



January 18, 2018

**NM OIL CONSERVATION
ARTESIA DISTRICT**

MAR 28 2018

**New Mexico Energy, Minerals and Natural Resources Department
Attn: Oil Conservation Division
1220 South St. Francis Drive
Santa Fe, NM 87505**

RECEIVED

Attn: Jackie Lathan

**Re: Mewbourne Oil Company
Archduke 19 W2AP Federal #001H
WFMP "D" (Shale)
Eddy County, New Mexico
API# 30-015-44462**

Enclosed please find the original and one (1) copy of the survey performed on the reference well by STRYKER ENERGY DIRECTIONAL SERVICES, L.L.C. Other information required by your office is as follows:

<u>Name & Title</u>	<u>Drainhole No.</u>	<u>Survey Depths</u>	<u>Dates Performed</u>	<u>Type Survey</u>
Jimmy Walker	Original Hole	487ft. to 14,546ft.	11-23-17 to 12-16-17	MWD Survey

A certified plat on which the bottom-hole location is oriented to both surface location and to the lease lines (or unit lines in case of pooling) is attached to the survey report. If any other information is required, please contact the undersigned at the letterhead address and phone number.


Todd Estes

Enclosures

CC:

Mewbourne Oil Company
Attn: Frosty Lathan
P.O. Box 5720
Hobbs, NM 88241

Mewbourne Oil Company
Attn: Robin Terrell
P.O. Box 5720
Hobbs, NM 88241

NMEMaNRD\Mewbourne Oil Company\Archduke 19 W2AP Federal #1HNM171123

**STRYKER ENERGY DIRECTIONAL SERVICES, L.L.C.
P.O. Box 1250
Montgomery, TX 77356
Office (936) 582-7296 * Fax (936)-588-4163**



January 18, 2018

Survey Certification Report

STATE OF TEXAS

COUNTY OF Montgomery

I, Todd Estes, certify that I am employed by STRYKER ENERGY DIRECTIONAL SERVICES, L.L.C., and that I did on the day(s) of November 23, 2017, through December 16, 2017 conduct or supervise the taking of a SEDS Original Hole MWD Survey from a depth of 487 feet to a depth of 14,546 feet; that I am authorized and qualified to make this report; that this survey was conducted at the request of Mewbourne Oil Company, for the Archduke 19 W2AP Federal #001H well, API # 30-015-44462 in Eddy County, New Mexico; and that I have reviewed this report and find that it conforms to the principles as set forth by STRYKER ENERGY DIRECTIONAL SERVICES, L.L.C.

A handwritten signature in cursive script, appearing to read "Todd Estes", written over a horizontal line.

Todd Estes

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Mewbourne Oil Company

Eddy County, N.M. Nad (83)

Section 19-24S-27E Archduke 19 W2AP Fed #1H

Archduke 19 W2AP Fed 1H

Original Hole

Design: Original Hole

Standard Survey Report

09 January, 2018





Microsoft Survey Report



Company: Mewbourne Oil Company
Project: Eddy County, N.M. Nad (83)
Site: Section 19-24S-27E Archduke 19 W2AP Fed #1H
Well: Archduke 19 W2AP Fed 1H
Wellbore: Original Hole
Design: Original Hole

Local Co-ordinate Reference: Well Archduke 19 W2AP Fed 1H
TVD Reference: 3242 + 27 @ 3269.0usft (Patterson 245)
MD Reference: 3242 + 27 @ 3269.0usft (Patterson 245)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Stryker_EDM

Project	Eddy County, N.M. 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 Section 19-24S-27E Archduke 19 W2AP Fed #1H

Site Position:		Northing:	440,091.50 usft	Latitude:	32° 12' 35.422 N
From:	Map	Easting:	575,714.10 usft	Longitude:	104° 13' 19.859 W
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.06 °

Well Archduke 19 W2AP Fed 1H

Well Position	+N/-S	0.0 usft	Northing:	440,091.50 usft	Latitude:	32° 12' 35.422 N
	+E/-W	0.0 usft	Easting:	575,714.10 usft	Longitude:	104° 13' 19.859 W
Position Uncertainty		0.0 usft	Wellhead Elevation:	27.0 usft	Ground Level:	3,242.0 usft

