



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 5-63-27-4841CH, 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 5-63-27-4841CH

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	1379411.23	3298969.70	40° 22' 11.712 N	104° 25' 37.164 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	1995.3	21.91	229.58	1968.8	-134.1	-157.5	2.00	229.58	-118.5	
4	4745.2	21.91	229.58	4520.2	-799.4	-938.5	0.00	0.00	-706.4	
5	5840.5	0.00	0.00	5589.0	-933.5	-1096.0	2.00	180.00	-824.9	
6	6090.5	0.00	0.00	5839.0	-933.5	-1096.0	0.00	0.00	-824.9	
7	6992.5	90.20	89.82	6412.0	-931.7	-521.0	10.00	89.82	-269.0	4841CH LP
8	11035.7	90.20	89.82	6397.8	-918.8	3522.0	0.00	0.00	3639.9	4841CH 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

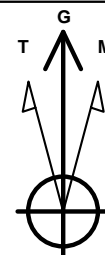
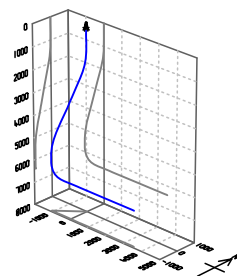
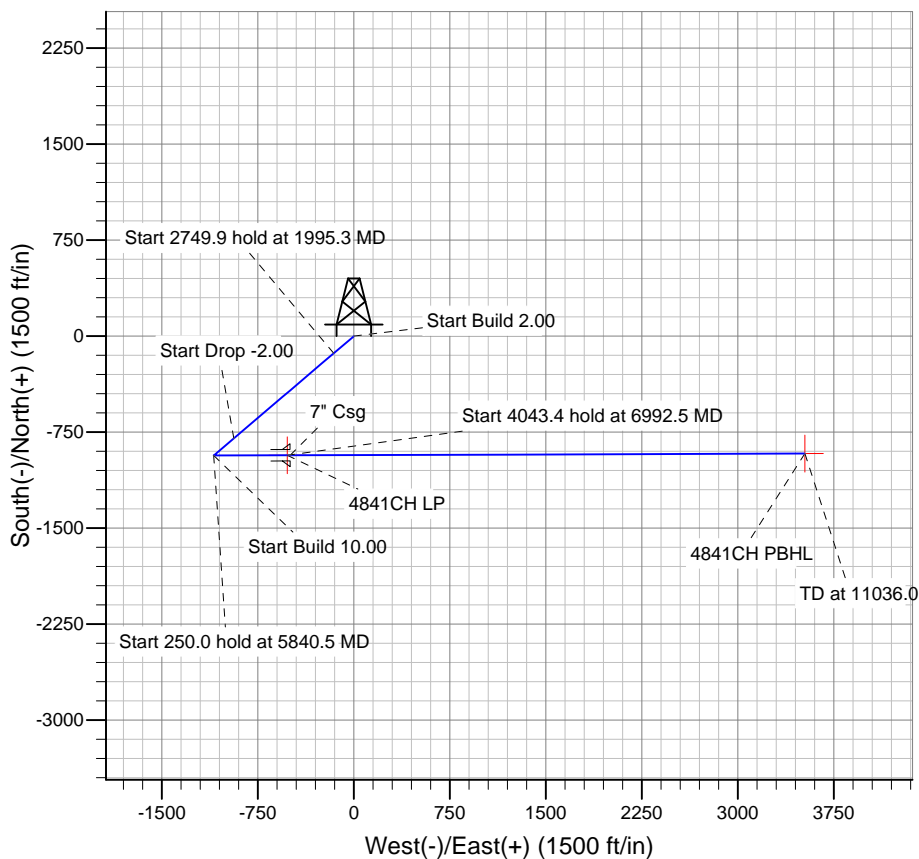
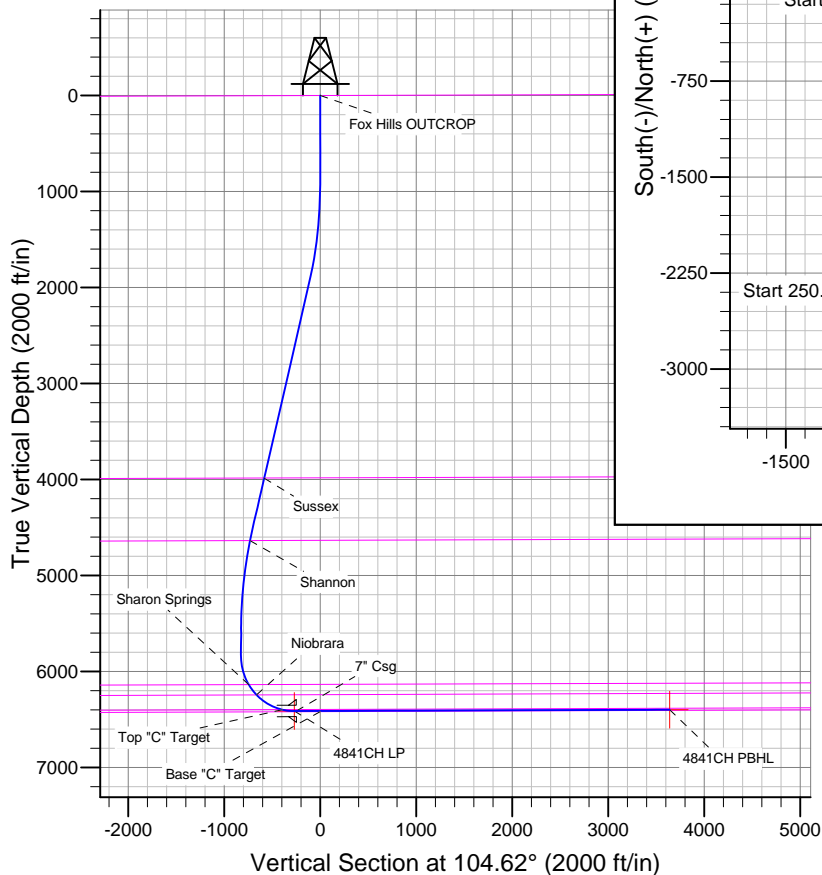
TVDPath	MDPath	Formation
		Base "C" Target
		Fox Hills OUTCROP
3984.7	4168.1	Sussex
4636.4	4869.5	Shannon
6137.5	6404.6	Sharon Springs
6244.2	6540.7	Niobrara
6397.3	6860.6	Top "C" Target

