

Marathon Oil Permian, LLC

**Eddy County, NM (NAD27)
Gravel Grinder Fee 23-28-18
TB #6H**

OH

Plan: Plan #1

Standard Planning Report

08 January, 2018

**NM OIL CONSERVATION
ARTESIA DISTRICT**

JAN 16 2018

RECEIVED



Planning Report

Database:	Midland District	Local Coordinates Reference:	Well TB #6H
Company:	Marathon Oil Permian, LLC	TVD Reference:	KB = 26.5' @ 3106.50usft (H&P 441)
Project:	Eddy County, NM (NAD27)	MD Reference:	KB = 26.5' @ 3106.50usft (H&P 441)
Site:	Gravel Grinder Fee 23-28-18	North Reference:	Grid
Well:	TB #6H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Project:	Eddy County, NM (NAD27)		
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		Using geodetic scale factor

Site:		Gravel Grinder Fee 23-28-18			
Site Position:		Northing:	472,497.59 usft	Latitude:	32° 17' 55.858 N
From:	Map	Easting:	562,658.22 usft	Longitude:	104° 7' 49.967 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.11 °

Well:	TB #6H					
Well Position	+N/-S	0.00 usft	Northing:	472,497.59 usft	Latitude:	32° 17' 55.858 N
	+E/-W	29.97 usft	Easting:	562,688.19 usft	Longitude:	104° 7' 49.617 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	3,080.00 usft

Wellbore:	OH				
Magnetic:	Model Name	Sample Date	Declination	Dip Angle	Field Strength
	HDGM	1/8/2018	7.32	60.08	48,046

Design:	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth from (TVD)	N/S	E/W	Direction
	(usft)	(usft)	(usft)	(bearing)
	0.00	0.00	0.00	3.58

Plan Section:										
Measured Depth (usft)	Interval (ft)	Asimuth (bearing)	Vertical Depth (usft)	N-S (usft)	E-W (usft)	Depth (ft)	Rate (ft/100usft)	Turn Rate (ft/100usft)	TFO (ft)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,186.00	3.72	135.00	2,185.87	-4.27	4.27	2.00	2.00	0.00	135.00	
8,604.41	3.72	135.00	8,590.75	-298.73	298.73	0.00	0.00	0.00	0.00	
9,526.90	89.60	359.58	9,189.56	269.80	321.71	10.00	9.31	-14.68	-135.38	
13,887.25	89.60	359.58	9,220.00	4,629.93	289.82	0.00	0.00	0.00	0.00	BHL[GGF/TB#6H]

Planning Report

Database:	Midland District	Local Coordinate Reference:	Well TB #6H
Company:	Marathon Oil Permian, LLC	Well Name:	KB = 26.5' @ 3106.50usft (H&P 441)
Project:	Eddy County, NM (NAD27)	MDZ Reference:	KB = 26.5' @ 3106.50usft (H&P 441)
Site:	Gravel Grinder Fee 23-28-18	North Reference:	Grid
Well:	TB #6H	Survey Calculation Method:	Minimum Curvature
Wellson:	OH		
Design:	Plan #1		

