

# ENSIGN

## Directional

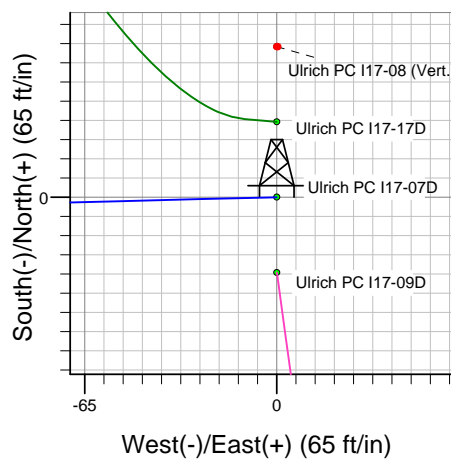
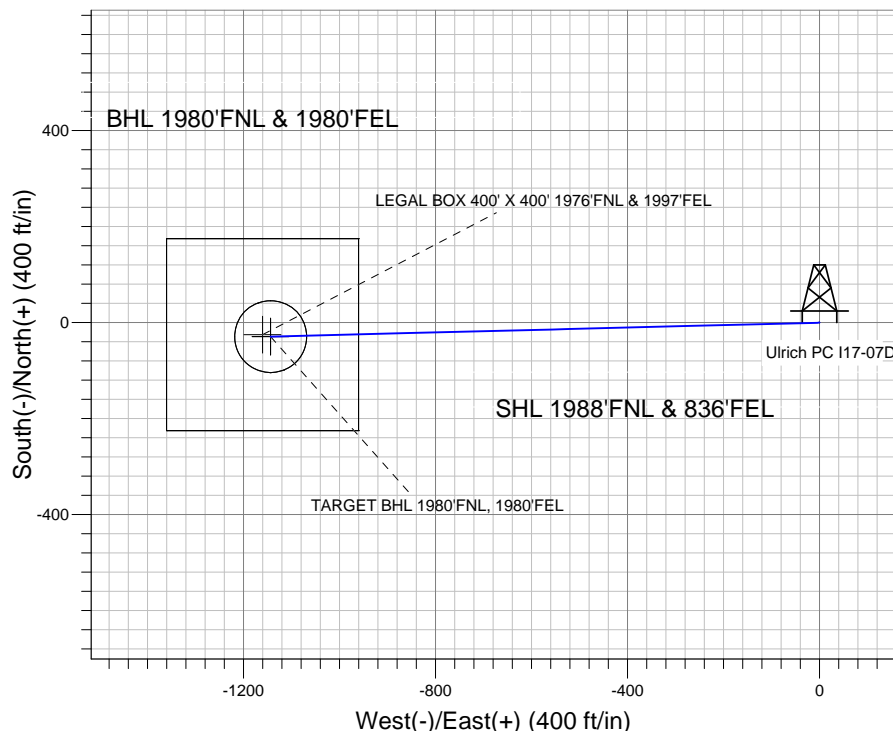
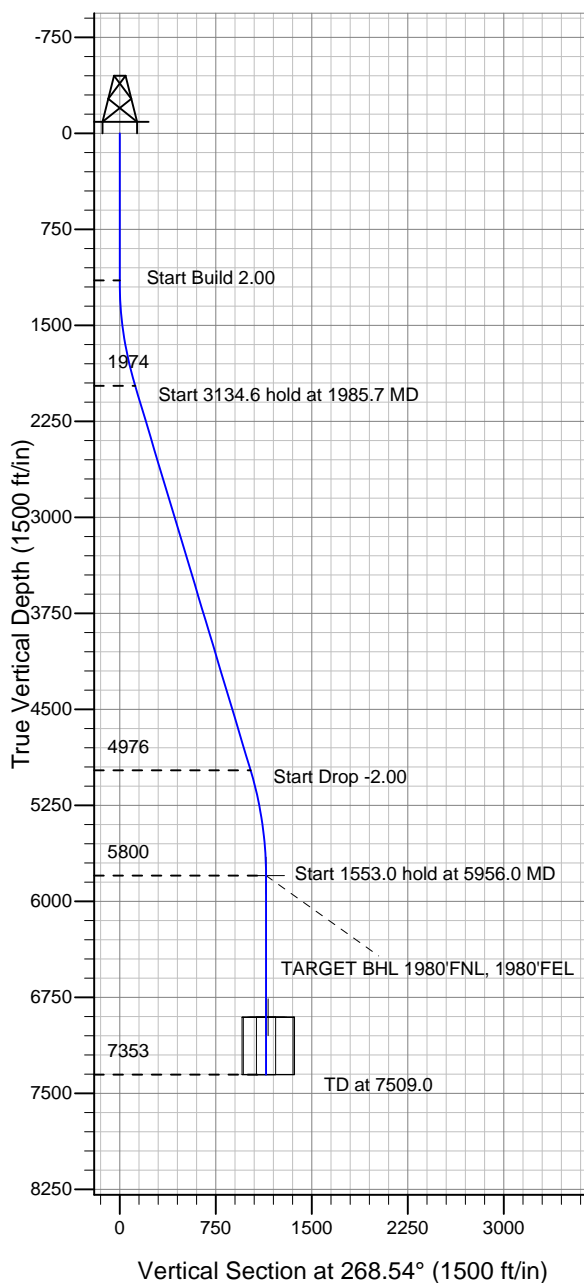
### Well Name: Ulrich PC I17-07D

