



**Weatherford®**

## **Drilling Services**

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## **Proposal**

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**Bill Barrett Corporation**

**Bill Barrett Corporation**  
GRAY 14N-15-37-17  
MONTEZUMA COUNTY, CO  
WELL FILE: PLAN 1  
JANUARY 28, 2010

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**Weatherford International Ltd.**

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Project: MONTEZUMA COUNTY, COLORADO  
 Site: GRAY 14N-15-37-17  
 Well: GRAY 14N-15-37-17  
 Wellbore: GRAY 14N-15-37-17  
 Design: Design #1  
 Lat: 37° 27' 26.550 N  
 Long: 108° 42' 42.250 W  
 GL: 6691.50  
 KB: WELL @ 6707.50ft (Original Well Elev)

### SECTION DETAILS

MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
5217.53	0.00	0.00	5217.53	0.00	0.00	0.00	0.00	0.00	Start Build 12.00
5967.54	90.00	359.73	5695.00	477.46	-2.23	12.00	359.73	477.47	Start 3840.29 hold at 5967.54 MD
9807.83	90.00	359.73	5695.00	4317.71	-20.15	0.00	0.00	4317.76	TD at 9807.83

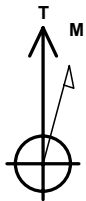
### WELL DETAILS: GRAY 14N-15-37-17

Ground Level: 6691.50

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	303930.71	1067908.16	37° 27' 26.550 N	108° 42' 42.250 W	