CASING DETAILS

TVD	MD	Name	Size
6411.9	7015.0	7" Csg	7

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
4841CH PBHL	6397.0	-918.9	3522.3	Point
4841CH LP	6412.0	-931.7	-521.0	Point



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

Magnetic Field
Strength: 52945.9snT
Dip Angle: 67.01°
Date: 6/3/2013
Model: IGRF2010

BILL BARRETT CORP

WELD COUNTY, COLORADO

Helton 5-63-27 Pad

Helton 5-63-27-4841CH

Wellbore #1

Plan: Design #1

Standard Planning Report

04 June, 2013

Bill Barrett Corp

Planning Report

Database:	Compass	Local Co-ordinate Reference:	Well Helton 5-63-27-4841CH
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 5-63-27-4841CH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

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

Well	Helton 5-63-27-4841CH					
Well Position	+N/-S	-25.1 ft	Northing:	1,379,411.23 ft	Latitude:	40° 22' 11.712 N
	+E/-W	36.5 ft	Easting:	3,298,969.70 ft	Longitude:	104° 25' 37.164 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,542.0ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	6/3/2013	8.41	67.01	52,946

Design	Design #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	104.62

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	
1,995.3	21.91	229.58	1,968.8	-134.1	-157.5	2.00	2.00	0.00	229.58	
4,745.2	21.91	229.58	4,520.2	-799.4	-938.5	0.00	0.00	0.00	0.00	
5,840.5	0.00	0.00	5,589.0	-933.5	-1,096.0	2.00	-2.00	0.00	180.00	
6,090.5	0.00	0.00	5,839.0	-933.5	-1,096.0	0.00	0.00	0.00	0.00	
6,992.5	90.20	89.82	6,412.0	-931.7	-521.0	10.00	10.00	0.00	89.82	4841CH LP
11,035.7	90.20	89.82	6,397.8	-918.8	3,522.0	0.00	0.00	0.00	0.00	4841CH PBHL

Bill Barrett Corp

Planning Report

Database:	Compass	Local Co-ordinate Reference:	Well Helton 5-63-27-4841CH
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 5-63-27-4841CH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

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	229.58	1,000.0	-1.1	-1.3	-1.0	2.00	2.00	0.00
1,100.0	4.00	229.58	1,099.8	-4.5	-5.3	-4.0	2.00	2.00	0.00
1,200.0	6.00	229.58	1,199.5	-10.2	-11.9	-9.0	2.00	2.00	0.00
1,300.0	8.00	229.58	1,298.7	-18.1	-21.2	-16.0	2.00	2.00	0.00
1,400.0	10.00	229.58	1,397.5	-28.2	-33.1	-24.9	2.00	2.00	0.00
1,500.0	12.00	229.58	1,495.6	-40.6	-47.7	-35.9	2.00	2.00	0.00
1,600.0	14.00	229.58	1,593.1	-55.2	-64.8	-48.8	2.00	2.00	0.00
