



Marathon Oil

Marathon Oil

Eddy County, NM

Sweet Tea State 24-29-31 (2-3-4-5-6)

WD #2H

OH

Design: MWD 200'-17957' PTB 18008'

Survey Report

05 September, 2018

RECEIVED

MAR 18 2019

DISTRICT II-ARTESIA O.C.D.



Company:	Marathon Oil	Local Co-ordinate Reference:	Well WD #2H
Project:	Eddy County, NM	TVD Reference:	Well @ 2943.00usft (GL: 2918' + KB: 25' (Prec594))
Site:	Sweet Tea State 24-29-31 (2-3-4-5-6)	MD Reference:	Well @ 2943.00usft (GL: 2918' + KB: 25' (Prec594))
Well:	WD #2H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	MWD 200'-17957' PTB 18008'	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	Sweet Tea State 24-29-31 (2-3-4-5-6)		
Site Position:		Northing:	426,778.23 usft
From:	Map	Easting:	593,717.06 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	32.172968
		Longitude:	-104.030446
		Grid Convergence:	0.16 °

Well	WD #2H			
Well Position	+N/-S	0.00 usft	Northing:	426,743.12 usft
	+E/-W	0.00 usft	Easting:	593,692.05 usft
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft
			Latitude:	32.172871
			Longitude:	-104.030527
			Ground Level:	2,918.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	HDGM	6/3/2018	7.12	59.93	47,991.60

Design	MWD 200'-17957' PTB 18008'		
Audit Notes:			
Version:	1.0	Phase:	ACTUAL
		Tie On Depth:	0.00
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W
	(usft)	(usft)	(usft)
	0.00	0.00	0.00
			Direction
			(°)
			179.92

Survey Program	Date 9/5/2018		
From	To	Survey (Wellbore)	Tool Name
(usft)	(usft)		
200.00	18,008.00	Survey #1 (OH)	MWD+IFR1
			Description
			OWSG MWD + IFR1

Company: Marathon Oil
Project: Eddy County, NM
Site: Sweet Tea State 24-29-31 (2-3-4-5-6)
Well: WD #2H
Wellbore: OH
Design: MWD 200'-17957' PTB 18008'

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

Well WD #2H
 Well @ 2943.00usft (GL: 2918' + KB: 25' (Prec594))
 Well @ 2943.00usft (GL: 2918' + 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	426,743.12	593,692.05	
[SweetTea#2H]PP/FTP											
200.00	1.20	112.10	199.99	0.79	-0.79	1.94	2.09	112.10	426,742.33	593,693.99	
234.00	1.40	113.60	233.98	1.09	-1.09	2.65	2.87	112.32	426,742.03	593,694.70	
325.00	1.80	121.30	324.94	2.28	-2.28	4.89	5.39	114.95	426,740.84	593,696.94	
383.00	1.80	122.40	382.91	3.25	-3.24	6.44	7.21	116.69	426,739.88	593,698.49	
502.00	1.50	128.00	501.86	5.21	-5.20	9.24	10.60	119.35	426,737.92	593,701.29	
593.00	0.50	141.80	592.85	6.26	-6.24	10.43	12.15	120.91	426,736.88	593,702.48	
685.00	0.30	256.70	684.85	6.63	-6.61	10.44	12.36	122.35	426,736.51	593,702.49	
776.00	0.30	184.00	775.85	6.92	-6.91	10.19	12.31	124.12	426,736.21	593,702.24	
868.00	0.60	145.40	867.84	7.56	-7.54	10.45	12.89	125.82	426,735.58	593,702.50	
960.00	0.60	152.20	959.84	8.38	-8.37	10.95	13.78	127.38	426,734.75	593,703.00	
1,051.00	0.80	162.20	1,050.83	9.41	-9.39	11.36	14.74	129.57	426,733.73	593,703.41	
1,140.00	0.60	151.60	1,139.82	10.41	-10.39	11.78	15.71	131.43	426,732.73	593,703.83	
1,229.00	0.70	334.80	1,228.82	10.33	-10.31	11.77	15.64	131.23	426,732.81	593,703.82	
1,318.00	2.30	343.40	1,317.79	8.12	-8.11	11.02	13.68	126.33	426,735.01	593,703.07	
1,408.00	3.90	351.80	1,407.66	3.36	-3.35	10.07	10.61	108.38	426,739.77	593,702.12	
1,497.00	5.30	357.50	1,496.37	-3.74	3.76	9.46	10.18	68.35	426,746.88	593,701.51	
1,586.00	6.60	2.00	1,584.89	-12.96	12.97	9.46	16.06	36.10	426,756.09	593,701.51	
1,675.00	8.70	359.00	1,673.09	-24.80	24.82	9.52	26.58	20.99	426,767.94	593,701.57	
1,765.00	10.60	356.70	1,761.81	-39.88	39.89	8.93	40.87	12.61	426,783.01	593,700.98	
1,854.00	11.50	355.50	1,849.16	-56.89	56.91	7.76	57.43	7.76	426,800.03	593,699.81	
1,943.00	11.40	354.40	1,936.39	-74.49	74.50	6.20	74.76	4.76	426,817.62	593,698.25	
2,033.00	10.50	359.20	2,024.75	-91.55	91.56	5.22	91.71	3.26	426,834.68	593,697.27	
2,122.00	9.80	4.50	2,112.36	-107.21	107.22	5.70	107.37	3.04	426,850.34	593,697.75	
2,211.00	9.40	3.90	2,200.11	-122.01	122.02	6.79	122.21	3.19	426,865.14	593,698.84	
2,300.00	8.70	3.00	2,288.01	-135.98	135.99	7.64	136.21	3.21	426,879.11	593,699.69	

