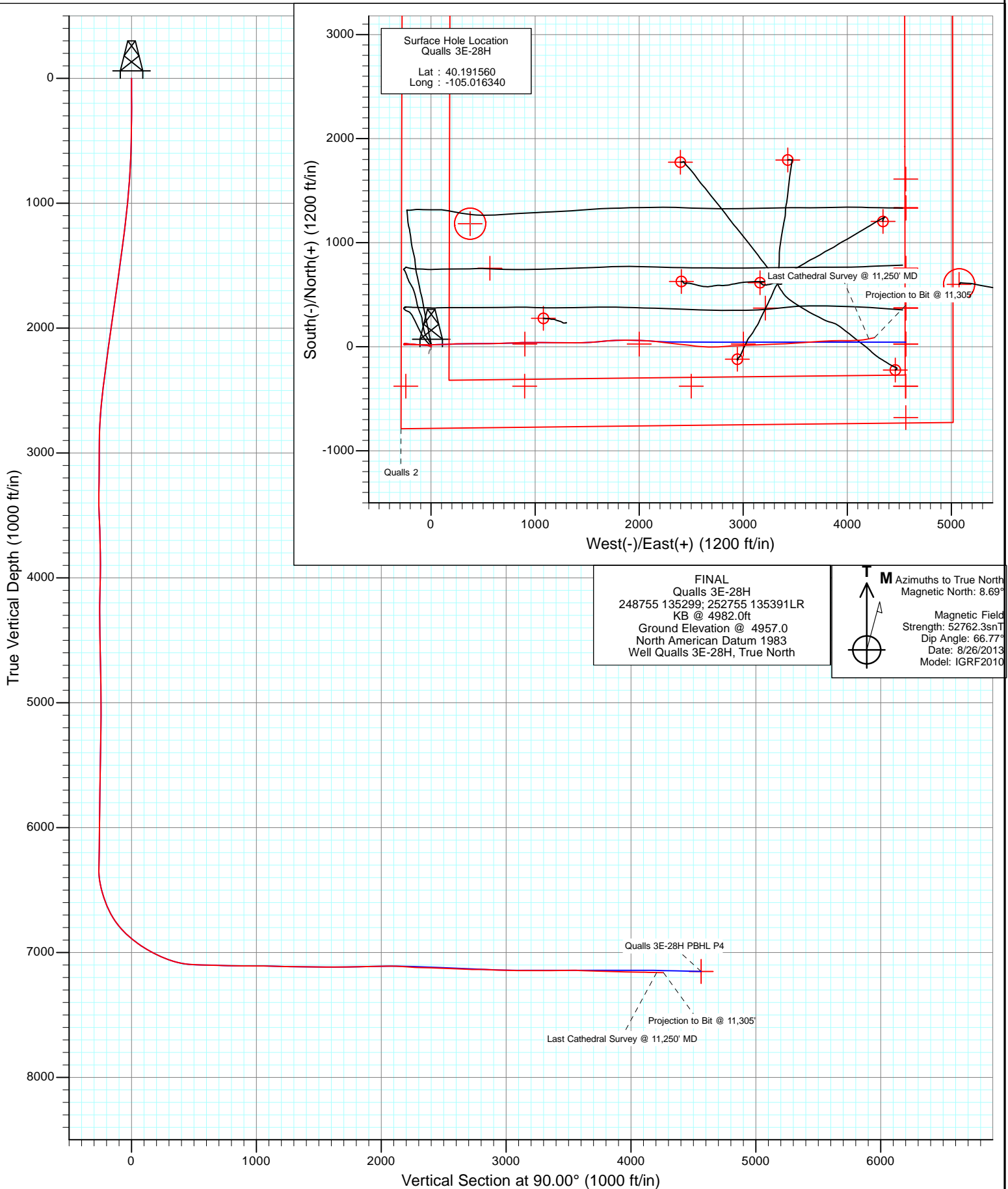


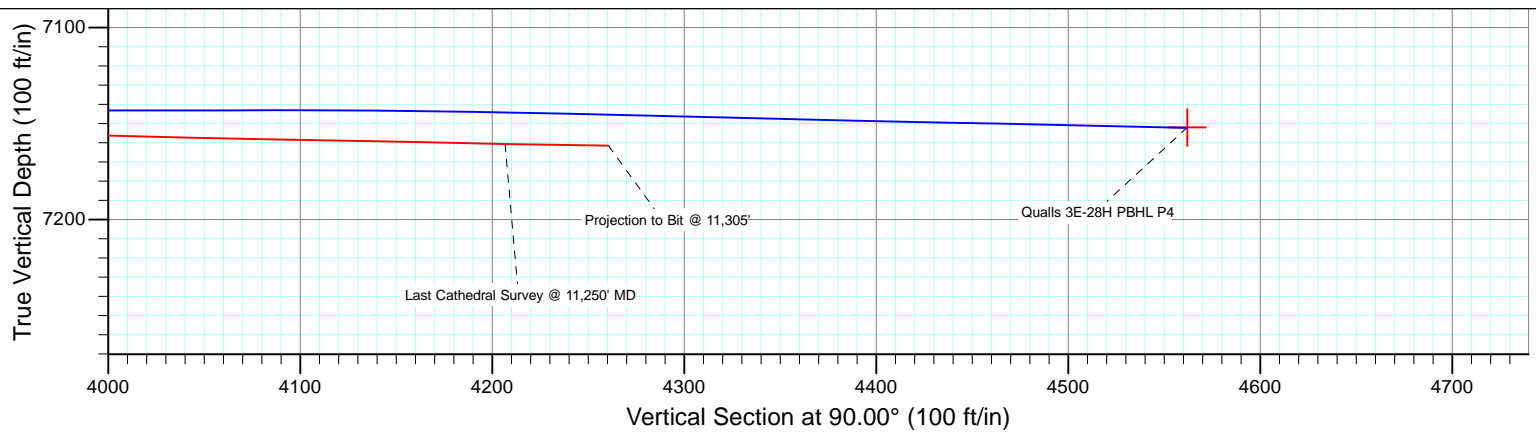
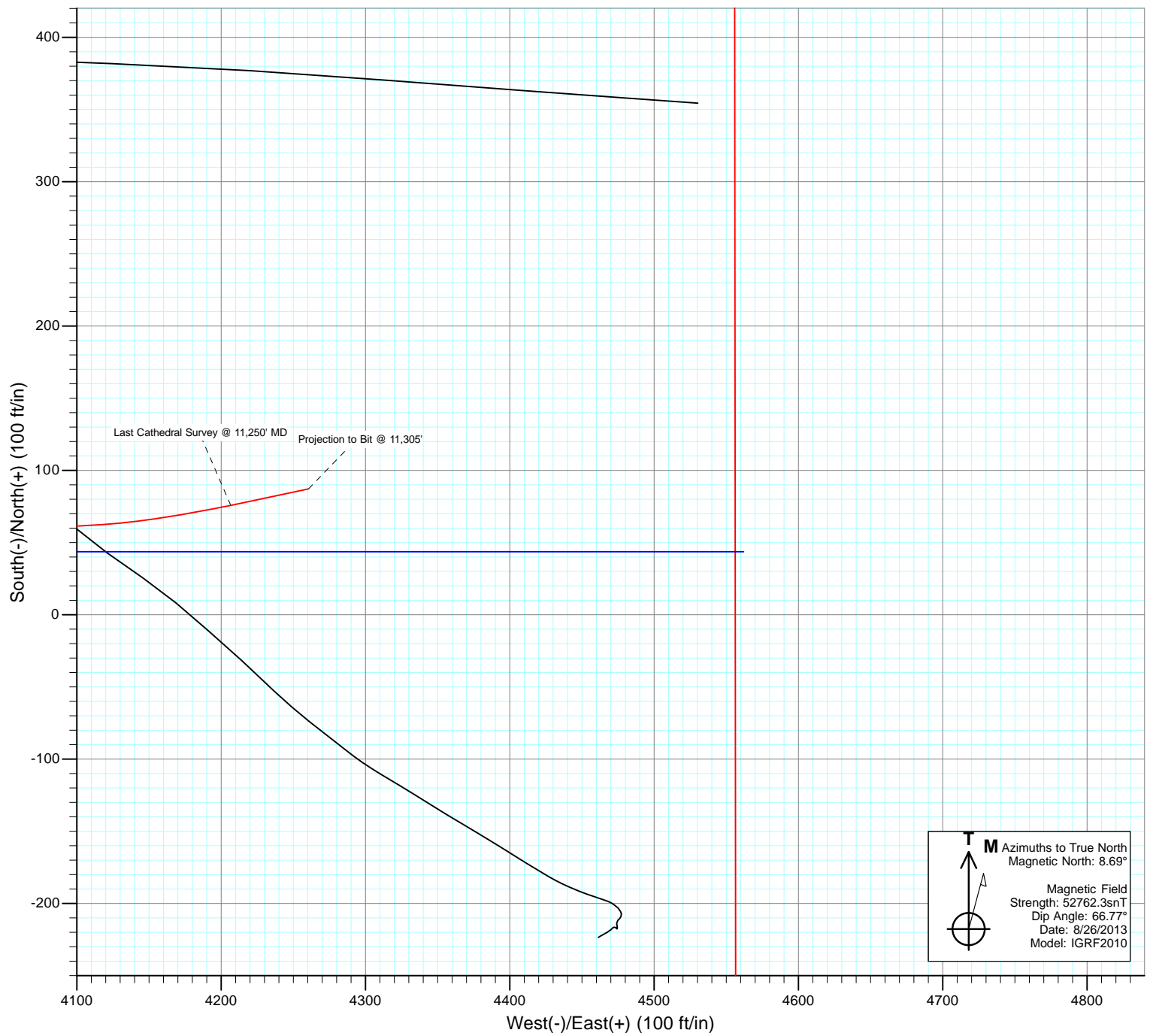


Project: DJ Wattenberg
Site: S28-T3N-R68W (Qualls)
Well: Qualls 3E-28H
Wellbore: Hz
Design: FINAL





Project: DJ Wattenberg
Site: S28-T3N-R68W (Qualls)
Well: Qualls 3E-28H
Wellbore: Hz
Design: FINAL



