



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 Dutch Lake 08-10H, True North
Vertical (TVD) Reference: KB @ 4794.0ft (Original Well Elev)
Section (VS) Reference: Slot - (0.0N, 0.0E)
Measured Depth Reference: KB @ 4794.0ft (Original Well Elev)
Calculation Method: Minimum Curvature

WELL DETAILS: Dutch Lake 08-10H

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	1429917.64	3328909.09	40° 30' 27.011 N	104° 19' 1.672 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	1000.0	0.00	0.00	1000.0	0.0	0.0	0.00	0.00	0.0	
3	1190.2	2.85	274.44	1190.2	0.4	-4.7	1.50	274.44	-4.7	
4	5331.5	2.85	274.44	5326.3	16.3	-210.3	0.00	0.00	-210.0	
5	5521.8	0.00	0.00	5516.5	16.7	-215.0	1.50	180.00	-214.8	
6	6021.8	0.00	0.00	6016.5	16.7	-215.0	0.00	0.00	-214.8	
7	6776.0	90.50	89.48	6493.9	21.1	266.6	12.00	89.48	266.9	DL 8-10H LP
8	11161.2	90.50	89.48	6455.7	61.2	4651.5	0.00	0.00	4651.9	DL 8-10H 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

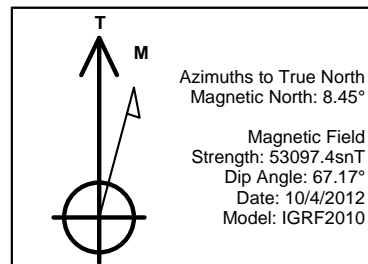
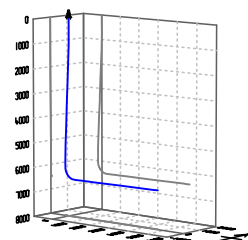
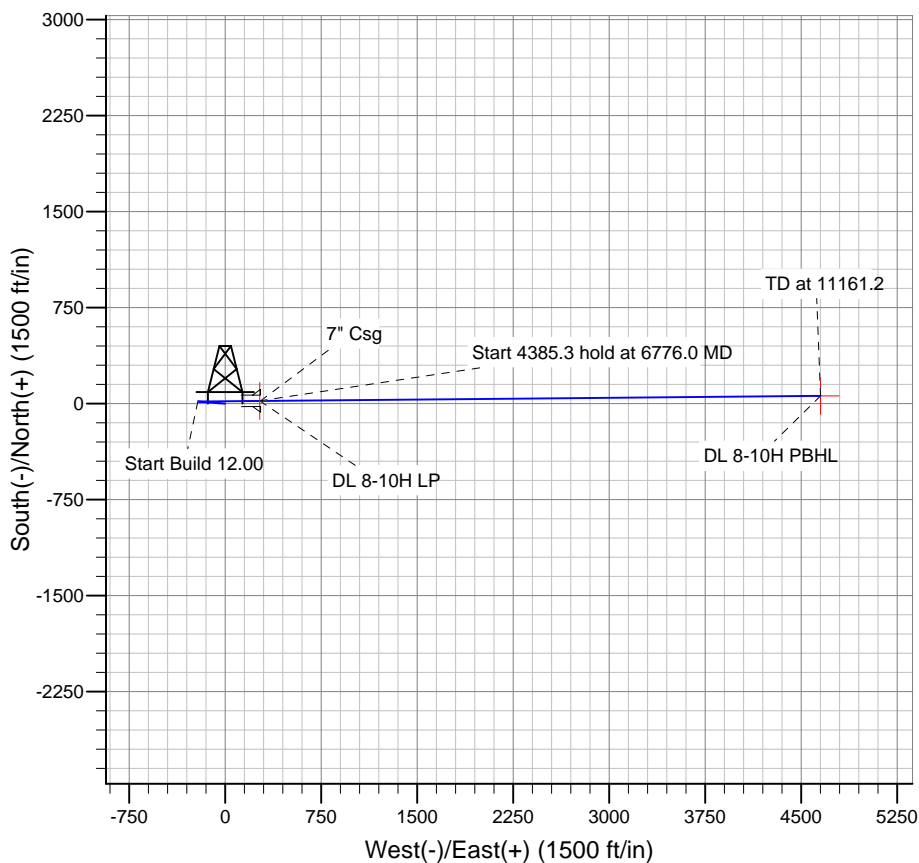
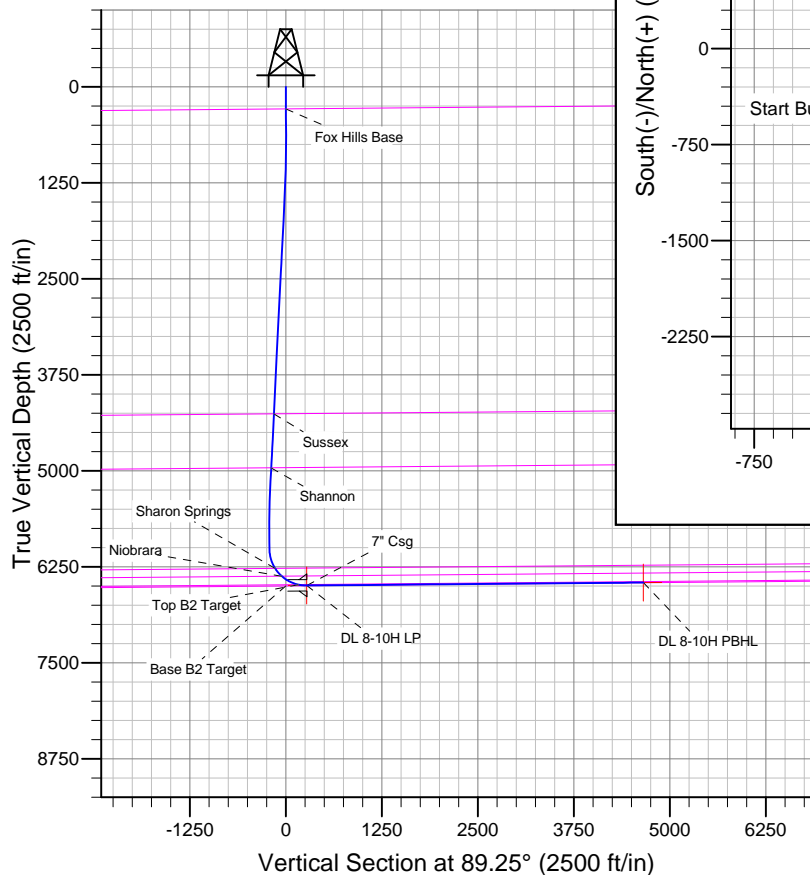
TVDPath	MDPath	Formation
288.0	288.0	Base B2 Target
4259.4	4263.3	Fox Hills Base
4962.7	4967.4	Sussex
6272.2	6291.7	Sharon Springs
6373.5	6425.0	Niobrara
6482.6	6667.5	Top B2 Target

