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DISTRICT II-ARTESIA O.C.D.

September 11, 2018

30-015-44286

Survey Certification Report

STATE OF TEXAS

COUNTY OF Montgomery

I, Eric Estes, certify that I am employed by STRYKER ENERGY DIRECTIONAL SERVICES, L.L.C., and that I did on the day(s) of July 1, 2018, through August 8, 2018 conduct or supervise the taking of a SEDS Original Hole MWD Survey from a depth of 215 feet to a depth of 15,023 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 Night Ranger 28 W2AP Fee #001H, well API # **30-015-44286** 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.

Eric Estes

STRYKER ENERGY DIRECTIONAL SERVICES, L.L.C.

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



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DISTRICT II-ARTESIA O.C.D.

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

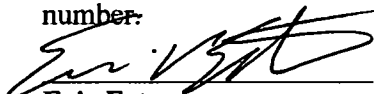
Attn: Jackie Lathan

Re: Mewbourne Oil Company
Night Ranger 28 W2AP Fee #001H
Palmillo: Bone Spring, East 2nd Bone
Spring "C" Sand (B2)
Eddy County, New Mexico
API# 30-015-44286

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>
Victor Anguiano	Original Hole	215ft. to 15,023ft.	07-01-18 to 08-08-18	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:


Eric 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\Night Ranger 28 W2AP Fee #1HMI81085

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Microsoft
MWD Surveys



Company: Mewbourne Oil Company
Project: Eddy County, N.M. Nad (83)
Site: Section 28-23S-28E Night Ranger 28 WZAP Fee
Well: Night Ranger 28 WZAP Fee 1H
Wellbore: Original Hole
Design: Original Hole

Local Co-ordinate Reference: Well Night Ranger 28 WZAP Fee 1H
TVD Reference: 3036 + 27 @ 3063.0usft (Patterson 560)
MD Reference: 3036 + 27 @ 3063.0usft (Patterson 560)
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 28-23S-28E Night Ranger 28 WZAP Fee 1H		
Site Position:		Northing:	466,693.70 usft
From: Map		Easting:	617,863.40 usft
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 16' 57.980 N
		Longitude:	104° 5' 8.532 W
		Grid Convergence:	0.13 "

Well	Night Ranger 28 WZAP Fee 1H		
Well Position	+N/-S 0.0 usft	Northing:	466,693.70 usft
	+E/-W 0.0 usft	Easting:	617,863.40 usft
Position Uncertainty	0.0 usft	Wellhead Elevation:	27.0 usft
		Latitude:	32° 16' 57.980 N
		Longitude:	104° 5' 8.532 W
		Ground Level:	3,036.0 usft

Wellbore	Original Hole		
Magnetics	Model Name	Sample Date	Declination (°)
	IGRF2015	6/6/2018	7.09
			Dip Angle (°)
			60.02
			Field Strength (nT)
			47,821.24881412

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)
	0.0	0.0	0.0
			Direction (°)
			214.21



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Survey Program Date 8/28/2018

From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
100.0	200.0	Gyro Survey #1 (Original Hole)	NSG-CT_WL	Continuous north-seeking gyro on wireline
215.0	15,075.0	MWD Survey #2 (Original Hole)	MWD	MWD v3: standard declination

