



Bill Barrett Corporation

Bill Barrett Corp. (II)

Weld Co., CO

Sec.3-T4N-R63W

70 Ranch 4-63-3-33H

Wellbore #1

Survey: OH

Standard Survey Report

24 October, 2012





Bill Barrett Corp. (II)
Project: Weld Co., CO
Site: Sec.3-T4N-R63W
Well: 70 Ranch 4-63-3-33H
Wellbore: Wellbore #1
Design: OH
Lat: 40° 20' 22.16 N
Long: 104° 24' 59.04 W
Pad GL: 4541.01
KB: WELL @ 4559.01ft



PROJECT DETAILS: Weld Co., CO

Geodetic System: US State Plane 1983
Datum: North American Datum 1983
Ellipsoid: GRS 1980
Zone: Colorado Northern Zone
System Datum: Mean Sea Level



Azimuths to True North
Magnetic North: 8.56°

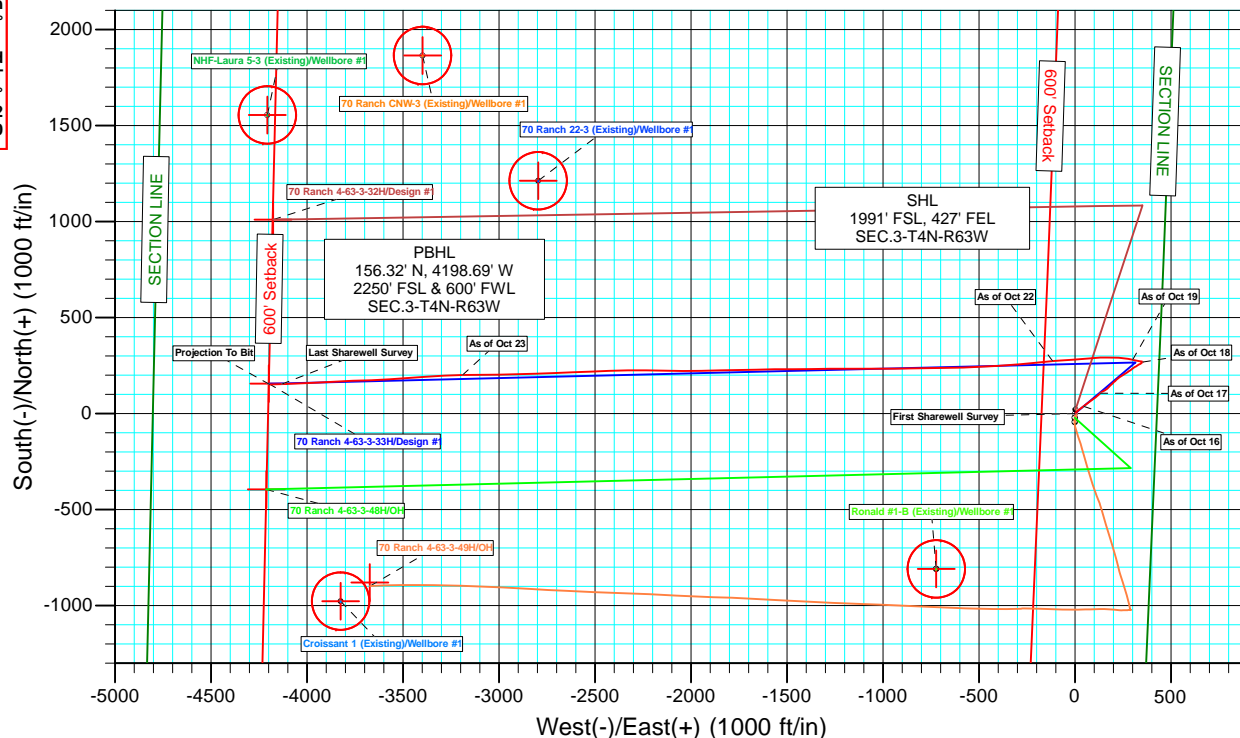
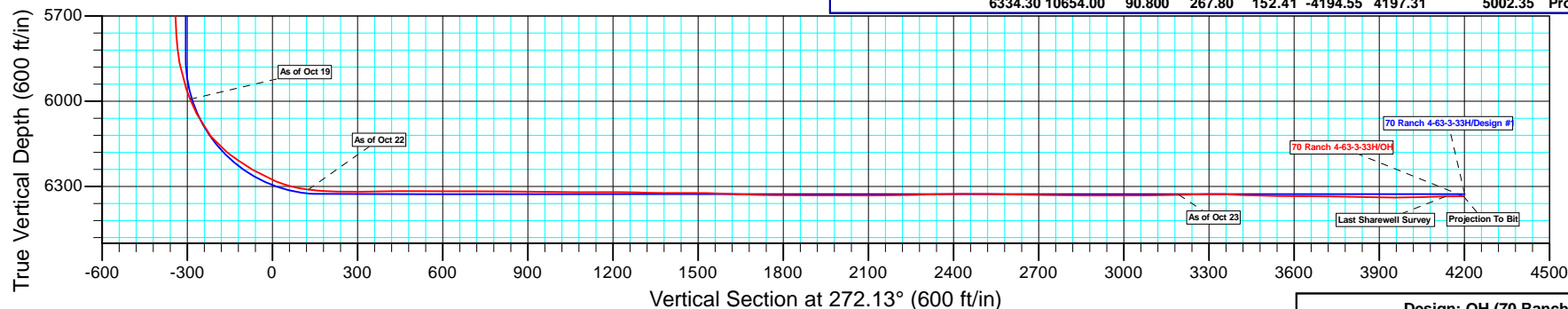
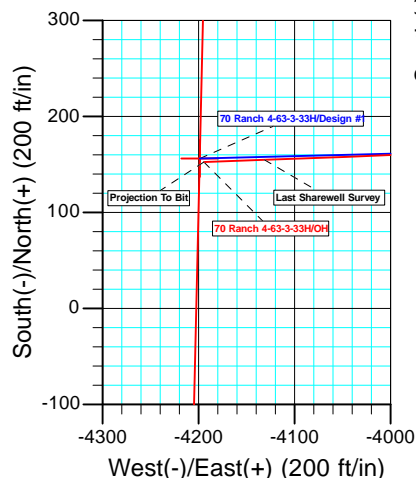
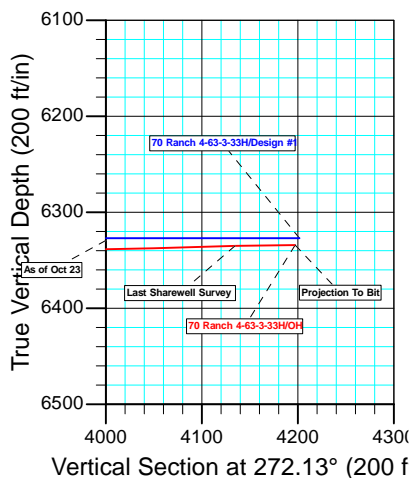
Magnetic Field
Strength: 53050.1nT
Dip Angle: 67.03°
Date: 04/18/2012
Model: IGRF2010

