

# ENSIGN

## Directional

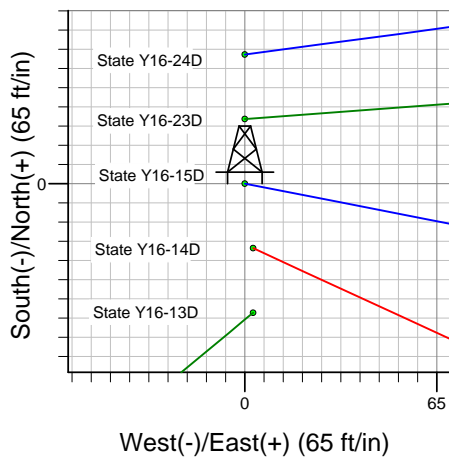
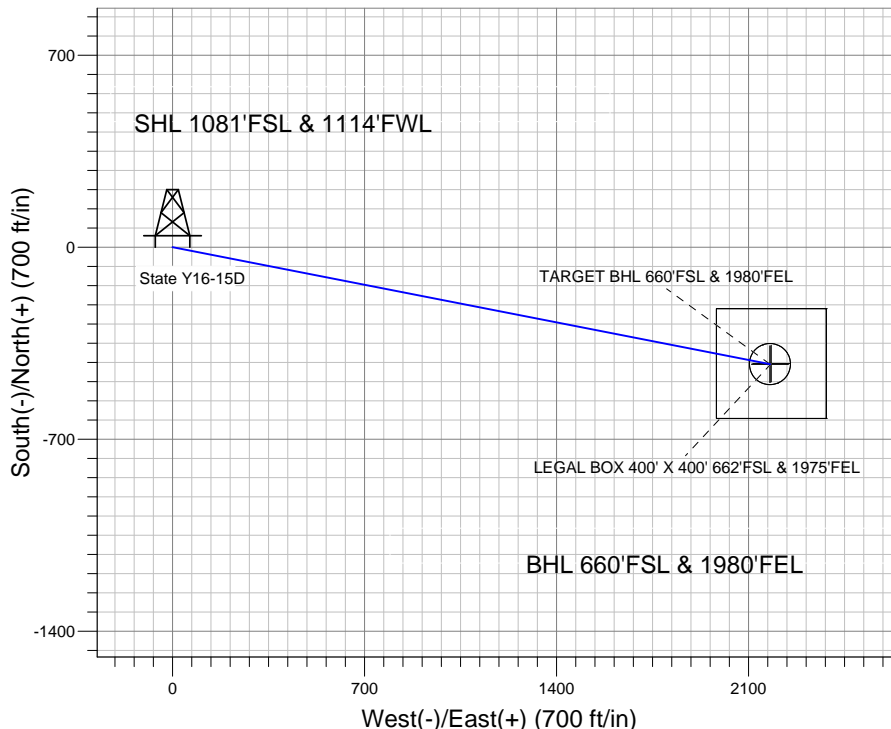
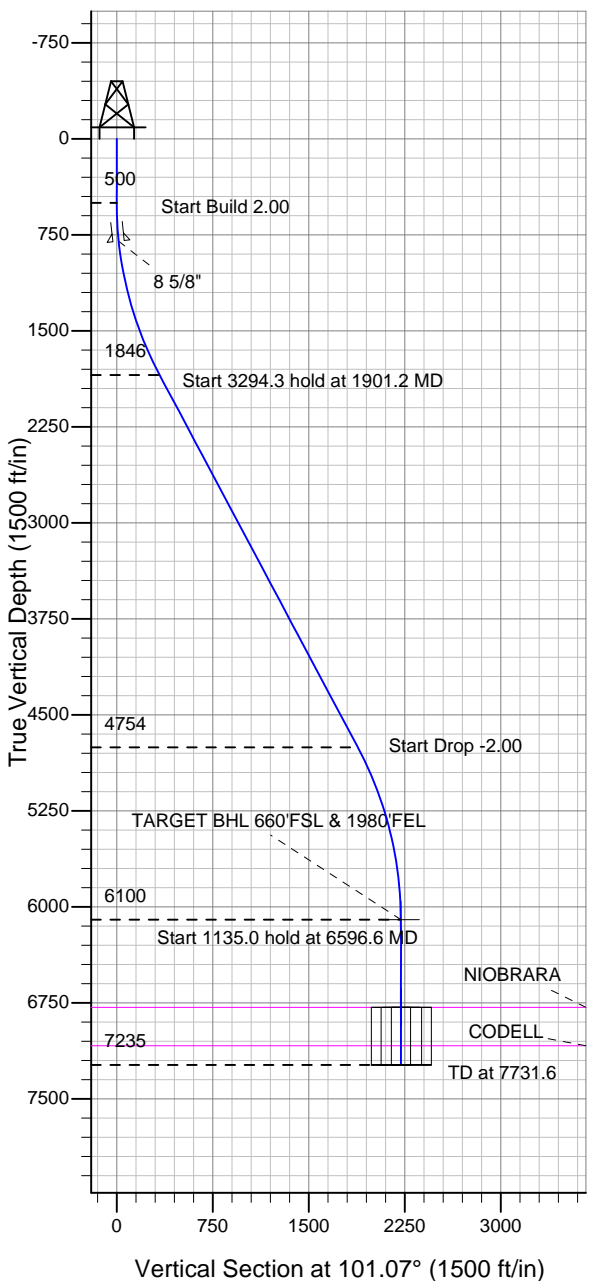
### Well Name: State Y16-15D

