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Mewbourne Oil Company

Eddy County, New Mexico (Nad 83)

Sec 11, T19S, R29E

Sapphire 11/12 B2KK State Com #1H

Wellbore #1

30-015-45020

Design: Wellbore #1

Survey Report - Geographic

27 October, 2018





Survey Report - Geographic



Company:	Mewbourne Oil Company	Local Co-ordinate Reference:	Well Sapphire 11/12 B2KK State Com #1H
Project:	Eddy County, New Mexico (Nad 83)	TVD Reference:	WELL @ 3404.0usft (Patterson #230)
Site:	Sec 11, T19S, R29E	MD Reference:	WELL @ 3404.0usft (Patterson #230)
Well:	Sapphire 11/12 B2KK State Com #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 11, T19S, R29E				
Site Position:		Northing:	607,339.87 usft	Latitude:	32° 40' 9.484 N
From:	Map	Easting:	628,765.02 usft	Longitude:	104° 2' 57.176 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.15 °

Well	Sapphire 11/12 B2KK State Com #1H					
Well Position	+N/-S	0.0 usft	Northing:	607,339.90 usft	Latitude:	32° 40' 9.486 N
	+E/-W	0.0 usft	Easting:	628,734.70 usft	Longitude:	104° 2' 57.530 W
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft	Ground Level:	3,377.0 usft	

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	10/5/2018	7.07	60.38	48,017.07280592

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	80.18	

Survey Program	Date	10/27/2018		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
109.0	432.0	Trueshot Surveys (Wellbore #1)	GYRO-NS	OWSG Gyrocompass Gyro
531.0	14,510.0	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)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.0	0.00	0.00	0.0	0.0	0.0	607,339.90	628,734.70	32° 40' 9.486 N	104° 2' 57.530 W
109.0	0.70	11.40	109.0	0.7	0.1	607,340.56	628,734.84	32° 40' 9.492 N	104° 2' 57.529 W
168.0	0.40	16.20	168.0	1.2	0.3	607,341.11	628,734.96	32° 40' 9.497 N	104° 2' 57.527 W
289.0	0.70	11.30	289.0	2.3	0.5	607,342.24	628,735.23	32° 40' 9.509 N	104° 2' 57.524 W
432.0	0.70	30.00	432.0	3.9	1.1	607,343.85	628,735.83	32° 40' 9.525 N	104° 2' 57.517 W
432.1	0.70	30.00	432.1	3.9	1.1	607,343.85	628,735.84	32° 40' 9.525 N	104° 2' 57.517 W
Gyro Tie-In @ 432.0' MD / 432.0' TVD									
531.0	1.80	12.40	531.0	6.0	1.8	607,345.89	628,736.47	32° 40' 9.545 N	104° 2' 57.509 W
562.0	2.30	2.50	561.9	7.1	1.9	607,346.99	628,736.60	32° 40' 9.556 N	104° 2' 57.508 W
623.0	4.10	352.00	622.8	10.5	1.6	607,350.37	628,736.35	32° 40' 9.589 N	104° 2' 57.511 W
684.0	5.90	347.80	683.6	15.7	0.7	607,355.60	628,735.39	32° 40' 9.641 N	104° 2' 57.522 W