Surface Location: Ulrich PC I17-17D Pad Sec.17-T6N-R66W  
North American Datum 1983 US State Plane 1983 Colorado Northern Zone

Ground Elevation: 4782.0

+N/-S +E/-W Northing Easting Latitude Longitude Slot  
0.0 0.0 1422078.70 3195978.97 40.489870 -104.795390  
Original Well Elev WELL @ 4795.0ft (Original Well Elev)

### NOBLE ENERGY INC WELD COUNTY CO



Ulrich PC I17-17D Pad Sec.17-T6N-R66W  
Ulrich PC I17-07D  
Noble Ulrich PC I17-07D Plan #2 (3-24-11)  
8:42, March 24 2011



Azimuths to True North  
Magnetic North: 8.92°

Magnetic Field  
Strength: 53199.6snT  
Dip Angle: 67.13°  
Date: 3/24/2011  
Model: IGRF2010

### WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude	Shape
TARGET BHL 1980'FNL, 1980'FEL	5800.0	-29.1	-1143.2	40.489790	-104.799500	Point
LEGAL BOX 400' X 400' 1976'FNL & 1997'FEL	6905.0	-25.1	-1160.2	40.489801	-104.799561	Rectangle (Sides: L400.0 W400.0)
TARGET CIRCLE 1980'FNL & 1980' FEL	6905.0	-29.1	-1143.2	40.489790	-104.799500	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	1150.0	0.00	0.00	1150.0	0.0	0.0	0.00	0.00	0.0	
3	1985.7	16.71	268.54	1973.9	-3.1	-121.0	2.00	268.54	121.0	
4	5120.3	16.71	268.54	4976.1	-26.0	-1022.2	0.00	0.00	1022.5	
5	5956.0	0.00	0.00	5800.0	-29.1	-1143.2	2.00	180.00	1143.6	TARGET BHL 1980'FNL, 1980'FEL
6	7509.0	0.00	0.00	7353.0	-29.1	-1143.2	0.00	0.00	1143.6	



## **Directional**

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

**SEC.17-T6N-R66W**

**Ulrich PC I17-17D Pad Sec.17-T6N-R66W**

**Ulrich PC I17-07D**

**Wellbore #1**

**Plan: Noble Ulrich PC I17-07D Plan #2 (3-24-11)**

### **Standard Planning Report**

**24 March, 2011**



<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Ulrich PC I17-07D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 4795.0ft (Original Well Elev)
<b>Project:</b>	SEC.17-T6N-R66W	<b>MD Reference:</b>	WELL @ 4795.0ft (Original Well Elev)
<b>Site:</b>	Ulrich PC I17-17D Pad Sec.17-T6N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Ulrich PC I17-07D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Ulrich PC I17-07D Plan #2 (3-24-11)		

<b>Project</b>	SEC.17-T6N-R66W		
<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						Ulrich PC I17-17D Pad Sec.17-T6N-R66W											
Site Position:						Northing:			1,422,104.22 ft			Latitude:			40.489940		
From:			Lat/Long			Easting:			3,195,978.77 ft			Longitude:			-104.795390		
Position Uncertainty:			0.0 ft			Slot Radius:			"			Grid Convergence:			0.46 °		

