

# **Bill Barrett Corp. (II)**

**Garfield County, Colorado [NAD83]**

**MDP 23 Pad**

**Federal 31B-19-691**

**Wellbore #1**

**Plan: plan1 10jun10 rbw**

## **Standard Planning Report**

**11 November, 2011**

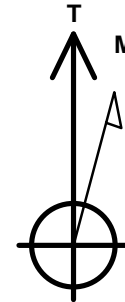
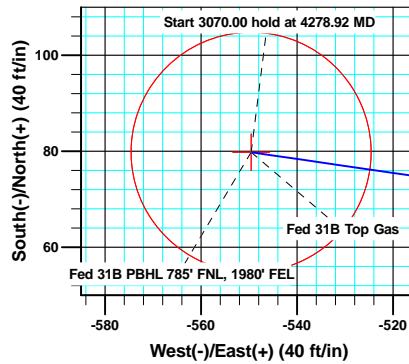
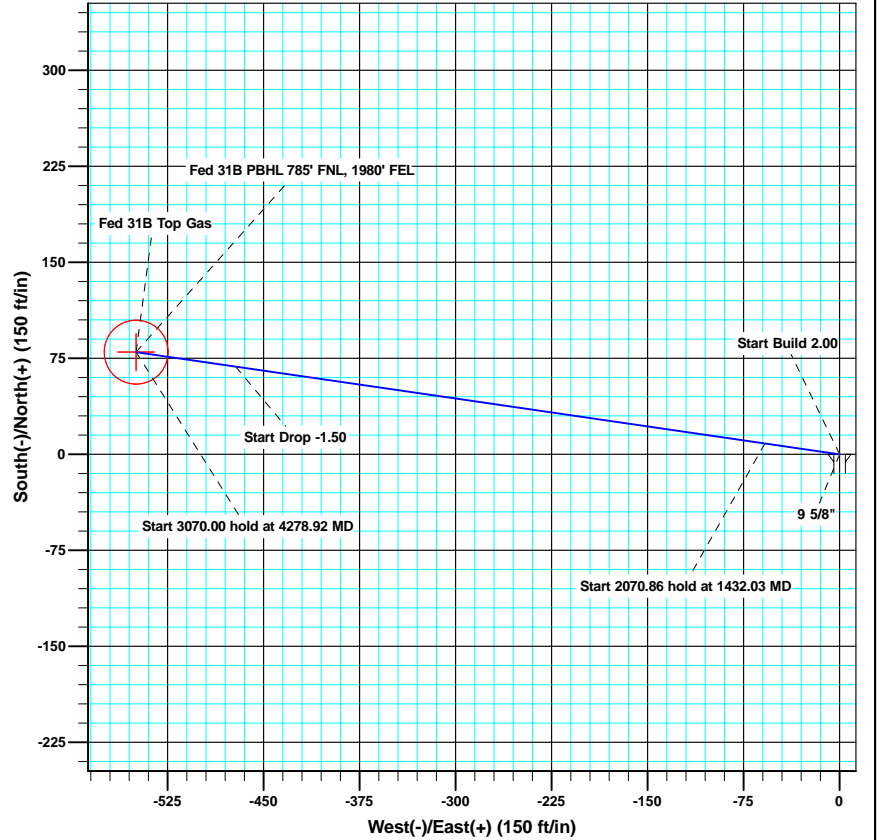
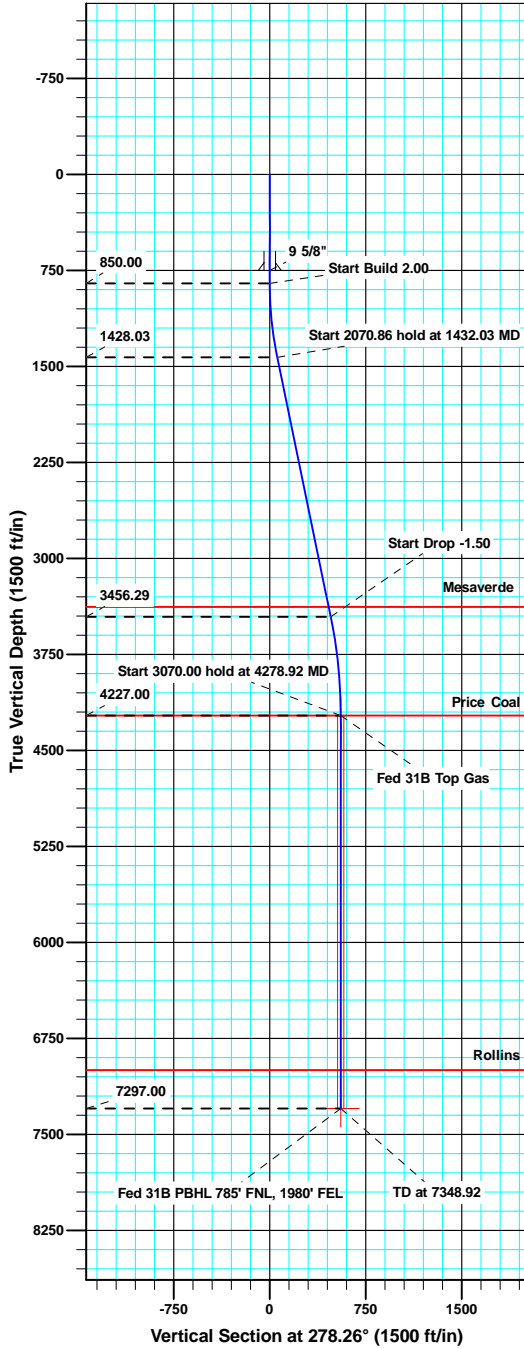




