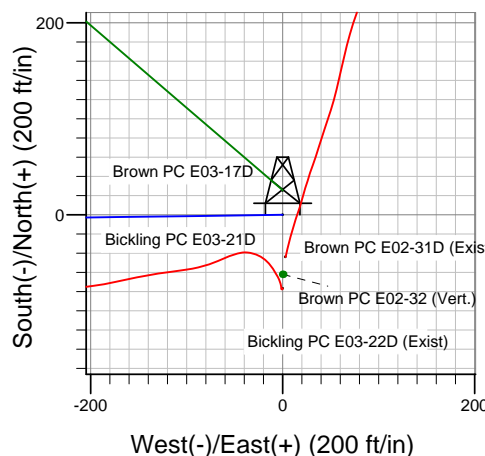
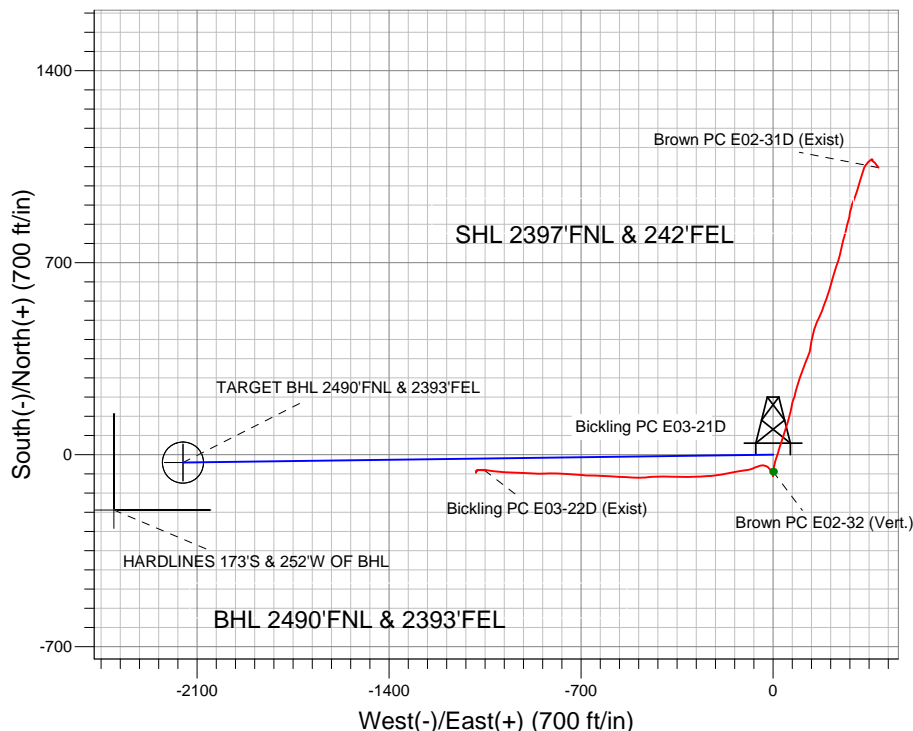
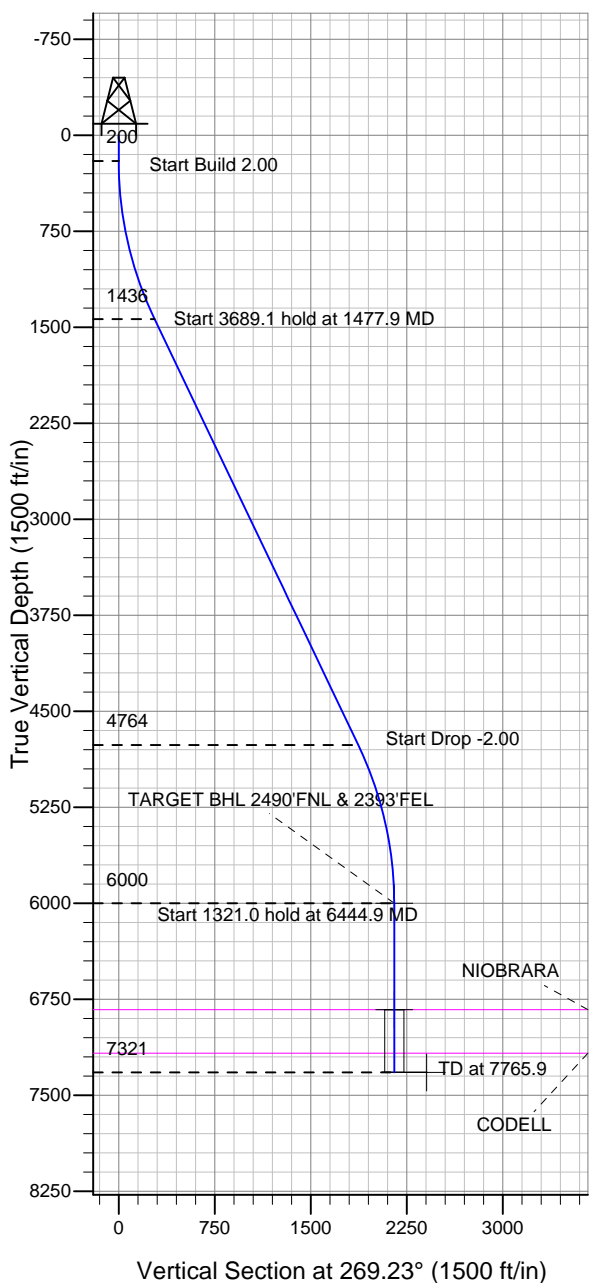


