

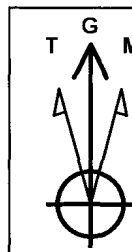
30-015-43950

Company Name: Mewbourne Oil Company
Styx 17 W2PA FEE COM #1H
Eddy County, New Mexico
Rig: Patterson #243 KB 28.5'
Created By: Sam Hays
Date: 1/4/2017

Styx 17 W2PA FEE COM #1H
Eddy County, New Mexico
Q160837 & WT-160593
Design #4 - Tie In



WELL DETAILS: Styx 17 W2PA FEE COM #1H				
	Ground Level:	3037.0		
+N/-S	+E/-W	North	East	Longitude
0.0	0.0	471992.50	571625.50	104° 6' 5.493 W

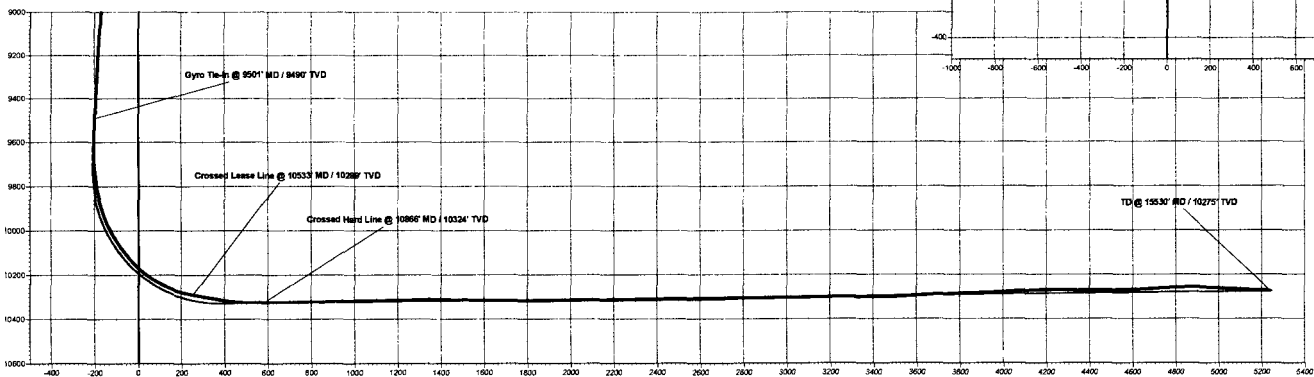
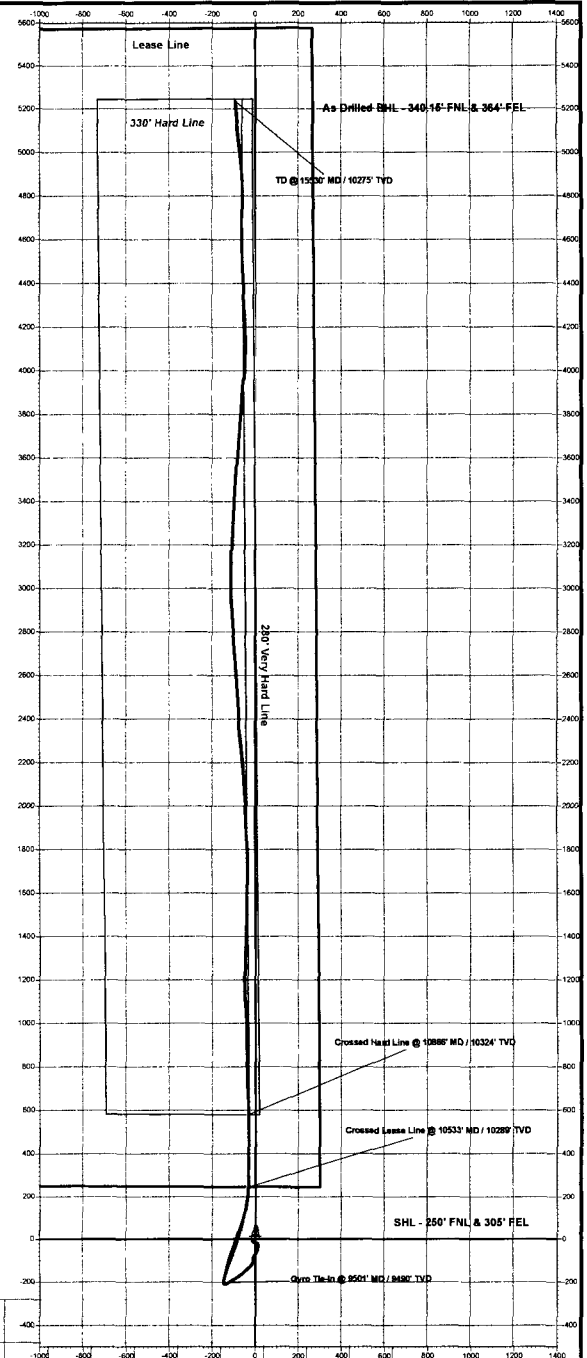


