

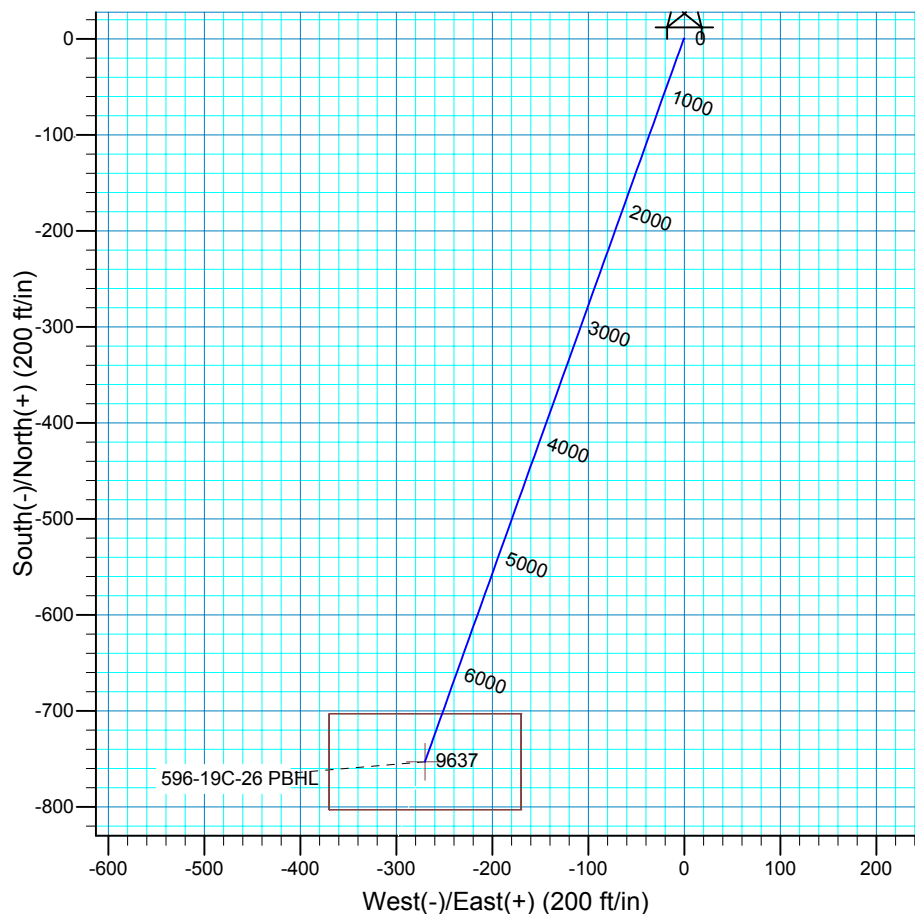
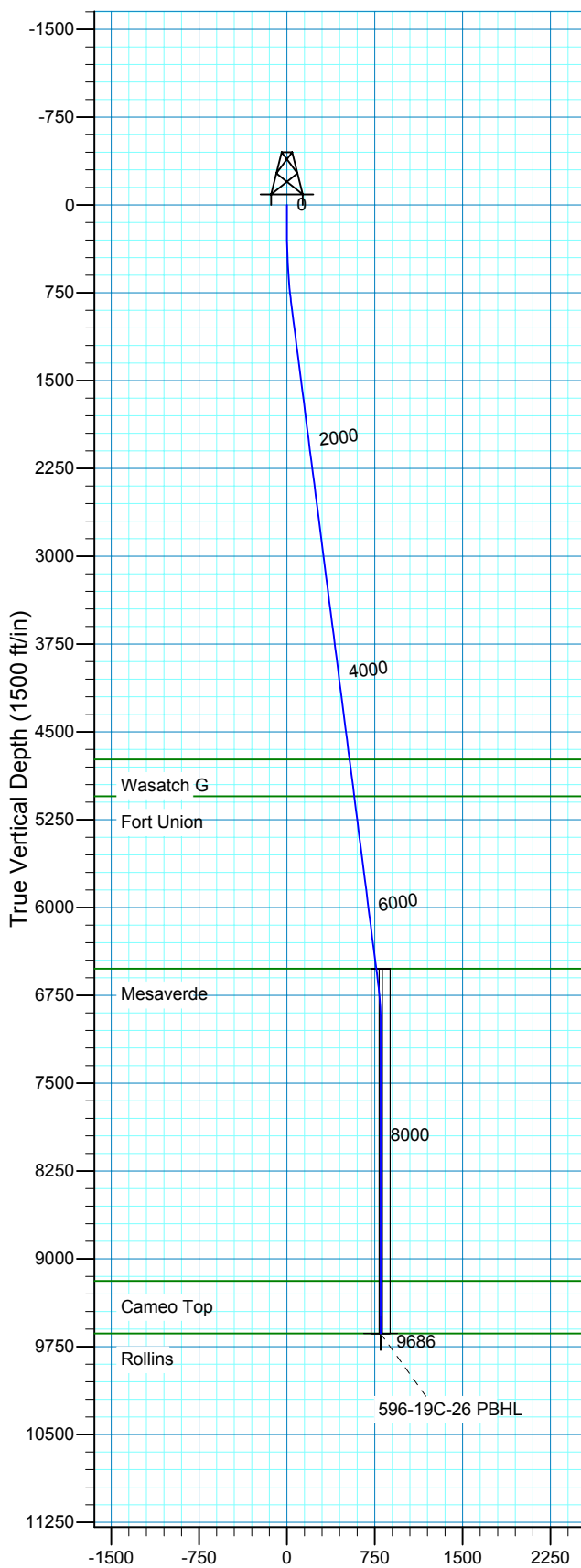