Well Name: Bickling PC E03-21D

Surface Location: Brown PC E03-17D Pad Sec.3-T6N-R65W
 North American Datum 1983 US State Plane 1983 Colorado Northern Zone
 Ground Elevation: 4838.0
 +N/-S +E/-W Northing Easting Latitude Longitude Slot
 0.0 0.0 1432137.42 3238925.83 40.516440 -104.640640
 Original Well Elev WELL @ 4851.0ft (Original Well Elev)

NOBLE ENERGY INC WELD COUNTY CO



Brown PC E03-17D Pad Sec.3-T6N-R65W
 Bickling PC E03-21D
 Noble Bickling PC E03-21D Plan #1 (11-04-11)
 13:01, November 04 2011



Azimuths to True North
 Magnetic North: 8.76°
 Magnetic Field
 Strength: 53164.5nT
 Dip Angle: 67.15°
 Date: 11/4/2011
 Model: IGRF2010

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 2490'FNL & 2393'FEL	6000.0	-29.0	-2152.0	40.516360	-104.648380	Point
TARGET CIRCLE 2490'FNL & 2393'FEL	6831.0	-29.0	-2152.0	40.516360	-104.648380	Circle (Radius: 75.0)
HARDLINES 173'S & 252'W OF BHL	7321.0	-202.0	-2404.0	40.515885	-104.649286	Polygon

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	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	1477.9	25.56	269.23	1436.0	-3.8	-280.3	2.00	269.23	280.3	
4	5167.0	25.56	269.23	4764.0	-25.3	-1871.7	0.00	0.00	1871.9	
5	6444.9	0.00	0.00	6000.0	-29.0	-2152.0	2.00	180.00	2152.2	TARGET BHL 2490'FNL & 2393'FEL
6	7765.9	0.00	0.00	7321.0	-29.0	-2152.0	0.00	0.00	2152.2	



Directional

NOBLE ENERGY INC WELD COUNTY CO

SEC.3-T6N-R65W

Brown PC E03-17D Pad Sec.3-T6N-R65W

Bickling PC E03-21D

Wellbore #1

Plan: Noble Bickling PC E03-21D Plan #1 (11-04-11)

Standard Planning Report

04 November, 2011



Database:	Landmark	Local Co-ordinate Reference:	Well Bickling PC E03-21D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4851.0ft (Original Well Elev)
Project:	SEC.3-T6N-R65W	MD Reference:	WELL @ 4851.0ft (Original Well Elev)
Site:	Brown PC E03-17D Pad Sec.3-T6N-R65W	North Reference:	True
Well:	Bickling PC E03-21D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Bickling PC E03-21D Plan #1 (11-04-11)		

Project	SEC.3-T6N-R65W, Weld County, Colorado		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		Using Well Reference Point
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site						Brown PC E03-17D Pad Sec.3-T6N-R65W											
Site Position:						Northing:			1,432,162.93ft			Latitude:			40.516510		
From:			Lat/Long			Easting:			3,238,925.58ft			Longitude:			-104.640640		
Position Uncertainty:			0.0 ft			Slot Radius:			"			Grid Convergence:			0.56 °		

Well	Bickling PC E03-21D					
Well Position	+N/-S	-25.5 ft	Northing:	1,432,137.42 ft	Latitude:	40.516440
	+E/-W	0.0 ft	Easting:	3,238,925.83 ft	Longitude:	-104.640640
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,838.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	11/4/2011	8.76	67.15	53,165

Design	Noble Bickling PC E03-21D Plan #1 (11-04-11)			
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	269.23

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	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,477.9	25.56	269.23	1,436.0	-3.8	-280.3	2.00	2.00	0.00	269.23	
5,167.0	25.56	269.23	4,764.0	-25.3	-1,871.7	0.00	0.00	0.00	0.00	
6,444.9	0.00	0.00	6,000.0	-29.0	-2,152.0	2.00	-2.00	0.00	180.00	TARGET BHL 249C
7,765.9	0.00	0.00	7,321.0	-29.0	-2,152.0	0.00	0.00	0.00	0.00	

