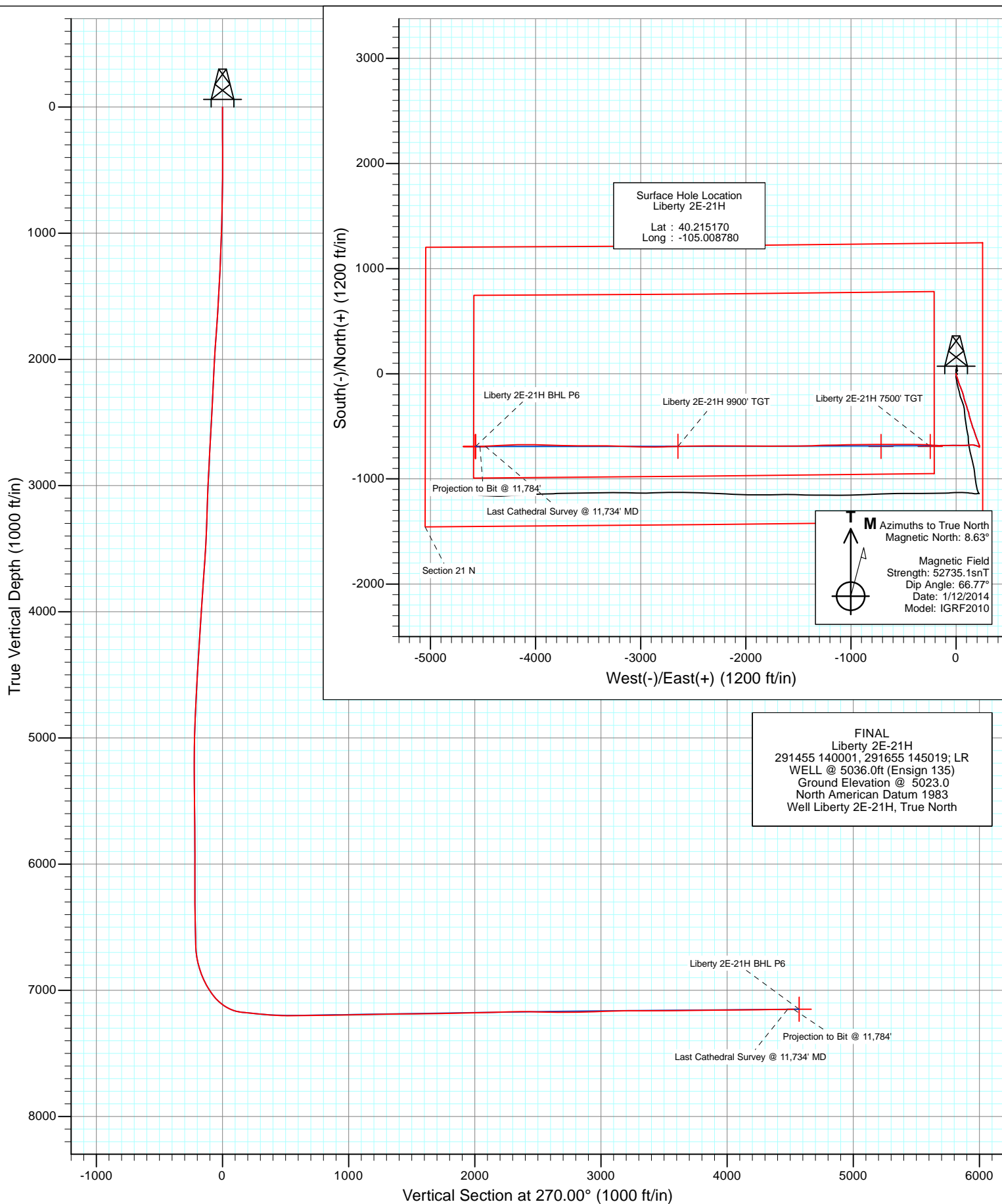


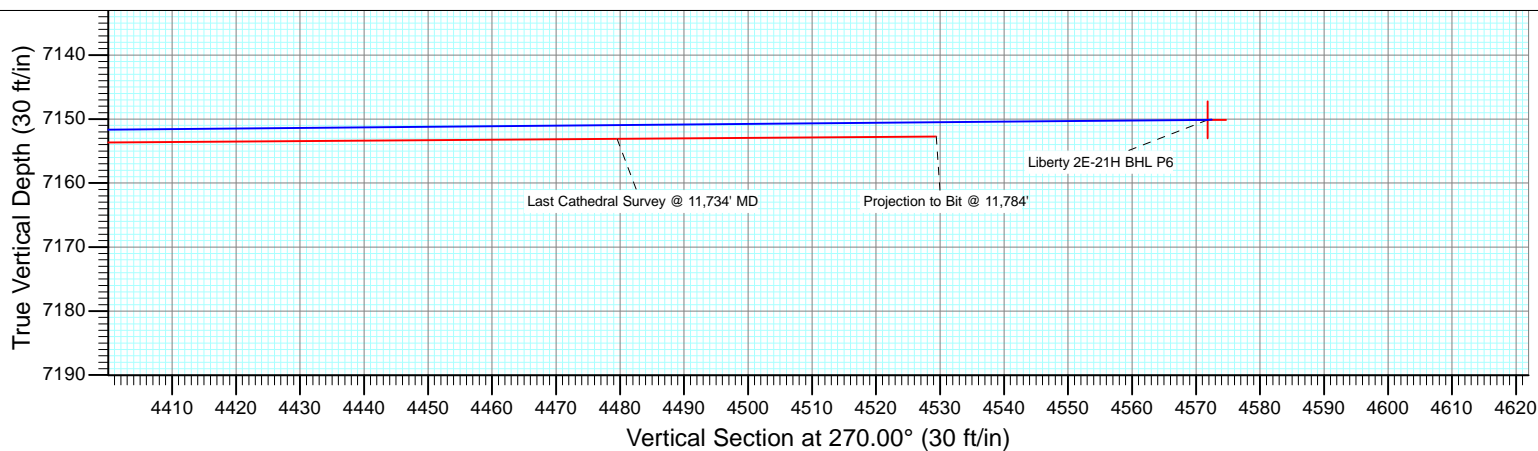
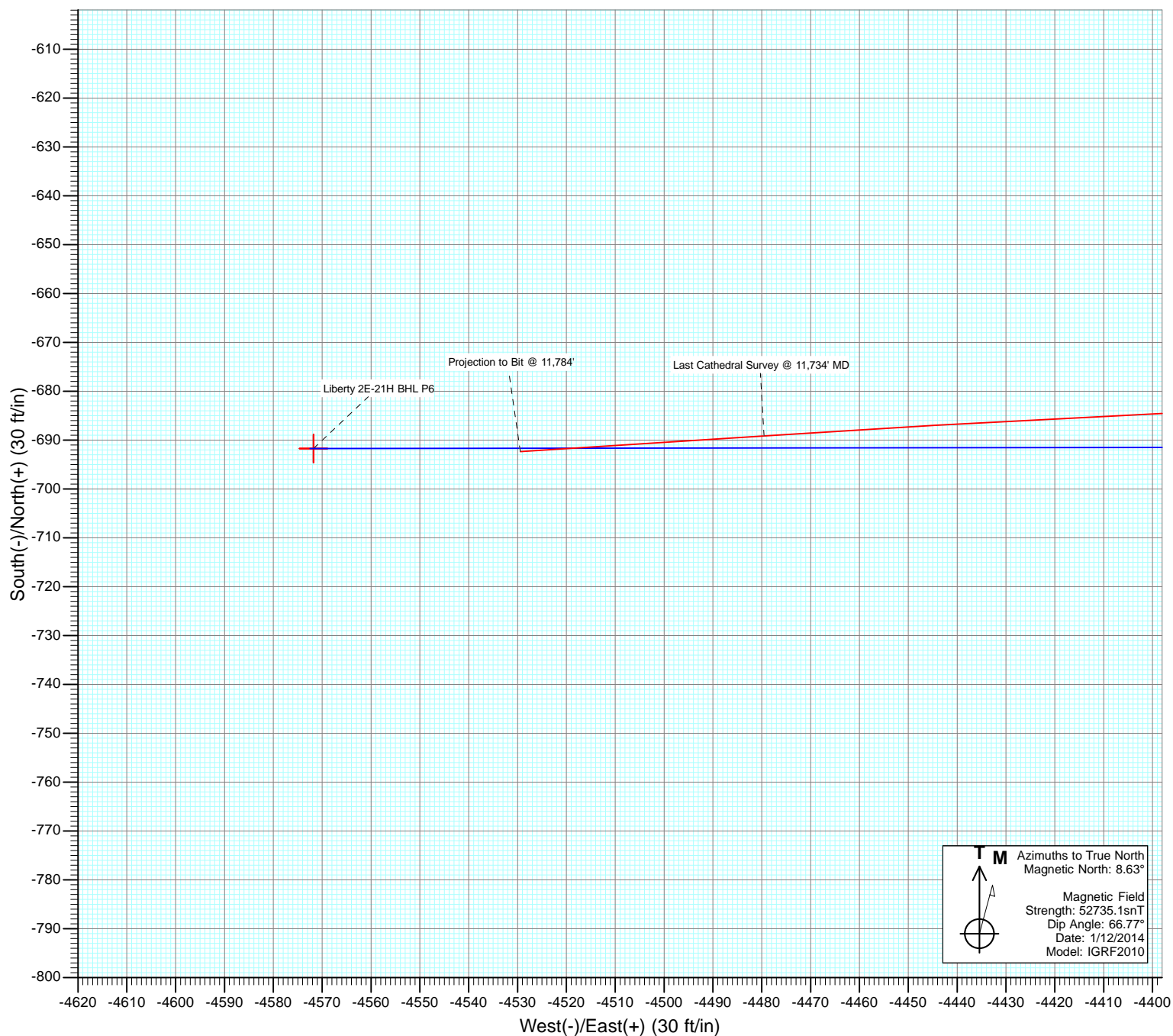


