



BTA Oil Producers, LLC

Lea County, NM (NAD 83)
Sec 22, T25-S, R33-E
Rojo 7811 22 Fed Com #14Y

Wellbore #1

Design: Wellbore #1

Survey Report - Geographic

04 February, 2019

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Survey Report - Geographic



Company:	BTA Oil Producers, LLC	Local Co-ordinate Reference:	Well Rojo 7811 22 Fed Com #14Y
Project:	Lea County, NM (NAD 83)	TVD Reference:	WELL @ 3370.0usft (Patterson #566)
Site:	Sec 22, T25-S, R33-E	MD Reference:	WELL @ 3370.0usft (Patterson #566)
Well:	Rojo 7811 22 Fed Com #14Y	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Project	Lea County, NM (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, T25-S, R33-E			
Site Position:		Northing:	409,243.40 usft	Latitude: 32° 7' 21.790 N
From:	Map	Easting:	781,148.30 usft	Longitude: 103° 33' 31.310 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence: 0.41 °

Well	Rojo 7811 22 Fed Com #14Y			
Well Position	+N/-S	0.0 usft	Northing:	404,399.60 usft
	+E/-W	0.0 usft	Easting:	782,142.80 usft
Position Uncertainty	0.0 usft		Wellhead Elevation:	usft
			Ground Level:	3,345.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	1/3/2019	6.77	59.94	47,713.28957679

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	9.64	

Survey Program	Date 2/4/2019				
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
133.0	16,717.0	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	404,399.60	782,142.80	32° 6' 33.788 N	103° 33' 20.152 W
133.0	0.20	2.20	133.0	0.2	0.0	404,399.83	782,142.81	32° 6' 33.790 N	103° 33' 20.152 W
First MWD Survey @ 133.0' MD / 133.0' TVD									
228.0	0.40	313.00	228.0	0.6	-0.2	404,400.22	782,142.57	32° 6' 33.794 N	103° 33' 20.155 W
259.0	0.40	320.70	259.0	0.8	-0.4	404,400.38	782,142.42	32° 6' 33.796 N	103° 33' 20.157 W
351.0	0.30	299.10	351.0	1.1	-0.8	404,400.75	782,142.01	32° 6' 33.799 N	103° 33' 20.161 W
445.0	0.70	306.30	445.0	1.6	-1.5	404,401.21	782,141.33	32° 6' 33.804 N	103° 33' 20.169 W
539.0	0.60	124.50	539.0	1.7	-1.5	404,401.27	782,141.27	32° 6' 33.805 N	103° 33' 20.170 W
633.0	0.50	297.70	633.0	1.6	-1.5	404,401.18	782,141.32	32° 6' 33.804 N	103° 33' 20.169 W
728.0	0.40	305.90	728.0	2.0	-2.1	404,401.57	782,140.68	32° 6' 33.808 N	103° 33' 20.177 W
823.0	0.30	334.80	823.0	2.4	-2.5	404,401.99	782,140.31	32° 6' 33.812 N	103° 33' 20.181 W
919.0	0.20	347.80	919.0	2.8	-2.6	404,402.38	782,140.16	32° 6' 33.816 N	103° 33' 20.183 W



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 Project: Lea County, NM (NAD 83)
 Site: Sec 22, T25-S, R33-E
 Well: Rojo 7811 22 Fed Com #14Y
 Wellbore: Wellbore #1
 Design: Wellbore #1

