

**NM OIL CONSERVATION
ARTESIA DISTRICT**

MAR 16 2018

RECEIVED

Marathon Oil Permian, LLC

**Eddy County, NM (NAD27)
Black River 374 State 24-27-15
WA #5H**

OH

30-015-44815

Plan: Plan #1

Standard Planning Report

27 February, 2018



Scientific Drilling

www.scientificdrilling.com

Planning Report

Midland District	Well WA #5H
Marathon Oil Permian, LLC	KB = 26.5' @ 3247.50usft (H&P 441)
Eddy County, NM (NAD27)	KB = 26.5' @ 3247.50usft (H&P 441)
Black River 374 State 24-27-15	Grid
WA #5H	Minimum Curvature
OH	
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:		Black River 374 State 24-27-15			
Site Position:		Northing:	440,373.41 usft	Latitude:	32° 12' 38.202 N
From:	Map	Easting:	547,156.41 usft	Longitude:	104° 10' 51.110 W
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "	Grid Convergence:	0.08 °

Well:	WA #5H					
Well Position	+N-S	52.29 usft	Northing:	440,425.70 usft	Latitude:	32° 12' 38.734 N
	+E-W	-1,058.68 usft	Easting:	546,097.82 usft	Longitude:	104° 11' 3.431 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	3,221.00 usft

Wellbore:	OH				
Magnitude	Model Name	Sample Date	Direction	Pro Angle	Field Strength
					(mT)
	HDGM	2/27/2018	7.37	59.95	47,987

Design:	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (FWD) (ft)	Y (ft)	X (ft)	Direction (bearing)
	0.00	0.00	0.00	0.00

Plan Section:										
Horizontal	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Vertical	Horizontal	Vertical	Target
Depth (ft)	Depth (ft)	Depth (ft)	Depth (ft)	Depth (ft)	Depth (ft)	Depth (ft)	Depth (ft)	Depth (ft)	Depth (ft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,900.00	10.00	242.00	2,897.47	-20.43	-38.43	2.00	2.00	0.00	242.00	
5,120.00	10.00	242.00	5,083.74	-201.41	-378.80	0.00	0.00	0.00	0.00	
5,620.00	0.00	0.00	5,581.20	-221.85	-417.23	2.00	-2.00	0.00	180.00	
8,675.84	0.00	0.00	8,637.04	-221.85	-417.23	0.00	0.00	0.00	0.00	
9,575.84	90.00	0.15	9,210.00	351.11	-415.78	10.00	10.00	0.00	0.15	
13,863.19	90.00	0.15	9,210.00	4,638.45	-404.90	0.00	0.00	0.00	0.00	BHL[BR374 WA#5H]
13,908.19	90.00	0.15	9,210.00	4,683.45	-404.78	0.00	0.00	0.00	0.00	