Wellbore Original Hole

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	11/14/2017	7.21	59.94	47,818.78806980

Design Original Hole

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	201.19

Survey Program Date 1/9/2018

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
115.0	415.0	Teledrift Survey (Original Hole)	MWD	MWD v3:standard declination
487.0	14,595.0	MWD Survey (Original Hole)	MWD	MWD v3:standard declination

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
115.0	0.50	253.00	115.0	-0.1	-0.5	0.3	0.43	0.43	0.00
196.0	0.80	291.00	196.0	0.0	-1.3	0.5	0.63	0.37	46.91
256.0	0.90	294.00	256.0	0.3	-2.2	0.5	0.18	0.17	5.00
313.0	1.30	282.00	313.0	0.6	-3.2	0.6	0.81	0.70	-21.05
380.0	1.50	270.00	380.0	0.8	-4.8	1.0	0.53	0.30	-17.91
415.0	1.80	272.00	414.9	0.8	-5.8	1.4	0.87	0.86	5.71
415' MD Teledrift									
487.0	1.80	268.50	486.9	0.8	-8.1	2.2	0.15	0.00	-4.86



Microsoft Survey Report



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North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Stryker_EDM

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)
548.0	0.40	257.80	547.9	0.7	-9.3	2.7	2.31	-2.30	-17.54
611.0	0.60	107.50	610.9	0.6	-9.2	2.8	1.54	0.32	-238.57
672.0	0.90	96.10	671.9	0.4	-8.4	2.6	0.55	0.49	-18.69
733.0	1.10	96.50	732.9	0.3	-7.3	2.4	0.33	0.33	0.66
764.0	1.20	93.50	763.9	0.3	-6.7	2.2	0.38	0.32	-9.68
832.0	1.10	92.60	831.9	0.2	-5.3	1.8	0.15	-0.15	-1.32
895.0	1.10	90.60	894.8	0.2	-4.1	1.3	0.06	0.00	-3.17
958.0	1.10	95.10	957.8	0.1	-2.9	1.0	0.14	0.00	7.14
1,022.0	1.10	91.10	1,021.8	0.0	-1.7	0.6	0.12	0.00	-6.25
1,085.0	1.20	82.30	1,084.8	0.1	-0.4	0.1	0.32	0.16	-13.97
1,149.0	0.90	79.20	1,148.8	0.3	0.7	-0.5	0.48	-0.47	-4.84
1,212.0	0.70	70.80	1,211.8	0.5	1.6	-1.0	0.37	-0.32	-13.33
