

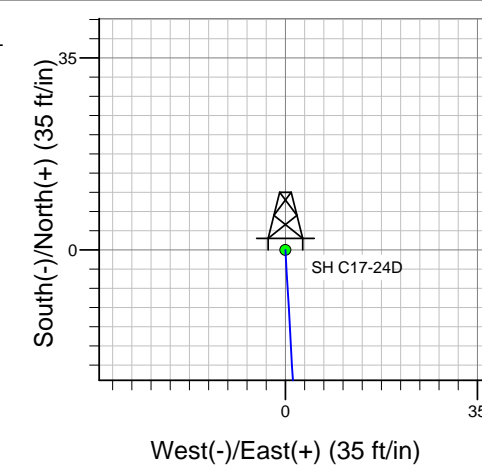
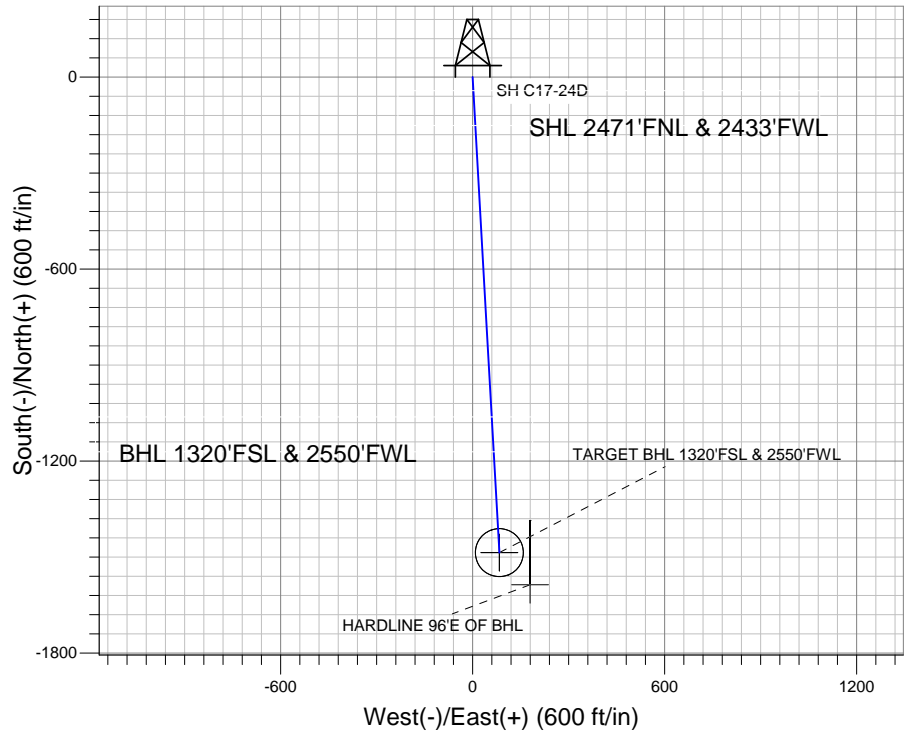
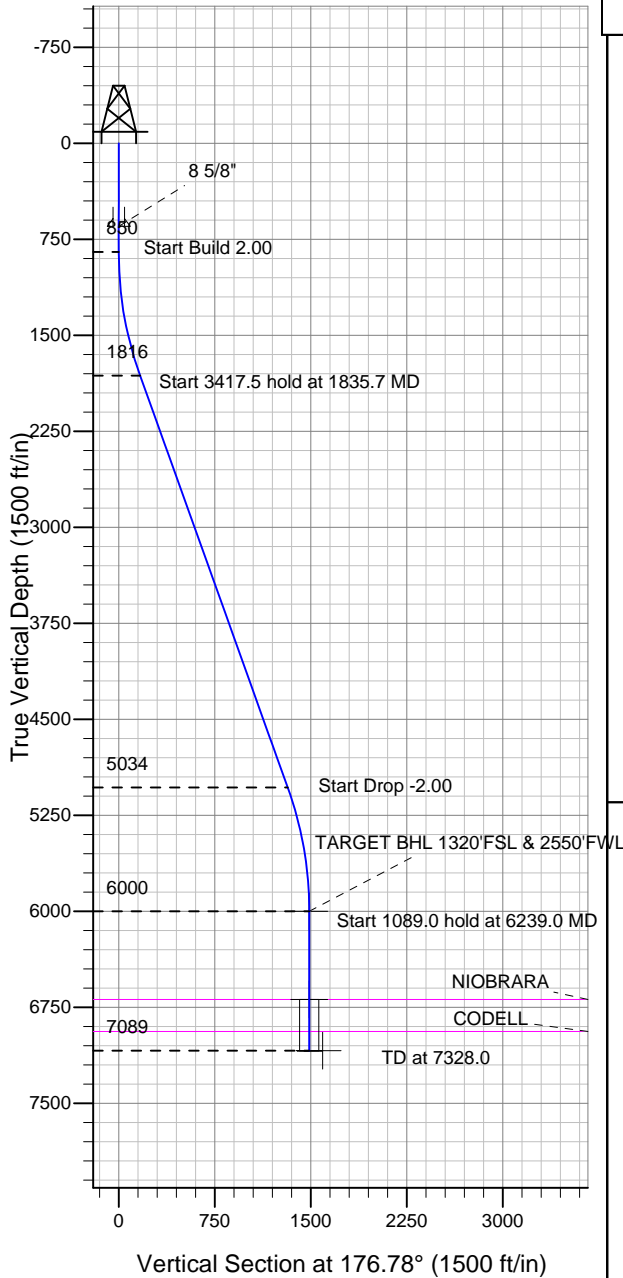
ENSIGN

