



DEC 05 2018

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BTA Oil Producers, LLC

Lea County, NM (NAD 83)

Sec 27, T25-S, R33-E

Rojo 7811 27 Fed Com #12H

Wellbore #1

Design: Wellbore #1

Survey Report - Geographic

18 June, 2018





Survey Report - Geographic



Company: BTA Oil Producers, LLC
Project: Lea County, NM (NAD 83)
Site: Sec 27, T25-S, R33-E
Well: Rojo 7811 27 Fed Com #12H
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Rojo 7811 27 Fed Com #12H
TVD Reference: WELL @ 3369.0usft
MD Reference: WELL @ 3369.0usft
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM 5000.1 Single User Db

Project Lea County, NM (NAD 83)

Map System: US State Plane 1983
Geo Datum: North American Datum 1983
Map Zone: New Mexico Eastern Zone

System Datum: Mean Sea Level

Site Sec 27, T25-S, R33-E

Site Position: Northing: 403,958.90 usft Latitude: 32° 6' 29.435 N
From: Map Easting: 782,026.00 usft Longitude: 103° 33' 21.547 W
Position Uncertainty: 0.0 usft Slot Radius: 13-3/16 " Grid Convergence: 0.41 °

Well Rojo 7811 27 Fed Com #12H

Well Position +N/-S 0.0 usft Northing: 403,959.00 usft Latitude: 32° 6' 29.434 N
 +E/-W 0.0 usft Easting: 782,056.00 usft Longitude: 103° 33' 21.198 W
Position Uncertainty 0.0 usft Wellhead Elevation: usft Ground Level: 3,344.0 usft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	3/31/2018	6.85	59.95	47,790.74068374

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	183.52

Survey Program Date 6/14/2018

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
160.0	17,370.0	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	403,959.00	782,056.00	32° 6' 29.434 N	103° 33' 21.198 W
160.0	0.80	82.40	160.0	0.1	1.1	403,959.15	782,057.10	32° 6' 29.436 N	103° 33' 21.185 W
First MWD Survey @ 160.0' MD / 160.0' TVD									
252.0	0.60	69.60	252.0	0.4	2.2	403,959.40	782,058.19	32° 6' 29.438 N	103° 33' 21.173 W
339.0	0.80	106.50	339.0	0.4	3.2	403,959.39	782,059.20	32° 6' 29.438 N	103° 33' 21.161 W
428.0	0.60	111.70	428.0	0.0	4.2	403,959.04	782,060.23	32° 6' 29.434 N	103° 33' 21.149 W
516.0	0.50	117.70	516.0	-0.3	5.0	403,958.69	782,061.00	32° 6' 29.431 N	103° 33' 21.140 W
604.0	0.40	80.40	604.0	-0.4	5.6	403,958.56	782,061.64	32° 6' 29.430 N	103° 33' 21.133 W
698.0	0.40	87.50	698.0	-0.4	6.3	403,958.63	782,062.29	32° 6' 29.430 N	103° 33' 21.125 W
792.0	0.20	37.50	792.0	-0.2	6.7	403,958.77	782,062.72	32° 6' 29.432 N	103° 33' 21.120 W
887.0	0.40	67.40	887.0	0.0	7.1	403,959.03	782,063.13	32° 6' 29.434 N	103° 33' 21.115 W
982.0	0.30	12.90	982.0	0.4	7.5	403,959.40	782,063.49	32° 6' 29.438 N	103° 33' 21.111 W