1,700.0	16.00	229.58	1,689.6	-72.0	-84.5	-63.6	2.00	2.00	0.00
1,800.0	18.00	229.58	1,785.3	-90.9	-106.7	-80.3	2.00	2.00	0.00
1,900.0	20.00	229.58	1,879.8	-112.0	-131.5	-99.0	2.00	2.00	0.00
1,995.3	21.91	229.58	1,968.8	-134.1	-157.5	-118.5	2.00	2.00	0.00
2,000.0	21.91	229.58	1,973.2	-135.3	-158.8	-119.5	0.00	0.00	0.00
2,100.0	21.91	229.58	2,065.9	-159.5	-187.2	-140.9	0.00	0.00	0.00
2,200.0	21.91	229.58	2,158.7	-183.6	-215.6	-162.3	0.00	0.00	0.00
2,300.0	21.91	229.58	2,251.5	-207.8	-244.0	-183.6	0.00	0.00	0.00
2,400.0	21.91	229.58	2,344.3	-232.0	-272.4	-205.0	0.00	0.00	0.00
2,500.0	21.91	229.58	2,437.1	-256.2	-300.8	-226.4	0.00	0.00	0.00
2,600.0	21.91	229.58	2,529.8	-280.4	-329.2	-247.8	0.00	0.00	0.00
2,700.0	21.91	229.58	2,622.6	-304.6	-357.6	-269.2	0.00	0.00	0.00
2,800.0	21.91	229.58	2,715.4	-328.8	-386.0	-290.5	0.00	0.00	0.00
2,900.0	21.91	229.58	2,808.2	-353.0	-414.4	-311.9	0.00	0.00	0.00
3,000.0	21.91	229.58	2,901.0	-377.2	-442.8	-333.3	0.00	0.00	0.00
3,100.0	21.91	229.58	2,993.7	-401.4	-471.2	-354.7	0.00	0.00	0.00
3,200.0	21.91	229.58	3,086.5	-425.6	-499.6	-376.0	0.00	0.00	0.00
3,300.0	21.91	229.58	3,179.3	-449.8	-528.0	-397.4	0.00	0.00	0.00
3,400.0	21.91	229.58	3,272.1	-473.9	-556.4	-418.8	0.00	0.00	0.00
3,500.0	21.91	229.58	3,364.9	-498.1	-584.8	-440.2	0.00	0.00	0.00
3,600.0	21.91	229.58	3,457.6	-522.3	-613.3	-461.5	0.00	0.00	0.00
3,700.0	21.91	229.58	3,550.4	-546.5	-641.7	-482.9	0.00	0.00	0.00
3,800.0	21.91	229.58	3,643.2	-570.7	-670.1	-504.3	0.00	0.00	0.00
3,900.0	21.91	229.58	3,736.0	-594.9	-698.5	-525.7	0.00	0.00	0.00
4,000.0	21.91	229.58	3,828.8	-619.1	-726.9	-547.1	0.00	0.00	0.00
4,100.0	21.91	229.58	3,921.5	-643.3	-755.3	-568.4	0.00	0.00	0.00
4,168.1	21.91	229.58	3,984.7	-659.8	-774.6	-583.0	0.00	0.00	0.00
Sussex									
4,200.0	21.91	229.58	4,014.3	-667.5	-783.7	-589.8	0.00	0.00	0.00
4,300.0	21.91	229.58	4,107.1	-691.7	-812.1	-611.2	0.00	0.00	0.00
4,400.0	21.91	229.58	4,199.9	-715.9	-840.5	-632.6	0.00	0.00	0.00
4,500.0	21.91	229.58	4,292.7	-740.1	-868.9	-653.9	0.00	0.00	0.00
4,600.0	21.91	229.58	4,385.4	-764.2	-897.3	-675.3	0.00	0.00	0.00
4,700.0	21.91	229.58	4,478.2	-788.4	-925.7	-696.7	0.00	0.00	0.00
4,745.2	21.91	229.58	4,520.2	-799.4	-938.5	-706.4	0.00	0.00	0.00
4,800.0	20.81	229.58	4,571.2	-812.3	-953.7	-717.8	2.00	-2.00	0.00
4,869.5	19.42	229.58	4,636.4	-827.8	-971.9	-731.5	2.00	-2.00	0.00