Directional

Well Name: SH C17-24D

Surface Location: SH C17-24D Pad Sec.17-T4N-R64W
 North American Datum 1983 US State Plane 1983 Colorado Northern Zone
 Ground Elevation: 4726.0
 +N/-S +E/-W Northing Easting Latitude Longitude Slot
 0.0 0.0 1358164.49 3257912.25 40.312870 -104.575130
 Original Well Elev WELL @ 4739.0ft (Original Well Elev)

NOBLE ENERGY INC WELD COUNTY CO



SH C17-24D Pad Sec.17-T4N-R64W
 SH C17-24D
 Noble SH C17-24D Plan #1 8-12-11
 8:42, August 16 2011



Azimuths to True North
 Magnetic North: 8.73°

Magnetic Field
 Strength: 53090.2snT
 Dip Angle: 67.01°
 Date: 8/12/2011
 Model: IGRF2010

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 1320'FSL & 2550'FWL	6000.0	-1486.4	83.7	40.308790	-104.574830	Point
TARGET CIRCLE 1320'FSL & 2550'FWL	6689.0	-1486.4	83.7	40.308790	-104.574830	Circle (Radius: 75.0)
HARDLINE 96'E OF BHL	7089.0	-1586.4	179.7	40.308515	-104.574486	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	850.0	0.00	0.00	850.0	0.0	0.0	0.00	0.00	0.0	
3	1835.7	19.71	176.78	1816.4	-167.7	9.4	2.00	176.78	167.9	
4	5253.3	19.71	176.78	5033.6	-1318.7	74.2	0.00	0.00	1320.8	
5	6239.0	0.00	0.00	6000.0	-1486.4	83.7	2.00	180.00	1488.7	TARGET BHL 1320'FSL & 2550'FWL
6	7328.0	0.00	0.00	7089.0	-1486.4	83.7	0.00	0.00	1488.7	



Directional

NOBLE ENERGY INC WELD COUNTY CO

SEC.17-T4N-R64W

SH C17-24D Pad Sec.17-T4N-R64W

SH C17-24D

Wellbore #1

Plan: Noble SH C17-24D Plan #1 8-12-11

Standard Planning Report

16 August, 2011



Database:	Landmark	Local Co-ordinate Reference:	Well SH C17-24D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4739.0ft (Original Well Elev)
Project:	SEC.17-T4N-R64W	MD Reference:	WELL @ 4739.0ft (Original Well Elev)
Site:	SH C17-24D Pad Sec.17-T4N-R64W	North Reference:	True
Well:	SH C17-24D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble SH C17-24D Plan #1 8-12-11		

Project	SEC.17-T4N-R64W, 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						SH C17-24D Pad Sec.17-T4N-R64W											
Site Position:						Northing:			1,358,164.51 ft			Latitude:			40.312870		
From:			Lat/Long			Easting:			3,257,912.25 ft			Longitude:			-104.575130		
Position Uncertainty:			0.0 ft			Slot Radius:			"			Grid Convergence:			0.60 °		