Company: Marathon Oil
Project: Eddy County, NM
Site: Sweet Tea State 24-29-31 (2-3-4-5-6)
Well: WD #2H
Wellbore: OH
Design: MWD 200'-17957' PTB 18008'

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

Well WD #2H
 Well @ 2943.00usft (GL: 2918' + KB: 25' (Prec594))
 Well @ 2943.00usft (GL: 2918' + 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)
2,389.00	8.60	358.90	2,375.99	-149.36	149.37	7.86	149.57	3.01	426,892.49	593,699.91
2,479.00	8.00	5.60	2,465.05	-162.32	162.33	8.34	162.54	2.94	426,905.45	593,700.39
2,568.00	7.40	10.70	2,553.25	-174.11	174.12	10.01	174.41	3.29	426,917.24	593,702.06
2,657.00	7.50	351.20	2,641.51	-185.48	185.50	10.19	185.78	3.14	426,928.62	593,702.24
2,751.00	7.80	336.00	2,734.69	-197.38	197.39	6.66	197.50	1.93	426,940.51	593,698.71
2,841.00	6.60	334.80	2,823.98	-207.65	207.65	1.97	207.66	0.54	426,950.77	593,694.02
2,930.00	5.20	333.10	2,912.50	-215.88	215.87	-2.03	215.88	359.46	426,958.99	593,690.02
3,019.00	2.80	329.20	3,001.28	-221.34	221.34	-4.97	221.39	358.71	426,964.46	593,687.08
3,108.00	2.50	325.70	3,090.18	-224.82	224.81	-7.18	224.92	358.17	426,967.93	593,684.87
3,198.00	2.50	323.20	3,180.10	-228.01	228.00	-9.46	228.20	357.62	426,971.12	593,682.59
3,287.00	0.80	316.90	3,269.06	-230.03	230.01	-11.05	230.28	357.25	426,973.13	593,681.00
3,377.00	0.20	313.50	3,359.05	-230.59	230.58	-11.59	230.87	357.12	426,973.70	593,680.46
3,466.00	0.20	280.30	3,448.05	-230.73	230.71	-11.86	231.02	357.06	426,973.83	593,680.19
3,556.00	0.40	274.90	3,538.05	-230.78	230.77	-12.32	231.10	356.94	426,973.89	593,679.73
3,645.00	0.90	267.50	3,627.05	-230.78	230.76	-13.33	231.15	356.69	426,973.88	593,678.72
3,734.00	0.90	261.10	3,716.04	-230.64	230.62	-14.72	231.09	356.35	426,973.74	593,677.33
3,823.00	0.90	259.00	3,805.02	-230.40	230.38	-16.10	230.94	356.00	426,973.50	593,675.95
3,912.00	0.90	260.70	3,894.01	-230.16	230.14	-17.47	230.80	355.66	426,973.26	593,674.58
4,002.00	0.90	260.20	3,984.00	-229.93	229.90	-18.87	230.67	355.31	426,973.02	593,673.18
4,091.00	1.00	269.10	4,072.99	-229.80	229.77	-20.33	230.67	354.94	426,972.89	593,671.72
4,180.00	1.10	265.20	4,161.98	-229.72	229.69	-21.96	230.73	354.54	426,972.81	593,670.09
4,270.00	1.10	261.10	4,251.96	-229.51	229.48	-23.68	230.70	354.11	426,972.60	593,668.37
4,359.00	1.30	249.10	4,340.94	-229.02	228.99	-25.46	230.40	353.65	426,972.11	593,666.59
4,449.00	0.50	342.80	4,430.93	-229.04	229.00	-26.53	230.53	353.39	426,972.12	593,665.52
4,538.00	0.60	12.30	4,519.93	-229.86	229.83	-26.55	231.35	353.41	426,972.95	593,665.50
4,628.00	0.70	13.40	4,609.92	-230.86	230.82	-26.32	232.32	353.49	426,973.94	593,665.73
4,717.00	0.80	359.00	4,698.91	-232.01	231.97	-26.21	233.45	353.55	426,975.09	593,665.84

