

# ENSIGN

## Directional

### Well Name: Calvary USX EE29-03D

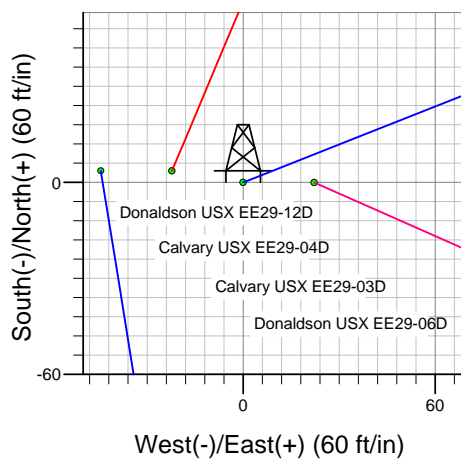
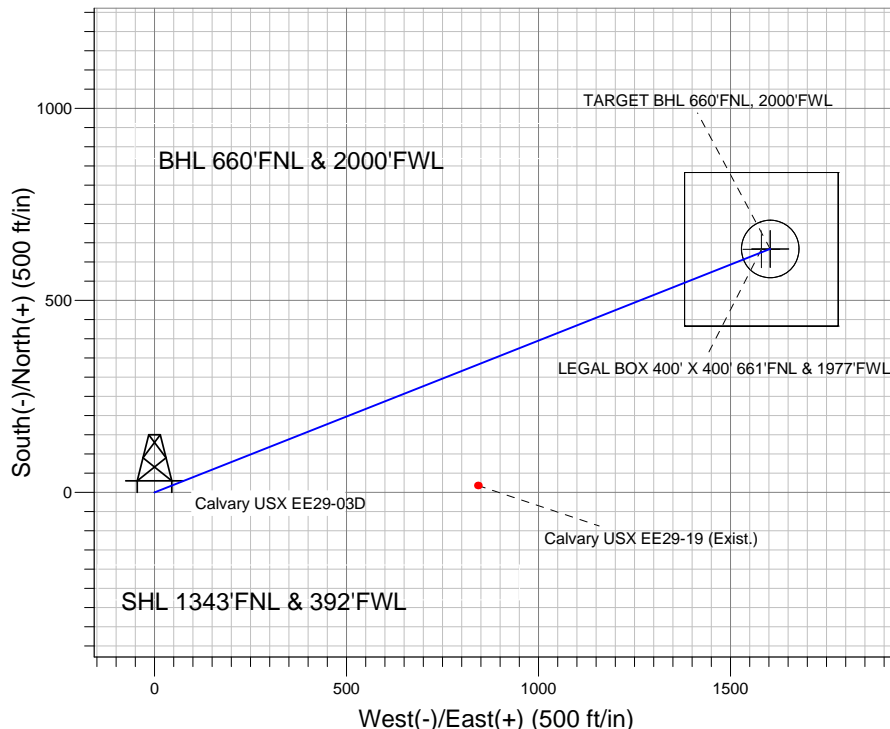
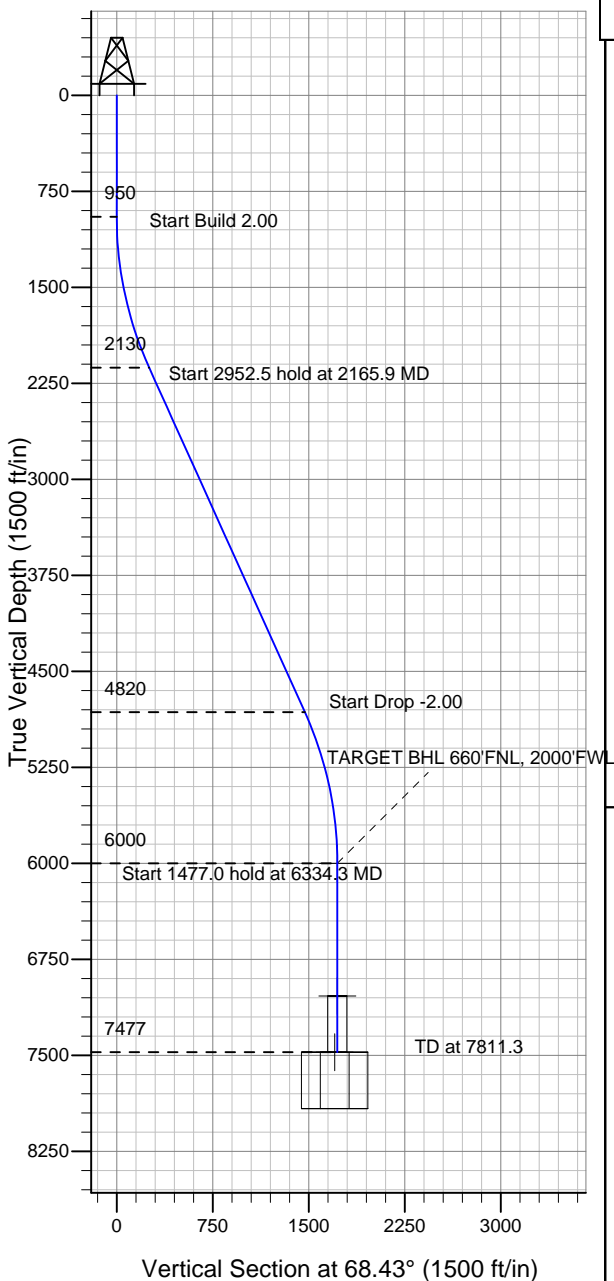
Surface Location: Donaldson USX EE29-12D Pad Sec.29-T7N-R65W  
North American Datum 1983 US State Plane 1983 Colorado Northern Zone

