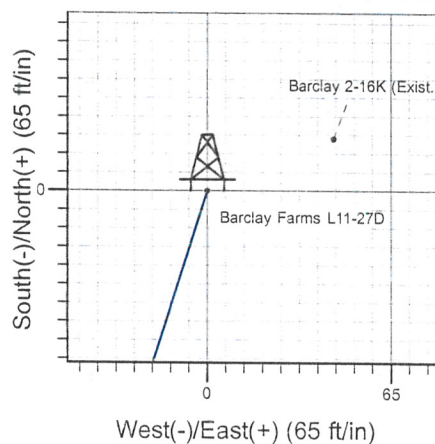
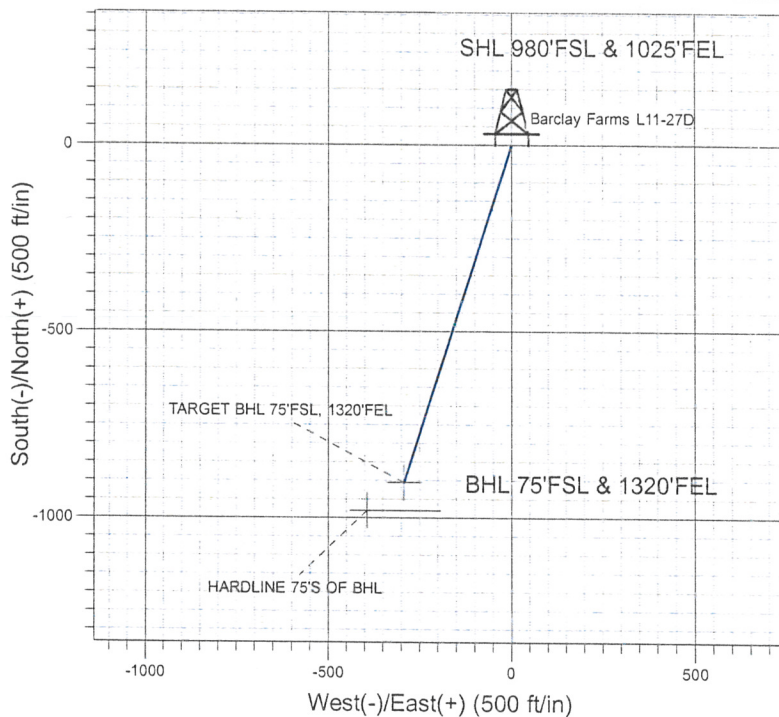
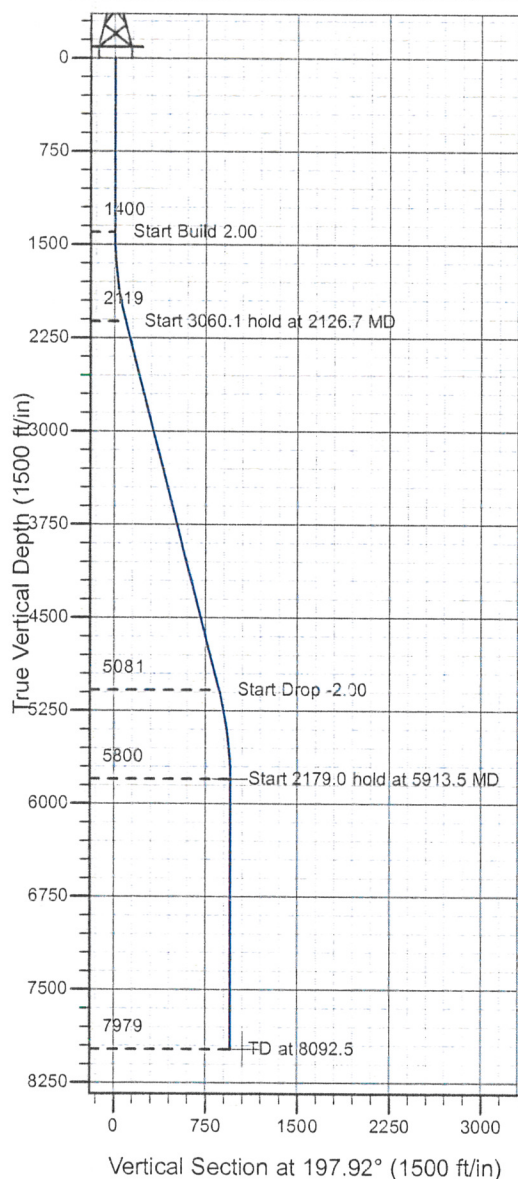


## Well Name: Barclay Farms L11-27D

Surface Location: Barclay Farms Pad Sec.2-T3N-R66W  
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone  
Ground Elevation: 4925.0

| +N/-S +E/-W | Northing  | Easting    | Latitude         | Longitude         | Slot |
|-------------|---|------------|------------------|-------------------|------|
| 0.0         | 0.0 1334603.42  | 3212545.85 | 40° 14' 57.768 N | 104° 44' 18.708 W |      |
|             | Original Well Elev WELL @ 4938.0ft (Original Well Elev) |            |                  |                   |      |

NOBLE ENERGY INC WELD COUNTY CO



Barclay Farms Pad Sec.2-T3N-R66W  
Barclay Farms L11-27D  
Plan # (05-21-09)  
13:31, May 21 2009