Well	SH C17-24D					
Well Position	+N/-S	0.0 ft	Northing:	1,358,164.49 ft	Latitude:	40.312870
	+E/-W	0.0 ft	Easting:	3,257,912.25 ft	Longitude:	-104.575130
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,726.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	8/12/2011	8.73	67.01	53,090

Design	Noble SH C17-24D Plan #1 8-12-11			
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	176.78

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	
850.0	0.00	0.00	850.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,835.7	19.71	176.78	1,816.4	-167.7	9.4	2.00	2.00	0.00	176.78	
5,253.3	19.71	176.78	5,033.6	-1,318.7	74.2	0.00	0.00	0.00	0.00	
6,239.0	0.00	0.00	6,000.0	-1,486.4	83.7	2.00	-2.00	0.00	180.00	TARGET BHL 132C
7,328.0	0.00	0.00	7,089.0	-1,486.4	83.7	0.00	0.00	0.00	0.00	

Database:	Landmark	Local Co-ordinate Reference:	Well SH C17-24D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4739.0ft (Original Well Elev)
Project:	SEC.17-T4N-R64W	MD Reference:	WELL @ 4739.0ft (Original Well Elev)
Site:	SH C17-24D Pad Sec.17-T4N-R64W	North Reference:	True
Well:	SH C17-24D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble SH C17-24D Plan #1 8-12-11		

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	0.00	0.00	240.0	0.0	0.0	0.0	0.00	0.00	0.00
280.0	0.00	0.00	280.0	0.0	0.0	0.0	0.00	0.00	0.00
320.0	0.00	0.00	320.0	0.0	0.0	0.0	0.00	0.00	0.00
360.0	0.00	0.00	360.0	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
440.0	0.00	0.00	440.0	0.0	0.0	0.0	0.00	0.00	0.00
480.0	0.00	0.00	480.0	0.0	0.0	0.0	0.00	0.00	0.00
520.0	0.00	0.00	520.0	0.0	0.0	0.0	0.00	0.00	0.00
560.0	0.00	0.00	560.0	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
640.0	0.00	0.00	640.0	0.0	0.0	0.0	0.00	0.00	0.00
650.0	0.00	0.00	650.0	0.0	0.0	0.0	0.00	0.00	0.00
8 5/8"									
680.0	0.00	0.00	680.0	0.0	0.0	0.0	0.00	0.00	0.00
720.0	0.00	0.00	720.0	0.0	0.0	0.0	0.00	0.00	0.00
760.0	0.00	0.00	760.0	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
840.0	0.00	0.00	840.0	0.0	0.0	0.0	0.00	0.00	0.00
850.0	0.00	0.00	850.0	0.0	0.0	0.0	0.00	0.00	0.00
880.0	0.60	176.78	880.0	-0.2	0.0	0.2	2.00	2.00	0.00
920.0	1.40	176.78	920.0	-0.9	0.0	0.9	2.00	2.00	0.00
960.0	2.20	176.78	960.0	-2.1	0.1	2.1	2.00	2.00	0.00
1,000.0	3.00	176.78	999.9	-3.9	0.2	3.9	2.00	2.00	0.00
1,040.0	3.80	176.78	1,039.9	-6.3	0.4	6.3	2.00	2.00	0.00
1,080.0	4.60	176.78	1,079.8	-9.2	0.5	9.2	2.00	2.00	0.00
1,120.0	5.40	176.78	1,119.6	-12.7	0.7	12.7	2.00	2.00	0.00
1,160.0	6.20	176.78	1,159.4	-16.7	0.9	16.8	2.00	2.00	0.00
1,200.0	7.00	176.78	1,199.1	-21.3	1.2	21.4	2.00	2.00	0.00
1,240.0	7.80	176.78	1,238.8	-26.5	1.5	26.5	2.00	2.00	0.00
1,280.0	8.60	176.78	1,278.4	-32.2	1.8	32.2	2.00	2.00	0.00
1,320.0	9.40	176.78	1,317.9	-38.4	2.2	38.5	2.00	2.00	0.00
1,360.0	10.20	176.78	1,357.3	-45.2	2.5	45.3	2.00	2.00	0.00
1,400.0	11.00	176.78	1,396.6	-52.6	3.0	52.6	2.00	2.00	0.00
1,440.0	11.80	176.78	1,435.8	-60.4	3.4	60.5	2.00	2.00	0.00
1,480.0	12.60	176.78	1,474.9	-68.9	3.9	69.0	2.00	2.00	0.00
1,520.0	13.40	176.78	1,513.9	-77.9	4.4	78.0	2.00	2.00	0.00
1,560.0	14.20	176.78	1,552.8	-87.4	4.9	87.5	2.00	2.00	0.00
1,600.0	15.00	176.78	1,591.5	-97.5	5.5	97.6	2.00	2.00	0.00
1,640.0	15.80	176.78	1,630.0	-108.1	6.1	108.2	2.00	2.00	0.00
1,680.0	16.60	176.78	1,668.4	-119.2	6.7	119.4	2.00	2.00	0.00
1,720.0	17.40	176.78	1,706.7	-130.9	7.4	131.1	2.00	2.00	0.00
1,760.0	18.20	176.78	1,744.8	-143.1	8.1	143.3	2.00	2.00	0.00
1,800.0	19.00	176.78	1,782.7	-155.8	8.8	156.1	2.00	2.00	0.00
1,835.7	19.71	176.78	1,816.4	-167.7	9.4	167.9	2.00	2.00	0.00
1,840.0	19.71	176.78	1,820.4	-169.1	9.5	169.4	0.00	0.00	0.00
1,880.0	19.71	176.78	1,858.1	-182.6	10.3	182.9	0.00	0.00	0.00
1,920.0	19.71	176.78	1,895.7	-196.0	11.0	196.3	0.00	0.00	0.00
1,960.0	19.71	176.78	1,933.4	-209.5	11.8	209.8	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well SH C17-24D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4739.0ft (Original Well Elev)
Project:	SEC.17-T4N-R64W	MD Reference:	WELL @ 4739.0ft (Original Well Elev)
Site:	SH C17-24D Pad Sec.17-T4N-R64W	North Reference:	True
Well:	SH C17-24D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble SH C17-24D Plan #1 8-12-11		