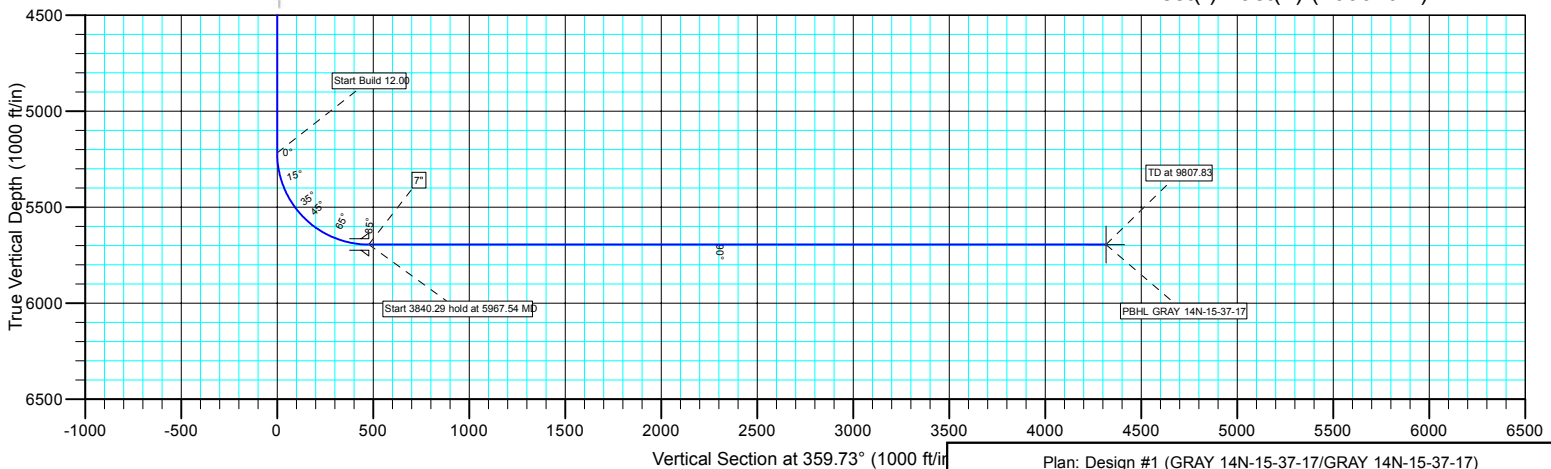
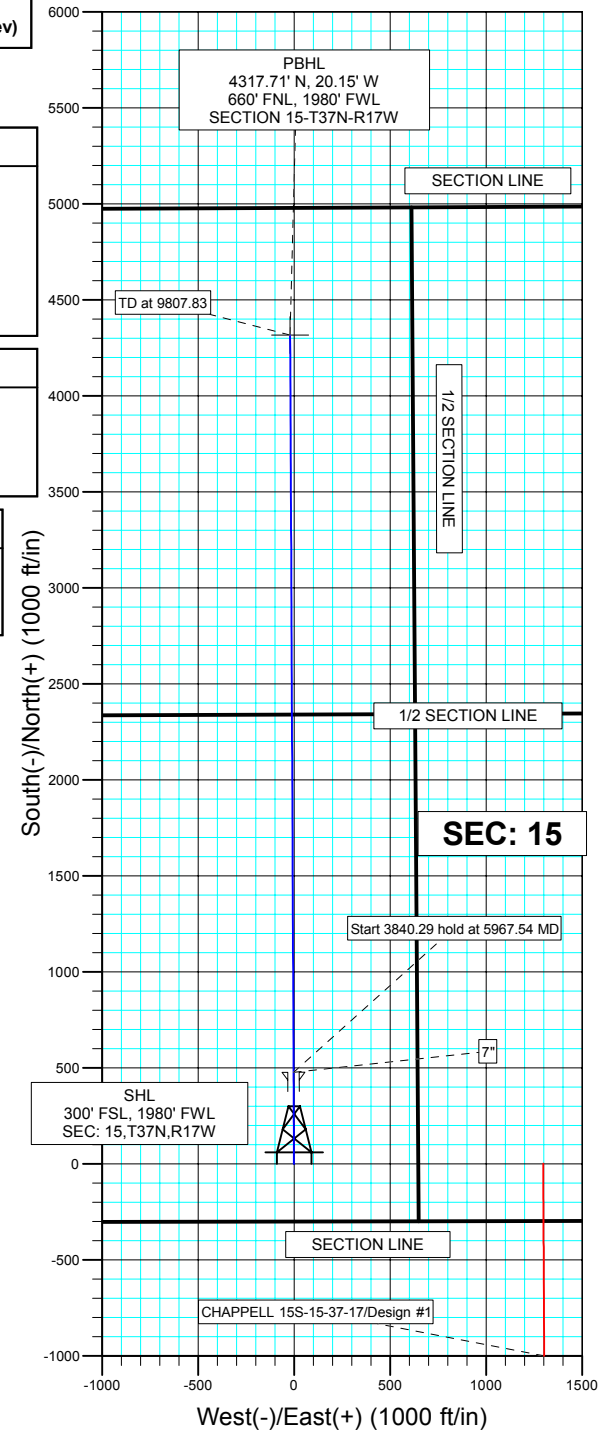
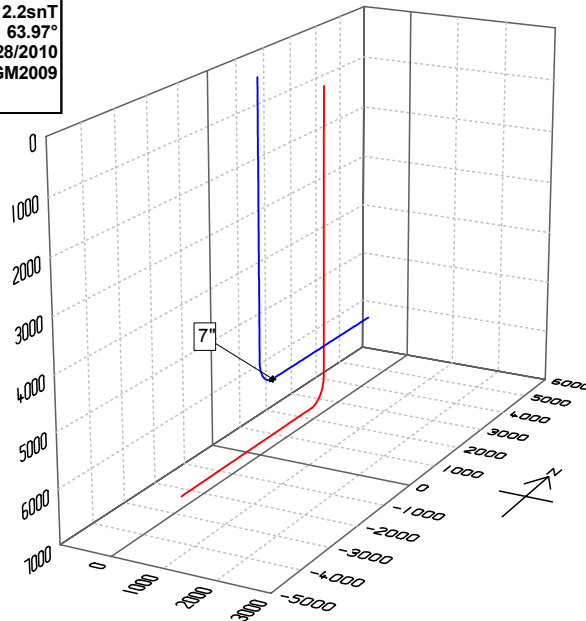
### WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
PBHL GRAY 14N-15-37-17	5695.00	4317.71	-20.15	37° 28' 9.240 N	108° 42' 42.500 W	Point



Azimuths to True North  
 Magnetic North: 10.54°

Magnetic Field  
 Strength: 51112.2snT  
 Dip Angle: 63.97°  
 Date: 1/28/2010  
 Model: BGGM2009



Plan: Design #1 (GRAY 14N-15-37-17/GRAY 14N-15-37-17)

