



Marathon Oil

Marathon Oil

Eddy County, NM

Rick Deckard State 25-28-4 (12-14-15-18)

WA #14H

OH

Design: MWD 175'-14356' PTB 14420'

Survey Report

31 October, 2018

RECEIVED

APR 11 2019

DISTRICT II-ARTESIA O.C.D.



Company:	Marathon Oil	Local Co-ordinate Reference:	Well WA #14H
Project:	Eddy County, NM	TVD Reference:	Well @ 2988.00usft (GL: 2963' + KB: 25' (Prec594))
Site:	Rick Deckard State 25-28-4 (12-14-15-18)	MD Reference:	Well @ 2988.00usft (GL: 2963' + KB: 25' (Prec594))
Well:	WA #14H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	MWD 175'-14356' PTB 14420'	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 (12-14-15-18)				
Site Position:		Northing:	419,495.00	usft	Latitude:	32.153070
From:	Map	Easting:	576,032.96	usft	Longitude:	-104.087653
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16	"	Grid Convergence:	0.13 °

Well	WA #14H					
Well Position	+N/-S	0.00 usft	Northing:	419,495.00 usft	Latitude:	32.153070
	+E/-W	0.00 usft	Easting:	576,123.01 usft	Longitude:	-104.087362
Position Uncertainty	0.00 usft		Wellhead Elevation:	usft	Ground Level:	2,963.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	User Defined	8/24/2018	7.24	59.93	47,953.70

Design		MWD 175'-14356' PTB 14420'		
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	359.78

Survey Program		Date 10/31/2018		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
175.00	14,420.00	Survey #1 (OH)	MWD+IFR1	OWSG MWD + IFR1

Company: Marathon Oil
Project: Eddy County, NM
Site: Rick Deckard State 25-28-4 (12-14-15-18)
Well: WA #14H
Wellbore: OH
Design: MWD 175'-14356' PTB 14420'

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:
Database:

Well WA #14H
 Well @ 2988.00usft (GL: 2963' + KB: 25' (Prec594))
 Well @ 2988.00usft (GL: 2963' + KB: 25' (Prec594))
 Grid
 Minimum Curvature
 WellPlanner1

Survey

MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	419,495.00	576,123.01
1.23	0.00	144.30	1.23	0.00	0.00	0.00	0.00	144.30	419,495.00	576,123.01
[RickDeckard#14H]FTP										
175.00	0.20	144.30	175.00	-0.25	-0.25	0.18	0.31	144.30	419,494.75	576,123.19
205.00	0.30	182.70	205.00	-0.37	-0.37	0.21	0.42	150.94	419,494.63	576,123.22
297.00	0.60	265.40	297.00	-0.65	-0.65	-0.29	0.71	203.84	419,494.35	576,122.72
382.00	0.80	297.60	381.99	-0.40	-0.41	-1.26	1.32	251.96	419,494.59	576,121.75
480.00	0.90	335.90	479.98	0.62	0.61	-2.18	2.26	285.67	419,495.61	576,120.83
571.00	1.40	45.60	570.97	2.05	2.04	-1.67	2.64	320.64	419,497.04	576,121.34
662.00	3.20	74.30	661.89	3.50	3.51	1.57	3.84	24.06	419,498.51	576,124.58
754.00	3.70	75.80	753.72	4.90	4.93	6.92	8.49	54.52	419,499.93	576,129.93
845.00	3.10	63.90	844.57	6.69	6.73	11.97	13.73	60.65	419,501.73	576,134.98
936.00	2.90	77.30	935.44	8.26	8.32	16.43	18.41	63.14	419,503.32	576,139.44
1,027.00	4.00	92.40	1,026.28	8.61	8.69	21.84	23.51	68.30	419,503.69	576,144.85
1,116.00	3.80	91.10	1,115.07	8.40	8.51	27.89	29.16	73.04	419,503.51	576,150.90
1,206.00	3.00	93.90	1,204.91	8.16	8.29	33.23	34.24	75.99	419,503.29	576,156.24
1,295.00	2.10	88.60	1,293.82	8.03	8.17	37.18	38.07	77.61	419,503.17	576,160.19
1,384.00	2.40	87.20	1,382.75	8.15	8.30	40.67	41.51	78.46	419,503.30	576,163.68
1,473.00	3.40	82.60	1,471.64	8.56	8.73	45.15	45.99	79.05	419,503.73	576,168.16
1,563.00	3.40	81.60	1,561.48	9.27	9.47	50.44	51.32	79.37	419,504.47	576,173.45
1,652.00	3.20	76.40	1,650.33	10.22	10.44	55.46	56.43	79.34	419,505.44	576,178.47
1,741.00	3.10	84.20	1,739.20	11.03	11.26	60.27	61.31	79.41	419,506.26	576,183.28
1,830.00	3.30	106.90	1,828.06	10.51	10.76	65.12	66.00	80.62	419,505.76	576,188.13
1,920.00	3.60	115.00	1,917.90	8.55	8.81	70.15	70.71	82.84	419,503.81	576,193.16
2,009.00	2.20	127.90	2,006.79	6.30	6.58	74.04	74.33	84.92	419,501.58	576,197.05
2,098.00	1.20	143.00	2,095.75	4.50	4.79	75.94	76.10	86.39	419,499.79	576,198.95
2,188.00	1.60	135.50	2,185.72	2.84	3.14	77.39	77.46	87.68	419,498.14	576,200.40