CASING DETAILS

TVD	MD	Name	Size
6493.9	6785.0	7" Csg	7

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
DL 8-10H PBHL	6455.0	60.9	4651.5	Point
DL 8-10H LP	6494.0	21.1	269.7	Point



BILL BARRETT CORP

WELD COUNTY, COLORADO

Dutch Lake 08-10H

Dutch Lake 08-10H

Wellbore #1

Plan: Design #2

Standard Planning Report

12 August, 2013

Bill Barrett Corp

Planning Report

Database:	Compass	Local Co-ordinate Reference:	Well Dutch Lake 08-10H
Company:	BILL BARRETT CORP	TVD Reference:	KB @ 4794.0ft (Original Well Elev)
Project:	WELD COUNTY, COLORADO	MD Reference:	KB @ 4794.0ft (Original Well Elev)
Site:	Dutch Lake 08-10H	North Reference:	True
Well:	Dutch Lake 08-10H	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		Dutch Lake 08-10H				
Site Position:		Northing:	1,429,917.64ft	Latitude:	40° 30' 27.011 N	
From:	Lat/Long	Easting:	3,328,909.09ft	Longitude:	104° 19' 1.672 W	
Position Uncertainty:		0.0 ft	Slot Radius:	"	Grid Convergence:	0.76 °

