

BILL BARRETT CORP

WELD COUNTY, COLORADO

Kunsemiller 5-61-21 Pad

Kunsemiller 5-61-21-0108BH

Wellbore #1

Plan: Design #1

Standard Planning Report

12 June, 2013



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 Kunsemiller 5-61-21-0108BH, True North
Vertical (TVD) Reference: KB @ 4661.0ft (Original Well Elev)
Section (VS) Reference: Slot - (0.0N, 0.0E)
Measured Depth Reference: KB @ 4661.0ft (Original Well Elev)
Calculation Method: Minimum Curvature

WELL DETAILS: Kunsemiller 5-61-21-0108BH

+N/-S +E/-W Northing Easting Latitude Longitude
0.0 0.0 1387608.56 3355813.0240° 23' 25.267 N 104° 13' 21.288 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	1858.4	14.38	343.58	1848.4	114.7	-33.8	1.50	343.58	-16.3	
4	4150.4	14.38	343.58	4068.6	660.6	-194.7	0.00	0.00	-93.9	
5	5108.8	0.00	0.00	5017.0	775.3	-228.5	1.50	180.00	-110.2	
6	5608.8	0.00	0.00	5517.0	775.3	-228.5	0.00	0.00	-110.2	
7	6510.4	90.16	91.06	6090.0	764.7	346.0	10.00	91.06	456.2	0108BH LP
8	10716.6	90.16	91.06	6078.2	687.1	4551.4	0.00	0.00	4603.0	0108BH 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

