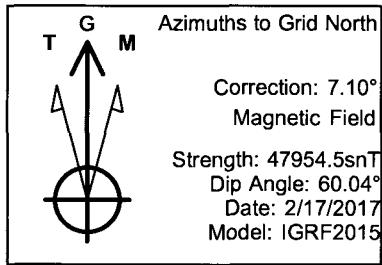


30-015-43496

Company Name: Newbourn Oil Company
Loving Townsite 21 W2PA FEE #1H
Eddy County, New Mexico
Rig: Patterson #243
Created By: Shane Robbins
Date: 3/28/2017

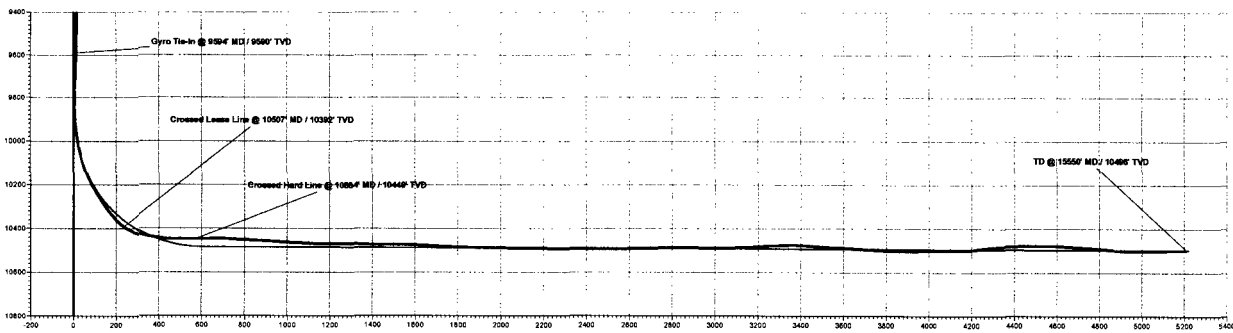
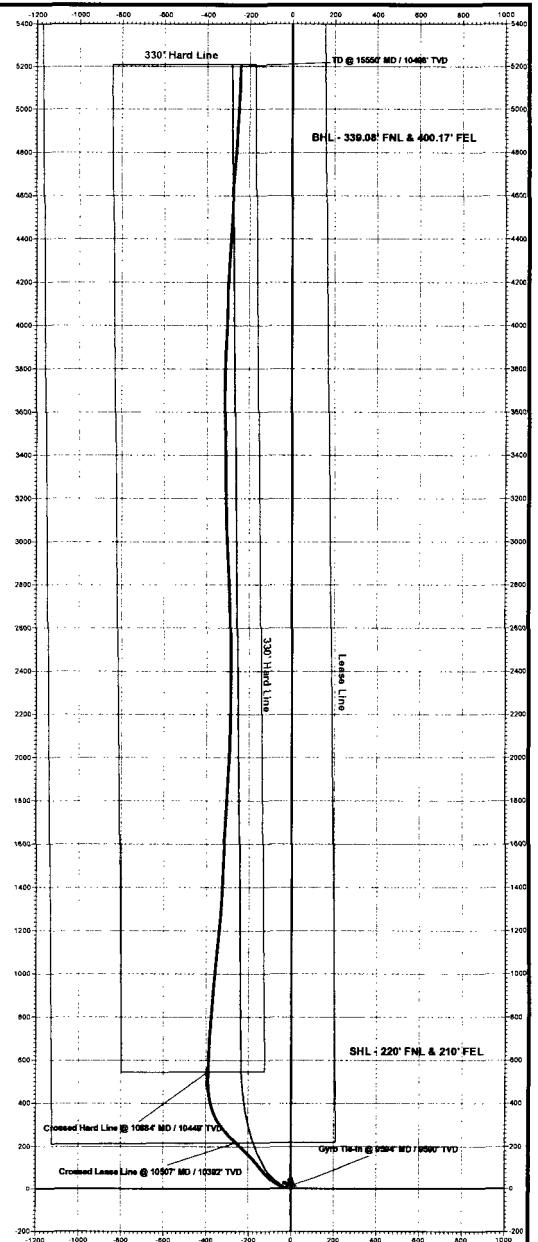
Loving Townsite 21 W2PA FEE #1H
Eddy County, New Mexico
Q170265 & WT-170216
Design #2 (tie-in)



