

Mewbourne Oil Company

Eddy County, New Mexico (Nad 83)

Sec 24, T18S, R30E

Virgo 24-23 B2HE Fed Com #1H

Wellbore #1

Design: Wellbore #1

QES Survey Report

19 January, 2019





Survey Report



Company:	Mewbourne Oil Company	Local Co-ordinate Reference:	Well Virgo 24-23 B2HE Fed Com #1H
Project:	Eddy County, New Mexico (Nad 83)	TVD Reference:	WELL @ 3671.0usft (Patterson #250)
Site:	Sec 24, T18S, R30E	MD Reference:	WELL @ 3671.0usft (Patterson #250)
Well:	Virgo 24-23 B2HE Fed 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 24, T18S, R30E		
Site Position:	Map	Northing:	631,402.45 usft
From:		Easting:	669,204.53 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 44' 6.266 N
		Longitude:	103° 55' 2.974 W
		Grid Convergence:	0.22 °

Well	Virgo 24-23 B2HE Fed Com #1H		
Well Position	+N/-S	0.0 usft	Northing:
	+E/-W	0.0 usft	Easting:
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft
		Latitude:	32° 44' 6.266 N
		Longitude:	103° 55' 2.974 W
		Ground Level:	3,644.0 usft

Wellbore	Wellbore #1		
Magnetics	Model Name	Sample Date	Declination
			(°)
	IGRF2015	11/29/2018	7.00
			Dip Angle
			(°)
			60.46
			Field Strength
			(nT)
			48,052.47698991

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
			(°)
			268.14

Survey Program	Date	1/19/2019		
From	To	Survey (Wellbore)	Tool Name	Description
(usft)	(usft)			
100.0	534.0	Phoenix Tech (Gyro) (Wellbore #1)	GYRO-NS	OWSG Gyrocompass Gyro
632.0	18,955.0	QES MWD Surveys (Wellbore #1)	OWSG (Rev2) MWD	OWSG MWD - Standard

Survey									
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Vertical	Dogleg	Build	Turn
Depth	(°)	(°)	Depth	(usft)	(usft)	Section	Rate	Rate	Rate
(usft)			(usft)			(usft)	(°/100usft)	(°/100usft)	(°/100usft)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.44	266.13	100.0	0.0	-0.4	0.4	0.44	0.44	0.00
200.0	0.20	74.77	200.0	0.0	-0.6	0.6	0.64	-0.24	168.64
300.0	0.39	39.84	300.0	0.3	-0.2	0.2	0.25	0.19	-34.93
400.0	0.17	189.65	400.0	0.4	0.0	0.0	0.54	-0.22	149.81
500.0	0.12	338.97	500.0	0.4	-0.1	0.1	0.28	-0.05	149.32
Gyro Tie In @ 534.0' MD / 534.0' TVD									
534.0	0.23	349.65	534.0	0.5	-0.1	0.1	0.34	0.32	31.41
632.0	0.40	245.30	632.0	0.5	-0.5	0.4	0.52	0.17	-106.48
813.0	0.50	210.70	813.0	-0.4	-1.4	1.4	0.16	0.06	-19.12

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Site:	Sec 24, T18S, R30E	MD Reference:	WELL @ 3671.0usft (Patterson #250)
Well:	Virgo 24-23 B2HE Fed 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)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
1,001.0	0.50	212.60	1,001.0	-1.8	-2.3	2.3	0.01	0.00	1.01
1,186.0	0.30	131.80	1,186.0	-2.8	-2.4	2.5	0.29	-0.11	-43.68
1,372.0	0.20	100.80	1,372.0	-3.2	-1.7	1.8	0.09	-0.05	-16.67
1,558.0	4.30	142.10	1,557.8	-8.8	2.9	-2.6	2.23	2.20	22.20
1,744.0	3.40	139.30	1,743.4	-18.5	10.8	-10.2	0.49	-0.48	-1.51
1,900.0	3.60	159.20	1,899.1	-26.5	15.6	-14.7	0.79	0.13	12.76
2,079.0	2.90	161.30	2,077.8	-36.1	19.0	-17.8	0.40	-0.39	1.17
2,265.0	1.80	148.30	2,263.6	-43.0	22.0	-20.6	0.65	-0.59	-6.99
2,451.0	3.40	148.80	2,449.4	-50.2	26.4	-24.8	0.86	0.86	0.27
2,637.0	3.50	149.70	2,635.1	-59.9	32.2	-30.2	0.06	0.05	0.48
2,824.0	3.30	145.10	2,821.8	-69.2	38.1	-35.9	0.18	-0.11	-2.46
3,010.0	3.30	152.30	3,007.5	-78.3	43.7	-41.1	0.22	0.00	3.87
3,196.0	2.80	143.90	3,193.2	-86.7	48.8	-46.0	0.36	-0.27	-4.52
3,382.0	2.50	134.70	3,379.0	-93.3	54.4	-51.3	0.28	-0.16	-4.95
3,568.0	3.50	152.70	3,564.8	-101.2	59.9	-56.6	0.73	0.54	9.68
3,755.0	3.40	152.50	3,751.4	-111.2	65.1	-61.4	0.05	-0.05	-0.11
3,941.0	3.00	150.00	3,937.1	-120.3	70.0	-66.1	0.23	-0.22	-1.34
4,127.0	2.90	150.40	4,122.9	-128.6	74.8	-70.6	0.05	-0.05	0.22
4,313.0	2.60	140.70	4,308.7	-135.9	79.8	-75.3	0.30	-0.16	-5.22
4,499.0	4.00	159.40	4,494.4	-145.3	84.8	-80.0	0.94	0.75	10.05
100' HL Crossed @ 4521.8'MD / 4517.1' TVD									
4,521.8	3.72	158.34	4,517.1	-146.7	85.3	-80.5	1.27	-1.23	-4.66
4,685.0	1.80	141.20	4,680.1	-153.6	88.9	-83.8	1.27	-1.18	-10.50
4,870.0	3.10	150.00	4,864.9	-160.2	93.2	-87.9	0.73	0.70	4.76
5,056.0	2.90	148.60	5,050.7	-168.6	98.2	-92.6	0.11	-0.11	-0.75
5,242.0	3.40	143.00	5,236.4	-177.0	103.9	-98.1	0.32	0.27	-3.01
5,428.0	2.60	156.20	5,422.2	-185.3	108.9	-102.9	0.57	-0.43	7.10
5,614.0	2.40	162.20	5,608.0	-192.8	111.8	-105.5	0.18	-0.11	3.23
5,801.0	3.60	144.60	5,794.7	-201.3	116.4	-109.8	0.80	0.64	-9.41
5,987.0	3.40	140.40	5,980.4	-210.4	123.3	-116.4	0.17	-0.11	-2.26
6,174.0	2.80	147.20	6,167.1	-218.5	129.3	-122.2	0.38	-0.32	3.64
6,360.0	2.60	149.70	6,352.9	-225.9	133.9	-126.5	0.12	-0.11	1.34
6,546.0	2.50	138.40	6,538.7	-232.6	138.8	-131.1	0.28	-0.05	-6.08
6,732.0	2.60	144.10	6,724.5	-239.1	143.9	-136.1	0.15	0.05	3.06
6,918.0	2.80	124.90	6,910.3	-245.1	150.1	-142.1	0.50	0.11	-10.32
7,103.0	2.50	118.70	7,095.1	-249.6	157.4	-149.2	0.22	-0.16	-3.35
7,288.0	1.90	128.40	7,280.0	-253.4	163.3	-155.0	0.38	-0.32	5.24
7,476.0	3.70	173.80	7,467.8	-261.4	166.4	-157.8	1.45	0.96	24.15
7,664.0	3.10	166.90	7,655.4	-272.4	168.2	-159.3	0.39	-0.32	-3.67
7,851.0	2.80	174.80	7,842.2	-281.9	169.8	-160.5	0.27	-0.16	4.22
8,038.0	1.90	153.70	8,029.0	-289.2	171.6	-162.1	0.66	-0.48	-11.28
8,217.0	1.30	143.70	8,208.0	-293.5	174.1	-164.5	0.37	-0.34	-5.59
8,276.0	2.00	233.20	8,267.0	-294.6	173.7	-164.0	4.03	1.19	151.69

