

Marathon Oil Permian, LLC

Eddy County, NM (NAD27)

Southern Comfort State 24-28-25

WD #9H

30-015-44833

OH

**NM OIL CONSERVATION
ARTESIA DISTRICT**

MAR 26 2018

RECEIVED

Plan: Plan #1

Standard Planning Report

26 March, 2018



Scientific Drilling

www.scientificdrilling.com

Planning Report

Database:	Midland District	Local Co-ordinate Reference:	Well WD #9H
Company:	Marathon Oil Permian, LLC	TVD Reference:	KB = 26.5' @ 2945.50usft (H&P 498)
Project:	Eddy County, NM (NAD27)	MD Reference:	KB = 26.5' @ 2945.50usft (H&P 498)
Site:	Southern Comfort State 24-28-25	North Reference:	Grid
Well:	WD #9H	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:	Southern Comfort State 24-28-25		
Site Position:		Northing:	432,128.89 usft
From:	Map	Easting:	591,559.01 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32° 11' 15.693 N
		Longitude:	104° 2' 14.542 W
		Grid Convergence:	0.16 °

Well	WD #9H					
Well Position	+N-S	0.00 usft	Northing:	432,128.89 usft	Latitude:	32° 11' 15.693 N
	+E-W	60.00 usft	Easting:	591,619.01 usft	Longitude:	104° 2' 13.844 W
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	2,919.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	3/26/2018	7.15	59.97	48,017

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	180.00

Plan Sections:										
Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00	
3,200.00	14.00	86.00	3,193.06	5.94	84.89	2.00	2.00	0.00	86.00	
8,370.00	14.00	86.00	8,209.48	93.18	1,332.58	0.00	0.00	0.00	0.00	
9,070.00	0.00	0.00	8,902.54	99.12	1,417.47	2.00	-2.00	0.00	180.00	
10,352.50	0.00	0.00	10,185.04	99.12	1,417.47	0.00	0.00	0.00	0.00	
11,252.50	90.00	180.38	10,758.00	-473.83	1,413.64	10.00	10.00	0.00	180.38	
18,208.63	90.00	180.38	10,758.00	-7,429.79	1,367.18	0.00	0.00	0.00	0.00	BHL[SCSWD#9H]
18,253.63	90.00	180.38	10,758.00	-7,474.79	1,366.88	0.00	0.00	0.00	0.00	

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Well:	WD #9H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	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
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
539.00	0.00	0.00	539.00	0.00	0.00	0.00	0.00	0.00	0.00
Salado									
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
1,180.00	0.00	0.00	1,180.00	0.00	0.00	0.00	0.00	0.00	0.00
Castile									
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
2,300.00	0.00	0.00	2,300.00	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
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
KOP - Build 2.0° / 100									
2,532.00	0.64	86.00	2,532.00	0.01	0.18	-0.01	2.00	2.00	0.00
Base of Salt									
2,600.00	2.00	86.00	2,599.98	0.12	1.74	-0.12	2.00	2.00	0.00
2,663.09	3.26	86.00	2,663.00	0.32	4.63	-0.32	2.00	2.00	0.00
Lamar									
2,690.14	3.80	86.00	2,690.00	0.44	6.29	-0.44	2.00	2.00	0.00
Bell Canyon									
2,700.00	4.00	86.00	2,699.84	0.49	6.96	-0.49	2.00	2.00	0.00
2,800.00	6.00	86.00	2,799.45	1.09	15.66	-1.09	2.00	2.00	0.00
2,900.00	8.00	86.00	2,898.70	1.94	27.81	-1.94	2.00	2.00	0.00
3,000.00	10.00	86.00	2,997.47	3.04	43.42	-3.04	2.00	2.00	0.00
3,100.00	12.00	86.00	3,095.62	4.37	62.45	-4.37	2.00	2.00	0.00
3,200.00	14.00	86.00	3,193.06	5.94	84.89	-5.94	2.00	2.00	0.00
EOB - HOLD									
3,300.00	14.00	86.00	3,290.08	7.62	109.02	-7.62	0.00	0.00	0.00
3,400.00	14.00	86.00	3,387.11	9.31	133.16	-9.31	0.00	0.00	0.00
3,500.00	14.00	86.00	3,484.14	11.00	157.29	-11.00	0.00	0.00	0.00
3,586.42	14.00	86.00	3,568.00	12.46	178.15	-12.46	0.00	0.00	0.00
Cherry Canyon									
3,600.00	14.00	86.00	3,581.17	12.69	181.42	-12.69	0.00	0.00	0.00
3,700.00	14.00	86.00	3,678.20	14.37	205.56	-14.37	0.00	0.00	0.00
3,800.00	14.00	86.00	3,775.23	16.06	229.69	-16.06	0.00	0.00	0.00