WELL DETAILS: Loving Townsite 21 W2PA FEE #1H					
		Ground Level:	3035.0		
+N-S	+E-W	Northing	Eastings	Latitude	Longitude
0.0	0.0	498537.50	577985.40	32° 10' 57.985 N	104° 0' 2.093 W

PROJECT DETAILS: Eddy County, New Mexico
Geodetic System: US State Plane 1927 (Exact solution)
Datum: NAD 1927 (NADCON CONUS)
Ellipsoid: Clarke 1866
Zone: New Mexico East 3001
System Datum: Mean Sea Level

ANNOTATIONS									
MD	Inc	Azi	TVD	+N-S	+E-W	V	Sect	Departure	Annotation
9594.0	1.25	194.87	9590.2	10.1	-21.3	11.3	221.3	0.0	Gyro Tie-In @ 9594' MD / 9590' TVD
10506.6	62.85	313.41	10391.8	218.0	-260.7	231.9	552.9	0.0	Crossed Lease Line @ 10507' MD / 10392' TVD
10854.3	90.79	0.87	10448.7	547.1	-351.6	567.8	922.6	0.0	Crossed Hard Line @ 10854' MD / 10449' TVD
15550.0	91.40	1.80	10497.7	5202.4	-244.9	5208.0	5584.0	0.0	TD @ 15550' MD / 10498' TVD



Vertical Section at 356.87° (200 usft/in)



Mewbourne Oil Company

Eddy County, New Mexico

Sec 28, T23S, R28E

Loving Townsite 21 W2PA FEE #1H

30-015-43496

Wellbore #1

Design: Wellbore #1

QES Survey Report

28 March, 2017





Survey Report



Company: Mewbourne Oil Company
Project: Eddy County, New Mexico
Site: Sec 28, T23S, R28E
Well: Loving Townsite 21 W2PA FEE #1H
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Loving Townsite 21 W2PA FEE #1H
TVD Reference: WELL @ 3062.0usft (Patterson #243)
MD Reference: WELL @ 3062.0usft (Patterson #243)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM5002

Project	Eddy County, New Mexico		
Map System:	US State Plane 1927 (Exact solution)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 (NADCON CONUS)		
Map Zone:	New Mexico East 3001		

Site	Sec 28, T23S, R28E				
Site Position:		Northing:	466,637.50 usft	Latitude:	32° 16' 57.565 N
From:	Map	Easting:	577,080.40 usft	Longitude:	104° 5' 2.093 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.13 °

Well	Loving Townsite 21 W2PA FEE #1H					
Well Position	+N/-S	0.0 usft	Northing:	466,637.50 usft	Latitude:	32° 16' 57.565 N
	+E/-W	0.0 usft	Easting:	577,080.40 usft	Longitude:	104° 5' 2.093 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	3,035.0 usft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	2/17/2017	7.23	60.04	47,955

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	356.87	

Survey Program	Date 3/28/2017			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.0	9,594.0	Gyro (Wellbore #1)	Good_gyro	Good Gyro
9,760.0	15,550.0	MWD Surveys (Gyro Tie-In) (Wellbore #1)	MWD default	MWD - Standard

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)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.29	76.53	100.0	0.1	0.2	0.0	0.29	0.29	0.00
200.0	1.24	47.25	200.0	0.9	1.3	0.8	1.00	0.95	-29.28
300.0	1.67	13.86	300.0	3.0	2.4	2.9	0.93	0.43	-33.39
400.0	2.19	338.54	399.9	6.2	2.1	6.1	1.27	0.52	-35.32
500.0	2.05	333.92	499.8	9.6	0.6	9.5	0.22	-0.14	-4.62
600.0	2.27	341.20	599.8	13.1	-0.8	13.1	0.35	0.22	7.28
700.0	2.03	327.89	699.7	16.4	-2.4	16.5	0.55	-0.24	-13.31
800.0	1.95	336.71	799.6	19.5	-4.0	19.7	0.32	-0.08	8.82
900.0	2.47	332.65	899.6	23.0	-5.7	23.3	0.54	0.52	-4.06

