

Well Name: **Coleman C22-21D**

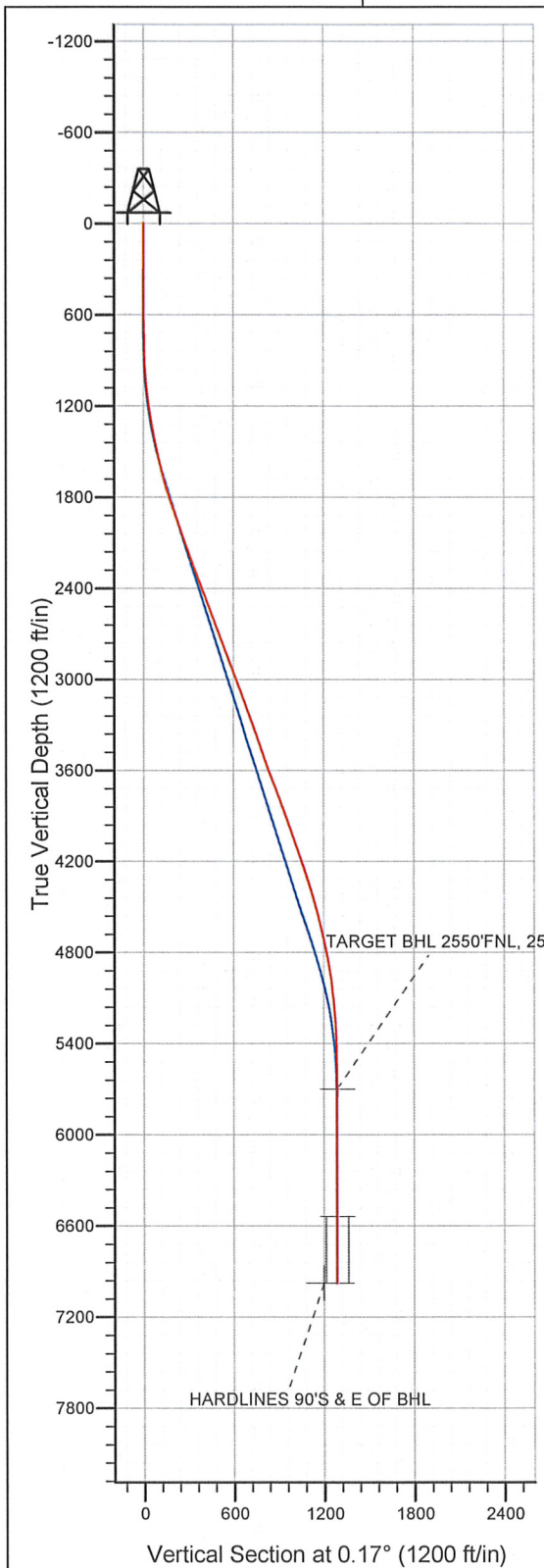
Surface Location: Coleman C22-21D Pad Sec.22-T4N-R64W  
North American Datum 1983 US State Plane 1983 Colorado Northern Zone