Local Co-ordinate Reference: Well Rojo 7811 22 Fed Com #14Y
 TVD Reference: WELL @ 3370.0usft (Patterson #566)
 MD Reference: WELL @ 3370.0usft (Patterson #566)
 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
1,012.0	0.00	346.70	1,012.0	2.9	-2.7	404,402.54	782,140.13	32° 6' 33.817 N	103° 33' 20.183 W
1,027.0	0.10	266.40	1,027.0	2.9	-2.7	404,402.53	782,140.12	32° 6' 33.817 N	103° 33' 20.183 W
1,111.0	0.20	32.60	1,111.0	3.1	-2.7	404,402.65	782,140.12	32° 6' 33.818 N	103° 33' 20.183 W
1,206.0	0.30	71.40	1,206.0	3.3	-2.4	404,402.87	782,140.45	32° 6' 33.821 N	103° 33' 20.179 W
1,301.0	0.20	80.50	1,301.0	3.4	-2.0	404,402.98	782,140.85	32° 6' 33.822 N	103° 33' 20.175 W
1,396.0	0.40	115.20	1,396.0	3.3	-1.5	404,402.87	782,141.31	32° 6' 33.820 N	103° 33' 20.169 W
1,492.0	0.30	78.40	1,492.0	3.2	-0.9	404,402.77	782,141.86	32° 6' 33.819 N	103° 33' 20.163 W
1,587.0	0.10	162.30	1,587.0	3.1	-0.7	404,402.74	782,142.13	32° 6' 33.819 N	103° 33' 20.160 W
1,682.0	0.30	178.10	1,682.0	2.8	-0.6	404,402.42	782,142.16	32° 6' 33.816 N	103° 33' 20.159 W
1,777.0	0.10	146.30	1,777.0	2.5	-0.6	404,402.10	782,142.22	32° 6' 33.813 N	103° 33' 20.159 W
1,872.0	0.40	180.40	1,872.0	2.1	-0.5	404,401.70	782,142.26	32° 6' 33.809 N	103° 33' 20.158 W
1,966.0	0.70	153.80	1,966.0	1.3	-0.3	404,400.85	782,142.51	32° 6' 33.800 N	103° 33' 20.155 W
2,062.0	0.70	180.60	2,062.0	0.1	0.0	404,399.74	782,142.76	32° 6' 33.789 N	103° 33' 20.153 W
2,158.0	0.80	170.20	2,158.0	-1.1	0.1	404,398.50	782,142.87	32° 6' 33.777 N	103° 33' 20.151 W
2,253.0	0.80	175.50	2,252.9	-2.4	0.2	404,397.18	782,143.04	32° 6' 33.764 N	103° 33' 20.150 W
2,350.0	0.90	165.40	2,349.9	-3.8	0.5	404,395.77	782,143.28	32° 6' 33.750 N	103° 33' 20.147 W
2,445.0	0.90	156.80	2,444.9	-5.2	1.0	404,394.36	782,143.76	32° 6' 33.736 N	103° 33' 20.141 W
2,540.0	0.90	162.10	2,539.9	-6.6	1.5	404,392.97	782,144.29	32° 6' 33.722 N	103° 33' 20.135 W
2,635.0	1.10	158.80	2,634.9	-8.2	2.0	404,391.41	782,144.85	32° 6' 33.707 N	103° 33' 20.129 W
2,729.0	1.10	142.10	2,728.9	-9.7	2.9	404,389.85	782,145.73	32° 6' 33.691 N	103° 33' 20.119 W
2,825.0	1.50	140.50	2,824.9	-11.4	4.3	404,388.16	782,147.09	32° 6' 33.674 N	103° 33' 20.103 W
2,921.0	2.40	113.40	2,920.8	-13.2	6.9	404,386.39	782,149.74	32° 6' 33.657 N	103° 33' 20.073 W
3,015.0	4.90	102.70	3,014.6	-14.9	12.7	404,384.72	782,155.46	32° 6' 33.640 N	103° 33' 20.006 W
3,110.0	7.30	96.40	3,109.1	-16.4	22.6	404,383.16	782,165.42	32° 6' 33.624 N	103° 33' 19.891 W
3,205.0	8.20	95.10	3,203.2	-17.7	35.4	404,381.88	782,178.16	32° 6' 33.610 N	103° 33' 19.743 W
3,300.0	8.50	94.60	3,297.2	-18.9	49.1	404,380.72	782,191.91	32° 6' 33.598 N	103° 33' 19.583 W
3,394.0	8.40	92.80	3,390.2	-19.8	62.9	404,379.82	782,205.69	32° 6' 33.588 N	103° 33' 19.423 W
