Bill Barrett Corporation

COMPANY DETAILS: BILL BARRETT CORP

Calculation Method: Minimum Curvature
Error System: ISCWSA
Scan Method: Closest Approach 3D
Error Surface: Elliptical Conic
Warning Method: Error Ratio

REFERENCE INFORMATION

Co-ordinate (N/E) Reference: Well Helton 5-63-27-4956CDH, Grid North
Vertical (TVD) Reference: KB @ 4565.0ft (Original Well Elev)
Section (VS) Reference: Slot - (0.0N, 0.0E)
Measured Depth Reference: KB @ 4565.0ft (Original Well Elev)
Calculation Method: Minimum Curvature

WELL DETAILS: Helton 5-63-27-4956CDH

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	1379404.12	3298983.72	40° 22' 11.640 N	104° 25' 36.984 W

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	900.0	0.00	0.00	900.0	0.0	0.0	0.00	0.00	0.0	
3	2258.0	27.16	229.00	2207.7	-207.2	-238.4	2.00	229.00	-161.3	
4	3058.0	27.16	229.00	2919.5	-446.8	-514.0	0.00	0.00	-347.8	
5	3288.9	27.16	218.87	3125.1	-522.5	-586.9	2.00	-94.52	-393.3	
6	4442.4	27.16	218.87	4151.3	-932.4	-917.3	0.00	0.00	-578.3	
7	5800.3	0.00	0.00	5459.0	-1178.3	-1115.5	2.00	180.00	-689.4	
8	6300.3	0.00	0.00	5959.0	-1178.3	-1115.5	0.00	0.00	-689.4	
9	7202.3	90.20	89.77	6532.0	-1176.0	-540.6	10.00	89.77	-144.2	4956CDH LP
10	11251.4	90.20	89.77	6517.8	-1159.8	3508.5	0.00	0.00	3695.2	4956CDH PBHL

PROJECT DETAILS: WELD COUNTY, COLORADO

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

FORMATION TOP DETAILS

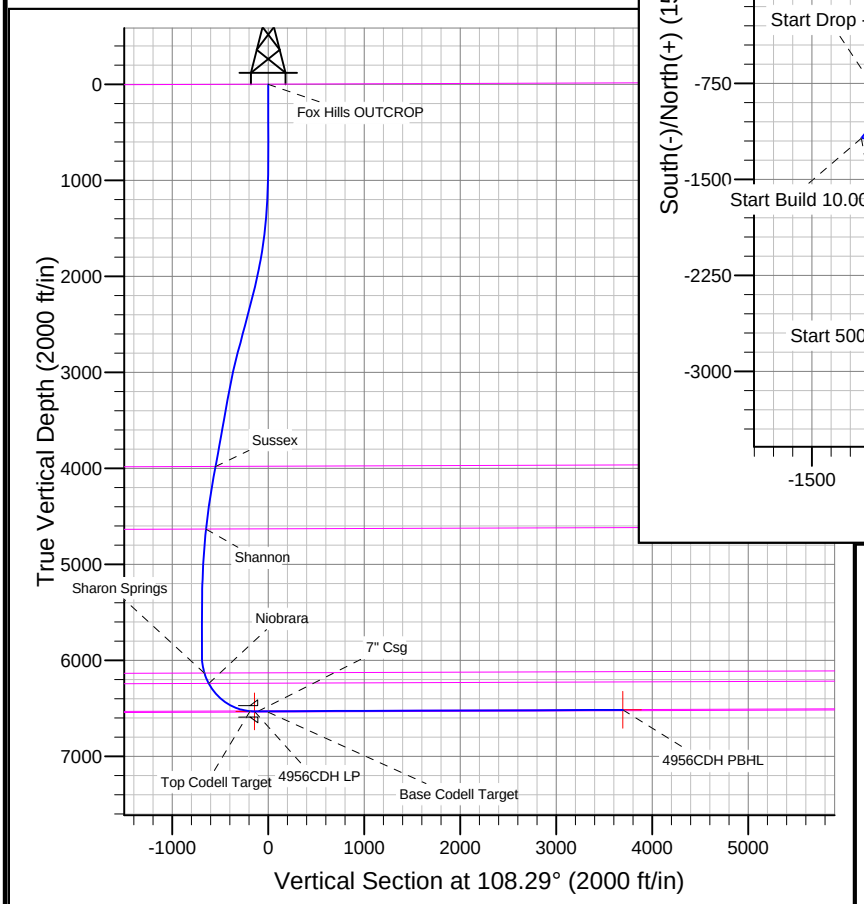
TVDPath	MDPath	Formation
		Base Codell Target
		Fox Hills OUTCROP
3983.2	4253.4	Sussex
4634.8	4964.3	Shannon
6136.0	6480.3	Sharon Springs
6242.8	6597.3	Niobrara
6530.2	7154.9	Top Codell Target

