

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

**Garfield County, Colorado [NAD83]**

**Circle B Tract 5 Pad**

**CBS 31B-21-692**

**Wellbore #1**

**Design: Wellbore #1**

## **Standard Survey Report**

**18 January, 2012**

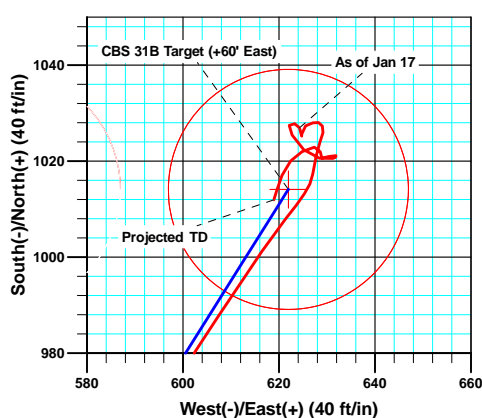
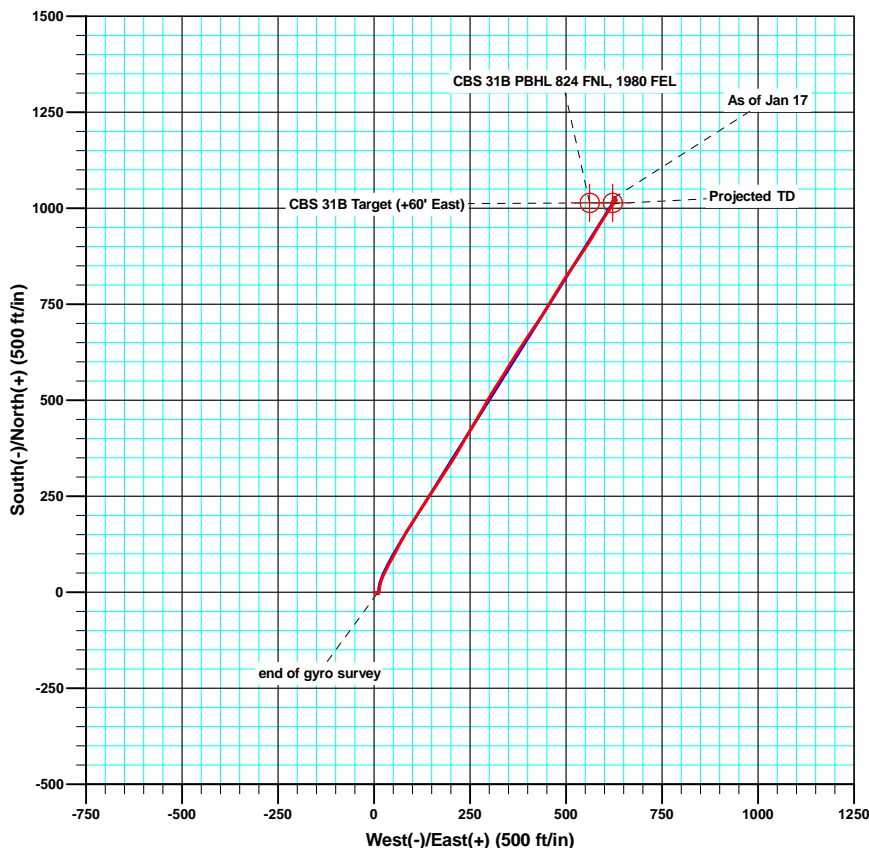
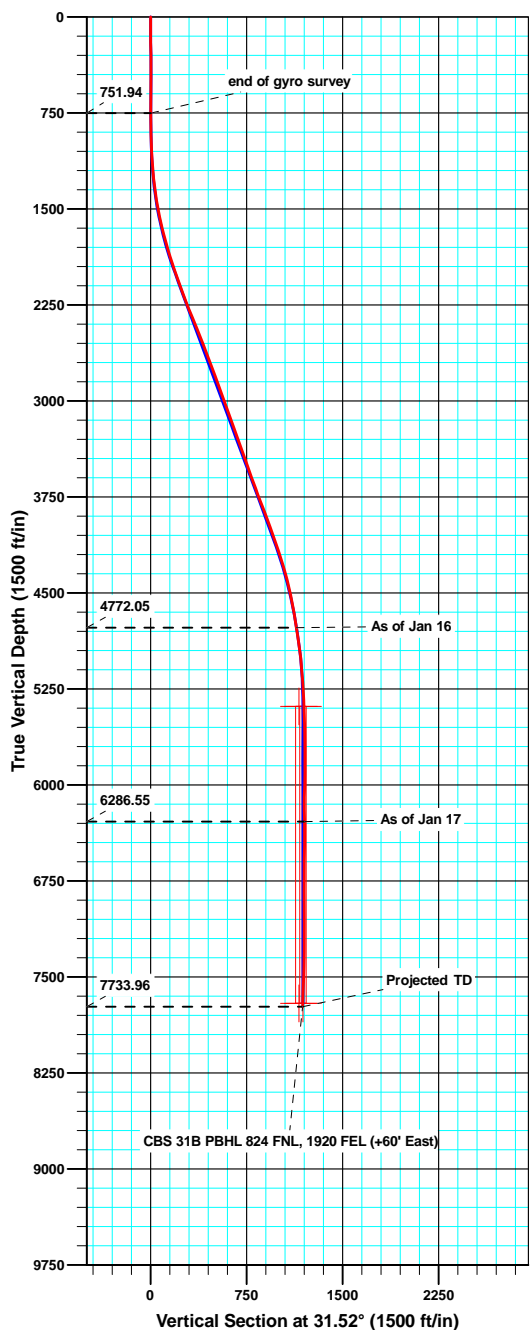


