

Company:	Marathon Oil	Local Co-ordinate Reference:	Well WXY Fee #5H
Project:	Eddy County, NM	TVD Reference:	well @ 3108.00usft
Site:	Thor 28 (1-5)	MD Reference:	well @ 3108.00usft
Well:	WXY Fee #5H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Prelim Plan B	Database:	WellPlanner1

Project:	Eddy 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:	Thor 28 (1-5)		
Site Position:		Northing:	462,147.63 usft
From:	Map	Easting:	573,236.71 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32.2703384
		Longitude:	-104.0963843
		Grid Convergence:	0.13 °

Well	WXY Fee #5H					
Well Position	+N/-S	0.00 usft	Northing:	462,147.61 usft	Latitude:	32.2703386
	+E/-W	0.00 usft	Easting:	573,206.73 usft	Longitude:	-104.0964813
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	3,083.00 usft

Wellbore		OH			
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	HDGM	8/15/2019	7.12	59.98	47,872.20

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	359.70

Survey Tool Program	Date	12/11/2019		
From	To	Survey (Wellbore)	Tool Name	Description
(usft)	(usft)			
0.00	1,850.00	Prelim Plan B (OH)	MWD+HDGM	OWSG MWD + HRGM
1,850.00	5,400.00	Prelim Plan B (OH)	MWD+HDGM	OWSG MWD + HRGM
5,400.00	9,000.00	Prelim Plan B (OH)	MWD+HDGM	OWSG MWD + HRGM
9,000.00	14,295.08	Prelim Plan B (OH)	MWD+HDGM	OWSG MWD + HRGM

Planned Survey									
Measured	Inclination	Azimuth	Vertical	+N/-S	+E/-W	Vertical	Dogleg	Build	Turn
Depth	(°)	(°)	Depth	(usft)	(usft)	Section	Rate	Rate	Rate
(usft)			(usft)			(usft)	(°/100usft)	(°/100usft)	(°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
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
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