Well	Ulrich PC I17-07D					
Well Position	+N/-S	-25.5 ft	Northing:	1,422,078.70 ft	Latitude:	40.489870
	+E/-W	0.0 ft	Easting:	3,195,978.97 ft	Longitude:	-104.795390
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,782.0 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	3/24/2011	8.92	67.13	53,200

<b>Design</b>	Noble Ulrich PC I17-07D Plan #2 (3-24-11)			
<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	268.54

<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	
1,150.0	0.00	0.00	1,150.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,985.7	16.71	268.54	1,973.9	-3.1	-121.0	2.00	2.00	0.00	268.54	
5,120.3	16.71	268.54	4,976.1	-26.0	-1,022.2	0.00	0.00	0.00	0.00	
5,956.0	0.00	0.00	5,800.0	-29.1	-1,143.2	2.00	-2.00	0.00	180.00	TARGET BHL 198C
7,509.0	0.00	0.00	7,353.0	-29.1	-1,143.2	0.00	0.00	0.00	0.00	

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Ulrich PC I17-07D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 4795.0ft (Original Well Elev)
<b>Project:</b>	SEC.17-T6N-R66W	<b>MD Reference:</b>	WELL @ 4795.0ft (Original Well Elev)
<b>Site:</b>	Ulrich PC I17-17D Pad Sec.17-T6N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Ulrich PC I17-07D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Ulrich PC I17-07D Plan #2 (3-24-11)		

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
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
960.0	0.00	0.00	960.0	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	0.00
1,040.0	0.00	0.00	1,040.0	0.0	0.0	0.0	0.00	0.00	0.00
1,080.0	0.00	0.00	1,080.0	0.0	0.0	0.0	0.00	0.00	0.00
1,120.0	0.00	0.00	1,120.0	0.0	0.0	0.0	0.00	0.00	0.00
1,150.0	0.00	0.00	1,150.0	0.0	0.0	0.0	0.00	0.00	0.00
1,160.0	0.20	268.54	1,160.0	0.0	0.0	0.0	2.00	2.00	0.00
1,200.0	1.00	268.54	1,200.0	0.0	-0.4	0.4	2.00	2.00	0.00
1,240.0	1.80	268.54	1,240.0	0.0	-1.4	1.4	2.00	2.00	0.00
1,280.0	2.60	268.54	1,280.0	-0.1	-2.9	2.9	2.00	2.00	0.00
1,320.0	3.40	268.54	1,319.9	-0.1	-5.0	5.0	2.00	2.00	0.00
1,360.0	4.20	268.54	1,359.8	-0.2	-7.7	7.7	2.00	2.00	0.00
1,400.0	5.00	268.54	1,399.7	-0.3	-10.9	10.9	2.00	2.00	0.00
1,440.0	5.80	268.54	1,439.5	-0.4	-14.7	14.7	2.00	2.00	0.00
1,480.0	6.60	268.54	1,479.3	-0.5	-19.0	19.0	2.00	2.00	0.00
1,520.0	7.40	268.54	1,519.0	-0.6	-23.9	23.9	2.00	2.00	0.00
1,560.0	8.20	268.54	1,558.6	-0.7	-29.3	29.3	2.00	2.00	0.00
1,600.0	9.00	268.54	1,598.2	-0.9	-35.3	35.3	2.00	2.00	0.00
1,640.0	9.80	268.54	1,637.6	-1.1	-41.8	41.8	2.00	2.00	0.00
1,680.0	10.60	268.54	1,677.0	-1.2	-48.9	48.9	2.00	2.00	0.00
1,720.0	11.40	268.54	1,716.2	-1.4	-56.5	56.5	2.00	2.00	0.00
1,760.0	12.20	268.54	1,755.4	-1.6	-64.7	64.7	2.00	2.00	0.00
1,800.0	13.00	268.54	1,794.4	-1.9	-73.4	73.4	2.00	2.00	0.00
1,840.0	13.80	268.54	1,833.3	-2.1	-82.7	82.7	2.00	2.00	0.00
1,880.0	14.60	268.54	1,872.1	-2.4	-92.5	92.5	2.00	2.00	0.00
1,920.0	15.40	268.54	1,910.8	-2.6	-102.8	102.9	2.00	2.00	0.00
1,960.0	16.20	268.54	1,949.3	-2.9	-113.7	113.7	2.00	2.00	0.00
1,985.7	16.71	268.54	1,973.9	-3.1	-121.0	121.0	2.00	2.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Ulrich PC I17-07D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 4795.0ft (Original Well Elev)
<b>Project:</b>	SEC.17-T6N-R66W	<b>MD Reference:</b>	WELL @ 4795.0ft (Original Well Elev)
<b>Site:</b>	Ulrich PC I17-17D Pad Sec.17-T6N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Ulrich PC I17-07D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Ulrich PC I17-07D Plan #2 (3-24-11)		