Surface Location: State Y16-24D Pad Sec.16-T2N-R64W  
North American Datum 1983 US State Plane 1983 Colorado Northern Zone

Ground Elevation: 4927.0

+N/-S +E/-W Northing Easting Latitude Longitude Slot  
0.0 0.0 1293123.88 3262298.37 40.134210 -104.561870  
Original Well Elev WELL @ 4940.0ft (Original Well Elev)

## NOBLE ENERGY INC WELD COUNTY CO



State Y16-24D Pad Sec.16-T2N-R64W  
State Y16-15D  
Noble State Y16-15D Plan #1 (9-28-11)  
13:42, October 03 2011



Azimuths to True North  
Magnetic North: 8.69°

Magnetic Field  
Strength: 52980.9nT  
Dip Angle: 66.86°  
Date: 10/3/2011  
Model: IGRF2010

### WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 660'FSL & 1980'FEL	6100.0	-426.1	2178.2	40.133040	-104.554080	Point
LEGAL BOX 400' X 400' 662'FSL & 1975'FEL	6785.0	-424.1	2183.2	40.133046	-104.554062	Rectangle (Sides: L400.0 W400.0)
TARGET CIRCLE 660'FSL & 1980'FEL	6785.0	-426.1	2178.2	40.133040	-104.554080	Circle (Radius: 75.0)

### 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	500.0	0.00	0.00	500.0	0.0	0.0	0.00	0.00	0.0	
3	1901.2	28.02	101.07	1846.0	-64.5	329.6	2.00	101.07	335.9	
4	5195.5	28.02	101.07	4754.0	-361.6	1848.6	0.00	0.00	1883.6	
5	6596.6	0.00	0.00	6100.0	-426.1	2178.2	2.00	180.00	2219.5	TARGET BHL 660'FSL & 1980'FEL
6	7731.6	0.00	0.00	7235.0	-426.1	2178.2	0.00	0.00	2219.5	



## **Directional**

# **NOBLE ENERGY INC WELD COUNTY CO**

**SEC.16-T2N-R64W**

**State Y16-24D Pad Sec.16-T2N-R64W**

**State Y16-15D**

**Wellbore #1**

**Plan: Noble State Y16-15D Plan #1 (9-28-11)**

## **Standard Planning Report**

**03 October, 2011**



<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well State Y16-15D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 4940.0ft (Original Well Elev)
<b>Project:</b>	SEC.16-T2N-R64W	<b>MD Reference:</b>	WELL @ 4940.0ft (Original Well Elev)
<b>Site:</b>	State Y16-24D Pad Sec.16-T2N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	State Y16-15D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble State Y16-15D Plan #1 (9-28-11)		

<b>Project</b>	SEC.16-T2N-R64W, Weld County, Colorado		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		Using Well Reference Point
<b>Map Zone:</b>	Colorado Northern Zone		Using geodetic scale factor

Site						State Y16-24D Pad Sec.16-T2N-R64W											
<b>Site Position:</b>						<b>Northing:</b>			1,293,080.21 ft			<b>Latitude:</b>			40.134090		
<b>From:</b>			Lat/Long			<b>Easting:</b>			3,262,301.63ft			<b>Longitude:</b>			-104.561860		
<b>Position Uncertainty:</b>			0.0 ft			<b>Slot Radius:</b>			"			<b>Grid Convergence:</b>			0.61 °		