Survey Report



Company: Mewbourne Oil Company
Project: Eddy County, New Mexico
Site: Sec 28, T23S, R28E
Well: Loving Townsite 21 W2PA FEE #1H
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Loving Townsite 21 W2PA FEE #1H
TVD Reference: WELL @ 3062.0usft (Patterson #243)
MD Reference: WELL @ 3062.0usft (Patterson #243)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM5002

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)
1,000.0	2.89	358.34	999.5	27.4	-6.7	27.7	1.26	0.42	25.69
1,100.0	3.31	359.02	1,099.3	32.8	-6.9	33.1	0.42	0.42	0.68
1,200.0	3.38	355.65	1,199.1	38.6	-7.1	39.0	0.21	0.07	-3.37
1,300.0	3.28	349.74	1,299.0	44.4	-7.9	44.8	0.36	-0.10	-5.91
1,400.0	0.93	338.08	1,398.9	48.0	-8.7	48.4	2.38	-2.35	-11.66
1,500.0	0.18	254.91	1,498.9	48.7	-9.1	49.1	0.93	-0.75	-83.17
1,600.0	0.14	314.92	1,598.9	48.7	-9.4	49.2	0.16	-0.04	60.01
1,700.0	0.51	296.25	1,698.9	49.0	-9.9	49.5	0.38	0.37	-18.67
1,800.0	0.58	283.48	1,798.9	49.3	-10.8	49.8	0.14	0.07	-12.77
1,900.0	0.42	250.77	1,898.9	49.3	-11.6	49.9	0.32	-0.16	-32.71
2,000.0	0.65	136.13	1,998.9	48.8	-11.6	49.3	0.91	0.23	-114.64
2,100.0	0.71	125.57	2,098.9	48.0	-10.7	48.5	0.14	0.06	-10.56
2,200.0	1.10	147.67	2,198.9	46.8	-9.6	47.3	0.52	0.39	22.10
2,300.0	1.72	144.74	2,298.8	44.8	-8.3	45.2	0.62	0.62	-2.93
2,400.0	2.31	141.23	2,398.8	42.0	-6.1	42.3	0.60	0.59	-3.51
2,500.0	2.17	139.01	2,498.7	39.0	-3.6	39.2	0.16	-0.14	-2.22
2,600.0	2.51	134.36	2,598.6	36.1	-0.8	36.0	0.39	0.34	-4.65
2,700.0	2.28	135.46	2,698.5	33.1	2.1	32.9	0.23	-0.23	1.10
2,800.0	1.73	134.10	2,798.5	30.6	4.6	30.3	0.55	-0.55	-1.36
2,900.0	1.51	140.80	2,898.4	28.6	6.5	28.2	0.29	-0.22	6.70
3,000.0	1.17	151.45	2,998.4	26.6	7.9	26.2	0.42	-0.34	10.65
3,100.0	1.32	140.45	3,098.4	24.9	9.1	24.3	0.28	0.15	-11.00
3,200.0	0.87	135.81	3,198.3	23.4	10.3	22.8	0.46	-0.45	-4.64
3,300.0	1.11	154.74	3,298.3	22.0	11.3	21.4	0.40	0.24	18.93
3,400.0	0.86	116.63	3,398.3	20.8	12.4	20.1	0.69	-0.25	-38.11
3,500.0	0.50	93.16	3,498.3	20.4	13.5	19.7	0.45	-0.36	-23.47
3,600.0	0.41	108.93	3,598.3	20.3	14.3	19.5	0.15	-0.09	15.77
3,700.0	0.77	111.93	3,698.3	19.9	15.2	19.1	0.36	0.36	3.00
3,800.0	0.75	71.78	3,798.3	19.9	16.5	19.0	0.52	-0.02	-40.15
3,900.0	0.31	112.86	3,898.3	20.0	17.3	19.0	0.56	-0.44	41.08
4,000.0	0.32	128.91	3,998.3	19.7	17.8	18.7	0.09	0.01	16.05
4,100.0	0.26	130.75	4,098.3	19.4	18.2	18.4	0.06	-0.06	1.84
4,200.0	0.13	308.17	4,198.3	19.3	18.3	18.3	0.39	-0.13	177.42
4,300.0	0.43	194.98	4,298.3	19.0	18.1	18.0	0.50	0.30	-113.19
4,400.0	0.19	284.11	4,398.3	18.7	17.8	17.7	0.47	-0.24	89.13
4,500.0	0.38	104.16	4,498.3	18.6	18.0	17.6	0.57	0.19	-179.95
4,600.0	0.19	219.63	4,598.3	18.4	18.2	17.4	0.49	-0.19	115.47
4,700.0	0.36	210.33	4,698.3	18.0	17.9	17.0	0.18	0.17	-9.30
4,800.0	0.14	62.64	4,798.3	17.8	17.9	16.8	0.48	-0.22	-147.69
4,900.0	0.43	289.63	4,898.3	18.0	17.6	17.0	0.54	0.29	-133.01
5,000.0	0.22	314.54	4,998.3	18.3	17.2	17.3	0.25	-0.21	24.91
5,100.0	0.58	356.06	5,098.3	18.9	17.0	17.9	0.44	0.36	41.52
5,200.0	0.41	286.45	5,198.3	19.5	16.6	18.6	0.58	-0.17	-69.61

