ENSIGN Directional

Well Name: Rhino D27-27D

Surface Location: Rhino D27-20D Pad Sec.27-T3N-R64W

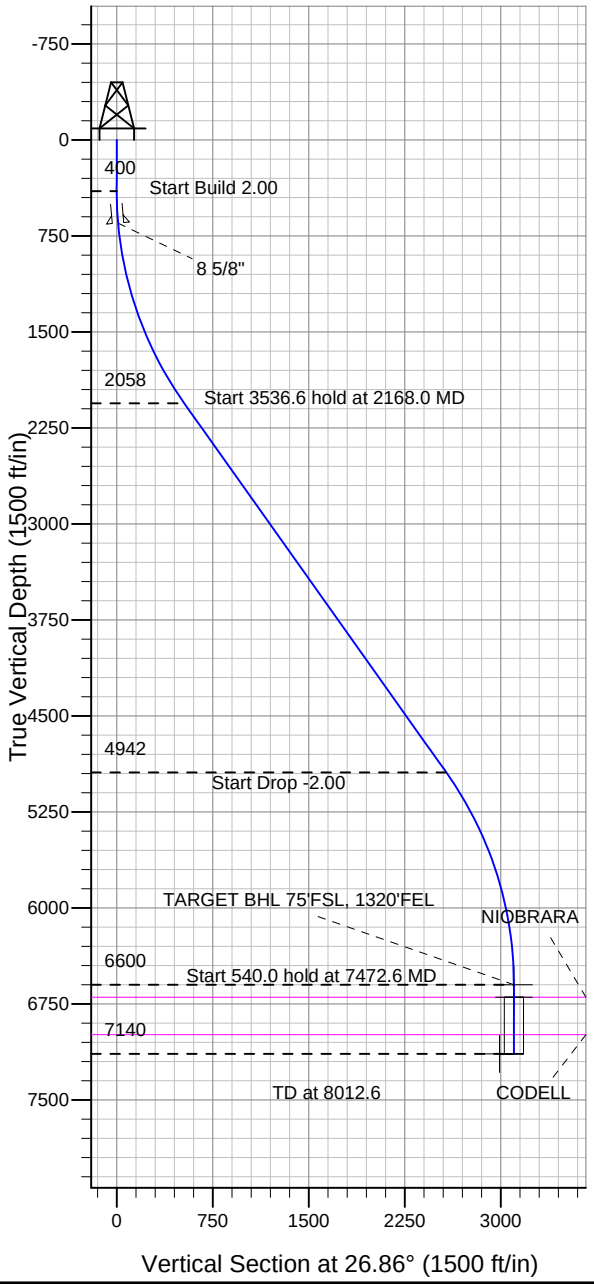
North American Datum 1983 US State Plane 1983 Colorado Northern Zone