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Survey									
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8,307.0	7.90	269.40	8,297.8	-295.0	171.1	-161.4	20.63	19.03	116.77
8,338.0	15.20	270.30	8,328.2	-295.0	164.9	-155.2	23.55	23.55	2.90
8,369.0	22.40	273.80	8,357.5	-294.6	154.9	-145.3	23.50	23.23	11.29
8,400.0	26.90	275.00	8,385.7	-293.6	142.0	-132.4	14.60	14.52	3.87
8,430.0	28.50	274.80	8,412.2	-292.4	128.1	-118.6	5.34	5.33	-0.67
8,461.0	29.80	273.40	8,439.3	-291.3	113.1	-103.6	4.74	4.19	-4.52
8,492.0	31.60	271.00	8,466.0	-290.7	97.3	-87.8	7.02	5.81	-7.74
100' HL Crossed @ 8513.2'MD / 8483.9' TVD									
8,513.2	33.15	269.56	8,483.9	-290.7	85.9	-76.4	8.17	7.32	-6.78
8,522.0	33.80	269.00	8,491.2	-290.7	81.1	-71.6	8.17	7.37	-6.39
8,553.0	36.20	268.30	8,516.6	-291.1	63.3	-53.8	7.85	7.74	-2.26
8,584.0	38.40	268.70	8,541.3	-291.6	44.5	-35.0	7.14	7.10	1.29
8,615.0	41.40	269.60	8,565.0	-291.9	24.6	-15.1	9.85	9.68	2.90
8,646.0	44.20	269.90	8,587.8	-292.0	3.6	5.9	9.06	9.03	0.97
8,677.0	47.60	270.60	8,609.4	-291.9	-18.7	28.2	11.09	10.97	2.26
8,708.0	51.00	271.10	8,629.6	-291.6	-42.2	51.6	11.04	10.97	1.61
8,739.0	56.30	271.30	8,647.9	-291.0	-67.1	76.6	17.10	17.10	0.65
8,770.0	61.90	271.70	8,663.8	-290.3	-93.7	103.1	18.10	18.06	1.29
8,801.0	66.30	271.30	8,677.4	-289.6	-121.6	130.9	14.24	14.19	-1.29
8,832.0	70.50	270.60	8,688.8	-289.1	-150.4	159.7	13.71	13.55	-2.26
8,863.0	73.60	270.10	8,698.3	-289.0	-179.9	189.2	10.12	10.00	-1.61
8,877.0	74.80	269.90	8,702.2	-289.0	-193.4	202.6	8.68	8.57	-1.43
8,956.0	84.40	269.90	8,716.4	-289.1	-271.0	280.2	12.15	12.15	0.00
9,017.0	87.20	270.40	8,720.9	-288.9	-331.8	341.0	4.66	4.59	0.82
9,110.0	90.80	272.50	8,722.5	-286.6	-424.7	433.8	4.48	3.87	2.26
9,203.0	91.00	272.00	8,721.0	-282.9	-517.7	526.6	0.58	0.22	-0.54
9,296.0	89.60	272.90	8,720.5	-278.9	-610.6	619.3	1.79	-1.51	0.97
9,390.0	88.00	271.50	8,722.5	-275.3	-704.5	713.0	2.26	-1.70	-1.49
9,483.0	87.30	270.10	8,726.3	-274.0	-797.4	805.9	1.68	-0.75	-1.51
9,576.0	87.20	267.80	8,730.8	-275.7	-890.2	898.7	2.47	-0.11	-2.47
9,671.0	89.50	267.10	8,733.5	-280.0	-985.1	993.7	2.53	2.42	-0.74
9,764.0	91.40	268.30	8,732.8	-283.7	-1,078.0	1,086.7	2.42	2.04	1.29
9,858.0	91.10	270.80	8,730.7	-284.4	-1,172.0	1,180.6	2.68	-0.32	2.66
9,951.0	90.20	272.50	8,729.7	-281.8	-1,264.9	1,273.4	2.07	-0.97	1.83
10,044.0	90.80	271.10	8,728.9	-278.8	-1,357.9	1,366.2	1.64	0.65	-1.51
10,138.0	91.90	268.70	8,726.7	-279.0	-1,451.9	1,460.1	2.81	1.17	-2.55
10,231.0	90.40	269.20	8,724.8	-280.7	-1,544.8	1,553.1	1.70	-1.61	0.54
10,324.0	91.00	267.10	8,723.7	-283.7	-1,637.8	1,646.1	2.35	0.65	-2.26
10,418.0	92.00	267.50	8,721.2	-288.1	-1,731.6	1,740.1	1.15	1.06	0.43
10,511.0	88.10	269.70	8,721.1	-290.4	-1,824.6	1,833.0	4.81	-4.19	2.37
10,604.0	89.10	268.50	8,723.4	-291.9	-1,917.5	1,926.0	1.68	1.08	-1.29
10,697.0	91.80	269.40	8,722.7	-293.6	-2,010.5	2,019.0	3.06	2.90	0.97
10,791.0	90.90	268.90	8,720.4	-295.0	-2,104.5	2,112.9	1.10	-0.96	-0.53
10,884.0	90.40	267.60	8,719.4	-297.8	-2,197.4	2,205.9	1.50	-0.54	-1.40

