

# **Bill Barrett Corp.**

Garfield County, Colorado [NAD83]

Kaufman 6 Pad

Kaufman 32D-24-692

Wellbore #1

Design: Wellbore #1

## **Standard Survey Report**

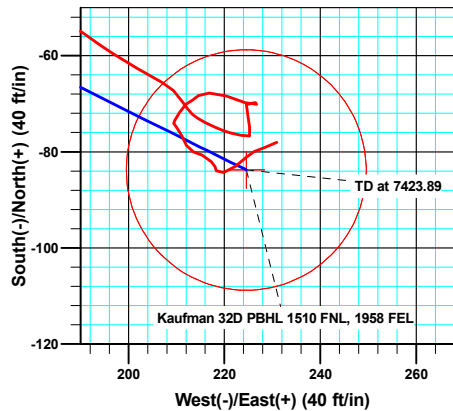
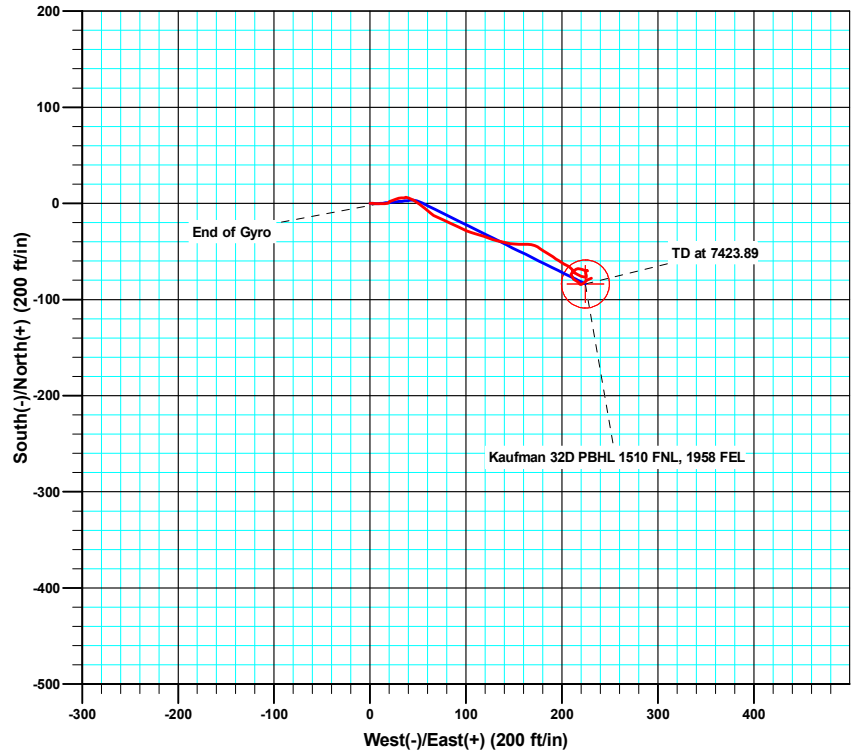
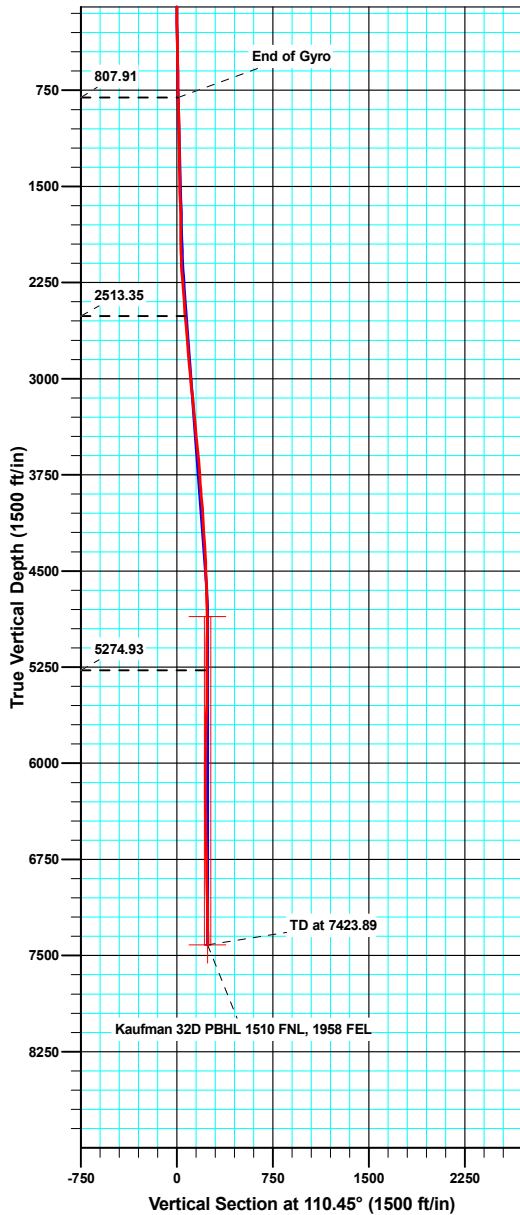
16 September, 2011