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	16.71	268.54	1,987.6	-3.2	-125.1	125.1	0.00	0.00	0.00
2,040.0	16.71	268.54	2,025.9	-3.5	-136.6	136.6	0.00	0.00	0.00
2,080.0	16.71	268.54	2,064.2	-3.8	-148.1	148.2	0.00	0.00	0.00
2,120.0	16.71	268.54	2,102.5	-4.1	-159.6	159.7	0.00	0.00	0.00
2,160.0	16.71	268.54	2,140.8	-4.4	-171.1	171.2	0.00	0.00	0.00
2,200.0	16.71	268.54	2,179.1	-4.6	-182.6	182.7	0.00	0.00	0.00
2,240.0	16.71	268.54	2,217.5	-4.9	-194.1	194.2	0.00	0.00	0.00
2,280.0	16.71	268.54	2,255.8	-5.2	-205.6	205.7	0.00	0.00	0.00
2,320.0	16.71	268.54	2,294.1	-5.5	-217.1	217.2	0.00	0.00	0.00
2,360.0	16.71	268.54	2,332.4	-5.8	-228.6	228.7	0.00	0.00	0.00
2,400.0	16.71	268.54	2,370.7	-6.1	-240.1	240.2	0.00	0.00	0.00
2,440.0	16.71	268.54	2,409.0	-6.4	-251.6	251.7	0.00	0.00	0.00
2,480.0	16.71	268.54	2,447.3	-6.7	-263.1	263.2	0.00	0.00	0.00
2,520.0	16.71	268.54	2,485.6	-7.0	-274.6	274.7	0.00	0.00	0.00
2,560.0	16.71	268.54	2,523.9	-7.3	-286.1	286.2	0.00	0.00	0.00
2,600.0	16.71	268.54	2,562.2	-7.6	-297.6	297.7	0.00	0.00	0.00
2,640.0	16.71	268.54	2,600.6	-7.9	-309.1	309.2	0.00	0.00	0.00
2,680.0	16.71	268.54	2,638.9	-8.2	-320.6	320.7	0.00	0.00	0.00
2,694.8	16.71	268.54	2,653.0	-8.3	-324.8	325.0	0.00	0.00	0.00
PIERRE SILT									
2,720.0	16.71	268.54	2,677.2	-8.5	-332.1	332.2	0.00	0.00	0.00
2,760.0	16.71	268.54	2,715.5	-8.7	-343.6	343.7	0.00	0.00	0.00
2,800.0	16.71	268.54	2,753.8	-9.0	-355.1	355.2	0.00	0.00	0.00
2,840.0	16.71	268.54	2,792.1	-9.3	-366.6	366.7	0.00	0.00	0.00
2,880.0	16.71	268.54	2,830.4	-9.6	-378.1	378.2	0.00	0.00	0.00
2,920.0	16.71	268.54	2,868.7	-9.9	-389.6	389.7	0.00	0.00	0.00
2,960.0	16.71	268.54	2,907.0	-10.2	-401.1	401.2	0.00	0.00	0.00
3,000.0	16.71	268.54	2,945.3	-10.5	-412.6	412.7	0.00	0.00	0.00
3,040.0	16.71	268.54	2,983.7	-10.8	-424.1	424.2	0.00	0.00	0.00
3,080.0	16.71	268.54	3,022.0	-11.1	-435.6	435.7	0.00	0.00	0.00
3,120.0	16.71	268.54	3,060.3	-11.4	-447.1	447.3	0.00	0.00	0.00
3,160.0	16.71	268.54	3,098.6	-11.7	-458.6	458.8	0.00	0.00	0.00
3,200.0	16.71	268.54	3,136.9	-12.0	-470.1	470.3	0.00	0.00	0.00
3,240.0	16.71	268.54	3,175.2	-12.3	-481.6	481.8	0.00	0.00	0.00
3,280.0	16.71	268.54	3,213.5	-12.6	-493.1	493.3	0.00	0.00	0.00
3,320.0	16.71	268.54	3,251.8	-12.8	-504.6	504.8	0.00	0.00	0.00
3,360.0	16.71	268.54	3,290.1	-13.1	-516.1	516.3	0.00	0.00	0.00
3,400.0	16.71	268.54	3,328.4	-13.4	-527.6	527.8	0.00	0.00	0.00
3,440.0	16.71	268.54	3,366.8	-13.7	-539.1	539.3	0.00	0.00	0.00
3,480.0	16.71	268.54	3,405.1	-14.0	-550.6	550.8	0.00	0.00	0.00
3,520.0	16.71	268.54	3,443.4	-14.3	-562.1	562.3	0.00	0.00	0.00
3,560.0	16.71	268.54	3,481.7	-14.6	-573.6	573.8	0.00	0.00	0.00
3,600.0	16.71	268.54	3,520.0	-14.9	-585.1	585.3	0.00	0.00	0.00
3,640.0	16.71	268.54	3,558.3	-15.2	-596.6	596.8	0.00	0.00	0.00
3,680.0	16.71	268.54	3,596.6	-15.5	-608.1	608.3	0.00	0.00	0.00
3,707.5	16.71	268.54	3,623.0	-15.7	-616.0	616.2	0.00	0.00	0.00
PARKMAN									
3,720.0	16.71	268.54	3,634.9	-15.8	-619.6	619.8	0.00	0.00	0.00
3,760.0	16.71	268.54	3,673.2	-16.1	-631.1	631.3	0.00	0.00	0.00
3,800.0	16.71	268.54	3,711.5	-16.4	-642.6	642.8	0.00	0.00	0.00
3,840.0	16.71	268.54	3,749.9	-16.7	-654.1	654.3	0.00	0.00	0.00
3,880.0	16.71	268.54	3,788.2	-16.9	-665.6	665.8	0.00	0.00	0.00
3,920.0	16.71	268.54	3,826.5	-17.2	-677.1	677.3	0.00	0.00	0.00
3,960.0	16.71	268.54	3,864.8	-17.5	-688.6	688.8	0.00	0.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Ulrich PC I17-07D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 4795.0ft (Original Well Elev)
<b>Project:</b>	SEC.17-T6N-R66W	<b>MD Reference:</b>	WELL @ 4795.0ft (Original Well Elev)
<b>Site:</b>	Ulrich PC I17-17D Pad Sec.17-T6N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Ulrich PC I17-07D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Ulrich PC I17-07D Plan #2 (3-24-11)		