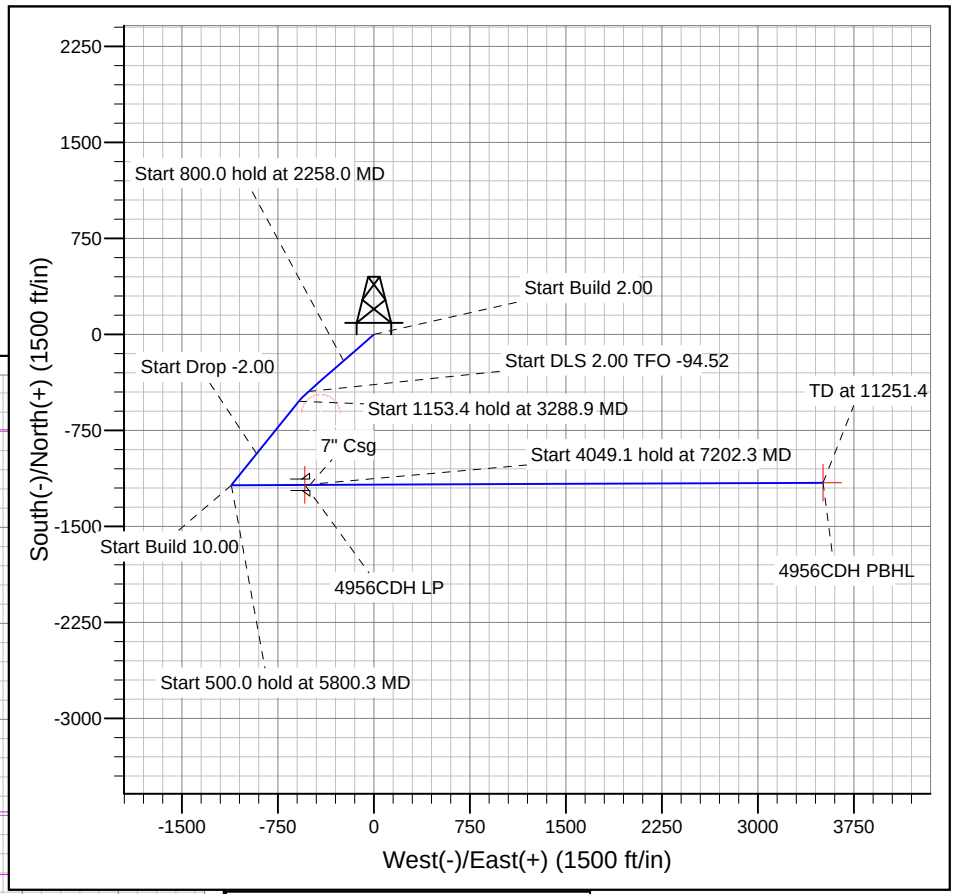
WELLBORE TARGET DETAILS

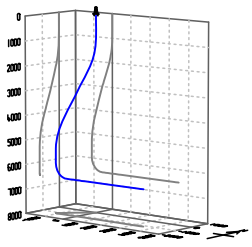
Name	TVD	+N/-S	+E/-W	Shape
4956CDH PBHL	6517.0	-1159.5	3508.5	Point
4956CDH LP	6532.0	-1176.0	-540.3	Point
13-27	7027.0	-620.7	-416.1	Circle (Radius: 150.0)