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Planning Report

Database:	Compass	Local Co-ordinate Reference:	Well Helton 5-63-27-4841CH
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 5-63-27-4841CH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

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)
Shannon									
4,900.0	18.81	229.58	4,665.3	-834.3	-979.5	-737.2	2.00	-2.00	0.00
5,000.0	16.81	229.58	4,760.5	-854.1	-1,002.8	-754.7	2.00	-2.00	0.00
5,100.0	14.81	229.58	4,856.7	-871.8	-1,023.5	-770.3	2.00	-2.00	0.00
5,200.0	12.81	229.58	4,953.8	-887.3	-1,041.7	-784.0	2.00	-2.00	0.00
5,300.0	10.81	229.58	5,051.7	-900.5	-1,057.3	-795.7	2.00	-2.00	0.00
5,400.0	8.81	229.58	5,150.2	-911.6	-1,070.3	-805.5	2.00	-2.00	0.00
5,500.0	6.81	229.58	5,249.3	-920.4	-1,080.6	-813.3	2.00	-2.00	0.00
5,600.0	4.81	229.58	5,348.7	-927.0	-1,088.3	-819.1	2.00	-2.00	0.00
5,700.0	2.81	229.58	5,448.5	-931.3	-1,093.4	-822.9	2.00	-2.00	0.00
5,800.0	0.81	229.58	5,548.5	-933.3	-1,095.8	-824.7	2.00	-2.00	0.00
5,840.5	0.00	0.00	5,589.0	-933.5	-1,096.0	-824.9	2.00	-2.00	0.00
5,900.0	0.00	0.00	5,648.5	-933.5	-1,096.0	-824.9	0.00	0.00	0.00
6,000.0	0.00	0.00	5,748.5	-933.5	-1,096.0	-824.9	0.00	0.00	0.00
6,090.5	0.00	0.00	5,839.0	-933.5	-1,096.0	-824.9	0.00	0.00	0.00
6,100.0	0.95	89.82	5,848.5	-933.5	-1,095.9	-824.8	10.00	10.00	0.00
6,200.0	10.95	89.82	5,947.8	-933.5	-1,085.6	-814.8	10.00	10.00	0.00
6,300.0	20.95	89.82	6,043.8	-933.4	-1,058.1	-788.3	10.00	10.00	0.00
6,400.0	30.95	89.82	6,133.6	-933.2	-1,014.4	-746.0	10.00	10.00	0.00
6,404.6	31.40	89.82	6,137.5	-933.2	-1,012.1	-743.7	10.00	10.00	0.00
Sharon Springs									
6,500.0	40.95	89.82	6,214.5	-933.1	-955.8	-689.3	10.00	10.00	0.00
6,540.7	45.02	89.82	6,244.2	-933.0	-928.1	-662.5	10.00	10.00	0.00
Niobrara									
6,600.0	50.95	89.82	6,283.9	-932.8	-884.0	-619.9	10.00	10.00	0.00
6,700.0	60.95	89.82	6,339.9	-932.6	-801.3	-539.9	10.00	10.00	0.00
6,800.0	70.95	89.82	6,380.6	-932.3	-710.1	-451.8	10.00	10.00	0.00
6,860.6	77.01	89.82	6,397.3	-932.1	-651.9	-395.5	10.00	10.00	0.00
Top "C" Target									
6,900.0	80.95	89.82	6,404.8	-932.0	-613.2	-358.1	10.00	10.00	0.00
6,992.5	90.20	89.82	6,412.0	-931.7	-521.0	-269.0	10.00	10.00	0.00
6,992.6	90.20	89.82	6,412.0	-931.7	-521.0	-268.9	0.00	0.00	0.00
4841CH LP									
7,000.0	90.20	89.82	6,411.9	-931.6	-513.6	-261.8	0.00	0.00	0.00
7,015.0	90.20	89.82	6,411.9	-931.6	-498.6	-247.3	0.00	0.00	0.00
7" Csg									
7,100.0	90.20	89.82	6,411.6	-931.3	-413.6	-165.1	0.00	0.00	0.00
7,200.0	90.20	89.82	6,411.2	-931.0	-313.6	-68.4	0.00	0.00	0.00
7,300.0	90.20	89.82	6,410.9	-930.7	-213.6	28.3	0.00	0.00	0.00
7,400.0	90.20	89.82	6,410.5	-930.4	-113.6	124.9	0.00	0.00	0.00
7,500.0	90.20	89.82	6,410.2	-930.1	-13.6	221.6	0.00	0.00	0.00
7,600.0	90.20	89.82	6,409.8	-929.7	86.4	318.3	0.00	0.00	0.00
7,700.0	90.20	89.82	6,409.5	-929.4	186.4	415.0	0.00	0.00	0.00
7,800.0	90.20	89.82	6,409.1	-929.1	286.4	511.7	0.00	0.00	0.00
7,900.0	90.20	89.82	6,408.8	-928.8	386.4	608.3	0.00	0.00	0.00
8,000.0	90.20	89.82	6,408.4	-928.5	486.4	705.0	0.00	0.00	0.00
8,100.0	90.20	89.82	6,408.1	-928.1	586.4	801.7	0.00	0.00	0.00
8,200.0	90.20	89.82	6,407.7	-927.8	686.4	898.4	0.00	0.00	0.00
8,300.0	90.20	89.82	6,407.4	-927.5	786.4	995.1	0.00	0.00	0.00
8,400.0	90.20	89.82	6,407.0	-927.2	886.4	1,091.7	0.00	0.00	0.00
8,500.0	90.20	89.82	6,406.7	-926.9	986.4	1,188.4	0.00	0.00	0.00
8,600.0	90.20	89.82	6,406.3	-926.5	1,086.4	1,285.1	0.00	0.00	0.00
8,700.0	90.20	89.82	6,406.0	-926.2	1,186.4	1,381.8	0.00	0.00	0.00