Database:	Landmark	Local Co-ordinate Reference:	Well Bickling PC E03-21D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4851.0ft (Original Well Elev)
Project:	SEC.3-T6N-R65W	MD Reference:	WELL @ 4851.0ft (Original Well Elev)
Site:	Brown PC E03-17D Pad Sec.3-T6N-R65W	North Reference:	True
Well:	Bickling PC E03-21D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Bickling PC E03-21D Plan #1 (11-04-11)		

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
40.0	0.00	0.00	40.0	0.0	0.0	0.0	0.00	0.00	0.00
80.0	0.00	0.00	80.0	0.0	0.0	0.0	0.00	0.00	0.00
120.0	0.00	0.00	120.0	0.0	0.0	0.0	0.00	0.00	0.00
160.0	0.00	0.00	160.0	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
240.0	0.80	269.23	240.0	0.0	-0.3	0.3	2.00	2.00	0.00
280.0	1.60	269.23	280.0	0.0	-1.1	1.1	2.00	2.00	0.00
320.0	2.40	269.23	320.0	0.0	-2.5	2.5	2.00	2.00	0.00
360.0	3.20	269.23	359.9	-0.1	-4.5	4.5	2.00	2.00	0.00
400.0	4.00	269.23	399.8	-0.1	-7.0	7.0	2.00	2.00	0.00
440.0	4.80	269.23	439.7	-0.1	-10.0	10.0	2.00	2.00	0.00
480.0	5.60	269.23	479.6	-0.2	-13.7	13.7	2.00	2.00	0.00
520.0	6.40	269.23	519.3	-0.2	-17.9	17.9	2.00	2.00	0.00
560.0	7.20	269.23	559.1	-0.3	-22.6	22.6	2.00	2.00	0.00
600.0	8.00	269.23	598.7	-0.4	-27.9	27.9	2.00	2.00	0.00
640.0	8.80	269.23	638.3	-0.5	-33.7	33.7	2.00	2.00	0.00
651.9	9.04	269.23	650.0	-0.5	-35.6	35.6	2.00	2.00	0.00
8 5/8"									
680.0	9.60	269.23	677.8	-0.5	-40.1	40.1	2.00	2.00	0.00
720.0	10.40	269.23	717.1	-0.6	-47.1	47.1	2.00	2.00	0.00
760.0	11.20	269.23	756.4	-0.7	-54.6	54.6	2.00	2.00	0.00
800.0	12.00	269.23	795.6	-0.8	-62.6	62.6	2.00	2.00	0.00
840.0	12.80	269.23	834.7	-1.0	-71.2	71.2	2.00	2.00	0.00
880.0	13.60	269.23	873.6	-1.1	-80.3	80.3	2.00	2.00	0.00
920.0	14.40	269.23	912.4	-1.2	-90.0	90.0	2.00	2.00	0.00
960.0	15.20	269.23	951.1	-1.4	-100.2	100.2	2.00	2.00	0.00
1,000.0	16.00	269.23	989.6	-1.5	-111.0	111.0	2.00	2.00	0.00
1,040.0	16.80	269.23	1,028.0	-1.6	-122.3	122.3	2.00	2.00	0.00
1,080.0	17.60	269.23	1,066.2	-1.8	-134.1	134.1	2.00	2.00	0.00
1,120.0	18.40	269.23	1,104.3	-2.0	-146.4	146.5	2.00	2.00	0.00
1,160.0	19.20	269.23	1,142.1	-2.2	-159.3	159.3	2.00	2.00	0.00
1,200.0	20.00	269.23	1,179.8	-2.3	-172.8	172.8	2.00	2.00	0.00
1,240.0	20.80	269.23	1,217.3	-2.5	-186.7	186.7	2.00	2.00	0.00
1,280.0	21.60	269.23	1,254.6	-2.7	-201.2	201.2	2.00	2.00	0.00
1,320.0	22.40	269.23	1,291.7	-2.9	-216.1	216.2	2.00	2.00	0.00
1,360.0	23.20	269.23	1,328.6	-3.1	-231.6	231.7	2.00	2.00	0.00
1,400.0	24.00	269.23	1,365.2	-3.3	-247.7	247.7	2.00	2.00	0.00
1,440.0	24.80	269.23	1,401.6	-3.6	-264.2	264.2	2.00	2.00	0.00
1,477.9	25.56	269.23	1,436.0	-3.8	-280.3	280.3	2.00	2.00	0.00
1,480.0	25.56	269.23	1,437.8	-3.8	-281.2	281.2	0.00	0.00	0.00
1,520.0	25.56	269.23	1,473.9	-4.0	-298.5	298.5	0.00	0.00	0.00
1,560.0	25.56	269.23	1,510.0	-4.3	-315.7	315.7	0.00	0.00	0.00
1,600.0	25.56	269.23	1,546.1	-4.5	-333.0	333.0	0.00	0.00	0.00
1,640.0	25.56	269.23	1,582.2	-4.7	-350.2	350.3	0.00	0.00	0.00
1,680.0	25.56	269.23	1,618.3	-5.0	-367.5	367.5	0.00	0.00	0.00
1,720.0	25.56	269.23	1,654.4	-5.2	-384.7	384.8	0.00	0.00	0.00
1,760.0	25.56	269.23	1,690.4	-5.4	-402.0	402.0	0.00	0.00	0.00
1,800.0	25.56	269.23	1,726.5	-5.7	-419.2	419.3	0.00	0.00	0.00
1,840.0	25.56	269.23	1,762.6	-5.9	-436.5	436.5	0.00	0.00	0.00
1,880.0	25.56	269.23	1,798.7	-6.1	-453.8	453.8	0.00	0.00	0.00
1,920.0	25.56	269.23	1,834.8	-6.4	-471.0	471.1	0.00	0.00	0.00
1,960.0	25.56	269.23	1,870.9	-6.6	-488.3	488.3	0.00	0.00	0.00
2,000.0	25.56	269.23	1,907.0	-6.8	-505.5	505.6	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Bickling PC E03-21D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4851.0ft (Original Well Elev)
Project:	SEC.3-T6N-R65W	MD Reference:	WELL @ 4851.0ft (Original Well Elev)
Site:	Brown PC E03-17D Pad Sec.3-T6N-R65W	North Reference:	True
Well:	Bickling PC E03-21D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Bickling PC E03-21D Plan #1 (11-04-11)		

