

Marathon Oil

Eddy County, NM

Rick Deckard State 25-28-4 (2-6-8-9)

WA #2H

OH

Design: OH 509'-14265' PTB 14330'

Survey Report

11 June, 2019

30015-45344

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DISTRICT 7 - ARTESIA O.C.D.



PRO DIRECTIONAL

Company:	Marathon Oil	Local Co-ordinate Reference:	Well WA #2H
Project:	Eddy County, NM	TVD Reference:	Well @ 3026.01ft (GL: 3001' + KB: 25' (PD594))
Site:	Rick Deckard State 25-28-4 (2-6-8-9)	MD Reference:	Well @ 3026.01ft (GL: 3001' + KB: 25' (PD594))
Well:	WA #2H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH 509'-14265' PTB 14330'	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 Rick Deckard State 25-28-4 (2-6-8-9)					
Site Position:		Northing:	423,513.57 usft	Latitude:	32.164132
From:	Map	Easting:	573,687.59 usft	Longitude:	-104.095202
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.13 °

Well	WA #2H, LNM1443919					
Well Position	+N/-S	0.00 ft	Northing:	423,513.53 usft	Latitude:	32.164131
	+E/-W	0.00 ft	Easting:	573,717.61 usft	Longitude:	-104.095105
Position Uncertainty	0.00 ft		Wellhead Elevation:	ft	Ground Level:	3,001.01 ft

Wellbore		OH			
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	4/10/2019	7.12	59.88	47,886.80000000

Design	OH 509'-14265' PTB 14330'			
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.00	0.00	0.00	180.06



Professional Directional Survey Report



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Site:	Rick Deckard State 25-28-4 (2-6-8-9)	MD Reference:	Well @ 3026.01ft (GL: 3001' + KB: 25' (PD594))
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Survey Program		Date	6/11/2019		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
91.00	411.00	Survey #1 (OH)	MWD - OWSG	MWD - OWSG	
509.00	14,330.00	Survey #2 (OH)	MWD+HDGM	OWSG MWD + HRGM	

Survey											
MD (ft)	Inc (°)	Azi (azimuth) (°)	TVD (ft)	V. Sec (ft)	N/S (ft)	E/W (ft)	Closure Distance (ft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	423,513.53	573,717.61	
0.02	0.00	236.87	0.02	0.00	0.00	0.00	0.00	236.87	423,513.53	573,717.61	
[RickDeckard#2H]KOP											
1.84	0.01	236.87	1.84	0.00	0.00	0.00	0.00	236.87	423,513.53	573,717.61	
[RickDeckard#2H]FTP											
91.00	0.70	236.87	91.00	0.30	-0.30	-0.47	0.56	236.87	423,513.23	573,717.14	
180.00	0.40	262.87	179.99	0.64	-0.64	-1.23	1.39	242.51	423,512.89	573,716.38	
262.00	0.90	269.87	261.99	0.68	-0.68	-2.16	2.26	252.59	423,512.85	573,715.45	
357.00	1.20	259.87	356.97	0.86	-0.85	-3.88	3.98	257.61	423,512.68	573,713.73	
411.00	1.20	223.87	410.96	1.37	-1.36	-4.83	5.02	254.27	423,512.17	573,712.78	
509.00	1.10	235.70	508.94	2.64	-2.63	-6.32	6.84	247.40	423,510.90	573,711.29	
599.00	0.50	242.40	598.93	3.31	-3.30	-7.38	8.08	245.92	423,510.23	573,710.23	
690.00	2.60	53.80	689.91	2.27	-2.26	-6.07	6.48	249.54	423,511.27	573,711.54	
781.00	3.00	60.20	780.80	-0.14	0.14	-2.33	2.34	273.40	423,513.67	573,715.28	
873.00	2.40	55.40	872.69	-2.43	2.43	1.34	2.77	28.88	423,515.96	573,718.95	
966.00	0.80	65.60	965.66	-3.81	3.80	3.53	5.19	42.90	423,517.33	573,721.14	
1,057.00	0.20	219.60	1,056.65	-3.95	3.94	4.01	5.63	45.49	423,517.47	573,721.62	
1,146.00	0.30	260.30	1,145.65	-3.79	3.78	3.68	5.28	44.22	423,517.31	573,721.29	
1,235.00	0.40	93.70	1,234.65	-3.73	3.73	3.76	5.29	45.29	423,517.26	573,721.37	
1,324.00	0.60	81.50	1,323.65	-3.78	3.77	4.53	5.90	50.23	423,517.30	573,722.14	
1,414.00	0.60	72.40	1,413.64	-3.99	3.99	5.45	6.75	53.82	423,517.52	573,723.06	
1,503.00	0.80	35.80	1,502.64	-4.64	4.63	6.26	7.78	53.49	423,518.16	573,723.87	

