

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

**Garfield County, Colorado [NAD83]**

**Kaufman 6 Pad**

**Kaufman 21A-24-692**

**Wellbore #1**

**Design: Wellbore #1**

## **Standard Survey Report**

**16 November, 2011**

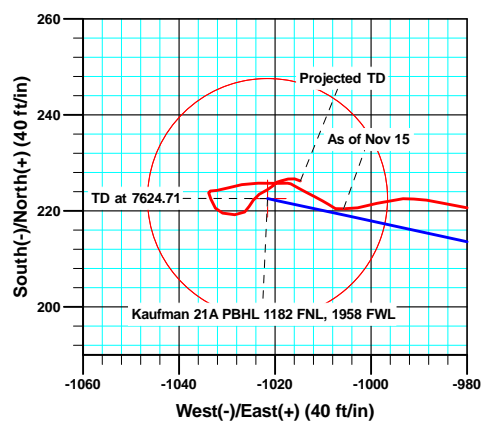
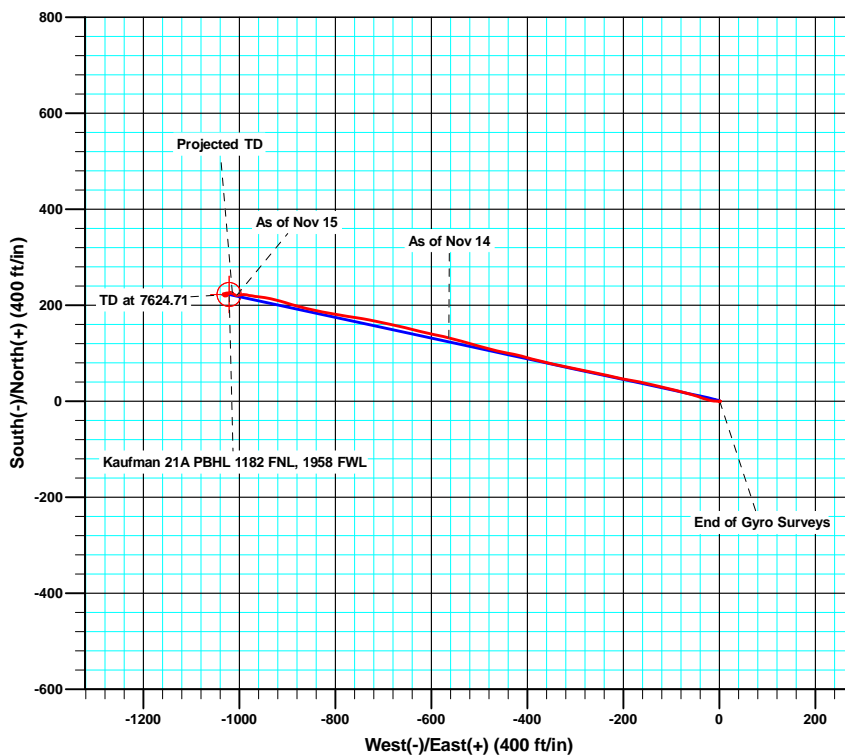
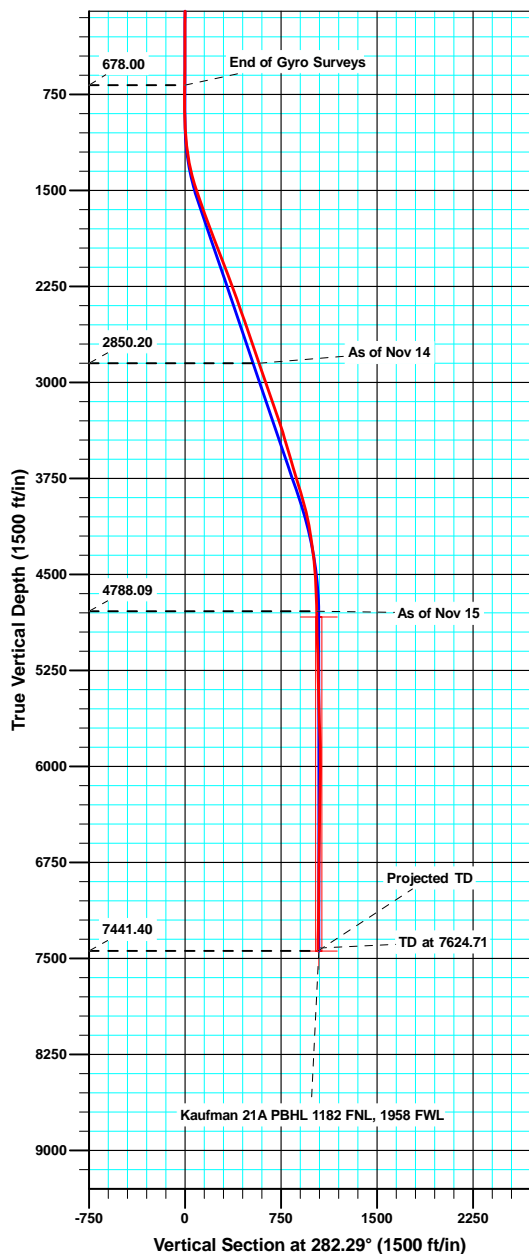


