

Well Name: **Cottonwood 32-33**

Surface Location: Cottonwood 12-33 Pad Sec. 33-T2N-R66W
North American Datum 1983 , US State Plane 1983 , Colorado Northern Zone

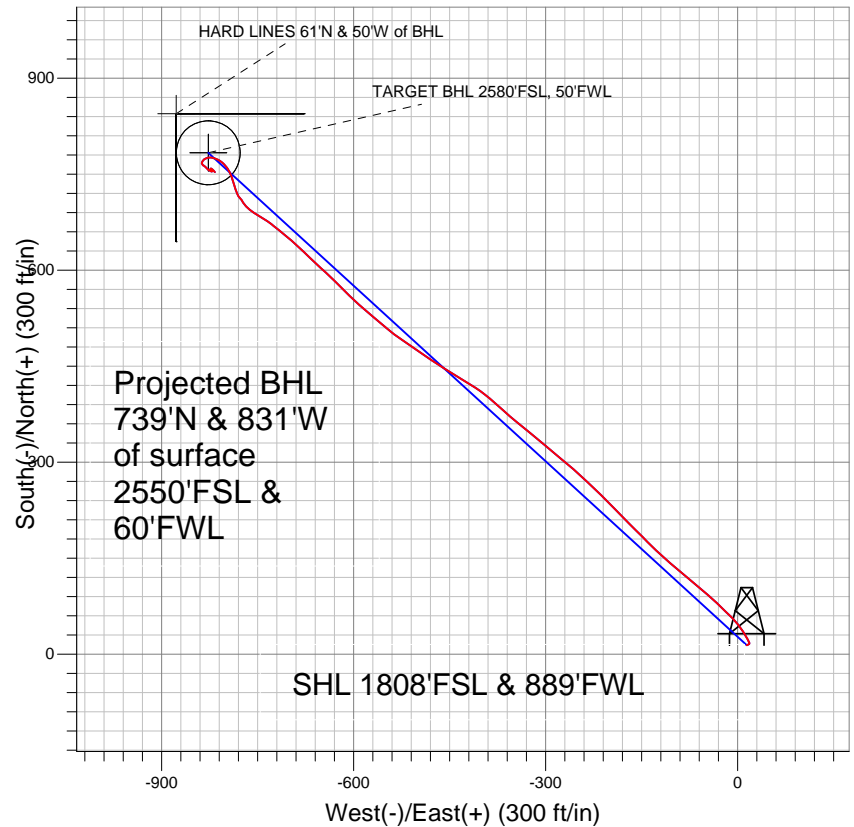
Ground Elevation: 4949.0

| +N/-S | +E/-W | Northing | Easting | Latitude | Longitude |
|-------|-------|------------|------------|-----------------|-------------------|
| 14.2 | 14.3 | 1277278.06 | 3199078.27 | 40° 5' 32.377 N | 104° 47' 18.330 W |

Original Well Elev WELL @ 4964.0ft (Original Well Elev)

