67.20	87.80	8,017.5	-140.8	179.4	607,199.08	628,944.41	32° 40' 8.087 N	104° 2' 55.081 W
8,198.0	73.00	87.30	8,028.1	-139.5	208.5	607,200.33	628,973.52	32° 40' 8.098 N	104° 2' 54.741 W
8,222.0	78.30	86.70	8,034.0	-138.3	231.7	607,201.55	628,996.73	32° 40' 8.110 N	104° 2' 54.469 W
8,405.0	90.80	88.10	8,051.4	-130.1	413.3	607,209.77	629,178.36	32° 40' 8.186 N	104° 2' 52.344 W
8,500.0	89.60	90.60	8,051.0	-129.0	508.3	607,210.85	629,273.34	32° 40' 8.194 N	104° 2' 51.233 W
8,595.0	89.30	90.40	8,051.9	-129.8	603.3	607,210.02	629,368.33	32° 40' 8.184 N	104° 2' 50.122 W
8,689.0	89.80	92.90	8,052.7	-132.6	697.3	607,207.31	629,462.28	32° 40' 8.154 N	104° 2' 49.023 W
8,784.0	90.00	91.80	8,052.9	-136.5	792.2	607,203.42	629,557.20	32° 40' 8.113 N	104° 2' 47.912 W
8,879.0	90.40	91.10	8,052.5	-138.9	887.1	607,201.01	629,652.17	32° 40' 8.087 N	104° 2' 46.801 W
8,973.0	91.40	90.80	8,051.0	-140.4	981.1	607,199.46	629,746.14	32° 40' 8.069 N	104° 2' 45.702 W
9,067.0	91.00	92.20	8,049.1	-142.9	1,075.1	607,197.00	629,840.09	32° 40' 8.042 N	104° 2' 44.603 W
9,162.0	89.90	92.50	8,048.3	-146.8	1,170.0	607,193.10	629,935.00	32° 40' 8.001 N	104° 2' 43.493 W
9,256.0	87.90	92.90	8,050.1	-151.2	1,263.9	607,188.67	630,028.88	32° 40' 7.955 N	104° 2' 42.395 W
9,350.0	87.80	92.50	8,053.7	-155.6	1,357.7	607,184.25	630,122.71	32° 40' 7.908 N	104° 2' 41.297 W
9,444.0	89.10	92.70	8,056.2	-159.9	1,451.6	607,179.99	630,216.57	32° 40' 7.864 N	104° 2' 40.199 W
9,539.0	87.50	92.00	8,059.0	-163.8	1,546.4	607,176.09	630,311.45	32° 40' 7.823 N	104° 2' 39.089 W
9,633.0	87.70	91.50	8,063.0	-166.6	1,640.3	607,173.22	630,405.32	32° 40' 7.792 N	104° 2' 37.991 W
9,727.0	87.90	90.60	8,066.6	-168.4	1,734.2	607,171.50	630,499.23	32° 40' 7.772 N	104° 2' 36.893 W
9,822.0	88.50	90.40	8,069.6	-169.2	1,829.2	607,170.67	630,594.18	32° 40' 7.761 N	104° 2' 35.782 W
9,916.0	89.20	90.10	8,071.4	-169.6	1,923.1	607,170.26	630,688.16	32° 40' 7.755 N	104° 2' 34.682 W
10,011.0	89.60	89.50	8,072.4	-169.3	2,018.1	607,170.60	630,783.16	32° 40' 7.755 N	104° 2' 33.571 W
10,106.0	90.00	88.80	8,072.8	-167.9	2,113.1	607,172.01	630,878.14	32° 40' 7.767 N	104° 2' 32.460 W
10,200.0	90.20	87.80	8,072.6	-165.1	2,207.1	607,174.79	630,972.10	32° 40' 7.792 N	104° 2' 31.360 W
10,295.0	89.40	88.30	8,072.9	-161.8	2,302.0	607,178.03	631,067.05	32° 40' 7.821 N	104° 2' 30.250 W