1,276.0	0.30	39.30	1,275.8	0.8	2.0	-1.5	0.74	-0.63	-49.22
1,339.0	0.30	318.90	1,338.8	1.0	2.0	-1.7	0.61	0.00	-127.62
1,402.0	0.90	174.90	1,401.8	0.7	2.0	-1.3	1.84	0.95	-228.57
1,466.0	1.80	174.80	1,465.8	-0.8	2.1	0.0	1.41	1.41	-0.16
1,529.0	1.30	191.10	1,528.7	-2.5	2.1	1.6	1.05	-0.79	25.87
1,593.0	0.70	220.30	1,592.7	-3.5	1.7	2.7	1.20	-0.94	45.63
1,656.0	1.00	286.30	1,655.7	-3.7	0.9	3.1	1.52	0.48	104.76
1,720.0	2.30	332.80	1,719.7	-2.4	-0.2	2.3	2.76	2.03	72.66
1,783.0	2.90	357.50	1,782.6	0.3	-0.9	0.0	2.00	0.95	39.21
1,881.0	1.90	25.90	1,880.6	4.3	-0.3	-3.9	1.56	-1.02	28.98
1,958.0	1.10	102.20	1,957.5	5.3	1.0	-5.3	2.54	-1.04	99.09
2,018.0	1.50	118.60	2,017.5	4.8	2.3	-5.3	0.90	0.67	27.33
2,098.0	0.60	190.20	2,097.5	3.8	3.1	-4.7	1.79	-1.13	89.50
2,194.0	0.60	224.20	2,193.5	3.0	2.7	-3.8	0.37	0.00	35.42
2,289.0	0.50	209.20	2,288.5	2.3	2.1	-2.9	0.18	-0.11	-15.79
2,384.0	0.50	204.40	2,383.5	1.5	1.7	-2.1	0.04	0.00	-5.05
2,479.0	0.50	210.40	2,478.5	0.8	1.4	-1.2	0.06	0.00	6.32
2,575.0	0.40	202.40	2,574.5	0.1	1.0	-0.5	0.12	-0.10	-8.33
2,670.0	0.50	212.90	2,669.5	-0.5	0.7	0.2	0.14	0.11	11.05
2,765.0	0.50	233.30	2,764.5	-1.1	0.1	1.0	0.19	0.00	21.47
2,860.0	0.60	238.70	2,859.5	-1.6	-0.6	1.8	0.12	0.11	5.68
2,955.0	0.60	235.90	2,954.5	-2.2	-1.5	2.6	0.03	0.00	-2.95
3,050.0	0.40	242.80	3,049.5	-2.6	-2.2	3.2	0.22	-0.21	7.26
3,145.0	0.60	234.30	3,144.5	-3.0	-2.9	3.9	0.22	0.21	-8.95
3,240.0	0.70	228.10	3,239.5	-3.7	-3.7	4.8	0.13	0.11	-6.53
3,336.0	0.60	74.90	3,335.5	-4.0	-3.7	5.0	1.32	-0.10	-159.58
3,431.0	0.60	72.80	3,430.5	-3.7	-2.7	4.4	0.02	0.00	-2.21
3,527.0	0.40	59.60	3,526.5	-3.4	-2.0	3.9	0.24	-0.21	-13.75
3,622.0	0.20	65.00	3,621.4	-3.1	-1.5	3.5	0.21	-0.21	5.68
3,718.0	0.10	101.40	3,717.4	-3.1	-1.3	3.3	0.14	-0.10	37.92