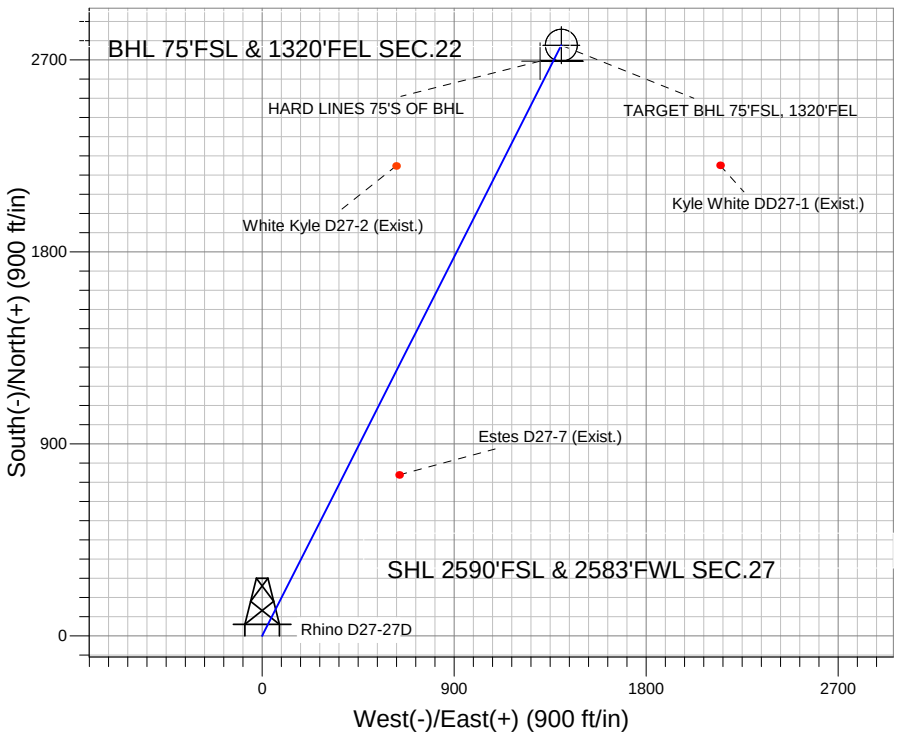
Ground Elevation: 4866.0

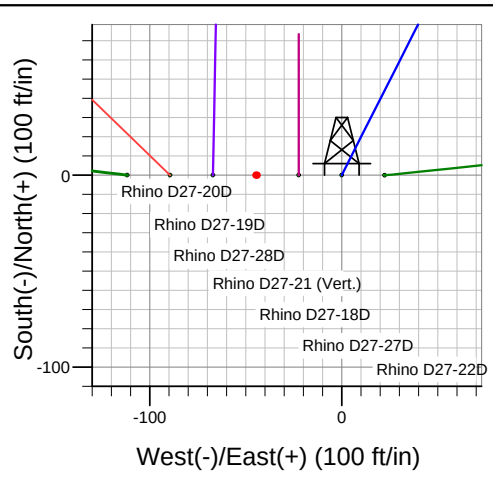
+N/-S	+E/-W	Northing	Easting	Latittude	Longitude	Slot
0.0	0.0	1315787.52	3268799.63	40.196230	-104.537740	

Original Well Elev WELL @ 4879.0ft (Original Well Elev)

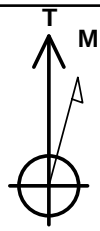
NOBLE ENERGY INC WELD COUNTY CO







Rhino D27-20D Pad Sec.27-T3N-R64W
Rhino D27-27D
Noble Rhino D27-27D Plan #1 (5-02-11)
7:08, May 02 2011



Azimuths to True North
Magnetic North: 8.74°

Magnetic Field
Strength: 53061.2snT
Dip Angle: 66.93°
Date: 5/2/2011
Model: IGRF2010

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 75'FSL, 1320'FEL	6600.0	2768.8	1402.2	40.203830	-104.532720	Point
TARGET CIRCLE 75'FSL & 1320'FEL	6698.0	2768.8	1402.2	40.203830	-104.532720	Circle (Radius: 75.0)
HARD LINES 75'S OF BHL	7140.0	2693.8	1302.2	40.203624	-104.533078	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	400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.0	
3	2168.0	35.36	26.86	2057.9	471.5	238.8	2.00	26.86	528.5	
4	5704.6	35.36	26.86	4942.1	2297.3	1163.5	0.00	0.00	2575.1	
5	7472.6	0.00	0.00	6600.0	2768.8	1402.2	2.00	180.00	3103.6	TARGET BHL 75'FSL, 1320'FEL
6	8012.6	0.00	0.00	7140.0	2768.8	1402.2	0.00	0.00	3103.6	

ENSIGN Directional

NOBLE ENERGY INC WELD COUNTY CO

SEC.27-T3N-R64W
Rhino D27-20D Pad Sec.27-T3N-R64W
Rhino D27-27D

Wellbore #1

Plan: Noble Rhino D27-27D Plan #1 (5-02-11)

Standard Planning Report

02 May, 2011

noble energy

Database:	Landmark	**Local Co-ordinate Reference:**	Well Rhino D27-27D
Company:	NOBLE ENERGY INC WELD COUNTY CO	**TVD Reference:**	WELL @ 4879.0ft (Original Well Elev)
Project:	SEC.27-T3N-R64W	**MD Reference:**	WELL @ 4879.0ft (Original Well Elev)
Site:	Rhino D27-20D Pad Sec.27-T3N-R64W	**North Reference:**	True
Well:	Rhino D27-27D	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Rhino D27-27D Plan #1 (5-02-11)		

Project SEC.27-T3N-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 Rhino D27-20D Pad Sec.27-T3N-R64W

Site Position:		**Northing:**	1,315,786.36 ft	**Latitude:**	40.196230
From:	Lat/Long	**Easting:**	3,268,687.89 ft	**Longitude:**	-104.538140
Position Uncertainty:	0.0 ft	**Slot Radius:**	"	**Grid Convergence:**	0.62 °

Well Rhino D27-27D

Well Position	**+N/-S**	-0.1 ft	**Northing:**	1,315,787.52 ft	**Latitude:**	40.196230
	+E/-W	111.7 ft	**Easting:**	3,268,799.63 ft	**Longitude:**	-104.537740
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	4,866.0 ft

Wellbore Wellbore #1

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/2/2011	8.74	66.93	53,061

Design Noble Rhino D27-27D Plan #1 (5-02-11)