Survey Report - Geographic



Company: Mewbourne Oil Company
Project: Eddy County, New Mexico (Nad 83)
Site: Sec 11, T19S, R29E
Well: Sapphire 11/12 B2NN State Com #1H
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Sapphire 11/12 B2NN State Com #1H
TVD Reference: WELL @ 3402.0usft (Patterson #230)
MD Reference: WELL @ 3402.0usft (Patterson #230)
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)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
10,389.0	88.60	87.60	8,074.6	-158.5	2,396.0	607,181.39	631,160.97	32° 40' 7.852 N	104° 2' 29.151 W
10,484.0	88.70	88.80	8,076.8	-155.5	2,490.9	607,184.37	631,255.89	32° 40' 7.879 N	104° 2' 28.040 W
10,578.0	88.90	91.80	8,078.8	-156.0	2,584.8	607,183.88	631,349.86	32° 40' 7.871 N	104° 2' 26.941 W
10,672.0	89.10	92.20	8,080.4	-159.3	2,678.8	607,180.60	631,443.79	32° 40' 7.836 N	104° 2' 25.842 W
10,767.0	88.60	91.50	8,082.3	-162.3	2,773.7	607,177.53	631,538.72	32° 40' 7.803 N	104° 2' 24.731 W
10,862.0	88.90	90.80	8,084.4	-164.2	2,868.7	607,175.63	631,633.68	32° 40' 7.782 N	104° 2' 23.621 W
10,956.0	89.30	89.70	8,085.9	-164.7	2,962.6	607,175.22	631,727.66	32° 40' 7.775 N	104° 2' 22.521 W
11,051.0	89.50	88.50	8,086.9	-163.2	3,057.6	607,176.71	631,822.65	32° 40' 7.788 N	104° 2' 21.410 W
11,145.0	90.40	89.40	8,087.0	-161.4	3,151.6	607,178.43	631,916.63	32° 40' 7.802 N	104° 2' 20.310 W
11,240.0	90.70	90.60	8,086.0	-161.4	3,246.6	607,178.43	632,011.62	32° 40' 7.799 N	104° 2' 19.199 W
11,335.0	91.60	90.80	8,084.1	-162.6	3,341.6	607,177.27	632,106.59	32° 40' 7.785 N	104° 2' 18.088 W
11,429.0	90.00	91.30	8,082.8	-164.3	3,435.5	607,175.55	632,200.57	32° 40' 7.766 N	104° 2' 16.989 W
11,523.0	88.90	91.10	8,083.7	-166.3	3,529.5	607,173.58	632,294.54	32° 40' 7.744 N	104° 2' 15.889 W
11,618.0	88.30	91.30	8,086.0	-168.3	3,624.5	607,171.59	632,389.49	32° 40' 7.721 N	104° 2' 14.779 W
11,713.0	89.10	90.80	8,088.2	-170.0	3,719.4	607,169.85	632,484.45	32° 40' 7.701 N	104° 2' 13.668 W
11,808.0	88.40	91.30	8,090.3	-171.8	3,814.4	607,168.11	632,579.41	32° 40' 7.682 N	104° 2' 12.557 W
11,902.0	90.30	89.90	8,091.3	-172.7	3,908.4	607,167.13	632,673.39	32° 40' 7.669 N	104° 2' 11.457 W
11,996.0	87.70	89.50	8,093.0	-172.2	4,002.3	607,167.62	632,767.37	32° 40' 7.672 N	104° 2' 10.358 W
12,090.0	86.80	89.20	8,097.5	-171.2	4,096.2	607,168.68	632,861.25	32° 40' 7.679 N	104° 2' 9.260 W
12,185.0	86.30	87.80	8,103.2	-168.7	4,191.0	607,171.17	632,956.04	32° 40' 7.701 N	104° 2' 8.151 W
12,280.0	86.60	88.30	8,109.1	-165.5	4,285.8	607,174.39	633,050.81	32° 40' 7.731 N	104° 2' 7.042 W
12,374.0	87.70	90.10	8,113.8	-164.2	4,379.7	607,175.70	633,144.68	32° 40' 7.741 N	104° 2' 5.944 W
12,469.0	91.40	90.20	8,114.5	-164.4	4,474.6	607,175.45	633,239.66	32° 40' 7.736 N	104° 2' 4.832 W
12,563.0	91.40	89.00	8,112.2	-163.8	4,568.6	607,176.11	633,333.62	32° 40' 7.740 N	104° 2' 3.733 W
12,658.0	91.60	89.50	8,109.7	-162.5	4,663.6	607,177.35	633,428.58	32° 40' 7.749 N	104° 2' 2.622 W
12,753.0	92.10	88.80	8,106.7	-161.1	4,758.5	607,178.76	633,523.52	32° 40' 7.761 N	104° 2' 1.511 W
12,847.0	91.60	89.90	8,103.6	-160.0	4,852.4	607,179.83	633,617.47	32° 40' 7.769 N	104° 2' 0.412 W
12,941.0	91.70	90.40	8,100.9	-160.3	4,946.4	607,179.58	633,711.43	32° 40' 7.764 N	104° 1' 59.313 W
13,036.0	91.40	91.70	8,098.3	-162.0	5,041.4	607,177.84	633,806.37	32° 40' 7.744 N	104° 1' 58.202 W
13,131.0	88.00	92.20	8,098.8	-165.3	5,136.3	607,174.61	633,901.30	32° 40' 7.709 N	104° 1' 57.092 W
13,225.0	86.60	91.50	8,103.3	-168.3	5,230.1	607,171.58	633,995.15	32° 40' 7.676 N	104° 1' 55.994 W
13,319.0	86.10	90.80	8,109.3	-170.2	5,323.9	607,169.69	634,088.94	32° 40' 7.655 N	104° 1' 54.897 W
13,413.0	87.00	92.20	8,114.9	-172.6	5,417.7	607,167.24	634,182.73	32° 40' 7.628 N	104° 1' 53.800 W
13,508.0	88.00	92.90	8,119.1	-176.9	5,512.5	607,163.01	634,277.54	32° 40' 7.584 N	104° 1' 52.691 W
13,603.0	88.70	94.30	8,121.8	-182.8	5,607.3	607,157.05	634,372.31	32° 40' 7.522 N	104° 1' 51.582 W
13,697.0	92.20	93.80	8,121.1	-189.5	5,701.0	607,150.41	634,466.06	32° 40' 7.454 N	104° 1' 50.486 W
13,792.0	91.30	92.50	8,118.2	-194.7	5,795.9	607,145.20	634,560.87	32° 40' 7.400 N	104° 1' 49.377 W
13,886.0	91.40	92.20	8,115.9	-198.5	5,889.7	607,141.34	634,654.77	32° 40' 7.359 N	104° 1' 48.278 W
13,981.0	90.80	91.50	8,114.1	-201.6	5,984.7	607,138.28	634,749.70	32° 40' 7.326 N	104° 1' 47.168 W
14,075.0	89.10	91.30	8,114.2	-203.9	6,078.6	607,135.98	634,843.67	32° 40' 7.300 N	104° 1' 46.069 W
14,170.0	86.90	90.90	8,117.5	-205.7	6,173.6	607,134.16	634,938.58	32° 40' 7.280 N	104° 1' 44.958 W
14,240.0	86.70	90.80	8,121.4	-206.7	6,243.4	607,133.12	635,008.47	32° 40' 7.267 N	104° 1' 44.141 W
14,310.0	86.70	90.80	8,125.4	-207.7	6,313.3	607,132.15	635,078.34	32° 40' 7.256 N	104° 1' 43.323 W