Azimuths to True North  
Magnetic North:  $9.08^\circ$

Magnetic Field  
Strength: 53290.4snT  
Dip Angle: 67.01°  
Date: 5/21/2009  
Model: IGRF200510

## WELLBORE TARGET DETAILS (LAT/LONG)

| Name                        | TVD    | +N/-S  | +E/-W  | Latitude         | Longitude         | Shape   |
|-----------------------------|--------|--------|--------|------------------|-------------------|---------|
| TARGET BHL 75°FSL, 1320°FEL | 5800.0 | -905.1 | -292.7 | 40° 14' 48.824 N | 104° 44' 22.483 W | Point   |
| HARCLINE 75°S OF BHL        | 7979.0 | -980.1 | -392.7 | 40° 14' 48.083 N | 104° 44' 23.772 W | 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   | 1400.0 | 0.00  | 0.00   | 1400.0 | 0.0    | 0.0    | 0.00 | 0.00   | 0.0   |                             |
| 3   | 2126.7 | 14.53 | 197.92 | 2118.9 | -87.2  | -28.2  | 2.00 | 197.92 | 91.7  |                             |
| 4   | 5186.8 | 14.53 | 197.92 | 5081.1 | -817.9 | -264.5 | 0.00 | 0.00   | 859.6 |                             |
| 5   | 5913.5 | 0.00  | 0.00   | 5800.0 | -905.1 | -292.7 | 2.00 | 180.00 | 951.2 | TARGET BHL 75°FSL, 1320°FEL |
| 6   | 8092.5 | 0.00  | 0.00   | 7979.0 | -905.1 | -292.7 | 0.00 | 0.00   | 951.2 |                             |



## **Directional**

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

SEC.2-T3N-R66W

Barclay Farms Pad Sec.2-T3N-R66W

Barclay Farms L11-27D

Wellbore #1

Plan: Plan # (05-21-09)

### **Standard Planning Report**

21 May, 2009





**Database:** EDM den0-adp01 Server Data  
**Company:** NOBLE ENERGY INC WELD COUNTY CO  
**Project:** SEC.2-T3N-R66W  
**Site:** Barclay Farms Pad Sec.2-T3N-R66W  
**Well:** Barclay Farms L11-27D  
**Wellbore:** Wellbore #1  
**Design:** Plan # (05-21-09)

**Local Co-ordinate Reference:** Well Barclay Farms L11-27D  
**TVD Reference:** WELL @ 4938.0ft (Original Well Elev)  
**MD Reference:** WELL @ 4938.0ft (Original Well Elev)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature

|                    |                           |                      |                             |
|--------------------|---------------------------|----------------------|-----------------------------|
| <b>Project</b>     | SEC.2-T3N-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 |

|                              |                                  |                     |                 |                          |                   |
|------------------------------|----------------------------------|---------------------|-----------------|--------------------------|-------------------|
| <b>Site</b>                  | Barclay Farms Pad Sec.2-T3N-R66W |                     |                 |                          |                   |
| <b>Site Position:</b>        |                                  | <b>Northing:</b>    | 1,334,603.43 ft | <b>Latitude:</b>         | 40° 14' 57.768 N  |
| <b>From:</b>                 | Lat/Long                         | <b>Easting:</b>     | 3,212,545.85 ft | <b>Longitude:</b>        | 104° 44' 18.708 W |
| <b>Position Uncertainty:</b> | 0.0 ft                           | <b>Slot Radius:</b> | "               | <b>Grid Convergence:</b> | 0.49 °            |

|                             |                       |        |                            |                 |                      |                   |
|-----------------------------|-----------------------|--------|----------------------------|-----------------|----------------------|-------------------|
| <b>Well</b>                 | Barclay Farms L11-27D |        |                            |                 |                      |                   |
| <b>Well Position</b>        | +N/-S                 | 0.0 ft | <b>Northing:</b>           | 1,334,603.42 ft | <b>Latitude:</b>     | 40° 14' 57.768 N  |
|                             | +E/-W                 | 0.0 ft | <b>Easting:</b>            | 3,212,545.85 ft | <b>Longitude:</b>    | 104° 44' 18.708 W |
| <b>Position Uncertainty</b> |                       | 0.0 ft | <b>Wellhead Elevation:</b> | ft              | <b>Ground Level:</b> | 4,925.0 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> |
|                  | IGRF200510        | 5/21/2009          | 9.08                   | 67.01                | 53,290                     |

|                          |                              |                   |                      |                      |
|--------------------------|------------------------------|-------------------|----------------------|----------------------|
| <b>Design</b>            | Plan # (05-21-09)            |                   |                      |                      |
| <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                  | 197.92               |

| <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    |                  |
| 1,400.0              | 0.00            | 0.00        | 1,400.0             | 0.0        | 0.0        | 0.00                  | 0.00                 | 0.00                | 0.00    |                  |
| 2,126.7              | 14.53           | 197.92      | 2,118.9             | -87.2      | -28.2      | 2.00                  | 2.00                 | 0.00                | 197.92  |                  |
| 5,186.8              | 14.53           | 197.92      | 5,081.1             | -817.9     | -264.5     | 0.00                  | 0.00                 | 0.00                | 0.00    |                  |
| 5,913.5              | 0.00            | 0.00        | 5,800.0             | -905.1     | -292.7     | 2.00                  | -2.00                | 0.00                | 180.00  | TARGET BHL 75°F: |
| 8,092.5              | 0.00            | 0.00        | 7,979.0             | -905.1     | -292.7     | 0.00                  | 0.00                 | 0.00                | 0.00    |                  |



