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Mewbourne Oil Company

Eddy County, N.M. Nad (83)

Section 11 14-26S-28E Delaware Ranch 11 14 W1AP

Delaware Ranch 11-14 W1AP Fed Com 1H

Original Hole

Design: Original Hole

Standard Survey Report

14 June, 2019

STRYKER
DIRECTIONAL



Microsoft
Survey Report



Company:	Mewbourne Oil Company	Local Co-ordinate Reference:	Well Delaware Ranch 11-14 W1AP Fed Com 1H
Project:	Eddy County, N.M. Nad (83)	TVD Reference:	2968 + 27 @ 2995.0usft (Patterson 217)
Site:	Section 11 14-26S-28E Delaware Ranch11 14 W1AP	MD Reference:	2968 + 27 @ 2995.0usft (Patterson 217)
Well:	Delaware Ranch 11-14 W1AP Fed Com 1H	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Original Hole	Database:	EDM 5000.1 Single User Db

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 11 14-26S-28E Delaware Ranch11 14 W1AP		
Site Position:	Northing:	387,102.14 usft	Latitude: 32° 3' 50.070 N
From: Map	Easting:	628,908.42 usft	Longitude: 104° 3' 2.304 W
Position Uncertainty: 0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence: 0.15 °

Well	Delaware Ranch 11-14 W1AP Fed Com 1H		
Well Position	+N/-S	0.0 usft	Northing: 387,102.14 usft
	+E/-W	0.0 usft	Easting: 628,908.42 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	27.0 usft
		Ground Level:	2,968.0 usft

Wellbore	Original Hole		
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Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	04/16/19	6.97	59.82	47,607.89071967

Design	Original Hole		
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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	183.35

Survey Program	Date 06/14/19		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name
770.0	19,830.0	MWD Survey #1 (Original Hole)	MWD+IGRF
		Description	
		OWSG MWD + IGRF or WMM	

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)	
615.0	1.50	69.30	614.9	-7.5	4.0	7.3	0.00	0.00	0.00	
770.0	2.60	60.30	769.8	-5.0	9.0	4.5	0.74	0.71	-5.81	
927.0	0.40	75.00	926.7	-3.1	12.6	2.4	1.41	-1.40	9.36	
1,116.0	0.70	66.50	1,115.7	-2.5	14.3	1.7	0.16	0.16	-4.50	
1,305.0	0.90	70.90	1,304.7	-1.6	16.7	0.6	0.11	0.11	2.33	
1,495.0	0.10	154.70	1,494.7	-1.2	18.2	0.2	0.47	-0.42	44.11	
1,684.0	0.40	139.40	1,683.7	-1.9	18.7	0.8	0.16	0.16	-8.10	
1,873.0	0.90	143.40	1,872.7	-3.6	20.0	2.4	0.27	0.26	2.12	
2,062.0	1.40	145.20	2,061.6	-6.6	22.2	5.3	0.27	0.26	0.95	
2,252.0	0.40	42.20	2,251.6	-8.1	24.0	6.6	0.81	-0.53	-54.21	