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	
200.0	1.38	215.74	200.0	2,863.0	-0.9	-0.8	1.1	214.21	Tie-In
215.0	1.37	211.50	215.0	2,848.0	-1.2	-0.8	1.5	214.07	
315.0	2.20	217.30	314.9	2,748.1	-3.8	-2.6	4.6	214.75	
357.0	2.20	219.50	356.9	2,706.1	-5.1	-3.6	6.2	215.69	
415.0	1.60	228.30	414.9	2,648.1	-6.5	-4.9	8.1	217.46	
475.0	1.50	228.50	474.9	2,588.1	-7.5	-6.2	9.7	219.27	
534.0	1.60	231.10	533.8	2,529.2	-8.6	-7.4	11.3	220.76	
594.0	1.50	232.00	593.8	2,469.2	-9.6	-8.6	12.9	222.11	
654.0	1.50	236.40	653.8	2,409.2	-10.5	-9.9	14.4	223.41	
713.0	1.40	239.60	712.8	2,350.2	-11.3	-11.2	15.9	224.76	
777.0	1.50	236.80	776.7	2,286.3	-12.1	-12.6	17.5	225.99	
840.0	0.80	224.00	839.7	2,223.3	-12.9	-13.6	18.7	226.42	
934.0	0.40	179.80	933.7	2,129.3	-13.7	-14.0	19.6	225.64	
1,029.0	0.30	166.20	1,028.7	2,034.3	-14.3	-13.9	20.0	224.34	
1,124.0	0.00	16.80	1,123.7	1,939.3	-14.5	-13.9	20.1	223.74	
1,218.0	0.20	356.20	1,217.7	1,845.3	-14.4	-13.9	20.0	224.09	
1,313.0	0.00	23.50	1,312.7	1,750.3	-14.2	-13.9	19.9	224.44	
1,407.0	0.10	117.50	1,406.7	1,656.3	-14.2	-13.8	19.8	224.22	
1,501.0	0.00	112.10	1,500.7	1,562.3	-14.3	-13.8	19.8	223.99	
1,595.0	0.20	157.30	1,594.7	1,468.3	-14.4	-13.7	19.9	223.56	
1,690.0	0.10	182.50	1,689.7	1,373.3	-14.6	-13.6	20.0	222.97	



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1,784.0	0.20	131.10	1,783.7	1,278.3	-14.8	-13.5	20.1	222.35
1,878.0	0.80	116.70	1,877.7	1,185.3	-15.2	-12.8	19.9	220.05
1,973.0	1.70	119.60	1,972.7	1,090.3	-16.2	-11.0	19.6	214.11
2,067.0	1.90	116.10	2,066.7	996.3	-17.6	-8.4	19.5	205.46
2,161.0	1.80	117.60	2,160.6	902.4	-19.0	-5.7	19.8	196.85
2,256.0	2.20	116.90	2,255.5	807.5	-20.5	-2.7	20.7	187.59
2,350.0	2.10	105.90	2,349.5	713.5	-21.8	0.5	21.8	178.60
2,444.0	1.10	92.40	2,443.4	619.6	-22.3	3.1	22.5	172.11
2,500.0	1.00	84.30	2,499.4	563.6	-22.3	4.1	22.7	169.53
2,558.0	0.90	78.00	2,557.4	505.6	-22.1	5.1	22.7	167.11
2,652.0	1.70	48.50	2,651.4	411.6	-21.1	6.8	22.1	162.03
2,746.0	1.70	48.80	2,745.4	317.6	-19.2	8.9	21.2	155.08
2,841.0	3.30	53.00	2,840.3	222.7	-16.6	12.2	20.6	143.82
2,935.0	3.30	57.00	2,934.1	128.9	-13.5	16.6	21.4	129.20
3,029.0	3.50	48.60	3,027.9	35.1	-10.2	21.0	23.3	115.81
3,124.0	3.30	47.00	3,122.8	-59.8	-6.4	25.2	26.0	104.21
3,218.0	3.30	50.60	3,216.6	-153.6	-2.8	29.3	29.4	95.50
3,312.0	3.30	49.60	3,310.5	-247.5	0.7	33.4	33.4	88.88
3,406.0	3.60	28.20	3,404.3	-341.3	5.0	36.9	37.2	82.27
3,501.0	3.50	26.00	3,499.1	-438.1	10.2	39.5	40.9	75.48
3,595.0	3.30	27.00	3,593.0	-530.0	15.2	42.0	44.7	70.08
3,690.0	3.40	24.80	3,687.8	-624.8	20.2	44.5	48.8	65.54
3,785.0	3.50	30.00	3,782.6	-719.6	25.3	47.1	53.5	61.78
3,879.0	3.20	27.20	3,876.5	-813.5	30.1	49.7	58.1	58.80
3,974.0	3.30	50.20	3,971.3	-908.3	34.2	53.0	63.1	57.17
4,068.0	3.00	54.60	4,065.2	-1,002.2	37.4	57.1	68.3	56.80
4,163.0	3.10	54.90	4,160.0	-1,097.0	40.3	61.2	73.3	56.66