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)
2,000.0	19.71	176.78	1,971.0	-223.0	12.6	223.3	0.00	0.00	0.00
2,040.0	19.71	176.78	2,008.7	-236.5	13.3	236.8	0.00	0.00	0.00
2,080.0	19.71	176.78	2,046.3	-249.9	14.1	250.3	0.00	0.00	0.00
2,120.0	19.71	176.78	2,084.0	-263.4	14.8	263.8	0.00	0.00	0.00
2,160.0	19.71	176.78	2,121.7	-276.9	15.6	277.3	0.00	0.00	0.00
2,200.0	19.71	176.78	2,159.3	-290.3	16.3	290.8	0.00	0.00	0.00
2,240.0	19.71	176.78	2,197.0	-303.8	17.1	304.3	0.00	0.00	0.00
2,280.0	19.71	176.78	2,234.6	-317.3	17.9	317.8	0.00	0.00	0.00
2,320.0	19.71	176.78	2,272.3	-330.8	18.6	331.3	0.00	0.00	0.00
2,360.0	19.71	176.78	2,309.9	-344.2	19.4	344.8	0.00	0.00	0.00
2,400.0	19.71	176.78	2,347.6	-357.7	20.1	358.3	0.00	0.00	0.00
2,440.0	19.71	176.78	2,385.2	-371.2	20.9	371.8	0.00	0.00	0.00
2,480.0	19.71	176.78	2,422.9	-384.6	21.7	385.3	0.00	0.00	0.00
2,520.0	19.71	176.78	2,460.6	-398.1	22.4	398.8	0.00	0.00	0.00
2,560.0	19.71	176.78	2,498.2	-411.6	23.2	412.2	0.00	0.00	0.00
2,600.0	19.71	176.78	2,535.9	-425.1	23.9	425.7	0.00	0.00	0.00
2,640.0	19.71	176.78	2,573.5	-438.5	24.7	439.2	0.00	0.00	0.00
2,680.0	19.71	176.78	2,611.2	-452.0	25.4	452.7	0.00	0.00	0.00
2,720.0	19.71	176.78	2,648.8	-465.5	26.2	466.2	0.00	0.00	0.00
2,760.0	19.71	176.78	2,686.5	-479.0	27.0	479.7	0.00	0.00	0.00
2,800.0	19.71	176.78	2,724.1	-492.4	27.7	493.2	0.00	0.00	0.00
2,840.0	19.71	176.78	2,761.8	-505.9	28.5	506.7	0.00	0.00	0.00
2,880.0	19.71	176.78	2,799.5	-519.4	29.2	520.2	0.00	0.00	0.00
2,920.0	19.71	176.78	2,837.1	-532.8	30.0	533.7	0.00	0.00	0.00
2,960.0	19.71	176.78	2,874.8	-546.3	30.8	547.2	0.00	0.00	0.00
3,000.0	19.71	176.78	2,912.4	-559.8	31.5	560.7	0.00	0.00	0.00
3,040.0	19.71	176.78	2,950.1	-573.3	32.3	574.2	0.00	0.00	0.00
3,080.0	19.71	176.78	2,987.7	-586.7	33.0	587.7	0.00	0.00	0.00
3,120.0	19.71	176.78	3,025.4	-600.2	33.8	601.2	0.00	0.00	0.00
3,160.0	19.71	176.78	3,063.0	-613.7	34.5	614.6	0.00	0.00	0.00
3,200.0	19.71	176.78	3,100.7	-627.1	35.3	628.1	0.00	0.00	0.00
3,240.0	19.71	176.78	3,138.4	-640.6	36.1	641.6	0.00	0.00	0.00
3,280.0	19.71	176.78	3,176.0	-654.1	36.8	655.1	0.00	0.00	0.00
3,320.0	19.71	176.78	3,213.7	-667.6	37.6	668.6	0.00	0.00	0.00
3,360.0	19.71	176.78	3,251.3	-681.0	38.3	682.1	0.00	0.00	0.00
3,400.0	19.71	176.78	3,289.0	-694.5	39.1	695.6	0.00	0.00	0.00
3,440.0	19.71	176.78	3,326.6	-708.0	39.9	709.1	0.00	0.00	0.00
3,480.0	19.71	176.78	3,364.3	-721.5	40.6	722.6	0.00	0.00	0.00
3,520.0	19.71	176.78	3,401.9	-734.9	41.4	736.1	0.00	0.00	0.00
3,560.0	19.71	176.78	3,439.6	-748.4	42.1	749.6	0.00	0.00	0.00
3,600.0	19.71	176.78	3,477.2	-761.9	42.9	763.1	0.00	0.00	0.00
3,640.0	19.71	176.78	3,514.9	-775.3	43.6	776.6	0.00	0.00	0.00
3,680.0	19.71	176.78	3,552.6	-788.8	44.4	790.1	0.00	0.00	0.00
3,720.0	19.71	176.78	3,590.2	-802.3	45.2	803.6	0.00	0.00	0.00
3,760.0	19.71	176.78	3,627.9	-815.8	45.9	817.1	0.00	0.00	0.00
3,800.0	19.71	176.78	3,665.5	-829.2	46.7	830.5	0.00	0.00	0.00
3,840.0	19.71	176.78	3,703.2	-842.7	47.4	844.0	0.00	0.00	0.00
3,880.0	19.71	176.78	3,740.8	-856.2	48.2	857.5	0.00	0.00	0.00
3,920.0	19.71	176.78	3,778.5	-869.7	49.0	871.0	0.00	0.00	0.00
3,960.0	19.71	176.78	3,816.1	-883.1	49.7	884.5	0.00	0.00	0.00
4,000.0	19.71	176.78	3,853.8	-896.6	50.5	898.0	0.00	0.00	0.00
4,040.0	19.71	176.78	3,891.5	-910.1	51.2	911.5	0.00	0.00	0.00
4,080.0	19.71	176.78	3,929.1	-923.5	52.0	925.0	0.00	0.00	0.00
4,120.0	19.71	176.78	3,966.8	-937.0	52.7	938.5	0.00	0.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well SH C17-24D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4739.0ft (Original Well Elev)
Project:	SEC.17-T4N-R64W	MD Reference:	WELL @ 4739.0ft (Original Well Elev)
Site:	SH C17-24D Pad Sec.17-T4N-R64W	North Reference:	True
Well:	SH C17-24D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble SH C17-24D Plan #1 8-12-11		