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Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Original Hole	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)
2,441.0	0.50	95.10	2,440.6	-7.6	25.3	6.2	0.22	0.05	27.99
2,527.0	0.30	100.20	2,526.6	-7.7	25.9	6.2	0.24	-0.23	5.93
2,585.0	0.40	53.30	2,584.6	-7.6	26.2	6.1	0.51	0.17	-80.86
2,774.0	4.70	290.60	2,773.4	-4.5	19.4	3.4	2.61	2.28	-64.92
2,963.0	4.80	289.70	2,961.8	0.9	4.8	-1.2	0.07	0.05	-0.48
3,153.0	4.50	289.40	3,151.1	6.0	-9.8	-5.5	0.16	-0.16	-0.16
3,342.0	5.50	293.60	3,339.4	12.1	-25.1	-10.6	0.56	0.53	2.22
3,532.0	5.00	291.20	3,528.6	18.8	-41.1	-16.3	0.29	-0.26	-1.26
3,721.0	4.90	291.10	3,716.9	24.7	-56.3	-21.3	0.05	-0.05	-0.05
3,909.0	5.10	292.40	3,904.2	30.7	-71.5	-26.5	0.12	0.11	0.69
4,098.0	5.20	289.40	4,092.4	36.8	-87.4	-31.6	0.15	0.05	-1.59
4,287.0	3.70	302.30	4,280.9	42.9	-100.6	-36.9	0.95	-0.79	6.83
4,477.0	4.70	298.00	4,470.4	49.8	-112.7	-43.1	0.55	0.53	-2.26
4,667.0	4.30	290.90	4,659.8	56.0	-126.2	-48.5	0.36	-0.21	-3.74
4,857.0	4.10	284.00	4,849.3	60.2	-139.4	-51.9	0.29	-0.11	-3.63
5,047.0	4.50	295.60	5,038.7	65.1	-152.8	-56.0	0.50	0.21	6.11
5,235.0	3.70	289.20	5,226.2	70.2	-165.1	-60.4	0.49	-0.43	-3.40
5,424.0	4.70	294.70	5,414.7	75.5	-177.9	-64.9	0.57	0.53	2.91
5,613.0	4.40	292.10	5,603.1	81.4	-191.7	-70.1	0.19	-0.16	-1.38
5,802.0	4.90	291.30	5,791.5	87.1	-205.9	-74.9	0.27	0.26	-0.42
5,992.0	4.10	286.00	5,980.9	91.9	-220.0	-78.9	0.47	-0.42	-2.79
6,180.0	4.00	293.30	6,168.5	96.4	-232.5	-82.6	0.28	-0.05	3.88
6,370.0	4.40	296.90	6,358.0	102.3	-245.1	-87.8	0.25	0.21	1.89
6,559.0	4.70	302.40	6,546.4	109.7	-258.1	-94.4	0.28	0.16	2.91
6,748.0	4.30	282.40	6,734.8	115.4	-271.5	-99.3	0.85	-0.21	-10.58
6,937.0	3.30	278.20	6,923.4	117.7	-283.9	-100.9	0.55	-0.53	-2.22
7,127.0	4.70	296.70	7,112.9	122.0	-296.2	-104.4	0.99	0.74	9.74
7,316.0	4.40	296.40	7,301.3	128.7	-309.6	-110.3	0.16	-0.16	-0.16
7,505.0	4.90	296.20	7,489.7	135.4	-323.4	-116.3	0.26	0.26	-0.11
7,695.0	4.70	295.00	7,679.0	142.3	-337.7	-122.3	0.12	-0.11	-0.63
7,885.0	4.30	299.30	7,868.4	149.1	-351.0	-128.3	0.28	-0.21	2.26
8,074.0	4.60	282.40	8,056.9	154.2	-364.6	-132.6	0.71	0.16	-8.94
8,263.0	5.00	290.00	8,245.2	158.6	-379.7	-136.1	0.40	0.21	4.02
8,453.0	4.70	297.70	8,434.5	165.1	-394.4	-141.7	0.38	-0.16	4.05
8,643.0	3.50	296.10	8,624.1	171.3	-406.5	-147.2	0.63	-0.63	-0.84
8,832.0	2.50	270.50	8,812.8	173.8	-415.8	-149.2	0.87	-0.53	-13.54
9,021.0	1.80	245.90	9,001.7	172.7	-422.6	-147.6	0.60	-0.37	-13.02
9,119.2	1.80	241.02	9,099.8	171.3	-425.4	-146.1	0.16	0.00	-4.97
New NameB.B. Delaware Ranch 11 14 W1AP Fed Com 1H									
9,192.0	1.80	237.40	9,172.6	170.1	-427.3	-144.8	0.16	0.01	-4.97
9,266.0	2.60	210.40	9,246.5	168.0	-429.1	-142.6	1.74	1.08	-36.49
9,298.0	5.50	191.60	9,278.4	165.9	-429.8	-140.5	9.85	9.06	-58.75