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Local Co-ordinate Reference: Well Rojo 7811 27 Fed Com #12H
TVD Reference: WELL @ 3369.0usft
MD Reference: WELL @ 3369.0usft
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
1,076.0	0.30	31.40	1,076.0	0.9	7.7	403,959.85	782,063.67	32° 6' 29.442 N	103° 33' 21.109 W
1,171.0	0.40	19.60	1,171.0	1.4	7.9	403,960.38	782,063.91	32° 6' 29.447 N	103° 33' 21.106 W
1,264.0	0.80	14.50	1,264.0	2.3	8.2	403,961.31	782,064.18	32° 6' 29.457 N	103° 33' 21.103 W
1,454.0	0.60	9.80	1,453.9	4.6	8.7	403,963.58	782,064.69	32° 6' 29.479 N	103° 33' 21.097 W
1,645.0	0.60	29.60	1,644.9	6.4	9.4	403,965.43	782,065.35	32° 6' 29.497 N	103° 33' 21.089 W
1,835.0	0.60	37.00	1,834.9	8.1	10.4	403,967.09	782,066.44	32° 6' 29.514 N	103° 33' 21.076 W
2,025.0	0.50	29.50	2,024.9	9.6	11.5	403,968.61	782,067.45	32° 6' 29.529 N	103° 33' 21.064 W
2,216.0	0.70	43.20	2,215.9	11.2	12.7	403,970.18	782,068.66	32° 6' 29.544 N	103° 33' 21.050 W
2,406.0	0.80	50.90	2,405.9	12.9	14.5	403,971.87	782,070.48	32° 6' 29.561 N	103° 33' 21.029 W
2,596.0	1.10	39.10	2,595.9	15.1	16.7	403,974.12	782,072.66	32° 6' 29.583 N	103° 33' 21.003 W
2,784.0	1.00	45.30	2,783.8	17.7	19.0	403,976.67	782,074.96	32° 6' 29.608 N	103° 33' 20.976 W
2,975.0	1.20	50.20	2,974.8	20.1	21.7	403,979.12	782,077.69	32° 6' 29.632 N	103° 33' 20.945 W
3,165.0	1.80	50.00	3,164.7	23.3	25.5	403,982.32	782,081.50	32° 6' 29.663 N	103° 33' 20.900 W
3,259.0	1.20	53.20	3,258.7	24.9	27.4	403,983.85	782,083.42	32° 6' 29.678 N	103° 33' 20.877 W
3,354.0	0.20	50.60	3,353.7	25.6	28.3	403,984.56	782,084.34	32° 6' 29.685 N	103° 33' 20.867 W
3,447.0	0.80	66.60	3,446.7	25.9	29.1	403,984.92	782,085.06	32° 6' 29.689 N	103° 33' 20.858 W
3,541.0	1.50	278.50	3,540.7	26.4	28.5	403,985.36	782,084.45	32° 6' 29.693 N	103° 33' 20.865 W
3,637.0	3.80	277.70	3,636.6	27.0	24.1	403,985.97	782,080.05	32° 6' 29.700 N	103° 33' 20.916 W
3,732.0	2.80	274.30	3,731.4	27.6	18.6	403,986.57	782,074.62	32° 6' 29.706 N	103° 33' 20.980 W
3,827.0	3.80	278.90	3,826.2	28.2	13.2	403,987.23	782,069.20	32° 6' 29.713 N	103° 33' 21.043 W
3,921.0	4.60	285.80	3,920.0	29.7	6.5	403,988.74	782,062.49	32° 6' 29.728 N	103° 33' 21.120 W
4,016.0	3.90	283.80	4,014.7	31.5	-0.3	403,990.54	782,055.69	32° 6' 29.746 N	103° 33' 21.199 W
4,111.0	3.60	279.60	4,109.5	32.8	-6.4	403,991.81	782,049.61	32° 6' 29.759 N	103° 33' 21.270 W
4,206.0	3.30	280.50	4,204.4	33.8	-12.0	403,992.81	782,043.98	32° 6' 29.770 N	103° 33' 21.335 W
4,301.0	2.90	278.00	4,299.2	34.6	-17.1	403,993.64	782,038.91	32° 6' 29.778 N	103° 33' 21.394 W
4,396.0	1.90	283.80	4,394.1	35.4	-21.0	403,994.35	782,035.00	32° 6' 29.786 N	103° 33' 21.439 W
4,492.0	3.30	293.00	4,490.0	36.8	-25.1	403,995.81	782,030.91	32° 6' 29.800 N	103° 33' 21.487 W