Slot

Anadarko, Weld County CO

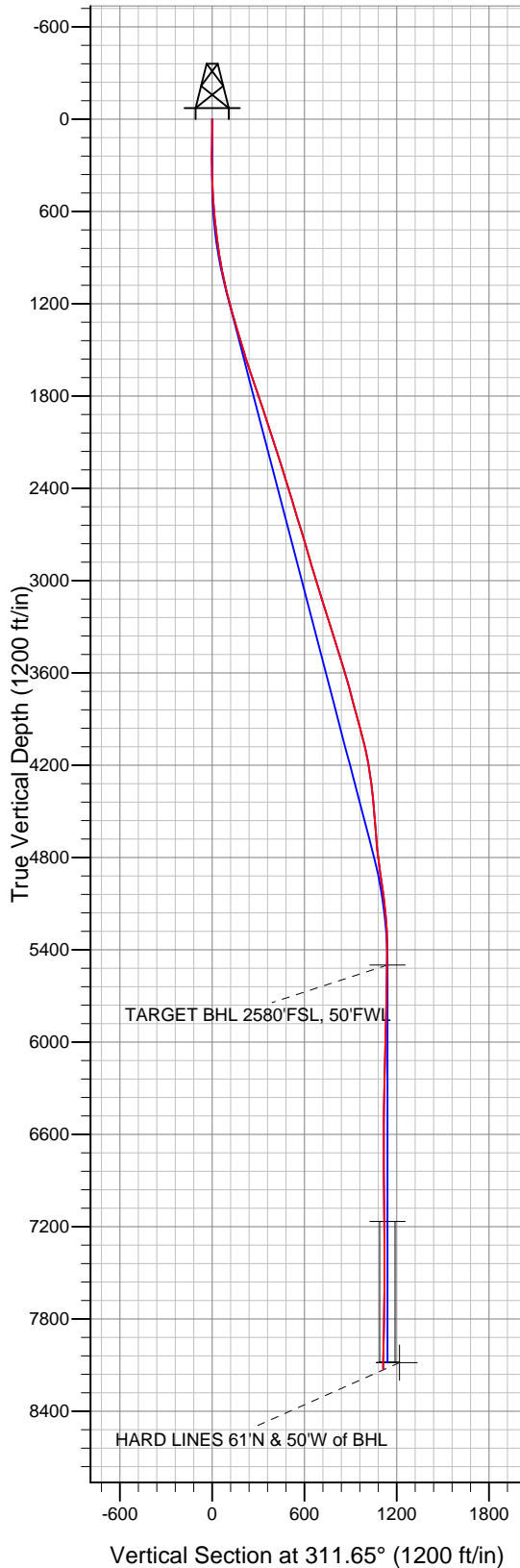


LEGEND

- Cottonwood 32-33, Wellbore #1, Plan #1 (11-08-10) V0
- Wellbore #1
- Survey #1

Final Survey Plot

Projected Final Survey -
8280'MD & 8127'TVD @ 1112' VS
1.1 deg Inc 143.0 deg AZ



Project: SEC.33-T2N-R66W
Site: Cottonwood 12-33 Pad Sec. 33-T2N-R66W
Well: Cottonwood 32-33
Plan: Wellbore #1



Directional

Anadarko, Weld County CO

SEC.33-T2N-R66W

Cottonwood 12-33 Pad Sec. 33-T2N-R66W

Cottonwood 32-33

Wellbore #1

Survey: Survey #1

Standard Survey Report

30 December, 2010

| | | | |
|------------------|---------------------------------------|-------------------------------------|--|
| Company: | Anadarko, Weld County CO | Local Co-ordinate Reference: | Site Cottonwood 12-33 Pad Sec. 33-T2N-R66W |
| Project: | SEC.33-T2N-R66W | TVD Reference: | WELL @ 4964.0ft (Original Well Elev) |
| Site: | Cottonwood 12-33 Pad Sec. 33-T2N-R66W | MD Reference: | WELL @ 4964.0ft (Original Well Elev) |
| Well: | Cottonwood 32-33 | North Reference: | True |
| Wellbore: | Wellbore #1 | Survey Calculation Method: | Minimum Curvature |
| Design: | Wellbore #1 | Database: | Landmark |

| | | | |
|--------------------|--|----------------------|-----------------------------|
| Project | SEC.33-T2N-R66W, Weld County, Colorado | | |
| Map System: | US State Plane 1983 | System Datum: | Mean Sea Level |
| Geo Datum: | North American Datum 1983 | | Using Well Reference Point |
| Map Zone: | Colorado Northern Zone | | Using geodetic scale factor |

| | | | |
|------------------------------|---------------------------------------|--------------------------|-------------------|
| Site | Cottonwood 12-33 Pad Sec. 33-T2N-R66W | | |
| Site Position: | | Northing: | 1,277,263.75 ft |
| From: | Lat/Long | Easting: | 3,199,064.12 ft |
| Position Uncertainty: | 0.0 ft | Slot Radius: | " |
| | | Latitude: | 40° 5' 32.237 N |
| | | Longitude: | 104° 47' 18.514 W |
| | | Grid Convergence: | 0.46 ° |

| | | | |
|-----------------------------|------------------|---------|----------------------------|
| Well | Cottonwood 32-33 | | |
| Well Position | +N-S | 14.2 ft | Northing: |
| | +E-W | 14.3 ft | Easting: |
| Position Uncertainty | | 0.0 ft | Wellhead Elevation: |
| | | | ft |
| | | | Latitude: |
| | | | 40° 5' 32.377 N |
| | | | Longitude: |
| | | | 104° 47' 18.330 W |
| | | | Ground Level: |
| | | | 4,949.0 ft |

| | | | | | |
|------------------|-------------------|--------------------|------------------------|----------------------|----------------------------|
| Wellbore | Wellbore #1 | | | | |
| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
| | IGRF2010 | 11/8/2010 | 8.93 | 66.82 | 53,029 |