Cathedral Energy Services

Survey Report

| | | | |
|------------------|----------------------------|-------------------------------------|-----------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Qualls 3E-28H |
| Project: | DJ Wattenberg | TVD Reference: | KB @ 4982.0ft |
| Site: | S28-T3N-R68W (Qualls) | MD Reference: | KB @ 4982.0ft |
| Well: | Qualls 3E-28H | North Reference: | True |
| Wellbore: | Hz | Survey Calculation Method: | Minimum Curvature |
| Design: | FINAL | Database: | USA EDM 5000 Multi Users DB |

| | | | |
|--------------------|---------------------------|----------------------|----------------|
| Project | DJ Wattenberg | | |
| Map System: | US State Plane 1983 | System Datum: | Mean Sea Level |
| Geo Datum: | North American Datum 1983 | | |
| Map Zone: | Colorado Northern Zone | | |

| Site | | S28-T3N-R68W (Qualls) | | | |
|-----------------------|----------|-----------------------|-----------------|-------------------|-------------|
| Site Position: | | Northing: | 1,313,038.99 ft | Latitude: | 40.191670 |
| From: | Lat/Long | Easting: | 3,135,104.30 ft | Longitude: | -105.016410 |
| Position Uncertainty: | 0.0 ft | Slot Radius: | 13.200 in | Grid Convergence: | 0.31 ° |

| | | | | | | |
|----------------------|---------------|--------|---------------------|-----------------|---------------|-------------|
| Well | Qualls 3E-28H | | | | | |
| Well Position | +N/-S | 0.0 ft | Northing: | 1,312,999.01 ft | Latitude: | 40.191560 |
| | +E/-W | 0.0 ft | Easting: | 3,135,124.08 ft | Longitude: | -105.016340 |
| Position Uncertainty | | 0.0 ft | Wellhead Elevation: | ft | Ground Level: | 4,957.0 ft |

| | | | | | |
|------------------|-------------------|--------------------|------------------------|----------------------|----------------------------|
| Wellbore | Hz | | | | |
| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
| | IGRF2010 | 8/26/2013 | 8.68 | 66.77 | 52,762 |

| | | | | | |
|--------------------------|-------------------------|---------------|--------------|----------------------|-----|
| Design | FINAL | | | | |
| Audit Notes: | | | | | |
| Version: | 1.0 | Phase: | ACTUAL | Tie On Depth: | 0.0 |
| Vertical Section: | Depth From (TVD) | +N/-S | +E/-W | Direction | |
| | (ft) | (ft) | (ft) | (°) | |
| | 0.0 | 0.0 | 0.0 | 90.00 | |

| | | | | | |
|-----------------------|----------------|--------------------------|------------------|--------------------|--|
| Survey Program | Date | 9/16/2013 | | | |
| From (ft) | To (ft) | Survey (Wellbore) | Tool Name | Description | |
| 143.0 | 11,305.0 | Survey #1 (Hz) | Geolink MWD | Geolink MWD | |

| | | | | | | | | | | |
|----------------------------|------------------------|--------------------|----------------------------|-------------------|-------------------|------------------------------|------------------------------|-----------------------------|------------------------------|--|
| Survey | | | | | | | | | | |
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Formations / Comments | |
| 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | | |
| 143.0 | 0.57 | 103.80 | 143.0 | -0.2 | 0.7 | 0.7 | 0.40 | 0.40 | | |
| 235.0 | 0.35 | 149.24 | 235.0 | -0.5 | 1.3 | 1.3 | 0.44 | -0.24 | | |
| 327.0 | 0.57 | 278.70 | 327.0 | -0.7 | 1.0 | 1.0 | 0.91 | 0.24 | | |
| 419.0 | 1.01 | 303.92 | 419.0 | -0.2 | -0.2 | -0.2 | 0.60 | 0.48 | | |
| 511.0 | 1.58 | 298.91 | 511.0 | 0.9 | -1.9 | -1.9 | 0.63 | 0.62 | | |
| 603.0 | 2.42 | 304.19 | 602.9 | 2.6 | -4.7 | -4.7 | 0.93 | 0.91 | | |
| 695.0 | 3.08 | 295.40 | 694.8 | 4.8 | -8.5 | -8.5 | 0.85 | 0.72 | | |
| 787.0 | 4.09 | 293.73 | 786.6 | 7.1 | -13.7 | -13.7 | 1.10 | 1.10 | | |
| 900.0 | 5.00 | 289.20 | 899.3 | 10.4 | -22.1 | -22.1 | 0.87 | 0.81 | | |
| 992.0 | 5.60 | 285.20 | 990.9 | 12.9 | -30.2 | -30.2 | 0.77 | 0.65 | | |
| 1,083.0 | 6.30 | 284.10 | 1,081.4 | 15.2 | -39.3 | -39.3 | 0.78 | 0.77 | | |
| 1,175.0 | 6.90 | 277.10 | 1,172.8 | 17.2 | -49.7 | -49.7 | 1.09 | 0.65 | | |

Cathedral Energy Services

Survey Report

| | | | |
|------------------|----------------------------|-------------------------------------|-----------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Qualls 3E-28H |
| Project: | DJ Wattenberg | TVD Reference: | KB @ 4982.0ft |
| Site: | S28-T3N-R68W (Qualls) | MD Reference: | KB @ 4982.0ft |
| Well: | Qualls 3E-28H | North Reference: | True |
| Wellbore: | Hz | Survey Calculation Method: | Minimum Curvature |
| Design: | FINAL | Database: | USA EDM 5000 Multi Users DB |