Created By: TRACY WILLIAMS Date: 11:43, January 28 2010



**Bill Barrett Corporation**

# **BILL BARRETT CORP**

**MONTEZUMA COUNTY, COLORADO**

**GRAY 14N-15-37-17**

**GRAY 14N-15-37-17**

**GRAY 14N-15-37-17**

**Plan: Design #1**

## **Standard Planning Report**

**28 January, 2010**



**Weatherford®**

<b>Database:</b>	EDM 2003.21 Single User Db	<b>Local Co-ordinate Reference:</b>	Well GRAY 14N-15-37-17
<b>Company:</b>	BILL BARRETT CORP	<b>TVD Reference:</b>	WELL @ 6707.50ft (Original Well Elev)
<b>Project:</b>	MONTEZUMA COUNTY, COLORADO	<b>MD Reference:</b>	WELL @ 6707.50ft (Original Well Elev)
<b>Site:</b>	GRAY 14N-15-37-17	<b>North Reference:</b>	True
<b>Well:</b>	GRAY 14N-15-37-17	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	GRAY 14N-15-37-17		
<b>Design:</b>	Design #1		

<b>Project</b>	MONTEZUMA COUNTY, COLORADO		
<b>Map System:</b>	US State Plane 1927 (Exact solution)	<b>System Datum:</b>	Ground Level
<b>Geo Datum:</b>	NAD 1927 (NADCON CONUS)		
<b>Map Zone:</b>	Colorado South 503		

Site		GRAY 14N-15-37-17			
Site Position:		Northing:	303,930.71 ft	Latitude:	37° 27' 26.550 N
From:	Lat/Long	Easting:	1,067,908.16 ft	Longitude:	108° 42' 42.250 W
Position Uncertainty:	0.00 ft	Slot Radius:	"	Grid Convergence:	-1.97 °

Well	GRAY 14N-15-37-17					
Well Position	+N/-S	0.00 ft	Northing:	303,930.71 ft	Latitude:	37° 27' 26.550 N
	+E/-W	0.00 ft	Easting:	1,067,908.16 ft	Longitude:	108° 42' 42.250 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	6,691.50 ft

<b>Wellbore</b>	GRAY 14N-15-37-17				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	BGGM2009	1/28/2010	10.54	63.97	51,112

<b>Design</b>	Design #1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<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	359.73

<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	
5,217.53	0.00	0.00	5,217.53	0.00	0.00	0.00	0.00	0.00	0.00	
5,967.54	90.00	359.73	5,695.00	477.46	-2.23	12.00	12.00	0.00	359.73	
9,807.83	90.00	359.73	5,695.00	4,317.71	-20.15	0.00	0.00	0.00	0.00	PBHL GRAY 14N-1