TD @ 14310.0' MD / 8125.4' TVD

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates +N/-S (usft)	+E/-W (usft)	Comment
1,403.0	1,402.5	8.5	-31.2	Gyro Tie In @ 1403.0' MD / 1402.5' TVD
14,310.0	8,125.4	-207.7	6,313.3	TD @ 14310.0' MD / 8125.4' TVD



Survey Report - Geographic



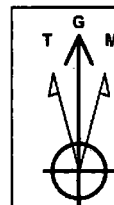
Company: Mewbourne Oil Company
Project: Eddy County, New Mexico (Nad 83)
Site: Sec 11, T19S, R29E
Well: Sapphire 11/12 B2NN State Com #1H
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Database:

Well Sapphire 11/12 B2NN State Com #1H
WELL @ 3402.0usft (Patterson #230)
WELL @ 3402.0usft (Patterson #230)
Grid
Minimum Curvature
EDM 5000.1 Single User Db

Company Name: Meawbourne Oil Company
Sapphire 11/12 B2NN State Com #1H
Eddy County, New Mexico (Nad 83)
Rig: Patterson 6236
Created By: Shane Robbins
Date: 10/05/2018

Sapphire 11/12 B2NN State Com #1H
Eddy County, New Mexico (Nad 83)
Q181242 & WT-181043
Design #1



Azimuths to Grid North

Correction: 6.92°
Magnetic Field

Strength: 48023.0snT
Dip Angle: 60.38°
Date: 9/14/2018
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

