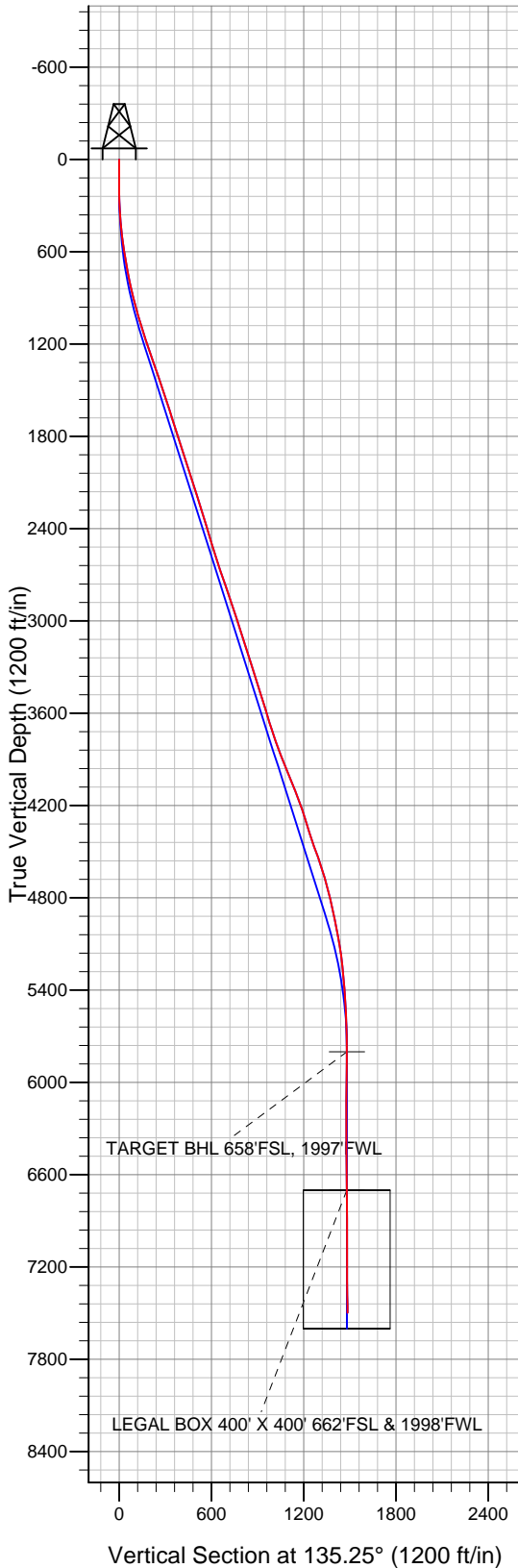
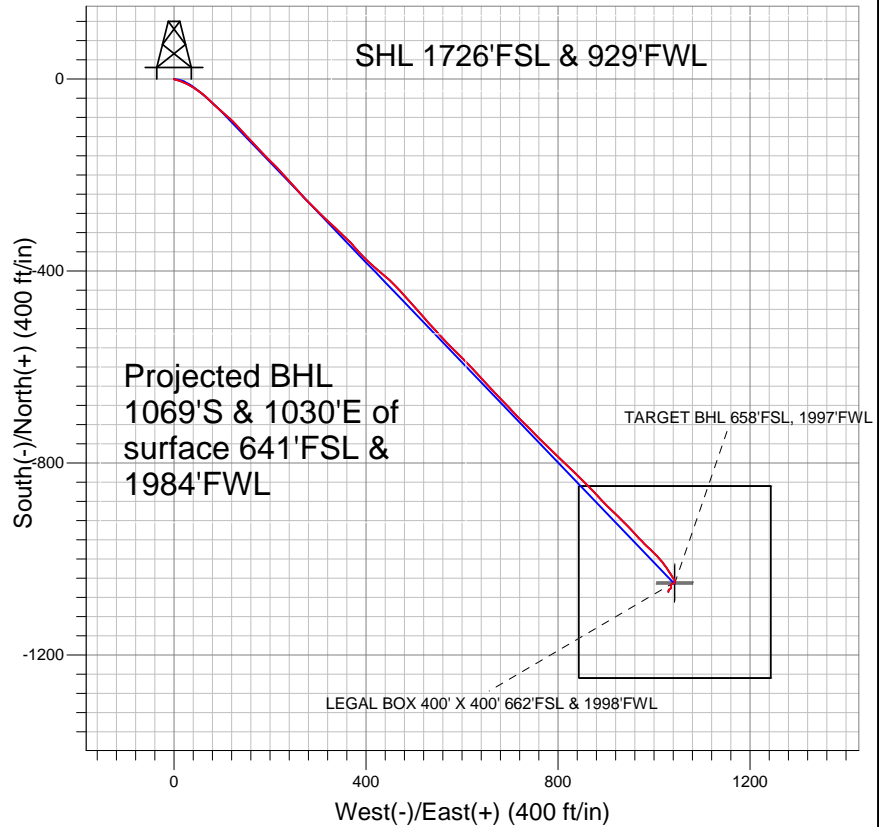