Microsoft
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Survey									
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9,330.0	8.80	183.90	9,310.2	162.0	-430.3	-136.5	10.72	10.31	-24.06
9,361.0	12.20	178.70	9,340.7	156.3	-430.4	-130.9	11.37	10.97	-16.77
9,393.0	15.10	177.00	9,371.8	148.8	-430.1	-123.4	9.15	9.06	-5.31
9,424.0	18.10	176.00	9,401.5	139.9	-429.5	-114.6	9.72	9.68	-3.23
9,455.0	21.50	172.80	9,430.6	129.5	-428.5	-104.2	11.51	10.97	-10.32
9,487.0	24.30	170.40	9,460.1	117.2	-426.7	-92.0	9.22	8.75	-7.50
9,519.0	26.70	170.40	9,489.0	103.6	-424.4	-78.6	7.50	7.50	0.00
9,550.0	29.90	171.10	9,516.3	89.1	-422.0	-64.2	10.38	10.32	2.26
9,582.0	33.60	172.80	9,543.5	72.4	-419.7	-47.7	11.89	11.56	5.31
9,613.0	36.40	175.40	9,568.9	54.7	-417.8	-30.2	10.23	9.03	8.39
9,645.0	39.10	179.30	9,594.2	35.2	-417.0	-10.7	11.26	8.44	12.19
9,677.0	42.00	181.50	9,618.5	14.4	-417.1	10.0	10.10	9.06	6.88
9,708.0	44.70	182.50	9,641.0	-6.9	-417.9	31.3	8.99	8.71	3.23
9,740.0	47.80	183.10	9,663.2	-30.0	-419.0	54.4	9.78	9.69	1.88
9,772.0	49.60	183.90	9,684.3	-54.0	-420.5	78.5	5.93	5.63	2.50
9,803.0	51.20	185.00	9,704.0	-77.8	-422.3	102.4	5.84	5.16	3.55
9,834.0	53.50	186.10	9,723.0	-102.2	-424.7	126.9	7.93	7.42	3.55
9,866.0	56.50	187.50	9,741.3	-128.2	-427.8	153.0	10.04	9.38	4.38
9,898.0	58.90	188.80	9,758.4	-155.0	-431.6	180.0	8.25	7.50	4.06
9,929.0	61.80	189.30	9,773.8	-181.6	-435.9	206.8	9.46	9.35	1.61
9,961.0	64.20	189.20	9,788.3	-209.7	-440.5	235.2	7.51	7.50	-0.31
9,992.0	66.50	188.50	9,801.2	-237.6	-444.8	263.2	7.70	7.42	-2.26
10,024.0	71.30	188.10	9,812.7	-267.1	-449.1	292.9	15.05	15.00	-1.25
10,087.0	77.30	187.50	9,829.8	-327.2	-457.3	353.4	9.57	9.52	-0.95
10,118.0	80.50	186.60	9,835.7	-357.4	-461.1	383.7	10.71	10.32	-2.90
10,150.0	82.40	186.50	9,840.5	-388.8	-464.7	415.3	5.95	5.94	-0.31
10,181.0	84.70	185.00	9,844.0	-419.4	-467.8	446.1	8.84	7.42	-4.84
10,212.0	85.80	184.00	9,846.6	-450.2	-470.2	477.0	4.79	3.55	-3.23
10,244.0	85.90	184.50	9,848.9	-482.1	-472.5	508.9	1.59	0.31	1.56
10,275.0	87.40	185.10	9,850.7	-512.9	-475.1	539.8	5.21	4.84	1.94
10,307.0	89.30	184.90	9,851.6	-544.8	-477.9	571.8	5.97	5.94	-0.63
LP Delaware Ranch 11 14 W2AP Fed Com 1H									
10,334.4	89.18	184.99	9,852.0	-572.1	-480.3	599.2	0.53	-0.42	0.32
New LP Delaware Ranch 11 14 W1AP Fed Com 1H									
10,402.0	88.90	185.20	9,853.1	-639.4	-486.3	666.7	0.53	-0.42	0.32
10,496.0	90.90	184.80	9,853.3	-733.0	-494.5	760.7	2.17	2.13	-0.43
10,591.0	91.10	184.40	9,851.6	-827.7	-502.1	855.7	0.47	0.21	-0.42
10,686.0	90.40	184.50	9,850.4	-922.4	-509.5	950.6	0.74	-0.74	0.11
10,780.0	91.50	183.90	9,848.8	-1,016.1	-516.3	1,044.6	1.33	1.17	-0.64
10,875.0	90.40	185.20	9,847.2	-1,110.8	-523.9	1,139.6	1.79	-1.16	1.37
10,970.0	91.60	186.40	9,845.6	-1,205.3	-533.5	1,234.5	1.79	1.26	1.26
11,065.0	91.50	184.70	9,843.0	-1,299.8	-542.7	1,329.4	1.79	-0.11	-1.79
11,159.0	86.00	181.20	9,845.0	-1,393.6	-547.5	1,423.3	6.93	-5.85	-3.72