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10,977.0	92.90	266.90	8,716.7	-302.3	-2,290.3	2,298.9	2.79	2.69	-0.75
11,072.0	92.80	267.60	8,712.0	-306.8	-2,385.0	2,393.7	0.74	-0.11	0.74
11,166.0	91.50	268.50	8,708.5	-310.0	-2,478.9	2,487.7	1.68	-1.38	0.96
11,260.0	91.70	269.00	8,705.8	-312.1	-2,572.8	2,581.6	0.57	0.21	0.53
11,354.0	92.20	269.60	8,702.6	-313.2	-2,666.8	2,675.5	0.83	0.53	0.64
11,448.0	91.60	270.30	8,699.5	-313.3	-2,760.7	2,769.4	0.98	-0.64	0.74
11,542.0	92.50	271.70	8,696.2	-311.7	-2,854.7	2,863.3	1.77	0.96	1.49
11,637.0	89.40	271.50	8,694.6	-309.0	-2,949.6	2,958.1	3.27	-3.26	-0.21
11,730.0	89.30	271.90	8,695.6	-306.2	-3,042.5	3,050.9	0.44	-0.11	0.43
11,824.0	89.90	273.40	8,696.3	-301.9	-3,136.4	3,144.6	1.72	0.64	1.60
11,918.0	90.10	269.70	8,696.3	-299.4	-3,230.4	3,238.4	3.94	0.21	-3.94
12,011.0	91.20	269.70	8,695.2	-299.8	-3,323.4	3,331.4	1.18	1.18	0.00
12,105.0	91.00	270.10	8,693.4	-300.0	-3,417.4	3,425.3	0.48	-0.21	0.43
12,199.0	90.40	270.30	8,692.3	-299.7	-3,511.4	3,519.2	0.67	-0.64	0.21
12,294.0	91.40	270.40	8,690.8	-299.1	-3,606.3	3,614.1	1.06	1.05	0.11
12,388.0	90.30	270.40	8,689.4	-298.4	-3,700.3	3,708.1	1.17	-1.17	0.00
12,482.0	89.10	271.10	8,689.9	-297.2	-3,794.3	3,802.0	1.48	-1.28	0.74
12,576.0	90.40	266.40	8,690.3	-299.3	-3,888.3	3,895.9	5.19	1.38	-5.00
12,670.0	90.90	263.80	8,689.2	-307.3	-3,981.9	3,989.8	2.82	0.53	-2.77
12,764.0	91.80	267.50	8,687.0	-314.4	-4,075.6	4,083.6	4.05	0.96	3.94
12,858.0	90.40	267.60	8,685.2	-318.4	-4,169.5	4,177.6	1.49	-1.49	0.11
12,952.0	89.30	268.00	8,685.5	-322.0	-4,263.4	4,271.6	1.25	-1.17	0.43
13,046.0	89.00	267.10	8,686.9	-326.1	-4,357.3	4,365.6	1.01	-0.32	-0.96
13,139.0	89.90	266.60	8,687.8	-331.2	-4,450.2	4,458.6	1.11	0.97	-0.54
13,233.0	92.60	267.60	8,685.7	-335.9	-4,544.0	4,552.5	3.06	2.87	1.06
13,327.0	91.30	266.20	8,682.5	-341.0	-4,637.8	4,646.4	2.03	-1.38	-1.49
13,421.0	91.60	267.60	8,680.1	-346.1	-4,731.7	4,740.4	1.52	0.32	1.49
13,515.0	93.10	271.50	8,676.3	-346.8	-4,825.5	4,834.3	4.44	1.60	4.15
13,609.0	95.50	273.80	8,669.2	-342.5	-4,919.2	4,927.7	3.53	2.55	2.45
13,703.0	94.00	274.50	8,661.4	-335.7	-5,012.6	5,020.9	1.76	-1.60	0.74
13,790.0	91.90	274.70	8,657.0	-328.7	-5,099.2	5,107.2	2.42	-2.41	0.23
13,883.0	90.30	274.70	8,655.2	-321.1	-5,191.9	5,199.6	1.72	-1.72	0.00
13,976.0	87.80	271.70	8,656.7	-315.9	-5,284.7	5,292.2	4.20	-2.69	-3.23
14,069.0	90.00	271.10	8,658.5	-313.7	-5,377.6	5,385.0	2.45	2.37	-0.65
14,163.0	88.90	272.40	8,659.4	-310.8	-5,471.6	5,478.8	1.81	-1.17	1.38
14,255.0	87.70	271.50	8,662.1	-307.7	-5,563.5	5,570.5	1.63	-1.30	-0.98
14,348.0	90.50	271.10	8,663.6	-305.6	-5,656.4	5,663.4	3.04	3.01	-0.43
14,442.0	91.00	272.50	8,662.4	-302.6	-5,750.4	5,757.2	1.58	0.53	1.49
14,536.0	91.10	270.40	8,660.6	-300.2	-5,844.3	5,851.0	2.24	0.11	-2.23
14,630.0	92.30	268.20	8,657.9	-301.4	-5,938.3	5,944.9	2.67	1.28	-2.34
14,724.0	95.10	269.90	8,651.8	-302.9	-6,032.1	6,038.7	3.48	2.98	1.81
14,818.0	92.10	270.80	8,645.9	-302.4	-6,125.9	6,132.4	3.33	-3.19	0.96
14,913.0	88.00	270.60	8,645.8	-301.2	-6,220.8	6,227.3	4.32	-4.32	-0.21