Ground Elevation: 4924.0

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1444053.29	3223658.75	40.549540	-104.695160	

Original Well Elev WELL @ 4937.0ft (Original Well Elev)

### NOBLE ENERGY INC WELD COUNTY CO



Donaldson USX EE29-12D Pad Sec.29-T7N-R65W  
Calvary USX EE29-03D  
Noble Calvary USX EE29-03D Plan #1 (5-04-11)  
9:40, May 09 2011



Azimuths to True North  
Magnetic North: 8.85°

Magnetic Field  
Strength: 53227.1snT  
Dip Angle: 67.19°  
Date: 5/9/2011  
Model: IGRF2010

#### WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 660'FNL, 2000'FWL	6000.0	634.0	1603.5	40.551280	-104.689390	Point
TARGET CIRCLE 660'FNL & 2000'FWL	7037.0	634.0	1603.5	40.551280	-104.689390	Circle (Radius: 75.0)
LEGAL BOX 400' X 400' 661'FNL & 1977'FWL	7477.0	633.0	1580.5	40.551277	-104.689473	Rectangle (Sides: L400.0 W400.0)

#### 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	950.0	0.00	0.00	950.0	0.0	0.0	0.00	0.00	0.0	
3	2165.9	24.32	68.43	2129.8	93.5	236.4	2.00	68.43	254.2	
4	5118.4	24.32	68.43	4820.2	540.5	1367.1	0.00	0.00	1470.1	
5	6334.3	0.00	0.00	6000.0	634.0	1603.5	2.00	180.00	1724.3	TARGET BHL 660'FNL, 2000'FWL
6	7811.3	0.00	0.00	7477.0	634.0	1603.5	0.00	0.00	1724.3	



## **Directional**

### **NOBLE ENERGY INC WELD COUNTY CO**

**SEC.29-T7N-R65W**

**Donaldson USX EE29-12D Pad Sec.29-T7N-R65W**

**Calvary USX EE29-03D**

**Wellbore #1**

**Plan: Noble Calvary USX EE29-03D Plan #1 (5-04-11)**

### **Standard Planning Report**

**09 May, 2011**



<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Calvary USX EE29-03D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 4937.0ft (Original Well Elev)
<b>Project:</b>	SEC.29-T7N-R65W	<b>MD Reference:</b>	WELL @ 4937.0ft (Original Well Elev)
<b>Site:</b>	Donaldson USX EE29-12D Pad Sec.29-T7N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	Calvary USX EE29-03D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Calvary USX EE29-03D Plan #1 (5-04-1		

<b>Project</b>	SEC.29-T7N-R65W, 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						Donaldson USX EE29-12D Pad Sec.29-T7N-R65W											
Site Position:						Northing:			1,444,056.55 ft			Latitude:			40.549550		
From:			Lat/Long			Easting:			3,223,614.25 ft			Longitude:			-104.695320		
Position Uncertainty:			0.0 ft			Slot Radius:			"			Grid Convergence:			0.52 °		