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Wellbore:	OH		
Design:	Plan #1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
3,900.00	14.00	86.00	3,872.26	17.75	253.82	-17.75	0.00	0.00	0.00
4,000.00	14.00	86.00	3,969.29	19.44	277.96	-19.44	0.00	0.00	0.00
4,100.00	14.00	86.00	4,066.32	21.12	302.09	-21.12	0.00	0.00	0.00
4,200.00	14.00	86.00	4,163.35	22.81	326.22	-22.81	0.00	0.00	0.00
4,300.00	14.00	86.00	4,260.38	24.50	350.36	-24.50	0.00	0.00	0.00
4,400.00	14.00	86.00	4,357.41	26.19	374.49	-26.19	0.00	0.00	0.00
4,500.00	14.00	86.00	4,454.44	27.87	398.62	-27.87	0.00	0.00	0.00
4,600.00	14.00	86.00	4,551.47	29.56	422.75	-29.56	0.00	0.00	0.00
4,700.00	14.00	86.00	4,648.50	31.25	446.89	-31.25	0.00	0.00	0.00
4,800.00	14.00	86.00	4,745.53	32.94	471.02	-32.94	0.00	0.00	0.00
4,858.20	14.00	86.00	4,802.00	33.92	485.07	-33.92	0.00	0.00	0.00
Brushy Canyon									
4,900.00	14.00	86.00	4,842.56	34.62	495.15	-34.62	0.00	0.00	0.00
5,000.00	14.00	86.00	4,939.59	36.31	519.29	-36.31	0.00	0.00	0.00
5,100.00	14.00	86.00	5,036.62	38.00	543.42	-38.00	0.00	0.00	0.00
5,200.00	14.00	86.00	5,133.65	39.69	567.55	-39.69	0.00	0.00	0.00
5,300.00	14.00	86.00	5,230.68	41.37	591.69	-41.37	0.00	0.00	0.00
5,400.00	14.00	86.00	5,327.71	43.06	615.82	-43.06	0.00	0.00	0.00
5,500.00	14.00	86.00	5,424.74	44.75	639.95	-44.75	0.00	0.00	0.00
5,600.00	14.00	86.00	5,521.77	46.44	664.09	-46.44	0.00	0.00	0.00
5,700.00	14.00	86.00	5,618.79	48.13	688.22	-48.13	0.00	0.00	0.00
5,800.00	14.00	86.00	5,715.82	49.81	712.35	-49.81	0.00	0.00	0.00
5,900.00	14.00	86.00	5,812.85	51.50	736.49	-51.50	0.00	0.00	0.00
6,000.00	14.00	86.00	5,909.88	53.19	760.62	-53.19	0.00	0.00	0.00
6,100.00	14.00	86.00	6,006.91	54.88	784.75	-54.88	0.00	0.00	0.00
6,200.00	14.00	86.00	6,103.94	56.56	808.89	-56.56	0.00	0.00	0.00
6,300.00	14.00	86.00	6,200.97	58.25	833.02	-58.25	0.00	0.00	0.00
6,400.00	14.00	86.00	6,298.00	59.94	857.15	-59.94	0.00	0.00	0.00
6,477.29	14.00	86.00	6,373.00	61.24	875.81	-61.24	0.00	0.00	0.00
Bone Spring									
6,500.00	14.00	86.00	6,395.03	61.63	881.29	-61.63	0.00	0.00	0.00
6,600.00	14.00	86.00	6,492.06	63.31	905.42	-63.31	0.00	0.00	0.00
6,700.00	14.00	86.00	6,589.09	65.00	929.55	-65.00	0.00	0.00	0.00
6,800.00	14.00	86.00	6,686.12	66.69	953.69	-66.69	0.00	0.00	0.00
6,900.00	14.00	86.00	6,783.15	68.38	977.82	-68.38	0.00	0.00	0.00
7,000.00	14.00	86.00	6,880.18	70.06	1,001.95	-70.06	0.00	0.00	0.00
7,100.00	14.00	86.00	6,977.21	71.75	1,026.09	-71.75	0.00	0.00	0.00
7,200.00	14.00	86.00	7,074.24	73.44	1,050.22	-73.44	0.00	0.00	0.00
7,300.00	14.00	86.00	7,171.27	75.13	1,074.35	-75.13	0.00	0.00	0.00
7,400.00	14.00	86.00	7,268.30	76.81	1,098.49	-76.81	0.00	0.00	0.00
7,453.29	14.00	86.00	7,320.00	77.71	1,111.35	-77.71	0.00	0.00	0.00
1st Bone Spring Sand									
7,500.00	14.00	86.00	7,365.33	78.50	1,122.62	-78.50	0.00	0.00	0.00
7,600.00	14.00	86.00	7,462.36	80.19	1,146.75	-80.19	0.00	0.00	0.00
7,700.00	14.00	86.00	7,559.39	81.88	1,170.89	-81.88	0.00	0.00	0.00
7,800.00	14.00	86.00	7,656.42	83.56	1,195.02	-83.56	0.00	0.00	0.00
7,900.00	14.00	86.00	7,753.45	85.25	1,219.15	-85.25	0.00	0.00	0.00
8,000.00	14.00	86.00	7,850.47	86.94	1,243.29	-86.94	0.00	0.00	0.00
8,100.00	14.00	86.00	7,947.50	88.63	1,267.42	-88.63	0.00	0.00	0.00
8,200.00	14.00	86.00	8,044.53	90.31	1,291.55	-90.31	0.00	0.00	0.00
8,293.24	14.00	86.00	8,135.00	91.89	1,314.05	-91.89	0.00	0.00	0.00
2nd Bone Spring Sand									
8,300.00	14.00	86.00	8,141.56	92.00	1,315.69	-92.00	0.00	0.00	0.00
8,370.00	14.00	86.00	8,209.48	93.18	1,332.58	-93.18	0.00	0.00	0.00