| Survey | | | | | | | | | |
|---------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|-----------------------|
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Formations / Comments |
| 1,267.0 | 7.80 | 273.20 | 1,264.0 | 18.2 | -61.4 | -61.4 | 1.12 | 0.98 | |
| 1,359.0 | 7.70 | 270.30 | 1,355.2 | 18.6 | -73.8 | -73.8 | 0.44 | -0.11 | |
| 1,451.0 | 7.10 | 267.20 | 1,446.4 | 18.3 | -85.7 | -85.7 | 0.78 | -0.65 | |
| 1,545.0 | 7.60 | 270.60 | 1,539.6 | 18.1 | -97.7 | -97.7 | 0.70 | 0.53 | |
| 1,640.0 | 8.10 | 273.80 | 1,633.7 | 18.6 | -110.6 | -110.6 | 0.70 | 0.53 | |
| 1,734.0 | 8.40 | 272.20 | 1,726.8 | 19.34 | -124.1 | -124.1 | 0.40 | 0.32 | |
| 1,829.0 | 8.40 | 272.50 | 1,820.8 | 19.9 | -138.0 | -138.0 | 0.05 | 0.00 | |
| 1,924.0 | 7.50 | 273.20 | 1,914.8 | 20.5 | -151.1 | -151.1 | 0.95 | -0.95 | |
| 2,018.0 | 7.70 | 271.60 | 2,008.0 | 21.1 | -163.5 | -163.5 | 0.31 | 0.21 | |
| 2,113.0 | 7.70 | 277.90 | 2,102.2 | 22.1 | -176.2 | -176.2 | 0.89 | 0.00 | |
| 2,208.0 | 8.20 | 280.00 | 2,196.2 | 24.2 | -189.2 | -189.2 | 0.61 | 0.53 | |
| 2,302.0 | 7.90 | 278.30 | 2,289.3 | 26.3 | -202.1 | -202.1 | 0.41 | -0.32 | |
| 2,397.0 | 7.40 | 275.10 | 2,383.5 | 27.7 | -214.7 | -214.7 | 0.69 | -0.53 | |
| 2,492.0 | 6.90 | 274.50 | 2,477.7 | 28.7 | -226.5 | -226.5 | 0.53 | -0.53 | |
| 2,586.0 | 5.80 | 275.80 | 2,571.2 | 29.7 | -236.8 | -236.8 | 1.18 | -1.17 | |
| 2,681.0 | 4.70 | 277.80 | 2,665.8 | 30.7 | -245.5 | -245.5 | 1.17 | -1.16 | |
| 2,776.0 | 3.40 | 274.70 | 2,760.5 | 31.4 | -252.1 | -252.1 | 1.39 | -1.37 | |
| 2,870.0 | 1.60 | 245.50 | 2,854.4 | 31.1 | -256.1 | -256.1 | 2.29 | -1.91 | |
| 2,965.0 | 0.40 | 221.50 | 2,949.4 | 30.3 | -257.5 | -257.5 | 1.31 | -1.26 | |
| 3,059.0 | 0.50 | 168.90 | 3,043.4 | 29.7 | -257.7 | -257.7 | 0.43 | 0.11 | |
| 3,154.0 | 0.70 | 244.20 | 3,138.4 | 29.0 | -258.1 | -258.1 | 0.79 | 0.21 | |
| 3,249.0 | 1.60 | 217.60 | 3,233.4 | 27.7 | -259.4 | -259.4 | 1.08 | 0.95 | |
| 3,343.0 | 1.40 | 204.00 | 3,327.4 | 25.6 | -260.7 | -260.7 | 0.43 | -0.21 | |
| 3,438.0 | 1.80 | 130.20 | 3,422.3 | 23.6 | -260.0 | -260.0 | 2.05 | 0.42 | |
| 3,533.0 | 2.30 | 109.10 | 3,517.3 | 22.0 | -257.1 | -257.1 | 0.94 | 0.53 | |
| 3,627.0 | 2.00 | 119.30 | 3,611.2 | 20.6 | -253.9 | -253.9 | 0.52 | -0.32 | |
| 3,722.0 | 1.40 | 127.90 | 3,706.2 | 19.1 | -251.5 | -251.5 | 0.68 | -0.63 | |
| 3,816.0 | 1.00 | 105.90 | 3,800.1 | 18.1 | -249.8 | -249.8 | 0.64 | -0.43 | |
| 3,911.0 | 1.10 | 19.10 | 3,895.1 | 18.8 | -248.7 | -248.7 | 1.52 | 0.11 | |
| 4,006.0 | 1.50 | 332.50 | 3,990.1 | 20.7 | -249.0 | -249.0 | 1.15 | 0.42 | |
| 4,101.0 | 2.20 | 305.50 | 4,085.1 | 22.9 | -251.1 | -251.1 | 1.16 | 0.74 | |
| 4,195.0 | 1.40 | 298.50 | 4,179.0 | 24.5 | -253.6 | -253.6 | 0.88 | -0.85 | |
| 4,290.0 | 0.10 | 57.80 | 4,274.0 | 25.1 | -254.5 | -254.5 | 1.53 | -1.37 | |
| 4,384.0 | 0.90 | 78.50 | 4,368.0 | 25.3 | -253.7 | -253.7 | 0.86 | 0.85 | |
| 4,479.0 | 1.10 | 91.00 | 4,463.0 | 25.4 | -252.1 | -252.1 | 0.31 | 0.21 | |
| 4,573.0 | 1.10 | 99.90 | 4,557.0 | 25.2 | -250.3 | -250.3 | 0.18 | 0.00 | |
| 4,668.0 | 1.50 | 64.90 | 4,651.9 | 25.6 | -248.2 | -248.2 | 0.92 | 0.42 | |
| 4,763.0 | 0.80 | 40.30 | 4,746.9 | 26.6 | -246.7 | -246.7 | 0.89 | -0.74 | |
| 4,857.0 | 0.80 | 56.30 | 4,840.9 | 27.5 | -245.7 | -245.7 | 0.24 | 0.00 | |
| 4,952.0 | 1.00 | 76.90 | 4,935.9 | 28.1 | -244.4 | -244.4 | 0.40 | 0.21 | |
| 5,047.0 | 0.40 | 42.40 | 5,030.9 | 28.5 | -243.3 | -243.3 | 0.74 | -0.63 | |
| 5,141.0 | 0.70 | 287.00 | 5,124.9 | 28.9 | -243.7 | -243.7 | 1.00 | 0.32 | |
| 5,236.0 | 0.90 | 216.50 | 5,219.9 | 28.5 | -244.7 | -244.7 | 0.99 | 0.21 | |
| 5,330.0 | 1.70 | 219.40 | 5,313.9 | 26.8 | -246.0 | -246.0 | 0.85 | 0.85 | |
| 5,425.0 | 1.90 | 215.90 | 5,408.8 | 24.4 | -247.8 | -247.8 | 0.24 | 0.21 | |
| 5,520.0 | 1.60 | 229.90 | 5,503.8 | 22.3 | -249.7 | -249.7 | 0.55 | -0.32 | |
| 5,615.0 | 1.00 | 246.20 | 5,598.8 | 21.1 | -251.5 | -251.5 | 0.74 | -0.63 | |
| 5,709.0 | 0.70 | 236.30 | 5,692.7 | 20.5 | -252.7 | -252.7 | 0.35 | -0.32 | |
| 5,803.0 | 0.70 | 237.60 | 5,786.7 | 19.8 | -253.7 | -253.7 | 0.02 | 0.00 | |
| 5,898.0 | 0.50 | 224.80 | 5,881.7 | 19.2 | -254.5 | -254.5 | 0.25 | -0.21 | |
| 5,992.0 | 0.60 | 230.90 | 5,975.7 | 18.6 | -255.2 | -255.2 | 0.12 | 0.11 | |
| 6,087.0 | 0.90 | 282.80 | 6,070.7 | 18.5 | -256.3 | -256.3 | 0.75 | 0.32 | |
| 6,181.0 | 1.00 | 296.20 | 6,164.7 | 19.0 | -257.7 | -257.7 | 0.26 | 0.11 | |