Microsoft Survey Report



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11,254.0	86.30	181.30	9,851.4	-1,488.4	-549.6	1,518.0	0.33	0.32	0.11
11,348.0	91.30	182.20	9,853.4	-1,582.3	-552.4	1,611.9	5.40	5.32	0.96
11,443.0	93.00	182.20	9,849.8	-1,677.2	-556.1	1,706.8	1.79	1.79	0.00
11,538.0	94.30	183.40	9,843.8	-1,771.9	-560.7	1,801.6	1.86	1.37	1.26
11,632.0	92.10	183.40	9,838.5	-1,865.5	-566.3	1,895.5	2.34	-2.34	0.00
11,726.0	88.90	182.00	9,837.7	-1,959.4	-570.7	1,989.5	3.72	-3.40	-1.49
11,821.0	89.10	180.20	9,839.4	-2,054.4	-572.5	2,084.4	1.91	0.21	-1.89
11,915.0	88.00	180.70	9,841.7	-2,148.3	-573.3	2,178.2	1.29	-1.17	0.53
12,010.0	90.60	179.90	9,842.9	-2,243.3	-573.8	2,273.1	2.86	2.74	-0.84
12,105.0	93.10	179.80	9,839.8	-2,338.3	-573.5	2,367.8	2.63	2.63	-0.11
12,200.0	92.90	179.10	9,834.9	-2,433.1	-572.6	2,462.5	0.77	-0.21	-0.74
12,294.0	91.40	178.90	9,831.3	-2,527.1	-571.0	2,556.1	1.61	-1.60	-0.21
12,389.0	90.30	179.30	9,829.9	-2,622.0	-569.5	2,650.9	1.23	-1.16	0.42
12,483.0	88.90	178.40	9,830.6	-2,716.0	-567.6	2,744.6	1.77	-1.49	-0.96
12,578.0	89.40	179.50	9,832.0	-2,811.0	-565.8	2,839.3	1.27	0.53	1.16
12,673.0	90.40	180.80	9,832.2	-2,906.0	-566.1	2,934.1	1.73	1.05	1.37
12,768.0	90.20	180.80	9,831.7	-3,001.0	-567.4	3,029.0	0.21	-0.21	0.00
12,863.0	90.60	181.70	9,831.0	-3,095.9	-569.5	3,124.0	1.04	0.42	0.95
12,958.0	91.10	181.90	9,829.6	-3,190.9	-572.5	3,218.9	0.57	0.53	0.21
13,053.0	91.80	182.70	9,827.2	-3,285.8	-576.3	3,313.9	1.12	0.74	0.84
13,147.0	90.20	182.60	9,825.6	-3,379.6	-580.6	3,407.8	1.71	-1.70	-0.11
13,241.0	89.50	183.00	9,825.8	-3,473.5	-585.2	3,501.8	0.86	-0.74	0.43
13,336.0	88.20	180.90	9,827.7	-3,568.5	-588.5	3,596.8	2.60	-1.37	-2.21
13,431.0	88.70	179.20	9,830.3	-3,663.4	-588.5	3,691.6	1.86	0.53	-1.79
13,525.0	89.70	177.90	9,831.6	-3,757.4	-586.2	3,785.2	1.74	1.06	-1.38
13,620.0	89.40	178.30	9,832.3	-3,852.3	-583.0	3,879.8	0.53	-0.32	0.42
13,715.0	91.10	178.30	9,831.9	-3,947.3	-580.2	3,974.5	1.79	1.79	0.00
13,809.0	90.50	177.70	9,830.6	-4,041.2	-576.9	4,068.0	0.90	-0.64	-0.64
13,904.0	89.50	176.90	9,830.6	-4,136.1	-572.4	4,162.5	1.35	-1.05	-0.84
13,998.0	92.90	178.10	9,828.6	-4,230.0	-568.3	4,256.0	3.84	3.62	1.28
14,093.0	92.30	178.80	9,824.3	-4,324.8	-565.8	4,350.5	0.97	-0.63	0.74
14,187.0	92.40	179.40	9,820.5	-4,418.7	-564.3	4,444.2	0.65	0.11	0.64
14,282.0	92.40	180.00	9,816.5	-4,513.7	-563.8	4,538.9	0.63	0.00	0.63
14,377.0	89.50	179.50	9,814.9	-4,608.6	-563.4	4,633.7	3.10	-3.05	-0.53
14,471.0	91.30	180.60	9,814.3	-4,702.6	-563.5	4,727.5	2.24	1.91	1.17
14,565.0	91.60	181.30	9,811.9	-4,796.6	-565.0	4,821.4	0.81	0.32	0.74
14,660.0	89.30	183.00	9,811.1	-4,891.5	-568.6	4,916.4	3.01	-2.42	1.79
14,755.0	87.70	181.50	9,813.6	-4,986.4	-572.3	5,011.3	2.31	-1.68	-1.58
14,849.0	89.60	179.40	9,815.8	-5,080.4	-573.1	5,105.2	3.01	2.02	-2.23
14,944.0	90.30	179.20	9,815.9	-5,175.3	-571.9	5,199.9	0.77	0.74	-0.21
15,038.0	90.90	180.20	9,814.9	-5,269.3	-571.4	5,293.7	1.24	0.64	1.06
15,133.0	91.10	180.50	9,813.3	-5,364.3	-572.0	5,388.6	0.38	0.21	0.32
15,228.0	89.00	181.10	9,813.2	-5,459.3	-573.3	5,483.5	2.30	-2.21	0.63