Company:	Marathon Oil	Local Co-ordinate Reference:	Well WXY Fee #5H
Project:	Eddy County, NM	TVD Reference:	well @ 3108.00usft
Site:	Thor 28 (1-5)	MD Reference:	well @ 3108.00usft
Well:	WXY Fee #5H	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)
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	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	2.00	204.06	1,599.98	-1.59	-0.71	-1.59	2.00	2.00	0.00
1,700.00	4.00	204.06	1,699.84	-6.37	-2.85	-6.36	2.00	2.00	0.00
1,800.00	6.00	204.06	1,799.45	-14.33	-6.40	-14.30	2.00	2.00	0.00
1,900.00	8.00	204.06	1,898.70	-25.46	-11.37	-25.40	2.00	2.00	0.00
2,000.00	10.00	204.06	1,997.47	-39.74	-17.74	-39.65	2.00	2.00	0.00
2,100.00	10.00	204.06	2,095.95	-55.60	-24.82	-55.47	0.00	0.00	0.00
2,200.00	10.00	204.06	2,194.43	-71.45	-31.90	-71.29	0.00	0.00	0.00
2,300.00	10.00	204.06	2,292.91	-87.31	-38.98	-87.10	0.00	0.00	0.00
2,400.00	10.00	204.06	2,391.39	-103.17	-46.06	-102.92	0.00	0.00	0.00
2,500.00	10.00	204.06	2,489.87	-119.02	-53.14	-118.74	0.00	0.00	0.00
2,600.00	10.00	204.06	2,588.35	-134.88	-60.22	-134.56	0.00	0.00	0.00
2,700.00	10.00	204.06	2,686.83	-150.73	-67.30	-150.38	0.00	0.00	0.00
2,800.00	10.00	204.06	2,785.31	-166.59	-74.38	-166.20	0.00	0.00	0.00
2,900.00	10.00	204.06	2,883.79	-182.45	-81.46	-182.02	0.00	0.00	0.00
3,000.00	10.00	204.06	2,982.27	-198.30	-88.54	-197.84	0.00	0.00	0.00
3,100.00	10.00	204.06	3,080.75	-214.16	-95.62	-213.65	0.00	0.00	0.00
3,200.00	10.00	204.06	3,179.23	-230.01	-102.70	-229.47	0.00	0.00	0.00
3,300.00	10.00	204.06	3,277.72	-245.87	-109.78	-245.29	0.00	0.00	0.00
3,400.00	10.00	204.06	3,376.20	-261.73	-116.86	-261.11	0.00	0.00	0.00
3,500.00	10.00	204.06	3,474.68	-277.58	-123.94	-276.93	0.00	0.00	0.00
3,600.00	10.00	204.06	3,573.16	-293.44	-131.02	-292.75	0.00	0.00	0.00
3,700.00	10.00	204.06	3,671.64	-309.29	-138.10	-308.57	0.00	0.00	0.00
3,800.00	10.00	204.06	3,770.12	-325.15	-145.18	-324.39	0.00	0.00	0.00
3,900.00	10.00	204.06	3,868.60	-341.01	-152.26	-340.20	0.00	0.00	0.00
4,000.00	10.00	204.06	3,967.08	-356.86	-159.34	-356.02	0.00	0.00	0.00
4,100.00	10.00	204.06	4,065.56	-372.72	-166.42	-371.84	0.00	0.00	0.00
4,200.00	10.00	204.06	4,164.04	-388.57	-173.50	-387.66	0.00	0.00	0.00
4,300.00	10.00	204.06	4,262.52	-404.43	-180.58	-403.48	0.00	0.00	0.00
4,400.00	10.00	204.06	4,361.00	-420.29	-187.66	-419.30	0.00	0.00	0.00
4,500.00	10.00	204.06	4,459.48	-436.14	-194.74	-435.12	0.00	0.00	0.00
4,600.00	10.00	204.06	4,557.97	-452.00	-201.82	-450.94	0.00	0.00	0.00
4,700.00	10.00	204.06	4,656.45	-467.85	-208.90	-466.75	0.00	0.00	0.00
4,740.39	10.00	204.06	4,696.22	-474.26	-211.76	-473.14	0.00	0.00	0.00
4,800.00	8.81	204.06	4,755.03	-483.15	-215.73	-482.02	2.00	-2.00	0.00
4,900.00	6.81	204.06	4,854.10	-495.56	-221.27	-494.39	2.00	-2.00	0.00