# WELL DETAILS: Federal 31B-19-691

North American Datum 1983 US State Plane 1983 Colorado Central Zone  
 +N/-S +E/-W Northing Easting Latitude Longitude  
 0.00 0.00 1620314.19 2409656.77 39.517874 -107.592764

Ground Level: 5904.00 MDP 23 Pad



Azimuths to True North  
 Magnetic North: 10.28°

Magnetic Field  
 Strength: 52446.6snT  
 Dip Angle: 65.87°  
 Date: 6/10/2010  
 Model: IGRF200510

## ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	VSect	Departure	Annotation
850.00	850.00	0.00	0.00	0.00	0.00	0.00	0.00	Start Build 2.00
1428.03	1432.03	11.64	278.26	8.47	-58.31	58.92	58.92	Start 2070.86 hold at 1432.03 MD
3456.29	3502.88	11.64	278.26	68.51	-471.81	476.76	476.76	Start Drop -1.50
4227.00	4278.92	0.00	0.00	79.80	-549.56	555.32	555.32	Start 3070.00 hold at 4278.92 MD
7297.00	7348.92	0.00	0.00	79.80	-549.56	555.32	555.32	TD at 7348.92

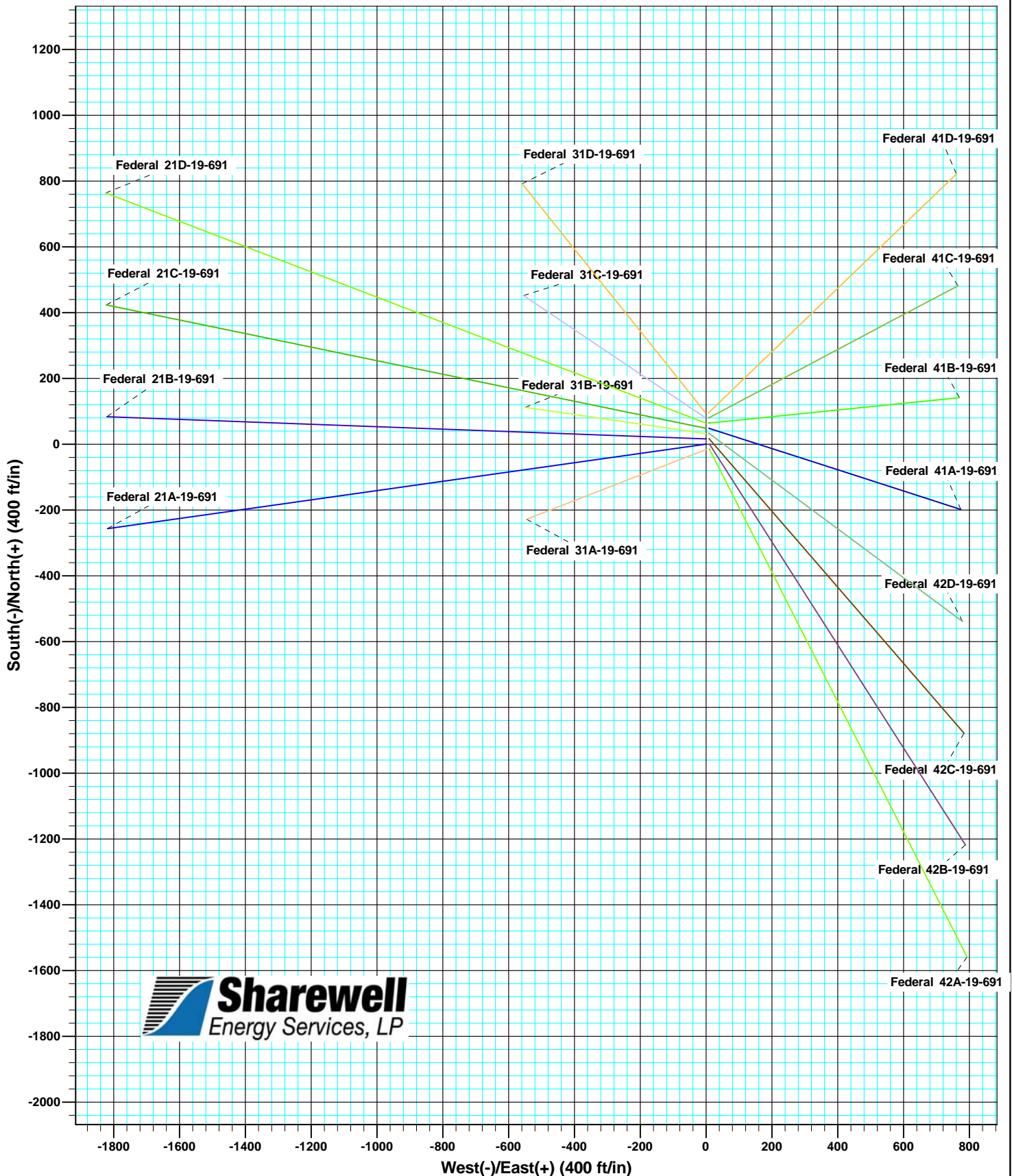




MDP 23 Pad

North American Datum 1983			US State Plane 1983		Colorado Central Zone	
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	
0.00	0.00	1620282.13	2409656.60	39.517786	-107.592762	

Ground Level: 5904.00