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Wellbore:	OH		
Design:	Plan #1		

Planned Survey									
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DROP 2.0° / 100									
8,400.00	13.40	86.00	8,238.63	93.68	1,339.67	-93.68	2.00	-2.00	0.00
8,500.00	11.40	86.00	8,336.29	95.18	1,361.09	-95.18	2.00	-2.00	0.00
8,600.00	9.40	86.00	8,434.65	96.44	1,379.09	-96.44	2.00	-2.00	0.00
8,700.00	7.40	86.00	8,533.57	97.45	1,393.67	-97.45	2.00	-2.00	0.00
8,800.00	5.40	86.00	8,632.94	98.23	1,404.78	-98.23	2.00	-2.00	0.00
8,900.00	3.40	86.00	8,732.64	98.77	1,412.44	-98.77	2.00	-2.00	0.00
9,000.00	1.40	86.00	8,832.55	99.06	1,416.61	-99.06	2.00	-2.00	0.00
9,070.00	0.00	0.00	8,902.54	99.12	1,417.47	-99.12	2.00	-2.00	0.00
EOD - HOLD									
9,100.00	0.00	0.00	8,932.54	99.12	1,417.47	-99.12	0.00	0.00	0.00
9,200.00	0.00	0.00	9,032.54	99.12	1,417.47	-99.12	0.00	0.00	0.00
9,300.00	0.00	0.00	9,132.54	99.12	1,417.47	-99.12	0.00	0.00	0.00
9,400.00	0.00	0.00	9,232.54	99.12	1,417.47	-99.12	0.00	0.00	0.00
9,407.46	0.00	0.00	9,240.00	99.12	1,417.47	-99.12	0.00	0.00	0.00
3rd Bone Spring Sand									
9,500.00	0.00	0.00	9,332.54	99.12	1,417.47	-99.12	0.00	0.00	0.00
9,600.00	0.00	0.00	9,432.54	99.12	1,417.47	-99.12	0.00	0.00	0.00
9,700.00	0.00	0.00	9,532.54	99.12	1,417.47	-99.12	0.00	0.00	0.00
9,774.46	0.00	0.00	9,607.00	99.12	1,417.47	-99.12	0.00	0.00	0.00
Wolfcamp									
9,800.00	0.00	0.00	9,632.54	99.12	1,417.47	-99.12	0.00	0.00	0.00
9,900.00	0.00	0.00	9,732.54	99.12	1,417.47	-99.12	0.00	0.00	0.00
9,929.46	0.00	0.00	9,762.00	99.12	1,417.47	-99.12	0.00	0.00	0.00
Wolfcamp A									
10,000.00	0.00	0.00	9,832.54	99.12	1,417.47	-99.12	0.00	0.00	0.00
10,100.00	0.00	0.00	9,932.54	99.12	1,417.47	-99.12	0.00	0.00	0.00
10,136.46	0.00	0.00	9,969.00	99.12	1,417.47	-99.12	0.00	0.00	0.00
Wolfcamp B									
10,200.00	0.00	0.00	10,032.54	99.12	1,417.47	-99.12	0.00	0.00	0.00
10,300.00	0.00	0.00	10,132.54	99.12	1,417.47	-99.12	0.00	0.00	0.00
10,352.50	0.00	0.00	10,185.04	99.12	1,417.47	-99.12	0.00	0.00	0.00
Curve KOP - Build 10.0° / 100									
10,357.46	0.50	180.38	10,190.00	99.10	1,417.47	-99.10	10.00	10.00	0.00
Wolfcamp C									
10,400.00	4.75	180.38	10,232.49	97.15	1,417.45	-97.15	10.00	10.00	0.00
10,450.00	9.75	180.38	10,282.07	90.84	1,417.41	-90.84	10.00	10.00	0.00
10,484.63	13.21	180.38	10,316.00	83.95	1,417.37	-83.95	10.00	10.00	0.00
Wolfcamp C2									
10,500.00	14.75	180.38	10,330.92	80.24	1,417.34	-80.24	10.00	10.00	0.00
10,550.00	19.75	180.38	10,378.65	65.42	1,417.24	-65.42	10.00	10.00	0.00
10,600.00	24.75	180.38	10,424.91	46.49	1,417.12	-46.49	10.00	10.00	0.00
10,650.00	29.75	180.38	10,469.35	23.61	1,416.96	-23.61	10.00	10.00	0.00
10,700.00	34.75	180.38	10,511.62	-3.07	1,416.79	3.07	10.00	10.00	0.00
10,750.00	39.75	180.38	10,551.41	-33.32	1,416.58	33.32	10.00	10.00	0.00
10,771.93	41.94	180.38	10,568.00	-47.66	1,416.49	47.66	10.00	10.00	0.00
Wolfcamp D2									
10,800.00	44.75	180.38	10,588.41	-66.93	1,416.36	66.93	10.00	10.00	0.00
10,850.00	49.75	180.38	10,622.34	-103.63	1,416.11	103.63	10.00	10.00	0.00
10,900.00	54.75	180.38	10,652.94	-143.15	1,415.85	143.15	10.00	10.00	0.00
10,913.19	56.07	180.38	10,660.43	-154.01	1,415.78	154.01	10.00	10.00	0.00
FTP[SCSWD#9H]									