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Well:	WA #2H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH 509'-14265' PTB 14330'	Database:	WellPlanner1

Survey											
MD (ft)	Inc (°)	Azi (azimuth) (°)	TVD (ft)	V. Sec (ft)	N/S (ft)	E/W (ft)	Closure Distance (ft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)	
1,593.00	0.50	352.00	1,592.63	-5.54	5.53	6.57	8.59	49.91	423,519.06	573,724.18	
1,682.00	0.80	352.70	1,681.63	-6.54	6.53	6.44	9.17	44.59	423,520.06	573,724.05	
1,772.00	0.50	41.00	1,771.62	-7.46	7.45	6.61	9.96	41.60	423,520.98	573,724.22	
1,861.00	1.30	77.70	1,860.61	-7.97	7.96	7.86	11.18	44.63	423,521.49	573,725.47	
1,951.00	1.10	45.80	1,950.59	-8.79	8.78	9.47	12.91	47.18	423,522.31	573,727.08	
2,040.00	1.60	350.50	2,039.57	-10.61	10.60	9.88	14.49	42.99	423,524.13	573,727.49	
2,130.00	2.90	341.90	2,129.50	-14.01	14.00	8.97	16.63	32.63	423,527.53	573,726.58	
2,219.00	3.50	337.70	2,218.36	-18.66	18.66	7.23	20.01	21.20	423,532.19	573,724.84	
2,308.00	4.30	336.00	2,307.15	-24.22	24.22	4.85	24.70	11.32	423,537.75	573,722.46	
2,397.00	5.30	321.90	2,395.84	-30.50	30.50	0.95	30.52	1.79	423,544.03	573,718.56	
2,441.00	6.30	311.30	2,439.62	-33.69	33.69	-2.11	33.76	356.41	423,547.22	573,715.50	
2,583.00	6.40	304.10	2,580.75	-43.26	43.27	-14.52	45.64	341.45	423,556.80	573,703.09	
2,672.00	8.10	310.90	2,669.04	-50.14	50.16	-23.37	55.34	335.02	423,563.69	573,694.24	
2,761.00	10.90	324.40	2,756.82	-61.08	61.11	-33.01	69.46	331.62	423,574.64	573,684.60	
2,850.00	13.00	326.60	2,843.88	-76.27	76.31	-43.42	87.80	330.36	423,589.84	573,674.19	
2,940.00	13.20	326.40	2,931.54	-93.26	93.32	-54.68	108.16	329.63	423,606.85	573,662.93	
3,029.00	13.20	326.10	3,018.19	-110.15	110.22	-65.97	128.45	329.10	423,623.75	573,651.64	
3,118.00	14.10	322.00	3,104.68	-127.11	127.20	-78.31	149.37	328.38	423,640.73	573,639.30	
3,207.00	14.60	316.60	3,190.90	-143.79	143.89	-92.69	171.16	327.21	423,657.42	573,624.92	
3,297.00	14.70	316.90	3,277.98	-160.36	160.47	-108.29	193.59	325.99	423,674.00	573,609.32	
3,386.00	13.90	316.20	3,364.22	-176.30	176.43	-123.41	215.31	325.03	423,689.96	573,594.20	
3,476.00	11.60	305.90	3,452.01	-189.40	189.54	-138.22	234.59	323.90	423,703.07	573,579.39	
3,565.00	12.00	304.50	3,539.13	-199.87	200.03	-153.09	251.89	322.57	423,713.56	573,564.52	
3,655.00	11.60	305.10	3,627.22	-210.36	210.53	-168.21	269.48	321.38	423,724.06	573,549.40	
3,743.00	11.60	307.00	3,713.43	-220.75	220.94	-182.51	286.58	320.44	423,734.47	573,535.10	
3,832.00	11.30	312.80	3,800.66	-232.05	232.25	-196.06	303.94	319.83	423,745.78	573,521.55	
3,921.00	10.90	318.00	3,888.00	-244.21	244.43	-208.09	321.01	319.59	423,757.96	573,509.52	



Professional Directional Survey Report



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Well:	WA #2H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH 509'-14265' PTB 14330'	Database:	WellPlanner1