Planning Report

Database:	Midland District	Local Co-ordinate Reference:	Well WA #5H
Company:	Marathon Oil Permian, LLC	TVD Reference:	KB = 26.5' @ 3247.50usft (H&P 441)
Project:	Eddy County, NM (NAD27)	MD Reference:	KB = 26.5' @ 3247.50usft (H&P 441)
Site:	Black River 374 State 24-27-15	North Reference:	Grid
Well:	WA #5H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	inclination (°)	Azimuth (°)	Vertical Depth (ft)	True North (°)	True East (°)	True North (°)	Depth Rate (ft/1000usft)	Build Rate (°/1000usft)	Turn Rate (°/1000usft)
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
713.00	0.00	0.00	713.00	0.00	0.00	0.00	0.00	0.00	0.00
Castile / Salado									
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
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,225.00	0.00	0.00	2,225.00	0.00	0.00	0.00	0.00	0.00	0.00
Base of Salt									
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,366.00	0.00	0.00	2,366.00	0.00	0.00	0.00	0.00	0.00	0.00
Lamar									
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP - Build 2.0° / 100									
2,437.00	0.74	242.00	2,437.00	-0.11	-0.21	-0.11	2.00	2.00	0.00
Bell Canyon									
2,500.00	2.00	242.00	2,499.98	-0.82	-1.54	-0.82	2.00	2.00	0.00
2,600.00	4.00	242.00	2,599.84	-3.28	-6.16	-3.28	2.00	2.00	0.00
2,700.00	6.00	242.00	2,699.45	-7.37	-13.86	-7.37	2.00	2.00	0.00
2,800.00	8.00	242.00	2,798.70	-13.09	-24.62	-13.09	2.00	2.00	0.00
2,900.00	10.00	242.00	2,897.47	-20.43	-38.43	-20.43	2.00	2.00	0.00
EOB - HOLD									
3,000.00	10.00	242.00	2,995.95	-28.58	-53.76	-28.58	0.00	0.00	0.00
3,100.00	10.00	242.00	3,094.43	-36.74	-69.09	-36.74	0.00	0.00	0.00
3,197.05	10.00	242.00	3,190.00	-44.65	-83.97	-44.65	0.00	0.00	0.00
Brushy Canyon									
3,200.00	10.00	242.00	3,192.91	-44.89	-84.42	-44.89	0.00	0.00	0.00
3,300.00	10.00	242.00	3,291.39	-53.04	-99.76	-53.04	0.00	0.00	0.00
3,400.00	10.00	242.00	3,389.87	-61.19	-115.09	-61.19	0.00	0.00	0.00
3,500.00	10.00	242.00	3,488.35	-69.35	-130.42	-69.35	0.00	0.00	0.00
3,600.00	10.00	242.00	3,586.83	-77.50	-145.75	-77.50	0.00	0.00	0.00
3,700.00	10.00	242.00	3,685.31	-85.65	-161.09	-85.65	0.00	0.00	0.00
3,800.00	10.00	242.00	3,783.79	-93.80	-176.42	-93.80	0.00	0.00	0.00
3,900.00	10.00	242.00	3,882.27	-101.96	-191.75	-101.96	0.00	0.00	0.00
4,000.00	10.00	242.00	3,980.75	-110.11	-207.08	-110.11	0.00	0.00	0.00

Planning Report

Client:	Midland District	Local Coordinates:	Well WA #5H
Company:	Marathon Oil Permian, LLC	Area:	KB = 26.5' @ 3247.50usft (H&P 441)
Project:	Eddy County, NM (NAD27)	North Arrow:	KB = 26.5' @ 3247.50usft (H&P 441)
Site:	Black River 374 State 24-27-15	North Arrow:	Grid
Well:	WA #5H	Survey:	Minimum Curvature
Wellbore:	OH		
Position:	Plan #1		