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Planning Report

Database:	Compass	Local Co-ordinate Reference:	Well Helton 5-63-27-4841CH
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 5-63-27-4841CH	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Design #1		

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)
8,800.0	90.20	89.82	6,405.6	-925.9	1,286.4	1,478.5	0.00	0.00	0.00
8,900.0	90.20	89.82	6,405.3	-925.6	1,386.4	1,575.1	0.00	0.00	0.00
9,000.0	90.20	89.82	6,404.9	-925.3	1,486.4	1,671.8	0.00	0.00	0.00
9,100.0	90.20	89.82	6,404.6	-925.0	1,586.4	1,768.5	0.00	0.00	0.00
9,200.0	90.20	89.82	6,404.2	-924.6	1,686.4	1,865.2	0.00	0.00	0.00
9,300.0	90.20	89.82	6,403.9	-924.3	1,786.4	1,961.9	0.00	0.00	0.00
9,400.0	90.20	89.82	6,403.6	-924.0	1,886.4	2,058.5	0.00	0.00	0.00
9,500.0	90.20	89.82	6,403.2	-923.7	1,986.4	2,155.2	0.00	0.00	0.00
9,600.0	90.20	89.82	6,402.9	-923.4	2,086.4	2,251.9	0.00	0.00	0.00
9,700.0	90.20	89.82	6,402.5	-923.0	2,186.4	2,348.6	0.00	0.00	0.00
9,800.0	90.20	89.82	6,402.2	-922.7	2,286.4	2,445.3	0.00	0.00	0.00
9,900.0	90.20	89.82	6,401.8	-922.4	2,386.4	2,541.9	0.00	0.00	0.00
10,000.0	90.20	89.82	6,401.5	-922.1	2,486.4	2,638.6	0.00	0.00	0.00
10,100.0	90.20	89.82	6,401.1	-921.8	2,586.4	2,735.3	0.00	0.00	0.00
10,200.0	90.20	89.82	6,400.8	-921.4	2,686.4	2,832.0	0.00	0.00	0.00
10,300.0	90.20	89.82	6,400.4	-921.1	2,786.4	2,928.7	0.00	0.00	0.00
10,400.0	90.20	89.82	6,400.1	-920.8	2,886.4	3,025.3	0.00	0.00	0.00
10,500.0	90.20	89.82	6,399.7	-920.5	2,986.4	3,122.0	0.00	0.00	0.00
10,600.0	90.20	89.82	6,399.4	-920.2	3,086.4	3,218.7	0.00	0.00	0.00
10,700.0	90.20	89.82	6,399.0	-919.9	3,186.4	3,315.4	0.00	0.00	0.00
10,800.0	90.20	89.82	6,398.7	-919.5	3,286.4	3,412.1	0.00	0.00	0.00
10,900.0	90.20	89.82	6,398.3	-919.2	3,386.4	3,508.7	0.00	0.00	0.00
11,000.0	90.20	89.82	6,398.0	-918.9	3,486.4	3,605.4	0.00	0.00	0.00
11,035.7	90.20	89.82	6,397.8	-918.8	3,522.0	3,639.9	0.00	0.00	0.00
4841CH PBHL									

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
7,015.0	6,411.9	7" Csg	7	8-3/4

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
	0.0	Fox Hills OUTCROP		-0.20	89.82
4,168.1	3,982.0	Sussex		-0.20	89.82
4,869.5	4,633.0	Shannon		-0.20	89.82
6,404.6	6,134.0	Sharon Springs		-0.20	89.82
6,540.7	6,241.0	Niobrara		-0.20	89.82
6,860.6	6,395.0	Top "C" Target		-0.20	89.82
	6,417.0	Base "C" Target		-0.20	89.82