Ground Elevation: 4668.0

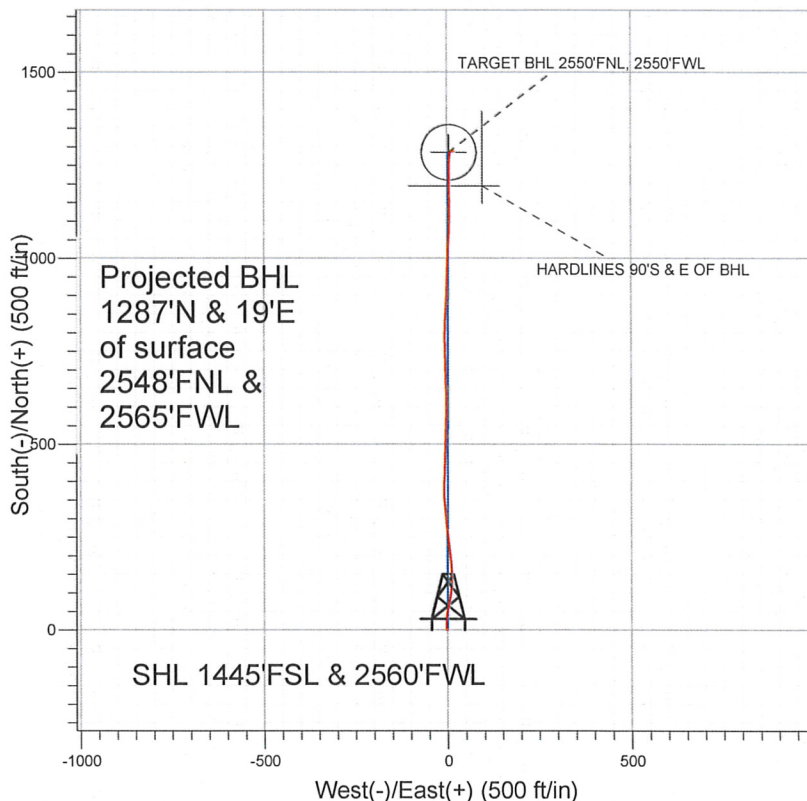
| +N/-S | +E/-W | Northing   | Easting    | Latitude         | Longitude         |
|-------|-------|------------|------------|------------------|-------------------|
| 0.0   | 0.0   | 1351643.72 | 3268558.36 | 40° 17' 40.776 N | 104° 32' 13.956 W |

Original Well Elev WELL @ 4681.0ft (Original Well Elev)

Slot



## NOBLE ENERGY INC WELD COUNTY CO



### LEGEND

- ◆ Coleman C22-21D, Wellbore #1, Noble Coleman C22-21D Plan #1 (05-06-10) V0
- Wellbore #1
- Survey #1

## Final Survey Plot

Projected Final Survey -  
7180'MD & 6977'TVD @ 1287'VS  
0.4 deg Inc 101.2 deg AZ

Project: SEC.22-T4N-R64W  
Site: Coleman C22-21D Pad Sec.22-T4N-R64W  
Well: Coleman C22-21D  
Plan: Wellbore #1

**Company:** NOBLE ENERGY INC WELD COUNTY CO  
**Project:** SEC.22-T4N-R64W  
**Site:** Coleman C22-21D Pad Sec.22-T4N-R64W  
**Well:** Coleman C22-21D  
**Wellbore:** Wellbore #1  
**Design:** Wellbore #1

**Local Co-ordinate Reference:** Well Coleman C22-21D  
**TVD Reference:** WELL @ 4681.0ft (Original Well Elev)  
**MD Reference:** WELL @ 4681.0ft (Original Well Elev)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature  
**Database:** Landmark

|                    |  |                      |                             |
|--------------------|--|----------------------|-----------------------------|
| <b>Project</b>     | SEC.22-T4N-R64W, 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              |                      |                             |
| <b>Map Zone:</b>   | Colorado Northern Zone                 |                      | Using geodetic scale factor |

|                              |                                     |                     |                 |                          |                   |
|------------------------------|-------------------------------------|---------------------|-----------------|--------------------------|-------------------|
| <b>Site</b>                  | Coleman C22-21D Pad Sec.22-T4N-R64W |                     |                 |                          |                   |
| <b>Site Position:</b>        |                                     | <b>Northing:</b>    | 1,351,643.73 ft | <b>Latitude:</b>         | 40° 17' 40.776 N  |
| <b>From:</b>                 | Lat/Long                            | <b>Easting:</b>     | 3,268,558.36 ft | <b>Longitude:</b>        | 104° 32' 13.956 W |
| <b>Position Uncertainty:</b> | 0.0 ft                              | <b>Slot Radius:</b> | "               | <b>Grid Convergence:</b> | 0.62 °            |

|                      |                 |        |                     |                 |               |                   |
|----------------------|-----------------|--------|---------------------|-----------------|---------------|-------------------|
| Well                 | Coleman C22-21D |        |                     |                 |               |                   |
| Well Position        | +N/-S           | 0.0 ft | Northing:           | 1,351,643.72 ft | Latitude:     | 40° 17' 40.776 N  |
|                      | +E/-W           | 0.0 ft | Easting:            | 3,268,558.36 ft | Longitude:    | 104° 32' 13.956 W |
| Position Uncertainty |                 | 0.0 ft | Wellhead Elevation: | ft              | Ground Level: | 4,668.0 ft        |