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	26.86

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	
400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,168.0	35.36	26.86	2,057.9	471.5	238.8	2.00	2.00	0.00	26.86	
5,704.6	35.36	26.86	4,942.1	2,297.3	1,163.5	0.00	0.00	0.00	0.00	
7,472.6	0.00	0.00	6,600.0	2,768.8	1,402.2	2.00	-2.00	0.00	180.00	TARGET BHL 75'F
8,012.6	0.00	0.00	7,140.0	2,768.8	1,402.2	0.00	0.00	0.00	0.00	

Database:	Landmark	**Local Co-ordinate Reference:**	Well Rhino D27-27D
Company:	NOBLE ENERGY INC WELD COUNTY CO	**TVD Reference:**	WELL @ 4879.0ft (Original Well Elev)
Project:	SEC.27-T3N-R64W	**MD Reference:**	WELL @ 4879.0ft (Original Well Elev)
Site:	Rhino D27-20D Pad Sec.27-T3N-R64W	**North Reference:**	True
Well:	Rhino D27-27D	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Rhino D27-27D Plan #1 (5-02-11)		

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	0.80	26.86	440.0	0.2	0.1	0.3	2.00	2.00	0.00
480.0	1.60	26.86	480.0	1.0	0.5	1.1	2.00	2.00	0.00
520.0	2.40	26.86	520.0	2.2	1.1	2.5	2.00	2.00	0.00
560.0	3.20	26.86	559.9	4.0	2.0	4.5	2.00	2.00	0.00
600.0	4.00	26.86	599.8	6.2	3.2	7.0	2.00	2.00	0.00
640.0	4.80	26.86	639.7	9.0	4.5	10.0	2.00	2.00	0.00
650.3	5.01	26.86	650.0	9.8	4.9	10.9	2.00	2.00	0.00
8 5/8"									
680.0	5.60	26.86	679.6	12.2	6.2	13.7	2.00	2.00	0.00
720.0	6.40	26.86	719.3	15.9	8.1	17.9	2.00	2.00	0.00
760.0	7.20	26.86	759.1	20.2	10.2	22.6	2.00	2.00	0.00
800.0	8.00	26.86	798.7	24.9	12.6	27.9	2.00	2.00	0.00
840.0	8.80	26.86	838.3	30.1	15.2	33.7	2.00	2.00	0.00
880.0	9.60	26.86	877.8	35.8	18.1	40.1	2.00	2.00	0.00
920.0	10.40	26.86	917.1	42.0	21.3	47.1	2.00	2.00	0.00
960.0	11.20	26.86	956.4	48.7	24.7	54.6	2.00	2.00	0.00
1,000.0	12.00	26.86	995.6	55.8	28.3	62.6	2.00	2.00	0.00
1,040.0	12.80	26.86	1,034.7	63.5	32.2	71.2	2.00	2.00	0.00
1,080.0	13.60	26.86	1,073.6	71.7	36.3	80.3	2.00	2.00	0.00
1,120.0	14.40	26.86	1,112.4	80.3	40.7	90.0	2.00	2.00	0.00
1,160.0	15.20	26.86	1,151.1	89.4	45.3	100.2	2.00	2.00	0.00
1,200.0	16.00	26.86	1,189.6	99.0	50.1	111.0	2.00	2.00	0.00
1,240.0	16.80	26.86	1,228.0	109.1	55.2	122.3	2.00	2.00	0.00
1,280.0	17.60	26.86	1,266.2	119.6	60.6	134.1	2.00	2.00	0.00
1,320.0	18.40	26.86	1,304.3	130.7	66.2	146.5	2.00	2.00	0.00
1,360.0	19.20	26.86	1,342.1	142.2	72.0	159.3	2.00	2.00	0.00
1,400.0	20.00	26.86	1,379.8	154.1	78.1	172.8	2.00	2.00	0.00
1,440.0	20.80	26.86	1,417.3	166.6	84.4	186.7	2.00	2.00	0.00
1,480.0	21.60	26.86	1,454.6	179.5	90.9	201.2	2.00	2.00	0.00
1,520.0	22.40	26.86	1,491.7	192.8	97.7	216.2	2.00	2.00	0.00
1,560.0	23.20	26.86	1,528.6	206.7	104.7	231.7	2.00	2.00	0.00
1,600.0	24.00	26.86	1,565.2	221.0	111.9	247.7	2.00	2.00	0.00
1,640.0	24.80	26.86	1,601.6	235.7	119.4	264.2	2.00	2.00	0.00
1,680.0	25.60	26.86	1,637.8	250.9	127.1	281.2	2.00	2.00	0.00
1,720.0	26.40	26.86	1,673.8	266.5	135.0	298.8	2.00	2.00	0.00
1,760.0	27.20	26.86	1,709.5	282.6	143.1	316.8	2.00	2.00	0.00
1,800.0	28.00	26.86	1,744.9	299.2	151.5	335.3	2.00	2.00	0.00
1,840.0	28.80	26.86	1,780.1	316.1	160.1	354.4	2.00	2.00	0.00
1,880.0	29.60	26.86	1,815.0	333.5	168.9	373.9	2.00	2.00	0.00
1,920.0	30.40	26.86	1,849.7	351.4	178.0	393.9	2.00	2.00	0.00
1,960.0	31.20	26.86	1,884.0	369.6	187.2	414.4	2.00	2.00	0.00
2,000.0	32.00	26.86	1,918.1	388.3	196.7	435.3	2.00	2.00	0.00
2,040.0	32.80	26.86	1,951.9	407.5	206.4	456.7	2.00	2.00	0.00