Well	Dutch Lake 08-10H, 519 FNL & 230 FWL					
Well Position	+N-S	0.0 ft	Northing:	1,429,917.64 ft	Latitude:	40° 30' 27.011 N
	+E-W	0.0 ft	Easting:	3,328,909.09 ft	Longitude:	104° 19' 1.672 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	4,772.0 ft	Ground Level:	4,772.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	10/4/2012	8.45	67.17	53,097

Design	Design #2			
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	89.25

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	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,190.2	2.85	274.44	1,190.2	0.4	-4.7	1.50	1.50	0.00	274.44	
5,331.5	2.85	274.44	5,326.3	16.3	-210.3	0.00	0.00	0.00	0.00	
5,521.8	0.00	0.00	5,516.5	16.7	-215.0	1.50	-1.50	0.00	180.00	
6,021.8	0.00	0.00	6,016.5	16.7	-215.0	0.00	0.00	0.00	0.00	
6,776.0	90.50	89.48	6,493.9	21.1	266.6	12.00	12.00	0.00	89.48	DL 8-10H LP
11,161.2	90.50	89.48	6,455.7	61.2	4,651.5	0.00	0.00	0.00	0.00	DL 8-10H PBHL

Bill Barrett Corp

Planning Report

Database:	Compass	Local Co-ordinate Reference:	Well Dutch Lake 08-10H
Company:	BILL BARRETT CORP	TVD Reference:	KB @ 4794.0ft (Original Well Elev)
Project:	WELD COUNTY, COLORADO	MD Reference:	KB @ 4794.0ft (Original Well Elev)
Site:	Dutch Lake 08-10H	North Reference:	True
Well:	Dutch Lake 08-10H	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
288.0	0.00	0.00	288.0	0.0	0.0	0.0	0.00	0.00	0.00
Fox Hills Base									
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	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	1.50	274.44	1,100.0	0.1	-1.3	-1.3	1.50	1.50	0.00
1,190.2	2.85	274.44	1,190.2	0.4	-4.7	-4.7	1.50	1.50	0.00
1,200.0	2.85	274.44	1,199.9	0.4	-5.2	-5.2	0.00	0.00	0.00
1,300.0	2.85	274.44	1,299.8	0.8	-10.2	-10.2	0.00	0.00	0.00
1,400.0	2.85	274.44	1,399.7	1.2	-15.1	-15.1	0.00	0.00	0.00
1,500.0	2.85	274.44	1,499.5	1.6	-20.1	-20.1	0.00	0.00	0.00
1,600.0	2.85	274.44	1,599.4	1.9	-25.1	-25.0	0.00	0.00	0.00
1,700.0	2.85	274.44	1,699.3	2.3	-30.0	-30.0	0.00	0.00	0.00
1,800.0	2.85	274.44	1,799.2	2.7	-35.0	-34.9	0.00	0.00	0.00
1,900.0	2.85	274.44	1,899.0	3.1	-40.0	-39.9	0.00	0.00	0.00
2,000.0	2.85	274.44	1,998.9	3.5	-44.9	-44.9	0.00	0.00	0.00
2,100.0	2.85	274.44	2,098.8	3.9	-49.9	-49.8	0.00	0.00	0.00
2,200.0	2.85	274.44	2,198.7	4.3	-54.8	-54.8	0.00	0.00	0.00
2,300.0	2.85	274.44	2,298.5	4.6	-59.8	-59.7	0.00	0.00	0.00
2,400.0	2.85	274.44	2,398.4	5.0	-64.8	-64.7	0.00	0.00	0.00
2,500.0	2.85	274.44	2,498.3	5.4	-69.7	-69.7	0.00	0.00	0.00
2,600.0	2.85	274.44	2,598.2	5.8	-74.7	-74.6	0.00	0.00	0.00
2,700.0	2.85	274.44	2,698.0	6.2	-79.7	-79.6	0.00	0.00	0.00
2,800.0	2.85	274.44	2,797.9	6.6	-84.6	-84.5	0.00	0.00	0.00
2,900.0	2.85	274.44	2,897.8	7.0	-89.6	-89.5	0.00	0.00	0.00
3,000.0	2.85	274.44	2,997.7	7.3	-94.6	-94.4	0.00	0.00	0.00
3,100.0	2.85	274.44	3,097.6	7.7	-99.5	-99.4	0.00	0.00	0.00
3,200.0	2.85	274.44	3,197.4	8.1	-104.5	-104.4	0.00	0.00	0.00
3,300.0	2.85	274.44	3,297.3	8.5	-109.4	-109.3	0.00	0.00	0.00
3,400.0	2.85	274.44	3,397.2	8.9	-114.4	-114.3	0.00	0.00	0.00
3,500.0	2.85	274.44	3,497.1	9.3	-119.4	-119.2	0.00	0.00	0.00
3,600.0	2.85	274.44	3,596.9	9.7	-124.3	-124.2	0.00	0.00	0.00
3,700.0	2.85	274.44	3,696.8	10.0	-129.3	-129.2	0.00	0.00	0.00
3,800.0	2.85	274.44	3,796.7	10.4	-134.3	-134.1	0.00	0.00	0.00
3,900.0	2.85	274.44	3,896.6	10.8	-139.2	-139.1	0.00	0.00	0.00
4,000.0	2.85	274.44	3,996.4	11.2	-144.2	-144.0	0.00	0.00	0.00
4,100.0	2.85	274.44	4,096.3	11.6	-149.1	-149.0	0.00	0.00	0.00
4,200.0	2.85	274.44	4,196.2	12.0	-154.1	-153.9	0.00	0.00	0.00
4,263.3	2.85	274.44	4,259.4	12.2	-157.3	-157.1	0.00	0.00	0.00
Sussex									
4,300.0	2.85	274.44	4,296.1	12.4	-159.1	-158.9	0.00	0.00	0.00
4,400.0	2.85	274.44	4,395.9	12.7	-164.0	-163.9	0.00	0.00	0.00
4,500.0	2.85	274.44	4,495.8	13.1	-169.0	-168.8	0.00	0.00	0.00
4,600.0	2.85	274.44	4,595.7	13.5	-174.0	-173.8	0.00	0.00	0.00
4,700.0	2.85	274.44	4,695.6	13.9	-178.9	-178.7	0.00	0.00	0.00
4,800.0	2.85	274.44	4,795.4	14.3	-183.9	-183.7	0.00	0.00	0.00

