



## **Bill Barrett Corp.**

Garfield County, Colorado [NAD83]

MDP 11 Pad

GGU Federal 31B-29-691

Wellbore #1

Survey: Surveys from Surface

## **Standard Survey Report**

22 March, 2011



<b>Company:</b>	Bill Barrett Corp.	<b>Local Co-ordinate Reference:</b>	Well GGU Federal 31B-29-691
<b>Project:</b>	Garfield County, Colorado [NAD83]	<b>TVD Reference:</b>	KB @ 6126.90ft
<b>Site:</b>	MDP 11 Pad	<b>MD Reference:</b>	KB @ 6126.90ft
<b>Well:</b>	GGU Federal 31B-29-691	<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>	Compass VM

<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		MDP 11 Pad			
Site Position:		Northing:	1,614,688.12 usft	Latitude:	39° 30' 9.99 N
From:	Lat/Long	Easting:	2,415,090.26 usft	Longitude:	107° 34' 22.99 W
Position Uncertainty:	0.00 ft	Slot Radius:	1.10 ft	Grid Convergence:	-1.31 °

Well		GGU Federal 31B-29-691				
Well Position	+N/-S	0.00 ft	Northing:	1,614,716.09 usft	Latitude:	39° 30' 10.24 N
	+E/-W	0.00 ft	Easting:	2,414,997.76 usft	Longitude:	107° 34' 24.18 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	6,103.90 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	12/21/10	10.20	65.85	52,387

<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	300.40	

<b>Survey Program</b>	<b>Date</b>	03/22/11			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
50.00	750.00	Gyro Surveys (Wellbore #1)	MWD	MWD - Standard	
882.00	7,453.00	Surveys (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	
50.00	0.270	19.09	50.00	0.11	0.04	0.02	0.54	0.54	0.00	
100.00	0.170	29.62	100.00	0.29	0.11	0.05	0.21	-0.20	21.06	
150.00	0.250	14.71	150.00	0.46	0.18	0.08	0.19	0.16	-29.82	
200.00	0.140	10.25	200.00	0.62	0.22	0.13	0.22	-0.22	-8.92	
250.00	0.290	358.27	250.00	0.81	0.22	0.22	0.31	0.30	-23.96	
300.00	0.270	358.01	300.00	1.05	0.22	0.35	0.04	-0.04	-0.52	
350.00	0.190	326.27	350.00	1.24	0.17	0.48	0.29	-0.16	-63.48	
400.00	0.260	337.87	400.00	1.41	0.08	0.65	0.17	0.14	23.20	
450.00	0.300	324.84	450.00	1.63	-0.04	0.86	0.15	0.08	-26.06	

<b>Company:</b>	Bill Barrett Corp.	<b>Local Co-ordinate Reference:</b>	Well GGU Federal 31B-29-691
<b>Project:</b>	Garfield County, Colorado [NAD83]	<b>TVD Reference:</b>	KB @ 6126.90ft
<b>Site:</b>	MDP 11 Pad	<b>MD Reference:</b>	KB @ 6126.90ft
<b>Well:</b>	GGU Federal 31B-29-691	<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>	Compass VM