Company:	Mewbourne Oil Company	Local Co-ordinate Reference:	Well Virgo 24-23 B2HE Fed Com #1H
Project:	Eddy County, New Mexico (Nad 83)	TVD Reference:	WELL @ 3671.0usft (Patterson #250)
Site:	Sec 24, T18S, R30E	MD Reference:	WELL @ 3671.0usft (Patterson #250)
Well:	Virgo 24-23 B2HE Fed 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)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
15,006.0	90.60	268.50	8,646.9	-301.9	-6,313.8	6,320.3	3.59	2.80	-2.26
15,100.0	90.80	269.60	8,645.8	-303.5	-6,407.8	6,414.3	1.19	0.21	1.17
15,194.0	91.70	270.80	8,643.7	-303.2	-6,501.8	6,508.2	1.60	0.96	1.28
15,287.0	91.80	271.10	8,640.9	-301.6	-6,594.7	6,601.0	0.34	0.11	0.32
15,382.0	88.10	270.30	8,641.0	-300.5	-6,689.7	6,695.9	3.98	-3.89	-0.84
15,475.0	88.00	268.00	8,644.1	-301.8	-6,782.6	6,788.8	2.47	-0.11	-2.47
15,570.0	88.60	269.20	8,647.0	-304.2	-6,877.5	6,883.8	1.41	0.63	1.26
15,664.0	90.00	268.70	8,648.1	-305.9	-6,971.5	6,977.8	1.58	1.49	-0.53
15,758.0	90.60	269.60	8,647.6	-307.3	-7,065.5	7,071.8	1.15	0.64	0.96
15,852.0	90.40	271.00	8,646.8	-306.8	-7,159.5	7,165.7	1.50	-0.21	1.49
15,946.0	90.40	268.20	8,646.1	-307.4	-7,253.5	7,259.6	2.98	0.00	-2.98
16,041.0	90.50	266.90	8,645.4	-311.5	-7,348.4	7,354.6	1.37	0.11	-1.37
16,136.0	88.70	266.90	8,646.1	-316.6	-7,443.2	7,449.6	1.89	-1.89	0.00
16,231.0	91.10	267.80	8,646.2	-321.0	-7,538.1	7,544.6	2.70	2.53	0.95
16,326.0	91.40	267.10	8,644.2	-325.3	-7,633.0	7,639.6	0.80	0.32	-0.74
16,420.0	91.40	266.80	8,641.9	-330.3	-7,726.9	7,733.5	0.32	0.00	-0.32
16,509.0	92.00	266.60	8,639.2	-335.4	-7,815.7	7,822.4	0.71	0.67	-0.22
16,603.0	92.90	266.40	8,635.2	-341.1	-7,909.4	7,916.3	0.98	0.96	-0.21
16,697.0	91.40	266.40	8,631.7	-347.0	-8,003.2	8,010.2	1.60	-1.60	0.00
16,791.0	91.50	267.50	8,629.3	-352.0	-8,097.0	8,104.1	1.17	0.11	1.17
16,885.0	90.10	269.40	8,628.0	-354.5	-8,190.9	8,198.1	2.51	-1.49	2.02
16,979.0	88.60	269.60	8,629.0	-355.4	-8,284.9	8,292.1	1.61	-1.60	0.21
17,073.0	90.90	268.20	8,629.5	-357.2	-8,378.9	8,386.1	2.86	2.45	-1.49
17,167.0	91.00	267.80	8,627.9	-360.5	-8,472.8	8,480.1	0.44	0.11	-0.43
17,261.0	92.30	268.00	8,625.2	-363.9	-8,566.7	8,574.0	1.40	1.38	0.21
17,355.0	89.20	268.30	8,624.0	-366.9	-8,660.7	8,668.0	3.31	-3.30	0.32
17,448.0	92.50	269.60	8,622.6	-368.6	-8,753.6	8,761.0	3.81	3.55	1.40
17,542.0	92.60	271.50	8,618.4	-367.7	-8,847.5	8,854.8	2.02	0.11	2.02
17,637.0	90.20	272.20	8,616.1	-364.7	-8,942.4	8,949.6	2.63	-2.53	0.74
17,732.0	89.40	272.20	8,616.4	-361.0	-9,037.4	9,044.3	0.84	-0.84	0.00
17,827.0	90.30	271.00	8,616.7	-358.4	-9,132.3	9,139.1	1.58	0.95	-1.26
17,922.0	91.50	270.80	8,615.2	-356.9	-9,227.3	9,234.0	1.28	1.26	-0.21
18,017.0	93.70	271.10	8,610.9	-355.3	-9,322.2	9,328.8	2.34	2.32	0.32
18,111.0	91.20	271.00	8,606.8	-353.6	-9,416.1	9,422.6	2.66	-2.66	-0.11
18,206.0	90.20	270.40	8,605.7	-352.4	-9,511.0	9,517.5	1.23	-1.05	-0.63
18,302.0	89.70	270.10	8,605.8	-352.0	-9,607.0	9,613.4	0.61	-0.52	-0.31
18,396.0	91.20	270.30	8,605.0	-351.7	-9,701.0	9,707.3	1.61	1.60	0.21
18,491.0	89.10	269.70	8,604.8	-351.7	-9,796.0	9,802.3	2.30	-2.21	-0.63
18,586.0	89.70	270.30	8,605.8	-351.7	-9,891.0	9,897.2	0.89	0.63	0.63
18,681.0	89.90	265.90	8,606.1	-354.8	-9,986.0	9,992.2	4.64	0.21	-4.63
18,776.0	89.20	269.20	8,606.8	-358.9	-10,080.8	10,087.2	3.55	-0.74	3.47
18,871.0	88.70	269.40	8,608.6	-360.0	-10,175.8	10,182.1	0.57	-0.53	0.21
18,885.0	88.60	269.60	8,608.9	-360.2	-10,189.8	10,196.1	1.60	-0.71	1.43