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)
4,000.0	16.71	268.54	3,903.1	-17.8	-700.1	700.3	0.00	0.00	0.00
4,040.0	16.71	268.54	3,941.4	-18.1	-711.6	711.8	0.00	0.00	0.00
4,080.0	16.71	268.54	3,979.7	-18.4	-723.1	723.3	0.00	0.00	0.00
4,120.0	16.71	268.54	4,018.0	-18.7	-734.6	734.8	0.00	0.00	0.00
4,160.0	16.71	268.54	4,056.3	-19.0	-746.1	746.4	0.00	0.00	0.00
4,200.0	16.71	268.54	4,094.6	-19.3	-757.6	757.9	0.00	0.00	0.00
4,240.0	16.71	268.54	4,133.0	-19.6	-769.1	769.4	0.00	0.00	0.00
4,280.0	16.71	268.54	4,171.3	-19.9	-780.6	780.9	0.00	0.00	0.00
4,320.0	16.71	268.54	4,209.6	-20.2	-792.1	792.4	0.00	0.00	0.00
4,360.0	16.71	268.54	4,247.9	-20.5	-803.6	803.9	0.00	0.00	0.00
4,400.0	16.71	268.54	4,286.2	-20.8	-815.1	815.4	0.00	0.00	0.00
4,440.0	16.71	268.54	4,324.5	-21.0	-826.6	826.9	0.00	0.00	0.00
4,480.0	16.71	268.54	4,362.8	-21.3	-838.1	838.4	0.00	0.00	0.00
4,520.0	16.71	268.54	4,401.1	-21.6	-849.6	849.9	0.00	0.00	0.00
4,524.0	16.71	268.54	4,405.0	-21.7	-850.8	851.1	0.00	0.00	0.00
<b>SUSSEX</b>									
4,560.0	16.71	268.54	4,439.4	-21.9	-861.1	861.4	0.00	0.00	0.00
4,600.0	16.71	268.54	4,477.7	-22.2	-872.6	872.9	0.00	0.00	0.00
4,640.0	16.71	268.54	4,516.1	-22.5	-884.1	884.4	0.00	0.00	0.00
4,680.0	16.71	268.54	4,554.4	-22.8	-895.6	895.9	0.00	0.00	0.00
4,720.0	16.71	268.54	4,592.7	-23.1	-907.1	907.4	0.00	0.00	0.00
4,760.0	16.71	268.54	4,631.0	-23.4	-918.6	918.9	0.00	0.00	0.00
4,800.0	16.71	268.54	4,669.3	-23.7	-930.1	930.4	0.00	0.00	0.00
4,840.0	16.71	268.54	4,707.6	-24.0	-941.6	941.9	0.00	0.00	0.00
4,880.0	16.71	268.54	4,745.9	-24.3	-953.1	953.4	0.00	0.00	0.00
4,920.0	16.71	268.54	4,784.2	-24.6	-964.6	964.9	0.00	0.00	0.00
4,926.0	16.71	268.54	4,790.0	-24.6	-966.3	966.7	0.00	0.00	0.00
<b>SHANNON</b>									
4,960.0	16.71	268.54	4,822.5	-24.9	-976.1	976.4	0.00	0.00	0.00
5,000.0	16.71	268.54	4,860.8	-25.1	-987.6	987.9	0.00	0.00	0.00
5,040.0	16.71	268.54	4,899.2	-25.4	-999.1	999.4	0.00	0.00	0.00
5,080.0	16.71	268.54	4,937.5	-25.7	-1,010.6	1,010.9	0.00	0.00	0.00
5,120.0	16.71	268.54	4,975.8	-26.0	-1,022.1	1,022.4	0.00	0.00	0.00
5,120.3	16.71	268.54	4,976.1	-26.0	-1,022.2	1,022.5	0.00	0.00	0.00
5,160.0	15.92	268.54	5,014.2	-26.3	-1,033.4	1,033.7	2.00	-2.00	0.00
5,200.0	15.12	268.54	5,052.7	-26.6	-1,044.1	1,044.4	2.00	-2.00	0.00
5,240.0	14.32	268.54	5,091.4	-26.8	-1,054.2	1,054.6	2.00	-2.00	0.00
5,280.0	13.52	268.54	5,130.2	-27.1	-1,063.8	1,064.2	2.00	-2.00	0.00
5,320.0	12.72	268.54	5,169.2	-27.3	-1,072.9	1,073.3	2.00	-2.00	0.00
5,360.0	11.92	268.54	5,208.3	-27.5	-1,081.4	1,081.8	2.00	-2.00	0.00
5,400.0	11.12	268.54	5,247.4	-27.7	-1,089.4	1,089.8	2.00	-2.00	0.00
5,440.0	10.32	268.54	5,286.7	-27.9	-1,096.9	1,097.2	2.00	-2.00	0.00
5,480.0	9.52	268.54	5,326.1	-28.1	-1,103.8	1,104.1	2.00	-2.00	0.00
5,520.0	8.72	268.54	5,365.6	-28.3	-1,110.1	1,110.5	2.00	-2.00	0.00
5,560.0	7.92	268.54	5,405.2	-28.4	-1,115.9	1,116.2	2.00	-2.00	0.00
5,600.0	7.12	268.54	5,444.9	-28.5	-1,121.1	1,121.5	2.00	-2.00	0.00
5,640.0	6.32	268.54	5,484.6	-28.7	-1,125.8	1,126.2	2.00	-2.00	0.00
5,680.0	5.52	268.54	5,524.4	-28.8	-1,129.9	1,130.3	2.00	-2.00	0.00
5,720.0	4.72	268.54	5,564.2	-28.9	-1,133.5	1,133.9	2.00	-2.00	0.00
5,760.0	3.92	268.54	5,604.1	-28.9	-1,136.5	1,136.9	2.00	-2.00	0.00
5,800.0	3.12	268.54	5,644.0	-29.0	-1,139.0	1,139.3	2.00	-2.00	0.00
5,840.0	2.32	268.54	5,684.0	-29.0	-1,140.9	1,141.2	2.00	-2.00	0.00
5,880.0	1.52	268.54	5,724.0	-29.1	-1,142.2	1,142.6	2.00	-2.00	0.00

