

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	800.0	0.00	0.00	800.0	0.0	0.0	0.00	0.00	0.0	
3	1756.6	19.13	175.84	1738.9	-157.8	11.5	2.00	175.84	158.2	
4	6133.5	19.13	175.84	5874.1	-1588.5	115.7	0.00	0.00	1592.7	
5	7046.7	10.00	175.84	6757.0	-1817.3	132.3	1.00	180.00	1822.2	NIOBRARA TARGET BHL 1434'FSL, 2467'FEL
6	7541.2	10.00	175.84	7244.0	-1903.0	138.6	0.00	0.00	1908.0	



Directional

NOBLE ENERGY INC WELD COUNTY CO

SEC.34-T5N-R67W

Ehrlich N34-24D Pad Sec.34-T5N-R67W

Ehrlich N34-24D

Wellbore #1

Plan: Plan #1 (06-11-09)

Standard Planning Report

30 June, 2009



Database: EDM den0-adp01 Server Data
Company: NOBLE ENERGY INC WELD COUNTY CO
Project: SEC.34-T5N-R67W
Site: Ehrlich N34-24D Pad Sec.34-T5N-R67W
Well: Ehrlich N34-24D
Wellbore: Wellbore #1
Design: Plan #1 (06-11-09)

Local Co-ordinate Reference: Well Ehrlich N34-24D
TVD Reference: WELL @ 4879.0ft (Original Well Elev)
MD Reference: WELL @ 4879.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Project SEC.34-T5N-R67W, Weld County, Colorado
Map System: US State Plane 1983 **System Datum:** Mean Sea Level
Geo Datum: North American Datum 1983
Map Zone: Colorado Northern Zone Using geodetic scale factor

Site Ehrlich N34-24D Pad Sec.34-T5N-R67W
Site Position:
From: Lat/Long **Northing:** 1,373,805.83ft **Latitude:** 40° 21' 28.206 N
Position Uncertainty: 0.0 ft **Easting:** 3,173,055.51ft **Longitude:** 104° 52' 44.472 W
Slot Radius: " **Grid Convergence:** 0.40 °

Well Ehrlich N34-24D
Well Position **+N/-S** 0.0 ft **Northing:** 1,373,805.82 ft **Latitude:** 40° 21' 28.206 N
+E/-W 0.0 ft **Easting:** 3,173,055.51 ft **Longitude:** 104° 52' 44.472 W
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)
	IGRF200510	6/11/2009	9.16	67.07	53,327

Design Plan #1 (06-11-09)

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	175.84

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	
800.0	0.00	0.00	800.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,756.6	19.13	175.84	1,738.9	-157.8	11.5	2.00	2.00	0.00	175.84	
6,133.5	19.13	175.84	5,874.1	-1,588.5	115.7	0.00	0.00	0.00	0.00	
7,046.7	10.00	175.84	6,757.0	-1,817.3	132.3	1.00	-1.00	0.00	180.00	NIOBARRA TARGE
7,541.2	10.00	175.84	7,244.0	-1,903.0	138.6	0.00	0.00	0.00	0.00	

Database: EDM den0-adp01 Server Data
 Company: NOBLE ENERGY INC WELD COUNTY CO
 Project: SEC.34-T5N-R67W
 Site: Ehrlich N34-24D Pad Sec.34-T5N-R67W
 Well: Ehrlich N34-24D
 Wellbore: Wellbore #1
 Design: Plan #1 (06-11-09)

Local Co-ordinate Reference: Well Ehrlich N34-24D
 TVD Reference: WELL @ 4879.0ft (Original Well Elev)
 MD Reference: WELL @ 4879.0ft (Original Well Elev)
 North Reference: True
 Survey Calculation Method: Minimum Curvature