Planned Survey										
Measured Depth (ft)	Interval (ft)	Azimuth (bearing)	True North (ft)	True North (ft)	True North (ft)	True North (ft)	True North (ft)	True North (ft)	True North (ft)	True North (ft)
4,100.00	10.00	242.00	4,079.23	-118.26	-222.41	-118.26	0.00	0.00	0.00	0.00
4,200.00	10.00	242.00	4,177.72	-126.41	-237.75	-126.41	0.00	0.00	0.00	0.00
4,300.00	10.00	242.00	4,276.20	-134.56	-253.08	-134.56	0.00	0.00	0.00	0.00
4,302.85	10.00	242.00	4,279.00	-134.80	-253.52	-134.80	0.00	0.00	0.00	0.00
Bone Spring										
4,400.00	10.00	242.00	4,374.68	-142.72	-268.41	-142.72	0.00	0.00	0.00	0.00
4,500.00	10.00	242.00	4,473.16	-150.87	-283.74	-150.87	0.00	0.00	0.00	0.00
4,600.00	10.00	242.00	4,571.64	-159.02	-299.08	-159.02	0.00	0.00	0.00	0.00
4,700.00	10.00	242.00	4,670.12	-167.17	-314.41	-167.17	0.00	0.00	0.00	0.00
4,800.00	10.00	242.00	4,768.60	-175.33	-329.74	-175.33	0.00	0.00	0.00	0.00
4,900.00	10.00	242.00	4,867.08	-183.48	-345.07	-183.48	0.00	0.00	0.00	0.00
5,000.00	10.00	242.00	4,965.56	-191.63	-360.40	-191.63	0.00	0.00	0.00	0.00
5,100.00	10.00	242.00	5,064.04	-199.78	-375.74	-199.78	0.00	0.00	0.00	0.00
5,120.00	10.00	242.00	5,083.74	-201.41	-378.80	-201.41	0.00	0.00	0.00	0.00
DROP 2.0° / 100										
5,200.00	8.40	242.00	5,162.71	-207.42	-390.10	-207.42	2.00	-2.00	0.00	0.00
5,300.00	6.40	242.00	5,261.87	-213.46	-401.47	-213.46	2.00	-2.00	0.00	0.00
5,400.00	4.40	242.00	5,361.42	-217.88	-409.78	-217.88	2.00	-2.00	0.00	0.00
5,500.00	2.40	242.00	5,461.24	-220.67	-415.01	-220.67	2.00	-2.00	0.00	0.00
5,600.00	0.40	242.00	5,561.20	-221.81	-417.17	-221.81	2.00	-2.00	0.00	0.00
5,620.00	0.00	0.00	5,581.20	-221.85	-417.23	-221.85	2.00	-2.00	0.00	0.00
EOD - HOLD										
5,700.00	0.00	0.00	5,661.20	-221.85	-417.23	-221.85	0.00	0.00	0.00	0.00
5,800.00	0.00	0.00	5,761.20	-221.85	-417.23	-221.85	0.00	0.00	0.00	0.00
5,869.80	0.00	0.00	5,831.00	-221.85	-417.23	-221.85	0.00	0.00	0.00	0.00
1st Bone Spring Sand										
5,900.00	0.00	0.00	5,861.20	-221.85	-417.23	-221.85	0.00	0.00	0.00	0.00
6,000.00	0.00	0.00	5,961.20	-221.85	-417.23	-221.85	0.00	0.00	0.00	0.00
6,100.00	0.00	0.00	6,061.20	-221.85	-417.23	-221.85	0.00	0.00	0.00	0.00
6,200.00	0.00	0.00	6,161.20	-221.85	-417.23	-221.85	0.00	0.00	0.00	0.00
6,300.00	0.00	0.00	6,261.20	-221.85	-417.23	-221.85	0.00	0.00	0.00	0.00
6,400.00	0.00	0.00	6,361.20	-221.85	-417.23	-221.85	0.00	0.00	0.00	0.00
6,500.00	0.00	0.00	6,461.20	-221.85	-417.23	-221.85	0.00	0.00	0.00	0.00
6,600.00	0.00	0.00	6,561.20	-221.85	-417.23	-221.85	0.00	0.00	0.00	0.00
6,700.00	0.00	0.00	6,661.20	-221.85	-417.23	-221.85	0.00	0.00	0.00	0.00
6,800.00	0.00	0.00	6,761.20	-221.85	-417.23	-221.85	0.00	0.00	0.00	0.00
6,885.80	0.00	0.00	6,847.00	-221.85	-417.23	-221.85	0.00	0.00	0.00	0.00
2nd Bone Spring Sand										
6,900.00	0.00	0.00	6,861.20	-221.85	-417.23	-221.85	0.00	0.00	0.00	0.00
7,000.00	0.00	0.00	6,961.20	-221.85	-417.23	-221.85	0.00	0.00	0.00	0.00
7,100.00	0.00	0.00	7,061.20	-221.85	-417.23	-221.85	0.00	0.00	0.00	0.00
7,200.00	0.00	0.00	7,161.20	-221.85	-417.23	-221.85	0.00	0.00	0.00	0.00
7,300.00	0.00	0.00	7,261.20	-221.85	-417.23	-221.85	0.00	0.00	0.00	0.00
7,400.00	0.00	0.00	7,361.20	-221.85	-417.23	-221.85	0.00	0.00	0.00	0.00
7,427.80	0.00	0.00	7,389.00	-221.85	-417.23	-221.85	0.00	0.00	0.00	0.00
3rd Bone Spring Sand										
7,500.00	0.00	0.00	7,461.20	-221.85	-417.23	-221.85	0.00	0.00	0.00	0.00
7,600.00	0.00	0.00	7,561.20	-221.85	-417.23	-221.85	0.00	0.00	0.00	0.00
7,700.00	0.00	0.00	7,661.20	-221.85	-417.23	-221.85	0.00	0.00	0.00	0.00
7,800.00	0.00	0.00	7,761.20	-221.85	-417.23	-221.85	0.00	0.00	0.00	0.00
7,900.00	0.00	0.00	7,861.20	-221.85	-417.23	-221.85	0.00	0.00	0.00	0.00
8,000.00	0.00	0.00	7,961.20	-221.85	-417.23	-221.85	0.00	0.00	0.00	0.00
8,100.00	0.00	0.00	8,061.20	-221.85	-417.23	-221.85	0.00	0.00	0.00	0.00