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Site:	Sec 11, T19S, R29E	MD Reference:	WELL @ 3404.0usft (Patterson #230)
Well:	Sapphire 11/12 B2KK State Com #1H	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)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
744.0	6.60	347.20	743.2	22.1	-0.7	607,361.97	628,733.97	32° 40' 9.704 N	104° 2' 57.538 W
807.0	7.00	348.10	805.8	29.4	-2.3	607,369.26	628,732.38	32° 40' 9.776 N	104° 2' 57.557 W
871.0	7.60	350.80	869.3	37.4	-3.8	607,377.25	628,730.90	32° 40' 9.855 N	104° 2' 57.574 W
934.0	6.90	352.90	931.8	45.2	-4.9	607,385.12	628,729.76	32° 40' 9.933 N	104° 2' 57.587 W
998.0	6.00	357.10	995.4	52.4	-5.6	607,392.28	628,729.12	32° 40' 10.004 N	104° 2' 57.594 W
1,061.0	5.50	349.30	1,058.1	58.6	-6.3	607,398.53	628,728.39	32° 40' 10.066 N	104° 2' 57.602 W
1,124.0	5.90	345.00	1,120.7	64.7	-7.7	607,404.63	628,726.99	32° 40' 10.126 N	104° 2' 57.619 W
1,188.0	6.20	344.60	1,184.4	71.2	-9.5	607,411.14	628,725.22	32° 40' 10.191 N	104° 2' 57.639 W
1,251.0	5.70	345.50	1,247.0	77.5	-11.2	607,417.45	628,723.54	32° 40' 10.253 N	104° 2' 57.659 W
1,315.0	5.80	347.10	1,310.7	83.8	-12.7	607,423.67	628,722.02	32° 40' 10.315 N	104° 2' 57.676 W
1,364.0	6.20	344.80	1,359.5	88.7	-13.9	607,428.64	628,720.77	32° 40' 10.364 N	104° 2' 57.691 W
1,444.0	6.20	347.60	1,439.0	97.1	-16.0	607,437.03	628,718.71	32° 40' 10.447 N	104° 2' 57.714 W
1,540.0	6.50	344.20	1,534.4	107.4	-18.6	607,447.32	628,716.12	32° 40' 10.549 N	104° 2' 57.744 W
1,603.0	6.80	343.50	1,597.0	114.4	-20.6	607,454.33	628,714.09	32° 40' 10.618 N	104° 2' 57.768 W
1,666.0	6.60	335.10	1,659.6	121.3	-23.2	607,461.19	628,711.51	32° 40' 10.686 N	104° 2' 57.798 W
1,701.0	6.50	326.10	1,694.3	124.8	-25.2	607,464.66	628,709.55	32° 40' 10.721 N	104° 2' 57.821 W
1,795.0	5.60	313.00	1,787.8	132.3	-31.5	607,472.20	628,703.23	32° 40' 10.796 N	104° 2' 57.894 W
1,890.0	5.70	308.00	1,882.3	138.4	-38.6	607,478.27	628,696.12	32° 40' 10.856 N	104° 2' 57.977 W
1,985.0	6.60	307.00	1,976.8	144.6	-46.7	607,484.46	628,688.05	32° 40' 10.917 N	104° 2' 58.072 W
2,079.0	6.30	318.80	2,070.2	151.7	-54.4	607,491.59	628,680.33	32° 40' 10.988 N	104° 2' 58.162 W
2,173.0	5.80	335.30	2,163.7	159.9	-59.8	607,499.79	628,674.95	32° 40' 11.069 N	104° 2' 58.224 W
2,267.0	6.20	343.40	2,257.2	169.1	-63.2	607,508.97	628,671.52	32° 40' 11.160 N	104° 2' 58.264 W
2,361.0	6.20	342.80	2,350.6	178.8	-66.1	607,518.68	628,668.57	32° 40' 11.256 N	104° 2' 58.299 W
2,455.0	6.20	343.90	2,444.1	188.5	-69.0	607,528.41	628,665.66	32° 40' 11.353 N	104° 2' 58.332 W
2,549.0	6.10	344.10	2,537.5	198.2	-71.8	607,538.09	628,662.88	32° 40' 11.449 N	104° 2' 58.364 W
2,644.0	6.20	344.10	2,632.0	208.0	-74.6	607,547.87	628,660.09	32° 40' 11.545 N	104° 2' 58.397 W