|           |                                  |                              |                                      |
|-----------|----------------------------------|------------------------------|--------------------------------------|
| Database: | EDM den0-adp01 Server Data       | Local Co-ordinate Reference: | Well Barclay Farms L11-27D           |
| Company:  | NOBLE ENERGY INC WELD COUNTY CO  | TVD Reference:               | WELL @ 4938.0ft (Original Well Elev) |
| Project:  | SEC.2-T3N-R66W                   | MD Reference:                | WELL @ 4938.0ft (Original Well Elev) |
| Site:     | Barclay Farms Pad Sec.2-T3N-R66W | North Reference:             | True                                 |
| Well:     | Barclay Farms L11-27D            | Survey Calculation Method:   | Minimum Curvature                    |
| Wellbore: | Wellbore #1                      |                              |                                      |
| Design:   | Plan # (05-21-09)                |                              |                                      |

**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) |
|---------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|---------------------|
| 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               | 0.00            | 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                |
| 1,160.0             | 0.00            | 0.00        | 1,160.0             | 0.0        | 0.0        | 0.0                   | 0.00                  | 0.00                 | 0.00                |
| 1,200.0             | 0.00            | 0.00        | 1,200.0             | 0.0        | 0.0        | 0.0                   | 0.00                  | 0.00                 | 0.00                |
| 1,240.0             | 0.00            | 0.00        | 1,240.0             | 0.0        | 0.0        | 0.0                   | 0.00                  | 0.00                 | 0.00                |
| 1,280.0             | 0.00            | 0.00        | 1,280.0             | 0.0        | 0.0        | 0.0                   | 0.00                  | 0.00                 | 0.00                |
| 1,320.0             | 0.00            | 0.00        | 1,320.0             | 0.0        | 0.0        | 0.0                   | 0.00                  | 0.00                 | 0.00                |
| 1,360.0             | 0.00            | 0.00        | 1,360.0             | 0.0        | 0.0        | 0.0                   | 0.00                  | 0.00                 | 0.00                |
| 1,400.0             | 0.00            | 0.00        | 1,400.0             | 0.0        | 0.0        | 0.0                   | 0.00                  | 0.00                 | 0.00                |
| 1,440.0             | 0.80            | 197.92      | 1,440.0             | -0.3       | -0.1       | 0.3                   | 2.00                  | 2.00                 | 0.00                |
| 1,480.0             | 1.60            | 197.92      | 1,480.0             | -1.1       | -0.3       | 1.1                   | 2.00                  | 2.00                 | 0.00                |
| 1,520.0             | 2.40            | 197.92      | 1,520.0             | -2.4       | -0.8       | 2.5                   | 2.00                  | 2.00                 | 0.00                |
| 1,560.0             | 3.20            | 197.92      | 1,559.9             | -4.3       | -1.4       | 4.5                   | 2.00                  | 2.00                 | 0.00                |
| 1,600.0             | 4.00            | 197.92      | 1,599.8             | -6.6       | -2.1       | 7.0                   | 2.00                  | 2.00                 | 0.00                |
| 1,640.0             | 4.80            | 197.92      | 1,639.7             | -9.6       | -3.1       | 10.0                  | 2.00                  | 2.00                 | 0.00                |
| 1,680.0             | 5.60            | 197.92      | 1,679.6             | -13.0      | -4.2       | 13.7                  | 2.00                  | 2.00                 | 0.00                |
| 1,720.0             | 6.40            | 197.92      | 1,719.3             | -17.0      | -5.5       | 17.9                  | 2.00                  | 2.00                 | 0.00                |
| 1,760.0             | 7.20            | 197.92      | 1,759.1             | -21.5      | -7.0       | 22.6                  | 2.00                  | 2.00                 | 0.00                |
| 1,800.0             | 8.00            | 197.92      | 1,798.7             | -26.5      | -8.6       | 27.9                  | 2.00                  | 2.00                 | 0.00                |
| 1,840.0             | 8.80            | 197.92      | 1,838.3             | -32.1      | -10.4      | 33.7                  | 2.00                  | 2.00                 | 0.00                |
| 1,880.0             | 9.60            | 197.92      | 1,877.8             | -38.2      | -12.3      | 40.1                  | 2.00                  | 2.00                 | 0.00                |
| 1,920.0             | 10.40           | 197.92      | 1,917.1             | -44.8      | -14.5      | 47.1                  | 2.00                  | 2.00                 | 0.00                |
| 1,960.0             | 11.20           | 197.92      | 1,956.4             | -51.9      | -16.8      | 54.6                  | 2.00                  | 2.00                 | 0.00                |
| 2,000.0             | 12.00           | 197.92      | 1,995.6             | -59.6      | -19.3      | 62.6                  | 2.00                  | 2.00                 | 0.00                |
| 2,040.0             | 12.80           | 197.92      | 2,034.7             | -67.7      | -21.9      | 71.2                  | 2.00                  | 2.00                 | 0.00                |
| 2,080.0             | 13.60           | 197.92      | 2,073.6             | -76.4      | -24.7      | 80.3                  | 2.00                  | 2.00                 | 0.00                |
| 2,120.0             | 14.40           | 197.92      | 2,112.4             | -85.6      | -27.7      | 90.0                  | 2.00                  | 2.00                 | 0.00                |