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
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	0.80	175.84	840.0	-0.3	0.0	0.3	2.00	2.00	0.00
880.0	1.60	175.84	880.0	-1.1	0.1	1.1	2.00	2.00	0.00
920.0	2.40	175.84	920.0	-2.5	0.2	2.5	2.00	2.00	0.00
960.0	3.20	175.84	959.9	-4.5	0.3	4.5	2.00	2.00	0.00
1,000.0	4.00	175.84	999.8	-7.0	0.5	7.0	2.00	2.00	0.00
1,040.0	4.80	175.84	1,039.7	-10.0	0.7	10.0	2.00	2.00	0.00
1,080.0	5.60	175.84	1,079.6	-13.6	1.0	13.7	2.00	2.00	0.00
1,120.0	6.40	175.84	1,119.3	-17.8	1.3	17.9	2.00	2.00	0.00
1,160.0	7.20	175.84	1,159.1	-22.5	1.6	22.6	2.00	2.00	0.00
1,200.0	8.00	175.84	1,198.7	-27.8	2.0	27.9	2.00	2.00	0.00
1,240.0	8.80	175.84	1,238.3	-33.6	2.4	33.7	2.00	2.00	0.00
1,280.0	9.60	175.84	1,277.8	-40.0	2.9	40.1	2.00	2.00	0.00
1,320.0	10.40	175.84	1,317.1	-46.9	3.4	47.1	2.00	2.00	0.00
1,360.0	11.20	175.84	1,356.4	-54.4	4.0	54.6	2.00	2.00	0.00
1,400.0	12.00	175.84	1,395.6	-62.4	4.5	62.6	2.00	2.00	0.00
1,440.0	12.80	175.84	1,434.7	-71.0	5.2	71.2	2.00	2.00	0.00
1,480.0	13.60	175.84	1,473.6	-80.1	5.8	80.3	2.00	2.00	0.00
1,520.0	14.40	175.84	1,512.4	-89.8	6.5	90.0	2.00	2.00	0.00
1,560.0	15.20	175.84	1,551.1	-100.0	7.3	100.2	2.00	2.00	0.00
1,600.0	16.00	175.84	1,589.6	-110.7	8.1	111.0	2.00	2.00	0.00
1,640.0	16.80	175.84	1,628.0	-121.9	8.9	122.3	2.00	2.00	0.00
1,680.0	17.60	175.84	1,666.2	-133.7	9.7	134.1	2.00	2.00	0.00
1,720.0	18.40	175.84	1,704.3	-146.1	10.6	146.5	2.00	2.00	0.00
1,756.6	19.13	175.84	1,738.9	-157.8	11.5	158.2	2.00	2.00	0.00
1,760.0	19.13	175.84	1,742.1	-158.9	11.6	159.3	0.00	0.00	0.00
1,800.0	19.13	175.84	1,779.9	-172.0	12.5	172.5	0.00	0.00	0.00
1,840.0	19.13	175.84	1,817.7	-185.1	13.5	185.6	0.00	0.00	0.00
1,880.0	19.13	175.84	1,855.5	-198.2	14.4	198.7	0.00	0.00	0.00
1,920.0	19.13	175.84	1,893.3	-211.2	15.4	211.8	0.00	0.00	0.00
1,960.0	19.13	175.84	1,931.1	-224.3	16.3	224.9	0.00	0.00	0.00
2,000.0	19.13	175.84	1,968.9	-237.4	17.3	238.0	0.00	0.00	0.00
2,040.0	19.13	175.84	2,006.7	-250.5	18.2	251.1	0.00	0.00	0.00
2,080.0	19.13	175.84	2,044.5	-263.5	19.2	264.2	0.00	0.00	0.00

Database:	EDM den0-adp01 Server Data	Local Co-ordinate Reference:	Well Ehrlich N34-24D
Company:	NOBLE ENERGY INC WELD COUNTY CO	TVD Reference:	WELL @ 4879.0ft (Original Well Elev)
Project:	SEC.34-T5N-R67W	MD Reference:	WELL @ 4879.0ft (Original Well Elev)
Site:	Ehrlich N34-24D Pad Sec.34-T5N-R67W	North Reference:	True
Well:	Ehrlich N34-24D	Survey Calculation Method:	Minimum Curvature
Wellbore:	Wellbore #1		
Design:	Plan #1 (06-11-09)		