Well	Calvary USX EE29-03D					
Well Position	+N/-S	-3.7 ft	Northing:	1,444,053.29 ft	Latitude:	40.549540
	+E/-W	44.5 ft	Easting:	3,223,658.75 ft	Longitude:	-104.695160
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,924.0 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	5/9/2011	8.85	67.19	53,227

<b>Design</b>	Noble Calvary USX EE29-03D Plan #1 (5-04-11)			
<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	68.43

<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	
950.0	0.00	0.00	950.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,165.9	24.32	68.43	2,129.8	93.5	236.4	2.00	2.00	0.00	68.43	
5,118.4	24.32	68.43	4,820.2	540.5	1,367.1	0.00	0.00	0.00	0.00	
6,334.3	0.00	0.00	6,000.0	634.0	1,603.5	2.00	-2.00	0.00	180.00	TARGET BHL 660'I
7,811.3	0.00	0.00	7,477.0	634.0	1,603.5	0.00	0.00	0.00	0.00	

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Calvary USX EE29-03D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 4937.0ft (Original Well Elev)
<b>Project:</b>	SEC.29-T7N-R65W	<b>MD Reference:</b>	WELL @ 4937.0ft (Original Well Elev)
<b>Site:</b>	Donaldson USX EE29-12D Pad Sec.29-T7N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	Calvary USX EE29-03D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Calvary USX EE29-03D Plan #1 (5-04-1)		

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
880.0	0.00	0.00	880.0	0.0	0.0	0.0	0.00	0.00	0.00
920.0	0.00	0.00	920.0	0.0	0.0	0.0	0.00	0.00	0.00
950.0	0.00	0.00	950.0	0.0	0.0	0.0	0.00	0.00	0.00
960.0	0.20	68.43	960.0	0.0	0.0	0.0	2.00	2.00	0.00
1,000.0	1.00	68.43	1,000.0	0.2	0.4	0.4	2.00	2.00	0.00
1,040.0	1.80	68.43	1,040.0	0.5	1.3	1.4	2.00	2.00	0.00
1,080.0	2.60	68.43	1,080.0	1.1	2.7	2.9	2.00	2.00	0.00
1,120.0	3.40	68.43	1,119.9	1.9	4.7	5.0	2.00	2.00	0.00
1,160.0	4.20	68.43	1,159.8	2.8	7.2	7.7	2.00	2.00	0.00
1,200.0	5.00	68.43	1,199.7	4.0	10.1	10.9	2.00	2.00	0.00
1,240.0	5.80	68.43	1,239.5	5.4	13.6	14.7	2.00	2.00	0.00
1,280.0	6.60	68.43	1,279.3	7.0	17.7	19.0	2.00	2.00	0.00
1,320.0	7.40	68.43	1,319.0	8.8	22.2	23.9	2.00	2.00	0.00
1,360.0	8.20	68.43	1,358.6	10.8	27.2	29.3	2.00	2.00	0.00
1,400.0	9.00	68.43	1,398.2	13.0	32.8	35.3	2.00	2.00	0.00
1,440.0	9.80	68.43	1,437.6	15.4	38.9	41.8	2.00	2.00	0.00
1,480.0	10.60	68.43	1,477.0	18.0	45.5	48.9	2.00	2.00	0.00
1,520.0	11.40	68.43	1,516.2	20.8	52.6	56.5	2.00	2.00	0.00
1,560.0	12.20	68.43	1,555.4	23.8	60.2	64.7	2.00	2.00	0.00
1,600.0	13.00	68.43	1,594.4	27.0	68.3	73.4	2.00	2.00	0.00
1,640.0	13.80	68.43	1,633.3	30.4	76.9	82.7	2.00	2.00	0.00
1,680.0	14.60	68.43	1,672.1	34.0	86.0	92.5	2.00	2.00	0.00
1,720.0	15.40	68.43	1,710.8	37.8	95.7	102.9	2.00	2.00	0.00
1,760.0	16.20	68.43	1,749.3	41.8	105.8	113.7	2.00	2.00	0.00
1,800.0	17.00	68.43	1,787.6	46.0	116.4	125.2	2.00	2.00	0.00
1,840.0	17.80	68.43	1,825.8	50.4	127.5	137.1	2.00	2.00	0.00
1,880.0	18.60	68.43	1,863.8	55.0	139.2	149.6	2.00	2.00	0.00
1,920.0	19.40	68.43	1,901.6	59.8	151.3	162.7	2.00	2.00	0.00
1,960.0	20.20	68.43	1,939.2	64.8	163.9	176.2	2.00	2.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Calvary USX EE29-03D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 4937.0ft (Original Well Elev)
<b>Project:</b>	SEC.29-T7N-R65W	<b>MD Reference:</b>	WELL @ 4937.0ft (Original Well Elev)
<b>Site:</b>	Donaldson USX EE29-12D Pad Sec.29-T7N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	Calvary USX EE29-03D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Calvary USX EE29-03D Plan #1 (5-04-1)		