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4,258.0	3.00	58.40	4,254.9	-1,191.9	43.1	65.4	78.4	56.59
4,352.0	3.10	58.60	4,348.8	-1,285.8	45.9	69.6	83.4	56.59
4,447.0	3.50	54.30	4,443.6	-1,380.6	49.0	74.1	88.8	56.51
4,541.0	3.60	58.10	4,537.4	-1,474.4	52.3	78.9	94.7	56.43
4,636.0	3.60	56.20	4,632.2	-1,569.2	55.7	83.8	100.6	56.42
4,730.0	3.30	57.20	4,726.1	-1,663.1	58.8	88.6	106.3	56.43
4,825.0	3.90	35.70	4,820.9	-1,757.9	62.9	92.7	112.0	55.87
4,920.0	3.80	34.40	4,915.7	-1,852.7	68.1	96.4	118.0	54.77
5,014.0	3.50	33.20	5,009.5	-1,946.5	73.1	99.7	123.6	53.77
5,108.0	3.40	40.20	5,104.3	-2,041.3	77.6	103.1	129.1	53.03
5,203.0	2.90	35.10	5,198.2	-2,135.2	81.7	106.3	134.1	52.45
5,298.0	3.10	54.30	5,293.0	-2,230.0	85.2	109.8	138.9	52.19
5,392.0	2.90	56.00	5,386.9	-2,323.9	88.0	113.8	143.9	52.29
5,487.0	2.90	57.80	5,481.8	-2,418.8	90.6	117.8	148.6	52.44
5,582.0	2.90	60.00	5,576.7	-2,513.7	93.1	121.9	153.4	52.64
5,676.0	3.00	44.20	5,670.5	-2,607.5	96.1	125.7	158.2	52.62
5,771.0	2.90	44.90	5,765.4	-2,702.4	99.5	129.2	163.1	52.38
5,865.0	2.90	46.30	5,859.3	-2,796.3	102.9	132.5	167.8	52.19
5,960.0	2.70	47.40	5,954.2	-2,891.2	106.0	135.9	172.4	52.04
6,055.0	2.40	50.80	6,049.1	-2,986.1	108.8	139.1	176.6	51.97
6,149.0	2.10	51.60	6,143.0	-3,080.0	111.1	142.0	180.3	51.95
6,244.0	1.80	54.90	6,238.0	-3,175.0	113.1	144.6	183.5	51.97
6,338.0	1.40	37.90	6,331.9	-3,268.9	114.8	146.5	186.1	51.91
6,433.0	1.30	14.90	6,426.9	-3,363.9	116.8	147.5	188.1	51.83
6,528.0	1.70	6.50	6,521.9	-3,458.9	119.2	147.9	190.0	51.13
6,622.0	3.60	29.60	6,615.8	-3,552.8	123.2	149.5	193.7	50.52
6,717.0	3.10	29.40	6,710.6	-3,647.6	128.0	152.3	198.9	49.95



Microsoft
MWD Surveys



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Site: Section 28-23S-28E Night Ranger 28 W2AP Fee
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Wellbore: Original Hole
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Survey

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6,811.0	2.30	27.00	6,804.5	-3,741.5	131.9	154.4	203.0	49.49
6,908.0	2.70	45.20	6,899.4	-3,836.4	135.2	156.8	207.0	49.24
7,001.0	4.00	72.60	6,994.2	-3,931.2	137.7	161.6	212.3	49.55
7,095.0	3.90	84.20	7,088.0	-4,025.0	139.0	167.9	218.0	50.37
7,190.0	3.60	69.20	7,182.8	-4,119.8	140.6	173.8	223.6	51.04
7,285.0	2.60	59.20	7,277.7	-4,214.7	143.0	178.3	228.6	51.28
7,379.0	2.20	49.70	7,371.6	-4,308.6	145.3	181.5	232.5	51.32
7,474.0	2.30	71.10	7,466.5	-4,403.5	147.1	184.7	236.1	51.46
7,569.0	2.20	80.70	7,561.5	-4,498.5	148.0	188.3	239.5	51.63
7,664.0	2.40	84.70	7,656.4	-4,593.4	148.5	192.1	242.8	52.29
7,759.0	2.60	84.30	7,751.3	-4,688.3	148.9	196.2	246.3	52.80
7,853.0	2.20	78.90	7,845.2	-4,782.2	149.5	200.1	249.8	53.24
7,948.0	1.30	97.80	7,940.2	-4,877.2	149.7	202.9	252.2	53.59
8,043.0	1.10	96.70	8,035.1	-4,972.1	149.4	204.9	253.6	53.90
8,137.0	0.70	134.90	8,129.1	-5,066.1	148.9	206.2	254.4	54.17
8,232.0	0.70	108.60	8,224.1	-5,161.1	148.3	207.2	254.8	54.40
8,326.0	0.80	136.90	8,318.1	-5,255.1	147.7	208.2	255.2	54.65
8,421.0	1.10	120.10	8,413.1	-5,350.1	146.7	209.4	255.7	54.99
8,516.0	1.30	105.70	8,508.1	-5,445.1	146.0	211.2	256.6	55.36
8,610.0	1.70	116.30	8,602.1	-5,539.1	145.1	213.5	258.1	55.81
8,705.0	2.40	106.50	8,697.0	-5,634.0	143.9	216.7	260.1	56.42
8,800.0	2.50	111.50	8,791.9	-5,728.9	142.5	220.5	262.6	57.12
8,894.0	2.50	110.50	8,885.8	-5,822.8	141.1	224.4	265.0	57.84
8,989.0	2.20	114.30	8,980.7	-5,917.7	139.6	228.0	267.3	58.52
9,084.0	2.30	117.90	9,075.7	-6,012.7	138.0	231.3	269.3	59.19
9,178.0	1.90	107.30	9,169.6	-6,106.6	136.6	234.5	271.4	59.77
9,273.0	2.10	106.10	9,264.5	-6,201.5	135.7	237.6	273.6	60.28