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)
4,160.0	19.71	176.78	4,004.4	-950.5	53.5	952.0	0.00	0.00	0.00
4,200.0	19.71	176.78	4,042.1	-964.0	54.3	965.5	0.00	0.00	0.00
4,240.0	19.71	176.78	4,079.7	-977.4	55.0	979.0	0.00	0.00	0.00
4,280.0	19.71	176.78	4,117.4	-990.9	55.8	992.5	0.00	0.00	0.00
4,320.0	19.71	176.78	4,155.0	-1,004.4	56.5	1,006.0	0.00	0.00	0.00
4,360.0	19.71	176.78	4,192.7	-1,017.8	57.3	1,019.5	0.00	0.00	0.00
4,400.0	19.71	176.78	4,230.4	-1,031.3	58.1	1,032.9	0.00	0.00	0.00
4,440.0	19.71	176.78	4,268.0	-1,044.8	58.8	1,046.4	0.00	0.00	0.00
4,480.0	19.71	176.78	4,305.7	-1,058.3	59.6	1,059.9	0.00	0.00	0.00
4,520.0	19.71	176.78	4,343.3	-1,071.7	60.3	1,073.4	0.00	0.00	0.00
4,560.0	19.71	176.78	4,381.0	-1,085.2	61.1	1,086.9	0.00	0.00	0.00
4,600.0	19.71	176.78	4,418.6	-1,098.7	61.8	1,100.4	0.00	0.00	0.00
4,640.0	19.71	176.78	4,456.3	-1,112.2	62.6	1,113.9	0.00	0.00	0.00
4,680.0	19.71	176.78	4,493.9	-1,125.6	63.4	1,127.4	0.00	0.00	0.00
4,720.0	19.71	176.78	4,531.6	-1,139.1	64.1	1,140.9	0.00	0.00	0.00
4,760.0	19.71	176.78	4,569.3	-1,152.6	64.9	1,154.4	0.00	0.00	0.00
4,800.0	19.71	176.78	4,606.9	-1,166.0	65.6	1,167.9	0.00	0.00	0.00
4,840.0	19.71	176.78	4,644.6	-1,179.5	66.4	1,181.4	0.00	0.00	0.00
4,880.0	19.71	176.78	4,682.2	-1,193.0	67.2	1,194.9	0.00	0.00	0.00
4,920.0	19.71	176.78	4,719.9	-1,206.5	67.9	1,208.4	0.00	0.00	0.00
4,960.0	19.71	176.78	4,757.5	-1,219.9	68.7	1,221.9	0.00	0.00	0.00
5,000.0	19.71	176.78	4,795.2	-1,233.4	69.4	1,235.4	0.00	0.00	0.00
5,040.0	19.71	176.78	4,832.8	-1,246.9	70.2	1,248.8	0.00	0.00	0.00
5,080.0	19.71	176.78	4,870.5	-1,260.3	70.9	1,262.3	0.00	0.00	0.00
5,120.0	19.71	176.78	4,908.2	-1,273.8	71.7	1,275.8	0.00	0.00	0.00
5,160.0	19.71	176.78	4,945.8	-1,287.3	72.5	1,289.3	0.00	0.00	0.00
5,200.0	19.71	176.78	4,983.5	-1,300.8	73.2	1,302.8	0.00	0.00	0.00