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Planning Report

Database:	Compass	Local Co-ordinate Reference:	Well Dutch Lake 08-10H
Company:	BILL BARRETT CORP	TVD Reference:	KB @ 4794.0ft (Original Well Elev)
Project:	WELD COUNTY, COLORADO	MD Reference:	KB @ 4794.0ft (Original Well Elev)
Site:	Dutch Lake 08-10H	North Reference:	True
Well:	Dutch Lake 08-10H	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)
4,900.0	2.85	274.44	4,895.3	14.7	-188.9	-188.6	0.00	0.00	0.00
4,967.4	2.85	274.44	4,962.7	14.9	-192.2	-192.0	0.00	0.00	0.00
Shannon									
5,000.0	2.85	274.44	4,995.2	15.1	-193.8	-193.6	0.00	0.00	0.00
5,100.0	2.85	274.44	5,095.1	15.4	-198.8	-198.6	0.00	0.00	0.00
5,200.0	2.85	274.44	5,194.9	15.8	-203.7	-203.5	0.00	0.00	0.00
5,300.0	2.85	274.44	5,294.8	16.2	-208.7	-208.5	0.00	0.00	0.00
5,331.5	2.85	274.44	5,326.3	16.3	-210.3	-210.0	0.00	0.00	0.00
5,400.0	1.83	274.44	5,394.7	16.5	-213.1	-212.8	1.50	-1.50	0.00
5,500.0	0.33	274.44	5,494.7	16.7	-214.9	-214.7	1.50	-1.50	0.00
5,521.8	0.00	0.00	5,516.5	16.7	-215.0	-214.8	1.50	-1.50	0.00
5,600.0	0.00	0.00	5,594.7	16.7	-215.0	-214.8	0.00	0.00	0.00
5,700.0	0.00	0.00	5,694.7	16.7	-215.0	-214.8	0.00	0.00	0.00
5,800.0	0.00	0.00	5,794.7	16.7	-215.0	-214.8	0.00	0.00	0.00
5,900.0	0.00	0.00	5,894.7	16.7	-215.0	-214.8	0.00	0.00	0.00
6,000.0	0.00	0.00	5,994.7	16.7	-215.0	-214.8	0.00	0.00	0.00
6,021.8	0.00	0.00	6,016.5	16.7	-215.0	-214.8	0.00	0.00	0.00
6,100.0	9.38	89.48	6,094.4	16.8	-208.6	-208.4	12.00	12.00	0.00
6,200.0	21.38	89.48	6,190.6	17.0	-182.1	-181.9	12.00	12.00	0.00
6,291.7	32.38	89.48	6,272.2	17.4	-140.7	-140.5	12.00	12.00	0.00
Sharon Springs									
6,300.0	33.38	89.48	6,279.2	17.4	-136.2	-136.0	12.00	12.00	0.00
6,400.0	45.38	89.48	6,356.4	18.0	-72.9	-72.6	12.00	12.00	0.00
6,425.0	48.38	89.48	6,373.5	18.2	-54.6	-54.4	11.99	11.99	0.00
Niobrara									
6,500.0	57.38	89.48	6,418.7	18.7	5.1	5.4	12.00	12.00	0.00
6,600.0	69.38	89.48	6,463.4	19.5	94.3	94.6	12.00	12.00	0.00
6,667.5	77.48	89.48	6,482.6	20.1	158.9	159.2	12.00	12.00	0.00
Top B2 Target									
6,700.0	81.38	89.48	6,488.6	20.4	190.9	191.2	12.00	12.00	0.00
6,776.0	90.50	89.48	6,493.9	21.1	266.6	266.9	12.00	12.00	0.00
6,779.1	90.50	89.48	6,493.9	21.1	269.7	270.0	0.00	0.00	0.00
DL 8-10H LP									
6,785.0	90.50	89.48	6,493.9	21.2	275.7	275.9	0.00	0.00	0.00
7" Csg									
6,800.0	90.50	89.48	6,493.7	21.3	290.6	290.9	0.00	0.00	0.00
6,900.0	90.50	89.48	6,492.9	22.2	390.6	390.9	0.00	0.00	0.00
7,000.0	90.50	89.48	6,492.0	23.2	490.6	490.9	0.00	0.00	0.00
7,100.0	90.50	89.48	6,491.1	24.1	590.6	590.9	0.00	0.00	0.00
7,200.0	90.50	89.48	6,490.2	25.0	690.6	690.9	0.00	0.00	0.00
7,300.0	90.50	89.48	6,489.4	25.9	790.6	790.9	0.00	0.00	0.00
7,400.0	90.50	89.48	6,488.5	26.8	890.6	890.9	0.00	0.00	0.00
7,500.0	90.50	89.48	6,487.6	27.7	990.6	990.9	0.00	0.00	0.00
7,600.0	90.50	89.48	6,486.8	28.6	1,090.6	1,090.9	0.00	0.00	0.00
7,700.0	90.50	89.48	6,485.9	29.6	1,190.6	1,190.9	0.00	0.00	0.00
7,800.0	90.50	89.48	6,485.0	30.5	1,290.6	1,290.9	0.00	0.00	0.00
7,900.0	90.50	89.48	6,484.1	31.4	1,390.6	1,390.9	0.00	0.00	0.00
8,000.0	90.50	89.48	6,483.3	32.3	1,490.6	1,490.8	0.00	0.00	0.00
8,100.0	90.50	89.48	6,482.4	33.2	1,590.5	1,590.8	0.00	0.00	0.00
8,200.0	90.50	89.48	6,481.5	34.1	1,690.5	1,690.8	0.00	0.00	0.00
8,300.0	90.50	89.48	6,480.6	35.1	1,790.5	1,790.8	0.00	0.00	0.00
8,400.0	90.50	89.48	6,479.8	36.0	1,890.5	1,890.8	0.00	0.00	0.00
8,500.0	90.50	89.48	6,478.9	36.9	1,990.5	1,990.8	0.00	0.00	0.00