Company: Marathon Oil
Project: Eddy County, NM
Site: Rick Deckard State 25-28-4 (12-14-15-18)
Well: WA #14H
Wellbore: OH
Design: MWD 175'-14356' PTB 14420'

Local Co-ordinate Reference: Well WA #14H
TVD Reference: Well @ 2988.00usft (GL: 2963' + KB: 25' (Prec594))
MD Reference: Well @ 2988.00usft (GL: 2963' + KB: 25' (Prec594))
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)
2,277.00	2.30	121.00	2,274.67	1.03	1.34	79.79	79.81	89.04	419,496.34	576,202.80
2,366.00	2.80	121.50	2,363.58	-1.04	-0.72	83.18	83.18	90.50	419,494.28	576,206.19
2,455.00	2.20	117.10	2,452.49	-2.97	-2.63	86.55	86.59	91.74	419,492.37	576,209.56
2,494.00	1.90	122.30	2,491.47	-3.66	-3.32	87.77	87.83	92.17	419,491.68	576,210.78
2,574.00	1.10	125.90	2,571.44	-4.82	-4.48	89.51	89.62	92.86	419,490.52	576,212.52
2,663.00	2.90	111.40	2,660.38	-6.16	-5.80	92.30	92.48	93.60	419,489.20	576,215.31
2,752.00	4.70	100.50	2,749.19	-7.66	-7.29	97.98	98.25	94.25	419,487.71	576,220.99
2,842.00	6.90	103.50	2,838.72	-9.63	-9.22	106.86	107.26	94.93	419,485.78	576,229.87
2,931.00	9.50	106.80	2,926.80	-13.05	-12.59	119.09	119.76	96.04	419,482.41	576,242.10
3,021.00	11.10	111.00	3,015.35	-18.36	-17.85	134.29	135.47	97.57	419,477.15	576,257.30
3,110.00	11.50	112.60	3,102.63	-24.90	-24.33	150.48	152.44	99.18	419,470.67	576,273.49
3,199.00	11.60	113.40	3,189.82	-31.93	-31.29	166.88	169.79	100.62	419,463.71	576,289.89
3,289.00	11.40	114.90	3,278.02	-39.33	-38.63	183.26	187.28	101.90	419,456.37	576,306.27
3,378.00	10.60	114.10	3,365.38	-46.44	-45.67	198.71	203.89	102.94	419,449.33	576,321.72
3,467.00	10.30	114.10	3,452.90	-53.08	-52.26	213.44	219.75	103.76	419,442.74	576,336.45
3,556.00	10.20	114.40	3,540.48	-59.64	-58.77	227.88	235.34	104.46	419,436.23	576,350.89
3,645.00	10.60	113.30	3,628.02	-66.19	-65.26	242.58	251.20	105.06	419,429.74	576,365.59
3,734.00	11.50	119.10	3,715.37	-73.80	-72.81	257.85	267.93	105.77	419,422.19	576,380.86
3,823.00	11.70	121.50	3,802.56	-82.89	-81.84	273.29	285.29	106.67	419,413.16	576,396.30
3,913.00	11.60	122.10	3,890.70	-92.53	-91.42	288.74	302.87	107.57	419,403.58	576,411.75
4,002.00	11.80	123.60	3,977.85	-102.38	-101.21	303.90	320.31	108.42	419,393.79	576,426.91
4,092.00	11.40	125.50	4,066.02	-112.69	-111.47	318.81	337.73	109.27	419,383.53	576,441.82
4,181.00	11.60	126.00	4,153.23	-123.12	-121.84	333.21	354.78	110.08	419,373.16	576,456.22
4,270.00	11.60	126.90	4,240.41	-133.80	-132.47	347.60	371.99	110.86	419,362.53	576,470.61
4,359.00	10.30	126.30	4,327.79	-143.94	-142.55	361.17	388.28	111.54	419,352.45	576,484.18
4,448.00	10.30	126.20	4,415.35	-153.40	-151.96	374.00	403.70	112.11	419,343.04	576,497.01
4,538.00	10.10	127.50	4,503.93	-163.00	-161.52	386.76	419.13	112.67	419,333.48	576,509.77