Pro Directional Survey Report



Company:	Marathon Oil	Local Co-ordinate Reference:	Well WXY Fee #5H
Project:	Eddy County, NM	TVD Reference:	well @ 3108.00usft
Site:	Thor.28 (1-5)	MD Reference:	well @ 3108.00usft
Well:	WXY Fee #5H	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)	
5,000.00	4.81	204.06	4,953.58	-504.80	-225.39	-503.61	2.00	-2.00	0.00	
5,100.00	2.81	204.06	5,053.35	-510.86	-228.10	-509.66	2.00	-2.00	0.00	
5,200.00	0.81	204.06	5,153.30	-513.74	-229.38	-512.53	2.00	-2.00	0.00	
5,240.39	0.00	0.00	5,193.69	-514.00	-229.50	-512.79	2.00	-2.00	0.00	
5,300.00	0.00	0.00	5,253.30	-514.00	-229.50	-512.79	0.00	0.00	0.00	
5,400.00	0.00	0.00	5,353.30	-514.00	-229.50	-512.79	0.00	0.00	0.00	
5,500.00	0.00	0.00	5,453.30	-514.00	-229.50	-512.79	0.00	0.00	0.00	
5,600.00	0.00	0.00	5,553.30	-514.00	-229.50	-512.79	0.00	0.00	0.00	
5,700.00	0.00	0.00	5,653.30	-514.00	-229.50	-512.79	0.00	0.00	0.00	
5,800.00	0.00	0.00	5,753.30	-514.00	-229.50	-512.79	0.00	0.00	0.00	
5,900.00	0.00	0.00	5,853.30	-514.00	-229.50	-512.79	0.00	0.00	0.00	
6,000.00	0.00	0.00	5,953.30	-514.00	-229.50	-512.79	0.00	0.00	0.00	
6,100.00	0.00	0.00	6,053.30	-514.00	-229.50	-512.79	0.00	0.00	0.00	
6,200.00	0.00	0.00	6,153.30	-514.00	-229.50	-512.79	0.00	0.00	0.00	
6,300.00	0.00	0.00	6,253.30	-514.00	-229.50	-512.79	0.00	0.00	0.00	
6,400.00	0.00	0.00	6,353.30	-514.00	-229.50	-512.79	0.00	0.00	0.00	
6,500.00	0.00	0.00	6,453.30	-514.00	-229.50	-512.79	0.00	0.00	0.00	
6,600.00	0.00	0.00	6,553.30	-514.00	-229.50	-512.79	0.00	0.00	0.00	
6,700.00	0.00	0.00	6,653.30	-514.00	-229.50	-512.79	0.00	0.00	0.00	
6,800.00	0.00	0.00	6,753.30	-514.00	-229.50	-512.79	0.00	0.00	0.00	
6,900.00	0.00	0.00	6,853.30	-514.00	-229.50	-512.79	0.00	0.00	0.00	
7,000.00	0.00	0.00	6,953.30	-514.00	-229.50	-512.79	0.00	0.00	0.00	
7,100.00	0.00	0.00	7,053.30	-514.00	-229.50	-512.79	0.00	0.00	0.00	
7,200.00	0.00	0.00	7,153.30	-514.00	-229.50	-512.79	0.00	0.00	0.00	
7,300.00	0.00	0.00	7,253.30	-514.00	-229.50	-512.79	0.00	0.00	0.00	
7,400.00	0.00	0.00	7,353.30	-514.00	-229.50	-512.79	0.00	0.00	0.00	
7,500.00	0.00	0.00	7,453.30	-514.00	-229.50	-512.79	0.00	0.00	0.00	
7,600.00	0.00	0.00	7,553.30	-514.00	-229.50	-512.79	0.00	0.00	0.00	
7,700.00	0.00	0.00	7,653.30	-514.00	-229.50	-512.79	0.00	0.00	0.00	
7,800.00	0.00	0.00	7,753.30	-514.00	-229.50	-512.79	0.00	0.00	0.00	
7,900.00	0.00	0.00	7,853.30	-514.00	-229.50	-512.79	0.00	0.00	0.00	
8,000.00	0.00	0.00	7,953.30	-514.00	-229.50	-512.79	0.00	0.00	0.00	
8,100.00	0.00	0.00	8,053.30	-514.00	-229.50	-512.79	0.00	0.00	0.00	
8,200.00	0.00	0.00	8,153.30	-514.00	-229.50	-512.79	0.00	0.00	0.00	
8,300.00	0.00	0.00	8,253.30	-514.00	-229.50	-512.79	0.00	0.00	0.00	
8,400.00	0.00	0.00	8,353.30	-514.00	-229.50	-512.79	0.00	0.00	0.00	
8,500.00	0.00	0.00	8,453.30	-514.00	-229.50	-512.79	0.00	0.00	0.00	
8,600.00	0.00	0.00	8,553.30	-514.00	-229.50	-512.79	0.00	0.00	0.00	
8,700.00	0.00	0.00	8,653.30	-514.00	-229.50	-512.79	0.00	0.00	0.00	
8,800.00	0.00	0.00	8,753.30	-514.00	-229.50	-512.79	0.00	0.00	0.00	
8,900.00	0.00	0.00	8,853.30	-514.00	-229.50	-512.79	0.00	0.00	0.00	
9,000.00	0.00	0.00	8,953.30	-514.00	-229.50	-512.79	0.00	0.00	0.00	
9,100.00	0.00	0.00	9,053.30	-514.00	-229.50	-512.79	0.00	0.00	0.00	
9,112.20	0.00	0.00	9,065.50	-514.00	-229.50	-512.79	0.00	0.00	0.00	