| | | | | | |
|--------------------------|------------------------------|------------------|------------------|----------------------|-----|
| Design | Wellbore #1 | | | | |
| Audit Notes: | | | | | |
| Version: | 1.0 | Phase: | ACTUAL | Tie On Depth: | 0.0 |
| Vertical Section: | Depth From (TVD) (ft) | +N-S (ft) | +E-W (ft) | Direction (°) | |
| | 0.0 | 14.2 | 14.3 | 311.65 | |

| | | | | | |
|-----------------------|----------------|--------------------------|------------------|--------------------|--|
| Survey Program | Date | 12/30/2010 | | | |
| From (ft) | To (ft) | Survey (Wellbore) | Tool Name | Description | |
| 174.0 | 8,280.0 | Survey #1 (Wellbore #1) | MWD | MWD - Standard | |

| | | | | | | | | | | |
|----------------------------|------------------------|--------------------|----------------------------|------------------|------------------|------------------------------|------------------------------|-----------------------------|----------------------------|--|
| 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 | 14.2 | 14.3 | 0.0 | 0.00 | 0.00 | 0.00 | |
| 174.0 | 1.60 | 69.20 | 174.0 | 15.1 | 16.5 | -1.1 | 0.92 | 0.92 | 0.00 | |
| 263.0 | 0.80 | 46.60 | 263.0 | 15.9 | 18.2 | -1.8 | 1.03 | -0.90 | -25.39 | |
| 355.0 | 1.80 | 347.30 | 354.9 | 17.8 | 18.3 | -0.6 | 1.69 | 1.09 | -64.46 | |
| 446.0 | 2.90 | 331.70 | 445.9 | 21.2 | 16.9 | 2.7 | 1.39 | 1.21 | -17.14 | |
| 539.0 | 4.20 | 329.10 | 538.7 | 26.2 | 14.0 | 8.2 | 1.41 | 1.40 | -2.80 | |
| 631.0 | 5.50 | 329.50 | 630.3 | 32.9 | 10.1 | 15.6 | 1.41 | 1.41 | 0.43 | |
| 723.0 | 6.70 | 325.80 | 721.8 | 41.1 | 4.8 | 25.0 | 1.37 | 1.30 | -4.02 | |
| 818.0 | 8.00 | 318.20 | 816.0 | 50.6 | -2.7 | 36.9 | 1.71 | 1.37 | -8.00 | |
| 913.0 | 9.90 | 313.30 | 909.9 | 61.2 | -13.1 | 51.6 | 2.15 | 2.00 | -5.16 | |
| 951.0 | 10.40 | 314.00 | 947.3 | 65.8 | -17.9 | 58.3 | 1.36 | 1.32 | 1.84 | |
| 1,056.0 | 11.70 | 314.70 | 1,050.3 | 79.9 | -32.3 | 78.4 | 1.24 | 1.24 | 0.67 | |
| 1,151.0 | 13.60 | 310.60 | 1,143.0 | 93.9 | -47.6 | 99.2 | 2.21 | 2.00 | -4.32 | |