4,586.0	3.50	296.50	4,583.9	39.1	-30.1	403,998.15	782,025.86	32° 6' 29.824 N	103° 33' 21.545 W
4,681.0	2.40	306.10	4,678.7	41.6	-34.3	404,000.61	782,021.65	32° 6' 29.849 N	103° 33' 21.594 W
4,775.0	2.10	300.40	4,772.7	43.6	-37.4	404,002.64	782,018.58	32° 6' 29.869 N	103° 33' 21.630 W
4,870.0	1.90	295.10	4,867.6	45.2	-40.3	404,004.19	782,015.65	32° 6' 29.884 N	103° 33' 21.664 W
4,929.0	1.80	296.50	4,926.6	46.0	-42.1	404,005.02	782,013.94	32° 6' 29.893 N	103° 33' 21.683 W
5,039.0	1.90	294.70	5,036.5	47.6	-45.3	404,006.55	782,010.73	32° 6' 29.908 N	103° 33' 21.721 W
5,134.0	4.30	301.90	5,131.4	50.1	-49.7	404,009.10	782,006.28	32° 6' 29.934 N	103° 33' 21.772 W
5,229.0	4.80	304.20	5,226.1	54.2	-56.0	404,013.21	781,999.97	32° 6' 29.975 N	103° 33' 21.845 W
5,324.0	4.70	305.10	5,320.7	58.7	-62.5	404,017.68	781,993.50	32° 6' 30.019 N	103° 33' 21.920 W
5,419.0	4.80	306.30	5,415.4	63.3	-68.9	404,022.27	781,987.11	32° 6' 30.065 N	103° 33' 21.994 W
5,514.0	4.80	306.90	5,510.1	68.0	-75.3	404,027.01	781,980.73	32° 6' 30.113 N	103° 33' 22.068 W
5,608.0	4.80	309.10	5,603.8	72.9	-81.5	404,031.86	781,974.53	32° 6' 30.161 N	103° 33' 22.139 W
5,703.0	5.50	289.80	5,698.4	76.9	-88.8	404,035.91	781,967.16	32° 6' 30.202 N	103° 33' 22.225 W
5,798.0	5.70	286.10	5,792.9	79.8	-97.7	404,038.76	781,958.34	32° 6' 30.231 N	103° 33' 22.327 W
5,893.0	5.70	287.20	5,887.5	82.5	-106.7	404,041.46	781,949.30	32° 6' 30.258 N	103° 33' 22.432 W
5,987.0	5.70	287.20	5,981.0	85.2	-115.6	404,044.22	781,940.39	32° 6' 30.286 N	103° 33' 22.535 W
6,082.0	5.60	286.50	6,075.5	87.9	-124.6	404,046.93	781,931.44	32° 6' 30.313 N	103° 33' 22.639 W
6,177.0	5.60	287.00	6,170.1	90.6	-133.4	404,049.60	781,922.56	32° 6' 30.340 N	103° 33' 22.742 W
6,272.0	5.70	287.50	6,264.6	93.4	-142.4	404,052.38	781,913.63	32° 6' 30.368 N	103° 33' 22.846 W
6,367.0	5.60	287.70	6,359.2	96.2	-151.3	404,055.20	781,904.71	32° 6' 30.397 N	103° 33' 22.949 W
6,461.0	5.60	288.60	6,452.7	99.1	-160.0	404,058.06	781,895.99	32° 6' 30.426 N	103° 33' 23.050 W
6,556.0	5.80	289.10	6,547.2	102.1	-168.9	404,061.11	781,887.07	32° 6' 30.457 N	103° 33' 23.154 W
6,651.0	5.70	289.80	6,641.8	105.3	-177.9	404,064.28	781,878.09	32° 6' 30.489 N	103° 33' 23.258 W
6,747.0	5.40	290.70	6,737.3	108.5	-186.6	404,067.49	781,869.38	32° 6' 30.521 N	103° 33' 23.359 W
6,842.0	5.30	292.30	6,831.9	111.7	-194.9	404,070.74	781,861.14	32° 6' 30.554 N	103° 33' 23.454 W
6,937.0	5.00	294.00	6,926.5	115.1	-202.7	404,074.09	781,853.30	32° 6' 30.588 N	103° 33' 23.545 W
7,032.0	4.60	294.20	7,021.2	118.3	-210.0	404,077.33	781,846.04	32° 6' 30.620 N	103° 33' 23.629 W
7,127.0	4.40	294.40	7,115.9	121.4	-216.7	404,080.40	781,839.25	32° 6' 30.651 N	103° 33' 23.708 W