<b>Database:</b>	CompassVM	<b>Local Co-ordinate Reference:</b>	Well Federal 31B-19-691
<b>Company:</b>	Bill Barrett Corp. (II)	<b>TVD Reference:</b>	KB @ 5927.00ft
<b>Project:</b>	Garfield County, Colorado [NAD83]	<b>MD Reference:</b>	KB @ 5927.00ft
<b>Site:</b>	MDP 23 Pad	<b>North Reference:</b>	True
<b>Well:</b>	Federal 31B-19-691	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	plan1 10jun10 rbw		

<b>Project</b>	Garfield County, Colorado [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 Central Zone		

<b>Site</b>	MDP 23 Pad			
<b>Site Position:</b>		<b>Northing:</b>	1,620,378.10 usft	<b>Latitude:</b> 39.518050
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,409,666.99 usft	<b>Longitude:</b> -107.592733
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	1.10 ft	<b>Grid Convergence:</b> -1.32 °

<b>Well</b>	Federal 31B-19-691			
<b>Well Position</b>	<b>+N/-S</b>	-64.13 ft	<b>Northing:</b>	1,620,314.18 usft
	<b>+E/-W</b>	-8.75 ft	<b>Easting:</b>	2,409,656.77 usft
<b>Position Uncertainty</b>		0.00 ft	<b>Wellhead Elevation:</b>	<b>Ground Level:</b> 5,904.00 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	6/10/2010	10.28	65.87	52,447