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)
500.00	0.320	338.39	500.00	1.86	-0.17	1.09	0.15	0.04	27.10
550.00	0.250	324.77	550.00	2.08	-0.28	1.30	0.19	-0.14	-27.24
600.00	0.260	307.91	599.99	2.24	-0.43	1.51	0.15	0.02	-33.72
650.00	0.240	289.03	649.99	2.34	-0.62	1.72	0.17	-0.04	-37.76
700.00	0.070	210.58	699.99	2.35	-0.74	1.83	0.47	-0.34	-156.90
750.00	0.120	181.50	749.99	2.27	-0.75	1.80	0.14	0.10	-58.16
826.70	0.215	213.63	826.69	2.07	-0.84	1.77	0.17	0.12	41.89
9 5/8"									
882.00	0.300	222.45	881.99	1.88	-0.99	1.81	0.17	0.15	15.95
974.00	2.000	307.70	973.97	2.68	-2.42	3.45	2.17	1.85	92.66
1,066.00	4.900	298.10	1,065.80	5.52	-7.16	8.97	3.20	3.15	-10.43
1,158.00	7.100	302.90	1,157.29	10.46	-15.40	18.58	2.45	2.39	5.22
1,251.00	9.100	304.40	1,249.36	17.74	-26.30	31.66	2.16	2.15	1.61
1,346.00	11.000	302.10	1,342.89	26.80	-40.18	48.21	2.04	2.00	-2.42
1,441.00	12.500	299.50	1,435.90	36.68	-56.80	67.55	1.67	1.58	-2.74
1,537.00	13.300	301.40	1,529.48	47.55	-75.27	88.98	0.94	0.83	1.98
1,632.00	13.100	292.50	1,621.98	57.36	-94.55	110.57	2.15	-0.21	-9.37
1,727.00	12.000	295.90	1,714.71	65.79	-113.38	131.08	1.39	-1.16	3.58
1,823.00	12.200	302.70	1,808.58	75.63	-130.89	151.17	1.50	0.21	7.08
1,917.00	13.200	306.10	1,900.28	87.32	-147.92	171.77	1.33	1.06	3.62
2,013.00	13.500	304.00	1,993.69	100.05	-166.07	193.86	0.59	0.31	-2.19
2,108.00	13.400	300.40	2,086.08	111.82	-184.76	215.94	0.89	-0.11	-3.79
2,204.00	13.300	303.30	2,179.49	123.51	-203.58	238.09	0.71	-0.10	3.02
2,299.00	12.800	299.40	2,272.04	134.68	-221.88	259.53	1.07	-0.53	-4.11
2,395.00	12.700	302.80	2,365.67	145.61	-240.02	280.70	0.79	-0.10	3.54
2,490.00	12.700	299.10	2,458.35	156.35	-257.92	301.58	0.86	0.00	-3.89
2,585.00	12.500	296.20	2,551.06	165.97	-276.27	322.27	0.70	-0.21	-3.05
2,681.00	12.500	302.30	2,644.79	176.11	-294.37	343.02	1.37	0.00	6.35
2,776.00	12.800	299.00	2,737.49	186.70	-312.27	363.81	0.82	0.32	-3.47
2,871.00	12.000	299.20	2,830.27	196.62	-330.09	384.21	0.84	-0.84	0.21
2,967.00	11.800	303.40	2,924.21	206.89	-347.00	403.99	0.93	-0.21	4.38
3,062.00	12.700	306.90	3,017.05	218.51	-363.46	424.06	1.23	0.95	3.68
3,158.00	13.600	301.90	3,110.53	230.81	-381.48	445.83	1.51	0.94	-5.21
3,253.00	13.200	303.60	3,202.94	242.72	-400.00	467.83	0.59	-0.42	1.79
3,348.00	13.000	297.60	3,295.48	253.67	-418.50	489.33	1.45	-0.21	-6.32
3,444.00	12.300	298.40	3,389.15	263.54	-437.07	510.33	0.75	-0.73	0.83
3,539.00	10.800	294.60	3,482.22	272.06	-454.06	529.30	1.77	-1.58	-4.00
3,634.00	11.500	296.90	3,575.43	280.04	-470.60	547.61	0.87	0.74	2.42
3,729.00	11.300	302.30	3,668.56	289.30	-486.91	566.37	1.14	-0.21	5.68
3,825.00	11.400	301.60	3,762.68	299.30	-502.94	585.25	0.18	0.10	-0.73
3,920.00	10.000	299.00	3,856.02	308.22	-518.16	602.89	1.56	-1.47	-2.74
4,016.00	9.000	296.70	3,950.71	315.63	-532.15	618.71	1.11	-1.04	-2.40
4,111.00	8.000	302.00	4,044.66	322.48	-544.40	632.74	1.34	-1.05	5.58

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<b>Well:</b>	GGU Federal 31B-29-691	<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>	Compass VM