|                  |                   |                    |                        |                      |                            |
|------------------|-------------------|--------------------|------------------------|----------------------|----------------------------|
| <b>Wellbore</b>  | Wellbore #1       |                    |                        |                      |                            |
| <b>Magnetics</b> | <b>Model Name</b> | <b>Sample Date</b> | <b>Declination (°)</b> | <b>Dip Angle (°)</b> | <b>Field Strength (nT)</b> |
|                  | IGRF2010          | 5/6/2010           | 8.88                   | 67.04                | 53,219                     |

|                          |                         |                   |                   |                      |     |
|--------------------------|-------------------------|-------------------|-------------------|----------------------|-----|
| <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)</b> | <b>+N/-S (ft)</b> | <b>+E/-W (ft)</b> | <b>Direction (°)</b> |     |
|                          | 0.0                     | 0.0               | 0.0               | 0.17                 |     |

|                       |                |                          |                  |                    |  |
|-----------------------|----------------|--------------------------|------------------|--------------------|--|
| <b>Survey Program</b> | Date 3/28/2011 |                          |                  |                    |  |
| <b>From (ft)</b>      | <b>To (ft)</b> | <b>Survey (Wellbore)</b> | <b>Tool Name</b> | <b>Description</b> |  |
| 645.0                 | 7,180.0        | Survey #1 (Wellbore #1)  | MWD              | MWD - Standard     |  |

| 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                |
| 645.0               | 0.50            | 303.50      | 645.0               | 1.6        | -2.3       | 1.5                   | 0.08                  | 0.08                 | 0.00                |
| 731.0               | 0.40            | 294.80      | 731.0               | 1.9        | -2.9       | 1.9                   | 0.14                  | -0.12                | -10.12              |
| 816.0               | 1.30            | 352.50      | 816.0               | 3.0        | -3.3       | 3.0                   | 1.34                  | 1.06                 | 67.88               |
| 902.0               | 2.80            | 359.80      | 901.9               | 6.0        | -3.5       | 6.0                   | 1.77                  | 1.74                 | 8.49                |
| 988.0               | 4.50            | 3.60        | 987.7               | 11.5       | -3.3       | 11.5                  | 2.00                  | 1.98                 | 4.42                |
| 1,073.0             | 5.90            | 0.60        | 1,072.4             | 19.2       | -3.0       | 19.2                  | 1.68                  | 1.65                 | -3.53               |
| 1,159.0             | 7.30            | 1.70        | 1,157.8             | 29.1       | -2.8       | 29.1                  | 1.63                  | 1.63                 | 1.28                |
| 1,244.0             | 8.70            | 7.30        | 1,242.0             | 40.9       | -1.8       | 40.9                  | 1.88                  | 1.65                 | 6.59                |
| 1,330.0             | 10.60           | 12.90       | 1,326.8             | 55.0       | 0.8        | 55.0                  | 2.46                  | 2.21                 | 6.51                |
| 1,416.0             | 12.20           | 13.50       | 1,411.1             | 71.6       | 4.7        | 71.6                  | 1.87                  | 1.86                 | 0.70                |
| 1,501.0             | 13.00           | 8.50        | 1,494.0             | 89.8       | 8.2        | 89.8                  | 1.59                  | 0.94                 | -5.88               |
| 1,587.0             | 13.90           | 6.50        | 1,577.7             | 109.6      | 10.8       | 109.6                 | 1.18                  | 1.05                 | -2.33               |