Company: Marathon Oil
Project: Eddy County, NM
Site: Rick Deckard State 25-28-4 (12-14-15-18)
Well: WA #14H
Wellbore: OH
Design: MWD 175'-14356' PTB 14420'

Local Co-ordinate Reference: Well WA #14H
TVD Reference: Well @ 2988.00usft (GL: 2963' + KB: 25' (Prec594))
MD Reference: Well @ 2988.00usft (GL: 2963' + KB: 25' (Prec594))
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)	
4,627.00	9.60	128.70	4,591.62	-172.44	-170.91	398.74	433.82	113.20	419,324.09	576,521.75	
4,716.00	9.30	130.00	4,679.41	-181.74	-180.17	410.04	447.88	113.72	419,314.83	576,533.05	
4,805.00	8.80	123.20	4,767.31	-190.14	-188.52	421.25	461.51	114.11	419,306.48	576,544.26	
4,895.00	9.60	113.40	4,856.15	-196.94	-195.27	433.90	475.81	114.23	419,299.73	576,556.91	
4,984.00	8.90	111.30	4,944.00	-202.44	-200.72	447.12	490.11	114.18	419,294.28	576,570.13	
5,073.00	8.10	112.00	5,032.02	-207.33	-205.57	459.35	503.25	114.11	419,289.43	576,582.36	
5,162.00	8.80	111.00	5,120.05	-212.17	-210.36	471.52	516.31	114.04	419,284.64	576,594.53	
5,252.00	9.80	110.20	5,208.87	-217.33	-215.47	485.13	530.83	113.95	419,279.53	576,608.14	
5,341.00	9.80	111.20	5,296.57	-222.74	-220.83	499.30	545.96	113.86	419,274.17	576,622.31	
5,431.00	9.20	112.10	5,385.33	-228.27	-226.30	513.11	560.80	113.80	419,268.70	576,636.12	
5,520.00	8.70	113.60	5,473.25	-233.69	-231.67	525.87	574.64	113.78	419,263.33	576,648.88	
5,609.00	8.70	115.70	5,561.23	-239.35	-237.29	538.10	588.10	113.80	419,257.71	576,661.11	
5,699.00	8.50	115.90	5,650.21	-245.26	-243.14	550.22	601.55	113.84	419,251.86	576,673.23	
5,788.00	8.70	110.10	5,738.22	-250.49	-248.33	562.46	614.84	113.82	419,246.67	576,685.47	
5,877.00	9.00	109.70	5,826.16	-255.20	-252.99	575.33	628.50	113.74	419,242.01	576,698.34	
5,966.00	8.60	111.10	5,914.11	-259.99	-257.73	588.10	642.09	113.67	419,237.27	576,711.11	
6,056.00	9.90	111.80	6,002.94	-265.34	-263.03	601.56	656.55	113.62	419,231.97	576,724.57	
6,145.00	10.60	110.40	6,090.51	-271.09	-268.72	616.34	672.37	113.56	419,226.28	576,739.35	
6,234.00	9.70	111.20	6,178.12	-276.71	-274.29	631.00	688.04	113.49	419,220.71	576,754.01	
6,324.00	8.30	112.40	6,267.01	-281.98	-279.51	644.07	702.11	113.46	419,215.49	576,767.08	
6,413.00	7.90	112.60	6,355.12	-286.82	-284.30	655.66	714.65	113.44	419,210.70	576,778.67	
6,502.00	8.00	115.50	6,443.27	-291.88	-289.32	666.90	726.95	113.45	419,205.68	576,789.91	
6,591.00	6.70	116.00	6,531.53	-296.86	-294.26	677.15	738.33	113.49	419,200.74	576,800.16	
6,680.00	6.80	116.90	6,619.92	-301.56	-298.92	686.52	748.77	113.53	419,196.08	576,809.53	
6,770.00	7.50	109.10	6,709.22	-305.93	-303.26	696.82	759.95	113.52	419,191.74	576,819.83	
6,859.00	9.20	106.50	6,797.27	-309.90	-307.18	709.13	772.80	113.42	419,187.82	576,832.14	
6,948.00	9.40	113.60	6,885.11	-314.88	-312.11	722.61	787.14	113.36	419,182.89	576,845.62	