Azimuths to Grid North
True North: -0.12°
Magnetic North: 7.14°
Magnetic Field
Strength: 47983.6snT
Dip Angle: 60.05°
Date: 11/29/2016
Model: IGRF2015

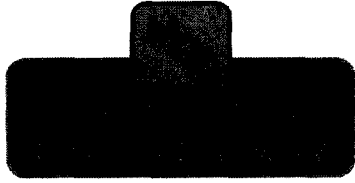
PROJECT DETAILS: Eddy County, New Mexico

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	
9501.0	4.84	238.95	9490.6	-203.1	-126.4	-201.8	304.5	Gyro Tie-In @ 9501' MD / 9490' TVD	
10533.0	79.08	1.71	10289.3	250.0	-33.3	250.4	800.4	Crossed Lease Line @ 10533' MD / 10289' TVD	
10865.9	90.75	358.78	10323.8	580.0	-33.7	580.4	1130.5	Crossed Hard Line @ 10865' MD / 10324' TVD	
15530.0	87.10	356.50	10274.6	5234.6	-95.2	5235.3	5792.7	TD @ 15530' MD / 10275' TVD	



Vertical Section at 359.33° (200 usf/in)



ARTESIA OIL CONSERVATION
ARTESIA DISTRICT

MAY 05 2017

RECEIVED

Mewbourne Oil Company

Eddy County, New Mexico

Sec 20, T23S, R28E

Styx 17 W2PA FEE COM #1H

Wellbore #1

Design: Wellbore #1

QES Survey Report

04 January, 2017



Survey Report

DES

Company: Mewbourne Oil Company
Project: Eddy County, New Mexico
Site: Sec 20, T23S, R28E
Well: Styx 17 W2PA FEE COM #1H
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Styx 17 W2PA FEE COM #1H
TVD Reference: WELL @ 3063.5usft (Patterson #243 KB 26.5')
MD Reference: WELL @ 3063.5usft (Patterson #243 KB 26.5')
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 20, T23S, R28E			
Site Position:		Northing:	471,892.50 usft	Latitude:	32° 17' 49.690 N
From:	Map	Easting:	571,626.50 usft	Longitude:	104° 6' 5.493 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.12 °

Well	Styx 17 W2PA FEE COM #1H					
Well Position	+N/-S	0.0 usft	Northing:	471,892.50 usft	Latitude:	32° 17' 49.690 N
	+E/-W	0.0 usft	Easting:	571,626.50 usft	Longitude:	104° 6' 5.493 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	3,037.0 usft

Wellbore	Wellbore #1					
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength	
			(°)	(°)	(nT)	
	IGRF2015	11/29/2016	7.26	60.05	47,984	