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Project:	Lea County, NM (NAD 83)	TVD Reference:	WELL @ 3369.0usft
	Sec 27, T25-S, R33-E	MD Reference:	WELL @ 3369.0usft
	Rojo 7811 27 Fed Com #12H	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
7,222.0	4.20	294.90	7,210.6	124.4	-223.2	404,083.37	781,832.77	32° 6' 30.681 N	103° 33' 23.783 W
7,317.0	4.20	295.40	7,305.4	127.3	-229.5	404,086.32	781,826.48	32° 6' 30.711 N	103° 33' 23.856 W
7,412.0	4.00	297.20	7,400.1	130.3	-235.6	404,089.33	781,820.39	32° 6' 30.741 N	103° 33' 23.927 W
7,507.0	3.90	297.90	7,494.9	133.4	-241.4	404,092.36	781,814.58	32° 6' 30.771 N	103° 33' 23.994 W
7,602.0	3.60	296.60	7,589.7	136.2	-246.9	404,095.20	781,809.06	32° 6' 30.800 N	103° 33' 24.058 W
7,697.0	3.50	294.00	7,684.5	138.7	-252.3	404,097.72	781,803.75	32° 6' 30.825 N	103° 33' 24.119 W
7,792.0	3.30	290.90	7,779.3	140.9	-257.5	404,099.87	781,798.54	32° 6' 30.847 N	103° 33' 24.180 W
7,887.0	3.30	288.60	7,874.2	142.7	-262.6	404,101.72	781,793.40	32° 6' 30.865 N	103° 33' 24.239 W
7,982.0	3.30	288.90	7,969.0	144.5	-267.8	404,103.48	781,788.22	32° 6' 30.883 N	103° 33' 24.299 W
8,075.0	3.20	287.00	8,061.9	146.1	-272.8	404,105.11	781,783.20	32° 6' 30.900 N	103° 33' 24.358 W
8,171.0	3.10	289.10	8,157.7	147.7	-277.8	404,106.74	781,778.19	32° 6' 30.916 N	103° 33' 24.416 W
8,265.0	2.90	289.80	8,251.6	149.4	-282.4	404,108.38	781,773.55	32° 6' 30.933 N	103° 33' 24.470 W
8,359.0	2.80	290.10	8,345.5	151.0	-286.8	404,109.97	781,769.16	32° 6' 30.949 N	103° 33' 24.520 W
8,454.0	3.30	292.10	8,440.4	152.8	-291.6	404,111.80	781,764.44	32° 6' 30.967 N	103° 33' 24.575 W
8,549.0	3.80	295.60	8,535.2	155.2	-296.9	404,114.19	781,759.07	32° 6' 30.991 N	103° 33' 24.637 W
8,642.0	3.30	294.70	8,628.0	157.6	-302.1	404,116.64	781,753.86	32° 6' 31.016 N	103° 33' 24.698 W
8,737.0	3.10	289.60	8,722.8	159.6	-307.0	404,118.64	781,748.96	32° 6' 31.036 N	103° 33' 24.755 W
8,833.0	2.80	285.60	8,818.7	161.1	-311.7	404,120.14	781,744.25	32° 6' 31.051 N	103° 33' 24.809 W
8,927.0	2.60	284.00	8,912.6	162.3	-316.0	404,121.27	781,739.97	32° 6' 31.063 N	103° 33' 24.859 W
9,022.0	2.50	281.70	9,007.5	163.2	-320.1	404,122.22	781,735.85	32° 6' 31.072 N	103° 33' 24.907 W
9,118.0	2.50	279.80	9,103.4	164.0	-324.3	404,123.00	781,731.74	32° 6' 31.080 N	103° 33' 24.954 W
9,213.0	2.40	282.20	9,198.3	164.8	-328.2	404,123.77	781,727.75	32° 6' 31.088 N	103° 33' 25.001 W
9,307.0	2.50	281.40	9,292.3	165.6	-332.2	404,124.59	781,723.82	32° 6' 31.097 N	103° 33' 25.046 W
9,401.0	1.90	272.90	9,386.2	166.1	-335.7	404,125.08	781,720.25	32° 6' 31.102 N	103° 33' 25.088 W
9,496.0	1.80	343.90	9,481.1	167.6	-337.7	404,126.59	781,718.27	32° 6' 31.117 N	103° 33' 25.111 W
9,591.0	1.70	335.90	9,576.1	170.3	-338.7	404,129.31	781,717.28	32° 6' 31.144 N	103° 33' 25.122 W
