



Company: B.P.  
Project: La Plata County, CO NAD83  
Site: Fischer Mark Federal B5  
Well: Fischer Mark Federal B5  
Wellbore: Lateral 1  
Design: Plan #3

PROJECT DETAILS: La Plata County, CO NAD83  
Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: Colorado Southern Zone  
System Datum: Mean Sea Level  
Local North: Grid



Plan: Plan #3 (Fischer Mark Federal B5/Lateral 1)

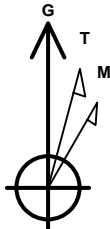
Created By: Janie Collins Date: 11:31, February 28 2017

WELL DETAILS: Fischer Mark Federal B5

+N/-S +E/-W GL 7185' & RKB 11' @ 7196.00usft (Aztec 507) 7185.00  
0.00 0.00 Northing Easting Latitude Longitude Slot  
1214702.34 2409773.11 37.2387194 -107.5276174

SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
2449.48	65.00	348.53	2264.72	438.11	-88.89	0.00	0.00	447.03	
2586.43	92.39	348.54	2291.32	568.47	-115.34	20.00	0.01	580.05	
5688.23	92.39	348.54	2162.00	3605.74	-731.31	0.00	0.00	3679.15	FMF B5 Lat 1 PBHL



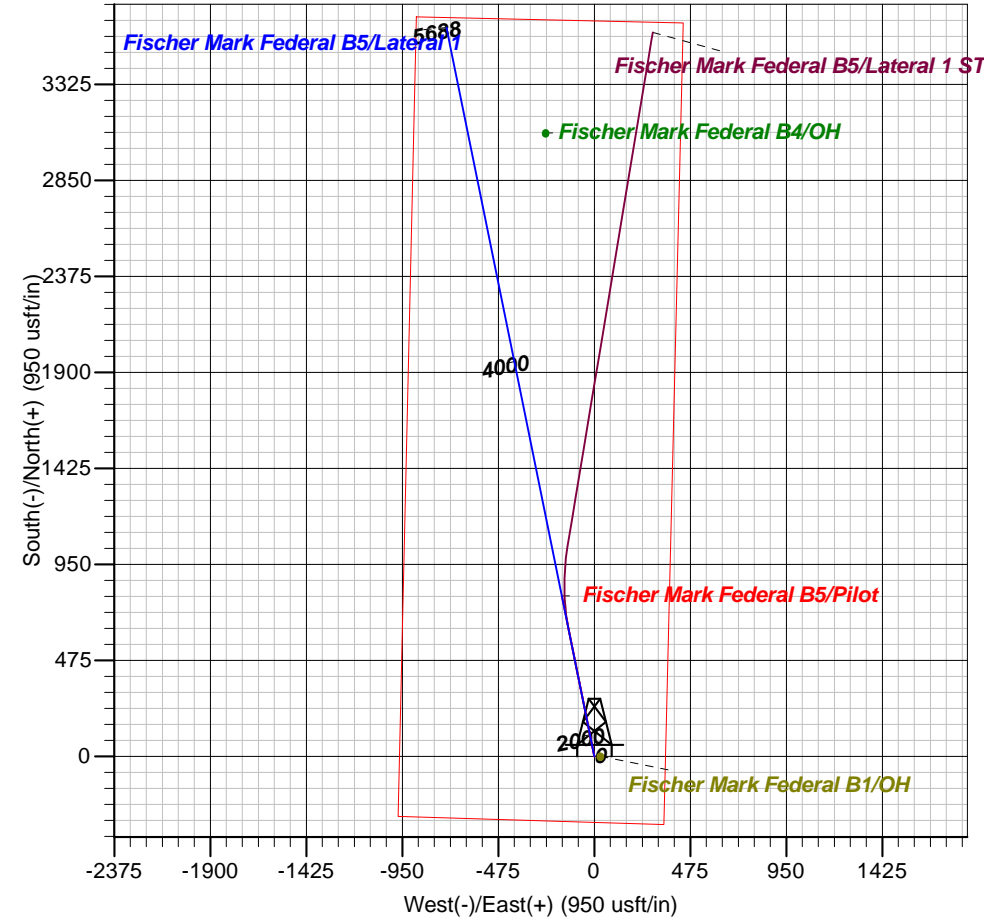
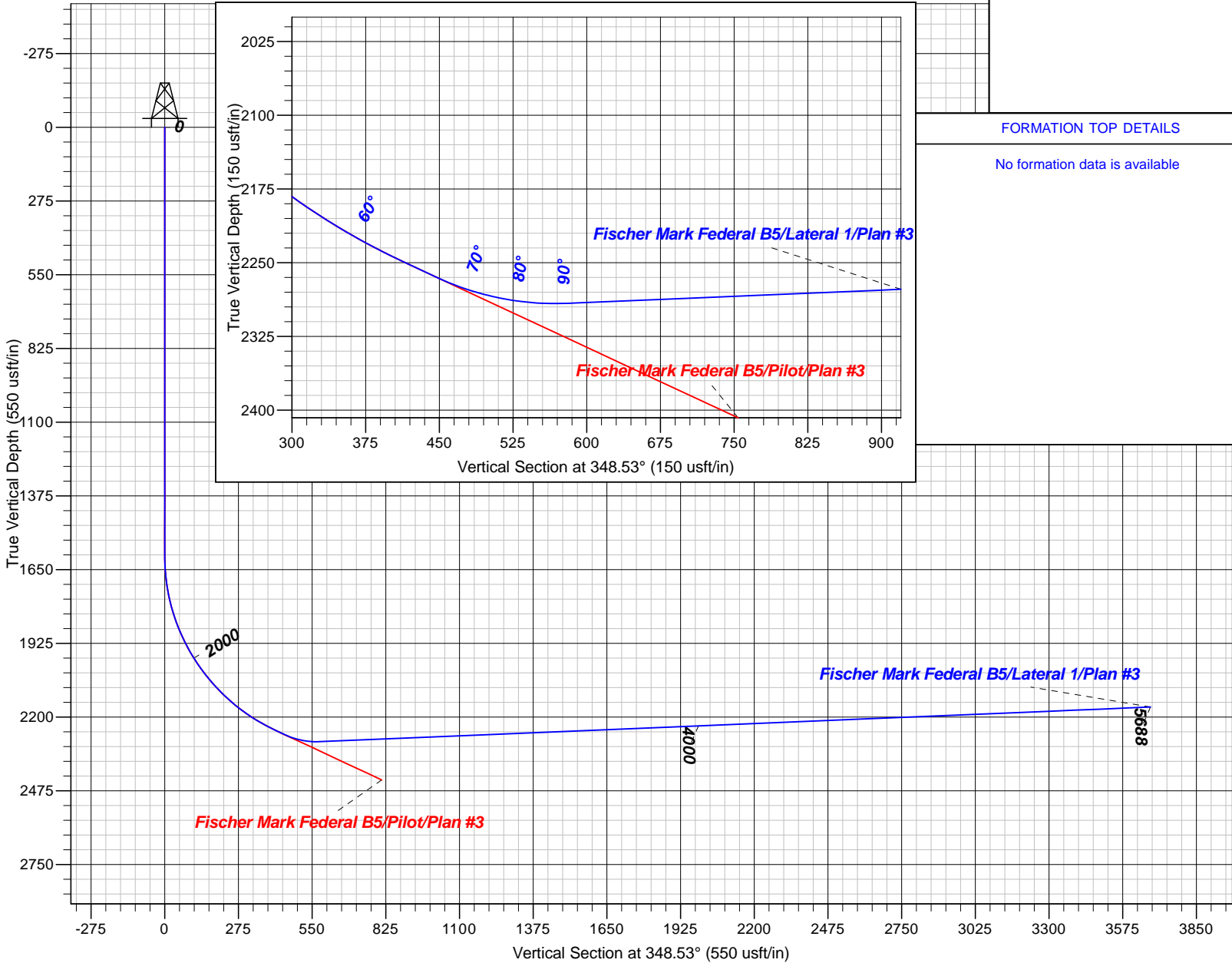
Azimuths to Grid North  
True North: 1.24°  
Magnetic North: 10.56°  
Magnetic Field  
Strength: 50261.4snT  
Dip Angle: 63.75°  
Date: 2/15/2017  
Model: HDGM