Company:	Marathon Oil	Local Co-ordinate Reference:	Well WD #2H
Project:	Eddy County, NM	TVD Reference:	Well @ 2943.00usft (GL: 2918' + KB: 25' (Prec594))
Site:	Sweet Tea State 24-29-31 (2-3-4-5-6)	MD Reference:	Well @ 2943.00usft (GL: 2918' + KB: 25' (Prec594))
Well:	WD #2H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	MWD 200'-17957' PTB 18008'	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)	
4,806.00	0.60	353.50	4,787.91	-233.09	233.06	-26.27	234.53	353.57	426,976.18	593,665.78	
4,895.00	0.30	336.60	4,876.90	-233.77	233.73	-26.41	235.22	353.55	426,976.85	593,665.64	
4,985.00	0.40	314.10	4,966.90	-234.20	234.17	-26.73	235.69	353.49	426,977.29	593,665.32	
5,074.00	0.80	272.50	5,055.90	-234.45	234.41	-27.58	236.03	353.29	426,977.53	593,664.47	
5,164.00	1.00	261.10	5,145.89	-234.36	234.32	-28.98	236.10	352.95	426,977.44	593,663.07	
5,253.00	1.10	252.40	5,234.87	-233.98	233.94	-30.56	235.93	352.56	426,977.06	593,661.49	
5,343.00	1.30	256.60	5,324.85	-233.48	233.44	-32.38	235.67	352.10	426,976.56	593,659.67	
5,431.00	1.50	253.50	5,412.83	-232.93	232.88	-34.45	235.42	351.58	426,976.00	593,657.60	
5,521.00	1.60	255.60	5,502.79	-232.29	232.23	-36.80	235.13	351.00	426,975.35	593,655.25	
5,610.00	1.00	205.70	5,591.77	-231.28	231.23	-38.34	234.38	350.59	426,974.35	593,653.71	
5,699.00	1.20	180.70	5,680.76	-229.65	229.59	-38.69	232.83	350.43	426,972.71	593,653.36	
5,788.00	1.40	184.90	5,769.73	-227.63	227.58	-38.79	230.86	350.33	426,970.70	593,653.26	
5,878.00	1.40	179.00	5,859.71	-225.44	225.38	-38.87	228.71	350.22	426,968.50	593,653.18	
5,967.00	1.50	136.00	5,948.68	-223.51	223.46	-38.04	226.67	350.34	426,966.58	593,654.01	
6,056.00	2.00	115.60	6,037.64	-222.00	221.95	-35.83	224.82	350.83	426,965.07	593,656.22	
6,146.00	1.80	114.00	6,127.59	-220.74	220.70	-33.12	223.17	351.46	426,963.82	593,658.93	
6,235.00	1.70	112.60	6,216.55	-219.66	219.62	-30.63	221.75	352.06	426,962.74	593,661.42	
6,324.00	1.70	116.20	6,305.51	-218.57	218.53	-28.22	220.35	352.64	426,961.65	593,663.83	
6,413.00	1.00	96.30	6,394.48	-217.90	217.86	-26.27	219.44	353.13	426,960.98	593,665.78	
6,503.00	0.80	112.90	6,484.47	-217.57	217.53	-24.91	218.95	353.47	426,960.65	593,667.14	
6,592.00	1.00	153.30	6,573.46	-216.63	216.60	-23.99	217.92	353.68	426,959.72	593,668.06	
6,681.00	1.00	175.10	6,662.45	-215.16	215.13	-23.57	216.42	353.75	426,958.25	593,668.48	
6,770.00	0.80	120.00	6,751.44	-214.08	214.04	-22.97	215.27	353.88	426,957.16	593,669.08	
6,859.00	0.90	127.60	6,840.43	-213.34	213.31	-21.88	214.43	354.14	426,956.43	593,670.17	
6,949.00	1.20	123.70	6,930.42	-212.38	212.35	-20.53	213.34	354.48	426,955.47	593,671.52	
7,038.00	1.90	89.10	7,019.38	-211.88	211.86	-18.28	212.65	355.07	426,954.98	593,673.77	
7,128.00	2.60	86.10	7,109.31	-212.04	212.02	-14.75	212.53	356.02	426,955.14	593,677.30	

Company: Marathon Oil
Project: Eddy County, NM
Site: Sweet Tea State 24-29-31 (2-3-4-5-6)
Well: WVD #2H
Wellbore: OH
Design: MWD 200'-17957' PTB 18008'

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

Well WD #2H
 Well @ 2943.00usft (GL: 2918' + KB: 25' (Prec594))
 Well @ 2943.00usft (GL: 2918' + 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)
7,217.00	2.00	70.90		7,198.24	-212.68	212.67	-11.27	212.96	356.97	426,955.79	593,680.78
7,307.00	2.20	58.00		7,288.18	-214.11	214.10	-8.32	214.26	357.77	426,957.22	593,683.73
7,397.00	2.50	40.90		7,378.11	-216.50	216.49	-5.57	216.57	358.53	426,959.61	593,686.48
7,486.00	2.50	38.30		7,467.02	-219.49	219.49	-3.10	219.51	359.19	426,962.61	593,688.95
7,576.00	2.30	9.40		7,556.95	-222.81	222.81	-1.59	222.81	359.59	426,965.93	593,690.46
7,665.00	2.60	334.70		7,645.87	-226.40	226.39	-2.16	226.40	359.45	426,969.51	593,689.89
7,754.00	3.30	316.30		7,734.75	-230.08	230.07	-4.79	230.12	358.81	426,973.19	593,687.26
7,844.00	4.10	300.50		7,824.57	-233.59	233.58	-9.35	233.76	357.71	426,976.70	593,682.70
7,933.00	5.00	292.20		7,913.29	-236.68	236.66	-15.68	237.18	356.21	426,979.78	593,676.37
8,022.00	5.50	287.60		8,001.92	-239.45	239.41	-23.34	240.55	354.43	426,982.53	593,668.71
8,112.00	4.40	275.60		8,091.58	-241.10	241.05	-30.89	243.02	352.70	426,984.17	593,661.16
8,201.00	3.20	253.10		8,180.39	-240.72	240.67	-36.66	243.44	351.34	426,983.79	593,655.39
8,290.00	2.30	234.40		8,269.29	-238.96	238.90	-40.49	242.31	350.38	426,982.02	593,651.56
8,379.00	1.20	217.10		8,358.24	-237.18	237.12	-42.51	240.90	349.84	426,980.24	593,649.54
8,469.00	1.10	200.60		8,448.23	-235.62	235.56	-43.38	239.52	349.57	426,978.68	593,648.67
8,558.00	1.40	154.60		8,537.21	-233.84	233.78	-43.21	237.74	349.53	426,976.90	593,648.84
8,647.00	1.50	160.00		8,626.18	-231.76	231.70	-42.35	235.54	349.64	426,974.82	593,649.70
8,737.00	1.50	134.10		8,716.15	-229.83	229.77	-41.10	233.42	349.86	426,972.89	593,650.95
8,826.00	2.20	101.90		8,805.10	-228.67	228.61	-38.59	231.85	350.42	426,971.73	593,653.46
8,915.00	2.20	102.20		8,894.04	-227.95	227.90	-35.25	230.61	351.21	426,971.02	593,656.80
9,004.00	1.80	92.60		8,982.98	-227.52	227.47	-32.18	229.74	351.95	426,970.59	593,659.87
9,094.00	1.20	103.30		9,072.95	-227.23	227.19	-29.85	229.15	352.51	426,970.31	593,662.20
9,183.00	1.70	113.80		9,161.92	-226.48	226.45	-27.74	228.14	353.02	426,969.57	593,664.31
9,272.00	0.80	142.90		9,250.90	-225.45	225.42	-26.16	226.93	353.38	426,968.54	593,665.89
9,362.00	1.50	135.50		9,340.88	-224.11	224.08	-24.95	225.46	353.65	426,967.20	593,667.10
9,451.00	1.30	139.10		9,429.86	-222.51	222.48	-23.47	223.72	353.98	426,965.60	593,668.58
9,540.00	1.30	152.20		9,518.84	-220.86	220.83	-22.34	221.95	354.22	426,963.95	593,669.71