Bill Barrett Corporation

## WELL DETAILS: CBS 31B-21-692

North American Datum 1983 , US State Plane 1983 , Colorado Central Zone

+N/-S +E/-W Northing Easting Latitude Longitude  
0.00 0.00 1619641.87 2387448.73 39° 30' 52.55 N 107° 40' 17.06 W  
Ground Level: 5743.50



Azimuths to True North  
Magnetic North: 10.23°

Magnetic Field  
Strength: 52318.3snT  
Dip Angle: 65.82°  
Date: 4/26/2011  
Model: IGRF2010

### ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	VSect	Departure	Annotation
751.94	752.00	0.650	117.37	-2.64	8.75	2.32	9.34	end of gyro survey
4772.05	4956.00	9.300	32.70	969.88	595.79	1138.25	1151.79	As of Jan 16
6286.55	6474.00	1.100	331.70	1026.92	624.29	1201.79	1229.63	As of Jan 17
7733.96	7922.00	2.600	197.30	1011.96	618.93	1186.23	1269.27	Projected TD

**Microsoft**  
Survey Report

<b>Company:</b>	Bill Barrett Corp. (II)	<b>Local Co-ordinate Reference:</b>	Well CBS 31B-21-692
<b>Project:</b>	Garfield County, Colorado [NAD83]	<b>TVD Reference:</b>	KB @ 5767.00ft
<b>Site:</b>	Circle B Tract 5 Pad	<b>MD Reference:</b>	KB @ 5767.00ft
<b>Well:</b>	CBS 31B-21-692	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	CompassVM

<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		

Site		Circle B Tract 5 Pad			
Site Position:		Northing:	1,619,626.42 usft	Latitude:	39° 30' 52.41 N
From:	Lat/Long	Easting:	2,387,502.83 usft	Longitude:	107° 40' 16.36 W
Position Uncertainty:	0.00 ft	Slot Radius:	1.10 ft	Grid Convergence:	-1.37 °

Well	CBS 31B-21-692					
Well Position	+N/-S	0.00 ft	Northing:	1,619,641.87 usft	Latitude:	39° 30' 52.55 N
	+E/-W	0.00 ft	Easting:	2,387,448.73 usft	Longitude:	107° 40' 17.06 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	5,743.50 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>
	IGRF2010	4/26/2011	10.23	65.82	52,318

<b>Design</b>	Wellbore #1				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<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	31.52	