Project: DJ Wattenberg
Site: S20-T3N-R68W (Liberty 2A-21H)
Well: Liberty 2E-21H
Wellbore: HZ
Design: FINAL





Project: DJ Wattenberg
Site: S20-T3N-R68W (Liberty 2A-21H)
Well: Liberty 2E-21H
Wellbore: HZ
Design: FINAL



Cathedral Energy Services

Survey Report

| | | | |
|------------------|-------------------------------|-------------------------------------|------------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Liberty 2E-21H |
| Project: | DJ Wattenberg | TVD Reference: | WELL @ 5036.0ft (Ensign 135) |
| Site: | S20-T3N-R68W (Liberty 2A-21H) | MD Reference: | WELL @ 5036.0ft (Ensign 135) |
| Well: | Liberty 2E-21H | 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 | | S20-T3N-R68W (Liberty 2A-21H) | | | |
| Site Position: | | Northing: | 1,322,254.59 ft | Latitude: | 40.216940 |
| From: | Lat/Long | Easting: | 3,136,925.14 ft | Longitude: | -105.009710 |
| Position Uncertainty: | 0.0 ft | Slot Radius: | 13.200 in | Grid Convergence: | 0.32 ° |

| | | | | | | |
|----------------------|----------------|--------|---------------------|-----------------|---------------|-------------|
| Well | Liberty 2E-21H | | | | | |
| Well Position | +N/-S | 0.0 ft | Northing: | 1,321,611.24 ft | Latitude: | 40.215170 |
| | +E/-W | 0.0 ft | Easting: | 3,137,188.42 ft | Longitude: | -105.008780 |
| Position Uncertainty | | 0.0 ft | Wellhead Elevation: | ft | Ground Level: | 5,023.0 ft |

| | | | | | |
|------------------|-------------------|--------------------|------------------------|----------------------|----------------------------|
| Wellbore | HZ | | | | |
| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
| | IGRF2010 | 1/12/2014 | 8.63 | 66.77 | 52,735 |

| | | | | | |
|--------------------------|-------------------------|-------------------|-------------------|----------------------|-----|
| Design | FINAL | | | | |
| Audit Notes: | | | | | |
| Version: | 1.0 | Phase: | ACTUAL | Tie On Depth: | 0.0 |
| Vertical Section: | Depth From (TVD) | +N/-S (ft) | +E/-W (ft) | Direction (°) | |
| | 0.0 | 0.0 | 0.0 | 270.00 | |

| | | | | | |
|-----------------------|----------------|--------------------------|------------------|--------------------|--|
| Survey Program | Date | 1/20/2014 | | | |
| From (ft) | To (ft) | Survey (Wellbore) | Tool Name | Description | |
| 145.0 | 11,784.0 | 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 | | |
| 145.0 | 0.30 | 308.40 | 145.0 | 0.2 | -0.3 | 0.3 | 0.21 | 0.21 | | |
| 237.0 | 0.40 | 285.50 | 237.0 | 0.5 | -0.8 | 0.8 | 0.18 | 0.11 | | |
| 329.0 | 0.30 | 298.40 | 329.0 | 0.7 | -1.3 | 1.3 | 0.14 | -0.11 | | |
| 390.0 | 0.60 | 210.70 | 390.0 | 0.5 | -1.6 | 1.6 | 1.08 | 0.49 | | |
| 451.0 | 1.50 | 188.20 | 451.0 | -0.6 | -1.9 | 1.9 | 1.60 | 1.48 | | |
| 513.0 | 2.20 | 181.20 | 513.0 | -2.6 | -2.0 | 2.0 | 1.18 | 1.13 | | |
| 574.0 | 2.20 | 169.00 | 573.9 | -4.9 | -1.8 | 1.8 | 0.77 | 0.00 | | |
| 635.0 | 2.70 | 157.50 | 634.9 | -7.4 | -1.1 | 1.1 | 1.15 | 0.82 | | |
| 696.0 | 3.30 | 159.90 | 695.8 | -10.4 | 0.1 | -0.1 | 1.00 | 0.98 | | |
| 788.0 | 4.00 | 159.50 | 787.6 | -15.9 | 2.1 | -2.1 | 0.76 | 0.76 | | |
| 861.0 | 4.80 | 155.10 | 860.4 | -21.0 | 4.3 | -4.3 | 1.19 | 1.10 | | |
| 1,008.0 | 5.40 | 164.50 | 1,006.8 | -33.2 | 8.7 | -8.7 | 0.70 | 0.41 | | |