| | | | |
|------------------|---------------------------------------|-------------------------------------|--|
| Company: | Anadarko, Weld County CO | Local Co-ordinate Reference: | Site Cottonwood 12-33 Pad Sec. 33-T2N-R66W |
| Project: | SEC.33-T2N-R66W | TVD Reference: | WELL @ 4964.0ft (Original Well Elev) |
| Site: | Cottonwood 12-33 Pad Sec. 33-T2N-R66W | MD Reference: | WELL @ 4964.0ft (Original Well Elev) |
| Well: | Cottonwood 32-33 | North Reference: | True |
| Wellbore: | Wellbore #1 | Survey Calculation Method: | Minimum Curvature |
| Design: | Wellbore #1 | 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) |
|------------------------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|---------------------|
| 1,246.0 | 16.40 | 309.20 | 1,234.8 | 109.7 | -66.5 | 123.8 | 2.97 | 2.95 | -1.47 |
| 1,342.0 | 17.10 | 309.50 | 1,326.7 | 127.2 | -87.9 | 151.4 | 0.73 | 0.73 | 0.31 |
| 1,437.0 | 15.80 | 312.20 | 1,417.8 | 144.8 | -108.3 | 178.3 | 1.59 | -1.37 | 2.84 |
| 1,532.0 | 16.80 | 314.80 | 1,509.0 | 163.1 | -127.6 | 205.0 | 1.30 | 1.05 | 2.74 |
| 1,627.0 | 18.20 | 313.80 | 1,599.6 | 183.1 | -148.0 | 233.5 | 1.51 | 1.47 | -1.05 |
| 1,722.0 | 19.30 | 315.30 | 1,689.6 | 204.5 | -169.8 | 264.0 | 1.26 | 1.16 | 1.58 |
| 1,817.0 | 19.00 | 316.00 | 1,779.3 | 226.8 | -191.6 | 295.1 | 0.40 | -0.32 | 0.74 |
| 1,913.0 | 18.30 | 314.70 | 1,870.3 | 248.6 | -213.1 | 325.7 | 0.85 | -0.73 | -1.35 |
| 2,009.0 | 17.90 | 313.00 | 1,961.5 | 269.3 | -234.6 | 355.5 | 0.69 | -0.42 | -1.77 |
| 2,105.0 | 17.80 | 311.20 | 2,052.9 | 289.0 | -256.5 | 384.9 | 0.58 | -0.10 | -1.88 |
| 2,200.0 | 18.60 | 309.70 | 2,143.1 | 308.3 | -279.0 | 414.6 | 0.98 | 0.84 | -1.58 |
| 2,295.0 | 17.50 | 310.10 | 2,233.5 | 327.1 | -301.6 | 444.0 | 1.17 | -1.16 | 0.42 |
| 2,391.0 | 17.40 | 309.50 | 2,325.0 | 345.6 | -323.7 | 472.8 | 0.21 | -0.10 | -0.63 |
| 2,486.0 | 16.70 | 308.90 | 2,415.9 | 363.2 | -345.3 | 500.6 | 0.76 | -0.74 | -0.63 |
| 2,581.0 | 16.90 | 312.40 | 2,506.8 | 381.1 | -366.2 | 528.1 | 1.09 | 0.21 | 3.68 |
| 2,676.0 | 17.60 | 310.60 | 2,597.5 | 399.7 | -387.3 | 556.2 | 0.93 | 0.74 | -1.89 |
| 2,772.0 | 16.90 | 302.30 | 2,689.2 | 416.6 | -410.1 | 584.5 | 2.66 | -0.73 | -8.65 |
| 2,867.0 | 16.70 | 301.20 | 2,780.2 | 431.1 | -433.4 | 611.6 | 0.40 | -0.21 | -1.16 |
| 2,962.0 | 16.60 | 302.10 | 2,871.2 | 445.4 | -456.6 | 638.4 | 0.29 | -0.11 | 0.95 |
| 3,057.0 | 16.40 | 304.00 | 2,962.3 | 460.1 | -479.2 | 665.0 | 0.61 | -0.21 | 2.00 |
| 3,152.0 | 17.20 | 305.50 | 3,053.2 | 475.7 | -501.8 | 692.3 | 0.96 | 0.84 | 1.58 |
| 3,247.0 | 17.60 | 304.10 | 3,143.9 | 491.9 | -525.1 | 720.5 | 0.61 | 0.42 | -1.47 |
| 3,343.0 | 17.30 | 310.10 | 3,235.5 | 509.3 | -548.0 | 749.2 | 1.90 | -0.31 | 6.25 |