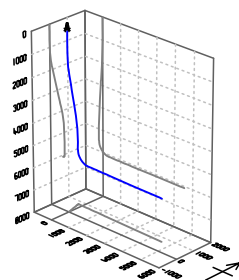
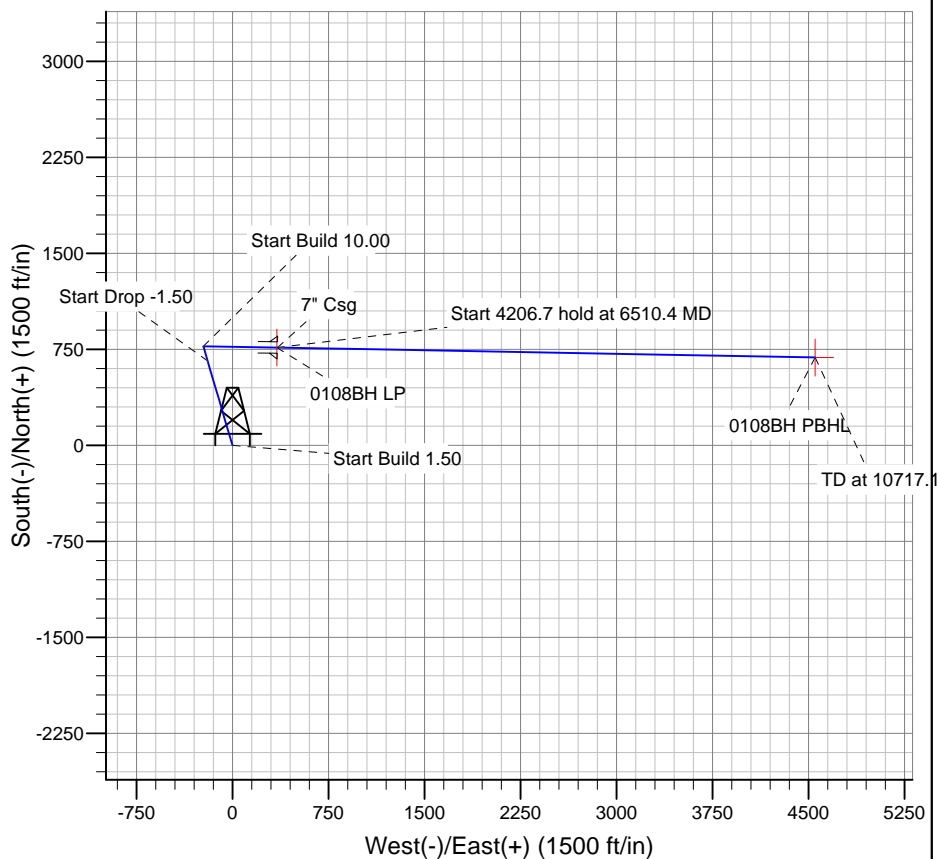
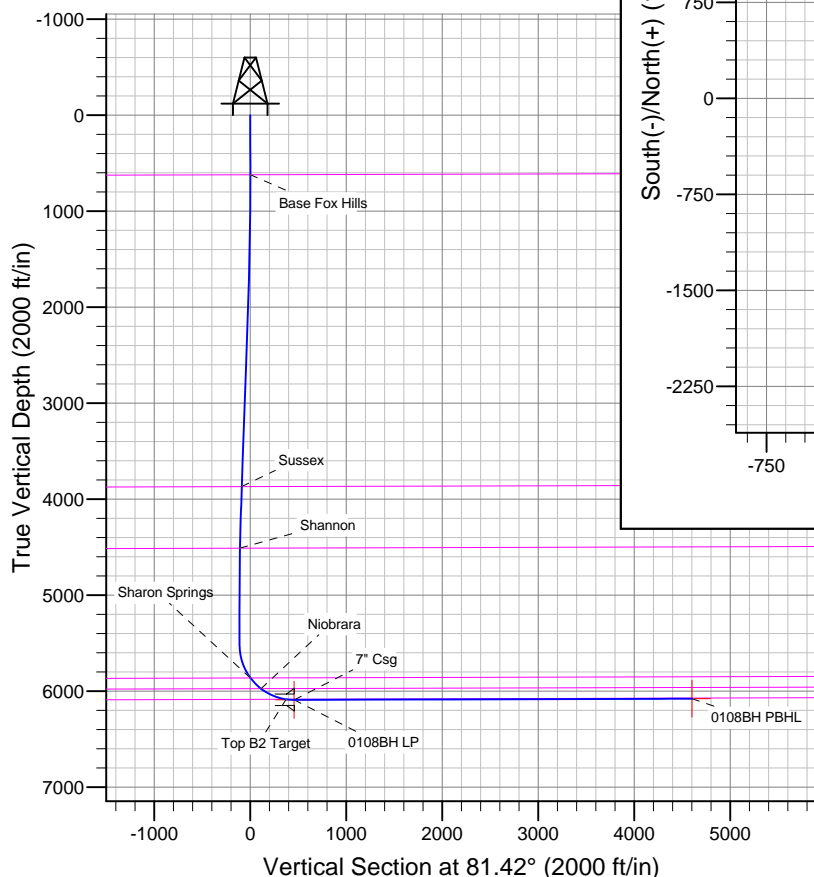
TVDPath	MDPath	Formation
620.0	620.0	Base Fox Hills
3868.5	3943.9	Sussex
4509.6	4600.0	Shannon
5862.4	5979.5	Sharon Springs
5974.0	6137.9	Niobrara
6084.3	6428.2	Top B2 Target

CASING DETAILS

TVD	MD	Name	Size
6089.9	6515.0	7" Csg	7

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
0108BH PBHL	6078.0	686.8	4551.9	Point
0108BH LP	6090.0	764.7	347.3	Point



Azimuths to True North
Magnetic North: 8.30°
Magnetic Field
Strength: 52974.3snT
Dip Angle: 67.06°
Date: 6/12/2013
Model: IGRF2010

Bill Barrett Corp

Planning Report

Database:	Compass	Local Co-ordinate Reference:	Well Kunsemiller 5-61-21-0108BH
Company:	BILL BARRETT CORP	TVD Reference:	KB @ 4661.0ft (Original Well Elev)
Project:	WELD COUNTY, COLORADO	MD Reference:	KB @ 4661.0ft (Original Well Elev)
Site:	Kunsemiller 5-61-21 Pad	North Reference:	True
Well:	Kunsemiller 5-61-21-0108BH	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		Kunsemiller 5-61-21 Pad			
Site Position:		Northing:	1,387,548.81 ft	Latitude:	40° 23' 24.677 N
From:	Lat/Long	Easting:	3,355,813.05 ft	Longitude:	104° 13' 21.299 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	0.83 °