9,685.0	1.30	337.30	9,670.1	172.6	-339.7	404,131.56	781,716.30	32° 6' 31.166 N	103° 33' 25.133 W
9,780.0	1.20	325.30	9,765.0	174.4	-340.7	404,133.38	781,715.31	32° 6' 31.184 N	103° 33' 25.144 W
9,874.0	0.80	328.60	9,859.0	175.7	-341.6	404,134.75	781,714.41	32° 6' 31.198 N	103° 33' 25.155 W
9,968.0	1.50	305.60	9,953.0	177.0	-342.9	404,136.02	781,713.07	32° 6' 31.210 N	103° 33' 25.170 W
10,063.0	2.20	265.50	10,048.0	177.6	-345.8	404,136.60	781,710.24	32° 6' 31.216 N	103° 33' 25.203 W
10,193.0	3.20	266.10	10,177.8	177.2	-351.9	404,136.16	781,704.13	32° 6' 31.212 N	103° 33' 25.274 W
10,287.0	3.20	300.00	10,271.7	178.3	-356.8	404,137.29	781,699.24	32° 6' 31.224 N	103° 33' 25.331 W
10,382.0	2.90	315.10	10,366.5	181.3	-360.7	404,140.32	781,695.25	32° 6' 31.254 N	103° 33' 25.377 W
10,477.0	1.90	323.70	10,461.5	184.3	-363.4	404,143.29	781,692.62	32° 6' 31.284 N	103° 33' 25.407 W
10,571.0	1.80	316.70	10,555.4	186.6	-365.3	404,145.62	781,690.69	32° 6' 31.307 N	103° 33' 25.430 W
10,667.0	1.10	7.70	10,651.4	188.6	-366.2	404,147.63	781,689.78	32° 6' 31.327 N	103° 33' 25.440 W
10,762.0	0.60	80.40	10,746.4	189.6	-365.6	404,148.62	781,690.39	32° 6' 31.337 N	103° 33' 25.433 W
10,855.0	0.90	105.10	10,839.4	189.5	-364.4	404,148.51	781,691.57	32° 6' 31.336 N	103° 33' 25.419 W
10,950.0	1.60	88.50	10,934.3	189.4	-362.4	404,148.35	781,693.62	32° 6' 31.334 N	103° 33' 25.395 W
11,045.0	0.90	101.40	11,029.3	189.2	-360.3	404,148.24	781,695.68	32° 6' 31.333 N	103° 33' 25.372 W
11,140.0	0.20	200.00	11,124.3	188.9	-359.6	404,147.94	781,696.35	32° 6' 31.330 N	103° 33' 25.364 W
11,235.0	0.30	252.70	11,219.3	188.7	-359.9	404,147.71	781,696.06	32° 6' 31.327 N	103° 33' 25.367 W
11,330.0	0.70	276.40	11,314.3	188.7	-360.8	404,147.70	781,695.24	32° 6' 31.327 N	103° 33' 25.377 W
11,425.0	2.10	259.00	11,409.3	188.4	-363.0	404,147.43	781,692.96	32° 6' 31.325 N	103° 33' 25.403 W
11,520.0	2.80	255.50	11,504.2	187.5	-367.0	404,146.52	781,689.00	32° 6' 31.316 N	103° 33' 25.449 W
11,615.0	1.40	263.80	11,599.1	186.8	-370.4	404,145.81	781,685.60	32° 6' 31.309 N	103° 33' 25.489 W
11,711.0	1.20	216.90	11,695.1	185.9	-372.2	404,144.88	781,683.83	32° 6' 31.300 N	103° 33' 25.510 W
11,806.0	1.60	197.30	11,790.1	183.8	-373.2	404,142.82	781,682.84	32° 6' 31.280 N	103° 33' 25.521 W
11,903.0	6.40	170.30	11,886.8	177.2	-372.6	404,136.19	781,683.35	32° 6' 31.214 N	103° 33' 25.516 W
11,998.0	18.90	170.40	11,979.3	156.7	-369.2	404,115.72	781,686.82	32° 6' 31.011 N	103° 33' 25.477 W
12,093.0	28.00	174.10	12,066.4	119.3	-364.3	404,078.29	781,691.69	32° 6' 30.641 N	103° 33' 25.424 W
12,189.0	34.50	175.40	12,148.4	69.7	-359.8	404,028.72	781,696.19	32° 6' 30.150 N	103° 33' 25.376 W
12,284.0	40.10	175.00	12,224.0	12.4	-355.0	403,971.38	781,701.02	32° 6' 29.582 N	103° 33' 25.324 W
12,379.0	45.60	179.10	12,293.6	-52.1	-351.8	403,906.90	781,704.22	32° 6' 28.944 N	103° 33' 25.292 W