<b>Design</b>	plan1 10jun10 rbw			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD)</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Direction</b>
	(ft)	(ft)	(ft)	(°)
	0.00	0.00	0.00	278.26

<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
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
850.00	0.00	0.00	850.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,432.03	11.64	278.26	1,428.03	8.47	-58.31	2.00	2.00	0.00	278.26	
3,502.88	11.64	278.26	3,456.29	68.51	-471.81	0.00	0.00	0.00	0.00	
4,278.92	0.00	0.00	4,227.00	79.80	-549.56	1.50	-1.50	0.00	180.00	Fed 31B Top Gas
7,348.92	0.00	0.00	7,297.00	79.80	-549.56	0.00	0.00	0.00	0.00	Fed 31B PBHL 785' F

<b>Database:</b>	CompassVM	<b>Local Co-ordinate Reference:</b>	Well Federal 31B-19-691
<b>Company:</b>	Bill Barrett Corp. (II)	<b>TVD Reference:</b>	KB @ 5927.00ft
<b>Project:</b>	Garfield County, Colorado [NAD83]	<b>MD Reference:</b>	KB @ 5927.00ft
<b>Site:</b>	MDP 23 Pad	<b>North Reference:</b>	True
<b>Well:</b>	Federal 31B-19-691	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	plan1 10jun10 rbw		

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)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
750.00	0.00	0.00	750.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>9 5/8"</b>									
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
850.00	0.00	0.00	850.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Start Build 2.00</b>									
900.00	1.00	278.26	900.00	0.06	-0.43	0.44	2.00	2.00	0.00
1,000.00	3.00	278.26	999.93	0.56	-3.89	3.93	2.00	2.00	0.00
1,100.00	5.00	278.26	1,099.68	1.57	-10.79	10.90	2.00	2.00	0.00
1,200.00	7.00	278.26	1,199.13	3.07	-21.13	21.35	2.00	2.00	0.00
1,300.00	9.00	278.26	1,298.15	5.07	-34.90	35.27	2.00	2.00	0.00
1,400.00	11.00	278.26	1,396.63	7.56	-52.09	52.63	2.00	2.00	0.00
1,432.03	11.64	278.26	1,428.03	8.47	-58.31	58.92	2.00	2.00	0.00
<b>Start 2070.86 hold at 1432.03 MD</b>									
1,500.00	11.64	278.26	1,494.61	10.44	-71.88	72.64	0.00	0.00	0.00
1,600.00	11.64	278.26	1,592.55	13.34	-91.85	92.81	0.00	0.00	0.00
1,700.00	11.64	278.26	1,690.49	16.24	-111.82	112.99	0.00	0.00	0.00
1,800.00	11.64	278.26	1,788.44	19.14	-131.78	133.17	0.00	0.00	0.00
1,900.00	11.64	278.26	1,886.38	22.04	-151.75	153.34	0.00	0.00	0.00
2,000.00	11.64	278.26	1,984.32	24.94	-171.72	173.52	0.00	0.00	0.00
2,100.00	11.64	278.26	2,082.27	27.84	-191.69	193.70	0.00	0.00	0.00
2,200.00	11.64	278.26	2,180.21	30.73	-211.66	213.88	0.00	0.00	0.00
2,300.00	11.64	278.26	2,278.15	33.63	-231.62	234.05	0.00	0.00	0.00
2,400.00	11.64	278.26	2,376.10	36.53	-251.59	254.23	0.00	0.00	0.00
2,500.00	11.64	278.26	2,474.04	39.43	-271.56	274.41	0.00	0.00	0.00
2,600.00	11.64	278.26	2,571.98	42.33	-291.53	294.58	0.00	0.00	0.00
2,700.00	11.64	278.26	2,669.93	45.23	-311.49	314.76	0.00	0.00	0.00
2,800.00	11.64	278.26	2,767.87	48.13	-331.46	334.94	0.00	0.00	0.00
2,900.00	11.64	278.26	2,865.81	51.03	-351.43	355.11	0.00	0.00	0.00
3,000.00	11.64	278.26	2,963.76	53.93	-371.40	375.29	0.00	0.00	0.00
3,100.00	11.64	278.26	3,061.70	56.83	-391.36	395.47	0.00	0.00	0.00
3,200.00	11.64	278.26	3,159.64	59.73	-411.33	415.65	0.00	0.00	0.00
3,300.00	11.64	278.26	3,257.59	62.63	-431.30	435.82	0.00	0.00	0.00
3,400.00	11.64	278.26	3,355.53	65.53	-451.27	456.00	0.00	0.00	0.00
3,421.92	11.64	278.26	3,377.00	66.16	-455.64	460.42	0.00	0.00	0.00
<b>Mesaverde</b>									
3,500.00	11.64	278.26	3,453.47	68.43	-471.23	476.18	0.00	0.00	0.00
3,502.88	11.64	278.26	3,456.29	68.51	-471.81	476.76	0.00	0.00	0.00
<b>Start Drop -1.50</b>									
3,600.00	10.18	278.26	3,551.65	71.15	-490.00	495.14	1.50	-1.50	0.00
3,700.00	8.68	278.26	3,650.30	73.51	-506.22	511.53	1.50	-1.50	0.00
3,800.00	7.18	278.26	3,749.34	75.49	-519.88	525.34	1.50	-1.50	0.00
3,900.00	5.68	278.26	3,848.71	77.10	-530.97	536.54	1.50	-1.50	0.00
4,000.00	4.18	278.26	3,948.33	78.34	-539.48	545.14	1.50	-1.50	0.00
4,100.00	2.68	278.26	4,048.15	79.20	-545.41	551.13	1.50	-1.50	0.00
4,200.00	1.18	278.26	4,148.09	79.68	-548.75	554.50	1.50	-1.50	0.00
4,278.92	0.00	0.00	4,227.00	79.80	-549.56	555.32	1.50	-1.50	0.00