<b>Database:</b>	EDM 2003.21 Single User Db	<b>Local Co-ordinate Reference:</b>	Well GRAY 14N-15-37-17
<b>Company:</b>	BILL BARRETT CORP	<b>TVD Reference:</b>	WELL @ 6707.50ft (Original Well Elev)
<b>Project:</b>	MONTEZUMA COUNTY, COLORADO	<b>MD Reference:</b>	WELL @ 6707.50ft (Original Well Elev)
<b>Site:</b>	GRAY 14N-15-37-17	<b>North Reference:</b>	True
<b>Well:</b>	GRAY 14N-15-37-17	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	GRAY 14N-15-37-17		
<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)
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
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
900.00	0.00	0.00	900.00	0.00	0.00	0.00	0.00	0.00	0.00
1,000.00	0.00	0.00	1,000.00	0.00	0.00	0.00	0.00	0.00	0.00
1,100.00	0.00	0.00	1,100.00	0.00	0.00	0.00	0.00	0.00	0.00
1,200.00	0.00	0.00	1,200.00	0.00	0.00	0.00	0.00	0.00	0.00
1,300.00	0.00	0.00	1,300.00	0.00	0.00	0.00	0.00	0.00	0.00
1,400.00	0.00	0.00	1,400.00	0.00	0.00	0.00	0.00	0.00	0.00
1,500.00	0.00	0.00	1,500.00	0.00	0.00	0.00	0.00	0.00	0.00
1,600.00	0.00	0.00	1,600.00	0.00	0.00	0.00	0.00	0.00	0.00
1,700.00	0.00	0.00	1,700.00	0.00	0.00	0.00	0.00	0.00	0.00
1,800.00	0.00	0.00	1,800.00	0.00	0.00	0.00	0.00	0.00	0.00
1,900.00	0.00	0.00	1,900.00	0.00	0.00	0.00	0.00	0.00	0.00
2,000.00	0.00	0.00	2,000.00	0.00	0.00	0.00	0.00	0.00	0.00
2,100.00	0.00	0.00	2,100.00	0.00	0.00	0.00	0.00	0.00	0.00
2,200.00	0.00	0.00	2,200.00	0.00	0.00	0.00	0.00	0.00	0.00
2,300.00	0.00	0.00	2,300.00	0.00	0.00	0.00	0.00	0.00	0.00
2,400.00	0.00	0.00	2,400.00	0.00	0.00	0.00	0.00	0.00	0.00
2,500.00	0.00	0.00	2,500.00	0.00	0.00	0.00	0.00	0.00	0.00
2,600.00	0.00	0.00	2,600.00	0.00	0.00	0.00	0.00	0.00	0.00
2,700.00	0.00	0.00	2,700.00	0.00	0.00	0.00	0.00	0.00	0.00
2,800.00	0.00	0.00	2,800.00	0.00	0.00	0.00	0.00	0.00	0.00
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.00
3,000.00	0.00	0.00	3,000.00	0.00	0.00	0.00	0.00	0.00	0.00
3,100.00	0.00	0.00	3,100.00	0.00	0.00	0.00	0.00	0.00	0.00
3,200.00	0.00	0.00	3,200.00	0.00	0.00	0.00	0.00	0.00	0.00
3,300.00	0.00	0.00	3,300.00	0.00	0.00	0.00	0.00	0.00	0.00
3,400.00	0.00	0.00	3,400.00	0.00	0.00	0.00	0.00	0.00	0.00
3,500.00	0.00	0.00	3,500.00	0.00	0.00	0.00	0.00	0.00	0.00
3,600.00	0.00	0.00	3,600.00	0.00	0.00	0.00	0.00	0.00	0.00
3,700.00	0.00	0.00	3,700.00	0.00	0.00	0.00	0.00	0.00	0.00
3,800.00	0.00	0.00	3,800.00	0.00	0.00	0.00	0.00	0.00	0.00
3,900.00	0.00	0.00	3,900.00	0.00	0.00	0.00	0.00	0.00	0.00
4,000.00	0.00	0.00	4,000.00	0.00	0.00	0.00	0.00	0.00	0.00
4,100.00	0.00	0.00	4,100.00	0.00	0.00	0.00	0.00	0.00	0.00
4,200.00	0.00	0.00	4,200.00	0.00	0.00	0.00	0.00	0.00	0.00
4,300.00	0.00	0.00	4,300.00	0.00	0.00	0.00	0.00	0.00	0.00
4,400.00	0.00	0.00	4,400.00	0.00	0.00	0.00	0.00	0.00	0.00
4,500.00	0.00	0.00	4,500.00	0.00	0.00	0.00	0.00	0.00	0.00
4,600.00	0.00	0.00	4,600.00	0.00	0.00	0.00	0.00	0.00	0.00
4,700.00	0.00	0.00	4,700.00	0.00	0.00	0.00	0.00	0.00	0.00
4,800.00	0.00	0.00	4,800.00	0.00	0.00	0.00	0.00	0.00	0.00
4,900.00	0.00	0.00	4,900.00	0.00	0.00	0.00	0.00	0.00	0.00
5,000.00	0.00	0.00	5,000.00	0.00	0.00	0.00	0.00	0.00	0.00
5,100.00	0.00	0.00	5,100.00	0.00	0.00	0.00	0.00	0.00	0.00
5,200.00	0.00	0.00	5,200.00	0.00	0.00	0.00	0.00	0.00	0.00