Survey Report



Company:	Mewbourne Oil Company	Local Co-ordinate Reference:	Well Virgo 24-23 B2HE Fed Com #1H
Project:	Eddy County, New Mexico (Nad 83)	TVD Reference:	WELL @ 3671.0usft (Patterson #250)
Site:	Sec 24, T18S, R30E	MD Reference:	WELL @ 3671.0usft (Patterson #250)
Well:	Virgo 24-23 B2HE Fed Com #1H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

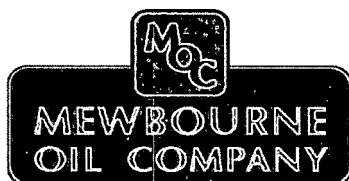
Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
TD @ 18955.0' MD / 8610.6' TVD									
18,955.0	88.60	269.60	8,610.6	-360.7	-10,259.8	10,266.1	0.00	0.00	0.00

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
534.0	534.0	0.5	-0.1	Gyro Tie In @ 534.0' MD / 534.0' TVD
4,521.8	4,517.1	-146.7	85.3	100' HL Crossed @ 4521.8' MD / 4517.1' TVD
8,513.2	8,483.9	-290.7	85.9	100' HL Crossed @ 8513.2' MD / 8483.9' TVD
18,955.0	8,610.6	-360.7	-10,259.8	TD @ 18955.0' MD / 8610.6' TVD

Checked By: _____ Approved By: _____ Date: _____



Mewbourne Oil Company

Eddy County, New Mexico (Nad 83)

Sec 24, T18S, R30E

Virgo 24-23 B2HE Fed Com #1H

Wellbore #1

Design: Wellbore #1

QES Survey Certification Report

19 January, 2019



Quintana Energy Services

11390 FM 830
Willis, TX 77318
Phone: (936) 856-4332
Fax: (936) 856-8678



Survey Certification Sheet

Company	Job Number	Date
Mewbourne Oil Company	WT-181448	1/23/2019

Lease	Well Name	County & State
SEC 24, T18S, R30E	Virgo 24-23 B2HE Fed Com #1H	Eddy County, NM

API No.	Survey Depth Range	Survey Type
30-015-44655	534 feet to 18955 feet MD	MWD

Sidetrack Information	Directional Supervisor/Surveyor
	Brad Reed

Certification Statement

The data and calculations for this survey have been checked by me and conform to the standards and procedures set forth by Quintana Energy Services (QES). This report represents a true and correct directional survey of this well based on the original data obtained at the well site. Wellbore coordinates are calculated using minimum curvature.

**Christopher
Hughes**
Christopher Hughes
MWD Compliance Manager

Digitally signed by Christopher Hughes
DN: cn=Christopher Hughes, o=QES,
ou=compliance,
email=chrish@qeslp.com, c=US
Date: 2019.03.21 13:58:05 -05'00'



QES Survey Certification Report



Company:	Mewbourne Oil Company	Local Co-ordinate Reference:	Well Virgo 24-23 B2HE Fed Com #1H
Project:	Eddy County, New Mexico (Nad 83)	TVD Reference:	WELL @ 3671.0usft (Patterson #250)
Site:	Sec 24, T18S, R30E	MD Reference:	WELL @ 3671.0usft (Patterson #250)
Well:	Virgo 24-23 B2HE Fed 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 24, T18S, R30E		
Site Position:		Northing:	631,402.45 usft
From:	Map	Easting:	669,204.53 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16"
		Latitude:	32° 44' 6.266 N
		Longitude:	103° 55' 2.974 W
		Grid Convergence:	0.22 °

Well	Virgo 24-23 B2HE Fed Com #1H		
Well Position	+N/-S	0.0 usft	Northing: 631,402.45 usft
	+E/-W	0.0 usft	Easting: 669,204.53 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	usft
		Latitude:	32° 44' 6.266 N
		Longitude:	103° 55' 2.974 W
		Ground Level:	3,644.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	IGRF2015	11/29/2018	7.00	60.46	48,052.47698991

Design	Wellbore #1			
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.0	0.0	0.0	268.14

Survey Program	Date	1/19/2019		
From	To	Survey (Wellbore)	Tool Name	Description
(usft)	(usft)			
100.0	534.0	Phoenix Tech (Gyro) (Wellbore #1)	GYRO-NS	OWSG Gyrocompass Gyro
632.0	18,955.0	QES MWD Surveys (Wellbore #1)	OWSG (Rev2) MWD	OWSG MWD - Standard

Survey								
MD	Inc	Azi (azimuth)	TVD	N/S	E/W	Closure Distance	Closure Azimuth	
(usft)	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(°)	
534.0	0.23	349.65	534.0	0.5	-0.1	0.5	347.28	
Gyro Tie In @ 534.0' MD / 534.0' TVD								
632.0	0.40	245.30	632.0	0.5	-0.5	0.7	318.94	
813.0	0.50	210.70	813.0	-0.4	-1.4	1.5	253.46	
1,001.0	0.50	212.60	1,001.0	-1.8	-2.3	2.9	231.51	
1,186.0	0.30	131.80	1,186.0	-2.8	-2.4	3.7	219.93	
1,372.0	0.20	100.80	1,372.0	-3.2	-1.7	3.6	207.66	
1,558.0	4.30	142.10	1,557.8	-8.8	2.9	9.2	161.58	
1,744.0	3.40	139.30	1,743.4	-18.5	10.8	21.4	149.66	
1,900.0	3.60	159.20	1,899.1	-26.5	15.6	30.8	149.62	
2,079.0	2.90	161.30	2,077.8	-36.1	19.0	40.8	152.23	