Planned Survey									
Measure	Inclination	Azimuth	Vertical	Slant	Slant	Vertical	Depth	Build	Turn
(usft)	(°)	(bearing)	(usft)	(usft)	(usft)	(usft)	(usft)	(usft)	(usft)
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
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	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP - Build 2.0° / 100									
2,100.00	2.00	135.00	2,099.98	-1.23	1.23	-1.15	2.00	2.00	0.00
2,186.00	3.72	135.00	2,185.87	-4.27	4.27	-3.99	2.00	2.00	0.00
EOB - HOLD									
2,200.00	3.72	135.00	2,199.84	-4.91	4.91	-4.59	0.00	0.00	0.00
2,300.00	3.72	135.00	2,299.63	-9.50	9.50	-8.89	0.00	0.00	0.00
2,400.00	3.72	135.00	2,399.42	-14.09	14.09	-13.18	0.00	0.00	0.00
2,500.00	3.72	135.00	2,499.21	-18.67	18.67	-17.47	0.00	0.00	0.00
2,600.00	3.72	135.00	2,599.00	-23.26	23.26	-21.76	0.00	0.00	0.00
2,700.00	3.72	135.00	2,698.79	-27.85	27.85	-26.05	0.00	0.00	0.00
2,800.00	3.72	135.00	2,798.58	-32.44	32.44	-30.35	0.00	0.00	0.00
2,900.00	3.72	135.00	2,898.37	-37.02	37.02	-34.64	0.00	0.00	0.00
3,000.00	3.72	135.00	2,998.15	-41.61	41.61	-38.93	0.00	0.00	0.00
3,100.00	3.72	135.00	3,097.94	-46.20	46.20	-43.22	0.00	0.00	0.00
3,200.00	3.72	135.00	3,197.73	-50.79	50.79	-47.52	0.00	0.00	0.00
3,300.00	3.72	135.00	3,297.52	-55.38	55.38	-51.81	0.00	0.00	0.00
3,400.00	3.72	135.00	3,397.31	-59.96	59.96	-56.10	0.00	0.00	0.00
3,500.00	3.72	135.00	3,497.10	-64.55	64.55	-60.39	0.00	0.00	0.00
3,600.00	3.72	135.00	3,596.89	-69.14	69.14	-64.68	0.00	0.00	0.00
3,700.00	3.72	135.00	3,696.68	-73.73	73.73	-68.98	0.00	0.00	0.00
3,800.00	3.72	135.00	3,796.47	-78.31	78.31	-73.27	0.00	0.00	0.00
3,900.00	3.72	135.00	3,896.26	-82.90	82.90	-77.56	0.00	0.00	0.00
4,000.00	3.72	135.00	3,996.05	-87.49	87.49	-81.85	0.00	0.00	0.00
4,100.00	3.72	135.00	4,095.84	-92.08	92.08	-86.15	0.00	0.00	0.00
4,200.00	3.72	135.00	4,195.63	-96.67	96.67	-90.44	0.00	0.00	0.00
4,300.00	3.72	135.00	4,295.42	-101.25	101.25	-94.73	0.00	0.00	0.00
4,400.00	3.72	135.00	4,395.20	-105.84	105.84	-99.02	0.00	0.00	0.00
4,500.00	3.72	135.00	4,494.99	-110.43	110.43	-103.31	0.00	0.00	0.00
4,600.00	3.72	135.00	4,594.78	-115.02	115.02	-107.61	0.00	0.00	0.00
4,700.00	3.72	135.00	4,694.57	-119.60	119.60	-111.90	0.00	0.00	0.00
4,800.00	3.72	135.00	4,794.36	-124.19	124.19	-116.19	0.00	0.00	0.00
4,900.00	3.72	135.00	4,894.15	-128.78	128.78	-120.48	0.00	0.00	0.00
5,000.00	3.72	135.00	4,993.94	-133.37	133.37	-124.78	0.00	0.00	0.00