Company: Marathon Oil
Project: Eddy County, NM
Site: Sweet Tea State 24-29-31 (2-3-4-5-6)
Well: WD #2H
Wellbore: OH
Design: MWD 200'-17957' PTB 18008'

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

Well WD #2H
 Well @ 2943.00usft (GL: 2918' + KB: 25' (Prec594))
 Well @ 2943.00usft (GL: 2918' + 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)	
9,629.00	1.70	167.20	9,607.81	-218.68	218.65	-21.58	219.71	354.36	426,961.77	593,670.47	
9,719.00	1.70	163.90	9,697.77	-216.09	216.06	-20.91	217.07	354.47	426,959.18	593,671.14	
9,742.00	1.80	171.10	9,720.75	-215.41	215.38	-20.76	216.38	354.49	426,958.50	593,671.29	
9,844.00	2.00	163.90	9,822.70	-212.11	212.08	-20.02	213.03	354.61	426,955.20	593,672.03	
9,938.00	2.00	163.70	9,916.64	-208.96	208.93	-19.11	209.81	354.77	426,952.05	593,672.94	
10,033.00	2.00	176.80	10,011.58	-205.71	205.69	-18.55	206.52	354.85	426,948.81	593,673.50	
10,080.09	5.91	179.87	10,058.55	-202.47	202.44	-18.50	203.29	354.78	426,945.56	593,673.55	
[SweetTea#2H]KOP											
10,127.00	9.80	180.50	10,105.01	-196.06	196.04	-18.53	196.91	354.60	426,939.16	593,673.52	
10,222.00	17.00	180.10	10,197.37	-174.06	174.03	-18.62	175.03	353.89	426,917.15	593,673.43	
10,316.00	22.70	185.30	10,285.75	-142.23	142.20	-20.32	143.65	351.87	426,885.32	593,671.73	
10,410.00	32.60	185.60	10,368.91	-98.87	98.83	-24.48	101.82	346.09	426,841.95	593,667.57	
10,505.00	43.30	176.80	10,443.77	-40.66	40.63	-25.16	47.79	328.23	426,783.75	593,666.89	
10,552.00	49.50	174.60	10,476.17	-6.74	6.71	-22.58	23.55	286.55	426,749.83	593,669.47	
10,599.00	55.50	175.80	10,504.77	30.40	-30.43	-19.47	36.13	212.62	426,712.69	593,672.58	
10,694.00	64.30	180.00	10,552.38	112.44	-112.46	-16.60	113.68	188.40	426,630.66	593,675.45	
10,789.00	71.20	181.40	10,588.33	200.30	-200.32	-17.70	201.10	185.05	426,542.80	593,674.35	
10,883.00	75.00	180.30	10,615.66	290.21	-290.24	-19.03	290.86	183.75	426,452.88	593,673.02	
10,954.00	82.60	181.60	10,629.44	359.79	-359.82	-20.19	360.39	183.21	426,383.30	593,671.86	
10,978.00	85.30	182.10	10,631.97	383.64	-383.67	-20.96	384.25	183.13	426,359.45	593,671.09	
11,073.00	88.70	182.60	10,636.94	478.41	-478.45	-24.85	479.09	182.97	426,264.67	593,667.20	
11,167.00	90.20	180.60	10,637.84	572.36	-572.40	-27.47	573.06	182.75	426,170.72	593,664.58	
11,261.00	91.60	183.60	10,636.36	666.27	-666.31	-30.92	667.03	182.66	426,076.81	593,661.13	
11,356.00	93.20	182.00	10,632.38	761.06	-761.11	-35.55	761.94	182.67	425,982.01	593,656.50	
11,450.00	89.30	177.00	10,630.33	854.99	-855.04	-34.73	855.74	182.33	425,888.08	593,657.32	
11,545.00	89.10	173.90	10,631.66	949.68	-949.72	-27.20	950.11	181.64	425,793.40	593,664.85	
11,639.00	91.00	179.10	10,631.58	1,043.47	-1,043.50	-21.46	1,043.72	181.18	425,699.62	593,670.59	