| 3,438.0 | 17.70 | 309.90 | 3,326.1 | 527.6 | -569.9 | 777.7 | 0.43 | 0.42 | -0.21 |
| 3,532.0 | 17.50 | 311.40 | 3,415.7 | 546.1 | -591.5 | 806.1 | 0.53 | -0.21 | 1.60 |
| 3,628.0 | 17.80 | 316.20 | 3,507.2 | 566.3 | -612.5 | 835.2 | 1.55 | 0.31 | 5.00 |
| 3,723.0 | 16.70 | 313.30 | 3,597.9 | 586.1 | -632.4 | 863.3 | 1.47 | -1.16 | -3.05 |
| 3,818.0 | 14.60 | 312.30 | 3,689.4 | 603.5 | -651.2 | 888.9 | 2.23 | -2.21 | -1.05 |
| 3,913.0 | 14.70 | 314.40 | 3,781.3 | 620.0 | -668.7 | 913.0 | 0.57 | 0.11 | 2.21 |
| 4,008.0 | 16.10 | 312.50 | 3,872.9 | 637.4 | -687.0 | 938.2 | 1.57 | 1.47 | -2.00 |
| 4,104.0 | 15.30 | 310.00 | 3,965.3 | 654.5 | -706.5 | 964.1 | 1.09 | -0.83 | -2.60 |
| 4,199.0 | 13.80 | 307.70 | 4,057.2 | 669.5 | -725.1 | 988.0 | 1.69 | -1.58 | -2.42 |
| 4,294.0 | 10.90 | 301.90 | 4,150.0 | 681.2 | -741.7 | 1,008.1 | 3.32 | -3.05 | -6.11 |
| 4,389.0 | 8.90 | 301.60 | 4,243.6 | 689.8 | -755.6 | 1,024.2 | 2.11 | -2.11 | -0.32 |
| 4,484.0 | 7.30 | 314.80 | 4,337.7 | 697.9 | -766.1 | 1,037.5 | 2.57 | -1.68 | 13.89 |
| 4,579.0 | 5.00 | 330.40 | 4,432.1 | 705.7 | -772.5 | 1,047.4 | 2.97 | -2.42 | 16.42 |
| 4,675.0 | 5.00 | 317.70 | 4,527.8 | 712.4 | -777.3 | 1,055.6 | 1.15 | 0.00 | -13.23 |
| 4,770.0 | 4.70 | 338.00 | 4,622.4 | 719.1 | -781.6 | 1,063.2 | 1.82 | -0.32 | 21.37 |
| 4,865.0 | 6.20 | 339.70 | 4,717.0 | 727.5 | -784.8 | 1,071.2 | 1.59 | 1.58 | 1.79 |
| 4,959.0 | 8.00 | 345.00 | 4,810.3 | 738.6 | -788.3 | 1,081.1 | 2.04 | 1.91 | 5.64 |
| 5,054.0 | 8.70 | 336.20 | 4,904.3 | 751.6 | -792.9 | 1,093.2 | 1.53 | 0.74 | -9.26 |
| 5,150.0 | 9.10 | 318.60 | 4,999.1 | 763.9 | -800.8 | 1,107.3 | 2.86 | 0.42 | -18.33 |
| 5,245.0 | 6.50 | 296.90 | 5,093.3 | 772.0 | -810.6 | 1,120.0 | 4.09 | -2.74 | -22.84 |
| 5,340.0 | 5.90 | 285.10 | 5,187.7 | 775.7 | -820.1 | 1,129.6 | 1.48 | -0.63 | -12.42 |
| 5,435.0 | 5.40 | 251.10 | 5,282.3 | 775.5 | -829.1 | 1,136.1 | 3.51 | -0.53 | -35.79 |
| 5,530.0 | 3.40 | 214.90 | 5,377.0 | 771.8 | -834.9 | 1,138.0 | 3.50 | -2.11 | -38.11 |
| 5,625.0 | 1.50 | 196.70 | 5,471.9 | 768.3 | -836.9 | 1,137.1 | 2.14 | -2.00 | -19.16 |
| 5,652.8 | 1.25 | 189.54 | 5,499.7 | 767.6 | -837.0 | 1,136.8 | 1.10 | -0.91 | -25.79 |
| TARGET BHL 2580'FSL, 50'FWL | | | | | | | | | |
| 5,721.0 | 0.80 | 154.50 | 5,567.9 | 766.5 | -837.0 | 1,136.0 | 1.10 | -0.66 | -51.36 |
| 5,816.0 | 0.80 | 148.30 | 5,662.9 | 765.3 | -836.3 | 1,134.7 | 0.09 | 0.00 | -6.53 |
| 5,911.0 | 0.90 | 132.10 | 5,757.9 | 764.2 | -835.4 | 1,133.4 | 0.27 | 0.11 | -17.05 |
| 6,006.0 | 1.30 | 122.40 | 5,852.9 | 763.1 | -834.0 | 1,131.5 | 0.46 | 0.42 | -10.21 |
| 6,101.0 | 2.00 | 130.00 | 5,947.8 | 761.5 | -831.8 | 1,128.8 | 0.77 | 0.74 | 8.00 |