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	359.33		

Survey Program	Date 1/4/2017			
From	To	Survey (Wellbore)	Tool Name	Description
(usft)	(usft)			
100.0	9,501.0	Gyro (Wellbore #1)	Good_gyro	Good Gyro
9,642.0	15,530.0	MWD Surveys (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	0.32	300.28	100.0	0.1	-0.2	0.1	0.32	0.32	0.00
200.0	0.75	268.65	200.0	0.3	-1.1	0.3	0.51	0.43	-31.63
300.0	0.73	279.70	300.0	0.4	-2.4	0.4	0.14	-0.02	11.05
400.0	0.69	248.34	400.0	0.2	-3.6	0.3	0.39	-0.04	-31.36
500.0	0.87	249.34	500.0	-0.2	-4.9	-0.2	0.18	0.18	1.00
600.0	0.50	236.65	600.0	-0.8	-6.0	-0.7	0.40	-0.37	-12.69
700.0	0.76	233.44	700.0	-1.4	-6.8	-1.3	0.26	0.26	-3.21
800.0	0.62	256.15	799.9	-1.9	-7.9	-1.8	0.30	-0.14	22.71
900.0	0.71	238.90	899.9	-2.4	-9.0	-2.3	0.22	0.09	-17.25

Survey Report



Company: Mewbourne Oil Company
Project: Eddy County, New Mexico
Site: Sec 20, T23S, R28E
Well: Styx 17 W2PA FEE COM #1H
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Styx 17 W2PA FEE COM #1H
TVD Reference: WELL @ 3063.5usft (Patterson #243 KB 26.5')
MD Reference: WELL @ 3063.5usft (Patterson #243 KB 26.5')
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	0.34	293.20	999.9	-2.6	-9.8	-2.5	0.58	-0.37	54.30
1,100.0	0.82	221.99	1,099.9	-3.0	-10.5	-2.9	0.78	0.48	-71.21
1,200.0	0.73	230.76	1,199.9	-3.9	-11.5	-3.8	0.15	-0.09	8.77
1,300.0	0.52	194.00	1,299.9	-4.8	-12.1	-4.6	0.44	-0.21	-36.76
1,400.0	0.84	192.94	1,399.9	-5.9	-12.4	-5.8	0.32	0.32	-1.06
1,500.0	0.60	201.35	1,499.9	-7.1	-12.7	-7.0	0.26	-0.24	8.41
1,600.0	0.69	209.10	1,599.9	-8.1	-13.2	-8.0	0.13	0.09	7.75
1,700.0	0.45	157.59	1,699.9	-9.0	-13.3	-8.9	0.54	-0.24	-51.51
1,800.0	1.47	129.86	1,799.9	-10.2	-12.2	-10.1	1.09	1.02	-27.73
1,900.0	1.76	131.31	1,899.8	-12.0	-10.1	-11.9	0.29	0.29	1.45
2,000.0	2.14	129.18	1,999.8	-14.2	-7.5	-14.1	0.39	0.38	-2.13
2,100.0	0.90	108.40	2,099.7	-15.7	-5.3	-15.6	1.34	-1.24	-20.78