Cathedral Energy Services

Survey Report

| | | | |
|------------------|-------------------------------|-------------------------------------|------------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Liberty 2E-21H |
| Project: | DJ Wattenberg | TVD Reference: | WELL @ 5036.0ft (Ensign 135) |
| Site: | S20-T3N-R68W (Liberty 2A-21H) | MD Reference: | WELL @ 5036.0ft (Ensign 135) |
| Well: | Liberty 2E-21H | 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 |
|---------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|-----------------------|
| 1,100.0 | 6.30 | 161.70 | 1,098.3 | -42.2 | 11.5 | -11.5 | 1.03 | 0.98 | |
| 1,192.0 | 7.60 | 162.50 | 1,189.6 | -52.8 | 14.9 | -14.9 | 1.42 | 1.41 | |
| 1,284.0 | 8.00 | 160.70 | 1,280.8 | -64.7 | 18.8 | -18.8 | 0.51 | 0.43 | |
| 1,375.0 | 8.40 | 163.10 | 1,370.8 | -77.0 | 22.9 | -22.9 | 0.58 | 0.44 | |
| 1,467.0 | 9.90 | 162.40 | 1,461.7 | -91.0 | 27.2 | -27.2 | 1.63 | 1.63 | |
| 1,559.0 | 9.90 | 159.30 | 1,552.3 | -105.9 | 32.4 | -32.4 | 0.58 | 0.00 | |
| 1,651.0 | 9.30 | 151.70 | 1,643.0 | -119.8 | 38.7 | -38.7 | 1.52 | -0.65 | |
| 1,743.0 | 10.40 | 161.40 | 1,733.7 | -134.3 | 44.9 | -44.9 | 2.16 | 1.20 | |
| 1,835.0 | 12.40 | 159.50 | 1,823.9 | -151.4 | 51.0 | -51.0 | 2.21 | 2.17 | |
| 1,926.0 | 10.50 | 156.50 | 1,913.0 | -168.1 | 57.7 | -57.7 | 2.19 | -2.09 | |
| 2,021.0 | 10.30 | 166.50 | 2,006.5 | -184.3 | 63.2 | -63.2 | 1.91 | -0.21 | |
| 2,115.0 | 11.20 | 164.00 | 2,098.8 | -201.3 | 67.6 | -67.6 | 1.08 | 0.96 | |
| 2,210.0 | 10.70 | 166.90 | 2,192.1 | -218.7 | 72.2 | -72.2 | 0.78 | -0.53 | |
| 2,305.0 | 11.10 | 166.30 | 2,285.4 | -236.2 | 76.3 | -76.3 | 0.44 | 0.42 | |
| 2,399.0 | 10.70 | 162.10 | 2,377.7 | -253.3 | 81.2 | -81.2 | 0.95 | -0.43 | |
| 2,494.0 | 9.40 | 160.70 | 2,471.2 | -269.0 | 86.4 | -86.4 | 1.39 | -1.37 | |
| 2,589.0 | 9.50 | 162.40 | 2,564.9 | -283.8 | 91.4 | -91.4 | 0.31 | 0.11 | |
| 2,683.0 | 9.50 | 160.10 | 2,657.7 | -298.5 | 96.4 | -96.4 | 0.40 | 0.00 | |
| 2,778.0 | 9.70 | 163.50 | 2,751.3 | -313.6 | 101.3 | -101.3 | 0.63 | 0.21 | |
| 2,872.0 | 9.00 | 164.30 | 2,844.1 | -328.2 | 105.5 | -105.5 | 0.76 | -0.74 | |
| 2,966.0 | 9.60 | 161.60 | 2,936.8 | -342.7 | 110.0 | -110.0 | 0.79 | 0.64 | |
| 3,061.0 | 8.40 | 155.20 | 3,030.7 | -356.6 | 115.4 | -115.4 | 1.64 | -1.26 | |
| 3,156.0 | 8.60 | 170.20 | 3,124.6 | -369.9 | 119.5 | -119.5 | 2.34 | 0.21 | |
| 3,250.0 | 8.50 | 170.40 | 3,217.6 | -383.6 | 121.9 | -121.9 | 0.11 | -0.11 | |
| 3,344.0 | 9.30 | 166.30 | 3,310.5 | -397.9 | 124.9 | -124.9 | 1.09 | 0.85 | |
| 3,439.0 | 10.50 | 163.80 | 3,404.1 | -413.6 | 129.1 | -129.1 | 1.34 | 1.26 | |
| 3,534.0 | 10.30 | 164.50 | 3,497.5 | -430.1 | 133.8 | -133.8 | 0.25 | -0.21 | |
| 3,629.0 | 13.30 | 162.90 | 3,590.5 | -448.8 | 139.3 | -139.3 | 3.18 | 3.16 | |
| 3,724.0 | 13.50 | 162.10 | 3,682.9 | -469.8 | 145.9 | -145.9 | 0.29 | 0.21 | |
| 3,818.0 | 12.70 | 161.80 | 3,774.4 | -490.0 | 152.5 | -152.5 | 0.85 | -0.85 | |
| 3,913.0 | 10.20 | 162.60 | 3,867.5 | -508.0 | 158.3 | -158.3 | 2.64 | -2.63 | |
| 4,007.0 | 9.90 | 155.00 | 3,960.1 | -523.2 | 164.2 | -164.2 | 1.45 | -0.32 | |
| 4,102.0 | 10.70 | 161.80 | 4,053.6 | -539.0 | 170.4 | -170.4 | 1.53 | 0.84 | |
| 4,197.0 | 13.30 | 162.00 | 4,146.5 | -557.8 | 176.5 | -176.5 | 2.74 | 2.74 | |
| 4,292.0 | 12.50 | 161.60 | 4,239.1 | -577.9 | 183.1 | -183.1 | 0.85 | -0.84 | |
| 4,386.0 | 10.20 | 161.10 | 4,331.3 | -595.5 | 189.0 | -189.0 | 2.45 | -2.45 | |
| 4,481.0 | 8.80 | 162.10 | 4,424.9 | -610.3 | 194.0 | -194.0 | 1.48 | -1.47 | |
| 4,575.0 | 9.60 | 158.80 | 4,517.7 | -624.5 | 199.0 | -199.0 | 1.02 | 0.85 | |
| 4,669.0 | 9.50 | 159.50 | 4,610.4 | -639.1 | 204.6 | -204.6 | 0.16 | -0.11 | |
| 4,763.0 | 8.00 | 159.30 | 4,703.3 | -652.4 | 209.6 | -209.6 | 1.60 | -1.60 | |
| 4,858.0 | 6.20 | 159.20 | 4,797.6 | -663.4 | 213.8 | -213.8 | 1.89 | -1.89 | |
| 4,952.0 | 4.80 | 155.30 | 4,891.2 | -671.7 | 217.2 | -217.2 | 1.54 | -1.49 | |
| 5,047.0 | 4.40 | 157.90 | 4,985.9 | -678.7 | 220.2 | -220.2 | 0.47 | -0.42 | |
| 5,142.0 | 3.30 | 166.10 | 5,080.7 | -684.8 | 222.3 | -222.3 | 1.29 | -1.16 | |
| 5,237.0 | 2.50 | 170.90 | 5,175.5 | -689.5 | 223.3 | -223.3 | 0.88 | -0.84 | |
| 5,331.0 | 1.90 | 186.20 | 5,269.5 | -693.0 | 223.4 | -223.4 | 0.89 | -0.64 | |
| 5,426.0 | 1.60 | 193.80 | 5,364.4 | -695.9 | 222.9 | -222.9 | 0.40 | -0.32 | |
| 5,521.0 | 0.80 | 233.00 | 5,459.4 | -697.6 | 222.1 | -222.1 | 1.16 | -0.84 | |
| 5,616.0 | 1.70 | 239.00 | 5,554.4 | -698.7 | 220.3 | -220.3 | 0.96 | 0.95 | |
| 5,710.0 | 1.20 | 11.40 | 5,648.4 | -698.5 | 219.3 | -219.3 | 2.83 | -0.53 | |
| 5,805.0 | 2.20 | 10.70 | 5,743.3 | -695.7 | 219.9 | -219.9 | 1.05 | 1.05 | |
| 5,900.0 | 1.80 | 316.20 | 5,838.3 | -692.8 | 219.2 | -219.2 | 1.96 | -0.42 | |
| 5,995.0 | 1.10 | 331.60 | 5,933.2 | -690.9 | 217.7 | -217.7 | 0.84 | -0.74 | |