Company: Marathon Oil
Project: Eddy County, NM
Site: Sweet Tea State 24-29-31 (2-3-4-5-6)
Well: WD #2H
Wellbore: OH
Design: MWD 200'-17957' PTB 18008'

Local Co-ordinate Reference: Well WD #2H
TVD Reference: Well @ 2943.00usft (GL: 2918' + KB: 25' (Prec594))
MD Reference: Well @ 2943.00usft (GL: 2918' + 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)
11,733.00	90.10	177.40	10,630.68	1,137.42	-1,137.45	-18.59	1,137.60	180.94	425,605.67	593,673.46
11,827.00	89.00	177.50	10,631.41	1,231.33	-1,231.35	-14.41	1,231.44	180.67	425,511.77	593,677.64
11,921.00	91.80	182.30	10,630.76	1,325.29	-1,325.31	-14.24	1,325.39	180.62	425,417.81	593,677.81
12,016.00	89.40	180.10	10,629.76	1,420.25	-1,420.28	-16.23	1,420.37	180.65	425,322.84	593,675.82
12,110.00	90.50	180.00	10,629.84	1,514.25	-1,514.27	-16.31	1,514.36	180.62	425,228.85	593,675.74
12,204.00	90.60	178.90	10,628.94	1,608.24	-1,608.26	-15.41	1,608.34	180.55	425,134.86	593,676.64
12,299.00	89.00	176.30	10,629.27	1,703.15	-1,703.17	-11.43	1,703.21	180.38	425,039.95	593,680.62
12,416.00	93.20	180.50	10,627.03	1,820.04	-1,820.05	-8.17	1,820.07	180.26	424,923.07	593,683.88
12,510.00	90.90	182.60	10,623.66	1,913.93	-1,913.94	-10.71	1,913.97	180.32	424,829.18	593,681.34
12,604.00	86.50	181.90	10,625.80	2,007.80	-2,007.82	-14.40	2,007.87	180.41	424,735.30	593,677.65
12,698.00	86.20	182.70	10,631.78	2,101.53	-2,101.56	-18.16	2,101.63	180.50	424,641.56	593,673.89
12,793.00	89.00	182.60	10,635.76	2,196.33	-2,196.36	-22.55	2,196.48	180.59	424,546.76	593,669.50
12,887.00	90.10	183.40	10,636.50	2,290.19	-2,290.23	-27.47	2,290.39	180.69	424,452.89	593,664.58
12,981.00	88.10	181.30	10,637.97	2,384.08	-2,384.13	-31.32	2,384.33	180.75	424,358.99	593,660.73
13,076.00	90.20	179.70	10,639.38	2,479.06	-2,479.10	-32.15	2,479.31	180.74	424,264.02	593,659.90
13,171.00	90.90	177.60	10,638.47	2,574.02	-2,574.07	-29.91	2,574.24	180.67	424,169.05	593,662.14
13,265.00	90.60	175.70	10,637.24	2,667.86	-2,667.89	-24.42	2,668.01	180.52	424,075.23	593,667.63
13,360.00	86.60	173.40	10,639.56	2,762.39	-2,762.41	-15.41	2,762.45	180.32	423,980.71	593,676.64
13,454.00	93.70	174.30	10,639.32	2,855.80	-2,855.81	-5.34	2,855.81	180.11	423,887.31	593,686.71
13,486.00	93.70	174.70	10,637.25	2,887.59	-2,887.60	-2.28	2,887.60	180.05	423,855.52	593,689.77
13,517.00	93.30	176.00	10,635.36	2,918.43	-2,918.44	0.23	2,918.44	180.00	423,824.68	593,692.28
13,549.00	93.50	178.40	10,633.46	2,950.34	-2,950.34	1.79	2,950.34	179.97	423,792.78	593,693.84
13,579.00	91.10	182.00	10,632.26	2,980.31	-2,980.31	1.68	2,980.31	179.97	423,762.81	593,693.73
13,643.00	90.60	182.70	10,631.31	3,044.24	-3,044.25	-0.94	3,044.25	180.02	423,698.87	593,691.11
13,738.00	92.10	183.00	10,629.07	3,139.09	-3,139.10	-5.66	3,139.10	180.10	423,604.02	593,686.39
13,832.00	93.00	182.80	10,624.89	3,232.87	-3,232.88	-10.42	3,232.90	180.18	423,510.24	593,681.63
13,927.00	84.80	181.80	10,626.71	3,327.69	-3,327.71	-14.23	3,327.74	180.24	423,415.41	593,677.82