Database:	Landmark	**Local Co-ordinate Reference:**	Well Rhino D27-27D
Company:	NOBLE ENERGY INC WELD COUNTY CO	**TVD Reference:**	WELL @ 4879.0ft (Original Well Elev)
Project:	SEC.27-T3N-R64W	**MD Reference:**	WELL @ 4879.0ft (Original Well Elev)
Site:	Rhino D27-20D Pad Sec.27-T3N-R64W	**North Reference:**	True
Well:	Rhino D27-27D	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Rhino D27-27D Plan #1 (5-02-11)		

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)
2,080.0	33.60	26.86	1,985.4	427.0	216.3	478.6	2.00	2.00	0.00
2,120.0	34.40	26.86	2,018.5	447.0	226.4	501.0	2.00	2.00	0.00
2,160.0	35.20	26.86	2,051.4	467.3	236.7	523.8	2.00	2.00	0.00
2,168.0	35.36	26.86	2,057.9	471.5	238.8	528.5	2.00	2.00	0.00
2,200.0	35.36	26.86	2,084.0	488.0	247.1	547.0	0.00	0.00	0.00
2,240.0	35.36	26.86	2,116.6	508.6	257.6	570.1	0.00	0.00	0.00
2,280.0	35.36	26.86	2,149.2	529.3	268.0	593.3	0.00	0.00	0.00
2,320.0	35.36	26.86	2,181.8	549.9	278.5	616.4	0.00	0.00	0.00
2,360.0	35.36	26.86	2,214.5	570.6	289.0	639.6	0.00	0.00	0.00
2,400.0	35.36	26.86	2,247.1	591.2	299.4	662.7	0.00	0.00	0.00
2,440.0	35.36	26.86	2,279.7	611.9	309.9	685.9	0.00	0.00	0.00
2,480.0	35.36	26.86	2,312.3	632.5	320.3	709.0	0.00	0.00	0.00
2,520.0	35.36	26.86	2,345.0	653.2	330.8	732.2	0.00	0.00	0.00
2,560.0	35.36	26.86	2,377.6	673.8	341.3	755.3	0.00	0.00	0.00
2,600.0	35.36	26.86	2,410.2	694.5	351.7	778.5	0.00	0.00	0.00
2,640.0	35.36	26.86	2,442.8	715.1	362.2	801.6	0.00	0.00	0.00
2,680.0	35.36	26.86	2,475.4	735.8	372.6	824.8	0.00	0.00	0.00
2,720.0	35.36	26.86	2,508.1	756.4	383.1	847.9	0.00	0.00	0.00
2,760.0	35.36	26.86	2,540.7	777.1	393.6	871.1	0.00	0.00	0.00
2,800.0	35.36	26.86	2,573.3	797.7	404.0	894.2	0.00	0.00	0.00
2,840.0	35.36	26.86	2,605.9	818.4	414.5	917.4	0.00	0.00	0.00
2,880.0	35.36	26.86	2,638.5	839.0	424.9	940.5	0.00	0.00	0.00
2,920.0	35.36	26.86	2,671.2	859.7	435.4	963.7	0.00	0.00	0.00
2,960.0	35.36	26.86	2,703.8	880.3	445.8	986.8	0.00	0.00	0.00
3,000.0	35.36	26.86	2,736.4	901.0	456.3	1,009.9	0.00	0.00	0.00
3,040.0	35.36	26.86	2,769.0	921.6	466.8	1,033.1	0.00	0.00	0.00
3,080.0	35.36	26.86	2,801.7	942.3	477.2	1,056.2	0.00	0.00	0.00
3,120.0	35.36	26.86	2,834.3	962.9	487.7	1,079.4	0.00	0.00	0.00
3,160.0	35.36	26.86	2,866.9	983.6	498.1	1,102.5	0.00	0.00	0.00
3,200.0	35.36	26.86	2,899.5	1,004.2	508.6	1,125.7	0.00	0.00	0.00
3,240.0	35.36	26.86	2,932.1	1,024.9	519.1	1,148.8	0.00	0.00	0.00
3,280.0	35.36	26.86	2,964.8	1,045.5	529.5	1,172.0	0.00	0.00	0.00
3,320.0	35.36	26.86	2,997.4	1,066.2	540.0	1,195.1	0.00	0.00	0.00
3,360.0	35.36	26.86	3,030.0	1,086.9	550.4	1,218.3	0.00	0.00	0.00
3,400.0	35.36	26.86	3,062.6	1,107.5	560.9	1,241.4	0.00	0.00	0.00
3,440.0	35.36	26.86	3,095.2	1,128.2	571.3	1,264.6	0.00	0.00	0.00
3,480.0	35.36	26.86	3,127.9	1,148.8	581.8	1,287.7	0.00	0.00	0.00
3,520.0	35.36	26.86	3,160.5	1,169.5	592.3	1,310.9	0.00	0.00	0.00
3,560.0	35.36	26.86	3,193.1	1,190.1	602.7	1,334.0	0.00	0.00	0.00
3,600.0	35.36	26.86	3,225.7	1,210.8	613.2	1,357.2	0.00	0.00	0.00
3,640.0	35.36	26.86	3,258.4	1,231.4	623.6	1,380.3	0.00	0.00	0.00
3,680.0	35.36	26.86	3,291.0	1,252.1	634.1	1,403.5	0.00	0.00	0.00
3,720.0	35.36	26.86	3,323.6	1,272.7	644.6	1,426.6	0.00	0.00	0.00
3,760.0	35.36	26.86	3,356.2	1,293.4	655.0	1,449.8	0.00	0.00	0.00
3,800.0	35.36	26.86	3,388.8	1,314.0	665.5	1,472.9	0.00	0.00	0.00
3,840.0	35.36	26.86	3,421.5	1,334.7	675.9	1,496.1	0.00	0.00	0.00
3,880.0	35.36	26.86	3,454.1	1,355.3	686.4	1,519.2	0.00	0.00	0.00
3,920.0	35.36	26.86	3,486.7	1,376.0	696.9	1,542.4	0.00	0.00	0.00
3,960.0	35.36	26.86	3,519.3	1,396.6	707.3	1,565.5	0.00	0.00	0.00
4,000.0	35.36	26.86	3,551.9	1,417.3	717.8	1,588.7	0.00	0.00	0.00
4,040.0	35.36	26.86	3,584.6	1,437.9	728.2	1,611.8	0.00	0.00	0.00
4,080.0	35.36	26.86	3,617.2	1,458.6	738.7	1,635.0	0.00	0.00	0.00
4,120.0	35.36	26.86	3,649.8	1,479.2	749.1	1,658.1	0.00	0.00	0.00
4,160.0	35.36	26.86	3,682.4	1,499.9	759.6	1,681.3	0.00	0.00	0.00