Company:	Marathon Oil	Local Co-ordinate Reference:	Well WXY Fee #5H
Project:	Eddy County, NM	TVD Reference:	well @ 3108.00usft
Site:	Thor 28 (1-5)	MD Reference:	well @ 3108.00usft
Well:	WXY Fee #5H	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)
[ThorWXY#5H]FTP/KOP									
9,125.00	1.54	359.70	9,078.30	-513.83	-229.50	-512.62	12.00	12.00	0.00
9,150.00	4.54	359.70	9,103.26	-512.50	-229.51	-511.30	12.00	12.00	0.00
9,175.00	7.54	359.70	9,128.12	-509.88	-229.52	-508.67	12.00	12.00	0.00
9,200.00	10.54	359.70	9,152.80	-505.95	-229.54	-504.74	12.00	12.00	0.00
9,225.00	13.54	359.70	9,177.25	-500.74	-229.57	-499.53	12.00	12.00	0.00
9,250.00	16.54	359.70	9,201.39	-494.25	-229.60	-493.04	12.00	12.00	0.00
9,275.00	19.54	359.70	9,225.16	-486.51	-229.64	-485.31	12.00	12.00	0.00
9,300.00	22.54	359.70	9,248.49	-477.54	-229.69	-476.33	12.00	12.00	0.00
9,325.00	25.54	359.70	9,271.32	-467.36	-229.74	-466.15	12.00	12.00	0.00
9,350.00	28.54	359.70	9,293.59	-456.00	-229.80	-454.79	12.00	12.00	0.00
9,375.00	31.54	359.70	9,315.23	-443.49	-229.87	-442.28	12.00	12.00	0.00
9,400.00	34.54	359.70	9,336.18	-429.86	-229.94	-428.65	12.00	12.00	0.00
9,425.00	37.54	359.70	9,356.40	-415.15	-230.02	-413.94	12.00	12.00	0.00
9,450.00	40.54	359.70	9,375.82	-399.41	-230.10	-398.20	12.00	12.00	0.00
9,475.00	43.54	359.70	9,394.38	-382.67	-230.19	-381.46	12.00	12.00	0.00
9,500.00	46.54	359.70	9,412.05	-364.99	-230.28	-363.78	12.00	12.00	0.00
9,525.00	49.54	359.70	9,428.76	-346.40	-230.38	-345.19	12.00	12.00	0.00
9,550.00	52.54	359.70	9,444.48	-326.96	-230.48	-325.75	12.00	12.00	0.00
9,575.00	55.54	359.70	9,459.16	-306.73	-230.58	-305.52	12.00	12.00	0.00
9,600.00	58.54	359.70	9,472.76	-285.76	-230.69	-284.55	12.00	12.00	0.00
9,625.00	61.54	359.70	9,485.25	-264.10	-230.81	-262.89	12.00	12.00	0.00
9,650.00	64.54	359.70	9,496.58	-241.82	-230.92	-240.61	12.00	12.00	0.00
9,675.00	67.54	359.70	9,506.73	-218.98	-231.04	-217.77	12.00	12.00	0.00
9,700.00	70.54	359.70	9,515.68	-195.64	-231.16	-194.43	12.00	12.00	0.00
9,725.00	73.54	359.70	9,523.39	-171.86	-231.29	-170.65	12.00	12.00	0.00
9,750.00	76.54	359.70	9,529.84	-147.71	-231.42	-146.50	12.00	12.00	0.00
9,775.00	79.54	359.70	9,535.02	-123.26	-231.54	-122.04	12.00	12.00	0.00
9,800.00	82.54	359.70	9,538.92	-98.57	-231.67	-97.35	12.00	12.00	0.00
9,825.00	85.54	359.70	9,541.52	-73.71	-231.80	-72.49	12.00	12.00	0.00
9,850.00	88.54	359.70	9,542.81	-48.74	-231.93	-47.53	12.00	12.00	0.00
9,862.20	90.00	359.70	9,542.97	-36.55	-232.00	-35.33	12.00	12.00	0.00
9,900.00	90.00	359.70	9,542.97	1.26	-232.19	2.47	0.00	0.00	0.00
10,000.00	90.00	359.70	9,542.97	101.25	-232.72	102.47	0.00	0.00	0.00
10,100.00	90.00	359.70	9,542.97	201.25	-233.24	202.47	0.00	0.00	0.00
10,200.00	90.00	359.70	9,542.97	301.25	-233.76	302.47	0.00	0.00	0.00
10,300.00	90.00	359.70	9,542.97	401.25	-234.29	402.47	0.00	0.00	0.00
10,400.00	90.00	359.70	9,542.97	501.25	-234.81	502.47	0.00	0.00	0.00
10,500.00	90.00	359.70	9,542.97	601.25	-235.33	602.47	0.00	0.00	0.00
10,600.00	90.00	359.70	9,542.97	701.25	-235.85	702.47	0.00	0.00	0.00
10,700.00	90.00	359.70	9,542.97	801.24	-236.38	802.47	0.00	0.00	0.00
10,800.00	90.00	359.70	9,542.97	901.24	-236.90	902.47	0.00	0.00	0.00
10,900.00	90.00	359.70	9,542.97	1,001.24	-237.42	1,002.47	0.00	0.00	0.00

