



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 5-61-21-1724BH, 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 5-61-21-1724BH

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	1387568.84	3355813.04	40° 23' 24.875 N	104° 13' 21.295 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	1522.3	7.83	207.80	1520.7	-31.5	-16.6	1.50	207.80	-11.8	
4	4523.0	7.83	207.80	4493.3	-393.4	-207.4	0.00	0.00	-146.6	
5	5045.3	0.00	0.00	5014.0	-424.9	-224.0	1.50	180.00	-158.3	
6	5545.3	0.00	0.00	5514.0	-424.9	-224.0	0.00	0.00	-158.3	
7	6446.9	90.16	91.07	6087.0	-435.7	350.5	10.00	91.07	411.4	1724BH LP
8	9356.4	90.16	91.07	6078.8	-490.2	3259.5	0.00	0.00	3296.1	1724BH PBHL2

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

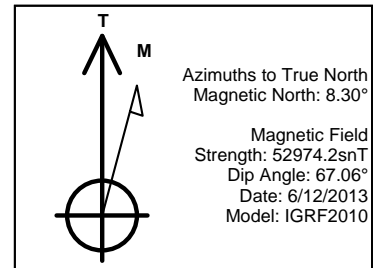
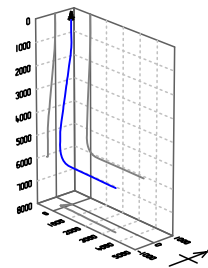
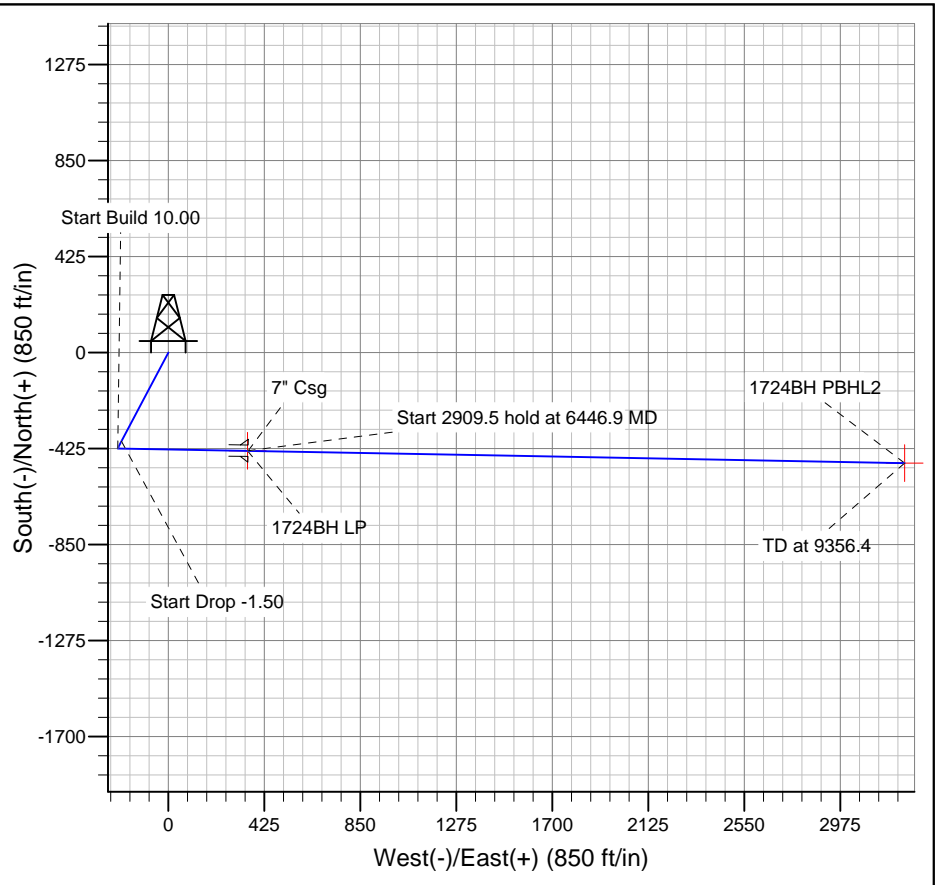
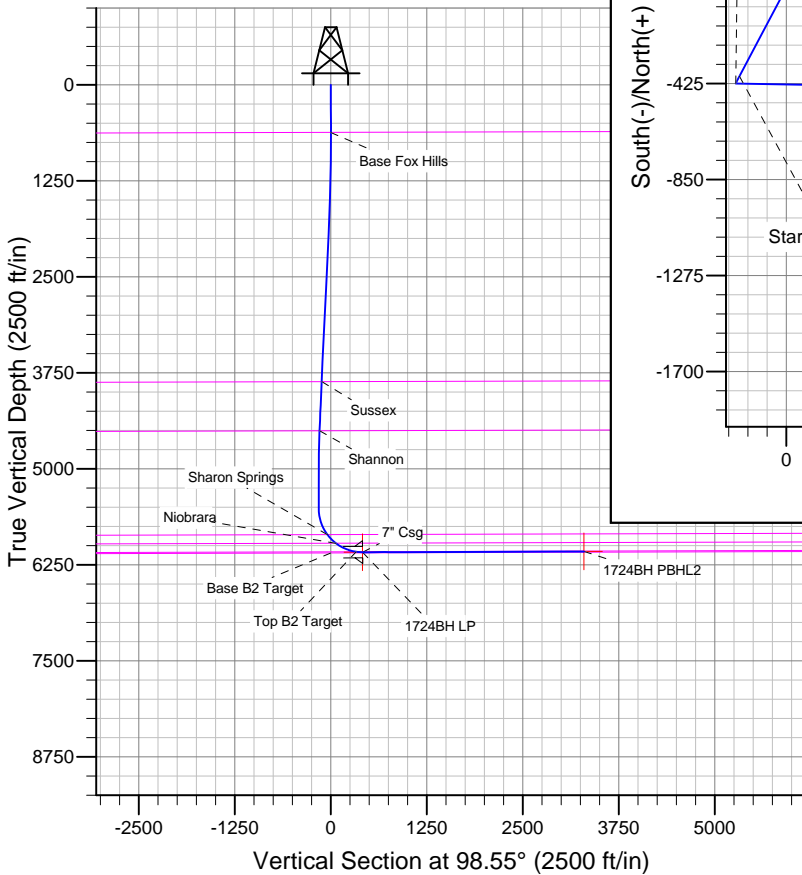
TVDPath	MDPath	Formation
620.0	620.0	Base B2 Target
3865.5	3889.2	Base Fox Hills
4506.6	4536.3	Sussex
5859.3	5915.8	Sharon Springs
5971.0	6074.2	Niobrara
6081.2	6364.2	Top B2 Target