FORMATION TOP DETAILS

No formation data is available

TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
FMF B5 Lat 1 PBHL	2162.00	3605.74	-731.31	1218308.08	2409041.80	37.2485762	-107.5303981





**B.P.**

**La Plata County, CO NAD83**

**Fischer Mark Federal B5**

**Fischer Mark Federal B5**

**Lateral 1**

**Plan: Plan #3**

## **Standard Planning Report**

**28 February, 2017**





<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well Fischer Mark Federal B5
<b>Company:</b>	B.P.	<b>TVD Reference:</b>	GL 7185' & RKB 11' @ 7196.00usft (Aztec 507)
<b>Project:</b>	La Plata County, CO NAD83	<b>MD Reference:</b>	GL 7185' & RKB 11' @ 7196.00usft (Aztec 507)
<b>Site:</b>	Fischer Mark Federal B5	<b>North Reference:</b>	Grid
<b>Well:</b>	Fischer Mark Federal B5	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Lateral 1		
<b>Design:</b>	Plan #3		

<b>Project</b>	La Plata County, CO NAD83		
<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 Southern Zone		

Site		Fischer Mark Federal B5			
Site Position:		Northing:	1,214,702.34 usft	Latitude:	37.2387194
From:	Map	Easting:	2,409,773.11 usft	Longitude:	-107.5276174
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	-1.24 °

Well	Fischer Mark Federal B5					
Well Position	+N/-S	0.00 usft	Northing:	1,214,702.34 usft	Latitude:	37.2387194
	+E/-W	0.00 usft	Easting:	2,409,773.11 usft	Longitude:	-107.5276174
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	7,185.00 usft

<b>Wellbore</b>	Lateral 1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	HDGM	2/15/2017	9.32	63.75	50,261

<b>Design</b>	Plan #3			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	2,449.48
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	348.53

<b>Plan Sections</b>										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
2,449.48	65.00	348.53	2,264.72	438.11	-88.89	0.00	0.00	0.00	0.00	
2,586.43	92.39	348.54	2,291.32	568.47	-115.34	20.00	20.00	0.00	0.01	
5,688.23	92.39	348.54	2,162.00	3,605.74	-731.31	0.00	0.00	0.00	0.00	FMF B5 Lat 1 PBHL



<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well Fischer Mark Federal B5
<b>Company:</b>	B.P.	<b>TVD Reference:</b>	GL 7185' & RKB 11' @ 7196.00usft (Aztec 507)
<b>Project:</b>	La Plata County, CO NAD83	<b>MD Reference:</b>	GL 7185' & RKB 11' @ 7196.00usft (Aztec 507)
<b>Site:</b>	Fischer Mark Federal B5	<b>North Reference:</b>	Grid
<b>Well:</b>	Fischer Mark Federal B5	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Lateral 1		
<b>Design:</b>	Plan #3		

## Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
2,449.48	65.00	348.53	2,264.72	438.11	-88.89	447.03	0.00	0.00	0.00
2,500.00	75.10	348.53	2,281.94	484.59	-98.33	494.46	20.00	20.00	0.00
2,586.43	92.39	348.54	2,291.32	568.47	-115.34	580.05	20.00	20.00	0.00
2,600.00	92.39	348.54	2,290.75	581.76	-118.03	593.61	0.00	0.00	0.00
2,700.00	92.39	348.54	2,286.58	679.68	-137.89	693.52	0.00	0.00	0.00
2,800.00	92.39	348.54	2,282.41	777.60	-157.75	793.44	0.00	0.00	0.00
2,900.00	92.39	348.54	2,278.24	875.52	-177.61	893.35	0.00	0.00	0.00
3,000.00	92.39	348.54	2,274.07	973.44	-197.47	993.26	0.00	0.00	0.00
3,100.00	92.39	348.54	2,269.90	1,071.36	-217.33	1,093.18	0.00	0.00	0.00
3,200.00	92.39	348.54	2,265.74	1,169.28	-237.19	1,193.09	0.00	0.00	0.00
3,300.00	92.39	348.54	2,261.57	1,267.19	-257.04	1,293.00	0.00	0.00	0.00
3,400.00	92.39	348.54	2,257.40	1,365.11	-276.90	1,392.91	0.00	0.00	0.00
3,500.00	92.39	348.54	2,253.23	1,463.03	-296.76	1,492.83	0.00	0.00	0.00
3,600.00	92.39	348.54	2,249.06	1,560.95	-316.62	1,592.74	0.00	0.00	0.00
3,700.00	92.39	348.54	2,244.89	1,658.87	-336.48	1,692.65	0.00	0.00	0.00
3,800.00	92.39	348.54	2,240.72	1,756.79	-356.34	1,792.57	0.00	0.00	0.00
3,900.00	92.39	348.54	2,236.55	1,854.71	-376.19	1,892.48	0.00	0.00	0.00
4,000.00	92.39	348.54	2,232.38	1,952.63	-396.05	1,992.39	0.00	0.00	0.00
4,100.00	92.39	348.54	2,228.21	2,050.55	-415.91	2,092.31	0.00	0.00	0.00
4,200.00	92.39	348.54	2,224.04	2,148.47	-435.77	2,192.22	0.00	0.00	0.00
4,300.00	92.39	348.54	2,219.88	2,246.39	-455.63	2,292.13	0.00	0.00	0.00
4,400.00	92.39	348.54	2,215.71	2,344.31	-475.49	2,392.05	0.00	0.00	0.00
4,500.00	92.39	348.54	2,211.54	2,442.23	-495.35	2,491.96	0.00	0.00	0.00
4,600.00	92.39	348.54	2,207.37	2,540.15	-515.20	2,591.87	0.00	0.00	0.00
4,700.00	92.39	348.54	2,203.20	2,638.07	-535.06	2,691.78	0.00	0.00	0.00
4,800.00	92.39	348.54	2,199.03	2,735.99	-554.92	2,791.70	0.00	0.00	0.00
4,900.00	92.39	348.54	2,194.86	2,833.91	-574.78	2,891.61	0.00	0.00	0.00
5,000.00	92.39	348.54	2,190.69	2,931.83	-594.64	2,991.52	0.00	0.00	0.00
5,100.00	92.39	348.54	2,186.52	3,029.75	-614.50	3,091.44	0.00	0.00	0.00
5,200.00	92.39	348.54	2,182.35	3,127.67	-634.36	3,191.35	0.00	0.00	0.00
5,300.00	92.39	348.54	2,178.19	3,225.59	-654.21	3,291.26	0.00	0.00	0.00
5,400.00	92.39	348.54	2,174.02	3,323.51	-674.07	3,391.18	0.00	0.00	0.00
5,500.00	92.39	348.54	2,169.85	3,421.43	-693.93	3,491.09	0.00	0.00	0.00
5,600.00	92.39	348.54	2,165.68	3,519.35	-713.79	3,591.00	0.00	0.00	0.00
5,688.23	92.39	348.54	2,162.00	3,605.74	-731.31	3,679.15	0.00	0.00	0.00
FMF B5 Lat 1 PBHL (copy) - FMF B5 Lat 1 PBHL									

## Design Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
FMF B5 Lat 1 PBHL (copy) - plan hits target center - Point	0.00	360.00	2,162.00	3,605.74	-731.31	1,218,308.08	2,409,041.80	37.2485762	-107.5303981
FMF B5 Lat 1 PBHL - plan hits target center - Point	0.00	360.00	2,162.00	3,605.74	-731.31	1,218,308.08	2,409,041.80	37.2485762	-107.5303981