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9,367.0	1.90	82.10	9,358.5	-6,295.5	135.4	240.8	276.3	60.66
9,462.0	2.30	69.00	9,453.4	-6,390.4	136.3	244.2	279.6	60.83
9,557.0	1.50	78.20	9,548.4	-6,485.4	137.2	247.2	282.7	60.96
9,651.0	1.30	70.10	9,642.3	-6,579.3	137.8	249.4	284.9	61.07
9,746.0	0.70	54.30	9,737.3	-6,674.3	138.6	250.9	286.6	61.09
9,809.0	0.19	149.52	9,800.3	-6,737.3	138.7	251.2	287.0	61.10
B.B. Night Ranger 28 W2AP Fee 1H								
9,812.0	0.20	159.20	9,803.3	-6,740.3	138.7	251.2	287.0	61.10
9,882.0	0.40	152.20	9,873.3	-6,810.3	138.3	251.4	286.9	61.17
9,913.0	4.30	168.00	9,904.3	-6,841.3	137.1	251.7	286.6	61.42
9,945.0	10.40	168.30	9,936.0	-6,873.0	133.1	252.5	285.5	62.20
9,976.0	13.70	168.70	9,968.3	-6,903.3	126.8	253.8	283.7	63.46
10,008.0	16.70	170.50	9,997.2	-6,934.2	118.5	255.3	281.5	65.10
10,039.0	19.80	179.20	10,028.6	-6,963.6	108.9	256.1	278.3	66.97
10,071.0	22.20	179.10	10,056.5	-6,993.5	97.4	256.3	274.2	69.19
10,102.0	24.10	180.20	10,085.0	-7,022.0	85.2	256.4	270.1	71.61
10,134.0	26.20	179.60	10,114.0	-7,051.0	71.6	256.4	266.2	74.39
10,166.0	29.80	178.30	10,141.4	-7,078.4	57.1	256.7	262.9	77.46
10,197.0	33.30	174.60	10,168.6	-7,105.6	40.4	257.7	260.9	81.10
10,228.0	35.60	173.20	10,194.2	-7,131.2	22.9	259.6	260.6	84.95
10,260.0	38.00	173.10	10,219.8	-7,156.8	3.9	261.9	261.9	89.15
10,291.0	43.30	175.30	10,243.3	-7,180.3	-16.2	263.9	264.4	93.51
10,323.0	46.60	176.80	10,266.0	-7,203.0	-38.7	265.5	266.3	98.30
10,355.0	48.80	177.60	10,287.5	-7,224.5	-62.4	266.7	273.9	103.16
10,386.0	50.80	178.30	10,307.5	-7,244.5	-86.0	267.5	281.0	107.83
10,418.0	55.60	178.80	10,326.6	-7,263.6	-111.7	268.2	290.5	112.61
10,449.0	58.30	178.50	10,343.5	-7,280.5	-137.6	268.8	302.0	117.12



Microsoft
MWD Surveys



Company: Mewbourne Oil Company
Project: Eddy County, N.M. Nad (83)
Site: Section 28-23S-28E Night Ranger 28 WZAP Fee
Well: Night Ranger 28 WZAP Fee 1H
Wellbore: Original Hole
Design: Original Hole