3,489.0	8.30	92.80	3,484.2	-20.4	76.7	404,379.15	782,219.47	32° 6' 33.580 N	103° 33' 19.263 W
3,585.0	7.70	95.00	3,579.2	-21.3	90.0	404,378.25	782,232.80	32° 6' 33.570 N	103° 33' 19.108 W
3,680.0	7.20	97.90	3,673.4	-22.7	102.2	404,376.88	782,245.04	32° 6' 33.556 N	103° 33' 18.966 W
3,776.0	6.50	99.90	3,768.7	-24.5	113.6	404,375.12	782,256.35	32° 6' 33.538 N	103° 33' 18.834 W
3,870.0	6.10	103.60	3,862.2	-26.6	123.6	404,373.03	782,266.44	32° 6' 33.516 N	103° 33' 18.717 W
3,965.0	5.80	103.20	3,956.7	-28.9	133.2	404,370.75	782,276.02	32° 6' 33.493 N	103° 33' 18.606 W
4,061.0	5.40	105.00	4,052.2	-31.1	142.3	404,368.47	782,285.11	32° 6' 33.470 N	103° 33' 18.500 W
4,156.0	4.80	107.10	4,146.8	-33.5	150.4	404,366.14	782,293.23	32° 6' 33.446 N	103° 33' 18.406 W
4,251.0	4.10	109.40	4,241.5	-35.8	157.4	404,363.85	782,300.23	32° 6' 33.423 N	103° 33' 18.325 W
4,347.0	4.90	102.20	4,337.2	-37.8	164.7	404,361.84	782,307.47	32° 6' 33.403 N	103° 33' 18.241 W
4,442.0	5.80	102.30	4,431.8	-39.6	173.3	404,359.96	782,316.13	32° 6' 33.383 N	103° 33' 18.140 W
4,537.0	5.90	100.60	4,526.3	-41.6	182.8	404,358.04	782,325.62	32° 6' 33.364 N	103° 33' 18.030 W
4,633.0	6.50	102.40	4,621.8	-43.6	193.0	404,355.96	782,335.78	32° 6' 33.342 N	103° 33' 17.912 W
4,728.0	7.10	104.10	4,716.1	-46.2	203.9	404,353.38	782,346.72	32° 6' 33.316 N	103° 33' 17.785 W
4,823.0	7.30	104.10	4,810.3	-49.1	215.5	404,350.48	782,358.27	32° 6' 33.287 N	103° 33' 17.651 W
4,918.0	6.60	103.60	4,904.7	-51.9	226.6	404,347.72	782,369.43	32° 6' 33.259 N	103° 33' 17.522 W
4,949.0	6.40	103.20	4,935.5	-52.7	230.0	404,346.91	782,372.84	32° 6' 33.250 N	103° 33' 17.482 W
5,080.0	7.00	103.20	5,065.6	-56.2	244.9	404,343.42	782,387.72	32° 6' 33.215 N	103° 33' 17.309 W
5,175.0	7.60	103.60	5,159.8	-59.0	256.7	404,340.62	782,399.47	32° 6' 33.186 N	103° 33' 17.173 W
5,269.0	7.80	102.50	5,252.9	-61.8	268.9	404,337.78	782,411.73	32° 6' 33.157 N	103° 33' 17.031 W
5,364.0	6.50	100.90	5,347.2	-64.2	280.5	404,335.37	782,423.31	32° 6' 33.132 N	103° 33' 16.896 W
5,460.0	6.50	103.20	5,442.6	-66.5	291.1	404,333.10	782,433.93	32° 6' 33.109 N	103° 33' 16.773 W
5,554.0	7.00	98.60	5,535.9	-68.6	302.0	404,331.03	782,444.78	32° 6' 33.088 N	103° 33' 16.647 W
5,649.0	5.10	108.00	5,630.4	-70.7	311.7	404,328.86	782,454.52	32° 6' 33.066 N	103° 33' 16.534 W
5,744.0	4.90	108.00	5,725.0	-73.3	319.6	404,326.30	782,462.39	32° 6' 33.040 N	103° 33' 16.443 W
5,839.0	5.00	108.80	5,819.7	-75.9	327.4	404,323.71	782,470.17	32° 6' 33.014 N	103° 33' 16.353 W
5,935.0	4.80	92.70	5,915.3	-77.4	335.3	404,322.17	782,478.14	32° 6' 32.998 N	103° 33' 16.260 W
6,030.0	4.70	89.20	6,010.0	-77.6	343.2	404,322.04	782,486.01	32° 6' 32.996 N	103° 33' 16.169 W