Cathedral Energy Services

Survey Report

| | | | |
|------------------|-------------------------------|-------------------------------------|------------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Liberty 2E-21H |
| Project: | DJ Wattenberg | TVD Reference: | WELL @ 5036.0ft (Ensign 135) |
| Site: | S20-T3N-R68W (Liberty 2A-21H) | MD Reference: | WELL @ 5036.0ft (Ensign 135) |
| Well: | Liberty 2E-21H | 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 |
|---------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|-----------------------|
| 6,090.0 | 1.20 | 133.10 | 6,028.2 | -690.8 | 218.0 | -218.0 | 2.39 | 0.11 | |
| 6,184.0 | 0.20 | 220.70 | 6,122.2 | -691.6 | 218.6 | -218.6 | 1.29 | -1.06 | |
| 6,279.0 | 0.30 | 44.90 | 6,217.2 | -691.6 | 218.7 | -218.7 | 0.53 | 0.11 | |
| 6,374.0 | 0.70 | 282.10 | 6,312.2 | -691.3 | 218.3 | -218.3 | 0.95 | 0.42 | |
| 6,468.0 | 1.40 | 277.20 | 6,406.2 | -691.0 | 216.6 | -216.6 | 0.75 | 0.74 | |
| 6,563.0 | 1.60 | 211.00 | 6,501.2 | -692.0 | 214.8 | -214.8 | 1.73 | 0.21 | |
| 6,657.0 | 1.60 | 303.10 | 6,595.2 | -692.4 | 213.0 | -213.0 | 2.45 | 0.00 | |
| 6,704.0 | 2.00 | 315.30 | 6,642.1 | -691.5 | 211.9 | -211.9 | 1.17 | 0.85 | |
| 6,752.0 | 5.10 | 289.70 | 6,690.0 | -690.2 | 209.3 | -209.3 | 7.10 | 6.46 | |
| 6,799.0 | 9.90 | 289.60 | 6,736.6 | -688.1 | 203.5 | -203.5 | 10.21 | 10.21 | |
| 6,847.0 | 14.20 | 289.30 | 6,783.6 | -684.8 | 194.0 | -194.0 | 8.96 | 8.96 | |
| 6,894.0 | 17.80 | 287.70 | 6,828.7 | -680.7 | 181.8 | -181.8 | 7.72 | 7.66 | |
| 6,941.0 | 21.00 | 276.60 | 6,873.1 | -677.5 | 166.5 | -166.5 | 10.36 | 6.81 | |
| 6,988.0 | 24.40 | 266.70 | 6,916.4 | -677.1 | 148.5 | -148.5 | 10.86 | 7.23 | |
| 7,036.0 | 29.00 | 263.50 | 6,959.3 | -679.0 | 127.0 | -127.0 | 10.04 | 9.58 | |
| 7,070.0 | 31.90 | 265.40 | 6,988.6 | -680.6 | 109.8 | -109.8 | 8.99 | 8.53 | |
| 7,083.0 | 33.10 | 266.90 | 6,999.6 | -681.1 | 102.9 | -102.9 | 11.12 | 9.23 | |
| 7,131.0 | 37.70 | 269.20 | 7,038.7 | -682.0 | 75.1 | -75.1 | 9.98 | 9.58 | |
| 7,178.0 | 44.10 | 270.60 | 7,074.2 | -682.1 | 44.3 | -44.3 | 13.76 | 13.62 | |
| 7,226.0 | 51.30 | 270.40 | 7,106.5 | -681.8 | 8.9 | -8.9 | 15.00 | 15.00 | |
| 7,273.0 | 59.20 | 269.80 | 7,133.3 | -681.7 | -29.7 | 29.7 | 16.84 | 16.81 | |
| 7,320.0 | 67.80 | 269.10 | 7,154.2 | -682.1 | -71.7 | 71.7 | 18.35 | 18.30 | |
| 7,367.0 | 77.00 | 269.00 | 7,168.4 | -682.8 | -116.5 | 116.5 | 19.58 | 19.57 | |
| 7,415.0 | 85.00 | 270.10 | 7,175.9 | -683.2 | -163.9 | 163.9 | 16.82 | 16.67 | |
| 7,427.0 | 85.50 | 271.60 | 7,176.9 | -683.0 | -175.8 | 175.8 | 13.14 | 4.17 | |
| 7,470.0 | 83.80 | 277.50 | 7,180.9 | -679.6 | -218.5 | 218.5 | 14.22 | -3.95 | |
| 7,533.0 | 83.60 | 271.30 | 7,187.8 | -674.8 | -280.9 | 280.9 | 9.79 | -0.32 | |
| 7,596.0 | 85.50 | 271.20 | 7,193.8 | -673.5 | -343.6 | 343.6 | 3.02 | 3.02 | |
| 7,659.0 | 86.70 | 271.00 | 7,198.1 | -672.3 | -406.4 | 406.4 | 1.93 | 1.90 | |
| 7,723.0 | 87.90 | 270.50 | 7,201.1 | -671.4 | -470.3 | 470.3 | 2.03 | 1.87 | |
| 7,786.0 | 89.30 | 269.00 | 7,202.7 | -671.7 | -533.3 | 533.3 | 3.26 | 2.22 | |
| 7,849.0 | 91.20 | 269.50 | 7,202.4 | -672.5 | -596.3 | 596.3 | 3.12 | 3.02 | |
| 7,912.0 | 91.80 | 270.80 | 7,200.7 | -672.4 | -659.3 | 659.3 | 2.27 | 0.95 | |
| 8,007.0 | 90.20 | 269.60 | 7,199.1 | -672.0 | -754.3 | 754.3 | 2.11 | -1.68 | |
| 8,102.0 | 91.00 | 269.30 | 7,198.1 | -672.9 | -849.3 | 849.3 | 0.90 | 0.84 | |
| 8,197.0 | 91.00 | 269.00 | 7,196.4 | -674.4 | -944.2 | 944.2 | 0.32 | 0.00 | |
| 8,291.0 | 90.90 | 269.10 | 7,194.9 | -675.9 | -1,038.2 | 1,038.2 | 0.15 | -0.11 | |
| 8,386.0 | 91.10 | 269.20 | 7,193.2 | -677.3 | -1,133.2 | 1,133.2 | 0.24 | 0.21 | |
| 8,481.0 | 91.00 | 268.50 | 7,191.5 | -679.2 | -1,228.1 | 1,228.1 | 0.74 | -0.11 | |
| 8,576.0 | 90.80 | 267.30 | 7,190.0 | -682.7 | -1,323.1 | 1,323.1 | 1.28 | -0.21 | |
| 8,670.0 | 91.10 | 268.50 | 7,188.4 | -686.2 | -1,417.0 | 1,417.0 | 1.32 | 0.32 | |
| 8,765.0 | 91.00 | 269.00 | 7,186.7 | -688.2 | -1,511.9 | 1,511.9 | 0.54 | -0.11 | |
| 8,859.0 | 90.00 | 269.80 | 7,185.9 | -689.2 | -1,605.9 | 1,605.9 | 1.36 | -1.06 | |
| 8,954.0 | 90.30 | 270.50 | 7,185.6 | -689.0 | -1,700.9 | 1,700.9 | 0.80 | 0.32 | |
| 9,049.0 | 91.30 | 270.50 | 7,184.3 | -688.1 | -1,795.9 | 1,795.9 | 1.05 | 1.05 | |
| 9,144.0 | 90.90 | 269.80 | 7,182.5 | -687.9 | -1,890.9 | 1,890.9 | 0.85 | -0.42 | |
| 9,238.0 | 92.70 | 270.90 | 7,179.5 | -687.3 | -1,984.8 | 1,984.8 | 2.24 | 1.91 | |
| 9,333.0 | 91.60 | 270.50 | 7,175.9 | -686.2 | -2,079.8 | 2,079.8 | 1.23 | -1.16 | |
| 9,427.0 | 91.70 | 270.20 | 7,173.2 | -685.6 | -2,173.7 | 2,173.7 | 0.34 | 0.11 | |
| 9,522.0 | 90.40 | 268.50 | 7,171.5 | -686.7 | -2,268.7 | 2,268.7 | 2.25 | -1.37 | |
| 9,617.0 | 91.50 | 270.30 | 7,169.9 | -687.7 | -2,363.7 | 2,363.7 | 2.22 | 1.16 | |
| 9,711.0 | 87.80 | 269.30 | 7,170.5 | -688.0 | -2,457.7 | 2,457.7 | 4.08 | -3.94 | |
| 9,806.0 | 88.80 | 269.40 | 7,173.3 | -689.1 | -2,552.6 | 2,552.6 | 1.06 | 1.05 | |

Cathedral Energy Services

Survey Report

| | | | |
|------------------|-------------------------------|-------------------------------------|------------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Liberty 2E-21H |
| Project: | DJ Wattenberg | TVD Reference: | WELL @ 5036.0ft (Ensign 135) |
| Site: | S20-T3N-R68W (Liberty 2A-21H) | MD Reference: | WELL @ 5036.0ft (Ensign 135) |
| Well: | Liberty 2E-21H | 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 |
|---------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|------------------------------------|
| 9,901.0 | 90.20 | 268.70 | 7,174.1 | -690.6 | -2,647.6 | 2,647.6 | 1.65 | 1.47 | |
| 9,995.0 | 89.40 | 268.60 | 7,174.5 | -692.8 | -2,741.6 | 2,741.6 | 0.86 | -0.85 | |
| 10,090.0 | 91.30 | 267.80 | 7,173.9 | -695.8 | -2,836.5 | 2,836.5 | 2.17 | 2.00 | |
| 10,184.0 | 92.10 | 270.50 | 7,171.1 | -697.2 | -2,930.5 | 2,930.5 | 2.99 | 0.85 | |
| 10,279.0 | 92.20 | 272.50 | 7,167.5 | -694.7 | -3,025.3 | 3,025.3 | 2.11 | 0.11 | |
| 10,373.0 | 91.80 | 271.80 | 7,164.2 | -691.2 | -3,119.2 | 3,119.2 | 0.86 | -0.43 | |
| 10,468.0 | 89.80 | 271.50 | 7,162.9 | -688.5 | -3,214.2 | 3,214.2 | 2.13 | -2.11 | |
| 10,563.0 | 90.00 | 271.00 | 7,163.1 | -686.4 | -3,309.1 | 3,309.1 | 0.57 | 0.21 | |
| 10,657.0 | 89.70 | 270.00 | 7,163.3 | -685.6 | -3,403.1 | 3,403.1 | 1.11 | -0.32 | |
| 10,752.0 | 91.30 | 271.20 | 7,162.5 | -684.6 | -3,498.1 | 3,498.1 | 2.11 | 1.68 | |
| 10,847.0 | 90.60 | 269.00 | 7,160.9 | -684.4 | -3,593.1 | 3,593.1 | 2.43 | -0.74 | |
| 10,941.0 | 89.70 | 271.30 | 7,160.7 | -684.2 | -3,687.1 | 3,687.1 | 2.63 | -0.96 | |
| 11,036.0 | 90.80 | 272.40 | 7,160.3 | -681.1 | -3,782.0 | 3,782.0 | 1.64 | 1.16 | |
| 11,131.0 | 91.00 | 271.90 | 7,158.8 | -677.6 | -3,876.9 | 3,876.9 | 0.57 | 0.21 | |
| 11,225.0 | 90.70 | 271.40 | 7,157.4 | -674.8 | -3,970.9 | 3,970.9 | 0.62 | -0.32 | |
| 11,320.0 | 90.20 | 270.10 | 7,156.6 | -673.6 | -4,065.9 | 4,065.9 | 1.47 | -0.53 | |
| 11,415.0 | 90.90 | 268.40 | 7,155.7 | -674.8 | -4,160.9 | 4,160.9 | 1.94 | 0.74 | |
| 11,510.0 | 90.40 | 267.70 | 7,154.6 | -678.1 | -4,255.8 | 4,255.8 | 0.91 | -0.53 | |
| 11,604.0 | 90.40 | 267.40 | 7,154.0 | -682.1 | -4,349.7 | 4,349.7 | 0.32 | 0.00 | |
| 11,699.0 | 90.40 | 266.70 | 7,153.3 | -687.0 | -4,444.6 | 4,444.6 | 0.74 | 0.00 | |
| 11,734.0 | 90.40 | 266.30 | 7,153.1 | -689.1 | -4,479.5 | 4,479.5 | 1.14 | 0.00 | Last Cathedral Survey @ 11,734' MD |
| 11,784.0 | 90.40 | 266.30 | 7,152.7 | -692.3 | -4,529.4 | 4,529.4 | 0.00 | 0.00 | Projection to Bit @ 11,784' |