Company: Marathon Oil
Project: Eddy County, NM
Site: Rick Deckard State 25-28-4 (12-14-15-18)
Well: WA #14H
Wellbore: OH
Design: MWD 175'-14356' PTB 14420'

Local Co-ordinate Reference: Well WA #14H
TVD Reference: Well @ 2988.00usft (GL: 2963' + KB: 25' (Prec594))
MD Reference: Well @ 2988.00usft (GL: 2963' + KB: 25' (Prec594))
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)	
7,038.00	8.90	113.50	6,973.96	-320.65	-317.83	735.73	801.45	113.36	419,177.17	576,858.74	
7,127.00	12.30	118.10	7,061.43	-327.92	-325.04	750.41	817.79	113.42	419,169.96	576,873.42	
7,217.00	12.60	118.80	7,149.31	-337.23	-334.28	767.47	837.11	113.54	419,160.72	576,890.48	
7,306.00	11.50	119.00	7,236.35	-346.27	-343.26	783.74	855.62	113.65	419,151.74	576,906.75	
7,395.00	10.20	119.40	7,323.76	-354.50	-351.43	798.37	872.29	113.76	419,143.57	576,921.38	
7,484.00	9.20	117.90	7,411.49	-361.74	-358.63	811.52	887.23	113.84	419,136.37	576,934.53	
7,574.00	7.90	118.00	7,500.48	-368.06	-364.90	823.34	900.58	113.90	419,130.10	576,946.35	
7,663.00	6.70	116.80	7,588.76	-373.31	-370.11	833.37	911.86	113.95	419,124.89	576,956.38	
7,753.00	6.90	124.30	7,678.13	-378.76	-375.53	842.53	922.43	114.02	419,119.47	576,965.54	
7,842.00	5.80	134.10	7,766.58	-384.93	-381.67	850.17	931.91	114.18	419,113.33	576,973.18	
7,931.00	7.10	137.60	7,855.02	-392.15	-388.86	857.11	941.20	114.40	419,106.14	576,980.12	
8,020.00	7.90	130.20	7,943.26	-400.19	-396.87	865.49	952.15	114.63	419,098.13	576,988.50	
8,109.00	6.60	130.30	8,031.55	-407.48	-404.13	874.06	962.97	114.81	419,090.87	576,997.07	
8,199.00	6.40	122.40	8,120.97	-413.54	-410.16	882.24	972.93	114.93	419,084.84	577,005.25	
8,289.00	6.30	118.20	8,210.42	-418.60	-415.18	890.83	982.83	114.99	419,079.82	577,013.84	
8,378.00	5.00	119.40	8,298.98	-422.84	-419.39	898.51	991.57	115.02	419,075.61	577,021.52	
8,468.00	2.90	129.40	8,388.77	-426.23	-422.76	903.69	997.69	115.07	419,072.24	577,026.70	
8,557.00	2.00	139.60	8,477.68	-428.85	-425.38	906.44	1,001.29	115.14	419,069.62	577,029.45	
8,647.00	1.90	158.80	8,567.63	-431.45	-427.96	908.00	1,003.80	115.24	419,067.04	577,031.01	
8,736.00	1.50	190.70	8,656.59	-433.97	-430.48	908.31	1,005.16	115.36	419,064.52	577,031.32	
8,826.00	1.80	223.10	8,746.56	-436.15	-432.67	907.13	1,005.03	115.50	419,062.33	577,030.14	
8,915.00	1.70	239.50	8,835.52	-437.84	-434.36	905.04	1,003.87	115.64	419,060.64	577,028.05	
9,001.00	1.90	238.40	8,921.48	-439.22	-435.76	902.72	1,002.39	115.77	419,059.24	577,025.73	
9,091.00	1.90	255.90	9,011.43	-440.36	-436.90	900.00	1,000.45	115.89	419,058.10	577,023.01	
9,169.97	3.40	309.78	9,090.32	-439.16	-435.72	896.93	997.17	115.91	419,059.28	577,019.94	
[RickDeckard#14H]KOP											
9,180.00	3.70	312.80	9,100.33	-438.75	-435.31	896.47	996.57	115.90	419,059.69	577,019.48	