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)	
4,206.00	8.100	300.50	4,138.73	329.38	-555.77	646.04	0.24	0.11	-1.58	
4,302.00	8.500	304.00	4,233.72	336.78	-567.48	659.88	0.67	0.42	3.65	
4,397.00	7.600	300.90	4,327.79	343.93	-578.69	673.17	1.05	-0.95	-3.26	
4,492.00	6.000	302.90	4,422.11	349.85	-588.25	684.41	1.70	-1.68	2.11	
4,587.00	6.800	304.50	4,516.52	355.74	-597.06	694.98	0.86	0.84	1.68	
4,683.00	5.100	311.10	4,612.00	361.76	-604.96	704.85	1.91	-1.77	6.88	
4,778.00	4.200	308.90	4,706.69	366.72	-610.85	712.44	0.97	-0.95	-2.32	
4,873.00	3.900	303.10	4,801.45	370.67	-616.26	719.10	0.53	-0.32	-6.11	
4,969.00	2.600	299.10	4,897.30	373.51	-620.90	724.54	1.37	-1.35	-4.17	
5,064.00	2.400	294.10	4,992.21	375.37	-624.60	728.67	0.31	-0.21	-5.26	
5,160.00	1.700	301.30	5,088.14	376.93	-627.65	732.10	0.78	-0.73	7.50	
5,255.00	1.200	286.40	5,183.11	377.94	-629.81	734.47	0.65	-0.53	-15.68	
5,350.00	0.600	273.80	5,278.10	378.26	-631.26	735.88	0.66	-0.63	-13.26	
5,446.00	0.900	291.60	5,374.09	378.57	-632.46	737.07	0.39	0.31	18.54	
5,541.00	0.600	192.30	5,469.09	378.36	-633.26	737.66	1.22	-0.32	-104.53	
5,637.00	0.400	186.90	5,565.08	377.53	-633.41	737.37	0.21	-0.21	-5.63	
5,779.00	1.000	194.90	5,707.07	375.84	-633.79	736.84	0.43	0.42	5.63	
5,827.00	1.100	119.90	5,755.07	375.21	-633.49	736.27	2.67	0.21	-156.25	
5,923.00	1.100	157.90	5,851.05	373.90	-632.35	734.61	0.75	0.00	39.58	
6,018.00	1.000	168.10	5,946.03	372.24	-631.83	733.33	0.22	-0.11	10.74	
6,113.00	1.200	242.30	6,041.02	370.97	-632.54	733.30	1.41	0.21	78.11	
6,209.00	1.900	228.40	6,136.99	369.44	-634.62	734.32	0.82	0.73	-14.48	
6,304.00	1.300	237.20	6,231.95	367.81	-636.71	735.30	0.68	-0.63	9.26	
6,399.00	1.100	141.00	6,326.93	366.52	-637.04	734.93	1.89	-0.21	-101.26	
6,495.00	0.900	156.70	6,422.92	365.11	-636.16	733.46	0.35	-0.21	16.35	
6,590.00	1.300	73.00	6,517.91	364.74	-634.84	732.13	1.58	0.42	-88.11	
6,686.00	1.000	51.60	6,613.89	365.58	-633.14	731.09	0.54	-0.31	-22.29	
6,781.00	0.700	27.20	6,708.88	366.61	-632.22	730.82	0.49	-0.32	-25.68	
6,876.00	0.500	359.00	6,803.87	367.54	-631.96	731.07	0.37	-0.21	-29.68	
6,972.00	0.700	289.70	6,899.87	368.16	-632.52	731.86	0.73	0.21	-72.19	
7,067.00	1.100	294.00	6,994.86	368.73	-633.90	733.34	0.43	0.42	4.53	
7,162.00	0.900	314.70	7,089.84	369.62	-635.27	734.97	0.43	-0.21	21.79	
7,258.00	1.000	317.80	7,185.83	370.77	-636.37	736.50	0.12	0.10	3.23	
7,353.00	0.700	329.60	7,280.82	371.89	-637.22	737.80	0.36	-0.32	12.42	
7,406.00	0.500	352.30	7,333.82	372.40	-637.41	738.22	0.58	-0.38	42.83	
7,453.00	0.500	352.30	7,380.81	372.80	-637.47	738.47	0.00	0.00	0.00	

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name		Casing Diameter (ft)	Hole Diameter (ft)
826.70	826.69	9 5/8"		0.80	1.02

<b>Company:</b>	Bill Barrett Corp.	<b>Local Co-ordinate Reference:</b>	Well GGU Federal 31B-29-691
<b>Project:</b>	Garfield County, Colorado [NAD83]	<b>TVD Reference:</b>	KB @ 6126.90ft
<b>Site:</b>	MDP 11 Pad	<b>MD Reference:</b>	KB @ 6126.90ft
<b>Well:</b>	GGU Federal 31B-29-691	<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>	Compass VM

Survey Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
750.00	749.99	2.27	-0.75	End of Gyros

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