<b>Survey Program</b>	<b>Date</b>	1/18/2012			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
100.00	752.00	Gyro (Wellbore #1)	Gyro	Gyro	
883.00	7,922.00	MWD (Wellbore #1)	MWD	MWD - Standard	

<b>Survey</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Turn Rate (°/100ft)</b>	
0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
100.00	0.590	87.93	100.00	0.02	0.51	0.28	0.59	0.59	0.00	
200.00	0.900	88.52	199.99	0.06	1.81	1.00	0.31	0.31	0.59	
300.00	0.590	112.15	299.98	-0.12	3.08	1.51	0.43	-0.31	23.63	
400.00	0.770	111.81	399.98	-0.56	4.18	1.71	0.18	0.18	-0.34	
500.00	0.760	114.25	499.97	-1.08	5.41	1.90	0.03	-0.01	2.44	
600.00	0.880	119.76	599.96	-1.74	6.68	2.01	0.14	0.12	5.51	
700.00	0.910	108.77	699.94	-2.37	8.10	2.21	0.17	0.03	-10.99	
752.00	0.650	117.37	751.94	-2.64	8.75	2.32	0.55	-0.50	16.54	
883.00	1.000	126.70	882.92	-3.67	10.32	2.27	0.29	0.27	7.12	

**Microsoft**  
Survey Report

<b>Company:</b>	Bill Barrett Corp. (II)	<b>Local Co-ordinate Reference:</b>	Well CBS 31B-21-692
<b>Project:</b>	Garfield County, Colorado [NAD83]	<b>TVD Reference:</b>	KB @ 5767.00ft
<b>Site:</b>	Circle B Tract 5 Pad	<b>MD Reference:</b>	KB @ 5767.00ft
<b>Well:</b>	CBS 31B-21-692	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	CompassVM