Planning Report

Database:	Midland District	Local Co-ordinate Reference:	Well WD #9H
Company:	Marathon Oil Permian, LLC	TVD Reference:	KB = 26.5' @ 2945.50usft (H&P 498)
Project:	Eddy County, NM (NAD27)	MD Reference:	KB = 26.5' @ 2945.50usft (H&P 498)
Site:	Southern Comfort State 24-28-25	North Reference:	Grid
Well:	WD #9H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
10,950.00	59.75	180.38	10,679.98	-185.19	1,415.57	185.19	10.00	10.00	0.00
11,000.00	64.75	180.38	10,703.26	-229.42	1,415.27	229.42	10.00	10.00	0.00
11,050.00	69.75	180.38	10,722.59	-275.52	1,414.97	275.52	10.00	10.00	0.00
11,100.00	74.75	180.38	10,737.82	-323.12	1,414.65	323.12	10.00	10.00	0.00
11,150.00	79.75	180.38	10,748.86	-371.87	1,414.32	371.87	10.00	10.00	0.00
11,200.00	84.75	180.38	10,755.60	-421.40	1,413.99	421.40	10.00	10.00	0.00
11,252.50	90.00	180.38	10,758.00	-473.83	1,413.64	473.83	10.00	10.00	0.00
EOC - HOLD									
11,300.00	90.00	180.38	10,758.00	-521.32	1,413.32	521.32	0.00	0.00	0.00
11,400.00	90.00	180.38	10,758.00	-621.32	1,412.66	621.32	0.00	0.00	0.00
11,500.00	90.00	180.38	10,758.00	-721.32	1,411.99	721.32	0.00	0.00	0.00
11,600.00	90.00	180.38	10,758.00	-821.32	1,411.32	821.32	0.00	0.00	0.00
11,700.00	90.00	180.38	10,758.00	-921.31	1,410.65	921.31	0.00	0.00	0.00
11,800.00	90.00	180.38	10,758.00	-1,021.31	1,409.98	1,021.31	0.00	0.00	0.00
11,900.00	90.00	180.38	10,758.00	-1,121.31	1,409.32	1,121.31	0.00	0.00	0.00
12,000.00	90.00	180.38	10,758.00	-1,221.31	1,408.65	1,221.31	0.00	0.00	0.00
12,100.00	90.00	180.38	10,758.00	-1,321.30	1,407.98	1,321.30	0.00	0.00	0.00
12,200.00	90.00	180.38	10,758.00	-1,421.30	1,407.31	1,421.30	0.00	0.00	0.00
12,300.00	90.00	180.38	10,758.00	-1,521.30	1,406.64	1,521.30	0.00	0.00	0.00
12,400.00	90.00	180.38	10,758.00	-1,621.30	1,405.98	1,621.30	0.00	0.00	0.00
12,500.00	90.00	180.38	10,758.00	-1,721.30	1,405.31	1,721.30	0.00	0.00	0.00
12,600.00	90.00	180.38	10,758.00	-1,821.29	1,404.64	1,821.29	0.00	0.00	0.00
12,700.00	90.00	180.38	10,758.00	-1,921.29	1,403.97	1,921.29	0.00	0.00	0.00
12,800.00	90.00	180.38	10,758.00	-2,021.29	1,403.31	2,021.29	0.00	0.00	0.00
12,900.00	90.00	180.38	10,758.00	-2,121.29	1,402.64	2,121.29	0.00	0.00	0.00