WELL DETAILS: 70 Ranch 4-63-3-33H

	+N/-S	+E/-W	Northing	Ground Level: Easting	Latitude	Longitude	Slot
	0.00	0.00	1368362.49	4541.01 3302055.67	40° 20' 22.16 N	104° 24' 59.04 W	

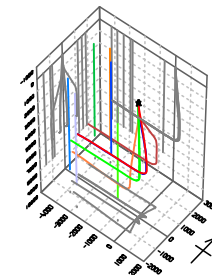
WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape Point
4-63-3-33H PBHL	6327.01	156.32	-4198.70	40° 20' 23.71 N	104° 25' 53.26 W	



ANNOTATIONS

TVD	MD	Inc	Azi	+N/-S	+E/-W	Vsect	Departure	Annotation
141.00	141.00	0.200	19.50	0.23	0.08	-0.07	0.25	First Sharewell Survey
770.89	774.00	7.200	53.50	38.53	45.76	-44.30	60.21	As of Oct 16
1718.55	1728.00	5.300	41.90	106.01	130.45	-126.42	168.68	As of Oct 17
5490.88	5512.00	0.600	316.30	269.09	353.47	-343.22	447.87	As of Oct 18
5993.28	6021.00	23.200	282.80	280.06	300.20	-289.58	502.58	As of Oct 19
6311.30	6572.00	83.300	264.90	274.07	-116.65	126.75	921.25	As of Oct 22
6329.44	9647.00	92.100	269.00	201.57	-3189.11	3194.40	3995.63	As of Oct 23
6335.18	10591.00	90.800	267.80	154.82	-4131.60	4134.50	4939.36	Last Sharewell Survey
6334.30	10654.00	90.800	267.80	152.41	-4194.55	4197.31	5002.35	Projection To Bit