Survey Report



Company: Mewbourne Oil Company
Project: Eddy County, New Mexico
Site: Sec 28, T23S, R28E
Well: Loving Townsite 21 W2PA FEE #1H
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Loving Townsite 21 W2PA FEE #1H
TVD Reference: WELL @ 3062.0usft (Patterson #243)
MD Reference: WELL @ 3062.0usft (Patterson #243)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM5002

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)
5,300.0	0.20	254.18	5,298.3	19.6	16.1	18.7	0.26	-0.21	-32.27
5,400.0	1.06	295.85	5,398.3	19.9	15.1	19.1	0.92	0.86	41.67
5,500.0	0.92	268.41	5,498.3	20.3	13.5	19.5	0.49	-0.14	-27.44
5,600.0	0.79	256.74	5,598.2	20.1	12.0	19.4	0.22	-0.13	-11.67
5,700.0	0.77	268.90	5,698.2	20.0	10.6	19.3	0.17	-0.02	12.16
5,800.0	0.98	259.45	5,798.2	19.8	9.1	19.3	0.25	0.21	-9.45
5,900.0	0.74	244.05	5,898.2	19.3	7.7	18.9	0.33	-0.24	-15.40
6,000.0	0.48	254.34	5,998.2	18.9	6.7	18.6	0.28	-0.26	10.29
6,100.0	0.84	264.44	6,098.2	18.8	5.6	18.4	0.38	0.36	10.10
6,200.0	0.84	260.00	6,198.2	18.6	4.1	18.3	0.07	0.00	-4.44
6,300.0	1.32	298.17	6,298.2	19.0	2.4	18.8	0.84	0.48	38.17
6,400.0	2.42	291.48	6,398.1	20.3	-0.6	20.3	1.12	1.10	-6.69
6,500.0	2.92	286.14	6,498.0	21.8	-5.0	22.0	0.56	0.50	-5.34
6,600.0	2.53	287.75	6,597.9	23.2	-9.5	23.6	0.40	-0.39	1.61
6,700.0	2.74	316.05	6,697.8	25.6	-13.3	26.2	1.30	0.21	28.30
6,800.0	4.31	302.49	6,797.6	29.3	-18.1	30.2	1.77	1.57	-13.56
6,900.0	4.80	295.34	6,897.3	33.1	-25.1	34.4	0.75	0.49	-7.15
7,000.0	2.06	302.90	6,997.1	35.9	-30.4	37.5	2.77	-2.74	7.56
7,100.0	0.70	267.65	7,097.1	36.8	-32.5	38.5	1.54	-1.36	-35.25
7,200.0	1.85	170.19	7,197.0	35.2	-32.8	36.9	2.06	1.15	-97.46
7,300.0	1.81	154.96	7,297.0	32.2	-31.9	33.9	0.49	-0.04	-15.23
7,400.0	0.93	161.06	7,397.0	30.0	-31.0	31.6	0.89	-0.88	6.10
7,500.0	1.02	137.12	7,497.0	28.6	-30.1	30.2	0.41	0.09	-23.94
7,600.0	0.73	352.10	7,596.9	28.5	-29.6	30.1	1.67	-0.29	-145.02
7,700.0	1.25	3.91	7,696.9	30.3	-29.6	31.8	0.56	0.52	11.81
7,800.0	1.62	306.41	7,796.9	32.2	-30.6	33.8	1.42	0.37	-57.50
7,900.0	1.59	314.00	7,896.9	34.0	-32.8	35.7	0.21	-0.03	7.59
8,000.0	0.87	244.55	7,996.8	34.6	-34.5	36.5	1.52	-0.72	-69.45
8,100.0	1.13	161.22	8,096.8	33.4	-34.8	35.2	1.34	0.26	-83.33
8,200.0	0.34	125.14	8,196.8	32.3	-34.3	34.1	0.88	-0.79	-36.08
8,300.0	0.91	224.76	8,296.8	31.5	-34.6	33.4	1.02	0.57	99.62
8,400.0	0.52	207.87	8,396.8	30.6	-35.4	32.5	0.44	-0.39	-16.89
8,500.0	0.62	110.29	8,496.8	30.0	-35.1	31.8	0.86	0.10	-97.58
8,600.0	2.41	81.14	8,596.8	30.1	-32.5	31.8	1.89	1.79	-29.15
8,700.0	2.71	98.69	8,696.7	30.1	-28.1	31.6	0.84	0.30	17.55
8,800.0	3.30	122.17	8,796.5	28.2	-23.3	29.4	1.35	0.59	23.48
8,900.0	2.58	130.99	8,896.4	25.2	-19.2	26.2	0.85	-0.72	8.82
9,000.0	1.49	151.65	8,996.3	22.6	-16.8	23.4	1.30	-1.09	20.66
9,100.0	1.48	210.39	9,096.3	20.3	-16.9	21.2	1.46	-0.01	58.74
9,200.0	1.36	208.16	9,196.3	18.1	-18.1	19.1	0.13	-0.12	-2.23
9,300.0	1.34	201.92	9,296.3	16.0	-19.1	17.0	0.15	-0.02	-6.24
9,400.0	1.25	205.22	9,396.2	13.9	-20.0	15.0	0.12	-0.09	3.30
9,500.0	1.14	196.67	9,496.2	12.0	-20.7	13.1	0.21	-0.11	-8.55

Survey Report



Company: Mewbourne Oil Company
Project: Eddy County, New Mexico
Site: Sec 28, T23S, R28E
Well: Loving Townsite 21 W2PA FEE #1H
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Loving Townsite 21 W2PA FEE #1H
TVD Reference: WELL @ 3062.0usft (Patterson #243)
MD Reference: WELL @ 3062.0usft (Patterson #243)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM5002