CASING DETAILS

TVD	MD	Name	Size
6531.8	7242.0	7" Csg	7







Azimuths to Grid North
True North: -0.69°
Magnetic North: 7.72°

Magnetic Field
Strength: 52945.6snT
Dip Angle: 67.01°
Date: 6/4/2013
Model: IGRF2010

BILL BARRETT CORP

WELD COUNTY, COLORADO
Helton 5-63-27 Pad
Helton 5-63-27-4956CDH

Wellbore #1

Plan: Design #2

Standard Planning Report

10 July, 2013

Database:	Compass	**Local Co-ordinate Reference:**	Well Helton 5-63-27-4956CDH
Company:	BILL BARRETT CORP	**TVD Reference:**	KB @ 4565.0ft (Original Well Elev)
Project:	WELD COUNTY, COLORADO	**MD Reference:**	KB @ 4565.0ft (Original Well Elev)
Site:	Helton 5-63-27 Pad	**North Reference:**	Grid
Well:	Helton 5-63-27-4956CDH	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

Project WELD COUNTY, COLORADO

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site Helton 5-63-27 Pad

Site Position:		**Northing:**	1,379,436.30 ft	**Latitude:**	40° 22' 11.964 N
From:	Lat/Long	**Easting:**	3,298,933.17 ft	**Longitude:**	104° 25' 37.632 W
Position Uncertainty:	0.0 ft	**Slot Radius:**	"	**Grid Convergence:**	0.69 °

Well Helton 5-63-27-4956CDH

Well Position	**+N/-S**	-32.2 ft	**Northing:**	1,379,404.12 ft	**Latitude:**	40° 22' 11.640 N
	+E/-W	50.5 ft	**Easting:**	3,298,983.72 ft	**Longitude:**	104° 25' 36.984 W
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	4,542.0 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	6/4/2013	8.41	67.01	52,946

Design Design #2

Audit Notes:

Version:		**Phase:**	PROTOTYPE	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	108.29

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
900.0	0.00	0.00	900.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,258.0	27.16	229.00	2,207.7	-207.2	-238.4	2.00	2.00	0.00	229.00	
3,058.0	27.16	229.00	2,919.5	-446.8	-514.0	0.00	0.00	0.00	0.00	
3,288.9	27.16	218.87	3,125.1	-522.5	-586.9	2.00	0.00	-4.39	-94.52	
4,442.4	27.16	218.87	4,151.3	-932.4	-917.3	0.00	0.00	0.00	0.00	
5,800.3	0.00	0.00	5,459.0	-1,178.3	-1,115.5	2.00	-2.00	0.00	180.00	
6,300.3	0.00	0.00	5,959.0	-1,178.3	-1,115.5	0.00	0.00	0.00	0.00	
7,202.3	90.20	89.77	6,532.0	-1,176.0	-540.6	10.00	10.00	0.00	89.77	4956CDH LP
11,251.4	90.20	89.77	6,517.8	-1,159.8	3,508.5	0.00	0.00	0.00	0.00	4956CDH PBHL

Database:	Compass	**Local Co-ordinate Reference:**	Well Helton 5-63-27-4956CDH
Company:	BILL BARRETT CORP	**TVD Reference:**	KB @ 4565.0ft (Original Well Elev)
Project:	WELD COUNTY, COLORADO	**MD Reference:**	KB @ 4565.0ft (Original Well Elev)
Site:	Helton 5-63-27 Pad	**North Reference:**	Grid
Well:	Helton 5-63-27-4956CDH	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