Survey											
MD (ft)	Inc (°)	Azi (azimuth) (°)	TVD (ft)	V. Sec (ft)	N/S (ft)	E/W (ft)	Closure Distance (ft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)	
4,011.00	10.40	316.70	3,976.44	-256.44	256.67	-219.35	337.63	319.48	423,770.20	573,498.26	
4,100.00	10.10	316.20	4,064.02	-267.91	268.15	-230.26	353.44	319.35	423,781.68	573,487.35	
4,189.00	10.10	316.70	4,151.65	-279.21	279.46	-241.01	369.03	319.22	423,792.99	573,476.60	
4,278.00	10.40	316.60	4,239.22	-290.71	290.97	-251.89	384.85	319.12	423,804.50	573,465.72	
4,368.00	10.50	316.60	4,327.73	-302.56	302.84	-263.10	401.16	319.02	423,816.36	573,454.51	
4,457.00	10.70	315.70	4,415.21	-314.35	314.64	-274.44	417.52	318.90	423,828.17	573,443.17	
4,546.00	10.60	315.00	4,502.68	-326.04	326.34	-286.00	433.93	318.77	423,839.87	573,431.61	
4,636.00	9.60	314.30	4,591.28	-337.13	337.44	-297.23	449.68	318.63	423,850.97	573,420.38	
4,725.00	8.90	311.50	4,679.13	-346.86	347.18	-307.70	463.91	318.45	423,860.71	573,409.91	
4,815.00	9.00	314.30	4,768.03	-356.38	356.71	-317.95	477.84	318.29	423,870.24	573,399.66	
4,904.00	8.80	312.20	4,855.96	-365.80	366.15	-327.97	491.56	318.15	423,879.68	573,389.64	
4,993.00	9.20	311.70	4,943.86	-375.10	375.45	-338.33	505.40	317.98	423,888.98	573,379.28	
5,082.00	9.40	313.90	5,031.69	-384.86	385.23	-348.88	519.73	317.83	423,898.75	573,368.73	
5,171.00	8.90	313.00	5,119.56	-394.58	394.96	-359.15	533.84	317.72	423,908.49	573,358.46	
5,261.00	9.10	313.60	5,208.45	-404.23	404.62	-369.40	547.88	317.61	423,918.15	573,348.21	
5,350.00	8.50	312.90	5,296.41	-413.55	413.95	-379.31	561.45	317.50	423,927.48	573,338.30	
5,439.00	9.10	319.00	5,384.36	-423.33	423.74	-388.75	575.05	317.47	423,937.27	573,328.86	
5,529.00	9.40	326.70	5,473.19	-434.84	435.25	-397.45	589.42	317.60	423,948.78	573,320.16	
5,618.00	8.60	324.20	5,561.10	-446.30	446.72	-405.33	603.21	317.78	423,960.25	573,312.28	
5,707.00	9.30	325.80	5,649.01	-457.64	458.07	-413.27	616.94	317.94	423,971.60	573,304.34	
5,797.00	10.90	326.90	5,737.61	-470.77	471.21	-422.00	632.56	318.15	423,984.74	573,295.61	
5,886.00	10.10	326.20	5,825.12	-484.30	484.75	-430.94	648.61	318.36	423,998.28	573,286.67	
5,975.00	9.00	323.00	5,912.89	-496.33	496.79	-439.47	663.28	318.50	424,010.32	573,278.14	
6,065.00	8.10	320.70	6,001.89	-506.85	507.32	-447.73	676.63	318.57	424,020.85	573,269.89	
6,155.00	7.50	318.40	6,091.06	-516.14	516.62	-455.64	688.84	318.59	424,030.15	573,261.97	
6,244.00	6.60	318.70	6,179.38	-524.32	524.81	-462.87	699.77	318.59	424,038.34	573,254.74	
6,334.00	5.50	315.80	6,268.88	-531.29	531.78	-469.29	709.25	318.57	424,045.31	573,248.32	



Professional Directional Survey Report



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Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH 509'-14265' PTB 14330'	Database:	WellPlanner1