Survey Report - Geographic



Company: BTA Oil Producers, LLC
Project: Lea County, NM (NAD 83)
Site: Sec 27, T25-S, R33-E
Well: Rojo 7811 27 Fed Com #12H
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Rojo 7811 27 Fed Com #12H
TVD Reference: WELL @ 3369.0usft
MD Reference: WELL @ 3369.0usft
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
12,467.9	51.68	182.02	12,352.3	-118.8	-352.5	403,840.22	781,703.49	32° 6' 28.284 N	103° 33' 25.306 W
Crossed 330° FNL @ 12467.9' MD / 12352.3' TVD									
12,474.0	52.10	182.20	12,356.1	-123.6	-352.7	403,835.43	781,703.32	32° 6' 28.237 N	103° 33' 25.309 W
12,498.0	54.80	182.20	12,370.4	-142.8	-353.4	403,816.16	781,702.58	32° 6' 28.046 N	103° 33' 25.319 W
12,593.0	60.80	181.00	12,421.0	-223.2	-355.6	403,735.84	781,700.36	32° 6' 27.252 N	103° 33' 25.352 W
12,688.0	77.80	180.60	12,454.4	-311.7	-356.9	403,647.31	781,699.14	32° 6' 26.376 N	103° 33' 25.373 W
12,782.0	86.00	179.10	12,467.7	-404.7	-356.6	403,554.33	781,699.40	32° 6' 25.455 N	103° 33' 25.378 W
12,877.0	85.00	177.80	12,475.1	-499.3	-354.0	403,459.66	781,701.96	32° 6' 24.518 N	103° 33' 25.356 W
12,971.0	84.80	177.50	12,483.5	-592.9	-350.2	403,366.11	781,705.80	32° 6' 23.593 N	103° 33' 25.319 W
13,065.0	87.80	178.20	12,489.6	-686.6	-346.7	403,272.39	781,709.32	32° 6' 22.665 N	103° 33' 25.286 W
13,159.0	89.60	180.10	12,491.7	-780.6	-345.3	403,178.43	781,710.71	32° 6' 21.735 N	103° 33' 25.278 W
13,253.0	89.80	179.60	12,492.2	-874.6	-345.0	403,084.43	781,710.95	32° 6' 20.805 N	103° 33' 25.283 W
13,347.0	88.80	179.10	12,493.3	-968.6	-344.0	402,990.45	781,712.02	32° 6' 19.875 N	103° 33' 25.278 W
13,441.0	89.00	178.70	12,495.1	-1,062.5	-342.2	402,896.48	781,713.83	32° 6' 18.945 N	103° 33' 25.265 W
13,535.0	89.30	178.20	12,496.5	-1,156.5	-339.6	402,802.53	781,716.37	32° 6' 18.015 N	103° 33' 25.244 W
13,629.0	90.00	177.80	12,497.1	-1,250.4	-336.3	402,708.59	781,719.65	32° 6' 17.085 N	103° 33' 25.213 W
13,723.0	89.80	177.10	12,497.3	-1,344.3	-332.2	402,614.68	781,723.83	32° 6' 16.156 N	103° 33' 25.173 W
13,817.0	90.50	179.90	12,497.0	-1,438.3	-329.7	402,520.72	781,726.29	32° 6' 15.226 N	103° 33' 25.152 W
13,912.0	89.70	179.90	12,496.9	-1,533.3	-329.5	402,425.72	781,726.46	32° 6' 14.286 N	103° 33' 25.158 W
14,005.0	88.60	178.90	12,498.2	-1,626.3	-328.6	402,332.74	781,727.43	32° 6' 13.365 N	103° 33' 25.154 W
14,100.0	88.90	178.40	12,500.3	-1,721.2	-326.3	402,237.79	781,729.67	32° 6' 12.426 N	103° 33' 25.136 W
14,194.0	89.30	178.50	12,501.8	-1,815.2	-323.8	402,143.84	781,732.21	32° 6' 11.496 N	103° 33' 25.115 W
14,288.0	90.10	178.00	12,502.3	-1,909.1	-320.9	402,049.88	781,735.08	32° 6' 10.566 N	103° 33' 25.089 W
14,382.0	89.50	177.10	12,502.6	-2,003.0	-316.9	401,955.97	781,739.10	32° 6' 9.636 N	103° 33' 25.050 W
14,476.0	89.80	180.10	12,503.2	-2,097.0	-314.6	401,862.01	781,741.40	32° 6' 8.706 N	103° 33' 25.031 W
14,570.0	89.30	179.80	12,503.9	-2,191.0	-314.5	401,768.02	781,741.48	32° 6' 7.776 N	103° 33' 25.038 W
