

Marathon Oil Company

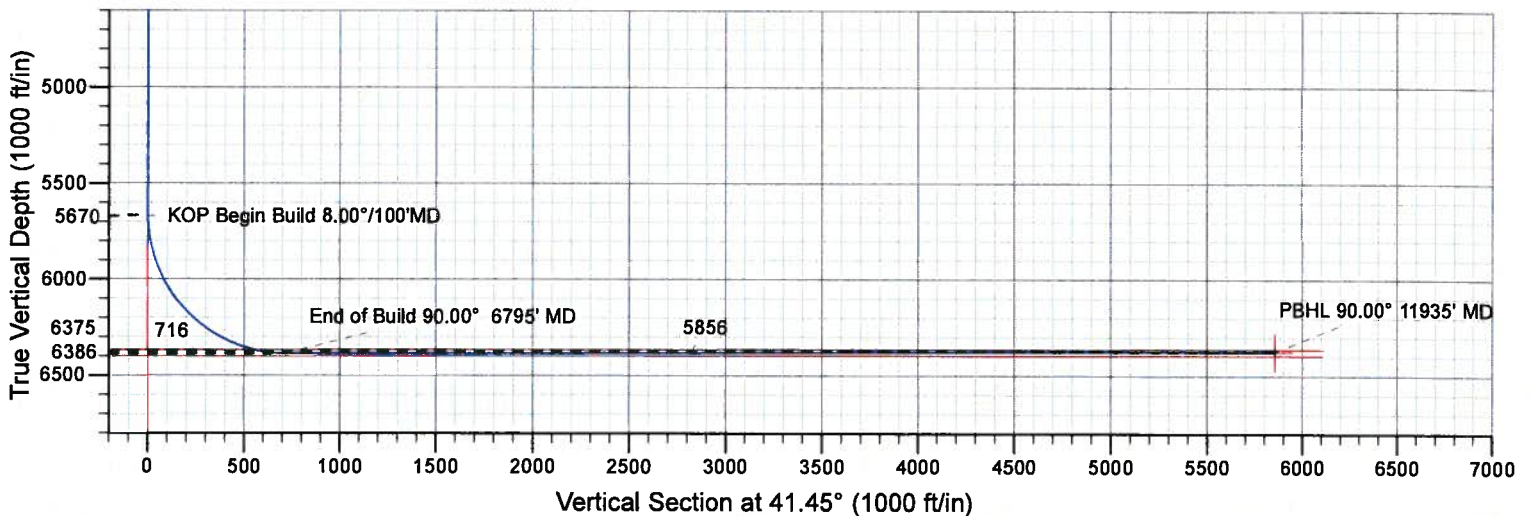
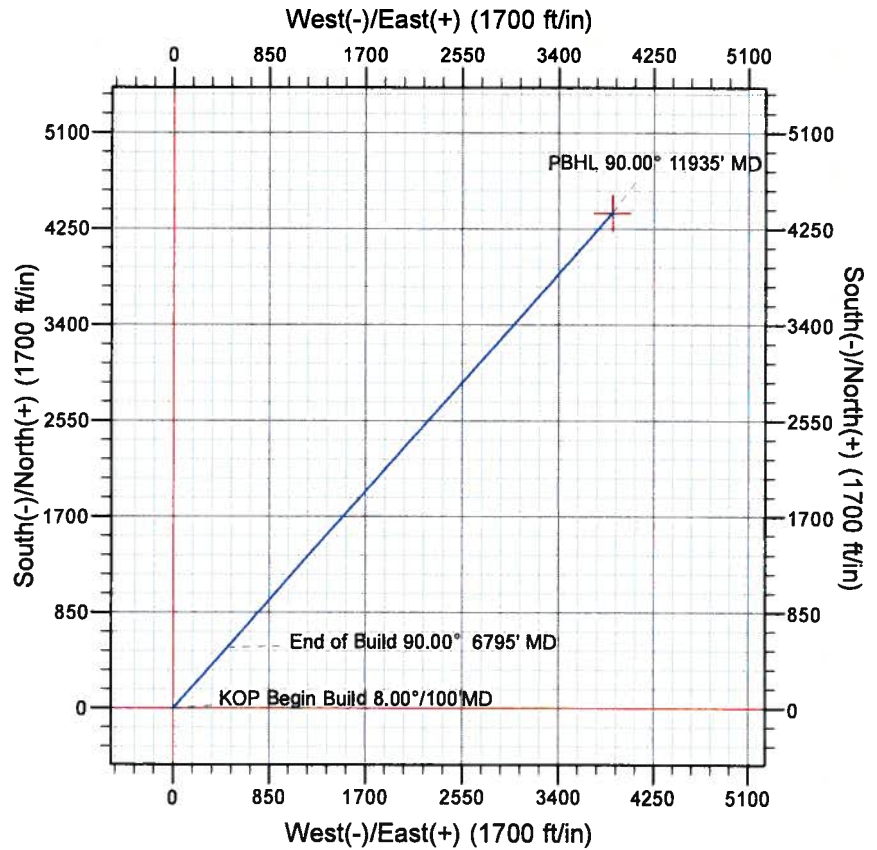
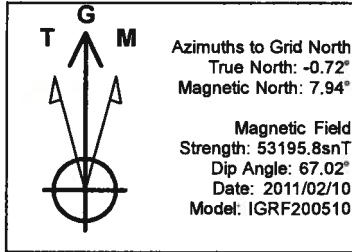
French Lake 4-63-36-1B