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Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Rojo 7811 22 Fed Com #14Y
TVD Reference: WELL @ 3370.0usft (Patterson #566)
MD Reference: WELL @ 3370.0usft (Patterson #566)
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
6,126.0	4.30	90.70	6,105.7	-77.5	350.7	404,322.05	782,493.54	32° 6' 32.996 N	103° 33' 16.081 W
6,220.0	4.50	86.30	6,199.4	-77.4	357.9	404,322.25	782,500.74	32° 6' 32.997 N	103° 33' 15.997 W
6,316.0	4.40	90.20	6,295.1	-77.1	365.4	404,322.48	782,508.18	32° 6' 32.999 N	103° 33' 15.911 W
6,411.0	4.30	87.00	6,389.9	-76.9	372.6	404,322.65	782,515.38	32° 6' 33.000 N	103° 33' 15.827 W
6,505.0	4.50	87.90	6,483.6	-76.6	379.8	404,322.97	782,522.59	32° 6' 33.003 N	103° 33' 15.743 W
6,601.0	4.70	95.80	6,579.3	-76.9	387.5	404,322.71	782,530.26	32° 6' 32.999 N	103° 33' 15.654 W
6,695.0	5.50	104.40	6,672.9	-78.4	395.7	404,321.20	782,538.46	32° 6' 32.984 N	103° 33' 15.559 W
6,790.0	5.50	104.10	6,767.5	-80.6	404.5	404,318.96	782,547.28	32° 6' 32.961 N	103° 33' 15.456 W
6,886.0	5.60	101.80	6,863.0	-82.7	413.5	404,316.88	782,556.33	32° 6' 32.940 N	103° 33' 15.351 W
6,981.0	5.40	105.50	6,957.6	-84.9	422.4	404,314.74	782,565.18	32° 6' 32.918 N	103° 33' 15.249 W
7,076.0	5.20	103.70	7,052.2	-87.1	430.9	404,312.52	782,573.67	32° 6' 32.896 N	103° 33' 15.150 W
7,171.0	5.20	109.50	7,146.8	-89.5	439.1	404,310.07	782,581.91	32° 6' 32.871 N	103° 33' 15.055 W
7,265.0	5.20	107.60	7,240.4	-92.2	447.2	404,307.36	782,589.98	32° 6' 32.843 N	103° 33' 14.961 W
7,361.0	5.20	113.60	7,336.0	-95.3	455.3	404,304.30	782,598.12	32° 6' 32.812 N	103° 33' 14.867 W
7,456.0	5.30	114.50	7,430.6	-98.8	463.3	404,300.76	782,606.05	32° 6' 32.777 N	103° 33' 14.775 W
7,549.0	4.60	102.00	7,523.3	-101.4	470.8	404,298.20	782,613.61	32° 6' 32.751 N	103° 33' 14.687 W
7,644.0	4.40	99.50	7,618.0	-102.8	478.1	404,296.81	782,620.93	32° 6' 32.737 N	103° 33' 14.602 W
7,739.0	4.00	103.40	7,712.7	-104.2	484.9	404,295.44	782,627.75	32° 6' 32.723 N	103° 33' 14.523 W
7,834.0	4.00	107.10	7,807.5	-105.9	491.3	404,293.70	782,634.14	32° 6' 32.705 N	103° 33' 14.449 W
7,929.0	4.40	92.50	7,902.2	-107.0	498.1	404,292.56	782,640.95	32° 6' 32.693 N	103° 33' 14.370 W
8,023.0	4.40	91.40	7,996.0	-107.3	505.4	404,292.32	782,648.15	32° 6' 32.690 N	103° 33' 14.286 W
8,118.0	4.60	93.40	8,090.7	-107.6	512.8	404,292.00	782,655.60	32° 6' 32.687 N	103° 33' 14.199 W
8,213.0	4.50	90.40	8,185.4	-107.8	520.3	404,291.75	782,663.13	32° 6' 32.684 N	103° 33' 14.112 W
8,308.0	4.50	92.80	8,280.1	-108.1	527.8	404,291.54	782,670.58	32° 6' 32.681 N	103° 33' 14.025 W
8,402.0	4.00	91.60	8,373.8	-108.3	534.7	404,291.27	782,677.54	32° 6' 32.678 N	103° 33' 13.944 W
8,497.0	3.80	96.50	8,468.6	-108.8	541.2	404,290.82	782,683.98	32° 6' 32.673 N	103° 33' 13.870 W