Company: Marathon Oil
Project: Eddy County, NM
Site: Rick Deckard State 25-28-4 (12-14-15-18)
Well: WA #14H
Wellbore: OH
Design: MWD 175'-14356' PTB 14420'

Local Co-ordinate Reference: Well WA #14H
TVD Reference: Well @ 2988.00usft (GL: 2963' + KB: 25' (Prec594))
MD Reference: Well @ 2988.00usft (GL: 2963' + KB: 25' (Prec594))
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)
9,269.00	13.50	4.00	9,188.31	-426.39	-422.96	895.08	989.98	115.29	419,072.04	577,018.09
9,359.00	25.90	358.10	9,272.88	-396.14	-392.71	895.16	977.51	113.69	419,102.29	577,018.17
9,448.00	39.40	354.20	9,347.65	-348.38	-344.96	891.64	956.05	111.15	419,150.04	577,014.65
9,538.00	49.40	356.90	9,411.88	-285.66	-282.26	886.90	930.73	107.65	419,212.74	577,009.91
9,627.00	56.70	359.50	9,465.35	-214.62	-211.22	884.74	909.61	103.43	419,283.78	577,007.75
9,717.00	64.40	340.00	9,509.58	-136.37	-132.96	886.82	896.74	98.53	419,362.04	577,009.83
9,806.00	75.80	2.50	9,539.82	-52.95	-49.52	891.10	892.48	93.18	419,445.48	577,014.11
9,927.00	85.70	357.20	9,559.26	66.29	69.71	890.71	893.43	85.53	419,564.71	577,013.72
10,021.00	89.50	0.50	9,563.20	160.16	163.58	888.83	903.76	79.57	419,658.58	577,011.84
10,116.00	89.30	2.80	9,564.19	255.10	258.53	891.57	928.29	73.83	419,753.53	577,014.58
10,210.00	88.40	2.10	9,566.08	348.98	352.42	895.58	962.43	68.52	419,847.42	577,018.59
10,302.00	90.10	0.00	9,567.28	440.94	444.39	897.27	1,001.28	63.65	419,939.39	577,020.28
10,398.00	90.30	359.40	9,566.95	536.94	540.39	896.77	1,047.00	58.93	420,035.39	577,019.78
10,493.00	91.90	358.60	9,565.13	631.91	635.35	895.11	1,097.67	54.63	420,130.35	577,018.12
10,587.00	89.90	0.00	9,563.65	725.89	729.32	893.96	1,153.72	50.79	420,224.32	577,016.97
10,679.00	92.00	3.10	9,562.12	817.81	821.26	896.45	1,215.77	47.51	420,316.26	577,019.46
10,773.00	87.70	4.00	9,562.37	911.59	915.06	902.27	1,285.07	44.60	420,410.06	577,025.28
10,867.00	87.20	3.20	9,566.55	1,005.28	1,008.78	908.16	1,357.35	42.00	420,503.78	577,031.17
10,962.00	86.40	3.00	9,571.85	1,099.98	1,103.49	913.29	1,432.41	39.61	420,598.49	577,036.30
11,056.00	88.40	0.50	9,576.12	1,193.81	1,197.34	916.16	1,507.64	37.42	420,692.34	577,039.17
11,150.00	90.90	359.50	9,576.69	1,287.80	1,291.33	916.16	1,583.31	35.35	420,786.33	577,039.17
11,244.00	91.20	0.30	9,574.97	1,381.78	1,385.31	915.99	1,660.76	33.47	420,880.31	577,039.00
11,339.00	92.00	1.80	9,572.32	1,476.72	1,480.25	917.73	1,741.66	31.80	420,975.25	577,040.74
11,433.00	90.80	0.20	9,570.02	1,570.67	1,574.21	919.37	1,823.01	30.29	421,069.21	577,042.38
11,527.00	89.80	359.50	9,569.53	1,664.66	1,668.20	919.13	1,904.65	28.85	421,163.20	577,042.14
11,621.00	88.70	359.80	9,570.76	1,758.65	1,762.19	918.55	1,987.22	27.53	421,257.19	577,041.56
11,716.00	87.70	359.50	9,573.74	1,853.60	1,857.14	917.97	2,071.63	26.30	421,352.14	577,040.98