Niobrara Horizontals

Lincoln County, Colorado
Weld



gyrodata



Design #1

Surface Location

Northing
1340403.91

Easting
3309191.01

Latitude
40° 15' 45.020 N

Longitude
104° 23' 31.410 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	5670.0	0.00	0.00	5670.0	0.0	0.0	0.00	0.00	0.0	
3	6794.7	90.00	41.45	6386.0	536.7	474.0	8.00	41.45	716.0	
4	9247.4	90.25	41.45	6380.8	2375.0	2097.6	0.01	0.59	3168.7	
5	11934.5	90.00	41.45	6375.0	4389.1	3876.5	0.01	-179.41	5855.8	PBHL French Lake 1B

To convert a Magnetic Direction to a Grid Direction. Add 7.94°

Marathon Oil Company

Niobrara Horizontals

~~Larimer~~ County, Colorado .

French Lake 4-63-36-1B

Wellbore #1

Plan: Design #1

Standard Planning Report

10 February, 2011

Gyrodatta

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Larimer County, Colorado .
Company:	Marathon Oil Company	TVD Reference:	WELL @ 0.0ft (Original Well Elev)
Project:	Niobrara Horizontals	MD Reference:	WELL @ 0.0ft (Original Well Elev)
Site:	Larimer County, Colorado .	North Reference:	Grid
Well:	French Lake 4-63-36-1B	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

Project	Niobrara Horizontals		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		Larimer County, Colorado .			
Site Position:		Northing:	1,340,403.91 ft	Latitude:	40° 15' 45.020 N
From:	Lat/Long	Easting:	3,309,191.01 ft	Longitude:	104° 23' 31.410 W
Position Uncertainty:	0.0 ft	Slot Radius:	0 "	Grid Convergence:	0.72 °

Well	French Lake 4-63-36-1B					
Well Position	+N/-S	0.0 ft	Northing:	1,340,403.91 ft	Latitude:	40° 15' 45.020 N
	+E/-W	0.0 ft	Easting:	3,309,191.01 ft	Longitude:	104° 23' 31.410 W
Position Uncertainty		0.0 ft	Wellhead Elevation:		Ground Level:	0.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	2011/02/10	8.66	67.02	53,196

Design	Design #1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	41.45

Plan Sections										
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	
5,670.0	0.00	0.00	5,670.0	0.0	0.0	0.00	0.00	0.00	0.00	
6,794.7	90.00	41.45	6,386.0	536.7	474.0	8.00	8.00	0.00	41.45	
9,247.4	90.25	41.45	6,380.8	2,375.0	2,097.6	0.01	0.01	0.00	0.59	
11,934.5	90.00	41.45	6,375.0	4,389.1	3,876.5	0.01	-0.01	0.00	-179.41	PBHL French Lake

Gyrodatta

Planning Report

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Site Larimer County, Colorado .
Company:	Marathon Oil Company	TVD Reference:	WELL @ 0.0ft (Original Well Elev)
Project:	Niobrara Horizontals	MD Reference:	WELL @ 0.0ft (Original Well Elev)
Site:	Larimer County, Colorado .	North Reference:	Grid
Well:	French Lake 4-63-36-1B	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	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)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
5,670.0	0.00	0.00	5,670.0	0.0	0.0	0.0	0.00	0.00	0.00
KOP Begin Build 8.00°/100'MD									
6,794.7	90.00	41.45	6,386.0	536.7	474.0	716.0	8.00	8.00	0.00
End of Build 90.00° 6795' MD									
9,247.4	90.25	41.45	6,380.8	2,375.0	2,097.6	3,168.7	0.01	0.01	0.00
11,934.5	90.00	41.45	6,375.0	4,389.0	3,876.4	5,855.8	0.01	-0.01	0.00
PBHL 90.00° 11935' 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 French Lake 1E	0.00	0.00	6,375.0	4,389.1	3,876.5	1,344,792.98	3,313,067.46	40° 16' 27.909 N	104° 22' 40.692 W
- plan hits target center									
- Point									

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
5,670.0	5,670.0	0.0	0.0	KOP Begin Build 8.00°/100'MD
6,794.7	6,386.0	536.7	474.0	End of Build 90.00° 6795' MD
11,934.5	6,375.0	4,389.0	3,876.4	PBHL 90.00° 11935' MD