

Company:	Marathon Oil	Local Co-ordinate Reference:	Well No. 19H
Project:	Lea County, NM	TVD Reference:	Well @ 3472.50usft (GL: 3446' + KB: 26.5' (H&P480))
Site:	Knife Fight Fee 3-6-7-19	MD Reference:	Well @ 3472.50usft (GL: 3446' + KB: 26.5' (H&P480))
Well:	No. 19H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Prelim Plan B	Database:	WellPlanner1

Project	Lea County, NM		
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		Knife Fight Fee 3-6-7-19			
Site Position:		Northing:	435,782.47 usft	Latitude:	32° 11' 41.6202 N
From:	Map	Easting:	777,788.07 usft	Longitude:	103° 26' 7.2196 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.48 °

Well	No. 19H					
Well Position	+N/-S	0.00 usft	Northing:	435,782.47 usft	Latitude:	32° 11' 41.6202 N
	+E/-W	0.00 usft	Easting:	777,788.07 usft	Longitude:	103° 26' 7.2196 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,446.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	10/25/2017	6.77	59.95	48,063.30

Design	Prelim Plan B				
Audit Notes:					
Version:	Phase:	PLAN	Tie On Depth:	0.00	
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)	
	0.00	0.00	0.00	179.60	

Survey Tool Program	Date	2/21/2018			
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description	
0.00	5,000.00	Prelim Plan B (OH)	MWD+IFR1	OWSG MWD + IFR1	
5,000.00	10,000.00	Prelim Plan B (OH)	MWD+IFR1	OWSG MWD + IFR1	
10,000.00	17,382.89	Prelim Plan B (OH)	MWD+IFR1	OWSG MWD + IFR1	

Planned 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)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
[KnifeFight#19H]FTP										
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00	

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Site:	Knife Fight Fee 3-6-7-19	MD Reference:	Well @ 3472.50usft (GL: 3446' + KB: 26.5' (H&P480))
Well:	No. 19H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Prelim Plan B	Database:	WellPlanner1

Planned 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)
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.75	77.41	1,300.00	0.14	0.64	-0.14	0.75	0.75	0.00
1,400.00	1.50	77.41	1,399.98	0.57	2.55	-0.55	0.75	0.75	0.00