|           |                                  |                              |                                      |
|-----------|----------------------------------|------------------------------|--------------------------------------|
| Database: | EDM den0-adp01 Server Data       | Local Co-ordinate Reference: | Well Barclay Farms L11-27D           |
| Company:  | NOBLE ENERGY INC WELD COUNTY CO  | TVD Reference:               | WELL @ 4938.0ft (Original Well Elev) |
| Project:  | SEC.2-T3N-R66W                   | MD Reference:                | WELL @ 4938.0ft (Original Well Elev) |
| Site:     | Barclay Farms Pad Sec.2-T3N-R66W | North Reference:             | True                                 |
| Well:     | Barclay Farms L11-27D            | Survey Calculation Method:   | Minimum Curvature                    |
| Wellbore: | Wellbore #1                      |                              |                                      |
| Design:   | Plan # (05-21-09)                |                              |                                      |

| 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) |  |
| 2,126.7             | 14.53           | 197.92      | 2,118.9             | -87.2      | -28.2      | 91.7                  | 2.00                  | 2.00                 | 0.00                |  |
| 2,160.0             | 14.53           | 197.92      | 2,151.2             | -95.2      | -30.8      | 100.0                 | 0.00                  | 0.00                 | 0.00                |  |
| 2,200.0             | 14.53           | 197.92      | 2,189.9             | -104.7     | -33.9      | 110.1                 | 0.00                  | 0.00                 | 0.00                |  |
| 2,240.0             | 14.53           | 197.92      | 2,228.6             | -114.3     | -37.0      | 120.1                 | 0.00                  | 0.00                 | 0.00                |  |
| 2,280.0             | 14.53           | 197.92      | 2,267.3             | -123.8     | -40.1      | 130.1                 | 0.00                  | 0.00                 | 0.00                |  |
| 2,320.0             | 14.53           | 197.92      | 2,306.0             | -133.4     | -43.1      | 140.2                 | 0.00                  | 0.00                 | 0.00                |  |
| 2,360.0             | 14.53           | 197.92      | 2,344.8             | -142.9     | -46.2      | 150.2                 | 0.00                  | 0.00                 | 0.00                |  |
| 2,400.0             | 14.53           | 197.92      | 2,383.5             | -152.5     | -49.3      | 160.3                 | 0.00                  | 0.00                 | 0.00                |  |
| 2,440.0             | 14.53           | 197.92      | 2,422.2             | -162.0     | -52.4      | 170.3                 | 0.00                  | 0.00                 | 0.00                |  |
| 2,480.0             | 14.53           | 197.92      | 2,460.9             | -171.6     | -55.5      | 180.3                 | 0.00                  | 0.00                 | 0.00                |  |
| 2,520.0             | 14.53           | 197.92      | 2,499.6             | -181.1     | -58.6      | 190.4                 | 0.00                  | 0.00                 | 0.00                |  |
| 2,560.0             | 14.53           | 197.92      | 2,538.4             | -190.7     | -61.7      | 200.4                 | 0.00                  | 0.00                 | 0.00                |  |
| 2,600.0             | 14.53           | 197.92      | 2,577.1             | -200.2     | -64.8      | 210.4                 | 0.00                  | 0.00                 | 0.00                |  |
| 2,640.0             | 14.53           | 197.92      | 2,615.8             | -209.8     | -67.9      | 220.5                 | 0.00                  | 0.00                 | 0.00                |  |
| 2,680.0             | 14.53           | 197.92      | 2,654.5             | -219.3     | -70.9      | 230.5                 | 0.00                  | 0.00                 | 0.00                |  |
| 2,720.0             | 14.53           | 197.92      | 2,693.2             | -228.9     | -74.0      | 240.6                 | 0.00                  | 0.00                 | 0.00                |  |
| 2,760.0             | 14.53           | 197.92      | 2,732.0             | -238.4     | -77.1      | 250.6                 | 0.00                  | 0.00                 | 0.00                |  |
| 2,800.0             | 14.53           | 197.92      | 2,770.7             | -248.0     | -80.2      | 260.6                 | 0.00                  | 0.00                 | 0.00                |  |
| 2,840.0             | 14.53           | 197.92      | 2,809.4             | -257.5     | -83.3      | 270.7                 | 0.00                  | 0.00                 | 0.00                |  |
| 2,880.0             | 14.53           | 197.92      | 2,848.1             | -267.1     | -86.4      | 280.7                 | 0.00                  | 0.00                 | 0.00                |  |
| 2,920.0             | 14.53           | 197.92      | 2,886.8             | -276.6     | -89.5      | 290.7                 | 0.00                  | 0.00                 | 0.00                |  |
| 2,960.0             | 14.53           | 197.92      | 2,925.6             | -286.2     | -92.6      | 300.8                 | 0.00                  | 0.00                 | 0.00                |  |
| 3,000.0             | 14.53           | 197.92      | 2,964.3             | -295.7     | -95.7      | 310.8                 | 0.00                  | 0.00                 | 0.00                |  |
| 3,040.0             | 14.53           | 197.92      | 3,003.0             | -305.3     | -98.7      | 320.9                 | 0.00                  | 0.00                 | 0.00                |  |
| 3,080.0             | 14.53           | 197.92      | 3,041.7             | -314.8     | -101.8     | 330.9                 | 0.00                  | 0.00                 | 0.00                |  |