Planning Report

Client:	Midland District	Local Coordinates (NAD83):	Well WA #5H
Company:	Marathon Oil Permian, LLC	Well Reference:	KB = 26.5' @ 3247.50usft (H&P 441)
Project:	Eddy County, NM (NAD27)	MD Reference:	KB = 26.5' @ 3247.50usft (H&P 441)
Site:	Black River 374 State 24-27-15	North Arrow:	Grid
Well:	WA #5H	Survey:	Minimum Curvature
Wellhead:	OH		
Plan #:	Plan #1		

Station	Interval	Length	Station	Interval	Length	Station	Interval	Length	Station	Interval	Length
(USFT)	(USFT)	(USFT)	(USFT)	(USFT)	(USFT)	(USFT)	(USFT)	(USFT)	(USFT)	(USFT)	(USFT)
8,200.00	0.00	0.00	8,161.20	-221.85	-417.23	-221.85	0.00	0.00	0.00	0.00	0.00
8,300.00	0.00	0.00	8,261.20	-221.85	-417.23	-221.85	0.00	0.00	0.00	0.00	0.00
8,400.00	0.00	0.00	8,361.20	-221.85	-417.23	-221.85	0.00	0.00	0.00	0.00	0.00
8,500.00	0.00	0.00	8,461.20	-221.85	-417.23	-221.85	0.00	0.00	0.00	0.00	0.00
8,600.00	0.00	0.00	8,561.20	-221.85	-417.23	-221.85	0.00	0.00	0.00	0.00	0.00
8,675.84	0.00	0.00	8,637.04	-221.85	-417.23	-221.85	0.00	0.00	0.00	0.00	0.00
Curve KOP - Build 10.0° / 100											
8,700.00	2.42	0.15	8,661.20	-221.34	-417.23	-221.34	10.00	10.00	0.00	0.00	0.00
8,750.00	7.42	0.15	8,711.00	-217.05	-417.22	-217.05	10.00	10.00	0.00	0.00	0.00
8,797.71	12.19	0.15	8,758.00	-208.93	-417.20	-208.93	10.00	10.00	0.00	0.00	0.00
3BS Sand Target											
8,800.00	12.42	0.15	8,760.23	-208.45	-417.20	-208.45	10.00	10.00	0.00	0.00	0.00
8,850.00	17.42	0.15	8,808.53	-195.58	-417.17	-195.58	10.00	10.00	0.00	0.00	0.00
8,900.00	22.42	0.15	8,855.53	-178.55	-417.12	-178.55	10.00	10.00	0.00	0.00	0.00
8,950.00	27.42	0.15	8,900.86	-157.49	-417.07	-157.49	10.00	10.00	0.00	0.00	0.00
9,000.00	32.42	0.15	8,944.19	-132.57	-417.01	-132.57	10.00	10.00	0.00	0.00	0.00
9,050.00	37.42	0.15	8,985.17	-103.96	-416.93	-103.96	10.00	10.00	0.00	0.00	0.00
9,100.00	42.42	0.15	9,023.51	-71.88	-416.85	-71.88	10.00	10.00	0.00	0.00	0.00
9,150.00	47.42	0.15	9,058.90	-36.59	-416.76	-36.59	10.00	10.00	0.00	0.00	0.00
9,177.47	50.16	0.15	9,077.00	-15.93	-416.71	-15.93	10.00	10.00	0.00	0.00	0.00
Wolfcamp											
9,200.00	52.42	0.15	9,091.09	1.65	-416.66	1.65	10.00	10.00	0.00	0.00	0.00
9,250.00	57.42	0.15	9,119.82	42.55	-416.56	42.55	10.00	10.00	0.00	0.00	0.00