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	21.00	68.43	1,976.6	70.0	176.9	190.3	2.00	2.00	0.00	
2,040.0	21.80	68.43	2,013.9	75.3	190.5	204.9	2.00	2.00	0.00	
2,080.0	22.60	68.43	2,050.9	80.9	204.6	220.0	2.00	2.00	0.00	
2,120.0	23.40	68.43	2,087.7	86.6	219.1	235.6	2.00	2.00	0.00	
2,160.0	24.20	68.43	2,124.3	92.6	234.1	251.8	2.00	2.00	0.00	
2,165.9	24.32	68.43	2,129.8	93.5	236.4	254.2	2.00	2.00	0.00	
2,200.0	24.32	68.43	2,160.8	98.6	249.4	268.2	0.00	0.00	0.00	
2,240.0	24.32	68.43	2,197.2	104.7	264.8	284.7	0.00	0.00	0.00	
2,280.0	24.32	68.43	2,233.7	110.7	280.1	301.2	0.00	0.00	0.00	
2,320.0	24.32	68.43	2,270.1	116.8	295.4	317.6	0.00	0.00	0.00	
2,360.0	24.32	68.43	2,306.6	122.8	310.7	334.1	0.00	0.00	0.00	
2,400.0	24.32	68.43	2,343.1	128.9	326.0	350.6	0.00	0.00	0.00	
2,440.0	24.32	68.43	2,379.5	135.0	341.3	367.1	0.00	0.00	0.00	
2,480.0	24.32	68.43	2,416.0	141.0	356.7	383.5	0.00	0.00	0.00	
2,520.0	24.32	68.43	2,452.4	147.1	372.0	400.0	0.00	0.00	0.00	
2,560.0	24.32	68.43	2,488.9	153.1	387.3	416.5	0.00	0.00	0.00	
2,600.0	24.32	68.43	2,525.3	159.2	402.6	432.9	0.00	0.00	0.00	
2,640.0	24.32	68.43	2,561.8	165.2	417.9	449.4	0.00	0.00	0.00	
2,680.0	24.32	68.43	2,598.2	171.3	433.3	465.9	0.00	0.00	0.00	
2,720.0	24.32	68.43	2,634.7	177.4	448.6	482.4	0.00	0.00	0.00	
2,760.0	24.32	68.43	2,671.1	183.4	463.9	498.8	0.00	0.00	0.00	
2,800.0	24.32	68.43	2,707.6	189.5	479.2	515.3	0.00	0.00	0.00	
2,840.0	24.32	68.43	2,744.0	195.5	494.5	531.8	0.00	0.00	0.00	
2,880.0	24.32	68.43	2,780.5	201.6	509.9	548.3	0.00	0.00	0.00	
2,920.0	24.32	68.43	2,816.9	207.6	525.2	564.7	0.00	0.00	0.00	
2,960.0	24.32	68.43	2,853.4	213.7	540.5	581.2	0.00	0.00	0.00	
3,000.0	24.32	68.43	2,889.8	219.8	555.8	597.7	0.00	0.00	0.00	
3,040.0	24.32	68.43	2,926.3	225.8	571.1	614.1	0.00	0.00	0.00	
3,080.0	24.32	68.43	2,962.7	231.9	586.4	630.6	0.00	0.00	0.00	
3,120.0	24.32	68.43	2,999.2	237.9	601.8	647.1	0.00	0.00	0.00	
3,160.0	24.32	68.43	3,035.6	244.0	617.1	663.6	0.00	0.00	0.00	
3,200.0	24.32	68.43	3,072.1	250.0	632.4	680.0	0.00	0.00	0.00	
3,240.0	24.32	68.43	3,108.5	256.1	647.7	696.5	0.00	0.00	0.00	
3,280.0	24.32	68.43	3,145.0	262.2	663.0	713.0	0.00	0.00	0.00	
3,320.0	24.32	68.43	3,181.4	268.2	678.4	729.5	0.00	0.00	0.00	
3,360.0	24.32	68.43	3,217.9	274.3	693.7	745.9	0.00	0.00	0.00	
3,400.0	24.32	68.43	3,254.3	280.3	709.0	762.4	0.00	0.00	0.00	
3,440.0	24.32	68.43	3,290.8	286.4	724.3	778.9	0.00	0.00	0.00	
3,480.0	24.32	68.43	3,327.2	292.4	739.6	795.3	0.00	0.00	0.00	
3,520.0	24.32	68.43	3,363.7	298.5	754.9	811.8	0.00	0.00	0.00	
3,560.0	24.32	68.43	3,400.1	304.6	770.3	828.3	0.00	0.00	0.00	
3,600.0	24.32	68.43	3,436.6	310.6	785.6	844.8	0.00	0.00	0.00	
3,640.0	24.32	68.43	3,473.0	316.7	800.9	861.2	0.00	0.00	0.00	
3,680.0	24.32	68.43	3,509.5	322.7	816.2	877.7	0.00	0.00	0.00	
3,720.0	24.32	68.43	3,545.9	328.8	831.5	894.2	0.00	0.00	0.00	
3,760.0	24.32	68.43	3,582.4	334.8	846.9	910.7	0.00	0.00	0.00	
3,800.0	24.32	68.43	3,618.8	340.9	862.2	927.1	0.00	0.00	0.00	
3,840.0	24.32	68.43	3,655.3	346.9	877.5	943.6	0.00	0.00	0.00	
3,880.0	24.32	68.43	3,691.7	353.0	892.8	960.1	0.00	0.00	0.00	
3,920.0	24.32	68.43	3,728.2	359.1	908.1	976.5	0.00	0.00	0.00	
3,960.0	24.32	68.43	3,764.6	365.1	923.5	993.0	0.00	0.00	0.00	
4,000.0	24.32	68.43	3,801.1	371.2	938.8	1,009.5	0.00	0.00	0.00	
4,040.0	24.32	68.43	3,837.5	377.2	954.1	1,026.0	0.00	0.00	0.00	