Cathedral Energy Services

Survey Report

| | | | |
|------------------|----------------------------|-------------------------------------|-----------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Qualls 3E-28H |
| Project: | DJ Wattenberg | TVD Reference: | KB @ 4982.0ft |
| Site: | S28-T3N-R68W (Qualls) | MD Reference: | KB @ 4982.0ft |
| Well: | Qualls 3E-28H | North Reference: | True |
| Wellbore: | Hz | Survey Calculation Method: | Minimum Curvature |
| Design: | FINAL | Database: | USA EDM 5000 Multi Users DB |

| Survey | | | | | | | | | |
|---------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|-----------------------|
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Formations / Comments |
| 6,276.0 | 1.30 | 279.90 | 6,259.7 | 19.6 | -259.5 | -259.5 | 0.46 | 0.32 | |
| 6,370.0 | 0.40 | 75.40 | 6,353.7 | 19.8 | -260.3 | -260.3 | 1.78 | -0.96 | |
| 6,402.0 | 4.10 | 94.60 | 6,385.6 | 19.8 | -259.0 | -259.0 | 11.64 | 11.56 | |
| 6,433.0 | 7.80 | 89.90 | 6,416.5 | 19.7 | -255.8 | -255.8 | 12.03 | 11.94 | |
| 6,465.0 | 10.80 | 87.90 | 6,448.0 | 19.8 | -250.6 | -250.6 | 9.43 | 9.37 | |
| 6,496.0 | 13.10 | 85.20 | 6,478.4 | 20.2 | -244.2 | -244.2 | 7.63 | 7.42 | |
| 6,528.0 | 15.00 | 84.50 | 6,509.4 | 20.9 | -236.5 | -236.5 | 5.96 | 5.94 | |
| 6,559.0 | 17.30 | 86.10 | 6,539.2 | 21.6 | -227.9 | -227.9 | 7.56 | 7.42 | |
| 6,591.0 | 19.60 | 89.10 | 6,569.5 | 22.0 | -217.8 | -217.8 | 7.77 | 7.19 | |
| 6,622.0 | 21.10 | 91.10 | 6,598.6 | 22.0 | -207.0 | -207.0 | 5.33 | 4.84 | |
| 6,654.0 | 22.90 | 91.00 | 6,628.3 | 21.8 | -195.0 | -195.0 | 5.63 | 5.62 | |
| 6,685.0 | 25.10 | 91.80 | 6,656.6 | 21.5 | -182.4 | -182.4 | 7.17 | 7.10 | |
| 6,717.0 | 27.60 | 91.90 | 6,685.3 | 21.0 | -168.2 | -168.2 | 7.81 | 7.81 | |
| 6,748.0 | 30.30 | 91.50 | 6,712.4 | 20.5 | -153.2 | -153.2 | 8.73 | 8.71 | |
| 6,780.0 | 33.00 | 91.60 | 6,739.6 | 20.1 | -136.4 | -136.4 | 8.44 | 8.44 | |
| 6,812.0 | 36.00 | 92.40 | 6,766.0 | 19.5 | -118.3 | -118.3 | 9.48 | 9.37 | |
| 6,843.0 | 38.70 | 93.80 | 6,790.6 | 18.4 | -99.6 | -99.6 | 9.13 | 8.71 | |
| 6,875.0 | 42.30 | 93.30 | 6,815.0 | 17.1 | -78.8 | -78.8 | 11.30 | 11.25 | |
| 6,912.0 | 46.20 | 91.20 | 6,841.5 | 16.2 | -53.0 | -53.0 | 11.26 | 10.54 | |
| 6,992.0 | 51.50 | 85.90 | 6,894.1 | 17.8 | 7.1 | 7.1 | 8.29 | 6.62 | |
| 7,023.0 | 52.60 | 86.40 | 6,913.2 | 19.4 | 31.5 | 31.5 | 3.77 | 3.55 | |
| 7,055.0 | 53.70 | 88.50 | 6,932.4 | 20.6 | 57.1 | 57.1 | 6.28 | 3.44 | |