Azimuths to True North  
Magnetic North:  $10.86^\circ$

Magnetic Field  
Strength: 52604.2snT  
Dip Angle: 65.88°  
Date: 2008-03-24  
Model: IGRF2005-10

## WELL DETAILS: 596-19C-26

		GL 8423.5' & RKB 24' @ 8447.50ft		8423.50
+N/-S	+E/-W	Northing	Easting	Latitude Longitude
0.00	0.00	1654020.12	2235631.63	39° 35' 51.874 N 108° 12' 46.530 W



## FORMATION TOP DETAILS

TVDPATH	MDPATH	FORMATION
4734.50	4767.64	Wasatch G
5049.50	5085.21	Fort Union
6522.50	6570.19	Mesaverde
9188.50	9238.10	Cameo Top
9636.50	9686.10	Rollins

## Plan: Plan 2 (596-19C-26/OH)

Created By: Julie Cruse    Date: 2009-05-26

## PROJECT DETAILS: Garfield County, CO NAD 83

Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: Colorado Central Zone  
Location: Sec 19 T5S R96W  
System Datum: Mean Sea Level  
Local North: True

## SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
139.58	0.09	355.85	139.58	0.45	-0.31	0.00	0.00	-0.32	
200.00	0.09	355.85	200.00	0.55	-0.32	0.00	0.00	-0.41	
708.25	5.00	199.70	707.61	-19.92	-7.82	1.00	-156.56	21.39	596-19C-26 PBHL
822.47	7.28	199.70	821.17	-31.43	-11.94	2.00	0.00	33.61	
6685.37	7.28	199.70	6636.75	-731.30	-262.57	0.00	0.00	777.01	
7049.60	0.00	0.00	7000.00	-753.07	-270.37	2.00	180.00	800.13	
9686.10	0.00	0.00	9636.50	-753.07	-270.37	0.00	0.00	800.13	596-19C-26 PBHL



**Scientific Drilling**  
Rocky Mountain Operations

## **Marathon Oil Co.**

**Garfield County, CO NAD 83**

**596-19C Pad**

**596-19C-26 - Slot I**

**OH**

**Plan: Plan 2**

## **Standard Planning Report**

**26 May, 2009**

<b>Database:</b>	EDM 2003.16 Multi User Db	<b>Local Co-ordinate Reference:</b>	Well 596-19C-26 - Slot I
<b>Company:</b>	Marathon Oil Co.	<b>TVD Reference:</b>	GL 8423.5' & RKB 24' @ 8447.50ft
<b>Project:</b>	Garfield County, CO NAD 83	<b>MD Reference:</b>	GL 8423.5' & RKB 24' @ 8447.50ft
<b>Site:</b>	596-19C Pad	<b>North Reference:</b>	True
<b>Well:</b>	596-19C-26	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan 2		