## WELL DETAILS: Kaufman 21A-24-692

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

+N/-S +E/-W Northing Easting Latitude Longitude  
0.00 0.00 1619793.93 2403552.19 39.516058 -107.614354

Ground Level: 5771.00 WELL @ 5771.00ft (Original Well Elev)



Azimuths to True North  
Magnetic North: 10.29°

Magnetic Field  
Strength: 52446.1snT  
Dip Angle: 65.87°  
Date: 6/2/2010  
Model: IGRF200510

### ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	VSec	Departure	Annotation
678.00	678.00	0.25	326.56	0.37	0.54	-0.45	2.42	End of Gyro Surveys
2850.20	2946.00	18.90	282.80	132.13	-563.82	579.03	588.62	As of Nov 14
4788.09	4947.00	1.50	265.60	220.45	-1005.71	1029.59	1040.72	As of Nov 15
7441.40	7601.00	0.90	111.10	226.26	-1014.70	1039.61	1096.04	Projected TD

# Sharewell

## Survey Report

<b>Company:</b>	Bill Barrett Corp. (II)	<b>Local Co-ordinate Reference:</b>	Well Kaufman 21A-24-692
<b>Project:</b>	Garfield County, Colorado [NAD83]	<b>TVD Reference:</b>	WELL @ 5771.00ft (Original Well Elev)
<b>Site:</b>	Kaufman 6 Pad	<b>MD Reference:</b>	WELL @ 5771.00ft (Original Well Elev)
<b>Well:</b>	Kaufman 21A-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 21A-24-692					
Well Position	+N/-S	0.00 ft	Northing:	1,619,793.93 usft	Latitude:	39.516058
	+E/-W	0.00 ft	Easting:	2,403,552.20 usft	Longitude:	-107.614354
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	6/2/2010	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>	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	282.29	

<b>Survey Program</b>	<b>Date</b>	11/16/2011			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
100.00	678.00	Survey #1 (Wellbore #1)	MWD	MWD - Standard	
866.00	7,601.00	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	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
100.00	0.16	358.61	100.00	0.14	0.00	0.03	0.16	0.16	0.00	
200.00	0.24	57.30	200.00	0.39	0.17	-0.08	0.21	0.08	58.69	
300.00	0.32	107.88	300.00	0.42	0.61	-0.51	0.25	0.08	50.58	
400.00	0.19	128.24	400.00	0.23	1.01	-0.94	0.16	-0.13	20.36	
500.00	0.06	171.57	500.00	0.08	1.15	-1.10	0.15	-0.13	43.33	
600.00	0.36	291.17	600.00	0.14	0.86	-0.81	0.39	0.30	119.60	
678.00	0.25	326.56	678.00	0.37	0.54	-0.45	0.27	-0.14	45.37	
866.00	1.20	107.50	865.98	0.12	2.19	-2.11	0.75	0.51	74.97	
952.00	1.30	281.20	951.98	0.04	2.09	-2.04	2.90	0.12	201.98	