Well Name: **Nelson 24-32D**  
 Surface Location: Nelson 32BD Pad Sec.32-T7N-R66W  
 North American Datum 1983 US State Plane 1983 Colorado Northern Zone  
 Ground Elevation: 4860.0  
 +N/-S +E/-W Northing Easting Latitude Longitude Slot  
 0.0 0.0 1436087.53 3191914.61 40° 31' 42.276 N 104° 48' 34.596 W  
 Original Well Elev WELL @ 4873.0ft (Original Well Elev)



## PETROLEUM DEVELOPMENT CORP Weld County CO



### LEGEND

- + Nelson 24-32D, Wellbore #1, Plan #1 (1-04-11) V0
- Wellbore #1
- Survey #1

## Final Survey Plot

Projected Final Survey -  
 7720'MD & 7497'TVD @ 1484'VS  
 0.8 deg Inc 168.4 deg AZ

Project: SEC.32-T7N-R66W  
 Site: Nelson 32BD Pad Sec.32-T7N-R66W  
 Well: Nelson 24-32D  
 Plan: Wellbore #1



## **Directional**

# **PETROLEUM DEVELOPMENT CORP Weld County CO**

**SEC.32-T7N-R66W**

**Nelson 32BD Pad Sec.32-T7N-R66W**

**Nelson 24-32D**

**Wellbore #1**

**Survey: Survey #1**

## **Standard Survey Report**

**11 April, 2011**

|                  |   |                                     |                                      |
|------------------|---|-------------------------------------|--------------------------------------|
| <b>Company:</b>  | PETROLEUM DEVELOPMENT CORP Weld County CO | <b>Local Co-ordinate Reference:</b> | Well Nelson 24-32D                   |
| <b>Project:</b>  | SEC.32-T7N-R66W                           | <b>TVD Reference:</b>               | WELL @ 4873.0ft (Original Well Elev) |
| <b>Site:</b>     | Nelson 32BD Pad Sec.32-T7N-R66W           | <b>MD Reference:</b>                | WELL @ 4873.0ft (Original Well Elev) |
| <b>Well:</b>     | Nelson 24-32D                             | <b>North Reference:</b>             | True                                 |
| <b>Wellbore:</b> | Wellbore #1                               | <b>Survey Calculation Method:</b>   | Minimum Curvature                    |
| <b>Design:</b>   | Wellbore #1                               | <b>Database:</b>                    | Landmark                             |

|                    |  |                      |                             |
|--------------------|--|----------------------|-----------------------------|
| <b>Project</b>     | SEC.32-T7N-R66W, Weld County, Colorado |                      |                             |
| <b>Map System:</b> | US State Plane 1983                    | <b>System Datum:</b> | Mean Sea Level              |
| <b>Geo Datum:</b>  | North American Datum 1983              |                      | Using Well Reference Point  |
| <b>Map Zone:</b>   | Colorado Northern Zone                 |                      | Using geodetic scale factor |