Company:	Marathon Oil	Local Co-ordinate Reference:	Well WD #2H
Project:	Eddy County, NM	TVD Reference:	Well @ 2943.00usft (GL: 2918' + KB: 25' (Prec594))
Site:	Sweet Tea State 24-29-31 (2-3-4-5-6)	MD Reference:	Well @ 2943.00usft (GL: 2918' + KB: 25' (Prec594))
Well:	WD #2H	North Reference:	Grid
Wellbore:	OH	Survey Calculation Method:	Minimum Curvature
Design:	MWD 200'-17957' PTB 18008'	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)	
14,021.00	89.50	181.30	10,631.38	3,421.50	-3,421.53	-16.76	3,421.57	180.28	423,321.59	593,675.29	
14,115.00	89.40	182.60	10,632.28	3,515.44	-3,515.47	-19.96	3,515.53	180.33	423,227.65	593,672.09	
14,210.00	90.10	182.50	10,632.70	3,610.34	-3,610.38	-24.19	3,610.46	180.38	423,132.74	593,667.86	
14,305.00	90.90	182.50	10,631.87	3,705.24	-3,705.28	-28.33	3,705.39	180.44	423,037.84	593,663.72	
14,399.00	87.30	181.00	10,633.34	3,799.16	-3,799.21	-31.20	3,799.33	180.47	422,943.91	593,660.85	
14,492.00	89.20	181.40	10,636.18	3,892.09	-3,892.14	-33.15	3,892.28	180.49	422,850.98	593,658.90	
14,588.00	90.70	179.10	10,636.27	3,988.08	-3,988.13	-33.57	3,988.27	180.48	422,754.99	593,658.48	
14,682.00	91.80	178.50	10,634.22	4,082.04	-4,082.08	-31.60	4,082.21	180.44	422,661.04	593,660.45	
14,775.00	89.60	178.50	10,633.08	4,174.99	-4,175.04	-29.17	4,175.14	180.40	422,568.08	593,662.88	
14,869.00	89.10	181.20	10,634.15	4,268.98	-4,269.02	-28.92	4,269.12	180.39	422,474.10	593,663.13	
14,963.00	89.00	182.30	10,635.71	4,362.92	-4,362.97	-31.79	4,363.08	180.42	422,380.15	593,660.26	
15,057.00	92.50	184.90	10,634.48	4,456.69	-4,456.75	-37.69	4,456.91	180.48	422,286.37	593,654.36	
15,151.00	91.40	182.30	10,631.28	4,550.43	-4,550.50	-43.59	4,550.71	180.55	422,192.62	593,648.46	
15,245.00	89.80	173.70	10,630.29	4,644.29	-4,644.35	-40.31	4,644.52	180.50	422,098.77	593,651.74	
15,339.00	90.70	175.90	10,629.88	4,737.90	-4,737.95	-31.79	4,738.06	180.38	422,005.17	593,660.26	
15,433.00	92.00	178.30	10,627.67	4,831.75	-4,831.80	-27.04	4,831.87	180.32	421,911.32	593,665.01	
15,526.00	92.80	178.20	10,623.77	4,924.63	-4,924.67	-24.20	4,924.73	180.28	421,818.45	593,667.85	
15,620.00	88.10	177.90	10,623.03	5,018.55	-5,018.59	-21.00	5,018.63	180.24	421,724.53	593,671.05	
15,714.00	91.00	179.10	10,623.77	5,112.51	-5,112.54	-18.54	5,112.57	180.21	421,630.58	593,673.51	
15,808.00	88.30	179.30	10,624.35	5,206.49	-5,206.52	-17.23	5,206.55	180.19	421,536.60	593,674.82	
15,903.00	88.00	179.10	10,627.41	5,301.43	-5,301.46	-15.90	5,301.49	180.17	421,441.66	593,676.15	
15,997.00	88.00	177.90	10,630.69	5,395.35	-5,395.37	-13.44	5,395.39	180.14	421,347.75	593,678.61	
16,091.00	89.10	179.80	10,633.07	5,489.29	-5,489.32	-11.56	5,489.33	180.12	421,253.80	593,680.49	
16,186.00	91.10	179.10	10,632.91	5,584.29	-5,584.31	-10.65	5,584.32	180.11	421,158.81	593,681.40	
16,280.00	91.50	181.10	10,630.77	5,678.26	-5,678.28	-10.81	5,678.29	180.11	421,064.84	593,681.24	
16,375.00	91.50	180.80	10,628.29	5,773.21	-5,773.23	-12.38	5,773.24	180.12	420,969.89	593,679.67	
16,470.00	87.00	180.80	10,629.53	5,868.16	-5,868.19	-13.71	5,868.20	180.13	420,874.93	593,678.34	

Company: Marathon Oil
Project: Eddy County, NM
Site: Sweet Tea State 24-29-31 (2-3-4-5-6)
Well: WD #2H
Wellbore: OH
Design: MWD 200'-17957' PTB 18008'