Company:	Marathon Oil	Local Co-ordinate Reference:	Well WXY Fee #5H
Project:	Eddy County, NM	TVD Reference:	well @ 3108.00usft
Site:	Thor 28 (1-5)	MD Reference:	well @ 3108.00usft
Well:	WXY Fee #5H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Prelim Plan B	Database:	WellPlanner1

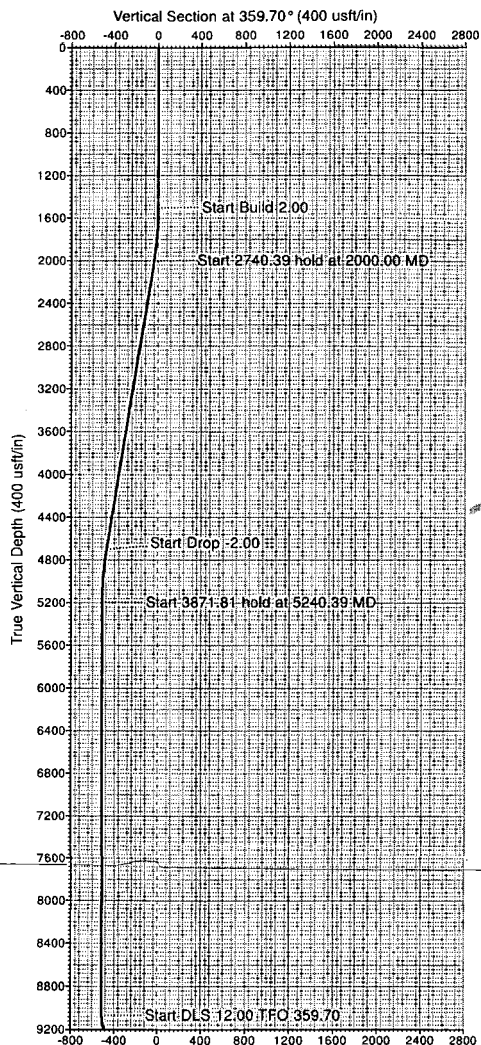
Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
11,000.00	90.00	359.70	9,542.97	1,101.24	-237.95	1,102.47	0.00	0.00	0.00	
11,100.00	90.00	359.70	9,542.97	1,201.24	-238.47	1,202.47	0.00	0.00	0.00	
11,200.00	90.00	359.70	9,542.98	1,301.24	-238.99	1,302.47	0.00	0.00	0.00	
11,300.00	90.00	359.70	9,542.98	1,401.24	-239.51	1,402.47	0.00	0.00	0.00	
11,400.00	90.00	359.70	9,542.98	1,501.24	-240.04	1,502.47	0.00	0.00	0.00	
11,500.00	90.00	359.70	9,542.98	1,601.23	-240.56	1,602.47	0.00	0.00	0.00	
11,600.00	90.00	359.70	9,542.98	1,701.23	-241.08	1,702.47	0.00	0.00	0.00	
11,700.00	90.00	359.70	9,542.98	1,801.23	-241.61	1,802.47	0.00	0.00	0.00	
11,800.00	90.00	359.70	9,542.98	1,901.23	-242.13	1,902.47	0.00	0.00	0.00	
11,900.00	90.00	359.70	9,542.98	2,001.23	-242.65	2,002.47	0.00	0.00	0.00	
12,000.00	90.00	359.70	9,542.98	2,101.23	-243.17	2,102.47	0.00	0.00	0.00	
12,100.00	90.00	359.70	9,542.98	2,201.23	-243.70	2,202.47	0.00	0.00	0.00	
12,200.00	90.00	359.70	9,542.98	2,301.22	-244.22	2,302.47	0.00	0.00	0.00	
12,300.00	90.00	359.70	9,542.98	2,401.22	-244.74	2,402.47	0.00	0.00	0.00	
12,400.00	90.00	359.70	9,542.99	2,501.22	-245.27	2,502.47	0.00	0.00	0.00	