5,240.0	19.71	176.78	5,021.1	-1,314.2	74.0	1,316.3	0.00	0.00	0.00
5,253.3	19.71	176.78	5,033.6	-1,318.7	74.2	1,320.8	0.00	0.00	0.00
5,280.0	19.18	176.78	5,058.8	-1,327.6	74.7	1,329.7	2.00	-2.00	0.00
5,320.0	18.38	176.78	5,096.7	-1,340.4	75.5	1,342.6	2.00	-2.00	0.00
5,360.0	17.58	176.78	5,134.7	-1,352.8	76.1	1,354.9	2.00	-2.00	0.00
5,400.0	16.78	176.78	5,172.9	-1,364.6	76.8	1,366.7	2.00	-2.00	0.00
5,440.0	15.98	176.78	5,211.3	-1,375.8	77.4	1,378.0	2.00	-2.00	0.00
5,480.0	15.18	176.78	5,249.9	-1,386.6	78.1	1,388.8	2.00	-2.00	0.00
5,520.0	14.38	176.78	5,288.5	-1,396.7	78.6	1,399.0	2.00	-2.00	0.00
5,560.0	13.58	176.78	5,327.3	-1,406.4	79.2	1,408.6	2.00	-2.00	0.00
5,600.0	12.78	176.78	5,366.3	-1,415.5	79.7	1,417.7	2.00	-2.00	0.00
5,640.0	11.98	176.78	5,405.4	-1,424.1	80.2	1,426.3	2.00	-2.00	0.00
5,680.0	11.18	176.78	5,444.5	-1,432.1	80.6	1,434.3	2.00	-2.00	0.00
5,720.0	10.38	176.78	5,483.8	-1,439.5	81.0	1,441.8	2.00	-2.00	0.00
5,760.0	9.58	176.78	5,523.2	-1,446.5	81.4	1,448.8	2.00	-2.00	0.00
5,800.0	8.78	176.78	5,562.7	-1,452.8	81.8	1,455.1	2.00	-2.00	0.00
5,840.0	7.98	176.78	5,602.3	-1,458.7	82.1	1,461.0	2.00	-2.00	0.00
5,880.0	7.18	176.78	5,641.9	-1,463.9	82.4	1,466.2	2.00	-2.00	0.00
5,920.0	6.38	176.78	5,681.7	-1,468.6	82.7	1,471.0	2.00	-2.00	0.00
5,960.0	5.58	176.78	5,721.4	-1,472.8	82.9	1,475.1	2.00	-2.00	0.00
6,000.0	4.78	176.78	5,761.3	-1,476.4	83.1	1,478.7	2.00	-2.00	0.00
6,040.0	3.98	176.78	5,801.2	-1,479.5	83.3	1,481.8	2.00	-2.00	0.00
6,080.0	3.18	176.78	5,841.1	-1,482.0	83.4	1,484.3	2.00	-2.00	0.00
6,120.0	2.38	176.78	5,881.0	-1,483.9	83.5	1,486.2	2.00	-2.00	0.00
6,160.0	1.58	176.78	5,921.0	-1,485.3	83.6	1,487.6	2.00	-2.00	0.00
6,200.0	0.78	176.78	5,961.0	-1,486.1	83.7	1,488.4	2.00	-2.00	0.00
6,239.0	0.00	0.00	6,000.0	-1,486.4	83.7	1,488.7	2.00	-2.00	0.00

