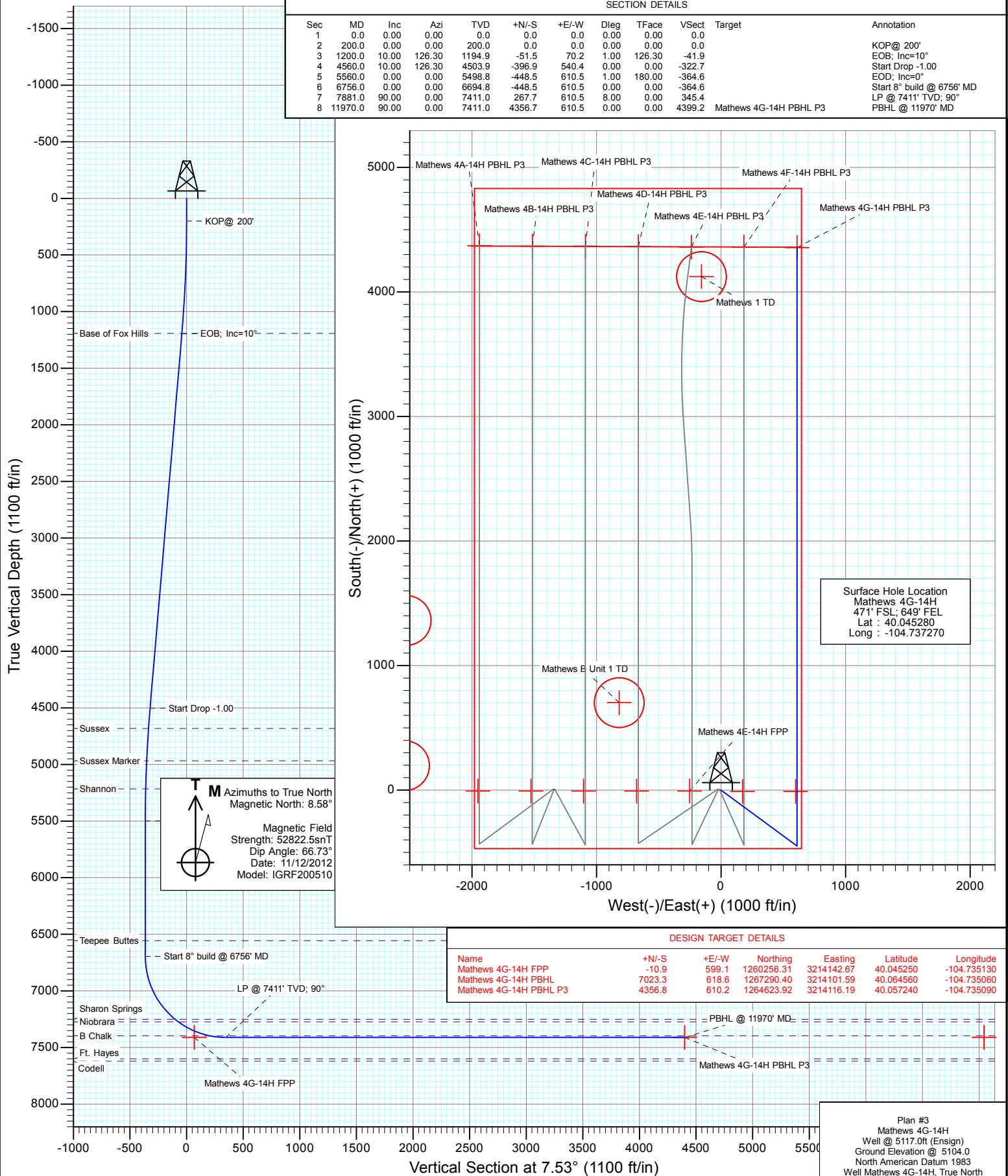




Project: DJ Wattenberg
Site: SWSE S14 T1N-R66W (Mathews)
Well: Mathews 4G-14H
Wellbore: HZ
Design: Plan #3



Planning Report

| | | | |
|------------------|-----------------------------|-------------------------------------|--------------------------|
| Database: | USA EDM 5000 Multi Users DB | Local Co-ordinate Reference: | Well Mathews 4G-14H |
| Company: | EnCana Oil & Gas (USA) Inc | TVD Reference: | Well @ 5117.0ft (Ensign) |
| Project: | DJ Wattenberg | MD Reference: | Well @ 5117.0ft (Ensign) |
| Site: | SWSE S14 T1N-R66W (Mathews) | North Reference: | True |
| Well: | Mathews 4G-14H | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | HZ | | |
| Design: | Plan #3 | | |

| | | | |
|--------------------|---------------------------|----------------------|----------------|
| 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 | | SWSE S14 T1N-R66W (Mathews) | | | |
|-----------------------|----------|-----------------------------|-----------------|-------------------|-------------|
| Site Position: | | Northing: | 1,260,084.79 ft | Latitude: | 40.044810 |
| From: | Lat/Long | Easting: | 3,212,836.64 ft | Longitude: | -104.739800 |
| Position Uncertainty: | 0.0 ft | Slot Radius: | 13.200 in | Grid Convergence: | 0.49 ° |

| Well | Mathews 4G-14H | | | | | |
|----------------------|----------------|--------|---------------------|-----------------|---------------|-------------|
| Well Position | +N/-S | 0.0 ft | Northing: | 1,260,262.07 ft | Latitude: | 40.045280 |
| | +E/-W | 0.0 ft | Easting: | 3,213,543.47 ft | Longitude: | -104.737270 |
| Position Uncertainty | | 0.0 ft | Wellhead Elevation: | ft | Ground Level: | 5,104.0 ft |

| | | | | | |
|------------------|-------------------|--------------------|----------------------------|--------------------------|--------------------------------|
| Wellbore | HZ | | | | |
| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
| | IGRF200510 | 11/12/2012 | 8.58 | 66.73 | 52,822 |

| | | | | |
|--------------------------|----------------------------------|-----------------------|-----------------------|--------------------------|
| Design | Plan #3 | | | |
| Audit Notes: | | | | |
| Version: | Phase: | PLAN | Tie On Depth: | 0.0 |
| Vertical Section: | Depth From (TVD) (ft) | +N/-S (ft) | +E/-W (ft) | Direction (°) |
| | 0.0 | 0.0 | 0.0 | 7.53 |

| Plan Sections | | | | | | | | | | |
|---------------------------|--------------------|----------------|---------------------------|---------------|---------------|-----------------------------|----------------------------|---------------------------|------------|--------------------|
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Turn Rate (°/100ft) | TFO (°) | Target |
| 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 200.0 | 0.00 | 0.00 | 200.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 1,200.0 | 10.00 | 126.30 | 1,194.9 | -51.5 | 70.2 | 1.00 | 1.00 | 0.00 | 126.30 | |
| 4,560.0 | 10.00 | 126.30 | 4,503.9 | -396.9 | 540.4 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 5,560.0 | 0.00 | 0.00 | 5,498.8 | -448.5 | 610.5 | 1.00 | -1.00 | 0.00 | 180.00 | |
| 6,756.0 | 0.00 | 0.00 | 6,694.8 | -448.5 | 610.5 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 7,881.0 | 90.00 | 0.00 | 7,411.0 | 267.7 | 610.5 | 8.00 | 8.00 | 0.00 | 0.00 | |
| 11,970.0 | 90.00 | 0.00 | 7,411.0 | 4,356.7 | 610.5 | 0.00 | 0.00 | 0.00 | 0.00 | Mathews 4G-14H PBI |

Planning Report

| | | | |
|------------------|-----------------------------|-------------------------------------|--------------------------|
| Database: | USA EDM 5000 Multi Users DB | Local Co-ordinate Reference: | Well Mathews 4G-14H |
| Company: | EnCana Oil & Gas (USA) Inc | TVD Reference: | Well @ 5117.0ft (Ensign) |
| Project: | DJ Wattenberg | MD Reference: | Well @ 5117.0ft (Ensign) |
| Site: | SWSE S14 T1N-R66W (Mathews) | North Reference: | True |
| Well: | Mathews 4G-14H | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | HZ | | |
| Design: | Plan #3 | | |

| Planned Survey | | | | | | | | | |
|---------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|-----------------------|
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Comments / Formations |
| 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | |
| 100.0 | 0.00 | 0.00 | 100.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | |
| 200.0 | 0.00 | 0.00 | 200.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | KOP@ 200' |
| 300.0 | 1.00 | 126.30 | 300.0 | -0.5 | 0.7 | -0.4 | 1.00 | 1.00 | |
| 400.0 | 2.00 | 126.30 | 400.0 | -2.1 | 2.8 | -1.7 | 1.00 | 1.00 | |
| 500.0 | 3.00 | 126.30 | 499.9 | -4.6 | 6.3 | -3.8 | 1.00 | 1.00 | |
| 600.0 | 4.00 | 126.30 | 599.7 | -8.3 | 11.2 | -6.7 | 1.00 | 1.00 | |
| 700.0 | 5.00 | 126.30 | 699.4 | -12.9 | 17.6 | -10.5 | 1.00 | 1.00 | |
| 800.0 | 6.00 | 126.30 | 798.9 | -18.6 | 25.3 | -15.1 | 1.00 | 1.00 | |
| 900.0 | 7.00 | 126.30 | 898.3 | -25.3 | 34.4 | -20.6 | 1.00 | 1.00 | |
| 1,000.0 | 8.00 | 126.30 | 997.4 | -33.0 | 44.9 | -26.8 | 1.00 | 1.00 | |
| 1,100.0 | 9.00 | 126.30 | 1,096.3 | -41.8 | 56.9 | -33.9 | 1.00 | 1.00 | |
| 1,197.0 | 9.97 | 126.30 | 1,192.0 | -51.2 | 69.7 | -41.6 | 1.00 | 1.00 | Base of Fox Hills |
| 1,200.0 | 10.00 | 126.30 | 1,194.9 | -51.5 | 70.2 | -41.9 | 1.00 | 1.00 | EOB; Inc=10° |
| 1,300.0 | 10.00 | 126.30 | 1,293.4 | -61.8 | 84.1 | -50.2 | 0.00 | 0.00 | |
| 1,400.0 | 10.00 | 126.30 | 1,391.9 | -72.1 | 98.1 | -58.6 | 0.00 | 0.00 | |
| 1,500.0 | 10.00 | 126.30 | 1,490.4 | -82.4 | 112.1 | -67.0 | 0.00 | 0.00 | |
| 1,600.0 | 10.00 | 126.30 | 1,588.9 | -92.7 | 126.1 | -75.3 | 0.00 | 0.00 | |
| 1,700.0 | 10.00 | 126.30 | 1,687.3 | -102.9 | 140.1 | -83.7 | 0.00 | 0.00 | |
| 1,800.0 | 10.00 | 126.30 | 1,785.8 | -113.2 | 154.1 | -92.0 | 0.00 | 0.00 | |
| 1,900.0 | 10.00 | 126.30 | 1,884.3 | -123.5 | 168.1 | -100.4 | 0.00 | 0.00 | |
| 2,000.0 | 10.00 | 126.30 | 1,982.8 | -133.8 | 182.1 | -108.7 | 0.00 | 0.00 | |
| 2,100.0 | 10.00 | 126.30 | 2,081.3 | -144.1 | 196.1 | -117.1 | 0.00 | 0.00 | |
| 2,200.0 | 10.00 | 126.30 | 2,179.7 | -154.3 | 210.1 | -125.5 | 0.00 | 0.00 | |
| 2,300.0 | 10.00 | 126.30 | 2,278.2 | -164.6 | 224.1 | -133.8 | 0.00 | 0.00 | |
| 2,400.0 | 10.00 | 126.30 | 2,376.7 | -174.9 | 238.1 | -142.2 | 0.00 | 0.00 | |
| 2,500.0 | 10.00 | 126.30 | 2,475.2 | -185.2 | 252.1 | -150.5 | 0.00 | 0.00 | |
| 2,600.0 | 10.00 | 126.30 | 2,573.7 | -195.5 | 266.1 | -158.9 | 0.00 | 0.00 | |
| 2,700.0 | 10.00 | 126.30 | 2,672.1 | -205.7 | 280.1 | -167.2 | 0.00 | 0.00 | |
| 2,800.0 | 10.00 | 126.30 | 2,770.6 | -216.0 | 294.1 | -175.6 | 0.00 | 0.00 | |
| 2,900.0 | 10.00 | 126.30 | 2,869.1 | -226.3 | 308.1 | -184.0 | 0.00 | 0.00 | |
| 3,000.0 | 10.00 | 126.30 | 2,967.6 | -236.6 | 322.1 | -192.3 | 0.00 | 0.00 | |
| 3,100.0 | 10.00 | 126.30 | 3,066.1 | -246.9 | 336.1 | -200.7 | 0.00 | 0.00 | |
| 3,200.0 | 10.00 | 126.30 | 3,164.5 | -257.1 | 350.0 | -209.0 | 0.00 | 0.00 | |
| 3,300.0 | 10.00 | 126.30 | 3,263.0 | -267.4 | 364.0 | -217.4 | 0.00 | 0.00 | |
| 3,400.0 | 10.00 | 126.30 | 3,361.5 | -277.7 | 378.0 | -225.7 | 0.00 | 0.00 | |
| 3,500.0 | 10.00 | 126.30 | 3,460.0 | -288.0 | 392.0 | -234.1 | 0.00 | 0.00 | |
| 3,600.0 | 10.00 | 126.30 | 3,558.5 | -298.3 | 406.0 | -242.5 | 0.00 | 0.00 | |
| 3,700.0 | 10.00 | 126.30 | 3,657.0 | -308.5 | 420.0 | -250.8 | 0.00 | 0.00 | |
| 3,800.0 | 10.00 | 126.30 | 3,755.4 | -318.8 | 434.0 | -259.2 | 0.00 | 0.00 | |
| 3,900.0 | 10.00 | 126.30 | 3,853.9 | -329.1 | 448.0 | -267.5 | 0.00 | 0.00 | |
| 4,000.0 | 10.00 | 126.30 | 3,952.4 | -339.4 | 462.0 | -275.9 | 0.00 | 0.00 | |
| 4,100.0 | 10.00 | 126.30 | 4,050.9 | -349.7 | 476.0 | -284.2 | 0.00 | 0.00 | |
| 4,200.0 | 10.00 | 126.30 | 4,149.4 | -359.9 | 490.0 | -292.6 | 0.00 | 0.00 | |
| 4,300.0 | 10.00 | 126.30 | 4,247.8 | -370.2 | 504.0 | -301.0 | 0.00 | 0.00 | |
| 4,400.0 | 10.00 | 126.30 | 4,346.3 | -380.5 | 518.0 | -309.3 | 0.00 | 0.00 | |
| 4,500.0 | 10.00 | 126.30 | 4,444.8 | -390.8 | 532.0 | -317.7 | 0.00 | 0.00 | |
| 4,560.0 | 10.00 | 126.30 | 4,503.9 | -396.9 | 540.4 | -322.7 | 0.00 | 0.00 | Start Drop -1.00 |
| 4,600.0 | 9.60 | 126.30 | 4,543.3 | -401.0 | 545.9 | -326.0 | 1.00 | -1.00 | |
| 4,700.0 | 8.60 | 126.30 | 4,642.0 | -410.3 | 558.6 | -333.6 | 1.00 | -1.00 | |
| 4,740.4 | 8.20 | 126.30 | 4,682.0 | -413.8 | 563.4 | -336.4 | 1.00 | -1.00 | Sussex |
| 4,800.0 | 7.60 | 126.30 | 4,741.0 | -418.7 | 570.0 | -340.4 | 1.00 | -1.00 | |

Planning Report

| | | | |
|------------------|-----------------------------|-------------------------------------|--------------------------|
| Database: | USA EDM 5000 Multi Users DB | Local Co-ordinate Reference: | Well Mathews 4G-14H |
| Company: | EnCana Oil & Gas (USA) Inc | TVD Reference: | Well @ 5117.0ft (Ensign) |
| Project: | DJ Wattenberg | MD Reference: | Well @ 5117.0ft (Ensign) |
| Site: | SWSE S14 T1N-R66W (Mathews) | North Reference: | True |
| Well: | Mathews 4G-14H | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | HZ | | |
| Design: | Plan #3 | | |

| Planned Survey | | | | | | | | | |
|---------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|---------------------------|
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Comments / Formations |
| 4,900.0 | 6.60 | 126.30 | 4,840.3 | -426.0 | 579.9 | -346.3 | 1.00 | -1.00 | |
| 5,000.0 | 5.60 | 126.30 | 4,939.7 | -432.3 | 588.5 | -351.4 | 1.00 | -1.00 | |
| 5,028.4 | 5.32 | 126.30 | 4,968.0 | -433.9 | 590.7 | -352.7 | 1.00 | -1.00 | Sussex Marker |
| 5,100.0 | 4.60 | 126.30 | 5,039.3 | -437.6 | 595.7 | -355.7 | 1.00 | -1.00 | |
| 5,200.0 | 3.60 | 126.30 | 5,139.1 | -441.8 | 601.4 | -359.1 | 1.00 | -1.00 | |
| 5,276.1 | 2.84 | 126.30 | 5,215.0 | -444.3 | 604.9 | -361.2 | 1.00 | -1.00 | Shannon |
| 5,300.0 | 2.60 | 126.30 | 5,238.9 | -445.0 | 605.8 | -361.7 | 1.00 | -1.00 | |
| 5,400.0 | 1.60 | 126.30 | 5,338.8 | -447.2 | 608.7 | -363.5 | 1.00 | -1.00 | |
| 5,500.0 | 0.60 | 126.30 | 5,438.8 | -448.3 | 610.3 | -364.4 | 1.00 | -1.00 | |
| 5,560.0 | 0.00 | 0.00 | 5,498.8 | -448.5 | 610.5 | -364.6 | 1.00 | -1.00 | EOD; Inc=0° |
| 5,600.0 | 0.00 | 0.00 | 5,538.8 | -448.5 | 610.5 | -364.6 | 0.00 | 0.00 | |
| 5,700.0 | 0.00 | 0.00 | 5,638.8 | -448.5 | 610.5 | -364.6 | 0.00 | 0.00 | |
| 5,800.0 | 0.00 | 0.00 | 5,738.8 | -448.5 | 610.5 | -364.6 | 0.00 | 0.00 | |
| 5,900.0 | 0.00 | 0.00 | 5,838.8 | -448.5 | 610.5 | -364.6 | 0.00 | 0.00 | |
| 6,000.0 | 0.00 | 0.00 | 5,938.8 | -448.5 | 610.5 | -364.6 | 0.00 | 0.00 | |
| 6,100.0 | 0.00 | 0.00 | 6,038.8 | -448.5 | 610.5 | -364.6 | 0.00 | 0.00 | |
| 6,200.0 | 0.00 | 0.00 | 6,138.8 | -448.5 | 610.5 | -364.6 | 0.00 | 0.00 | |
| 6,300.0 | 0.00 | 0.00 | 6,238.8 | -448.5 | 610.5 | -364.6 | 0.00 | 0.00 | |
| 6,400.0 | 0.00 | 0.00 | 6,338.8 | -448.5 | 610.5 | -364.6 | 0.00 | 0.00 | |
| 6,500.0 | 0.00 | 0.00 | 6,438.8 | -448.5 | 610.5 | -364.6 | 0.00 | 0.00 | |
| 6,600.0 | 0.00 | 0.00 | 6,538.8 | -448.5 | 610.5 | -364.6 | 0.00 | 0.00 | |
| 6,617.2 | 0.00 | 0.00 | 6,556.0 | -448.5 | 610.5 | -364.6 | 0.00 | 0.00 | Teepee Buttes |
| 6,700.0 | 0.00 | 0.00 | 6,638.8 | -448.5 | 610.5 | -364.6 | 0.00 | 0.00 | |
| 6,756.0 | 0.00 | 0.00 | 6,694.8 | -448.5 | 610.5 | -364.6 | 0.00 | 0.00 | Start 8° build @ 6756' MD |
| 6,800.0 | 3.52 | 0.00 | 6,738.8 | -447.1 | 610.5 | -363.2 | 8.00 | 8.00 | |
| 6,900.0 | 11.52 | 0.00 | 6,837.8 | -434.1 | 610.5 | -350.3 | 8.00 | 8.00 | |
| 7,000.0 | 19.52 | 0.00 | 6,934.1 | -407.3 | 610.5 | -323.8 | 8.00 | 8.00 | |
| 7,100.0 | 27.52 | 0.00 | 7,025.7 | -367.4 | 610.5 | -284.2 | 8.00 | 8.00 | |
| 7,200.0 | 35.52 | 0.00 | 7,110.9 | -315.2 | 610.5 | -232.4 | 8.00 | 8.00 | |
| 7,300.0 | 43.52 | 0.00 | 7,188.0 | -251.6 | 610.5 | -169.4 | 8.00 | 8.00 | |
| 7,391.3 | 50.82 | 0.00 | 7,250.0 | -184.7 | 610.5 | -103.1 | 8.00 | 8.00 | Sharon Springs |
| 7,400.0 | 51.52 | 0.00 | 7,255.5 | -177.9 | 610.5 | -96.4 | 8.00 | 8.00 | |
| 7,428.9 | 53.83 | 0.00 | 7,273.0 | -154.9 | 610.5 | -73.6 | 8.00 | 8.00 | Niobrara |
| 7,500.0 | 59.52 | 0.00 | 7,312.0 | -95.6 | 610.5 | -14.7 | 8.00 | 8.00 | |
| 7,600.0 | 67.52 | 0.00 | 7,356.6 | -6.1 | 610.5 | 74.0 | 8.00 | 8.00 | |
| 7,612.7 | 68.54 | 0.00 | 7,361.3 | 5.7 | 610.5 | 85.7 | 8.00 | 8.00 | Mathews 4G-14H FPP |
| 7,700.0 | 75.52 | 0.00 | 7,388.3 | 88.6 | 610.5 | 167.9 | 8.00 | 8.00 | |
| 7,734.1 | 78.25 | 0.00 | 7,396.0 | 121.8 | 610.5 | 200.8 | 8.00 | 8.00 | B Chalk |
| 7,800.0 | 83.52 | 0.00 | 7,406.4 | 186.9 | 610.5 | 265.3 | 8.00 | 8.00 | |
| 7,881.0 | 90.00 | 0.00 | 7,411.0 | 267.7 | 610.5 | 345.4 | 8.00 | 8.00 | LP @ 7411' TVD; 90° |
| 7,900.0 | 90.00 | 0.00 | 7,411.0 | 286.7 | 610.5 | 364.3 | 0.01 | 0.01 | |
| 8,000.0 | 90.00 | 0.00 | 7,411.0 | 386.7 | 610.5 | 463.4 | 0.00 | 0.00 | |
| 8,100.0 | 90.00 | 0.00 | 7,411.0 | 486.7 | 610.5 | 562.6 | 0.00 | 0.00 | |
| 8,200.0 | 90.00 | 0.00 | 7,411.0 | 586.7 | 610.5 | 661.7 | 0.00 | 0.00 | |
| 8,300.0 | 90.00 | 0.00 | 7,411.0 | 686.7 | 610.5 | 760.8 | 0.00 | 0.00 | |
| 8,400.0 | 90.00 | 0.00 | 7,411.0 | 786.7 | 610.5 | 860.0 | 0.00 | 0.00 | |
| 8,500.0 | 90.00 | 0.00 | 7,411.0 | 886.7 | 610.5 | 959.1 | 0.00 | 0.00 | |
| 8,600.0 | 90.00 | 0.00 | 7,411.0 | 986.7 | 610.5 | 1,058.2 | 0.00 | 0.00 | |
| 8,700.0 | 90.00 | 0.00 | 7,411.0 | 1,086.7 | 610.5 | 1,157.4 | 0.00 | 0.00 | |
| 8,800.0 | 90.00 | 0.00 | 7,411.0 | 1,186.7 | 610.5 | 1,256.5 | 0.00 | 0.00 | |
| 8,900.0 | 90.00 | 0.00 | 7,411.0 | 1,286.7 | 610.5 | 1,355.6 | 0.00 | 0.00 | |
| 9,000.0 | 90.00 | 0.00 | 7,411.0 | 1,386.7 | 610.5 | 1,454.8 | 0.00 | 0.00 | |

Planning Report

| | | | |
|------------------|-----------------------------|-------------------------------------|--------------------------|
| Database: | USA EDM 5000 Multi Users DB | Local Co-ordinate Reference: | Well Mathews 4G-14H |
| Company: | EnCana Oil & Gas (USA) Inc | TVD Reference: | Well @ 5117.0ft (Ensign) |
| Project: | DJ Wattenberg | MD Reference: | Well @ 5117.0ft (Ensign) |
| Site: | SWSE S14 T1N-R66W (Mathews) | North Reference: | True |
| Well: | Mathews 4G-14H | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | HZ | | |
| Design: | Plan #3 | | |

Planned Survey

| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Comments / Formations |
|---------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|------------------------------------------|
| 9,100.0 | 90.00 | 0.00 | 7,411.0 | 1,486.7 | 610.5 | 1,553.9 | 0.00 | 0.00 | |
| 9,200.0 | 90.00 | 0.00 | 7,411.0 | 1,586.7 | 610.5 | 1,653.1 | 0.00 | 0.00 | |
| 9,300.0 | 90.00 | 0.00 | 7,411.0 | 1,686.7 | 610.5 | 1,752.2 | 0.00 | 0.00 | |
| 9,400.0 | 90.00 | 0.00 | 7,411.0 | 1,786.7 | 610.5 | 1,851.3 | 0.00 | 0.00 | |
| 9,500.0 | 90.00 | 0.00 | 7,411.0 | 1,886.7 | 610.5 | 1,950.5 | 0.00 | 0.00 | |
| 9,600.0 | 90.00 | 0.00 | 7,411.0 | 1,986.7 | 610.5 | 2,049.6 | 0.00 | 0.00 | |
| 9,700.0 | 90.00 | 0.00 | 7,411.0 | 2,086.7 | 610.5 | 2,148.7 | 0.00 | 0.00 | |
| 9,800.0 | 90.00 | 0.00 | 7,411.0 | 2,186.7 | 610.5 | 2,247.9 | 0.00 | 0.00 | |
| 9,900.0 | 90.00 | 0.00 | 7,411.0 | 2,286.7 | 610.5 | 2,347.0 | 0.00 | 0.00 | |
| 10,000.0 | 90.00 | 0.00 | 7,411.0 | 2,386.7 | 610.5 | 2,446.2 | 0.00 | 0.00 | |
| 10,100.0 | 90.00 | 0.00 | 7,411.0 | 2,486.7 | 610.5 | 2,545.3 | 0.00 | 0.00 | |
| 10,200.0 | 90.00 | 0.00 | 7,411.0 | 2,586.7 | 610.5 | 2,644.4 | 0.00 | 0.00 | |
| 10,300.0 | 90.00 | 0.00 | 7,411.0 | 2,686.7 | 610.5 | 2,743.6 | 0.00 | 0.00 | |
| 10,400.0 | 90.00 | 0.00 | 7,411.0 | 2,786.7 | 610.5 | 2,842.7 | 0.00 | 0.00 | |
| 10,500.0 | 90.00 | 0.00 | 7,411.0 | 2,886.7 | 610.5 | 2,941.8 | 0.00 | 0.00 | |
| 10,600.0 | 90.00 | 0.00 | 7,411.0 | 2,986.7 | 610.5 | 3,041.0 | 0.00 | 0.00 | |
| 10,700.0 | 90.00 | 0.00 | 7,411.0 | 3,086.7 | 610.5 | 3,140.1 | 0.00 | 0.00 | |
| 10,800.0 | 90.00 | 0.00 | 7,411.0 | 3,186.7 | 610.5 | 3,239.3 | 0.00 | 0.00 | |
| 10,900.0 | 90.00 | 0.00 | 7,411.0 | 3,286.7 | 610.5 | 3,338.4 | 0.00 | 0.00 | |
| 11,000.0 | 90.00 | 0.00 | 7,411.0 | 3,386.7 | 610.5 | 3,437.5 | 0.00 | 0.00 | |
| 11,100.0 | 90.00 | 0.00 | 7,411.0 | 3,486.7 | 610.5 | 3,536.7 | 0.00 | 0.00 | |
| 11,200.0 | 90.00 | 0.00 | 7,411.0 | 3,586.7 | 610.5 | 3,635.8 | 0.00 | 0.00 | |
| 11,300.0 | 90.00 | 0.00 | 7,411.0 | 3,686.7 | 610.5 | 3,734.9 | 0.00 | 0.00 | |
| 11,400.0 | 90.00 | 0.00 | 7,411.0 | 3,786.7 | 610.5 | 3,834.1 | 0.00 | 0.00 | |
| 11,500.0 | 90.00 | 0.00 | 7,411.0 | 3,886.7 | 610.5 | 3,933.2 | 0.00 | 0.00 | |
| 11,600.0 | 90.00 | 0.00 | 7,411.0 | 3,986.7 | 610.5 | 4,032.3 | 0.00 | 0.00 | |
| 11,700.0 | 90.00 | 0.00 | 7,411.0 | 4,086.7 | 610.5 | 4,131.5 | 0.00 | 0.00 | |
| 11,800.0 | 90.00 | 0.00 | 7,411.0 | 4,186.7 | 610.5 | 4,230.6 | 0.00 | 0.00 | |
| 11,900.0 | 90.00 | 0.00 | 7,411.0 | 4,286.7 | 610.5 | 4,329.8 | 0.00 | 0.00 | |
| 11,970.0 | 90.00 | 0.00 | 7,411.0 | 4,356.7 | 610.5 | 4,399.2 | 0.00 | 0.00 | PBHL @ 11970' MD - Mathews 4G-14H PBHL - |

Targets

| Target Name | Dip Angle (°) | Dip Dir. (°) | TVD (ft) | +N/-S (ft) | +E/-W (ft) | Northing (ft) | Easting (ft) | Latitude | Longitude |
|-------------------------------------------------------------------------------------------------------------|---------------|--------------|----------|------------|------------|---------------|--------------|-----------|-------------|
| Mathews 4G-14H PBHL - hit/miss target - Shape | 0.00 | 0.00 | 7,411.0 | 7,023.3 | 618.6 | 1,267,290.40 | 3,214,101.59 | 40.064560 | -104.735060 |
| - plan misses target center by 2666.6ft at 11970.0ft MD (7411.0 TVD, 4356.7 N, 610.5 E) | | | | | | | | | |
| - Point | | | | | | | | | |
| Mathews 4G-14H FPP - plan misses target center by 53.6ft at 7612.7ft MD (7361.3 TVD, 5.7 N, 610.5 E) | 0.00 | 0.00 | 7,411.0 | -10.9 | 599.1 | 1,260,256.31 | 3,214,142.67 | 40.045250 | -104.735130 |
| - Point | | | | | | | | | |
| Mathews 4G-14H PBHL - plan misses target center by 0.3ft at 11970.0ft MD (7411.0 TVD, 4356.7 N, 610.5 E) | 0.00 | 0.00 | 7,411.0 | 4,356.8 | 610.2 | 1,264,623.92 | 3,214,116.19 | 40.057240 | -104.735090 |
| - Point | | | | | | | | | |

Planning Report

| | | | |
|------------------|-----------------------------|-------------------------------------|--------------------------|
| Database: | USA EDM 5000 Multi Users DB | Local Co-ordinate Reference: | Well Mathews 4G-14H |
| Company: | EnCana Oil & Gas (USA) Inc | TVD Reference: | Well @ 5117.0ft (Ensign) |
| Project: | DJ Wattenberg | MD Reference: | Well @ 5117.0ft (Ensign) |
| Site: | SWSE S14 T1N-R66W (Mathews) | North Reference: | True |
| Well: | Mathews 4G-14H | Survey Calculation Method: | Minimum Curvature |
| Wellbore: | HZ | | |
| Design: | Plan #3 | | |

| Formations | | | | | | |
|---------------------|---------------------|-------------------|-----------|---------|-------------------|--|
| Measured Depth (ft) | Vertical Depth (ft) | Name | Lithology | Dip (°) | Dip Direction (°) | |
| 1,197.0 | 1,192.0 | Base of Fox Hills | | 0.00 | | |
| 4,740.4 | 4,682.0 | Sussex | | 0.00 | | |
| 5,028.4 | 4,968.0 | Sussex Marker | | 0.00 | | |
| 5,276.1 | 5,215.0 | Shannon | | 0.00 | | |
| 6,617.2 | 6,556.0 | Teepee Buttes | | 0.00 | | |
| 7,391.3 | 7,250.0 | Sharon Springs | | 0.00 | | |
| 7,428.9 | 7,273.0 | Niobrara | | 0.00 | | |
| 7,734.1 | 7,396.0 | B Chalk | | 0.00 | | |

| Plan Annotations | | | | | |
|---------------------|---------------------|-------------------|------------|---------------------------|--|
| Measured Depth (ft) | Vertical Depth (ft) | Local Coordinates | | | |
| | | +N/-S (ft) | +E/-W (ft) | Comment | |
| 200.0 | 200.0 | 0.0 | 0.0 | KOP@ 200' | |
| 1,200.0 | 1,194.9 | -51.5 | 70.2 | EOB; Inc=10° | |
| 4,560.0 | 4,503.9 | -396.9 | 540.4 | Start Drop -1.00 | |
| 5,560.0 | 5,498.8 | -448.5 | 610.5 | EOD; Inc=0° | |
| 6,756.0 | 6,694.8 | -448.5 | 610.5 | Start 8° build @ 6756' MD | |
| 7,881.0 | 7,411.0 | 267.7 | 610.5 | LP @ 7411' TVD; 90° | |
| 11,970.0 | 7,411.0 | 4,356.7 | 610.2 | PBHL @ 11970' MD | |