12,500.00	90.00	359.70	9,542.99	2,601.22	-245.79	2,602.47	0.00	0.00	0.00	
12,600.00	90.00	359.70	9,542.99	2,701.22	-246.31	2,702.47	0.00	0.00	0.00	
12,700.00	90.00	359.70	9,542.99	2,801.22	-246.83	2,802.47	0.00	0.00	0.00	
12,800.00	90.00	359.70	9,542.99	2,901.22	-247.36	2,902.47	0.00	0.00	0.00	
12,900.00	90.00	359.70	9,542.99	3,001.21	-247.88	3,002.47	0.00	0.00	0.00	
13,000.00	90.00	359.70	9,542.99	3,101.21	-248.40	3,102.47	0.00	0.00	0.00	
13,100.00	90.00	359.70	9,542.99	3,201.21	-248.93	3,202.47	0.00	0.00	0.00	
13,200.00	90.00	359.70	9,542.99	3,301.21	-249.45	3,302.47	0.00	0.00	0.00	
13,300.00	90.00	359.70	9,542.99	3,401.21	-249.97	3,402.47	0.00	0.00	0.00	
13,400.00	90.00	359.70	9,542.99	3,501.21	-250.50	3,502.47	0.00	0.00	0.00	
13,500.00	90.00	359.70	9,542.99	3,601.21	-251.02	3,602.47	0.00	0.00	0.00	
13,600.00	90.00	359.70	9,543.00	3,701.21	-251.54	3,702.47	0.00	0.00	0.00	
13,700.00	90.00	359.70	9,543.00	3,801.20	-252.06	3,802.47	0.00	0.00	0.00	
13,800.00	90.00	359.70	9,543.00	3,901.20	-252.59	3,902.47	0.00	0.00	0.00	
13,900.00	90.00	359.70	9,543.00	4,001.20	-253.11	4,002.47	0.00	0.00	0.00	
14,000.00	90.00	359.70	9,543.00	4,101.20	-253.63	4,102.47	0.00	0.00	0.00	
14,100.00	90.00	359.70	9,543.00	4,201.20	-254.16	4,202.47	0.00	0.00	0.00	
14,200.00	90.00	359.70	9,543.00	4,301.20	-254.68	4,302.47	0.00	0.00	0.00	
14,250.09	90.00	359.70	9,543.00	4,351.29	-254.94	4,352.57	0.00	0.00	0.00	
[ThorWXY#5H]LTP/BHL										
14,295.09	90.00	359.70	9,543.00	4,396.29	-255.18	4,397.57	0.00	0.00	0.00	