|                              |                                 |                          |                   |
|------------------------------|---------------------------------|--------------------------|-------------------|
| <b>Site</b>                  | Nelson 32BD Pad Sec.32-T7N-R66W |                          |                   |
| <b>Site Position:</b>        |                                 | <b>Northing:</b>         | 1,436,065.66 ft   |
| <b>From:</b>                 | Lat/Long                        | <b>Easting:</b>          | 3,191,912.00 ft   |
| <b>Position Uncertainty:</b> | 0.0 ft                          | <b>Slot Radius:</b>      | "                 |
|                              |                                 | <b>Latitude:</b>         | 40° 31' 42.060 N  |
|                              |                                 | <b>Longitude:</b>        | 104° 48' 34.632 W |
|                              |                                 | <b>Grid Convergence:</b> | 0.45 °            |

|                             |               |                            |                                  |
|-----------------------------|---------------|----------------------------|----------------------------------|
| <b>Well</b>                 | Nelson 24-32D |                            |                                  |
| <b>Well Position</b>        | <b>+N/-S</b>  | 0.0 ft                     | <b>Northing:</b> 1,436,087.53 ft |
|                             | <b>+E/-W</b>  | 0.0 ft                     | <b>Easting:</b> 3,191,914.61 ft  |
| <b>Position Uncertainty</b> | 0.0 ft        | <b>Wellhead Elevation:</b> | ft                               |
|                             |               | <b>Latitude:</b>           | 40° 31' 42.276 N                 |
|                             |               | <b>Longitude:</b>          | 104° 48' 34.596 W                |
|                             |               | <b>Ground Level:</b>       | 4,860.0 ft                       |

|                  |                   |                    |                            |
|------------------|-------------------|--------------------|----------------------------|
| <b>Wellbore</b>  | Wellbore #1       |                    |                            |
| <b>Magnetics</b> | <b>Model Name</b> | <b>Sample Date</b> | <b>Declination (°)</b>     |
|                  | IGRF2010          | 1/11/2011          | 8.96                       |
|                  |                   |                    | <b>Dip Angle (°)</b>       |
|                  |                   |                    | 67.16                      |
|                  |                   |                    | <b>Field Strength (nT)</b> |
|                  |                   |                    | 53,238                     |

|                          |                              |                      |                      |
|--------------------------|------------------------------|----------------------|----------------------|
| <b>Design</b>            | Wellbore #1                  |                      |                      |
| <b>Audit Notes:</b>      |                              |                      |                      |
| <b>Version:</b>          | 1.0                          | <b>Phase:</b>        | ACTUAL               |
|                          |                              | <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>    |
|                          | 0.0                          | 0.0                  | 0.0                  |
|                          |                              |                      | <b>Direction (°)</b> |
|                          |                              |                      | 135.25               |

|                       |                       |                          |                    |
|-----------------------|-----------------------|--------------------------|--------------------|
| <b>Survey Program</b> | <b>Date</b> 4/11/2011 |                          |                    |
| <b>From (ft)</b>      | <b>To (ft)</b>        | <b>Survey (Wellbore)</b> | <b>Tool Name</b>   |
| 89.0                  | 7,720.0               | Survey #1 (Wellbore #1)  | MWD                |
|                       |                       |                          | <b>Description</b> |
|                       |                       |                          | MWD - Standard     |