ANNOTATIONS

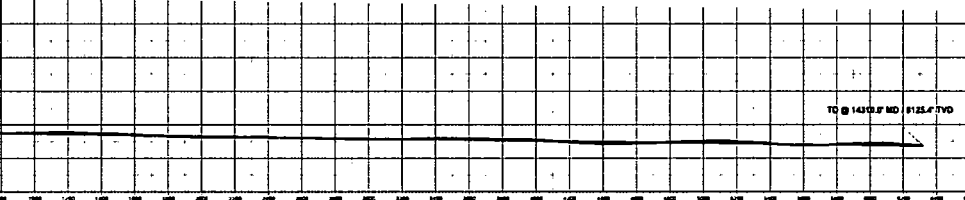
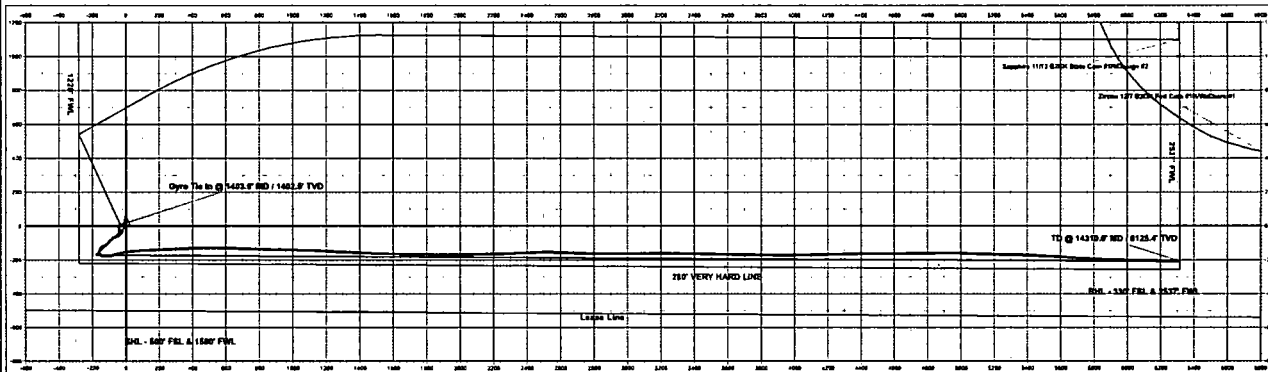
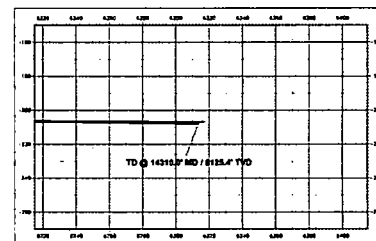
MD	Inc	Adj	TVD	+H/L	+E/W	ViscDeparture	Annotation
1482.0	1.49	312.00	1482.0	0.0	-31.2	-31.2	Opey Tie In @ 1482.0' MD / 1482.0' TVD
14310.0	96.70	90.80	8125.4	-797.7	6312.3	6312.7	TD @ 14310.0' MD / 8125.4' TVD

WELL DETAILS: Sapphire 11/12 B2NN State Com #1H

MD	Inc	Adj	TVD	+H/L	+E/W	ViscDeparture	Annotation
1482.0	1.49	312.00	1482.0	0.0	-31.2	-31.2	Opey Tie In @ 1482.0' MD / 1482.0' TVD
14310.0	96.70	90.80	8125.4	-797.7	6312.3	6312.7	TD @ 14310.0' MD / 8125.4' TVD

DESIGN ANNOTATIONS

MD	Inc	Adj	TVD	+H/L	+E/W	ViscDeparture	Annotation
1345.0	0.00	0.00	1345.0	0.0	0.0	0.0	Build 2°10'0"
3540.2	3.50	226.71	3540.9	-3.7	-3.9	-3.9	EOB @ 3.5° Inc / 226.71° Azm
7289.0	1.50	120.71	7289.0	-155.3	-175.9	-175.9	Drop 2°10'0"
7674.0	0.00	0.00	7674.0	-160.0	-173.3	-173.3	EOB @ Vert / Build 12°10'0"
8217.0	80.32	90.33	8044.0	-171.7	291.5	291.5	EOB @ 80.32° Inc / 90.33° Azm / 8044° TVD
14344.1	89.22	90.33	8125.0	-206.0	6317.5	6326.9	TD @ 8344° MD / 8125° TVD



Vertical Section at 91.87° (200 usd/hr)