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 Survey Calculation Method: Minimum Curvature  
 Database: 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) |
|-------------------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|---------------------|
| 1,672.0                       | 15.40           | 1.10        | 1,659.9             | 131.0      | 12.1       | 131.1                 | 2.38                  | 1.76                 | -6.35               |
| 1,758.0                       | 16.80           | 358.20      | 1,742.5             | 154.9      | 12.0       | 154.9                 | 1.88                  | 1.63                 | -3.37               |
| 1,844.0                       | 18.10           | 353.60      | 1,824.6             | 180.6      | 10.1       | 180.6                 | 2.20                  | 1.51                 | -5.35               |
| 1,929.0                       | 19.50           | 353.70      | 1,905.0             | 207.8      | 7.1        | 207.8                 | 1.65                  | 1.65                 | 0.12                |
| 2,015.0                       | 20.00           | 353.10      | 1,986.0             | 236.6      | 3.7        | 236.7                 | 0.63                  | 0.58                 | -0.70               |
| 2,100.0                       | 20.10           | 352.90      | 2,065.8             | 265.6      | 0.2        | 265.6                 | 0.14                  | 0.12                 | -0.24               |
| 2,186.0                       | 20.50           | 354.50      | 2,146.5             | 295.2      | -3.1       | 295.2                 | 0.80                  | 0.47                 | 1.86                |
| 2,272.0                       | 20.40           | 355.00      | 2,227.1             | 325.1      | -5.8       | 325.1                 | 0.23                  | -0.12                | 0.58                |
| 2,357.0                       | 20.30           | 356.30      | 2,306.8             | 354.6      | -8.1       | 354.6                 | 0.54                  | -0.12                | 1.53                |
| 2,443.0                       | 20.40           | 1.40        | 2,387.4             | 384.5      | -8.7       | 384.5                 | 2.06                  | 0.12                 | 5.93                |
| 2,528.0                       | 20.60           | 2.90        | 2,467.0             | 414.2      | -7.6       | 414.2                 | 0.66                  | 0.24                 | 1.76                |
| 2,614.0                       | 21.30           | 1.60        | 2,547.3             | 445.0      | -6.4       | 444.9                 | 0.98                  | 0.81                 | -1.51               |
| 2,700.0                       | 21.30           | 2.50        | 2,627.5             | 476.2      | -5.2       | 476.2                 | 0.38                  | 0.00                 | 1.05                |
| 2,785.0                       | 21.40           | 0.30        | 2,706.6             | 507.1      | -4.5       | 507.1                 | 0.95                  | 0.12                 | -2.59               |
| 2,871.0                       | 21.50           | 2.00        | 2,786.7             | 538.6      | -3.9       | 538.5                 | 0.73                  | 0.12                 | 1.98                |
| 2,956.0                       | 20.80           | 1.50        | 2,865.9             | 569.2      | -2.9       | 569.2                 | 0.85                  | -0.82                | -0.59               |
| 3,042.0                       | 21.20           | 358.30      | 2,946.2             | 600.0      | -3.0       | 600.0                 | 1.41                  | 0.47                 | -3.72               |
| 3,128.0                       | 20.40           | 0.40        | 3,026.6             | 630.5      | -3.3       | 630.5                 | 1.27                  | -0.93                | 2.44                |
| 3,213.0                       | 20.00           | 357.60      | 3,106.4             | 659.9      | -3.8       | 659.9                 | 1.23                  | -0.47                | -3.29               |
| 3,299.0                       | 20.00           | 359.20      | 3,187.2             | 689.3      | -4.7       | 689.3                 | 0.64                  | 0.00                 | 1.86                |
| 3,384.0                       | 19.70           | 359.20      | 3,267.2             | 718.1      | -5.1       | 718.1                 | 0.35                  | -0.35                | 0.00                |
| 3,470.0                       | 19.60           | 359.30      | 3,348.2             | 747.1      | -5.5       | 747.0                 | 0.12                  | -0.12                | 0.12                |
| 3,556.0                       | 19.50           | 358.10      | 3,429.2             | 775.8      | -6.1       | 775.8                 | 0.48                  | -0.12                | -1.40               |
| 3,641.0                       | 19.90           | 0.40        | 3,509.2             | 804.5      | -6.5       | 804.5                 | 1.03                  | 0.47                 | 2.71                |
| 3,727.0                       | 20.50           | 3.10        | 3,589.9             | 834.2      | -5.6       | 834.1                 | 1.29                  | 0.70                 | 3.14                |
| 3,812.0                       | 20.90           | 3.30        | 3,669.5             | 864.1      | -3.9       | 864.1                 | 0.48                  | 0.47                 | 0.24                |