Survey											
MD (ft)	Inc (°)	Azi (azimuth) (°)	TVD (ft)	V. Sec (ft)	N/S (ft)	E/W (ft)	Closure Distance (ft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)	
6,423.00	6.40	315.50	6,357.40	-537.88	538.38	-475.74	718.46	318.53	424,051.91	573,241.87	
6,512.00	6.20	311.40	6,445.86	-544.59	545.10	-482.83	728.18	318.47	424,058.63	573,234.78	
6,601.00	6.60	308.60	6,534.31	-550.95	551.47	-490.43	737.99	318.35	424,064.99	573,227.18	
6,691.00	6.30	307.10	6,623.74	-557.15	557.67	-498.41	747.94	318.21	424,071.20	573,219.20	
6,780.00	7.30	306.80	6,712.11	-563.47	564.00	-506.83	758.27	318.06	424,077.53	573,210.78	
6,870.00	9.00	309.60	6,801.20	-571.38	571.92	-516.84	770.85	317.90	424,085.45	573,200.78	
6,959.00	7.60	302.70	6,889.27	-578.98	579.53	-527.15	783.42	317.71	424,093.06	573,190.46	
7,048.00	6.20	311.00	6,977.62	-585.31	585.87	-535.73	793.88	317.56	424,099.40	573,181.88	
7,139.00	6.00	313.70	7,068.11	-591.81	592.38	-542.88	803.51	317.50	424,105.91	573,174.73	
7,228.00	6.70	311.20	7,156.56	-598.43	599.01	-550.15	813.31	317.43	424,112.54	573,167.46	
7,318.00	5.90	321.50	7,246.02	-605.51	606.09	-556.98	823.15	317.42	424,119.62	573,160.63	
7,407.00	5.40	318.50	7,334.59	-612.22	612.81	-562.60	831.90	317.45	424,126.33	573,155.01	
7,497.00	4.90	309.80	7,424.22	-617.84	618.44	-568.36	839.94	317.42	424,131.97	573,149.25	
7,586.00	4.80	319.40	7,512.91	-623.10	623.70	-573.70	847.43	317.39	424,137.23	573,143.91	
7,675.00	4.90	342.80	7,601.60	-629.55	630.16	-577.25	854.59	317.51	424,143.69	573,140.36	
7,765.00	4.40	347.30	7,691.30	-636.59	637.20	-579.15	861.06	317.73	424,150.73	573,138.46	
7,854.00	3.50	345.80	7,780.09	-642.55	643.16	-580.57	866.44	317.93	424,156.69	573,137.05	
7,943.00	3.60	337.90	7,868.92	-647.77	648.38	-582.28	871.47	318.07	424,161.91	573,135.33	
8,032.00	3.80	318.60	7,957.74	-652.57	653.19	-585.28	877.05	318.14	424,166.71	573,132.33	
8,121.00	4.90	312.90	8,046.48	-657.37	657.99	-590.02	883.78	318.12	424,171.51	573,127.59	
8,210.00	4.60	308.40	8,135.17	-662.17	662.79	-595.60	891.08	318.06	424,176.32	573,122.01	
8,300.00	3.70	299.20	8,224.94	-665.82	666.45	-600.96	897.39	317.96	424,179.98	573,116.65	
8,389.00	4.20	303.50	8,313.73	-669.01	669.65	-606.19	903.27	317.85	424,183.18	573,111.42	
8,478.00	4.70	309.10	8,402.46	-673.11	673.75	-611.74	910.03	317.76	424,187.27	573,105.88	
8,568.00	3.50	294.20	8,492.23	-676.55	677.20	-617.10	916.20	317.66	424,190.73	573,100.51	
8,657.00	3.00	269.90	8,581.09	-677.66	678.31	-621.91	920.26	317.48	424,191.84	573,095.70	
8,747.00	3.20	253.10	8,670.96	-676.92	677.57	-626.67	922.94	317.24	424,191.10	573,090.94	