<b>Project</b>	Garfield County, CO NAD 83		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Central Zone		

Site		596-19C Pad, Sec 19 T5S R96W			
Site Position:		Northing:	1,654,080.12 ft	Latitude:	39° 35' 52.467 N
From:	Map	Easting:	2,235,631.58 ft	Longitude:	108° 12' 46.553 W
Position Uncertainty:	0.00 ft	Slot Radius:	in	Grid Convergence:	-1.71 °

Well	596-19C-26 - Slot I, 1591' FSL 1286' FEL					
Well Position	+N/-S	0.00 ft	Northing:	1,654,020.12 ft	Latitude:	39° 35' 51.874 N
	+E/-W	0.00 ft	Easting:	2,235,631.63 ft	Longitude:	108° 12' 46.530 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	8,423.50 ft

<b>Wellbore</b>	OH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2005-10	2008-03-24	10.86	65.88	52,604

<b>Design</b>	Plan 2			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	139.58
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	199.75

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
139.58	0.09	355.85	139.58	0.45	-0.31	0.00	0.00	0.00	0.00	
200.00	0.09	355.85	200.00	0.55	-0.32	0.00	0.00	0.00	0.00	
708.25	5.00	199.70	707.61	-19.92	-7.82	1.00	0.97	-30.72	-156.56	596-19C-26 PBHL
822.47	7.28	199.70	821.17	-31.43	-11.94	2.00	2.00	0.00	0.00	
6,685.37	7.28	199.70	6,636.75	-731.30	-262.57	0.00	0.00	0.00	0.00	
7,049.60	0.00	0.00	7,000.00	-753.07	-270.37	2.00	-2.00	0.00	180.00	
9,686.10	0.00	0.00	9,636.50	-753.07	-270.37	0.00	0.00	0.00	0.00	596-19C-26 PBHL

<b>Database:</b>	EDM 2003.16 Multi User Db	<b>Local Co-ordinate Reference:</b>	Well 596-19C-26 - Slot I
<b>Company:</b>	Marathon Oil Co.	<b>TVD Reference:</b>	GL 8423.5' & RKB 24' @ 8447.50ft
<b>Project:</b>	Garfield County, CO NAD 83	<b>MD Reference:</b>	GL 8423.5' & RKB 24' @ 8447.50ft
<b>Site:</b>	596-19C Pad	<b>North Reference:</b>	True
<b>Well:</b>	596-19C-26	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan 2		