8,592.0	4.90	94.10	8,563.3	-109.4	548.4	404,290.17	782,691.15	32° 6' 32.666 N	103° 33' 13.786 W
8,687.0	5.00	96.90	8,658.0	-110.2	556.5	404,289.39	782,699.31	32° 6' 32.658 N	103° 33' 13.691 W
8,783.0	5.80	98.50	8,753.5	-111.4	565.5	404,288.17	782,708.26	32° 6' 32.645 N	103° 33' 13.587 W
8,878.0	5.20	101.60	8,848.1	-113.0	574.4	404,286.59	782,717.22	32° 6' 32.629 N	103° 33' 13.483 W
8,974.0	5.00	88.30	8,943.7	-113.8	582.9	404,285.84	782,725.67	32° 6' 32.621 N	103° 33' 13.385 W
9,069.0	5.80	86.00	9,038.3	-113.3	591.8	404,286.30	782,734.59	32° 6' 32.625 N	103° 33' 13.281 W
9,164.0	5.10	85.80	9,132.9	-112.7	600.8	404,286.94	782,743.59	32° 6' 32.630 N	103° 33' 13.177 W
9,260.0	5.10	79.80	9,228.5	-111.6	609.3	404,288.01	782,752.05	32° 6' 32.640 N	103° 33' 13.078 W
9,355.0	5.20	81.40	9,323.1	-110.2	617.7	404,289.40	782,760.46	32° 6' 32.653 N	103° 33' 12.980 W
9,451.0	5.50	83.00	9,418.7	-109.0	626.5	404,290.61	782,769.33	32° 6' 32.665 N	103° 33' 12.877 W
9,546.0	6.40	87.60	9,513.2	-108.2	636.3	404,291.39	782,779.14	32° 6' 32.672 N	103° 33' 12.763 W
9,642.0	6.10	88.10	9,608.6	-107.8	646.8	404,291.78	782,789.58	32° 6' 32.675 N	103° 33' 12.642 W
9,737.0	8.00	97.90	9,702.9	-108.6	658.4	404,291.04	782,801.18	32° 6' 32.667 N	103° 33' 12.507 W
9,833.0	7.90	102.50	9,798.0	-110.9	671.4	404,288.70	782,814.23	32° 6' 32.643 N	103° 33' 12.355 W
9,928.0	6.90	105.30	9,892.2	-113.8	683.3	404,285.78	782,826.11	32° 6' 32.613 N	103° 33' 12.218 W
10,023.0	5.20	114.30	9,986.6	-117.1	692.7	404,282.50	782,835.54	32° 6' 32.580 N	103° 33' 12.108 W
10,119.0	3.90	106.60	10,082.3	-119.8	699.8	404,279.78	782,842.64	32° 6' 32.552 N	103° 33' 12.026 W
10,214.0	4.50	92.30	10,177.1	-120.9	706.7	404,278.70	782,849.46	32° 6' 32.541 N	103° 33' 11.947 W
10,309.0	6.80	90.70	10,271.6	-121.1	716.0	404,278.49	782,858.80	32° 6' 32.538 N	103° 33' 11.838 W
10,405.0	6.50	92.50	10,367.0	-121.4	727.1	404,278.18	782,869.92	32° 6' 32.535 N	103° 33' 11.709 W
10,500.0	5.20	97.80	10,461.5	-122.2	736.8	404,277.36	782,879.55	32° 6' 32.526 N	103° 33' 11.597 W
10,596.0	6.00	94.60	10,557.0	-123.2	746.1	404,276.37	782,888.87	32° 6' 32.515 N	103° 33' 11.489 W
10,691.0	5.20	99.30	10,651.6	-124.3	755.3	404,275.27	782,898.06	32° 6' 32.504 N	103° 33' 11.382 W
10,787.0	6.60	99.50	10,747.1	-125.9	765.0	404,273.66	782,907.80	32° 6' 32.487 N	103° 33' 11.269 W
10,881.0	6.20	101.10	10,840.5	-127.8	775.3	404,271.79	782,918.11	32° 6' 32.468 N	103° 33' 11.149 W
10,977.0	4.70	95.50	10,936.0	-129.2	784.3	404,270.42	782,927.11	32° 6' 32.454 N	103° 33' 11.045 W
11,072.0	5.80	94.40	11,030.6	-129.9	793.0	404,269.68	782,935.77	32° 6' 32.446 N	103° 33' 10.944 W
11,167.0	6.20	100.10	11,125.1	-131.2	802.8	404,268.41	782,945.61	32° 6' 32.432 N	103° 33' 10.830 W
11,263.0	5.50	105.10	11,220.6	-133.3	812.4	404,266.30	782,955.15	32° 6' 32.411 N	103° 33' 10.719 W