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)
976.00	1.300	65.90	975.91	-3.72	11.94	3.07	1.28	0.32	-65.38
1,071.00	4.200	9.80	1,070.80	0.15	13.51	7.19	3.83	3.05	-59.05
1,166.00	5.200	3.30	1,165.48	7.88	14.35	14.22	1.19	1.05	-6.84
1,261.00	6.900	13.10	1,259.95	17.73	15.90	23.43	2.09	1.79	10.32
1,356.00	7.900	16.10	1,354.16	29.56	19.00	35.13	1.13	1.05	3.16
1,451.00	9.400	25.20	1,448.08	42.86	24.11	49.14	2.13	1.58	9.58
1,546.00	11.200	26.30	1,541.55	58.15	31.51	66.04	1.91	1.89	1.16
1,641.00	13.000	28.40	1,634.43	75.82	40.68	85.90	1.95	1.89	2.21
1,736.00	15.500	29.10	1,726.50	96.31	51.93	109.26	2.64	2.63	0.74
1,831.00	16.700	27.40	1,817.77	119.53	64.39	135.55	1.36	1.26	-1.79
1,926.00	17.300	28.10	1,908.62	144.10	77.32	163.27	0.67	0.63	0.74
2,021.00	19.300	32.30	1,998.82	169.84	92.37	193.07	2.52	2.11	4.42
2,116.00	20.600	33.10	2,088.11	197.11	109.89	225.48	1.40	1.37	0.84
2,211.00	19.900	32.60	2,177.24	224.73	127.72	258.35	0.76	-0.74	-0.53
2,305.00	21.900	32.50	2,265.05	253.00	145.76	291.87	2.13	2.13	-0.11
2,400.00	22.200	33.10	2,353.10	282.97	165.08	327.53	0.39	0.32	0.63
2,495.00	22.000	33.70	2,441.12	312.81	184.76	363.25	0.32	-0.21	0.63
2,590.00	21.400	32.80	2,529.39	342.19	204.02	398.36	0.72	-0.63	-0.95
2,685.00	21.300	29.70	2,617.88	371.74	221.96	432.93	1.19	-0.11	-3.26
2,780.00	20.700	30.00	2,706.57	401.27	238.90	466.96	0.64	-0.63	0.32
2,875.00	19.900	30.10	2,795.66	429.80	255.41	499.91	0.84	-0.84	0.11
2,970.00	20.400	30.40	2,884.85	458.07	271.89	532.63	0.54	0.53	0.32
3,064.00	20.100	30.40	2,973.04	486.13	288.36	565.16	0.32	-0.32	0.00
3,159.00	19.500	29.30	3,062.42	514.04	304.38	597.32	0.74	-0.63	-1.16
3,254.00	19.200	33.10	3,152.06	540.95	320.67	628.78	1.36	-0.32	4.00
3,349.00	19.500	32.60	3,241.69	567.40	337.74	660.25	0.36	0.32	-0.53
3,443.00	19.800	31.40	3,330.22	594.20	354.49	691.86	0.53	0.32	-1.28
3,538.00	20.000	32.30	3,419.55	621.67	371.55	724.19	0.39	0.21	0.95
3,632.00	19.600	33.30	3,507.99	648.43	388.80	756.03	0.56	-0.43	1.06
3,727.00	19.700	34.10	3,597.46	675.01	406.52	787.95	0.30	0.11	0.84
3,822.00	19.800	34.90	3,686.87	701.47	424.71	820.01	0.30	0.11	0.84
3,917.00	21.400	32.20	3,775.79	729.33	443.15	853.40	1.96	1.68	-2.84
4,012.00	21.700	31.20	3,864.15	759.02	461.48	888.29	0.50	0.32	-1.05
4,107.00	19.500	30.90	3,953.07	787.65	478.73	921.72	2.32	-2.32	-0.32
4,201.00	18.900	32.10	4,041.85	814.01	494.87	952.63	0.76	-0.64	1.28
4,296.00	19.300	35.20	4,131.62	839.87	512.10	983.68	1.15	0.42	3.26
4,390.00	18.000	34.60	4,220.68	864.52	529.30	1,013.69	1.40	-1.38	-0.64
4,484.00	16.100	33.80	4,310.54	887.31	544.80	1,041.22	2.04	-2.02	-0.85
4,580.00	14.400	31.90	4,403.16	908.51	558.52	1,066.46	1.85	-1.77	-1.98
4,671.00	12.800	30.20	4,491.61	926.83	569.57	1,087.85	1.81	-1.76	-1.87
4,767.00	10.700	31.90	4,585.59	943.59	579.63	1,107.40	2.22	-2.19	1.77
4,861.00	8.800	30.80	4,678.23	957.17	587.92	1,123.31	2.03	-2.02	-1.17
4,956.00	9.300	32.70	4,772.05	969.88	595.79	1,138.25	0.61	0.53	2.00

**Microsoft**  
Survey Report

<b>Company:</b>	Bill Barrett Corp. (II)	<b>Local Co-ordinate Reference:</b>	Well CBS 31B-21-692
<b>Project:</b>	Garfield County, Colorado [NAD83]	<b>TVD Reference:</b>	KB @ 5767.00ft
<b>Site:</b>	Circle B Tract 5 Pad	<b>MD Reference:</b>	KB @ 5767.00ft
<b>Well:</b>	CBS 31B-21-692	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	CompassVM