EnCana Oil & Gas (USA) Inc

DJ Wattenberg

SWSE S14 T1N-R66W (Mathews)

Mathews 4G-14H

HZ

Plan #3

Anticollision Report

27 December, 2012

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|-----------------------------|-------------------------------------|-----------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Mathews 4G-14H |
| Project: | DJ Wattenberg | TVD Reference: | Well @ 5117.0ft (Ensign) |
| Reference Site: | SWSE S14 T1N-R66W (Mathews) | MD Reference: | Well @ 5117.0ft (Ensign) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Mathews 4G-14H | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | HZ | Database: | USA EDM 5000 Multi Users DB |
| Reference Design: | Plan #3 | Offset TVD Reference: | Offset Datum |

| Reference | Plan #3 | | |
|------------------------------|---------------------------------------------------------------------|----------------|---------------------|
| Filter type: | NO GLOBAL FILTER: Using user defined selection & filtering criteria | | |
| Interpolation Method: | Stations | Error Model: | Systematic Ellipse |
| Depth Range: | Unlimited | Scan Method: | Closest Approach 3D |
| Results Limited by: | Maximum center-center distance of 10,000.0ft | Error Surface: | Elliptical Conic |
| Warning Levels Evaluated at: | 2.00 Sigma | | |

| Survey Tool Program | | Date | 12/27/2012 | | |
|---------------------|------------|-------------------|------------|-------------|--|
| From (ft) | To (ft) | Survey (Wellbore) | Tool Name | Description | |
| 0.0 | 11,970.0 | Plan #3 (HZ) | MWD | Geolink MWD | |

| Summary | | | | | | |
|-----------------------------------------------------------|-------------------------------|----------------------------|-------------------------------|--------------------------------|-------------------|---------|
| Site Name | Reference Measured Depth (ft) | Offset Measured Depth (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Separation Factor | Warning |
| Offset Well - Wellbore - Design | | | | | | |
| SWSE S14 T1N-R66W (Mathews) | | | | | | |
| 05-123-07177, Mathews 1 (Exisitng) - VT (Existing) - Exis | 11,736.6 | 7,413.0 | 766.4 | 678.3 | 8.695 | CC, ES |
| 05-123-07177, Mathews 1 (Exisitng) - VT (Existing) - Exis | 11,900.0 | 7,413.0 | 783.7 | 692.7 | 8.615 | SF |
| Mathews 4A-14H - HZ - Plan #3 | 161.2 | 175.2 | 1,352.3 | 1,351.7 | 2,495.429 | CC |
| Mathews 4A-14H - HZ - Plan #3 | 200.0 | 200.0 | 1,352.3 | 1,351.7 | 2,071.721 | ES |
| Mathews 4A-14H - HZ - Plan #3 | 11,970.0 | 11,980.0 | 2,550.1 | 2,391.6 | 16.092 | SF |
| Mathews 4B-14H - HZ - Plan #3 | 200.0 | 214.0 | 1,341.1 | 1,340.4 | 1,980.325 | CC, ES |
| Mathews 4B-14H - HZ - Plan #3 | 11,970.0 | 12,159.7 | 2,135.9 | 1,978.2 | 13.539 | SF |
| Mathews 4C-14H - HZ - Plan #3 | 200.0 | 214.0 | 1,332.7 | 1,332.0 | 1,967.922 | CC, ES |
| Mathews 4C-14H - HZ - Plan #3 | 11,970.0 | 11,949.4 | 1,699.1 | 1,540.7 | 10.723 | SF |
| Mathews 4D-14H - HZ - Plan #3 | 200.0 | 200.0 | 31.0 | 30.4 | 47.507 | CC, ES |
| Mathews 4D-14H - HZ - Plan #3 | 11,970.0 | 12,169.8 | 1,292.5 | 1,136.1 | 8.266 | SF |
| Mathews 4E-14H - HZ - Plan #3 | 200.0 | 200.0 | 22.7 | 22.0 | 34.762 | CC, ES |
| Mathews 4E-14H - HZ - Plan #3 | 11,970.0 | 11,938.2 | 848.2 | 689.6 | 5.350 | SF |
| Mathews 4F-14H - HZ - Plan #3 | 200.0 | 200.0 | 11.8 | 11.1 | 18.041 | CC, ES |
| Mathews 4F-14H - HZ - Plan #3 | 11,970.0 | 12,157.8 | 479.0 | 337.0 | 3.374 | SF |

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|-----------------------------|-------------------------------------|-----------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Mathews 4G-14H |
| Project: | DJ Wattenberg | TVD Reference: | Well @ 5117.0ft (Ensign) |
| Reference Site: | SWSE S14 T1N-R66W (Mathews) | MD Reference: | Well @ 5117.0ft (Ensign) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Mathews 4G-14H | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | HZ | Database: | USA EDM 5000 Multi Users DB |
| Reference Design: | Plan #3 | Offset TVD Reference: | Offset Datum |

| Offset Design | | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|---------------------------|---------------------------|---------------------------|---------------------------|-------------------|----------------|-----------------------------|-----------------------------------------|---------------|------------------------------|----------------------|---------|-----------|--------------------|--------|
| Survey Program: 0-MWD | | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | Highside Toolface (°) | Distance | | Total Uncertainty Axis | Separation Factor | Warning | | | |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | | | | | | |
| 0.0 | 0.0 | 2.0 | 2.0 | 0.0 | 0.0 | -2.17 | 4,123.2 | -156.2 | 4,126.2 | | | | | |
| 100.0 | 100.0 | 102.0 | 102.0 | 0.2 | 0.2 | -2.17 | 4,123.2 | -156.2 | 4,126.2 | 4,125.9 | 0.31 | N/A | | |
| 200.0 | 200.0 | 202.0 | 202.0 | 0.3 | 0.3 | -2.17 | 4,123.2 | -156.2 | 4,126.2 | 4,125.5 | 0.66 | 6,287.605 | | |
| 300.0 | 300.0 | 302.0 | 302.0 | 0.5 | 0.5 | -128.47 | 4,123.2 | -156.2 | 4,126.7 | 4,125.7 | 1.01 | 4,102.813 | | |
| 400.0 | 400.0 | 402.0 | 402.0 | 0.7 | 0.7 | -128.49 | 4,123.2 | -156.2 | 4,128.4 | 4,127.0 | 1.36 | 3,040.235 | | |
| 500.0 | 499.9 | 501.9 | 501.9 | 0.9 | 0.9 | -128.52 | 4,123.2 | -156.2 | 4,131.1 | 4,129.4 | 1.71 | 2,409.214 | | |
| 600.0 | 599.7 | 601.7 | 601.7 | 1.1 | 1.0 | -128.55 | 4,123.2 | -156.2 | 4,134.9 | 4,132.8 | 2.08 | 1,989.488 | | |
| 700.0 | 699.4 | 701.4 | 701.4 | 1.3 | 1.2 | -128.60 | 4,123.2 | -156.2 | 4,139.8 | 4,137.4 | 2.45 | 1,689.062 | | |
| 800.0 | 798.9 | 800.9 | 800.9 | 1.5 | 1.4 | -128.66 | 4,123.2 | -156.2 | 4,145.8 | 4,143.0 | 2.83 | 1,462.741 | | |
| 900.0 | 898.3 | 900.3 | 900.3 | 1.8 | 1.5 | -128.72 | 4,123.2 | -156.2 | 4,152.9 | 4,149.7 | 3.23 | 1,285.737 | | |
| 1,000.0 | 997.4 | 999.4 | 999.4 | 2.0 | 1.7 | -128.80 | 4,123.2 | -156.2 | 4,161.1 | 4,157.5 | 3.64 | 1,143.321 | | |
| 1,100.0 | 1,096.3 | 1,098.3 | 1,098.3 | 2.3 | 1.9 | -128.88 | 4,123.2 | -156.2 | 4,170.5 | 4,166.4 | 4.06 | 1,026.182 | | |
| 1,200.0 | 1,194.9 | 1,196.9 | 1,196.9 | 2.7 | 2.1 | -128.97 | 4,123.2 | -156.2 | 4,180.9 | 4,176.4 | 4.50 | 928.139 | | |
| 1,300.0 | 1,293.4 | 1,295.4 | 1,295.4 | 3.0 | 2.2 | -129.16 | 4,123.2 | -156.2 | 4,192.0 | 4,187.0 | 4.95 | 846.790 | | |
| 1,400.0 | 1,391.9 | 1,393.9 | 1,393.9 | 3.3 | 2.4 | -129.34 | 4,123.2 | -156.2 | 4,203.0 | 4,197.6 | 5.40 | 778.522 | | |
| 1,500.0 | 1,490.4 | 1,492.4 | 1,492.4 | 3.7 | 2.6 | -129.52 | 4,123.2 | -156.2 | 4,214.2 | 4,208.3 | 5.85 | 720.528 | | |
| 1,600.0 | 1,588.9 | 1,590.9 | 1,590.9 | 4.0 | 2.8 | -129.70 | 4,123.2 | -156.2 | 4,225.3 | 4,219.0 | 6.30 | 670.719 | | |
| 1,700.0 | 1,687.3 | 1,689.3 | 1,689.3 | 4.4 | 2.9 | -129.88 | 4,123.2 | -156.2 | 4,236.6 | 4,229.8 | 6.75 | 627.518 | | |
| 1,800.0 | 1,785.8 | 1,787.8 | 1,787.8 | 4.7 | 3.1 | -130.06 | 4,123.2 | -156.2 | 4,247.8 | 4,240.6 | 7.20 | 589.719 | | |
| 1,900.0 | 1,884.3 | 1,886.3 | 1,886.3 | 5.0 | 3.3 | -130.23 | 4,123.2 | -156.2 | 4,259.1 | 4,251.5 | 7.65 | 556.385 | | |
| 2,000.0 | 1,982.8 | 1,984.8 | 1,984.8 | 5.4 | 3.4 | -130.41 | 4,123.2 | -156.2 | 4,270.4 | 4,262.3 | 8.11 | 526.783 | | |
| 2,100.0 | 2,081.3 | 2,083.3 | 2,083.3 | 5.7 | 3.6 | -130.59 | 4,123.2 | -156.2 | 4,281.8 | 4,273.3 | 8.56 | 500.328 | | |
| 2,200.0 | 2,179.7 | 2,181.7 | 2,181.7 | 6.1 | 3.8 | -130.76 | 4,123.2 | -156.2 | 4,293.2 | 4,284.2 | 9.01 | 476.549 | | |
| 2,300.0 | 2,278.2 | 2,280.2 | 2,280.2 | 6.4 | 4.0 | -130.93 | 4,123.2 | -156.2 | 4,304.7 | 4,295.2 | 9.46 | 455.065 | | |
| 2,400.0 | 2,376.7 | 2,378.7 | 2,378.7 | 6.8 | 4.1 | -131.11 | 4,123.2 | -156.2 | 4,316.2 | 4,306.3 | 9.91 | 435.563 | | |
| 2,500.0 | 2,475.2 | 2,477.2 | 2,477.2 | 7.1 | 4.3 | -131.28 | 4,123.2 | -156.2 | 4,327.7 | 4,317.4 | 10.36 | 417.783 | | |
| 2,600.0 | 2,573.7 | 2,575.7 | 2,575.7 | 7.5 | 4.5 | -131.45 | 4,123.2 | -156.2 | 4,339.3 | 4,328.5 | 10.81 | 401.509 | | |
| 2,700.0 | 2,672.1 | 2,674.1 | 2,674.1 | 7.8 | 4.6 | -131.62 | 4,123.2 | -156.2 | 4,350.9 | 4,339.7 | 11.26 | 386.559 | | |
| 2,800.0 | 2,770.6 | 2,772.6 | 2,772.6 | 8.2 | 4.8 | -131.79 | 4,123.2 | -156.2 | 4,362.6 | 4,350.9 | 11.70 | 372.779 | | |
| 2,900.0 | 2,869.1 | 2,871.1 | 2,871.1 | 8.5 | 5.0 | -131.96 | 4,123.2 | -156.2 | 4,374.2 | 4,362.1 | 12.15 | 360.039 | | |
| 3,000.0 | 2,967.6 | 2,969.6 | 2,969.6 | 8.9 | 5.2 | -132.12 | 4,123.2 | -156.2 | 4,386.0 | 4,373.4 | 12.60 | 348.226 | | |
| 3,100.0 | 3,066.1 | 3,068.1 | 3,068.1 | 9.2 | 5.3 | -132.29 | 4,123.2 | -156.2 | 4,397.7 | 4,384.7 | 13.04 | 337.243 | | |
| 3,200.0 | 3,164.5 | 3,166.5 | 3,166.5 | 9.6 | 5.5 | -132.46 | 4,123.2 | -156.2 | 4,409.5 | 4,396.1 | 13.48 | 327.007 | | |
| 3,300.0 | 3,263.0 | 3,265.0 | 3,265.0 | 9.9 | 5.7 | -132.62 | 4,123.2 | -156.2 | 4,421.4 | 4,407.4 | 13.93 | 317.444 | | |
| 3,400.0 | 3,361.5 | 3,363.5 | 3,363.5 | 10.3 | 5.8 | -132.78 | 4,123.2 | -156.2 | 4,433.3 | 4,418.9 | 14.37 | 308.491 | | |
| 3,500.0 | 3,460.0 | 3,462.0 | 3,462.0 | 10.6 | 6.0 | -132.95 | 4,123.2 | -156.2 | 4,445.2 | 4,430.3 | 14.81 | 300.092 | | |
| 3,600.0 | 3,558.5 | 3,560.5 | 3,560.5 | 11.0 | 6.2 | -133.11 | 4,123.2 | -156.2 | 4,457.1 | 4,441.9 | 15.25 | 292.197 | | |
| 3,700.0 | 3,657.0 | 3,659.0 | 3,659.0 | 11.3 | 6.4 | -133.27 | 4,123.2 | -156.2 | 4,469.1 | 4,453.4 | 15.69 | 284.763 | | |
| 3,800.0 | 3,755.4 | 3,757.4 | 3,757.4 | 11.7 | 6.5 | -133.43 | 4,123.2 | -156.2 | 4,481.1 | 4,465.0 | 16.13 | 277.750 | | |
| 3,900.0 | 3,853.9 | 3,855.9 | 3,855.9 | 12.0 | 6.7 | -133.59 | 4,123.2 | -156.2 | 4,493.2 | 4,476.6 | 16.57 | 271.125 | | |
| 4,000.0 | 3,952.4 | 3,954.4 | 3,954.4 | 12.4 | 6.9 | -133.75 | 4,123.2 | -156.2 | 4,505.2 | 4,488.2 | 17.01 | 264.857 | | |
| 4,100.0 | 4,050.9 | 4,052.9 | 4,052.9 | 12.7 | 7.1 | -133.91 | 4,123.2 | -156.2 | 4,517.4 | 4,499.9 | 17.45 | 258.917 | | |
| 4,200.0 | 4,149.4 | 4,151.4 | 4,151.4 | 13.1 | 7.2 | -134.06 | 4,123.2 | -156.2 | 4,529.5 | 4,511.6 | 17.88 | 253.281 | | |
| 4,300.0 | 4,247.8 | 4,249.8 | 4,249.8 | 13.4 | 7.4 | -134.22 | 4,123.2 | -156.2 | 4,541.7 | 4,523.4 | 18.32 | 247.926 | | |
| 4,400.0 | 4,346.3 | 4,348.3 | 4,348.3 | 13.8 | 7.6 | -134.38 | 4,123.2 | -156.2 | 4,553.9 | 4,535.2 | 18.75 | 242.832 | | |
| 4,500.0 | 4,444.8 | 4,446.8 | 4,446.8 | 14.1 | 7.7 | -134.53 | 4,123.2 | -156.2 | 4,566.2 | 4,547.0 | 19.19 | 237.980 | | |
| 4,560.0 | 4,503.9 | 4,505.9 | 4,505.9 | 14.4 | 7.8 | -134.62 | 4,123.2 | -156.2 | 4,573.6 | 4,554.1 | 19.45 | 235.179 | | |
| 4,600.0 | 4,543.3 | 4,545.3 | 4,545.3 | 14.5 | 7.9 | -134.72 | 4,123.2 | -156.2 | 4,578.4 | 4,558.8 | 19.62 | 233.383 | | |
| 4,700.0 | 4,642.0 | 4,644.0 | 4,644.0 | 14.8 | 8.1 | -134.94 | 4,123.2 | -156.2 | 4,589.6 | 4,569.6 | 20.03 | 229.159 | | |
| 4,800.0 | 4,741.0 | 4,743.0 | 4,743.0 | 15.1 | 8.3 | -135.13 | 4,123.2 | -156.2 | 4,599.6 | 4,579.2 | 20.42 | 225.207 | | |
| 4,900.0 | 4,840.3 | 4,842.3 | 4,842.3 | 15.4 | 8.4 | -135.30 | 4,123.2 | -156.2 | 4,608.4 | 4,587.6 | 20.81 | 221.500 | | |
| 5,000.0 | 4,939.7 | 4,941.7 | 4,941.7 | 15.6 | 8.6 | -135.45 | 4,123.2 | -156.2 | 4,616.0 | 4,594.8 | 21.17 | 218.014 | | |

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|-----------------------------|-------------------------------------|-----------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Mathews 4G-14H |
| Project: | DJ Wattenberg | TVD Reference: | Well @ 5117.0ft (Ensign) |
| Reference Site: | SWSE S14 T1N-R66W (Mathews) | MD Reference: | Well @ 5117.0ft (Ensign) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Mathews 4G-14H | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | HZ | Database: | USA EDM 5000 Multi Users DB |
| Reference Design: | Plan #3 | Offset TVD Reference: | Offset Datum |

| Offset Design | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|-----------------------|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|------------------|--------------------|--------|
| Survey Program: 0-MWD | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | Distance | | Total | | Separation | | Warning | |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Uncertainty Axis | Factor | |
| 5,100.0 | 5,039.3 | 5,041.3 | 5,041.3 | 15.8 | 8.8 | -135.57 | 4,123.2 | -156.2 | 4,622.4 | 4,600.8 | 21.53 | 214.727 | |
| 5,200.0 | 5,139.1 | 5,141.1 | 5,141.1 | 16.0 | 9.0 | -135.67 | 4,123.2 | -156.2 | 4,627.5 | 4,605.6 | 21.87 | 211.620 | |
| 5,300.0 | 5,238.9 | 5,240.9 | 5,240.9 | 16.2 | 9.1 | -135.74 | 4,123.2 | -156.2 | 4,631.3 | 4,609.2 | 22.19 | 208.677 | |
| 5,400.0 | 5,338.8 | 5,340.8 | 5,340.8 | 16.3 | 9.3 | -135.79 | 4,123.2 | -156.2 | 4,634.0 | 4,611.5 | 22.51 | 205.882 | |
| 5,500.0 | 5,438.8 | 5,440.8 | 5,440.8 | 16.4 | 9.5 | -135.82 | 4,123.2 | -156.2 | 4,635.3 | 4,612.5 | 22.81 | 203.224 | |
| 5,560.0 | 5,498.8 | 5,500.8 | 5,500.8 | 16.5 | 9.6 | -9.52 | 4,123.2 | -156.2 | 4,635.6 | 4,612.6 | 22.99 | 201.669 | |
| 5,600.0 | 5,538.8 | 5,540.8 | 5,540.8 | 16.5 | 9.6 | -9.52 | 4,123.2 | -156.2 | 4,635.6 | 4,612.5 | 23.11 | 200.619 | |
| 5,700.0 | 5,638.8 | 5,640.8 | 5,640.8 | 16.6 | 9.8 | -9.52 | 4,123.2 | -156.2 | 4,635.6 | 4,612.2 | 23.41 | 198.035 | |
| 5,800.0 | 5,738.8 | 5,740.8 | 5,740.8 | 16.7 | 10.0 | -9.52 | 4,123.2 | -156.2 | 4,635.6 | 4,611.9 | 23.71 | 195.508 | |
| 5,900.0 | 5,838.8 | 5,840.8 | 5,840.8 | 16.8 | 10.2 | -9.52 | 4,123.2 | -156.2 | 4,635.6 | 4,611.6 | 24.01 | 193.036 | |
| 6,000.0 | 5,938.8 | 5,940.8 | 5,940.8 | 16.9 | 10.3 | -9.52 | 4,123.2 | -156.2 | 4,635.6 | 4,611.3 | 24.32 | 190.619 | |
| 6,100.0 | 6,038.8 | 6,040.8 | 6,040.8 | 17.1 | 10.5 | -9.52 | 4,123.2 | -156.2 | 4,635.6 | 4,610.9 | 24.62 | 188.254 | |
| 6,200.0 | 6,138.8 | 6,140.8 | 6,140.8 | 17.2 | 10.7 | -9.52 | 4,123.2 | -156.2 | 4,635.6 | 4,610.6 | 24.93 | 185.939 | |
| 6,300.0 | 6,238.8 | 6,240.8 | 6,240.8 | 17.3 | 10.9 | -9.52 | 4,123.2 | -156.2 | 4,635.6 | 4,610.3 | 25.24 | 183.675 | |
| 6,400.0 | 6,338.8 | 6,340.8 | 6,340.8 | 17.4 | 11.0 | -9.52 | 4,123.2 | -156.2 | 4,635.6 | 4,610.0 | 25.55 | 181.458 | |
| 6,500.0 | 6,438.8 | 6,440.8 | 6,440.8 | 17.5 | 11.2 | -9.52 | 4,123.2 | -156.2 | 4,635.6 | 4,609.7 | 25.86 | 179.289 | |
| 6,600.0 | 6,538.8 | 6,540.8 | 6,540.8 | 17.6 | 11.4 | -9.52 | 4,123.2 | -156.2 | 4,635.6 | 4,609.4 | 26.17 | 177.165 | |
| 6,700.0 | 6,638.8 | 6,640.8 | 6,640.8 | 17.7 | 11.6 | -9.52 | 4,123.2 | -156.2 | 4,635.6 | 4,609.1 | 26.48 | 175.086 | |
| 6,756.0 | 6,694.8 | 6,696.8 | 6,696.8 | 17.8 | 11.7 | -9.52 | 4,123.2 | -156.2 | 4,635.6 | 4,608.9 | 26.65 | 173.940 | |
| 6,800.0 | 6,738.8 | 6,740.8 | 6,740.8 | 17.8 | 11.7 | -9.54 | 4,123.2 | -156.2 | 4,634.2 | 4,607.5 | 26.72 | 173.428 | |
| 6,850.0 | 6,788.5 | 6,790.5 | 6,790.5 | 17.8 | 11.8 | -9.61 | 4,123.2 | -156.2 | 4,629.5 | 4,602.8 | 26.71 | 173.317 | |
| 6,900.0 | 6,837.8 | 6,839.8 | 6,839.8 | 17.8 | 11.9 | -9.74 | 4,123.2 | -156.2 | 4,621.3 | 4,594.7 | 26.60 | 173.710 | |
| 6,950.0 | 6,886.5 | 6,888.5 | 6,888.5 | 17.8 | 12.0 | -9.93 | 4,123.2 | -156.2 | 4,609.8 | 4,583.4 | 26.40 | 174.608 | |
| 7,000.0 | 6,934.1 | 6,936.1 | 6,936.1 | 17.7 | 12.1 | -10.18 | 4,123.2 | -156.2 | 4,595.0 | 4,568.9 | 26.11 | 176.014 | |
| 7,050.0 | 6,980.6 | 6,982.6 | 6,982.6 | 17.6 | 12.2 | -10.49 | 4,123.2 | -156.2 | 4,576.9 | 4,551.2 | 25.72 | 177.933 | |
| 7,100.0 | 7,025.7 | 7,027.7 | 7,027.7 | 17.6 | 12.2 | -10.89 | 4,123.2 | -156.2 | 4,555.7 | 4,530.4 | 25.26 | 180.367 | |
| 7,150.0 | 7,069.2 | 7,071.2 | 7,071.2 | 17.5 | 12.3 | -11.38 | 4,123.2 | -156.2 | 4,531.4 | 4,506.7 | 24.72 | 183.316 | |
| 7,200.0 | 7,110.9 | 7,112.9 | 7,112.9 | 17.4 | 12.4 | -11.98 | 4,123.2 | -156.2 | 4,504.2 | 4,480.1 | 24.12 | 186.768 | |
| 7,250.0 | 7,150.6 | 7,152.6 | 7,152.6 | 17.3 | 12.5 | -12.70 | 4,123.2 | -156.2 | 4,474.2 | 4,450.7 | 23.46 | 190.689 | |
| 7,300.0 | 7,188.0 | 7,190.0 | 7,190.0 | 17.2 | 12.5 | -13.58 | 4,123.2 | -156.2 | 4,441.5 | 4,418.8 | 22.78 | 195.012 | |
| 7,350.0 | 7,223.0 | 7,225.0 | 7,225.0 | 17.1 | 12.6 | -14.66 | 4,123.2 | -156.2 | 4,406.4 | 4,384.3 | 22.07 | 199.614 | |
| 7,400.0 | 7,255.5 | 7,257.5 | 7,257.5 | 17.0 | 12.6 | -15.98 | 4,123.2 | -156.2 | 4,369.0 | 4,347.6 | 21.39 | 204.279 | |
| 7,450.0 | 7,285.2 | 7,287.2 | 7,287.2 | 17.0 | 12.7 | -17.63 | 4,123.2 | -156.2 | 4,329.4 | 4,308.7 | 20.75 | 208.659 | |
| 7,500.0 | 7,312.0 | 7,314.0 | 7,314.0 | 17.0 | 12.7 | -19.71 | 4,123.2 | -156.2 | 4,287.9 | 4,267.7 | 20.21 | 212.205 | |
| 7,550.0 | 7,335.9 | 7,337.9 | 7,337.9 | 17.0 | 12.8 | -22.38 | 4,123.2 | -156.2 | 4,244.7 | 4,224.9 | 19.83 | 214.101 | |
| 7,600.0 | 7,356.6 | 7,358.6 | 7,358.6 | 17.1 | 12.8 | -25.89 | 4,123.2 | -156.2 | 4,199.9 | 4,180.2 | 19.70 | 213.221 | |
| 7,650.0 | 7,374.1 | 7,376.1 | 7,376.1 | 17.2 | 12.9 | -30.64 | 4,123.2 | -156.2 | 4,153.9 | 4,133.9 | 19.95 | 208.201 | |
| 7,700.0 | 7,388.3 | 7,390.3 | 7,390.3 | 17.3 | 12.9 | -37.23 | 4,123.2 | -156.2 | 4,106.8 | 4,086.0 | 20.76 | 197.818 | |
| 7,750.0 | 7,399.1 | 7,401.1 | 7,401.1 | 17.5 | 12.9 | -46.59 | 4,123.2 | -156.2 | 4,058.9 | 4,036.5 | 22.31 | 181.961 | |
| 7,800.0 | 7,406.4 | 7,408.4 | 7,408.4 | 17.7 | 12.9 | -59.91 | 4,123.2 | -156.2 | 4,010.3 | 3,985.7 | 24.57 | 163.219 | |
| 7,850.0 | 7,410.3 | 7,412.3 | 7,412.3 | 18.0 | 12.9 | -77.63 | 4,123.2 | -156.2 | 3,961.4 | 3,934.6 | 26.83 | 147.669 | |
| 7,881.0 | 7,411.0 | 7,413.0 | 7,413.0 | 18.1 | 12.9 | -90.00 | 4,123.2 | -156.2 | 3,931.0 | 3,903.4 | 27.58 | 142.526 | |
| 7,900.0 | 7,411.0 | 7,413.0 | 7,413.0 | 18.3 | 12.9 | -90.00 | 4,123.2 | -156.2 | 3,912.4 | 3,884.6 | 27.73 | 141.086 | |
| 8,000.0 | 7,411.0 | 7,413.0 | 7,413.0 | 19.0 | 12.9 | -90.00 | 4,123.2 | -156.2 | 3,814.4 | 3,785.7 | 28.61 | 133.324 | |
| 8,100.0 | 7,411.0 | 7,413.0 | 7,413.0 | 19.8 | 12.9 | -90.00 | 4,123.2 | -156.2 | 3,716.5 | 3,686.8 | 29.63 | 125.440 | |
| 8,200.0 | 7,411.0 | 7,413.0 | 7,413.0 | 20.8 | 12.9 | -90.00 | 4,123.2 | -156.2 | 3,618.7 | 3,587.9 | 30.76 | 117.642 | |
| 8,300.0 | 7,411.0 | 7,413.0 | 7,413.0 | 21.8 | 12.9 | -90.00 | 4,123.2 | -156.2 | 3,521.0 | 3,489.0 | 31.99 | 110.077 | |
| 8,400.0 | 7,411.0 | 7,413.0 | 7,413.0 | 23.0 | 12.9 | -90.00 | 4,123.2 | -156.2 | 3,423.5 | 3,390.2 | 33.29 | 102.835 | |
| 8,500.0 | 7,411.0 | 7,413.0 | 7,413.0 | 24.2 | 12.9 | -90.00 | 4,123.2 | -156.2 | 3,326.1 | 3,291.4 | 34.66 | 95.968 | |
| 8,600.0 | 7,411.0 | 7,413.0 | 7,413.0 | 25.5 | 12.9 | -90.00 | 4,123.2 | -156.2 | 3,228.8 | 3,192.8 | 36.08 | 89.497 | |
| 8,700.0 | 7,411.0 | 7,413.0 | 7,413.0 | 26.8 | 12.9 | -90.00 | 4,123.2 | -156.2 | 3,131.8 | 3,094.3 | 37.54 | 83.425 | |
| 8,800.0 | 7,411.0 | 7,413.0 | 7,413.0 | 28.2 | 12.9 | -90.00 | 4,123.2 | -156.2 | 3,034.9 | 2,995.9 | 39.04 | 77.741 | |