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)
2,120.0	19.13	175.84	2,082.3	-276.6	20.1	277.3	0.00	0.00	0.00
2,160.0	19.13	175.84	2,120.0	-289.7	21.1	290.4	0.00	0.00	0.00
2,200.0	19.13	175.84	2,157.8	-302.8	22.0	303.6	0.00	0.00	0.00
2,240.0	19.13	175.84	2,195.6	-315.8	23.0	316.7	0.00	0.00	0.00
2,280.0	19.13	175.84	2,233.4	-328.9	23.9	329.8	0.00	0.00	0.00
2,320.0	19.13	175.84	2,271.2	-342.0	24.9	342.9	0.00	0.00	0.00
2,360.0	19.13	175.84	2,309.0	-355.1	25.9	356.0	0.00	0.00	0.00
2,400.0	19.13	175.84	2,346.8	-368.1	26.8	369.1	0.00	0.00	0.00
2,440.0	19.13	175.84	2,384.6	-381.2	27.8	382.2	0.00	0.00	0.00
2,480.0	19.13	175.84	2,422.4	-394.3	28.7	395.3	0.00	0.00	0.00
2,520.0	19.13	175.84	2,460.2	-407.4	29.7	408.4	0.00	0.00	0.00
2,560.0	19.13	175.84	2,497.9	-420.4	30.6	421.5	0.00	0.00	0.00
2,600.0	19.13	175.84	2,535.7	-433.5	31.6	434.7	0.00	0.00	0.00
2,640.0	19.13	175.84	2,573.5	-446.6	32.5	447.8	0.00	0.00	0.00
2,680.0	19.13	175.84	2,611.3	-459.7	33.5	460.9	0.00	0.00	0.00
2,720.0	19.13	175.84	2,649.1	-472.7	34.4	474.0	0.00	0.00	0.00
2,760.0	19.13	175.84	2,686.9	-485.8	35.4	487.1	0.00	0.00	0.00
2,800.0	19.13	175.84	2,724.7	-498.9	36.3	500.2	0.00	0.00	0.00
2,840.0	19.13	175.84	2,762.5	-512.0	37.3	513.3	0.00	0.00	0.00
2,880.0	19.13	175.84	2,800.3	-525.0	38.2	526.4	0.00	0.00	0.00
2,920.0	19.13	175.84	2,838.1	-538.1	39.2	539.5	0.00	0.00	0.00
2,960.0	19.13	175.84	2,875.9	-551.2	40.1	552.6	0.00	0.00	0.00
3,000.0	19.13	175.84	2,913.6	-564.3	41.1	565.7	0.00	0.00	0.00
3,040.0	19.13	175.84	2,951.4	-577.3	42.0	578.9	0.00	0.00	0.00
3,080.0	19.13	175.84	2,989.2	-590.4	43.0	592.0	0.00	0.00	0.00
3,120.0	19.13	175.84	3,027.0	-603.5	43.9	605.1	0.00	0.00	0.00
3,160.0	19.13	175.84	3,064.8	-616.6	44.9	618.2	0.00	0.00	0.00
3,200.0	19.13	175.84	3,102.6	-629.6	45.8	631.3	0.00	0.00	0.00
3,240.0	19.13	175.84	3,140.4	-642.7	46.8	644.4	0.00	0.00	0.00
3,280.0	19.13	175.84	3,178.2	-655.8	47.7	657.5	0.00	0.00	0.00
3,320.0	19.13	175.84	3,216.0	-668.9	48.7	670.6	0.00	0.00	0.00
3,360.0	19.13	175.84	3,253.8	-681.9	49.6	683.7	0.00	0.00	0.00
3,400.0	19.13	175.84	3,291.6	-695.0	50.6	696.8	0.00	0.00	0.00
3,440.0	19.13	175.84	3,329.3	-708.1	51.6	710.0	0.00	0.00	0.00
3,480.0	19.13	175.84	3,367.1	-721.2	52.5	723.1	0.00	0.00	0.00
3,520.0	19.13	175.84	3,404.9	-734.2	53.5	736.2	0.00	0.00	0.00
3,560.0	19.13	175.84	3,442.7	-747.3	54.4	749.3	0.00	0.00	0.00
3,600.0	19.13	175.84	3,480.5	-760.4	55.4	762.4	0.00	0.00	0.00
3,640.0	19.13	175.84	3,518.3	-773.5	56.3	775.5	0.00	0.00	0.00
3,680.0	19.13	175.84	3,556.1	-786.5	57.3	788.6	0.00	0.00	0.00
3,720.0	19.13	175.84	3,593.9	-799.6	58.2	801.7	0.00	0.00	0.00
3,760.0	19.13	175.84	3,631.7	-812.7	59.2	814.8	0.00	0.00	0.00
3,800.0	19.13	175.84	3,669.5	-825.8	60.1	827.9	0.00	0.00	0.00
3,840.0	19.13	175.84	3,707.2	-838.8	61.1	841.1	0.00	0.00	0.00
3,880.0	19.13	175.84	3,745.0	-851.9	62.0	854.2	0.00	0.00	0.00
3,920.0	19.13	175.84	3,782.8	-865.0	63.0	867.3	0.00	0.00	0.00
3,960.0	19.13	175.84	3,820.6	-878.1	63.9	880.4	0.00	0.00	0.00
4,000.0	19.13	175.84	3,858.4	-891.1	64.9	893.5	0.00	0.00	0.00
4,040.0	19.13	175.84	3,896.2	-904.2	65.8	906.6	0.00	0.00	0.00
4,080.0	19.13	175.84	3,934.0	-917.3	66.8	919.7	0.00	0.00	0.00
4,120.0	19.13	175.84	3,971.8	-930.4	67.7	932.8	0.00	0.00	0.00
4,160.0	19.13	175.84	4,009.6	-943.4	68.7	945.9	0.00	0.00	0.00
4,200.0	19.13	175.84	4,047.4	-956.5	69.6	959.0	0.00	0.00	0.00
4,240.0	19.13	175.84	4,085.2	-969.6	70.6	972.2	0.00	0.00	0.00