<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Ulrich PC I17-07D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 4795.0ft (Original Well Elev)
<b>Project:</b>	SEC.17-T6N-R66W	<b>MD Reference:</b>	WELL @ 4795.0ft (Original Well Elev)
<b>Site:</b>	Ulrich PC I17-17D Pad Sec.17-T6N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Ulrich PC I17-07D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Ulrich PC I17-07D Plan #2 (3-24-11)		

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)
5,920.0	0.72	268.54	5,764.0	-29.1	-1,143.0	1,143.3	2.00	-2.00	0.00
5,956.0	0.00	0.00	5,800.0	-29.1	-1,143.2	1,143.6	2.00	-2.00	0.00
<b>TARGET BHL 1980°FNL, 1980°FEL</b>									
5,960.0	0.00	0.00	5,804.0	-29.1	-1,143.2	1,143.6	0.00	0.00	0.00
6,000.0	0.00	0.00	5,844.0	-29.1	-1,143.2	1,143.6	0.00	0.00	0.00
6,040.0	0.00	0.00	5,884.0	-29.1	-1,143.2	1,143.6	0.00	0.00	0.00
6,074.0	0.00	0.00	5,918.0	-29.1	-1,143.2	1,143.6	0.00	0.00	0.00
<b>TEEPREE BUTTES</b>									
6,080.0	0.00	0.00	5,924.0	-29.1	-1,143.2	1,143.6	0.00	0.00	0.00
6,120.0	0.00	0.00	5,964.0	-29.1	-1,143.2	1,143.6	0.00	0.00	0.00
6,160.0	0.00	0.00	6,004.0	-29.1	-1,143.2	1,143.6	0.00	0.00	0.00
6,200.0	0.00	0.00	6,044.0	-29.1	-1,143.2	1,143.6	0.00	0.00	0.00
6,240.0	0.00	0.00	6,084.0	-29.1	-1,143.2	1,143.6	0.00	0.00	0.00
6,280.0	0.00	0.00	6,124.0	-29.1	-1,143.2	1,143.6	0.00	0.00	0.00
6,320.0	0.00	0.00	6,164.0	-29.1	-1,143.2	1,143.6	0.00	0.00	0.00
6,360.0	0.00	0.00	6,204.0	-29.1	-1,143.2	1,143.6	0.00	0.00	0.00
6,400.0	0.00	0.00	6,244.0	-29.1	-1,143.2	1,143.6	0.00	0.00	0.00
6,440.0	0.00	0.00	6,284.0	-29.1	-1,143.2	1,143.6	0.00	0.00	0.00
6,480.0	0.00	0.00	6,324.0	-29.1	-1,143.2	1,143.6	0.00	0.00	0.00
6,520.0	0.00	0.00	6,364.0	-29.1	-1,143.2	1,143.6	0.00	0.00	0.00
6,560.0	0.00	0.00	6,404.0	-29.1	-1,143.2	1,143.6	0.00	0.00	0.00
6,600.0	0.00	0.00	6,444.0	-29.1	-1,143.2	1,143.6	0.00	0.00	0.00