2,200.0	1.09	81.31	2,199.7	-15.8	-3.6	-15.7	0.50	0.19	-27.09
2,300.0	1.30	100.31	2,299.7	-15.8	-1.5	-15.8	0.45	0.21	19.00
2,400.0	1.49	90.41	2,399.7	-16.0	0.9	-16.0	0.31	0.19	-9.90
2,500.0	0.63	98.45	2,499.7	-16.1	2.7	-16.2	0.87	-0.86	8.04
2,600.0	0.75	107.55	2,599.7	-16.4	3.9	-16.4	0.16	0.12	9.10
2,700.0	0.56	123.87	2,699.6	-16.9	4.9	-16.9	0.26	-0.19	16.32
2,800.0	0.63	135.77	2,799.6	-17.5	5.7	-17.6	0.14	0.07	11.90
2,900.0	0.51	119.28	2,899.6	-18.2	6.5	-18.2	0.20	-0.12	-16.49
3,000.0	0.27	112.71	2,999.6	-18.5	7.1	-18.5	0.24	-0.24	-6.57
3,100.0	0.55	123.32	3,099.6	-18.8	7.7	-18.9	0.29	0.28	10.61
3,200.0	0.38	134.17	3,199.6	-19.3	8.3	-19.4	0.19	-0.17	10.85
3,300.0	0.34	93.71	3,299.6	-19.6	8.9	-19.7	0.25	-0.04	-40.46
3,400.0	0.14	63.10	3,399.6	-19.5	9.3	-19.6	0.23	-0.20	-30.61
3,500.0	0.09	86.42	3,499.6	-19.5	9.5	-19.6	0.07	-0.05	23.32
3,600.0	0.24	126.72	3,599.6	-19.6	9.7	-19.7	0.18	0.15	40.30
3,700.0	0.11	97.07	3,699.6	-19.7	10.0	-19.8	0.15	-0.13	-29.65
3,800.0	0.16	33.24	3,799.6	-19.6	10.1	-19.7	0.15	0.05	-63.83
3,900.0	0.27	184.79	3,899.6	-19.7	10.2	-19.9	0.42	0.11	151.55
4,000.0	0.20	126.65	3,999.6	-20.1	10.3	-20.2	0.24	-0.07	-58.14
4,100.0	0.26	308.30	4,099.6	-20.0	10.3	-20.2	0.46	0.06	-178.35
4,200.0	0.22	196.83	4,199.6	-20.1	10.1	-20.2	0.40	-0.04	-111.47
4,300.0	0.29	292.64	4,299.6	-20.2	9.8	-20.3	0.38	0.07	95.81
4,400.0	0.23	222.95	4,399.6	-20.2	9.4	-20.3	0.30	-0.06	-69.69
4,500.0	0.17	80.39	4,499.6	-20.3	9.4	-20.4	0.38	-0.06	-142.56
4,600.0	0.15	282.21	4,599.6	-20.3	9.4	-20.4	0.31	-0.02	-158.18
4,700.0	0.27	287.51	4,699.6	-20.2	9.1	-20.3	0.12	0.12	5.30
4,800.0	0.23	113.69	4,799.6	-20.2	9.0	-20.3	0.50	-0.04	-173.82
4,900.0	0.19	87.34	4,899.6	-20.3	9.4	-20.4	0.10	-0.04	-26.35
5,000.0	0.24	326.53	4,999.6	-20.1	9.4	-20.2	0.37	0.05	-120.81
5,100.0	0.36	296.39	5,099.6	-19.8	9.0	-19.9	0.19	0.12	-30.14
5,200.0	0.12	215.02	5,199.6	-19.7	8.7	-19.8	0.36	-0.24	-81.37