13,000.00	90.00	180.38	10,758.00	-2,221.28	1,401.97	2,221.28	0.00	0.00	0.00
13,100.00	90.00	180.38	10,758.00	-2,321.28	1,401.30	2,321.28	0.00	0.00	0.00
13,200.00	90.00	180.38	10,758.00	-2,421.28	1,400.63	2,421.28	0.00	0.00	0.00
13,300.00	90.00	180.38	10,758.00	-2,521.28	1,399.97	2,521.28	0.00	0.00	0.00
13,400.00	90.00	180.38	10,758.00	-2,621.28	1,399.30	2,621.28	0.00	0.00	0.00
13,500.00	90.00	180.38	10,758.00	-2,721.27	1,398.63	2,721.27	0.00	0.00	0.00
13,600.00	90.00	180.38	10,758.00	-2,821.27	1,397.96	2,821.27	0.00	0.00	0.00
13,700.00	90.00	180.38	10,758.00	-2,921.27	1,397.29	2,921.27	0.00	0.00	0.00
13,800.00	90.00	180.38	10,758.00	-3,021.27	1,396.63	3,021.27	0.00	0.00	0.00
13,900.00	90.00	180.38	10,758.00	-3,121.26	1,395.96	3,121.26	0.00	0.00	0.00
14,000.00	90.00	180.38	10,758.00	-3,221.26	1,395.29	3,221.26	0.00	0.00	0.00
14,100.00	90.00	180.38	10,758.00	-3,321.26	1,394.62	3,321.26	0.00	0.00	0.00
14,200.00	90.00	180.38	10,758.00	-3,421.26	1,393.95	3,421.26	0.00	0.00	0.00
14,300.00	90.00	180.38	10,758.00	-3,521.26	1,393.29	3,521.26	0.00	0.00	0.00
14,400.00	90.00	180.38	10,758.00	-3,621.25	1,392.62	3,621.25	0.00	0.00	0.00
14,500.00	90.00	180.38	10,758.00	-3,721.25	1,391.95	3,721.25	0.00	0.00	0.00
14,600.00	90.00	180.38	10,758.00	-3,821.25	1,391.28	3,821.25	0.00	0.00	0.00
14,700.00	90.00	180.38	10,758.00	-3,921.25	1,390.62	3,921.25	0.00	0.00	0.00
14,800.00	90.00	180.38	10,758.00	-4,021.24	1,389.95	4,021.24	0.00	0.00	0.00
14,900.00	90.00	180.38	10,758.00	-4,121.24	1,389.28	4,121.24	0.00	0.00	0.00
15,000.00	90.00	180.38	10,758.00	-4,221.24	1,388.61	4,221.24	0.00	0.00	0.00
15,100.00	90.00	180.38	10,758.00	-4,321.24	1,387.94	4,321.24	0.00	0.00	0.00
15,200.00	90.00	180.38	10,758.00	-4,421.24	1,387.28	4,421.24	0.00	0.00	0.00
15,300.00	90.00	180.38	10,758.00	-4,521.23	1,386.61	4,521.23	0.00	0.00	0.00
15,400.00	90.00	180.38	10,758.00	-4,621.23	1,385.94	4,621.23	0.00	0.00	0.00
15,500.00	90.00	180.38	10,758.00	-4,721.23	1,385.27	4,721.23	0.00	0.00	0.00
15,600.00	90.00	180.38	10,758.00	-4,821.23	1,384.60	4,821.23	0.00	0.00	0.00
15,700.00	90.00	180.38	10,758.00	-4,921.22	1,383.94	4,921.22	0.00	0.00	0.00
15,800.00	90.00	180.38	10,758.00	-5,021.22	1,383.27	5,021.22	0.00	0.00	0.00