Survey Report - Geographic



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Project: Lea County, NM (NAD 83)
Site: Sec 22, T25-S, R33-E
Well: Rojo 7811 22 Fed Com #14Y
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Rojo 7811 22 Fed Com #14Y
TVD Reference: WELL @ 3370.0usft (Patterson #566)
MD Reference: WELL @ 3370.0usft (Patterson #566)
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
11,362.0	4.20	108.00	11,319.3	-135.7	820.4	404,263.94	782,963.18	32° 6' 32.387 N	103° 33' 10.626 W
11,458.0	4.60	98.30	11,415.0	-137.3	827.5	404,262.30	782,970.33	32° 6' 32.370 N	103° 33' 10.543 W
11,553.0	6.10	93.70	11,509.6	-138.2	836.3	404,261.43	782,979.14	32° 6' 32.361 N	103° 33' 10.440 W
11,648.0	4.40	89.30	11,604.2	-138.5	845.0	404,261.14	782,987.82	32° 6' 32.358 N	103° 33' 10.340 W
11,744.0	3.10	86.90	11,700.0	-138.3	851.3	404,261.33	782,994.10	32° 6' 32.359 N	103° 33' 10.267 W
11,839.0	2.30	91.60	11,794.8	-138.2	855.8	404,261.42	782,998.57	32° 6' 32.359 N	103° 33' 10.215 W
11,902.0	2.50	95.70	11,857.8	-138.4	858.4	404,261.24	783,001.20	32° 6' 32.358 N	103° 33' 10.184 W
12,032.0	12.70	24.00	11,986.6	-125.5	867.1	404,274.06	783,009.86	32° 6' 32.484 N	103° 33' 10.082 W
12,126.0	25.20	16.60	12,075.4	-96.8	877.0	404,302.80	783,019.83	32° 6' 32.767 N	103° 33' 9.964 W
12,221.0	33.10	13.40	12,158.3	-52.1	888.8	404,347.49	783,031.63	32° 6' 33.209 N	103° 33' 9.823 W
12,316.0	38.60	9.10	12,235.3	2.4	899.5	404,402.03	783,042.34	32° 6' 33.748 N	103° 33' 9.694 W
12,411.0	44.80	3.10	12,306.2	65.2	906.1	404,464.80	783,048.85	32° 6' 34.368 N	103° 33' 9.613 W
12,481.2	47.93	0.44	12,354.6	116.0	907.6	404,515.57	783,050.39	32° 6' 34.871 N	103° 33' 9.591 W
330' HL Crossed @ 12481.2' MD / 12354.6' TVD									
12,505.0	49.00	359.60	12,370.4	133.8	907.6	404,533.39	783,050.39	32° 6' 35.047 N	103° 33' 9.589 W
12,569.0	55.40	357.50	12,409.6	184.3	906.3	404,583.91	783,049.07	32° 6' 35.547 N	103° 33' 9.600 W
12,635.0	57.90	356.00	12,445.9	239.3	903.1	404,638.94	783,045.94	32° 6' 36.092 N	103° 33' 9.632 W
12,729.0	66.90	355.30	12,489.4	322.3	896.8	404,721.92	783,039.61	32° 6' 36.913 N	103° 33' 9.699 W
12,823.0	80.50	357.50	12,515.7	412.1	891.2	404,811.75	783,034.01	32° 6' 37.803 N	103° 33' 9.756 W
12,917.0	87.40	1.30	12,525.6	505.5	890.3	404,905.14	783,033.06	32° 6' 38.727 N	103° 33' 9.759 W
13,011.0	90.40	0.80	12,527.4	599.5	892.0	404,999.10	783,034.78	32° 6' 39.656 N	103° 33' 9.732 W
13,105.0	92.40	359.20	12,525.1	693.5	892.0	405,093.06	783,034.78	32° 6' 40.586 N	103° 33' 9.724 W
13,199.0	93.50	358.70	12,520.3	787.3	890.3	405,186.92	783,033.06	32° 6' 41.515 N	103° 33' 9.736 W
13,293.0	94.40	358.90	12,513.8	881.1	888.3	405,280.68	783,031.09	32° 6' 42.443 N	103° 33' 9.751 W
13,387.0	95.50	358.50	12,505.7	974.7	886.2	405,374.30	783,028.97	32° 6' 43.370 N	103° 33' 9.767 W
13,481.0	90.40	359.00	12,500.9	1,068.5	884.1	405,468.12	783,026.92	32° 6' 44.298 N	103° 33' 9.783 W