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Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
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8,837.00	3.00	246.10	8,760.83	-675.23	675.89	-631.23	924.81	316.96	424,189.42	573,086.38	
8,926.00	3.00	247.60	8,849.71	-673.39	674.06	-635.51	926.40	316.69	424,187.59	573,082.10	
9,015.00	3.00	243.10	8,938.58	-671.45	672.12	-639.74	927.90	316.41	424,185.65	573,077.87	
9,098.00	2.80	233.80	9,021.48	-669.26	669.94	-643.31	928.80	316.16	424,183.47	573,074.30	
9,188.00	7.30	202.40	9,111.12	-662.67	663.35	-647.27	926.81	315.70	424,176.88	573,070.34	
9,277.00	18.90	195.60	9,197.66	-643.49	644.17	-653.32	917.49	314.60	424,157.70	573,064.29	
9,366.00	28.10	193.10	9,279.19	-609.10	609.80	-661.96	900.03	312.65	424,123.33	573,055.65	
9,455.00	32.80	182.10	9,355.96	-564.53	565.23	-667.61	874.75	310.25	424,078.76	573,050.00	
9,545.00	40.90	173.20	9,427.97	-510.79	511.49	-665.00	838.96	307.57	424,025.02	573,052.61	
9,634.00	52.70	175.40	9,488.79	-446.35	447.04	-658.69	796.07	304.16	423,960.57	573,058.92	
9,724.00	62.30	175.40	9,537.09	-370.78	371.47	-652.61	750.93	299.65	423,885.00	573,065.00	
9,813.00	71.80	180.10	9,571.77	-289.02	289.70	-649.52	711.19	294.04	423,803.22	573,068.09	
9,903.00	83.10	182.80	9,591.30	-201.34	202.03	-651.78	682.38	287.22	423,715.56	573,065.83	
9,992.00	93.80	183.40	9,593.70	-112.63	113.32	-656.59	666.30	279.79	423,626.85	573,061.02	
10,008.00	94.10	183.60	9,592.60	-96.70	97.39	-657.56	664.74	278.42	423,610.92	573,060.05	
10,098.00	94.90	183.90	9,585.54	-7.16	7.86	-663.43	663.48	270.68	423,521.39	573,054.18	
10,187.00	92.70	182.90	9,579.64	81.48	-80.78	-668.70	673.56	263.11	423,432.75	573,048.92	
10,277.00	93.10	182.10	9,575.08	171.29	-170.58	-672.62	693.91	255.77	423,342.95	573,044.99	
10,366.00	94.20	181.40	9,569.42	260.07	-259.36	-675.33	723.42	248.99	423,254.17	573,042.28	
10,456.00	92.80	180.30	9,563.92	349.89	-349.18	-676.66	761.44	242.70	423,164.35	573,040.95	
10,545.00	93.60	181.00	9,558.96	438.74	-438.03	-677.67	806.91	237.12	423,075.50	573,039.94	
10,635.00	92.10	180.70	9,554.48	528.62	-527.91	-679.00	860.08	232.14	422,985.62	573,038.61	
10,725.00	90.80	180.10	9,552.20	618.59	-617.87	-679.63	918.51	227.72	422,895.66	573,037.98	
10,814.00	90.90	180.30	9,550.88	707.58	-706.86	-679.94	980.80	223.89	422,806.67	573,037.67	
10,903.00	90.30	180.40	9,549.95	796.57	-795.86	-680.49	1,047.11	220.53	422,717.67	573,037.13	
10,993.00	89.00	180.50	9,550.50	886.56	-885.85	-681.19	1,117.48	217.56	422,627.68	573,036.42	
11,082.00	88.80	179.80	9,552.21	975.55	-974.83	-681.42	1,189.39	214.95	422,538.70	573,036.19	



Professional Directional Survey Report



Company:	Marathon Oil	Local Co-ordinate Reference:	Well WA #2H
Project:	Eddy County, NM	TVD Reference:	Well @ 3026.01ft (GL: 3001' + KB: 25' (PD594))
Site:	Rick Deckard State 25-28-4 (2-6-8-9)	MD Reference:	Well @ 3026.01ft (GL: 3001' + KB: 25' (PD594))
Well:	WA #2H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH 509'-14265' PTB 14330'	Database:	WellPlanner1