# Sharewell

## Survey Report

<b>Company:</b>	Bill Barrett Corp. (II)	<b>Local Co-ordinate Reference:</b>	Well Kaufman 21A-24-692
<b>Project:</b>	Garfield County, Colorado [NAD83]	<b>TVD Reference:</b>	WELL @ 5771.00ft (Original Well Elev)
<b>Site:</b>	Kaufman 6 Pad	<b>MD Reference:</b>	WELL @ 5771.00ft (Original Well Elev)
<b>Well:</b>	Kaufman 21A-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)
1,044.00	4.20	270.00	1,043.86	0.24	-2.30	2.30	3.19	3.15	-12.17
1,136.00	6.60	274.10	1,135.45	0.62	-10.95	10.83	2.64	2.61	4.46
1,231.00	9.30	285.00	1,229.53	3.00	-23.81	23.90	3.24	2.84	11.47
1,327.00	12.80	291.30	1,323.74	8.87	-41.22	42.16	3.85	3.65	6.56
1,422.00	15.20	283.40	1,415.92	15.58	-63.14	65.01	3.22	2.53	-8.32
1,517.00	18.70	284.30	1,506.78	22.23	-90.02	92.69	3.69	3.68	0.95
1,612.00	19.20	284.20	1,596.63	29.82	-119.92	123.52	0.53	0.53	-0.11
1,707.00	20.10	282.50	1,686.10	37.19	-151.00	155.46	1.12	0.95	-1.79
1,802.00	21.00	279.60	1,775.05	43.56	-183.73	188.79	1.43	0.95	-3.05
1,898.00	20.30	283.40	1,864.89	50.29	-216.89	222.62	1.57	-0.73	3.96
1,993.00	20.80	280.50	1,953.85	57.18	-249.51	255.96	1.19	0.53	-3.05
2,088.00	20.90	283.20	2,042.63	64.13	-282.59	289.76	1.02	0.11	2.84
2,184.00	21.50	281.00	2,132.13	71.39	-316.53	324.47	1.04	0.63	-2.29
2,279.00	20.70	282.10	2,220.76	78.23	-350.04	358.67	0.94	-0.84	1.16
2,374.00	19.10	285.60	2,310.09	85.93	-381.43	390.98	2.10	-1.68	3.68
2,470.00	19.40	284.00	2,400.72	94.02	-412.03	422.60	0.63	0.31	-1.67
2,565.00	20.60	281.30	2,489.99	101.11	-443.73	455.08	1.59	1.26	-2.84
2,660.00	18.20	283.10	2,579.59	107.75	-474.57	486.63	2.60	-2.53	1.89
2,755.00	18.70	285.80	2,669.71	115.25	-503.67	516.66	1.04	0.53	2.84
2,851.00	19.40	287.00	2,760.45	124.11	-533.73	547.91	0.84	0.73	1.25
2,946.00	18.90	282.80	2,850.20	132.13	-563.82	579.03	1.54	-0.53	-4.42
3,042.00	18.90	282.10	2,941.02	138.83	-594.19	610.12	0.24	0.00	-0.73
3,137.00	19.50	283.60	3,030.74	145.79	-624.64	641.36	0.82	0.63	1.58
3,232.00	19.10	284.30	3,120.40	153.35	-655.11	672.74	0.49	-0.42	0.74
3,327.00	18.60	282.10	3,210.31	160.37	-684.99	703.43	0.91	-0.53	-2.32
3,422.00	18.70	281.70	3,300.32	166.63	-714.72	733.81	0.17	0.11	-0.42
3,517.00	17.80	280.30	3,390.54	172.32	-743.92	763.55	1.05	-0.95	-1.47
3,613.00	16.10	278.40	3,482.37	176.89	-771.52	791.50	1.86	-1.77	-1.98
3,708.00	16.30	278.30	3,573.59	180.74	-797.75	817.94	0.21	0.21	-0.11
3,803.00	17.10	282.20	3,664.59	185.61	-824.59	845.20	1.45	0.84	4.11
3,898.00	16.20	282.90	3,755.61	191.52	-851.16	872.42	0.97	-0.95	0.74
3,993.00	17.10	284.40	3,846.62	197.95	-877.61	899.63	1.05	0.95	1.58
4,088.00	16.40	287.20	3,937.59	205.39	-903.95	926.95	1.12	-0.74	2.95
4,183.00	12.60	283.40	4,029.55	211.76	-926.85	950.68	4.12	-4.00	-4.00
4,279.00	10.10	280.70	4,123.67	215.75	-945.31	969.57	2.66	-2.60	-2.81
4,374.00	8.60	274.90	4,217.41	217.91	-960.57	984.94	1.86	-1.58	-6.11
4,470.00	7.80	279.80	4,312.42	219.63	-974.14	998.57	1.11	-0.83	5.10
4,565.00	6.00	281.50	4,406.73	221.72	-985.36	1,009.98	1.91	-1.89	1.79
4,660.00	3.70	266.70	4,501.39	222.53	-993.29	1,017.89	2.74	-2.42	-15.58
4,756.00	3.00	252.00	4,597.23	221.57	-998.77	1,023.05	1.15	-0.73	-15.31
4,851.00	2.00	265.60	4,692.14	220.68	-1,002.79	1,026.78	1.22	-1.05	14.32
4,947.00	1.50	265.60	4,788.09	220.45	-1,005.71	1,029.59	0.52	-0.52	0.00
5,042.00	0.60	287.40	4,883.07	220.51	-1,007.43	1,031.28	1.02	-0.95	22.95