QES Survey Certification Report



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Project:	Eddy County, New Mexico (Nad 83)	TVD Reference:	WELL @ 3671.0usft (Patterson #250)
Site:	Sec 24, T18S, R30E	MD Reference:	WELL @ 3671.0usft (Patterson #250)
Well:	Virgo 24-23 B2HE Fed Com #1H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Survey								
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	
2,265.0	1.80	148.30	2,263.6	-43.0	22.0	48.4	152.87	
2,451.0	3.40	148.80	2,449.4	-50.2	26.4	56.8	152.24	
2,637.0	3.50	149.70	2,635.1	-59.9	32.2	67.9	151.75	
2,824.0	3.30	145.10	2,821.8	-69.2	38.1	79.0	151.15	
3,010.0	3.30	152.30	3,007.5	-78.3	43.7	89.7	150.86	
3,196.0	2.80	143.90	3,193.2	-86.7	48.8	99.5	150.62	
3,382.0	2.50	134.70	3,379.0	-93.3	54.4	108.0	149.74	
3,568.0	3.50	152.70	3,564.8	-101.2	59.9	117.6	149.37	
3,755.0	3.40	152.50	3,751.4	-111.2	65.1	128.8	149.66	
3,941.0	3.00	150.00	3,937.1	-120.3	70.0	139.2	149.78	
4,127.0	2.90	150.40	4,122.9	-128.6	74.8	148.7	149.81	
4,313.0	2.60	140.70	4,308.7	-135.9	79.8	157.6	149.58	
4,499.0	4.00	159.40	4,494.4	-145.3	84.8	168.2	149.74	
4,685.0	1.80	141.20	4,680.1	-153.6	88.9	177.5	149.95	
4,870.0	3.10	150.00	4,864.9	-160.2	93.2	185.3	149.81	
5,056.0	2.90	148.60	5,050.7	-168.6	98.2	195.1	149.79	
5,242.0	3.40	143.00	5,236.4	-177.0	103.9	205.3	149.58	
5,428.0	2.60	156.20	5,422.2	-185.3	108.9	214.9	149.54	
5,614.0	2.40	162.20	5,608.0	-192.8	111.8	222.9	149.89	
5,801.0	3.60	144.60	5,794.7	-201.3	116.4	232.6	149.96	
5,987.0	3.40	140.40	5,980.4	-210.4	123.3	243.8	149.62	
6,174.0	2.80	147.20	6,167.1	-218.5	129.3	253.9	149.37	
6,360.0	2.60	149.70	6,352.9	-225.9	133.9	262.6	149.34	
6,546.0	2.50	138.40	6,538.7	-232.6	138.8	270.8	149.18	
6,732.0	2.60	144.10	6,724.5	-239.1	143.9	279.0	148.95	
6,918.0	2.80	124.90	6,910.3	-245.1	150.1	287.4	148.51	
7,103.0	2.50	118.70	7,095.1	-249.6	157.4	295.1	147.77	
7,288.0	1.90	128.40	7,280.0	-253.4	163.3	301.5	147.20	
7,476.0	3.70	173.80	7,467.8	-261.4	166.4	309.9	147.52	
7,664.0	3.10	166.90	7,655.4	-272.4	168.2	320.1	148.30	
7,851.0	2.80	174.80	7,842.2	-281.9	169.8	329.0	148.94	
8,038.0	1.90	153.70	8,029.0	-289.2	171.6	336.3	149.32	
8,217.0	1.30	143.70	8,208.0	-293.5	174.1	341.2	149.33	
8,276.0	2.00	233.20	8,267.0	-294.6	173.7	342.0	149.49	
8,307.0	7.90	269.40	8,297.8	-295.0	171.1	341.0	149.89	
8,338.0	15.20	270.30	8,328.2	-295.0	164.9	337.9	150.80	
8,369.0	22.40	273.80	8,357.5	-294.6	154.9	332.8	152.26	
8,400.0	26.90	275.00	8,385.7	-293.6	142.0	326.1	154.18	
8,430.0	28.50	274.80	8,412.2	-292.4	128.1	319.2	156.33	
8,461.0	29.80	273.40	8,439.3	-291.3	113.1	312.5	158.79	
8,492.0	31.60	271.00	8,466.0	-290.7	97.3	306.5	161.50	
8,522.0	33.80	269.00	8,491.2	-290.7	81.1	301.8	164.42	
8,553.0	36.20	268.30	8,516.6	-291.1	63.3	297.9	167.74	
8,584.0	38.40	268.70	8,541.3	-291.6	44.5	295.0	171.32	