|                            |                        |                    |                            |                   |                   |                              |                              |                             |                            |
|----------------------------|------------------------|--------------------|----------------------------|-------------------|-------------------|------------------------------|------------------------------|-----------------------------|----------------------------|
| <b>Survey</b>              |                        |                    |                            |                   |                   |                              |                              |                             |                            |
| <b>Measured Depth (ft)</b> | <b>Inclination (°)</b> | <b>Azimuth (°)</b> | <b>Vertical Depth (ft)</b> | <b>+N/-S (ft)</b> | <b>+E/-W (ft)</b> | <b>Vertical Section (ft)</b> | <b>Dogleg Rate (°/100ft)</b> | <b>Build Rate (°/100ft)</b> | <b>Turn Rate (°/100ft)</b> |
| 0.0                        | 0.00                   | 0.00               | 0.0                        | 0.0               | 0.0               | 0.0                          | 0.00                         | 0.00                        | 0.00                       |
| 89.0                       | 0.10                   | 225.10             | 89.0                       | -0.1              | -0.1              | 0.0                          | 0.11                         | 0.11                        | 0.00                       |
| 180.0                      | 0.00                   | 151.90             | 180.0                      | -0.1              | -0.1              | 0.0                          | 0.11                         | -0.11                       | 0.00                       |
| 271.0                      | 1.70                   | 109.90             | 271.0                      | -0.6              | 1.2               | 1.2                          | 1.87                         | 1.87                        | 0.00                       |
| 361.0                      | 4.30                   | 106.50             | 360.9                      | -2.0              | 5.6               | 5.4                          | 2.89                         | 2.89                        | -3.78                      |
| 452.0                      | 6.50                   | 108.00             | 451.4                      | -4.5              | 13.8              | 13.0                         | 2.42                         | 2.42                        | 1.65                       |
| 545.0                      | 8.40                   | 115.80             | 543.7                      | -9.1              | 24.9              | 24.0                         | 2.31                         | 2.04                        | 8.39                       |
| 638.0                      | 9.80                   | 122.10             | 635.5                      | -16.3             | 37.8              | 38.2                         | 1.85                         | 1.51                        | 6.77                       |
| 733.0                      | 10.80                  | 125.20             | 729.0                      | -25.7             | 51.9              | 54.8                         | 1.20                         | 1.05                        | 3.26                       |
| 826.0                      | 12.30                  | 131.40             | 820.1                      | -37.3             | 66.4              | 73.3                         | 2.09                         | 1.61                        | 6.67                       |
| 888.0                      | 14.00                  | 134.60             | 880.4                      | -46.9             | 76.7              | 87.3                         | 2.98                         | 2.74                        | 5.16                       |
| 963.0                      | 14.90                  | 131.50             | 953.1                      | -59.7             | 90.4              | 106.0                        | 1.58                         | 1.20                        | -4.13                      |

|                  |   |                                     |                                      |
|------------------|---|-------------------------------------|--------------------------------------|
| <b>Company:</b>  | PETROLEUM DEVELOPMENT CORP Weld County CO | <b>Local Co-ordinate Reference:</b> | Well Nelson 24-32D                   |
| <b>Project:</b>  | SEC.32-T7N-R66W                           | <b>TVD Reference:</b>               | WELL @ 4873.0ft (Original Well Elev) |
| <b>Site:</b>     | Nelson 32BD Pad Sec.32-T7N-R66W           | <b>MD Reference:</b>                | WELL @ 4873.0ft (Original Well Elev) |
| <b>Well:</b>     | Nelson 24-32D                             | <b>North Reference:</b>             | True                                 |
| <b>Wellbore:</b> | Wellbore #1                               | <b>Survey Calculation Method:</b>   | Minimum Curvature                    |
| <b>Design:</b>   | Wellbore #1                               | <b>Database:</b>                    | Landmark                             |