WELLBORE TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Shape
1724BH PBHL2	6075.0	-490.0	3259.5	Point
1724BH LP	6087.0	-435.7	350.7	Point

CASING DETAILS

TVD	MD	Name	Size
6086.9	6450.0	7" Csg	7



BILL BARRETT CORP

WELD COUNTY, COLORADO

Kunsemiller 5-61-21 Pad

Kunsemiller 5-61-21-1724BH

Wellbore #1

Plan: Design #2

Standard Planning Report

21 August, 2013

Bill Barrett Corp
Planning Report

Database:	Compass	Local Co-ordinate Reference:	Well Kunsemiller 5-61-21-1724BH
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 5-61-21-1724BH	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	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 5-61-21-1724BH					
Well Position	+N-S	20.0 ft	Northing:	1,387,568.84 ft	Latitude:	40° 23' 24.875 N
	+E-W	0.3 ft	Easting:	3,355,813.04 ft	Longitude:	104° 13' 21.295 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 #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	98.55

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	
1,522.3	7.83	207.80	1,520.7	-31.5	-16.6	1.50	1.50	0.00	207.80	
4,523.0	7.83	207.80	4,493.3	-393.4	-207.4	0.00	0.00	0.00	0.00	
5,045.3	0.00	0.00	5,014.0	-424.9	-224.0	1.50	-1.50	0.00	180.00	
5,545.3	0.00	0.00	5,514.0	-424.9	-224.0	0.00	0.00	0.00	0.00	
6,446.9	90.16	91.07	6,087.0	-435.7	350.5	10.00	10.00	0.00	91.07	1724BH LP
9,356.4	90.16	91.07	6,078.8	-490.2	3,259.5	0.00	0.00	0.00	0.00	1724BH PBHL2