Company: Marathon Oil
Project: Eddy County, NM
Site: Rick Deckard State 25-28-4 (12-14-15-18)
Well: WA #14H
Wellbore: OH
Design: MWD 175'-14356' PTB 14420'

Local Co-ordinate Reference: Well WA #14H
TVD Reference: Well @ 2988.00usft (GL: 2963' + KB: 25' (Prec594))
MD Reference: Well @ 2988.00usft (GL: 2963' + KB: 25' (Prec594))
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

Survey											
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)	
11,810.00	93.80	359.90	9,572.51	1,947.55	1,951.09	917.48	2,156.04	25.18	421,446.09	577,040.49	
11,905.00	92.80	0.70	9,567.05	2,042.39	2,045.93	917.98	2,242.43	24.17	421,540.93	577,040.99	
11,999.00	91.00	2.00	9,563.93	2,136.30	2,139.84	920.19	2,329.31	23.27	421,634.84	577,043.20	
12,094.00	87.20	0.10	9,565.42	2,231.24	2,234.79	921.93	2,417.49	22.42	421,729.79	577,044.94	
12,188.00	87.00	0.20	9,570.18	2,325.12	2,328.67	922.18	2,504.62	21.60	421,823.67	577,045.19	
12,283.00	88.80	0.20	9,573.66	2,420.05	2,423.61	922.51	2,593.24	20.84	421,918.61	577,045.52	
12,375.00	89.00	359.80	9,575.42	2,512.03	2,515.59	922.51	2,679.40	20.14	422,010.59	577,045.52	
12,470.00	88.70	359.30	9,577.33	2,607.01	2,610.57	921.76	2,768.52	19.45	422,105.57	577,044.77	
12,565.00	91.20	359.30	9,577.41	2,702.00	2,705.55	920.60	2,857.89	18.79	422,200.55	577,043.61	
12,659.00	91.10	359.60	9,575.53	2,795.98	2,799.53	919.70	2,946.73	18.19	422,294.53	577,042.71	
12,753.00	91.60	359.90	9,573.31	2,889.95	2,893.50	919.29	3,036.02	17.63	422,388.50	577,042.30	
12,848.00	90.60	0.10	9,571.49	2,984.93	2,988.48	919.29	3,126.68	17.10	422,483.48	577,042.30	
12,943.00	89.60	1.50	9,571.32	3,079.91	3,083.47	920.62	3,217.97	16.62	422,578.47	577,043.63	
13,036.00	89.40	1.40	9,572.13	3,172.87	3,176.44	922.97	3,307.81	16.20	422,671.44	577,045.98	
13,130.00	89.70	0.60	9,572.87	3,266.84	3,270.42	924.61	3,398.61	15.79	422,765.42	577,047.62	
13,225.00	90.60	1.70	9,572.62	3,361.81	3,365.40	926.52	3,490.60	15.39	422,860.40	577,049.53	
13,319.00	89.80	359.90	9,572.30	3,455.79	3,459.38	927.83	3,581.65	15.01	422,954.38	577,050.84	
13,412.00	89.30	359.90	9,573.03	3,548.79	3,552.38	927.67	3,671.51	14.64	423,047.38	577,050.68	
