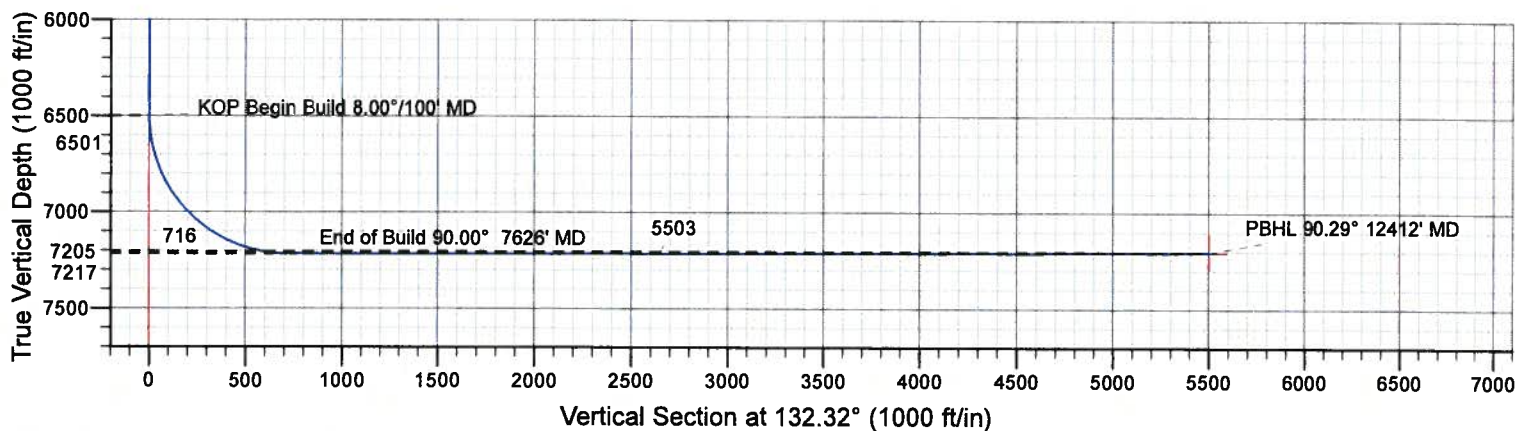
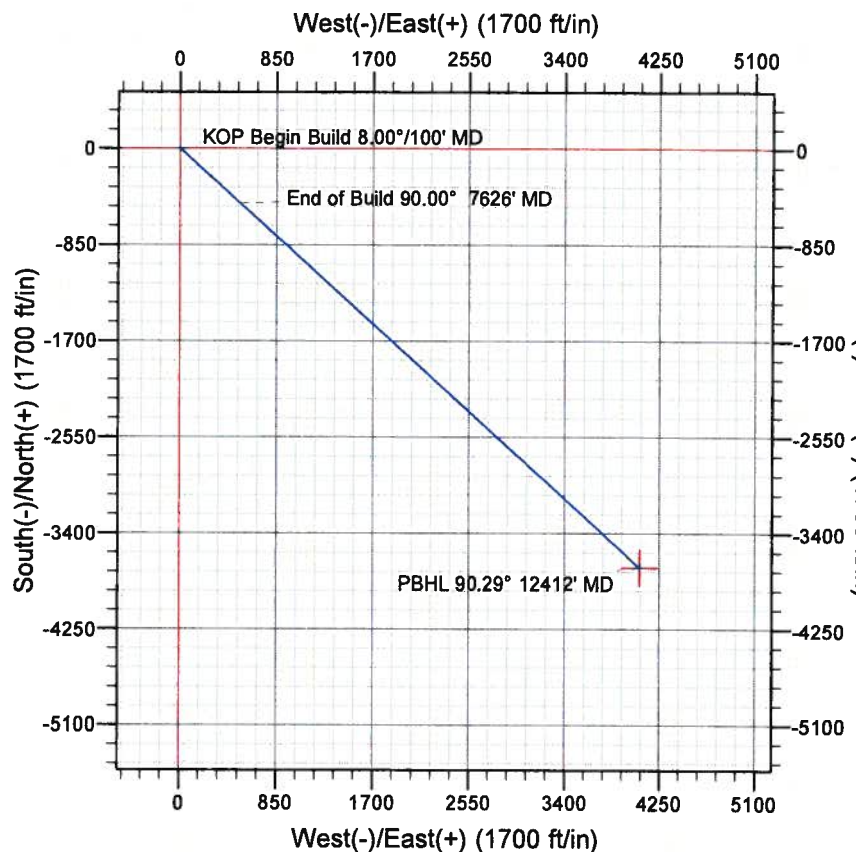
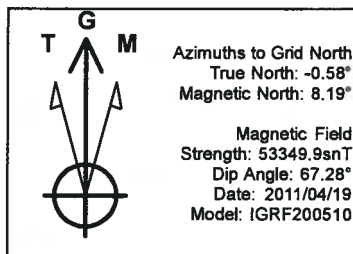