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3,813.0	0.10	158.10	3,812.4	-3.2	-1.2	3.4	0.10	0.00	59.68
3,908.0	1.00	14.80	3,907.4	-2.5	-0.9	2.6	1.14	0.95	-150.84
4,003.0	0.70	11.70	4,002.4	-1.1	-0.6	1.2	0.32	-0.32	-3.26
4,098.0	0.30	346.30	4,097.4	-0.3	-0.5	0.5	0.47	-0.42	-26.74
4,193.0	0.30	210.40	4,192.4	-0.2	-0.7	0.5	0.59	0.00	-143.05
4,288.0	0.40	193.50	4,287.4	-0.8	-0.9	1.1	0.15	0.11	-17.79
4,382.0	0.40	153.30	4,381.4	-1.4	-0.9	1.6	0.29	0.00	-42.77
4,478.0	0.50	134.20	4,477.4	-2.0	-0.4	2.0	0.19	0.10	-19.90
4,574.0	0.70	137.20	4,573.4	-2.7	0.3	2.4	0.21	0.21	3.13
4,669.0	0.70	139.20	4,668.4	-3.6	1.1	2.9	0.03	0.00	2.11
4,763.0	0.30	22.30	4,762.4	-3.8	1.5	3.0	0.93	-0.43	-124.36
4,858.0	0.40	35.70	4,857.4	-3.3	1.8	2.4	0.14	0.11	14.11
4,953.0	0.30	60.50	4,952.4	-2.9	2.2	1.9	0.19	-0.11	26.11
5,049.0	0.40	80.30	5,048.4	-2.7	2.8	1.5	0.16	0.10	20.63
5,145.0	0.40	86.70	5,144.4	-2.6	3.4	1.2	0.05	0.00	6.67
5,240.0	0.60	102.00	5,239.4	-2.7	4.3	1.0	0.25	0.21	16.11
5,336.0	0.70	118.80	5,335.4	-3.1	5.3	1.0	0.22	0.10	17.50
5,431.0	0.50	319.50	5,430.4	-3.1	5.5	0.9	1.24	-0.21	-167.68
5,525.0	0.70	308.60	5,524.4	-2.4	4.8	0.5	0.24	0.21	-11.60
5,619.0	0.40	322.60	5,618.4	-1.8	4.1	0.2	0.35	-0.32	14.89
5,714.0	0.40	355.50	5,713.4	-1.2	3.9	-0.3	0.24	0.00	34.63
5,809.0	0.30	22.00	5,808.4	-0.6	4.0	-0.9	0.20	-0.11	27.89
5,903.0	0.80	125.70	5,902.4	-0.8	4.6	-0.9	0.98	0.53	110.32
5,999.0	0.40	18.10	5,998.4	-0.9	5.3	-1.1	1.04	-0.42	-112.08
6,094.0	0.70	296.50	6,093.4	-0.3	4.8	-1.5	0.79	0.32	-85.89
6,189.0	1.10	244.20	6,188.4	-0.4	3.5	-0.9	0.92	0.42	-55.05
6,285.0	1.10	200.20	6,284.3	-1.7	2.4	0.7	0.86	0.00	-45.83
6,381.0	1.10	217.70	6,380.3	-3.3	1.5	2.5	0.35	0.00	18.23
6,476.0	1.00	249.30	6,475.3	-4.3	0.1	4.0	0.61	-0.11	33.26
6,571.0	0.40	264.50	6,570.3	-4.6	-1.0	4.7	0.66	-0.63	16.00
6,667.0	0.20	305.80	6,666.3	-4.6	-1.4	4.8	0.29	-0.21	43.02
6,761.0	0.20	265.30	6,760.3	-4.5	-1.7	4.8	0.15	0.00	-43.09
6,857.0	1.10	84.10	6,856.3	-4.4	-1.0	4.4	1.35	0.94	186.25
6,953.0	1.60	54.00	6,952.3	-3.5	1.0	2.9	0.89	0.52	-31.35
7,048.0	0.40	144.50	7,047.3	-3.0	2.3	2.0	1.74	-1.26	95.26
7,144.0	0.50	222.40	7,143.3	-3.6	2.2	2.5	0.59	0.10	81.15
7,239.0	0.60	231.00	7,238.2	-4.2	1.5	3.4	0.14	0.11	9.05
7,334.0	0.80	237.20	7,333.2	-4.9	0.6	4.3	0.22	0.21	6.53
7,429.0	1.10	239.30	7,428.2	-5.7	-0.8	5.6	0.32	0.32	2.21
7,525.0	0.10	294.20	7,524.2	-6.1	-1.6	6.3	1.09	-1.04	57.19
7,621.0	0.70	287.30	7,620.2	-5.9	-2.3	6.3	0.63	0.63	-7.19
7,715.0	0.70	282.60	7,714.2	-5.8	-3.4	6.7	0.32	0.00	-26.28
7,810.0	1.00	234.90	7,809.2	-6.4	-4.6	7.6	0.53	0.32	-29.16