| 7,086.0 | 56.40 | 88.30 | 6,950.1 | 21.3 | 82.5 | 82.5 | 8.73 | 8.71 | |
| 7,118.0 | 58.90 | 88.60 | 6,967.3 | 22.0 | 109.5 | 109.5 | 7.85 | 7.81 | |
| 7,149.0 | 60.40 | 89.20 | 6,982.9 | 22.5 | 136.3 | 136.3 | 5.12 | 4.84 | |
| 7,181.0 | 62.40 | 86.90 | 6,998.2 | 23.5 | 164.3 | 164.3 | 8.88 | 6.25 | |
| 7,212.0 | 63.40 | 86.30 | 7,012.4 | 25.1 | 191.9 | 191.9 | 3.66 | 3.23 | |
| 7,244.0 | 64.90 | 87.00 | 7,026.3 | 26.8 | 220.6 | 220.6 | 5.08 | 4.69 | |
| 7,275.0 | 66.90 | 87.70 | 7,039.0 | 28.1 | 248.9 | 248.9 | 6.77 | 6.45 | |
| 7,307.0 | 68.40 | 89.30 | 7,051.1 | 28.9 | 278.5 | 278.5 | 6.58 | 4.69 | |
| 7,338.0 | 71.80 | 89.80 | 7,061.7 | 29.1 | 307.6 | 307.6 | 11.07 | 10.97 | |
| 7,370.0 | 72.80 | 91.00 | 7,071.4 | 28.9 | 338.1 | 338.1 | 4.75 | 3.12 | |
| 7,402.0 | 75.80 | 89.50 | 7,080.1 | 28.8 | 368.9 | 368.9 | 10.40 | 9.37 | |
| 7,433.0 | 79.00 | 89.00 | 7,086.8 | 29.2 | 399.2 | 399.2 | 10.44 | 10.32 | |
| 7,465.0 | 82.20 | 89.30 | 7,092.1 | 29.6 | 430.7 | 430.7 | 10.05 | 10.00 | |
| 7,496.0 | 85.10 | 89.90 | 7,095.5 | 29.8 | 461.5 | 461.5 | 9.55 | 9.35 | |
| 7,528.0 | 88.30 | 90.30 | 7,097.3 | 29.8 | 493.5 | 493.5 | 10.08 | 10.00 | |
| 7,622.0 | 88.40 | 88.40 | 7,100.0 | 30.8 | 587.4 | 587.4 | 2.02 | 0.11 | |
| 7,717.0 | 87.80 | 88.50 | 7,103.2 | 33.4 | 682.3 | 682.3 | 0.64 | -0.63 | |
| 7,812.0 | 88.80 | 87.30 | 7,106.0 | 36.9 | 777.2 | 777.2 | 1.64 | 1.05 | |
| 7,906.0 | 89.30 | 89.30 | 7,107.6 | 39.7 | 871.2 | 871.2 | 2.19 | 0.53 | |
| 8,001.0 | 89.90 | 90.30 | 7,108.2 | 40.0 | 966.2 | 966.2 | 1.23 | 0.63 | |
| 8,095.0 | 89.20 | 90.00 | 7,109.0 | 39.8 | 1,060.1 | 1,060.1 | 0.81 | -0.74 | |
| 8,190.0 | 88.60 | 90.40 | 7,110.8 | 39.4 | 1,155.1 | 1,155.1 | 0.76 | -0.63 | |
| 8,285.0 | 88.60 | 90.70 | 7,113.1 | 38.5 | 1,250.1 | 1,250.1 | 0.32 | 0.00 | |
| 8,379.0 | 89.70 | 90.40 | 7,114.5 | 37.6 | 1,344.1 | 1,344.1 | 1.21 | 1.17 | |
| 8,474.0 | 89.30 | 89.00 | 7,115.3 | 38.1 | 1,439.1 | 1,439.1 | 1.53 | -0.42 | |
| 8,569.0 | 88.70 | 86.10 | 7,117.0 | 42.2 | 1,534.0 | 1,534.0 | 3.12 | -0.63 | |
| 8,663.0 | 90.20 | 84.10 | 7,117.9 | 50.2 | 1,627.6 | 1,627.6 | 2.66 | 1.60 | |
| 8,758.0 | 91.80 | 86.00 | 7,116.2 | 58.4 | 1,722.2 | 1,722.2 | 2.61 | 1.68 | |
| 8,853.0 | 90.60 | 89.50 | 7,114.2 | 62.1 | 1,817.1 | 1,817.1 | 3.89 | -1.26 | |
| 8,947.0 | 91.80 | 90.00 | 7,112.3 | 62.5 | 1,911.1 | 1,911.1 | 1.38 | 1.28 | |
| 9,042.0 | 90.50 | 92.70 | 7,110.4 | 60.3 | 2,006.1 | 2,006.1 | 3.15 | -1.37 | |