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

Well WD #2H
 Well @ 2943.00usft (GL: 2918' + KB: 25' (Prec594))
 Well @ 2943.00usft (GL: 2918' + 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)
16,564.00	87.10	181.80	10,634.37	5,962.01	-5,962.04	-15.84	5,962.06	180.15	420,781.08	593,676.21
16,659.00	89.10	178.70	10,637.52	6,056.94	-6,056.97	-16.25	6,056.99	180.15	420,686.15	593,675.80
16,753.00	90.90	176.20	10,637.52	6,150.84	-6,150.86	-12.07	6,150.88	180.11	420,592.26	593,679.98
16,847.00	88.80	181.00	10,637.76	6,244.78	-6,244.80	-9.77	6,244.81	180.09	420,498.32	593,682.28
16,941.00	90.10	179.90	10,638.67	6,338.77	-6,338.79	-10.51	6,338.80	180.10	420,404.33	593,681.54
17,035.00	90.90	177.20	10,637.85	6,432.73	-6,432.75	-8.13	6,432.76	180.07	420,310.37	593,683.92
17,130.00	88.90	181.30	10,638.01	6,527.70	-6,527.72	-6.89	6,527.72	180.06	420,215.40	593,685.16
17,225.00	89.20	179.40	10,639.59	6,622.68	-6,622.70	-7.47	6,622.70	180.06	420,120.42	593,684.58
17,319.00	88.80	183.40	10,641.23	6,716.62	-6,716.64	-9.77	6,716.64	180.08	420,026.48	593,682.28
17,413.00	91.90	183.80	10,640.65	6,810.41	-6,810.44	-15.67	6,810.45	180.13	419,932.68	593,676.38
17,506.00	89.90	183.90	10,639.19	6,903.17	-6,903.21	-21.91	6,903.25	180.18	419,839.91	593,670.14
17,600.00	89.40	184.90	10,639.77	6,996.88	-6,996.93	-29.12	6,996.99	180.24	419,746.19	593,662.93
17,694.00	89.40	181.50	10,640.75	7,090.71	-7,090.77	-34.37	7,090.85	180.28	419,652.35	593,657.68
17,788.00	88.70	183.40	10,642.31	7,184.60	-7,184.66	-38.39	7,184.76	180.31	419,558.46	593,653.66
17,882.00	88.90	182.90	10,644.28	7,278.43	-7,278.50	-43.55	7,278.63	180.34	419,464.62	593,648.50
17,957.00	91.10	185.20	10,644.28	7,353.23	-7,353.30	-48.85	7,353.46	180.38	419,389.82	593,643.20
Last Survey: 17957' MD, 10644' TVD - [SweetTea#2H]LTP/BHL										
18,008.00	91.10	185.20	10,643.30	7,404.00	-7,404.08	-53.47	7,404.28	180.41	419,339.04	593,638.58
PTB: 18008' MD, 10643' TVD										

Design Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
17,957.00	10,644.28	-7,353.30	-48.85	Last Survey: 17957' MD, 10644' TVD
18,008.00	10,643.30	-7,404.08	-53.47	PTB: 18008' MD, 10643' TVD

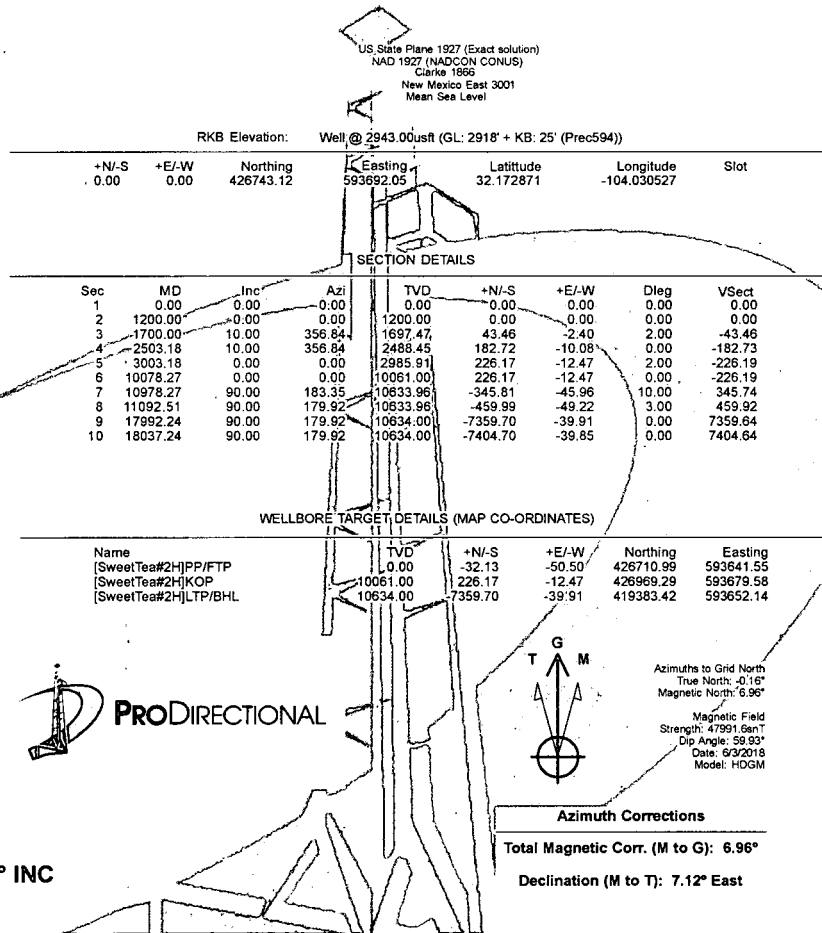
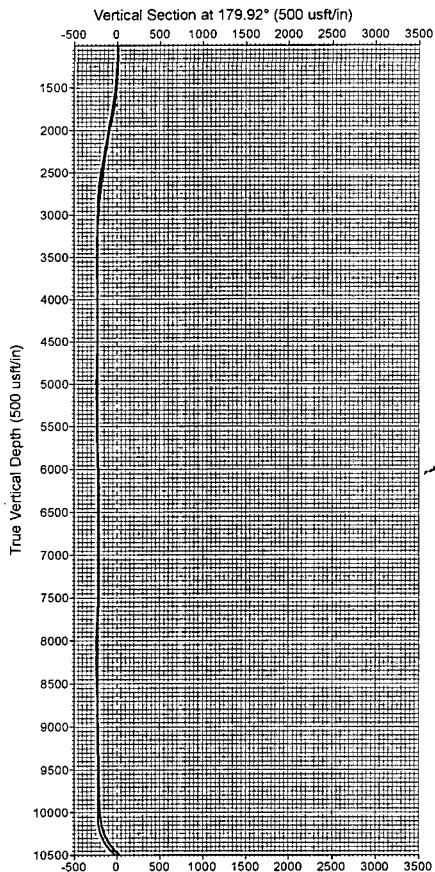
Company:	Marathon Oil
Project:	Eddy County, NM
Site:	Sweet Tea State 24-29-31 (2-3-4-5-6)
Well:	WD #2H
Wellbore:	OH
Design:	MWD 200'-17957' PTB 18008'