6,640.0	0.00	0.00	6,484.0	-29.1	-1,143.2	1,143.6	0.00	0.00	0.00
6,680.0	0.00	0.00	6,524.0	-29.1	-1,143.2	1,143.6	0.00	0.00	0.00
6,720.0	0.00	0.00	6,564.0	-29.1	-1,143.2	1,143.6	0.00	0.00	0.00
6,760.0	0.00	0.00	6,604.0	-29.1	-1,143.2	1,143.6	0.00	0.00	0.00
6,800.0	0.00	0.00	6,644.0	-29.1	-1,143.2	1,143.6	0.00	0.00	0.00
6,840.0	0.00	0.00	6,684.0	-29.1	-1,143.2	1,143.6	0.00	0.00	0.00
6,880.0	0.00	0.00	6,724.0	-29.1	-1,143.2	1,143.6	0.00	0.00	0.00
6,920.0	0.00	0.00	6,764.0	-29.1	-1,143.2	1,143.6	0.00	0.00	0.00
6,960.0	0.00	0.00	6,804.0	-29.1	-1,143.2	1,143.6	0.00	0.00	0.00
7,000.0	0.00	0.00	6,844.0	-29.1	-1,143.2	1,143.6	0.00	0.00	0.00
7,040.0	0.00	0.00	6,884.0	-29.1	-1,143.2	1,143.6	0.00	0.00	0.00
7,061.0	0.00	0.00	6,905.0	-29.1	-1,143.2	1,143.6	0.00	0.00	0.00
<b>NIORARA - TARGET CIRCLE 1980°FNL &amp; 1980°FEL - LEGAL BOX 400' X 400' 1976°FNL &amp; 1997°FEL</b>									
7,080.0	0.00	0.00	6,924.0	-29.1	-1,143.2	1,143.6	0.00	0.00	0.00
7,120.0	0.00	0.00	6,964.0	-29.1	-1,143.2	1,143.6	0.00	0.00	0.00
7,160.0	0.00	0.00	7,004.0	-29.1	-1,143.2	1,143.6	0.00	0.00	0.00
7,200.0	0.00	0.00	7,044.0	-29.1	-1,143.2	1,143.6	0.00	0.00	0.00
7,240.0	0.00	0.00	7,084.0	-29.1	-1,143.2	1,143.6	0.00	0.00	0.00
7,280.0	0.00	0.00	7,124.0	-29.1	-1,143.2	1,143.6	0.00	0.00	0.00
7,320.0	0.00	0.00	7,164.0	-29.1	-1,143.2	1,143.6	0.00	0.00	0.00
7,337.0	0.00	0.00	7,181.0	-29.1	-1,143.2	1,143.6	0.00	0.00	0.00
<b>FT. HAYS</b>									
7,359.0	0.00	0.00	7,203.0	-29.1	-1,143.2	1,143.6	0.00	0.00	0.00
<b>CODELL</b>									
7,360.0	0.00	0.00	7,204.0	-29.1	-1,143.2	1,143.6	0.00	0.00	0.00
7,400.0	0.00	0.00	7,244.0	-29.1	-1,143.2	1,143.6	0.00	0.00	0.00
7,440.0	0.00	0.00	7,284.0	-29.1	-1,143.2	1,143.6	0.00	0.00	0.00
7,480.0	0.00	0.00	7,324.0	-29.1	-1,143.2	1,143.6	0.00	0.00	0.00
7,509.0	0.00	0.00	7,353.0	-29.1	-1,143.2	1,143.6	0.00	0.00	0.00