**Planned Survey**

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
139.58	0.09	355.85	139.58	0.45	-0.31	-0.32	0.00	0.00	0.00
200.00	0.09	355.85	200.00	0.55	-0.32	-0.41	0.00	0.00	0.00
300.00	0.92	201.53	299.99	-0.12	-0.62	0.32	1.00	0.83	-154.32
400.00	1.92	200.36	399.96	-2.43	-1.49	2.80	1.00	1.00	-1.17
500.00	2.92	200.00	499.87	-6.39	-2.95	7.01	1.00	1.00	-0.37
600.00	3.92	199.82	599.69	-12.00	-4.97	12.97	1.00	1.00	-0.18
700.00	4.92	199.71	699.39	-19.25	-7.58	20.68	1.00	1.00	-0.11
708.25	5.00	199.70	707.61	-19.92	-7.82	21.39	1.00	1.00	-0.08
800.00	6.84	199.70	798.87	-28.82	-11.01	30.85	2.00	2.00	0.00
822.47	7.28	199.70	821.17	-31.43	-11.94	33.61	2.00	2.00	0.00
900.00	7.28	199.70	898.07	-40.68	-15.25	43.44	0.00	0.00	0.00
1,000.00	7.28	199.70	997.27	-52.62	-19.53	56.12	0.00	0.00	0.00
1,100.00	7.28	199.70	1,096.46	-64.55	-23.80	68.80	0.00	0.00	0.00
1,200.00	7.28	199.70	1,195.65	-76.49	-28.08	81.48	0.00	0.00	0.00
1,300.00	7.28	199.70	1,294.85	-88.43	-32.35	94.16	0.00	0.00	0.00
1,400.00	7.28	199.70	1,394.04	-100.37	-36.63	106.84	0.00	0.00	0.00
1,500.00	7.28	199.70	1,493.23	-112.30	-40.90	119.52	0.00	0.00	0.00
1,600.00	7.28	199.70	1,592.43	-124.24	-45.18	132.20	0.00	0.00	0.00
1,700.00	7.28	199.70	1,691.62	-136.18	-49.45	144.88	0.00	0.00	0.00
1,800.00	7.28	199.70	1,790.81	-148.12	-53.73	157.56	0.00	0.00	0.00
1,900.00	7.28	199.70	1,890.00	-160.05	-58.00	170.24	0.00	0.00	0.00
2,000.00	7.28	199.70	1,989.20	-171.99	-62.28	182.92	0.00	0.00	0.00
2,100.00	7.28	199.70	2,088.39	-183.93	-66.55	195.60	0.00	0.00	0.00
2,200.00	7.28	199.70	2,187.58	-195.87	-70.83	208.28	0.00	0.00	0.00
2,300.00	7.28	199.70	2,286.78	-207.80	-75.10	220.96	0.00	0.00	0.00
2,400.00	7.28	199.70	2,385.97	-219.74	-79.38	233.64	0.00	0.00	0.00
2,500.00	7.28	199.70	2,485.16	-231.68	-83.65	246.32	0.00	0.00	0.00
2,600.00	7.28	199.70	2,584.35	-243.62	-87.93	259.00	0.00	0.00	0.00
2,700.00	7.28	199.70	2,683.55	-255.55	-92.20	271.68	0.00	0.00	0.00
2,800.00	7.28	199.70	2,782.74	-267.49	-96.48	284.36	0.00	0.00	0.00
2,900.00	7.28	199.70	2,881.93	-279.43	-100.75	297.04	0.00	0.00	0.00
3,000.00	7.28	199.70	2,981.13	-291.36	-105.03	309.72	0.00	0.00	0.00
3,100.00	7.28	199.70	3,080.32	-303.30	-109.30	322.39	0.00	0.00	0.00
3,200.00	7.28	199.70	3,179.51	-315.24	-113.57	335.07	0.00	0.00	0.00
3,300.00	7.28	199.70	3,278.70	-327.18	-117.85	347.75	0.00	0.00	0.00
3,400.00	7.28	199.70	3,377.90	-339.11	-122.12	360.43	0.00	0.00	0.00
3,500.00	7.28	199.70	3,477.09	-351.05	-126.40	373.11	0.00	0.00	0.00
3,600.00	7.28	199.70	3,576.28	-362.99	-130.67	385.79	0.00	0.00	0.00
3,700.00	7.28	199.70	3,675.48	-374.93	-134.95	398.47	0.00	0.00	0.00
3,800.00	7.28	199.70	3,774.67	-386.86	-139.22	411.15	0.00	0.00	0.00
3,900.00	7.28	199.70	3,873.86	-398.80	-143.50	423.83	0.00	0.00	0.00
4,000.00	7.28	199.70	3,973.05	-410.74	-147.77	436.51	0.00	0.00	0.00
4,100.00	7.28	199.70	4,072.25	-422.68	-152.05	449.19	0.00	0.00	0.00
4,200.00	7.28	199.70	4,171.44	-434.61	-156.32	461.87	0.00	0.00	0.00
4,300.00	7.28	199.70	4,270.63	-446.55	-160.60	474.55	0.00	0.00	0.00
4,400.00	7.28	199.70	4,369.83	-458.49	-164.87	487.23	0.00	0.00	0.00
4,500.00	7.28	199.70	4,469.02	-470.43	-169.15	499.91	0.00	0.00	0.00
4,600.00	7.28	199.70	4,568.21	-482.36	-173.42	512.59	0.00	0.00	0.00
4,700.00	7.28	199.70	4,667.40	-494.30	-177.70	525.27	0.00	0.00	0.00
4,767.64	7.28	199.70	4,734.50	-502.37	-180.59	533.85	0.00	0.00	0.00
<b>Wasatch G</b>									
4,800.00	7.28	199.70	4,766.60	-506.24	-181.97	537.95	0.00	0.00	0.00
4,900.00	7.28	199.70	4,865.79	-518.17	-186.25	550.63	0.00	0.00	0.00