Well	State Y16-15D					
Well Position	+N/-S	43.7 ft	Northing:	1,293,123.88 ft	Latitude:	40.134210
	+E/-W	-2.8 ft	Easting:	3,262,298.37 ft	Longitude:	-104.561870
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,927.0 ft

<b>Wellbore</b>	Wellbore #1				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	10/3/2011	8.69	66.86	52,981

<b>Design</b>	Noble State Y16-15D Plan #1 (9-28-11)			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	101.07

<b>Plan Sections</b>										
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	
500.0	0.00	0.00	500.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,901.2	28.02	101.07	1,846.0	-64.5	329.6	2.00	2.00	0.00	101.07	
5,195.5	28.02	101.07	4,754.0	-361.6	1,848.6	0.00	0.00	0.00	0.00	
6,596.6	0.00	0.00	6,100.0	-426.1	2,178.2	2.00	-2.00	0.00	180.00	TARGET BHL 660'I
7,731.6	0.00	0.00	7,235.0	-426.1	2,178.2	0.00	0.00	0.00	0.00	

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<b>Project:</b>	SEC.16-T2N-R64W	<b>MD Reference:</b>	WELL @ 4940.0ft (Original Well Elev)
<b>Site:</b>	State Y16-24D Pad Sec.16-T2N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	State Y16-15D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble State Y16-15D Plan #1 (9-28-11)		

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
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	0.00
520.0	0.40	101.07	520.0	0.0	0.1	0.1	2.00	2.00	0.00
560.0	1.20	101.07	560.0	-0.1	0.6	0.6	2.00	2.00	0.00
600.0	2.00	101.07	600.0	-0.3	1.7	1.7	2.00	2.00	0.00
640.0	2.80	101.07	639.9	-0.7	3.4	3.4	2.00	2.00	0.00
680.0	3.60	101.07	679.9	-1.1	5.5	5.7	2.00	2.00	0.00
720.0	4.40	101.07	719.8	-1.6	8.3	8.4	2.00	2.00	0.00
760.0	5.20	101.07	759.6	-2.3	11.6	11.8	2.00	2.00	0.00
800.0	6.00	101.07	799.5	-3.0	15.4	15.7	2.00	2.00	0.00
800.6	6.01	101.07	800.0	-3.0	15.5	15.8	2.00	2.00	0.00
8 5/8"									
840.0	6.80	101.07	839.2	-3.9	19.8	20.2	2.00	2.00	0.00
880.0	7.60	101.07	878.9	-4.8	24.7	25.2	2.00	2.00	0.00
920.0	8.40	101.07	918.5	-5.9	30.2	30.7	2.00	2.00	0.00
960.0	9.20	101.07	958.0	-7.1	36.2	36.9	2.00	2.00	0.00
1,000.0	10.00	101.07	997.5	-8.4	42.7	43.5	2.00	2.00	0.00
1,040.0	10.80	101.07	1,036.8	-9.7	49.8	50.7	2.00	2.00	0.00
1,080.0	11.60	101.07	1,076.0	-11.2	57.4	58.5	2.00	2.00	0.00
1,120.0	12.40	101.07	1,115.2	-12.8	65.6	66.8	2.00	2.00	0.00
1,160.0	13.20	101.07	1,154.2	-14.5	74.3	75.7	2.00	2.00	0.00
1,200.0	14.00	101.07	1,193.1	-16.3	83.5	85.1	2.00	2.00	0.00
1,240.0	14.80	101.07	1,231.8	-18.2	93.3	95.0	2.00	2.00	0.00
1,280.0	15.60	101.07	1,270.4	-20.3	103.6	105.5	2.00	2.00	0.00
1,320.0	16.40	101.07	1,308.8	-22.4	114.4	116.6	2.00	2.00	0.00
1,360.0	17.20	101.07	1,347.1	-24.6	125.7	128.1	2.00	2.00	0.00
1,400.0	18.00	101.07	1,385.3	-26.9	137.6	140.2	2.00	2.00	0.00
1,440.0	18.80	101.07	1,423.2	-29.3	150.0	152.8	2.00	2.00	0.00
1,480.0	19.60	101.07	1,461.0	-31.9	162.9	166.0	2.00	2.00	0.00
1,520.0	20.40	101.07	1,498.6	-34.5	176.3	179.7	2.00	2.00	0.00
1,560.0	21.20	101.07	1,536.0	-37.2	190.3	193.9	2.00	2.00	0.00
1,600.0	22.00	101.07	1,573.2	-40.0	204.7	208.6	2.00	2.00	0.00
1,640.0	22.80	101.07	1,610.2	-43.0	219.7	223.8	2.00	2.00	0.00
1,680.0	23.60	101.07	1,646.9	-46.0	235.1	239.6	2.00	2.00	0.00
1,720.0	24.40	101.07	1,683.5	-49.1	251.1	255.9	2.00	2.00	0.00
1,760.0	25.20	101.07	1,719.8	-52.3	267.6	272.6	2.00	2.00	0.00
1,800.0	26.00	101.07	1,755.8	-55.7	284.5	289.9	2.00	2.00	0.00
1,840.0	26.80	101.07	1,791.7	-59.1	302.0	307.7	2.00	2.00	0.00
1,880.0	27.60	101.07	1,827.2	-62.6	319.9	326.0	2.00	2.00	0.00
1,901.2	28.02	101.07	1,846.0	-64.5	329.6	335.9	2.00	2.00	0.00
1,920.0	28.02	101.07	1,862.6	-66.2	338.3	344.7	0.00	0.00	0.00
1,960.0	28.02	101.07	1,897.9	-69.8	356.8	363.5	0.00	0.00	0.00