| 3,898.0                       | 20.80           | 1.60        | 3,749.8             | 894.7      | -2.6       | 894.7                 | 0.71                  | -0.12                | -1.98               |
| 3,984.0                       | 20.50           | 3.90        | 3,830.3             | 925.0      | -1.1       | 925.0                 | 1.01                  | -0.35                | 2.67                |
| 4,069.0                       | 19.30           | 0.80        | 3,910.2             | 953.9      | 0.1        | 953.9                 | 1.88                  | -1.41                | -3.65               |
| 4,155.0                       | 20.30           | 3.40        | 3,991.1             | 983.0      | 1.2        | 983.0                 | 1.55                  | 1.16                 | 3.02                |
| 4,240.0                       | 19.60           | 0.60        | 4,071.0             | 1,012.0    | 2.2        | 1,012.0               | 1.39                  | -0.82                | -3.29               |
| 4,326.0                       | 18.40           | 3.60        | 4,152.4             | 1,040.0    | 3.2        | 1,040.0               | 1.80                  | -1.40                | 3.49                |
| 4,412.0                       | 18.40           | 2.60        | 4,234.0             | 1,067.1    | 4.7        | 1,067.1               | 0.37                  | 0.00                 | -1.16               |
| 4,497.0                       | 17.10           | 2.60        | 4,314.9             | 1,093.0    | 5.8        | 1,093.0               | 1.53                  | -1.53                | 0.00                |
| 4,583.0                       | 16.90           | 359.40      | 4,397.2             | 1,118.1    | 6.3        | 1,118.1               | 1.11                  | -0.23                | -3.72               |
| 4,668.0                       | 15.50           | 1.10        | 4,478.8             | 1,141.8    | 6.4        | 1,141.8               | 1.74                  | -1.65                | 2.00                |
| 4,754.0                       | 14.60           | 357.40      | 4,561.8             | 1,164.1    | 6.1        | 1,164.1               | 1.53                  | -1.05                | -4.30               |
| 4,840.0                       | 13.50           | 358.70      | 4,645.3             | 1,185.0    | 5.4        | 1,185.0               | 1.33                  | -1.28                | 1.51                |
| 4,925.0                       | 12.00           | 359.00      | 4,728.2             | 1,203.7    | 5.0        | 1,203.7               | 1.77                  | -1.76                | 0.35                |
| 5,011.0                       | 11.20           | 0.40        | 4,812.4             | 1,221.0    | 4.9        | 1,221.0               | 0.99                  | -0.93                | 1.63                |
| 5,096.0                       | 10.40           | 359.70      | 4,895.9             | 1,237.0    | 4.9        | 1,237.0               | 0.95                  | -0.94                | -0.82               |
| 5,182.0                       | 8.10            | 4.60        | 4,980.8             | 1,250.8    | 5.4        | 1,250.8               | 2.82                  | -2.67                | 5.70                |
| 5,268.0                       | 6.40            | 6.20        | 5,066.1             | 1,261.6    | 6.4        | 1,261.6               | 1.99                  | -1.98                | 1.86                |
| 5,353.0                       | 5.20            | 6.10        | 5,150.6             | 1,270.1    | 7.3        | 1,270.1               | 1.41                  | -1.41                | -0.12               |
| 5,439.0                       | 4.00            | 5.30        | 5,236.4             | 1,277.0    | 8.0        | 1,277.0               | 1.40                  | -1.40                | -0.93               |
| 5,524.0                       | 2.90            | 16.10       | 5,321.2             | 1,282.0    | 8.9        | 1,282.0               | 1.50                  | -1.29                | 12.71               |
| 5,610.0                       | 2.00            | 24.70       | 5,407.1             | 1,285.4    | 10.1       | 1,285.5               | 1.13                  | -1.05                | 10.00               |
| 5,696.0                       | 1.30            | 62.20       | 5,493.1             | 1,287.3    | 11.6       | 1,287.3               | 1.45                  | -0.81                | 43.60               |
| 5,781.0                       | 0.90            | 43.40       | 5,578.1             | 1,288.2    | 12.9       | 1,288.2               | 0.63                  | -0.47                | -22.12              |
| 5,867.0                       | 0.30            | 166.40      | 5,664.1             | 1,288.5    | 13.4       | 1,288.5               | 1.27                  | -0.70                | 143.02              |
| 5,902.9                       | 0.29            | 177.36      | 5,700.0             | 1,288.3    | 13.4       | 1,288.3               | 0.16                  | -0.02                | 30.49               |
| TARGET BHL 2550'FNL, 2550'FWL |                 |             |                     |            |            |                       |                       |                      |                     |
| 5,952.0                       | 0.30            | 192.40      | 5,749.1             | 1,288.0    | 13.4       | 1,288.1               | 0.16                  | 0.02                 | 30.66               |
| 6,038.0                       | 0.60            | 163.00      | 5,835.1             | 1,287.4    | 13.5       | 1,287.4               | 0.43                  | 0.35                 | -34.19              |