Database: EDM den0-adp01 Server Data
Company: NOBLE ENERGY INC WELD COUNTY CO
Project: SEC.34-T5N-R67W
Site: Ehrlich N34-24D Pad Sec.34-T5N-R67W
Well: Ehrlich N34-24D
Wellbore: Wellbore #1
Design: Plan #1 (06-11-09)

Local Co-ordinate Reference:
TVD Reference:
MD Reference:
North Reference:
Survey Calculation Method:

Well Ehrlich N34-24D
 WELL @ 4879.0ft (Original Well Elev)
 WELL @ 4879.0ft (Original Well Elev)
 True
 Minimum Curvature

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)
4,280.0	19.13	175.84	4,122.9	-982.7	71.5	985.3	0.00	0.00	0.00
4,320.0	19.13	175.84	4,160.7	-995.7	72.5	998.4	0.00	0.00	0.00
4,360.0	19.13	175.84	4,198.5	-1,008.8	73.4	1,011.5	0.00	0.00	0.00
4,400.0	19.13	175.84	4,236.3	-1,021.9	74.4	1,024.6	0.00	0.00	0.00
4,440.0	19.13	175.84	4,274.1	-1,035.0	75.4	1,037.7	0.00	0.00	0.00
4,480.0	19.13	175.84	4,311.9	-1,048.0	76.3	1,050.8	0.00	0.00	0.00
4,520.0	19.13	175.84	4,349.7	-1,061.1	77.3	1,063.9	0.00	0.00	0.00
4,560.0	19.13	175.84	4,387.5	-1,074.2	78.2	1,077.0	0.00	0.00	0.00
4,600.0	19.13	175.84	4,425.3	-1,087.3	79.2	1,090.1	0.00	0.00	0.00
4,640.0	19.13	175.84	4,463.1	-1,100.3	80.1	1,103.2	0.00	0.00	0.00
4,680.0	19.13	175.84	4,500.9	-1,113.4	81.1	1,116.4	0.00	0.00	0.00
4,720.0	19.13	175.84	4,538.6	-1,126.5	82.0	1,129.5	0.00	0.00	0.00
4,760.0	19.13	175.84	4,576.4	-1,139.6	83.0	1,142.6	0.00	0.00	0.00
4,800.0	19.13	175.84	4,614.2	-1,152.6	83.9	1,155.7	0.00	0.00	0.00
4,840.0	19.13	175.84	4,652.0	-1,165.7	84.9	1,168.8	0.00	0.00	0.00
4,880.0	19.13	175.84	4,689.8	-1,178.8	85.8	1,181.9	0.00	0.00	0.00
4,920.0	19.13	175.84	4,727.6	-1,191.9	86.8	1,195.0	0.00	0.00	0.00
4,960.0	19.13	175.84	4,765.4	-1,204.9	87.7	1,208.1	0.00	0.00	0.00
5,000.0	19.13	175.84	4,803.2	-1,218.0	88.7	1,221.2	0.00	0.00	0.00
5,040.0	19.13	175.84	4,841.0	-1,231.1	89.6	1,234.3	0.00	0.00	0.00
5,080.0	19.13	175.84	4,878.8	-1,244.2	90.6	1,247.5	0.00	0.00	0.00
5,120.0	19.13	175.84	4,916.6	-1,257.2	91.5	1,260.6	0.00	0.00	0.00
5,160.0	19.13	175.84	4,954.3	-1,270.3	92.5	1,273.7	0.00	0.00	0.00
5,200.0	19.13	175.84	4,992.1	-1,283.4	93.4	1,286.8	0.00	0.00	0.00