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<b>Site:</b>	State Y16-24D Pad Sec.16-T2N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	State Y16-15D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble State Y16-15D Plan #1 (9-28-11)		

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	28.02	101.07	1,933.2	-73.4	375.2	382.3	0.00	0.00	0.00
2,040.0	28.02	101.07	1,968.5	-77.0	393.6	401.1	0.00	0.00	0.00
2,080.0	28.02	101.07	2,003.8	-80.6	412.1	419.9	0.00	0.00	0.00
2,120.0	28.02	101.07	2,039.1	-84.2	430.5	438.7	0.00	0.00	0.00
2,160.0	28.02	101.07	2,074.5	-87.8	449.0	457.5	0.00	0.00	0.00
2,200.0	28.02	101.07	2,109.8	-91.4	467.4	476.3	0.00	0.00	0.00
2,240.0	28.02	101.07	2,145.1	-95.0	485.9	495.1	0.00	0.00	0.00
2,280.0	28.02	101.07	2,180.4	-98.7	504.3	513.9	0.00	0.00	0.00
2,320.0	28.02	101.07	2,215.7	-102.3	522.7	532.7	0.00	0.00	0.00
2,360.0	28.02	101.07	2,251.0	-105.9	541.2	551.5	0.00	0.00	0.00
2,400.0	28.02	101.07	2,286.3	-109.5	559.6	570.2	0.00	0.00	0.00
2,440.0	28.02	101.07	2,321.6	-113.1	578.1	589.0	0.00	0.00	0.00
2,480.0	28.02	101.07	2,356.9	-116.7	596.5	607.8	0.00	0.00	0.00
2,520.0	28.02	101.07	2,392.2	-120.3	615.0	626.6	0.00	0.00	0.00
2,560.0	28.02	101.07	2,427.6	-123.9	633.4	645.4	0.00	0.00	0.00
2,600.0	28.02	101.07	2,462.9	-127.5	651.9	664.2	0.00	0.00	0.00
2,640.0	28.02	101.07	2,498.2	-131.1	670.3	683.0	0.00	0.00	0.00
2,680.0	28.02	101.07	2,533.5	-134.7	688.7	701.8	0.00	0.00	0.00
2,720.0	28.02	101.07	2,568.8	-138.3	707.2	720.6	0.00	0.00	0.00
2,760.0	28.02	101.07	2,604.1	-142.0	725.6	739.4	0.00	0.00	0.00
2,800.0	28.02	101.07	2,639.4	-145.6	744.1	758.2	0.00	0.00	0.00
2,840.0	28.02	101.07	2,674.7	-149.2	762.5	777.0	0.00	0.00	0.00
2,880.0	28.02	101.07	2,710.0	-152.8	781.0	795.8	0.00	0.00	0.00
2,920.0	28.02	101.07	2,745.3	-156.4	799.4	814.6	0.00	0.00	0.00
2,960.0	28.02	101.07	2,780.7	-160.0	817.8	833.4	0.00	0.00	0.00
3,000.0	28.02	101.07	2,816.0	-163.6	836.3	852.1	0.00	0.00	0.00
3,040.0	28.02	101.07	2,851.3	-167.2	854.7	870.9	0.00	0.00	0.00
3,080.0	28.02	101.07	2,886.6	-170.8	873.2	889.7	0.00	0.00	0.00
3,120.0	28.02	101.07	2,921.9	-174.4	891.6	908.5	0.00	0.00	0.00
3,160.0	28.02	101.07	2,957.2	-178.0	910.1	927.3	0.00	0.00	0.00
3,200.0	28.02	101.07	2,992.5	-181.6	928.5	946.1	0.00	0.00	0.00
3,240.0	28.02	101.07	3,027.8	-185.2	947.0	964.9	0.00	0.00	0.00
3,280.0	28.02	101.07	3,063.1	-188.9	965.4	983.7	0.00	0.00	0.00
3,320.0	28.02	101.07	3,098.5	-192.5	983.8	1,002.5	0.00	0.00	0.00
3,360.0	28.02	101.07	3,133.8	-196.1	1,002.3	1,021.3	0.00	0.00	0.00
3,400.0	28.02	101.07	3,169.1	-199.7	1,020.7	1,040.1	0.00	0.00	0.00
3,440.0	28.02	101.07	3,204.4	-203.3	1,039.2	1,058.9	0.00	0.00	0.00
3,480.0	28.02	101.07	3,239.7	-206.9	1,057.6	1,077.7	0.00	0.00	0.00
3,520.0	28.02	101.07	3,275.0	-210.5	1,076.1	1,096.5	0.00	0.00	0.00
3,560.0	28.02	101.07	3,310.3	-214.1	1,094.5	1,115.2	0.00	0.00	0.00
3,600.0	28.02	101.07	3,345.6	-217.7	1,112.9	1,134.0	0.00	0.00	0.00
3,640.0	28.02	101.07	3,380.9	-221.3	1,131.4	1,152.8	0.00	0.00	0.00
3,680.0	28.02	101.07	3,416.2	-224.9	1,149.8	1,171.6	0.00	0.00	0.00
3,720.0	28.02	101.07	3,451.6	-228.5	1,168.3	1,190.4	0.00	0.00	0.00
3,760.0	28.02	101.07	3,486.9	-232.2	1,186.7	1,209.2	0.00	0.00	0.00
3,800.0	28.02	101.07	3,522.2	-235.8	1,205.2	1,228.0	0.00	0.00	0.00
3,840.0	28.02	101.07	3,557.5	-239.4	1,223.6	1,246.8	0.00	0.00	0.00
3,880.0	28.02	101.07	3,592.8	-243.0	1,242.1	1,265.6	0.00	0.00	0.00
3,920.0	28.02	101.07	3,628.1	-246.6	1,260.5	1,284.4	0.00	0.00	0.00
3,960.0	28.02	101.07	3,663.4	-250.2	1,278.9	1,303.2	0.00	0.00	0.00
4,000.0	28.02	101.07	3,698.7	-253.8	1,297.4	1,322.0	0.00	0.00	0.00
4,040.0	28.02	101.07	3,734.0	-257.4	1,315.8	1,340.8	0.00	0.00	0.00
4,080.0	28.02	101.07	3,769.3	-261.0	1,334.3	1,359.6	0.00	0.00	0.00
4,120.0	28.02	101.07	3,804.7	-264.6	1,352.7	1,378.4	0.00	0.00	0.00

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<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 4940.0ft (Original Well Elev)
<b>Project:</b>	SEC.16-T2N-R64W	<b>MD Reference:</b>	WELL @ 4940.0ft (Original Well Elev)
<b>Site:</b>	State Y16-24D Pad Sec.16-T2N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	State Y16-15D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble State Y16-15D Plan #1 (9-28-11)		