Company:	Marathon Oil	Local Co-ordinate Reference:	Well WXY Fee #5H
Project:	Eddy County, NM	TVD Reference:	well @ 3108.00usft
Site:	Thor 28 (1-5)	MD Reference:	well @ 3108.00usft
Well:	WXY Fee #5H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	Prelim Plan B	Database:	WellPlanner1

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(usft)	(usft)	(usft)	(usft)	(usft)		
- Shape									
[ThorWXY#5H]FTP/KOF	0.00	0.00	9,065.50	-514.00	-229.50	461,633.61	572,977.23	32.2689270	-104.0972274
- plan hits target center									
- Point									
[ThorWXY#5H]LTP/BHL	0.00	0.00	9,543.00	4,351.29	-254.94	466,498.90	572,951.79	32.2823016	-104.0972751
- plan hits target center									
- Point									

Checked By: _____ Approved By: _____ Date: _____

Marathon Oil
Eddy County, NM
Thor 28 (1-5)
WXY Fee #5H
Prelim Plan B



RKB Elevation: well @ 3108.00usft
 US State Plane 1927 (Exact solution)
 NAD 1927 (NADCON CONUS)
 Clarke 1866
 New Mexico East 3001
 Mean Sea Level

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	462147.61	573206.73	32.2703385	-104.0964813	

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	VSec
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	1500.00	0.00	0.00	1500.00	0.00	0.00	0.00	0.00
3	2000.00	10.00	204.06	1997.47	-39.74	-17.74	2.00	-39.65
4	4740.39	10.00	204.06	4696.22	-474.26	-211.76	0.00	-473.14
5	5240.39	0.00	0.00	5193.69	-514.00	-229.50	2.00	-512.79
6	9112.20	0.00	0.00	9065.50	-514.00	-229.50	0.00	-512.79
7	9862.20	90.00	359.70	9542.96	-36.55	-232.00	12.00	-35.33
8	14250.09	90.00	359.70	9543.00	4351.29	-254.94	0.00	4352.57
9	14295.09	90.00	359.70	9543.00	4396.29	-255.18	0.00	4397.57

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting
[ThorWXY#5H]FTP/KOP	9065.50	-514.00	-229.50	461633.61	572977.23
[ThorWXY#5H]LTP/BHL	9543.00	4351.29	-254.94	466498.90	572951.79