Survey											
MD (ft)	Inc (°)	Azi (azimuth) (°)	TVD (ft)	V. Sec (ft)	N/S (ft)	E/W (ft)	Closure Distance (ft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)	
11,172.00	89.10	179.60	9,553.86	1,065.53	-1,064.82	-680.95	1,263.94	212.60	422,448.71	573,036.66	
11,261.00	89.30	179.20	9,555.10	1,154.51	-1,153.80	-680.02	1,339.29	210.51	422,359.73	573,037.59	
11,350.00	90.90	179.70	9,554.95	1,243.51	-1,242.80	-679.17	1,416.27	208.66	422,270.74	573,038.44	
11,439.00	92.10	179.80	9,552.62	1,332.47	-1,331.76	-678.78	1,494.77	207.01	422,181.77	573,038.83	
11,528.00	90.70	179.30	9,550.44	1,421.44	-1,420.73	-678.08	1,574.25	205.51	422,092.80	573,039.53	
11,618.00	90.10	179.20	9,549.81	1,511.43	-1,510.72	-676.90	1,655.44	204.14	422,002.81	573,040.71	
11,707.00	90.00	178.30	9,549.74	1,600.40	-1,599.70	-674.96	1,736.26	202.88	421,913.83	573,042.65	
11,796.00	88.60	177.30	9,550.82	1,689.33	-1,688.62	-671.54	1,817.26	201.69	421,824.91	573,046.07	
11,885.00	88.90	177.50	9,552.77	1,778.21	-1,777.51	-667.51	1,898.71	200.58	421,736.02	573,050.10	
11,975.00	89.80	180.00	9,553.79	1,868.17	-1,867.47	-665.55	1,982.53	199.62	421,646.06	573,052.07	
12,064.00	90.10	180.70	9,553.86	1,957.17	-1,956.47	-666.09	2,066.75	198.80	421,557.06	573,051.52	
12,153.00	89.20	180.50	9,554.41	2,046.16	-2,045.47	-667.02	2,151.48	198.06	421,468.07	573,050.59	
12,243.00	90.60	180.60	9,554.56	2,136.16	-2,135.46	-667.89	2,237.47	197.37	421,378.08	573,049.73	
12,332.00	89.90	179.90	9,554.18	2,225.15	-2,224.46	-668.27	2,322.67	196.72	421,289.08	573,049.34	
12,421.00	89.10	179.50	9,554.95	2,314.15	-2,313.45	-667.81	2,407.91	196.10	421,200.08	573,049.80	
12,510.00	89.70	179.40	9,555.89	2,403.14	-2,402.44	-666.95	2,493.30	195.52	421,111.09	573,050.66	
12,599.00	90.20	180.10	9,555.96	2,492.14	-2,491.44	-666.56	2,579.07	194.98	421,022.10	573,051.05	
12,689.00	89.50	180.10	9,556.20	2,582.13	-2,581.44	-666.72	2,666.15	194.48	420,932.10	573,050.89	
12,778.00	89.00	180.80	9,557.36	2,671.12	-2,670.43	-667.42	2,752.57	194.03	420,843.11	573,050.19	
12,867.00	89.50	180.80	9,558.53	2,760.11	-2,759.41	-668.66	2,839.27	193.62	420,754.13	573,048.95	
12,957.00	90.60	180.50	9,558.45	2,850.10	-2,849.40	-669.68	2,927.04	193.23	420,664.13	573,047.93	
13,046.00	91.00	180.40	9,557.21	2,939.09	-2,938.39	-670.38	3,013.89	192.85	420,575.14	573,047.23	
13,136.00	92.30	180.70	9,554.62	3,029.05	-3,028.35	-671.25	3,101.85	192.50	420,485.19	573,046.36	
13,225.00	93.20	180.20	9,550.35	3,117.94	-3,117.24	-671.95	3,188.84	192.16	420,396.29	573,045.67	
13,314.00	91.30	180.70	9,546.85	3,206.87	-3,206.17	-672.64	3,275.97	191.85	420,307.37	573,044.97	
13,403.00	90.20	179.90	9,545.69	3,295.86	-3,295.15	-673.11	3,363.20	191.55	420,218.38	573,044.50	
13,492.00	89.10	179.60	9,546.23	3,384.85	-3,384.15	-672.72	3,450.37	191.24	420,129.39	573,044.89	

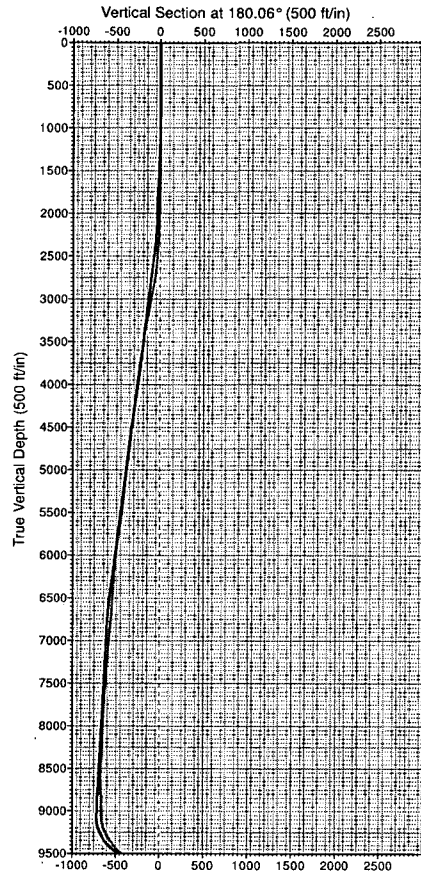
Company:	Marathon Oil	Local Co-ordinate Reference:	Well WA #2H
Project:	Eddy County, NM	TVD Reference:	Well @ 3026.01ft (GL: 3001' + KB: 25' (PD594))
Site:	Rick Deckard State 25-28-4 (2-6-8-9)	MD Reference:	Well @ 3026.01ft (GL: 3001' + KB: 25' (PD594))
Well:	WA #2H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	OH 509'-14265' PTB 14330'	Database:	WellPlanner1