Planned 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)
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	2.00	229.00	1,000.0	-1.1	-1.3	-0.9	2.00	2.00	0.00
1,100.0	4.00	229.00	1,099.8	-4.6	-5.3	-3.6	2.00	2.00	0.00
1,200.0	6.00	229.00	1,199.5	-10.3	-11.8	-8.0	2.00	2.00	0.00
1,300.0	8.00	229.00	1,298.7	-18.3	-21.0	-14.2	2.00	2.00	0.00
1,400.0	10.00	229.00	1,397.5	-28.6	-32.8	-22.2	2.00	2.00	0.00
1,500.0	12.00	229.00	1,495.6	-41.1	-47.2	-32.0	2.00	2.00	0.00
1,600.0	14.00	229.00	1,593.1	-55.8	-64.2	-43.5	2.00	2.00	0.00
1,700.0	16.00	229.00	1,689.6	-72.8	-83.8	-56.7	2.00	2.00	0.00
1,800.0	18.00	229.00	1,785.3	-92.0	-105.8	-71.6	2.00	2.00	0.00
1,900.0	20.00	229.00	1,879.8	-113.3	-130.4	-88.2	2.00	2.00	0.00
2,000.0	22.00	229.00	1,973.2	-136.9	-157.4	-106.5	2.00	2.00	0.00
2,100.0	24.00	229.00	2,065.2	-162.5	-186.9	-126.5	2.00	2.00	0.00
2,200.0	26.00	229.00	2,155.8	-190.2	-218.8	-148.1	2.00	2.00	0.00
2,258.0	27.16	229.00	2,207.7	-207.2	-238.4	-161.3	2.00	2.00	0.00
2,300.0	27.16	229.00	2,245.1	-219.8	-252.9	-171.1	0.00	0.00	0.00
2,400.0	27.16	229.00	2,334.1	-249.8	-287.3	-194.4	0.00	0.00	0.00
2,500.0	27.16	229.00	2,423.0	-279.7	-321.8	-217.7	0.00	0.00	0.00
2,600.0	27.16	229.00	2,512.0	-309.7	-356.2	-241.0	0.00	0.00	0.00
2,700.0	27.16	229.00	2,601.0	-339.6	-390.7	-264.3	0.00	0.00	0.00
2,800.0	27.16	229.00	2,689.9	-369.6	-425.1	-287.7	0.00	0.00	0.00
2,900.0	27.16	229.00	2,778.9	-399.5	-459.6	-311.0	0.00	0.00	0.00
3,000.0	27.16	229.00	2,867.9	-429.4	-494.0	-334.3	0.00	0.00	0.00
3,058.0	27.16	229.00	2,919.5	-446.8	-514.0	-347.8	0.00	0.00	0.00
3,100.0	27.11	227.16	2,956.9	-459.6	-528.3	-357.3	2.00	-0.13	-4.38
3,200.0	27.07	222.77	3,045.9	-491.8	-560.4	-377.7	2.00	-0.03	-4.39
3,288.9	27.16	218.87	3,125.1	-522.5	-586.9	-393.3	2.00	0.10	-4.38
3,300.0	27.16	218.87	3,134.9	-526.4	-590.1	-395.0	0.00	0.00	0.00
3,400.0	27.16	218.87	3,223.9	-561.9	-618.7	-411.1	0.00	0.00	0.00
3,500.0	27.16	218.87	3,312.9	-597.5	-647.4	-427.1	0.00	0.00	0.00
3,600.0	27.16	218.87	3,401.8	-633.0	-676.0	-443.2	0.00	0.00	0.00
3,700.0	27.16	218.87	3,490.8	-668.6	-704.7	-459.2	0.00	0.00	0.00
3,800.0	27.16	218.87	3,579.8	-704.1	-733.3	-475.3	0.00	0.00	0.00
3,900.0	27.16	218.87	3,668.8	-739.6	-762.0	-491.3	0.00	0.00	0.00
4,000.0	27.16	218.87	3,757.7	-775.2	-790.6	-507.4	0.00	0.00	0.00
4,100.0	27.16	218.87	3,846.7	-810.7	-819.2	-523.4	0.00	0.00	0.00
4,200.0	27.16	218.87	3,935.7	-846.3	-847.9	-539.4	0.00	0.00	0.00
4,253.4	27.16	218.87	3,983.2	-865.2	-863.2	-548.0	0.00	0.00	0.00
Sussex									
4,300.0	27.16	218.87	4,024.7	-881.8	-876.5	-555.5	0.00	0.00	0.00
4,400.0	27.16	218.87	4,113.6	-917.3	-905.2	-571.5	0.00	0.00	0.00
4,442.4	27.16	218.87	4,151.3	-932.4	-917.3	-578.3	0.00	0.00	0.00
4,500.0	26.01	218.87	4,202.9	-952.5	-933.5	-587.4	2.00	-2.00	0.00
4,600.0	24.01	218.87	4,293.5	-985.4	-960.0	-602.3	2.00	-2.00	0.00
4,700.0	22.01	218.87	4,385.5	-1,015.8	-984.6	-616.0	2.00	-2.00	0.00