<b>Database:</b>	EDM 2003.16 Multi User Db	<b>Local Co-ordinate Reference:</b>	Well 596-19C-26 - Slot I
<b>Company:</b>	Marathon Oil Co.	<b>TVD Reference:</b>	GL 8423.5' & RKB 24' @ 8447.50ft
<b>Project:</b>	Garfield County, CO NAD 83	<b>MD Reference:</b>	GL 8423.5' & RKB 24' @ 8447.50ft
<b>Site:</b>	596-19C Pad	<b>North Reference:</b>	True
<b>Well:</b>	596-19C-26	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan 2		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
5,000.00	7.28	199.70	4,964.98	-530.11	-190.52	563.31	0.00	0.00	0.00
5,085.21	7.28	199.70	5,049.50	-540.28	-194.16	574.11	0.00	0.00	0.00
<b>Fort Union</b>									
5,100.00	7.28	199.70	5,064.18	-542.05	-194.80	575.99	0.00	0.00	0.00
5,200.00	7.28	199.70	5,163.37	-553.99	-199.07	588.67	0.00	0.00	0.00
5,300.00	7.28	199.70	5,262.56	-565.92	-203.35	601.35	0.00	0.00	0.00
5,400.00	7.28	199.70	5,361.75	-577.86	-207.62	614.03	0.00	0.00	0.00
5,500.00	7.28	199.70	5,460.95	-589.80	-211.90	626.71	0.00	0.00	0.00
5,600.00	7.28	199.70	5,560.14	-601.74	-216.17	639.39	0.00	0.00	0.00
5,700.00	7.28	199.70	5,659.33	-613.67	-220.45	652.07	0.00	0.00	0.00
5,800.00	7.28	199.70	5,758.53	-625.61	-224.72	664.75	0.00	0.00	0.00
5,900.00	7.28	199.70	5,857.72	-637.55	-229.00	677.43	0.00	0.00	0.00
6,000.00	7.28	199.70	5,956.91	-649.49	-233.27	690.11	0.00	0.00	0.00
6,100.00	7.28	199.70	6,056.10	-661.42	-237.55	702.79	0.00	0.00	0.00
6,200.00	7.28	199.70	6,155.30	-673.36	-241.82	715.47	0.00	0.00	0.00
6,300.00	7.28	199.70	6,254.49	-685.30	-246.10	728.15	0.00	0.00	0.00
6,400.00	7.28	199.70	6,353.68	-697.24	-250.37	740.83	0.00	0.00	0.00
6,500.00	7.28	199.70	6,452.88	-709.17	-254.65	753.51	0.00	0.00	0.00
6,570.19	7.28	199.70	6,522.50	-717.55	-257.65	762.41	0.00	0.00	0.00
<b>Mesaverde</b>									
6,600.00	7.28	199.70	6,552.07	-721.11	-258.92	766.18	0.00	0.00	0.00
6,685.37	7.28	199.70	6,636.75	-731.30	-262.57	777.01	0.00	0.00	0.00
6,700.00	6.99	199.70	6,651.27	-733.01	-263.18	778.83	2.00	-2.00	0.00
6,800.00	4.99	199.70	6,750.71	-742.84	-266.70	789.27	2.00	-2.00	0.00
6,900.00	2.99	199.70	6,850.47	-749.39	-269.05	796.23	2.00	-2.00	0.00
7,000.00	0.99	199.70	6,950.40	-752.67	-270.22	799.70	2.00	-2.00	0.00
7,049.60	0.00	0.00	7,000.00	-753.07	-270.37	800.13	2.00	-2.00	0.00
7,100.00	0.00	0.00	7,050.40	-753.07	-270.37	800.13	0.00	0.00	0.00
7,200.00	0.00	0.00	7,150.40	-753.07	-270.37	800.13	0.00	0.00	0.00
7,300.00	0.00	0.00	7,250.40	-753.07	-270.37	800.13	0.00	0.00	0.00
7,400.00	0.00	0.00	7,350.40	-753.07	-270.37	800.13	0.00	0.00	0.00
7,500.00	0.00	0.00	7,450.40	-753.07	-270.37	800.13	0.00	0.00	0.00
7,600.00	0.00	0.00	7,550.40	-753.07	-270.37	800.13	0.00	0.00	0.00
7,700.00	0.00	0.00	7,650.40	-753.07	-270.37	800.13	0.00	0.00	0.00
7,800.00	0.00	0.00	7,750.40	-753.07	-270.37	800.13	0.00	0.00	0.00
7,900.00	0.00	0.00	7,850.40	-753.07	-270.37	800.13	0.00	0.00	0.00
8,000.00	0.00	0.00	7,950.40	-753.07	-270.37	800.13	0.00	0.00	0.00
8,100.00	0.00	0.00	8,050.40	-753.07	-270.37	800.13	0.00	0.00	0.00
8,200.00	0.00	0.00	8,150.40	-753.07	-270.37	800.13	0.00	0.00	0.00
8,300.00	0.00	0.00	8,250.40	-753.07	-270.37	800.13	0.00	0.00	0.00
8,400.00	0.00	0.00	8,350.40	-753.07	-270.37	800.13	0.00	0.00	0.00
8,500.00	0.00	0.00	8,450.40	-753.07	-270.37	800.13	0.00	0.00	0.00
8,600.00	0.00	0.00	8,550.40	-753.07	-270.37	800.13	0.00	0.00	0.00
8,700.00	0.00	0.00	8,650.40	-753.07	-270.37	800.13	0.00	0.00	0.00
8,800.00	0.00	0.00	8,750.40	-753.07	-270.37	800.13	0.00	0.00	0.00
8,900.00	0.00	0.00	8,850.40	-753.07	-270.37	800.13	0.00	0.00	0.00
9,000.00	0.00	0.00	8,950.40	-753.07	-270.37	800.13	0.00	0.00	0.00
9,100.00	0.00	0.00	9,050.40	-753.07	-270.37	800.13	0.00	0.00	0.00
9,200.00	0.00	0.00	9,150.40	-753.07	-270.37	800.13	0.00	0.00	0.00
9,238.10	0.00	0.00	9,188.50	-753.07	-270.37	800.13	0.00	0.00	0.00
<b>Cameo Top</b>									
9,300.00	0.00	0.00	9,250.40	-753.07	-270.37	800.13	0.00	0.00	0.00
9,400.00	0.00	0.00	9,350.40	-753.07	-270.37	800.13	0.00	0.00	0.00