<b>Database:</b>	CompassVM	<b>Local Co-ordinate Reference:</b>	Well Federal 31B-19-691
<b>Company:</b>	Bill Barrett Corp. (II)	<b>TVD Reference:</b>	KB @ 5927.00ft
<b>Project:</b>	Garfield County, Colorado [NAD83]	<b>MD Reference:</b>	KB @ 5927.00ft
<b>Site:</b>	MDP 23 Pad	<b>North Reference:</b>	True
<b>Well:</b>	Federal 31B-19-691	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	plan1 10jun10 rbw		

## 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)
<b>Start 3070.00 hold at 4278.92 MD - Price Coal - Fed 31B Top Gas</b>									
4,300.00	0.00	0.00	4,248.09	79.80	-549.56	555.32	0.00	0.00	0.00
4,400.00	0.00	0.00	4,348.09	79.80	-549.56	555.32	0.00	0.00	0.00
4,500.00	0.00	0.00	4,448.09	79.80	-549.56	555.32	0.00	0.00	0.00
4,600.00	0.00	0.00	4,548.09	79.80	-549.56	555.32	0.00	0.00	0.00
4,700.00	0.00	0.00	4,648.09	79.80	-549.56	555.32	0.00	0.00	0.00
4,800.00	0.00	0.00	4,748.09	79.80	-549.56	555.32	0.00	0.00	0.00
4,900.00	0.00	0.00	4,848.09	79.80	-549.56	555.32	0.00	0.00	0.00
5,000.00	0.00	0.00	4,948.09	79.80	-549.56	555.32	0.00	0.00	0.00
5,100.00	0.00	0.00	5,048.09	79.80	-549.56	555.32	0.00	0.00	0.00
5,200.00	0.00	0.00	5,148.09	79.80	-549.56	555.32	0.00	0.00	0.00
5,300.00	0.00	0.00	5,248.09	79.80	-549.56	555.32	0.00	0.00	0.00
5,400.00	0.00	0.00	5,348.09	79.80	-549.56	555.32	0.00	0.00	0.00
5,500.00	0.00	0.00	5,448.09	79.80	-549.56	555.32	0.00	0.00	0.00
5,600.00	0.00	0.00	5,548.09	79.80	-549.56	555.32	0.00	0.00	0.00
5,700.00	0.00	0.00	5,648.09	79.80	-549.56	555.32	0.00	0.00	0.00
5,800.00	0.00	0.00	5,748.09	79.80	-549.56	555.32	0.00	0.00	0.00
5,900.00	0.00	0.00	5,848.09	79.80	-549.56	555.32	0.00	0.00	0.00
6,000.00	0.00	0.00	5,948.09	79.80	-549.56	555.32	0.00	0.00	0.00
6,100.00	0.00	0.00	6,048.09	79.80	-549.56	555.32	0.00	0.00	0.00
6,200.00	0.00	0.00	6,148.09	79.80	-549.56	555.32	0.00	0.00	0.00
6,300.00	0.00	0.00	6,248.09	79.80	-549.56	555.32	0.00	0.00	0.00
6,400.00	0.00	0.00	6,348.09	79.80	-549.56	555.32	0.00	0.00	0.00
6,500.00	0.00	0.00	6,448.09	79.80	-549.56	555.32	0.00	0.00	0.00
6,600.00	0.00	0.00	6,548.09	79.80	-549.56	555.32	0.00	0.00	0.00