<b>Database:</b>	Landmark	<b>Local Co-ordinate Reference:</b>	Well Ulrich PC I17-07D
<b>Company:</b>	NOBLE ENERGY INC WELD COUNTY CO	<b>TVD Reference:</b>	WELL @ 4795.0ft (Original Well Elev)
<b>Project:</b>	SEC.17-T6N-R66W	<b>MD Reference:</b>	WELL @ 4795.0ft (Original Well Elev)
<b>Site:</b>	Ulrich PC I17-17D Pad Sec.17-T6N-R66W	<b>North Reference:</b>	True
<b>Well:</b>	Ulrich PC I17-07D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Noble Ulrich PC I17-07D Plan #2 (3-24-11)		

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 198'	0.00	0.00	6,905.0	-29.1	-1,143.2	1,422,040.52	3,194,836.08	40.489790	-104.799500
- plan hits target center									
- Circle (radius 75.0)									
TARGET BHL 1980'F	0.00	0.00	5,800.0	-29.1	-1,143.2	1,422,040.52	3,194,836.08	40.489790	-104.799500
- plan hits target center									
- Point									
LEGAL BOX 400' X 400'	0.00	0.00	6,905.0	-25.1	-1,160.2	1,422,044.39	3,194,819.05	40.489801	-104.799561
- plan misses target center by 17.5ft at 7061.0ft MD (6905.0 TVD, -29.1 N, -1143.2 E)									
- Rectangle (sides W400.0 H400.0 D448.0)									

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

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
2,694.8	2,653.0	PIERRE SILT		0.00		
3,707.5	3,623.0	PARKMAN		0.00		
4,524.0	4,405.0	SUSSEX		0.00		
4,926.0	4,790.0	SHANNON		0.00		
6,074.0	5,918.0	TEEPEE BUTTES		0.00		
7,061.0	6,905.0	NIOBRARA		0.00		
7,337.0	7,181.0	FT. HAYS		0.00		
7,359.0	7,203.0	CODELL		0.00		