QES Survey Certification Report



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Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)
8,615.0	41.40	269.60	8,565.0	-291.9	24.6	293.0	175.18
8,646.0	44.20	269.90	8,587.8	-292.0	3.6	292.0	179.30
8,677.0	47.60	270.60	8,609.4	-291.9	-18.7	292.5	183.66
8,708.0	51.00	271.10	8,629.6	-291.6	-42.2	294.6	188.23
8,739.0	56.30	271.30	8,647.9	-291.0	-67.1	298.7	192.99
8,770.0	61.90	271.70	8,663.8	-290.3	-93.7	305.1	197.89
8,801.0	66.30	271.30	8,677.4	-289.6	-121.6	314.1	202.78
8,832.0	70.50	270.60	8,688.8	-289.1	-150.4	325.9	207.48
8,863.0	73.60	270.10	8,698.3	-289.0	-179.9	340.4	211.90
8,877.0	74.80	269.90	8,702.2	-289.0	-193.4	347.7	213.79
8,956.0	84.40	269.90	8,716.4	-289.1	-271.0	396.2	223.15
9,017.0	87.20	270.40	8,720.9	-288.9	-331.8	440.0	228.95
9,110.0	90.80	272.50	8,722.5	-286.6	-424.7	512.4	235.99
9,203.0	91.00	272.00	8,721.0	-282.9	-517.7	589.9	241.34
9,296.0	89.60	272.90	8,720.5	-278.9	-610.6	671.3	245.45
9,390.0	88.00	271.50	8,722.5	-275.3	-704.5	756.4	248.65
9,483.0	87.30	270.10	8,726.3	-274.0	-797.4	843.2	251.03
9,576.0	87.20	267.80	8,730.8	-275.7	-890.2	932.0	252.79
9,671.0	89.50	267.10	8,733.5	-280.0	-985.1	1,024.1	254.13
9,764.0	91.40	268.30	8,732.8	-283.7	-1,078.0	1,114.7	255.26
9,858.0	91.10	270.80	8,730.7	-284.4	-1,172.0	1,206.0	256.36
9,951.0	90.20	272.50	8,729.7	-281.8	-1,264.9	1,295.9	257.44
10,044.0	90.80	271.10	8,728.9	-278.8	-1,357.9	1,386.2	258.40
10,138.0	91.90	268.70	8,726.7	-279.0	-1,451.9	1,478.4	259.12
10,231.0	90.40	269.20	8,724.8	-280.7	-1,544.8	1,570.1	259.70
10,324.0	91.00	267.10	8,723.7	-283.7	-1,637.8	1,662.2	260.17
10,418.0	92.00	267.50	8,721.2	-288.1	-1,731.6	1,755.4	260.55
10,511.0	88.10	269.70	8,721.1	-290.4	-1,824.6	1,847.5	260.96
10,604.0	89.10	268.50	8,723.4	-291.9	-1,917.5	1,939.6	261.35
10,697.0	91.80	269.40	8,722.7	-293.6	-2,010.5	2,031.8	261.69
10,791.0	90.90	268.90	8,720.4	-295.0	-2,104.5	2,125.0	262.02
10,884.0	90.40	267.60	8,719.4	-297.8	-2,197.4	2,217.5	262.28
10,977.0	92.90	266.90	8,716.7	-302.3	-2,290.3	2,310.1	262.48
11,072.0	92.80	267.60	8,712.0	-306.8	-2,385.0	2,404.7	262.67
11,166.0	91.50	268.50	8,708.5	-310.0	-2,478.9	2,498.2	262.87
11,260.0	91.70	269.00	8,705.8	-312.1	-2,572.8	2,591.7	263.08
11,354.0	92.20	269.60	8,702.6	-313.2	-2,666.8	2,685.1	263.30
11,448.0	91.60	270.30	8,699.5	-313.3	-2,760.7	2,778.5	263.53
11,542.0	92.50	271.70	8,696.2	-311.7	-2,854.7	2,871.6	263.77
11,637.0	89.40	271.50	8,694.6	-309.0	-2,949.6	2,965.7	264.02
11,730.0	89.30	271.90	8,695.6	-306.2	-3,042.5	3,057.9	264.25
11,824.0	89.90	273.40	8,696.3	-301.9	-3,136.4	3,150.9	264.50
11,918.0	90.10	269.70	8,696.3	-299.4	-3,230.4	3,244.2	264.71
12,011.0	91.20	269.70	8,695.2	-299.8	-3,323.4	3,336.9	264.84
12,105.0	91.00	270.10	8,693.4	-300.0	-3,417.4	3,430.5	264.98

Company:	Mewbourne Oil Company	Local Co-ordinate Reference:	Well Virgo 24-23 B2HE Fed Com #1H
Project:	Eddy County, New Mexico (Nad 83)	TVD Reference:	WELL @ 3671.0usft (Patterson #250)
Site:	Sec 24, T18S, R30E	MD Reference:	WELL @ 3671.0usft (Patterson #250)
Well:	Virgo 24-23 B2HE Fed Com #1H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Survey							
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)
12,199.0	90.40	270.30	8,692.3	-299.7	-3,511.4	3,524.1	265.12
12,294.0	91.40	270.40	8,690.8	-299.1	-3,606.3	3,618.7	265.26
12,388.0	90.30	270.40	8,689.4	-298.4	-3,700.3	3,712.3	265.39
12,482.0	89.10	271.10	8,689.9	-297.2	-3,794.3	3,805.9	265.52
12,576.0	90.40	266.40	8,690.3	-299.3	-3,888.3	3,899.8	265.60
12,670.0	90.90	263.80	8,689.2	-307.3	-3,981.9	3,993.7	265.59
12,764.0	91.80	267.50	8,687.0	-314.4	-4,075.6	4,087.7	265.59
12,858.0	90.40	267.60	8,685.2	-318.4	-4,169.5	4,181.6	265.63
12,952.0	89.30	268.00	8,685.5	-322.0	-4,263.4	4,275.6	265.68
13,046.0	89.00	267.10	8,686.9	-326.1	-4,357.3	4,369.5	265.72
13,139.0	89.90	266.60	8,687.8	-331.2	-4,450.2	4,462.5	265.74
13,233.0	92.60	267.60	8,685.7	-335.9	-4,544.0	4,556.4	265.77
13,327.0	91.30	266.20	8,682.5	-341.0	-4,637.8	4,650.3	265.79
13,421.0	91.60	267.60	8,680.1	-346.1	-4,731.7	4,744.3	265.82
13,515.0	93.10	271.50	8,676.3	-346.8	-4,825.5	4,838.0	265.89
13,609.0	95.50	273.80	8,669.2	-342.5	-4,919.2	4,931.1	266.02
13,703.0	94.00	274.50	8,661.4	-335.7	-5,012.6	5,023.8	266.17
13,790.0	91.90	274.70	8,657.0	-328.7	-5,099.2	5,109.8	266.31
13,883.0	90.30	274.70	8,655.2	-321.1	-5,191.9	5,201.8	266.46
13,976.0	87.80	271.70	8,656.7	-315.9	-5,284.7	5,294.1	266.58
14,069.0	90.00	271.10	8,658.5	-313.7	-5,377.6	5,386.8	266.66
14,163.0	88.90	272.40	8,659.4	-310.8	-5,471.6	5,480.4	266.75
14,255.0	87.70	271.50	8,662.1	-307.7	-5,563.5	5,572.0	266.83
14,348.0	90.50	271.10	8,663.6	-305.6	-5,656.4	5,664.7	266.91
14,442.0	91.00	272.50	8,662.4	-302.6	-5,750.4	5,758.3	266.99
14,536.0	91.10	270.40	8,660.6	-300.2	-5,844.3	5,852.0	267.06
14,630.0	92.30	268.20	8,657.9	-301.4	-5,938.3	5,945.9	267.09
14,724.0	95.10	269.90	8,651.8	-302.9	-6,032.1	6,039.7	267.12
14,818.0	92.10	270.80	8,645.9	-302.4	-6,125.9	6,133.3	267.17
14,913.0	88.00	270.60	8,645.8	-301.2	-6,220.8	6,228.1	267.23
15,006.0	90.60	268.50	8,646.9	-301.9	-6,313.8	6,321.0	267.26
15,100.0	90.80	269.60	8,645.8	-303.5	-6,407.8	6,415.0	267.29
15,194.0	91.70	270.80	8,643.7	-303.2	-6,501.8	6,508.8	267.33
15,287.0	91.80	271.10	8,640.9	-301.6	-6,594.7	6,601.6	267.38
15,382.0	88.10	270.30	8,641.0	-300.5	-6,689.7	6,696.4	267.43
15,475.0	88.00	268.00	8,644.1	-301.8	-6,782.6	6,789.3	267.45
15,570.0	88.60	269.20	8,647.0	-304.2	-6,877.5	6,884.3	267.47
15,664.0	90.00	268.70	8,648.1	-305.9	-6,971.5	6,978.2	267.49
15,758.0	90.60	269.60	8,647.6	-307.3	-7,065.5	7,072.2	267.51
15,852.0	90.40	271.00	8,646.8	-306.8	-7,159.5	7,166.1	267.55
15,946.0	90.40	268.20	8,646.1	-307.4	-7,253.5	7,260.0	267.57
16,041.0	90.50	266.90	8,645.4	-311.5	-7,348.4	7,355.0	267.57
16,136.0	88.70	266.90	8,646.1	-316.6	-7,443.2	7,450.0	267.56
16,231.0	91.10	267.80	8,646.2	-321.0	-7,538.1	7,545.0	267.56



