



**Bill Barrett Corporation**

## **Bill Barrett Corp.**

Garfield County, Colorado

Miller 10 Pad

Miller Federal 24D-31-691

Wellbore #1

Survey: Surveys from Surface

## **Standard Survey Report**

13 December, 2010



<b>Company:</b>	Bill Barrett Corp.	<b>Local Co-ordinate Reference:</b>	Well Miller Federal 24D-31-691
<b>Project:</b>	Garfield County, Colorado	<b>TVD Reference:</b>	KB @ 6283.00ft
<b>Site:</b>	Miller 10 Pad	<b>MD Reference:</b>	KB @ 6283.00ft
<b>Well:</b>	Miller Federal 24D-31-691	<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		
<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>	Miller 10 Pad				
<b>Site Position:</b>		<b>Northing:</b>	1,605,362.13 usft	<b>Latitude:</b>	39° 28' 36.39 N
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,408,695.61 usft	<b>Longitude:</b>	107° 35' 41.81 W
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	1.10 ft	<b>Grid Convergence:</b>	-1.32 °

<b>Well</b>	Miller Federal 24D-31-691					
<b>Well Position</b>	<b>+N/-S</b>	0.00 ft	<b>Northing:</b>	1,605,404.57 usft	<b>Latitude:</b>	39° 28' 36.80 N
	<b>+E/-W</b>	0.00 ft	<b>Easting:</b>	2,408,671.75 usft	<b>Longitude:</b>	107° 35' 42.13 W
<b>Position Uncertainty</b>		0.00 ft	<b>Wellhead Elevation:</b>	ft	<b>Ground Level:</b>	6,261.00 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	07/28/10	10.26	65.83	52,408

<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	317.03	

<b>Survey Program</b>	<b>Date</b>	12/13/10			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
50.00	695.00	Gyro Surveys (Wellbore #1)	MWD	MWD - Standard	
876.00	7,625.00	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
50.00	0.07	307.55	50.00	0.02	-0.02	0.03	0.14	0.14	0.00	
100.00	0.17	353.63	100.00	0.11	-0.06	0.12	0.26	0.20	92.16	
150.00	0.24	22.77	150.00	0.28	-0.02	0.22	0.25	0.14	58.28	
200.00	0.14	345.61	200.00	0.44	0.00	0.32	0.31	-0.20	-74.32	
250.00	0.20	19.81	250.00	0.58	0.02	0.41	0.23	0.12	68.40	
300.00	0.18	12.04	300.00	0.74	0.06	0.50	0.07	-0.04	-15.54	
350.00	0.25	65.63	350.00	0.86	0.18	0.51	0.41	0.14	107.18	
400.00	0.33	68.97	400.00	0.96	0.41	0.42	0.16	0.16	6.68	
450.00	0.33	87.72	450.00	1.01	0.69	0.27	0.22	0.00	37.50	