1,500.00	2.25	77.41	1,499.92	1.28	5.75	-1.24	0.75	0.75	0.00
1,600.00	3.00	77.41	1,599.82	2.28	10.22	-2.21	0.75	0.75	0.00
1,700.00	3.75	77.41	1,699.64	3.57	15.96	-3.45	0.75	0.75	0.00
1,800.00	4.50	77.41	1,799.38	5.13	22.98	-4.97	0.75	0.75	0.00
1,900.00	5.25	77.41	1,899.02	6.99	31.28	-6.77	0.75	0.75	0.00
2,000.00	6.00	77.41	1,998.54	9.12	40.84	-8.84	0.75	0.75	0.00
2,100.00	6.75	77.41	2,097.92	11.54	51.68	-11.18	0.75	0.75	0.00
2,200.00	7.50	77.41	2,197.15	14.25	63.78	-13.80	0.75	0.75	0.00
2,300.00	8.25	77.41	2,296.20	17.23	77.16	-16.69	0.75	0.75	0.00
2,400.00	9.00	77.41	2,395.07	20.50	91.79	-19.86	0.75	0.75	0.00
2,500.00	9.75	77.41	2,493.73	24.05	107.69	-23.30	0.75	0.75	0.00
2,533.33	10.00	77.41	2,526.57	25.30	113.27	-24.51	0.75	0.75	0.00
2,600.00	10.00	77.41	2,592.23	27.82	124.57	-26.95	0.00	0.00	0.00
2,700.00	10.00	77.41	2,690.71	31.61	141.51	-30.62	0.00	0.00	0.00
2,800.00	10.00	77.41	2,789.19	35.39	158.46	-34.29	0.00	0.00	0.00
2,900.00	10.00	77.41	2,887.67	39.18	175.41	-37.95	0.00	0.00	0.00
3,000.00	10.00	77.41	2,986.15	42.96	192.36	-41.62	0.00	0.00	0.00
3,100.00	10.00	77.41	3,084.63	46.75	209.30	-45.29	0.00	0.00	0.00
3,200.00	10.00	77.41	3,183.11	50.53	226.25	-48.95	0.00	0.00	0.00
3,300.00	10.00	77.41	3,281.59	54.32	243.20	-52.62	0.00	0.00	0.00
3,400.00	10.00	77.41	3,380.07	58.11	260.15	-56.29	0.00	0.00	0.00
3,500.00	10.00	77.41	3,478.56	61.89	277.09	-59.95	0.00	0.00	0.00
3,600.00	10.00	77.41	3,577.04	65.68	294.04	-63.62	0.00	0.00	0.00
3,700.00	10.00	77.41	3,675.52	69.46	310.99	-67.29	0.00	0.00	0.00
3,800.00	10.00	77.41	3,774.00	73.25	327.93	-70.96	0.00	0.00	0.00
3,900.00	10.00	77.41	3,872.48	77.03	344.88	-74.62	0.00	0.00	0.00
4,000.00	10.00	77.41	3,970.96	80.82	361.83	-78.29	0.00	0.00	0.00
4,100.00	10.00	77.41	4,069.44	84.60	378.78	-81.96	0.00	0.00	0.00
4,200.00	10.00	77.41	4,167.92	88.39	395.72	-85.62	0.00	0.00	0.00
4,300.00	10.00	77.41	4,266.40	92.17	412.67	-89.29	0.00	0.00	0.00
4,400.00	10.00	77.41	4,364.88	95.96	429.62	-92.96	0.00	0.00	0.00
4,500.00	10.00	77.41	4,463.36	99.74	446.56	-96.62	0.00	0.00	0.00
4,600.00	10.00	77.41	4,561.84	103.53	463.51	-100.29	0.00	0.00	0.00