14,664.0	89.40	179.10	12,505.0	-2,285.0	-313.6	401,674.03	781,742.38	32° 6' 6.846 N	103° 33' 25.036 W
14,757.0	88.30	182.60	12,506.8	-2,377.9	-315.0	401,581.07	781,741.00	32° 6' 5.926 N	103° 33' 25.060 W
14,852.0	88.10	182.20	12,509.8	-2,472.8	-319.0	401,486.20	781,737.02	32° 6' 4.988 N	103° 33' 25.114 W
14,946.0	90.40	184.00	12,511.1	-2,566.6	-324.1	401,392.36	781,731.94	32° 6' 4.060 N	103° 33' 25.181 W
15,040.0	90.30	183.10	12,510.5	-2,660.5	-329.9	401,298.54	781,726.12	32° 6' 3.132 N	103° 33' 25.256 W
15,134.0	90.40	181.90	12,509.9	-2,754.4	-334.0	401,204.63	781,722.02	32° 6' 2.203 N	103° 33' 25.312 W
15,228.0	91.50	182.60	12,508.4	-2,848.3	-337.7	401,110.72	781,718.33	32° 6' 1.274 N	103° 33' 25.362 W
15,322.0	91.20	180.50	12,506.1	-2,942.2	-340.2	401,016.79	781,715.79	32° 6' 0.344 N	103° 33' 25.400 W
15,416.0	87.10	177.10	12,507.5	-3,036.1	-338.2	400,922.85	781,717.76	32° 5' 59.415 N	103° 33' 25.385 W
15,511.0	86.80	176.90	12,512.6	-3,130.9	-333.3	400,828.12	781,722.72	32° 5' 58.477 N	103° 33' 25.335 W
15,605.0	86.50	176.40	12,518.1	-3,224.6	-327.8	400,734.44	781,728.20	32° 5' 57.550 N	103° 33' 25.279 W
15,699.0	87.60	177.60	12,522.9	-3,318.3	-322.9	400,640.69	781,733.12	32° 5' 56.622 N	103° 33' 25.230 W
15,793.0	87.10	178.50	12,527.3	-3,412.1	-319.7	400,546.85	781,736.31	32° 5' 55.693 N	103° 33' 25.201 W
15,888.0	90.80	179.40	12,529.0	-3,507.1	-317.9	400,451.90	781,738.05	32° 5' 54.753 N	103° 33' 25.188 W
15,982.0	90.80	178.70	12,527.7	-3,601.1	-316.4	400,357.92	781,739.61	32° 5' 53.823 N	103° 33' 25.178 W
16,076.0	87.70	177.50	12,528.9	-3,695.0	-313.3	400,263.99	781,742.73	32° 5' 52.893 N	103° 33' 25.150 W
16,170.0	91.50	179.80	12,529.6	-3,789.0	-311.1	400,170.05	781,744.94	32° 5' 51.964 N	103° 33' 25.132 W
16,263.0	88.60	178.70	12,529.5	-3,881.9	-309.8	400,077.07	781,746.16	32° 5' 51.043 N	103° 33' 25.126 W
16,358.0	95.10	183.10	12,526.4	-3,976.8	-311.3	399,982.20	781,744.67	32° 5' 50.105 N	103° 33' 25.151 W
16,452.0	93.60	182.40	12,519.3	-4,070.4	-315.8	399,888.58	781,740.18	32° 5' 49.179 N	103° 33' 25.211 W
16,546.0	92.20	181.50	12,514.5	-4,164.2	-319.0	399,794.76	781,736.98	32° 5' 48.251 N	103° 33' 25.256 W
16,639.0	93.60	181.20	12,509.8	-4,257.1	-321.2	399,701.91	781,734.79	32° 5' 47.332 N	103° 33' 25.289 W
16,733.0	91.30	178.70	12,505.8	-4,351.0	-321.1	399,608.01	781,734.88	32° 5' 46.403 N	103° 33' 25.296 W
16,827.0	91.80	178.70	12,503.3	-4,444.9	-319.0	399,514.07	781,737.01	32° 5' 45.473 N	103° 33' 25.279 W
16,921.0	91.10	178.00	12,500.9	-4,538.9	-316.3	399,420.14	781,739.72	32° 5' 44.543 N	103° 33' 25.255 W
17,015.0	91.10	177.50	12,499.1	-4,632.8	-312.6	399,326.23	781,743.41	32° 5' 43.614 N	103° 33' 25.220 W
17,109.0	90.60	177.10	12,497.7	-4,726.7	-308.2	399,232.34	781,747.83	32° 5' 42.684 N	103° 33' 25.177 W
17,116.1	90.77	177.18	12,497.6	-4,733.7	-307.8	399,225.25	781,748.19	32° 5' 42.614 N	103° 33' 25.173 W
Crossed 330° FSL @ 17116.1' MD / 12497.6' TVD									