6,700.00	0.00	0.00	6,648.09	79.80	-549.56	555.32	0.00	0.00	0.00
6,800.00	0.00	0.00	6,748.09	79.80	-549.56	555.32	0.00	0.00	0.00
6,900.00	0.00	0.00	6,848.09	79.80	-549.56	555.32	0.00	0.00	0.00
7,000.00	0.00	0.00	6,948.09	79.80	-549.56	555.32	0.00	0.00	0.00
7,048.92	0.00	0.00	6,997.00	79.80	-549.56	555.32	0.00	0.00	0.00
<b>Rollins</b>									
7,100.00	0.00	0.00	7,048.09	79.80	-549.56	555.32	0.00	0.00	0.00
7,200.00	0.00	0.00	7,148.09	79.80	-549.56	555.32	0.00	0.00	0.00
7,300.00	0.00	0.00	7,248.09	79.80	-549.56	555.32	0.00	0.00	0.00
7,348.92	0.00	0.00	7,297.00	79.80	-549.56	555.32	0.00	0.00	0.00
<b>TD at 7348.92 - Fed 31B PBHL 785' FNL, 1980' FEL</b>									

## Design Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (usft)	Easting (usft)	Latitude	Longitude
Fed 31B Top Gas - plan hits target center - Circle (radius 25.00)	0.00	0.00	4,227.00	79.80	-549.56	1,620,406.62	2,409,109.20	39.518093	-107.594712
Fed 31B PBHL 785' FNL - plan hits target center - Point	0.00	0.00	7,297.00	79.80	-549.56	1,620,406.62	2,409,109.20	39.518093	-107.594712

<b>Database:</b>	CompassVM	<b>Local Co-ordinate Reference:</b>	Well Federal 31B-19-691
<b>Company:</b>	Bill Barrett Corp. (II)	<b>TVD Reference:</b>	KB @ 5927.00ft
<b>Project:</b>	Garfield County, Colorado [NAD83]	<b>MD Reference:</b>	KB @ 5927.00ft
<b>Site:</b>	MDP 23 Pad	<b>North Reference:</b>	True
<b>Well:</b>	Federal 31B-19-691	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	plan1 10jun10 rbw		

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (ft)	Hole Diameter (ft)	
750.00	750.00	9 5/8"	0.80	1.02	

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,421.92	3,377.00	Mesaverde		0.00	
4,278.92	4,227.00	Price Coal		0.00	
7,048.92	6,997.00	Rollins		0.00	

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
850.00	850.00	0.00	0.00	Start Build 2.00	
1,432.03	1,428.03	8.47	-58.31	Start 2070.86 hold at 1432.03 MD	
3,502.88	3,456.29	68.51	-471.81	Start Drop -1.50	
4,278.92	4,227.00	79.80	-549.56	Start 3070.00 hold at 4278.92 MD	
7,348.92	7,297.00	79.80	-549.56	TD at 7348.92	