9,268.04	59.22	0.15	9,129.29	57.90	-416.52	57.90	10.00	10.00	0.00	0.00	0.00
FTP[BR374(WA#5H)]											
9,291.75	61.59	0.15	9,141.00	78.52	-416.47	78.52	10.00	10.00	0.00	0.00	0.00
Wolfcamp X											
9,300.00	62.42	0.15	9,144.87	85.81	-416.45	85.81	10.00	10.00	0.00	0.00	0.00
9,350.00	67.42	0.15	9,166.07	131.07	-416.34	131.07	10.00	10.00	0.00	0.00	0.00
9,400.00	72.42	0.15	9,183.23	178.02	-416.22	178.02	10.00	10.00	0.00	0.00	0.00
9,444.44	76.86	0.15	9,195.00	220.87	-416.11	220.87	10.00	10.00	0.00	0.00	0.00
Wolfcamp Y											
9,450.00	77.42	0.15	9,196.24	226.28	-416.09	226.28	10.00	10.00	0.00	0.00	0.00
9,500.00	82.42	0.15	9,204.99	275.49	-415.97	275.49	10.00	10.00	0.00	0.00	0.00
9,550.00	87.42	0.15	9,209.42	325.28	-415.84	325.28	10.00	10.00	0.00	0.00	0.00
9,575.84	90.00	0.15	9,210.00	351.11	-415.78	351.11	10.00	10.00	0.00	0.00	0.00
EOC - HOLD											
9,600.00	90.00	0.15	9,210.00	375.27	-415.72	375.27	0.00	0.00	0.00	0.00	0.00
9,700.00	90.00	0.15	9,210.00	475.27	-415.46	475.27	0.00	0.00	0.00	0.00	0.00
9,800.00	90.00	0.15	9,210.00	575.27	-415.21	575.27	0.00	0.00	0.00	0.00	0.00
9,900.00	90.00	0.15	9,210.00	675.27	-414.95	675.27	0.00	0.00	0.00	0.00	0.00
10,000.00	90.00	0.15	9,210.00	775.27	-414.70	775.27	0.00	0.00	0.00	0.00	0.00
10,100.00	90.00	0.15	9,210.00	875.27	-414.45	875.27	0.00	0.00	0.00	0.00	0.00
10,200.00	90.00	0.15	9,210.00	975.27	-414.19	975.27	0.00	0.00	0.00	0.00	0.00
10,300.00	90.00	0.15	9,210.00	1,075.27	-413.94	1,075.27	0.00	0.00	0.00	0.00	0.00
10,400.00	90.00	0.15	9,210.00	1,175.27	-413.69	1,175.27	0.00	0.00	0.00	0.00	0.00
10,500.00	90.00	0.15	9,210.00	1,275.27	-413.43	1,275.27	0.00	0.00	0.00	0.00	0.00
10,600.00	90.00	0.15	9,210.00	1,375.27	-413.18	1,375.27	0.00	0.00	0.00	0.00	0.00
10,700.00	90.00	0.15	9,210.00	1,475.27	-412.92	1,475.27	0.00	0.00	0.00	0.00	0.00
10,800.00	90.00	0.15	9,210.00	1,575.27	-412.67	1,575.27	0.00	0.00	0.00	0.00	0.00
10,900.00	90.00	0.15	9,210.00	1,675.27	-412.42	1,675.27	0.00	0.00	0.00	0.00	0.00
11,000.00	90.00	0.15	9,210.00	1,775.27	-412.16	1,775.27	0.00	0.00	0.00	0.00	0.00
11,100.00	90.00	0.15	9,210.00	1,875.27	-411.91	1,875.27	0.00	0.00	0.00	0.00	0.00