Bill Barrett Corp

Planning Report

Database:	Compass	Local Co-ordinate Reference:	Well Kunsemiller 5-61-21-1724BH
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 5-61-21-1724BH	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
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	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	1.50	207.80	1,100.0	-1.2	-0.6	-0.4	1.50	1.50	0.00
1,200.0	3.00	207.80	1,199.9	-4.6	-2.4	-1.7	1.50	1.50	0.00
1,300.0	4.50	207.80	1,299.7	-10.4	-5.5	-3.9	1.50	1.50	0.00
1,400.0	6.00	207.80	1,399.3	-18.5	-9.8	-6.9	1.50	1.50	0.00
1,500.0	7.50	207.80	1,498.6	-28.9	-15.2	-10.8	1.50	1.50	0.00
1,522.3	7.83	207.80	1,520.7	-31.5	-16.6	-11.8	1.50	1.50	0.00
1,600.0	7.83	207.80	1,597.6	-40.9	-21.6	-15.2	0.00	0.00	0.00
1,700.0	7.83	207.80	1,696.7	-53.0	-27.9	-19.7	0.00	0.00	0.00
1,800.0	7.83	207.80	1,795.8	-65.0	-34.3	-24.2	0.00	0.00	0.00
1,900.0	7.83	207.80	1,894.8	-77.1	-40.6	-28.7	0.00	0.00	0.00
2,000.0	7.83	207.80	1,993.9	-89.1	-47.0	-33.2	0.00	0.00	0.00
2,100.0	7.83	207.80	2,093.0	-101.2	-53.4	-37.7	0.00	0.00	0.00
2,200.0	7.83	207.80	2,192.0	-113.3	-59.7	-42.2	0.00	0.00	0.00
2,300.0	7.83	207.80	2,291.1	-125.3	-66.1	-46.7	0.00	0.00	0.00
2,400.0	7.83	207.80	2,390.2	-137.4	-72.4	-51.2	0.00	0.00	0.00
2,500.0	7.83	207.80	2,489.2	-149.4	-78.8	-55.7	0.00	0.00	0.00
2,600.0	7.83	207.80	2,588.3	-161.5	-85.1	-60.2	0.00	0.00	0.00
2,700.0	7.83	207.80	2,687.4	-173.5	-91.5	-64.7	0.00	0.00	0.00
2,800.0	7.83	207.80	2,786.4	-185.6	-97.8	-69.2	0.00	0.00	0.00
2,900.0	7.83	207.80	2,885.5	-197.7	-104.2	-73.6	0.00	0.00	0.00
3,000.0	7.83	207.80	2,984.6	-209.7	-110.6	-78.1	0.00	0.00	0.00
3,100.0	7.83	207.80	3,083.6	-221.8	-116.9	-82.6	0.00	0.00	0.00
3,200.0	7.83	207.80	3,182.7	-233.8	-123.3	-87.1	0.00	0.00	0.00
3,300.0	7.83	207.80	3,281.8	-245.9	-129.6	-91.6	0.00	0.00	0.00
3,400.0	7.83	207.80	3,380.8	-258.0	-136.0	-96.1	0.00	0.00	0.00
3,500.0	7.83	207.80	3,479.9	-270.0	-142.3	-100.6	0.00	0.00	0.00
3,600.0	7.83	207.80	3,579.0	-282.1	-148.7	-105.1	0.00	0.00	0.00
3,700.0	7.83	207.80	3,678.0	-294.1	-155.1	-109.6	0.00	0.00	0.00
3,800.0	7.83	207.80	3,777.1	-306.2	-161.4	-114.1	0.00	0.00	0.00
3,889.2	7.83	207.80	3,865.5	-316.9	-167.1	-118.1	0.00	0.00	0.00
Sussex									
3,900.0	7.83	207.80	3,876.2	-318.2	-167.8	-118.6	0.00	0.00	0.00
4,000.0	7.83	207.80	3,975.2	-330.3	-174.1	-123.1	0.00	0.00	0.00
4,100.0	7.83	207.80	4,074.3	-342.4	-180.5	-127.6	0.00	0.00	0.00
4,200.0	7.83	207.80	4,173.4	-354.4	-186.8	-132.1	0.00	0.00	0.00
4,300.0	7.83	207.80	4,272.4	-366.5	-193.2	-136.5	0.00	0.00	0.00
4,400.0	7.83	207.80	4,371.5	-378.5	-199.6	-141.0	0.00	0.00	0.00
4,500.0	7.83	207.80	4,470.6	-390.6	-205.9	-145.5	0.00	0.00	0.00
4,523.0	7.83	207.80	4,493.3	-393.4	-207.4	-146.6	0.00	0.00	0.00
4,536.3	7.63	207.80	4,506.6	-395.0	-208.2	-147.2	1.50	-1.50	0.00