| 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) |
| 1,058.0             | 16.30           | 131.40      | 1,044.6             | -76.6      | 109.6      | 131.5                 | 1.47                  | 1.47                 | -0.11               |
| 1,153.0             | 18.40           | 136.60      | 1,135.3             | -96.3      | 129.9      | 159.8                 | 2.75                  | 2.21                 | 5.47                |
| 1,248.0             | 19.30           | 137.30      | 1,225.2             | -118.7     | 150.8      | 190.5                 | 0.98                  | 0.95                 | 0.74                |
| 1,343.0             | 19.20           | 136.10      | 1,314.8             | -141.5     | 172.3      | 221.8                 | 0.43                  | -0.11                | -1.26               |
| 1,438.0             | 18.70           | 136.00      | 1,404.7             | -163.7     | 193.7      | 252.7                 | 0.53                  | -0.53                | -0.11               |
| 1,533.0             | 18.10           | 135.80      | 1,494.8             | -185.3     | 214.6      | 282.6                 | 0.64                  | -0.63                | -0.21               |
| 1,628.0             | 18.50           | 138.10      | 1,585.0             | -207.1     | 234.9      | 312.5                 | 0.87                  | 0.42                 | 2.42                |
| 1,723.0             | 17.40           | 138.20      | 1,675.4             | -228.9     | 254.5      | 341.7                 | 1.16                  | -1.16                | 0.11                |
| 1,818.0             | 17.50           | 136.70      | 1,766.0             | -249.9     | 273.7      | 370.2                 | 0.49                  | 0.11                 | -1.58               |
| 1,913.0             | 17.70           | 134.90      | 1,856.6             | -270.5     | 293.8      | 398.9                 | 0.61                  | 0.21                 | -1.89               |
| 2,008.0             | 18.80           | 133.10      | 1,946.8             | -291.1     | 315.2      | 428.6                 | 1.30                  | 1.16                 | -1.89               |
| 2,102.0             | 17.70           | 133.20      | 2,036.1             | -311.2     | 336.6      | 458.0                 | 1.17                  | -1.17                | 0.11                |
| 2,197.0             | 17.60           | 133.20      | 2,126.6             | -331.0     | 357.6      | 486.8                 | 0.11                  | -0.11                | 0.00                |
| 2,292.0             | 17.70           | 139.60      | 2,217.1             | -351.8     | 377.5      | 515.6                 | 2.04                  | 0.11                 | 6.74                |
| 2,387.0             | 17.20           | 134.60      | 2,307.8             | -372.7     | 396.8      | 544.0                 | 1.66                  | -0.53                | -5.26               |
| 2,482.0             | 16.50           | 130.70      | 2,398.7             | -391.3     | 417.1      | 571.5                 | 1.40                  | -0.74                | -4.11               |
| 2,577.0             | 17.30           | 130.60      | 2,489.6             | -409.3     | 438.0      | 599.1                 | 0.84                  | 0.84                 | -0.11               |
| 2,672.0             | 17.60           | 135.30      | 2,580.2             | -428.7     | 458.8      | 627.5                 | 1.52                  | 0.32                 | 4.95                |
| 2,767.0             | 18.30           | 138.10      | 2,670.6             | -450.0     | 478.9      | 656.8                 | 1.17                  | 0.74                 | 2.95                |
| 2,862.0             | 19.80           | 138.60      | 2,760.4             | -473.2     | 499.5      | 687.7                 | 1.59                  | 1.58                 | 0.53                |
| 2,956.0             | 19.30           | 138.80      | 2,849.0             | -496.8     | 520.3      | 719.1                 | 0.54                  | -0.53                | 0.21                |
| 3,051.0             | 17.60           | 137.10      | 2,939.1             | -519.2     | 540.4      | 749.1                 | 1.88                  | -1.79                | -1.79               |
| 3,146.0             | 17.00           | 137.30      | 3,029.8             | -539.9     | 559.6      | 777.4                 | 0.63                  | -0.63                | 0.21                |
| 3,241.0             | 18.40           | 134.60      | 3,120.3             | -560.6     | 579.7      | 806.2                 | 1.71                  | 1.47                 | -2.84               |
| 3,335.0             | 18.40           | 135.00      | 3,209.5             | -581.5     | 600.7      | 835.9                 | 0.13                  | 0.00                 | 0.43                |
| 3,430.0             | 17.60           | 137.40      | 3,299.8             | -602.7     | 621.1      | 865.3                 | 1.15                  | -0.84                | 2.53                |