| 3,120.0             | 14.53           | 197.92      | 3,080.4             | -324.4     | -104.9     | 340.9                 | 0.00                  | 0.00                 | 0.00                |  |
| 3,160.0             | 14.53           | 197.92      | 3,119.2             | -333.9     | -108.0     | 351.0                 | 0.00                  | 0.00                 | 0.00                |  |
| 3,200.0             | 14.53           | 197.92      | 3,157.9             | -343.5     | -111.1     | 361.0                 | 0.00                  | 0.00                 | 0.00                |  |
| 3,240.0             | 14.53           | 197.92      | 3,196.6             | -353.0     | -114.2     | 371.1                 | 0.00                  | 0.00                 | 0.00                |  |
| 3,280.0             | 14.53           | 197.92      | 3,235.3             | -362.6     | -117.3     | 381.1                 | 0.00                  | 0.00                 | 0.00                |  |
| 3,320.0             | 14.53           | 197.92      | 3,274.0             | -372.1     | -120.4     | 391.1                 | 0.00                  | 0.00                 | 0.00                |  |
| 3,360.0             | 14.53           | 197.92      | 3,312.8             | -381.7     | -123.5     | 401.2                 | 0.00                  | 0.00                 | 0.00                |  |
| 3,400.0             | 14.53           | 197.92      | 3,351.5             | -391.2     | -126.5     | 411.2                 | 0.00                  | 0.00                 | 0.00                |  |
| 3,440.0             | 14.53           | 197.92      | 3,390.2             | -400.8     | -129.6     | 421.2                 | 0.00                  | 0.00                 | 0.00                |  |
| 3,480.0             | 14.53           | 197.92      | 3,428.9             | -410.3     | -132.7     | 431.3                 | 0.00                  | 0.00                 | 0.00                |  |
| 3,520.0             | 14.53           | 197.92      | 3,467.6             | -419.9     | -135.8     | 441.3                 | 0.00                  | 0.00                 | 0.00                |  |
| 3,560.0             | 14.53           | 197.92      | 3,506.4             | -429.4     | -138.9     | 451.4                 | 0.00                  | 0.00                 | 0.00                |  |
| 3,600.0             | 14.53           | 197.92      | 3,545.1             | -439.0     | -142.0     | 461.4                 | 0.00                  | 0.00                 | 0.00                |  |
| 3,640.0             | 14.53           | 197.92      | 3,583.8             | -448.5     | -145.1     | 471.4                 | 0.00                  | 0.00                 | 0.00                |  |
| 3,680.0             | 14.53           | 197.92      | 3,622.5             | -458.1     | -148.2     | 481.5                 | 0.00                  | 0.00                 | 0.00                |  |
| 3,720.0             | 14.53           | 197.92      | 3,661.2             | -467.7     | -151.3     | 491.5                 | 0.00                  | 0.00                 | 0.00                |  |
| 3,760.0             | 14.53           | 197.92      | 3,700.0             | -477.2     | -154.3     | 501.5                 | 0.00                  | 0.00                 | 0.00                |  |
| 3,800.0             | 14.53           | 197.92      | 3,738.7             | -486.8     | -157.4     | 511.6                 | 0.00                  | 0.00                 | 0.00                |  |
| 3,840.0             | 14.53           | 197.92      | 3,777.4             | -496.3     | -160.5     | 521.6                 | 0.00                  | 0.00                 | 0.00                |  |
| 3,880.0             | 14.53           | 197.92      | 3,816.1             | -505.9     | -163.6     | 531.7                 | 0.00                  | 0.00                 | 0.00                |  |
| 3,920.0             | 14.53           | 197.92      | 3,854.8             | -515.4     | -166.7     | 541.7                 | 0.00                  | 0.00                 | 0.00                |  |
| 3,960.0             | 14.53           | 197.92      | 3,893.6             | -525.0     | -169.8     | 551.7                 | 0.00                  | 0.00                 | 0.00                |  |
| 4,000.0             | 14.53           | 197.92      | 3,932.3             | -534.5     | -172.9     | 561.8                 | 0.00                  | 0.00                 | 0.00                |  |
| 4,040.0             | 14.53           | 197.92      | 3,971.0             | -544.1     | -176.0     | 571.8                 | 0.00                  | 0.00                 | 0.00                |  |
| 4,080.0             | 14.53           | 197.92      | 4,009.7             | -553.6     | -179.1     | 581.8                 | 0.00                  | 0.00                 | 0.00                |  |
| 4,120.0             | 14.53           | 197.92      | 4,048.4             | -563.2     | -182.1     | 591.9                 | 0.00                  | 0.00                 | 0.00                |  |
| 4,160.0             | 14.53           | 197.92      | 4,087.2             | -572.7     | -185.2     | 601.9                 | 0.00                  | 0.00                 | 0.00                |  |
| 4,200.0             | 14.53           | 197.92      | 4,125.9             | -582.3     | -188.3     | 612.0                 | 0.00                  | 0.00                 | 0.00                |  |
| 4,240.0             | 14.53           | 197.92      | 4,164.6             | -591.8     | -191.4     | 622.0                 | 0.00                  | 0.00                 | 0.00                |  |



Database: EDM den0-adp01 Server Data  
 Company: NOBLE ENERGY INC WELD COUNTY CO  
 Project: SEC.2-T3N-R66W  
 Site: Barclay Farms Pad Sec.2-T3N-R66W  
 Well: Barclay Farms L11-27D  
 Wellbore: Wellbore #1  
 Design: Plan # (05-21-09)