Design: OH (70 Ranch 4-63-3-33H/Wellbore #1)

Created By: Rolando Garza

Date: 8:01, October 24 2012

Company:	Bill Barrett Corp. (II)	Local Co-ordinate Reference:	Well 70 Ranch 4-63-3-33H
Project:	Weld Co., CO	TVD Reference:	WELL @ 4559.01ft
Site:	Sec.3-T4N-R63W	MD Reference:	WELL @ 4559.01ft
Well:	70 Ranch 4-63-3-33H	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	CompassVM

Project	Weld Co., CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site		Sec.3-T4N-R63W			
Site Position:		Northing:	1,368,318.79 usft	Latitude:	40° 20' 21.73 N
From:	Lat/Long	Easting:	3,302,056.21 usft	Longitude:	104° 24' 59.04 W
Position Uncertainty:	0.00 ft	Slot Radius:	1.10 ft	Grid Convergence:	0.70 °

Well	70 Ranch 4-63-3-33H					
Well Position	+N/-S	0.00 ft	Northing:	1,368,362.49 usft	Latitude:	40° 20' 22.16 N
	+E/-W	0.00 ft	Easting:	3,302,055.68 usft	Longitude:	104° 24' 59.04 W
Position Uncertainty		0.00 ft	Wellhead Elevation:	ft	Ground Level:	4,541.01 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	04/18/12	8.56	67.03	53,050

Design	OH				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.00	0.00	0.00	272.13	

Survey Program	Date	10/24/12			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
141.00	10,654.00	OH (Wellbore #1)	MWD	MWD - Standard	

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)
0.00	0.000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
141.00	0.200	19.50	141.00	0.23	0.08	-0.07	0.14	0.14	0.00
First Sharewell Survey									
233.00	4.000	36.30	232.92	2.97	2.04	-1.92	4.14	4.13	18.26
325.00	5.400	48.30	324.61	8.44	7.17	-6.85	1.85	1.52	13.04
417.00	5.400	49.80	416.20	14.11	13.71	-13.17	0.15	0.00	1.63
510.00	5.700	46.40	508.77	20.12	20.39	-19.63	0.48	0.32	-3.66
602.00	6.800	57.40	600.22	26.21	28.29	-27.30	1.76	1.20	11.96
694.00	7.300	54.10	691.53	32.57	37.61	-36.38	0.70	0.54	-3.59
774.00	7.200	53.50	770.89	38.53	45.76	-44.30	0.16	-0.13	-0.75