## Well Details: Kaufman 32D-24-692

North American Datum 1983 , US State Plane 1983 , Colorado Central Zone  
 +N/-S +E/-W Northing Easting Latitude Longitude  
 0.00 0.00 1619789.49 2403664.69 39.516053 -107.613955  
 Ground Level: 5771.00 KB @ 5794.00ft



Azimuths to True North  
 Magnetic North: 10.29°

Magnetic Field  
 Strength: 52446.3snT  
 Dip Angle: 65.87°  
 Date: 06/02/2010  
 Model: IGRF200510

### ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	Vsect	Departure	Annotation
784.92	785.00	1.65	84.12	-0.02	10.06	9.44	10.12	End of Gyro
2490.43	2492.00	4.60	131.07	-10.01	63.24	62.75	71.22	As of Sept 13
5251.93	5261.00	0.30	79.20	-70.18	224.60	234.96	258.24	As of Sept 14
7418.23	7428.00	2.10	67.20	-77.98	230.93	243.62	312.55	Projected TD



<b>Company:</b>	Bill Barrett Corp.	<b>Local Co-ordinate Reference:</b>	Well Kaufman 32D-24-692
<b>Project:</b>	Garfield County, Colorado [NAD83]	<b>TVD Reference:</b>	KB @ 5794.00ft
<b>Site:</b>	Kaufman 6 Pad	<b>MD Reference:</b>	KB @ 5794.00ft
<b>Well:</b>	Kaufman 32D-24-692	<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>	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	Kaufman 6 Pad				
Site Position:		Northing:	1,619,793.95 usft	Latitude:	39.516058
From:	Lat/Long	Easting:	2,403,552.20 usft	Longitude:	-107.614354
Position Uncertainty:	0.00 ft	Slot Radius:	0.00 ft	Grid Convergence:	-1.33 °

Well	Kaufman 32D-24-692					
Well Position	+N/-S	0.00 ft	Northing:	1,619,789.49 usft	Latitude:	39.516053
	+E/-W	0.00 ft	Easting:	2,403,664.69 usft	Longitude:	-107.613955
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	5,771.00 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	06/02/10	10.29	65.87	52,446

<b>Design</b>	Wellbore #1				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	23.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	23.00	0.00	0.00	110.45	

<b>Survey Program</b>	<b>Date</b>	09/16/11			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
123.00	785.00	Gyro (Wellbore #1)	MWD	MWD - Standard	
882.00	7,428.00	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>	
23.00	0.00	0.00	23.00	0.00	0.00	0.00	0.00	0.00	0.00	
123.00	0.61	88.14	123.00	0.02	0.53	0.49	0.61	0.61	0.00	
223.00	0.19	90.57	223.00	0.03	1.23	1.14	0.42	-0.42	2.43	
323.00	0.59	86.51	322.99	0.06	1.91	1.77	0.40	0.40	-4.06	
423.00	1.10	90.48	422.98	0.09	3.38	3.14	0.51	0.51	3.97	
523.00	1.11	101.41	522.96	-0.11	5.29	5.00	0.21	0.01	10.93	
623.00	0.74	90.02	622.95	-0.31	6.89	6.56	0.41	-0.37	-11.39	
723.00	1.17	83.41	722.94	-0.19	8.55	8.07	0.44	0.43	-6.61	
785.00	1.65	84.12	784.92	-0.02	10.06	9.44	0.77	0.77	1.15	
882.00	1.60	98.90	881.88	-0.09	12.79	12.02	0.43	-0.05	15.24	