Survey											
MD (ft)	Inc (°)	Azi (azimuth) (°)	TVD (ft)	V. Sec (ft)	N/S (ft)	E/W (ft)	Closure Distance (ft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)	
13,581.00	90.40	180.10	9,546.62	3,473.85	-3,473.15	-672.49	3,537.65	190.96	420,040.39	573,045.12	
13,670.00	92.10	181.50	9,544.68	3,562.82	-3,562.11	-673.73	3,625.27	190.71	419,951.42	573,043.88	
13,757.00	90.30	181.40	9,542.86	3,649.77	-3,649.06	-675.93	3,711.14	190.49	419,864.48	573,041.68	
13,846.00	90.40	181.40	9,542.31	3,738.74	-3,738.03	-678.11	3,799.04	190.28	419,775.50	573,039.51	
13,935.00	90.50	180.80	9,541.61	3,827.72	-3,827.01	-679.81	3,886.92	190.07	419,686.52	573,037.80	
14,024.00	88.50	181.20	9,542.39	3,916.70	-3,915.99	-681.37	3,974.83	189.87	419,597.55	573,036.24	
14,114.00	88.30	181.00	9,544.90	4,006.65	-4,005.94	-683.09	4,063.76	189.68	419,507.60	573,034.52	
14,203.00	88.60	181.30	9,547.31	4,095.60	-4,094.89	-684.88	4,151.77	189.49	419,418.65	573,032.73	
14,265.00	88.00	180.50	9,549.15	4,157.57	-4,156.85	-685.85	4,213.05	189.37	419,356.68	573,031.76	
Last Survey: 14265'MD, 9549'TVD - [RickDeckard#2H]LTP/BHL											
14,330.00	88.00	180.50	9,551.42	4,222.53	-4,221.81	-686.42	4,277.25	189.23	419,291.73	573,031.19	
PTB: 14330'MD, 9551'TVD											

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
14,265.00	9,549.15	-4,156.85	-685.85	Last Survey: 14265'MD, 9549'TVD	
14,330.00	9,551.42	-4,221.81	-686.42	PTB: 14330'MD, 9551'TVD	

Marathon Oil Corporation

Marathon Oil
Eddy County, NM
Rick Deckard State 25-28-4 (2-6-8-9)
WA #2H
Plan #8
GL: 3001' + KB: 25' (PD594)



RKB Elevation: Well @ 3026.01ft (GL: 3001' + KB: 25' (PD594))

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Spot
0.00	0.00	423513.53	573717.61	32.164131	-104.095105	

SECTION DETAILS

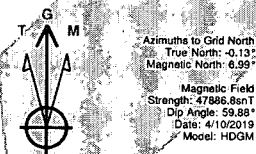
Sec	MD	Inc.	Azi	TVD	+N/-S	+E/-W	Dleg	Vsect
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	1000.00	0.00	0.00	1000.00	0.00	0.00	0.00	0.00
3	1100.00	2.00	0.00	1099.98	1.75	0.00	2.00	-1.75
4	2050.60	2.00	0.00	2050.00	34.92	0.00	0.00	-34.92
5	2484.21	10.00	316.00	2481.01	69.63	-26.20	2.00	-69.61
6	6584.22	10.00	316.00	6518.73	581.78	-520.77	0.00	-581.23
7	6884.23	4.00	315.70	6816.36	608.03	-546.20	2.00	-607.45
8	9122.73	4.00	315.70	9049.42	719.78	-655.25	0.00	-719.09
9	9896.56	90.00	180.06	9550.10	242.93	-680.22	12.00	-242.21
10	14316.44	90.00	180.06	9550.02	-4176.95	-684.70	0.00	4177.66
11	14361.44	90.00	180.06	9550.02	-4221.95	-684.75	0.00	4222.66

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N/-S	+E/-W	Northing	Easting
(RickDeckard#2H)FTP	0.00	489.41	-680.01	424002.94	573037.60
(RickDeckard#2H)KOP	0.00	719.41	-679.78	424232.94	573037.83
(RickDeckard#2H)JTP/BHL	9550.02	-176.95	-684.70	419336.59	573032.91