Start Build 12.00



<b>Database:</b>	EDM 2003.21 Single User Db	<b>Local Co-ordinate Reference:</b>	Well GRAY 14N-15-37-17
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<b>Project:</b>	MONTEZUMA COUNTY, COLORADO	<b>MD Reference:</b>	WELL @ 6707.50ft (Original Well Elev)
<b>Site:</b>	GRAY 14N-15-37-17	<b>North Reference:</b>	True
<b>Well:</b>	GRAY 14N-15-37-17	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	GRAY 14N-15-37-17		
<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)
5,217.53	0.00	0.00	5,217.53	0.00	0.00	0.00	0.00	0.00	0.00
5,225.00	0.90	359.73	5,225.00	0.06	0.00	0.06	12.00	12.00	0.00
5,250.00	3.90	359.73	5,249.97	1.10	-0.01	1.10	12.00	12.00	0.00
5,275.00	6.90	359.73	5,274.86	3.45	-0.02	3.45	12.00	12.00	0.00
5,300.00	9.90	359.73	5,299.59	7.10	-0.03	7.10	12.00	12.00	0.00
5,325.00	12.90	359.73	5,324.09	12.04	-0.06	12.04	12.00	12.00	0.00
5,350.00	15.90	359.73	5,348.31	18.26	-0.09	18.26	12.00	12.00	0.00
5,375.00	18.90	359.73	5,372.16	25.73	-0.12	25.73	12.00	12.00	0.00
5,400.00	21.90	359.73	5,395.59	34.44	-0.16	34.44	12.00	12.00	0.00
5,425.00	24.90	359.73	5,418.53	44.37	-0.21	44.37	12.00	12.00	0.00
5,450.00	27.90	359.73	5,440.92	55.48	-0.26	55.48	12.00	12.00	0.00
5,475.00	30.90	359.73	5,462.70	67.75	-0.32	67.75	12.00	12.00	0.00
5,500.00	33.90	359.73	5,483.81	81.14	-0.38	81.14	12.00	12.00	0.00
5,525.00	36.90	359.73	5,504.19	95.62	-0.45	95.62	12.00	12.00	0.00
5,550.00	39.90	359.73	5,523.78	111.15	-0.52	111.15	12.00	12.00	0.00
5,575.00	42.90	359.73	5,542.53	127.68	-0.60	127.68	12.00	12.00	0.00
5,600.00	45.90	359.73	5,560.39	145.16	-0.68	145.17	12.00	12.00	0.00
5,625.00	48.90	359.73	5,577.31	163.56	-0.76	163.57	12.00	12.00	0.00
5,650.00	51.90	359.73	5,593.25	182.82	-0.85	182.82	12.00	12.00	0.00
5,675.00	54.90	359.73	5,608.15	202.89	-0.95	202.89	12.00	12.00	0.00
5,700.00	57.90	359.73	5,621.99	223.71	-1.04	223.71	12.00	12.00	0.00
5,725.00	60.90	359.73	5,634.71	245.22	-1.14	245.23	12.00	12.00	0.00
5,750.00	63.90	359.73	5,646.30	267.38	-1.25	267.38	12.00	12.00	0.00
5,775.00	66.90	359.73	5,656.70	290.10	-1.35	290.11	12.00	12.00	0.00
5,800.00	69.90	359.73	5,665.91	313.34	-1.46	313.35	12.00	12.00	0.00
5,825.00	72.90	359.73	5,673.88	337.03	-1.57	337.04	12.00	12.00	0.00
5,850.00	75.90	359.73	5,680.61	361.11	-1.69	361.11	12.00	12.00	0.00
5,875.00	78.90	359.73	5,686.06	385.50	-1.80	385.51	12.00	12.00	0.00
5,900.00	81.90	359.73	5,690.23	410.15	-1.91	410.16	12.00	12.00	0.00
5,925.00	84.90	359.73	5,693.11	434.98	-2.03	434.99	12.00	12.00	0.00
5,950.00	87.90	359.73	5,694.68	459.93	-2.15	459.93	12.00	12.00	0.00
Start 3840.29 hold at 5967.54 MD - 7"									
5,967.54	90.00	359.73	5,695.00	477.46	-2.23	477.47	12.00	12.00	0.00
6,000.00	90.00	359.73	5,695.00	509.92	-2.38	509.93	0.00	0.00	0.00
6,100.00	90.00	359.73	5,695.00	609.92	-2.85	609.93	0.00	0.00	0.00
6,200.00	90.00	359.73	5,695.00	709.92	-3.31	709.93	0.00	0.00	0.00
6,300.00	90.00	359.73	5,695.00	809.92	-3.78	809.93	0.00	0.00	0.00
6,400.00	90.00	359.73	5,695.00	909.92	-4.25	909.93	0.00	0.00	0.00
6,500.00	90.00	359.73	5,695.00	1,009.92	-4.71	1,009.93	0.00	0.00	0.00
6,600.00	90.00	359.73	5,695.00	1,109.92	-5.18	1,109.93	0.00	0.00	0.00
6,700.00	90.00	359.73	5,695.00	1,209.92	-5.65	1,209.93	0.00	0.00	0.00
6,800.00	90.00	359.73	5,695.00	1,309.92	-6.11	1,309.93	0.00	0.00	0.00
6,900.00	90.00	359.73	5,695.00	1,409.91	-6.58	1,409.93	0.00	0.00	0.00
7,000.00	90.00	359.73	5,695.00	1,509.91	-7.05	1,509.93	0.00	0.00	0.00
7,100.00	90.00	359.73	5,695.00	1,609.91	-7.51	1,609.93	0.00	0.00	0.00
7,200.00	90.00	359.73	5,695.00	1,709.91	-7.98	1,709.93	0.00	0.00	0.00
7,300.00	90.00	359.73	5,695.00	1,809.91	-8.45	1,809.93	0.00	0.00	0.00
7,400.00	90.00	359.73	5,695.00	1,909.91	-8.92	1,909.93	0.00	0.00	0.00
7,500.00	90.00	359.73	5,695.00	2,009.91	-9.38	2,009.93	0.00	0.00	0.00
7,600.00	90.00	359.73	5,695.00	2,109.91	-9.85	2,109.93	0.00	0.00	0.00
7,700.00	90.00	359.73	5,695.00	2,209.91	-10.32	2,209.93	0.00	0.00	0.00
7,800.00	90.00	359.73	5,695.00	2,309.90	-10.78	2,309.93	0.00	0.00	0.00
7,900.00	90.00	359.73	5,695.00	2,409.90	-11.25	2,409.93	0.00	0.00	0.00