Database:	Landmark	**Local Co-ordinate Reference:**	Well Rhino D27-27D
Company:	NOBLE ENERGY INC WELD COUNTY CO	**TVD Reference:**	WELL @ 4879.0ft (Original Well Elev)
Project:	SEC.27-T3N-R64W	**MD Reference:**	WELL @ 4879.0ft (Original Well Elev)
Site:	Rhino D27-20D Pad Sec.27-T3N-R64W	**North Reference:**	True
Well:	Rhino D27-27D	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Rhino D27-27D Plan #1 (5-02-11)		

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	35.36	26.86	3,715.0	1,520.5	770.1	1,704.4	0.00	0.00	0.00
4,240.0	35.36	26.86	3,747.7	1,541.2	780.5	1,727.6	0.00	0.00	0.00
4,280.0	35.36	26.86	3,780.3	1,561.8	791.0	1,750.7	0.00	0.00	0.00
4,320.0	35.36	26.86	3,812.9	1,582.5	801.4	1,773.8	0.00	0.00	0.00
4,360.0	35.36	26.86	3,845.5	1,603.1	811.9	1,797.0	0.00	0.00	0.00
4,400.0	35.36	26.86	3,878.2	1,623.8	822.4	1,820.1	0.00	0.00	0.00
4,440.0	35.36	26.86	3,910.8	1,644.4	832.8	1,843.3	0.00	0.00	0.00
4,480.0	35.36	26.86	3,943.4	1,665.1	843.3	1,866.4	0.00	0.00	0.00
4,520.0	35.36	26.86	3,976.0	1,685.7	853.7	1,889.6	0.00	0.00	0.00
4,560.0	35.36	26.86	4,008.6	1,706.4	864.2	1,912.7	0.00	0.00	0.00
4,600.0	35.36	26.86	4,041.3	1,727.0	874.6	1,935.9	0.00	0.00	0.00
4,640.0	35.36	26.86	4,073.9	1,747.7	885.1	1,959.0	0.00	0.00	0.00
4,680.0	35.36	26.86	4,106.5	1,768.3	895.6	1,982.2	0.00	0.00	0.00
4,720.0	35.36	26.86	4,139.1	1,789.0	906.0	2,005.3	0.00	0.00	0.00
4,760.0	35.36	26.86	4,171.7	1,809.6	916.5	2,028.5	0.00	0.00	0.00
4,800.0	35.36	26.86	4,204.4	1,830.3	926.9	2,051.6	0.00	0.00	0.00
4,840.0	35.36	26.86	4,237.0	1,850.9	937.4	2,074.8	0.00	0.00	0.00
4,880.0	35.36	26.86	4,269.6	1,871.6	947.9	2,097.9	0.00	0.00	0.00
4,920.0	35.36	26.86	4,302.2	1,892.2	958.3	2,121.1	0.00	0.00	0.00
4,960.0	35.36	26.86	4,334.9	1,912.9	968.8	2,144.2	0.00	0.00	0.00
5,000.0	35.36	26.86	4,367.5	1,933.5	979.2	2,167.4	0.00	0.00	0.00
5,040.0	35.36	26.86	4,400.1	1,954.2	989.7	2,190.5	0.00	0.00	0.00
5,080.0	35.36	26.86	4,432.7	1,974.8	1,000.2	2,213.7	0.00	0.00	0.00
5,120.0	35.36	26.86	4,465.3	1,995.5	1,010.6	2,236.8	0.00	0.00	0.00