Planning Report

Database:	Midland District	Local Coordinate Reference:	Well TB #6H
Company:	Marathon Oil Permian, LLC	TVD Reference:	KB = 26.5' @ 3106.50ust (H&P 441)
Project:	Eddy County, NM (NAD27)	MD Reference:	KB = 26.5' @ 3106.50ust (H&P 441)
Site:	Gravel Grinder Fee 23-28-18	North Reference:	Grid
Well:	TB #6H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey										
Measured Depth (UST)	Inclination (°)	Azimuth (Bearing)	Vertical Depth (UST)	North (UST)	East (UST)	Vertical Angle (UST)	Dogleg Rate (100ust)	Build Rate (100ust)	Turn Rate (100ust)	
5,100.00	3.72	135.00	5,093.73	-137.96	137.96	-129.07	0.00	0.00	0.00	
5,200.00	3.72	135.00	5,193.52	-142.54	142.54	-133.36	0.00	0.00	0.00	
5,300.00	3.72	135.00	5,293.31	-147.13	147.13	-137.65	0.00	0.00	0.00	
5,400.00	3.72	135.00	5,393.10	-151.72	151.72	-141.94	0.00	0.00	0.00	
5,500.00	3.72	135.00	5,492.89	-156.31	156.31	-146.24	0.00	0.00	0.00	
5,600.00	3.72	135.00	5,592.68	-160.89	160.89	-150.53	0.00	0.00	0.00	
5,700.00	3.72	135.00	5,692.47	-165.48	165.48	-154.82	0.00	0.00	0.00	
5,800.00	3.72	135.00	5,792.25	-170.07	170.07	-159.11	0.00	0.00	0.00	
5,900.00	3.72	135.00	5,892.04	-174.66	174.66	-163.40	0.00	0.00	0.00	
6,000.00	3.72	135.00	5,991.83	-179.25	179.25	-167.70	0.00	0.00	0.00	
6,100.00	3.72	135.00	6,091.62	-183.83	183.83	-171.99	0.00	0.00	0.00	
6,200.00	3.72	135.00	6,191.41	-188.42	188.42	-176.28	0.00	0.00	0.00	
6,300.00	3.72	135.00	6,291.20	-193.01	193.01	-180.57	0.00	0.00	0.00	
6,400.00	3.72	135.00	6,390.99	-197.60	197.60	-184.87	0.00	0.00	0.00	
6,500.00	3.72	135.00	6,490.78	-202.18	202.18	-189.16	0.00	0.00	0.00	
6,600.00	3.72	135.00	6,590.57	-206.77	206.77	-193.45	0.00	0.00	0.00	
6,700.00	3.72	135.00	6,690.36	-211.36	211.36	-197.74	0.00	0.00	0.00	
6,800.00	3.72	135.00	6,790.15	-215.95	215.95	-202.03	0.00	0.00	0.00	
6,900.00	3.72	135.00	6,889.94	-220.53	220.53	-206.33	0.00	0.00	0.00	
7,000.00	3.72	135.00	6,989.73	-225.12	225.12	-210.62	0.00	0.00	0.00	
7,100.00	3.72	135.00	7,089.52	-229.71	229.71	-214.91	0.00	0.00	0.00	
7,200.00	3.72	135.00	7,189.31	-234.30	234.30	-219.20	0.00	0.00	0.00	
7,300.00	3.72	135.00	7,289.09	-238.89	238.89	-223.50	0.00	0.00	0.00	
7,400.00	3.72	135.00	7,388.88	-243.47	243.47	-227.79	0.00	0.00	0.00	
7,500.00	3.72	135.00	7,488.67	-248.06	248.06	-232.08	0.00	0.00	0.00	
7,600.00	3.72	135.00	7,588.46	-252.65	252.65	-236.37	0.00	0.00	0.00	
7,700.00	3.72	135.00	7,688.25	-257.24	257.24	-240.66	0.00	0.00	0.00	
7,800.00	3.72	135.00	7,788.04	-261.82	261.82	-244.96	0.00	0.00	0.00	
7,900.00	3.72	135.00	7,887.83	-266.41	266.41	-249.25	0.00	0.00	0.00	
8,000.00	3.72	135.00	7,987.62	-271.00	271.00	-253.54	0.00	0.00	0.00	
8,100.00	3.72	135.00	8,087.41	-275.59	275.59	-257.83	0.00	0.00	0.00	
8,200.00	3.72	135.00	8,187.20	-280.18	280.18	-262.12	0.00	0.00	0.00	
8,300.00	3.72	135.00	8,286.99	-284.76	284.76	-266.42	0.00	0.00	0.00	
8,400.00	3.72	135.00	8,386.78	-289.35	289.35	-270.71	0.00	0.00	0.00	
8,500.00	3.72	135.00	8,486.57	-293.94	293.94	-275.00	0.00	0.00	0.00	
8,604.41	3.72	135.00	8,590.75	-298.73	298.73	-279.48	0.00	0.00	0.00	
Curve KOP - Build 10.0° / 100										
8,650.00	3.24	53.37	8,636.29	-299.01	300.81	-279.63	10.00	-1.06	-179.04	
8,700.00	7.38	20.17	8,686.07	-295.15	303.05	-275.64	10.00	8.30	-66.40	
8,750.00	12.19	11.76	8,735.33	-286.96	305.24	-267.33	10.00	9.61	-16.83	
8,800.00	17.10	8.09	8,783.69	-274.50	307.35	-254.77	10.00	9.83	-7.33	
8,850.00	22.06	6.03	8,830.79	-257.88	309.37	-238.04	10.00	9.91	-4.12	
8,900.00	27.03	4.69	8,876.26	-237.20	311.28	-217.29	10.00	9.94	-2.67	
8,950.00	32.01	3.75	8,919.75	-212.64	313.08	-192.67	10.00	9.96	-1.89	
9,000.00	36.99	3.03	8,960.95	-184.38	314.75	-164.36	10.00	9.97	-1.43	
9,050.00	41.98	2.47	8,999.53	-152.64	316.26	-132.58	10.00	9.97	-1.13	
9,100.00	46.97	2.00	9,035.20	-117.65	317.62	-97.58	10.00	9.98	-0.93	
9,150.00	51.96	1.61	9,067.68	-79.68	318.82	-59.61	10.00	9.98	-0.79	
9,200.00	56.95	1.26	9,096.74	-39.03	319.83	-18.97	10.00	9.98	-0.69	
9,250.00	61.94	0.96	9,122.15	4.01	320.66	24.03	10.00	9.99	-0.62	
9,268.81	63.82	0.85	9,130.73	20.75	320.93	40.76	10.00	9.99	-0.58	
FTP[GGF/TB#6H]										
9,300.00	66.94	0.68	9,143.72	49.10	321.30	69.07	10.00	9.99	-0.55	
9,350.00	71.93	0.42	9,161.28	95.89	321.75	115.81	10.00	9.99	-0.52	