| | | | |
|------------------|---------------------------------------|-------------------------------------|--|
| Company: | Anadarko, Weld County CO | Local Co-ordinate Reference: | Site Cottonwood 12-33 Pad Sec. 33-T2N-R66W |
| Project: | SEC.33-T2N-R66W | TVD Reference: | WELL @ 4964.0ft (Original Well Elev) |
| Site: | Cottonwood 12-33 Pad Sec. 33-T2N-R66W | MD Reference: | WELL @ 4964.0ft (Original Well Elev) |
| Well: | Cottonwood 32-33 | North Reference: | True |
| Wellbore: | Wellbore #1 | Survey Calculation Method: | Minimum Curvature |
| Design: | Wellbore #1 | 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) |
|--|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|---------------------|
| 6,198.0 | 1.80 | 134.90 | 6,044.8 | 759.3 | -829.4 | 1,125.6 | 0.27 | -0.21 | 5.05 |
| 6,292.0 | 1.30 | 141.60 | 6,138.7 | 757.5 | -827.7 | 1,123.1 | 0.56 | -0.53 | 7.13 |
| 6,383.0 | 1.20 | 112.00 | 6,229.7 | 756.3 | -826.2 | 1,121.2 | 0.71 | -0.11 | -32.53 |
| 6,478.0 | 1.10 | 115.70 | 6,324.7 | 755.5 | -824.4 | 1,119.4 | 0.13 | -0.11 | 3.89 |
| 6,573.0 | 0.80 | 120.10 | 6,419.7 | 754.8 | -823.0 | 1,117.8 | 0.32 | -0.32 | 4.63 |
| 6,669.0 | 0.50 | 106.10 | 6,515.7 | 754.3 | -822.0 | 1,116.8 | 0.35 | -0.31 | -14.58 |
| 6,764.0 | 0.30 | 79.70 | 6,610.7 | 754.3 | -821.4 | 1,116.3 | 0.28 | -0.21 | -27.79 |
| 6,859.0 | 0.40 | 12.60 | 6,705.7 | 754.6 | -821.1 | 1,116.3 | 0.42 | 0.11 | -70.63 |
| 6,953.0 | 0.30 | 352.30 | 6,799.7 | 755.2 | -821.0 | 1,116.6 | 0.17 | -0.11 | -21.60 |
| 7,048.0 | 0.50 | 299.40 | 6,894.7 | 755.7 | -821.4 | 1,117.2 | 0.42 | 0.21 | -55.68 |
| 7,144.0 | 0.50 | 307.70 | 6,990.7 | 756.1 | -822.1 | 1,118.0 | 0.08 | 0.00 | 8.65 |
| 7,239.0 | 0.50 | 303.40 | 7,085.7 | 756.6 | -822.8 | 1,118.9 | 0.04 | 0.00 | -4.53 |
| 7,319.5 | 0.67 | 314.13 | 7,166.2 | 757.1 | -823.4 | 1,119.7 | 0.25 | 0.21 | 13.32 |
| TARGET CIRCLE 2580'FSL & 50'FWL | | | | | | | | | |
| 7,334.0 | 0.70 | 315.50 | 7,180.7 | 757.2 | -823.6 | 1,119.9 | 0.25 | 0.22 | 9.46 |
| 7,428.0 | 0.30 | 20.20 | 7,274.7 | 757.9 | -823.9 | 1,120.5 | 0.67 | -0.43 | 68.83 |
| 7,524.0 | 0.30 | 29.90 | 7,370.7 | 758.3 | -823.7 | 1,120.7 | 0.05 | 0.00 | 10.10 |
| 7,621.0 | 0.40 | 61.90 | 7,467.7 | 758.7 | -823.2 | 1,120.6 | 0.22 | 0.10 | 32.99 |
| 7,718.0 | 0.40 | 110.60 | 7,564.6 | 758.8 | -822.6 | 1,120.2 | 0.34 | 0.00 | 50.21 |
| 7,808.0 | 0.50 | 114.00 | 7,654.6 | 758.5 | -822.0 | 1,119.5 | 0.11 | 0.11 | 3.78 |
| 7,905.0 | 0.70 | 138.60 | 7,751.6 | 757.9 | -821.2 | 1,118.5 | 0.33 | 0.21 | 25.36 |
| 8,000.0 | 1.10 | 125.60 | 7,846.6 | 756.9 | -820.1 | 1,117.0 | 0.47 | 0.42 | -13.68 |
| 8,095.0 | 0.90 | 133.60 | 7,941.6 | 755.9 | -818.8 | 1,115.4 | 0.26 | -0.21 | 8.42 |
| 8,230.0 | 1.10 | 143.00 | 8,076.6 | 754.1 | -817.2 | 1,113.0 | 0.19 | 0.15 | 6.96 |
| HARD LINES 61'N & 50'W of BHL | | | | | | | | | |
| 8,280.0 | 1.10 | 143.00 | 8,126.6 | 753.3 | -816.7 | 1,112.1 | 0.00 | 0.00 | 0.00 |

Checked By: _____ Approved By: _____ Date: _____