<b>Database:</b>	EDM 2003.21 Single User Db	<b>Local Co-ordinate Reference:</b>	Well GRAY 14N-15-37-17
<b>Company:</b>	BILL BARRETT CORP	<b>TVD Reference:</b>	WELL @ 6707.50ft (Original Well Elev)
<b>Project:</b>	MONTEZUMA COUNTY, COLORADO	<b>MD Reference:</b>	WELL @ 6707.50ft (Original Well Elev)
<b>Site:</b>	GRAY 14N-15-37-17	<b>North Reference:</b>	True
<b>Well:</b>	GRAY 14N-15-37-17	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	GRAY 14N-15-37-17		
<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)
8,000.00	90.00	359.73	5,695.00	2,509.90	-11.72	2,509.93	0.00	0.00	0.00
8,100.00	90.00	359.73	5,695.00	2,609.90	-12.18	2,609.93	0.00	0.00	0.00
8,200.00	90.00	359.73	5,695.00	2,709.90	-12.65	2,709.93	0.00	0.00	0.00
8,300.00	90.00	359.73	5,695.00	2,809.90	-13.12	2,809.93	0.00	0.00	0.00
8,400.00	90.00	359.73	5,695.00	2,909.90	-13.58	2,909.93	0.00	0.00	0.00
8,500.00	90.00	359.73	5,695.00	3,009.90	-14.05	3,009.93	0.00	0.00	0.00
8,600.00	90.00	359.73	5,695.00	3,109.90	-14.52	3,109.93	0.00	0.00	0.00
8,700.00	90.00	359.73	5,695.00	3,209.90	-14.98	3,209.93	0.00	0.00	0.00
8,800.00	90.00	359.73	5,695.00	3,309.89	-15.45	3,309.93	0.00	0.00	0.00
8,900.00	90.00	359.73	5,695.00	3,409.89	-15.92	3,409.93	0.00	0.00	0.00
9,000.00	90.00	359.73	5,695.00	3,509.89	-16.38	3,509.93	0.00	0.00	0.00
9,100.00	90.00	359.73	5,695.00	3,609.89	-16.85	3,609.93	0.00	0.00	0.00
9,200.00	90.00	359.73	5,695.00	3,709.89	-17.32	3,709.93	0.00	0.00	0.00
9,300.00	90.00	359.73	5,695.00	3,809.89	-17.78	3,809.93	0.00	0.00	0.00
9,400.00	90.00	359.73	5,695.00	3,909.89	-18.25	3,909.93	0.00	0.00	0.00
9,500.00	90.00	359.73	5,695.00	4,009.89	-18.72	4,009.93	0.00	0.00	0.00
9,600.00	90.00	359.73	5,695.00	4,109.89	-19.18	4,109.93	0.00	0.00	0.00
9,700.00	90.00	359.73	5,695.00	4,209.88	-19.65	4,209.93	0.00	0.00	0.00
<b>TD at 9807.83 - PBHL GRAY 14N-15-37-17</b>									
9,807.83	90.00	359.73	5,695.00	4,317.71	-20.15	4,317.76	0.00	0.00	0.00

Wellbore 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 GRAY 14N-15-37-17	0.00	0.00	5,695.00	4,317.71	-20.15	308,246.56	1,068,036.44	37° 28' 9.240 N	108° 42' 42.500 W
- plan hits target center									
- Point									

Casing Points				
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
5,967.54	5,695.00	7"	7	7-1/2

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment
5,217.53	5,217.53	0.00	0.00	Start Build 12.00
5,967.54	5,695.00	477.46	-2.23	Start 3840.29 hold at 5967.54 MD
9,807.83	5,695.00	4,317.71	-20.15	TD at 9807.83