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)
2,040.0	25.56	269.23	1,943.0	-7.1	-522.8	522.8	0.00	0.00	0.00
2,080.0	25.56	269.23	1,979.1	-7.3	-540.0	540.1	0.00	0.00	0.00
2,120.0	25.56	269.23	2,015.2	-7.5	-557.3	557.3	0.00	0.00	0.00
2,160.0	25.56	269.23	2,051.3	-7.8	-574.5	574.6	0.00	0.00	0.00
2,200.0	25.56	269.23	2,087.4	-8.0	-591.8	591.9	0.00	0.00	0.00
2,240.0	25.56	269.23	2,123.5	-8.2	-609.1	609.1	0.00	0.00	0.00
2,280.0	25.56	269.23	2,159.6	-8.5	-626.3	626.4	0.00	0.00	0.00
2,320.0	25.56	269.23	2,195.6	-8.7	-643.6	643.6	0.00	0.00	0.00
2,360.0	25.56	269.23	2,231.7	-8.9	-660.8	660.9	0.00	0.00	0.00
2,400.0	25.56	269.23	2,267.8	-9.1	-678.1	678.1	0.00	0.00	0.00
2,440.0	25.56	269.23	2,303.9	-9.4	-695.3	695.4	0.00	0.00	0.00
2,480.0	25.56	269.23	2,340.0	-9.6	-712.6	712.7	0.00	0.00	0.00
2,520.0	25.56	269.23	2,376.1	-9.8	-729.8	729.9	0.00	0.00	0.00
2,560.0	25.56	269.23	2,412.2	-10.1	-747.1	747.2	0.00	0.00	0.00
2,600.0	25.56	269.23	2,448.2	-10.3	-764.4	764.4	0.00	0.00	0.00
2,640.0	25.56	269.23	2,484.3	-10.5	-781.6	781.7	0.00	0.00	0.00
2,680.0	25.56	269.23	2,520.4	-10.8	-798.9	798.9	0.00	0.00	0.00
2,720.0	25.56	269.23	2,556.5	-11.0	-816.1	816.2	0.00	0.00	0.00
2,760.0	25.56	269.23	2,592.6	-11.2	-833.4	833.5	0.00	0.00	0.00
2,800.0	25.56	269.23	2,628.7	-11.5	-850.6	850.7	0.00	0.00	0.00
2,840.0	25.56	269.23	2,664.8	-11.7	-867.9	868.0	0.00	0.00	0.00
2,880.0	25.56	269.23	2,700.8	-11.9	-885.2	885.2	0.00	0.00	0.00
2,920.0	25.56	269.23	2,736.9	-12.2	-902.4	902.5	0.00	0.00	0.00
2,960.0	25.56	269.23	2,773.0	-12.4	-919.7	919.7	0.00	0.00	0.00
3,000.0	25.56	269.23	2,809.1	-12.6	-936.9	937.0	0.00	0.00	0.00
3,040.0	25.56	269.23	2,845.2	-12.9	-954.2	954.3	0.00	0.00	0.00
3,080.0	25.56	269.23	2,881.3	-13.1	-971.4	971.5	0.00	0.00	0.00
3,120.0	25.56	269.23	2,917.4	-13.3	-988.7	988.8	0.00	0.00	0.00
3,160.0	25.56	269.23	2,953.4	-13.6	-1,005.9	1,006.0	0.00	0.00	0.00
3,200.0	25.56	269.23	2,989.5	-13.8	-1,023.2	1,023.3	0.00	0.00	0.00
3,240.0	25.56	269.23	3,025.6	-14.0	-1,040.5	1,040.5	0.00	0.00	0.00
3,280.0	25.56	269.23	3,061.7	-14.3	-1,057.7	1,057.8	0.00	0.00	0.00
3,320.0	25.56	269.23	3,097.8	-14.5	-1,075.0	1,075.1	0.00	0.00	0.00
3,360.0	25.56	269.23	3,133.9	-14.7	-1,092.2	1,092.3	0.00	0.00	0.00
3,400.0	25.56	269.23	3,170.0	-15.0	-1,109.5	1,109.6	0.00	0.00	0.00
3,440.0	25.56	269.23	3,206.0	-15.2	-1,126.7	1,126.8	0.00	0.00	0.00
3,480.0	25.56	269.23	3,242.1	-15.4	-1,144.0	1,144.1	0.00	0.00	0.00
3,520.0	25.56	269.23	3,278.2	-15.7	-1,161.2	1,161.3	0.00	0.00	0.00
3,560.0	25.56	269.23	3,314.3	-15.9	-1,178.5	1,178.6	0.00	0.00	0.00
3,600.0	25.56	269.23	3,350.4	-16.1	-1,195.8	1,195.9	0.00	0.00	0.00
3,640.0	25.56	269.23	3,386.5	-16.4	-1,213.0	1,213.1	0.00	0.00	0.00
3,680.0	25.56	269.23	3,422.6	-16.6	-1,230.3	1,230.4	0.00	0.00	0.00
3,720.0	25.56	269.23	3,458.6	-16.8	-1,247.5	1,247.6	0.00	0.00	0.00
3,760.0	25.56	269.23	3,494.7	-17.1	-1,264.8	1,264.9	0.00	0.00	0.00
3,800.0	25.56	269.23	3,530.8	-17.3	-1,282.0	1,282.1	0.00	0.00	0.00
3,840.0	25.56	269.23	3,566.9	-17.5	-1,299.3	1,299.4	0.00	0.00	0.00
3,880.0	25.56	269.23	3,603.0	-17.8	-1,316.5	1,316.7	0.00	0.00	0.00
3,920.0	25.56	269.23	3,639.1	-18.0	-1,333.8	1,333.9	0.00	0.00	0.00
3,960.0	25.56	269.23	3,675.2	-18.2	-1,351.1	1,351.2	0.00	0.00	0.00
4,000.0	25.56	269.23	3,711.2	-18.5	-1,368.3	1,368.4	0.00	0.00	0.00
4,040.0	25.56	269.23	3,747.3	-18.7	-1,385.6	1,385.7	0.00	0.00	0.00
4,080.0	25.56	269.23	3,783.4	-18.9	-1,402.8	1,402.9	0.00	0.00	0.00
4,120.0	25.56	269.23	3,819.5	-19.2	-1,420.1	1,420.2	0.00	0.00	0.00
4,160.0	25.56	269.23	3,855.6	-19.4	-1,437.3	1,437.5	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well Bickling PC E03-21D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4851.0ft (Original Well Elev)
Project:	SEC.3-T6N-R65W	MD Reference:	WELL @ 4851.0ft (Original Well Elev)
Site:	Brown PC E03-17D Pad Sec.3-T6N-R65W	North Reference:	True
Well:	Bickling PC E03-21D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Bickling PC E03-21D Plan #1 (11-04-11)		