Well	Kunsemiller 5-61-21-0108BH					
Well Position	+N-S	59.7 ft	Northing:	1,387,608.56 ft	Latitude:	40° 23' 25.267 N
	+E-W	0.8 ft	Easting:	3,355,813.02 ft	Longitude:	104° 13' 21.288 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,641.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	6/12/2013	8.30	67.06	52,974

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	81.42

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	
1,858.4	14.38	343.58	1,848.4	114.7	-33.8	1.50	1.50	0.00	343.58	
4,150.4	14.38	343.58	4,068.6	660.6	-194.7	0.00	0.00	0.00	0.00	
5,108.8	0.00	0.00	5,017.0	775.3	-228.5	1.50	-1.50	0.00	180.00	
5,608.8	0.00	0.00	5,517.0	775.3	-228.5	0.00	0.00	0.00	0.00	
6,510.4	90.16	91.06	6,090.0	764.7	346.0	10.00	10.00	0.00	91.06	0108BH LP
10,716.6	90.16	91.06	6,078.2	687.1	4,551.4	0.00	0.00	0.00	0.00	0108BH PBHL

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Planning Report

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Company:	BILL BARRETT CORP	TVD Reference:	KB @ 4661.0ft (Original Well Elev)
Project:	WELD COUNTY, COLORADO	MD Reference:	KB @ 4661.0ft (Original Well Elev)
Site:	Kunsemiller 5-61-21 Pad	North Reference:	True
Well:	Kunsemiller 5-61-21-0108BH	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
620.0	0.00	0.00	620.0	0.0	0.0	0.0	0.00	0.00	0.00
Base Fox Hills									
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	1.50	343.58	1,000.0	1.3	-0.4	-0.2	1.50	1.50	0.00
1,100.0	3.00	343.58	1,099.9	5.0	-1.5	-0.7	1.50	1.50	0.00
1,200.0	4.50	343.58	1,199.7	11.3	-3.3	-1.6	1.50	1.50	0.00
1,300.0	6.00	343.58	1,299.3	20.1	-5.9	-2.9	1.50	1.50	0.00
1,400.0	7.50	343.58	1,398.6	31.3	-9.2	-4.5	1.50	1.50	0.00
1,500.0	9.00	343.58	1,497.5	45.1	-13.3	-6.4	1.50	1.50	0.00
1,600.0	10.50	343.58	1,596.1	61.4	-18.1	-8.7	1.50	1.50	0.00
1,700.0	12.00	343.58	1,694.2	80.1	-23.6	-11.4	1.50	1.50	0.00
1,800.0	13.50	343.58	1,791.7	101.2	-29.8	-14.4	1.50	1.50	0.00
1,858.4	14.38	343.58	1,848.4	114.7	-33.8	-16.3	1.50	1.50	0.00
1,900.0	14.38	343.58	1,888.7	124.6	-36.7	-17.7	0.00	0.00	0.00
2,000.0	14.38	343.58	1,985.5	148.4	-43.8	-21.1	0.00	0.00	0.00
2,100.0	14.38	343.58	2,082.4	172.3	-50.8	-24.5	0.00	0.00	0.00
2,200.0	14.38	343.58	2,179.3	196.1	-57.8	-27.9	0.00	0.00	0.00
2,300.0	14.38	343.58	2,276.1	219.9	-64.8	-31.3	0.00	0.00	0.00
2,400.0	14.38	343.58	2,373.0	243.7	-71.8	-34.7	0.00	0.00	0.00
2,500.0	14.38	343.58	2,469.9	267.5	-78.8	-38.0	0.00	0.00	0.00
2,600.0	14.38	343.58	2,566.8	291.3	-85.9	-41.4	0.00	0.00	0.00
2,700.0	14.38	343.58	2,663.6	315.2	-92.9	-44.8	0.00	0.00	0.00
2,800.0	14.38	343.58	2,760.5	339.0	-99.9	-48.2	0.00	0.00	0.00
2,900.0	14.38	343.58	2,857.4	362.8	-106.9	-51.6	0.00	0.00	0.00
3,000.0	14.38	343.58	2,954.2	386.6	-113.9	-55.0	0.00	0.00	0.00
3,100.0	14.38	343.58	3,051.1	410.4	-121.0	-58.4	0.00	0.00	0.00
3,200.0	14.38	343.58	3,148.0	434.2	-128.0	-61.7	0.00	0.00	0.00
3,300.0	14.38	343.58	3,244.8	458.0	-135.0	-65.1	0.00	0.00	0.00
3,400.0	14.38	343.58	3,341.7	481.9	-142.0	-68.5	0.00	0.00	0.00
3,500.0	14.38	343.58	3,438.6	505.7	-149.0	-71.9	0.00	0.00	0.00
3,600.0	14.38	343.58	3,535.4	529.5	-156.1	-75.3	0.00	0.00	0.00
3,700.0	14.38	343.58	3,632.3	553.3	-163.1	-78.7	0.00	0.00	0.00
3,800.0	14.38	343.58	3,729.2	577.1	-170.1	-82.1	0.00	0.00	0.00
3,900.0	14.38	343.58	3,826.1	600.9	-177.1	-85.4	0.00	0.00	0.00
3,943.9	14.38	343.58	3,868.5	611.4	-180.2	-86.9	0.00	0.00	0.00
Sussex									
4,000.0	14.38	343.58	3,922.9	624.8	-184.1	-88.8	0.00	0.00	0.00
4,100.0	14.38	343.58	4,019.8	648.6	-191.1	-92.2	0.00	0.00	0.00
4,150.4	14.38	343.58	4,068.6	660.6	-194.7	-93.9	0.00	0.00	0.00
4,200.0	13.63	343.58	4,116.7	672.1	-198.1	-95.6	1.50	-1.50	0.00
4,300.0	12.13	343.58	4,214.2	693.5	-204.4	-98.6	1.50	-1.50	0.00
4,400.0	10.63	343.58	4,312.2	712.4	-210.0	-101.3	1.50	-1.50	0.00
4,500.0	9.13	343.58	4,410.8	728.9	-214.8	-103.6	1.50	-1.50	0.00
4,600.0	7.63	343.58	4,509.6	742.8	-218.9	-105.6	1.50	-1.50	0.00