Microsoft
Survey Report



Company:	Mewbourne Oil Company	Local Co-ordinate Reference:	Well Delaware Ranch 11-14 W1AP Fed Com 1H
Project:	Eddy County, N.M. Nad (83)	TVD Reference:	2968 + 27 @ 2995.0usft (Patterson 217)
Site:	Section 11 14-26S-28E Delaware Ranch 11 14 W1AP	MD Reference:	2968 + 27 @ 2995.0usft (Patterson 217)
Well:	Delaware Ranch 11-14 W1AP Fed Com 1H	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Original Hole	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)
15,323.0	88.40	182.70	9,815.4	-5,554.2	-576.5	5,578.4	1.80	-0.63	1.68
15,417.0	87.80	180.50	9,818.5	-5,648.1	-579.1	5,672.3	2.42	-0.64	-2.34
15,511.0	89.50	180.10	9,820.7	-5,742.1	-579.6	5,766.2	1.86	1.81	-0.43
15,606.0	88.00	180.50	9,822.8	-5,837.1	-580.1	5,861.0	1.63	-1.58	0.42
15,700.0	89.50	180.80	9,824.8	-5,931.0	-581.1	5,954.9	1.63	1.60	0.32
15,793.0	92.30	180.30	9,823.3	-6,024.0	-582.0	6,047.8	3.06	3.01	-0.54
15,885.0	92.70	180.70	9,819.3	-6,115.9	-582.8	6,139.6	0.61	0.43	0.43
15,978.0	92.10	179.30	9,815.4	-6,208.8	-582.8	6,232.3	1.64	-0.65	-1.51
16,070.0	92.30	179.70	9,811.9	-6,300.8	-582.0	6,324.0	0.49	0.22	0.43
16,163.0	89.50	180.90	9,810.4	-6,393.7	-582.5	6,416.9	3.28	-3.01	1.29
16,255.0	89.50	181.30	9,811.3	-6,485.7	-584.3	6,508.8	0.43	0.00	0.43
16,348.0	89.40	180.50	9,812.1	-6,578.7	-585.7	6,601.7	0.87	-0.11	-0.86
16,443.0	89.10	181.00	9,813.4	-6,673.7	-587.0	6,696.6	0.61	-0.32	0.53
16,537.0	89.80	181.60	9,814.3	-6,767.7	-589.1	6,790.5	0.98	0.74	0.64
16,631.0	89.10	181.70	9,815.2	-6,861.6	-591.8	6,884.5	0.75	-0.74	0.11
16,726.0	91.00	181.20	9,815.1	-6,956.6	-594.2	6,979.4	2.07	2.00	-0.53
16,820.0	90.60	181.80	9,813.8	-7,050.5	-596.7	7,073.4	0.77	-0.43	0.64
16,915.0	90.80	180.40	9,812.6	-7,145.5	-598.5	7,168.3	1.49	0.21	-1.47
17,009.0	90.70	180.70	9,811.4	-7,239.5	-599.4	7,262.2	0.34	-0.11	0.32
17,103.0	91.00	179.50	9,810.0	-7,333.5	-599.6	7,356.0	1.32	0.32	-1.28
17,198.0	90.90	180.00	9,808.4	-7,428.5	-599.2	7,450.8	0.54	-0.11	0.53
17,293.0	90.30	179.10	9,807.4	-7,523.5	-598.4	7,545.6	1.14	-0.63	-0.95
17,388.0	90.20	179.80	9,807.0	-7,618.5	-597.5	7,640.4	0.74	-0.11	0.74
17,482.0	90.50	176.90	9,806.5	-7,712.4	-594.8	7,734.0	3.10	0.32	-3.09
17,577.0	89.70	177.40	9,806.3	-7,807.3	-590.1	7,828.4	0.99	-0.84	0.53
17,671.0	89.70	178.00	9,806.8	-7,901.2	-586.3	7,922.0	0.64	0.00	0.64
17,765.0	90.70	178.60	9,806.5	-7,995.2	-583.5	8,015.6	1.24	1.06	0.64
17,860.0	91.90	177.70	9,804.3	-8,090.1	-580.5	8,110.2	1.58	1.26	-0.95
17,955.0	92.00	177.70	9,801.1	-8,185.0	-576.6	8,204.7	0.11	0.11	0.00
18,049.0	89.30	177.30	9,800.0	-8,278.9	-572.5	8,298.2	2.90	-2.87	-0.43
18,144.0	87.80	176.50	9,802.4	-8,373.7	-567.4	8,392.5	1.79	-1.58	-0.84
18,238.0	90.60	177.40	9,803.7	-8,467.5	-562.4	8,485.9	3.13	2.98	0.96
18,333.0	90.30	177.90	9,803.0	-8,562.5	-558.5	8,580.5	0.61	-0.32	0.53
18,427.0	90.10	178.00	9,802.6	-8,656.4	-555.1	8,674.0	0.24	-0.21	0.11
18,522.0	91.30	179.20	9,801.5	-8,751.4	-552.8	8,768.7	1.79	1.26	1.26
18,616.0	90.30	178.90	9,800.2	-8,845.3	-551.3	8,862.4	1.11	-1.06	-0.32
18,711.0	89.40	178.90	9,800.4	-8,940.3	-549.4	8,957.1	0.95	-0.95	0.00
18,805.0	88.80	179.30	9,801.9	-9,034.3	-548.0	9,050.9	0.77	-0.64	0.43
18,899.0	88.50	179.80	9,804.1	-9,128.3	-547.2	9,144.6	0.62	-0.32	0.53
18,993.0	88.80	180.80	9,806.3	-9,222.2	-547.7	9,238.5	1.11	0.32	1.06
19,088.0	92.80	183.10	9,805.0	-9,317.1	-551.0	9,333.4	4.86	4.21	2.42
19,181.0	90.70	183.00	9,802.2	-9,410.0	-555.9	9,426.4	2.26	-2.26	-0.11