# Sharewell

## Survey Report

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<b>Well:</b>	Kaufman 21A-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)	
5,137.00	1.40	306.20	4,978.06	221.34	-1,008.84	1,032.83	0.90	0.84	19.79	
5,233.00	2.70	296.00	5,074.00	223.03	-1,011.82	1,036.10	1.40	1.35	-10.63	
5,328.00	1.60	301.30	5,168.93	224.70	-1,014.96	1,039.53	1.18	-1.16	5.58	
5,423.00	0.80	295.30	5,263.91	225.67	-1,016.69	1,041.43	0.85	-0.84	-6.32	
5,519.00	0.20	201.80	5,359.90	225.80	-1,017.36	1,042.11	0.87	-0.63	-97.40	
5,614.00	2.50	272.60	5,454.87	225.74	-1,019.49	1,044.18	2.57	2.42	74.53	
5,710.00	2.30	268.30	5,550.79	225.78	-1,023.51	1,048.11	0.28	-0.21	-4.48	
5,805.00	1.80	260.90	5,645.73	225.48	-1,026.89	1,051.35	0.59	-0.53	-7.79	
5,900.00	1.70	251.70	5,740.68	224.81	-1,029.70	1,053.95	0.31	-0.11	-9.68	
5,996.00	1.20	267.10	5,836.65	224.31	-1,032.06	1,056.15	0.66	-0.52	16.04	
6,091.00	0.50	253.50	5,931.64	224.14	-1,033.45	1,057.47	0.76	-0.74	-14.32	
6,186.00	0.30	176.80	6,026.64	223.77	-1,033.83	1,057.77	0.55	-0.21	-80.74	
6,282.00	1.40	156.10	6,122.63	222.45	-1,033.34	1,057.01	1.17	1.15	-21.56	
6,377.00	1.10	150.00	6,217.60	220.60	-1,032.41	1,055.71	0.35	-0.32	-6.42	
6,473.00	1.30	104.30	6,313.59	219.53	-1,030.90	1,054.00	0.99	0.21	-47.60	
6,567.00	1.80	92.00	6,407.55	219.22	-1,028.39	1,051.48	0.64	0.53	-13.09	
6,663.00	1.00	43.20	6,503.52	219.78	-1,026.31	1,049.57	1.42	-0.83	-50.83	
6,758.00	0.80	32.10	6,598.51	220.94	-1,025.39	1,048.92	0.28	-0.21	-11.68	
6,853.00	1.10	34.90	6,693.50	222.25	-1,024.52	1,048.35	0.32	0.32	2.95	
6,949.00	1.00	57.40	6,789.48	223.46	-1,023.28	1,047.40	0.44	-0.10	23.44	
7,044.00	1.40	62.00	6,884.46	224.45	-1,021.56	1,045.92	0.43	0.42	4.84	
7,139.00	0.60	40.30	6,979.45	225.37	-1,020.21	1,044.81	0.92	-0.84	-22.84	
7,235.00	0.30	37.20	7,075.44	225.96	-1,019.74	1,044.46	0.31	-0.31	-3.23	
7,330.00	1.00	83.00	7,170.44	226.26	-1,018.76	1,043.58	0.86	0.74	48.21	
7,425.00	0.90	65.30	7,265.43	226.67	-1,017.26	1,042.20	0.32	-0.11	-18.63	
7,520.00	0.90	111.10	7,360.42	226.71	-1,015.89	1,040.87	0.74	0.00	48.21	
7,601.00	0.90	111.10	7,441.41	226.26	-1,014.70	1,039.61	0.00	0.00	0.00	

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
678.00	678.00	0.37	0.54	End of Gyro Surveys	
2,946.00	2,850.20	132.13	-563.82	As of Nov 14	
4,947.00	4,788.09	220.45	-1,005.71	As of Nov 15	
7,601.00	7,441.41	226.26	-1,014.70	Projected TD	

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