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)	
4,200.0	25.56	269.23	3,891.7	-19.6	-1,454.6	1,454.7	0.00	0.00	0.00	
4,240.0	25.56	269.23	3,927.8	-19.9	-1,471.8	1,472.0	0.00	0.00	0.00	
4,280.0	25.56	269.23	3,963.8	-20.1	-1,489.1	1,489.2	0.00	0.00	0.00	
4,320.0	25.56	269.23	3,999.9	-20.3	-1,506.4	1,506.5	0.00	0.00	0.00	
4,360.0	25.56	269.23	4,036.0	-20.6	-1,523.6	1,523.7	0.00	0.00	0.00	
4,400.0	25.56	269.23	4,072.1	-20.8	-1,540.9	1,541.0	0.00	0.00	0.00	
4,440.0	25.56	269.23	4,108.2	-21.0	-1,558.1	1,558.3	0.00	0.00	0.00	
4,480.0	25.56	269.23	4,144.3	-21.3	-1,575.4	1,575.5	0.00	0.00	0.00	
4,520.0	25.56	269.23	4,180.4	-21.5	-1,592.6	1,592.8	0.00	0.00	0.00	
4,560.0	25.56	269.23	4,216.4	-21.7	-1,609.9	1,610.0	0.00	0.00	0.00	
4,600.0	25.56	269.23	4,252.5	-22.0	-1,627.1	1,627.3	0.00	0.00	0.00	
4,640.0	25.56	269.23	4,288.6	-22.2	-1,644.4	1,644.5	0.00	0.00	0.00	
4,680.0	25.56	269.23	4,324.7	-22.4	-1,661.7	1,661.8	0.00	0.00	0.00	
4,720.0	25.56	269.23	4,360.8	-22.7	-1,678.9	1,679.1	0.00	0.00	0.00	
4,760.0	25.56	269.23	4,396.9	-22.9	-1,696.2	1,696.3	0.00	0.00	0.00	
4,800.0	25.56	269.23	4,433.0	-23.1	-1,713.4	1,713.6	0.00	0.00	0.00	
4,840.0	25.56	269.23	4,469.0	-23.4	-1,730.7	1,730.8	0.00	0.00	0.00	
4,880.0	25.56	269.23	4,505.1	-23.6	-1,747.9	1,748.1	0.00	0.00	0.00	
4,920.0	25.56	269.23	4,541.2	-23.8	-1,765.2	1,765.3	0.00	0.00	0.00	
4,960.0	25.56	269.23	4,577.3	-24.1	-1,782.4	1,782.6	0.00	0.00	0.00	
5,000.0	25.56	269.23	4,613.4	-24.3	-1,799.7	1,799.9	0.00	0.00	0.00	
5,040.0	25.56	269.23	4,649.5	-24.5	-1,817.0	1,817.1	0.00	0.00	0.00	
5,080.0	25.56	269.23	4,685.6	-24.8	-1,834.2	1,834.4	0.00	0.00	0.00	
5,120.0	25.56	269.23	4,721.6	-25.0	-1,851.5	1,851.6	0.00	0.00	0.00	
5,160.0	25.56	269.23	4,757.7	-25.2	-1,868.7	1,868.9	0.00	0.00	0.00	
5,167.0	25.56	269.23	4,764.0	-25.3	-1,871.7	1,871.9	0.00	0.00	0.00	
5,200.0	24.90	269.23	4,793.9	-25.4	-1,885.8	1,886.0	2.00	-2.00	0.00	