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Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Prelim Plan B	Database:	WellPlanner1

Planned 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)
4,700.00	10.00	77.41	4,660.32	107.31	480.46	-103.96	0.00	0.00	0.00
4,800.00	10.00	77.41	4,758.81	111.10	497.41	-107.62	0.00	0.00	0.00
4,900.00	10.00	77.41	4,857.29	114.88	514.35	-111.29	0.00	0.00	0.00
5,000.00	10.00	77.41	4,955.77	118.67	531.30	-114.96	0.00	0.00	0.00
5,100.00	10.00	77.41	5,054.25	122.45	548.25	-118.62	0.00	0.00	0.00
5,200.00	10.00	77.41	5,152.73	126.24	565.20	-122.29	0.00	0.00	0.00
5,300.00	10.00	77.41	5,251.21	130.03	582.14	-125.96	0.00	0.00	0.00
5,400.00	10.00	77.41	5,349.69	133.81	599.09	-129.63	0.00	0.00	0.00
5,500.00	10.00	77.41	5,448.17	137.60	616.04	-133.29	0.00	0.00	0.00
5,600.00	10.00	77.41	5,546.65	141.38	632.98	-136.96	0.00	0.00	0.00
5,700.00	10.00	77.41	5,645.13	145.17	649.93	-140.63	0.00	0.00	0.00
5,800.00	10.00	77.41	5,743.61	148.95	666.88	-144.29	0.00	0.00	0.00
5,900.00	10.00	77.41	5,842.09	152.74	683.83	-147.96	0.00	0.00	0.00
6,000.00	10.00	77.41	5,940.57	156.52	700.77	-151.63	0.00	0.00	0.00
6,100.00	10.00	77.41	6,039.06	160.31	717.72	-155.29	0.00	0.00	0.00
6,153.96	10.00	77.41	6,092.20	162.35	726.87	-157.27	0.00	0.00	0.00
6,200.00	9.31	77.41	6,137.58	164.03	734.40	-158.90	1.50	-1.50	0.00
6,300.00	7.81	77.41	6,236.47	167.28	748.93	-162.05	1.50	-1.50	0.00
6,400.00	6.31	77.41	6,335.71	169.96	760.92	-164.64	1.50	-1.50	0.00
6,500.00	4.81	77.41	6,435.23	172.07	770.37	-166.69	1.50	-1.50	0.00
6,600.00	3.31	77.41	6,534.98	173.61	777.28	-168.18	1.50	-1.50	0.00
6,700.00	1.81	77.41	6,634.88	174.58	781.64	-169.12	1.50	-1.50	0.00
6,800.00	0.31	77.41	6,734.86	174.99	783.45	-169.51	1.50	-1.50	0.00
6,820.63	0.00	0.00	6,755.48	175.00	783.50	-169.53	1.50	-1.50	0.00
6,900.00	0.00	0.00	6,834.86	175.00	783.50	-169.53	0.00	0.00	0.00
7,000.00	0.00	0.00	6,934.86	175.00	783.50	-169.53	0.00	0.00	0.00
7,100.00	0.00	0.00	7,034.86	175.00	783.50	-169.53	0.00	0.00	0.00
7,200.00	0.00	0.00	7,134.86	175.00	783.50	-169.53	0.00	0.00	0.00
7,300.00	0.00	0.00	7,234.86	175.00	783.50	-169.53	0.00	0.00	0.00
7,400.00	0.00	0.00	7,334.86	175.00	783.50	-169.53	0.00	0.00	0.00
7,500.00	0.00	0.00	7,434.86	175.00	783.50	-169.53	0.00	0.00	0.00
7,600.00	0.00	0.00	7,534.86	175.00	783.50	-169.53	0.00	0.00	0.00
7,700.00	0.00	0.00	7,634.86	175.00	783.50	-169.53	0.00	0.00	0.00
7,800.00	0.00	0.00	7,734.86	175.00	783.50	-169.53	0.00	0.00	0.00
7,900.00	0.00	0.00	7,834.86	175.00	783.50	-169.53	0.00	0.00	0.00
8,000.00	0.00	0.00	7,934.86	175.00	783.50	-169.53	0.00	0.00	0.00
8,100.00	0.00	0.00	8,034.86	175.00	783.50	-169.53	0.00	0.00	0.00
8,200.00	0.00	0.00	8,134.86	175.00	783.50	-169.53	0.00	0.00	0.00
8,300.00	0.00	0.00	8,234.86	175.00	783.50	-169.53	0.00	0.00	0.00
8,400.00	0.00	0.00	8,334.86	175.00	783.50	-169.53	0.00	0.00	0.00
8,500.00	0.00	0.00	8,434.86	175.00	783.50	-169.53	0.00	0.00	0.00
8,600.00	0.00	0.00	8,534.86	175.00	783.50	-169.53	0.00	0.00	0.00

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Well:	No. 19H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Prelim Plan B	Database:	WellPlanner1