Planning Report

Client:	Midland District	Location:	Well WA #5H
Company:	Marathon Oil Permian, LLC	Well Name:	KB = 26.5' @ 3247.50usft (H&P 441)
Form:	Eddy County, NM (NAD27)	MD (m):	KB = 26.5' @ 3247.50usft (H&P 441)
Site:	Black River 374 State 24-27-15	North Arrow:	Grid
Well:	WA #5H	North Arrow:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Through	Radius	Angle	Length	True	Delta	Vertical	Depth	Angle	Turn
(usft)	(ft)	(bearing)	(ft)	(usft)	(usft)	(usft)	(1000usft)	(1000usft)	(1000usft)
11,200.00	90.00	0.15	9,210.00	1,975.27	-411.66	1,975.27	0.00	0.00	0.00
11,300.00	90.00	0.15	9,210.00	2,075.27	-411.40	2,075.27	0.00	0.00	0.00
11,400.00	90.00	0.15	9,210.00	2,175.27	-411.15	2,175.27	0.00	0.00	0.00
11,500.00	90.00	0.15	9,210.00	2,275.27	-410.89	2,275.27	0.00	0.00	0.00
11,600.00	90.00	0.15	9,210.00	2,375.27	-410.64	2,375.27	0.00	0.00	0.00
11,700.00	90.00	0.15	9,210.00	2,475.26	-410.39	2,475.26	0.00	0.00	0.00
11,800.00	90.00	0.15	9,210.00	2,575.26	-410.13	2,575.26	0.00	0.00	0.00
11,900.00	90.00	0.15	9,210.00	2,675.26	-409.88	2,675.26	0.00	0.00	0.00
12,000.00	90.00	0.15	9,210.00	2,775.26	-409.62	2,775.26	0.00	0.00	0.00
12,100.00	90.00	0.15	9,210.00	2,875.26	-409.37	2,875.26	0.00	0.00	0.00
12,200.00	90.00	0.15	9,210.00	2,975.26	-409.12	2,975.26	0.00	0.00	0.00
12,300.00	90.00	0.15	9,210.00	3,075.26	-408.86	3,075.26	0.00	0.00	0.00
12,400.00	90.00	0.15	9,210.00	3,175.26	-408.61	3,175.26	0.00	0.00	0.00
12,500.00	90.00	0.15	9,210.00	3,275.26	-408.36	3,275.26	0.00	0.00	0.00
12,600.00	90.00	0.15	9,210.00	3,375.26	-408.10	3,375.26	0.00	0.00	0.00
12,700.00	90.00	0.15	9,210.00	3,475.26	-407.85	3,475.26	0.00	0.00	0.00
12,800.00	90.00	0.15	9,210.00	3,575.26	-407.59	3,575.26	0.00	0.00	0.00
12,900.00	90.00	0.15	9,210.00	3,675.26	-407.34	3,675.26	0.00	0.00	0.00
13,000.00	90.00	0.15	9,210.00	3,775.26	-407.09	3,775.26	0.00	0.00	0.00
13,100.00	90.00	0.15	9,210.00	3,875.26	-406.83	3,875.26	0.00	0.00	0.00
13,200.00	90.00	0.15	9,210.00	3,975.26	-406.58	3,975.26	0.00	0.00	0.00
13,300.00	90.00	0.15	9,210.00	4,075.26	-406.33	4,075.26	0.00	0.00	0.00
13,400.00	90.00	0.15	9,210.00	4,175.26	-406.07	4,175.26	0.00	0.00	0.00
13,500.00	90.00	0.15	9,210.00	4,275.26	-405.82	4,275.26	0.00	0.00	0.00
13,600.00	90.00	0.15	9,210.00	4,375.26	-405.56	4,375.26	0.00	0.00	0.00
13,700.00	90.00	0.15	9,210.00	4,475.26	-405.31	4,475.26	0.00	0.00	0.00
13,800.00	90.00	0.15	9,210.00	4,575.26	-405.06	4,575.26	0.00	0.00	0.00
13,863.19	90.00	0.15	9,210.00	4,638.45	-404.90	4,638.45	0.00	0.00	0.00
TD at 13863.19 - BHL[BR374WA#5H]									
13,908.19	90.00	0.15	9,210.00	4,683.45	-404.78	4,683.45	0.00	0.00	0.00
TD + 45' VS									