5,160.0	35.36	26.86	4,498.0	2,016.2	1,021.1	2,260.0	0.00	0.00	0.00
5,200.0	35.36	26.86	4,530.6	2,036.8	1,031.5	2,283.1	0.00	0.00	0.00
5,240.0	35.36	26.86	4,563.2	2,057.5	1,042.0	2,306.3	0.00	0.00	0.00
5,280.0	35.36	26.86	4,595.8	2,078.1	1,052.4	2,329.4	0.00	0.00	0.00
5,320.0	35.36	26.86	4,628.4	2,098.8	1,062.9	2,352.6	0.00	0.00	0.00
5,360.0	35.36	26.86	4,661.1	2,119.4	1,073.4	2,375.7	0.00	0.00	0.00
5,400.0	35.36	26.86	4,693.7	2,140.1	1,083.8	2,398.9	0.00	0.00	0.00
5,440.0	35.36	26.86	4,726.3	2,160.7	1,094.3	2,422.0	0.00	0.00	0.00
5,480.0	35.36	26.86	4,758.9	2,181.4	1,104.7	2,445.2	0.00	0.00	0.00
5,520.0	35.36	26.86	4,791.6	2,202.0	1,115.2	2,468.3	0.00	0.00	0.00
5,560.0	35.36	26.86	4,824.2	2,222.7	1,125.7	2,491.5	0.00	0.00	0.00
5,600.0	35.36	26.86	4,856.8	2,243.3	1,136.1	2,514.6	0.00	0.00	0.00
5,640.0	35.36	26.86	4,889.4	2,264.0	1,146.6	2,537.7	0.00	0.00	0.00
5,680.0	35.36	26.86	4,922.0	2,284.6	1,157.0	2,560.9	0.00	0.00	0.00
5,704.6	35.36	26.86	4,942.1	2,297.3	1,163.5	2,575.1	0.00	0.00	0.00
5,720.0	35.05	26.86	4,954.7	2,305.2	1,167.5	2,584.0	2.00	-2.00	0.00
5,760.0	34.25	26.86	4,987.6	2,325.5	1,177.8	2,606.8	2.00	-2.00	0.00
5,800.0	33.45	26.86	5,020.8	2,345.4	1,187.8	2,629.0	2.00	-2.00	0.00
5,840.0	32.65	26.86	5,054.3	2,364.9	1,197.7	2,650.9	2.00	-2.00	0.00
5,880.0	31.85	26.86	5,088.2	2,383.9	1,207.3	2,672.2	2.00	-2.00	0.00
5,920.0	31.05	26.86	5,122.3	2,402.5	1,216.7	2,693.1	2.00	-2.00	0.00
5,960.0	30.25	26.86	5,156.7	2,420.7	1,226.0	2,713.5	2.00	-2.00	0.00
6,000.0	29.45	26.86	5,191.4	2,438.5	1,235.0	2,733.4	2.00	-2.00	0.00
6,040.0	28.65	26.86	5,226.4	2,455.8	1,243.7	2,752.8	2.00	-2.00	0.00
6,080.0	27.85	26.86	5,261.6	2,472.7	1,252.3	2,771.7	2.00	-2.00	0.00
6,120.0	27.05	26.86	5,297.1	2,489.2	1,260.6	2,790.2	2.00	-2.00	0.00
6,160.0	26.25	26.86	5,332.8	2,505.2	1,268.7	2,808.1	2.00	-2.00	0.00
6,200.0	25.45	26.86	5,368.8	2,520.7	1,276.6	2,825.6	2.00	-2.00	0.00
6,240.0	24.65	26.86	5,405.1	2,535.8	1,284.3	2,842.5	2.00	-2.00	0.00
6,280.0	23.85	26.86	5,441.5	2,550.5	1,291.7	2,858.9	2.00	-2.00	0.00