Planned 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)
8,700.00	0.00	0.00	8,634.86	175.00	783.50	-169.53	0.00	0.00	0.00
8,800.00	0.00	0.00	8,734.86	175.00	783.50	-169.53	0.00	0.00	0.00
8,900.00	0.00	0.00	8,834.86	175.00	783.50	-169.53	0.00	0.00	0.00
9,000.00	0.00	0.00	8,934.86	175.00	783.50	-169.53	0.00	0.00	0.00
9,100.00	0.00	0.00	9,034.86	175.00	783.50	-169.53	0.00	0.00	0.00
9,200.00	0.00	0.00	9,134.86	175.00	783.50	-169.53	0.00	0.00	0.00
9,300.00	0.00	0.00	9,234.86	175.00	783.50	-169.53	0.00	0.00	0.00
9,400.00	0.00	0.00	9,334.86	175.00	783.50	-169.53	0.00	0.00	0.00
9,500.00	0.00	0.00	9,434.86	175.00	783.50	-169.53	0.00	0.00	0.00
9,600.00	0.00	0.00	9,534.86	175.00	783.50	-169.53	0.00	0.00	0.00
9,700.00	0.00	0.00	9,634.86	175.00	783.50	-169.53	0.00	0.00	0.00
9,800.00	0.00	0.00	9,734.86	175.00	783.50	-169.53	0.00	0.00	0.00
9,900.00	0.00	0.00	9,834.86	175.00	783.50	-169.53	0.00	0.00	0.00
10,000.00	0.00	0.00	9,934.86	175.00	783.50	-169.53	0.00	0.00	0.00
10,100.00	0.00	0.00	10,034.86	175.00	783.50	-169.53	0.00	0.00	0.00
10,200.00	0.00	0.00	10,134.86	175.00	783.50	-169.53	0.00	0.00	0.00
10,300.00	0.00	0.00	10,234.86	175.00	783.50	-169.53	0.00	0.00	0.00
10,400.00	0.00	0.00	10,334.86	175.00	783.50	-169.53	0.00	0.00	0.00
10,500.00	0.00	0.00	10,434.86	175.00	783.50	-169.53	0.00	0.00	0.00
10,600.00	0.00	0.00	10,534.86	175.00	783.50	-169.53	0.00	0.00	0.00
10,700.00	0.00	0.00	10,634.86	175.00	783.50	-169.53	0.00	0.00	0.00
10,800.00	0.00	0.00	10,734.86	175.00	783.50	-169.53	0.00	0.00	0.00
10,900.00	0.00	0.00	10,834.86	175.00	783.50	-169.53	0.00	0.00	0.00
11,000.00	0.00	0.00	10,934.86	175.00	783.50	-169.53	0.00	0.00	0.00
11,100.00	0.00	0.00	11,034.86	175.00	783.50	-169.53	0.00	0.00	0.00
11,200.00	0.00	0.00	11,134.86	175.00	783.50	-169.53	0.00	0.00	0.00
11,300.00	0.00	0.00	11,234.86	175.00	783.50	-169.53	0.00	0.00	0.00
11,400.00	0.00	0.00	11,334.86	175.00	783.50	-169.53	0.00	0.00	0.00
11,500.00	0.00	0.00	11,434.86	175.00	783.50	-169.53	0.00	0.00	0.00
11,600.00	0.00	0.00	11,534.86	175.00	783.50	-169.53	0.00	0.00	0.00
11,700.00	0.00	0.00	11,634.86	175.00	783.50	-169.53	0.00	0.00	0.00
11,800.00	0.00	0.00	11,734.86	175.00	783.50	-169.53	0.00	0.00	0.00
11,900.00	0.00	0.00	11,834.86	175.00	783.50	-169.53	0.00	0.00	0.00
11,979.14	0.00	0.00	11,914.00	175.00	783.50	-169.53	0.00	0.00	0.00
[KnifeFight#19H]KOP									
12,000.00	2.09	179.60	11,934.85	174.62	783.50	-169.15	10.00	10.00	0.00
12,050.00	7.09	179.60	11,984.68	170.62	783.53	-165.15	10.00	10.00	0.00
12,100.00	12.09	179.60	12,033.96	162.30	783.59	-156.83	10.00	10.00	0.00
12,150.00	17.09	179.60	12,082.34	149.71	783.68	-144.24	10.00	10.00	0.00
12,200.00	22.09	179.60	12,129.43	132.96	783.79	-127.48	10.00	10.00	0.00
12,250.00	27.09	179.60	12,174.88	112.16	783.94	-106.69	10.00	10.00	0.00
12,300.00	32.09	179.60	12,218.35	87.49	784.11	-82.01	10.00	10.00	0.00

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Well:	No. 19H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Prelim Plan B	Database:	WellPlanner1