13,506.00	88.90	0.20	9,574.50	3,642.78	3,646.37	927.75	3,762.54	14.27	423,141.37	577,050.76	
13,601.00	89.80	358.30	9,575.58	3,737.76	3,741.35	926.51	3,854.36	13.91	423,236.35	577,049.52	
13,695.00	88.20	357.40	9,577.22	3,831.69	3,835.26	922.98	3,944.76	13.53	423,330.26	577,045.99	
13,789.00	91.50	357.40	9,577.47	3,925.60	3,929.15	918.72	4,035.13	13.16	423,424.15	577,041.73	
13,883.00	91.30	357.70	9,575.17	4,019.50	4,023.04	914.70	4,125.71	12.81	423,518.04	577,037.71	
13,978.00	90.70	358.10	9,573.51	4,114.43	4,117.96	911.22	4,217.57	12.48	423,612.96	577,034.23	
14,073.00	88.90	357.90	9,573.84	4,209.38	4,212.90	907.90	4,309.62	12.16	423,707.90	577,030.91	
14,167.00	88.40	357.60	9,576.06	4,303.29	4,306.80	904.21	4,400.69	11.86	423,801.80	577,027.22	
14,261.00	89.40	357.80	9,577.86	4,397.21	4,400.70	900.44	4,491.88	11.56	423,895.70	577,023.45	

Company: Marathon Oil
Project: Eddy County, NM
Site: Rick Deckard State 25-28-4 (12-14-15-18)
Well: WA #14H
Wellbore: OH
Design: MWD 175'-14356' PTB 14420'

Local Co-ordinate Reference: Well WA #14H
TVD Reference: Well @ 2988.00usft (GL: 2963' + KB: 25' (Prec594))
MD Reference: Well @ 2988.00usft (GL: 2963' + KB: 25' (Prec594))
North Reference: Grid
Survey Calculation Method: Minimum Curvature
Database: WellPlanner1

Survey										
MD (usft)	Inc (°)	Azi (azimuth) (°)	TVD (usft)	V. Sec (usft)	N/S (usft)	E/W (usft)	Closure Distance (usft)	Closure Azimuth (°)	Northing (usft)	Easting (usft)
14,356.00	96.20	4.50	9,573.22	4,491.96	4,495.46	902.33	4,585.12	11.35	423,990.46	577,025.34
Last Survey: 14356' MD, 9573' TVD - [RickDeckard#14H]LTP/BHL										
14,420.00	96.20	4.50	9,566.31	4,555.37	4,558.89	907.32	4,648.30	11.26	424,053.89	577,030.33
PTB: 14420' MD, 9566' TVD										

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
14,356.00	9,573.22	4,495.46	902.33	Last Survey: 14356' MD, 9573' TVD
14,420.00	9,566.31	4,558.89	907.32	PTB: 14420' MD, 9566' TVD

Marathon Oil Corporation

Marathon Oil
Eddy County, NM
Rick Deckard State 25-28-4 (12-14-15-18)
WA #14H
Plan #4
GL: 2963' + KB: 25' (Prec594)