Local Co-ordinate Reference: Well Night Ranger 28 WZAP Fee 1H
TVD Reference: 3038 + 27 @ 3063.0usft (Patterson 560)
MD Reference: 3038 + 27 @ 3063.0usft (Patterson 560)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Stryker_EDM

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)
10,490.0	61.50	178.00	10,364.1	-7,301.1	-173.1	269.9	320.6	122.68
10,521.0	63.10	177.90	10,378.5	-7,315.5	-200.5	270.8	337.0	126.51
10,553.0	65.40	178.50	10,392.4	-7,329.4	-229.3	271.8	355.6	130.16
10,584.0	69.40	178.70	10,404.3	-7,341.3	-257.9	272.5	375.2	133.43
10,616.0	72.20	178.30	10,414.8	-7,351.8	-288.1	273.2	397.1	136.52
10,648.0	73.40	178.10	10,424.3	-7,361.3	-318.7	274.2	420.4	139.29
10,679.0	73.50	177.80	10,433.1	-7,370.1	-348.4	275.3	444.0	141.69
10,711.0	75.30	179.00	10,441.7	-7,378.7	-379.2	276.1	469.1	143.94
10,742.0	75.70	179.80	10,449.5	-7,386.5	-409.2	276.4	493.8	145.96
10,774.0	77.10	181.20	10,457.0	-7,394.0	-440.3	276.2	519.7	147.90
10,805.0	77.60	181.10	10,463.8	-7,400.8	-470.5	275.6	545.3	149.66
10,837.0	79.40	181.20	10,470.2	-7,407.2	-501.9	274.9	572.3	151.29
10,868.0	81.10	181.80	10,475.4	-7,412.4	-532.4	274.2	598.9	152.75
10,900.0	83.00	181.70	10,479.9	-7,416.9	-564.1	273.3	626.8	154.15
10,903.8	83.30	181.72	10,480.3	-7,417.3	-567.9	273.2	630.2	154.31
LP Night Ranger 28 WZAP Fee 1H								
10,963.0	86.00	182.10	10,484.8	-7,421.8	-626.9	271.2	683.0	156.61
11,057.0	89.50	180.50	10,488.9	-7,423.9	-720.8	269.1	769.4	159.53
11,152.0	89.60	179.90	10,487.6	-7,424.6	-815.8	268.7	858.9	161.77
11,246.0	88.70	179.60	10,489.0	-7,426.0	-909.8	269.1	948.8	163.52
11,341.0	89.00	180.40	10,490.9	-7,427.9	-1,004.8	269.1	1,040.2	165.00
11,435.0	90.60	181.80	10,491.2	-7,428.2	-1,098.8	267.3	1,130.8	166.33
11,530.0	88.90	178.50	10,491.6	-7,428.6	-1,193.7	267.1	1,223.2	167.39
11,624.0	89.50	180.40	10,493.0	-7,430.0	-1,287.7	268.0	1,315.3	168.24
11,719.0	90.10	182.10	10,493.3	-7,430.3	-1,382.7	265.9	1,408.0	169.11
11,813.0	89.30	181.20	10,493.8	-7,430.6	-1,476.6	263.2	1,499.9	169.89
11,908.0	86.00	179.30	10,496.0	-7,433.0	-1,571.6	262.8	1,593.4	170.51



Microsoft
MWD Surveys



Company: Mewbourne Oil Company
Project: Eddy County, N.M. Nad (83)
Site: Section 28-23S-28E Night Ranger 28 W2AP Fee
Well: Night Ranger 28 W2AP Fee 1H
Wellbore: Original Hole
Design: Original Hole

Local Co-ordinate Reference: Well Night Ranger 28 W2AP Fee 1H
TVD Reference: 3036 + 27 @ 3063.0usft (Patterson 560)
MD Reference: 3036 + 27 @ 3063.0usft (Patterson 560)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Stryker_EDM