2,739.0	6.20	344.10	2,726.4	217.8	-77.4	607,557.74	628,657.28	32° 40' 11.643 N	104° 2' 58.429 W
2,833.0	5.40	333.00	2,820.0	226.7	-80.8	607,566.56	628,653.88	32° 40' 11.731 N	104° 2' 58.469 W
2,927.0	5.60	328.30	2,913.5	234.5	-85.2	607,574.41	628,649.47	32° 40' 11.808 N	104° 2' 58.520 W
3,022.0	5.90	328.60	3,008.0	242.6	-90.2	607,582.52	628,644.49	32° 40' 11.889 N	104° 2' 58.578 W
3,117.0	6.00	330.70	3,102.5	251.1	-95.2	607,591.02	628,639.51	32° 40' 11.973 N	104° 2' 58.636 W
3,212.0	6.30	333.20	3,197.0	260.1	-100.0	607,600.00	628,634.73	32° 40' 12.062 N	104° 2' 58.692 W
3,306.0	5.40	323.00	3,290.5	268.2	-105.0	607,608.14	628,629.74	32° 40' 12.143 N	104° 2' 58.750 W
3,401.0	4.90	316.10	3,385.1	274.7	-110.5	607,614.63	628,624.24	32° 40' 12.207 N	104° 2' 58.814 W
3,496.0	5.10	317.90	3,479.7	280.8	-116.1	607,620.69	628,618.60	32° 40' 12.267 N	104° 2' 58.880 W
3,590.0	3.90	314.20	3,573.5	286.1	-121.2	607,626.01	628,613.50	32° 40' 12.320 N	104° 2' 58.939 W
3,685.0	3.30	310.30	3,668.3	290.1	-125.6	607,630.04	628,609.10	32° 40' 12.360 N	104° 2' 58.991 W
3,780.0	3.20	338.30	3,763.1	294.4	-128.7	607,634.27	628,606.04	32° 40' 12.402 N	104° 2' 59.026 W
3,875.0	3.50	347.40	3,858.0	299.7	-130.3	607,639.56	628,604.42	32° 40' 12.454 N	104° 2' 59.045 W
3,969.0	3.50	354.30	3,951.8	305.3	-131.2	607,645.22	628,603.51	32° 40' 12.510 N	104° 2' 59.056 W
4,064.0	4.00	341.30	4,046.6	311.3	-132.5	607,651.24	628,602.16	32° 40' 12.570 N	104° 2' 59.071 W
4,158.0	4.50	336.70	4,140.3	317.8	-135.1	607,657.73	628,599.65	32° 40' 12.634 N	104° 2' 59.100 W
4,253.0	4.70	338.60	4,235.0	324.9	-137.9	607,664.78	628,596.76	32° 40' 12.704 N	104° 2' 59.134 W
4,348.0	5.10	338.80	4,329.7	332.4	-140.9	607,672.34	628,593.81	32° 40' 12.779 N	104° 2' 59.168 W
4,442.0	5.10	338.80	4,423.3	340.2	-143.9	607,680.13	628,590.79	32° 40' 12.856 N	104° 2' 59.203 W
4,537.0	4.70	339.50	4,518.0	347.8	-146.8	607,687.71	628,587.90	32° 40' 12.931 N	104° 2' 59.237 W
4,632.0	4.10	345.80	4,612.7	354.7	-149.0	607,694.65	628,585.70	32° 40' 13.000 N	104° 2' 59.262 W
4,726.0	4.00	343.20	4,706.4	361.1	-150.8	607,701.05	628,583.93	32° 40' 13.063 N	104° 2' 59.283 W
4,821.0	3.50	336.20	4,801.2	367.0	-152.9	607,706.87	628,581.80	32° 40' 13.121 N	104° 2' 59.308 W
4,915.0	3.20	329.60	4,895.1	371.9	-155.4	607,711.76	628,579.32	32° 40' 13.169 N	104° 2' 59.337 W
5,009.0	3.00	329.30	4,988.9	376.2	-158.0	607,716.14	628,576.73	32° 40' 13.213 N	104° 2' 59.367 W
5,104.0	3.20	329.80	5,083.8	380.7	-160.6	607,720.57	628,574.13	32° 40' 13.257 N	104° 2' 59.397 W
5,199.0	3.20	324.90	5,178.7	385.1	-163.4	607,725.03	628,571.27	32° 40' 13.301 N	104° 2' 59.430 W
5,293.0	3.30	327.20	5,272.5	389.5	-166.4	607,729.45	628,568.30	32° 40' 13.345 N	104° 2' 59.465 W
5,388.0	3.50	326.10	5,367.3	394.3	-169.5	607,734.15	628,565.20	32° 40' 13.391 N	104° 2' 59.501 W