Planned 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)
12,350.00	37.09	179.60	12,259.50	59.11	784.31	-53.64	10.00	10.00	0.00
12,400.00	42.09	179.60	12,298.02	27.26	784.53	-21.79	10.00	10.00	0.00
12,438.92	45.98	179.60	12,325.99	0.22	784.72	5.26	10.00	10.00	0.00
Wolfcamp									
12,450.00	47.09	179.60	12,333.62	-7.82	784.78	13.30	10.00	10.00	0.00
12,500.00	52.09	179.60	12,366.02	-45.88	785.04	51.36	10.00	10.00	0.00
12,550.00	57.09	179.60	12,394.99	-86.61	785.33	92.09	10.00	10.00	0.00
12,600.00	62.09	179.60	12,420.29	-129.72	785.63	135.20	10.00	10.00	0.00
12,650.00	67.09	179.60	12,441.74	-174.87	785.94	180.35	10.00	10.00	0.00
12,700.00	72.09	179.60	12,459.18	-221.71	786.27	227.19	10.00	10.00	0.00
12,750.00	77.09	179.60	12,472.47	-269.89	786.61	275.38	10.00	10.00	0.00
12,800.00	82.09	179.60	12,481.50	-319.05	786.95	324.54	10.00	10.00	0.00
12,850.00	87.09	179.60	12,486.22	-368.81	787.30	374.30	10.00	10.00	0.00
12,859.17	88.00	179.60	12,486.61	-377.98	787.36	383.46	10.00	10.00	0.00
12,900.00	88.00	179.60	12,488.03	-418.78	787.65	424.27	0.00	0.00	0.00
13,000.00	88.00	179.60	12,491.52	-518.72	788.35	524.21	0.00	0.00	0.00
13,100.00	88.00	179.60	12,495.00	-618.65	789.05	624.15	0.00	0.00	0.00
13,200.00	88.00	179.60	12,498.49	-718.59	789.74	724.08	0.00	0.00	0.00
13,300.00	88.00	179.60	12,501.97	-818.53	790.44	824.02	0.00	0.00	0.00
13,400.00	88.00	179.60	12,505.46	-918.46	791.14	923.96	0.00	0.00	0.00
13,500.00	88.00	179.60	12,508.94	-1,018.40	791.84	1,023.90	0.00	0.00	0.00
13,600.00	88.00	179.60	12,512.43	-1,118.34	792.54	1,123.84	0.00	0.00	0.00
13,700.00	88.00	179.60	12,515.91	-1,218.27	793.24	1,223.78	0.00	0.00	0.00
13,800.00	88.00	179.60	12,519.40	-1,318.21	793.93	1,323.72	0.00	0.00	0.00
13,900.00	88.00	179.60	12,522.88	-1,418.15	794.63	1,423.66	0.00	0.00	0.00
14,000.00	88.00	179.60	12,526.37	-1,518.08	795.33	1,523.60	0.00	0.00	0.00
14,100.00	88.00	179.60	12,529.85	-1,618.02	796.03	1,623.54	0.00	0.00	0.00
14,200.00	88.00	179.60	12,533.34	-1,717.96	796.73	1,723.48	0.00	0.00	0.00
14,300.00	88.00	179.60	12,536.83	-1,817.89	797.43	1,823.42	0.00	0.00	0.00
14,400.00	88.00	179.60	12,540.31	-1,917.83	798.12	1,923.36	0.00	0.00	0.00
14,500.00	88.00	179.60	12,543.80	-2,017.77	798.82	2,023.30	0.00	0.00	0.00
14,600.00	88.00	179.60	12,547.28	-2,117.70	799.52	2,123.23	0.00	0.00	0.00
14,700.00	88.00	179.60	12,550.77	-2,217.64	800.22	2,223.17	0.00	0.00	0.00
14,800.00	88.00	179.60	12,554.25	-2,317.58	800.92	2,323.11	0.00	0.00	0.00
14,900.00	88.00	179.60	12,557.74	-2,417.51	801.62	2,423.05	0.00	0.00	0.00
15,000.00	88.00	179.60	12,561.22	-2,517.45	802.31	2,522.99	0.00	0.00	0.00
15,100.00	88.00	179.60	12,564.71	-2,617.39	803.01	2,622.93	0.00	0.00	0.00
15,200.00	88.00	179.60	12,568.19	-2,717.33	803.71	2,722.87	0.00	0.00	0.00
15,300.00	88.00	179.60	12,571.68	-2,817.26	804.41	2,822.81	0.00	0.00	0.00
15,400.00	88.00	179.60	12,575.16	-2,917.20	805.11	2,922.75	0.00	0.00	0.00
15,500.00	88.00	179.60	12,578.65	-3,017.14	805.81	3,022.69	0.00	0.00	0.00
15,600.00	88.00	179.60	12,582.13	-3,117.07	806.50	3,122.63	0.00	0.00	0.00