# Marathon Oil Company

Owl Creek 8-64-30-1A

Weld County, Colorado



## Design #1

### Surface Location

**Northing** 1475635.82  
**Easting** 3249890.44  
**Latitude** 40° 38' 7.922 N  
**Longitude** 104° 35' 58.621 W

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0			0.0	0.0	0.0	0.00	0.00	0.0	
2	6501.0	0.00	0.00	6501.0	0.0	0.0	0.00	0.00	0.0	
3	7625.7	90.00	132.35	7217.0	-482.3	529.2	8.00	132.35	716.0	
4	12412.2	90.29	132.32	7205.0	-3701.9	4071.1	0.01	-6.48	5502.5	PBHL 30-1A

To convert a Magnetic Direction to a Grid Direction, Add 8.20°



# **Marathon Oil Company**

**Niobrara Horizontals**

**Weld County, Colorado. . . .**

**Owl Creek 8-64-30-1A**

**Wellbore #1**

**Plan: Design #1**

## **Standard Planning Report**

**19 April, 2011**

# Gyrodatta

## Planning Report

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Site Weld County, Colorado. . . .
<b>Company:</b>	Marathon Oil Company	<b>TVD Reference:</b>	WELL @ 0.0ft (Original Well Elev)
<b>Project:</b>	Niobrara Horizontals	<b>MD Reference:</b>	WELL @ 0.0ft (Original Well Elev)
<b>Site:</b>	Weld County, Colorado. . . .	<b>North Reference:</b>	Grid
<b>Well:</b>	Owl Creek 8-64-30-1A	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

<b>Project</b>	Niobrara Horizontals		
<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 Northern Zone		

Site		Weld County, Colorado. . . .			
Site Position:		Northing:	1,475,635.83 ft	Latitude:	40° 38' 7.922 N
From:	Lat/Long	Easting:	3,249,890.44 ft	Longitude:	104° 35' 58.621 W
Position Uncertainty:	0.0 ft	Slot Radius:	0 "	Grid Convergence:	0.58 °

Well	Owl Creek 8-64-30-1A					
Well Position	+N/-S	0.0 ft	Northing:	1,475,635.83 ft	Latitude:	40° 38' 7.922 N
	+E/-W	0.0 ft	Easting:	3,249,890.44 ft	Longitude:	104° 35' 58.621 W
Position Uncertainty		0.0 ft	Wellhead Elevation:		Ground Level:	0.0 ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF200510	2011/04/19	8.78	67.28	53,350

<b>Design</b>	Design #1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	132.32

<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
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
6,501.0	0.00	0.00	6,501.0	0.0	0.0	0.00	0.00	0.00	0.00	
7,625.7	90.00	132.35	7,217.0	-482.3	529.2	8.00	8.00	0.00	132.35	
12,412.2	90.29	132.32	7,205.0	-3,701.9	4,071.1	0.01	0.01	0.00	-6.48	PBHL 30-1A



# Gyrodatta

## Planning Report

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Site Weld County, Colorado. . . .
<b>Company:</b>	Marathon Oil Company	<b>TVD Reference:</b>	WELL @ 0.0ft (Original Well Elev)
<b>Project:</b>	Niobrara Horizontals	<b>MD Reference:</b>	WELL @ 0.0ft (Original Well Elev)
<b>Site:</b>	Weld County, Colorado. . . .	<b>North Reference:</b>	Grid
<b>Well:</b>	Owl Creek 8-64-30-1A	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