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Site:	Sec.3-T4N-R63W	MD Reference:	WELL @ 4559.01ft
Well:	70 Ranch 4-63-3-33H	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	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)
As of Oct 16									
877.00	7.600	51.70	873.03	46.59	56.30	-54.53	0.45	0.39	-1.75
969.00	8.000	50.20	964.18	54.46	65.99	-63.92	0.49	0.43	-1.63
1,064.00	7.400	53.00	1,058.32	62.37	75.95	-73.58	0.74	-0.63	2.95
1,159.00	6.200	54.70	1,152.65	69.02	85.03	-82.40	1.28	-1.26	1.79
1,254.00	6.700	55.30	1,247.05	75.14	93.77	-90.91	0.53	0.53	0.63
1,349.00	7.600	54.60	1,341.31	81.93	103.45	-100.33	0.95	0.95	-0.74
1,444.00	5.100	48.60	1,435.72	88.37	111.74	-108.37	2.72	-2.63	-6.32
1,538.00	5.100	47.30	1,529.35	93.96	117.94	-114.37	0.12	0.00	-1.38
1,633.00	5.300	47.60	1,623.96	99.78	124.28	-120.49	0.21	0.21	0.32
1,728.00	5.300	41.90	1,718.55	106.01	130.45	-126.42	0.55	0.00	-6.00
As of Oct 17									
1,823.00	4.900	60.50	1,813.18	111.27	136.92	-132.69	1.78	-0.42	19.58
1,918.00	5.200	61.40	1,907.81	115.33	144.23	-139.84	0.33	0.32	0.95
2,013.00	5.100	59.70	2,002.43	119.52	151.65	-147.11	0.19	-0.11	-1.79
2,107.00	4.500	57.80	2,096.10	123.59	158.38	-153.68	0.66	-0.64	-2.02
2,201.00	5.600	54.00	2,189.73	128.26	165.21	-160.33	1.22	1.17	-4.04
2,296.00	5.800	47.60	2,284.27	134.22	172.51	-167.40	0.70	0.21	-6.74
2,391.00	5.200	36.50	2,378.83	140.91	178.61	-173.25	1.28	-0.63	-11.68
2,486.00	5.800	48.60	2,473.40	147.55	184.77	-179.16	1.37	0.63	12.74
2,581.00	6.300	48.30	2,567.87	154.19	192.27	-186.40	0.53	0.53	-0.32
2,676.00	7.300	43.00	2,662.20	162.07	200.27	-194.11	1.24	1.05	-5.58
2,770.00	6.100	49.20	2,755.56	169.71	208.13	-201.68	1.49	-1.28	6.60
2,865.00	6.300	46.70	2,850.00	176.58	215.74	-209.03	0.35	0.21	-2.63
2,960.00	5.100	50.20	2,944.53	182.86	222.78	-215.83	1.31	-1.26	3.68
3,054.00	4.000	58.00	3,038.23	187.27	228.77	-221.65	1.34	-1.17	8.30
3,148.00	3.800	55.30	3,132.01	190.78	234.11	-226.86	0.29	-0.21	-2.87
3,243.00	4.600	54.10	3,226.76	194.80	239.79	-232.38	0.85	0.84	-1.26
3,337.00	4.500	49.30	3,320.46	199.42	245.64	-238.05	0.42	-0.11	-5.11
3,432.00	4.900	65.60	3,415.15	203.53	252.16	-244.42	1.46	0.42	17.16
3,525.00	5.700	64.70	3,507.75	207.14	259.95	-252.07	0.86	0.86	-0.97
3,620.00	5.500	51.90	3,602.30	211.97	267.80	-259.73	1.33	-0.21	-13.47
3,714.00	4.200	55.80	3,695.96	216.68	274.19	-265.95	1.43	-1.38	4.15
3,809.00	4.000	54.50	3,790.72	220.56	279.76	-271.37	0.23	-0.21	-1.37
3,904.00	4.000	55.40	3,885.49	224.37	285.19	-276.65	0.07	0.00	0.95
3,998.00	3.700	55.20	3,979.27	227.96	290.38	-281.71	0.32	-0.32	-0.21
4,093.00	3.900	57.30	4,074.07	231.45	295.61	-286.81	0.26	0.21	2.21
4,188.00	4.600	53.10	4,168.80	235.49	301.38	-292.42	0.81	0.74	-4.42
4,283.00	4.900	49.20	4,263.48	240.42	307.50	-298.35	0.46	0.32	-4.11
4,378.00	3.800	65.20	4,358.21	244.40	313.43	-304.13	1.71	-1.16	16.84
4,472.00	3.300	62.10	4,452.03	246.97	318.65	-309.25	0.57	-0.53	-3.30
4,567.00	2.700	54.80	4,546.90	249.54	322.89	-313.39	0.75	-0.63	-7.68
4,662.00	3.600	60.10	4,641.75	252.31	327.30	-317.70	0.99	0.95	5.58