Survey Report - Geographic



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Project: Eddy County, New Mexico (Nad 83)
Site: Sec 11, T19S, R29E
Well: Sapphire 11/12 B2KK State Com #1H
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Sapphire 11/12 B2KK State Com #1H
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MD Reference: WELL @ 3404.0usft (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
5,483.0	3.80	329.00	5,462.1	399.4	-172.7	607,739.26	628,561.96	32° 40' 13.442 N	104° 2' 59.539 W
5,577.0	4.10	334.90	5,555.9	405.1	-175.8	607,744.97	628,558.93	32° 40' 13.499 N	104° 2' 59.574 W
5,672.0	4.20	339.70	5,650.7	411.4	-178.4	607,751.31	628,556.28	32° 40' 13.561 N	104° 2' 59.605 W
5,767.0	4.70	339.00	5,745.4	418.3	-181.0	607,758.21	628,553.68	32° 40' 13.630 N	104° 2' 59.635 W
5,861.0	4.80	337.70	5,839.1	425.5	-183.9	607,765.44	628,550.81	32° 40' 13.701 N	104° 2' 59.668 W
5,956.0	5.10	337.70	5,933.7	433.1	-187.0	607,773.03	628,547.70	32° 40' 13.776 N	104° 2' 59.705 W
6,051.0	5.10	337.40	6,028.3	440.9	-190.2	607,780.83	628,544.47	32° 40' 13.854 N	104° 2' 59.742 W
6,145.0	5.30	330.90	6,121.9	448.6	-193.9	607,788.48	628,540.76	32° 40' 13.930 N	104° 2' 59.785 W
6,240.0	5.30	323.30	6,216.5	455.9	-198.7	607,795.83	628,536.00	32° 40' 14.002 N	104° 2' 59.841 W
6,334.0	5.30	322.50	6,310.1	462.9	-203.9	607,802.76	628,530.76	32° 40' 14.071 N	104° 2' 59.902 W
6,429.0	4.70	319.50	6,404.8	469.3	-209.1	607,809.20	628,525.56	32° 40' 14.135 N	104° 2' 59.962 W
6,524.0	3.80	321.60	6,499.5	474.7	-213.6	607,814.63	628,521.08	32° 40' 14.189 N	104° 3' 0.015 W
6,619.0	3.10	346.20	6,594.3	479.7	-216.2	607,819.59	628,518.51	32° 40' 14.238 N	104° 3' 0.045 W
6,713.0	3.20	359.70	6,688.2	484.8	-216.8	607,824.68	628,517.89	32° 40' 14.288 N	104° 3' 0.052 W
6,808.0	3.10	0.40	6,783.1	490.0	-216.8	607,829.90	628,517.90	32° 40' 14.340 N	104° 3' 0.051 W
6,902.0	2.00	356.40	6,877.0	494.2	-216.9	607,834.08	628,517.81	32° 40' 14.381 N	104° 3' 0.052 W
6,997.0	1.30	357.10	6,971.9	496.9	-217.1	607,836.81	628,517.65	32° 40' 14.408 N	104° 3' 0.054 W
7,092.0	0.90	18.00	7,066.9	498.7	-216.9	607,838.60	628,517.83	32° 40' 14.426 N	104° 3' 0.052 W
7,186.0	0.70	43.10	7,160.9	499.8	-216.3	607,839.72	628,518.45	32° 40' 14.437 N	104° 3' 0.045 W
7,281.0	0.80	50.70	7,255.9	500.7	-215.3	607,840.56	628,519.36	32° 40' 14.445 N	104° 3' 0.034 W
7,375.0	1.10	65.50	7,349.9	501.4	-214.0	607,841.35	628,520.69	32° 40' 14.453 N	104° 3' 0.018 W
7,470.0	1.10	68.10	7,444.9	502.2	-212.3	607,842.07	628,522.36	32° 40' 14.460 N	104° 2' 59.999 W
7,543.0	1.20	61.40	7,517.8	502.8	-211.0	607,842.70	628,523.69	32° 40' 14.466 N	104° 2' 59.983 W
7,589.0	1.30	66.70	7,563.8	503.2	-210.1	607,843.13	628,524.59	32° 40' 14.471 N	104° 2' 59.973 W
7,621.0	5.40	50.50	7,595.8	504.3	-208.6	607,844.23	628,526.08	32° 40' 14.482 N	104° 2' 59.955 W