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)
Gyro Tie-In @ 9594' MD / 9590' TVD									
9,594.0	1.25	194.67	9,590.2	10.1	-21.3	11.3	0.13	0.12	-2.13
9,760.0	2.50	194.80	9,756.1	4.9	-22.6	6.1	0.75	0.75	0.08
9,792.0	2.10	194.50	9,788.1	3.6	-23.0	4.9	1.25	-1.25	-0.94
9,823.0	2.20	230.90	9,819.1	2.7	-23.6	4.0	4.34	0.32	117.42
9,854.0	4.80	275.20	9,850.0	2.4	-25.3	3.8	11.52	8.39	142.90
9,886.0	7.90	286.10	9,881.8	3.2	-28.8	4.7	10.35	9.69	34.06
9,917.0	10.60	291.50	9,912.4	4.8	-33.5	6.6	9.14	8.71	17.42
9,948.0	13.70	296.80	9,942.7	7.5	-39.4	9.6	10.62	10.00	17.10
9,980.0	15.80	300.80	9,973.6	11.4	-46.5	14.0	7.29	6.56	12.50
10,011.0	17.40	298.50	10,003.4	15.8	-54.2	18.8	5.58	5.16	-7.42
10,042.0	19.90	303.30	10,032.7	20.9	-62.7	24.3	9.46	8.06	15.48
10,073.0	21.60	307.20	10,061.7	27.3	-71.7	31.1	7.06	5.48	12.58
10,105.0	23.60	309.30	10,091.3	34.9	-81.3	39.3	6.74	6.25	6.56
10,136.0	25.60	313.10	10,119.4	43.4	-91.0	48.3	8.22	6.45	12.26
10,167.0	28.60	315.40	10,147.0	53.3	-101.1	58.7	10.25	9.68	7.42
10,199.0	31.40	317.70	10,174.7	64.9	-112.1	70.9	9.46	8.75	7.19
10,230.0	33.80	320.00	10,200.9	77.5	-123.1	84.1	8.71	7.74	7.42
10,261.0	36.40	318.60	10,226.2	91.0	-134.7	98.2	8.78	8.39	-4.52
10,292.0	39.10	318.20	10,250.7	105.2	-147.3	113.0	8.75	8.71	-1.29
10,324.0	41.00	317.40	10,275.2	120.4	-161.2	129.0	6.15	5.94	-2.50
10,355.0	44.20	316.60	10,298.0	135.8	-175.5	145.1	10.47	10.32	-2.58
10,386.0	46.00	317.00	10,319.9	151.8	-190.5	161.9	5.88	5.81	1.29
10,416.0	49.50	313.30	10,340.1	167.5	-206.2	178.5	14.81	11.67	-12.33
10,447.0	52.80	312.80	10,359.5	184.0	-223.8	195.9	10.72	10.65	-1.61
10,478.0	57.30	312.30	10,377.3	201.1	-242.5	214.1	14.58	14.52	-1.61
Crossed Lease Line @ 10507' MD / 10392' TVD									
10,506.6	62.65	313.41	10,391.6	218.0	-260.7	231.9	19.01	18.71	3.89
10,509.0	63.10	313.50	10,392.7	219.4	-262.2	233.4	19.01	18.73	3.67
10,541.0	68.80	314.00	10,405.7	239.6	-283.3	254.8	17.87	17.81	1.56
10,573.0	72.60	316.60	10,416.3	261.1	-304.5	277.4	14.13	11.88	8.13
10,604.0	77.00	321.90	10,424.4	283.8	-324.0	301.0	21.76	14.19	17.10
10,636.0	79.10	327.00	10,431.1	309.2	-342.2	327.5	16.92	6.56	15.94
10,667.0	80.10	333.70	10,436.7	335.7	-357.3	354.7	21.50	3.23	21.61
10,699.0	81.20	340.00	10,441.9	364.7	-369.7	384.4	19.73	3.44	19.69
10,730.0	84.50	344.10	10,445.7	394.0	-379.2	414.1	16.90	10.65	13.23
10,761.0	86.50	349.70	10,448.2	424.1	-386.2	444.5	19.13	6.45	18.06
10,795.0	89.90	356.70	10,449.2	457.8	-390.2	478.4	22.88	10.00	20.59
10,857.0	90.50	0.20	10,449.0	519.8	-391.9	540.4	5.73	0.97	5.65
Crossed Hard Line @ 10884' MD / 10449' TVD									
10,884.3	90.79	0.87	10,448.7	547.1	-391.6	567.6	2.67	1.06	2.45
10,951.0	91.50	2.50	10,447.4	613.7	-389.7	634.1	2.67	1.06	2.45
11,045.0	87.40	3.90	10,448.3	707.5	-384.4	727.5	4.61	-4.36	1.49
11,138.0	86.70	4.30	10,453.1	800.2	-377.8	819.6	0.87	-0.75	0.43