<b>Company:</b>	Bill Barrett Corp.	<b>Local Co-ordinate Reference:</b>	Well Kaufman 32D-24-692
<b>Project:</b>	Garfield County, Colorado [NAD83]	<b>TVD Reference:</b>	KB @ 5794.00ft
<b>Site:</b>	Kaufman 6 Pad	<b>MD Reference:</b>	KB @ 5794.00ft
<b>Well:</b>	Kaufman 32D-24-692	<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>	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)
977.00	1.80	78.90	976.84	-0.01	15.57	14.59	0.66	0.21	-21.05
1,067.00	1.20	89.30	1,066.81	0.27	17.90	16.67	0.73	-0.67	11.56
1,159.00	0.50	58.60	1,158.80	0.50	19.20	17.82	0.88	-0.76	-33.37
1,254.00	1.10	20.80	1,253.79	1.56	19.88	18.08	0.81	0.63	-39.79
1,350.00	1.80	87.40	1,349.76	2.49	21.71	19.47	1.77	0.73	69.38
1,445.00	1.70	62.60	1,444.72	3.21	24.45	21.79	0.80	-0.11	-26.11
1,540.00	1.80	62.10	1,539.67	4.56	27.02	23.73	0.11	0.11	-0.53
1,636.00	1.90	80.90	1,635.63	5.51	29.93	26.11	0.64	0.10	19.58
1,731.00	1.40	90.90	1,730.59	5.74	32.64	28.58	0.61	-0.53	10.53
1,827.00	0.60	65.80	1,826.57	5.93	34.27	30.04	0.93	-0.83	-26.15
1,922.00	1.10	100.30	1,921.56	5.97	35.63	31.29	0.73	0.53	36.32
2,017.00	1.20	62.30	2,016.54	6.27	37.40	32.85	0.79	0.11	-40.00
2,113.00	2.50	115.10	2,112.50	5.85	40.19	35.61	2.10	1.35	55.00
2,208.00	4.40	112.40	2,207.32	3.58	45.44	41.32	2.01	2.00	-2.84
2,303.00	4.50	135.20	2,302.04	-0.45	51.43	48.35	1.85	0.11	24.00
2,399.00	4.70	125.00	2,397.73	-5.38	57.31	55.57	0.88	0.21	-10.63
2,494.00	4.60	131.20	2,492.42	-10.12	63.36	62.90	0.54	-0.11	6.53
2,589.00	5.00	113.00	2,587.09	-14.25	70.04	70.60	1.65	0.42	-19.16
2,685.00	4.50	116.90	2,682.76	-17.59	77.25	78.52	0.62	-0.52	4.06
2,780.00	5.10	110.10	2,777.43	-20.72	84.54	86.45	0.87	0.63	-7.16
2,876.00	5.40	119.70	2,873.03	-24.43	92.47	95.17	0.97	0.31	10.00
2,971.00	5.90	113.20	2,967.57	-28.57	100.84	104.46	0.85	0.53	-6.84
3,066.00	5.60	103.50	3,062.09	-31.57	109.83	113.94	1.07	-0.32	-10.21
3,162.00	5.40	110.80	3,157.65	-34.27	118.61	123.11	0.76	-0.21	7.60
3,257.00	6.20	108.70	3,252.17	-37.50	127.65	132.71	0.87	0.84	-2.21
3,353.00	5.80	99.50	3,347.64	-39.96	137.34	142.65	1.08	-0.42	-9.58
3,448.00	5.00	102.40	3,442.22	-41.64	146.12	151.46	0.89	-0.84	3.05
3,543.00	6.00	88.70	3,536.78	-42.42	155.13	160.17	1.73	1.05	-14.42
3,639.00	4.90	91.30	3,632.35	-42.40	164.25	168.71	1.17	-1.15	2.71
3,734.00	4.30	110.20	3,727.05	-43.72	171.64	176.10	1.71	-0.63	19.89
3,830.00	3.90	128.70	3,822.81	-47.01	177.57	182.80	1.43	-0.42	19.27
3,925.00	5.00	118.70	3,917.52	-51.01	183.72	189.97	1.41	1.16	-10.53
4,020.00	5.00	125.10	4,012.16	-55.38	190.74	198.07	0.59	0.00	6.74
4,116.00	3.70	123.50	4,107.88	-59.50	196.75	205.14	1.36	-1.35	-1.67
4,211.00	3.50	119.30	4,202.69	-62.61	201.83	210.99	0.35	-0.21	-4.42
4,307.00	3.60	119.50	4,298.51	-65.53	207.01	216.86	0.10	0.10	0.21
4,402.00	3.70	147.00	4,393.32	-69.57	211.28	222.27	1.83	0.11	28.95
4,497.00	2.00	120.30	4,488.21	-72.97	214.38	226.36	2.22	-1.79	-28.11
4,593.00	3.00	115.20	4,584.11	-74.89	218.10	230.52	1.07	1.04	-5.31
4,689.00	1.20	95.10	4,680.05	-76.05	221.37	233.99	2.00	-1.88	-20.94
4,784.00	1.50	108.40	4,775.02	-76.53	223.54	236.19	0.45	0.32	14.00
4,879.00	0.70	68.90	4,870.00	-76.71	225.26	237.87	1.11	-0.84	-41.58
4,975.00	2.10	341.50	4,965.98	-74.83	225.25	237.20	2.27	1.46	-91.04