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<b>Project:</b>	SEC.29-T7N-R65W	<b>MD Reference:</b>	WELL @ 4937.0ft (Original Well Elev)
<b>Site:</b>	Donaldson USX EE29-12D Pad Sec.29-T7N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	Calvary USX EE29-03D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Calvary USX EE29-03D Plan #1 (5-04-1)		

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)
4,080.0	24.32	68.43	3,874.0	383.3	969.4	1,042.4	0.00	0.00	0.00
4,120.0	24.32	68.43	3,910.4	389.3	984.7	1,058.9	0.00	0.00	0.00
4,160.0	24.32	68.43	3,946.9	395.4	1,000.0	1,075.4	0.00	0.00	0.00
4,200.0	24.32	68.43	3,983.3	401.5	1,015.4	1,091.8	0.00	0.00	0.00
4,240.0	24.32	68.43	4,019.8	407.5	1,030.7	1,108.3	0.00	0.00	0.00
4,280.0	24.32	68.43	4,056.2	413.6	1,046.0	1,124.8	0.00	0.00	0.00
4,320.0	24.32	68.43	4,092.7	419.6	1,061.3	1,141.3	0.00	0.00	0.00
4,360.0	24.32	68.43	4,129.1	425.7	1,076.6	1,157.7	0.00	0.00	0.00
4,400.0	24.32	68.43	4,165.6	431.7	1,092.0	1,174.2	0.00	0.00	0.00
4,440.0	24.32	68.43	4,202.0	437.8	1,107.3	1,190.7	0.00	0.00	0.00
4,480.0	24.32	68.43	4,238.5	443.9	1,122.6	1,207.2	0.00	0.00	0.00
4,520.0	24.32	68.43	4,274.9	449.9	1,137.9	1,223.6	0.00	0.00	0.00
4,560.0	24.32	68.43	4,311.4	456.0	1,153.2	1,240.1	0.00	0.00	0.00
4,600.0	24.32	68.43	4,347.8	462.0	1,168.6	1,256.6	0.00	0.00	0.00
4,640.0	24.32	68.43	4,384.3	468.1	1,183.9	1,273.0	0.00	0.00	0.00
4,680.0	24.32	68.43	4,420.7	474.1	1,199.2	1,289.5	0.00	0.00	0.00
4,720.0	24.32	68.43	4,457.2	480.2	1,214.5	1,306.0	0.00	0.00	0.00
4,760.0	24.32	68.43	4,493.6	486.3	1,229.8	1,322.5	0.00	0.00	0.00
4,800.0	24.32	68.43	4,530.1	492.3	1,245.1	1,338.9	0.00	0.00	0.00
4,840.0	24.32	68.43	4,566.5	498.4	1,260.5	1,355.4	0.00	0.00	0.00
4,880.0	24.32	68.43	4,603.0	504.4	1,275.8	1,371.9	0.00	0.00	0.00
4,920.0	24.32	68.43	4,639.4	510.5	1,291.1	1,388.4	0.00	0.00	0.00
4,960.0	24.32	68.43	4,675.9	516.5	1,306.4	1,404.8	0.00	0.00	0.00
5,000.0	24.32	68.43	4,712.3	522.6	1,321.7	1,421.3	0.00	0.00	0.00
5,040.0	24.32	68.43	4,748.8	528.6	1,337.1	1,437.8	0.00	0.00	0.00
5,080.0	24.32	68.43	4,785.3	534.7	1,352.4	1,454.2	0.00	0.00	0.00
5,118.4	24.32	68.43	4,820.2	540.5	1,367.1	1,470.1	0.00	0.00	0.00