Cathedral Energy Services

Survey Report

| | | | |
|------------------|-------------------------------|-------------------------------------|------------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Liberty 2E-21H |
| Project: | DJ Wattenberg | TVD Reference: | WELL @ 5036.0ft (Ensign 135) |
| Site: | S20-T3N-R68W (Liberty 2A-21H) | MD Reference: | WELL @ 5036.0ft (Ensign 135) |
| Well: | Liberty 2E-21H | 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) | | |
| Liberty 2E-21H 9900' TC - actual wellpath misses target center by 6.8ft at 9899.3ft MD (7174.1 TVD, -690.6 N, -2645.8 E) - Point | 0.00 | 0.00 | 7,167.4 | -689.6 | -2,645.9 | 1,320,906.96 | 3,134,546.36 | 40.213276 | -105.018254 |
| Liberty 2E-21H BHL P6 - actual wellpath misses target center by 42.4ft at 11784.0ft MD (7152.7 TVD, -692.3 N, -4529.4 E) - Point | 0.00 | 0.00 | 7,150.1 | -691.7 | -4,571.8 | 1,320,894.22 | 3,132,620.54 | 40.213270 | -105.025150 |
| Liberty 2E-21H 8000' MI - actual wellpath misses target center by 31.7ft at 7967.8ft MD (7199.4 TVD, -671.9 N, -715.1 E) - Point | 0.00 | 0.00 | 7,174.6 | -691.6 | -714.7 | 1,320,915.69 | 3,136,477.56 | 40.213271 | -105.011339 |
| Liberty 2E-21H BHL P4 - actual wellpath misses target center by 42.4ft at 11784.0ft MD (7152.7 TVD, -692.3 N, -4529.4 E) - Point | 0.00 | 0.00 | 7,151.8 | -691.7 | -4,571.8 | 1,320,894.22 | 3,132,620.54 | 40.213270 | -105.025150 |
| Liberty 2E-21H BHL P5 - actual wellpath misses target center by 68.1ft at 11784.0ft MD (7152.7 TVD, -692.3 N, -4529.4 E) - Point | 0.00 | 0.00 | 7,206.1 | -691.7 | -4,571.8 | 1,320,894.22 | 3,132,620.54 | 40.213270 | -105.025150 |
| Liberty 2E-21H 7500' TC - actual wellpath misses target center by 48.2ft at 7502.5ft MD (7184.4 TVD, -676.3 N, -250.5 E) - Point | 0.00 | 0.00 | 7,230.0 | -691.6 | -246.7 | 1,320,918.31 | 3,136,945.59 | 40.213272 | -105.009663 |
| Liberty 2E-21H BHL - actual wellpath misses target center by 47.5ft at 11784.0ft MD (7152.7 TVD, -692.3 N, -4529.4 E) - Point | 0.00 | 0.00 | 7,174.3 | -691.7 | -4,571.8 | 1,320,894.22 | 3,132,620.54 | 40.213270 | -105.025150 |

| Design Annotations | | | | |
|--------------------|----------------|-------------------|------------|------------------------------------|
| Measured Depth | Vertical Depth | Local Coordinates | | Comment |
| (ft) | (ft) | +N/-S (ft) | +E/-W (ft) | |
| 11,734.0 | 7,153.1 | -689.1 | -4,479.5 | Last Cathedral Survey @ 11,734' MD |
| 11,784.0 | 7,152.7 | -692.3 | -4,529.4 | Projection to Bit @ 11,784' |

Checked By: _____ Approved By: _____ Date: _____

EnCana Oil & Gas (USA) Inc

DJ Wattenberg

S20-T3N-R68W (Liberty 2A-21H)

Liberty 2E-21H

HZ

Design: FINAL

Survey Report - Geographic

20 January, 2014

Cathedral Energy Services

Survey Report - Geographic

| | | | |
|------------------|-------------------------------|-------------------------------------|------------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Liberty 2E-21H |
| Project: | DJ Wattenberg | TVD Reference: | WELL @ 5036.0ft (Ensign 135) |
| Site: | S20-T3N-R68W (Liberty 2A-21H) | MD Reference: | WELL @ 5036.0ft (Ensign 135) |
| Well: | Liberty 2E-21H | 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 | S20-T3N-R68W (Liberty 2A-21H) | | | | |
| Site Position: | | Northing: | 1,322,254.59 ft | Latitude: | 40.216940 |
| From: | Lat/Long | Easting: | 3,136,925.14 ft | Longitude: | -105.009710 |
| Position Uncertainty: | 0.0 ft | Slot Radius: | 13.200 in | Grid Convergence: | 0.32 ° |

| | | | | | | |
|----------------------|----------------|--------|---------------------|-----------------|---------------|-------------|
| Well | Liberty 2E-21H | | | | | |
| Well Position | +N/-S | 0.0 ft | Northing: | 1,321,611.24 ft | Latitude: | 40.215170 |
| | +E/-W | 0.0 ft | Easting: | 3,137,188.42 ft | Longitude: | -105.008780 |
| Position Uncertainty | | 0.0 ft | Wellhead Elevation: | ft | Ground Level: | 5,023.0 ft |

| | | | | | |
|------------------|-------------------|--------------------|------------------------|----------------------|----------------------------|
| Wellbore | HZ | | | | |
| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
| | IGRF2010 | 1/12/2014 | 8.63 | 66.77 | 52,735 |

| | | | | | |
|--------------------------|------------------------------|-------------------|-------------------|----------------------|-----|
| Design | FINAL | | | | |
| 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 | 0.0 | 0.0 | 270.00 | |

| | | | | | |
|-----------------------|----------------|--------------------------|------------------|--------------------|--|
| Survey Program | Date | 1/20/2014 | | | |
| From (ft) | To (ft) | Survey (Wellbore) | Tool Name | Description | |
| 145.0 | 11,784.0 | Survey #1 (HZ) | Geolink MWD | Geolink MWD | |

| | | | | | | | | | | |
|----------------------------|------------------------|--------------------|----------------------------|-------------------|-------------------|--------------------------|-------------------------|-----------------|------------------|--|
| Survey | | | | | | | | | | |
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Map Northing (ft) | Map Easting (ft) | Latitude | Longitude | |
| 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 1,321,611.24 | 3,137,188.42 | 40.215170 | -105.008780 | |
| 145.0 | 0.30 | 308.40 | 145.0 | 0.2 | -0.3 | 1,321,611.47 | 3,137,188.12 | 40.215171 | -105.008781 | |
| 237.0 | 0.40 | 285.50 | 237.0 | 0.5 | -0.8 | 1,321,611.71 | 3,137,187.62 | 40.215171 | -105.008783 | |
| 329.0 | 0.30 | 298.40 | 329.0 | 0.7 | -1.3 | 1,321,611.90 | 3,137,187.10 | 40.215172 | -105.008785 | |
| 390.0 | 0.60 | 210.70 | 390.0 | 0.5 | -1.6 | 1,321,611.70 | 3,137,186.80 | 40.215171 | -105.008786 | |
| 451.0 | 1.50 | 188.20 | 451.0 | -0.6 | -1.9 | 1,321,610.64 | 3,137,186.52 | 40.215168 | -105.008787 | |
| 513.0 | 2.20 | 181.20 | 513.0 | -2.6 | -2.0 | 1,321,608.64 | 3,137,186.40 | 40.215163 | -105.008788 | |
| 574.0 | 2.20 | 169.00 | 573.9 | -4.9 | -1.8 | 1,321,606.32 | 3,137,186.61 | 40.215157 | -105.008787 | |
| 635.0 | 2.70 | 157.50 | 634.9 | -7.4 | -1.1 | 1,321,603.85 | 3,137,187.39 | 40.215150 | -105.008784 | |
| 696.0 | 3.30 | 159.90 | 695.8 | -10.4 | 0.1 | 1,321,600.88 | 3,137,188.56 | 40.215142 | -105.008780 | |
| 788.0 | 4.00 | 159.50 | 787.6 | -15.9 | 2.1 | 1,321,595.40 | 3,137,190.63 | 40.215127 | -105.008773 | |
| 861.0 | 4.80 | 155.10 | 860.4 | -21.0 | 4.3 | 1,321,590.26 | 3,137,192.83 | 40.215112 | -105.008765 | |