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|-----------------------------|-------------------------------------|-----------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Mathews 4G-14H |
| Project: | DJ Wattenberg | TVD Reference: | Well @ 5117.0ft (Ensign) |
| Reference Site: | SWSE S14 T1N-R66W (Mathews) | MD Reference: | Well @ 5117.0ft (Ensign) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Mathews 4G-14H | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | HZ | Database: | USA EDM 5000 Multi Users DB |
| Reference Design: | Plan #3 | Offset TVD Reference: | Offset Datum |

| Offset Design | | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|---------------------------|---------------------------|---------------------------|---------------------------|-------------------|----------------|-----------------------------|-----------------------------------------|---------------|----------------------------|-----------------------------|------------------------------|----------------------|--------------------|--------|
| Survey Program: 0-MWD | | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | Highside Toolface (°) | Distance | | | | Total Uncertainty Axis | Separation Factor | Warning | |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | | | | |
| 8,900.0 | 7,411.0 | 7,413.0 | 7,413.0 | 29.6 | 12.9 | -90.00 | 4,123.2 | -156.2 | 2,938.3 | 2,897.7 | 40.57 | 72.429 | | |
| 9,000.0 | 7,411.0 | 7,413.0 | 7,413.0 | 31.1 | 12.9 | -90.00 | 4,123.2 | -156.2 | 2,841.9 | 2,799.7 | 42.12 | 67.468 | | |
| 9,100.0 | 7,411.0 | 7,413.0 | 7,413.0 | 32.6 | 12.9 | -90.00 | 4,123.2 | -156.2 | 2,745.7 | 2,702.0 | 43.70 | 62.835 | | |
| 9,200.0 | 7,411.0 | 7,413.0 | 7,413.0 | 34.1 | 12.9 | -90.00 | 4,123.2 | -156.2 | 2,649.8 | 2,604.5 | 45.29 | 58.506 | | |
| 9,300.0 | 7,411.0 | 7,413.0 | 7,413.0 | 35.6 | 12.9 | -90.00 | 4,123.2 | -156.2 | 2,554.3 | 2,507.4 | 46.90 | 54.461 | | |
| 9,400.0 | 7,411.0 | 7,413.0 | 7,413.0 | 37.2 | 12.9 | -90.00 | 4,123.2 | -156.2 | 2,459.1 | 2,410.5 | 48.52 | 50.677 | | |
| 9,500.0 | 7,411.0 | 7,413.0 | 7,413.0 | 38.7 | 12.9 | -90.00 | 4,123.2 | -156.2 | 2,364.2 | 2,314.1 | 50.16 | 47.135 | | |
| 9,600.0 | 7,411.0 | 7,413.0 | 7,413.0 | 40.3 | 12.9 | -90.00 | 4,123.2 | -156.2 | 2,269.9 | 2,218.1 | 51.80 | 43.816 | | |
| 9,700.0 | 7,411.0 | 7,413.0 | 7,413.0 | 41.9 | 12.9 | -90.00 | 4,123.2 | -156.2 | 2,176.0 | 2,122.5 | 53.46 | 40.704 | | |
| 9,800.0 | 7,411.0 | 7,413.0 | 7,413.0 | 43.5 | 12.9 | -90.00 | 4,123.2 | -156.2 | 2,082.7 | 2,027.6 | 55.12 | 37.784 | | |
| 9,900.0 | 7,411.0 | 7,413.0 | 7,413.0 | 45.2 | 12.9 | -90.00 | 4,123.2 | -156.2 | 1,990.1 | 1,933.3 | 56.79 | 35.041 | | |
| 10,000.0 | 7,411.0 | 7,413.0 | 7,413.0 | 46.8 | 12.9 | -90.00 | 4,123.2 | -156.2 | 1,898.2 | 1,839.7 | 58.47 | 32.465 | | |
| 10,100.0 | 7,411.0 | 7,413.0 | 7,413.0 | 48.4 | 12.9 | -90.00 | 4,123.2 | -156.2 | 1,807.1 | 1,747.0 | 60.15 | 30.044 | | |
| 10,200.0 | 7,411.0 | 7,413.0 | 7,413.0 | 50.1 | 12.9 | -90.00 | 4,123.2 | -156.2 | 1,717.1 | 1,655.3 | 61.84 | 27.768 | | |
| 10,300.0 | 7,411.0 | 7,413.0 | 7,413.0 | 51.7 | 12.9 | -90.00 | 4,123.2 | -156.2 | 1,628.2 | 1,564.7 | 63.53 | 25.630 | | |
| 10,400.0 | 7,411.0 | 7,413.0 | 7,413.0 | 53.4 | 12.9 | -90.00 | 4,123.2 | -156.2 | 1,540.7 | 1,475.5 | 65.22 | 23.622 | | |
| 10,500.0 | 7,411.0 | 7,413.0 | 7,413.0 | 55.1 | 12.9 | -90.00 | 4,123.2 | -156.2 | 1,454.8 | 1,387.9 | 66.92 | 21.739 | | |
| 10,600.0 | 7,411.0 | 7,413.0 | 7,413.0 | 56.7 | 12.9 | -90.00 | 4,123.2 | -156.2 | 1,370.8 | 1,302.2 | 68.63 | 19.976 | | |
| 10,700.0 | 7,411.0 | 7,413.0 | 7,413.0 | 58.4 | 12.9 | -90.00 | 4,123.2 | -156.2 | 1,289.1 | 1,218.8 | 70.33 | 18.330 | | |
| 10,800.0 | 7,411.0 | 7,413.0 | 7,413.0 | 60.1 | 12.9 | -90.00 | 4,123.2 | -156.2 | 1,210.2 | 1,138.2 | 72.04 | 16.799 | | |
| 10,900.0 | 7,411.0 | 7,413.0 | 7,413.0 | 61.8 | 12.9 | -90.00 | 4,123.2 | -156.2 | 1,134.6 | 1,060.8 | 73.75 | 15.384 | | |
| 11,000.0 | 7,411.0 | 7,413.0 | 7,413.0 | 63.5 | 12.9 | -90.00 | 4,123.2 | -156.2 | 1,063.0 | 987.5 | 75.46 | 14.086 | | |
| 11,100.0 | 7,411.0 | 7,413.0 | 7,413.0 | 65.1 | 12.9 | -90.00 | 4,123.2 | -156.2 | 996.3 | 919.1 | 77.18 | 12.909 | | |
| 11,200.0 | 7,411.0 | 7,413.0 | 7,413.0 | 66.8 | 12.9 | -90.00 | 4,123.2 | -156.2 | 935.6 | 856.7 | 78.90 | 11.858 | | |
| 11,300.0 | 7,411.0 | 7,413.0 | 7,413.0 | 68.5 | 12.9 | -90.00 | 4,123.2 | -156.2 | 882.0 | 801.4 | 80.62 | 10.941 | | |
| 11,400.0 | 7,411.0 | 7,413.0 | 7,413.0 | 70.2 | 12.9 | -90.00 | 4,123.2 | -156.2 | 837.1 | 754.7 | 82.34 | 10.166 | | |
| 11,500.0 | 7,411.0 | 7,413.0 | 7,413.0 | 71.9 | 12.9 | -90.00 | 4,123.2 | -156.2 | 802.1 | 718.1 | 84.06 | 9.542 | | |
| 11,600.0 | 7,411.0 | 7,413.0 | 7,413.0 | 73.6 | 12.9 | -90.00 | 4,123.2 | -156.2 | 778.5 | 692.7 | 85.79 | 9.075 | | |
| 11,700.0 | 7,411.0 | 7,413.0 | 7,413.0 | 75.4 | 12.9 | -90.00 | 4,123.2 | -156.2 | 767.3 | 679.8 | 87.51 | 8.768 | | |
| 11,736.6 | 7,411.0 | 7,413.0 | 7,413.0 | 76.0 | 12.9 | -90.00 | 4,123.2 | -156.2 | 766.4 | 678.3 | 88.14 | 8.695 CC, ES | | |
| 11,800.0 | 7,411.0 | 7,413.0 | 7,413.0 | 77.1 | 12.9 | -90.00 | 4,123.2 | -156.2 | 769.1 | 679.8 | 89.24 | 8.618 | | |
| 11,900.0 | 7,411.0 | 7,413.0 | 7,413.0 | 78.8 | 12.9 | -90.00 | 4,123.2 | -156.2 | 783.7 | 692.7 | 90.97 | 8.615 SF | | |
| 11,970.0 | 7,411.0 | 7,413.0 | 7,413.0 | 80.0 | 12.9 | -90.00 | 4,123.2 | -156.2 | 801.2 | 709.0 | 92.18 | 8.692 | | |

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|-----------------------------|-------------------------------------|-----------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Mathews 4G-14H |
| Project: | DJ Wattenberg | TVD Reference: | Well @ 5117.0ft (Ensign) |
| Reference Site: | SWSE S14 T1N-R66W (Mathews) | MD Reference: | Well @ 5117.0ft (Ensign) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Mathews 4G-14H | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | HZ | Database: | USA EDM 5000 Multi Users DB |
| Reference Design: | Plan #3 | Offset TVD Reference: | Offset Datum |

| Offset Design | | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|-----------------------|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|------------------|--------------|--------------------|--------|
| Survey Program: 0-MWD | | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | Total | Separation | Warning | |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Uncertainty Axis | Factor | | |
| 0.0 | 0.0 | 14.0 | 14.0 | 0.0 | 0.0 | -89.84 | 3.7 | -1,352.2 | 1,352.3 | | | | | |
| 100.0 | 100.0 | 114.0 | 114.0 | 0.2 | 0.2 | -89.84 | 3.7 | -1,352.2 | 1,352.3 | 1,351.9 | 0.33 | 4,121.180 | | |
| 161.2 | 161.2 | 175.2 | 175.2 | 0.3 | 0.3 | -89.84 | 3.7 | -1,352.2 | 1,352.3 | 1,351.7 | 0.54 | 2,495.429 CC | | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | -89.84 | 3.7 | -1,352.2 | 1,352.3 | 1,351.7 | 0.65 | 2,071.721 ES | | |
| 300.0 | 300.0 | 282.7 | 282.7 | 0.5 | 0.5 | 143.83 | 3.0 | -1,353.2 | 1,354.3 | 1,353.3 | 0.97 | 1,391.918 | | |
| 400.0 | 400.0 | 355.1 | 355.0 | 0.7 | 0.6 | 143.77 | 1.2 | -1,355.6 | 1,359.7 | 1,358.4 | 1.28 | 1,062.537 | | |
| 500.0 | 499.9 | 427.1 | 426.9 | 0.9 | 0.8 | 143.67 | -1.7 | -1,359.5 | 1,368.6 | 1,367.0 | 1.59 | 859.395 | | |
| 600.0 | 599.7 | 500.0 | 499.5 | 1.1 | 0.9 | 143.54 | -5.7 | -1,364.8 | 1,380.8 | 1,378.9 | 1.92 | 720.850 | | |
| 700.0 | 699.4 | 569.8 | 568.8 | 1.3 | 1.1 | 143.38 | -10.5 | -1,371.4 | 1,396.5 | 1,394.2 | 2.25 | 621.002 | | |
| 800.0 | 798.9 | 640.2 | 638.4 | 1.5 | 1.3 | 143.19 | -16.4 | -1,379.3 | 1,415.4 | 1,412.8 | 2.60 | 545.038 | | |
| 900.0 | 898.3 | 700.0 | 697.5 | 1.8 | 1.5 | 142.98 | -22.3 | -1,387.2 | 1,437.7 | 1,434.8 | 2.93 | 489.988 | | |
| 1,000.0 | 997.4 | 778.3 | 774.4 | 2.0 | 1.8 | 142.71 | -31.0 | -1,399.0 | 1,463.2 | 1,459.9 | 3.34 | 438.179 | | |
| 1,100.0 | 1,096.3 | 865.2 | 859.4 | 2.3 | 2.1 | 142.42 | -41.7 | -1,413.4 | 1,491.5 | 1,487.7 | 3.78 | 394.756 | | |
| 1,200.0 | 1,194.9 | 960.7 | 952.8 | 2.7 | 2.5 | 142.15 | -53.6 | -1,429.3 | 1,521.2 | 1,516.9 | 4.25 | 357.742 | | |
| 1,300.0 | 1,293.4 | 1,055.9 | 1,046.0 | 3.0 | 2.9 | 142.09 | -65.4 | -1,445.2 | 1,551.6 | 1,546.8 | 4.74 | 327.450 | | |
| 1,400.0 | 1,391.9 | 1,151.2 | 1,139.2 | 3.3 | 3.3 | 142.04 | -77.2 | -1,461.1 | 1,581.9 | 1,576.7 | 5.23 | 302.522 | | |
| 1,500.0 | 1,490.4 | 1,246.5 | 1,232.3 | 3.7 | 3.6 | 141.98 | -89.0 | -1,477.0 | 1,612.3 | 1,606.6 | 5.72 | 281.700 | | |
| 1,600.0 | 1,588.9 | 1,341.7 | 1,325.5 | 4.0 | 4.0 | 141.93 | -100.8 | -1,492.9 | 1,642.7 | 1,636.4 | 6.22 | 264.077 | | |
| 1,700.0 | 1,687.3 | 1,437.0 | 1,418.7 | 4.4 | 4.4 | 141.88 | -112.6 | -1,508.8 | 1,673.0 | 1,666.3 | 6.72 | 248.985 | | |
| 1,800.0 | 1,785.8 | 1,532.3 | 1,511.9 | 4.7 | 4.8 | 141.83 | -124.4 | -1,524.7 | 1,703.4 | 1,696.2 | 7.22 | 235.928 | | |
| 1,900.0 | 1,884.3 | 1,627.5 | 1,605.1 | 5.0 | 5.2 | 141.79 | -136.2 | -1,540.6 | 1,733.8 | 1,726.1 | 7.72 | 224.526 | | |
| 2,000.0 | 1,982.8 | 1,722.8 | 1,698.3 | 5.4 | 5.5 | 141.74 | -148.0 | -1,556.5 | 1,764.2 | 1,755.9 | 8.22 | 214.489 | | |
| 2,100.0 | 2,081.3 | 1,818.1 | 1,791.5 | 5.7 | 5.9 | 141.70 | -159.8 | -1,572.4 | 1,794.5 | 1,785.8 | 8.73 | 205.588 | | |
| 2,200.0 | 2,179.7 | 1,913.3 | 1,884.6 | 6.1 | 6.3 | 141.66 | -171.6 | -1,588.3 | 1,824.9 | 1,815.7 | 9.23 | 197.644 | | |
| 2,300.0 | 2,278.2 | 2,008.6 | 1,977.8 | 6.4 | 6.7 | 141.61 | -183.5 | -1,604.2 | 1,855.3 | 1,845.5 | 9.74 | 190.511 | | |
| 2,400.0 | 2,376.7 | 2,103.9 | 2,071.0 | 6.8 | 7.1 | 141.58 | -195.3 | -1,620.2 | 1,885.7 | 1,875.4 | 10.24 | 184.073 | | |
| 2,500.0 | 2,475.2 | 2,199.1 | 2,164.2 | 7.1 | 7.5 | 141.54 | -207.1 | -1,636.1 | 1,916.0 | 1,905.3 | 10.75 | 178.233 | | |
| 2,600.0 | 2,573.7 | 2,294.4 | 2,257.4 | 7.5 | 7.9 | 141.50 | -218.9 | -1,652.0 | 1,946.4 | 1,935.1 | 11.26 | 172.912 | | |
| 2,700.0 | 2,672.1 | 2,389.7 | 2,350.6 | 7.8 | 8.2 | 141.47 | -230.7 | -1,667.9 | 1,976.8 | 1,965.0 | 11.76 | 168.046 | | |
| 2,800.0 | 2,770.6 | 2,484.9 | 2,443.7 | 8.2 | 8.6 | 141.43 | -242.5 | -1,683.8 | 2,007.2 | 1,994.9 | 12.27 | 163.577 | | |
| 2,900.0 | 2,869.1 | 2,580.2 | 2,536.9 | 8.5 | 9.0 | 141.40 | -254.3 | -1,699.7 | 2,037.5 | 2,024.8 | 12.78 | 159.460 | | |
| 3,000.0 | 2,967.6 | 2,675.5 | 2,630.1 | 8.9 | 9.4 | 141.36 | -266.1 | -1,715.6 | 2,067.9 | 2,054.6 | 13.29 | 155.656 | | |
| 3,100.0 | 3,066.1 | 2,770.7 | 2,723.3 | 9.2 | 9.8 | 141.33 | -277.9 | -1,731.5 | 2,098.3 | 2,084.5 | 13.79 | 152.129 | | |
| 3,200.0 | 3,164.5 | 2,866.0 | 2,816.5 | 9.6 | 10.2 | 141.30 | -289.7 | -1,747.4 | 2,128.7 | 2,114.4 | 14.30 | 148.851 | | |
| 3,300.0 | 3,263.0 | 2,961.3 | 2,909.7 | 9.9 | 10.6 | 141.27 | -301.5 | -1,763.3 | 2,159.1 | 2,144.3 | 14.81 | 145.796 | | |
| 3,400.0 | 3,361.5 | 3,056.5 | 3,002.9 | 10.3 | 11.0 | 141.24 | -313.4 | -1,779.2 | 2,189.5 | 2,174.1 | 15.32 | 142.943 | | |
| 3,500.0 | 3,460.0 | 3,151.8 | 3,096.0 | 10.6 | 11.3 | 141.22 | -325.2 | -1,795.1 | 2,219.8 | 2,204.0 | 15.83 | 140.273 | | |
| 3,600.0 | 3,558.5 | 3,247.1 | 3,189.2 | 11.0 | 11.7 | 141.19 | -337.0 | -1,811.0 | 2,250.2 | 2,233.9 | 16.33 | 137.767 | | |
| 3,700.0 | 3,657.0 | 3,342.3 | 3,282.4 | 11.3 | 12.1 | 141.16 | -348.8 | -1,826.9 | 2,280.6 | 2,263.8 | 16.84 | 135.412 | | |
| 3,800.0 | 3,755.4 | 3,437.6 | 3,375.6 | 11.7 | 12.5 | 141.13 | -360.6 | -1,842.8 | 2,311.0 | 2,293.6 | 17.35 | 133.194 | | |
| 3,900.0 | 3,853.9 | 3,532.9 | 3,468.8 | 12.0 | 12.9 | 141.11 | -372.4 | -1,858.7 | 2,341.4 | 2,323.5 | 17.86 | 131.103 | | |
| 4,000.0 | 3,952.4 | 3,628.1 | 3,562.0 | 12.4 | 13.3 | 141.08 | -384.2 | -1,874.6 | 2,371.8 | 2,353.4 | 18.37 | 129.126 | | |
| 4,100.0 | 4,050.9 | 3,730.9 | 3,662.5 | 12.7 | 13.7 | 141.06 | -396.9 | -1,891.7 | 2,402.1 | 2,383.2 | 18.89 | 127.137 | | |
| 4,200.0 | 4,149.4 | 4,044.1 | 3,971.9 | 13.1 | 14.6 | 141.24 | -425.0 | -1,929.5 | 2,427.9 | 2,408.1 | 19.82 | 122.516 | | |
| 4,300.0 | 4,247.8 | 4,334.4 | 4,261.8 | 13.4 | 15.0 | 141.81 | -432.9 | -1,940.2 | 2,445.0 | 2,424.5 | 20.51 | 119.222 | | |
| 4,400.0 | 4,346.3 | 4,432.9 | 4,360.3 | 13.8 | 15.1 | 142.05 | -432.9 | -1,940.2 | 2,458.7 | 2,437.8 | 20.89 | 117.682 | | |
| 4,500.0 | 4,444.8 | 4,531.4 | 4,458.8 | 14.1 | 15.2 | 142.30 | -432.9 | -1,940.2 | 2,472.5 | 2,451.2 | 21.28 | 116.206 | | |
| 4,560.0 | 4,503.9 | 4,590.4 | 4,517.9 | 14.4 | 15.2 | 142.45 | -432.9 | -1,940.2 | 2,480.8 | 2,459.3 | 21.51 | 115.350 | | |
| 4,600.0 | 4,543.3 | 4,629.9 | 4,557.3 | 14.5 | 15.3 | 142.57 | -432.9 | -1,940.2 | 2,486.2 | 2,464.6 | 21.67 | 114.719 | | |
| 4,700.0 | 4,642.0 | 4,728.6 | 4,656.0 | 14.8 | 15.3 | 142.87 | -432.9 | -1,940.2 | 2,498.9 | 2,476.8 | 22.07 | 113.222 | | |
| 4,800.0 | 4,741.0 | 4,827.6 | 4,755.0 | 15.1 | 15.4 | 143.13 | -432.9 | -1,940.2 | 2,510.2 | 2,487.7 | 22.45 | 111.800 | | |
| 4,900.0 | 4,840.3 | 4,926.8 | 4,854.3 | 15.4 | 15.5 | 143.36 | -432.9 | -1,940.2 | 2,520.1 | 2,497.3 | 22.82 | 110.443 | | |

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|-----------------------------|-------------------------------------|-----------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Mathews 4G-14H |
| Project: | DJ Wattenberg | TVD Reference: | Well @ 5117.0ft (Ensign) |
| Reference Site: | SWSE S14 T1N-R66W (Mathews) | MD Reference: | Well @ 5117.0ft (Ensign) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Mathews 4G-14H | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | HZ | Database: | USA EDM 5000 Multi Users DB |
| Reference Design: | Plan #3 | Offset TVD Reference: | Offset Datum |

| Offset Design | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|-----------------------|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|------------------|--------------------|--------|
| Survey Program: O-MWD | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | Distance | | Total | | Separation | | Warning | |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Uncertainty Axis | | |
| 5,000.0 | 4,939.7 | 5,026.3 | 4,953.7 | 15.6 | 15.6 | 143.56 | -432.9 | -1,940.2 | 2,528.7 | 2,505.5 | 23.17 | 109.141 | |
| 5,100.0 | 5,039.3 | 5,125.9 | 5,053.3 | 15.8 | 15.7 | 143.72 | -432.9 | -1,940.2 | 2,535.8 | 2,512.3 | 23.50 | 107.887 | |
| 5,200.0 | 5,139.1 | 5,225.6 | 5,153.1 | 16.0 | 15.8 | 143.85 | -432.9 | -1,940.2 | 2,541.6 | 2,517.8 | 23.83 | 106.674 | |
| 5,300.0 | 5,238.9 | 5,325.5 | 5,252.9 | 16.2 | 15.9 | 143.94 | -432.9 | -1,940.2 | 2,546.0 | 2,521.8 | 24.13 | 105.496 | |
| 5,400.0 | 5,338.8 | 5,425.4 | 5,352.8 | 16.3 | 16.0 | 144.01 | -432.9 | -1,940.2 | 2,548.9 | 2,524.5 | 24.43 | 104.349 | |
| 5,500.0 | 5,438.8 | 5,525.4 | 5,452.8 | 16.4 | 16.1 | 144.04 | -432.9 | -1,940.2 | 2,550.5 | 2,525.8 | 24.71 | 103.227 | |
| 5,560.0 | 5,498.8 | 5,585.4 | 5,512.8 | 16.5 | 16.2 | -89.65 | -432.9 | -1,940.2 | 2,550.8 | 2,525.9 | 24.87 | 102.558 | |
| 5,600.0 | 5,538.8 | 5,625.4 | 5,552.8 | 16.5 | 16.2 | -89.65 | -432.9 | -1,940.2 | 2,550.8 | 2,525.8 | 24.98 | 102.110 | |
| 5,700.0 | 5,638.8 | 5,725.4 | 5,652.8 | 16.6 | 16.3 | -89.65 | -432.9 | -1,940.2 | 2,550.8 | 2,525.5 | 25.25 | 101.002 | |
| 5,800.0 | 5,738.8 | 5,825.4 | 5,752.8 | 16.7 | 16.4 | -89.65 | -432.9 | -1,940.2 | 2,550.8 | 2,525.2 | 25.53 | 99.911 | |
| 5,900.0 | 5,838.8 | 5,925.4 | 5,852.8 | 16.8 | 16.6 | -89.65 | -432.9 | -1,940.2 | 2,550.8 | 2,524.9 | 25.81 | 98.836 | |
| 6,000.0 | 5,938.8 | 6,025.4 | 5,952.8 | 16.9 | 16.7 | -89.65 | -432.9 | -1,940.2 | 2,550.8 | 2,524.7 | 26.09 | 97.777 | |
| 6,100.0 | 6,038.8 | 6,125.4 | 6,052.8 | 17.1 | 16.8 | -89.65 | -432.9 | -1,940.2 | 2,550.8 | 2,524.4 | 26.37 | 96.735 | |
| 6,200.0 | 6,138.8 | 6,225.4 | 6,152.8 | 17.2 | 16.9 | -89.65 | -432.9 | -1,940.2 | 2,550.8 | 2,524.1 | 26.65 | 95.709 | |
| 6,300.0 | 6,238.8 | 6,325.4 | 6,252.8 | 17.3 | 17.0 | -89.65 | -432.9 | -1,940.2 | 2,550.8 | 2,523.8 | 26.94 | 94.699 | |
| 6,400.0 | 6,338.8 | 6,425.4 | 6,352.8 | 17.4 | 17.1 | -89.65 | -432.9 | -1,940.2 | 2,550.8 | 2,523.5 | 27.22 | 93.705 | |
| 6,500.0 | 6,438.8 | 6,525.4 | 6,452.8 | 17.5 | 17.2 | -89.65 | -432.9 | -1,940.2 | 2,550.8 | 2,523.2 | 27.51 | 92.727 | |
| 6,600.0 | 6,538.8 | 6,625.4 | 6,552.8 | 17.6 | 17.3 | -89.65 | -432.9 | -1,940.2 | 2,550.8 | 2,523.0 | 27.80 | 91.764 | |
| 6,700.0 | 6,638.8 | 6,725.4 | 6,652.8 | 17.7 | 17.5 | -89.65 | -432.9 | -1,940.2 | 2,550.8 | 2,522.7 | 28.09 | 90.817 | |
| 6,737.3 | 6,676.1 | 6,762.7 | 6,690.1 | 17.8 | 17.5 | -89.65 | -432.9 | -1,940.2 | 2,550.8 | 2,522.6 | 28.20 | 90.467 | |
| 6,756.0 | 6,694.8 | 6,781.4 | 6,708.8 | 17.8 | 17.5 | -89.65 | -432.9 | -1,940.2 | 2,550.8 | 2,522.5 | 28.25 | 90.293 | |
| 6,800.0 | 6,738.8 | 6,824.5 | 6,751.9 | 17.8 | 17.6 | -89.65 | -431.6 | -1,940.2 | 2,550.8 | 2,522.4 | 28.32 | 90.055 | |
| 6,850.0 | 6,788.5 | 6,873.4 | 6,800.6 | 17.8 | 17.6 | -89.65 | -427.0 | -1,940.2 | 2,550.8 | 2,522.4 | 28.35 | 89.977 | |
| 6,900.0 | 6,837.8 | 6,922.4 | 6,848.9 | 17.8 | 17.6 | -89.65 | -419.1 | -1,940.2 | 2,550.8 | 2,522.4 | 28.31 | 90.085 | |
| 6,950.0 | 6,886.5 | 6,971.3 | 6,896.6 | 17.8 | 17.5 | -89.66 | -407.9 | -1,940.2 | 2,550.7 | 2,522.5 | 28.23 | 90.366 | |
| 7,000.0 | 6,934.1 | 7,020.3 | 6,943.4 | 17.7 | 17.5 | -89.67 | -393.4 | -1,940.2 | 2,550.7 | 2,522.7 | 28.09 | 90.803 | |
| 7,050.0 | 6,980.6 | 7,069.4 | 6,989.1 | 17.6 | 17.4 | -89.68 | -375.8 | -1,940.2 | 2,550.7 | 2,522.8 | 27.92 | 91.375 | |
| 7,100.0 | 7,025.7 | 7,118.4 | 7,033.5 | 17.6 | 17.3 | -89.69 | -355.1 | -1,940.2 | 2,550.7 | 2,523.0 | 27.71 | 92.058 | |
| 7,150.0 | 7,069.2 | 7,167.5 | 7,076.5 | 17.5 | 17.2 | -89.70 | -331.3 | -1,940.2 | 2,550.7 | 2,523.2 | 27.48 | 92.823 | |
| 7,200.0 | 7,110.9 | 7,216.6 | 7,117.7 | 17.4 | 17.1 | -89.71 | -304.7 | -1,940.2 | 2,550.7 | 2,523.5 | 27.24 | 93.634 | |
| 7,250.0 | 7,150.6 | 7,265.7 | 7,157.1 | 17.3 | 17.1 | -89.73 | -275.3 | -1,940.2 | 2,550.7 | 2,523.7 | 27.01 | 94.450 | |
| 7,300.0 | 7,188.0 | 7,314.9 | 7,194.4 | 17.2 | 17.0 | -89.74 | -243.2 | -1,940.2 | 2,550.7 | 2,523.9 | 26.79 | 95.224 | |
| 7,350.0 | 7,223.0 | 7,364.2 | 7,229.4 | 17.1 | 16.9 | -89.76 | -208.6 | -1,940.2 | 2,550.7 | 2,524.1 | 26.60 | 95.902 | |
| 7,400.0 | 7,255.5 | 7,413.5 | 7,262.0 | 17.0 | 16.8 | -89.78 | -171.6 | -1,940.2 | 2,550.7 | 2,524.2 | 26.45 | 96.429 | |
| 7,450.0 | 7,285.2 | 7,462.8 | 7,292.0 | 17.0 | 16.8 | -89.80 | -132.4 | -1,940.2 | 2,550.7 | 2,524.3 | 26.36 | 96.750 | |
| 7,500.0 | 7,312.0 | 7,512.3 | 7,319.3 | 17.0 | 16.8 | -89.82 | -91.2 | -1,940.2 | 2,550.7 | 2,524.3 | 26.35 | 96.811 | |
| 7,550.0 | 7,335.9 | 7,561.7 | 7,343.7 | 17.0 | 16.8 | -89.84 | -48.2 | -1,940.2 | 2,550.7 | 2,524.3 | 26.41 | 96.569 | |
| 7,600.0 | 7,356.6 | 7,611.3 | 7,365.1 | 17.1 | 16.9 | -89.86 | -3.5 | -1,940.1 | 2,550.7 | 2,524.1 | 26.57 | 95.994 | |
| 7,650.0 | 7,374.1 | 7,660.9 | 7,383.3 | 17.2 | 16.9 | -89.88 | 42.6 | -1,940.1 | 2,550.6 | 2,523.8 | 26.83 | 95.073 | |
| 7,700.0 | 7,388.3 | 7,710.6 | 7,398.4 | 17.3 | 17.1 | -89.91 | 89.9 | -1,940.1 | 2,550.6 | 2,523.5 | 27.19 | 93.812 | |
| 7,750.0 | 7,399.1 | 7,760.3 | 7,410.2 | 17.5 | 17.2 | -89.93 | 138.2 | -1,940.1 | 2,550.6 | 2,523.0 | 27.65 | 92.234 | |
| 7,800.0 | 7,406.4 | 7,810.1 | 7,418.5 | 17.7 | 17.5 | -89.96 | 187.3 | -1,940.1 | 2,550.6 | 2,522.4 | 28.22 | 90.379 | |
| 7,850.0 | 7,410.3 | 7,860.0 | 7,423.5 | 18.0 | 17.7 | -89.98 | 237.0 | -1,940.1 | 2,550.6 | 2,521.7 | 28.89 | 88.299 | |
| 7,881.0 | 7,411.0 | 7,891.0 | 7,424.8 | 18.1 | 17.9 | -90.00 | 267.9 | -1,940.1 | 2,550.6 | 2,521.3 | 29.34 | 86.922 | |
| 7,900.0 | 7,411.0 | 7,910.0 | 7,425.0 | 18.3 | 18.0 | -90.00 | 286.9 | -1,940.1 | 2,550.6 | 2,521.0 | 29.64 | 86.052 | |
| 8,000.0 | 7,411.0 | 8,010.0 | 7,425.0 | 19.0 | 18.7 | -90.00 | 386.9 | -1,940.1 | 2,550.6 | 2,519.2 | 31.39 | 81.243 | |
| 8,100.0 | 7,411.0 | 8,110.0 | 7,425.0 | 19.8 | 19.6 | -90.00 | 486.9 | -1,940.1 | 2,550.6 | 2,517.2 | 33.42 | 76.314 | |
| 8,200.0 | 7,411.0 | 8,210.0 | 7,425.0 | 20.8 | 20.6 | -90.00 | 586.9 | -1,940.1 | 2,550.6 | 2,514.9 | 35.68 | 71.483 | |
| 8,300.0 | 7,411.0 | 8,310.0 | 7,425.0 | 21.8 | 21.6 | -90.00 | 686.9 | -1,940.1 | 2,550.6 | 2,512.4 | 38.13 | 66.894 | |
| 8,400.0 | 7,411.0 | 8,410.0 | 7,425.0 | 23.0 | 22.8 | -90.00 | 786.9 | -1,940.1 | 2,550.5 | 2,509.8 | 40.73 | 62.618 | |
| 8,500.0 | 7,411.0 | 8,510.0 | 7,425.0 | 24.2 | 24.0 | -90.00 | 886.9 | -1,940.1 | 2,550.5 | 2,507.1 | 43.46 | 58.684 | |
| 8,600.0 | 7,411.0 | 8,610.0 | 7,425.0 | 25.5 | 25.3 | -90.00 | 986.9 | -1,940.1 | 2,550.5 | 2,504.2 | 46.30 | 55.089 | |