Local Co-ordinate Reference: Well Barclay Farms L11-27D  
 TVD Reference: WELL @ 4938.0ft (Original Well Elev)  
 MD Reference: WELL @ 4938.0ft (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) |
|------------------------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|---------------------|
| 4,280.0                            | 14.53           | 197.92      | 4,203.3             | -601.4     | -194.5     | 632.0                 | 0.00                  | 0.00                 | 0.00                |
| 4,320.0                            | 14.53           | 197.92      | 4,242.1             | -610.9     | -197.6     | 642.1                 | 0.00                  | 0.00                 | 0.00                |
| 4,360.0                            | 14.53           | 197.92      | 4,280.8             | -620.5     | -200.7     | 652.1                 | 0.00                  | 0.00                 | 0.00                |
| 4,400.0                            | 14.53           | 197.92      | 4,319.5             | -630.0     | -203.8     | 662.1                 | 0.00                  | 0.00                 | 0.00                |
| 4,440.0                            | 14.53           | 197.92      | 4,358.2             | -639.6     | -206.9     | 672.2                 | 0.00                  | 0.00                 | 0.00                |
| 4,480.0                            | 14.53           | 197.92      | 4,396.9             | -649.1     | -209.9     | 682.2                 | 0.00                  | 0.00                 | 0.00                |
| 4,520.0                            | 14.53           | 197.92      | 4,435.7             | -658.7     | -213.0     | 692.3                 | 0.00                  | 0.00                 | 0.00                |
| 4,560.0                            | 14.53           | 197.92      | 4,474.4             | -668.2     | -216.1     | 702.3                 | 0.00                  | 0.00                 | 0.00                |
| 4,600.0                            | 14.53           | 197.92      | 4,513.1             | -677.8     | -219.2     | 712.3                 | 0.00                  | 0.00                 | 0.00                |
| 4,640.0                            | 14.53           | 197.92      | 4,551.8             | -687.3     | -222.3     | 722.4                 | 0.00                  | 0.00                 | 0.00                |
| 4,680.0                            | 14.53           | 197.92      | 4,590.5             | -696.9     | -225.4     | 732.4                 | 0.00                  | 0.00                 | 0.00                |
| 4,720.0                            | 14.53           | 197.92      | 4,629.3             | -706.4     | -228.5     | 742.4                 | 0.00                  | 0.00                 | 0.00                |
| 4,760.0                            | 14.53           | 197.92      | 4,668.0             | -716.0     | -231.6     | 752.5                 | 0.00                  | 0.00                 | 0.00                |
| 4,800.0                            | 14.53           | 197.92      | 4,706.7             | -725.5     | -234.7     | 762.5                 | 0.00                  | 0.00                 | 0.00                |
| 4,840.0                            | 14.53           | 197.92      | 4,745.4             | -735.1     | -237.7     | 772.6                 | 0.00                  | 0.00                 | 0.00                |
| 4,880.0                            | 14.53           | 197.92      | 4,784.1             | -744.6     | -240.8     | 782.6                 | 0.00                  | 0.00                 | 0.00                |
| 4,920.0                            | 14.53           | 197.92      | 4,822.9             | -754.2     | -243.9     | 792.6                 | 0.00                  | 0.00                 | 0.00                |
| 4,960.0                            | 14.53           | 197.92      | 4,861.6             | -763.7     | -247.0     | 802.7                 | 0.00                  | 0.00                 | 0.00                |
| 5,000.0                            | 14.53           | 197.92      | 4,900.3             | -773.3     | -250.1     | 812.7                 | 0.00                  | 0.00                 | 0.00                |
| 5,040.0                            | 14.53           | 197.92      | 4,939.0             | -782.8     | -253.2     | 822.7                 | 0.00                  | 0.00                 | 0.00                |
| 5,080.0                            | 14.53           | 197.92      | 4,977.7             | -792.4     | -256.3     | 832.8                 | 0.00                  | 0.00                 | 0.00                |
| 5,120.0                            | 14.53           | 197.92      | 5,016.5             | -801.9     | -259.4     | 842.8                 | 0.00                  | 0.00                 | 0.00                |
| 5,160.0                            | 14.53           | 197.92      | 5,055.2             | -811.5     | -262.5     | 852.9                 | 0.00                  | 0.00                 | 0.00                |
| 5,186.8                            | 14.53           | 197.92      | 5,081.1             | -817.9     | -264.5     | 859.6                 | 0.00                  | 0.00                 | 0.00                |