### 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)
6,501.0	0.00	0.00	6,501.0	0.0	0.0	0.0	0.00	0.00	0.00
<b>KOP Begin Build 8.00°/100' MD</b>									
6,600.0	7.92	132.35	6,599.7	-4.6	5.1	6.8	8.00	8.00	0.00
6,700.0	15.92	132.35	6,697.4	-18.5	20.3	27.5	8.00	8.00	0.00
6,800.0	23.93	132.35	6,791.4	-41.4	45.5	61.5	8.00	8.00	0.00
6,900.0	31.93	132.35	6,879.7	-73.0	80.1	108.3	8.00	8.00	0.00
7,000.0	39.93	132.35	6,960.6	-112.5	123.4	167.0	8.00	8.00	0.00
7,100.0	47.93	132.35	7,032.5	-159.2	174.6	236.3	8.00	8.00	0.00
7,200.0	55.94	132.35	7,094.1	-212.2	232.8	314.9	8.00	8.00	0.00
7,300.0	63.94	132.35	7,144.2	-270.4	296.7	401.4	8.00	8.00	0.00
7,400.0	71.94	132.35	7,181.7	-332.8	365.1	494.0	8.00	8.00	0.00
7,500.0	79.94	132.35	7,206.0	-398.1	436.7	591.0	8.00	8.00	0.00
7,600.0	87.94	132.35	7,216.5	-465.0	510.2	690.3	8.00	8.00	0.00
7,625.7	90.00	132.35	7,217.0	-482.3	529.2	716.0	8.00	8.00	0.00
<b>End of Build 90.00° 7626' MD</b>									
7,700.0	90.00	132.35	7,217.0	-532.4	584.1	790.3	0.01	0.01	0.00
7,800.0	90.01	132.35	7,217.0	-599.8	658.0	890.3	0.01	0.01	0.00
7,900.0	90.02	132.35	7,217.0	-667.1	731.9	990.3	0.01	0.01	0.00
8,000.0	90.02	132.35	7,216.9	-734.5	805.8	1,090.3	0.01	0.01	0.00
8,100.0	90.03	132.35	7,216.9	-801.8	879.7	1,190.3	0.01	0.01	0.00
8,200.0	90.03	132.35	7,216.8	-869.2	953.7	1,290.3	0.01	0.01	0.00
8,300.0	90.04	132.35	7,216.8	-936.5	1,027.6	1,390.3	0.01	0.01	0.00
8,400.0	90.05	132.34	7,216.7	-1,003.8	1,101.5	1,490.3	0.01	0.01	0.00
8,500.0	90.05	132.34	7,216.6	-1,071.2	1,175.5	1,590.3	0.01	0.01	0.00
8,600.0	90.06	132.34	7,216.5	-1,138.5	1,249.4	1,690.3	0.01	0.01	0.00
8,700.0	90.06	132.34	7,216.4	-1,205.8	1,323.3	1,790.3	0.01	0.01	0.00
8,800.0	90.07	132.34	7,216.3	-1,273.1	1,397.3	1,890.3	0.01	0.01	0.00
8,900.0	90.08	132.34	7,216.1	-1,340.4	1,471.2	1,990.3	0.01	0.01	0.00
9,000.0	90.08	132.34	7,216.0	-1,407.7	1,545.2	2,090.3	0.01	0.01	0.00
9,100.0	90.09	132.34	7,215.9	-1,475.1	1,619.2	2,190.3	0.01	0.01	0.00
9,200.0	90.09	132.34	7,215.7	-1,542.4	1,693.1	2,290.3	0.01	0.01	0.00
9,300.0	90.10	132.34	7,215.5	-1,609.6	1,767.1	2,390.3	0.01	0.01	0.00
9,400.0	90.11	132.34	7,215.4	-1,676.9	1,841.1	2,490.3	0.01	0.01	0.00
9,500.0	90.11	132.34	7,215.2	-1,744.2	1,915.0	2,590.3	0.01	0.01	0.00
9,600.0	90.12	132.34	7,215.0	-1,811.5	1,989.0	2,690.3	0.01	0.01	0.00
9,700.0	90.12	132.34	7,214.7	-1,878.8	2,063.0	2,790.3	0.01	0.01	0.00
9,800.0	90.13	132.34	7,214.5	-1,946.1	2,137.0	2,890.3	0.01	0.01	0.00
9,900.0	90.14	132.33	7,214.3	-2,013.3	2,211.0	2,990.3	0.01	0.01	0.00
10,000.0	90.14	132.33	7,214.0	-2,080.6	2,285.0	3,090.3	0.01	0.01	0.00
10,100.0	90.15	132.33	7,213.8	-2,147.9	2,359.0	3,190.3	0.01	0.01	0.00
10,200.0	90.15	132.33	7,213.5	-2,215.1	2,433.0	3,290.3	0.01	0.01	0.00
10,300.0	90.16	132.33	7,213.3	-2,282.4	2,507.0	3,390.3	0.01	0.01	0.00
10,400.0	90.17	132.33	7,213.0	-2,349.6	2,581.0	3,490.3	0.01	0.01	0.00
10,500.0	90.17	132.33	7,212.7	-2,416.9	2,655.0	3,590.3	0.01	0.01	0.00
10,600.0	90.18	132.33	7,212.4	-2,484.1	2,729.0	3,690.3	0.01	0.01	0.00
10,700.0	90.18	132.33	7,212.0	-2,551.3	2,803.1	3,790.3	0.01	0.01	0.00
10,800.0	90.19	132.33	7,211.7	-2,618.6	2,877.1	3,890.3	0.01	0.01	0.00
10,900.0	90.20	132.33	7,211.4	-2,685.8	2,951.1	3,990.3	0.01	0.01	0.00
11,000.0	90.20	132.33	7,211.0	-2,753.0	3,025.1	4,090.3	0.01	0.01	0.00
11,100.0	90.21	132.33	7,210.7	-2,820.2	3,099.2	4,190.3	0.01	0.01	0.00
11,200.0	90.21	132.33	7,210.3	-2,887.4	3,173.2	4,290.3	0.01	0.01	0.00
11,300.0	90.22	132.32	7,209.9	-2,954.7	3,247.3	4,390.3	0.01	0.01	0.00
11,400.0	90.23	132.32	7,209.5	-3,021.9	3,321.3	4,490.3	0.01	0.01	0.00
11,500.0	90.23	132.32	7,209.1	-3,089.1	3,395.4	4,590.3	0.01	0.01	0.00