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|-----------------------------|-------------------------------------|-----------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Mathews 4G-14H |
| Project: | DJ Wattenberg | TVD Reference: | Well @ 5117.0ft (Ensign) |
| Reference Site: | SWSE S14 T1N-R66W (Mathews) | MD Reference: | Well @ 5117.0ft (Ensign) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Mathews 4G-14H | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | HZ | Database: | USA EDM 5000 Multi Users DB |
| Reference Design: | Plan #3 | Offset TVD Reference: | Offset Datum |

| Offset Design SWSE S14 T1N-R66W (Mathews) - Mathews 4A-14H - HZ - Plan #3 | | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|---------------------------------------------------------------------------|------------------------|------------------------|------------------------|-------------------|----------------|-----------------------------|-----------------------------------------|---------------|----------------------------|-----------------------------|---------------------|----------------------|--------------------|--------|
| Survey Program: 0-MWD | | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | Total | | Warning | |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Uncertainty Axis | Separation Factor | | |
| 8,700.0 | 7,411.0 | 8,710.0 | 7,425.0 | 26.8 | 26.6 | -90.00 | 1,086.9 | -1,940.1 | 2,550.5 | 2,501.3 | 49.22 | 51.818 | | |
| 8,800.0 | 7,411.0 | 8,810.0 | 7,425.0 | 28.2 | 28.0 | -90.00 | 1,186.9 | -1,940.1 | 2,550.5 | 2,498.3 | 52.21 | 48.846 | | |
| 8,900.0 | 7,411.0 | 8,910.0 | 7,425.0 | 29.6 | 29.5 | -90.00 | 1,286.9 | -1,940.1 | 2,550.5 | 2,495.2 | 55.27 | 46.146 | | |
| 9,000.0 | 7,411.0 | 9,010.0 | 7,425.0 | 31.1 | 30.9 | -90.00 | 1,386.9 | -1,940.0 | 2,550.5 | 2,492.1 | 58.38 | 43.691 | | |
| 9,100.0 | 7,411.0 | 9,110.0 | 7,425.0 | 32.6 | 32.4 | -90.00 | 1,486.9 | -1,940.0 | 2,550.4 | 2,488.9 | 61.52 | 41.454 | | |
| 9,200.0 | 7,411.0 | 9,210.0 | 7,425.0 | 34.1 | 33.9 | -90.00 | 1,586.9 | -1,940.0 | 2,550.4 | 2,485.7 | 64.71 | 39.413 | | |
| 9,300.0 | 7,411.0 | 9,310.0 | 7,425.0 | 35.6 | 35.5 | -90.00 | 1,686.9 | -1,940.0 | 2,550.4 | 2,482.5 | 67.93 | 37.545 | | |
| 9,400.0 | 7,411.0 | 9,410.0 | 7,425.0 | 37.2 | 37.0 | -90.00 | 1,786.9 | -1,940.0 | 2,550.4 | 2,479.2 | 71.17 | 35.833 | | |
| 9,500.0 | 7,411.0 | 9,510.0 | 7,425.0 | 38.7 | 38.6 | -90.00 | 1,886.9 | -1,940.0 | 2,550.4 | 2,476.0 | 74.44 | 34.259 | | |
| 9,600.0 | 7,411.0 | 9,610.0 | 7,425.0 | 40.3 | 40.2 | -90.00 | 1,986.9 | -1,940.0 | 2,550.4 | 2,472.6 | 77.73 | 32.809 | | |
| 9,700.0 | 7,411.0 | 9,710.0 | 7,425.0 | 41.9 | 41.8 | -90.00 | 2,086.9 | -1,940.0 | 2,550.4 | 2,469.3 | 81.04 | 31.470 | | |
| 9,800.0 | 7,411.0 | 9,810.0 | 7,425.0 | 43.5 | 43.4 | -90.00 | 2,186.9 | -1,940.0 | 2,550.4 | 2,466.0 | 84.37 | 30.230 | | |
| 9,900.0 | 7,411.0 | 9,910.0 | 7,425.0 | 45.2 | 45.0 | -90.00 | 2,286.9 | -1,940.0 | 2,550.3 | 2,462.6 | 87.71 | 29.079 | | |
| 10,000.0 | 7,411.0 | 10,010.0 | 7,425.0 | 46.8 | 46.6 | -90.00 | 2,386.9 | -1,940.0 | 2,550.3 | 2,459.3 | 91.06 | 28.008 | | |
| 10,100.0 | 7,411.0 | 10,110.0 | 7,425.0 | 48.4 | 48.3 | -90.00 | 2,486.9 | -1,940.0 | 2,550.3 | 2,455.9 | 94.42 | 27.010 | | |
| 10,200.0 | 7,411.0 | 10,210.0 | 7,425.0 | 50.1 | 49.9 | -90.00 | 2,586.9 | -1,940.0 | 2,550.3 | 2,452.5 | 97.79 | 26.079 | | |
| 10,300.0 | 7,411.0 | 10,310.0 | 7,425.0 | 51.7 | 51.6 | -90.00 | 2,686.9 | -1,940.0 | 2,550.3 | 2,449.1 | 101.17 | 25.207 | | |
| 10,400.0 | 7,411.0 | 10,410.0 | 7,425.0 | 53.4 | 53.3 | -90.00 | 2,786.9 | -1,940.0 | 2,550.3 | 2,445.7 | 104.57 | 24.389 | | |
| 10,500.0 | 7,411.0 | 10,510.0 | 7,425.0 | 55.1 | 54.9 | -90.00 | 2,886.9 | -1,939.9 | 2,550.3 | 2,442.3 | 107.96 | 23.621 | | |
| 10,600.0 | 7,411.0 | 10,610.0 | 7,425.0 | 56.7 | 56.6 | -90.00 | 2,986.9 | -1,939.9 | 2,550.2 | 2,438.9 | 111.37 | 22.899 | | |
| 10,700.0 | 7,411.0 | 10,710.0 | 7,425.0 | 58.4 | 58.3 | -90.00 | 3,086.9 | -1,939.9 | 2,550.2 | 2,435.5 | 114.78 | 22.219 | | |
| 10,800.0 | 7,411.0 | 10,810.0 | 7,425.0 | 60.1 | 60.0 | -90.00 | 3,186.9 | -1,939.9 | 2,550.2 | 2,432.0 | 118.20 | 21.576 | | |
| 10,900.0 | 7,411.0 | 10,910.0 | 7,425.0 | 61.8 | 61.6 | -90.00 | 3,286.9 | -1,939.9 | 2,550.2 | 2,428.6 | 121.62 | 20.969 | | |
| 11,000.0 | 7,411.0 | 11,010.0 | 7,425.0 | 63.5 | 63.3 | -90.00 | 3,386.9 | -1,939.9 | 2,550.2 | 2,425.1 | 125.05 | 20.394 | | |
| 11,100.0 | 7,411.0 | 11,110.0 | 7,425.0 | 65.1 | 65.0 | -90.00 | 3,486.9 | -1,939.9 | 2,550.2 | 2,421.7 | 128.48 | 19.849 | | |
| 11,200.0 | 7,411.0 | 11,210.0 | 7,425.0 | 66.8 | 66.7 | -90.00 | 3,586.9 | -1,939.9 | 2,550.2 | 2,418.3 | 131.91 | 19.332 | | |
| 11,300.0 | 7,411.0 | 11,310.0 | 7,425.0 | 68.5 | 68.4 | -90.00 | 3,686.9 | -1,939.9 | 2,550.2 | 2,414.8 | 135.35 | 18.841 | | |
| 11,400.0 | 7,411.0 | 11,410.0 | 7,425.0 | 70.2 | 70.1 | -90.00 | 3,786.9 | -1,939.9 | 2,550.1 | 2,411.3 | 138.79 | 18.374 | | |
| 11,500.0 | 7,411.0 | 11,510.0 | 7,425.0 | 71.9 | 71.8 | -90.00 | 3,886.9 | -1,939.9 | 2,550.1 | 2,407.9 | 142.24 | 17.929 | | |
| 11,600.0 | 7,411.0 | 11,610.0 | 7,425.0 | 73.6 | 73.5 | -90.00 | 3,986.9 | -1,939.9 | 2,550.1 | 2,404.4 | 145.69 | 17.504 | | |
| 11,700.0 | 7,411.0 | 11,710.0 | 7,425.0 | 75.4 | 75.2 | -90.00 | 4,086.9 | -1,939.9 | 2,550.1 | 2,401.0 | 149.14 | 17.099 | | |
| 11,800.0 | 7,411.0 | 11,810.0 | 7,425.0 | 77.1 | 77.0 | -90.00 | 4,186.9 | -1,939.9 | 2,550.1 | 2,397.5 | 152.59 | 16.712 | | |
| 11,900.0 | 7,411.0 | 11,910.0 | 7,425.0 | 78.8 | 78.7 | -90.00 | 4,286.9 | -1,939.8 | 2,550.1 | 2,394.0 | 156.05 | 16.342 | | |
| 11,970.0 | 7,411.0 | 11,980.0 | 7,425.0 | 80.0 | 79.9 | -90.00 | 4,356.9 | -1,939.8 | 2,550.1 | 2,391.6 | 158.47 | 16.092 SF | | |

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|-----------------------------|-------------------------------------|-----------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Mathews 4G-14H |
| Project: | DJ Wattenberg | TVD Reference: | Well @ 5117.0ft (Ensign) |
| Reference Site: | SWSE S14 T1N-R66W (Mathews) | MD Reference: | Well @ 5117.0ft (Ensign) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Mathews 4G-14H | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | HZ | Database: | USA EDM 5000 Multi Users DB |
| Reference Design: | Plan #3 | Offset TVD Reference: | Offset Datum |

| Offset Design SWSE S14 T1N-R66W (Mathews) - Mathews 4B-14H - HZ - Plan #3 | | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|---------------------------------------------------------------------------|------------------------|------------------------|------------------------|-------------------|----------------|-----------------------------|-----------------------------------------|---------------|----------------------------|-----------------------------|---------------------|------------------|--------------------|--------|
| Survey Program: O-MWD | | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | Total | Separation | Warning | |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Uncertainty Axis | Factor | | |
| 0.0 | 0.0 | 14.0 | 14.0 | 0.0 | 0.0 | -89.84 | 3.7 | -1,341.0 | 1,341.1 | | | | | |
| 100.0 | 100.0 | 114.0 | 114.0 | 0.2 | 0.2 | -89.84 | 3.7 | -1,341.0 | 1,341.1 | 1,340.7 | 0.33 | 4,087.051 | | |
| 200.0 | 200.0 | 214.0 | 214.0 | 0.3 | 0.4 | -89.84 | 3.7 | -1,341.0 | 1,341.1 | 1,340.4 | 0.68 | 1,980.325 CC, ES | | |
| 300.0 | 300.0 | 311.9 | 311.9 | 0.5 | 0.5 | 143.87 | 3.7 | -1,341.1 | 1,341.8 | 1,340.7 | 1.02 | 1,311.335 | | |
| 400.0 | 400.0 | 400.0 | 400.0 | 0.7 | 0.7 | 143.85 | 2.1 | -1,341.7 | 1,344.6 | 1,343.2 | 1.36 | 992.233 | | |
| 500.0 | 499.9 | 482.4 | 482.2 | 0.9 | 0.8 | 143.75 | -1.7 | -1,343.2 | 1,349.9 | 1,348.2 | 1.69 | 799.031 | | |
| 600.0 | 599.7 | 567.2 | 566.8 | 1.1 | 1.0 | 143.57 | -7.9 | -1,345.7 | 1,357.7 | 1,355.7 | 2.05 | 662.963 | | |
| 700.0 | 699.4 | 651.5 | 650.6 | 1.3 | 1.2 | 143.31 | -16.3 | -1,349.0 | 1,368.0 | 1,365.6 | 2.43 | 562.512 | | |
| 800.0 | 798.9 | 741.8 | 740.1 | 1.5 | 1.5 | 142.98 | -27.6 | -1,353.5 | 1,380.8 | 1,377.9 | 2.85 | 483.962 | | |
| 900.0 | 898.3 | 840.6 | 837.9 | 1.8 | 1.7 | 142.64 | -40.4 | -1,358.6 | 1,395.1 | 1,391.8 | 3.31 | 421.131 | | |
| 1,000.0 | 997.4 | 939.2 | 935.6 | 2.0 | 2.0 | 142.35 | -53.2 | -1,363.7 | 1,410.8 | 1,407.0 | 3.79 | 372.568 | | |
| 1,100.0 | 1,096.3 | 1,037.6 | 1,033.1 | 2.3 | 2.3 | 142.09 | -65.9 | -1,368.7 | 1,427.9 | 1,423.6 | 4.27 | 334.103 | | |
| 1,200.0 | 1,194.9 | 1,135.9 | 1,130.4 | 2.7 | 2.6 | 141.87 | -78.6 | -1,373.8 | 1,446.3 | 1,441.6 | 4.77 | 302.981 | | |
| 1,300.0 | 1,293.4 | 1,234.0 | 1,227.5 | 3.0 | 2.9 | 141.78 | -91.3 | -1,378.8 | 1,465.5 | 1,460.2 | 5.28 | 277.344 | | |
| 1,400.0 | 1,391.9 | 1,332.2 | 1,324.7 | 3.3 | 3.1 | 141.70 | -104.0 | -1,383.9 | 1,484.6 | 1,478.8 | 5.80 | 256.036 | | |
| 1,500.0 | 1,490.4 | 1,430.3 | 1,421.9 | 3.7 | 3.4 | 141.62 | -116.7 | -1,388.9 | 1,503.7 | 1,497.4 | 6.32 | 238.080 | | |
| 1,600.0 | 1,588.9 | 1,528.4 | 1,519.1 | 4.0 | 3.7 | 141.55 | -129.3 | -1,394.0 | 1,522.9 | 1,516.0 | 6.84 | 222.760 | | |
| 1,700.0 | 1,687.3 | 1,626.6 | 1,616.2 | 4.4 | 4.0 | 141.47 | -142.0 | -1,399.0 | 1,542.0 | 1,534.7 | 7.36 | 209.549 | | |
| 1,800.0 | 1,785.8 | 1,724.7 | 1,713.4 | 4.7 | 4.3 | 141.40 | -154.7 | -1,404.1 | 1,561.2 | 1,553.3 | 7.88 | 198.047 | | |
| 1,900.0 | 1,884.3 | 1,822.8 | 1,810.6 | 5.0 | 4.6 | 141.33 | -167.4 | -1,409.1 | 1,580.3 | 1,571.9 | 8.41 | 187.948 | | |
| 2,000.0 | 1,982.8 | 1,920.9 | 1,907.8 | 5.4 | 4.9 | 141.26 | -180.1 | -1,414.2 | 1,599.5 | 1,590.5 | 8.93 | 179.013 | | |
| 2,100.0 | 2,081.3 | 2,019.1 | 2,004.9 | 5.7 | 5.2 | 141.19 | -192.8 | -1,419.2 | 1,618.6 | 1,609.1 | 9.46 | 171.054 | | |
| 2,200.0 | 2,179.7 | 2,117.2 | 2,102.1 | 6.1 | 5.5 | 141.13 | -205.5 | -1,424.3 | 1,637.8 | 1,627.8 | 9.99 | 163.921 | | |
| 2,300.0 | 2,278.2 | 2,215.3 | 2,199.3 | 6.4 | 5.8 | 141.06 | -218.2 | -1,429.3 | 1,656.9 | 1,646.4 | 10.52 | 157.494 | | |
| 2,400.0 | 2,376.7 | 2,313.5 | 2,296.5 | 6.8 | 6.1 | 141.00 | -230.9 | -1,434.4 | 1,676.1 | 1,665.0 | 11.05 | 151.673 | | |
| 2,500.0 | 2,475.2 | 2,411.6 | 2,393.6 | 7.1 | 6.3 | 140.94 | -243.5 | -1,439.4 | 1,695.2 | 1,683.7 | 11.58 | 146.378 | | |
| 2,600.0 | 2,573.7 | 2,509.7 | 2,490.8 | 7.5 | 6.6 | 140.88 | -256.2 | -1,444.5 | 1,714.4 | 1,702.3 | 12.11 | 141.540 | | |
| 2,700.0 | 2,672.1 | 2,607.9 | 2,588.0 | 7.8 | 6.9 | 140.82 | -268.9 | -1,449.5 | 1,733.6 | 1,720.9 | 12.64 | 137.104 | | |
| 2,800.0 | 2,770.6 | 2,706.0 | 2,685.2 | 8.2 | 7.2 | 140.76 | -281.6 | -1,454.6 | 1,752.7 | 1,739.5 | 13.18 | 133.021 | | |
| 2,900.0 | 2,869.1 | 2,804.1 | 2,782.4 | 8.5 | 7.5 | 140.71 | -294.3 | -1,459.6 | 1,771.9 | 1,758.2 | 13.71 | 129.251 | | |
| 3,000.0 | 2,967.6 | 2,902.3 | 2,879.5 | 8.9 | 7.8 | 140.65 | -307.0 | -1,464.7 | 1,791.1 | 1,776.8 | 14.24 | 125.760 | | |
| 3,100.0 | 3,066.1 | 3,000.4 | 2,976.7 | 9.2 | 8.1 | 140.60 | -319.7 | -1,469.7 | 1,810.2 | 1,795.4 | 14.78 | 122.518 | | |
| 3,200.0 | 3,164.5 | 3,098.5 | 3,073.9 | 9.6 | 8.4 | 140.54 | -332.4 | -1,474.8 | 1,829.4 | 1,814.1 | 15.31 | 119.500 | | |
| 3,300.0 | 3,263.0 | 3,196.7 | 3,171.1 | 9.9 | 8.7 | 140.49 | -345.1 | -1,479.8 | 1,848.6 | 1,832.7 | 15.84 | 116.683 | | |
| 3,400.0 | 3,361.5 | 3,294.8 | 3,268.2 | 10.3 | 9.0 | 140.44 | -357.7 | -1,484.9 | 1,867.7 | 1,851.4 | 16.38 | 114.047 | | |
| 3,500.0 | 3,460.0 | 3,392.9 | 3,365.4 | 10.6 | 9.3 | 140.39 | -370.4 | -1,490.0 | 1,886.9 | 1,870.0 | 16.91 | 111.577 | | |
| 3,600.0 | 3,558.5 | 3,491.0 | 3,462.6 | 11.0 | 9.6 | 140.34 | -383.1 | -1,495.0 | 1,906.1 | 1,888.6 | 17.45 | 109.256 | | |
| 3,700.0 | 3,657.0 | 3,589.2 | 3,559.8 | 11.3 | 9.9 | 140.30 | -395.8 | -1,500.1 | 1,925.3 | 1,907.3 | 17.98 | 107.073 | | |
| 3,800.0 | 3,755.4 | 3,690.2 | 3,659.8 | 11.7 | 10.2 | 140.25 | -408.9 | -1,505.2 | 1,944.4 | 1,925.9 | 18.52 | 104.973 | | |
| 3,900.0 | 3,853.9 | 3,827.4 | 3,796.2 | 12.0 | 10.5 | 140.29 | -423.1 | -1,510.9 | 1,962.5 | 1,943.4 | 19.09 | 102.804 | | |
| 4,000.0 | 3,952.4 | 3,965.2 | 3,933.7 | 12.4 | 10.7 | 140.50 | -431.3 | -1,514.2 | 1,978.6 | 1,959.0 | 19.57 | 101.078 | | |
| 4,100.0 | 4,050.9 | 4,096.5 | 4,064.9 | 12.7 | 10.9 | 140.86 | -433.5 | -1,515.0 | 1,992.8 | 1,972.8 | 19.98 | 99.726 | | |
| 4,200.0 | 4,149.4 | 4,195.0 | 4,163.4 | 13.1 | 11.0 | 141.17 | -433.5 | -1,515.0 | 2,006.4 | 1,986.0 | 20.34 | 98.628 | | |
| 4,300.0 | 4,247.8 | 4,293.4 | 4,261.8 | 13.4 | 11.1 | 141.48 | -433.5 | -1,515.0 | 2,020.0 | 1,999.3 | 20.70 | 97.574 | | |
| 4,400.0 | 4,346.3 | 4,391.9 | 4,360.3 | 13.8 | 11.2 | 141.78 | -433.5 | -1,515.0 | 2,033.7 | 2,012.6 | 21.06 | 96.562 | | |
| 4,500.0 | 4,444.8 | 4,490.4 | 4,458.8 | 14.1 | 11.4 | 142.08 | -433.5 | -1,515.0 | 2,047.5 | 2,026.0 | 21.42 | 95.589 | | |
| 4,560.0 | 4,503.9 | 4,549.5 | 4,517.9 | 14.4 | 11.4 | 142.26 | -433.5 | -1,515.0 | 2,055.7 | 2,034.1 | 21.63 | 95.023 | | |
| 4,600.0 | 4,543.3 | 4,588.9 | 4,557.3 | 14.5 | 11.5 | 142.41 | -433.5 | -1,515.0 | 2,061.2 | 2,039.4 | 21.78 | 94.627 | | |
| 4,700.0 | 4,642.0 | 4,687.6 | 4,656.0 | 14.8 | 11.6 | 142.75 | -433.5 | -1,515.0 | 2,073.8 | 2,051.6 | 22.14 | 93.671 | | |
| 4,800.0 | 4,741.0 | 4,786.6 | 4,755.0 | 15.1 | 11.7 | 143.05 | -433.5 | -1,515.0 | 2,085.1 | 2,062.6 | 22.48 | 92.737 | | |
| 4,900.0 | 4,840.3 | 4,885.9 | 4,854.3 | 15.4 | 11.8 | 143.31 | -433.5 | -1,515.0 | 2,095.0 | 2,072.2 | 22.82 | 91.817 | | |
| 5,000.0 | 4,939.7 | 4,985.3 | 4,953.7 | 15.6 | 12.0 | 143.54 | -433.5 | -1,515.0 | 2,103.5 | 2,080.4 | 23.14 | 90.909 | | |

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|-----------------------------|-------------------------------------|-----------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Mathews 4G-14H |
| Project: | DJ Wattenberg | TVD Reference: | Well @ 5117.0ft (Ensign) |
| Reference Site: | SWSE S14 T1N-R66W (Mathews) | MD Reference: | Well @ 5117.0ft (Ensign) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Mathews 4G-14H | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | HZ | Database: | USA EDM 5000 Multi Users DB |
| Reference Design: | Plan #3 | Offset TVD Reference: | Offset Datum |

| Offset Design | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|-----------------------|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|------------------------|--------------------|---------|
| Survey Program: 0-MWD | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | Distance | | | | | | | |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
| 5,100.0 | 5,039.3 | 5,084.9 | 5,053.3 | 15.8 | 12.1 | 143.72 | -433.5 | -1,515.0 | 2,110.7 | 2,087.2 | 23.45 | 90.009 | |
| 5,200.0 | 5,139.1 | 5,184.7 | 5,153.1 | 16.0 | 12.2 | 143.87 | -433.5 | -1,515.0 | 2,116.5 | 2,092.7 | 23.75 | 89.112 | |
| 5,300.0 | 5,238.9 | 5,284.5 | 5,252.9 | 16.2 | 12.3 | 143.98 | -433.5 | -1,515.0 | 2,120.8 | 2,096.8 | 24.04 | 88.215 | |
| 5,400.0 | 5,338.8 | 5,384.4 | 5,352.8 | 16.3 | 12.5 | 144.06 | -433.5 | -1,515.0 | 2,123.8 | 2,099.5 | 24.32 | 87.318 | |
| 5,500.0 | 5,438.8 | 5,484.4 | 5,452.8 | 16.4 | 12.6 | 144.10 | -433.5 | -1,515.0 | 2,125.4 | 2,100.8 | 24.59 | 86.417 | |
| 5,560.0 | 5,498.8 | 5,544.4 | 5,512.8 | 16.5 | 12.7 | -89.60 | -433.5 | -1,515.0 | 2,125.6 | 2,100.9 | 24.75 | 85.870 | |
| 5,600.0 | 5,538.8 | 5,584.4 | 5,552.8 | 16.5 | 12.7 | -89.60 | -433.5 | -1,515.0 | 2,125.6 | 2,100.8 | 24.86 | 85.493 | |
| 5,700.0 | 5,638.8 | 5,684.4 | 5,652.8 | 16.6 | 12.9 | -89.60 | -433.5 | -1,515.0 | 2,125.6 | 2,100.5 | 25.14 | 84.560 | |
| 5,800.0 | 5,738.8 | 5,784.4 | 5,752.8 | 16.7 | 13.0 | -89.60 | -433.5 | -1,515.0 | 2,125.6 | 2,100.2 | 25.41 | 83.641 | |
| 5,900.0 | 5,838.8 | 5,884.4 | 5,852.8 | 16.8 | 13.1 | -89.60 | -433.5 | -1,515.0 | 2,125.6 | 2,099.9 | 25.69 | 82.736 | |
| 6,000.0 | 5,938.8 | 5,984.4 | 5,952.8 | 16.9 | 13.3 | -89.60 | -433.5 | -1,515.0 | 2,125.6 | 2,099.6 | 25.97 | 81.845 | |
| 6,100.0 | 6,038.8 | 6,084.4 | 6,052.8 | 17.1 | 13.4 | -89.60 | -433.5 | -1,515.0 | 2,125.6 | 2,099.4 | 26.25 | 80.968 | |
| 6,200.0 | 6,138.8 | 6,184.4 | 6,152.8 | 17.2 | 13.6 | -89.60 | -433.5 | -1,515.0 | 2,125.6 | 2,099.1 | 26.54 | 80.105 | |
| 6,300.0 | 6,238.8 | 6,284.4 | 6,252.8 | 17.3 | 13.7 | -89.60 | -433.5 | -1,515.0 | 2,125.6 | 2,098.8 | 26.82 | 79.255 | |
| 6,400.0 | 6,338.8 | 6,384.4 | 6,352.8 | 17.4 | 13.8 | -89.60 | -433.5 | -1,515.0 | 2,125.6 | 2,098.5 | 27.11 | 78.419 | |
| 6,500.0 | 6,438.8 | 6,484.4 | 6,452.8 | 17.5 | 14.0 | -89.60 | -433.5 | -1,515.0 | 2,125.6 | 2,098.2 | 27.39 | 77.596 | |
| 6,600.0 | 6,538.8 | 6,584.4 | 6,552.8 | 17.6 | 14.1 | -89.60 | -433.5 | -1,515.0 | 2,125.6 | 2,097.9 | 27.68 | 76.786 | |
| 6,700.0 | 6,638.8 | 6,684.4 | 6,652.8 | 17.7 | 14.3 | -89.60 | -433.5 | -1,515.0 | 2,125.6 | 2,097.6 | 27.97 | 75.989 | |
| 6,756.0 | 6,694.8 | 6,740.4 | 6,708.8 | 17.8 | 14.3 | -89.60 | -433.5 | -1,515.0 | 2,125.6 | 2,097.5 | 28.14 | 75.548 | |
| 6,800.0 | 6,738.8 | 6,784.4 | 6,752.8 | 17.8 | 14.4 | -89.63 | -433.5 | -1,515.0 | 2,125.6 | 2,097.4 | 28.24 | 75.266 | |
| 6,850.0 | 6,788.5 | 6,834.1 | 6,802.5 | 17.8 | 14.5 | -89.76 | -433.5 | -1,515.0 | 2,125.6 | 2,097.2 | 28.34 | 75.014 | |
| 6,900.0 | 6,837.8 | 6,883.4 | 6,851.8 | 17.8 | 14.5 | -89.98 | -433.5 | -1,515.0 | 2,125.6 | 2,097.2 | 28.41 | 74.830 | |
| 6,903.6 | 6,841.3 | 6,886.9 | 6,855.3 | 17.8 | 14.5 | -90.00 | -433.5 | -1,515.0 | 2,125.6 | 2,097.2 | 28.41 | 74.822 | |
| 6,950.0 | 6,886.5 | 6,932.0 | 6,900.5 | 17.8 | 14.6 | -90.28 | -433.5 | -1,515.0 | 2,125.6 | 2,097.1 | 28.45 | 74.713 | |
| 7,000.0 | 6,934.1 | 6,980.5 | 6,948.9 | 17.7 | 14.7 | -90.66 | -433.2 | -1,515.0 | 2,125.7 | 2,097.3 | 28.46 | 74.685 | |
| 7,050.0 | 6,980.6 | 7,030.4 | 6,998.7 | 17.6 | 14.7 | -91.06 | -430.0 | -1,515.0 | 2,126.0 | 2,097.5 | 28.42 | 74.807 | |
| 7,100.0 | 7,025.7 | 7,081.5 | 7,049.3 | 17.6 | 14.7 | -91.45 | -423.3 | -1,515.0 | 2,126.3 | 2,098.0 | 28.33 | 75.068 | |
| 7,150.0 | 7,069.2 | 7,133.8 | 7,100.5 | 17.5 | 14.7 | -91.84 | -412.6 | -1,515.0 | 2,126.8 | 2,098.6 | 28.19 | 75.457 | |
| 7,200.0 | 7,110.9 | 7,187.5 | 7,152.1 | 17.4 | 14.6 | -92.23 | -397.8 | -1,515.0 | 2,127.3 | 2,099.3 | 28.01 | 75.961 | |
| 7,250.0 | 7,150.6 | 7,242.5 | 7,203.7 | 17.3 | 14.5 | -92.62 | -378.6 | -1,515.0 | 2,128.0 | 2,100.2 | 27.79 | 76.560 | |
| 7,300.0 | 7,188.0 | 7,299.0 | 7,255.0 | 17.2 | 14.4 | -93.00 | -354.9 | -1,515.0 | 2,128.7 | 2,101.1 | 27.56 | 77.226 | |
| 7,350.0 | 7,223.0 | 7,357.1 | 7,305.5 | 17.1 | 14.3 | -93.37 | -326.4 | -1,515.0 | 2,129.5 | 2,102.2 | 27.33 | 77.926 | |
| 7,400.0 | 7,255.5 | 7,416.7 | 7,354.8 | 17.0 | 14.2 | -93.72 | -293.0 | -1,515.0 | 2,130.4 | 2,103.2 | 27.10 | 78.609 | |
| 7,450.0 | 7,285.2 | 7,477.9 | 7,402.4 | 17.0 | 14.0 | -94.07 | -254.5 | -1,515.0 | 2,131.2 | 2,104.3 | 26.90 | 79.218 | |
| 7,500.0 | 7,312.0 | 7,540.7 | 7,447.6 | 17.0 | 13.9 | -94.39 | -211.0 | -1,515.0 | 2,132.1 | 2,105.4 | 26.76 | 79.688 | |
| 7,550.0 | 7,335.9 | 7,605.1 | 7,489.9 | 17.0 | 13.8 | -94.70 | -162.4 | -1,515.0 | 2,133.0 | 2,106.3 | 26.68 | 79.941 | |
| 7,600.0 | 7,356.6 | 7,671.0 | 7,528.4 | 17.1 | 13.8 | -94.98 | -108.9 | -1,515.0 | 2,133.8 | 2,107.1 | 26.71 | 79.887 | |
| 7,650.0 | 7,374.1 | 7,738.4 | 7,562.6 | 17.2 | 13.8 | -95.23 | -50.8 | -1,515.0 | 2,134.6 | 2,107.7 | 26.86 | 79.483 | |
| 7,700.0 | 7,388.3 | 7,807.2 | 7,591.6 | 17.3 | 13.9 | -95.45 | 11.4 | -1,515.0 | 2,135.3 | 2,108.1 | 27.14 | 78.670 | |
| 7,750.0 | 7,399.1 | 7,877.1 | 7,614.9 | 17.5 | 14.2 | -95.63 | 77.3 | -1,515.0 | 2,135.9 | 2,108.3 | 27.59 | 77.418 | |
| 7,800.0 | 7,406.4 | 7,947.9 | 7,631.8 | 17.7 | 14.5 | -95.77 | 146.1 | -1,515.0 | 2,136.3 | 2,108.1 | 28.19 | 75.785 | |
| 7,850.0 | 7,410.3 | 8,019.5 | 7,642.0 | 18.0 | 14.9 | -95.86 | 217.0 | -1,514.9 | 2,136.6 | 2,107.7 | 28.96 | 73.782 | |
| 7,881.0 | 7,411.0 | 8,064.2 | 7,644.7 | 18.1 | 15.2 | -95.90 | 261.5 | -1,514.9 | 2,136.8 | 2,107.2 | 29.51 | 72.419 | |
| 7,900.0 | 7,411.0 | 8,089.7 | 7,645.0 | 18.3 | 15.4 | -95.91 | 287.0 | -1,514.9 | 2,136.8 | 2,106.9 | 29.85 | 71.595 | |
| 8,000.0 | 7,411.0 | 8,189.7 | 7,645.0 | 19.0 | 16.2 | -95.91 | 387.0 | -1,514.9 | 2,136.8 | 2,105.2 | 31.58 | 67.661 | |
| 8,100.0 | 7,411.0 | 8,289.7 | 7,645.0 | 19.8 | 17.2 | -95.91 | 487.0 | -1,514.9 | 2,136.7 | 2,103.1 | 33.58 | 63.626 | |
| 8,200.0 | 7,411.0 | 8,389.7 | 7,645.0 | 20.8 | 18.3 | -95.91 | 587.0 | -1,514.9 | 2,136.7 | 2,100.9 | 35.81 | 59.661 | |
| 8,300.0 | 7,411.0 | 8,489.7 | 7,645.0 | 21.8 | 19.5 | -95.91 | 687.0 | -1,514.9 | 2,136.7 | 2,098.5 | 38.23 | 55.884 | |
| 8,400.0 | 7,411.0 | 8,589.7 | 7,645.0 | 23.0 | 20.8 | -95.91 | 787.0 | -1,514.9 | 2,136.7 | 2,095.9 | 40.81 | 52.357 | |
| 8,500.0 | 7,411.0 | 8,689.7 | 7,645.0 | 24.2 | 22.1 | -95.91 | 887.0 | -1,514.8 | 2,136.7 | 2,093.1 | 43.51 | 49.104 | |
| 8,600.0 | 7,411.0 | 8,789.7 | 7,645.0 | 25.5 | 23.5 | -95.91 | 987.0 | -1,514.8 | 2,136.6 | 2,090.3 | 46.32 | 46.127 | |
| 8,700.0 | 7,411.0 | 8,889.7 | 7,645.0 | 26.8 | 25.0 | -95.91 | 1,087.0 | -1,514.8 | 2,136.6 | 2,087.4 | 49.22 | 43.412 | |