Cathedral Energy Services

Survey Report - Geographic

| | | | |
|------------------|-------------------------------|-------------------------------------|------------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Liberty 2E-21H |
| Project: | DJ Wattenberg | TVD Reference: | WELL @ 5036.0ft (Ensign 135) |
| Site: | S20-T3N-R68W (Liberty 2A-21H) | MD Reference: | WELL @ 5036.0ft (Ensign 135) |
| Well: | Liberty 2E-21H | 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) | Map Northing (ft) | Map Easting (ft) | Latitude | Longitude |
| 1,008.0 | 5.40 | 164.50 | 1,006.8 | -33.2 | 8.7 | 1,321,578.04 | 3,137,197.34 | 40.215079 | -105.008749 |
| 1,100.0 | 6.30 | 161.70 | 1,098.3 | -42.2 | 11.5 | 1,321,569.09 | 3,137,200.13 | 40.215054 | -105.008739 |
| 1,192.0 | 7.60 | 162.50 | 1,189.6 | -52.8 | 14.9 | 1,321,558.51 | 3,137,203.60 | 40.215025 | -105.008727 |
| 1,284.0 | 8.00 | 160.70 | 1,280.8 | -64.7 | 18.8 | 1,321,546.69 | 3,137,207.62 | 40.214993 | -105.008713 |
| 1,375.0 | 8.40 | 163.10 | 1,370.8 | -77.0 | 22.9 | 1,321,534.38 | 3,137,211.71 | 40.214959 | -105.008698 |
| 1,467.0 | 9.90 | 162.40 | 1,461.7 | -91.0 | 27.2 | 1,321,520.43 | 3,137,216.13 | 40.214920 | -105.008683 |
| 1,559.0 | 9.90 | 159.30 | 1,552.3 | -105.9 | 32.4 | 1,321,505.52 | 3,137,221.40 | 40.214879 | -105.008664 |
| 1,651.0 | 9.30 | 151.70 | 1,643.0 | -119.8 | 38.7 | 1,321,491.62 | 3,137,227.80 | 40.214841 | -105.008642 |
| 1,743.0 | 10.40 | 161.40 | 1,733.7 | -134.3 | 44.9 | 1,321,477.23 | 3,137,234.05 | 40.214802 | -105.008620 |
| 1,835.0 | 12.40 | 159.50 | 1,823.9 | -151.4 | 51.0 | 1,321,460.14 | 3,137,240.25 | 40.214754 | -105.008598 |
| 1,926.0 | 10.50 | 156.50 | 1,913.0 | -168.1 | 57.7 | 1,321,443.42 | 3,137,247.08 | 40.214708 | -105.008574 |
| 2,021.0 | 10.30 | 166.50 | 2,006.5 | -184.3 | 63.2 | 1,321,427.25 | 3,137,252.60 | 40.214664 | -105.008554 |
| 2,115.0 | 11.20 | 164.00 | 2,098.8 | -201.3 | 67.6 | 1,321,410.33 | 3,137,257.17 | 40.214618 | -105.008538 |
| 2,210.0 | 10.70 | 166.90 | 2,192.1 | -218.7 | 72.2 | 1,321,392.90 | 3,137,261.81 | 40.214570 | -105.008522 |
| 2,305.0 | 11.10 | 166.30 | 2,285.4 | -236.2 | 76.3 | 1,321,375.45 | 3,137,266.07 | 40.214522 | -105.008507 |
| 2,399.0 | 10.70 | 162.10 | 2,377.7 | -253.3 | 81.2 | 1,321,358.38 | 3,137,270.99 | 40.214475 | -105.008490 |
| 2,494.0 | 9.40 | 160.70 | 2,471.2 | -269.0 | 86.4 | 1,321,342.69 | 3,137,276.35 | 40.214432 | -105.008471 |
| 2,589.0 | 9.50 | 162.40 | 2,564.9 | -283.8 | 91.4 | 1,321,327.93 | 3,137,281.37 | 40.214391 | -105.008453 |
| 2,683.0 | 9.50 | 160.10 | 2,657.7 | -298.5 | 96.4 | 1,321,313.27 | 3,137,286.44 | 40.214351 | -105.008435 |
| 2,778.0 | 9.70 | 163.50 | 2,751.3 | -313.6 | 101.3 | 1,321,298.25 | 3,137,291.46 | 40.214309 | -105.008418 |
| 2,872.0 | 9.00 | 164.30 | 2,844.1 | -328.2 | 105.5 | 1,321,283.60 | 3,137,295.78 | 40.214269 | -105.008402 |
| 2,966.0 | 9.60 | 161.60 | 2,936.8 | -342.7 | 110.0 | 1,321,269.11 | 3,137,300.33 | 40.214229 | -105.008386 |
| 3,061.0 | 8.40 | 155.20 | 3,030.7 | -356.6 | 115.4 | 1,321,255.32 | 3,137,305.82 | 40.214191 | -105.008367 |
| 3,156.0 | 8.60 | 170.20 | 3,124.6 | -369.9 | 119.5 | 1,321,242.05 | 3,137,310.01 | 40.214155 | -105.008352 |
| 3,250.0 | 8.50 | 170.40 | 3,217.6 | -383.6 | 121.9 | 1,321,228.29 | 3,137,312.44 | 40.214117 | -105.008344 |
| 3,344.0 | 9.30 | 166.30 | 3,310.5 | -397.9 | 124.9 | 1,321,214.07 | 3,137,315.48 | 40.214078 | -105.008333 |
| 3,439.0 | 10.50 | 163.80 | 3,404.1 | -413.6 | 129.1 | 1,321,198.33 | 3,137,319.80 | 40.214035 | -105.008318 |
| 3,534.0 | 10.30 | 164.50 | 3,497.5 | -430.1 | 133.8 | 1,321,181.85 | 3,137,324.57 | 40.213989 | -105.008301 |
| 3,629.0 | 13.30 | 162.90 | 3,590.5 | -448.8 | 139.3 | 1,321,163.25 | 3,137,330.16 | 40.213938 | -105.008282 |
| 3,724.0 | 13.50 | 162.10 | 3,682.9 | -469.8 | 145.9 | 1,321,142.29 | 3,137,336.90 | 40.213881 | -105.008258 |
| 3,818.0 | 12.70 | 161.80 | 3,774.4 | -490.0 | 152.5 | 1,321,122.07 | 3,137,343.61 | 40.213825 | -105.008234 |
| 3,913.0 | 10.20 | 162.60 | 3,867.5 | -508.0 | 158.3 | 1,321,104.16 | 3,137,349.49 | 40.213776 | -105.008214 |
| 4,007.0 | 9.90 | 155.00 | 3,960.1 | -523.2 | 164.2 | 1,321,088.92 | 3,137,355.48 | 40.213734 | -105.008192 |
| 4,102.0 | 10.70 | 161.80 | 4,053.6 | -539.0 | 170.4 | 1,321,073.18 | 3,137,361.77 | 40.213690 | -105.008170 |
| 4,197.0 | 13.30 | 162.00 | 4,146.5 | -557.8 | 176.5 | 1,321,054.44 | 3,137,368.01 | 40.213639 | -105.008148 |
| 4,292.0 | 12.50 | 161.60 | 4,239.1 | -577.9 | 183.1 | 1,321,034.33 | 3,137,374.74 | 40.213584 | -105.008125 |
| 4,386.0 | 10.20 | 161.10 | 4,331.3 | -595.5 | 189.0 | 1,321,016.83 | 3,137,380.74 | 40.213535 | -105.008103 |
| 4,481.0 | 8.80 | 162.10 | 4,424.9 | -610.3 | 194.0 | 1,321,001.98 | 3,137,385.78 | 40.213495 | -105.008086 |
| 4,575.0 | 9.60 | 158.80 | 4,517.7 | -624.5 | 199.0 | 1,320,987.86 | 3,137,390.91 | 40.213456 | -105.008068 |
| 4,669.0 | 9.50 | 159.50 | 4,610.4 | -639.1 | 204.6 | 1,320,973.32 | 3,137,396.54 | 40.213416 | -105.008048 |
| 4,763.0 | 8.00 | 159.30 | 4,703.3 | -652.4 | 209.6 | 1,320,959.96 | 3,137,401.64 | 40.213379 | -105.008030 |
| 4,858.0 | 6.20 | 159.20 | 4,797.6 | -663.4 | 213.8 | 1,320,949.00 | 3,137,405.86 | 40.213349 | -105.008015 |
| 4,952.0 | 4.80 | 155.30 | 4,891.2 | -671.7 | 217.2 | 1,320,940.70 | 3,137,409.35 | 40.213326 | -105.008002 |
| 5,047.0 | 4.40 | 157.90 | 4,985.9 | -678.7 | 220.2 | 1,320,933.73 | 3,137,412.42 | 40.213307 | -105.007992 |
| 5,142.0 | 3.30 | 166.10 | 5,080.7 | -684.8 | 222.3 | 1,320,927.71 | 3,137,414.49 | 40.213290 | -105.007984 |
| 5,237.0 | 2.50 | 170.90 | 5,175.5 | -689.5 | 223.3 | 1,320,923.02 | 3,137,415.50 | 40.213277 | -105.007981 |
| 5,331.0 | 1.90 | 186.20 | 5,269.5 | -693.0 | 223.4 | 1,320,919.45 | 3,137,415.67 | 40.213268 | -105.007980 |
| 5,426.0 | 1.60 | 193.80 | 5,364.4 | -695.9 | 222.9 | 1,320,916.59 | 3,137,415.20 | 40.213260 | -105.007982 |
| 5,521.0 | 0.80 | 233.00 | 5,459.4 | -697.6 | 222.1 | 1,320,914.90 | 3,137,414.36 | 40.213255 | -105.007985 |
| 5,616.0 | 1.70 | 239.00 | 5,554.4 | -698.7 | 220.3 | 1,320,913.76 | 3,137,412.63 | 40.213252 | -105.007991 |
| 5,710.0 | 1.20 | 11.40 | 5,648.4 | -698.5 | 219.3 | 1,320,914.00 | 3,137,411.63 | 40.213253 | -105.007995 |
| 5,805.0 | 2.20 | 10.70 | 5,743.3 | -695.7 | 219.9 | 1,320,916.77 | 3,137,412.15 | 40.213260 | -105.007993 |
| 5,900.0 | 1.80 | 316.20 | 5,838.3 | -692.8 | 219.2 | 1,320,919.64 | 3,137,411.44 | 40.213268 | -105.007995 |
| 5,995.0 | 1.10 | 331.60 | 5,933.2 | -690.9 | 217.7 | 1,320,921.51 | 3,137,409.96 | 40.213273 | -105.008001 |
| 6,090.0 | 1.20 | 133.10 | 6,028.2 | -690.8 | 218.0 | 1,320,921.63 | 3,137,410.26 | 40.213274 | -105.008000 |