Cathedral Energy Services

Survey Report

| | | | |
|------------------|----------------------------|-------------------------------------|-----------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Qualls 3E-28H |
| Project: | DJ Wattenberg | TVD Reference: | KB @ 4982.0ft |
| Site: | S28-T3N-R68W (Qualls) | MD Reference: | KB @ 4982.0ft |
| Well: | Qualls 3E-28H | North Reference: | True |
| Wellbore: | Hz | Survey Calculation Method: | Minimum Curvature |
| Design: | FINAL | Database: | USA EDM 5000 Multi Users DB |

Survey

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Formations / Comments |
|---------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|---|
| 9,073.0 | 90.90 | 92.90 | 7,110.0 | 58.8 | 2,037.0 | 2,037.0 | 1.44 | 1.29 | |
| 9,105.0 | 90.50 | 92.30 | 7,109.6 | 57.3 | 2,069.0 | 2,069.0 | 2.25 | -1.25 | |
| 9,136.0 | 88.90 | 94.10 | 7,109.8 | 55.6 | 2,099.9 | 2,099.9 | 7.76 | -5.16 | |
| 9,168.0 | 87.80 | 95.10 | 7,110.7 | 53.0 | 2,131.8 | 2,131.8 | 4.64 | -3.44 | |
| 9,200.0 | 86.60 | 96.10 | 7,112.2 | 49.9 | 2,163.6 | 2,163.6 | 4.88 | -3.75 | |
| 9,231.0 | 85.10 | 95.70 | 7,114.5 | 46.7 | 2,194.4 | 2,194.4 | 5.01 | -4.84 | |
| 9,263.0 | 86.00 | 97.40 | 7,117.0 | 43.1 | 2,226.1 | 2,226.1 | 6.00 | 2.81 | |
| 9,326.0 | 88.10 | 96.10 | 7,120.2 | 35.7 | 2,288.5 | 2,288.5 | 3.92 | 3.33 | |
| 9,389.0 | 88.50 | 96.70 | 7,122.1 | 28.7 | 2,351.1 | 2,351.1 | 1.14 | 0.63 | |
| 9,421.0 | 88.00 | 96.30 | 7,123.1 | 25.1 | 2,382.9 | 2,382.9 | 2.00 | -1.56 | |
| 9,515.0 | 88.40 | 96.70 | 7,126.0 | 14.4 | 2,476.2 | 2,476.2 | 0.60 | 0.43 | |
| 9,578.0 | 88.00 | 97.50 | 7,128.0 | 6.7 | 2,538.7 | 2,538.7 | 1.42 | -0.63 | |
| 9,610.0 | 86.60 | 96.10 | 7,129.5 | 2.9 | 2,570.5 | 2,570.5 | 6.18 | -4.37 | |
| 9,704.0 | 87.50 | 91.50 | 7,134.3 | -3.3 | 2,664.1 | 2,664.1 | 4.98 | 0.96 | |
| 9,799.0 | 90.30 | 86.40 | 7,136.2 | -1.6 | 2,759.0 | 2,759.0 | 6.12 | 2.95 | |
| 9,894.0 | 88.30 | 85.50 | 7,137.3 | 5.1 | 2,853.8 | 2,853.8 | 2.31 | -2.11 | |
| 9,988.0 | 87.60 | 87.70 | 7,140.7 | 10.7 | 2,947.5 | 2,947.5 | 2.45 | -0.74 | |
| 10,083.0 | 87.80 | 87.60 | 7,144.5 | 14.6 | 3,042.4 | 3,042.4 | 0.24 | 0.21 | |
| 10,177.0 | 90.50 | 88.10 | 7,145.9 | 18.1 | 3,136.3 | 3,136.3 | 2.92 | 2.87 | |
| 10,272.0 | 91.20 | 87.50 | 7,144.5 | 21.7 | 3,231.2 | 3,231.2 | 0.97 | 0.74 | |
| 10,367.0 | 89.30 | 87.30 | 7,144.1 | 26.1 | 3,326.1 | 3,326.1 | 2.01 | -2.00 | |
| 10,461.0 | 89.70 | 86.90 | 7,144.9 | 30.8 | 3,420.0 | 3,420.0 | 0.60 | 0.43 | |
| 10,556.0 | 91.10 | 86.80 | 7,144.2 | 36.0 | 3,514.8 | 3,514.8 | 1.48 | 1.47 | |
| 10,650.0 | 88.10 | 85.90 | 7,144.9 | 42.0 | 3,608.6 | 3,608.6 | 3.33 | -3.19 | |
| 10,745.0 | 87.90 | 86.80 | 7,148.2 | 48.1 | 3,703.4 | 3,703.4 | 0.97 | -0.21 | |
| 10,840.0 | 87.90 | 86.10 | 7,151.7 | 53.9 | 3,798.1 | 3,798.1 | 0.74 | 0.00 | |
| 10,934.0 | 88.80 | 87.70 | 7,154.4 | 59.0 | 3,892.0 | 3,892.0 | 1.95 | 0.96 | |
| 10,966.0 | 88.70 | 90.70 | 7,155.1 | 59.5 | 3,923.9 | 3,923.9 | 9.38 | -0.31 | |
| 10,997.0 | 89.50 | 91.20 | 7,155.6 | 58.9 | 3,954.9 | 3,954.9 | 3.04 | 2.58 | |
| 11,029.0 | 89.10 | 90.40 | 7,156.0 | 58.5 | 3,986.9 | 3,986.9 | 2.79 | -1.25 | |
| 11,061.0 | 88.60 | 89.80 | 7,156.6 | 58.4 | 4,018.9 | 4,018.9 | 2.44 | -1.56 | |
| 11,092.0 | 88.60 | 87.40 | 7,157.4 | 59.2 | 4,049.9 | 4,049.9 | 7.74 | 0.00 | |
| 11,124.0 | 88.70 | 87.40 | 7,158.1 | 60.7 | 4,081.9 | 4,081.9 | 0.31 | 0.31 | |
| 11,155.0 | 89.30 | 86.90 | 7,158.7 | 62.2 | 4,112.8 | 4,112.8 | 2.52 | 1.94 | |
| 11,187.0 | 88.70 | 82.40 | 7,159.2 | 65.2 | 4,144.7 | 4,144.7 | 14.18 | -1.87 | |
| 11,218.0 | 88.80 | 80.40 | 7,159.9 | 69.8 | 4,175.3 | 4,175.3 | 6.46 | 0.32 | |
| 11,250.0 | 89.00 | 78.10 | 7,160.5 | 75.8 | 4,206.7 | 4,206.7 | 7.21 | 0.62 | Last Cathedral Survey @ 11,250' MD Projection to Bit @ 11,305' |
| 11,305.0 | 89.00 | 78.10 | 7,161.5 | 87.1 | 4,260.6 | 4,260.6 | 0.00 | 0.00 | |