<b>Company:</b>	Bill Barrett Corp.	<b>Local Co-ordinate Reference:</b>	Well Kaufman 32D-24-692
<b>Project:</b>	Garfield County, Colorado [NAD83]	<b>TVD Reference:</b>	KB @ 5794.00ft
<b>Site:</b>	Kaufman 6 Pad	<b>MD Reference:</b>	KB @ 5794.00ft
<b>Well:</b>	Kaufman 32D-24-692	<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>	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)	
5,070.00	0.80	16.50	5,060.95	-72.55	224.89	236.06	1.60	-1.37	36.84	
5,165.00	1.10	336.70	5,155.94	-71.07	224.72	235.39	0.74	0.32	-41.89	
5,261.00	0.30	79.20	5,251.93	-70.18	224.60	234.96	1.25	-0.83	106.77	
5,356.00	1.40	75.30	5,346.92	-69.84	225.97	236.13	1.16	1.16	-4.11	
5,451.00	0.80	210.50	5,441.91	-70.12	226.75	236.96	2.15	-0.63	142.32	
5,547.00	2.70	293.70	5,537.87	-69.78	224.34	234.58	2.84	1.98	86.67	
5,642.00	2.40	285.20	5,632.78	-68.36	220.37	230.37	0.51	-0.32	-8.95	
5,738.00	1.90	273.30	5,728.71	-67.75	216.84	226.85	0.70	-0.52	-12.40	
5,833.00	1.10	224.10	5,823.68	-68.31	214.64	224.98	1.52	-0.84	-51.79	
5,928.00	0.80	246.60	5,918.67	-69.23	213.39	224.13	0.50	-0.32	23.68	
6,024.00	1.20	233.30	6,014.65	-70.09	211.97	223.10	0.48	0.42	-13.85	
6,119.00	1.50	205.60	6,109.63	-71.81	210.64	222.45	0.75	0.32	-29.16	
6,214.00	0.90	220.60	6,204.60	-73.50	209.62	222.08	0.71	-0.63	15.79	
6,310.00	1.20	128.90	6,300.59	-74.70	209.91	222.78	1.58	0.31	-95.52	
6,405.00	1.50	161.50	6,395.57	-76.51	211.08	224.50	0.85	0.32	34.32	
6,501.00	1.40	145.90	6,491.54	-78.67	212.13	226.25	0.42	-0.10	-16.25	
6,596.00	1.10	111.50	6,586.52	-79.96	213.63	228.11	0.83	-0.32	-36.21	
6,691.00	1.20	110.70	6,681.50	-80.65	215.41	230.01	0.11	0.11	-0.84	
6,787.00	1.70	137.60	6,777.47	-82.06	217.31	232.28	0.87	0.52	28.02	
6,882.00	1.00	174.20	6,872.44	-83.92	218.34	233.91	1.13	-0.74	38.53	
6,977.00	1.80	71.10	6,967.42	-84.26	219.84	235.43	2.37	0.84	-108.53	
7,072.00	1.60	55.80	7,062.38	-83.03	222.35	237.35	0.52	-0.21	-16.11	
7,168.00	1.70	43.30	7,158.34	-81.24	224.43	238.68	0.39	0.10	-13.02	
7,263.00	1.00	69.80	7,253.32	-79.93	226.18	239.85	0.97	-0.74	27.89	
7,358.00	2.10	67.20	7,348.28	-78.97	228.56	241.75	1.16	1.16	-2.74	
7,428.00	2.10	67.20	7,418.23	-77.98	230.93	243.62	0.00	0.00	0.00	

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment	
		+N/-S (ft)	+E/-W (ft)		
785.00	784.92	-0.02	10.06	End of Gyro	
2,492.00	2,490.43	-10.01	63.24	As of Sept 13	
5,261.00	5,251.93	-70.18	224.60	As of Sept 14	
7,428.00	7,418.23	-77.98	230.93	Projected TD	

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