Survey Report



Company: Mewbourne Oil Company
Project: Eddy County, New Mexico
Site: Sec 20, T23S, R28E
Well: Styx 17 W2PA FEE COM #1H
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Styx 17 W2PA FEE COM #1H
TVD Reference: WELL @ 3063.5usft (Patterson #243 KB 26.5')
MD Reference: WELL @ 3063.5usft (Patterson #243 KB 26.5')
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	0.67	245.57	5,299.6	-20.0	8.1	-20.1	0.57	0.55	30.55
5,400.0	0.48	235.41	5,399.6	-20.5	7.2	-20.6	0.21	-0.19	-10.16
5,500.0	0.67	174.57	5,499.6	-21.3	6.9	-21.4	0.60	0.19	-60.84
5,600.0	2.78	78.03	5,599.6	-21.4	9.4	-21.5	2.93	2.11	-96.54
5,700.0	0.43	221.91	5,699.5	-21.2	11.5	-21.3	3.14	-2.35	143.88
5,800.0	0.63	184.28	5,799.5	-22.0	11.2	-22.2	0.39	0.20	-37.63
5,900.0	0.63	161.55	5,899.5	-23.1	11.3	-23.2	0.25	0.00	-22.73
6,000.0	0.82	159.48	5,999.5	-24.3	11.7	-24.4	0.19	0.19	-2.07
6,100.0	0.89	140.18	6,099.5	-25.6	12.5	-25.7	0.29	0.07	-19.30
6,200.0	1.41	167.89	6,199.5	-27.4	13.3	-27.5	0.75	0.52	27.71
6,300.0	1.45	190.48	6,299.5	-29.8	13.3	-30.0	0.56	0.04	22.59
6,400.0	2.33	198.40	6,399.4	-33.0	12.4	-33.1	0.92	0.88	7.92
6,500.0	2.97	195.09	6,499.3	-37.4	11.1	-37.5	0.66	0.64	-3.31
6,600.0	2.72	188.44	6,599.2	-42.3	10.1	-42.4	0.41	-0.25	-6.65
6,700.0	3.19	186.32	6,699.0	-47.4	9.4	-47.5	0.48	0.47	-2.12
6,800.0	2.95	190.57	6,798.9	-52.7	8.6	-52.8	0.33	-0.24	4.25
6,900.0	2.69	199.75	6,898.8	-57.4	7.4	-57.5	0.52	-0.26	9.18
7,000.0	2.79	204.72	6,998.7	-61.8	5.6	-61.9	0.26	0.10	4.97
7,100.0	2.88	214.36	7,098.5	-66.1	3.1	-66.1	0.48	0.09	9.64
7,200.0	2.72	212.17	7,198.4	-70.2	0.4	-70.2	0.19	-0.16	-2.19
7,300.0	2.81	218.01	7,298.3	-74.1	-2.3	-74.1	0.30	0.09	5.84
7,400.0	2.81	210.51	7,398.2	-78.2	-5.1	-78.1	0.37	0.00	-7.50
7,500.0	3.12	198.24	7,498.0	-82.9	-7.2	-82.8	0.70	0.31	-12.27
7,600.0	3.09	191.09	7,597.9	-88.1	-8.5	-88.0	0.39	-0.03	-7.15
7,700.0	3.57	170.44	7,697.7	-93.8	-8.6	-93.7	1.28	0.48	-20.65
7,800.0	3.41	187.37	7,797.5	-99.8	-8.4	-99.7	1.04	-0.16	16.93
7,900.0	3.39	200.90	7,897.4	-105.5	-9.9	-105.4	0.80	-0.02	13.53
8,000.0	3.59	212.32	7,997.2	-111.0	-12.6	-110.8	0.72	0.20	11.42
8,100.0	3.94	205.98	8,097.0	-116.7	-15.8	-116.5	0.54	0.35	-6.34
8,200.0	4.55	222.89	8,196.7	-122.7	-20.0	-122.4	1.39	0.61	16.91
8,300.0	4.98	221.55	8,296.4	-128.8	-25.5	-128.5	0.44	0.43	-1.34
8,400.0	4.51	230.79	8,396.0	-134.6	-31.5	-134.2	0.90	-0.47	9.24
8,500.0	4.91	232.30	8,495.7	-139.7	-37.9	-139.2	0.42	0.40	1.51
8,600.0	5.37	231.16	8,595.3	-145.2	-44.9	-144.7	0.47	0.46	-1.14
8,700.0	6.43	228.72	8,694.7	-151.9	-52.8	-151.2	1.09	1.06	-2.44
8,800.0	7.06	230.46	8,794.1	-159.5	-61.7	-158.7	0.66	0.63	1.74
8,900.0	6.58	231.43	8,893.3	-166.9	-71.0	-166.1	0.49	-0.48	0.97
9,000.0	6.79	236.81	8,992.7	-173.8	-80.4	-172.8	0.66	0.21	5.38
9,100.0	7.11	238.00	9,091.9	-180.3	-90.6	-179.2	0.35	0.32	1.19
9,200.0	6.93	238.30	9,191.2	-186.7	-101.0	-185.5	0.18	-0.18	0.30
9,300.0	6.13	236.16	9,290.5	-192.9	-110.5	-191.6	0.84	-0.80	-2.14
9,400.0	5.34	236.95	9,390.0	-198.4	-118.9	-197.0	0.79	-0.79	0.79