5,240.0	19.13	175.84	5,029.9	-1,296.5	94.4	1,299.9	0.00	0.00	0.00
5,280.0	19.13	175.84	5,067.7	-1,309.5	95.3	1,313.0	0.00	0.00	0.00
5,320.0	19.13	175.84	5,105.5	-1,322.6	96.3	1,326.1	0.00	0.00	0.00
5,360.0	19.13	175.84	5,143.3	-1,335.7	97.2	1,339.2	0.00	0.00	0.00
5,400.0	19.13	175.84	5,181.1	-1,348.8	98.2	1,352.3	0.00	0.00	0.00
5,440.0	19.13	175.84	5,218.9	-1,361.8	99.2	1,365.4	0.00	0.00	0.00
5,480.0	19.13	175.84	5,256.7	-1,374.9	100.1	1,378.6	0.00	0.00	0.00
5,520.0	19.13	175.84	5,294.5	-1,388.0	101.1	1,391.7	0.00	0.00	0.00
5,560.0	19.13	175.84	5,332.2	-1,401.1	102.0	1,404.8	0.00	0.00	0.00
5,600.0	19.13	175.84	5,370.0	-1,414.1	103.0	1,417.9	0.00	0.00	0.00
5,640.0	19.13	175.84	5,407.8	-1,427.2	103.9	1,431.0	0.00	0.00	0.00
5,680.0	19.13	175.84	5,445.6	-1,440.3	104.9	1,444.1	0.00	0.00	0.00
5,720.0	19.13	175.84	5,483.4	-1,453.4	105.8	1,457.2	0.00	0.00	0.00
5,760.0	19.13	175.84	5,521.2	-1,466.4	106.8	1,470.3	0.00	0.00	0.00
5,800.0	19.13	175.84	5,559.0	-1,479.5	107.7	1,483.4	0.00	0.00	0.00
5,840.0	19.13	175.84	5,596.8	-1,492.6	108.7	1,496.5	0.00	0.00	0.00
5,880.0	19.13	175.84	5,634.6	-1,505.7	109.6	1,509.6	0.00	0.00	0.00
5,920.0	19.13	175.84	5,672.4	-1,518.7	110.6	1,522.8	0.00	0.00	0.00
5,960.0	19.13	175.84	5,710.2	-1,531.8	111.5	1,535.9	0.00	0.00	0.00
6,000.0	19.13	175.84	5,747.9	-1,544.9	112.5	1,549.0	0.00	0.00	0.00
6,040.0	19.13	175.84	5,785.7	-1,558.0	113.4	1,562.1	0.00	0.00	0.00
6,080.0	19.13	175.84	5,823.5	-1,571.0	114.4	1,575.2	0.00	0.00	0.00
6,120.0	19.13	175.84	5,861.3	-1,584.1	115.3	1,588.3	0.00	0.00	0.00
6,133.5	19.13	175.84	5,874.1	-1,588.5	115.7	1,592.7	0.00	0.00	0.00
6,160.0	18.87	175.84	5,899.1	-1,597.1	116.3	1,601.4	1.00	-1.00	0.00
6,200.0	18.47	175.84	5,937.0	-1,609.9	117.2	1,614.2	1.00	-1.00	0.00
6,240.0	18.07	175.84	5,975.0	-1,622.4	118.1	1,626.7	1.00	-1.00	0.00
6,280.0	17.67	175.84	6,013.1	-1,634.6	119.0	1,639.0	1.00	-1.00	0.00
6,320.0	17.27	175.84	6,051.2	-1,646.6	119.9	1,651.0	1.00	-1.00	0.00
6,360.0	16.87	175.84	6,089.5	-1,658.3	120.7	1,662.7	1.00	-1.00	0.00