US State Plane 1927 (Exact solution)
NAD 1927 (NADCON CONUS)
Clarke 1866
New Mexico East 3001
Mean Sea Level

RKB Elevation: Well @ 2988.00usft (GL: 2963' + KB: 25' (Prec594))

+N-S	+E-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	419495.00	576123.01	32.153070	-104.087362	

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	175.00	0.20	144.30	175.00	-0.25	0.18	0.11	-0.25
3	205.00	0.30	182.70	205.00	-0.37	0.21	0.63	-0.37
4	297.00	0.60	265.40	297.00	-0.65	-0.29	0.69	-0.65
5	382.00	0.80	297.60	381.99	-0.41	-1.26	0.51	-0.40
6	460.00	0.80	297.60	459.98	0.10	-2.22	0.00	0.10
7	733.42	2.00	90.00	733.36	0.98	0.86	1.00	0.88
8	2501.14	2.00	90.00	2500.00	0.98	62.55	0.00	0.74
9	2914.28	10.00	116.50	2910.58	-15.06	101.94	2.00	-15.45
10	7989.68	10.00	116.50	7908.80	-408.56	891.02	0.00	-411.98
11	8489.91	0.00	0.00	8406.50	-428.00	930.00	2.00	-431.57
12	9174.91	0.00	0.00	9091.50	-428.00	930.00	0.00	-431.57
13	9924.91	90.00	359.78	9568.96	49.46	928.18	12.00	45.89
14	14389.45	90.00	359.78	9569.00	4513.97	911.17	0.00	4510.44
15	14434.45	90.00	359.78	9569.00	4558.97	911.00	0.00	4555.44

WELLBORE TARGET DETAILS (MAP CO-ORDINATES)

Name	TVD	+N-S	+E-W	Northing	Easting
[RickDeckard#14H]FTP	0.00	-199.69	928.17	419205.31	577052.18
[RickDeckard#14H]KOP	9091.50	-428.00	930.00	419067.00	577053.01
[RickDeckard#14H]LTP/BHL	9569.00	4513.97	911.17	424008.97	577034.18



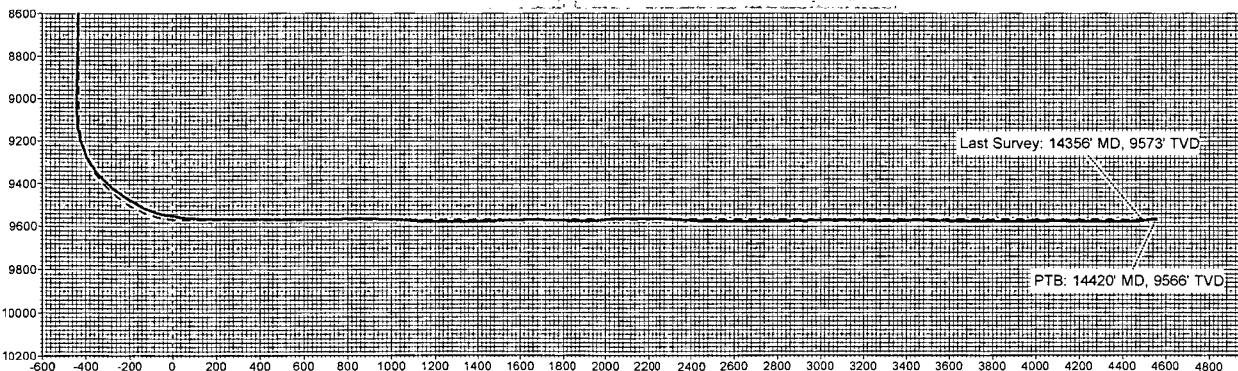
Azimuths to Grid North
True North: -0.13°
Magnetic North: 7.11°
Magnetic Field
Strength: 47953.7enT
Dip Angle: 59.53°
Date: 8/24/2018
Model: USER DEFINED

Azimuth Corrections

Total Magnetic Corr. (M to G): 7.11°

Declination (M to T): 7.24° East

Target Line: 9569' TVD @ 0° VS: 90° INC



36" x 48"

Vertical Section at 359.78° (200 usft/in)