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Site:	Sec.3-T4N-R63W	MD Reference:	WELL @ 4559.01ft
Well:	70 Ranch 4-63-3-33H	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	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)
4,757.00	4.000	62.60	4,736.54	255.33	332.83	-323.11	0.46	0.42	2.63
4,851.00	4.100	58.40	4,830.31	258.60	338.60	-328.76	0.33	0.11	-4.47
4,945.00	3.900	55.40	4,924.08	262.17	344.10	-334.12	0.31	-0.21	-3.19
5,040.00	1.900	44.60	5,018.95	265.13	347.86	-337.77	2.17	-2.11	-11.37
5,135.00	1.300	38.60	5,113.92	267.09	349.64	-339.47	0.65	-0.63	-6.32
5,230.00	0.700	64.90	5,208.90	268.18	350.84	-340.63	0.78	-0.63	27.68
5,324.00	0.800	88.00	5,302.89	268.45	352.02	-341.79	0.34	0.11	24.57
5,420.00	0.700	76.20	5,398.88	268.61	353.25	-343.03	0.19	-0.10	-12.29
5,512.00	0.600	316.30	5,490.88	269.09	353.47	-343.22	1.22	-0.11	-130.33
As of Oct 18									
5,601.00	0.500	313.80	5,579.88	269.70	352.87	-342.60	0.12	-0.11	-2.81
5,696.00	1.000	287.20	5,674.87	270.23	351.77	-341.49	0.63	0.53	-28.00
5,791.00	3.500	288.70	5,769.79	271.41	348.23	-337.91	2.63	2.63	1.58
5,839.00	5.800	283.80	5,817.63	272.45	344.49	-334.13	4.86	4.79	-10.21
5,887.00	10.300	276.00	5,865.14	273.48	337.86	-327.47	9.63	9.38	-16.25
5,982.00	19.200	280.40	5,956.92	277.20	314.00	-303.49	9.44	9.37	4.63
6,021.00	23.200	282.80	5,993.28	280.06	300.20	-289.58	10.49	10.26	6.15
As of Oct 19									
6,077.00	26.000	283.20	6,044.19	285.30	277.49	-266.69	5.01	5.00	0.71
6,172.00	39.000	271.90	6,124.21	291.08	227.08	-216.10	15.05	13.68	-11.89
6,252.00	51.900	270.20	6,180.22	292.03	170.20	-159.23	16.19	16.13	-2.13
6,267.00	53.900	271.10	6,189.27	292.17	158.24	-147.27	14.17	13.33	6.00
6,298.00	55.700	268.60	6,207.14	292.09	132.91	-121.96	8.78	5.81	-8.06
6,361.00	58.600	264.30	6,241.32	288.79	80.11	-69.33	7.35	4.60	-6.83
6,456.00	68.800	266.30	6,283.36	281.88	-4.65	15.13	10.90	10.74	2.11
6,550.00	80.500	266.00	6,308.20	275.80	-94.94	105.12	12.45	12.45	-0.32
6,572.00	83.300	264.90	6,311.30	274.07	-116.65	126.75	13.66	12.73	-5.00
As of Oct 22									
6,682.00	89.300	264.30	6,318.39	263.74	-225.88	235.53	5.48	5.45	-0.55
6,778.00	90.900	265.80	6,318.23	255.46	-321.52	330.79	2.28	1.67	1.56
6,874.00	90.600	266.30	6,316.97	248.85	-417.28	426.24	0.61	-0.31	0.52
6,969.00	90.000	266.60	6,316.47	242.97	-512.10	520.77	0.71	-0.63	0.32
7,065.00	89.600	269.20	6,316.81	239.45	-608.02	616.50	2.74	-0.42	2.71
7,161.00	90.100	268.70	6,317.06	237.69	-704.00	712.35	0.74	0.52	-0.52
7,256.00	89.000	269.80	6,317.80	236.45	-798.99	807.23	1.64	-1.16	1.16
7,352.00	89.800	269.40	6,318.81	235.78	-894.98	903.13	0.93	0.83	-0.42
7,447.00	89.200	269.50	6,319.64	234.86	-989.97	998.02	0.64	-0.63	0.11
7,543.00	90.300	269.50	6,320.06	234.03	-1,085.97	1,093.92	1.15	1.15	0.00
7,639.00	90.000	270.80	6,319.81	234.28	-1,181.96	1,189.86	1.39	-0.31	1.35
7,735.00	88.400	269.40	6,321.15	234.45	-1,277.95	1,285.78	2.21	-1.67	-1.46
7,831.00	89.400	268.70	6,322.99	232.85	-1,373.92	1,381.62	1.27	1.04	-0.73
7,926.00	90.200	270.20	6,323.32	231.94	-1,468.91	1,476.51	1.79	0.84	1.58
8,021.00	88.000	269.00	6,324.81	231.28	-1,563.89	1,571.40	2.64	-2.32	-1.26
8,117.00	87.500	268.90	6,328.58	229.52	-1,659.80	1,667.18	0.53	-0.52	-0.10