Database:	Compass	**Local Co-ordinate Reference:**	Well Helton 5-63-27-4956CDH
Company:	BILL BARRETT CORP	**TVD Reference:**	KB @ 4565.0ft (Original Well Elev)
Project:	WELD COUNTY, COLORADO	**MD Reference:**	KB @ 4565.0ft (Original Well Elev)
Site:	Helton 5-63-27 Pad	**North Reference:**	Grid
Well:	Helton 5-63-27-4956CDH	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

Planned 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)
4,800.0	20.01	218.87	4,478.9	-1,043.7	-1,007.1	-628.6	2.00	-2.00	0.00
4,900.0	18.01	218.87	4,573.4	-1,069.1	-1,027.5	-640.0	2.00	-2.00	0.00
4,964.3	16.72	218.87	4,634.8	-1,084.0	-1,039.5	-646.8	2.00	-2.00	0.00
Shannon									
5,000.0	16.01	218.87	4,669.1	-1,091.8	-1,045.8	-650.3	2.00	-2.00	0.00
5,100.0	14.01	218.87	4,765.6	-1,112.0	-1,062.1	-659.4	2.00	-2.00	0.00
5,200.0	12.01	218.87	4,863.1	-1,129.5	-1,076.2	-667.3	2.00	-2.00	0.00
5,300.0	10.01	218.87	4,961.2	-1,144.4	-1,088.2	-674.0	2.00	-2.00	0.00
5,400.0	8.01	218.87	5,060.0	-1,156.6	-1,098.0	-679.5	2.00	-2.00	0.00
5,500.0	6.01	218.87	5,159.2	-1,166.1	-1,105.7	-683.8	2.00	-2.00	0.00
5,600.0	4.01	218.87	5,258.9	-1,172.9	-1,111.2	-686.9	2.00	-2.00	0.00
5,700.0	2.01	218.87	5,358.7	-1,176.9	-1,114.4	-688.7	2.00	-2.00	0.00
5,800.0	0.01	218.87	5,458.7	-1,178.3	-1,115.5	-689.4	2.00	-2.00	0.00
5,800.3	0.00	0.00	5,459.0	-1,178.3	-1,115.5	-689.4	2.00	-2.00	0.00
5,900.0	0.00	0.00	5,558.7	-1,178.3	-1,115.5	-689.4	0.00	0.00	0.00
6,000.0	0.00	0.00	5,658.7	-1,178.3	-1,115.5	-689.4	0.00	0.00	0.00
6,100.0	0.00	0.00	5,758.7	-1,178.3	-1,115.5	-689.4	0.00	0.00	0.00
6,200.0	0.00	0.00	5,858.7	-1,178.3	-1,115.5	-689.4	0.00	0.00	0.00
6,300.0	0.00	0.00	5,958.7	-1,178.3	-1,115.5	-689.4	0.00	0.00	0.00
6,300.3	0.00	0.00	5,959.0	-1,178.3	-1,115.5	-689.4	0.00	0.00	0.00
6,400.0	9.97	89.77	6,058.2	-1,178.3	-1,106.9	-681.2	10.00	10.00	0.00