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	28.02	101.07	3,840.0	-268.2	1,371.2	1,397.1	0.00	0.00	0.00
4,200.0	28.02	101.07	3,875.3	-271.8	1,389.6	1,415.9	0.00	0.00	0.00
4,240.0	28.02	101.07	3,910.6	-275.5	1,408.0	1,434.7	0.00	0.00	0.00
4,280.0	28.02	101.07	3,945.9	-279.1	1,426.5	1,453.5	0.00	0.00	0.00
4,320.0	28.02	101.07	3,981.2	-282.7	1,444.9	1,472.3	0.00	0.00	0.00
4,360.0	28.02	101.07	4,016.5	-286.3	1,463.4	1,491.1	0.00	0.00	0.00
4,400.0	28.02	101.07	4,051.8	-289.9	1,481.8	1,509.9	0.00	0.00	0.00
4,440.0	28.02	101.07	4,087.1	-293.5	1,500.3	1,528.7	0.00	0.00	0.00
4,480.0	28.02	101.07	4,122.4	-297.1	1,518.7	1,547.5	0.00	0.00	0.00
4,520.0	28.02	101.07	4,157.8	-300.7	1,537.2	1,566.3	0.00	0.00	0.00
4,560.0	28.02	101.07	4,193.1	-304.3	1,555.6	1,585.1	0.00	0.00	0.00
4,600.0	28.02	101.07	4,228.4	-307.9	1,574.0	1,603.9	0.00	0.00	0.00
4,640.0	28.02	101.07	4,263.7	-311.5	1,592.5	1,622.7	0.00	0.00	0.00
4,680.0	28.02	101.07	4,299.0	-315.1	1,610.9	1,641.5	0.00	0.00	0.00
4,720.0	28.02	101.07	4,334.3	-318.7	1,629.4	1,660.3	0.00	0.00	0.00
4,760.0	28.02	101.07	4,369.6	-322.4	1,647.8	1,679.0	0.00	0.00	0.00
4,800.0	28.02	101.07	4,404.9	-326.0	1,666.3	1,697.8	0.00	0.00	0.00
4,840.0	28.02	101.07	4,440.2	-329.6	1,684.7	1,716.6	0.00	0.00	0.00
4,880.0	28.02	101.07	4,475.6	-333.2	1,703.1	1,735.4	0.00	0.00	0.00
4,920.0	28.02	101.07	4,510.9	-336.8	1,721.6	1,754.2	0.00	0.00	0.00
4,960.0	28.02	101.07	4,546.2	-340.4	1,740.0	1,773.0	0.00	0.00	0.00
5,000.0	28.02	101.07	4,581.5	-344.0	1,758.5	1,791.8	0.00	0.00	0.00
5,040.0	28.02	101.07	4,616.8	-347.6	1,776.9	1,810.6	0.00	0.00	0.00
5,080.0	28.02	101.07	4,652.1	-351.2	1,795.4	1,829.4	0.00	0.00	0.00
5,120.0	28.02	101.07	4,687.4	-354.8	1,813.8	1,848.2	0.00	0.00	0.00
5,160.0	28.02	101.07	4,722.7	-358.4	1,832.2	1,867.0	0.00	0.00	0.00
5,195.5	28.02	101.07	4,754.0	-361.6	1,848.6	1,883.6	0.00	0.00	0.00
5,200.0	27.93	101.07	4,758.0	-362.0	1,850.7	1,885.8	2.00	-2.00	0.00
5,240.0	27.13	101.07	4,793.5	-365.6	1,868.8	1,904.3	2.00	-2.00	0.00
5,280.0	26.33	101.07	4,829.2	-369.0	1,886.5	1,922.3	2.00	-2.00	0.00