Gyro Tie-In @ 9501' MD / 9490' TVD

Survey Report



Company: Mewbourne Oil Company
Project: Eddy County, New Mexico
Site: Sec 20, T23S, R28E
Well: Styx 17 W2PA FEE COM #1H
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Styx 17 W2PA FEE COM #1H
TVD Reference: WELL @ 3063.5usft (Patterson #243 KB 26.5')
MD Reference: WELL @ 3063.5usft (Patterson #243 KB 26.5')
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)
9,501.0	4.84	238.95	9,490.6	-203.1	-126.4	-201.6	0.53	-0.50	1.98
9,642.0	6.30	247.80	9,631.0	-209.1	-138.7	-207.5	1.20	1.04	6.28
9,674.0	4.80	274.10	9,662.8	-209.7	-141.7	-208.0	9.11	-4.69	82.19
9,705.0	5.30	313.00	9,693.7	-208.6	-144.0	-206.9	10.94	1.61	125.48
9,736.0	7.20	322.10	9,724.5	-206.1	-146.2	-204.4	6.89	6.13	29.35
9,768.0	7.60	339.40	9,756.3	-202.5	-148.2	-200.8	7.05	1.25	54.06
9,799.0	7.30	8.40	9,787.0	-198.7	-148.7	-196.9	12.04	-0.97	93.55
9,830.0	10.30	11.40	9,817.6	-194.0	-147.8	-192.3	9.79	9.68	9.68
9,862.0	12.80	9.60	9,849.0	-187.7	-146.7	-186.0	7.89	7.81	-5.63
9,893.0	15.90	11.70	9,879.0	-180.2	-145.2	-178.5	10.14	10.00	6.77
9,924.0	18.60	14.70	9,908.6	-171.2	-143.1	-169.5	9.17	8.71	9.68
9,956.0	21.50	17.00	9,938.7	-160.7	-140.1	-159.0	9.39	9.06	7.19
9,987.0	25.00	15.90	9,967.2	-148.9	-136.7	-147.3	11.38	11.29	-3.55
10,018.0	27.60	14.00	9,994.9	-135.7	-133.1	-134.1	8.81	8.39	-6.13
10,049.0	31.30	14.40	10,021.9	-120.9	-129.4	-119.4	11.95	11.94	1.29
10,080.0	34.70	16.30	10,047.9	-104.6	-124.9	-103.2	11.46	10.97	6.13
10,111.0	37.00	17.50	10,073.1	-87.3	-119.6	-85.9	7.76	7.42	3.87
10,143.0	39.60	17.90	10,098.2	-68.4	-113.6	-67.0	8.16	8.13	1.25
10,174.0	41.40	19.40	10,121.7	-49.3	-107.1	-48.0	6.60	5.81	4.84
10,205.0	44.80	20.90	10,144.4	-29.4	-99.8	-28.2	11.45	10.97	4.84
10,236.0	49.20	20.10	10,165.5	-8.2	-91.9	-7.1	14.32	14.19	-2.58
10,267.0	52.00	18.40	10,185.2	14.4	-84.0	15.4	9.98	9.03	-5.48
10,299.0	55.60	19.80	10,204.1	38.8	-75.6	39.7	11.79	11.25	4.38
10,330.0	60.50	16.80	10,220.5	63.8	-67.3	64.6	17.81	15.81	-9.68
10,361.0	63.70	15.20	10,235.0	90.1	-59.8	90.8	11.29	10.32	-5.16
10,392.0	65.20	13.80	10,248.4	117.2	-52.8	117.8	6.33	4.84	-4.52
10,423.0	68.20	10.80	10,260.6	145.0	-46.7	145.5	13.14	9.68	-9.68
10,455.0	71.80	9.30	10,271.6	174.6	-41.5	175.1	12.08	11.25	-4.69
10,486.0	76.80	8.00	10,280.0	204.1	-37.0	204.5	16.63	16.13	-4.19
10,495.0	78.30	6.30	10,281.9	212.8	-35.9	213.2	24.86	16.67	-18.89
Crossed Lease Line @ 10533' MD / 10289' TVD									
10,533.0	79.08	1.71	10,289.3	250.0	-33.3	250.4	12.03	2.06	-12.09
10,543.0	79.30	0.50	10,291.2	259.8	-33.1	260.2	12.03	2.17	-12.05
10,606.0	79.30	0.50	10,302.9	321.7	-32.6	322.1	0.00	0.00	0.00
10,637.0	79.70	0.10	10,308.6	352.2	-32.4	352.5	1.81	1.29	-1.29
10,668.0	81.30	1.90	10,313.7	382.8	-31.9	383.1	7.71	5.16	5.81
10,700.0	82.90	359.00	10,318.1	414.5	-31.6	414.8	10.27	5.00	-9.06
10,731.0	84.90	358.90	10,321.4	445.3	-32.2	445.6	6.46	6.45	-0.32
10,762.0	86.50	0.80	10,323.7	476.2	-32.3	476.5	8.00	5.16	6.13
10,794.0	89.80	358.90	10,324.7	508.2	-32.4	508.5	11.90	10.31	-5.94
10,825.0	91.10	359.00	10,324.5	539.2	-32.9	539.5	4.21	4.19	0.32
Crossed Hard Line @ 10866' MD / 10324' TVD									
10,865.9	90.75	358.78	10,323.8	580.0	-33.7	580.4	1.00	-0.85	-0.53
10,919.0	90.30	358.50	10,323.3	633.1	-35.0	633.5	1.00	-0.85	-0.53