5,120.0	24.29	68.43	4,821.7	540.8	1,367.7	1,470.7	2.00	-2.00	0.00
5,160.0	23.49	68.43	4,858.3	546.7	1,382.8	1,486.9	2.00	-2.00	0.00
5,200.0	22.69	68.43	4,895.1	552.5	1,397.3	1,502.6	2.00	-2.00	0.00
5,240.0	21.89	68.43	4,932.1	558.1	1,411.4	1,517.8	2.00	-2.00	0.00
5,280.0	21.09	68.43	4,969.3	563.4	1,425.1	1,532.4	2.00	-2.00	0.00
5,320.0	20.29	68.43	5,006.7	568.6	1,438.2	1,546.5	2.00	-2.00	0.00
5,360.0	19.49	68.43	5,044.3	573.6	1,450.9	1,560.2	2.00	-2.00	0.00
5,400.0	18.69	68.43	5,082.1	578.5	1,463.0	1,573.2	2.00	-2.00	0.00
5,440.0	17.89	68.43	5,120.1	583.1	1,474.7	1,585.8	2.00	-2.00	0.00
5,480.0	17.09	68.43	5,158.3	587.5	1,485.9	1,597.8	2.00	-2.00	0.00
5,520.0	16.29	68.43	5,196.6	591.7	1,496.6	1,609.3	2.00	-2.00	0.00
5,560.0	15.49	68.43	5,235.1	595.7	1,506.7	1,620.2	2.00	-2.00	0.00
5,600.0	14.69	68.43	5,273.7	599.6	1,516.4	1,630.7	2.00	-2.00	0.00
5,640.0	13.89	68.43	5,312.4	603.2	1,525.6	1,640.5	2.00	-2.00	0.00
5,680.0	13.09	68.43	5,351.3	606.6	1,534.3	1,649.9	2.00	-2.00	0.00
5,720.0	12.29	68.43	5,390.4	609.9	1,542.4	1,658.6	2.00	-2.00	0.00
5,760.0	11.49	68.43	5,429.5	612.9	1,550.1	1,666.9	2.00	-2.00	0.00
5,800.0	10.69	68.43	5,468.8	615.7	1,557.3	1,674.6	2.00	-2.00	0.00
5,840.0	9.89	68.43	5,508.1	618.3	1,563.9	1,681.7	2.00	-2.00	0.00
5,880.0	9.09	68.43	5,547.6	620.8	1,570.0	1,688.3	2.00	-2.00	0.00
5,920.0	8.29	68.43	5,587.1	623.0	1,575.7	1,694.3	2.00	-2.00	0.00
5,960.0	7.49	68.43	5,626.7	625.0	1,580.8	1,699.8	2.00	-2.00	0.00
6,000.0	6.69	68.43	5,666.4	626.8	1,585.3	1,704.8	2.00	-2.00	0.00
6,040.0	5.89	68.43	5,706.2	628.4	1,589.4	1,709.1	2.00	-2.00	0.00
6,080.0	5.09	68.43	5,746.0	629.8	1,593.0	1,713.0	2.00	-2.00	0.00
6,120.0	4.29	68.43	5,785.9	631.0	1,596.0	1,716.2	2.00	-2.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Calvary USX EE29-03D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 4937.0ft (Original Well Elev)
<b>Project:</b>	SEC.29-T7N-R65W	<b>MD Reference:</b>	WELL @ 4937.0ft (Original Well Elev)
<b>Site:</b>	Donaldson USX EE29-12D Pad Sec.29-T7N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	Calvary USX EE29-03D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Calvary USX EE29-03D Plan #1 (5-04-1)		