5,320.0	25.53	101.07	4,865.2	-372.4	1,903.7	1,939.7	2.00	-2.00	0.00
5,360.0	24.73	101.07	4,901.4	-375.7	1,920.3	1,956.7	2.00	-2.00	0.00
5,400.0	23.93	101.07	4,937.9	-378.8	1,936.5	1,973.2	2.00	-2.00	0.00
5,440.0	23.13	101.07	4,974.5	-381.9	1,952.2	1,989.2	2.00	-2.00	0.00
5,480.0	22.33	101.07	5,011.4	-384.9	1,967.4	2,004.6	2.00	-2.00	0.00
5,520.0	21.53	101.07	5,048.5	-387.7	1,982.0	2,019.6	2.00	-2.00	0.00
5,560.0	20.73	101.07	5,085.8	-390.5	1,996.2	2,034.0	2.00	-2.00	0.00
5,600.0	19.93	101.07	5,123.3	-393.2	2,009.8	2,047.9	2.00	-2.00	0.00
5,640.0	19.13	101.07	5,161.0	-395.7	2,022.9	2,061.3	2.00	-2.00	0.00
5,680.0	18.33	101.07	5,198.9	-398.2	2,035.5	2,074.1	2.00	-2.00	0.00
5,720.0	17.53	101.07	5,237.0	-400.6	2,047.6	2,086.4	2.00	-2.00	0.00
5,760.0	16.73	101.07	5,275.2	-402.8	2,059.2	2,098.2	2.00	-2.00	0.00
5,800.0	15.93	101.07	5,313.6	-405.0	2,070.2	2,109.5	2.00	-2.00	0.00
5,840.0	15.13	101.07	5,352.1	-407.0	2,080.7	2,120.2	2.00	-2.00	0.00
5,880.0	14.33	101.07	5,390.8	-409.0	2,090.7	2,130.4	2.00	-2.00	0.00
5,920.0	13.53	101.07	5,429.6	-410.9	2,100.2	2,140.0	2.00	-2.00	0.00
5,960.0	12.73	101.07	5,468.6	-412.6	2,109.1	2,149.1	2.00	-2.00	0.00
6,000.0	11.93	101.07	5,507.7	-414.2	2,117.5	2,157.6	2.00	-2.00	0.00
6,040.0	11.13	101.07	5,546.9	-415.8	2,125.3	2,165.6	2.00	-2.00	0.00
6,080.0	10.33	101.07	5,586.2	-417.2	2,132.6	2,173.1	2.00	-2.00	0.00
6,120.0	9.53	101.07	5,625.6	-418.5	2,139.4	2,180.0	2.00	-2.00	0.00
6,160.0	8.73	101.07	5,665.1	-419.7	2,145.6	2,186.3	2.00	-2.00	0.00
6,200.0	7.93	101.07	5,704.6	-420.9	2,151.3	2,192.1	2.00	-2.00	0.00
6,240.0	7.13	101.07	5,744.3	-421.9	2,156.5	2,197.4	2.00	-2.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well State Y16-15D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 4940.0ft (Original Well Elev)
<b>Project:</b>	SEC.16-T2N-R64W	<b>MD Reference:</b>	WELL @ 4940.0ft (Original Well Elev)
<b>Site:</b>	State Y16-24D Pad Sec.16-T2N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	State Y16-15D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble State Y16-15D Plan #1 (9-28-11)		