Survey Report



Company: Mewbourne Oil Company
Project: Eddy County, New Mexico
Site: Sec 28, T23S, R28E
Well: Loving Townsite 21 W2PA FEE #1H
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Loving Townsite 21 W2PA FEE #1H
TVD Reference: WELL @ 3062.0usft (Patterson #243)
MD Reference: WELL @ 3062.0usft (Patterson #243)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: EDM5002

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)
11,232.0	86.80	5.00	10,458.4	893.7	-370.2	912.6	0.75	0.11	0.74
11,326.0	86.80	5.00	10,463.6	987.2	-362.0	1,005.5	0.00	0.00	0.00
11,420.0	87.10	5.70	10,468.6	1,080.7	-353.2	1,098.3	0.81	0.32	0.74
11,514.0	89.30	5.90	10,471.6	1,174.1	-343.7	1,191.2	2.35	2.34	0.21
11,608.0	90.50	4.80	10,471.8	1,267.7	-335.0	1,284.1	1.73	1.28	-1.17
11,702.0	87.80	2.20	10,473.2	1,361.5	-329.2	1,377.5	3.99	-2.87	-2.77
11,796.0	90.00	2.20	10,475.0	1,455.4	-325.6	1,471.0	2.34	2.34	0.00
11,890.0	89.80	2.00	10,475.1	1,549.4	-322.2	1,564.6	0.30	-0.21	-0.21
11,984.0	86.60	3.40	10,478.1	1,643.2	-317.8	1,658.1	3.72	-3.40	1.49
12,078.0	87.90	4.10	10,482.6	1,736.9	-311.6	1,751.3	1.57	1.38	0.74
12,171.0	86.90	3.60	10,486.8	1,829.6	-305.4	1,843.5	1.20	-1.08	-0.54
12,265.0	90.70	3.40	10,488.8	1,923.4	-299.6	1,936.9	4.05	4.04	-0.21
12,359.0	88.10	2.50	10,489.8	2,017.2	-294.8	2,030.3	2.93	-2.77	-0.96
12,451.0	90.30	2.00	10,491.0	2,109.1	-291.2	2,121.9	2.45	2.39	-0.54
12,545.0	89.10	0.40	10,491.5	2,203.1	-289.2	2,215.6	2.13	-1.28	-1.70
12,638.0	90.10	0.20	10,492.2	2,296.1	-288.7	2,308.5	1.10	1.08	-0.22
12,732.0	89.30	0.60	10,492.7	2,390.1	-288.1	2,402.3	0.95	-0.85	0.43
12,827.0	90.40	359.00	10,492.9	2,485.1	-288.4	2,497.1	2.04	1.16	-1.68