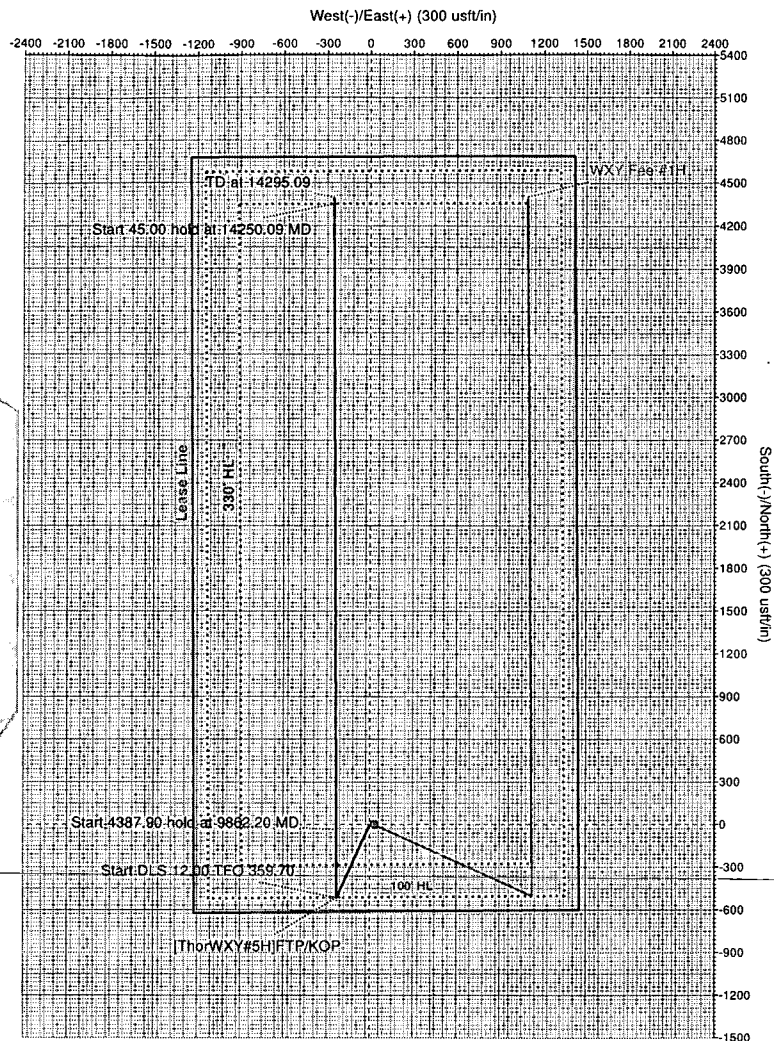
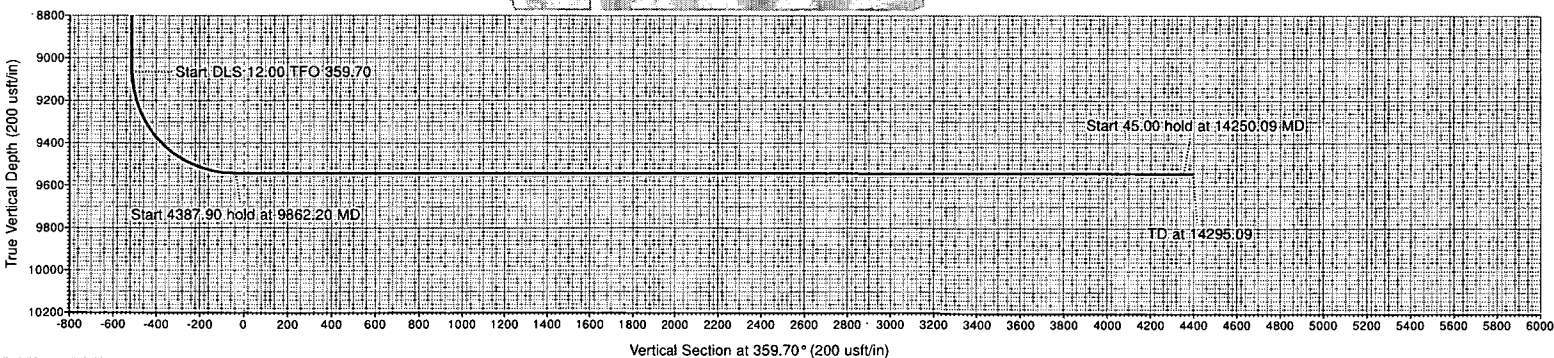


Azimuths to Grid North
 True North: -0.13°
 Magnetic North: 6.99°

Magnetic Field
 Strength: 47872.2nT
 Dip Angle: 59.98°
 Date: 9/5/2019
 Model: HDGM

Azimuth Corrections
 Total Magnetic Corr. (M to G): 6.99°
 Declination (M to T): 7.12° East

Target Line: 9543' TVD @ 0° VS :: 90° INC



Marathon Oil