7,653.0	12.10	51.60	7,627.4	507.4	-204.8	607,847.28	628,529.88	32° 40' 14.512 N	104° 2' 59.911 W
7,684.0	18.00	52.80	7,657.3	512.3	-198.5	607,852.20	628,536.25	32° 40' 14.560 N	104° 2' 59.836 W
7,716.0	22.80	53.00	7,687.3	519.0	-189.6	607,858.92	628,545.14	32° 40' 14.626 N	104° 2' 59.732 W
7,747.0	26.50	56.00	7,715.5	526.5	-179.0	607,866.41	628,555.68	32° 40' 14.700 N	104° 2' 59.608 W
7,779.0	30.50	58.30	7,743.6	534.8	-166.2	607,874.67	628,568.51	32° 40' 14.782 N	104° 2' 59.458 W
7,810.0	34.60	60.40	7,769.7	543.3	-151.8	607,883.16	628,582.86	32° 40' 14.865 N	104° 2' 59.290 W
7,841.0	37.90	60.00	7,794.7	552.4	-135.9	607,892.27	628,598.76	32° 40' 14.955 N	104° 2' 59.103 W
7,873.0	40.90	59.70	7,819.4	562.6	-118.4	607,902.47	628,616.33	32° 40' 15.055 N	104° 2' 58.898 W
7,905.0	43.30	59.10	7,843.2	573.5	-99.9	607,913.39	628,634.79	32° 40' 15.163 N	104° 2' 58.681 W
7,936.0	47.50	59.10	7,864.9	584.8	-81.0	607,924.72	628,653.72	32° 40' 15.275 N	104° 2' 58.459 W
7,968.0	51.40	59.30	7,885.7	597.3	-60.1	607,937.17	628,674.61	32° 40' 15.397 N	104° 2' 58.215 W
8,000.0	55.30	60.00	7,904.8	610.2	-37.9	607,950.14	628,696.76	32° 40' 15.525 N	104° 2' 57.955 W
8,031.0	58.50	59.50	7,921.8	623.3	-15.5	607,963.22	628,719.19	32° 40' 15.654 N	104° 2' 57.692 W
8,063.0	60.80	59.70	7,937.9	637.3	8.3	607,977.19	628,743.00	32° 40' 15.791 N	104° 2' 57.413 W
8,094.0	62.80	59.30	7,952.6	651.2	31.8	607,991.06	628,766.54	32° 40' 15.928 N	104° 2' 57.137 W
8,125.0	66.00	58.60	7,966.0	665.6	55.8	608,005.48	628,790.49	32° 40' 16.070 N	104° 2' 56.857 W
8,156.0	69.00	58.10	7,977.8	680.6	80.2	608,020.50	628,814.87	32° 40' 16.218 N	104° 2' 56.571 W
8,188.0	71.00	57.70	7,988.8	696.6	105.6	608,036.48	628,840.34	32° 40' 16.376 N	104° 2' 56.273 W
8,219.0	71.80	57.20	7,998.7	712.4	130.4	608,052.29	628,865.10	32° 40' 16.531 N	104° 2' 55.982 W
8,251.0	73.60	58.40	8,008.2	728.7	156.3	608,068.57	628,890.96	32° 40' 16.692 N	104° 2' 55.680 W
8,282.0	75.80	59.50	8,016.4	744.1	181.9	608,083.99	628,916.57	32° 40' 16.844 N	104° 2' 55.379 W
8,314.0	78.60	60.20	8,023.4	759.8	208.8	608,099.66	628,943.55	32° 40' 16.998 N	104° 2' 55.063 W
8,346.0	81.50	61.20	8,029.0	775.2	236.3	608,115.08	628,971.04	32° 40' 17.150 N	104° 2' 54.741 W
8,364.0	83.50	62.30	8,031.3	783.6	252.1	608,123.53	628,986.76	32° 40' 17.233 N	104° 2' 54.557 W
8,453.0	85.70	60.20	8,039.7	826.2	329.7	608,166.14	629,064.43	32° 40' 17.653 N	104° 2' 53.647 W
8,516.0	85.10	61.40	8,044.7	856.9	384.5	608,196.78	629,119.24	32° 40' 17.954 N	104° 2' 53.005 W
8,612.0	83.70	65.10	8,054.1	899.9	469.8	608,239.78	629,204.54	32° 40' 18.378 N	104° 2' 52.005 W
8,706.0	84.40	70.20	8,063.9	935.4	556.3	608,275.31	629,290.98	32° 40' 18.727 N	104° 2' 50.993 W
8,801.0	86.40	71.30	8,071.5	966.6	645.7	608,306.53	629,380.38	32° 40' 19.033 N	104° 2' 49.946 W
8,895.0	87.30	74.20	8,076.7	994.5	735.3	608,334.36	629,470.00	32° 40' 19.306 N	104° 2' 48.897 W