12,920.0	91.30	359.50	10,491.5	2,578.1	-289.6	2,590.1	1.11	0.97	0.54
13,014.0	89.90	358.10	10,490.6	2,672.1	-291.6	2,684.0	2.11	-1.49	-1.49
13,108.0	93.30	358.00	10,487.9	2,765.9	-294.8	2,777.9	3.62	3.62	-0.11
13,202.0	88.40	357.10	10,486.5	2,859.8	-298.8	2,871.9	5.30	-5.21	-0.96
13,296.0	87.70	357.40	10,489.7	2,953.7	-303.3	2,965.8	0.81	-0.74	0.32
13,390.0	92.30	357.60	10,489.7	3,047.5	-307.4	3,059.8	4.90	4.89	0.21
13,484.0	94.10	358.30	10,484.5	3,141.3	-310.8	3,153.6	2.05	1.91	0.74
13,578.0	92.40	359.50	10,479.2	3,235.2	-312.6	3,247.4	2.21	-1.81	1.28
13,672.0	90.90	0.10	10,476.5	3,329.1	-312.9	3,341.2	1.72	-1.60	0.64
13,766.0	86.20	358.80	10,478.8	3,423.1	-313.8	3,435.1	5.19	-5.00	-1.38
13,859.0	86.50	359.40	10,484.8	3,515.9	-315.3	3,527.8	0.72	0.32	0.65
13,953.0	87.10	0.10	10,490.0	3,609.7	-315.7	3,621.6	0.98	0.64	0.74
14,047.0	86.10	359.90	10,495.6	3,703.5	-315.7	3,715.2	1.08	-1.06	-0.21
14,141.0	86.80	1.50	10,501.4	3,797.3	-314.5	3,808.9	1.85	0.74	1.70
14,235.0	92.20	3.10	10,502.2	3,891.2	-310.8	3,902.4	5.99	5.74	1.70
14,329.0	90.80	2.90	10,499.8	3,985.1	-305.8	3,995.8	1.50	-1.49	-0.21
14,422.0	87.90	359.40	10,500.8	4,078.0	-304.0	4,088.5	4.89	-3.12	-3.76
14,516.0	95.60	3.10	10,497.9	4,171.9	-301.9	4,182.1	9.09	8.19	3.94
14,611.0	96.10	3.10	10,488.3	4,266.2	-296.8	4,276.1	0.53	0.53	0.00
14,704.0	93.90	3.80	10,480.2	4,358.7	-291.2	4,368.1	2.48	-2.37	0.75
14,798.0	89.00	3.20	10,477.8	4,452.5	-285.5	4,461.4	5.25	-5.21	-0.64
14,892.0	89.90	2.00	10,478.7	4,546.4	-281.3	4,554.9	1.60	0.96	-1.28
14,985.0	86.20	4.60	10,481.8	4,639.1	-275.9	4,647.3	4.86	-3.98	2.80
15,079.0	86.40	4.50	10,487.9	4,732.6	-268.5	4,740.2	0.24	0.21	-0.11
15,173.0	85.20	3.90	10,494.8	4,826.1	-261.6	4,833.2	1.43	-1.28	-0.64