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|-----------------------------|-------------------------------------|-----------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Mathews 4G-14H |
| Project: | DJ Wattenberg | TVD Reference: | Well @ 5117.0ft (Ensign) |
| Reference Site: | SWSE S14 T1N-R66W (Mathews) | MD Reference: | Well @ 5117.0ft (Ensign) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Mathews 4G-14H | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | HZ | Database: | USA EDM 5000 Multi Users DB |
| Reference Design: | Plan #3 | Offset TVD Reference: | Offset Datum |

| Offset Design | | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|------------------------|------------------------|------------------------|------------------------|-------------------|----------------|-----------------------------|-----------------------------------------|---------------|----------------------------|-----------------------------|---------------------|------------|--------------------|--------|
| Survey Program: 0-MWD | | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | Total | Separation | Warning | |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Uncertainty Axis | Factor | | |
| 8,800.0 | 7,411.0 | 8,989.7 | 7,645.0 | 28.2 | 26.4 | -95.91 | 1,187.0 | -1,514.8 | 2,136.6 | 2,084.4 | 52.19 | 40.943 | | |
| 8,900.0 | 7,411.0 | 9,089.7 | 7,645.0 | 29.6 | 27.9 | -95.91 | 1,287.0 | -1,514.8 | 2,136.6 | 2,081.4 | 55.21 | 38.696 | | |
| 9,000.0 | 7,411.0 | 9,189.7 | 7,645.0 | 31.1 | 29.5 | -95.91 | 1,387.0 | -1,514.8 | 2,136.5 | 2,078.3 | 58.30 | 36.650 | | |
| 9,100.0 | 7,411.0 | 9,289.7 | 7,645.0 | 32.6 | 31.0 | -95.91 | 1,487.0 | -1,514.8 | 2,136.5 | 2,075.1 | 61.42 | 34.785 | | |
| 9,200.0 | 7,411.0 | 9,389.7 | 7,645.0 | 34.1 | 32.6 | -95.91 | 1,587.0 | -1,514.8 | 2,136.5 | 2,071.9 | 64.58 | 33.082 | | |
| 9,300.0 | 7,411.0 | 9,489.7 | 7,645.0 | 35.6 | 34.2 | -95.91 | 1,687.0 | -1,514.7 | 2,136.5 | 2,068.7 | 67.78 | 31.523 | | |
| 9,400.0 | 7,411.0 | 9,589.7 | 7,645.0 | 37.2 | 35.8 | -95.91 | 1,787.0 | -1,514.7 | 2,136.5 | 2,065.5 | 71.00 | 30.092 | | |
| 9,500.0 | 7,411.0 | 9,689.7 | 7,645.0 | 38.7 | 37.5 | -95.91 | 1,887.0 | -1,514.7 | 2,136.4 | 2,062.2 | 74.24 | 28.776 | | |
| 9,600.0 | 7,411.0 | 9,789.7 | 7,645.0 | 40.3 | 39.1 | -95.91 | 1,987.0 | -1,514.7 | 2,136.4 | 2,058.9 | 77.51 | 27.562 | | |
| 9,700.0 | 7,411.0 | 9,889.7 | 7,645.0 | 41.9 | 40.7 | -95.91 | 2,087.0 | -1,514.7 | 2,136.4 | 2,055.6 | 80.80 | 26.441 | | |
| 9,800.0 | 7,411.0 | 9,989.7 | 7,645.0 | 43.5 | 42.4 | -95.91 | 2,187.0 | -1,514.7 | 2,136.4 | 2,052.3 | 84.10 | 25.403 | | |
| 9,900.0 | 7,411.0 | 10,089.7 | 7,645.0 | 45.2 | 44.0 | -95.91 | 2,287.0 | -1,514.7 | 2,136.4 | 2,048.9 | 87.42 | 24.439 | | |
| 10,000.0 | 7,411.0 | 10,189.7 | 7,645.0 | 46.8 | 45.7 | -95.91 | 2,387.0 | -1,514.6 | 2,136.3 | 2,045.6 | 90.75 | 23.542 | | |
| 10,100.0 | 7,411.0 | 10,289.7 | 7,645.0 | 48.4 | 47.4 | -95.91 | 2,487.0 | -1,514.6 | 2,136.3 | 2,042.2 | 94.09 | 22.705 | | |
| 10,200.0 | 7,411.0 | 10,389.7 | 7,645.0 | 50.1 | 49.1 | -95.91 | 2,587.0 | -1,514.6 | 2,136.3 | 2,038.9 | 97.44 | 21.924 | | |
| 10,300.0 | 7,411.0 | 10,489.7 | 7,645.0 | 51.7 | 50.8 | -95.91 | 2,687.0 | -1,514.6 | 2,136.3 | 2,035.5 | 100.80 | 21.193 | | |
| 10,400.0 | 7,411.0 | 10,589.7 | 7,645.0 | 53.4 | 52.4 | -95.91 | 2,787.0 | -1,514.6 | 2,136.3 | 2,032.1 | 104.17 | 20.507 | | |
| 10,500.0 | 7,411.0 | 10,689.7 | 7,645.0 | 55.1 | 54.1 | -95.91 | 2,887.0 | -1,514.6 | 2,136.2 | 2,028.7 | 107.55 | 19.863 | | |
| 10,600.0 | 7,411.0 | 10,789.7 | 7,645.0 | 56.7 | 55.8 | -95.91 | 2,987.0 | -1,514.6 | 2,136.2 | 2,025.3 | 110.93 | 19.257 | | |
| 10,700.0 | 7,411.0 | 10,889.7 | 7,645.0 | 58.4 | 57.5 | -95.91 | 3,087.0 | -1,514.5 | 2,136.2 | 2,021.9 | 114.32 | 18.685 | | |
| 10,800.0 | 7,411.0 | 10,989.7 | 7,645.0 | 60.1 | 59.2 | -95.91 | 3,187.0 | -1,514.5 | 2,136.2 | 2,018.5 | 117.72 | 18.146 | | |
| 10,900.0 | 7,411.0 | 11,089.7 | 7,645.0 | 61.8 | 61.0 | -95.91 | 3,287.0 | -1,514.5 | 2,136.2 | 2,015.0 | 121.12 | 17.636 | | |
| 11,000.0 | 7,411.0 | 11,189.7 | 7,645.0 | 63.5 | 62.7 | -95.91 | 3,387.0 | -1,514.5 | 2,136.1 | 2,011.6 | 124.53 | 17.154 | | |
| 11,100.0 | 7,411.0 | 11,289.7 | 7,645.0 | 65.1 | 64.4 | -95.91 | 3,487.0 | -1,514.5 | 2,136.1 | 2,008.2 | 127.94 | 16.696 | | |
| 11,200.0 | 7,411.0 | 11,389.7 | 7,645.0 | 66.8 | 66.1 | -95.91 | 3,587.0 | -1,514.5 | 2,136.1 | 2,004.7 | 131.36 | 16.262 | | |
| 11,300.0 | 7,411.0 | 11,489.7 | 7,645.0 | 68.5 | 67.8 | -95.91 | 3,687.0 | -1,514.5 | 2,136.1 | 2,001.3 | 134.77 | 15.849 | | |
| 11,400.0 | 7,411.0 | 11,589.7 | 7,645.0 | 70.2 | 69.5 | -95.91 | 3,787.0 | -1,514.4 | 2,136.1 | 1,997.9 | 138.20 | 15.457 | | |
| 11,500.0 | 7,411.0 | 11,689.7 | 7,645.0 | 71.9 | 71.2 | -95.91 | 3,887.0 | -1,514.4 | 2,136.0 | 1,994.4 | 141.62 | 15.083 | | |
| 11,600.0 | 7,411.0 | 11,789.7 | 7,645.0 | 73.6 | 73.0 | -95.91 | 3,987.0 | -1,514.4 | 2,136.0 | 1,991.0 | 145.05 | 14.726 | | |
| 11,700.0 | 7,411.0 | 11,889.7 | 7,645.0 | 75.4 | 74.7 | -95.91 | 4,087.0 | -1,514.4 | 2,136.0 | 1,987.5 | 148.48 | 14.385 | | |
| 11,800.0 | 7,411.0 | 11,989.7 | 7,645.0 | 77.1 | 76.4 | -95.91 | 4,187.0 | -1,514.4 | 2,136.0 | 1,984.1 | 151.92 | 14.060 | | |
| 11,900.0 | 7,411.0 | 12,089.7 | 7,645.0 | 78.8 | 78.1 | -95.91 | 4,287.0 | -1,514.4 | 2,136.0 | 1,980.6 | 155.35 | 13.749 | | |
| 11,970.0 | 7,411.0 | 12,159.7 | 7,645.0 | 80.0 | 79.3 | -95.91 | 4,357.1 | -1,514.4 | 2,135.9 | 1,978.2 | 157.76 | 13.539 SF | | |

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|-----------------------------|-------------------------------------|-----------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Mathews 4G-14H |
| Project: | DJ Wattenberg | TVD Reference: | Well @ 5117.0ft (Ensign) |
| Reference Site: | SWSE S14 T1N-R66W (Mathews) | MD Reference: | Well @ 5117.0ft (Ensign) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Mathews 4G-14H | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | HZ | Database: | USA EDM 5000 Multi Users DB |
| Reference Design: | Plan #3 | Offset TVD Reference: | Offset Datum |

| Offset Design SWSE S14 T1N-R66W (Mathews) - Mathews 4C-14H - HZ - Plan #3 | | | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|---------------------------------------------------------------------------|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|------------------------|-------------------|---------|--------------------|--------|
| Survey Program: O-MWD | | | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | Distance | | | | | | | | | |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning | | |
| 0.0 | 0.0 | 14.0 | 14.0 | 0.0 | 0.0 | -89.84 | 3.7 | -1,332.6 | 1,332.7 | | | | | | |
| 100.0 | 100.0 | 114.0 | 114.0 | 0.2 | 0.2 | -89.84 | 3.7 | -1,332.6 | 1,332.7 | 1,332.3 | 0.33 | 4,061.453 | | | |
| 200.0 | 200.0 | 214.0 | 214.0 | 0.3 | 0.4 | -89.84 | 3.7 | -1,332.6 | 1,332.7 | 1,332.0 | 0.68 | 1,967.922 | CC, ES | | |
| 300.0 | 300.0 | 314.0 | 314.0 | 0.5 | 0.5 | 143.88 | 3.7 | -1,332.6 | 1,333.4 | 1,332.3 | 1.03 | 1,298.928 | | | |
| 400.0 | 400.0 | 418.0 | 418.0 | 0.7 | 0.7 | 143.93 | 3.6 | -1,332.6 | 1,335.5 | 1,334.1 | 1.38 | 964.577 | | | |
| 500.0 | 499.9 | 547.2 | 547.1 | 0.9 | 0.9 | 143.92 | 0.4 | -1,330.8 | 1,337.6 | 1,335.8 | 1.80 | 745.147 | | | |
| 600.0 | 599.7 | 676.2 | 675.8 | 1.1 | 1.2 | 143.75 | -8.0 | -1,326.3 | 1,338.9 | 1,336.7 | 2.23 | 600.030 | | | |
| 700.0 | 699.4 | 803.9 | 802.5 | 1.3 | 1.5 | 143.44 | -21.2 | -1,319.0 | 1,339.6 | 1,336.9 | 2.71 | 494.115 | | | |
| 800.0 | 798.9 | 903.6 | 901.3 | 1.5 | 1.8 | 143.15 | -33.4 | -1,312.3 | 1,340.6 | 1,337.5 | 3.15 | 425.220 | | | |
| 900.0 | 898.3 | 1,003.5 | 1,000.2 | 1.8 | 2.1 | 142.90 | -45.6 | -1,305.7 | 1,343.1 | 1,339.5 | 3.61 | 371.921 | | | |
| 1,000.0 | 997.4 | 1,103.3 | 1,099.0 | 2.0 | 2.3 | 142.69 | -57.8 | -1,299.0 | 1,347.0 | 1,342.9 | 4.08 | 329.759 | | | |
| 1,100.0 | 1,096.3 | 1,203.1 | 1,197.9 | 2.3 | 2.6 | 142.51 | -70.0 | -1,292.3 | 1,352.3 | 1,347.7 | 4.57 | 295.741 | | | |
| 1,200.0 | 1,194.9 | 1,302.8 | 1,296.7 | 2.7 | 2.9 | 142.38 | -82.2 | -1,285.7 | 1,359.0 | 1,353.9 | 5.07 | 267.824 | | | |
| 1,300.0 | 1,293.4 | 1,402.6 | 1,395.4 | 3.0 | 3.2 | 142.30 | -94.3 | -1,279.0 | 1,366.4 | 1,360.8 | 5.58 | 244.668 | | | |
| 1,400.0 | 1,391.9 | 1,502.3 | 1,494.1 | 3.3 | 3.5 | 142.23 | -106.5 | -1,272.3 | 1,373.7 | 1,367.6 | 6.10 | 225.220 | | | |
| 1,500.0 | 1,490.4 | 1,602.0 | 1,592.9 | 3.7 | 3.8 | 142.16 | -118.7 | -1,265.7 | 1,381.1 | 1,374.5 | 6.62 | 208.685 | | | |
| 1,600.0 | 1,588.9 | 1,701.7 | 1,691.6 | 4.0 | 4.1 | 142.09 | -130.9 | -1,259.0 | 1,388.5 | 1,381.4 | 7.14 | 194.471 | | | |
| 1,700.0 | 1,687.3 | 1,801.4 | 1,790.4 | 4.4 | 4.4 | 142.02 | -143.0 | -1,252.3 | 1,395.9 | 1,388.2 | 7.66 | 182.134 | | | |
| 1,800.0 | 1,785.8 | 1,901.1 | 1,889.1 | 4.7 | 4.7 | 141.95 | -155.2 | -1,245.7 | 1,403.3 | 1,395.1 | 8.19 | 171.332 | | | |
| 1,900.0 | 1,884.3 | 2,000.8 | 1,987.8 | 5.0 | 5.0 | 141.88 | -167.4 | -1,239.0 | 1,410.7 | 1,401.9 | 8.72 | 161.800 | | | |
| 2,000.0 | 1,982.8 | 2,100.5 | 2,086.6 | 5.4 | 5.2 | 141.81 | -179.5 | -1,232.3 | 1,418.0 | 1,408.8 | 9.25 | 153.331 | | | |
| 2,100.0 | 2,081.3 | 2,200.3 | 2,185.3 | 5.7 | 5.5 | 141.75 | -191.7 | -1,225.7 | 1,425.4 | 1,415.7 | 9.78 | 145.758 | | | |
| 2,200.0 | 2,179.7 | 2,300.0 | 2,284.1 | 6.1 | 5.8 | 141.68 | -203.9 | -1,219.0 | 1,432.8 | 1,422.5 | 10.31 | 138.948 | | | |
| 2,300.0 | 2,278.2 | 2,399.7 | 2,382.8 | 6.4 | 6.1 | 141.61 | -216.1 | -1,212.4 | 1,440.2 | 1,429.4 | 10.85 | 132.792 | | | |
| 2,400.0 | 2,376.7 | 2,499.4 | 2,481.6 | 6.8 | 6.4 | 141.55 | -228.2 | -1,205.7 | 1,447.6 | 1,436.2 | 11.38 | 127.202 | | | |
| 2,500.0 | 2,475.2 | 2,599.1 | 2,580.3 | 7.1 | 6.7 | 141.48 | -240.4 | -1,199.0 | 1,455.0 | 1,443.1 | 11.92 | 122.103 | | | |
| 2,600.0 | 2,573.7 | 2,698.8 | 2,679.0 | 7.5 | 7.0 | 141.42 | -252.6 | -1,192.4 | 1,462.4 | 1,450.0 | 12.45 | 117.435 | | | |
| 2,700.0 | 2,672.1 | 2,798.5 | 2,777.8 | 7.8 | 7.3 | 141.36 | -264.8 | -1,185.7 | 1,469.8 | 1,456.8 | 12.99 | 113.145 | | | |
| 2,800.0 | 2,770.6 | 2,898.2 | 2,876.5 | 8.2 | 7.6 | 141.29 | -276.9 | -1,179.0 | 1,477.2 | 1,463.7 | 13.53 | 109.189 | | | |
| 2,900.0 | 2,869.1 | 2,998.0 | 2,975.3 | 8.5 | 7.9 | 141.23 | -289.1 | -1,172.4 | 1,484.6 | 1,470.6 | 14.07 | 105.530 | | | |
| 3,000.0 | 2,967.6 | 3,097.7 | 3,074.0 | 8.9 | 8.2 | 141.17 | -301.3 | -1,165.7 | 1,492.0 | 1,477.4 | 14.61 | 102.137 | | | |
| 3,100.0 | 3,066.1 | 3,197.4 | 3,172.8 | 9.2 | 8.5 | 141.11 | -313.4 | -1,159.0 | 1,499.5 | 1,484.3 | 15.15 | 98.981 | | | |
| 3,200.0 | 3,164.5 | 3,297.1 | 3,271.5 | 9.6 | 8.8 | 141.05 | -325.6 | -1,152.4 | 1,506.9 | 1,491.2 | 15.69 | 96.038 | | | |
| 3,300.0 | 3,263.0 | 3,396.8 | 3,370.2 | 9.9 | 9.1 | 140.99 | -337.8 | -1,145.7 | 1,514.3 | 1,498.0 | 16.23 | 93.288 | | | |
| 3,400.0 | 3,361.5 | 3,496.5 | 3,469.0 | 10.3 | 9.4 | 140.93 | -350.0 | -1,139.1 | 1,521.7 | 1,504.9 | 16.77 | 90.712 | | | |
| 3,500.0 | 3,460.0 | 3,596.2 | 3,567.7 | 10.6 | 9.7 | 140.87 | -362.1 | -1,132.4 | 1,529.1 | 1,511.8 | 17.32 | 88.295 | | | |
| 3,600.0 | 3,558.5 | 3,695.9 | 3,666.5 | 11.0 | 10.0 | 140.82 | -374.3 | -1,125.7 | 1,536.5 | 1,518.7 | 17.86 | 86.022 | | | |
| 3,700.0 | 3,657.0 | 3,795.7 | 3,765.2 | 11.3 | 10.3 | 140.76 | -386.5 | -1,119.1 | 1,543.9 | 1,525.5 | 18.41 | 83.880 | | | |
| 3,800.0 | 3,755.4 | 3,895.4 | 3,863.9 | 11.7 | 10.6 | 140.70 | -398.7 | -1,112.4 | 1,551.4 | 1,532.4 | 18.95 | 81.860 | | | |
| 3,900.0 | 3,853.9 | 3,995.1 | 3,962.7 | 12.0 | 10.9 | 140.65 | -410.8 | -1,105.7 | 1,558.8 | 1,539.3 | 19.50 | 79.950 | | | |
| 4,000.0 | 3,952.4 | 4,094.2 | 4,061.0 | 12.4 | 11.1 | 140.61 | -421.4 | -1,099.9 | 1,566.4 | 1,546.4 | 20.00 | 78.318 | | | |
| 4,100.0 | 4,050.9 | 4,194.6 | 4,160.9 | 12.7 | 11.3 | 140.64 | -429.2 | -1,095.7 | 1,575.1 | 1,554.7 | 20.43 | 77.080 | | | |
| 4,200.0 | 4,149.4 | 4,294.7 | 4,260.7 | 13.1 | 11.5 | 140.75 | -434.9 | -1,092.5 | 1,585.0 | 1,564.2 | 20.83 | 76.082 | | | |
| 4,300.0 | 4,247.8 | 4,394.4 | 4,359.3 | 13.4 | 11.6 | 140.92 | -438.7 | -1,090.5 | 1,596.2 | 1,575.0 | 21.20 | 75.307 | | | |
| 4,400.0 | 4,346.3 | 4,494.0 | 4,458.9 | 13.8 | 11.7 | 141.16 | -440.5 | -1,089.5 | 1,608.6 | 1,587.1 | 21.52 | 74.743 | | | |
| 4,500.0 | 4,444.8 | 4,592.9 | 4,558.8 | 14.1 | 11.8 | 141.51 | -440.8 | -1,089.4 | 1,622.1 | 1,600.3 | 21.84 | 74.281 | | | |
| 4,600.0 | 4,543.3 | 4,691.4 | 4,657.3 | 14.5 | 11.9 | 141.91 | -440.8 | -1,089.4 | 1,635.7 | 1,613.5 | 22.15 | 73.837 | | | |
| 4,700.0 | 4,642.0 | 4,790.2 | 4,755.0 | 14.8 | 12.1 | 142.33 | -440.8 | -1,089.4 | 1,648.2 | 1,625.8 | 22.46 | 73.399 | | | |
| 4,800.0 | 4,741.0 | 4,889.2 | 4,853.0 | 15.1 | 12.2 | 142.69 | -440.8 | -1,089.4 | 1,659.5 | 1,636.7 | 22.75 | 72.935 | | | |
| 4,900.0 | 4,840.3 | 4,988.4 | 4,953.3 | 15.4 | 12.3 | 143.01 | -440.8 | -1,089.4 | 1,669.3 | 1,646.3 | 23.04 | 72.443 | | | |
| 5,000.0 | 4,939.7 | 5,087.8 | 5,052.7 | 15.6 | 12.4 | 143.28 | -440.8 | -1,089.4 | 1,677.9 | 1,654.5 | 23.33 | 71.923 | | | |

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|-----------------------------|-------------------------------------|-----------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Mathews 4G-14H |
| Project: | DJ Wattenberg | TVD Reference: | Well @ 5117.0ft (Ensign) |
| Reference Site: | SWSE S14 T1N-R66W (Mathews) | MD Reference: | Well @ 5117.0ft (Ensign) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Mathews 4G-14H | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | HZ | Database: | USA EDM 5000 Multi Users DB |
| Reference Design: | Plan #3 | Offset TVD Reference: | Offset Datum |

| Offset Design | | | | | | | | | | | | | Offset Site Error: 0.0 ft | |
|-----------------------|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|------------------------|-------------------|---------------------------|--|
| Survey Program: 0-MWD | | | | | | | | | | | | | Offset Well Error: 0.0 ft | |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | | | Warning | |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | | |
| 5,100.0 | 5,039.3 | 5,087.4 | 5,053.3 | 15.8 | 12.5 | 143.50 | -440.8 | -1,089.4 | 1,685.0 | 1,661.4 | 23.61 | 71.373 | | |
| 5,200.0 | 5,139.1 | 5,187.2 | 5,153.1 | 16.0 | 12.7 | 143.68 | -440.8 | -1,089.4 | 1,690.8 | 1,666.9 | 23.88 | 70.793 | | |
| 5,300.0 | 5,238.9 | 5,287.0 | 5,252.9 | 16.2 | 12.8 | 143.81 | -440.8 | -1,089.4 | 1,695.1 | 1,671.0 | 24.15 | 70.183 | | |
| 5,400.0 | 5,338.8 | 5,387.0 | 5,352.8 | 16.3 | 12.9 | 143.90 | -440.8 | -1,089.4 | 1,698.1 | 1,673.7 | 24.42 | 69.542 | | |
| 5,500.0 | 5,438.8 | 5,486.9 | 5,452.8 | 16.4 | 13.0 | 143.95 | -440.8 | -1,089.4 | 1,699.6 | 1,675.0 | 24.68 | 68.872 | | |
| 5,560.0 | 5,498.8 | 5,546.9 | 5,512.8 | 16.5 | 13.1 | -89.74 | -440.8 | -1,089.4 | 1,699.9 | 1,675.1 | 24.83 | 68.453 | | |
| 5,600.0 | 5,538.8 | 5,586.9 | 5,552.8 | 16.5 | 13.2 | -89.74 | -440.8 | -1,089.4 | 1,699.9 | 1,675.0 | 24.94 | 68.154 | | |
| 5,700.0 | 5,638.8 | 5,686.9 | 5,652.8 | 16.6 | 13.3 | -89.74 | -440.8 | -1,089.4 | 1,699.9 | 1,674.7 | 25.22 | 67.415 | | |
| 5,800.0 | 5,738.8 | 5,786.9 | 5,752.8 | 16.7 | 13.4 | -89.74 | -440.8 | -1,089.4 | 1,699.9 | 1,674.4 | 25.49 | 66.686 | | |
| 5,900.0 | 5,838.8 | 5,886.9 | 5,852.8 | 16.8 | 13.6 | -89.74 | -440.8 | -1,089.4 | 1,699.9 | 1,674.1 | 25.77 | 65.969 | | |
| 6,000.0 | 5,938.8 | 5,986.9 | 5,952.8 | 16.9 | 13.7 | -89.74 | -440.8 | -1,089.4 | 1,699.9 | 1,673.9 | 26.05 | 65.263 | | |
| 6,100.0 | 6,038.8 | 6,086.9 | 6,052.8 | 17.1 | 13.8 | -89.74 | -440.8 | -1,089.4 | 1,699.9 | 1,673.6 | 26.33 | 64.567 | | |
| 6,200.0 | 6,138.8 | 6,186.9 | 6,152.8 | 17.2 | 14.0 | -89.74 | -440.8 | -1,089.4 | 1,699.9 | 1,673.3 | 26.61 | 63.882 | | |
| 6,300.0 | 6,238.8 | 6,286.9 | 6,252.8 | 17.3 | 14.1 | -89.74 | -440.8 | -1,089.4 | 1,699.9 | 1,673.0 | 26.89 | 63.208 | | |
| 6,400.0 | 6,338.8 | 6,386.9 | 6,352.8 | 17.4 | 14.2 | -89.74 | -440.8 | -1,089.4 | 1,699.9 | 1,672.7 | 27.18 | 62.545 | | |
| 6,500.0 | 6,438.8 | 6,486.9 | 6,452.8 | 17.5 | 14.4 | -89.74 | -440.8 | -1,089.4 | 1,699.9 | 1,672.4 | 27.47 | 61.892 | | |
| 6,600.0 | 6,538.8 | 6,586.9 | 6,552.8 | 17.6 | 14.5 | -89.74 | -440.8 | -1,089.4 | 1,699.9 | 1,672.1 | 27.75 | 61.249 | | |
| 6,700.0 | 6,638.8 | 6,686.9 | 6,652.8 | 17.7 | 14.6 | -89.74 | -440.8 | -1,089.4 | 1,699.9 | 1,671.9 | 28.04 | 60.616 | | |
| 6,737.3 | 6,676.1 | 6,724.3 | 6,690.1 | 17.8 | 14.7 | -89.74 | -440.8 | -1,089.4 | 1,699.9 | 1,671.7 | 28.15 | 60.383 | | |
| 6,756.0 | 6,694.8 | 6,742.9 | 6,708.8 | 17.8 | 14.7 | -89.74 | -440.8 | -1,089.4 | 1,699.9 | 1,671.7 | 28.21 | 60.267 | | |
| 6,800.0 | 6,738.8 | 6,786.5 | 6,752.3 | 17.8 | 14.8 | -89.74 | -439.4 | -1,089.4 | 1,699.9 | 1,671.6 | 28.28 | 60.109 | | |
| 6,850.0 | 6,788.5 | 6,836.0 | 6,801.6 | 17.8 | 14.8 | -89.74 | -434.7 | -1,089.4 | 1,699.9 | 1,671.6 | 28.30 | 60.060 | | |
| 6,900.0 | 6,837.8 | 6,885.5 | 6,850.4 | 17.8 | 14.8 | -89.74 | -426.6 | -1,089.4 | 1,699.9 | 1,671.6 | 28.27 | 60.136 | | |
| 6,950.0 | 6,886.5 | 6,934.9 | 6,898.5 | 17.8 | 14.7 | -89.75 | -415.2 | -1,089.3 | 1,699.9 | 1,671.7 | 28.18 | 60.329 | | |
| 7,000.0 | 6,934.1 | 6,984.4 | 6,945.8 | 17.7 | 14.6 | -89.75 | -400.4 | -1,089.3 | 1,699.9 | 1,671.9 | 28.04 | 60.628 | | |
| 7,050.0 | 6,980.6 | 7,034.0 | 6,991.9 | 17.6 | 14.6 | -89.76 | -382.4 | -1,089.3 | 1,699.9 | 1,672.0 | 27.86 | 61.018 | | |
| 7,100.0 | 7,025.7 | 7,083.5 | 7,036.7 | 17.6 | 14.5 | -89.77 | -361.3 | -1,089.3 | 1,699.9 | 1,672.2 | 27.65 | 61.483 | | |
| 7,150.0 | 7,069.2 | 7,133.0 | 7,079.9 | 17.5 | 14.3 | -89.77 | -337.1 | -1,089.3 | 1,699.9 | 1,672.5 | 27.42 | 62.004 | | |
| 7,200.0 | 7,110.9 | 7,182.6 | 7,121.4 | 17.4 | 14.2 | -89.79 | -310.0 | -1,089.3 | 1,699.9 | 1,672.7 | 27.17 | 62.556 | | |
| 7,250.0 | 7,150.6 | 7,232.2 | 7,160.9 | 17.3 | 14.1 | -89.80 | -280.1 | -1,089.3 | 1,699.9 | 1,672.9 | 26.93 | 63.112 | | |
| 7,300.0 | 7,188.0 | 7,281.8 | 7,198.2 | 17.2 | 14.0 | -89.81 | -247.4 | -1,089.3 | 1,699.9 | 1,673.1 | 26.71 | 63.639 | | |
| 7,350.0 | 7,223.0 | 7,331.4 | 7,233.3 | 17.1 | 13.9 | -89.82 | -212.3 | -1,089.3 | 1,699.9 | 1,673.3 | 26.52 | 64.101 | | |
| 7,400.0 | 7,255.5 | 7,381.1 | 7,265.8 | 17.0 | 13.8 | -89.84 | -174.8 | -1,089.3 | 1,699.8 | 1,673.5 | 26.37 | 64.462 | | |
| 7,450.0 | 7,285.2 | 7,430.8 | 7,295.7 | 17.0 | 13.8 | -89.85 | -135.1 | -1,089.3 | 1,699.8 | 1,673.6 | 26.28 | 64.681 | | |
| 7,500.0 | 7,312.0 | 7,480.5 | 7,322.7 | 17.0 | 13.8 | -89.87 | -93.4 | -1,089.3 | 1,699.8 | 1,673.6 | 26.26 | 64.726 | | |
| 7,550.0 | 7,335.9 | 7,530.2 | 7,346.8 | 17.0 | 13.8 | -89.88 | -49.9 | -1,089.3 | 1,699.8 | 1,673.5 | 26.33 | 64.565 | | |
| 7,600.0 | 7,356.6 | 7,580.0 | 7,367.9 | 17.1 | 13.9 | -89.90 | -4.8 | -1,089.3 | 1,699.8 | 1,673.3 | 26.49 | 64.179 | | |
| 7,650.0 | 7,374.1 | 7,629.8 | 7,385.8 | 17.2 | 14.0 | -89.92 | 41.7 | -1,089.3 | 1,699.8 | 1,673.1 | 26.74 | 63.560 | | |
| 7,700.0 | 7,388.3 | 7,679.7 | 7,400.4 | 17.3 | 14.2 | -89.93 | 89.3 | -1,089.3 | 1,699.8 | 1,672.7 | 27.11 | 62.711 | | |
| 7,750.0 | 7,399.1 | 7,729.5 | 7,411.7 | 17.5 | 14.4 | -89.95 | 137.9 | -1,089.3 | 1,699.8 | 1,672.2 | 27.57 | 61.650 | | |
| 7,800.0 | 7,406.4 | 7,779.5 | 7,419.5 | 17.7 | 14.7 | -89.97 | 187.2 | -1,089.3 | 1,699.8 | 1,671.6 | 28.14 | 60.403 | | |
| 7,850.0 | 7,410.3 | 7,829.4 | 7,424.0 | 18.0 | 15.0 | -89.99 | 236.9 | -1,089.3 | 1,699.8 | 1,671.0 | 28.81 | 59.005 | | |
| 7,881.0 | 7,411.0 | 7,860.4 | 7,425.0 | 18.1 | 15.2 | -90.00 | 267.9 | -1,089.3 | 1,699.8 | 1,670.5 | 29.26 | 58.089 | | |
| 7,900.0 | 7,411.0 | 7,879.4 | 7,425.0 | 18.3 | 15.3 | -90.00 | 286.9 | -1,089.3 | 1,699.8 | 1,670.2 | 29.56 | 57.501 | | |
| 8,000.0 | 7,411.0 | 7,979.4 | 7,425.0 | 19.0 | 16.2 | -90.00 | 386.9 | -1,089.3 | 1,699.7 | 1,668.4 | 31.33 | 54.262 | | |
| 8,100.0 | 7,411.0 | 8,079.4 | 7,425.0 | 19.8 | 17.2 | -90.00 | 486.9 | -1,089.3 | 1,699.7 | 1,666.4 | 33.36 | 50.958 | | |
| 8,200.0 | 7,411.0 | 8,179.4 | 7,425.0 | 20.8 | 18.3 | -90.00 | 586.9 | -1,089.3 | 1,699.7 | 1,664.1 | 35.62 | 47.723 | | |
| 8,300.0 | 7,411.0 | 8,279.4 | 7,425.0 | 21.8 | 19.5 | -90.00 | 686.9 | -1,089.2 | 1,699.7 | 1,661.6 | 38.07 | 44.650 | | |
| 8,400.0 | 7,411.0 | 8,379.4 | 7,425.0 | 23.0 | 20.7 | -90.00 | 786.9 | -1,089.2 | 1,699.7 | 1,659.0 | 40.67 | 41.789 | | |
| 8,500.0 | 7,411.0 | 8,479.4 | 7,425.0 | 24.2 | 22.1 | -90.00 | 886.9 | -1,089.2 | 1,699.7 | 1,656.3 | 43.41 | 39.157 | | |
| 8,600.0 | 7,411.0 | 8,579.4 | 7,425.0 | 25.5 | 23.5 | -90.00 | 986.9 | -1,089.2 | 1,699.7 | 1,653.4 | 46.24 | 36.754 | | |
| 8,700.0 | 7,411.0 | 8,679.4 | 7,425.0 | 26.8 | 24.9 | -90.00 | 1,086.9 | -1,089.2 | 1,699.6 | 1,650.5 | 49.17 | 34.567 | | |