Database:	Landmark	**Local Co-ordinate Reference:**	Well Rhino D27-27D
Company:	NOBLE ENERGY INC WELD COUNTY CO	**TVD Reference:**	WELL @ 4879.0ft (Original Well Elev)
Project:	SEC.27-T3N-R64W	**MD Reference:**	WELL @ 4879.0ft (Original Well Elev)
Site:	Rhino D27-20D Pad Sec.27-T3N-R64W	**North Reference:**	True
Well:	Rhino D27-27D	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Rhino D27-27D Plan #1 (5-02-11)		

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	23.05	26.86	5,478.2	2,564.7	1,298.9	2,874.8	2.00	-2.00	0.00
6,360.0	22.25	26.86	5,515.1	2,578.4	1,305.8	2,890.2	2.00	-2.00	0.00
6,400.0	21.45	26.86	5,552.3	2,591.7	1,312.6	2,905.1	2.00	-2.00	0.00
6,440.0	20.65	26.86	5,589.6	2,604.5	1,319.1	2,919.5	2.00	-2.00	0.00
6,480.0	19.85	26.86	5,627.1	2,616.9	1,325.3	2,933.4	2.00	-2.00	0.00
6,520.0	19.05	26.86	5,664.8	2,628.8	1,331.3	2,946.7	2.00	-2.00	0.00
6,560.0	18.25	26.86	5,702.7	2,640.2	1,337.1	2,959.5	2.00	-2.00	0.00
6,600.0	17.45	26.86	5,740.8	2,651.1	1,342.6	2,971.7	2.00	-2.00	0.00
6,640.0	16.65	26.86	5,779.1	2,661.6	1,347.9	2,983.5	2.00	-2.00	0.00
6,680.0	15.85	26.86	5,817.5	2,671.6	1,353.0	2,994.7	2.00	-2.00	0.00
6,720.0	15.05	26.86	5,856.0	2,681.1	1,357.8	3,005.3	2.00	-2.00	0.00
6,760.0	14.25	26.86	5,894.7	2,690.1	1,362.4	3,015.4	2.00	-2.00	0.00
6,800.0	13.45	26.86	5,933.5	2,698.7	1,366.7	3,025.0	2.00	-2.00	0.00
6,840.0	12.65	26.86	5,972.5	2,706.7	1,370.8	3,034.0	2.00	-2.00	0.00
6,880.0	11.85	26.86	6,011.6	2,714.3	1,374.6	3,042.5	2.00	-2.00	0.00
6,920.0	11.05	26.86	6,050.8	2,721.4	1,378.2	3,050.5	2.00	-2.00	0.00
6,960.0	10.25	26.86	6,090.1	2,728.0	1,381.6	3,057.9	2.00	-2.00	0.00
7,000.0	9.45	26.86	6,129.5	2,734.1	1,384.7	3,064.7	2.00	-2.00	0.00
7,040.0	8.65	26.86	6,169.0	2,739.7	1,387.5	3,071.0	2.00	-2.00	0.00
7,080.0	7.85	26.86	6,208.6	2,744.8	1,390.1	3,076.7	2.00	-2.00	0.00
7,120.0	7.05	26.86	6,248.3	2,749.4	1,392.4	3,081.9	2.00	-2.00	0.00
7,160.0	6.25	26.86	6,288.0	2,753.6	1,394.5	3,086.6	2.00	-2.00	0.00
7,200.0	5.45	26.86	6,327.8	2,757.2	1,396.4	3,090.6	2.00	-2.00	0.00
7,240.0	4.65	26.86	6,367.6	2,760.4	1,398.0	3,094.2	2.00	-2.00	0.00
7,280.0	3.85	26.86	6,407.5	2,763.0	1,399.3	3,097.1	2.00	-2.00	0.00
7,320.0	3.05	26.86	6,447.5	2,765.1	1,400.4	3,099.5	2.00	-2.00	0.00
7,360.0	2.25	26.86	6,487.4	2,766.8	1,401.2	3,101.4	2.00	-2.00	0.00
7,400.0	1.45	26.86	6,527.4	2,768.0	1,401.8	3,102.7	2.00	-2.00	0.00
7,440.0	0.65	26.86	6,567.4	2,768.6	1,402.1	3,103.4	2.00	-2.00	0.00
7,472.6	0.00	0.00	6,600.0	2,768.8	1,402.2	3,103.6	2.00	-2.00	0.00
TARGET BHL 75'FSL, 1320'FEL									
7,480.0	0.00	0.00	6,607.4	2,768.8	1,402.2	3,103.6	0.00	0.00	0.00
7,520.0	0.00	0.00	6,647.4	2,768.8	1,402.2	3,103.6	0.00	0.00	0.00
7,560.0	0.00	0.00	6,687.4	2,768.8	1,402.2	3,103.6	0.00	0.00	0.00
7,570.6	0.00	0.00	6,698.0	2,768.8	1,402.2	3,103.6	0.00	0.00	0.00
NIOBRARA - TARGET CIRCLE 75'FSL & 1320'FEL									
7,600.0	0.00	0.00	6,727.4	2,768.8	1,402.2	3,103.6	0.00	0.00	0.00
7,640.0	0.00	0.00	6,767.4	2,768.8	1,402.2	3,103.6	0.00	0.00	0.00
7,680.0	0.00	0.00	6,807.4	2,768.8	1,402.2	3,103.6	0.00	0.00	0.00
7,720.0	0.00	0.00	6,847.4	2,768.8	1,402.2	3,103.6	0.00	0.00	0.00
7,760.0	0.00	0.00	6,887.4	2,768.8	1,402.2	3,103.6	0.00	0.00	0.00
7,800.0	0.00	0.00	6,927.4	2,768.8	1,402.2	3,103.6	0.00	0.00	0.00
7,840.0	0.00	0.00	6,967.4	2,768.8	1,402.2	3,103.6	0.00	0.00	0.00
7,862.6	0.00	0.00	6,990.0	2,768.8	1,402.2	3,103.6	0.00	0.00	0.00
CODELL									
7,880.0	0.00	0.00	7,007.4	2,768.8	1,402.2	3,103.6	0.00	0.00	0.00
7,920.0	0.00	0.00	7,047.4	2,768.8	1,402.2	3,103.6	0.00	0.00	0.00
7,960.0	0.00	0.00	7,087.4	2,768.8	1,402.2	3,103.6	0.00	0.00	0.00
8,000.0	0.00	0.00	7,127.4	2,768.8	1,402.2	3,103.6	0.00	0.00	0.00
8,012.6	0.00	0.00	7,140.0	2,768.8	1,402.2	3,103.6	0.00	0.00	0.00
HARD LINES 75'S OF BHL									