Planning Report

Database:	Midland District	Local Coordinate Reference:	Well TB #6H
Company:	Marathon Oil Permian, LLC	TVD Reference:	KB = 26.5' @ 3106.50usft (H&P 441)
Project:	Eddy County, NM (NAD27)	NO Reference:	KB = 26.5' @ 3106.50usft (H&P 441)
Site:	Gravel Grinder Fee 23-28-18	North Azimuth:	Grid
Well:	TB #6H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Depth:	Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	True Vertical Depth (usft)	True North (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
9,400.00	76.92	0.17	9,174.70	144.04	321.99	163.88	10.00	9.99	-0.49
9,450.00	81.92	359.93	9,183.88	193.18	322.03	212.92	10.00	9.99	-0.47
9,500.00	86.91	359.70	9,188.74	242.92	321.88	262.56	10.00	9.99	-0.46
9,526.90	89.60	359.58	9,189.56	269.80	321.71	289.38	10.00	9.99	-0.46
EOC - HOLD									
9,600.00	89.60	359.58	9,190.07	342.90	321.17	362.30	0.00	0.00	0.00
9,700.00	89.60	359.58	9,190.77	442.90	320.44	462.05	0.00	0.00	0.00
9,800.00	89.60	359.58	9,191.47	542.89	319.71	561.81	0.00	0.00	0.00
9,900.00	89.60	359.58	9,192.16	642.89	318.98	661.56	0.00	0.00	0.00
10,000.00	89.60	359.58	9,192.86	742.88	318.25	761.31	0.00	0.00	0.00
10,100.00	89.60	359.58	9,193.56	842.88	317.52	861.07	0.00	0.00	0.00
10,200.00	89.60	359.58	9,194.26	942.87	316.79	960.82	0.00	0.00	0.00
10,300.00	89.60	359.58	9,194.96	1,042.87	316.05	1,060.58	0.00	0.00	0.00
10,400.00	89.60	359.58	9,195.65	1,142.86	315.32	1,160.33	0.00	0.00	0.00
10,500.00	89.60	359.58	9,196.35	1,242.86	314.59	1,260.08	0.00	0.00	0.00
10,600.00	89.60	359.58	9,197.05	1,342.85	313.86	1,359.84	0.00	0.00	0.00
10,700.00	89.60	359.58	9,197.75	1,442.85	313.13	1,459.59	0.00	0.00	0.00
10,800.00	89.60	359.58	9,198.45	1,542.84	312.40	1,559.34	0.00	0.00	0.00
10,900.00	89.60	359.58	9,199.15	1,642.84	311.67	1,659.10	0.00	0.00	0.00
11,000.00	89.60	359.58	9,199.84	1,742.83	310.93	1,758.85	0.00	0.00	0.00
11,100.00	89.60	359.58	9,200.54	1,842.83	310.20	1,858.61	0.00	0.00	0.00
11,200.00	89.60	359.58	9,201.24	1,942.82	309.47	1,958.36	0.00	0.00	0.00
11,300.00	89.60	359.58	9,201.94	2,042.82	308.74	2,058.11	0.00	0.00	0.00
11,400.00	89.60	359.58	9,202.64	2,142.81	308.01	2,157.87	0.00	0.00	0.00
11,500.00	89.60	359.58	9,203.33	2,242.81	307.28	2,257.62	0.00	0.00	0.00
11,600.00	89.60	359.58	9,204.03	2,342.80	306.55	2,357.38	0.00	0.00	0.00
11,700.00	89.60	359.58	9,204.73	2,442.80	305.81	2,457.13	0.00	0.00	0.00
11,800.00	89.60	359.58	9,205.43	2,542.79	305.08	2,556.88	0.00	0.00	0.00
11,900.00	89.60	359.58	9,206.13	2,642.79	304.35	2,656.64	0.00	0.00	0.00
12,000.00	89.60	359.58	9,206.82	2,742.78	303.62	2,756.39	0.00	0.00	0.00
12,100.00	89.60	359.58	9,207.52	2,842.78	302.89	2,856.14	0.00	0.00	0.00
12,200.00	89.60	359.58	9,208.22	2,942.77	302.16	2,955.90	0.00	0.00	0.00
12,300.00	89.60	359.58	9,208.92	3,042.76	301.42	3,055.65	0.00	0.00	0.00
12,400.00	89.60	359.58	9,209.62	3,142.76	300.69	3,155.41	0.00	0.00	0.00
12,500.00	89.60	359.58	9,210.32	3,242.75	299.96	3,255.16	0.00	0.00	0.00
12,600.00	89.60	359.58	9,211.01	3,342.75	299.23	3,354.91	0.00	0.00	0.00
12,700.00	89.60	359.58	9,211.71	3,442.74	298.50	3,454.67	0.00	0.00	0.00
12,800.00	89.60	359.58	9,212.41	3,542.74	297.77	3,554.42	0.00	0.00	0.00
12,900.00	89.60	359.58	9,213.11	3,642.73	297.04	3,654.18	0.00	0.00	0.00
13,000.00	89.60	359.58	9,213.81	3,742.73	296.30	3,753.93	0.00	0.00	0.00
13,100.00	89.60	359.58	9,214.50	3,842.72	295.57	3,853.68	0.00	0.00	0.00
13,200.00	89.60	359.58	9,215.20	3,942.72	294.84	3,953.44	0.00	0.00	0.00
13,300.00	89.60	359.58	9,215.90	4,042.71	294.11	4,053.19	0.00	0.00	0.00
13,400.00	89.60	359.58	9,216.60	4,142.71	293.38	4,152.94	0.00	0.00	0.00
13,500.00	89.60	359.58	9,217.30	4,242.70	292.65	4,252.70	0.00	0.00	0.00
13,600.00	89.60	359.58	9,217.99	4,342.70	291.92	4,352.45	0.00	0.00	0.00
13,700.00	89.60	359.58	9,218.69	4,442.69	291.18	4,452.21	0.00	0.00	0.00
13,800.00	89.60	359.58	9,219.39	4,542.69	290.45	4,551.96	0.00	0.00	0.00
13,887.25	89.60	359.58	9,220.00	4,629.93	289.82	4,638.99	0.00	0.00	0.00
TD at 13887.25 - BHL[GGF/TB#6H]									