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7,905.0	0.80	279.70	7,904.2	-6.7	-6.0	8.4	0.75	-0.21	47.16
8,000.0	1.30	284.70	7,999.2	-6.4	-7.7	8.7	0.53	0.53	5.26
8,095.0	1.40	344.80	8,094.2	-5.0	-9.0	7.9	1.43	0.11	63.26
8,191.0	2.00	324.30	8,190.1	-2.5	-10.3	6.0	0.88	0.63	-21.35
8,287.0	0.40	309.10	8,286.1	-0.9	-11.5	5.0	1.68	-1.67	-15.83
8,382.0	1.00	172.30	8,381.1	-1.5	-11.7	5.6	1.39	0.63	-144.00
8,477.0	0.70	144.30	8,476.1	-2.8	-11.2	6.7	0.53	-0.32	-29.47
8,573.0	0.40	124.70	8,572.1	-3.5	-10.6	7.1	0.36	-0.31	-20.42
8,668.0	0.20	120.70	8,667.1	-3.7	-10.2	7.2	0.21	-0.21	-4.21
8,763.0	0.30	129.80	8,762.1	-4.0	-9.9	7.3	0.11	0.11	9.58
8,858.0	0.40	135.60	8,857.1	-4.4	-9.4	7.5	0.11	0.11	6.11
8,954.0	0.50	139.80	8,953.1	-4.9	-8.9	7.8	0.11	0.10	4.38
9,049.0	0.80	131.90	9,048.1	-5.7	-8.2	8.3	0.33	0.32	-8.32
9,144.0	1.00	126.60	9,143.0	-6.6	-7.0	8.7	0.23	0.21	-5.58
9,238.0	1.00	153.80	9,237.0	-7.9	-6.0	9.5	0.50	0.00	28.94
9,333.0	1.00	170.50	9,332.0	-9.4	-5.5	10.8	0.31	0.00	17.58
9,395.0	0.90	185.50	9,394.0	-10.4	-5.4	11.7	0.43	-0.16	24.19
9,427.0	2.90	188.60	9,426.0	-11.5	-5.6	12.7	6.26	6.25	9.69
9,459.0	6.10	180.40	9,457.9	-14.0	-5.7	15.1	10.17	10.00	-25.63
9,491.0	9.00	179.90	9,489.6	-18.2	-5.7	19.0	9.06	9.06	-1.56
9,523.0	12.10	181.60	9,521.1	-24.1	-5.8	24.5	9.74	9.69	5.31
9,554.0	13.90	186.30	9,551.3	-31.0	-6.3	31.2	6.73	5.81	15.16
9,585.0	15.50	189.20	9,581.2	-38.8	-7.4	38.8	5.68	5.16	9.35
9,617.0	19.10	191.60	9,611.8	-48.2	-9.1	48.2	11.47	11.25	7.50
9,649.0	22.70	192.30	9,641.7	-59.3	-11.5	59.5	11.28	11.25	2.19
9,681.0	26.30	191.40	9,670.8	-72.3	-14.2	72.6	11.31	11.25	-2.81
9,713.0	30.30	190.10	9,699.0	-87.2	-17.0	87.5	12.65	12.50	-4.06
9,744.0	34.40	189.90	9,725.2	-103.5	-19.9	103.7	13.23	13.23	-0.65
9,776.0	38.40	188.20	9,750.9	-122.3	-22.9	122.3	12.89	12.50	-5.31
9,808.0	41.90	184.80	9,775.4	-142.8	-25.2	142.2	12.90	10.94	-10.63
9,840.0	45.00	181.30	9,798.6	-164.7	-26.3	163.1	12.26	9.69	-10.94
9,871.0	48.70	179.00	9,819.8	-187.4	-26.4	184.2	13.10	11.94	-7.42
9,903.0	52.10	177.70	9,840.2	-212.0	-25.7	206.9	11.08	10.63	-4.06
9,934.0	56.50	177.00	9,858.3	-237.1	-24.5	230.0	14.31	14.19	-2.26
9,966.0	60.30	178.00	9,875.0	-264.4	-23.3	254.9	12.17	11.88	3.13
9,998.0	63.30	179.20	9,890.2	-292.6	-22.6	281.0	9.94	9.38	3.75
10,030.0	65.70	179.60	9,903.9	-321.4	-22.3	307.8	7.58	7.50	1.25
10,061.0	67.60	179.10	9,916.2	-349.9	-22.0	334.2	6.31	6.13	-1.61
10,093.0	69.90	178.40	9,927.8	-379.7	-21.4	361.8	7.47	7.19	-2.19
10,122.0	72.60	177.90	9,937.1	-407.1	-20.5	387.0	9.45	9.31	-1.72
10,173.0	77.60	177.70	9,950.2	-456.4	-18.6	432.2	9.81	9.80	-0.39
10,204.0	80.10	176.90	9,956.2	-486.8	-17.1	460.1	8.45	8.06	-2.58