6,480.3	17.99	89.77	6,136.0	-1,178.2	-1,087.5	-662.8	10.00	10.00	0.00
Sharon Springs									
6,500.0	19.97	89.77	6,154.7	-1,178.2	-1,081.1	-656.7	10.00	10.00	0.00
6,597.3	29.69	89.77	6,242.8	-1,178.0	-1,040.3	-618.0	10.00	10.00	0.00
Niobrara									
6,600.0	29.97	89.77	6,245.2	-1,178.0	-1,039.0	-616.7	10.00	10.00	0.00
6,700.0	39.97	89.77	6,327.1	-1,177.8	-981.7	-562.5	10.00	10.00	0.00
6,800.0	49.97	89.77	6,397.7	-1,177.5	-911.1	-495.5	10.00	10.00	0.00
6,900.0	59.97	89.77	6,455.0	-1,177.2	-829.4	-418.0	10.00	10.00	0.00
7,000.0	69.97	89.77	6,497.3	-1,176.8	-738.9	-332.2	10.00	10.00	0.00
7,100.0	79.97	89.77	6,523.2	-1,176.4	-642.4	-240.7	10.00	10.00	0.00
7,154.9	85.46	89.77	6,530.2	-1,176.2	-588.0	-189.1	10.00	10.00	0.00
Top Codell Target									
7,200.0	89.97	89.77	6,532.0	-1,176.0	-542.9	-146.4	10.00	10.00	0.00
7,202.3	90.20	89.77	6,532.0	-1,176.0	-540.6	-144.2	10.00	10.00	0.00
7,202.6	90.20	89.77	6,532.0	-1,176.0	-540.3	-143.9	0.00	0.00	0.00
4956CDH LP									
7,242.0	90.20	89.77	6,531.8	-1,175.8	-500.9	-106.6	0.00	0.00	0.00
7" Csg									
7,300.0	90.20	89.77	6,531.6	-1,175.6	-442.9	-51.6	0.00	0.00	0.00
7,327.4	90.20	89.77	6,531.5	-1,175.5	-415.6	-25.6	0.00	0.00	0.00
13-27									
7,400.0	90.20	89.77	6,531.3	-1,175.2	-342.9	43.3	0.00	0.00	0.00
7,500.0	90.20	89.77	6,530.9	-1,174.8	-242.9	138.1	0.00	0.00	0.00
7,600.0	90.20	89.77	6,530.6	-1,174.4	-142.9	232.9	0.00	0.00	0.00
7,700.0	90.20	89.77	6,530.2	-1,174.0	-42.9	327.7	0.00	0.00	0.00
7,800.0	90.20	89.77	6,529.9	-1,173.6	57.1	422.5	0.00	0.00	0.00
7,900.0	90.20	89.77	6,529.5	-1,173.2	157.1	517.4	0.00	0.00	0.00
8,000.0	90.20	89.77	6,529.2	-1,172.8	257.1	612.2	0.00	0.00	0.00
8,100.0	90.20	89.77	6,528.8	-1,172.4	357.1	707.0	0.00	0.00	0.00
8,200.0	90.20	89.77	6,528.5	-1,172.0	457.1	801.8	0.00	0.00	0.00
8,300.0	90.20	89.77	6,528.1	-1,171.6	557.1	896.6	0.00	0.00	0.00