Cathedral Energy Services

Survey Report

| | | | |
|------------------|----------------------------|-------------------------------------|-----------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Qualls 3E-28H |
| Project: | DJ Wattenberg | TVD Reference: | KB @ 4982.0ft |
| Site: | S28-T3N-R68W (Qualls) | MD Reference: | KB @ 4982.0ft |
| Well: | Qualls 3E-28H | North Reference: | True |
| Wellbore: | Hz | Survey Calculation Method: | Minimum Curvature |
| Design: | FINAL | Database: | USA EDM 5000 Multi Users DB |

| Targets | | | | | | | | | |
|--|-----------|----------|---------|-------|---------|--------------|--------------|-----------|-------------|
| Target Name | | | | | | | | | |
| - hit/miss target | Dip Angle | Dip Dir. | TVD | +N/-S | +E/-W | Northing | Easting | Latitude | Longitude |
| - Shape | (°) | (°) | (ft) | (ft) | (ft) | (ft) | (ft) | | |
| Qualls 3E-28H PBHL P4 | 0.00 | 0.00 | 7,152.0 | 25.9 | 4,562.1 | 1,313,049.83 | 3,139,685.93 | 40.191630 | -105.000010 |
| - actual wellpath misses target center by 307.8ft at 11305.0ft MD (7161.5 TVD, 87.1 N, 4260.6 E) | | | | | | | | | |
| - Point | | | | | | | | | |
| Qualls 3E-28H 2000' TG | 0.00 | 0.00 | 7,115.0 | 26.0 | 2,000.0 | 1,313,035.90 | 3,137,123.94 | 40.191631 | -105.009181 |
| - actual wellpath misses target center by 34.9ft at 9036.7ft MD (7110.4 TVD, 60.6 N, 2000.8 E) | | | | | | | | | |
| - Point | | | | | | | | | |
| Qualls 3E-28H PBHL | 0.00 | 0.00 | 7,098.0 | 25.9 | 4,562.1 | 1,313,049.83 | 3,139,685.93 | 40.191630 | -105.000010 |
| - actual wellpath misses target center by 314.1ft at 11305.0ft MD (7161.5 TVD, 87.1 N, 4260.6 E) | | | | | | | | | |
| - Point | | | | | | | | | |
| Qualls 3E-28H 900' TGT | 0.00 | 0.00 | 7,120.0 | 26.0 | 900.0 | 1,313,029.92 | 3,136,023.95 | 40.191631 | -105.013118 |
| - actual wellpath misses target center by 18.5ft at 7934.9ft MD (7107.9 TVD, 40.0 N, 900.1 E) | | | | | | | | | |
| - Point | | | | | | | | | |
| Qualls 3E-28H PBHL P3 | 0.00 | 0.00 | 7,187.0 | 25.9 | 4,562.1 | 1,313,049.83 | 3,139,685.93 | 40.191630 | -105.000010 |
| - actual wellpath misses target center by 308.7ft at 11305.0ft MD (7161.5 TVD, 87.1 N, 4260.6 E) | | | | | | | | | |
| - Point | | | | | | | | | |
| Qualls 3E-28H 3000' TG | 0.00 | 0.00 | 7,183.0 | 26.0 | 3,000.0 | 1,313,041.34 | 3,138,123.92 | 40.191631 | -105.005601 |
| - actual wellpath misses target center by 42.2ft at 10042.7ft MD (7142.9 TVD, 12.9 N, 3002.2 E) | | | | | | | | | |
| - Point | | | | | | | | | |

| Design Annotations | | | | |
|--------------------|----------------|-------------------|------------|------------------------------------|
| Measured Depth | Vertical Depth | Local Coordinates | | Comment |
| (ft) | (ft) | +N/-S (ft) | +E/-W (ft) | |
| 11,250.0 | 7,160.5 | 75.8 | 4,206.7 | Last Cathedral Survey @ 11,250' MD |
| 11,305.0 | 7,161.5 | 87.1 | 4,260.6 | Projection to Bit @ 11,305' |

Checked By: _____ Approved By: _____ Date: _____