# Gyrodatta

## Planning Report

<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Site Weld County, Colorado. . . .
<b>Company:</b>	Marathon Oil Company	<b>TVD Reference:</b>	WELL @ 0.0ft (Original Well Elev)
<b>Project:</b>	Niobrara Horizontals	<b>MD Reference:</b>	WELL @ 0.0ft (Original Well Elev)
<b>Site:</b>	Weld County, Colorado. . . .	<b>North Reference:</b>	Grid
<b>Well:</b>	Owl Creek 8-64-30-1A	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1		

### 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)
11,600.0	90.24	132.32	7,208.7	-3,156.3	3,469.4	4,690.3	0.01	0.01	0.00
11,700.0	90.24	132.32	7,208.3	-3,223.4	3,543.5	4,790.3	0.01	0.01	0.00
11,800.0	90.25	132.32	7,207.9	-3,290.6	3,617.6	4,890.3	0.01	0.01	0.00
11,900.0	90.26	132.32	7,207.4	-3,357.8	3,691.6	4,990.3	0.01	0.01	0.00
12,000.0	90.26	132.32	7,207.0	-3,425.0	3,765.7	5,090.3	0.01	0.01	0.00
12,100.0	90.27	132.32	7,206.5	-3,492.2	3,839.8	5,190.3	0.01	0.01	0.00
12,200.0	90.27	132.32	7,206.0	-3,559.3	3,913.9	5,290.3	0.01	0.01	0.00
12,300.0	90.28	132.32	7,205.6	-3,626.5	3,988.0	5,390.3	0.01	0.01	0.00
12,400.0	90.29	132.32	7,205.1	-3,693.7	4,062.0	5,490.3	0.01	0.01	0.00
12,412.2	90.29	132.32	7,205.0	-3,701.9	4,071.1	5,502.5	0.00	0.00	0.00
PBHL 90.29° 12412' MD									

### Design 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									
PBHL 30-1A	0.00	0.00	7,205.0	-3,701.9	4,071.1	1,471,933.93	3,253,961.54	40° 37' 30.932 N	104° 35' 6.313 W
- plan hits target center									
- Point									

### Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment
6,501.0	6,501.0	0.0	0.0	KOP Begin Build 8.00°/100' MD
7,625.7	7,217.0	-482.3	529.2	End of Build 90.00° 7626' MD
12,412.2	7,205.0	-3,701.9	4,071.1	PBHL 90.29° 12412' MD