Database:	Landmark	**Local Co-ordinate Reference:**	Well Rhino D27-27D
Company:	NOBLE ENERGY INC WELD COUNTY CO	**TVD Reference:**	WELL @ 4879.0ft (Original Well Elev)
Project:	SEC.27-T3N-R64W	**MD Reference:**	WELL @ 4879.0ft (Original Well Elev)
Site:	Rhino D27-20D Pad Sec.27-T3N-R64W	**North Reference:**	True
Well:	Rhino D27-27D	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Noble Rhino D27-27D Plan #1 (5-02-11)		

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
HARD LINES 75'S OF	0.00	0.00	7,140.0	2,693.8	1,302.2	1,318,495.17	3,270,072.46	40.203624	-104.533078
- plan misses target center by 125.0ft at 8012.6ft MD (7140.0 TVD, 2768.8 N, 1402.2 E)									
- Polygon									
Point 1			7,140.0	0.0	0.0	1,318,495.17	3,270,072.46		
Point 2			7,140.0	0.0	200.0	1,318,497.34	3,270,272.44		
TARGET BHL 75'FSL	0.00	0.00	6,600.0	2,768.8	1,402.2	1,318,571.22	3,270,171.67	40.203830	-104.532720
- plan hits target center									
- Point									
TARGET CIRCLE 75'	0.00	0.00	6,698.0	2,768.8	1,402.2	1,318,571.22	3,270,171.67	40.203830	-104.532720
- plan hits target center									
- Circle (radius 75.0)									

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")
650.3	650.0	8 5/8"	8-5/8	12-1/4

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
7,570.6	6,698.0	NIOBRARA		0.00	
7,862.6	6,990.0	CODELL		0.00	