<b>Company:</b>	Bill Barrett Corp.	<b>Local Co-ordinate Reference:</b>	Well Miller Federal 24D-31-691
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<b>Site:</b>	Miller 10 Pad	<b>MD Reference:</b>	KB @ 6283.00ft
<b>Well:</b>	Miller Federal 24D-31-691	<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	0.42	149.63	500.00	0.86	0.93	0.00	0.79	0.18	123.82
550.00	0.37	117.83	550.00	0.63	1.16	-0.33	0.44	-0.10	-63.60
600.00	0.26	98.24	599.99	0.54	1.42	-0.57	0.30	-0.22	-39.18
650.00	0.42	128.79	649.99	0.40	1.67	-0.84	0.47	0.32	61.10
695.00	0.33	113.70	694.99	0.25	1.92	-1.13	0.30	-0.20	-33.53
717.00	0.30	125.38	716.99	0.19	2.02	-1.24	0.32	-0.14	53.09
<b>9 5/8"</b>									
876.00	0.50	200.30	875.99	-0.70	2.12	-1.96	0.32	0.13	47.12
968.00	1.60	42.10	967.98	-0.12	2.84	-2.03	2.25	1.20	-171.96
1,063.00	3.60	11.90	1,062.88	3.78	4.35	-0.20	2.48	2.11	-31.79
1,157.00	6.10	0.30	1,156.54	11.66	4.98	5.14	2.84	2.66	-12.34
1,253.00	8.80	342.60	1,251.73	23.77	2.81	15.48	3.66	2.81	-18.44
1,348.00	11.30	333.20	1,345.27	39.02	-3.56	30.98	3.14	2.63	-9.89
1,443.00	14.20	326.40	1,437.93	57.04	-14.21	51.42	3.43	3.05	-7.16
1,538.00	16.40	318.50	1,529.56	76.79	-29.54	76.33	3.19	2.32	-8.32
1,633.00	18.50	314.70	1,620.19	97.44	-49.15	104.80	2.51	2.21	-4.00
1,728.00	22.20	315.30	1,709.24	120.81	-72.49	137.81	3.90	3.89	0.63
1,823.00	24.50	315.40	1,796.46	147.59	-98.95	175.44	2.42	2.42	0.11
1,918.00	27.10	314.50	1,881.98	176.79	-128.22	216.76	2.77	2.74	-0.95
2,014.00	30.20	313.80	1,966.22	208.84	-161.25	262.72	3.25	3.23	-0.73
2,109.00	33.20	316.50	2,047.04	244.25	-196.41	312.60	3.49	3.16	2.84
2,204.00	35.60	316.10	2,125.42	283.05	-233.49	366.26	2.54	2.53	-0.42
2,299.00	36.10	315.40	2,202.42	322.90	-272.32	421.88	0.68	0.53	-0.74
2,394.00	36.10	314.50	2,279.18	362.44	-311.93	477.82	0.56	0.00	-0.95
2,489.00	36.40	316.20	2,355.80	402.40	-351.40	533.96	1.10	0.32	1.79
2,584.00	36.40	315.70	2,432.26	442.92	-390.60	590.33	0.31	0.00	-0.53
2,679.00	37.00	317.20	2,508.43	484.07	-429.71	647.10	1.14	0.63	1.58
2,775.00	37.50	315.00	2,584.85	525.93	-470.00	705.19	1.48	0.52	-2.29
2,870.00	38.10	314.70	2,659.91	566.99	-511.28	763.37	0.66	0.63	-0.32
2,965.00	37.90	316.40	2,734.78	608.74	-552.24	821.84	1.12	-0.21	1.79
3,060.00	35.90	318.80	2,810.75	650.83	-590.71	878.86	2.59	-2.11	2.53
3,155.00	35.20	314.20	2,888.05	690.89	-628.69	934.06	2.91	-0.74	-4.84
3,250.00	35.40	317.70	2,965.60	730.33	-666.85	988.92	2.14	0.21	3.68
3,345.00	35.00	317.20	3,043.22	770.67	-703.88	1,043.68	0.52	-0.42	-0.53
3,440.00	34.80	315.70	3,121.14	810.07	-741.32	1,098.03	0.93	-0.21	-1.58
3,535.00	33.10	313.70	3,199.94	847.39	-779.01	1,151.03	2.14	-1.79	-2.11
3,630.00	31.30	316.70	3,280.33	883.28	-814.69	1,201.61	2.53	-1.89	3.16
3,726.00	29.70	314.50	3,363.05	918.10	-848.76	1,250.31	2.03	-1.67	-2.29
3,821.00	28.80	318.10	3,445.94	951.63	-880.83	1,296.71	2.08	-0.95	3.79
3,916.00	26.30	318.20	3,530.17	984.36	-910.15	1,340.64	2.63	-2.63	0.11
4,011.00	23.80	318.30	3,616.22	1,014.36	-936.93	1,380.85	2.63	-2.63	0.11
4,106.00	21.50	315.70	3,703.89	1,041.14	-961.85	1,417.42	2.64	-2.42	-2.74
4,201.00	18.70	317.30	3,793.10	1,064.80	-984.34	1,450.06	3.00	-2.95	1.68