Survey Report



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Wellbore: Wellbore #1
Design: Wellbore #1

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Survey Calculation Method: Minimum Curvature
Database: EDM5002

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)
15,267.0	86.70	2.30	10,501.4	4,919.8	-256.5	4,926.4	2.33	1.60	-1.70
15,360.0	92.00	2.20	10,502.5	5,012.6	-252.9	5,019.0	5.70	5.70	-0.11
15,454.0	91.10	3.40	10,499.9	5,106.5	-248.3	5,112.4	1.60	-0.96	1.28
15,500.0	91.40	1.60	10,498.9	5,152.4	-246.3	5,158.2	3.97	0.65	-3.91
TD @ 15550' MD / 10498' TVD									
15,550.0	91.40	1.60	10,497.7	5,202.4	-244.9	5,208.0	0.00	0.00	0.00

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
9,594.0	9,590.2	10.1	-21.3	Gyro Tie-In @ 9594' MD / 9590' TVD
10,506.6	10,391.6	218.0	-260.7	Crossed Lease Line @ 10507' MD / 10392' TVD
10,884.3	10,448.7	547.1	-391.6	Crossed Hard Line @ 10884' MD / 10449' TVD
15,550.0	10,497.7	5,202.4	-244.9	TD @ 15550' MD / 10498' TVD

Checked By: _____ Approved By: _____ Date: _____

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-170264	4/11/2017

Lease	Well Name	County & State
Sec28,T23S,R28E	LovingTownsite21W2PAFee1H	Eddy, New Mexico

API No.	Survey Depth Range	Survey Type
30-015-43496	9594 feet to 15550 feet MD	MWD

Sidetrack Information	Directional Supervisor/Surveyor
N/A	Agee Combs

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

Digitally signed by Christopher Hughes
DN: cn=Christopher Hughes, o=QES, ou=compliance,
email=chrish@qeslp.com, c=US
Date: 2017.04.12 10:41:39 -05'00'

Christopher Hughes
MWD Compliance Manager
Quintana Energy Services



Mewbourne Oil Company

Eddy County, New Mexico

Sec 28, T23S, R28E

Loving Townsite 21W2PA FEE #1H

Wellbore #1

Survey: MWD Surveys (Gyro Tie-In)

QES Survey Report

11 April, 2017

NM OIL CONSERVATION
ARTESIA DISTRICT
JUL 05 2017
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