Cathedral Energy Services

Survey Report - Geographic

| | | | |
|------------------|-------------------------------|-------------------------------------|------------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Liberty 2E-21H |
| Project: | DJ Wattenberg | TVD Reference: | WELL @ 5036.0ft (Ensign 135) |
| Site: | S20-T3N-R68W (Liberty 2A-21H) | MD Reference: | WELL @ 5036.0ft (Ensign 135) |
| Well: | Liberty 2E-21H | 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) | Map Northing (ft) | Map Easting (ft) | Latitude | Longitude |
| 6,184.0 | 0.20 | 220.70 | 6,122.2 | -691.6 | 218.6 | 1,320,920.84 | 3,137,410.87 | 40.213271 | -105.007997 |
| 6,279.0 | 0.30 | 44.90 | 6,217.2 | -691.6 | 218.7 | 1,320,920.89 | 3,137,410.94 | 40.213272 | -105.007997 |
| 6,374.0 | 0.70 | 282.10 | 6,312.2 | -691.3 | 218.3 | 1,320,921.19 | 3,137,410.55 | 40.213272 | -105.007999 |
| 6,468.0 | 1.40 | 277.20 | 6,406.2 | -691.0 | 216.6 | 1,320,921.44 | 3,137,408.84 | 40.213273 | -105.008005 |
| 6,563.0 | 1.60 | 211.00 | 6,501.2 | -692.0 | 214.8 | 1,320,920.44 | 3,137,407.01 | 40.213270 | -105.008011 |
| 6,657.0 | 1.60 | 303.10 | 6,595.2 | -692.4 | 213.0 | 1,320,920.02 | 3,137,405.24 | 40.213269 | -105.008018 |
| 6,704.0 | 2.00 | 315.30 | 6,642.1 | -691.5 | 211.9 | 1,320,920.96 | 3,137,404.11 | 40.213272 | -105.008022 |
| 6,752.0 | 5.10 | 289.70 | 6,690.0 | -690.2 | 209.3 | 1,320,922.26 | 3,137,401.50 | 40.213276 | -105.008031 |
| 6,799.0 | 9.90 | 289.60 | 6,736.6 | -688.1 | 203.5 | 1,320,924.29 | 3,137,395.72 | 40.213281 | -105.008052 |
| 6,847.0 | 14.20 | 289.30 | 6,783.6 | -684.8 | 194.0 | 1,320,927.57 | 3,137,386.25 | 40.213290 | -105.008085 |
| 6,894.0 | 17.80 | 287.70 | 6,828.7 | -680.7 | 181.8 | 1,320,931.59 | 3,137,373.94 | 40.213302 | -105.008129 |
| 6,941.0 | 21.00 | 276.60 | 6,873.1 | -677.5 | 166.5 | 1,320,934.66 | 3,137,358.70 | 40.213310 | -105.008184 |
| 6,988.0 | 24.40 | 266.70 | 6,916.4 | -677.1 | 148.5 | 1,320,934.97 | 3,137,340.63 | 40.213311 | -105.008249 |
| 7,036.0 | 29.00 | 263.50 | 6,959.3 | -679.0 | 127.0 | 1,320,932.96 | 3,137,319.17 | 40.213306 | -105.008326 |
| 7,070.0 | 31.90 | 265.40 | 6,988.6 | -680.6 | 109.8 | 1,320,931.21 | 3,137,302.03 | 40.213302 | -105.008387 |
| 7,083.0 | 33.10 | 266.90 | 6,999.6 | -681.1 | 102.9 | 1,320,930.71 | 3,137,295.07 | 40.213300 | -105.008412 |
| 7,131.0 | 37.70 | 269.20 | 7,038.7 | -682.0 | 75.1 | 1,320,929.64 | 3,137,267.29 | 40.213298 | -105.008511 |
| 7,178.0 | 44.10 | 270.60 | 7,074.2 | -682.1 | 44.3 | 1,320,929.44 | 3,137,236.54 | 40.213298 | -105.008621 |
| 7,226.0 | 51.30 | 270.40 | 7,106.5 | -681.8 | 8.9 | 1,320,929.55 | 3,137,201.06 | 40.213299 | -105.008749 |
| 7,273.0 | 59.20 | 269.80 | 7,133.3 | -681.7 | -29.7 | 1,320,929.39 | 3,137,162.47 | 40.213299 | -105.008887 |
| 7,320.0 | 67.80 | 269.10 | 7,154.2 | -682.1 | -71.7 | 1,320,928.74 | 3,137,120.46 | 40.213298 | -105.009037 |
| 7,367.0 | 77.00 | 269.00 | 7,168.4 | -682.8 | -116.5 | 1,320,927.75 | 3,137,075.72 | 40.213296 | -105.009197 |
| 7,415.0 | 85.00 | 270.10 | 7,175.9 | -683.2 | -163.9 | 1,320,927.12 | 3,137,028.35 | 40.213295 | -105.009367 |
| 7,427.0 | 85.50 | 271.60 | 7,176.9 | -683.0 | -175.8 | 1,320,927.24 | 3,137,016.39 | 40.213295 | -105.009410 |
| 7,470.0 | 83.80 | 277.50 | 7,180.9 | -679.6 | -218.5 | 1,320,930.39 | 3,136,973.72 | 40.213304 | -105.009563 |
| 7,533.0 | 83.60 | 271.30 | 7,187.8 | -674.8 | -280.9 | 1,320,934.85 | 3,136,911.29 | 40.213318 | -105.009786 |
| 7,596.0 | 85.50 | 271.20 | 7,193.8 | -673.5 | -343.6 | 1,320,935.87 | 3,136,848.58 | 40.213321 | -105.010010 |
| 7,659.0 | 86.70 | 271.00 | 7,198.1 | -672.3 | -406.4 | 1,320,936.73 | 3,136,785.74 | 40.213325 | -105.010235 |
| 7,723.0 | 87.90 | 270.50 | 7,201.1 | -671.4 | -470.3 | 1,320,937.21 | 3,136,721.81 | 40.213327 | -105.010464 |
| 7,786.0 | 89.30 | 269.00 | 7,202.7 | -671.7 | -533.3 | 1,320,936.59 | 3,136,658.83 | 40.213326 | -105.010690 |
| 7,849.0 | 91.20 | 269.50 | 7,202.4 | -672.5 | -596.3 | 1,320,935.41 | 3,136,595.85 | 40.213324 | -105.010915 |
| 7,912.0 | 91.80 | 270.80 | 7,200.7 | -672.4 | -659.3 | 1,320,935.23 | 3,136,532.87 | 40.213324 | -105.011141 |
| 8,007.0 | 90.20 | 269.60 | 7,199.1 | -672.0 | -754.3 | 1,320,935.03 | 3,136,437.89 | 40.213325 | -105.011481 |
| 8,102.0 | 91.00 | 269.30 | 7,198.1 | -672.9 | -849.3 | 1,320,933.59 | 3,136,342.91 | 40.213323 | -105.011821 |
| 8,197.0 | 91.00 | 269.00 | 7,196.4 | -674.4 | -944.2 | 1,320,931.66 | 3,136,247.94 | 40.213319 | -105.012161 |
| 8,291.0 | 90.90 | 269.10 | 7,194.9 | -675.9 | -1,038.2 | 1,320,929.58 | 3,136,153.98 | 40.213315 | -105.012498 |
| 8,386.0 | 91.10 | 269.20 | 7,193.2 | -677.3 | -1,133.2 | 1,320,927.65 | 3,136,059.01 | 40.213311 | -105.012838 |
| 8,481.0 | 91.00 | 268.50 | 7,191.5 | -679.2 | -1,228.1 | 1,320,925.21 | 3,135,964.06 | 40.213305 | -105.013178 |
| 8,576.0 | 90.80 | 267.30 | 7,190.0 | -682.7 | -1,323.1 | 1,320,921.21 | 3,135,869.16 | 40.213296 | -105.013518 |
| 8,670.0 | 91.10 | 268.50 | 7,188.4 | -686.2 | -1,417.0 | 1,320,917.24 | 3,135,775.26 | 40.213286 | -105.013854 |
| 8,765.0 | 91.00 | 269.00 | 7,186.7 | -688.2 | -1,511.9 | 1,320,914.64 | 3,135,680.31 | 40.213281 | -105.014194 |
| 8,859.0 | 90.00 | 269.80 | 7,185.9 | -689.2 | -1,605.9 | 1,320,913.14 | 3,135,586.33 | 40.213278 | -105.014531 |
| 8,954.0 | 90.30 | 270.50 | 7,185.6 | -689.0 | -1,700.9 | 1,320,912.86 | 3,135,491.33 | 40.213279 | -105.014871 |
| 9,049.0 | 91.30 | 270.50 | 7,184.3 | -688.1 | -1,795.9 | 1,320,913.16 | 3,135,396.34 | 40.213281 | -105.015211 |
| 9,144.0 | 90.90 | 269.80 | 7,182.5 | -687.9 | -1,890.9 | 1,320,912.89 | 3,135,301.36 | 40.213282 | -105.015551 |
| 9,238.0 | 92.70 | 270.90 | 7,179.5 | -687.3 | -1,984.8 | 1,320,912.94 | 3,135,207.41 | 40.213283 | -105.015887 |
| 9,333.0 | 91.60 | 270.50 | 7,175.9 | -686.2 | -2,079.8 | 1,320,913.57 | 3,135,112.48 | 40.213286 | -105.016227 |
| 9,427.0 | 91.70 | 270.20 | 7,173.2 | -685.6 | -2,173.7 | 1,320,913.63 | 3,135,018.52 | 40.213288 | -105.016564 |
| 9,522.0 | 90.40 | 268.50 | 7,171.5 | -686.7 | -2,268.7 | 1,320,912.02 | 3,134,923.55 | 40.213285 | -105.016904 |
| 9,617.0 | 91.50 | 270.30 | 7,169.9 | -687.7 | -2,363.7 | 1,320,910.50 | 3,134,828.58 | 40.213282 | -105.017244 |
| 9,711.0 | 87.80 | 269.30 | 7,170.5 | -688.0 | -2,457.7 | 1,320,909.65 | 3,134,734.60 | 40.213281 | -105.017580 |
| 9,806.0 | 88.80 | 269.40 | 7,173.3 | -689.1 | -2,552.6 | 1,320,908.05 | 3,134,639.66 | 40.213278 | -105.017920 |
| 9,901.0 | 90.20 | 268.70 | 7,174.1 | -690.6 | -2,647.6 | 1,320,905.95 | 3,134,544.69 | 40.213274 | -105.018260 |
| 9,995.0 | 89.40 | 268.60 | 7,174.5 | -692.8 | -2,741.6 | 1,320,903.21 | 3,134,450.73 | 40.213268 | -105.018597 |
| 10,090.0 | 91.30 | 267.80 | 7,173.9 | -695.8 | -2,836.5 | 1,320,899.71 | 3,134,355.80 | 40.213259 | -105.018937 |