Survey Report - Geographic



Company: Mewbourne Oil Company
Project: Eddy County, New Mexico (Nad 83)
Site: Sec 11, T19S, R29E
Well: Sapphire 11/12 B2KK State Com #1H
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Sapphire 11/12 B2KK State Com #1H
TVD Reference: WELL @ 3404.0usft (Patterson #230)
MD Reference: WELL @ 3404.0usft (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
8,990.0	88.60	75.10	8,080.1	1,019.6	826.8	608,359.49	629,561.55	32° 40' 19.553 N	104° 2' 47.825 W
9,084.0	91.30	77.90	8,080.1	1,041.5	918.2	608,381.43	629,652.94	32° 40' 19.767 N	104° 2' 46.755 W
9,179.0	92.20	80.80	8,077.2	1,059.1	1,011.5	608,398.98	629,746.25	32° 40' 19.938 N	104° 2' 45.663 W
9,273.0	92.80	82.70	8,073.1	1,072.5	1,104.5	608,412.45	629,839.18	32° 40' 20.069 N	104° 2' 44.575 W
9,367.0	91.20	83.90	8,069.9	1,083.5	1,197.8	608,423.41	629,932.48	32° 40' 20.175 N	104° 2' 43.483 W
9,461.0	89.70	86.70	8,069.1	1,091.2	1,291.4	608,431.11	630,026.15	32° 40' 20.249 N	104° 2' 42.387 W
9,555.0	88.60	89.20	8,070.5	1,094.6	1,385.4	608,434.47	630,120.07	32° 40' 20.280 N	104° 2' 41.288 W
9,649.0	87.40	87.40	8,073.8	1,097.4	1,479.3	608,437.26	630,213.96	32° 40' 20.305 N	104° 2' 40.190 W
9,744.0	88.30	87.80	8,077.4	1,101.3	1,574.1	608,441.24	630,308.81	32° 40' 20.341 N	104° 2' 39.080 W
9,838.0	87.10	88.00	8,081.1	1,104.8	1,668.0	608,444.68	630,402.67	32° 40' 20.373 N	104° 2' 37.982 W
9,933.0	88.60	89.40	8,084.7	1,106.9	1,762.9	608,446.83	630,497.57	32° 40' 20.392 N	104° 2' 36.871 W
10,028.0	88.20	90.60	8,087.3	1,106.9	1,857.8	608,446.83	630,592.53	32° 40' 20.389 N	104° 2' 35.760 W
10,122.0	91.00	92.50	8,088.0	1,104.4	1,951.8	608,444.29	630,686.48	32° 40' 20.361 N	104° 2' 34.661 W
10,217.0	90.60	91.70	8,086.7	1,100.9	2,046.7	608,440.81	630,781.41	32° 40' 20.324 N	104° 2' 33.551 W
10,312.0	89.50	91.80	8,086.6	1,098.0	2,141.7	608,437.91	630,876.36	32° 40' 20.293 N	104° 2' 32.440 W
10,406.0	91.00	91.30	8,086.2	1,095.5	2,235.6	608,435.36	630,970.33	32° 40' 20.265 N	104° 2' 31.341 W
10,501.0	90.90	89.40	8,084.6	1,094.9	2,330.6	608,434.78	631,065.31	32° 40' 20.257 N	104° 2' 30.229 W
10,595.0	90.80	89.90	8,083.2	1,095.5	2,424.6	608,435.36	631,159.29	32° 40' 20.260 N	104° 2' 29.130 W
10,689.0	90.00	90.40	8,082.6	1,095.2	2,518.6	608,435.11	631,253.29	32° 40' 20.255 N	104° 2' 28.030 W
10,784.0	88.00	89.70	8,084.2	1,095.1	2,613.6	608,435.03	631,348.27	32° 40' 20.252 N	104° 2' 26.919 W
10,878.0	86.90	89.20	8,088.4	1,096.0	2,707.5	608,435.93	631,442.17	32° 40' 20.258 N	104° 2' 25.820 W
10,973.0	86.40	89.20	8,093.9	1,097.4	2,802.3	608,437.25	631,537.00	32° 40' 20.269 N	104° 2' 24.711 W
11,068.0	87.50	89.50	8,099.0	1,098.4	2,897.2	608,438.33	631,631.86	32° 40' 20.277 N	104° 2' 23.601 W
11,162.0	90.20	90.40	8,100.9	1,098.5	2,991.1	608,438.41	631,725.83	32° 40' 20.275 N	104° 2' 22.502 W
11,256.0	90.80	89.90	8,100.1	1,098.3	3,085.1	608,438.17	631,819.82	32° 40' 20.270 N	104° 2' 21.402 W
11,351.0	90.30	89.40	8,099.2	1,098.8	3,180.1	608,438.75	631,914.82	32° 40' 20.273 N	104° 2' 20.291 W