13,576.0	90.40	358.30	12,500.2	1,163.5	881.9	405,563.09	783,024.69	32° 6' 45.238 N	103° 33' 9.801 W
13,669.0	92.50	359.60	12,497.9	1,256.4	880.2	405,656.04	783,022.98	32° 6' 46.158 N	103° 33' 9.813 W
13,763.0	90.60	0.10	12,495.3	1,350.4	879.9	405,750.00	783,022.74	32° 6' 47.088 N	103° 33' 9.808 W
13,857.0	92.40	4.70	12,492.9	1,444.3	883.9	405,843.86	783,026.67	32° 6' 48.016 N	103° 33' 9.755 W
13,951.0	87.10	0.40	12,493.3	1,538.1	888.1	405,937.71	783,030.85	32° 6' 48.945 N	103° 33' 9.698 W
14,045.0	86.80	0.10	12,498.3	1,632.0	888.5	406,031.57	783,031.26	32° 6' 49.873 N	103° 33' 9.685 W
14,139.0	88.20	359.40	12,502.4	1,725.9	888.1	406,125.48	783,030.85	32° 6' 50.803 N	103° 33' 9.682 W
14,233.0	88.40	0.40	12,505.2	1,819.8	887.9	406,219.44	783,030.68	32° 6' 51.732 N	103° 33' 9.676 W
14,327.0	90.10	0.30	12,506.4	1,913.8	888.5	406,313.43	783,031.26	32° 6' 52.662 N	103° 33' 9.662 W
14,420.0	88.60	355.30	12,507.4	2,006.7	884.9	406,406.32	783,027.69	32° 6' 53.582 N	103° 33' 9.695 W
14,514.0	87.70	350.90	12,510.5	2,100.0	873.6	406,499.57	783,016.41	32° 6' 54.505 N	103° 33' 9.819 W
14,607.0	89.00	350.90	12,513.2	2,191.8	858.9	406,591.36	783,001.70	32° 6' 55.415 N	103° 33' 9.982 W
14,701.0	91.30	354.30	12,512.9	2,285.0	846.8	406,684.55	782,989.60	32° 6' 56.338 N	103° 33' 10.115 W
14,795.0	88.30	355.70	12,513.2	2,378.6	838.6	406,778.18	782,981.41	32° 6' 57.265 N	103° 33' 10.202 W
14,889.0	89.10	0.10	12,515.4	2,472.5	835.2	406,872.07	782,977.97	32° 6' 58.194 N	103° 33' 10.234 W
14,983.0	89.10	358.70	12,516.9	2,566.5	834.2	406,966.05	782,976.98	32° 6' 59.124 N	103° 33' 10.238 W
15,077.0	90.60	3.40	12,517.1	2,660.4	835.9	407,060.01	782,978.70	32° 7' 0.054 N	103° 33' 10.210 W
15,171.0	89.20	359.60	12,517.3	2,754.4	838.4	407,153.95	782,981.16	32° 7' 0.983 N	103° 33' 10.173 W
15,265.0	88.50	6.60	12,519.1	2,848.1	843.4	407,247.74	782,986.24	32° 7' 1.911 N	103° 33' 10.106 W
15,358.0	89.10	6.90	12,521.1	2,940.5	854.4	407,340.07	782,997.17	32° 7' 2.824 N	103° 33' 9.972 W
15,452.0	88.50	4.50	12,523.1	3,034.0	863.7	407,433.58	783,006.50	32° 7' 3.748 N	103° 33' 9.855 W
15,545.0	85.90	0.80	12,527.6	3,126.7	868.0	407,526.35	783,010.80	32° 7' 4.666 N	103° 33' 9.797 W
15,639.0	86.30	0.60	12,534.0	3,220.5	869.1	407,620.12	783,011.95	32° 7' 5.594 N	103° 33' 9.776 W
15,734.0	86.40	0.40	12,540.1	3,315.3	870.0	407,714.92	783,012.77	32° 7' 6.532 N	103° 33' 9.759 W
15,828.0	89.70	1.70	12,543.3	3,409.2	871.7	407,808.84	783,014.50	32° 7' 7.461 N	103° 33' 9.731 W
15,921.0	88.50	1.50	12,544.7	3,502.2	874.3	407,901.79	783,017.09	32° 7' 8.381 N	103° 33' 9.693 W
16,015.0	90.40	3.10	12,545.6	3,596.1	878.1	407,995.70	783,020.87	32° 7' 9.310 N	103° 33' 9.641 W
16,109.0	90.00	2.20	12,545.3	3,690.0	882.4	408,089.60	783,025.21	32° 7' 10.239 N	103° 33' 9.582 W
16,203.0	91.20	1.70	12,544.3	3,783.9	885.6	408,183.54	783,028.41	32° 7' 11.168 N	103° 33' 9.537 W