Database: EDM den0-adp01 Server Data
Company: NOBLE ENERGY INC WELD COUNTY CO
Project: SEC.34-T5N-R67W
Site: Ehrlich N34-24D Pad Sec.34-T5N-R67W
Well: Ehrlich N34-24D
Wellbore: Wellbore #1
Design: Plan #1 (06-11-09)

Local Co-ordinate Reference: Well Ehrlich N34-24D
TVD Reference: WELL @ 4879.0ft (Original Well Elev)
MD Reference: WELL @ 4879.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

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)
6,400.0	16.47	175.84	6,127.8	-1,669.8	121.6	1,674.2	1.00	-1.00	0.00
6,440.0	16.07	175.84	6,166.2	-1,680.9	122.4	1,685.4	1.00	-1.00	0.00
6,480.0	15.67	175.84	6,204.7	-1,691.9	123.2	1,696.3	1.00	-1.00	0.00
6,520.0	15.27	175.84	6,243.2	-1,702.5	124.0	1,707.0	1.00	-1.00	0.00
6,560.0	14.87	175.84	6,281.8	-1,712.9	124.7	1,717.4	1.00	-1.00	0.00
6,600.0	14.47	175.84	6,320.5	-1,723.0	125.4	1,727.5	1.00	-1.00	0.00
6,640.0	14.07	175.84	6,359.3	-1,732.8	126.2	1,737.4	1.00	-1.00	0.00
6,680.0	13.67	175.84	6,398.1	-1,742.4	126.9	1,747.0	1.00	-1.00	0.00
6,720.0	13.27	175.84	6,437.0	-1,751.6	127.5	1,756.3	1.00	-1.00	0.00
6,760.0	12.87	175.84	6,476.0	-1,760.7	128.2	1,765.3	1.00	-1.00	0.00
6,800.0	12.47	175.84	6,515.0	-1,769.4	128.8	1,774.1	1.00	-1.00	0.00
6,840.0	12.07	175.84	6,554.1	-1,777.9	129.4	1,782.6	1.00	-1.00	0.00
6,880.0	11.67	175.84	6,593.3	-1,786.1	130.0	1,790.8	1.00	-1.00	0.00
6,920.0	11.27	175.84	6,632.5	-1,794.0	130.6	1,798.8	1.00	-1.00	0.00
6,960.0	10.87	175.84	6,671.7	-1,801.7	131.2	1,806.5	1.00	-1.00	0.00
7,000.0	10.47	175.84	6,711.0	-1,809.1	131.7	1,813.9	1.00	-1.00	0.00
7,040.0	10.07	175.84	6,750.4	-1,816.2	132.2	1,821.0	1.00	-1.00	0.00
7,046.7	10.00	175.84	6,757.0	-1,817.3	132.3	1,822.2	1.00	-1.00	0.00
NIOBRARA - NIOBRARA TARGET BHL 1434'FSL, 2467'FEL									
7,080.0	10.00	175.84	6,789.8	-1,823.1	132.7	1,827.9	0.00	0.00	0.00
7,120.0	10.00	175.84	6,829.2	-1,830.0	133.2	1,834.9	0.00	0.00	0.00