11,446.0	89.10	88.80	8,099.7	1,100.3	3,275.1	608,440.24	632,009.80	32° 40' 20.285 N	104° 2' 19.179 W
11,540.0	88.30	88.70	8,101.8	1,102.4	3,369.1	608,442.29	632,103.76	32° 40' 20.303 N	104° 2' 18.080 W
11,635.0	88.50	88.80	8,104.4	1,104.5	3,464.0	608,444.36	632,198.70	32° 40' 20.321 N	104° 2' 16.969 W
11,730.0	89.30	90.90	8,106.3	1,104.7	3,559.0	608,444.61	632,293.67	32° 40' 20.321 N	104° 2' 15.858 W
11,824.0	88.50	90.80	8,108.1	1,103.3	3,652.9	608,443.21	632,387.64	32° 40' 20.304 N	104° 2' 14.759 W
11,918.0	87.80	91.10	8,111.1	1,101.8	3,746.9	608,441.66	632,481.58	32° 40' 20.286 N	104° 2' 13.660 W
12,013.0	88.80	90.90	8,113.9	1,100.1	3,841.8	608,440.00	632,576.52	32° 40' 20.267 N	104° 2' 12.549 W
12,107.0	90.60	90.90	8,114.4	1,098.6	3,935.8	608,438.52	632,670.51	32° 40' 20.250 N	104° 2' 11.450 W
12,202.0	90.80	90.40	8,113.2	1,097.5	4,030.8	608,437.45	632,765.49	32° 40' 20.237 N	104° 2' 10.338 W
12,296.0	91.60	89.90	8,111.3	1,097.3	4,124.8	608,437.20	632,859.47	32° 40' 20.232 N	104° 2' 9.239 W
12,391.0	90.40	90.10	8,109.6	1,097.3	4,219.8	608,437.20	632,954.45	32° 40' 20.229 N	104° 2' 8.128 W
12,485.0	88.90	90.60	8,110.2	1,096.7	4,313.7	608,436.63	633,048.45	32° 40' 20.221 N	104° 2' 7.028 W
12,580.0	88.50	90.40	8,112.4	1,095.9	4,408.7	608,435.80	633,143.42	32° 40' 20.210 N	104° 2' 5.917 W
12,675.0	88.50	90.10	8,114.8	1,095.5	4,503.7	608,435.38	633,238.39	32° 40' 20.203 N	104° 2' 4.806 W
12,769.0	88.40	89.00	8,117.4	1,096.2	4,597.6	608,436.12	633,332.35	32° 40' 20.208 N	104° 2' 3.707 W
12,863.0	88.60	88.70	8,119.8	1,098.1	4,691.6	608,438.01	633,426.30	32° 40' 20.224 N	104° 2' 2.607 W
12,958.0	89.10	88.00	8,121.7	1,100.8	4,786.5	608,440.74	633,521.24	32° 40' 20.248 N	104° 2' 1.496 W
13,052.0	88.80	87.10	8,123.5	1,104.9	4,880.4	608,444.76	633,615.13	32° 40' 20.286 N	104° 2' 0.398 W
13,147.0	89.30	86.60	8,125.0	1,110.1	4,975.3	608,449.98	633,709.98	32° 40' 20.335 N	104° 1' 59.288 W
13,242.0	88.10	85.50	8,127.2	1,116.6	5,070.0	608,456.52	633,804.72	32° 40' 20.397 N	104° 1' 58.179 W
13,336.0	88.90	86.20	8,129.7	1,123.4	5,163.7	608,463.32	633,898.44	32° 40' 20.461 N	104° 1' 57.083 W
13,430.0	89.30	89.40	8,131.1	1,127.0	5,257.6	608,466.93	633,992.35	32° 40' 20.494 N	104° 1' 55.984 W
13,524.0	89.60	91.30	8,132.0	1,126.4	5,351.6	608,466.35	634,086.34	32° 40' 20.486 N	104° 1' 54.884 W
13,619.0	89.70	90.80	8,132.6	1,124.7	5,446.6	608,464.61	634,181.32	32° 40' 20.466 N	104° 1' 53.773 W
13,713.0	90.10	92.70	8,132.8	1,121.8	5,540.6	608,461.74	634,275.27	32° 40' 20.435 N	104° 1' 52.674 W
13,808.0	90.50	93.20	8,132.3	1,116.9	5,635.4	608,456.85	634,370.15	32° 40' 20.384 N	104° 1' 51.564 W
13,903.0	89.10	93.80	8,132.6	1,111.1	5,730.3	608,451.05	634,464.96	32° 40' 20.324 N	104° 1' 50.455 W
13,997.0	87.70	93.20	8,135.2	1,105.4	5,824.0	608,445.32	634,558.75	32° 40' 20.265 N	104° 1' 49.358 W
14,092.0	87.80	92.90	8,139.0	1,100.4	5,918.8	608,440.27	634,653.54	32° 40' 20.212 N	104° 1' 48.249 W