Company:	Marathon Oil	Local Co-ordinate Reference:	Well No. 19H
Project:	Lea County, NM	TVD Reference:	Well @ 3472.50usft (GL: 3446' + KB: 26.5' (H&P480))
Site:	Knife Fight Fee 3-6-7-19	MD Reference:	Well @ 3472.50usft (GL: 3446' + KB: 26.5' (H&P480))
Well:	No. 19H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Prelim Plan B	Database:	WellPlanner1

Planned 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)
15,700.00	88.00	179.60	12,585.62	-3,217.01	807.20	3,222.57	0.00	0.00	0.00
15,800.00	88.00	179.60	12,589.10	-3,316.95	807.90	3,322.51	0.00	0.00	0.00
15,900.00	88.00	179.60	12,592.59	-3,416.88	808.60	3,422.44	0.00	0.00	0.00
16,000.00	88.00	179.60	12,596.07	-3,516.82	809.30	3,522.38	0.00	0.00	0.00
16,100.00	88.00	179.60	12,599.56	-3,616.76	810.00	3,622.32	0.00	0.00	0.00
16,200.00	88.00	179.60	12,603.04	-3,716.69	810.69	3,722.26	0.00	0.00	0.00
16,300.00	88.00	179.60	12,606.53	-3,816.63	811.39	3,822.20	0.00	0.00	0.00
16,400.00	88.00	179.60	12,610.01	-3,916.57	812.09	3,922.14	0.00	0.00	0.00
16,500.00	88.00	179.60	12,613.50	-4,016.50	812.79	4,022.08	0.00	0.00	0.00
16,600.00	88.00	179.60	12,616.98	-4,116.44	813.49	4,122.02	0.00	0.00	0.00
16,700.00	88.00	179.60	12,620.47	-4,216.38	814.19	4,221.96	0.00	0.00	0.00
16,800.00	88.00	179.60	12,623.95	-4,316.31	814.88	4,321.90	0.00	0.00	0.00
16,900.00	88.00	179.60	12,627.44	-4,416.25	815.58	4,421.84	0.00	0.00	0.00
17,000.00	88.00	179.60	12,630.92	-4,516.19	816.28	4,521.78	0.00	0.00	0.00
17,100.00	88.00	179.60	12,634.41	-4,616.12	816.98	4,621.72	0.00	0.00	0.00
17,200.00	88.00	179.60	12,637.89	-4,716.06	817.68	4,721.66	0.00	0.00	0.00
17,300.00	88.00	179.60	12,641.38	-4,816.00	818.38	4,821.59	0.00	0.00	0.00
17,337.89	88.00	179.60	12,642.70	-4,853.86	818.64	4,859.46	0.00	0.00	0.00
[KnifeFight#19H]LTP/BHL									
17,382.89	88.00	179.60	12,644.27	-4,898.83	818.95	4,904.43	0.00	0.00	0.00

Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
[KnifeFight#19H]FTP	0.00	0.00	0.00	124.93	784.17	435,907.40	778,572.24	32° 11' 42.7915 N	103° 25' 58.0826 W
- plan misses target center by 794.06usft at 0.00usft MD (0.00 TVD, 0.00 N, 0.00 E)									
- Point									
[KnifeFight#19H]KOP	0.00	0.00	11,914.00	175.00	783.50	435,957.47	778,571.57	32° 11' 43.2871 N	103° 25' 58.0855 W
- plan hits target center									
- Point									
[KnifeFight#19H]LTP/BH	0.00	0.00	12,642.70	-4,853.86	818.64	430,928.61	778,606.71	32° 10' 53.5225 N	103° 25' 58.1666 W
- plan hits target center									
- Point									

Company:	Marathon Oil	Local Co-ordinate Reference:	Well No. 19H
Project:	Lea County, NM	TVD Reference:	Well @ 3472.50usft (GL: 3446' + KB: 26.5' (H&P480))
Site:	Knife Fight Fee 3-6-7-19	MD Reference:	Well @ 3472.50usft (GL: 3446' + KB: 26.5' (H&P480))
Well:	No. 19H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Prelim Plan B	Database:	WellPlanner1

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
12,438.92	12,325.99	Wolfcamp		2.00	180.00	

Checked By: _____	Approved By: _____	Date: _____
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