PRO DIRECTIONAL

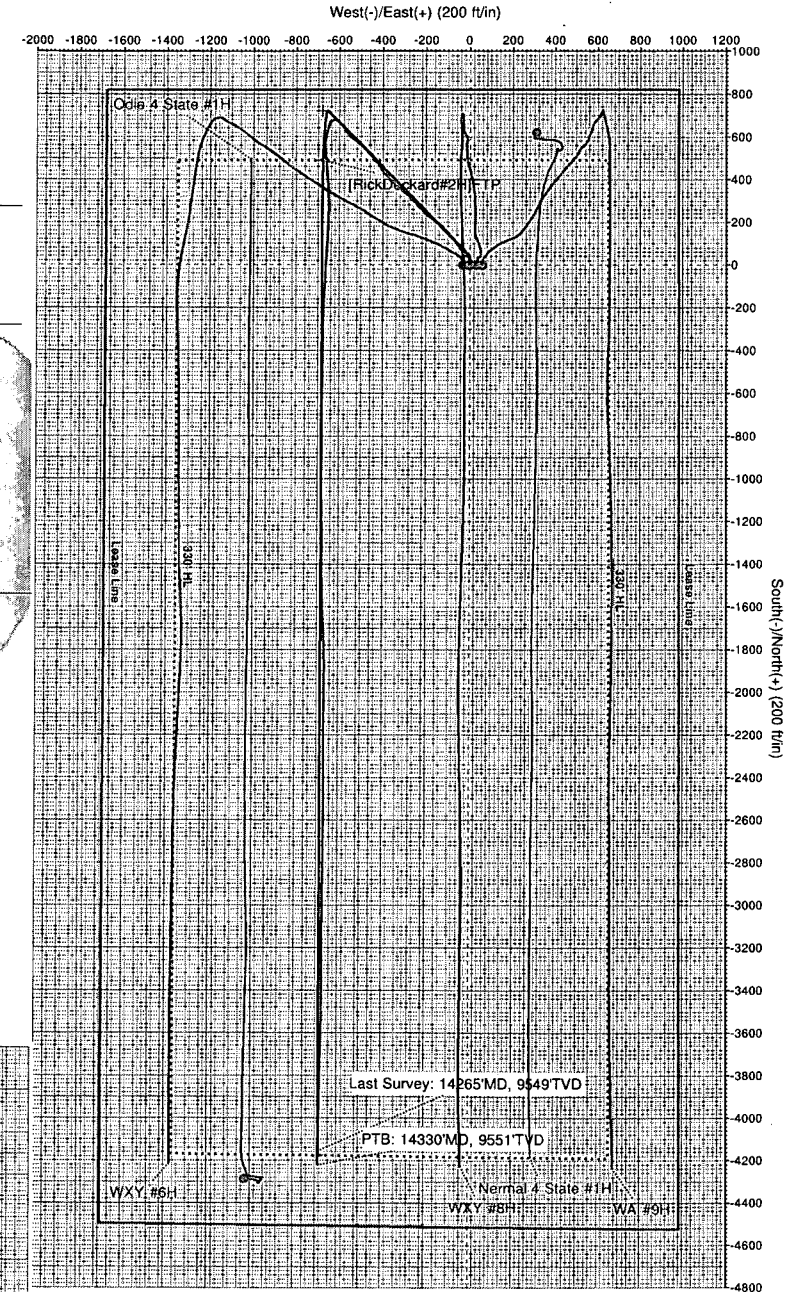
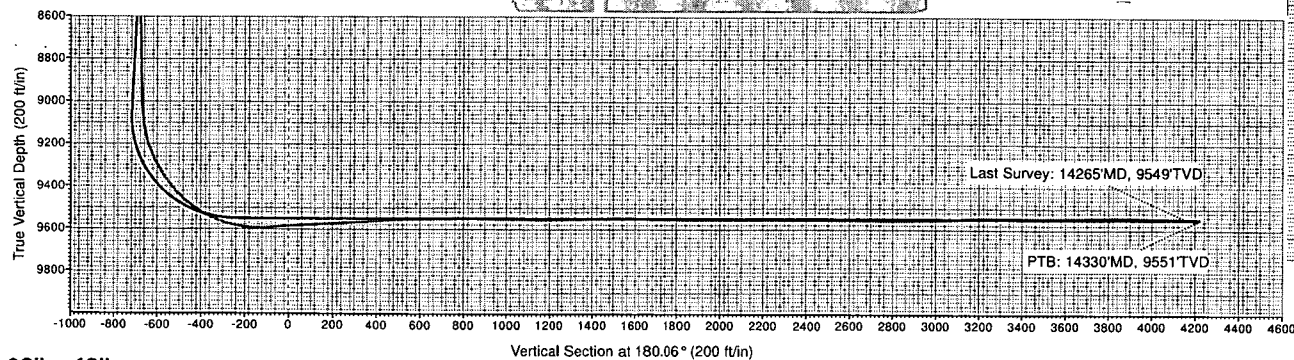


Azimuth Corrections

Total Magnetic Corr. (M to G): 6.99°

Declination (M to T): 7.12° East

Target Line: 9550' TVD @ 0° VS: 90° INC





Wellbore Schematic
Well Name: RICK DECKARD 25-28-4 WA STATE 002H

State/Province NEW MEXICO	Country UNITED STATES	Field Name PURPLE SAGE	Latitude (°) 32.16413130	Longitude (°) -104.09510550	North/South Distance (ft) 820.0	North/South Reference FNL
API/ IPC/ UWI 3001545344	KB-Ground Distance (ft) 25.00	KB-Mud Line Distance (ft)	Ground Elevation (ft) 3,001.00	Drilling Rig Spud Date 5/2/2019	Well Original Completion Date	Well First Production Date

HORIZONTAL, RICK DECKARD 25-28-4 WA STATE 002H, 6/11/2019 1:40:17 PM