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

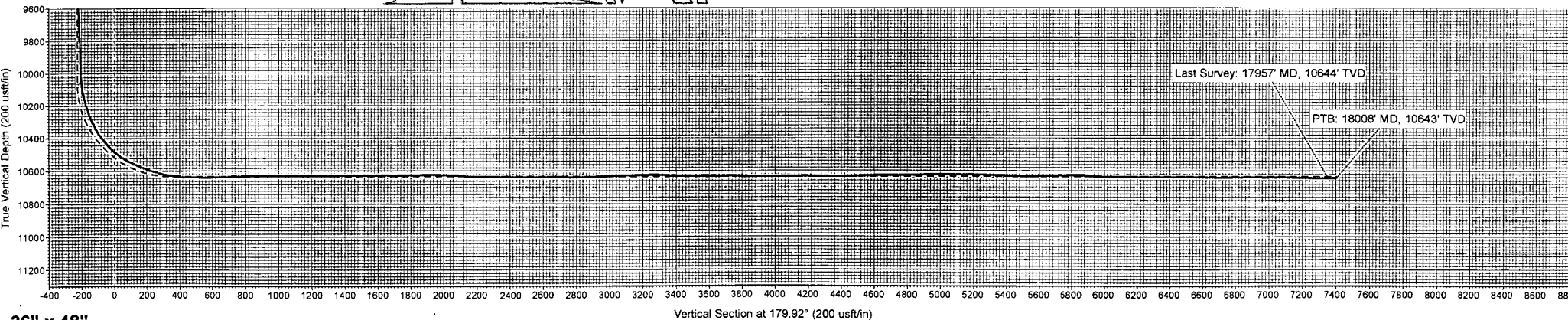
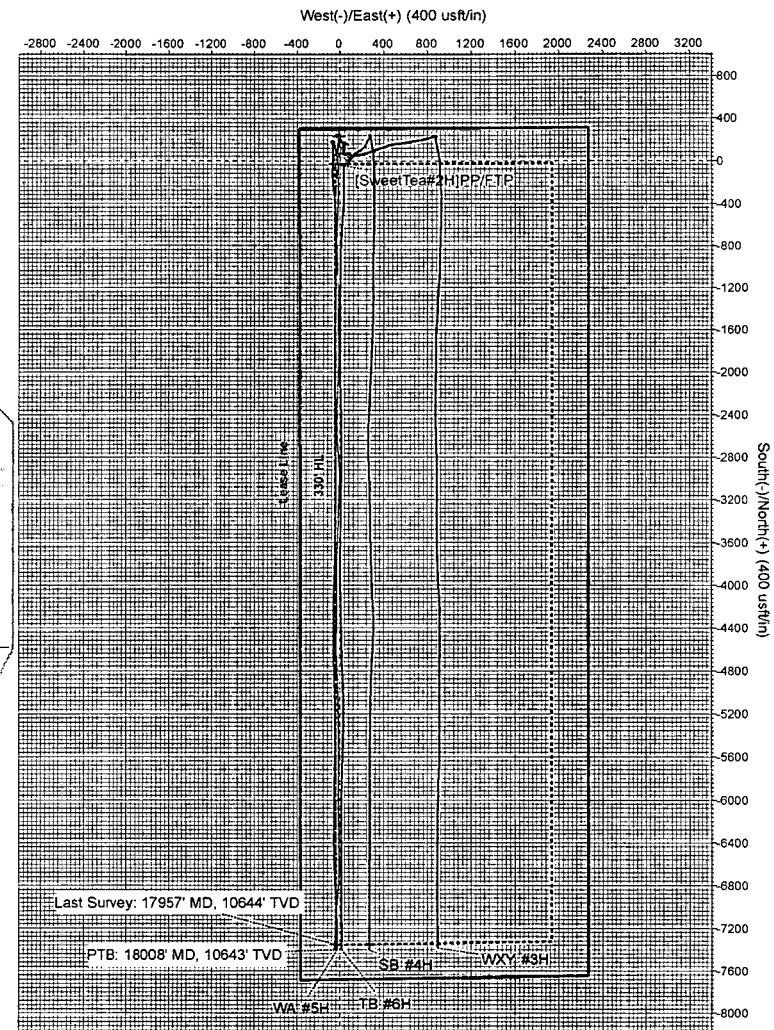
Well WD #2H
Well @ 2943.00usft (GL: 2918' + KB: 25' (Prec594))
Well @ 2943.00usft (GL: 2918' + KB: 25' (Prec594))
Grid
Minimum Curvature
WellPlanner1



Marathon Oil
Eddy County, NM
Sweet Tea State 24-29-31 (2-3-4-5-6)
WD #2H
Plan #3
GL: 2918' + KB: 25' (Prec594)



Target Line: 10634' TVD @ 0° VS: 90° INC



36" x 48"