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|-----------------------------|-------------------------------------|-----------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Mathews 4G-14H |
| Project: | DJ Wattenberg | TVD Reference: | Well @ 5117.0ft (Ensign) |
| Reference Site: | SWSE S14 T1N-R66W (Mathews) | MD Reference: | Well @ 5117.0ft (Ensign) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Mathews 4G-14H | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | HZ | Database: | USA EDM 5000 Multi Users DB |
| Reference Design: | Plan #3 | Offset TVD Reference: | Offset Datum |

| Offset Design SWSE S14 T1N-R66W (Mathews) - Mathews 4C-14H - HZ - Plan #3 | | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|---------------------------------------------------------------------------|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|------------------|------------|--------------------|--------|
| Survey Program: 0-MWD | | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | Total | Separation | Warning | |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Uncertainty Axis | Factor | | |
| 8,800.0 | 7,411.0 | 8,779.4 | 7,425.0 | 28.2 | 26.4 | -90.00 | 1,186.9 | -1,089.2 | 1,699.6 | 1,647.5 | 52.17 | 32.581 | | |
| 8,900.0 | 7,411.0 | 8,879.4 | 7,425.0 | 29.6 | 27.9 | -90.00 | 1,286.9 | -1,089.2 | 1,699.6 | 1,644.4 | 55.22 | 30.777 | | |
| 9,000.0 | 7,411.0 | 8,979.4 | 7,425.0 | 31.1 | 29.4 | -90.00 | 1,386.9 | -1,089.2 | 1,699.6 | 1,641.3 | 58.33 | 29.137 | | |
| 9,100.0 | 7,411.0 | 9,079.4 | 7,425.0 | 32.6 | 31.0 | -90.00 | 1,486.9 | -1,089.2 | 1,699.6 | 1,638.1 | 61.48 | 27.644 | | |
| 9,200.0 | 7,411.0 | 9,179.4 | 7,425.0 | 34.1 | 32.6 | -90.00 | 1,586.9 | -1,089.2 | 1,699.6 | 1,634.9 | 64.67 | 26.281 | | |
| 9,300.0 | 7,411.0 | 9,279.4 | 7,425.0 | 35.6 | 34.2 | -90.00 | 1,686.9 | -1,089.1 | 1,699.5 | 1,631.7 | 67.89 | 25.034 | | |
| 9,400.0 | 7,411.0 | 9,379.4 | 7,425.0 | 37.2 | 35.8 | -90.00 | 1,786.9 | -1,089.1 | 1,699.5 | 1,628.4 | 71.14 | 23.891 | | |
| 9,500.0 | 7,411.0 | 9,479.4 | 7,425.0 | 38.7 | 37.4 | -90.00 | 1,886.9 | -1,089.1 | 1,699.5 | 1,625.1 | 74.41 | 22.841 | | |
| 9,600.0 | 7,411.0 | 9,579.4 | 7,425.0 | 40.3 | 39.0 | -90.00 | 1,986.9 | -1,089.1 | 1,699.5 | 1,621.8 | 77.70 | 21.873 | | |
| 9,700.0 | 7,411.0 | 9,679.4 | 7,425.0 | 41.9 | 40.7 | -90.00 | 2,086.9 | -1,089.1 | 1,699.5 | 1,618.5 | 81.01 | 20.980 | | |
| 9,800.0 | 7,411.0 | 9,779.4 | 7,425.0 | 43.5 | 42.3 | -90.00 | 2,186.9 | -1,089.1 | 1,699.5 | 1,615.1 | 84.33 | 20.152 | | |
| 9,900.0 | 7,411.0 | 9,879.4 | 7,425.0 | 45.2 | 44.0 | -90.00 | 2,286.9 | -1,089.1 | 1,699.4 | 1,611.8 | 87.67 | 19.384 | | |
| 10,000.0 | 7,411.0 | 9,979.4 | 7,425.0 | 46.8 | 45.7 | -90.00 | 2,386.9 | -1,089.1 | 1,699.4 | 1,608.4 | 91.02 | 18.670 | | |
| 10,100.0 | 7,411.0 | 10,079.4 | 7,425.0 | 48.4 | 47.3 | -90.00 | 2,486.9 | -1,089.1 | 1,699.4 | 1,605.0 | 94.39 | 18.005 | | |
| 10,200.0 | 7,411.0 | 10,179.4 | 7,425.0 | 50.1 | 49.0 | -90.00 | 2,586.9 | -1,089.1 | 1,699.4 | 1,601.6 | 97.76 | 17.383 | | |
| 10,300.0 | 7,411.0 | 10,279.4 | 7,425.0 | 51.7 | 50.7 | -90.00 | 2,686.9 | -1,089.0 | 1,699.4 | 1,598.2 | 101.14 | 16.802 | | |
| 10,400.0 | 7,411.0 | 10,379.4 | 7,425.0 | 53.4 | 52.4 | -90.00 | 2,786.9 | -1,089.0 | 1,699.4 | 1,594.8 | 104.54 | 16.256 | | |
| 10,500.0 | 7,411.0 | 10,479.4 | 7,425.0 | 55.1 | 54.1 | -90.00 | 2,886.9 | -1,089.0 | 1,699.3 | 1,591.4 | 107.93 | 15.744 | | |
| 10,600.0 | 7,411.0 | 10,579.4 | 7,425.0 | 56.7 | 55.8 | -90.00 | 2,986.9 | -1,089.0 | 1,699.3 | 1,588.0 | 111.34 | 15.263 | | |
| 10,700.0 | 7,411.0 | 10,679.4 | 7,425.0 | 58.4 | 57.5 | -90.00 | 3,086.9 | -1,089.0 | 1,699.3 | 1,584.6 | 114.75 | 14.809 | | |
| 10,800.0 | 7,411.0 | 10,779.4 | 7,425.0 | 60.1 | 59.2 | -90.00 | 3,186.9 | -1,089.0 | 1,699.3 | 1,581.1 | 118.17 | 14.380 | | |
| 10,900.0 | 7,411.0 | 10,879.4 | 7,425.0 | 61.8 | 60.9 | -90.00 | 3,286.9 | -1,089.0 | 1,699.3 | 1,577.7 | 121.59 | 13.975 | | |
| 11,000.0 | 7,411.0 | 10,979.4 | 7,425.0 | 63.5 | 62.6 | -90.00 | 3,386.9 | -1,089.0 | 1,699.3 | 1,574.2 | 125.02 | 13.592 | | |
| 11,100.0 | 7,411.0 | 11,079.4 | 7,425.0 | 65.1 | 64.3 | -90.00 | 3,486.9 | -1,089.0 | 1,699.2 | 1,570.8 | 128.45 | 13.229 | | |
| 11,200.0 | 7,411.0 | 11,179.4 | 7,425.0 | 66.8 | 66.0 | -90.00 | 3,586.9 | -1,089.0 | 1,699.2 | 1,567.3 | 131.89 | 12.884 | | |
| 11,300.0 | 7,411.0 | 11,279.4 | 7,425.0 | 68.5 | 67.8 | -90.00 | 3,686.9 | -1,089.0 | 1,699.2 | 1,563.9 | 135.32 | 12.557 | | |
| 11,400.0 | 7,411.0 | 11,379.4 | 7,425.0 | 70.2 | 69.5 | -90.00 | 3,786.9 | -1,088.9 | 1,699.2 | 1,560.4 | 138.77 | 12.245 | | |
| 11,500.0 | 7,411.0 | 11,479.4 | 7,425.0 | 71.9 | 71.2 | -90.00 | 3,886.9 | -1,088.9 | 1,699.2 | 1,557.0 | 142.21 | 11.948 | | |
| 11,600.0 | 7,411.0 | 11,579.4 | 7,425.0 | 73.6 | 72.9 | -90.00 | 3,986.9 | -1,088.9 | 1,699.2 | 1,553.5 | 145.66 | 11.665 | | |
| 11,700.0 | 7,411.0 | 11,679.4 | 7,425.0 | 75.4 | 74.6 | -90.00 | 4,086.9 | -1,088.9 | 1,699.2 | 1,550.0 | 149.11 | 11.395 | | |
| 11,800.0 | 7,411.0 | 11,779.4 | 7,425.0 | 77.1 | 76.4 | -90.00 | 4,186.9 | -1,088.9 | 1,699.1 | 1,546.6 | 152.57 | 11.137 | | |
| 11,900.0 | 7,411.0 | 11,879.4 | 7,425.0 | 78.8 | 78.1 | -90.00 | 4,286.9 | -1,088.9 | 1,699.1 | 1,543.1 | 156.03 | 10.890 | | |
| 11,970.0 | 7,411.0 | 11,949.4 | 7,425.0 | 80.0 | 79.3 | -90.00 | 4,356.9 | -1,088.9 | 1,699.1 | 1,540.7 | 158.45 | 10.723 SF | | |

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|-----------------------------|-------------------------------------|-----------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Mathews 4G-14H |
| Project: | DJ Wattenberg | TVD Reference: | Well @ 5117.0ft (Ensign) |
| Reference Site: | SWSE S14 T1N-R66W (Mathews) | MD Reference: | Well @ 5117.0ft (Ensign) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Mathews 4G-14H | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | HZ | Database: | USA EDM 5000 Multi Users DB |
| Reference Design: | Plan #3 | Offset TVD Reference: | Offset Datum |

| Offset Design SWSE S14 T1N-R66W (Mathews) - Mathews 4D-14H - HZ - Plan #3 | | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|---------------------------------------------------------------------------|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|------------------|---------------|--------------------|--------|
| Survey Program: 0-MWD | | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | Total | Separation | Warning | |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Uncertainty Axis | Factor | | |
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -83.27 | 3.6 | -30.8 | 31.0 | | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.2 | 0.2 | -83.27 | 3.6 | -30.8 | 31.0 | 30.7 | 0.30 | 102.112 | | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | -83.27 | 3.6 | -30.8 | 31.0 | 30.4 | 0.65 | 47.507 CC, ES | | |
| 300.0 | 300.0 | 300.0 | 300.0 | 0.5 | 0.5 | 151.20 | 3.6 | -30.8 | 31.8 | 30.8 | 1.00 | 31.710 | | |
| 400.0 | 400.0 | 400.0 | 400.0 | 0.7 | 0.7 | 153.31 | 3.6 | -30.8 | 34.1 | 32.7 | 1.35 | 25.219 | | |
| 500.0 | 499.9 | 499.9 | 499.9 | 0.9 | 0.8 | 156.25 | 3.6 | -30.8 | 38.0 | 36.3 | 1.70 | 22.350 | | |
| 600.0 | 599.7 | 599.2 | 599.2 | 1.1 | 1.0 | 158.58 | 3.2 | -31.5 | 44.3 | 42.2 | 2.05 | 21.568 | | |
| 700.0 | 699.4 | 698.2 | 698.2 | 1.3 | 1.2 | 159.52 | 1.7 | -33.6 | 53.3 | 50.9 | 2.40 | 22.156 | | |
| 800.0 | 798.9 | 796.9 | 796.8 | 1.5 | 1.4 | 159.51 | -0.7 | -37.1 | 65.0 | 62.2 | 2.76 | 23.544 | | |
| 900.0 | 898.3 | 895.0 | 894.7 | 1.8 | 1.6 | 158.97 | -4.0 | -42.0 | 79.4 | 76.3 | 3.12 | 25.426 | | |
| 1,000.0 | 997.4 | 992.6 | 992.0 | 2.0 | 1.8 | 158.19 | -8.3 | -48.3 | 96.6 | 93.1 | 3.50 | 27.615 | | |
| 1,100.0 | 1,096.3 | 1,089.4 | 1,088.3 | 2.3 | 2.0 | 157.32 | -13.4 | -55.8 | 116.4 | 112.6 | 3.88 | 29.990 | | |
| 1,200.0 | 1,194.9 | 1,185.4 | 1,183.7 | 2.7 | 2.2 | 156.45 | -19.4 | -64.6 | 139.0 | 134.7 | 4.28 | 32.464 | | |
| 1,300.0 | 1,293.4 | 1,280.6 | 1,278.2 | 3.0 | 2.4 | 155.60 | -26.3 | -74.7 | 163.4 | 158.7 | 4.70 | 34.788 | | |
| 1,400.0 | 1,391.9 | 1,375.2 | 1,371.8 | 3.3 | 2.7 | 154.61 | -34.0 | -85.9 | 189.0 | 183.9 | 5.13 | 36.855 | | |
| 1,500.0 | 1,490.4 | 1,469.1 | 1,464.5 | 3.7 | 3.0 | 153.56 | -42.4 | -98.3 | 215.8 | 210.2 | 5.57 | 38.717 | | |
| 1,600.0 | 1,588.9 | 1,564.3 | 1,558.2 | 4.0 | 3.3 | 152.52 | -51.7 | -111.9 | 243.5 | 237.5 | 6.03 | 40.381 | | |
| 1,700.0 | 1,687.3 | 1,660.3 | 1,652.8 | 4.4 | 3.6 | 151.67 | -61.1 | -125.7 | 271.3 | 264.8 | 6.49 | 41.792 | | |
| 1,800.0 | 1,785.8 | 1,756.3 | 1,747.3 | 4.7 | 3.9 | 150.98 | -70.5 | -139.5 | 299.2 | 292.2 | 6.96 | 43.004 | | |
| 1,900.0 | 1,884.3 | 1,852.2 | 1,841.8 | 5.0 | 4.2 | 150.41 | -79.9 | -153.2 | 327.1 | 319.6 | 7.42 | 44.055 | | |
| 2,000.0 | 1,982.8 | 1,948.2 | 1,936.3 | 5.4 | 4.6 | 149.92 | -89.3 | -167.0 | 355.0 | 347.1 | 7.89 | 44.974 | | |
| 2,100.0 | 2,081.3 | 2,044.2 | 2,030.9 | 5.7 | 4.9 | 149.51 | -98.7 | -180.8 | 382.9 | 374.6 | 8.36 | 45.783 | | |
| 2,200.0 | 2,179.7 | 2,140.2 | 2,125.4 | 6.1 | 5.2 | 149.16 | -108.1 | -194.5 | 410.9 | 402.1 | 8.84 | 46.502 | | |
| 2,300.0 | 2,278.2 | 2,236.2 | 2,219.9 | 6.4 | 5.5 | 148.84 | -117.5 | -208.3 | 438.9 | 429.5 | 9.31 | 47.144 | | |
| 2,400.0 | 2,376.7 | 2,332.2 | 2,314.4 | 6.8 | 5.9 | 148.57 | -126.8 | -222.1 | 466.8 | 457.1 | 9.78 | 47.720 | | |
| 2,500.0 | 2,475.2 | 2,428.1 | 2,409.0 | 7.1 | 6.2 | 148.33 | -136.2 | -235.8 | 494.8 | 484.6 | 10.26 | 48.241 | | |
| 2,600.0 | 2,573.7 | 2,524.1 | 2,503.5 | 7.5 | 6.5 | 148.11 | -145.6 | -249.6 | 522.8 | 512.1 | 10.73 | 48.713 | | |
| 2,700.0 | 2,672.1 | 2,620.1 | 2,598.0 | 7.8 | 6.8 | 147.92 | -155.0 | -263.4 | 550.8 | 539.6 | 11.21 | 49.142 | | |
| 2,800.0 | 2,770.6 | 2,716.1 | 2,692.5 | 8.2 | 7.2 | 147.74 | -164.4 | -277.2 | 578.8 | 567.2 | 11.69 | 49.536 | | |
| 2,900.0 | 2,869.1 | 2,812.1 | 2,787.1 | 8.5 | 7.5 | 147.58 | -173.8 | -290.9 | 606.9 | 594.7 | 12.16 | 49.896 | | |
| 3,000.0 | 2,967.6 | 2,908.1 | 2,881.6 | 8.9 | 7.8 | 147.44 | -183.2 | -304.7 | 634.9 | 622.2 | 12.64 | 50.229 | | |
| 3,100.0 | 3,066.1 | 3,004.0 | 2,976.1 | 9.2 | 8.2 | 147.30 | -192.6 | -318.5 | 662.9 | 649.8 | 13.12 | 50.536 | | |
| 3,200.0 | 3,164.5 | 3,100.0 | 3,070.6 | 9.6 | 8.5 | 147.18 | -202.0 | -332.2 | 690.9 | 677.3 | 13.60 | 50.820 | | |
| 3,300.0 | 3,263.0 | 3,196.0 | 3,165.2 | 9.9 | 8.8 | 147.07 | -211.4 | -346.0 | 718.9 | 704.9 | 14.07 | 51.085 | | |
| 3,400.0 | 3,361.5 | 3,292.0 | 3,259.7 | 10.3 | 9.2 | 146.96 | -220.8 | -359.8 | 747.0 | 732.4 | 14.55 | 51.331 | | |
| 3,500.0 | 3,460.0 | 3,388.0 | 3,354.2 | 10.6 | 9.5 | 146.87 | -230.2 | -373.5 | 775.0 | 760.0 | 15.03 | 51.561 | | |
| 3,600.0 | 3,558.5 | 3,484.0 | 3,448.7 | 11.0 | 9.8 | 146.78 | -239.6 | -387.3 | 803.0 | 787.5 | 15.51 | 51.776 | | |
| 3,700.0 | 3,657.0 | 3,579.9 | 3,543.3 | 11.3 | 10.2 | 146.69 | -249.0 | -401.1 | 831.1 | 815.1 | 15.99 | 51.978 | | |
| 3,800.0 | 3,755.4 | 3,675.9 | 3,637.8 | 11.7 | 10.5 | 146.61 | -258.3 | -414.8 | 859.1 | 842.6 | 16.47 | 52.168 | | |
| 3,900.0 | 3,853.9 | 3,771.9 | 3,732.3 | 12.0 | 10.8 | 146.54 | -267.7 | -428.6 | 887.1 | 870.2 | 16.95 | 52.346 | | |
| 4,000.0 | 3,952.4 | 3,867.9 | 3,826.8 | 12.4 | 11.2 | 146.47 | -277.1 | -442.4 | 915.2 | 897.8 | 17.43 | 52.514 | | |
| 4,100.0 | 4,050.9 | 3,963.9 | 3,921.4 | 12.7 | 11.5 | 146.41 | -286.5 | -456.1 | 943.2 | 925.3 | 17.91 | 52.673 | | |
| 4,200.0 | 4,149.4 | 4,059.9 | 4,015.9 | 13.1 | 11.9 | 146.34 | -295.9 | -469.9 | 971.3 | 952.9 | 18.39 | 52.824 | | |
| 4,300.0 | 4,247.8 | 4,155.8 | 4,110.4 | 13.4 | 12.2 | 146.29 | -305.3 | -483.7 | 999.3 | 980.4 | 18.87 | 52.966 | | |
| 4,400.0 | 4,346.3 | 4,251.8 | 4,204.9 | 13.8 | 12.5 | 146.23 | -314.7 | -497.5 | 1,027.3 | 1,008.0 | 19.35 | 53.101 | | |
| 4,500.0 | 4,444.8 | 4,347.8 | 4,299.5 | 14.1 | 12.9 | 146.18 | -324.1 | -511.2 | 1,055.4 | 1,035.6 | 19.83 | 53.230 | | |
| 4,560.0 | 4,503.9 | 4,405.4 | 4,356.2 | 14.4 | 13.1 | 146.15 | -329.7 | -519.5 | 1,072.2 | 1,052.1 | 20.12 | 53.304 | | |
| 4,600.0 | 4,543.3 | 4,443.8 | 4,394.0 | 14.5 | 13.2 | 146.19 | -333.5 | -525.0 | 1,083.3 | 1,063.0 | 20.32 | 53.321 | | |
| 4,700.0 | 4,642.0 | 4,540.1 | 4,488.9 | 14.8 | 13.5 | 146.25 | -342.9 | -538.8 | 1,110.1 | 1,089.3 | 20.81 | 53.343 | | |
| 4,800.0 | 4,741.0 | 4,636.8 | 4,584.1 | 15.1 | 13.9 | 146.26 | -352.4 | -552.7 | 1,135.5 | 1,114.2 | 21.29 | 53.326 | | |
| 4,900.0 | 4,840.3 | 4,733.8 | 4,679.6 | 15.4 | 14.2 | 146.21 | -361.9 | -566.6 | 1,159.5 | 1,137.7 | 21.76 | 53.274 | | |
| 5,000.0 | 4,939.7 | 4,831.1 | 4,775.5 | 15.6 | 14.6 | 146.12 | -371.4 | -580.6 | 1,182.1 | 1,159.9 | 22.22 | 53.190 | | |

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|-----------------------------|-------------------------------------|-----------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Mathews 4G-14H |
| Project: | DJ Wattenberg | TVD Reference: | Well @ 5117.0ft (Ensign) |
| Reference Site: | SWSE S14 T1N-R66W (Mathews) | MD Reference: | Well @ 5117.0ft (Ensign) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Mathews 4G-14H | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | HZ | Database: | USA EDM 5000 Multi Users DB |
| Reference Design: | Plan #3 | Offset TVD Reference: | Offset Datum |

| Offset Design | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|-----------------------|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|------------------|--------------------|--------|
| Survey Program: 0-MWD | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | Distance | | Total | | Separation | | Warning | |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Uncertainty Axis | | |
| 5,100.0 | 5,039.3 | 4,933.5 | 4,876.3 | 15.8 | 14.9 | 145.96 | -381.4 | -595.2 | 1,203.3 | 1,180.6 | 22.68 | 53.054 | |
| 5,200.0 | 5,139.1 | 5,051.8 | 4,993.0 | 16.0 | 15.3 | 145.76 | -391.9 | -610.7 | 1,221.9 | 1,198.7 | 23.14 | 52.792 | |
| 5,300.0 | 5,238.9 | 5,171.1 | 5,111.2 | 16.2 | 15.6 | 145.56 | -401.2 | -624.3 | 1,237.4 | 1,213.9 | 23.58 | 52.474 | |
| 5,400.0 | 5,338.8 | 5,291.3 | 5,230.6 | 16.3 | 15.9 | 145.36 | -409.2 | -635.9 | 1,249.9 | 1,225.9 | 23.99 | 52.101 | |
| 5,500.0 | 5,438.8 | 5,412.2 | 5,350.9 | 16.4 | 16.2 | 145.16 | -415.7 | -645.6 | 1,259.3 | 1,235.0 | 24.37 | 51.677 | |
| 5,560.0 | 5,498.8 | 5,485.0 | 5,423.6 | 16.5 | 16.3 | -88.66 | -419.0 | -650.4 | 1,263.5 | 1,238.9 | 24.58 | 51.395 | |
| 5,600.0 | 5,538.8 | 5,533.7 | 5,472.1 | 16.5 | 16.4 | -88.75 | -420.9 | -653.1 | 1,265.7 | 1,241.0 | 24.72 | 51.197 | |
| 5,700.0 | 5,638.8 | 5,655.5 | 5,593.7 | 16.6 | 16.6 | -88.92 | -424.6 | -658.6 | 1,270.1 | 1,245.1 | 25.06 | 50.682 | |
| 5,800.0 | 5,738.8 | 5,777.6 | 5,715.7 | 16.7 | 16.8 | -89.03 | -426.9 | -661.9 | 1,272.8 | 1,247.4 | 25.39 | 50.139 | |
| 5,900.0 | 5,838.8 | 5,899.7 | 5,837.9 | 16.8 | 16.9 | -89.06 | -427.7 | -663.1 | 1,273.8 | 1,248.1 | 25.70 | 49.568 | |
| 6,000.0 | 5,938.8 | 6,000.7 | 5,938.8 | 16.9 | 17.1 | -89.06 | -427.7 | -663.1 | 1,273.8 | 1,247.8 | 25.98 | 49.032 | |
| 6,100.0 | 6,038.8 | 6,100.7 | 6,038.8 | 17.1 | 17.2 | -89.06 | -427.7 | -663.1 | 1,273.8 | 1,247.5 | 26.26 | 48.506 | |
| 6,200.0 | 6,138.8 | 6,200.7 | 6,138.8 | 17.2 | 17.3 | -89.06 | -427.7 | -663.1 | 1,273.8 | 1,247.2 | 26.54 | 47.988 | |
| 6,300.0 | 6,238.8 | 6,300.7 | 6,238.8 | 17.3 | 17.4 | -89.06 | -427.7 | -663.1 | 1,273.8 | 1,246.9 | 26.83 | 47.479 | |
| 6,400.0 | 6,338.8 | 6,400.7 | 6,338.8 | 17.4 | 17.5 | -89.06 | -427.7 | -663.1 | 1,273.8 | 1,246.6 | 27.11 | 46.977 | |
| 6,500.0 | 6,438.8 | 6,500.7 | 6,438.8 | 17.5 | 17.6 | -89.06 | -427.7 | -663.1 | 1,273.8 | 1,246.4 | 27.40 | 46.484 | |
| 6,600.0 | 6,538.8 | 6,600.7 | 6,538.8 | 17.6 | 17.7 | -89.06 | -427.7 | -663.1 | 1,273.8 | 1,246.1 | 27.69 | 45.999 | |
| 6,700.0 | 6,638.8 | 6,700.7 | 6,638.8 | 17.7 | 17.8 | -89.06 | -427.7 | -663.1 | 1,273.8 | 1,245.8 | 27.98 | 45.521 | |
| 6,756.0 | 6,694.8 | 6,756.7 | 6,694.8 | 17.8 | 17.9 | -89.06 | -427.7 | -663.1 | 1,273.8 | 1,245.6 | 28.15 | 45.257 | |
| 6,800.0 | 6,738.8 | 6,800.7 | 6,738.8 | 17.8 | 17.9 | -89.12 | -427.7 | -663.1 | 1,273.7 | 1,245.5 | 28.25 | 45.091 | |
| 6,850.0 | 6,788.5 | 6,850.4 | 6,788.5 | 17.8 | 18.0 | -89.34 | -427.7 | -663.1 | 1,273.7 | 1,245.3 | 28.33 | 44.955 | |
| 6,900.0 | 6,837.8 | 6,899.7 | 6,837.8 | 17.8 | 18.1 | -89.72 | -427.7 | -663.1 | 1,273.6 | 1,245.2 | 28.39 | 44.869 | |
| 6,929.4 | 6,866.5 | 6,928.4 | 6,866.5 | 17.8 | 18.1 | -90.00 | -427.7 | -663.1 | 1,273.6 | 1,245.2 | 28.40 | 44.847 | |
| 6,950.0 | 6,886.5 | 6,948.3 | 6,886.5 | 17.8 | 18.1 | -90.23 | -427.7 | -663.1 | 1,273.6 | 1,245.2 | 28.41 | 44.834 | |
| 7,000.0 | 6,934.1 | 6,996.5 | 6,934.7 | 17.7 | 18.2 | -90.86 | -427.4 | -663.1 | 1,273.7 | 1,245.4 | 28.39 | 44.858 | |
| 7,050.0 | 6,980.6 | 7,046.0 | 6,984.1 | 17.6 | 18.2 | -91.52 | -424.3 | -663.1 | 1,274.1 | 1,245.8 | 28.32 | 44.984 | |
| 7,100.0 | 7,025.7 | 7,096.6 | 7,034.2 | 17.6 | 18.2 | -92.17 | -417.6 | -663.1 | 1,274.6 | 1,246.4 | 28.20 | 45.193 | |
| 7,150.0 | 7,069.2 | 7,148.5 | 7,085.0 | 17.5 | 18.2 | -92.83 | -407.2 | -663.1 | 1,275.3 | 1,247.3 | 28.04 | 45.481 | |
| 7,200.0 | 7,110.9 | 7,201.6 | 7,136.0 | 17.4 | 18.1 | -93.49 | -392.6 | -663.1 | 1,276.2 | 1,248.3 | 27.84 | 45.837 | |
| 7,250.0 | 7,150.6 | 7,256.1 | 7,187.2 | 17.3 | 18.1 | -94.13 | -373.9 | -663.1 | 1,277.2 | 1,249.6 | 27.62 | 46.248 | |
| 7,300.0 | 7,188.0 | 7,312.0 | 7,238.0 | 17.2 | 18.0 | -94.76 | -350.6 | -663.1 | 1,278.4 | 1,251.0 | 27.38 | 46.696 | |
| 7,350.0 | 7,223.0 | 7,369.4 | 7,288.1 | 17.1 | 17.9 | -95.38 | -322.7 | -663.1 | 1,279.7 | 1,252.6 | 27.14 | 47.158 | |
| 7,400.0 | 7,255.5 | 7,428.4 | 7,337.2 | 17.0 | 17.8 | -95.99 | -289.9 | -663.1 | 1,281.1 | 1,254.2 | 26.91 | 47.604 | |
| 7,450.0 | 7,285.2 | 7,488.9 | 7,384.5 | 17.0 | 17.7 | -96.57 | -252.1 | -663.1 | 1,282.6 | 1,255.8 | 26.72 | 48.000 | |
| 7,500.0 | 7,312.0 | 7,551.1 | 7,429.6 | 17.0 | 17.6 | -97.12 | -209.4 | -663.1 | 1,284.1 | 1,257.5 | 26.58 | 48.308 | |
| 7,550.0 | 7,335.9 | 7,614.9 | 7,471.9 | 17.0 | 17.5 | -97.64 | -161.6 | -663.1 | 1,285.5 | 1,259.0 | 26.52 | 48.472 | |
| 7,600.0 | 7,356.6 | 7,680.3 | 7,510.6 | 17.1 | 17.5 | -98.11 | -108.9 | -663.1 | 1,287.0 | 1,260.4 | 26.56 | 48.460 | |
| 7,650.0 | 7,374.1 | 7,747.2 | 7,545.0 | 17.2 | 17.5 | -98.55 | -51.7 | -663.1 | 1,288.3 | 1,261.6 | 26.71 | 48.241 | |
| 7,700.0 | 7,388.3 | 7,815.4 | 7,574.6 | 17.3 | 17.6 | -98.93 | 9.9 | -663.1 | 1,289.6 | 1,262.6 | 26.99 | 47.771 | |
| 7,750.0 | 7,399.1 | 7,885.0 | 7,598.5 | 17.5 | 17.7 | -99.25 | 75.1 | -663.1 | 1,290.6 | 1,263.2 | 27.43 | 47.048 | |
| 7,800.0 | 7,406.4 | 7,955.5 | 7,616.1 | 17.7 | 18.0 | -99.51 | 143.4 | -663.1 | 1,291.5 | 1,263.5 | 28.02 | 46.095 | |
| 7,850.0 | 7,410.3 | 8,027.0 | 7,627.1 | 18.0 | 18.3 | -99.69 | 214.0 | -663.1 | 1,292.1 | 1,263.4 | 28.76 | 44.928 | |
| 7,881.0 | 7,411.0 | 8,071.5 | 7,630.4 | 18.1 | 18.6 | -99.77 | 258.4 | -663.1 | 1,292.4 | 1,263.1 | 29.29 | 44.124 | |
| 7,900.0 | 7,411.0 | 8,098.9 | 7,631.0 | 18.3 | 18.7 | -99.80 | 285.8 | -663.1 | 1,292.5 | 1,262.8 | 29.64 | 43.610 | |
| 8,000.0 | 7,411.0 | 8,199.8 | 7,631.0 | 19.0 | 19.4 | -99.80 | 386.6 | -663.1 | 1,292.5 | 1,261.1 | 31.36 | 41.218 | |
| 8,100.0 | 7,411.0 | 8,299.8 | 7,631.0 | 19.8 | 20.2 | -99.80 | 486.6 | -663.1 | 1,292.5 | 1,259.1 | 33.34 | 38.763 | |
| 8,200.0 | 7,411.0 | 8,399.8 | 7,631.0 | 20.8 | 21.2 | -99.80 | 586.6 | -663.1 | 1,292.5 | 1,256.9 | 35.55 | 36.351 | |
| 8,300.0 | 7,411.0 | 8,499.8 | 7,631.0 | 21.8 | 22.2 | -99.80 | 686.6 | -663.1 | 1,292.5 | 1,254.5 | 37.95 | 34.054 | |
| 8,400.0 | 7,411.0 | 8,599.8 | 7,631.0 | 23.0 | 23.3 | -99.80 | 786.6 | -663.1 | 1,292.5 | 1,252.0 | 40.51 | 31.909 | |
| 8,500.0 | 7,411.0 | 8,699.8 | 7,631.0 | 24.2 | 24.5 | -99.80 | 886.6 | -663.2 | 1,292.5 | 1,249.3 | 43.18 | 29.930 | |
| 8,600.0 | 7,411.0 | 8,799.8 | 7,631.0 | 25.5 | 25.8 | -99.80 | 986.6 | -663.2 | 1,292.5 | 1,246.5 | 45.97 | 28.118 | |
| 8,700.0 | 7,411.0 | 8,899.8 | 7,631.0 | 26.8 | 27.1 | -99.80 | 1,086.6 | -663.2 | 1,292.5 | 1,243.6 | 48.83 | 26.466 | |