| 5,200.0                            | 14.27           | 197.92      | 5,093.9             | -821.0     | -265.5     | 862.9                 | 2.00                  | -2.00                | 0.00                |
| 5,240.0                            | 13.47           | 197.92      | 5,132.7             | -830.1     | -268.5     | 872.5                 | 2.00                  | -2.00                | 0.00                |
| 5,280.0                            | 12.67           | 197.92      | 5,171.7             | -838.7     | -271.3     | 881.5                 | 2.00                  | -2.00                | 0.00                |
| 5,320.0                            | 11.87           | 197.92      | 5,210.8             | -846.8     | -273.9     | 890.0                 | 2.00                  | -2.00                | 0.00                |
| 5,360.0                            | 11.07           | 197.92      | 5,250.0             | -854.4     | -276.3     | 898.0                 | 2.00                  | -2.00                | 0.00                |
| 5,400.0                            | 10.27           | 197.92      | 5,289.3             | -861.4     | -278.6     | 905.4                 | 2.00                  | -2.00                | 0.00                |
| 5,440.0                            | 9.47            | 197.92      | 5,328.7             | -867.9     | -280.7     | 912.2                 | 2.00                  | -2.00                | 0.00                |
| 5,480.0                            | 8.67            | 197.92      | 5,368.2             | -873.9     | -282.7     | 918.5                 | 2.00                  | -2.00                | 0.00                |
| 5,520.0                            | 7.87            | 197.92      | 5,407.8             | -879.4     | -284.4     | 924.3                 | 2.00                  | -2.00                | 0.00                |
| 5,560.0                            | 7.07            | 197.92      | 5,447.4             | -884.4     | -286.0     | 929.5                 | 2.00                  | -2.00                | 0.00                |
| 5,600.0                            | 6.27            | 197.92      | 5,487.2             | -888.8     | -287.5     | 934.1                 | 2.00                  | -2.00                | 0.00                |
| 5,640.0                            | 5.47            | 197.92      | 5,527.0             | -892.7     | -288.7     | 938.2                 | 2.00                  | -2.00                | 0.00                |
| 5,680.0                            | 4.67            | 197.92      | 5,566.8             | -896.0     | -289.8     | 941.7                 | 2.00                  | -2.00                | 0.00                |
| 5,720.0                            | 3.87            | 197.92      | 5,606.7             | -898.9     | -290.7     | 944.7                 | 2.00                  | -2.00                | 0.00                |
| 5,760.0                            | 3.07            | 197.92      | 5,646.6             | -901.2     | -291.5     | 947.1                 | 2.00                  | -2.00                | 0.00                |
| 5,800.0                            | 2.27            | 197.92      | 5,686.6             | -902.9     | -292.0     | 949.0                 | 2.00                  | -2.00                | 0.00                |
| 5,840.0                            | 1.47            | 197.92      | 5,726.6             | -904.2     | -292.4     | 950.3                 | 2.00                  | -2.00                | 0.00                |
| 5,880.0                            | 0.67            | 197.92      | 5,766.5             | -904.9     | -292.7     | 951.1                 | 2.00                  | -2.00                | 0.00                |
| 5,913.5                            | 0.00            | 0.00        | 5,800.0             | -905.1     | -292.7     | 951.2                 | 2.00                  | -2.00                | 0.00                |
| <b>TARGET BHL 75'FSL, 1320'FEL</b> |                 |             |                     |            |            |                       |                       |                      |                     |
| 5,920.0                            | 0.00            | 0.00        | 5,806.5             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| 5,960.0                            | 0.00            | 0.00        | 5,846.5             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| 6,000.0                            | 0.00            | 0.00        | 5,886.5             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| 6,040.0                            | 0.00            | 0.00        | 5,926.5             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| 6,080.0                            | 0.00            | 0.00        | 5,966.5             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| 6,120.0                            | 0.00            | 0.00        | 6,006.5             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| 6,160.0                            | 0.00            | 0.00        | 6,046.5             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| 6,200.0                            | 0.00            | 0.00        | 6,086.5             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| 6,240.0                            | 0.00            | 0.00        | 6,126.5             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |



Database: EDM den0-adp01 Server Data  
 Company: NOBLE ENERGY INC WELD COUNTY CO  
 Project: SEC.2-T3N-R66W  
 Site: Barclay Farms Pad Sec.2-T3N-R66W  
 Well: Barclay Farms L11-27D  
 Wellbore: Wellbore #1  
 Design: Plan # (05-21-09)

Local Co-ordinate Reference: Well Barclay Farms L11-27D  
 TVD Reference: WELL @ 4938.0ft (Original Well Elev)  
 MD Reference: WELL @ 4938.0ft (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) |
|---------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|---------------------|
| 6,280.0             | 0.00            | 0.00        | 6,166.5             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| 6,320.0             | 0.00            | 0.00        | 6,206.5             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| 6,360.0             | 0.00            | 0.00        | 6,246.5             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| 6,400.0             | 0.00            | 0.00        | 6,286.5             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| 6,440.0             | 0.00            | 0.00        | 6,326.5             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| 6,480.0             | 0.00            | 0.00        | 6,366.5             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| 6,520.0             | 0.00            | 0.00        | 6,406.5             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| 6,560.0             | 0.00            | 0.00        | 6,446.5             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| 6,600.0             | 0.00            | 0.00        | 6,486.5             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| 6,640.0             | 0.00            | 0.00        | 6,526.5             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| 6,680.0             | 0.00            | 0.00        | 6,566.5             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| 6,720.0             | 0.00            | 0.00        | 6,606.5             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| 6,760.0             | 0.00            | 0.00        | 6,646.5             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| 6,800.0             | 0.00            | 0.00        | 6,686.5             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| 6,840.0             | 0.00            | 0.00        | 6,726.5             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| 6,880.0             | 0.00            | 0.00        | 6,766.5             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| 6,920.0             | 0.00            | 0.00        | 6,806.5             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| 6,960.0             | 0.00            | 0.00        | 6,846.5             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| 7,000.0             | 0.00            | 0.00        | 6,886.5             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| 7,040.0             | 0.00            | 0.00        | 6,926.5             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| 7,080.0             | 0.00            | 0.00        | 6,966.5             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| 7,120.0             | 0.00            | 0.00        | 7,006.5             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| 7,160.0             | 0.00            | 0.00        | 7,046.5             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| 7,175.5             | 0.00            | 0.00        | 7,062.0             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| <b>NIOBRARA</b>     |                 |             |                     |            |            |                       |                       |                      |                     |
| 7,200.0             | 0.00            | 0.00        | 7,086.5             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| 7,240.0             | 0.00            | 0.00        | 7,126.5             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| 7,280.0             | 0.00            | 0.00        | 7,166.5             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| 7,320.0             | 0.00            | 0.00        | 7,206.5             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| 7,360.0             | 0.00            | 0.00        | 7,246.5             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| 7,400.0             | 0.00            | 0.00        | 7,286.5             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| 7,440.0             | 0.00            | 0.00        | 7,326.5             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| 7,480.0             | 0.00            | 0.00        | 7,366.5             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| 7,492.5             | 0.00            | 0.00        | 7,379.0             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| <b>CODELL</b>       |                 |             |                     |            |            |                       |                       |                      |                     |
| 7,520.0             | 0.00            | 0.00        | 7,406.5             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| 7,560.0             | 0.00            | 0.00        | 7,446.5             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| 7,600.0             | 0.00            | 0.00        | 7,486.5             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| 7,640.0             | 0.00            | 0.00        | 7,526.5             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| 7,680.0             | 0.00            | 0.00        | 7,566.5             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| 7,720.0             | 0.00            | 0.00        | 7,606.5             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| 7,760.0             | 0.00            | 0.00        | 7,646.5             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| 7,800.0             | 0.00            | 0.00        | 7,686.5             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| 7,840.0             | 0.00            | 0.00        | 7,726.5             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| 7,880.0             | 0.00            | 0.00        | 7,766.5             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| 7,881.5             | 0.00            | 0.00        | 7,768.0             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| <b>D SAND</b>       |                 |             |                     |            |            |                       |                       |                      |                     |
| 7,920.0             | 0.00            | 0.00        | 7,806.5             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| 7,942.5             | 0.00            | 0.00        | 7,829.0             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| <b>J SAND</b>       |                 |             |                     |            |            |                       |                       |                      |                     |
| 7,960.0             | 0.00            | 0.00        | 7,846.5             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| 8,000.0             | 0.00            | 0.00        | 7,886.5             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| 8,040.0             | 0.00            | 0.00        | 7,926.5             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| 8,080.0             | 0.00            | 0.00        | 7,966.5             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |

|           |                                  |                              |                                      |
|-----------|----------------------------------|------------------------------|--------------------------------------|
| Database: | EDM den0-adp01 Server Data       | Local Co-ordinate Reference: | Well Barclay Farms L11-27D           |
| Company:  | NOBLE ENERGY INC WELD COUNTY CO  | TVD Reference:               | WELL @ 4938.0ft (Original Well Elev) |
| Project:  | SEC.2-T3N-R66W                   | MD Reference:                | WELL @ 4938.0ft (Original Well Elev) |
| Site:     | Barclay Farms Pad Sec.2-T3N-R66W | North Reference:             | True                                 |
| Well:     | Barclay Farms L11-27D            | Survey Calculation Method:   | Minimum Curvature                    |
| Wellbore: | Wellbore #1                      |                              |                                      |
| Design:   | Plan # (05-21-09)                |                              |                                      |

**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) |
|----------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|---------------------|
| 8,092.5              | 0.00            | 0.00        | 7,979.0             | -905.1     | -292.7     | 951.2                 | 0.00                  | 0.00                 | 0.00                |
| HARDLINE 75'S OF BHL |                 |             |                     |            |            |                       |                       |                      |                     |

**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  |               |              |          |            |            |               |              |                  |                   |
| TARGET BHL 75'FSL  | 0.00          | 0.00         | 5,800.0  | -905.1     | -292.7     | 1,333,695.90  | 3,212,260.91 | 40° 14' 48.824 N | 104° 44' 22.483 W |
| - plan hits target center  |               |              |          |            |            |               |              |                  |                   |
| - Point  |               |              |          |            |            |               |              |                  |                   |
| HARDLINE 75'S OF E   | 0.00          | 0.00         | 7,979.0  | -980.1     | -392.7     | 1,333,620.03  | 3,212,161.59 | 40° 14' 48.083 N | 104° 44' 23.772 W |
| - plan misses target center by 125.0ft at 8092.5ft MD (7979.0 TVD, -905.1 N, -292.7 E) |               |              |          |            |            |               |              |                  |                   |
| - Polygon  |               |              |          |            |            |               |              |                  |                   |
| Point 1  |               |              | 7,979.0  | 0.0        | 0.0        | 1,333,620.03  | 3,212,161.59 |                  |                   |
| Point 2  |               |              | 7,979.0  | 0.0        | 200.0      | 1,333,621.75  | 3,212,361.58 |                  |                   |

**Formations**

| Measured Depth (ft) | Vertical Depth (ft) | Name    | Lithology | Dip (°) | Dip Direction (°) |
|---------------------|---------------------|---------|-----------|---------|-------------------|
| 7,175.5             | 7,062.0             | NIORARA |           | 0.00    |                   |
| 7,492.5             | 7,379.0             | CODELL  |           | 0.00    |                   |
| 7,881.5             | 7,768.0             | D SAND  |           | 0.00    |                   |
| 7,942.5             | 7,829.0             | J SAND  |           | 0.00    |                   |