Survey Report



Company: Mewbourne Oil Company
Project: Eddy County, New Mexico
Site: Sec 20, T23S, R28E
Well: Styx 17 W2PA FEE COM #1H
Wellbore: Wellbore #1
Design: Wellbore #1

Local Co-ordinate Reference: Well Styx 17 W2PA FEE COM #1H
TVD Reference: WELL @ 3063.5usft (Patterson #243 KB 26.5')
MD Reference: WELL @ 3063.5usft (Patterson #243 KB 26.5')
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)
11,013.0	90.10	359.40	10,323.0	727.1	-36.7	727.5	0.98	-0.21	0.96
11,107.0	90.50	356.80	10,322.5	821.0	-39.8	821.5	2.80	0.43	-2.77
11,201.0	92.60	0.60	10,320.0	915.0	-42.0	915.4	4.62	2.23	4.04
11,295.0	90.90	358.50	10,317.1	1,008.9	-42.7	1,009.3	2.87	-1.81	-2.23
11,389.0	90.00	355.70	10,316.4	1,102.8	-47.4	1,103.3	3.13	-0.96	-2.98
11,483.0	91.30	0.50	10,315.3	1,196.7	-50.6	1,197.2	5.29	1.38	5.11
11,577.0	91.10	1.30	10,313.3	1,290.7	-49.1	1,291.1	0.88	-0.21	0.85
11,670.0	90.40	3.50	10,312.1	1,383.6	-45.2	1,384.0	2.48	-0.75	2.37
11,764.0	88.60	0.80	10,312.9	1,477.5	-41.7	1,477.9	3.45	-1.91	-2.87
11,858.0	89.30	1.50	10,314.7	1,571.4	-39.8	1,571.8	1.05	0.74	0.74
11,951.0	89.20	0.80	10,315.9	1,664.4	-37.9	1,664.7	0.76	-0.11	-0.75
12,045.0	91.20	359.90	10,315.6	1,758.4	-37.3	1,758.7	2.33	2.13	-0.96
12,139.0	89.30	357.30	10,315.1	1,852.4	-39.6	1,852.7	3.43	-2.02	-2.77
12,232.0	90.10	357.30	10,315.6	1,945.3	-44.0	1,945.6	0.86	0.86	0.00
12,325.0	91.50	356.60	10,314.3	2,038.1	-49.0	2,038.5	1.68	1.51	-0.75
12,418.0	90.50	356.40	10,312.7	2,130.9	-54.6	2,131.4	1.10	-1.08	-0.22
12,511.0	89.80	354.50	10,312.5	2,223.6	-62.0	2,224.2	2.18	-0.75	-2.04
12,605.0	90.10	354.10	10,312.5	2,317.2	-71.4	2,317.8	0.53	0.32	-0.43
12,699.0	90.80	357.30	10,311.8	2,410.9	-78.4	2,411.6	3.48	0.74	3.40
12,793.0	90.30	356.40	10,310.9	2,504.7	-83.6	2,505.5	1.10	-0.53	-0.96
12,887.0	91.10	356.80	10,309.8	2,598.6	-89.1	2,599.4	0.95	0.85	0.43
12,981.0	91.20	355.70	10,307.9	2,692.3	-95.3	2,693.3	1.17	0.11	-1.17
13,075.0	91.30	356.10	10,305.8	2,786.1	-102.0	2,787.1	0.44	0.11	0.43
13,168.0	90.70	355.70	10,304.2	2,878.8	-108.7	2,879.9	0.78	-0.65	-0.43
13,262.0	90.40	359.60	10,303.3	2,972.7	-112.5	2,973.8	4.16	-0.32	4.15
13,356.0	90.60	359.40	10,302.5	3,066.7	-113.3	3,067.8	0.30	0.21	-0.21
13,449.0	91.00	2.90	10,301.2	3,159.7	-111.5	3,160.8	3.79	0.43	3.76
13,543.0	90.10	3.30	10,300.3	3,253.5	-106.4	3,254.5	1.05	-0.96	0.43
13,637.0	89.70	2.90	10,300.4	3,347.4	-101.3	3,348.3	0.60	-0.43	-0.43
13,731.0	89.30	3.30	10,301.3	3,441.2	-96.2	3,442.1	0.60	-0.43	0.43
13,825.0	94.00	5.40	10,298.6	3,534.9	-89.1	3,535.7	5.48	5.00	2.23
13,919.0	94.00	4.00	10,292.0	3,628.4	-81.4	3,629.1	1.49	0.00	-1.49
14,012.0	92.10	4.30	10,287.0	3,721.0	-74.7	3,721.6	2.07	-2.04	0.32
14,106.0	90.40	4.70	10,285.0	3,814.7	-67.3	3,815.2	1.86	-1.81	0.43
14,200.0	93.10	4.50	10,282.1	3,908.3	-59.8	3,908.7	2.88	2.87	-0.21
14,293.0	93.40	6.30	10,276.9	4,000.7	-51.0	4,001.1	1.96	0.32	1.94
14,387.0	91.80	359.80	10,272.6	4,094.5	-46.1	4,094.7	7.11	-1.70	-6.91
14,481.0	90.60	358.50	10,270.6	4,188.4	-47.4	4,188.7	1.88	-1.28	-1.38
14,574.0	89.30	356.40	10,270.7	4,281.3	-51.6	4,281.6	2.66	-1.40	-2.26
14,669.0	89.20	358.40	10,271.9	4,376.2	-55.9	4,376.6	2.11	-0.11	2.11
14,763.0	91.10	358.00	10,271.7	4,470.2	-58.8	4,470.5	2.07	2.02	-0.43
14,858.0	91.50	358.40	10,269.5	4,565.1	-61.8	4,565.5	0.60	0.42	0.42
14,952.0	92.40	0.50	10,266.3	4,659.0	-62.7	4,659.4	2.43	0.96	2.23