Bill Barrett Corp

Planning Report

Database:	Compass	Local Co-ordinate Reference:	Well Kunsemiller 5-61-21-1724BH
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 5-61-21-1724BH	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)
Shannon									
4,600.0	6.68	207.80	4,569.7	-402.0	-211.9	-149.8	1.50	-1.50	0.00
4,700.0	5.18	207.80	4,669.2	-411.1	-216.7	-153.2	1.50	-1.50	0.00
4,800.0	3.68	207.80	4,768.9	-417.9	-220.3	-155.7	1.50	-1.50	0.00
4,900.0	2.18	207.80	4,868.8	-422.5	-222.7	-157.4	1.50	-1.50	0.00
5,000.0	0.68	207.80	4,968.7	-424.7	-223.9	-158.2	1.50	-1.50	0.00
5,045.3	0.00	0.00	5,014.0	-424.9	-224.0	-158.3	1.50	-1.50	0.00
5,100.0	0.00	0.00	5,068.7	-424.9	-224.0	-158.3	0.00	0.00	0.00
5,200.0	0.00	0.00	5,168.7	-424.9	-224.0	-158.3	0.00	0.00	0.00
5,300.0	0.00	0.00	5,268.7	-424.9	-224.0	-158.3	0.00	0.00	0.00
5,400.0	0.00	0.00	5,368.7	-424.9	-224.0	-158.3	0.00	0.00	0.00
5,500.0	0.00	0.00	5,468.7	-424.9	-224.0	-158.3	0.00	0.00	0.00
5,545.3	0.00	0.00	5,514.0	-424.9	-224.0	-158.3	0.00	0.00	0.00
5,600.0	5.47	91.07	5,568.7	-424.9	-221.4	-155.7	10.00	10.00	0.00
5,700.0	15.47	91.07	5,666.9	-425.3	-203.2	-137.7	10.00	10.00	0.00
5,800.0	25.47	91.07	5,760.4	-425.9	-168.3	-103.1	10.00	10.00	0.00
5,900.0	35.47	91.07	5,846.5	-426.9	-117.7	-52.9	10.00	10.00	0.00
5,915.8	37.06	91.07	5,859.3	-427.1	-108.3	-43.6	10.00	10.00	0.00
Sharon Springs									
6,000.0	45.47	91.07	5,922.5	-428.1	-52.8	11.4	10.00	10.00	0.00
6,074.2	52.90	91.07	5,971.0	-429.2	3.3	67.1	10.00	10.00	0.00
Niobrara									
6,100.0	55.47	91.07	5,986.0	-429.6	24.2	87.8	10.00	10.00	0.00
6,200.0	65.47	91.07	6,035.3	-431.2	111.1	174.0	10.00	10.00	0.00
6,300.0	75.47	91.07	6,068.6	-433.0	205.2	267.3	10.00	10.00	0.00
6,364.2	81.89	91.07	6,081.2	-434.1	268.0	329.6	10.00	10.00	0.00
Top B2 Target									
6,400.0	85.47	91.07	6,085.2	-434.8	303.7	364.9	10.00	10.00	0.00
6,446.9	90.16	91.07	6,087.0	-435.7	350.5	411.4	10.00	10.00	0.00
6,447.1	90.16	91.07	6,087.0	-435.7	350.7	411.6	0.00	0.00	0.00
1724BH LP									
6,450.0	90.16	91.07	6,086.9	-435.7	353.6	414.5	0.00	0.00	0.00
7" Csg									
6,500.0	90.16	91.07	6,086.8	-436.7	403.6	464.0	0.00	0.00	0.00
6,600.0	90.16	91.07	6,086.5	-438.5	503.6	563.2	0.00	0.00	0.00
6,700.0	90.16	91.07	6,086.2	-440.4	603.6	662.3	0.00	0.00	0.00
6,800.0	90.16	91.07	6,086.0	-442.3	703.5	761.5	0.00	0.00	0.00
6,900.0	90.16	91.07	6,085.7	-444.2	803.5	860.6	0.00	0.00	0.00
7,000.0	90.16	91.07	6,085.4	-446.0	903.5	959.8	0.00	0.00	0.00
7,100.0	90.16	91.07	6,085.1	-447.9	1,003.5	1,058.9	0.00	0.00	0.00
7,200.0	90.16	91.07	6,084.9	-449.8	1,103.5	1,158.1	0.00	0.00	0.00
7,300.0	90.16	91.07	6,084.6	-451.7	1,203.4	1,257.2	0.00	0.00	0.00
7,400.0	90.16	91.07	6,084.3	-453.6	1,303.4	1,356.4	0.00	0.00	0.00
7,500.0	90.16	91.07	6,084.0	-455.4	1,403.4	1,455.5	0.00	0.00	0.00
7,600.0	90.16	91.07	6,083.7	-457.3	1,503.4	1,554.7	0.00	0.00	0.00
7,700.0	90.16	91.07	6,083.5	-459.2	1,603.4	1,653.8	0.00	0.00	0.00
7,800.0	90.16	91.07	6,083.2	-461.1	1,703.4	1,753.0	0.00	0.00	0.00
7,900.0	90.16	91.07	6,082.9	-462.9	1,803.3	1,852.1	0.00	0.00	0.00
8,000.0	90.16	91.07	6,082.6	-464.8	1,903.3	1,951.3	0.00	0.00	0.00
8,100.0	90.16	91.07	6,082.3	-466.7	2,003.3	2,050.4	0.00	0.00	0.00
8,200.0	90.16	91.07	6,082.1	-468.6	2,103.3	2,149.6	0.00	0.00	0.00
8,300.0	90.16	91.07	6,081.8	-470.4	2,203.3	2,248.7	0.00	0.00	0.00
8,400.0	90.16	91.07	6,081.5	-472.3	2,303.2	2,347.9	0.00	0.00	0.00