Survey Report - Geographic



Company: BTA Oil Producers, LLC
Project: Lea County, NM (NAD 83)
Site: Sec 27, T25-S, R33-E
Well: Rojo 7811 27 Fed Com #12H
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Rojo 7811 27 Fed Com #12H
TVD Reference: WELL @ 3369.0usft
MD Reference: WELL @ 3369.0usft
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
17,203.0	92.80	178.20	12,494.9	-4,820.5	-304.3	399,138.47	781,751.69	32° 5' 41.755 N	103° 33' 25.140 W
17,297.0	89.20	174.80	12,493.3	-4,914.3	-298.6	399,044.69	781,757.42	32° 5' 40.827 N	103° 33' 25.081 W
17,314.0	89.90	174.30	12,493.4	-4,931.2	-297.0	399,027.77	781,759.04	32° 5' 40.659 N	103° 33' 25.064 W
17,370.0	89.90	174.30	12,493.5	-4,987.0	-291.4	398,972.04	781,764.60	32° 5' 40.107 N	103° 33' 25.004 W

TD @ 17370.0' MD / 12493.5' TVD

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N-S (usft)	+E-W (usft)	
160.0	160.0	0.1	1.1	First MWD Survey @ 160.0' MD / 160.0' TVD
12,467.9	12,352.3	-118.8	-352.5	Crossed 330' FNL @ 12467.9' MD / 12352.3' TVD
17,116.1	12,497.6	-4,733.7	-307.8	Crossed 330' FSL @ 17116.1' MD / 12497.6' TVD
17,370.0	12,493.5	-4,987.0	-291.4	TD @ 17370.0' MD / 12493.5' TVD

Checked By: _____ Approved By: _____ Date: _____