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)
12,002.0	88.60	178.60	10,498.8	-7,435.8	-1,865.8	264.5	1,886.4	170.98
12,097.0	91.70	179.20	10,498.8	-7,435.8	-1,760.5	266.3	1,780.6	171.40
12,192.0	90.00	177.10	10,497.2	-7,434.2	-1,855.5	269.4	1,874.9	171.74
12,286.0	89.80	176.10	10,497.5	-7,434.5	-1,949.3	275.0	1,968.6	171.97
12,381.0	89.80	177.50	10,498.0	-7,435.0	-2,044.1	280.3	2,063.3	172.19
12,475.0	88.30	175.30	10,499.5	-7,436.5	-2,137.9	288.2	2,157.0	172.38
12,570.0	91.20	180.70	10,500.0	-7,437.0	-2,232.8	289.5	2,251.5	172.61
12,664.0	89.70	178.30	10,499.2	-7,436.2	-2,326.8	290.3	2,344.9	172.89
12,759.0	90.80	178.40	10,498.8	-7,435.8	-2,421.8	293.1	2,439.4	173.10
12,853.0	89.90	179.00	10,498.2	-7,435.2	-2,515.7	295.2	2,533.0	173.31
12,948.0	88.00	179.90	10,500.0	-7,437.0	-2,610.7	296.1	2,627.5	173.53
13,042.0	88.20	181.90	10,503.1	-7,440.1	-2,704.6	294.6	2,720.6	173.78
13,137.0	88.30	182.20	10,508.0	-7,443.0	-2,799.5	291.2	2,814.6	174.06
13,231.0	88.80	180.40	10,508.4	-7,445.4	-2,893.5	289.1	2,907.9	174.29
13,326.0	91.30	180.10	10,508.3	-7,445.3	-2,988.5	288.7	3,002.4	174.48
13,420.0	91.00	179.30	10,506.4	-7,443.4	-3,082.5	289.2	3,096.0	174.64
13,515.0	90.10	178.80	10,505.5	-7,442.5	-3,177.4	290.7	3,190.7	174.77
13,609.0	90.40	179.60	10,505.1	-7,442.1	-3,271.4	292.1	3,284.4	174.90
13,704.0	90.90	180.40	10,504.0	-7,441.0	-3,366.4	292.1	3,379.1	175.04
13,798.0	89.40	176.80	10,503.7	-7,440.7	-3,460.4	294.4	3,472.9	175.14
13,893.0	89.80	178.90	10,504.4	-7,441.4	-3,555.3	297.9	3,567.8	175.21
13,986.0	88.80	175.80	10,505.6	-7,442.6	-3,650.2	302.3	3,662.7	175.27
14,082.0	91.10	179.70	10,505.7	-7,442.7	-3,744.1	306.0	3,756.6	175.33
14,177.0	90.60	182.70	10,504.2	-7,441.2	-3,839.0	304.0	3,851.1	175.47
14,271.0	89.80	182.50	10,503.9	-7,440.9	-3,932.9	299.7	3,944.3	175.64
14,366.0	87.40	179.70	10,506.2	-7,443.2	-4,027.9	297.9	4,038.9	175.77
14,460.0	87.10	179.20	10,510.7	-7,447.7	-4,121.8	298.8	4,132.6	175.85



Microsoft
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Wellbore: Original Hole
Design: Original Hole

Local Co-ordinate Reference: Well Night Ranger 28 W2AP Fee 1H
TVD Reference: 3036 + 27 @ 3083.0usft (Patterson 580)
MD Reference: 3036 + 27 @ 3083.0usft (Patterson 560)
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: Stryker_EDM

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	TVDSS (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)
14,555.0	88.50	182.70	10,513.6	-7,450.6	-4,216.7	297.2	4,227.1	175.97
14,649.0	89.00	182.00	10,514.8	-7,451.8	-4,310.6	293.4	4,320.6	176.11
14,744.0	90.40	178.70	10,515.3	-7,452.3	-4,405.6	292.8	4,415.3	176.20
14,839.0	88.50	175.50	10,516.2	-7,453.2	-4,500.4	297.6	4,510.3	176.22
14,933.0	87.80	177.00	10,518.2	-7,456.2	-4,594.2	303.8	4,604.2	176.22
15,023.0	87.60	177.20	10,522.9	-7,459.9	-4,684.0	308.3	4,694.1	176.23
15,075.0	87.60	177.20	10,525.0	-7,462.0	-4,735.9	310.8	4,746.1	176.24

15075.0' MD Projected to Bit - PBHL Night Ranger 28 W2AP Fee 1H

Survey Annotations

Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
15,075.0	10,525.0	-4,735.9	310.8	15075.0' MD Projected to Bit