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**Wellbore:** Wellbore #1  
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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) |
|----------------------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|---------------------|
| 6,124.0                          | 0.60            | 165.50      | 5,921.1             | 1,286.5    | 13.7       | 1,286.5               | 0.03                  | 0.00                 | 2.91                |
| 6,209.0                          | 0.30            | 156.00      | 6,006.1             | 1,285.9    | 13.9       | 1,285.9               | 0.36                  | -0.35                | -11.18              |
| 6,295.0                          | 0.10            | 108.30      | 6,092.1             | 1,285.6    | 14.1       | 1,285.7               | 0.28                  | -0.23                | -55.47              |
| 6,380.0                          | 0.40            | 119.50      | 6,177.1             | 1,285.5    | 14.4       | 1,285.5               | 0.36                  | 0.35                 | 13.18               |
| 6,466.0                          | 0.30            | 90.80       | 6,263.1             | 1,285.3    | 14.9       | 1,285.4               | 0.23                  | -0.12                | -33.37              |
| 6,552.0                          | 0.50            | 63.70       | 6,349.1             | 1,285.5    | 15.5       | 1,285.5               | 0.31                  | 0.23                 | -31.51              |
| 6,637.0                          | 0.20            | 73.50       | 6,434.1             | 1,285.7    | 16.0       | 1,285.7               | 0.36                  | -0.35                | 11.53               |
| 6,723.0                          | 0.40            | 50.00       | 6,520.1             | 1,285.9    | 16.3       | 1,286.0               | 0.27                  | 0.23                 | -27.33              |
| 6,738.9                          | 0.38            | 52.06       | 6,535.9             | 1,286.0    | 16.4       | 1,286.0               | 0.15                  | -0.13                | 12.97               |
| TARGET CIRCLE 2550'FNL, 2550'FWL |                 |             |                     |            |            |                       |                       |                      |                     |
| 6,808.0                          | 0.30            | 64.10       | 6,605.1             | 1,286.2    | 16.8       | 1,286.3               | 0.15                  | -0.12                | 17.42               |
| 6,894.0                          | 0.40            | 39.70       | 6,691.1             | 1,286.5    | 17.2       | 1,286.6               | 0.21                  | 0.12                 | -28.37              |
| 6,980.0                          | 0.40            | 40.60       | 6,777.1             | 1,287.0    | 17.5       | 1,287.1               | 0.01                  | 0.00                 | 1.05                |
| 7,065.0                          | 0.30            | 91.30       | 6,862.1             | 1,287.2    | 18.0       | 1,287.3               | 0.37                  | -0.12                | 59.65               |
| 7,137.0                          | 0.40            | 101.20      | 6,934.1             | 1,287.2    | 18.4       | 1,287.2               | 0.16                  | 0.14                 | 13.75               |
| 7,179.6                          | 0.40            | 101.20      | 6,976.6             | 1,287.1    | 18.7       | 1,287.2               | 0.00                  | 0.00                 | 0.00                |
| HARDLINES 90'S & E OF BHL        |                 |             |                     |            |            |                       |                       |                      |                     |
| 7,180.0                          | 0.40            | 101.20      | 6,977.1             | 1,287.1    | 18.7       | 1,287.2               | 0.00                  | 0.00                 | 0.00                |

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