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<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)	
4,296.00	15.30	313.60	3,883.94	1,084.64	-1,003.75	1,477.81	3.75	-3.58	-3.89	
4,388.00	12.80	312.50	3,973.18	1,099.90	-1,020.05	1,500.09	2.73	-2.72	-1.20	
4,483.00	10.50	319.00	4,066.22	1,113.54	-1,033.49	1,519.24	2.78	-2.42	6.84	
4,578.00	7.60	320.80	4,160.02	1,124.95	-1,043.15	1,534.16	3.07	-3.05	1.89	
4,673.00	4.70	324.00	4,254.47	1,132.96	-1,049.41	1,544.29	3.07	-3.05	3.37	
4,768.00	3.60	310.60	4,349.22	1,138.05	-1,053.96	1,551.12	1.54	-1.16	-14.11	
4,863.00	1.10	298.80	4,444.13	1,140.43	-1,057.02	1,554.95	2.67	-2.63	-12.42	
4,958.00	1.40	233.60	4,539.11	1,140.19	-1,058.76	1,555.95	1.44	0.32	-68.63	
5,053.00	2.40	218.10	4,634.06	1,137.93	-1,060.92	1,555.77	1.17	1.05	-16.32	
5,149.00	0.50	249.40	4,730.03	1,136.20	-1,062.55	1,555.62	2.07	-1.98	32.60	
5,244.00	0.90	182.30	4,825.02	1,135.31	-1,062.97	1,555.25	0.89	0.42	-70.63	
5,339.00	1.80	182.00	4,919.99	1,133.07	-1,063.05	1,553.67	0.95	0.95	-0.32	
5,434.00	0.50	287.00	5,014.98	1,131.70	-1,063.50	1,552.98	2.09	-1.37	110.53	
5,529.00	1.10	235.60	5,109.97	1,131.31	-1,064.65	1,553.47	0.93	0.63	-54.11	
5,624.00	0.60	92.70	5,204.96	1,130.77	-1,064.90	1,553.25	1.70	-0.53	-150.42	
5,719.00	1.00	137.60	5,299.96	1,130.14	-1,063.85	1,552.07	0.75	0.42	47.26	
5,814.00	0.90	29.90	5,394.95	1,130.17	-1,062.92	1,551.46	1.62	-0.11	-113.37	
5,909.00	0.60	215.00	5,489.95	1,130.41	-1,062.83	1,551.57	1.58	-0.32	-184.11	
6,004.00	1.50	6.80	5,584.94	1,131.24	-1,062.97	1,552.27	2.16	0.95	159.79	
6,100.00	1.00	290.40	5,680.92	1,132.78	-1,063.60	1,553.83	1.66	-0.52	-79.58	
6,195.00	1.60	16.70	5,775.90	1,134.34	-1,064.00	1,555.24	1.93	0.63	90.84	
6,290.00	0.50	319.10	5,870.89	1,135.92	-1,063.89	1,556.33	1.47	-1.16	-60.63	
6,385.00	1.40	14.60	5,965.87	1,137.36	-1,063.87	1,557.37	1.25	0.95	58.42	
6,480.00	0.90	53.10	6,060.86	1,138.93	-1,062.98	1,557.91	0.94	-0.53	40.53	
6,575.00	0.30	189.60	6,155.85	1,139.13	-1,062.42	1,557.68	1.20	-0.63	143.68	
6,670.00	0.60	324.90	6,250.85	1,139.29	-1,062.75	1,558.02	0.88	0.32	142.42	
6,765.00	0.50	286.30	6,345.85	1,139.82	-1,063.44	1,558.87	0.40	-0.11	-40.63	
6,860.00	0.80	196.60	6,440.84	1,139.30	-1,064.02	1,558.89	0.99	0.32	-94.42	
6,955.00	1.30	203.20	6,535.83	1,137.67	-1,064.64	1,558.12	0.54	0.53	6.95	
7,095.00	0.40	236.40	6,675.81	1,135.94	-1,065.67	1,557.56	0.71	-0.64	23.71	
7,145.00	1.60	207.40	6,725.80	1,135.22	-1,066.14	1,557.35	2.53	2.40	-58.00	
7,240.00	0.50	306.70	6,820.79	1,134.29	-1,067.08	1,557.31	1.84	-1.16	104.53	
7,336.00	0.70	139.80	6,916.79	1,134.10	-1,067.04	1,557.14	1.24	0.21	-173.85	
7,431.00	1.40	179.30	7,011.77	1,132.49	-1,066.65	1,555.70	1.02	0.74	41.58	
7,526.00	2.40	172.80	7,106.72	1,129.36	-1,066.38	1,553.23	1.08	1.05	-6.84	
7,580.00	3.20	185.10	7,160.65	1,126.74	-1,066.38	1,551.30	1.84	1.48	22.78	
7,625.00	3.20	185.10	7,205.58	1,124.23	-1,066.60	1,549.62	0.00	0.00	0.00	

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<b>Site:</b>	Miller 10 Pad	<b>MD Reference:</b>	KB @ 6283.00ft
<b>Well:</b>	Miller Federal 24D-31-691	<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

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)		Name	Casing Diameter (ft)	Hole Diameter (ft)
717.00	716.99	9 5/8"		0.80	1.02

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