Planning Report

Database:	Midland District	Local Coordinates Reference:	Well TB #6H
Company:	Marathon Oil Permian, LLC	TVD Reference:	KB = 26.5' @ 3106.50usft (H&P 441)
Project:	Eddy County, NM (NAD27)	MD Reference:	KB = 26.5' @ 3106.50usft (H&P 441)
Site:	Gravel Grinder Fee 23-28-18	North Reference:	Grid
Well:	TB #6H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Design Targets										
Target Name	Dip Angle (°)	Dip Dir. (bearing)	TVD (usft)	NVA (usft)	HPD (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude	
FTP[GGF/TB#6H] - plan misses target center by 99.01usft at 9268.81usft MD (9130.73 TVD, 20.75 N, 320.93 E) - Point	0.00	0.00	9,220.00	-21.99	323.58	472,475.60	563,011.74	32° 17' 55.634 N	104° 7' 45.848 W	
BHL[GGF/TB#6H] - plan hits target center - Point	0.00	0.00	9,220.00	4,629.93	289.82	477,127.12	562,977.98	32° 18' 41.667 N	104° 7' 46.139 W	

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		N-S (usft)	E-W (usft)		
2,000.00	2,000.00	0.00	0.00	KOP - Build 2.0° / 100	
2,186.00	2,185.87	-4.27	4.27	EOB - HOLD	
8,604.41	8,590.75	-298.73	298.73	Curve KOP - Build 10.0° / 100	
9,526.90	9,189.56	269.80	321.71	EOC - HOLD	
13,887.25	9,220.00	4,629.93	289.82	TD at 13887.25	