**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)
6,160.0	3.49	68.43	5,825.8	632.0	1,598.5	1,719.0	2.00	-2.00	0.00
6,200.0	2.69	68.43	5,865.7	632.8	1,600.5	1,721.1	2.00	-2.00	0.00
6,240.0	1.89	68.43	5,905.7	633.4	1,602.0	1,722.7	2.00	-2.00	0.00
6,280.0	1.09	68.43	5,945.7	633.8	1,603.0	1,723.7	2.00	-2.00	0.00
6,320.0	0.29	68.43	5,985.7	634.0	1,603.4	1,724.2	2.00	-2.00	0.00
6,334.3	0.00	0.00	6,000.0	634.0	1,603.5	1,724.3	2.00	-2.00	0.00
<b>TARGET BHL 660'FNL, 2000'FWL</b>									
6,360.0	0.00	0.00	6,025.7	634.0	1,603.5	1,724.3	0.00	0.00	0.00
6,400.0	0.00	0.00	6,065.7	634.0	1,603.5	1,724.3	0.00	0.00	0.00
6,440.0	0.00	0.00	6,105.7	634.0	1,603.5	1,724.3	0.00	0.00	0.00
6,480.0	0.00	0.00	6,145.7	634.0	1,603.5	1,724.3	0.00	0.00	0.00
6,520.0	0.00	0.00	6,185.7	634.0	1,603.5	1,724.3	0.00	0.00	0.00
6,560.0	0.00	0.00	6,225.7	634.0	1,603.5	1,724.3	0.00	0.00	0.00
6,600.0	0.00	0.00	6,265.7	634.0	1,603.5	1,724.3	0.00	0.00	0.00
6,640.0	0.00	0.00	6,305.7	634.0	1,603.5	1,724.3	0.00	0.00	0.00
6,680.0	0.00	0.00	6,345.7	634.0	1,603.5	1,724.3	0.00	0.00	0.00
6,720.0	0.00	0.00	6,385.7	634.0	1,603.5	1,724.3	0.00	0.00	0.00
6,760.0	0.00	0.00	6,425.7	634.0	1,603.5	1,724.3	0.00	0.00	0.00
6,800.0	0.00	0.00	6,465.7	634.0	1,603.5	1,724.3	0.00	0.00	0.00
6,840.0	0.00	0.00	6,505.7	634.0	1,603.5	1,724.3	0.00	0.00	0.00
6,880.0	0.00	0.00	6,545.7	634.0	1,603.5	1,724.3	0.00	0.00	0.00
6,920.0	0.00	0.00	6,585.7	634.0	1,603.5	1,724.3	0.00	0.00	0.00
6,960.0	0.00	0.00	6,625.7	634.0	1,603.5	1,724.3	0.00	0.00	0.00
7,000.0	0.00	0.00	6,665.7	634.0	1,603.5	1,724.3	0.00	0.00	0.00
7,040.0	0.00	0.00	6,705.7	634.0	1,603.5	1,724.3	0.00	0.00	0.00
7,080.0	0.00	0.00	6,745.7	634.0	1,603.5	1,724.3	0.00	0.00	0.00
7,120.0	0.00	0.00	6,785.7	634.0	1,603.5	1,724.3	0.00	0.00	0.00
7,160.0	0.00	0.00	6,825.7	634.0	1,603.5	1,724.3	0.00	0.00	0.00
7,200.0	0.00	0.00	6,865.7	634.0	1,603.5	1,724.3	0.00	0.00	0.00
7,240.0	0.00	0.00	6,905.7	634.0	1,603.5	1,724.3	0.00	0.00	0.00
7,280.0	0.00	0.00	6,945.7	634.0	1,603.5	1,724.3	0.00	0.00	0.00
7,320.0	0.00	0.00	6,985.7	634.0	1,603.5	1,724.3	0.00	0.00	0.00
7,360.0	0.00	0.00	7,025.7	634.0	1,603.5	1,724.3	0.00	0.00	0.00
7,371.3	0.00	0.00	7,037.0	634.0	1,603.5	1,724.3	0.00	0.00	0.00
<b>NIOBRARA - TARGET CIRCLE 660'FNL &amp; 2000'FWL</b>									
7,400.0	0.00	0.00	7,065.7	634.0	1,603.5	1,724.3	0.00	0.00	0.00
7,440.0	0.00	0.00	7,105.7	634.0	1,603.5	1,724.3	0.00	0.00	0.00
7,480.0	0.00	0.00	7,145.7	634.0	1,603.5	1,724.3	0.00	0.00	0.00
7,520.0	0.00	0.00	7,185.7	634.0	1,603.5	1,724.3	0.00	0.00	0.00
7,560.0	0.00	0.00	7,225.7	634.0	1,603.5	1,724.3	0.00	0.00	0.00
7,600.0	0.00	0.00	7,265.7	634.0	1,603.5	1,724.3	0.00	0.00	0.00
7,640.0	0.00	0.00	7,305.7	634.0	1,603.5	1,724.3	0.00	0.00	0.00
7,661.3	0.00	0.00	7,327.0	634.0	1,603.5	1,724.3	0.00	0.00	0.00
<b>CODELL</b>									
7,680.0	0.00	0.00	7,345.7	634.0	1,603.5	1,724.3	0.00	0.00	0.00
7,720.0	0.00	0.00	7,385.7	634.0	1,603.5	1,724.3	0.00	0.00	0.00
7,760.0	0.00	0.00	7,425.7	634.0	1,603.5	1,724.3	0.00	0.00	0.00
7,800.0	0.00	0.00	7,465.7	634.0	1,603.5	1,724.3	0.00	0.00	0.00
7,811.3	0.00	0.00	7,477.0	634.0	1,603.5	1,724.3	0.00	0.00	0.00
<b>LEGAL BOX 400' X 400' 661'FNL &amp; 1977'FWL</b>									