5,240.0	24.10	269.23	4,830.3	-25.7	-1,902.4	1,902.6	2.00	-2.00	0.00	
5,280.0	23.30	269.23	4,866.9	-25.9	-1,918.5	1,918.6	2.00	-2.00	0.00	
5,320.0	22.50	269.23	4,903.8	-26.1	-1,934.0	1,934.2	2.00	-2.00	0.00	
5,360.0	21.70	269.23	4,940.8	-26.3	-1,949.1	1,949.3	2.00	-2.00	0.00	
5,400.0	20.90	269.23	4,978.1	-26.5	-1,963.6	1,963.8	2.00	-2.00	0.00	
5,440.0	20.10	269.23	5,015.6	-26.7	-1,977.6	1,977.8	2.00	-2.00	0.00	
5,480.0	19.30	269.23	5,053.2	-26.9	-1,991.1	1,991.3	2.00	-2.00	0.00	
5,520.0	18.50	269.23	5,091.1	-27.0	-2,004.0	2,004.2	2.00	-2.00	0.00	
5,560.0	17.70	269.23	5,129.1	-27.2	-2,016.5	2,016.7	2.00	-2.00	0.00	
5,600.0	16.90	269.23	5,167.3	-27.4	-2,028.4	2,028.5	2.00	-2.00	0.00	
5,640.0	16.10	269.23	5,205.6	-27.5	-2,039.7	2,039.9	2.00	-2.00	0.00	
5,680.0	15.30	269.23	5,244.1	-27.7	-2,050.5	2,050.7	2.00	-2.00	0.00	
5,720.0	14.50	269.23	5,282.8	-27.8	-2,060.8	2,061.0	2.00	-2.00	0.00	
5,760.0	13.70	269.23	5,321.6	-27.9	-2,070.6	2,070.8	2.00	-2.00	0.00	
5,800.0	12.90	269.23	5,360.5	-28.1	-2,079.8	2,080.0	2.00	-2.00	0.00	
5,840.0	12.10	269.23	5,399.6	-28.2	-2,088.4	2,088.6	2.00	-2.00	0.00	
5,880.0	11.30	269.23	5,438.7	-28.3	-2,096.5	2,096.7	2.00	-2.00	0.00	
5,920.0	10.50	269.23	5,478.0	-28.4	-2,104.1	2,104.3	2.00	-2.00	0.00	
5,960.0	9.70	269.23	5,517.4	-28.5	-2,111.1	2,111.3	2.00	-2.00	0.00	
6,000.0	8.90	269.23	5,556.9	-28.6	-2,117.6	2,117.8	2.00	-2.00	0.00	
6,040.0	8.10	269.23	5,596.4	-28.7	-2,123.5	2,123.7	2.00	-2.00	0.00	
6,080.0	7.30	269.23	5,636.1	-28.7	-2,128.8	2,129.0	2.00	-2.00	0.00	
6,120.0	6.50	269.23	5,675.8	-28.8	-2,133.6	2,133.8	2.00	-2.00	0.00	
6,160.0	5.70	269.23	5,715.6	-28.8	-2,137.9	2,138.1	2.00	-2.00	0.00	
6,200.0	4.90	269.23	5,755.4	-28.9	-2,141.6	2,141.8	2.00	-2.00	0.00	
6,240.0	4.10	269.23	5,795.3	-28.9	-2,144.7	2,144.9	2.00	-2.00	0.00	
6,280.0	3.30	269.23	5,835.2	-29.0	-2,147.3	2,147.5	2.00	-2.00	0.00	