Planning Report

Database:	Midland District	Local Co-ordinate Reference:	Well WD #9H
Company:	Marathon Oil Permian, LLC	TVD Reference:	KB = 26.5' @ 2945.50usft (H&P 498)
Project:	Eddy County, NM (NAD27)	MD Reference:	KB = 26.5' @ 2945.50usft (H&P 498)
Site:	Southern Comfort State 24-28-25	North Reference:	Grid
Well:	WD #9H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (bearing)	Vertical Depth (usft)	+N-S (usft)	+E-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
15,900.00	90.00	180.38	10,758.00	-5,121.22	1,382.60	5,121.22	0.00	0.00	0.00
16,000.00	90.00	180.38	10,758.00	-5,221.22	1,381.93	5,221.22	0.00	0.00	0.00
16,100.00	90.00	180.38	10,758.00	-5,321.22	1,381.26	5,321.22	0.00	0.00	0.00
16,200.00	90.00	180.38	10,758.00	-5,421.21	1,380.60	5,421.21	0.00	0.00	0.00
16,300.00	90.00	180.38	10,758.00	-5,521.21	1,379.93	5,521.21	0.00	0.00	0.00
16,400.00	90.00	180.38	10,758.00	-5,621.21	1,379.26	5,621.21	0.00	0.00	0.00
16,500.00	90.00	180.38	10,758.00	-5,721.21	1,378.59	5,721.21	0.00	0.00	0.00
16,600.00	90.00	180.38	10,758.00	-5,821.20	1,377.93	5,821.20	0.00	0.00	0.00
16,700.00	90.00	180.38	10,758.00	-5,921.20	1,377.26	5,921.20	0.00	0.00	0.00
16,800.00	90.00	180.38	10,758.00	-6,021.20	1,376.59	6,021.20	0.00	0.00	0.00
16,900.00	90.00	180.38	10,758.00	-6,121.20	1,375.92	6,121.20	0.00	0.00	0.00
17,000.00	90.00	180.38	10,758.00	-6,221.20	1,375.25	6,221.20	0.00	0.00	0.00
17,100.00	90.00	180.38	10,758.00	-6,321.19	1,374.59	6,321.19	0.00	0.00	0.00
17,200.00	90.00	180.38	10,758.00	-6,421.19	1,373.92	6,421.19	0.00	0.00	0.00
17,300.00	90.00	180.38	10,758.00	-6,521.19	1,373.25	6,521.19	0.00	0.00	0.00
17,400.00	90.00	180.38	10,758.00	-6,621.19	1,372.58	6,621.19	0.00	0.00	0.00
17,500.00	90.00	180.38	10,758.00	-6,721.18	1,371.91	6,721.18	0.00	0.00	0.00
17,600.00	90.00	180.38	10,758.00	-6,821.18	1,371.25	6,821.18	0.00	0.00	0.00
17,700.00	90.00	180.38	10,758.00	-6,921.18	1,370.58	6,921.18	0.00	0.00	0.00
17,800.00	90.00	180.38	10,758.00	-7,021.18	1,369.91	7,021.18	0.00	0.00	0.00
17,900.00	90.00	180.38	10,758.00	-7,121.17	1,369.24	7,121.17	0.00	0.00	0.00
18,000.00	90.00	180.38	10,758.00	-7,221.17	1,368.57	7,221.17	0.00	0.00	0.00
18,100.00	90.00	180.38	10,758.00	-7,321.17	1,367.91	7,321.17	0.00	0.00	0.00
18,208.63	90.00	180.38	10,758.00	-7,429.79	1,367.18	7,429.79	0.00	0.00	0.00
TD at 18208.63 - BHL[SCSIWD#9H]									
18,253.63	90.00	180.38	10,758.00	-7,474.79	1,366.88	7,474.79	0.00	0.00	0.00
TD + 45' VS									