Database:	Landmark	Local Co-ordinate Reference:	Well SH C17-24D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4739.0ft (Original Well Elev)
Project:	SEC.17-T4N-R64W	MD Reference:	WELL @ 4739.0ft (Original Well Elev)
Site:	SH C17-24D Pad Sec.17-T4N-R64W	North Reference:	True
Well:	SH C17-24D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble SH C17-24D Plan #1 8-12-11		

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)
TARGET BHL 1320'FSL & 2550'FWL									
6,240.0	0.00	0.00	6,001.0	-1,486.4	83.7	1,488.7	0.00	0.00	0.00
6,280.0	0.00	0.00	6,041.0	-1,486.4	83.7	1,488.7	0.00	0.00	0.00
6,320.0	0.00	0.00	6,081.0	-1,486.4	83.7	1,488.7	0.00	0.00	0.00
6,360.0	0.00	0.00	6,121.0	-1,486.4	83.7	1,488.7	0.00	0.00	0.00
6,400.0	0.00	0.00	6,161.0	-1,486.4	83.7	1,488.7	0.00	0.00	0.00
6,440.0	0.00	0.00	6,201.0	-1,486.4	83.7	1,488.7	0.00	0.00	0.00
6,480.0	0.00	0.00	6,241.0	-1,486.4	83.7	1,488.7	0.00	0.00	0.00
6,520.0	0.00	0.00	6,281.0	-1,486.4	83.7	1,488.7	0.00	0.00	0.00
6,560.0	0.00	0.00	6,321.0	-1,486.4	83.7	1,488.7	0.00	0.00	0.00
6,600.0	0.00	0.00	6,361.0	-1,486.4	83.7	1,488.7	0.00	0.00	0.00
6,640.0	0.00	0.00	6,401.0	-1,486.4	83.7	1,488.7	0.00	0.00	0.00
6,680.0	0.00	0.00	6,441.0	-1,486.4	83.7	1,488.7	0.00	0.00	0.00
6,720.0	0.00	0.00	6,481.0	-1,486.4	83.7	1,488.7	0.00	0.00	0.00
6,760.0	0.00	0.00	6,521.0	-1,486.4	83.7	1,488.7	0.00	0.00	0.00
6,800.0	0.00	0.00	6,561.0	-1,486.4	83.7	1,488.7	0.00	0.00	0.00
6,840.0	0.00	0.00	6,601.0	-1,486.4	83.7	1,488.7	0.00	0.00	0.00
6,880.0	0.00	0.00	6,641.0	-1,486.4	83.7	1,488.7	0.00	0.00	0.00
6,920.0	0.00	0.00	6,681.0	-1,486.4	83.7	1,488.7	0.00	0.00	0.00
6,928.0	0.00	0.00	6,689.0	-1,486.4	83.7	1,488.7	0.00	0.00	0.00
NIOBRARA - TARGET CIRCLE 1320'FSL & 2550'FWL									
6,960.0	0.00	0.00	6,721.0	-1,486.4	83.7	1,488.7	0.00	0.00	0.00
7,000.0	0.00	0.00	6,761.0	-1,486.4	83.7	1,488.7	0.00	0.00	0.00
7,040.0	0.00	0.00	6,801.0	-1,486.4	83.7	1,488.7	0.00	0.00	0.00
7,080.0	0.00	0.00	6,841.0	-1,486.4	83.7	1,488.7	0.00	0.00	0.00
7,120.0	0.00	0.00	6,881.0	-1,486.4	83.7	1,488.7	0.00	0.00	0.00
7,160.0	0.00	0.00	6,921.0	-1,486.4	83.7	1,488.7	0.00	0.00	0.00
7,178.0	0.00	0.00	6,939.0	-1,486.4	83.7	1,488.7	0.00	0.00	0.00
CODELL									
7,200.0	0.00	0.00	6,961.0	-1,486.4	83.7	1,488.7	0.00	0.00	0.00
7,240.0	0.00	0.00	7,001.0	-1,486.4	83.7	1,488.7	0.00	0.00	0.00
7,280.0	0.00	0.00	7,041.0	-1,486.4	83.7	1,488.7	0.00	0.00	0.00
7,320.0	0.00	0.00	7,081.0	-1,486.4	83.7	1,488.7	0.00	0.00	0.00
7,328.0	0.00	0.00	7,089.0	-1,486.4	83.7	1,488.7	0.00	0.00	0.00
HARDLINE 96'E OF BHL									