Microsoft Survey Report



Company: Mewbourne Oil Company
Project: Eddy County, N.M. Nad (83)
Site: Section 19-24S-27E Archduke 19 W2AP Fed #1H
Well: Archduke 19 W2AP Fed 1H
Wellbore: Original Hole
Design: Original Hole

Local Co-ordinate Reference: Well Archduke 19 W2AP Fed 1H
TVD Reference: 3242 + 27 @ 3269.0usft (Patterson 245)
MD Reference: 3242 + 27 @ 3269.0usft (Patterson 245)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Stryker_EDM

Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Buidl Rate (°/100usft)	Turn Rate (°/100usft)
10,236.0	80.50	175.90	9,961.6	-518.2	-15.2	488.7	3.32	1.25	-3.13
10,268.0	80.70	178.40	9,966.9	-549.7	-13.0	517.3	1.66	0.63	1.56
10,299.6	82.78	178.18	9,971.4	-581.0	-11.6	545.9	8.61	6.56	5.63
LP Archduke 19 W2AP Fed 1H									
10,300.0	82.80	178.20	9,971.5	-581.4	-11.6	546.2	8.61	6.57	5.60
10,332.0	86.20	178.90	9,974.5	-613.2	-10.8	575.6	10.85	10.63	2.19
10,364.0	89.60	179.00	9,975.7	-645.2	-10.2	605.2	10.63	10.63	0.31
10,458.0	90.70	180.10	9,975.4	-739.2	-9.4	692.6	1.65	1.17	1.17
10,553.0	88.60	179.60	9,976.0	-834.2	-9.2	781.1	2.27	-2.21	-0.53
10,648.0	85.30	178.80	9,981.1	-929.0	-7.9	869.0	3.57	-3.47	-0.84
10,742.0	89.30	178.10	9,985.5	-1,022.8	-5.3	955.6	4.32	4.26	-0.74
10,837.0	91.90	178.70	9,984.5	-1,117.8	-2.7	1,043.2	2.81	2.74	0.63
10,932.0	88.30	177.40	9,984.3	-1,212.7	0.6	1,130.5	4.03	-3.79	-1.37
11,027.0	88.40	176.20	9,987.1	-1,307.5	5.9	1,217.0	1.27	0.11	-1.26
11,123.0	91.60	179.80	9,987.1	-1,403.4	9.2	1,305.2	5.02	3.33	3.75
11,218.0	89.50	182.90	9,986.2	-1,498.4	7.0	1,394.6	3.94	-2.21	3.26
11,313.0	90.80	183.60	9,985.9	-1,593.2	1.6	1,485.0	1.55	1.37	0.74
11,408.0	90.50	183.70	9,984.8	-1,688.0	-4.5	1,575.5	0.33	-0.32	0.11
11,504.0	91.80	184.50	9,982.9	-1,783.8	-11.3	1,667.3	1.59	1.35	0.83
11,600.0	90.90	182.50	9,980.7	-1,879.6	-17.2	1,758.7	2.28	-0.94	-2.08
11,695.0	92.40	181.80	9,977.9	-1,974.5	-20.7	1,848.5	1.74	1.58	-0.74
11,790.0	87.60	177.00	9,977.9	-2,069.4	-19.7	1,936.6	7.14	-5.05	-5.05
11,885.0	82.90	175.00	9,985.8	-2,163.8	-13.1	2,022.3	5.37	-4.95	-2.11
11,981.0	91.80	176.90	9,990.2	-2,259.4	-6.4	2,108.9	9.48	9.27	1.98
12,075.0	93.50	179.80	9,985.9	-2,353.2	-3.7	2,195.5	3.57	1.81	3.09
12,170.0	91.90	181.30	9,981.4	-2,448.1	-4.6	2,284.3	2.31	-1.68	1.58
12,265.0	93.10	183.50	9,977.3	-2,542.9	-8.6	2,374.1	2.64	1.26	2.32
12,361.0	92.70	183.00	9,972.4	-2,638.6	-14.0	2,465.3	0.67	-0.42	-0.52
12,455.0	91.70	182.80	9,968.8	-2,732.4	-18.8	2,554.5	1.08	-1.06	-0.21
12,550.0	86.80	181.10	9,970.0	-2,827.4	-22.0	2,644.2	5.46	-5.16	-1.79
12,645.0	90.40	185.00	9,972.4	-2,922.2	-27.0	2,734.4	5.59	3.79	4.11
12,739.0	89.10	185.70	9,972.8	-3,015.7	-35.8	2,824.8	1.57	-1.38	0.74
12,834.0	89.30	182.70	9,974.1	-3,110.5	-42.8	2,915.6	3.16	0.21	-3.16
12,929.0	89.10	179.30	9,975.4	-3,205.4	-44.4	3,004.8	3.58	-0.21	-3.58
13,024.0	90.20	178.80	9,976.0	-3,300.4	-42.8	3,092.8	1.27	1.16	-0.53
13,118.0	90.60	180.20	9,975.3	-3,394.4	-42.0	3,180.1	1.55	0.43	1.49
13,213.0	89.80	179.80	9,975.0	-3,489.4	-42.0	3,268.7	0.94	-0.84	-0.42
13,308.0	90.00	180.20	9,975.2	-3,584.4	-42.0	3,357.3	0.47	0.21	0.42
13,404.0	88.60	177.10	9,976.3	-3,680.4	-39.8	3,445.9	3.54	-1.46	-3.23
13,499.0	91.20	184.40	9,976.5	-3,775.3	-41.0	3,534.9	8.16	2.74	7.68
13,594.0	88.90	179.30	9,976.4	-3,870.2	-44.1	3,624.5	5.89	-2.42	-5.37
13,689.0	89.10	180.30	9,978.1	-3,965.2	-43.7	3,712.9	1.07	0.21	1.05
13,785.0	89.80	181.00	9,979.0	-4,061.2	-44.8	3,802.8	1.03	0.73	0.73