<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Calvary USX EE29-03D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 4937.0ft (Original Well Elev)
<b>Project:</b>	SEC.29-T7N-R65W	<b>MD Reference:</b>	WELL @ 4937.0ft (Original Well Elev)
<b>Site:</b>	Donaldson USX EE29-12D Pad Sec.29-T7N-R65W	<b>North Reference:</b>	True
<b>Well:</b>	Calvary USX EE29-03D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Calvary USX EE29-03D Plan #1 (5-04-1		

#### 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 BHL 660'FN	0.00	0.00	6,000.0	634.0	1,603.5	1,444,701.78	3,225,256.35	40.551280	-104.689390
- plan hits target center									
- Point									
LEGAL BOX 400' X 400'	0.00	0.00	7,477.0	633.0	1,580.5	1,444,700.60	3,225,233.39	40.551277	-104.689473
- plan misses target center by 23.0ft at 7811.3ft MD (7477.0 TVD, 634.0 N, 1603.5 E)									
- Rectangle (sides W400.0 H400.0 D440.0)									
TARGET CIRCLE 660'	0.00	0.00	7,037.0	634.0	1,603.5	1,444,701.78	3,225,256.35	40.551280	-104.689390
- plan hits target center									
- Circle (radius 75.0)									

#### Casing Points

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

#### Formations

Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction
(ft)	(ft)			(°)	(°)
7,371.3	7,037.0	NIOBRARA		0.00	
7,661.3	7,327.0	CODELL		0.00	