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|-----------------------------|-------------------------------------|-----------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Mathews 4G-14H |
| Project: | DJ Wattenberg | TVD Reference: | Well @ 5117.0ft (Ensign) |
| Reference Site: | SWSE S14 T1N-R66W (Mathews) | MD Reference: | Well @ 5117.0ft (Ensign) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Mathews 4G-14H | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | HZ | Database: | USA EDM 5000 Multi Users DB |
| Reference Design: | Plan #3 | Offset TVD Reference: | Offset Datum |

| Offset Design SWSE S14 T1N-R66W (Mathews) - Mathews 4D-14H - HZ - Plan #3 | | | | | | | | | | | | | Offset Site Error: 0.0 ft | |
|---------------------------------------------------------------------------|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|------------------------|-------------------|---------------------------|---------|
| Survey Program: 0-MWD | | | | | | | | | | | | | Offset Well Error: 0.0 ft | |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | | | | Warning |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | | |
| 8,800.0 | 7,411.0 | 8,999.8 | 7,631.0 | 28.2 | 28.5 | -99.80 | 1,186.6 | -663.2 | 1,292.5 | 1,240.7 | 51.77 | 24.963 | | |
| 8,900.0 | 7,411.0 | 9,099.8 | 7,631.0 | 29.6 | 29.9 | -99.80 | 1,286.6 | -663.2 | 1,292.5 | 1,237.7 | 54.78 | 23.596 | | |
| 9,000.0 | 7,411.0 | 9,199.8 | 7,631.0 | 31.1 | 31.3 | -99.80 | 1,386.6 | -663.2 | 1,292.5 | 1,234.6 | 57.83 | 22.350 | | |
| 9,100.0 | 7,411.0 | 9,299.8 | 7,631.0 | 32.6 | 32.8 | -99.80 | 1,486.6 | -663.2 | 1,292.5 | 1,231.5 | 60.92 | 21.215 | | |
| 9,200.0 | 7,411.0 | 9,399.8 | 7,631.0 | 34.1 | 34.3 | -99.80 | 1,586.6 | -663.2 | 1,292.5 | 1,228.4 | 64.06 | 20.177 | | |
| 9,300.0 | 7,411.0 | 9,499.8 | 7,631.0 | 35.6 | 35.8 | -99.80 | 1,686.6 | -663.2 | 1,292.5 | 1,225.2 | 67.22 | 19.227 | | |
| 9,400.0 | 7,411.0 | 9,599.8 | 7,631.0 | 37.2 | 37.4 | -99.80 | 1,786.6 | -663.2 | 1,292.5 | 1,222.1 | 70.41 | 18.356 | | |
| 9,500.0 | 7,411.0 | 9,699.8 | 7,631.0 | 38.7 | 38.9 | -99.80 | 1,886.6 | -663.2 | 1,292.5 | 1,218.8 | 73.63 | 17.554 | | |
| 9,600.0 | 7,411.0 | 9,799.8 | 7,631.0 | 40.3 | 40.5 | -99.80 | 1,986.6 | -663.2 | 1,292.5 | 1,215.6 | 76.86 | 16.815 | | |
| 9,700.0 | 7,411.0 | 9,899.8 | 7,631.0 | 41.9 | 42.1 | -99.80 | 2,086.6 | -663.2 | 1,292.5 | 1,212.4 | 80.12 | 16.132 | | |
| 9,800.0 | 7,411.0 | 9,999.8 | 7,631.0 | 43.5 | 43.7 | -99.80 | 2,186.6 | -663.3 | 1,292.5 | 1,209.1 | 83.39 | 15.499 | | |
| 9,900.0 | 7,411.0 | 10,099.8 | 7,631.0 | 45.2 | 45.3 | -99.80 | 2,286.6 | -663.3 | 1,292.5 | 1,205.8 | 86.68 | 14.911 | | |
| 10,000.0 | 7,411.0 | 10,199.8 | 7,631.0 | 46.8 | 46.9 | -99.80 | 2,386.6 | -663.3 | 1,292.5 | 1,202.5 | 89.98 | 14.365 | | |
| 10,100.0 | 7,411.0 | 10,299.8 | 7,631.0 | 48.4 | 48.6 | -99.80 | 2,486.6 | -663.3 | 1,292.5 | 1,199.2 | 93.29 | 13.855 | | |
| 10,200.0 | 7,411.0 | 10,399.8 | 7,631.0 | 50.1 | 50.2 | -99.80 | 2,586.6 | -663.3 | 1,292.5 | 1,195.9 | 96.61 | 13.379 | | |
| 10,300.0 | 7,411.0 | 10,499.8 | 7,631.0 | 51.7 | 51.9 | -99.80 | 2,686.6 | -663.3 | 1,292.5 | 1,192.5 | 99.94 | 12.933 | | |
| 10,400.0 | 7,411.0 | 10,599.8 | 7,631.0 | 53.4 | 53.5 | -99.80 | 2,786.6 | -663.3 | 1,292.5 | 1,189.2 | 103.28 | 12.515 | | |
| 10,500.0 | 7,411.0 | 10,699.8 | 7,631.0 | 55.1 | 55.2 | -99.80 | 2,886.6 | -663.3 | 1,292.5 | 1,185.9 | 106.62 | 12.122 | | |
| 10,600.0 | 7,411.0 | 10,799.8 | 7,631.0 | 56.7 | 56.9 | -99.80 | 2,986.6 | -663.3 | 1,292.5 | 1,182.5 | 109.97 | 11.753 | | |
| 10,700.0 | 7,411.0 | 10,899.8 | 7,631.0 | 58.4 | 58.5 | -99.80 | 3,086.6 | -663.3 | 1,292.5 | 1,179.1 | 113.33 | 11.404 | | |
| 10,800.0 | 7,411.0 | 10,999.8 | 7,631.0 | 60.1 | 60.2 | -99.80 | 3,186.6 | -663.3 | 1,292.5 | 1,175.8 | 116.70 | 11.075 | | |
| 10,900.0 | 7,411.0 | 11,099.8 | 7,631.0 | 61.8 | 61.9 | -99.80 | 3,286.6 | -663.3 | 1,292.5 | 1,172.4 | 120.07 | 10.765 | | |
| 11,000.0 | 7,411.0 | 11,199.8 | 7,631.0 | 63.5 | 63.6 | -99.80 | 3,386.6 | -663.3 | 1,292.5 | 1,169.0 | 123.44 | 10.470 | | |
| 11,100.0 | 7,411.0 | 11,299.8 | 7,631.0 | 65.1 | 65.3 | -99.80 | 3,486.6 | -663.3 | 1,292.5 | 1,165.7 | 126.82 | 10.191 | | |
| 11,200.0 | 7,411.0 | 11,399.8 | 7,631.0 | 66.8 | 66.9 | -99.80 | 3,586.6 | -663.4 | 1,292.5 | 1,162.3 | 130.21 | 9.926 | | |
| 11,300.0 | 7,411.0 | 11,499.8 | 7,631.0 | 68.5 | 68.6 | -99.80 | 3,686.6 | -663.4 | 1,292.5 | 1,158.9 | 133.59 | 9.675 | | |
| 11,400.0 | 7,411.0 | 11,599.8 | 7,631.0 | 70.2 | 70.3 | -99.80 | 3,786.6 | -663.4 | 1,292.5 | 1,155.5 | 136.98 | 9.435 | | |
| 11,500.0 | 7,411.0 | 11,699.8 | 7,631.0 | 71.9 | 72.0 | -99.80 | 3,886.6 | -663.4 | 1,292.5 | 1,152.1 | 140.38 | 9.207 | | |
| 11,600.0 | 7,411.0 | 11,799.8 | 7,631.0 | 73.6 | 73.7 | -99.80 | 3,986.6 | -663.4 | 1,292.5 | 1,148.7 | 143.78 | 8.990 | | |
| 11,700.0 | 7,411.0 | 11,899.8 | 7,631.0 | 75.4 | 75.4 | -99.80 | 4,086.6 | -663.4 | 1,292.5 | 1,145.3 | 147.18 | 8.782 | | |
| 11,800.0 | 7,411.0 | 11,999.8 | 7,631.0 | 77.1 | 77.2 | -99.80 | 4,186.6 | -663.4 | 1,292.5 | 1,141.9 | 150.58 | 8.584 | | |
| 11,900.0 | 7,411.0 | 12,099.8 | 7,631.0 | 78.8 | 78.9 | -99.80 | 4,286.6 | -663.4 | 1,292.5 | 1,138.5 | 153.98 | 8.394 | | |
| 11,970.0 | 7,411.0 | 12,169.8 | 7,631.0 | 80.0 | 80.1 | -99.80 | 4,356.7 | -663.4 | 1,292.5 | 1,136.1 | 156.37 | 8.266 SF | | |

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|-----------------------------|-------------------------------------|-----------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Mathews 4G-14H |
| Project: | DJ Wattenberg | TVD Reference: | Well @ 5117.0ft (Ensign) |
| Reference Site: | SWSE S14 T1N-R66W (Mathews) | MD Reference: | Well @ 5117.0ft (Ensign) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Mathews 4G-14H | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | HZ | Database: | USA EDM 5000 Multi Users DB |
| Reference Design: | Plan #3 | Offset TVD Reference: | Offset Datum |

| Offset Design SWSE S14 T1N-R66W (Mathews) - Mathews 4E-14H - HZ - Plan #3 | | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|---------------------------------------------------------------------------|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|------------------|---------------|--------------------|--------|
| Survey Program: 0-MWD | | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | Distance | | Total | | Separation | | Warning | | |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Uncertainty Axis | | | |
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -80.77 | 3.6 | -22.4 | 22.7 | | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.2 | 0.2 | -80.77 | 3.6 | -22.4 | 22.7 | 22.4 | 0.30 | 74.718 | | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | -80.77 | 3.6 | -22.4 | 22.7 | 22.0 | 0.65 | 34.762 CC, ES | | |
| 300.0 | 300.0 | 300.0 | 300.0 | 0.5 | 0.5 | 153.89 | 3.6 | -22.4 | 23.5 | 22.5 | 1.00 | 23.427 | | |
| 400.0 | 400.0 | 400.0 | 400.0 | 0.7 | 0.7 | 156.44 | 3.6 | -22.4 | 25.8 | 24.5 | 1.35 | 19.126 | | |
| 500.0 | 499.9 | 499.8 | 499.8 | 0.9 | 0.9 | 158.13 | 2.9 | -22.8 | 30.1 | 28.3 | 1.70 | 17.659 | | |
| 600.0 | 599.7 | 599.5 | 599.4 | 1.1 | 1.0 | 157.65 | 0.5 | -23.9 | 36.2 | 34.2 | 2.06 | 17.612 | | |
| 700.0 | 699.4 | 699.0 | 698.8 | 1.3 | 1.2 | 155.97 | -3.4 | -25.8 | 44.4 | 41.9 | 2.42 | 18.331 | | |
| 800.0 | 798.9 | 798.2 | 797.9 | 1.5 | 1.4 | 153.81 | -8.8 | -28.4 | 54.5 | 51.7 | 2.80 | 19.494 | | |
| 900.0 | 898.3 | 897.2 | 896.5 | 1.8 | 1.6 | 151.59 | -15.8 | -31.7 | 66.8 | 63.6 | 3.19 | 20.914 | | |
| 1,000.0 | 997.4 | 995.7 | 994.6 | 2.0 | 1.8 | 149.49 | -24.3 | -35.7 | 81.2 | 77.6 | 3.61 | 22.469 | | |
| 1,100.0 | 1,096.3 | 1,093.7 | 1,092.0 | 2.3 | 2.1 | 147.60 | -34.2 | -40.5 | 97.7 | 93.6 | 4.06 | 24.076 | | |
| 1,200.0 | 1,194.9 | 1,191.2 | 1,188.7 | 2.7 | 2.3 | 145.92 | -45.6 | -45.9 | 116.4 | 111.8 | 4.53 | 25.679 | | |
| 1,300.0 | 1,293.4 | 1,289.2 | 1,285.7 | 3.0 | 2.6 | 144.61 | -57.9 | -51.7 | 136.2 | 131.1 | 5.02 | 27.111 | | |
| 1,400.0 | 1,391.9 | 1,387.1 | 1,382.7 | 3.3 | 2.9 | 143.63 | -70.2 | -57.6 | 156.0 | 150.5 | 5.52 | 28.256 | | |
| 1,500.0 | 1,490.4 | 1,485.1 | 1,479.7 | 3.7 | 3.1 | 142.87 | -82.5 | -63.5 | 175.9 | 169.9 | 6.03 | 29.188 | | |
| 1,600.0 | 1,588.9 | 1,583.1 | 1,576.8 | 4.0 | 3.4 | 142.26 | -94.8 | -69.4 | 195.9 | 189.3 | 6.54 | 29.959 | | |
| 1,700.0 | 1,687.3 | 1,681.1 | 1,673.8 | 4.4 | 3.7 | 141.77 | -107.1 | -75.2 | 215.8 | 208.8 | 7.05 | 30.606 | | |
| 1,800.0 | 1,785.8 | 1,779.0 | 1,770.8 | 4.7 | 4.0 | 141.36 | -119.4 | -81.1 | 235.8 | 228.2 | 7.57 | 31.155 | | |
| 1,900.0 | 1,884.3 | 1,877.0 | 1,867.8 | 5.0 | 4.3 | 141.02 | -131.7 | -87.0 | 255.7 | 247.7 | 8.09 | 31.627 | | |
| 2,000.0 | 1,982.8 | 1,975.0 | 1,964.8 | 5.4 | 4.5 | 140.72 | -144.0 | -92.8 | 275.7 | 267.1 | 8.61 | 32.036 | | |
| 2,100.0 | 2,081.3 | 2,073.0 | 2,061.9 | 5.7 | 4.8 | 140.46 | -156.3 | -98.7 | 295.7 | 286.6 | 9.13 | 32.393 | | |
| 2,200.0 | 2,179.7 | 2,170.9 | 2,158.9 | 6.1 | 5.1 | 140.24 | -168.7 | -104.6 | 315.7 | 306.0 | 9.65 | 32.708 | | |
| 2,300.0 | 2,278.2 | 2,268.9 | 2,255.9 | 6.4 | 5.4 | 140.04 | -181.0 | -110.4 | 335.7 | 325.5 | 10.18 | 32.988 | | |
| 2,400.0 | 2,376.7 | 2,366.9 | 2,352.9 | 6.8 | 5.7 | 139.87 | -193.3 | -116.3 | 355.7 | 345.0 | 10.70 | 33.237 | | |
| 2,500.0 | 2,475.2 | 2,464.9 | 2,449.9 | 7.1 | 6.0 | 139.71 | -205.6 | -122.2 | 375.7 | 364.4 | 11.23 | 33.461 | | |
| 2,600.0 | 2,573.7 | 2,562.8 | 2,547.0 | 7.5 | 6.3 | 139.57 | -217.9 | -128.1 | 395.7 | 383.9 | 11.75 | 33.664 | | |
| 2,700.0 | 2,672.1 | 2,660.8 | 2,644.0 | 7.8 | 6.6 | 139.44 | -230.2 | -133.9 | 415.7 | 403.4 | 12.28 | 33.847 | | |
| 2,800.0 | 2,770.6 | 2,758.8 | 2,741.0 | 8.2 | 6.8 | 139.33 | -242.5 | -139.8 | 435.7 | 422.9 | 12.81 | 34.014 | | |
| 2,900.0 | 2,869.1 | 2,856.8 | 2,838.0 | 8.5 | 7.1 | 139.22 | -254.8 | -145.7 | 455.7 | 442.4 | 13.34 | 34.167 | | |
| 3,000.0 | 2,967.6 | 2,954.7 | 2,935.1 | 8.9 | 7.4 | 139.13 | -267.1 | -151.5 | 475.7 | 461.8 | 13.87 | 34.308 | | |
| 3,100.0 | 3,066.1 | 3,052.7 | 3,032.1 | 9.2 | 7.7 | 139.04 | -279.4 | -157.4 | 495.7 | 481.3 | 14.39 | 34.437 | | |
| 3,200.0 | 3,164.5 | 3,150.7 | 3,129.1 | 9.6 | 8.0 | 138.96 | -291.7 | -163.3 | 515.7 | 500.8 | 14.92 | 34.556 | | |
| 3,300.0 | 3,263.0 | 3,248.7 | 3,226.1 | 9.9 | 8.3 | 138.88 | -304.0 | -169.1 | 535.7 | 520.3 | 15.45 | 34.667 | | |
| 3,400.0 | 3,361.5 | 3,346.6 | 3,323.1 | 10.3 | 8.6 | 138.81 | -316.3 | -175.0 | 555.7 | 539.7 | 15.98 | 34.770 | | |
| 3,500.0 | 3,460.0 | 3,444.6 | 3,420.2 | 10.6 | 8.9 | 138.75 | -328.6 | -180.9 | 575.7 | 559.2 | 16.51 | 34.866 | | |
| 3,600.0 | 3,558.5 | 3,542.6 | 3,517.2 | 11.0 | 9.2 | 138.69 | -341.0 | -186.8 | 595.8 | 578.7 | 17.04 | 34.955 | | |
| 3,700.0 | 3,657.0 | 3,640.6 | 3,614.2 | 11.3 | 9.5 | 138.63 | -353.3 | -192.6 | 615.8 | 598.2 | 17.57 | 35.039 | | |
| 3,800.0 | 3,755.4 | 3,738.5 | 3,711.2 | 11.7 | 9.8 | 138.58 | -365.6 | -198.5 | 635.8 | 617.7 | 18.10 | 35.117 | | |
| 3,900.0 | 3,853.9 | 3,836.5 | 3,808.3 | 12.0 | 10.0 | 138.53 | -377.9 | -204.4 | 655.8 | 637.2 | 18.64 | 35.191 | | |
| 4,000.0 | 3,952.4 | 3,936.6 | 3,907.4 | 12.4 | 10.3 | 138.49 | -390.4 | -210.3 | 675.8 | 656.6 | 19.17 | 35.260 | | |
| 4,100.0 | 4,050.9 | 4,041.0 | 4,011.0 | 12.7 | 10.6 | 138.56 | -402.0 | -215.9 | 695.0 | 675.3 | 19.68 | 35.312 | | |
| 4,200.0 | 4,149.4 | 4,145.7 | 4,115.1 | 13.1 | 10.9 | 138.76 | -412.0 | -220.6 | 713.4 | 693.2 | 20.17 | 35.363 | | |
| 4,300.0 | 4,247.8 | 4,250.6 | 4,219.6 | 13.4 | 11.1 | 139.08 | -420.3 | -224.6 | 730.9 | 710.2 | 20.64 | 35.414 | | |
| 4,400.0 | 4,346.3 | 4,355.7 | 4,324.5 | 13.8 | 11.3 | 139.52 | -426.8 | -227.7 | 747.5 | 726.4 | 21.07 | 35.468 | | |
| 4,500.0 | 4,444.8 | 4,461.0 | 4,429.6 | 14.1 | 11.5 | 140.07 | -431.7 | -230.0 | 763.3 | 741.8 | 21.48 | 35.529 | | |
| 4,560.0 | 4,503.9 | 4,524.1 | 4,492.7 | 14.4 | 11.6 | 140.45 | -433.7 | -231.0 | 772.4 | 750.6 | 21.71 | 35.569 | | |
| 4,600.0 | 4,543.3 | 4,566.2 | 4,534.8 | 14.5 | 11.6 | 140.75 | -434.8 | -231.5 | 778.2 | 756.3 | 21.87 | 35.586 | | |
| 4,700.0 | 4,642.0 | 4,671.7 | 4,640.2 | 14.8 | 11.8 | 141.51 | -436.1 | -232.2 | 791.2 | 769.0 | 22.22 | 35.609 | | |
| 4,800.0 | 4,741.0 | 4,772.5 | 4,741.0 | 15.1 | 11.9 | 142.21 | -436.2 | -232.2 | 802.3 | 779.8 | 22.54 | 35.591 | | |
| 4,900.0 | 4,840.3 | 4,871.7 | 4,840.3 | 15.4 | 12.0 | 142.80 | -436.2 | -232.2 | 812.2 | 789.3 | 22.86 | 35.534 | | |
| 5,000.0 | 4,939.7 | 4,971.2 | 4,939.7 | 15.6 | 12.1 | 143.30 | -436.2 | -232.2 | 820.7 | 797.5 | 23.16 | 35.436 | | |

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|-----------------------------|-------------------------------------|-----------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Mathews 4G-14H |
| Project: | DJ Wattenberg | TVD Reference: | Well @ 5117.0ft (Ensign) |
| Reference Site: | SWSE S14 T1N-R66W (Mathews) | MD Reference: | Well @ 5117.0ft (Ensign) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Mathews 4G-14H | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | HZ | Database: | USA EDM 5000 Multi Users DB |
| Reference Design: | Plan #3 | Offset TVD Reference: | Offset Datum |

| Offset Design | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|-----------------------|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|------------------|--------------------|--------|
| Survey Program: O-MWD | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | Distance | | Total | | Separation | | Warning | |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Uncertainty Axis | Factor | |
| 5,100.0 | 5,039.3 | 5,070.8 | 5,039.3 | 15.8 | 12.3 | 143.71 | -436.2 | -232.2 | 827.8 | 804.4 | 23.46 | 35.294 | |
| 5,200.0 | 5,139.1 | 5,170.5 | 5,139.1 | 16.0 | 12.4 | 144.03 | -436.2 | -232.2 | 833.6 | 809.9 | 23.74 | 35.109 | |
| 5,300.0 | 5,238.9 | 5,270.4 | 5,238.9 | 16.2 | 12.5 | 144.27 | -436.2 | -232.2 | 838.0 | 814.0 | 24.02 | 34.881 | |
| 5,400.0 | 5,338.8 | 5,370.3 | 5,338.8 | 16.3 | 12.6 | 144.44 | -436.2 | -232.2 | 841.0 | 816.7 | 24.30 | 34.609 | |
| 5,500.0 | 5,438.8 | 5,470.3 | 5,438.8 | 16.4 | 12.8 | 144.52 | -436.2 | -232.2 | 842.5 | 818.0 | 24.57 | 34.294 | |
| 5,560.0 | 5,498.8 | 5,530.3 | 5,498.8 | 16.5 | 12.9 | -89.16 | -436.2 | -232.2 | 842.8 | 818.1 | 24.73 | 34.084 | |
| 5,600.0 | 5,538.8 | 5,570.3 | 5,538.8 | 16.5 | 12.9 | -89.16 | -436.2 | -232.2 | 842.8 | 818.0 | 24.84 | 33.934 | |
| 5,700.0 | 5,638.8 | 5,670.3 | 5,638.8 | 16.6 | 13.0 | -89.16 | -436.2 | -232.2 | 842.8 | 817.7 | 25.11 | 33.564 | |
| 5,800.0 | 5,738.8 | 5,770.3 | 5,738.8 | 16.7 | 13.2 | -89.16 | -436.2 | -232.2 | 842.8 | 817.4 | 25.39 | 33.198 | |
| 5,900.0 | 5,838.8 | 5,870.3 | 5,838.8 | 16.8 | 13.3 | -89.16 | -436.2 | -232.2 | 842.8 | 817.1 | 25.66 | 32.839 | |
| 6,000.0 | 5,938.8 | 5,970.3 | 5,938.8 | 16.9 | 13.4 | -89.16 | -436.2 | -232.2 | 842.8 | 816.9 | 25.94 | 32.485 | |
| 6,100.0 | 6,038.8 | 6,070.3 | 6,038.8 | 17.1 | 13.6 | -89.16 | -436.2 | -232.2 | 842.8 | 816.6 | 26.23 | 32.137 | |
| 6,200.0 | 6,138.8 | 6,170.3 | 6,138.8 | 17.2 | 13.7 | -89.16 | -436.2 | -232.2 | 842.8 | 816.3 | 26.51 | 31.794 | |
| 6,300.0 | 6,238.8 | 6,270.3 | 6,238.8 | 17.3 | 13.9 | -89.16 | -436.2 | -232.2 | 842.8 | 816.0 | 26.79 | 31.456 | |
| 6,400.0 | 6,338.8 | 6,370.3 | 6,338.8 | 17.4 | 14.0 | -89.16 | -436.2 | -232.2 | 842.8 | 815.7 | 27.08 | 31.124 | |
| 6,500.0 | 6,438.8 | 6,470.3 | 6,438.8 | 17.5 | 14.1 | -89.16 | -436.2 | -232.2 | 842.8 | 815.4 | 27.37 | 30.797 | |
| 6,600.0 | 6,538.8 | 6,570.3 | 6,538.8 | 17.6 | 14.3 | -89.16 | -436.2 | -232.2 | 842.8 | 815.1 | 27.66 | 30.475 | |
| 6,700.0 | 6,638.8 | 6,670.3 | 6,638.8 | 17.7 | 14.4 | -89.16 | -436.2 | -232.2 | 842.8 | 814.9 | 27.95 | 30.159 | |
| 6,756.0 | 6,694.8 | 6,726.3 | 6,694.8 | 17.8 | 14.5 | -89.16 | -436.2 | -232.2 | 842.8 | 814.7 | 28.11 | 29.984 | |
| 6,800.0 | 6,738.8 | 6,769.5 | 6,738.8 | 17.8 | 14.5 | -89.16 | -434.9 | -232.2 | 842.8 | 814.6 | 28.18 | 29.903 | |
| 6,850.0 | 6,788.5 | 6,818.7 | 6,787.0 | 17.8 | 14.5 | -89.17 | -430.2 | -232.2 | 842.8 | 814.6 | 28.21 | 29.877 | |
| 6,900.0 | 6,837.8 | 6,867.9 | 6,835.5 | 17.8 | 14.5 | -89.18 | -422.2 | -232.2 | 842.8 | 814.6 | 28.18 | 29.913 | |
| 6,950.0 | 6,886.5 | 6,917.0 | 6,883.3 | 17.8 | 14.5 | -89.19 | -410.9 | -232.2 | 842.8 | 814.7 | 28.09 | 30.006 | |
| 7,000.0 | 6,934.1 | 6,966.2 | 6,930.3 | 17.7 | 14.4 | -89.21 | -396.4 | -232.2 | 842.8 | 814.8 | 27.95 | 30.151 | |
| 7,050.0 | 6,980.6 | 7,015.5 | 6,976.2 | 17.6 | 14.3 | -89.23 | -378.6 | -232.2 | 842.8 | 815.0 | 27.78 | 30.341 | |
| 7,100.0 | 7,025.7 | 7,064.7 | 7,020.8 | 17.6 | 14.2 | -89.25 | -357.7 | -232.2 | 842.8 | 815.2 | 27.57 | 30.568 | |
| 7,150.0 | 7,069.2 | 7,114.0 | 7,063.8 | 17.5 | 14.1 | -89.28 | -333.8 | -232.2 | 842.8 | 815.4 | 27.34 | 30.822 | |
| 7,200.0 | 7,110.9 | 7,163.2 | 7,105.2 | 17.4 | 14.0 | -89.32 | -307.0 | -232.2 | 842.8 | 815.7 | 27.11 | 31.091 | |
| 7,250.0 | 7,150.6 | 7,212.6 | 7,144.6 | 17.3 | 13.9 | -89.35 | -277.3 | -232.2 | 842.8 | 815.9 | 26.87 | 31.362 | |
| 7,300.0 | 7,188.0 | 7,261.9 | 7,181.9 | 17.2 | 13.8 | -89.39 | -245.1 | -232.2 | 842.7 | 816.1 | 26.65 | 31.619 | |
| 7,350.0 | 7,223.0 | 7,311.3 | 7,216.9 | 17.1 | 13.7 | -89.43 | -210.2 | -232.2 | 842.7 | 816.3 | 26.46 | 31.844 | |
| 7,400.0 | 7,255.5 | 7,360.8 | 7,249.5 | 17.0 | 13.6 | -89.47 | -173.1 | -232.2 | 842.7 | 816.4 | 26.32 | 32.019 | |
| 7,450.0 | 7,285.2 | 7,410.3 | 7,279.5 | 17.0 | 13.6 | -89.52 | -133.7 | -232.2 | 842.7 | 816.5 | 26.23 | 32.124 | |
| 7,500.0 | 7,312.0 | 7,459.8 | 7,306.7 | 17.0 | 13.6 | -89.57 | -92.3 | -232.2 | 842.7 | 816.5 | 26.22 | 32.143 | |
| 7,550.0 | 7,335.9 | 7,509.4 | 7,330.9 | 17.0 | 13.6 | -89.62 | -49.1 | -232.2 | 842.7 | 816.4 | 26.28 | 32.061 | |
| 7,600.0 | 7,356.6 | 7,559.0 | 7,352.2 | 17.1 | 13.7 | -89.67 | -4.2 | -232.2 | 842.7 | 816.3 | 26.44 | 31.867 | |
| 7,650.0 | 7,374.1 | 7,608.7 | 7,370.3 | 17.2 | 13.8 | -89.73 | 42.0 | -232.2 | 842.7 | 816.0 | 26.70 | 31.558 | |
| 7,700.0 | 7,388.3 | 7,658.4 | 7,385.2 | 17.3 | 14.0 | -89.79 | 89.5 | -232.2 | 842.7 | 815.6 | 27.07 | 31.135 | |
| 7,750.0 | 7,399.1 | 7,708.3 | 7,396.8 | 17.5 | 14.2 | -89.84 | 137.9 | -232.2 | 842.7 | 815.1 | 27.53 | 30.607 | |
| 7,800.0 | 7,406.4 | 7,758.1 | 7,405.0 | 17.7 | 14.5 | -89.90 | 187.1 | -232.2 | 842.7 | 814.6 | 28.10 | 29.986 | |
| 7,850.0 | 7,410.3 | 7,808.0 | 7,409.7 | 18.0 | 14.8 | -89.96 | 236.8 | -232.2 | 842.7 | 813.9 | 28.77 | 29.290 | |
| 7,881.0 | 7,411.0 | 7,839.0 | 7,410.9 | 18.1 | 15.0 | -89.99 | 267.7 | -232.2 | 842.7 | 813.4 | 29.23 | 28.828 | |
| 7,900.0 | 7,411.0 | 7,858.0 | 7,411.0 | 18.3 | 15.2 | -90.00 | 286.7 | -232.2 | 842.7 | 813.1 | 29.53 | 28.539 | |
| 8,000.0 | 7,411.0 | 7,958.0 | 7,411.0 | 19.0 | 16.0 | -90.00 | 386.7 | -232.2 | 842.7 | 811.4 | 31.30 | 26.923 | |
| 8,100.0 | 7,411.0 | 8,058.0 | 7,411.0 | 19.8 | 17.0 | -90.00 | 486.7 | -232.2 | 842.6 | 809.3 | 33.33 | 25.282 | |
| 8,200.0 | 7,411.0 | 8,158.0 | 7,411.0 | 20.8 | 18.1 | -90.00 | 586.7 | -232.2 | 842.6 | 807.1 | 35.59 | 23.675 | |
| 8,300.0 | 7,411.0 | 8,258.0 | 7,411.0 | 21.8 | 19.3 | -90.00 | 686.7 | -232.2 | 842.6 | 804.6 | 38.04 | 22.149 | |
| 8,400.0 | 7,411.0 | 8,358.0 | 7,411.0 | 23.0 | 20.6 | -90.00 | 786.7 | -232.2 | 842.6 | 802.0 | 40.65 | 20.728 | |
| 8,500.0 | 7,411.0 | 8,458.0 | 7,411.0 | 24.2 | 22.0 | -90.00 | 886.7 | -232.2 | 842.6 | 799.2 | 43.39 | 19.421 | |
| 8,600.0 | 7,411.0 | 8,558.0 | 7,411.0 | 25.5 | 23.4 | -90.00 | 986.7 | -232.2 | 842.6 | 796.4 | 46.23 | 18.228 | |
| 8,700.0 | 7,411.0 | 8,658.0 | 7,411.0 | 26.8 | 24.8 | -90.00 | 1,086.7 | -232.2 | 842.6 | 793.5 | 49.15 | 17.143 | |
| 8,800.0 | 7,411.0 | 8,758.0 | 7,411.0 | 28.2 | 26.3 | -90.00 | 1,186.7 | -232.2 | 842.6 | 790.5 | 52.15 | 16.158 | |

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|-----------------------------|-------------------------------------|-----------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Mathews 4G-14H |
| Project: | DJ Wattenberg | TVD Reference: | Well @ 5117.0ft (Ensign) |
| Reference Site: | SWSE S14 T1N-R66W (Mathews) | MD Reference: | Well @ 5117.0ft (Ensign) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Mathews 4G-14H | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | HZ | Database: | USA EDM 5000 Multi Users DB |
| Reference Design: | Plan #3 | Offset TVD Reference: | Offset Datum |

| Offset Design SWSE S14 T1N-R66W (Mathews) - Mathews 4E-14H - HZ - Plan #3 | | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|---------------------------------------------------------------------------|------------------------|------------------------|------------------------|-------------------|----------------|-----------------------------|-----------------------------------------|---------------|----------------------------|-----------------------------|---------------------|------------|--------------------|--------|
| Survey Program: 0-MWD | | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | Total | Separation | Warning | |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Uncertainty Axis | Factor | | |
| 8,900.0 | 7,411.0 | 8,858.0 | 7,411.0 | 29.6 | 27.8 | -90.00 | 1,286.7 | -232.2 | 842.6 | 787.4 | 55.21 | 15.262 | | |
| 9,000.0 | 7,411.0 | 8,958.0 | 7,411.0 | 31.1 | 29.3 | -90.00 | 1,386.7 | -232.2 | 842.6 | 784.3 | 58.32 | 14.449 | | |
| 9,100.0 | 7,411.0 | 9,058.0 | 7,411.0 | 32.6 | 30.9 | -90.00 | 1,486.7 | -232.2 | 842.6 | 781.1 | 61.47 | 13.708 | | |
| 9,200.0 | 7,411.0 | 9,158.0 | 7,411.0 | 34.1 | 32.5 | -90.00 | 1,586.7 | -232.2 | 842.6 | 777.9 | 64.66 | 13.032 | | |
| 9,300.0 | 7,411.0 | 9,258.0 | 7,411.0 | 35.6 | 34.1 | -90.00 | 1,686.7 | -232.2 | 842.6 | 774.7 | 67.88 | 12.413 | | |
| 9,372.6 | 7,411.0 | 9,330.6 | 7,411.0 | 36.7 | 35.3 | -90.00 | 1,759.3 | -232.2 | 842.6 | 772.3 | 70.23 | 11.997 | | |
| 9,400.0 | 7,411.0 | 9,357.2 | 7,411.0 | 37.2 | 35.7 | -90.00 | 1,785.9 | -232.2 | 842.6 | 771.5 | 71.11 | 11.849 | | |
| 9,500.0 | 7,411.0 | 9,444.3 | 7,411.0 | 38.7 | 37.1 | -90.00 | 1,873.0 | -232.9 | 843.4 | 769.3 | 74.17 | 11.372 | | |
| 9,600.0 | 7,411.0 | 9,531.5 | 7,411.0 | 40.3 | 38.5 | -90.00 | 1,960.1 | -235.0 | 845.8 | 768.6 | 77.25 | 10.949 | | |
| 9,700.0 | 7,411.0 | 9,618.5 | 7,411.0 | 41.9 | 40.0 | -90.00 | 2,047.1 | -238.4 | 849.7 | 769.4 | 80.34 | 10.577 | | |
| 9,800.0 | 7,411.0 | 9,705.4 | 7,411.0 | 43.5 | 41.4 | -90.00 | 2,133.9 | -243.1 | 855.1 | 771.7 | 83.44 | 10.248 | | |
| 9,900.0 | 7,411.0 | 9,798.3 | 7,411.0 | 45.2 | 43.0 | -90.00 | 2,226.6 | -249.4 | 861.9 | 775.2 | 86.65 | 9.946 | | |
| 10,000.0 | 7,411.0 | 9,898.1 | 7,411.0 | 46.8 | 44.6 | -90.00 | 2,326.1 | -256.4 | 868.8 | 778.8 | 89.99 | 9.654 | | |
| 10,100.0 | 7,411.0 | 9,997.8 | 7,411.0 | 48.4 | 46.3 | -90.00 | 2,425.6 | -263.3 | 875.8 | 782.5 | 93.35 | 9.382 | | |
| 10,200.0 | 7,411.0 | 10,097.6 | 7,411.0 | 50.1 | 48.0 | -90.00 | 2,525.2 | -270.3 | 882.8 | 786.1 | 96.71 | 9.128 | | |
| 10,300.0 | 7,411.0 | 10,197.4 | 7,411.0 | 51.7 | 49.7 | -90.00 | 2,624.7 | -277.3 | 889.7 | 789.7 | 100.08 | 8.890 | | |
| 10,400.0 | 7,411.0 | 10,297.1 | 7,411.0 | 53.4 | 51.4 | -90.00 | 2,724.2 | -284.2 | 896.7 | 793.2 | 103.47 | 8.667 | | |
| 10,500.0 | 7,411.0 | 10,396.9 | 7,411.0 | 55.1 | 53.1 | -90.00 | 2,823.7 | -291.2 | 903.7 | 796.8 | 106.86 | 8.457 | | |
| 10,600.0 | 7,411.0 | 10,496.6 | 7,411.0 | 56.7 | 54.8 | -90.00 | 2,923.2 | -298.1 | 910.7 | 800.4 | 110.25 | 8.260 | | |
| 10,700.0 | 7,411.0 | 10,605.0 | 7,411.0 | 58.4 | 56.6 | -90.00 | 3,031.3 | -305.4 | 917.4 | 803.6 | 113.80 | 8.061 | | |
| 10,800.0 | 7,411.0 | 10,724.0 | 7,411.0 | 60.1 | 58.6 | -90.00 | 3,150.1 | -311.4 | 922.4 | 804.9 | 117.54 | 7.847 | | |
| 10,900.0 | 7,411.0 | 10,843.1 | 7,411.0 | 61.8 | 60.7 | -90.00 | 3,269.3 | -314.9 | 925.3 | 804.0 | 121.29 | 7.629 | | |
| 11,000.0 | 7,411.0 | 10,962.4 | 7,411.0 | 63.5 | 62.7 | -90.00 | 3,388.5 | -315.9 | 926.2 | 801.1 | 125.05 | 7.406 | | |
| 11,100.0 | 7,411.0 | 11,081.7 | 7,411.0 | 65.1 | 64.7 | -90.00 | 3,507.8 | -314.4 | 924.9 | 796.1 | 128.81 | 7.180 | | |
| 11,200.0 | 7,411.0 | 11,200.8 | 7,411.0 | 66.8 | 66.8 | -90.00 | 3,626.9 | -310.5 | 921.6 | 789.0 | 132.58 | 6.951 | | |
| 11,300.0 | 7,411.0 | 11,319.7 | 7,411.0 | 68.5 | 68.8 | -90.00 | 3,745.6 | -304.1 | 916.2 | 779.9 | 136.34 | 6.720 | | |
| 11,400.0 | 7,411.0 | 11,438.4 | 7,411.0 | 70.2 | 70.8 | -90.00 | 3,863.9 | -295.2 | 908.7 | 768.6 | 140.10 | 6.486 | | |
| 11,500.0 | 7,411.0 | 11,556.6 | 7,411.0 | 71.9 | 72.9 | -90.00 | 3,981.5 | -284.0 | 899.2 | 755.4 | 143.86 | 6.251 | | |
| 11,600.0 | 7,411.0 | 11,671.6 | 7,411.0 | 73.6 | 74.8 | -90.00 | 4,095.8 | -270.7 | 887.7 | 740.1 | 147.56 | 6.016 | | |
| 11,700.0 | 7,411.0 | 11,770.8 | 7,411.0 | 75.4 | 76.5 | -90.00 | 4,194.3 | -258.5 | 875.4 | 724.4 | 150.99 | 5.797 | | |
| 11,800.0 | 7,411.0 | 11,870.1 | 7,411.0 | 77.1 | 78.2 | -90.00 | 4,292.8 | -246.3 | 863.1 | 708.7 | 154.43 | 5.589 | | |
| 11,900.0 | 7,411.0 | 11,938.2 | 7,411.0 | 78.8 | 79.4 | -90.00 | 4,360.4 | -237.9 | 851.4 | 694.0 | 157.33 | 5.411 | | |
| 11,970.0 | 7,411.0 | 11,938.2 | 7,411.0 | 80.0 | 79.4 | -90.00 | 4,360.4 | -237.9 | 848.2 | 689.6 | 158.54 | 5.350 SF | | |