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)
6,280.0	6.33	101.07	5,784.0	-422.8	2,161.1	2,202.0	2.00	-2.00	0.00
6,320.0	5.53	101.07	5,823.8	-423.6	2,165.1	2,206.2	2.00	-2.00	0.00
6,360.0	4.73	101.07	5,863.6	-424.2	2,168.6	2,209.8	2.00	-2.00	0.00
6,400.0	3.93	101.07	5,903.5	-424.8	2,171.6	2,212.8	2.00	-2.00	0.00
6,440.0	3.13	101.07	5,943.4	-425.3	2,174.0	2,215.2	2.00	-2.00	0.00
6,480.0	2.33	101.07	5,983.4	-425.7	2,175.9	2,217.1	2.00	-2.00	0.00
6,520.0	1.53	101.07	6,023.4	-425.9	2,177.2	2,218.5	2.00	-2.00	0.00
6,560.0	0.73	101.07	6,063.4	-426.1	2,178.0	2,219.3	2.00	-2.00	0.00
6,596.6	0.00	0.00	6,100.0	-426.1	2,178.2	2,219.5	2.00	-2.00	0.00
TARGET BHL 660'FSL & 1980'FEL									
6,600.0	0.00	0.00	6,103.4	-426.1	2,178.2	2,219.5	0.00	0.00	0.00
6,640.0	0.00	0.00	6,143.4	-426.1	2,178.2	2,219.5	0.00	0.00	0.00
6,680.0	0.00	0.00	6,183.4	-426.1	2,178.2	2,219.5	0.00	0.00	0.00
6,720.0	0.00	0.00	6,223.4	-426.1	2,178.2	2,219.5	0.00	0.00	0.00
6,760.0	0.00	0.00	6,263.4	-426.1	2,178.2	2,219.5	0.00	0.00	0.00
6,800.0	0.00	0.00	6,303.4	-426.1	2,178.2	2,219.5	0.00	0.00	0.00
6,840.0	0.00	0.00	6,343.4	-426.1	2,178.2	2,219.5	0.00	0.00	0.00
6,880.0	0.00	0.00	6,383.4	-426.1	2,178.2	2,219.5	0.00	0.00	0.00
6,920.0	0.00	0.00	6,423.4	-426.1	2,178.2	2,219.5	0.00	0.00	0.00
6,960.0	0.00	0.00	6,463.4	-426.1	2,178.2	2,219.5	0.00	0.00	0.00
7,000.0	0.00	0.00	6,503.4	-426.1	2,178.2	2,219.5	0.00	0.00	0.00
7,040.0	0.00	0.00	6,543.4	-426.1	2,178.2	2,219.5	0.00	0.00	0.00
7,080.0	0.00	0.00	6,583.4	-426.1	2,178.2	2,219.5	0.00	0.00	0.00
7,120.0	0.00	0.00	6,623.4	-426.1	2,178.2	2,219.5	0.00	0.00	0.00
7,160.0	0.00	0.00	6,663.4	-426.1	2,178.2	2,219.5	0.00	0.00	0.00
7,200.0	0.00	0.00	6,703.4	-426.1	2,178.2	2,219.5	0.00	0.00	0.00
7,240.0	0.00	0.00	6,743.4	-426.1	2,178.2	2,219.5	0.00	0.00	0.00
7,280.0	0.00	0.00	6,783.4	-426.1	2,178.2	2,219.5	0.00	0.00	0.00
7,281.6	0.00	0.00	6,785.0	-426.1	2,178.2	2,219.5	0.00	0.00	0.00
NIOBRARA - LEGAL BOX 400' X 400' 662'FSL & 1975'FEL - TARGET CIRCLE 660'FSL & 1980'FEL									
7,320.0	0.00	0.00	6,823.4	-426.1	2,178.2	2,219.5	0.00	0.00	0.00
7,360.0	0.00	0.00	6,863.4	-426.1	2,178.2	2,219.5	0.00	0.00	0.00
7,400.0	0.00	0.00	6,903.4	-426.1	2,178.2	2,219.5	0.00	0.00	0.00
7,440.0	0.00	0.00	6,943.4	-426.1	2,178.2	2,219.5	0.00	0.00	0.00
7,480.0	0.00	0.00	6,983.4	-426.1	2,178.2	2,219.5	0.00	0.00	0.00
7,520.0	0.00	0.00	7,023.4	-426.1	2,178.2	2,219.5	0.00	0.00	0.00
7,560.0	0.00	0.00	7,063.4	-426.1	2,178.2	2,219.5	0.00	0.00	0.00
7,581.6	0.00	0.00	7,085.0	-426.1	2,178.2	2,219.5	0.00	0.00	0.00
CODELL									
7,600.0	0.00	0.00	7,103.4	-426.1	2,178.2	2,219.5	0.00	0.00	0.00
7,640.0	0.00	0.00	7,143.4	-426.1	2,178.2	2,219.5	0.00	0.00	0.00
7,680.0	0.00	0.00	7,183.4	-426.1	2,178.2	2,219.5	0.00	0.00	0.00
7,720.0	0.00	0.00	7,223.4	-426.1	2,178.2	2,219.5	0.00	0.00	0.00
7,731.6	0.00	0.00	7,235.0	-426.1	2,178.2	2,219.5	0.00	0.00	0.00