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Planning Report

Database:	Compass	Local Co-ordinate Reference:	Well Dutch Lake 08-10H
Company:	BILL BARRETT CORP	TVD Reference:	KB @ 4794.0ft (Original Well Elev)
Project:	WELD COUNTY, COLORADO	MD Reference:	KB @ 4794.0ft (Original Well Elev)
Site:	Dutch Lake 08-10H	North Reference:	True
Well:	Dutch Lake 08-10H	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)	
8,600.0	90.50	89.48	6,478.0	37.8	2,090.5	2,090.8	0.00	0.00	0.00	
8,700.0	90.50	89.48	6,477.2	38.7	2,190.5	2,190.8	0.00	0.00	0.00	
8,800.0	90.50	89.48	6,476.3	39.6	2,290.5	2,290.8	0.00	0.00	0.00	
8,900.0	90.50	89.48	6,475.4	40.5	2,390.5	2,390.8	0.00	0.00	0.00	
9,000.0	90.50	89.48	6,474.5	41.5	2,490.5	2,490.8	0.00	0.00	0.00	
9,100.0	90.50	89.48	6,473.7	42.4	2,590.5	2,590.8	0.00	0.00	0.00	
9,200.0	90.50	89.48	6,472.8	43.3	2,690.5	2,690.8	0.00	0.00	0.00	
9,300.0	90.50	89.48	6,471.9	44.2	2,790.4	2,790.8	0.00	0.00	0.00	
9,400.0	90.50	89.48	6,471.0	45.1	2,890.4	2,890.8	0.00	0.00	0.00	
9,500.0	90.50	89.48	6,470.2	46.0	2,990.4	2,990.8	0.00	0.00	0.00	
9,600.0	90.50	89.48	6,469.3	46.9	3,090.4	3,090.8	0.00	0.00	0.00	
9,700.0	90.50	89.48	6,468.4	47.9	3,190.4	3,190.8	0.00	0.00	0.00	
9,800.0	90.50	89.48	6,467.6	48.8	3,290.4	3,290.8	0.00	0.00	0.00	
9,900.0	90.50	89.48	6,466.7	49.7	3,390.4	3,390.8	0.00	0.00	0.00	
10,000.0	90.50	89.48	6,465.8	50.6	3,490.4	3,490.8	0.00	0.00	0.00	
10,100.0	90.50	89.48	6,464.9	51.5	3,590.4	3,590.8	0.00	0.00	0.00	
10,200.0	90.50	89.48	6,464.1	52.4	3,690.4	3,690.7	0.00	0.00	0.00	
10,300.0	90.50	89.48	6,463.2	53.3	3,790.4	3,790.7	0.00	0.00	0.00	
10,400.0	90.50	89.48	6,462.3	54.3	3,890.4	3,890.7	0.00	0.00	0.00	
10,500.0	90.50	89.48	6,461.4	55.2	3,990.4	3,990.7	0.00	0.00	0.00	
10,600.0	90.50	89.48	6,460.6	56.1	4,090.3	4,090.7	0.00	0.00	0.00	
10,700.0	90.50	89.48	6,459.7	57.0	4,190.3	4,190.7	0.00	0.00	0.00	
10,800.0	90.50	89.48	6,458.8	57.9	4,290.3	4,290.7	0.00	0.00	0.00	
10,900.0	90.50	89.48	6,458.0	58.8	4,390.3	4,390.7	0.00	0.00	0.00	
11,000.0	90.50	89.48	6,457.1	59.8	4,490.3	4,490.7	0.00	0.00	0.00	
11,100.0	90.50	89.48	6,456.2	60.7	4,590.3	4,590.7	0.00	0.00	0.00	
11,161.2	90.50	89.48	6,455.7	61.2	4,651.5	4,651.9	0.00	0.00	0.00	
DL 8-10H PBHL										

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
6,785.0	6,493.9	7" Csg	7	8-3/4	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
288.0	288.0	Fox Hills Base		-0.50	89.48	
4,263.3	4,258.0	Sussex		-0.50	89.48	
4,967.4	4,961.0	Shannon		-0.50	89.48	
6,291.7	6,271.0	Sharon Springs		-0.50	89.48	
6,425.0	6,373.0	Niobrara		-0.50	89.48	
6,667.5	6,484.0	Top B2 Target		-0.50	89.48	
	6,499.0	Base B2 Target		-0.50	89.48	