<b>Database:</b>	EDM 2003.16 Multi User Db	<b>Local Co-ordinate Reference:</b>	Well 596-19C-26 - Slot I
<b>Company:</b>	Marathon Oil Co.	<b>TVD Reference:</b>	GL 8423.5' & RKB 24' @ 8447.50ft
<b>Project:</b>	Garfield County, CO NAD 83	<b>MD Reference:</b>	GL 8423.5' & RKB 24' @ 8447.50ft
<b>Site:</b>	596-19C Pad	<b>North Reference:</b>	True
<b>Well:</b>	596-19C-26	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan 2		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
9,500.00	0.00	0.00	9,450.40	-753.07	-270.37	800.13	0.00	0.00	0.00
9,600.00	0.00	0.00	9,550.40	-753.07	-270.37	800.13	0.00	0.00	0.00
9,686.10	0.00	0.00	9,636.50	-753.07	-270.37	800.13	0.00	0.00	0.00
Rollins									

Targets										
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude		Longitude
- hit/miss target										
- Shape										
596-19C-26 PBHL	0.00	0.00	9,636.50	-753.07	-270.37	1,653,275.46	2,235,338.90	39° 35' 44.431 N		108° 12' 49.984 W
- plan hits target center										
- Rectangle (sides W100.00 H200.00 D0.00)										

Formations							
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)		
4,767.64	4,734.50	Wasatch G		0.00			
5,085.21	5,049.50	Fort Union		0.00			
6,570.19	6,522.50	Mesaverde		0.00			
9,238.10	9,188.50	Cameo Top		0.00			
9,686.10	9,636.50	Rollins		0.00			