<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well State Y16-15D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 4940.0ft (Original Well Elev)
<b>Project:</b>	SEC.16-T2N-R64W	<b>MD Reference:</b>	WELL @ 4940.0ft (Original Well Elev)
<b>Site:</b>	State Y16-24D Pad Sec.16-T2N-R64W	<b>North Reference:</b>	True
<b>Well:</b>	State Y16-15D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble State Y16-15D Plan #1 (9-28-11)		

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)		
LEGAL BOX 400' X 400'	0.00	0.00	6,785.0	-424.1	2,183.2	1,292,722.92	3,264,485.84	40.133046	-104.554062
- plan misses target center by 5.4ft at 7281.6ft MD (6785.0 TVD, -426.1 N, 2178.2 E)									
- Rectangle (sides W400.0 H400.0 D450.0)									
TARGET BHL 660'FS	0.00	0.00	6,100.0	-426.1	2,178.2	1,292,720.84	3,264,480.90	40.133040	-104.554080
- plan hits target center									
- Point									
TARGET CIRCLE 660'	0.00	0.00	6,785.0	-426.1	2,178.2	1,292,720.84	3,264,480.90	40.133040	-104.554080
- plan hits target center									
- Circle (radius 75.0)									

Casing Points					
	Measured Depth	Vertical Depth		Casing Diameter	Hole Diameter
	(ft)	(ft)	Name	(")	(")
	800.6	800.0	8 5/8"	8-5/8	12-1/4

Formations					
	Measured Depth	Vertical Depth			
	(ft)	(ft)	Name	Lithology	Dip
					(°)
					Dip Direction
					(°)
	7,281.6	6,785.0	NIOBRARA		0.00
	7,581.6	7,085.0	CODELL		0.00