Database:	Landmark	Local Co-ordinate Reference:	Well SH C17-24D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4739.0ft (Original Well Elev)
Project:	SEC.17-T4N-R64W	MD Reference:	WELL @ 4739.0ft (Original Well Elev)
Site:	SH C17-24D Pad Sec.17-T4N-R64W	North Reference:	True
Well:	SH C17-24D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble SH C17-24D Plan #1 8-12-11		

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 132'	0.00	0.00	6,689.0	-1,486.4	83.7	1,356,679.16	3,258,011.41	40.308790	-104.574830
- plan hits target center									
- Circle (radius 75.0)									
TARGET BHL 1320'F	0.00	0.00	6,000.0	-1,486.4	83.7	1,356,679.16	3,258,011.41	40.308790	-104.574830
- plan hits target center									
- Point									
HARDLINE 96'E OF E	0.00	0.00	7,089.0	-1,586.4	179.7	1,356,580.13	3,258,108.48	40.308515	-104.574486
- plan misses target center by 138.7ft at 7328.0ft MD (7089.0 TVD, -1486.4 N, 83.7 E)									
- Polygon									
Point 1			7,089.0	0.0	0.0	1,356,580.13	3,258,108.48		
Point 2			7,089.0	200.0	0.0	1,356,780.11	3,258,106.39		

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

Formations					
	Measured Depth	Vertical Depth		Dip	Dip Direction
	(ft)	(ft)	Name	(°)	(°)
	6,928.0	6,689.0	NIOBRARA	0.00	
	7,178.0	6,939.0	CODELL	0.00	