Microsoft Survey Report



Company: Mewbourne Oil Company
Project: Eddy County, N.M. Nad (83)
Site: Section 19-24S-27E Archduke 19 W2AP Fed #1H
Well: Archduke 19 W2AP Fed 1H
Wellbore: Original Hole
Design: Original Hole

Local Co-ordinate Reference: Well Archduke 19 W2AP Fed 1H
TVD Reference: 3242 + 27 @ 3289.0usft (Patterson 245)
MD Reference: 3242 + 27 @ 3289.0usft (Patterson 245)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Stryker_EDM

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)
13,880.0	89.40	181.70	9,979.7	-4,156.1	-47.1	3,892.2	0.85	-0.42	0.74
13,976.0	90.90	183.50	9,979.4	-4,252.0	-51.4	3,983.2	2.44	1.56	1.88
14,070.0	89.80	183.20	9,978.8	-4,345.9	-56.9	4,072.6	1.21	-1.17	-0.32
14,165.0	88.90	183.00	9,979.9	-4,440.7	-62.0	4,162.9	0.97	-0.95	-0.21
14,260.0	89.10	182.30	9,981.6	-4,535.6	-66.4	4,253.0	0.77	0.21	-0.74
14,355.0	91.60	180.30	9,981.0	-4,630.6	-68.6	4,342.3	3.37	2.63	-2.11
14,450.0	90.20	181.00	9,979.5	-4,725.5	-69.7	4,431.3	1.65	-1.47	0.74
14,546.0	88.50	180.50	9,980.6	-4,821.5	-70.9	4,521.2	1.85	-1.77	-0.52
14,595.0	88.50	180.50	9,981.9	-4,870.5	-71.4	4,567.0	0.00	0.00	0.00

14595' MD Projected to Bit - PBHL Archduke 19 W2AP Fed 1H

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
415.0	414.9	0.8	-5.8	415' MD Teledrift
14,595.0	9,981.9	-4,870.5	-71.4	14595' MD Projected to Bit



COMPANY: Mewbourne Oil Company
WELL: Archduke 19 W2AP Fed 1H
COUNTY: Eddy County, N.M. Nad (83)
DATUM: North American Datum 1983
RIG: Patterson 245



OFFICE: 936.582.7226

GRID CORRECTION: To convert a Magnetic Direction to a Grid Direction, Add 7.15°

GEODETIC ZONE: New Mexico Eastern Zone										
3242 + 27 @ 3269.0usft (Patterson 245)										
GROUND ELEVATION: 3242.0										
+N/-S	+E/-W	Northing		Easting		Latitude		Longitude	Slot	
0.0	0.0	440091.50		575714.10		32° 12' 35.422 N		104° 13' 19.859 W		
PLAN SECTIONS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSecl	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	9402.0	0.00	0.00	9402.0	0.0	0.0	0.00	0.00	0.0	
3	10302.0	90.00	180.18	9975.0	-573.0	-1.8	10.00	180.18	573.0	
4	14606.9	90.00	180.18	9975.0	-4877.8	-15.0	0.00	0.00	4877.8	PBHL Archduke 19 W2AP Fed 1H

SHL: 50' FNL; 330' FEL
Section 19-24S-27E
PBHL: 330' FSL; 330' FEL
Section 19-24S-27E