Database:	Landmark	Local Co-ordinate Reference:	Well Bickling PC E03-21D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4851.0ft (Original Well Elev)
Project:	SEC.3-T6N-R65W	MD Reference:	WELL @ 4851.0ft (Original Well Elev)
Site:	Brown PC E03-17D Pad Sec.3-T6N-R65W	North Reference:	True
Well:	Bickling PC E03-21D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Bickling PC E03-21D Plan #1 (11-04-11)		

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)
6,320.0	2.50	269.23	5,875.1	-29.0	-2,149.3	2,149.5	2.00	-2.00	0.00
6,360.0	1.70	269.23	5,915.1	-29.0	-2,150.8	2,151.0	2.00	-2.00	0.00
6,400.0	0.90	269.23	5,955.1	-29.0	-2,151.7	2,151.9	2.00	-2.00	0.00
6,440.0	0.10	269.23	5,995.1	-29.0	-2,152.0	2,152.2	2.00	-2.00	0.00
6,444.9	0.00	0.00	6,000.0	-29.0	-2,152.0	2,152.2	2.00	-2.00	1,847.57
TARGET BHL 2490'FNL & 2393'FEL									
6,480.0	0.00	0.00	6,035.1	-29.0	-2,152.0	2,152.2	0.00	0.00	0.00
6,520.0	0.00	0.00	6,075.1	-29.0	-2,152.0	2,152.2	0.00	0.00	0.00
6,560.0	0.00	0.00	6,115.1	-29.0	-2,152.0	2,152.2	0.00	0.00	0.00
6,600.0	0.00	0.00	6,155.1	-29.0	-2,152.0	2,152.2	0.00	0.00	0.00
6,640.0	0.00	0.00	6,195.1	-29.0	-2,152.0	2,152.2	0.00	0.00	0.00
6,680.0	0.00	0.00	6,235.1	-29.0	-2,152.0	2,152.2	0.00	0.00	0.00
6,720.0	0.00	0.00	6,275.1	-29.0	-2,152.0	2,152.2	0.00	0.00	0.00
6,760.0	0.00	0.00	6,315.1	-29.0	-2,152.0	2,152.2	0.00	0.00	0.00
6,800.0	0.00	0.00	6,355.1	-29.0	-2,152.0	2,152.2	0.00	0.00	0.00
6,840.0	0.00	0.00	6,395.1	-29.0	-2,152.0	2,152.2	0.00	0.00	0.00
6,880.0	0.00	0.00	6,435.1	-29.0	-2,152.0	2,152.2	0.00	0.00	0.00
6,920.0	0.00	0.00	6,475.1	-29.0	-2,152.0	2,152.2	0.00	0.00	0.00
6,960.0	0.00	0.00	6,515.1	-29.0	-2,152.0	2,152.2	0.00	0.00	0.00
7,000.0	0.00	0.00	6,555.1	-29.0	-2,152.0	2,152.2	0.00	0.00	0.00
7,040.0	0.00	0.00	6,595.1	-29.0	-2,152.0	2,152.2	0.00	0.00	0.00
7,080.0	0.00	0.00	6,635.1	-29.0	-2,152.0	2,152.2	0.00	0.00	0.00
7,120.0	0.00	0.00	6,675.1	-29.0	-2,152.0	2,152.2	0.00	0.00	0.00
7,160.0	0.00	0.00	6,715.1	-29.0	-2,152.0	2,152.2	0.00	0.00	0.00
7,200.0	0.00	0.00	6,755.1	-29.0	-2,152.0	2,152.2	0.00	0.00	0.00
7,240.0	0.00	0.00	6,795.1	-29.0	-2,152.0	2,152.2	0.00	0.00	0.00
7,275.9	0.00	0.00	6,831.0	-29.0	-2,152.0	2,152.2	0.00	0.00	0.00
NIOBRARA - TARGET CIRCLE 2490'FNL & 2393'FEL									
7,280.0	0.00	0.00	6,835.1	-29.0	-2,152.0	2,152.2	0.00	0.00	0.00
7,320.0	0.00	0.00	6,875.1	-29.0	-2,152.0	2,152.2	0.00	0.00	0.00
7,360.0	0.00	0.00	6,915.1	-29.0	-2,152.0	2,152.2	0.00	0.00	0.00
7,400.0	0.00	0.00	6,955.1	-29.0	-2,152.0	2,152.2	0.00	0.00	0.00
7,440.0	0.00	0.00	6,995.1	-29.0	-2,152.0	2,152.2	0.00	0.00	0.00
7,480.0	0.00	0.00	7,035.1	-29.0	-2,152.0	2,152.2	0.00	0.00	0.00
7,520.0	0.00	0.00	7,075.1	-29.0	-2,152.0	2,152.2	0.00	0.00	0.00
7,560.0	0.00	0.00	7,115.1	-29.0	-2,152.0	2,152.2	0.00	0.00	0.00
7,600.0	0.00	0.00	7,155.1	-29.0	-2,152.0	2,152.2	0.00	0.00	0.00
7,615.9	0.00	0.00	7,171.0	-29.0	-2,152.0	2,152.2	0.00	0.00	0.00
CODELL									
7,640.0	0.00	0.00	7,195.1	-29.0	-2,152.0	2,152.2	0.00	0.00	0.00
7,680.0	0.00	0.00	7,235.1	-29.0	-2,152.0	2,152.2	0.00	0.00	0.00
7,720.0	0.00	0.00	7,275.1	-29.0	-2,152.0	2,152.2	0.00	0.00	0.00
7,760.0	0.00	0.00	7,315.1	-29.0	-2,152.0	2,152.2	0.00	0.00	0.00
7,765.9	0.00	0.00	7,321.0	-29.0	-2,152.0	2,152.2	0.00	0.00	0.00
HARDLINES 173'S & 252'W OF BHL									