| 3,525.0             | 17.20           | 137.40      | 3,390.5             | -623.6     | 640.3      | 893.7                 | 0.42                  | -0.42                | 0.00                |
| 3,620.0             | 17.40           | 137.70      | 3,481.2             | -644.5     | 659.4      | 921.9                 | 0.23                  | 0.21                 | 0.32                |
| 3,715.0             | 17.10           | 134.80      | 3,571.9             | -664.8     | 678.8      | 950.0                 | 0.96                  | -0.32                | -3.05               |
| 3,810.0             | 17.30           | 137.90      | 3,662.7             | -685.1     | 698.2      | 978.1                 | 0.99                  | 0.21                 | 3.26                |
| 3,905.0             | 18.60           | 135.10      | 3,753.1             | -706.3     | 718.4      | 1,007.4               | 1.64                  | 1.37                 | -2.95               |
| 4,000.0             | 20.70           | 134.70      | 3,842.5             | -728.9     | 741.0      | 1,039.3               | 2.22                  | 2.21                 | -0.42               |
| 4,094.0             | 22.30           | 134.40      | 3,930.0             | -753.1     | 765.6      | 1,073.8               | 1.71                  | 1.70                 | -0.32               |
| 4,190.0             | 22.50           | 134.20      | 4,018.7             | -778.6     | 791.7      | 1,110.3               | 0.22                  | 0.21                 | -0.21               |
| 4,284.0             | 21.50           | 134.60      | 4,105.9             | -803.2     | 816.9      | 1,145.6               | 1.08                  | -1.06                | 0.43                |
| 4,379.0             | 18.90           | 133.30      | 4,195.0             | -826.0     | 840.5      | 1,178.3               | 2.78                  | -2.74                | -1.37               |
| 4,474.0             | 17.50           | 135.20      | 4,285.3             | -846.7     | 861.8      | 1,208.0               | 1.60                  | -1.47                | 2.00                |
| 4,569.0             | 18.30           | 138.30      | 4,375.7             | -868.0     | 881.7      | 1,237.2               | 1.31                  | 0.84                 | 3.26                |
| 4,664.0             | 18.90           | 133.80      | 4,465.7             | -889.8     | 902.8      | 1,267.5               | 1.64                  | 0.63                 | -4.74               |
| 4,758.0             | 19.30           | 134.70      | 4,554.6             | -911.2     | 924.8      | 1,298.2               | 0.53                  | 0.43                 | 0.96                |
| 4,853.0             | 17.40           | 135.70      | 4,644.7             | -932.4     | 945.9      | 1,328.1               | 2.03                  | -2.00                | 1.05                |
| 4,948.0             | 14.80           | 137.50      | 4,736.0             | -951.6     | 964.0      | 1,354.5               | 2.79                  | -2.74                | 1.89                |
| 5,043.0             | 12.70           | 134.80      | 4,828.3             | -967.9     | 979.6      | 1,377.0               | 2.31                  | -2.21                | -2.84               |
| 5,138.0             | 11.60           | 132.30      | 4,921.1             | -981.6     | 994.1      | 1,397.0               | 1.28                  | -1.16                | -2.63               |
| 5,233.0             | 11.00           | 137.40      | 5,014.3             | -994.7     | 1,007.3    | 1,415.6               | 1.23                  | -0.63                | 5.37                |
| 5,328.0             | 9.50            | 142.20      | 5,107.8             | -1,007.6   | 1,018.2    | 1,432.4               | 1.82                  | -1.58                | 5.05                |
| 5,423.0             | 7.20            | 145.90      | 5,201.8             | -1,018.7   | 1,026.4    | 1,446.1               | 2.49                  | -2.42                | 3.89                |
| 5,517.0             | 5.50            | 147.20      | 5,295.2             | -1,027.4   | 1,032.1    | 1,456.3               | 1.81                  | -1.81                | 1.38                |
| 5,612.0             | 4.40            | 148.80      | 5,389.8             | -1,034.4   | 1,036.5    | 1,464.3               | 1.17                  | -1.16                | 1.68                |
| 5,707.0             | 3.60            | 147.60      | 5,484.6             | -1,040.0   | 1,040.0    | 1,470.7               | 0.85                  | -0.84                | -1.26               |
| 5,802.0             | 2.50            | 150.50      | 5,579.5             | -1,044.3   | 1,042.6    | 1,475.6               | 1.17                  | -1.16                | 3.05                |
| 5,897.0             | 1.50            | 184.00      | 5,674.4             | -1,047.4   | 1,043.5    | 1,478.5               | 1.58                  | -1.05                | 35.26               |
| 5,992.0             | 1.40            | 212.80      | 5,769.4             | -1,049.6   | 1,042.8    | 1,479.5               | 0.77                  | -0.11                | 30.32               |