7,160.0	10.00	175.84	6,868.6	-1,837.0	133.7	1,841.8	0.00	0.00	0.00
7,200.0	10.00	175.84	6,908.0	-1,843.9	134.2	1,848.8	0.00	0.00	0.00
7,240.0	10.00	175.84	6,947.3	-1,850.8	134.8	1,855.7	0.00	0.00	0.00
7,280.0	10.00	175.84	6,986.7	-1,857.8	135.3	1,862.7	0.00	0.00	0.00
7,320.0	10.00	175.84	7,026.1	-1,864.7	135.8	1,869.6	0.00	0.00	0.00
7,360.0	10.00	175.84	7,065.5	-1,871.6	136.3	1,876.6	0.00	0.00	0.00
7,388.9	10.00	175.84	7,094.0	-1,876.6	136.6	1,881.6	0.00	0.00	0.00
CODELL									
7,400.0	10.00	175.84	7,104.9	-1,878.5	136.8	1,883.5	0.00	0.00	0.00
7,440.0	10.00	175.84	7,144.3	-1,885.5	137.3	1,890.5	0.00	0.00	0.00
7,480.0	10.00	175.84	7,183.7	-1,892.4	137.8	1,897.4	0.00	0.00	0.00
7,506.6	10.00	175.84	7,209.9	-1,897.0	138.1	1,902.0	0.00	0.00	0.00
HARDLINE 193'W OF BHL									
7,520.0	10.00	175.84	7,223.1	-1,899.3	138.3	1,904.3	0.00	0.00	0.00
7,541.2	10.00	175.84	7,244.0	-1,903.0	138.6	1,908.0	0.00	0.00	0.00

Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
NIOBRARA TARGET	0.00	0.00	6,757.0	-1,817.3	132.3	1,371,989.52	3,173,200.55	40° 21' 10.247 N	104° 52' 42.763 W
- plan hits target center									
- Point									
HARDLINE 193'W OF	0.00	0.00	7,244.0	-1,717.3	-54.7	1,372,088.25	3,173,012.84	40° 21' 11.236 N	104° 52' 45.179 W
- plan misses target center by 265.8ft at 7506.6ft MD (7209.9 TVD, -1897.0 N, 138.1 E)									
- Polygon									
Point 1			7,244.0	0.0	0.0	1,372,088.25	3,173,012.84		
Point 2			7,244.0	-300.0	0.0	1,371,788.28	3,173,014.94		

Database: EDM den0-adp01 Server Data
Company: NOBLE ENERGY INC WELD COUNTY CO
Project: SEC.34-T5N-R67W
Site: Ehrlich N34-24D Pad Sec.34-T5N-R67W
Well: Ehrlich N34-24D
Wellbore: Wellbore #1
Design: Plan #1 (06-11-09)

Local Co-ordinate Reference: Well Ehrlich N34-24D
TVD Reference: WELL @ 4879.0ft (Original Well Elev)
MD Reference: WELL @ 4879.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
7,046.7	6,757.0	NIOBRARA		0.00	
7,388.9	7,094.0	CODELL		0.00	