Database:	Landmark	Local Co-ordinate Reference:	Well Bickling PC E03-21D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4851.0ft (Original Well Elev)
Project:	SEC.3-T6N-R65W	MD Reference:	WELL @ 4851.0ft (Original Well Elev)
Site:	Brown PC E03-17D Pad Sec.3-T6N-R65W	North Reference:	True
Well:	Bickling PC E03-21D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Bickling PC E03-21D Plan #1 (11-04-11)		

Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N-S	+E-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
TARGET CIRCLE 2490'F	0.00	0.00	6,831.0	-29.0	-2,152.0	1,432,087.53	3,236,774.24	40.516360	-104.648380
- plan hits target center									
- Circle (radius 75.0)									
HARDLINES 173'S &	0.00	0.00	7,321.0	-202.0	-2,404.0	1,431,912.14	3,236,523.98	40.515885	-104.649286
- plan misses target center by 305.6ft at 7765.9ft MD (7321.0 TVD, -29.0 N, -2152.0 E)									
- Polygon									
Point 1			7,321.0	0.0	0.0	1,431,912.14	3,236,523.98		
Point 2			7,321.0	0.0	350.0	1,431,915.53	3,236,873.95		
Point 3			7,321.0	0.0	0.0	1,431,912.14	3,236,523.98		
Point 4			7,321.0	350.0	0.0	1,432,262.11	3,236,520.59		
TARGET BHL 2490'F	0.00	0.00	6,000.0	-29.0	-2,152.0	1,432,087.53	3,236,774.24	40.516360	-104.648380
- plan hits target center									
- Point									

Casing Points					
	Measured Depth	Vertical Depth		Casing Diameter	Hole Diameter
	(ft)	(ft)	Name	(")	(")
	651.9	650.0	8 5/8"	8-5/8	12-1/4

Formations						
	Measured Depth	Vertical Depth			Dip	Dip Direction
	(ft)	(ft)	Name	Lithology	(°)	(°)
	7,275.9	6,831.0	NIOBRARA		0.00	
	7,615.9	7,171.0	CODELL		0.00	