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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
16,297.0	93.10	359.70	12,540.8	3,877.9	886.8	408,277.46	783,029.56	32° 7' 12.097 N	103° 33' 9.516 W
16,392.0	94.40	359.60	12,534.6	3,972.6	886.2	408,372.25	783,028.98	32° 7' 13.035 N	103° 33' 9.515 W
16,485.0	93.30	358.50	12,528.3	4,065.4	884.6	408,465.02	783,027.44	32° 7' 13.953 N	103° 33' 9.525 W
16,579.0	90.80	356.80	12,525.0	4,159.3	880.8	408,558.87	783,023.59	32° 7' 14.882 N	103° 33' 9.562 W
16,672.0	87.00	351.10	12,526.7	4,251.7	871.0	408,651.28	783,013.80	32° 7' 15.797 N	103° 33' 9.668 W
16,717.0	87.00	351.10	12,529.1	4,296.1	864.0	408,695.68	783,006.84	32° 7' 16.237 N	103° 33' 9.745 W
OH TD @ 16717.0' MD / 12529.1' TVD									

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
133.0	133.0	0.2	0.0	First MWD Survey @ 133.0' MD / 133.0' TVD
12,481.2	12,354.6	116.0	907.6	330' HL Crossed @ 12481.2' MD / 12354.6' TVD
16,717.0	12,529.1	4,296.1	864.0	OH TD @ 16717.0' MD / 12529.1' TVD