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Planning Report

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Company:	BILL BARRETT CORP	TVD Reference:	KB @ 4661.0ft (Original Well Elev)
Project:	WELD COUNTY, COLORADO	MD Reference:	KB @ 4661.0ft (Original Well Elev)
Site:	Kunsemiller 5-61-21 Pad	North Reference:	True
Well:	Kunsemiller 5-61-21-0108BH	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									
4,700.0	6.13	343.58	4,609.0	754.3	-222.3	-107.3	1.50	-1.50	0.00
4,800.0	4.63	343.58	4,708.5	763.3	-225.0	-108.5	1.50	-1.50	0.00
4,900.0	3.13	343.58	4,808.3	769.8	-226.9	-109.5	1.50	-1.50	0.00
5,000.0	1.63	343.58	4,908.2	773.8	-228.1	-110.0	1.50	-1.50	0.00
5,100.0	0.13	343.58	5,008.2	775.3	-228.5	-110.2	1.50	-1.50	0.00
5,108.8	0.00	0.00	5,017.0	775.3	-228.5	-110.2	1.50	-1.50	0.00
5,200.0	0.00	0.00	5,108.2	775.3	-228.5	-110.2	0.00	0.00	0.00
5,300.0	0.00	0.00	5,208.2	775.3	-228.5	-110.2	0.00	0.00	0.00
5,400.0	0.00	0.00	5,308.2	775.3	-228.5	-110.2	0.00	0.00	0.00
5,500.0	0.00	0.00	5,408.2	775.3	-228.5	-110.2	0.00	0.00	0.00
5,600.0	0.00	0.00	5,508.2	775.3	-228.5	-110.2	0.00	0.00	0.00
5,608.8	0.00	0.00	5,517.0	775.3	-228.5	-110.2	0.00	0.00	0.00
5,700.0	9.12	91.06	5,607.8	775.2	-221.3	-103.1	10.00	10.00	0.00
5,800.0	19.12	91.06	5,704.7	774.7	-196.9	-79.1	10.00	10.00	0.00
5,900.0	29.12	91.06	5,795.8	774.0	-156.1	-38.8	10.00	10.00	0.00
5,979.5	37.07	91.06	5,862.4	773.2	-112.7	3.9	10.00	10.00	0.00
Sharon Springs									
6,000.0	39.12	91.06	5,878.5	772.9	-100.1	16.4	10.00	10.00	0.00
6,100.0	49.12	91.06	5,950.2	771.6	-30.6	84.9	10.00	10.00	0.00
6,137.9	52.91	91.06	5,974.0	771.1	-1.1	114.0	10.00	10.00	0.00
Niobrara									
6,200.0	59.12	91.06	6,008.7	770.2	50.3	164.7	10.00	10.00	0.00
6,300.0	69.12	91.06	6,052.3	768.5	140.2	253.3	10.00	10.00	0.00
6,400.0	79.12	91.06	6,079.7	766.7	236.2	348.0	10.00	10.00	0.00
6,428.2	81.94	91.06	6,084.3	766.2	264.1	375.5	10.00	10.00	0.00
Top B2 Target									
6,500.0	89.12	91.06	6,089.9	764.9	335.5	445.9	10.00	10.00	0.00
6,510.4	90.16	91.06	6,090.0	764.7	346.0	456.2	10.00	10.00	0.00
6,511.8	90.16	91.06	6,090.0	764.7	347.3	457.6	0.00	0.00	0.00
0108BH LP									
6,515.0	90.16	91.06	6,089.9	764.6	350.5	460.7	0.00	0.00	0.00
7" Csg									
6,600.0	90.16	91.06	6,089.7	763.0	435.5	544.5	0.00	0.00	0.00
6,700.0	90.16	91.06	6,089.4	761.2	535.5	643.1	0.00	0.00	0.00
6,800.0	90.16	91.06	6,089.1	759.4	635.5	741.7	0.00	0.00	0.00
6,900.0	90.16	91.06	6,088.9	757.5	735.5	840.3	0.00	0.00	0.00
7,000.0	90.16	91.06	6,088.6	755.7	835.5	938.9	0.00	0.00	0.00
7,100.0	90.16	91.06	6,088.3	753.8	935.4	1,037.5	0.00	0.00	0.00
7,200.0	90.16	91.06	6,088.0	752.0	1,035.4	1,136.1	0.00	0.00	0.00
7,300.0	90.16	91.06	6,087.8	750.1	1,135.4	1,234.6	0.00	0.00	0.00
7,400.0	90.16	91.06	6,087.5	748.3	1,235.4	1,333.2	0.00	0.00	0.00
7,500.0	90.16	91.06	6,087.2	746.4	1,335.4	1,431.8	0.00	0.00	0.00
7,600.0	90.16	91.06	6,086.9	744.6	1,435.4	1,530.4	0.00	0.00	0.00
7,700.0	90.16	91.06	6,086.6	742.7	1,535.3	1,629.0	0.00	0.00	0.00
7,800.0	90.16	91.06	6,086.4	740.9	1,635.3	1,727.6	0.00	0.00	0.00
7,900.0	90.16	91.06	6,086.1	739.0	1,735.3	1,826.2	0.00	0.00	0.00
8,000.0	90.16	91.06	6,085.8	737.2	1,835.3	1,924.8	0.00	0.00	0.00
8,100.0	90.16	91.06	6,085.5	735.4	1,935.3	2,023.3	0.00	0.00	0.00
8,200.0	90.16	91.06	6,085.2	733.5	2,035.2	2,121.9	0.00	0.00	0.00
8,300.0	90.16	91.06	6,085.0	731.7	2,135.2	2,220.5	0.00	0.00	0.00
8,400.0	90.16	91.06	6,084.7	729.8	2,235.2	2,319.1	0.00	0.00	0.00
8,500.0	90.16	91.06	6,084.4	728.0	2,335.2	2,417.7	0.00	0.00	0.00