Survey Report - Geographic



Company:	Mewbourne Oil Company	Local Co-ordinate Reference:	Well Sapphire 11/12 B2KK State Com #1H
Project:	Eddy County, New Mexico (Nad 83)	TVD Reference:	WELL @ 3404.0usft (Patterson #230)
Site:	Sec 11, T19S, R29E	MD Reference:	WELL @ 3404.0usft (Patterson #230)
Well:	Sapphire 11/12 B2KK State Com #1H	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)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
14,186.0	88.20	92.20	8,142.3	1,096.2	6,012.7	608,436.09	634,747.39	32° 40' 20.168 N	104° 1' 47.151 W
14,281.0	88.60	91.10	8,144.9	1,093.4	6,107.6	608,433.35	634,842.31	32° 40' 20.138 N	104° 1' 46.041 W
14,375.0	88.80	90.60	8,147.0	1,092.1	6,201.6	608,431.96	634,936.28	32° 40' 20.122 N	104° 1' 44.942 W
14,439.0	89.00	89.90	8,148.3	1,091.8	6,265.6	608,431.68	635,000.27	32° 40' 20.117 N	104° 1' 44.193 W
14,510.0	89.00	89.90	8,149.5	1,091.9	6,336.6	608,431.80	635,071.25	32° 40' 20.116 N	104° 1' 43.363 W
TD @ 14510.0' MD / 8149.5' TVD									

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
432.1	432.1	3.9	1.1	Gyro Tie-in @ 432.0' MD / 432.0' TVD
14,510.0	8,149.5	1,091.9	6,336.6	TD @ 14510.0' MD / 8149.5' TVD