BHL[BR374WA#5H]									
Point Name	Offset (ft)	Offset (ft)	TVD (usft)	MD (usft)	MD (usft)	MD (usft)	MD (usft)	Latitude	Longitude
BHL[BR374WA#5H]	0.00	0.00	9,210.00	4,638.45	-404.90	445,063.74	545,692.96	32° 13' 24.639 N	104° 11' 8.069 W
- plan hits target center									
- Point									
FTP[BR374WA#5H]									
FTP[BR374WA#5H]	0.00	0.00	9,210.00	10.37	-417.33	440,436.07	545,680.53	32° 12' 38.842 N	104° 11' 8.288 W
- plan misses target center by 93.67usft at 9268.04usft MD (9129.29 TVD, 57.90 N, -416.52 E)									
- Point									

Planning Report

Location:	Midland District	Local Coordinate Reference:	Well WA #5H
Company:	Marathon Oil Permian, LLC	TVD Reference:	KB = 26.5' @ 3247.50usft (H&P 441)
Project:	Eddy County, NM (NAD27)	MD Reference:	KB = 26.5' @ 3247.50usft (H&P 441)
Site:	Black River 374 State 24-27-15	North Arrow:	Grid
Well:	WA #5H	Survey:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Formations					
True Vertical Depth (usft)	Vertical Depth (usft)	Formation	Depth (usft)	Direction (usft)	
713.00	713.00	Castile / Salado			
2,225.00	2,225.00	Base of Salt			
2,366.00	2,366.00	Lamar			
2,437.00	2,437.00	Bell Canyon			
3,197.05	3,190.00	Brushy Canyon			
4,302.85	4,279.00	Bone Spring			
5,869.80	5,831.00	1st Bone Spring Sand			
6,885.80	6,847.00	2nd Bone Spring Sand			
7,427.80	7,389.00	3rd Bone Spring Sand			
8,797.71	8,758.00	3BS Sand Target			
9,177.47	9,077.00	Wolfcamp			
9,291.75	9,141.00	Wolfcamp X			
9,444.44	9,195.00	Wolfcamp Y			

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates (usft)	Local Coordinates (usft)	Local Coordinates (usft)	Local Coordinates (usft)
2,400.00	2,400.00	0.00	0.00	KOP - Build 2.0° / 100	
2,900.00	2,897.47	-20.43	-38.43	EOB - HOLD	
5,120.00	5,083.74	-201.41	-378.80	DROP 2.0° / 100	
5,620.00	5,581.20	-221.85	-417.23	EOD - HOLD	
8,675.84	8,637.04	-221.85	-417.23	Curve KOP - Build 10.0° / 100	
9,575.84	9,210.00	351.11	-415.78	EOC - HOLD	
13,863.19	9,210.00	4,638.45	-404.90	TD at 13863.19	
13,908.19	9,210.00	4,683.45	-404.78	TD + 45' VS	