Database:	Compass	**Local Co-ordinate Reference:**	Well Helton 5-63-27-4956CDH
Company:	BILL BARRETT CORP	**TVD Reference:**	KB @ 4565.0ft (Original Well Elev)
Project:	WELD COUNTY, COLORADO	**MD Reference:**	KB @ 4565.0ft (Original Well Elev)
Site:	Helton 5-63-27 Pad	**North Reference:**	Grid
Well:	Helton 5-63-27-4956CDH	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		

Planned 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)
8,400.0	90.20	89.77	6,527.8	-1,171.2	657.1	991.5	0.00	0.00	0.00
8,500.0	90.20	89.77	6,527.4	-1,170.8	757.1	1,086.3	0.00	0.00	0.00
8,600.0	90.20	89.77	6,527.1	-1,170.4	857.1	1,181.1	0.00	0.00	0.00
8,700.0	90.20	89.77	6,526.7	-1,170.0	957.1	1,275.9	0.00	0.00	0.00
8,800.0	90.20	89.77	6,526.4	-1,169.6	1,057.1	1,370.7	0.00	0.00	0.00
8,900.0	90.20	89.77	6,526.0	-1,169.2	1,157.1	1,465.6	0.00	0.00	0.00
9,000.0	90.20	89.77	6,525.7	-1,168.8	1,257.1	1,560.4	0.00	0.00	0.00
9,100.0	90.20	89.77	6,525.3	-1,168.4	1,357.1	1,655.2	0.00	0.00	0.00
9,200.0	90.20	89.77	6,525.0	-1,168.0	1,457.0	1,750.0	0.00	0.00	0.00
9,300.0	90.20	89.77	6,524.6	-1,167.6	1,557.0	1,844.8	0.00	0.00	0.00
9,400.0	90.20	89.77	6,524.3	-1,167.2	1,657.0	1,939.7	0.00	0.00	0.00
9,500.0	90.20	89.77	6,523.9	-1,166.8	1,757.0	2,034.5	0.00	0.00	0.00
9,600.0	90.20	89.77	6,523.6	-1,166.4	1,857.0	2,129.3	0.00	0.00	0.00
9,700.0	90.20	89.77	6,523.2	-1,166.0	1,957.0	2,224.1	0.00	0.00	0.00
9,800.0	90.20	89.77	6,522.9	-1,165.6	2,057.0	2,318.9	0.00	0.00	0.00
9,900.0	90.20	89.77	6,522.6	-1,165.2	2,157.0	2,413.7	0.00	0.00	0.00
10,000.0	90.20	89.77	6,522.2	-1,164.8	2,257.0	2,508.6	0.00	0.00	0.00
10,100.0	90.20	89.77	6,521.9	-1,164.4	2,357.0	2,603.4	0.00	0.00	0.00
10,200.0	90.20	89.77	6,521.5	-1,164.0	2,457.0	2,698.2	0.00	0.00	0.00
10,300.0	90.20	89.77	6,521.2	-1,163.6	2,557.0	2,793.0	0.00	0.00	0.00
10,400.0	90.20	89.77	6,520.8	-1,163.2	2,657.0	2,887.8	0.00	0.00	0.00
10,500.0	90.20	89.77	6,520.5	-1,162.8	2,757.0	2,982.7	0.00	0.00	0.00
10,600.0	90.20	89.77	6,520.1	-1,162.4	2,857.0	3,077.5	0.00	0.00	0.00
10,700.0	90.20	89.77	6,519.8	-1,162.0	2,957.0	3,172.3	0.00	0.00	0.00
10,800.0	90.20	89.77	6,519.4	-1,161.6	3,057.0	3,267.1	0.00	0.00	0.00
10,900.0	90.20	89.77	6,519.1	-1,161.2	3,157.0	3,361.9	0.00	0.00	0.00
11,000.0	90.20	89.77	6,518.7	-1,160.8	3,257.0	3,456.8	0.00	0.00	0.00
11,100.0	90.20	89.77	6,518.4	-1,160.4	3,357.0	3,551.6	0.00	0.00	0.00
11,200.0	90.20	89.77	6,518.0	-1,160.0	3,457.0	3,646.4	0.00	0.00	0.00
11,251.4	90.20	89.77	6,517.8	-1,159.8	3,508.5	3,695.2	0.00	0.00	0.00
4956CDH PBHL									

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,242.0	6,531.8	7" Csg	7	8-3/4

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
	0.0	Fox Hills OUTCROP		-0.21	89.77
4,253.4	3,980.0	Sussex		-0.21	89.77
4,964.3	4,631.0	Shannon		-0.21	89.77
6,480.3	6,132.0	Sharon Springs		-0.21	89.77
6,597.3	6,239.0	Niobrara		-0.21	89.77
7,154.9	6,528.0	Top Codell Target		-0.21	89.77
	6,540.0	Base Codell Target		-0.21	89.77

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Project:	WELD COUNTY, COLORADO	**MD Reference:**	KB @ 4565.0ft (Original Well Elev)
Site:	Helton 5-63-27 Pad	**North Reference:**	Grid
Well:	Helton 5-63-27-4956CDH	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #2		