Survey Report



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Design: Wellbore #1

Local Co-ordinate Reference: Well Styx 17 W2PA FEE COM #1H
TVD Reference: WELL @ 3063.5usft (Patterson #243 KB 26.5')
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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)
15,046.0	94.40	2.20	10,260.8	4,752.8	-60.5	4,753.2	2.79	2.13	1.81
15,155.0	90.00	357.50	10,256.6	4,861.7	-60.8	4,862.1	5.90	-4.04	-4.31
15,250.0	86.50	354.80	10,259.5	4,956.4	-67.2	4,956.9	4.65	-3.68	-2.84
15,343.0	87.10	352.70	10,264.7	5,048.7	-77.3	5,049.3	2.35	0.65	-2.26
15,438.0	86.70	354.70	10,269.8	5,143.0	-87.7	5,143.7	2.14	-0.42	2.11
15,480.0	87.10	355.50	10,272.1	5,184.8	-91.3	5,185.5	2.13	0.95	1.90
TD @ 15530' MD / 10275' TVD									
15,530.0	87.10	355.50	10,274.6	5,234.6	-95.2	5,235.3	0.00	0.00	0.00

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
9,501.0	9,490.6	-203.1	-126.4	Gyro Tie-In @ 9501' MD / 9490' TVD
10,533.0	10,289.3	250.0	-33.3	Crossed Lease Line @ 10533' MD / 10289' TVD
10,865.9	10,323.8	580.0	-33.7	Crossed Hard Line @ 10866' MD / 10324' TVD
15,530.0	10,274.6	5,234.6	-95.2	TD @ 15530' MD / 10275' TVD

Checked By: _____ Approved By: _____ Date: _____