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Well:	Kunsemiller 5-61-21-1724BH	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)	
8,500.0	90.16	91.07	6,081.2	-474.2	2,403.2	2,447.0	0.00	0.00	0.00	
8,600.0	90.16	91.07	6,080.9	-476.1	2,503.2	2,546.2	0.00	0.00	0.00	
8,700.0	90.16	91.07	6,080.7	-477.9	2,603.2	2,645.3	0.00	0.00	0.00	
8,800.0	90.16	91.07	6,080.4	-479.8	2,703.2	2,744.5	0.00	0.00	0.00	
8,900.0	90.16	91.07	6,080.1	-481.7	2,803.2	2,843.6	0.00	0.00	0.00	
9,000.0	90.16	91.07	6,079.8	-483.6	2,903.1	2,942.8	0.00	0.00	0.00	
9,100.0	90.16	91.07	6,079.5	-485.4	3,003.1	3,041.9	0.00	0.00	0.00	
9,200.0	90.16	91.07	6,079.3	-487.3	3,103.1	3,141.1	0.00	0.00	0.00	
9,300.0	90.16	91.07	6,079.0	-489.2	3,203.1	3,240.2	0.00	0.00	0.00	
9,356.4	90.16	91.07	6,078.8	-490.2	3,259.5	3,296.1	0.00	0.00	0.00	
1724BH PBHL2										

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
6,450.0	6,086.9	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	
3,889.2	3,865.0	Sussex		-0.16	91.06	
4,536.3	4,506.0	Shannon		-0.16	91.06	
5,915.8	5,859.0	Sharon Springs		-0.16	91.06	
6,074.2	5,971.0	Niobrara		-0.16	91.06	
6,364.2	6,082.0	Top B2 Target		-0.16	91.06	
	6,097.0	Base B2 Target		-0.16	91.06	