Microsoft
Survey Report



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Site:	Section 11 14-26S-28E Delaware Ranch11 14 W1AP	MD Reference:	2968 + 27 @ 2995.0usft (Patterson 217)
Well:	Delaware Ranch 11-14 W1AP Fed Com 1H	North Reference:	Grid
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	Original Hole	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)
19,275.0	91.70	184.30	9,800.2	-9,503.7	-561.9	9,520.3	1.74	1.06	1.38
19,369.0	90.30	182.30	9,798.5	-9,597.6	-567.3	9,614.3	2.60	-1.49	-2.13
19,463.0	89.80	183.00	9,798.5	-9,691.5	-571.6	9,708.3	0.92	-0.53	0.74
19,558.0	88.90	183.60	9,799.5	-9,786.3	-577.1	9,803.3	1.14	-0.95	0.63
19,653.0	87.20	182.50	9,802.8	-9,881.1	-582.2	9,898.2	2.13	-1.79	-1.16
19,748.0	86.20	182.50	9,808.2	-9,975.9	-586.3	9,993.1	1.05	-1.05	0.00
19,777.0	85.00	182.20	9,810.5	-10,004.7	-587.5	10,022.0	4.26	-4.14	-1.03
19,830.0	85.00	182.20	9,815.1	-10,057.5	-589.5	10,074.8	0.00	0.00	0.00

10830.0' MD Projected top Bit - New Name PBHL Delaware Ranch 11 14 W1AP Fed Com 1H - PBHL Delaware Ranch 11

Design Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
19,830.0	9,815.1	-10,057.5	-589.5	10830.0' MD Projected top Bit