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Well:	70 Ranch 4-63-3-33H	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	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)
8,213.00	90.000	269.10	6,330.68	227.85	-1,755.75	1,763.01	2.61	2.60	0.21
8,308.00	89.600	267.80	6,331.01	225.28	-1,850.71	1,857.81	1.43	-0.42	-1.37
8,404.00	89.800	269.50	6,331.51	223.02	-1,946.68	1,953.63	1.78	0.21	1.77
8,499.00	89.600	270.40	6,332.01	222.93	-2,041.68	2,048.56	0.97	-0.21	0.95
8,595.00	91.000	271.20	6,331.51	224.27	-2,137.67	2,144.52	1.68	1.46	0.83
8,691.00	90.900	270.20	6,329.91	225.45	-2,233.64	2,240.48	1.05	-0.10	-1.04
8,786.00	91.200	269.60	6,328.17	225.28	-2,328.63	2,335.39	0.71	0.32	-0.63
8,882.00	91.200	268.00	6,326.16	223.27	-2,424.58	2,431.21	1.67	0.00	-1.67
8,978.00	88.500	268.00	6,326.41	219.92	-2,520.52	2,526.95	2.81	-2.81	0.00
9,074.00	88.900	266.80	6,328.59	215.57	-2,616.39	2,622.59	1.32	0.42	-1.25
9,170.00	88.900	268.20	6,330.43	211.38	-2,712.28	2,718.26	1.46	0.00	1.46
9,265.00	89.600	268.70	6,331.68	208.81	-2,807.23	2,813.06	0.91	0.74	0.53
9,360.00	90.800	267.70	6,331.35	205.83	-2,902.18	2,907.83	1.64	1.26	-1.05
9,456.00	89.300	269.40	6,331.26	203.40	-2,998.15	3,003.64	2.36	-1.56	1.77
9,552.00	90.400	269.70	6,331.51	202.64	-3,094.14	3,099.54	1.19	1.15	0.31
9,647.00	92.100	269.00	6,329.44	201.57	-3,189.11	3,194.40	1.94	1.79	-0.74
As of Oct 23									
9,742.00	90.600	267.10	6,327.20	198.33	-3,284.02	3,289.12	2.55	-1.58	-2.00
9,838.00	88.000	266.00	6,328.38	192.56	-3,379.83	3,384.65	2.94	-2.71	-1.15
9,934.00	88.000	265.60	6,331.73	185.53	-3,475.51	3,480.01	0.42	0.00	-0.42
10,029.00	88.400	266.90	6,334.71	179.32	-3,570.26	3,574.46	1.43	0.42	1.37
10,124.00	91.000	267.70	6,335.21	174.85	-3,665.15	3,669.11	2.86	2.74	0.84
10,220.00	88.800	267.80	6,335.38	171.08	-3,761.07	3,764.83	2.29	-2.29	0.10
10,315.00	88.600	266.90	6,337.53	166.69	-3,855.94	3,859.47	0.97	-0.21	-0.95
10,411.00	89.400	267.30	6,339.21	161.83	-3,951.80	3,955.08	0.93	0.83	0.42
10,506.00	92.500	268.00	6,337.63	157.94	-4,046.70	4,049.77	3.35	3.26	0.74
10,591.00	90.800	267.80	6,335.18	154.82	-4,131.60	4,134.50	2.01	-2.00	-0.24
Last Sharewell Survey									
10,654.00	90.800	267.80	6,334.30	152.41	-4,194.55	4,197.31	0.00	0.00	0.00
Projection To Bit									

Survey Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
141.00	141.00	0.23	0.08	First Sharewell Survey
774.00	770.89	38.53	45.76	As of Oct 16
1,728.00	1,718.55	106.01	130.45	As of Oct 17
5,512.00	5,490.88	269.09	353.47	As of Oct 18
6,021.00	5,993.28	280.06	300.20	As of Oct 19
6,572.00	6,311.30	274.07	-116.65	As of Oct 22
9,647.00	6,329.44	201.57	-3,189.11	As of Oct 23
10,591.00	6,335.18	154.82	-4,131.60	Last Sharewell Survey
10,654.00	6,334.30	152.41	-4,194.55	Projection To Bit

Company:	Bill Barrett Corp. (II)	Local Co-ordinate Reference:	Well 70 Ranch 4-63-3-33H
Project:	Weld Co., CO	TVD Reference:	WELL @ 4559.01ft
Site:	Sec.3-T4N-R63W	MD Reference:	WELL @ 4559.01ft
Well:	70 Ranch 4-63-3-33H	North Reference:	True
Wellbore:	Wellbore #1	Survey Calculation Method:	Minimum Curvature
Design:	OH	Database:	CompassVM

Checked By: _____ Approved By: _____ Date: _____