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Well:	Kunsemiller 5-61-21-0108BH	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)	
8,600.0	90.16	91.06	6,084.1	726.1	2,435.2	2,516.3	0.00	0.00	0.00	
8,700.0	90.16	91.06	6,083.8	724.3	2,535.2	2,614.9	0.00	0.00	0.00	
8,800.0	90.16	91.06	6,083.6	722.4	2,635.1	2,713.5	0.00	0.00	0.00	
8,900.0	90.16	91.06	6,083.3	720.6	2,735.1	2,812.0	0.00	0.00	0.00	
9,000.0	90.16	91.06	6,083.0	718.7	2,835.1	2,910.6	0.00	0.00	0.00	
9,100.0	90.16	91.06	6,082.7	716.9	2,935.1	3,009.2	0.00	0.00	0.00	
9,200.0	90.16	91.06	6,082.4	715.1	3,035.1	3,107.8	0.00	0.00	0.00	
9,300.0	90.16	91.06	6,082.2	713.2	3,135.1	3,206.4	0.00	0.00	0.00	
9,400.0	90.16	91.06	6,081.9	711.4	3,235.0	3,305.0	0.00	0.00	0.00	
9,500.0	90.16	91.06	6,081.6	709.5	3,335.0	3,403.6	0.00	0.00	0.00	
9,600.0	90.16	91.06	6,081.3	707.7	3,435.0	3,502.2	0.00	0.00	0.00	
9,700.0	90.16	91.06	6,081.0	705.8	3,535.0	3,600.7	0.00	0.00	0.00	
9,800.0	90.16	91.06	6,080.8	704.0	3,635.0	3,699.3	0.00	0.00	0.00	
9,900.0	90.16	91.06	6,080.5	702.1	3,735.0	3,797.9	0.00	0.00	0.00	
10,000.0	90.16	91.06	6,080.2	700.3	3,834.9	3,896.5	0.00	0.00	0.00	
10,100.0	90.16	91.06	6,079.9	698.4	3,934.9	3,995.1	0.00	0.00	0.00	
10,200.0	90.16	91.06	6,079.7	696.6	4,034.9	4,093.7	0.00	0.00	0.00	
10,300.0	90.16	91.06	6,079.4	694.8	4,134.9	4,192.3	0.00	0.00	0.00	
10,400.0	90.16	91.06	6,079.1	692.9	4,234.9	4,290.8	0.00	0.00	0.00	
10,500.0	90.16	91.06	6,078.8	691.1	4,334.8	4,389.4	0.00	0.00	0.00	
10,600.0	90.16	91.06	6,078.5	689.2	4,434.8	4,488.0	0.00	0.00	0.00	
10,700.0	90.16	91.06	6,078.3	687.4	4,534.8	4,586.6	0.00	0.00	0.00	
10,716.6	90.16	91.06	6,078.2	687.1	4,551.4	4,603.0	0.00	0.00	0.00	
0108BH PBHL										

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
6,515.0	6,089.9	7" Csg	7	8-3/4	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
620.0	620.0	Base Fox Hills		-0.16	91.06	
3,943.9	3,868.0	Sussex		-0.16	91.06	
4,600.0	4,509.0	Shannon		-0.16	91.06	
5,979.5	5,862.0	Sharon Springs		-0.16	91.06	
6,137.9	5,974.0	Niobrara		-0.16	91.06	
6,428.2	6,085.0	Top B2 Target		-0.16	91.06	