Cathedral Energy Services

Survey Report - Geographic

| | | | |
|------------------|-------------------------------|-------------------------------------|------------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Liberty 2E-21H |
| Project: | DJ Wattenberg | TVD Reference: | WELL @ 5036.0ft (Ensign 135) |
| Site: | S20-T3N-R68W (Liberty 2A-21H) | MD Reference: | WELL @ 5036.0ft (Ensign 135) |
| Well: | Liberty 2E-21H | 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) | Map Northing (ft) | Map Easting (ft) | Latitude | Longitude |
| 10,184.0 | 92.10 | 270.50 | 7,171.1 | -697.2 | -2,930.5 | 1,320,897.79 | 3,134,261.87 | 40.213256 | -105.019273 |
| 10,279.0 | 92.20 | 272.50 | 7,167.5 | -694.7 | -3,025.3 | 1,320,899.75 | 3,134,166.96 | 40.213262 | -105.019613 |
| 10,373.0 | 91.80 | 271.80 | 7,164.2 | -691.2 | -3,119.2 | 1,320,902.75 | 3,134,073.07 | 40.213272 | -105.019949 |
| 10,468.0 | 89.80 | 271.50 | 7,162.9 | -688.5 | -3,214.2 | 1,320,904.96 | 3,133,978.13 | 40.213280 | -105.020289 |
| 10,563.0 | 90.00 | 271.00 | 7,163.1 | -686.4 | -3,309.1 | 1,320,906.51 | 3,133,883.14 | 40.213285 | -105.020629 |
| 10,657.0 | 89.70 | 270.00 | 7,163.3 | -685.6 | -3,403.1 | 1,320,906.81 | 3,133,789.15 | 40.213287 | -105.020966 |
| 10,752.0 | 91.30 | 271.20 | 7,162.5 | -684.6 | -3,498.1 | 1,320,907.28 | 3,133,694.16 | 40.213290 | -105.021306 |
| 10,847.0 | 90.60 | 269.00 | 7,160.9 | -684.4 | -3,593.1 | 1,320,906.92 | 3,133,599.18 | 40.213291 | -105.021646 |
| 10,941.0 | 89.70 | 271.30 | 7,160.7 | -684.2 | -3,687.1 | 1,320,906.64 | 3,133,505.18 | 40.213291 | -105.021982 |
| 11,036.0 | 90.80 | 272.40 | 7,160.3 | -681.1 | -3,782.0 | 1,320,909.18 | 3,133,410.22 | 40.213300 | -105.022322 |
| 11,131.0 | 91.00 | 271.90 | 7,158.8 | -677.6 | -3,876.9 | 1,320,912.22 | 3,133,315.28 | 40.213309 | -105.022662 |
| 11,225.0 | 90.70 | 271.40 | 7,157.4 | -674.8 | -3,970.9 | 1,320,914.41 | 3,133,221.32 | 40.213317 | -105.022999 |
| 11,320.0 | 90.20 | 270.10 | 7,156.6 | -673.6 | -4,065.9 | 1,320,915.12 | 3,133,126.33 | 40.213320 | -105.023339 |
| 11,415.0 | 90.90 | 268.40 | 7,155.7 | -674.8 | -4,160.9 | 1,320,913.35 | 3,133,031.35 | 40.213317 | -105.023679 |
| 11,510.0 | 90.40 | 267.70 | 7,154.6 | -678.1 | -4,255.8 | 1,320,909.60 | 3,132,936.43 | 40.213308 | -105.024019 |
| 11,604.0 | 90.40 | 267.40 | 7,154.0 | -682.1 | -4,349.7 | 1,320,905.06 | 3,132,842.55 | 40.213297 | -105.024355 |
| 11,699.0 | 90.40 | 266.70 | 7,153.3 | -687.0 | -4,444.6 | 1,320,899.64 | 3,132,747.70 | 40.213283 | -105.024695 |
| 11,734.0 | 90.40 | 266.30 | 7,153.1 | -689.1 | -4,479.5 | 1,320,897.31 | 3,132,712.78 | 40.213277 | -105.024820 |
| Last Cathedral Survey @ 11,734' MD | | | | | | | | | |
| 11,784.0 | 90.40 | 266.30 | 7,152.7 | -692.3 | -4,529.4 | 1,320,893.81 | 3,132,662.91 | 40.213268 | -105.024999 |
| Projection to Bit @ 11,784' | | | | | | | | | |

| Design Targets | | | | | | | | | |
|--|---------------|--------------|----------|------------|------------|---------------|--------------|-----------|-------------|
| Target Name | Dip Angle (°) | Dip Dir. (°) | TVD (ft) | +N/-S (ft) | +E/-W (ft) | Northing (ft) | Easting (ft) | Latitude | Longitude |
| - hit/miss target | | | | | | | | | |
| - Shape | | | | | | | | | |
| Liberty 2E-21H BHL P6 | 0.00 | 0.00 | 7,150.1 | -691.7 | -4,571.8 | 1,320,894.22 | 3,132,620.54 | 40.213270 | -105.025150 |
| - actual wellpath misses target center by 42.4ft at 11784.0ft MD (7152.7 TVD, -692.3 N, -4529.4 E) | | | | | | | | | |
| - Point | | | | | | | | | |

| Design Annotations | | | | | |
|---------------------|---------------------|-------------------|------------|------------------------------------|--|
| Measured Depth (ft) | Vertical Depth (ft) | Local Coordinates | | Comment | |
| | | +N/-S (ft) | +E/-W (ft) | | |
| 11,734.0 | 7,153.1 | -689.1 | -4,479.5 | Last Cathedral Survey @ 11,734' MD | |
| 11,784.0 | 7,152.7 | -692.3 | -4,529.4 | Projection to Bit @ 11,784' | |

Checked By: _____ Approved By: _____ Date: _____