QES Survey Certification Report



Company:	Mewbourne Oil Company	Local Co-ordinate Reference:	Well Virgo 24-23 B2HE Fed Com #1H
Project:	Eddy County, New Mexico (Nad 83)	TVD Reference:	WELL @ 3671.0usft (Patterson #250)
Site:	Sec 24, T18S, R30E	MD Reference:	WELL @ 3671.0usft (Patterson #250)
Well:	Virgo 24-23 B2HE Fed Com #1H	North Reference:	Grid
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	Wellbore #1	Database:	EDM 5000.1 Single User Db

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)
16,326.0	91.40	267.10	8,644.2	-325.3	-7,633.0	7,639.9	267.56
16,420.0	91.40	266.80	8,641.9	-330.3	-7,726.9	7,733.9	267.55
16,509.0	92.00	266.60	8,639.2	-335.4	-7,815.7	7,822.9	267.54
16,603.0	92.90	266.40	8,635.2	-341.1	-7,909.4	7,916.8	267.53
16,697.0	91.40	266.40	8,631.7	-347.0	-8,003.2	8,010.7	267.52
16,791.0	91.50	267.50	8,629.3	-352.0	-8,097.0	8,104.6	267.51
16,885.0	90.10	269.40	8,628.0	-354.5	-8,190.9	8,198.6	267.52
16,979.0	88.60	269.60	8,629.0	-355.4	-8,284.9	8,292.5	267.54
17,073.0	90.90	268.20	8,629.5	-357.2	-8,378.9	8,386.5	267.56
17,167.0	91.00	267.80	8,627.9	-360.5	-8,472.8	8,480.5	267.56
17,261.0	92.30	268.00	8,625.2	-363.9	-8,566.7	8,574.4	267.57
17,355.0	89.20	268.30	8,624.0	-366.9	-8,660.7	8,668.4	267.57
17,448.0	92.50	269.60	8,622.6	-368.6	-8,753.6	8,761.4	267.59
17,542.0	92.60	271.50	8,618.4	-367.7	-8,847.5	8,855.2	267.62
17,637.0	90.20	272.20	8,616.1	-364.7	-8,942.4	8,949.9	267.66
17,732.0	89.40	272.20	8,616.4	-361.0	-9,037.4	9,044.6	267.71
17,827.0	90.30	271.00	8,616.7	-358.4	-9,132.3	9,139.3	267.75
17,922.0	91.50	270.80	8,615.2	-356.9	-9,227.3	9,234.2	267.79
18,017.0	93.70	271.10	8,610.9	-355.3	-9,322.2	9,328.9	267.82
18,111.0	91.20	271.00	8,606.8	-353.6	-9,416.1	9,422.7	267.85
18,206.0	90.20	270.40	8,605.7	-352.4	-9,511.0	9,517.6	267.88
18,302.0	89.70	270.10	8,605.8	-352.0	-9,607.0	9,613.5	267.90
18,396.0	91.20	270.30	8,605.0	-351.7	-9,701.0	9,707.4	267.92
18,491.0	89.10	269.70	8,604.8	-351.7	-9,796.0	9,802.3	267.94
18,586.0	89.70	270.30	8,605.8	-351.7	-9,891.0	9,897.3	267.96
18,681.0	89.90	265.90	8,606.1	-354.8	-9,986.0	9,992.3	267.97
18,776.0	89.20	269.20	8,606.8	-358.9	-10,080.8	10,087.2	267.96
18,871.0	88.70	269.40	8,608.6	-360.0	-10,175.8	10,182.2	267.97
18,885.0	88.60	269.60	8,608.9	-360.2	-10,189.8	10,196.2	267.98
18,955.0	88.60	269.60	8,610.6	-360.7	-10,259.8	10,266.1	267.99
TD @ 18955.0' MD / 8610.6' TVD							

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
534.0	534.0	0.5	-0.1	Gyro Tie In @ 534.0' MD / 534.0' TVD
18,955.0	8,610.6	-360.7	-10,259.8	TD @ 18955.0' MD / 8610.6' TVD

Checked By: _____

Approved By: _____

Date: _____