Design Targets

Target Name	Dip Angle (°)	Dip Dir. (bearing)	TVD (usft)	+N-S (usft)	+E-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
BHL[SCSIWD#9H]	-90.00	180.38	10,758.00	-7,429.79	1,367.18	424,699.70	592,986.08	32° 10' 2.134 N	104° 1' 58.177 W
- plan hits target center									
- Rectangle (sides W50.00 H30.00 D6,900.00)									
FTP[SCSIWD#9H]	0.00	0.00	10,758.00	-91.25	1,415.60	432,037.65	593,034.49	32° 11' 14.752 N	104° 1' 57.375 W
- plan misses target center by 116.01usft at 10913.19usft MD (10660.43 TVD, -154.01 N, 1415.78 E)									
- Point									

Planning Report

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Company:	Marathon Oil Permian, LLC	TVD Reference:	KB = 26.5' @ 2945.50usft (H&P 498)
Project:	Eddy County, NM (NAD27)	MD Reference:	KB = 26.5' @ 2945.50usft (H&P 498)
Site:	Southern Comfort State 24-28-25	North Reference:	Grid
Well:	WD #9H	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #1		

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (bearing)	
539.00	539.00	Salado				
1,180.00	1,180.00	Castile				
2,532.00	2,532.00	Base of Salt				
2,663.09	2,663.00	Lamar				
2,690.14	2,690.00	Bell Canyon				
3,586.42	3,568.00	Cherry Canyon				
4,858.20	4,802.00	Brushy Canyon				
6,477.29	6,373.00	Bone Spring				
7,453.29	7,320.00	1st Bone Spring Sand				
8,293.24	8,135.00	2nd Bone Spring Sand				
9,407.46	9,240.00	3rd Bone Spring Sand				
9,774.46	9,607.00	Wolfcamp				
9,929.46	9,762.00	Wolfcamp A				
10,136.46	9,969.00	Wolfcamp B				
10,357.46	10,190.00	Wolfcamp C				
10,484.63	10,316.00	Wolfcamp C2				
10,771.93	10,568.00	Wolfcamp D2				

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment	
		+N-S (usft)	+E-W (usft)		
2,500.00	2,500.00	0.00	0.00	KOP - Build 2.0° / 100	
3,200.00	3,193.06	5.94	84.89	EOB - HOLD	
8,370.00	8,209.48	93.18	1,332.58	DROP 2.0° / 100	
9,070.00	8,902.54	99.12	1,417.47	EOD - HOLD	
10,352.50	10,185.04	99.12	1,417.47	Curve KOP - Build 10.0° / 100	
11,252.50	10,758.00	-473.83	1,413.64	EOC - HOLD	
18,208.63	10,758.00	-7,429.79	1,367.18	TD at 18208.63	
18,253.63	10,758.00	-7,474.79	1,366.88	TD + 45' VS	