|                  |   |                                     |                                      |
|------------------|---|-------------------------------------|--------------------------------------|
| <b>Company:</b>  | PETROLEUM DEVELOPMENT CORP Weld County CO | <b>Local Co-ordinate Reference:</b> | Well Nelson 24-32D                   |
| <b>Project:</b>  | SEC.32-T7N-R66W                           | <b>TVD Reference:</b>               | WELL @ 4873.0ft (Original Well Elev) |
| <b>Site:</b>     | Nelson 32BD Pad Sec.32-T7N-R66W           | <b>MD Reference:</b>                | WELL @ 4873.0ft (Original Well Elev) |
| <b>Well:</b>     | Nelson 24-32D                             | <b>North Reference:</b>             | True                                 |
| <b>Wellbore:</b> | Wellbore #1                               | <b>Survey Calculation Method:</b>   | Minimum Curvature                    |
| <b>Design:</b>   | Wellbore #1                               | <b>Database:</b>                    | Landmark                             |

| 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) |
| 6,022.7   | 1.25            | 222.81      | 5,800.0             | -1,050.1   | 1,042.4    | 1,479.6               | 0.90                  | -0.50                | 32.67               |
| <b>TARGET BHL 658'FSL, 1997'FWL</b>                 |                 |             |                     |            |            |                       |                       |                      |                     |
| 6,087.0   | 1.10            | 250.50      | 5,864.4             | -1,050.8   | 1,041.3    | 1,479.4               | 0.90                  | -0.23                | 43.02               |
| 6,182.0   | 0.90            | 250.00      | 5,959.3             | -1,051.4   | 1,039.7    | 1,478.7               | 0.21                  | -0.21                | -0.53               |
| 6,277.0   | 0.70            | 256.80      | 6,054.3             | -1,051.8   | 1,038.5    | 1,478.1               | 0.23                  | -0.21                | 7.16                |
| 6,372.0   | 0.70            | 242.70      | 6,149.3             | -1,052.2   | 1,037.4    | 1,477.6               | 0.18                  | 0.00                 | -14.84              |
| 6,467.0   | 0.50            | 231.30      | 6,244.3             | -1,052.7   | 1,036.6    | 1,477.4               | 0.24                  | -0.21                | -12.00              |
| 6,562.0   | 0.50            | 220.80      | 6,339.3             | -1,053.3   | 1,036.0    | 1,477.4               | 0.10                  | 0.00                 | -11.05              |
| 6,657.0   | 0.40            | 215.30      | 6,434.3             | -1,053.9   | 1,035.5    | 1,477.5               | 0.11                  | -0.11                | -5.79               |
| 6,751.0   | 0.60            | 181.10      | 6,528.3             | -1,054.6   | 1,035.3    | 1,477.9               | 0.37                  | 0.21                 | -36.38              |
| 6,846.0   | 0.70            | 178.20      | 6,623.3             | -1,055.7   | 1,035.3    | 1,478.6               | 0.11                  | 0.11                 | -3.05               |
| 6,922.6   | 0.86            | 176.09      | 6,699.9             | -1,056.8   | 1,035.4    | 1,479.4               | 0.21                  | 0.21                 | -2.75               |
| <b>LEGAL BOX 400' X 400' 662'FSL &amp; 1998'FWL</b> |                 |             |                     |            |            |                       |                       |                      |                     |
| 6,941.0   | 0.90            | 175.70      | 6,718.3             | -1,057.0   | 1,035.4    | 1,479.6               | 0.21                  | 0.21                 | -2.14               |
| 7,036.0   | 0.80            | 177.80      | 6,813.3             | -1,058.4   | 1,035.5    | 1,480.7               | 0.11                  | -0.11                | 2.21                |
| 7,131.0   | 1.00            | 184.70      | 6,908.3             | -1,059.9   | 1,035.4    | 1,481.7               | 0.24                  | 0.21                 | 7.26                |
| 7,226.0   | 1.30            | 239.80      | 7,003.3             | -1,061.3   | 1,034.4    | 1,482.0               | 1.15                  | 0.32                 | 58.00               |
| 7,416.0   | 1.30            | 221.60      | 7,193.2             | -1,064.0   | 1,031.1    | 1,481.6               | 0.22                  | 0.00                 | -9.58               |
| 7,511.0   | 0.90            | 197.00      | 7,288.2             | -1,065.5   | 1,030.2    | 1,482.0               | 0.64                  | -0.42                | -25.89              |
| 7,606.0   | 1.00            | 187.70      | 7,383.2             | -1,067.1   | 1,029.9    | 1,482.8               | 0.19                  | 0.11                 | -9.79               |
| 7,678.0   | 0.90            | 171.20      | 7,455.2             | -1,068.2   | 1,029.9    | 1,483.7               | 0.40                  | -0.14                | -22.92              |
| 7,720.0   | 0.80            | 168.40      | 7,497.2             | -1,068.8   | 1,030.0    | 1,484.2               | 0.26                  | -0.24                | -6.67               |

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_