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)	
5,051.00	8.500	33.10	4,865.90	982.22	603.77	1,152.95	0.84	-0.84	0.42	
5,146.00	6.900	34.10	4,960.04	992.82	610.80	1,165.67	1.69	-1.68	1.05	
5,241.00	5.400	33.70	5,054.49	1,001.27	616.48	1,175.83	1.58	-1.58	-0.42	
5,336.00	4.700	38.90	5,149.12	1,008.02	621.41	1,184.16	0.88	-0.74	5.47	
5,431.00	3.100	34.50	5,243.90	1,013.16	625.31	1,190.59	1.71	-1.68	-4.63	
5,525.00	2.500	8.30	5,337.79	1,017.29	627.04	1,195.01	1.49	-0.64	-27.87	
5,618.00	2.200	12.70	5,430.71	1,021.04	627.73	1,198.56	0.38	-0.32	4.73	
5,713.00	1.500	19.10	5,525.66	1,023.99	628.54	1,201.50	0.77	-0.74	6.74	
5,807.00	1.000	15.90	5,619.64	1,025.94	629.16	1,203.50	0.54	-0.53	-3.40	
5,902.00	0.800	329.70	5,714.63	1,027.31	629.06	1,204.61	0.77	-0.21	-48.63	
5,997.00	0.600	290.80	5,809.62	1,028.06	628.26	1,204.83	0.53	-0.21	-40.95	
6,093.00	0.900	250.70	5,905.62	1,027.99	627.07	1,204.15	0.61	0.31	-41.77	
6,188.00	1.100	244.80	6,000.60	1,027.35	625.54	1,202.81	0.24	0.21	-6.21	
6,284.00	1.600	179.00	6,096.58	1,025.62	624.73	1,200.91	1.59	0.52	-68.54	
6,379.00	1.100	359.00	6,191.57	1,025.21	624.74	1,200.56	2.84	-0.53	-189.47	
6,474.00	1.100	331.70	6,286.55	1,026.92	624.29	1,201.79	0.55	0.00	-28.74	
6,569.00	0.700	280.70	6,381.54	1,027.83	623.29	1,202.04	0.90	-0.42	-53.68	
6,664.00	0.900	230.70	6,476.53	1,027.47	622.14	1,201.13	0.74	0.21	-52.63	
6,759.00	2.300	142.70	6,571.50	1,025.48	622.72	1,199.73	2.57	1.47	-92.63	
6,853.00	2.500	140.50	6,665.42	1,022.40	625.17	1,198.39	0.23	0.21	-2.34	
6,948.00	2.400	95.70	6,760.34	1,020.60	628.47	1,198.58	1.97	-0.11	-47.16	
7,043.00	1.000	77.70	6,855.30	1,020.58	631.26	1,200.02	1.56	-1.47	-18.95	
7,138.00	0.500	335.30	6,950.29	1,021.13	631.89	1,200.82	1.27	-0.53	-107.79	
7,233.00	1.600	246.40	7,045.28	1,020.98	630.50	1,199.97	1.75	1.16	-93.58	
7,328.00	0.500	299.70	7,140.27	1,020.65	628.93	1,198.86	1.43	-1.16	56.11	
7,422.00	1.300	1.70	7,234.25	1,021.92	628.60	1,199.78	1.23	0.85	65.96	
7,517.00	1.500	265.10	7,329.24	1,022.89	627.40	1,199.97	2.20	0.21	-101.68	
7,612.00	1.900	238.40	7,424.20	1,021.96	624.82	1,197.83	0.92	0.42	-28.11	
7,707.00	1.800	223.60	7,519.15	1,020.06	622.45	1,194.97	0.51	-0.11	-15.58	
7,802.00	2.500	201.70	7,614.08	1,017.05	620.65	1,191.47	1.12	0.74	-23.05	
7,877.00	2.600	197.30	7,689.01	1,013.91	619.54	1,188.20	0.29	0.13	-5.87	
7,922.00	2.600	197.30	7,733.96	1,011.96	618.93	1,186.23	0.00	0.00	0.00	

Design Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
752.00	751.94	-2.64	8.75	end of gyro survey
4,956.00	4,772.05	969.88	595.79	As of Jan 16
6,474.00	6,286.55	1,026.92	624.29	As of Jan 17
7,922.00	7,733.96	1,011.96	618.93	Projected TD

**Microsoft**  
Survey Report

<b>Company:</b>	Bill Barrett Corp. (II)	<b>Local Co-ordinate Reference:</b>	Well CBS 31B-21-692
<b>Project:</b>	Garfield County, Colorado [NAD83]	<b>TVD Reference:</b>	KB @ 5767.00ft
<b>Site:</b>	Circle B Tract 5 Pad	<b>MD Reference:</b>	KB @ 5767.00ft
<b>Well:</b>	CBS 31B-21-692	<b>North Reference:</b>	True
<b>Wellbore:</b>	Wellbore #1	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	Wellbore #1	<b>Database:</b>	CompassVM

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_