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|-----------------------------|-------------------------------------|-----------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Mathews 4G-14H |
| Project: | DJ Wattenberg | TVD Reference: | Well @ 5117.0ft (Ensign) |
| Reference Site: | SWSE S14 T1N-R66W (Mathews) | MD Reference: | Well @ 5117.0ft (Ensign) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Mathews 4G-14H | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | HZ | Database: | USA EDM 5000 Multi Users DB |
| Reference Design: | Plan #3 | Offset TVD Reference: | Offset Datum |

| Offset Design SWSE S14 T1N-R66W (Mathews) - Mathews 4F-14H - HZ - Plan #3 | | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|---------------------------------------------------------------------------|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|------------------|------------|--------------------|--------|
| Survey Program: 0-MWD | | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | Total | Separation | Warning | |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Uncertainty Axis | Factor | | |
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -71.98 | 3.6 | -11.2 | 11.8 | | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.2 | 0.2 | -71.98 | 3.6 | -11.2 | 11.8 | 11.5 | 0.30 | 38.778 | | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | -71.98 | 3.6 | -11.2 | 11.8 | 11.1 | 0.65 | 18.041 | CC, ES | |
| 300.0 | 300.0 | 300.0 | 300.0 | 0.5 | 0.5 | 162.96 | 3.6 | -11.2 | 12.6 | 11.6 | 1.00 | 12.585 | | |
| 400.0 | 400.0 | 400.1 | 400.1 | 0.7 | 0.7 | 163.46 | 2.8 | -10.8 | 14.5 | 13.2 | 1.35 | 10.739 | | |
| 500.0 | 499.9 | 500.3 | 500.3 | 0.9 | 0.9 | 161.22 | 0.4 | -9.8 | 16.9 | 15.2 | 1.70 | 9.918 | | |
| 600.0 | 599.7 | 600.4 | 600.3 | 1.1 | 1.0 | 157.41 | -3.6 | -8.0 | 19.8 | 17.8 | 2.06 | 9.610 | | |
| 700.0 | 699.4 | 700.6 | 700.3 | 1.3 | 1.2 | 152.89 | -9.2 | -5.5 | 23.4 | 21.0 | 2.44 | 9.601 | | |
| 800.0 | 798.9 | 800.7 | 800.1 | 1.5 | 1.4 | 148.28 | -16.4 | -2.4 | 27.8 | 24.9 | 2.84 | 9.774 | | |
| 900.0 | 898.3 | 900.8 | 899.7 | 1.8 | 1.7 | 143.91 | -25.1 | 1.5 | 32.9 | 29.7 | 3.28 | 10.050 | | |
| 1,000.0 | 997.4 | 1,000.8 | 999.0 | 2.0 | 1.9 | 139.95 | -35.5 | 6.1 | 39.0 | 35.2 | 3.76 | 10.378 | | |
| 1,100.0 | 1,096.3 | 1,100.8 | 1,098.2 | 2.3 | 2.2 | 136.44 | -47.5 | 11.3 | 45.9 | 41.6 | 4.28 | 10.723 | | |
| 1,200.0 | 1,194.9 | 1,200.6 | 1,196.9 | 2.7 | 2.5 | 133.39 | -61.0 | 17.3 | 53.7 | 48.9 | 4.86 | 11.063 | | |
| 1,300.0 | 1,293.4 | 1,300.5 | 1,295.4 | 3.0 | 2.8 | 130.18 | -76.1 | 24.0 | 61.9 | 56.4 | 5.48 | 11.285 | | |
| 1,400.0 | 1,391.9 | 1,400.1 | 1,393.5 | 3.3 | 3.1 | 127.04 | -91.9 | 30.9 | 70.1 | 63.9 | 6.14 | 11.419 | | |
| 1,500.0 | 1,490.4 | 1,499.7 | 1,491.6 | 3.7 | 3.5 | 124.56 | -107.7 | 37.9 | 78.4 | 71.6 | 6.80 | 11.537 | | |
| 1,600.0 | 1,588.9 | 1,599.3 | 1,589.6 | 4.0 | 3.8 | 122.56 | -123.5 | 44.9 | 86.9 | 79.4 | 7.47 | 11.641 | | |
| 1,700.0 | 1,687.3 | 1,698.9 | 1,687.7 | 4.4 | 4.1 | 120.91 | -139.4 | 51.9 | 95.5 | 87.3 | 8.14 | 11.733 | | |
| 1,800.0 | 1,785.8 | 1,798.5 | 1,785.8 | 4.7 | 4.5 | 119.54 | -155.2 | 58.9 | 104.1 | 95.3 | 8.81 | 11.816 | | |
| 1,900.0 | 1,884.3 | 1,898.1 | 1,883.9 | 5.0 | 4.8 | 118.38 | -171.0 | 65.8 | 112.8 | 103.3 | 9.49 | 11.889 | | |
| 2,000.0 | 1,982.8 | 1,997.7 | 1,982.0 | 5.4 | 5.1 | 117.38 | -186.8 | 72.8 | 121.5 | 111.3 | 10.16 | 11.955 | | |
| 2,100.0 | 2,081.3 | 2,097.3 | 2,080.1 | 5.7 | 5.5 | 116.52 | -202.7 | 79.8 | 130.3 | 119.4 | 10.84 | 12.015 | | |
| 2,200.0 | 2,179.7 | 2,196.9 | 2,178.2 | 6.1 | 5.8 | 115.77 | -218.5 | 86.8 | 139.0 | 127.5 | 11.52 | 12.069 | | |
| 2,300.0 | 2,278.2 | 2,296.5 | 2,276.2 | 6.4 | 6.2 | 115.10 | -234.3 | 93.8 | 147.8 | 135.6 | 12.20 | 12.118 | | |
| 2,400.0 | 2,376.7 | 2,396.1 | 2,374.3 | 6.8 | 6.5 | 114.51 | -250.1 | 100.7 | 156.6 | 143.8 | 12.88 | 12.163 | | |
| 2,500.0 | 2,475.2 | 2,495.7 | 2,472.4 | 7.1 | 6.8 | 113.99 | -266.0 | 107.7 | 165.5 | 151.9 | 13.56 | 12.204 | | |
| 2,600.0 | 2,573.7 | 2,595.3 | 2,570.5 | 7.5 | 7.2 | 113.51 | -281.8 | 114.7 | 174.3 | 160.1 | 14.24 | 12.242 | | |
| 2,700.0 | 2,672.1 | 2,694.9 | 2,668.6 | 7.8 | 7.5 | 113.09 | -297.6 | 121.7 | 183.2 | 168.2 | 14.92 | 12.276 | | |
| 2,800.0 | 2,770.6 | 2,794.4 | 2,766.7 | 8.2 | 7.9 | 112.70 | -313.4 | 128.7 | 192.0 | 176.4 | 15.60 | 12.309 | | |
| 2,900.0 | 2,869.1 | 2,894.0 | 2,864.8 | 8.5 | 8.2 | 112.34 | -329.3 | 135.6 | 200.9 | 184.6 | 16.28 | 12.338 | | |
| 3,000.0 | 2,967.6 | 2,993.6 | 2,962.8 | 8.9 | 8.6 | 112.02 | -345.1 | 142.6 | 209.8 | 192.8 | 16.96 | 12.366 | | |
| 3,100.0 | 3,066.1 | 3,093.3 | 3,060.9 | 9.2 | 8.9 | 111.72 | -360.9 | 149.6 | 218.6 | 201.0 | 17.64 | 12.392 | | |
| 3,200.0 | 3,164.5 | 3,193.4 | 3,159.7 | 9.6 | 9.2 | 111.68 | -376.0 | 156.2 | 227.4 | 209.1 | 18.30 | 12.428 | | |
| 3,300.0 | 3,263.0 | 3,293.6 | 3,258.8 | 9.9 | 9.5 | 112.06 | -389.5 | 162.2 | 235.9 | 217.0 | 18.91 | 12.474 | | |
| 3,400.0 | 3,361.5 | 3,393.7 | 3,358.1 | 10.3 | 9.8 | 112.83 | -401.4 | 167.4 | 244.3 | 224.8 | 19.49 | 12.530 | | |
| 3,500.0 | 3,460.0 | 3,493.7 | 3,457.4 | 10.6 | 10.1 | 113.94 | -411.7 | 172.0 | 252.5 | 232.4 | 20.03 | 12.602 | | |
| 3,600.0 | 3,558.5 | 3,593.5 | 3,556.8 | 11.0 | 10.3 | 115.36 | -420.4 | 175.8 | 260.6 | 240.1 | 20.52 | 12.697 | | |
| 3,700.0 | 3,657.0 | 3,693.2 | 3,656.1 | 11.3 | 10.5 | 117.06 | -427.5 | 178.9 | 268.8 | 247.9 | 20.97 | 12.822 | | |
| 3,800.0 | 3,755.4 | 3,792.5 | 3,755.3 | 11.7 | 10.7 | 119.01 | -433.0 | 181.4 | 277.2 | 255.9 | 21.35 | 12.986 | | |
| 3,900.0 | 3,853.9 | 3,891.5 | 3,854.2 | 12.0 | 10.8 | 121.18 | -436.9 | 183.1 | 286.0 | 264.3 | 21.67 | 13.198 | | |
| 4,000.0 | 3,952.4 | 3,990.1 | 3,952.8 | 12.4 | 11.0 | 123.54 | -439.2 | 184.1 | 295.3 | 273.3 | 21.93 | 13.467 | | |
| 4,100.0 | 4,050.9 | 4,088.2 | 4,050.9 | 12.7 | 11.1 | 126.06 | -440.0 | 184.5 | 305.2 | 283.1 | 22.12 | 13.801 | | |
| 4,200.0 | 4,149.4 | 4,186.7 | 4,149.4 | 13.1 | 11.2 | 128.58 | -440.0 | 184.5 | 315.8 | 293.6 | 22.27 | 14.182 | | |
| 4,300.0 | 4,247.8 | 4,285.2 | 4,247.8 | 13.4 | 11.3 | 130.94 | -440.0 | 184.5 | 327.0 | 304.6 | 22.41 | 14.593 | | |
| 4,400.0 | 4,346.3 | 4,383.6 | 4,346.3 | 13.8 | 11.4 | 133.14 | -440.0 | 184.5 | 338.8 | 316.2 | 22.54 | 15.027 | | |
| 4,500.0 | 4,444.8 | 4,482.1 | 4,444.8 | 14.1 | 11.5 | 135.19 | -440.0 | 184.5 | 351.0 | 328.3 | 22.67 | 15.479 | | |
| 4,560.0 | 4,503.9 | 4,541.2 | 4,503.9 | 14.4 | 11.6 | 136.36 | -440.0 | 184.5 | 358.5 | 335.7 | 22.75 | 15.758 | | |
| 4,600.0 | 4,543.3 | 4,580.6 | 4,543.3 | 14.5 | 11.6 | 137.13 | -440.0 | 184.5 | 363.5 | 340.7 | 22.80 | 15.942 | | |
| 4,700.0 | 4,642.0 | 4,679.4 | 4,642.0 | 14.8 | 11.8 | 138.84 | -440.0 | 184.5 | 375.3 | 352.4 | 22.93 | 16.365 | | |
| 4,800.0 | 4,741.0 | 4,778.4 | 4,741.0 | 15.1 | 11.9 | 140.28 | -440.0 | 184.5 | 386.1 | 363.0 | 23.08 | 16.728 | | |
| 4,900.0 | 4,840.3 | 4,877.6 | 4,840.3 | 15.4 | 12.0 | 141.48 | -440.0 | 184.5 | 395.7 | 372.4 | 23.24 | 17.025 | | |
| 5,000.0 | 4,939.7 | 4,977.0 | 4,939.7 | 15.6 | 12.1 | 142.47 | -440.0 | 184.5 | 404.1 | 380.7 | 23.42 | 17.254 | | |

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|-----------------------------|-------------------------------------|-----------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Mathews 4G-14H |
| Project: | DJ Wattenberg | TVD Reference: | Well @ 5117.0ft (Ensign) |
| Reference Site: | SWSE S14 T1N-R66W (Mathews) | MD Reference: | Well @ 5117.0ft (Ensign) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Mathews 4G-14H | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | HZ | Database: | USA EDM 5000 Multi Users DB |
| Reference Design: | Plan #3 | Offset TVD Reference: | Offset Datum |

| Offset Design | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|-----------------------|---------------------|---------------------|---------------------|-----------------|-------------|-----------------------|-----------------------------------|------------|----------------------|-----------------------|------------------|--------------------|--------|
| Survey Program: 0-MWD | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | Distance | | Total | | Separation | | Warning | |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | Uncertainty Axis | Factor | |
| 5,100.0 | 5,039.3 | 5,076.6 | 5,039.3 | 15.8 | 12.2 | 143.26 | -440.0 | 184.5 | 411.2 | 387.6 | 23.61 | 17.414 | |
| 5,200.0 | 5,139.1 | 5,176.4 | 5,139.1 | 16.0 | 12.4 | 143.89 | -440.0 | 184.5 | 416.9 | 393.1 | 23.82 | 17.505 | |
| 5,300.0 | 5,238.9 | 5,276.2 | 5,238.9 | 16.2 | 12.5 | 144.34 | -440.0 | 184.5 | 421.3 | 397.3 | 24.04 | 17.527 | |
| 5,400.0 | 5,338.8 | 5,376.2 | 5,338.8 | 16.3 | 12.6 | 144.65 | -440.0 | 184.5 | 424.3 | 400.0 | 24.27 | 17.482 | |
| 5,500.0 | 5,438.8 | 5,476.1 | 5,438.8 | 16.4 | 12.8 | 144.81 | -440.0 | 184.5 | 425.9 | 401.4 | 24.52 | 17.371 | |
| 5,560.0 | 5,498.8 | 5,536.1 | 5,498.8 | 16.5 | 12.8 | -88.87 | -440.0 | 184.5 | 426.1 | 401.5 | 24.67 | 17.274 | |
| 5,600.0 | 5,538.8 | 5,576.1 | 5,538.8 | 16.5 | 12.9 | -88.87 | -440.0 | 184.5 | 426.1 | 401.3 | 24.78 | 17.198 | |
| 5,700.0 | 5,638.8 | 5,676.1 | 5,638.8 | 16.6 | 13.0 | -88.87 | -440.0 | 184.5 | 426.1 | 401.1 | 25.05 | 17.009 | |
| 5,800.0 | 5,738.8 | 5,776.1 | 5,738.8 | 16.7 | 13.2 | -88.87 | -440.0 | 184.5 | 426.1 | 400.8 | 25.33 | 16.823 | |
| 5,900.0 | 5,838.8 | 5,876.1 | 5,838.8 | 16.8 | 13.3 | -88.87 | -440.0 | 184.5 | 426.1 | 400.5 | 25.61 | 16.640 | |
| 6,000.0 | 5,938.8 | 5,976.1 | 5,938.8 | 16.9 | 13.4 | -88.87 | -440.0 | 184.5 | 426.1 | 400.2 | 25.89 | 16.460 | |
| 6,100.0 | 6,038.8 | 6,076.1 | 6,038.8 | 17.1 | 13.6 | -88.87 | -440.0 | 184.5 | 426.1 | 400.0 | 26.17 | 16.282 | |
| 6,200.0 | 6,138.8 | 6,176.1 | 6,138.8 | 17.2 | 13.7 | -88.87 | -440.0 | 184.5 | 426.1 | 399.7 | 26.45 | 16.108 | |
| 6,300.0 | 6,238.8 | 6,276.1 | 6,238.8 | 17.3 | 13.8 | -88.87 | -440.0 | 184.5 | 426.1 | 399.4 | 26.74 | 15.936 | |
| 6,400.0 | 6,338.8 | 6,376.1 | 6,338.8 | 17.4 | 14.0 | -88.87 | -440.0 | 184.5 | 426.1 | 399.1 | 27.03 | 15.767 | |
| 6,500.0 | 6,438.8 | 6,476.1 | 6,438.8 | 17.5 | 14.1 | -88.87 | -440.0 | 184.5 | 426.1 | 398.8 | 27.31 | 15.601 | |
| 6,600.0 | 6,538.8 | 6,576.1 | 6,538.8 | 17.6 | 14.3 | -88.87 | -440.0 | 184.5 | 426.1 | 398.5 | 27.60 | 15.437 | |
| 6,700.0 | 6,638.8 | 6,676.1 | 6,638.8 | 17.7 | 14.4 | -88.87 | -440.0 | 184.5 | 426.1 | 398.2 | 27.90 | 15.276 | |
| 6,756.0 | 6,694.8 | 6,732.1 | 6,694.8 | 17.8 | 14.5 | -88.87 | -440.0 | 184.5 | 426.1 | 398.1 | 28.06 | 15.187 | |
| 6,800.0 | 6,738.8 | 6,776.1 | 6,738.8 | 17.8 | 14.5 | -89.05 | -440.0 | 184.5 | 426.1 | 397.9 | 28.19 | 15.117 | |
| 6,850.0 | 6,788.5 | 6,825.9 | 6,788.5 | 17.8 | 14.6 | -89.69 | -440.0 | 184.5 | 426.0 | 397.7 | 28.36 | 15.022 | |
| 6,866.2 | 6,804.6 | 6,841.9 | 6,804.6 | 17.8 | 14.6 | -90.00 | -440.0 | 184.5 | 426.0 | 397.6 | 28.42 | 14.991 | |
| 6,900.0 | 6,837.8 | 6,875.2 | 6,837.8 | 17.8 | 14.7 | -90.79 | -440.0 | 184.5 | 426.1 | 397.5 | 28.56 | 14.919 | |
| 6,950.0 | 6,886.5 | 6,923.8 | 6,886.5 | 17.8 | 14.7 | -92.29 | -440.0 | 184.5 | 426.4 | 397.6 | 28.77 | 14.820 | |
| 7,000.0 | 6,934.1 | 6,972.4 | 6,935.0 | 17.7 | 14.8 | -94.14 | -439.8 | 184.5 | 427.3 | 398.3 | 28.97 | 14.750 | |
| 7,050.0 | 6,980.6 | 7,022.8 | 6,985.3 | 17.6 | 14.8 | -96.09 | -436.6 | 184.5 | 428.7 | 399.6 | 29.09 | 14.738 | |
| 7,100.0 | 7,025.7 | 7,074.4 | 7,036.5 | 17.6 | 14.8 | -98.03 | -429.6 | 184.5 | 430.7 | 401.6 | 29.12 | 14.792 | |
| 7,150.0 | 7,069.2 | 7,127.3 | 7,088.2 | 17.5 | 14.8 | -99.93 | -418.7 | 184.5 | 433.2 | 404.1 | 29.05 | 14.912 | |
| 7,200.0 | 7,110.9 | 7,181.5 | 7,140.3 | 17.4 | 14.7 | -101.80 | -403.6 | 184.5 | 436.1 | 407.2 | 28.88 | 15.099 | |
| 7,250.0 | 7,150.6 | 7,237.1 | 7,192.3 | 17.3 | 14.6 | -103.61 | -384.1 | 184.5 | 439.4 | 410.8 | 28.63 | 15.348 | |
| 7,300.0 | 7,188.0 | 7,294.2 | 7,244.0 | 17.2 | 14.5 | -105.37 | -359.9 | 184.5 | 443.1 | 414.8 | 28.30 | 15.657 | |
| 7,350.0 | 7,223.0 | 7,352.9 | 7,295.0 | 17.1 | 14.4 | -107.05 | -330.8 | 184.5 | 447.1 | 419.2 | 27.91 | 16.018 | |
| 7,400.0 | 7,255.5 | 7,413.1 | 7,344.6 | 17.0 | 14.3 | -108.64 | -296.7 | 184.5 | 451.2 | 423.7 | 27.48 | 16.419 | |
| 7,450.0 | 7,285.2 | 7,475.0 | 7,392.4 | 17.0 | 14.1 | -110.14 | -257.5 | 184.5 | 455.3 | 428.3 | 27.04 | 16.842 | |
| 7,500.0 | 7,312.0 | 7,538.4 | 7,437.8 | 17.0 | 14.0 | -111.52 | -213.2 | 184.5 | 459.5 | 432.9 | 26.61 | 17.265 | |
| 7,550.0 | 7,335.9 | 7,603.4 | 7,480.0 | 17.0 | 13.9 | -112.79 | -163.8 | 184.5 | 463.5 | 437.2 | 26.25 | 17.658 | |
| 7,600.0 | 7,356.6 | 7,670.0 | 7,518.3 | 17.1 | 13.9 | -113.92 | -109.4 | 184.5 | 467.2 | 441.3 | 25.98 | 17.981 | |
| 7,650.0 | 7,374.1 | 7,737.9 | 7,552.1 | 17.2 | 13.9 | -114.91 | -50.5 | 184.5 | 470.6 | 444.8 | 25.86 | 18.202 | |
| 7,700.0 | 7,388.3 | 7,807.1 | 7,580.7 | 17.3 | 14.0 | -115.74 | 12.5 | 184.5 | 473.6 | 447.7 | 25.91 | 18.281 | |
| 7,750.0 | 7,399.1 | 7,877.4 | 7,603.3 | 17.5 | 14.2 | -116.40 | 79.0 | 184.5 | 476.0 | 449.9 | 26.16 | 18.196 | |
| 7,800.0 | 7,406.4 | 7,948.5 | 7,619.5 | 17.7 | 14.6 | -116.89 | 148.3 | 184.5 | 477.8 | 451.2 | 26.63 | 17.944 | |
| 7,850.0 | 7,410.3 | 8,020.3 | 7,628.7 | 18.0 | 15.0 | -117.20 | 219.4 | 184.5 | 479.0 | 451.7 | 27.33 | 17.524 | |
| 7,881.0 | 7,411.0 | 8,065.0 | 7,630.9 | 18.1 | 15.3 | -117.30 | 264.0 | 184.5 | 479.4 | 451.5 | 27.88 | 17.198 | |
| 7,900.0 | 7,411.0 | 8,087.7 | 7,631.0 | 18.3 | 15.5 | -117.32 | 286.8 | 184.5 | 479.4 | 451.3 | 28.16 | 17.024 | |
| 8,000.0 | 7,411.0 | 8,187.7 | 7,631.0 | 19.0 | 16.3 | -117.32 | 386.8 | 184.5 | 479.4 | 449.7 | 29.70 | 16.140 | |
| 8,100.0 | 7,411.0 | 8,287.7 | 7,631.0 | 19.8 | 17.3 | -117.32 | 486.8 | 184.5 | 479.4 | 447.9 | 31.47 | 15.232 | |
| 8,200.0 | 7,411.0 | 8,387.7 | 7,631.0 | 20.8 | 18.4 | -117.32 | 586.8 | 184.5 | 479.4 | 445.9 | 33.44 | 14.335 | |
| 8,300.0 | 7,411.0 | 8,487.7 | 7,631.0 | 21.8 | 19.6 | -117.32 | 686.8 | 184.5 | 479.4 | 443.8 | 35.58 | 13.474 | |
| 8,400.0 | 7,411.0 | 8,587.7 | 7,631.0 | 23.0 | 20.8 | -117.32 | 786.8 | 184.6 | 479.4 | 441.5 | 37.85 | 12.665 | |
| 8,500.0 | 7,411.0 | 8,687.7 | 7,631.0 | 24.2 | 22.2 | -117.32 | 886.8 | 184.6 | 479.4 | 439.1 | 40.23 | 11.914 | |
| 8,600.0 | 7,411.0 | 8,787.7 | 7,631.0 | 25.5 | 23.6 | -117.32 | 986.8 | 184.6 | 479.3 | 436.6 | 42.72 | 11.222 | |
| 8,700.0 | 7,411.0 | 8,887.7 | 7,631.0 | 26.8 | 25.0 | -117.32 | 1,086.8 | 184.6 | 479.3 | 434.1 | 45.28 | 10.587 | |

CC - Min centre to center distance or covergent point, SF - min separation factor, ES - min ellipse separation

Cathedral Energy Services

Anticollision Report

| | | | |
|---------------------------|-----------------------------|-------------------------------------|-----------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Mathews 4G-14H |
| Project: | DJ Wattenberg | TVD Reference: | Well @ 5117.0ft (Ensign) |
| Reference Site: | SWSE S14 T1N-R66W (Mathews) | MD Reference: | Well @ 5117.0ft (Ensign) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Mathews 4G-14H | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | HZ | Database: | USA EDM 5000 Multi Users DB |
| Reference Design: | Plan #3 | Offset TVD Reference: | Offset Datum |

| Offset Design SWSE S14 T1N-R66W (Mathews) - Mathews 4F-14H - HZ - Plan #3 | | | | | | | | | | | | Offset Site Error: | 0.0 ft |
|---------------------------------------------------------------------------|---------------------------|---------------------------|---------------------------|-------------------|----------------|-----------------------------|-----------------------------------------|---------------|----------------------------|-----------------------------|------------------------------|----------------------|---------|
| Survey Program: 0-MWD | | | | | | | | | | | | Offset Well Error: | 0.0 ft |
| Reference | | Offset | | Semi Major Axis | | | Distance | | | | Total Uncertainty Axis | Separation Factor | Warning |
| Measured Depth (ft) | Vertical Depth (ft) | Measured Depth (ft) | Vertical Depth (ft) | Reference (ft) | Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | +E/-W (ft) | Between Centres (ft) | Between Ellipses (ft) | | | |
| 8,800.0 | 7,411.0 | 8,987.7 | 7,631.0 | 28.2 | 26.5 | -117.32 | 1,186.8 | 184.6 | 479.3 | 431.4 | 47.90 | 10.006 | |
| 8,900.0 | 7,411.0 | 9,087.7 | 7,631.0 | 29.6 | 28.0 | -117.32 | 1,286.8 | 184.6 | 479.3 | 428.7 | 50.59 | 9.475 | |
| 9,000.0 | 7,411.0 | 9,187.7 | 7,631.0 | 31.1 | 29.5 | -117.32 | 1,386.8 | 184.6 | 479.3 | 426.0 | 53.32 | 8.990 | |
| 9,100.0 | 7,411.0 | 9,287.7 | 7,631.0 | 32.6 | 31.1 | -117.32 | 1,486.8 | 184.6 | 479.3 | 423.2 | 56.09 | 8.545 | |
| 9,200.0 | 7,411.0 | 9,387.7 | 7,631.0 | 34.1 | 32.7 | -117.32 | 1,586.8 | 184.6 | 479.3 | 420.4 | 58.90 | 8.138 | |
| 9,300.0 | 7,411.0 | 9,487.7 | 7,631.0 | 35.6 | 34.3 | -117.32 | 1,686.8 | 184.6 | 479.3 | 417.5 | 61.73 | 7.764 | |
| 9,400.0 | 7,411.0 | 9,587.7 | 7,631.0 | 37.2 | 35.9 | -117.33 | 1,786.8 | 184.6 | 479.3 | 414.7 | 64.60 | 7.419 | |
| 9,500.0 | 7,411.0 | 9,687.7 | 7,631.0 | 38.7 | 37.5 | -117.33 | 1,886.8 | 184.6 | 479.2 | 411.8 | 67.48 | 7.102 | |
| 9,600.0 | 7,411.0 | 9,787.7 | 7,631.0 | 40.3 | 39.1 | -117.33 | 1,986.8 | 184.6 | 479.2 | 408.8 | 70.39 | 6.809 | |
| 9,700.0 | 7,411.0 | 9,887.7 | 7,631.0 | 41.9 | 40.8 | -117.33 | 2,086.8 | 184.6 | 479.2 | 405.9 | 73.31 | 6.537 | |
| 9,800.0 | 7,411.0 | 9,987.7 | 7,631.0 | 43.5 | 42.4 | -117.33 | 2,186.8 | 184.6 | 479.2 | 403.0 | 76.25 | 6.285 | |
| 9,900.0 | 7,411.0 | 10,087.7 | 7,631.0 | 45.2 | 44.1 | -117.33 | 2,286.8 | 184.6 | 479.2 | 400.0 | 79.20 | 6.050 | |
| 10,000.0 | 7,411.0 | 10,187.7 | 7,631.0 | 46.8 | 45.7 | -117.33 | 2,386.8 | 184.6 | 479.2 | 397.0 | 82.17 | 5.832 | |
| 10,100.0 | 7,411.0 | 10,287.7 | 7,631.0 | 48.4 | 47.4 | -117.33 | 2,486.8 | 184.6 | 479.2 | 394.0 | 85.15 | 5.628 | |
| 10,200.0 | 7,411.0 | 10,387.7 | 7,631.0 | 50.1 | 49.1 | -117.33 | 2,586.8 | 184.7 | 479.2 | 391.0 | 88.13 | 5.437 | |
| 10,300.0 | 7,411.0 | 10,487.7 | 7,631.0 | 51.7 | 50.8 | -117.33 | 2,686.8 | 184.7 | 479.2 | 388.0 | 91.13 | 5.258 | |
| 10,400.0 | 7,411.0 | 10,587.7 | 7,631.0 | 53.4 | 52.5 | -117.33 | 2,786.8 | 184.7 | 479.2 | 385.0 | 94.13 | 5.090 | |
| 10,500.0 | 7,411.0 | 10,687.7 | 7,631.0 | 55.1 | 54.2 | -117.33 | 2,886.8 | 184.7 | 479.1 | 382.0 | 97.14 | 4.932 | |
| 10,600.0 | 7,411.0 | 10,787.7 | 7,631.0 | 56.7 | 55.9 | -117.33 | 2,986.8 | 184.7 | 479.1 | 379.0 | 100.16 | 4.784 | |
| 10,700.0 | 7,411.0 | 10,887.7 | 7,631.0 | 58.4 | 57.6 | -117.33 | 3,086.8 | 184.7 | 479.1 | 375.9 | 103.19 | 4.643 | |
| 10,800.0 | 7,411.0 | 10,987.7 | 7,631.0 | 60.1 | 59.3 | -117.33 | 3,186.8 | 184.7 | 479.1 | 372.9 | 106.22 | 4.511 | |
| 10,900.0 | 7,411.0 | 11,087.7 | 7,631.0 | 61.8 | 61.0 | -117.34 | 3,286.8 | 184.7 | 479.1 | 369.9 | 109.25 | 4.385 | |
| 11,000.0 | 7,411.0 | 11,187.7 | 7,631.0 | 63.5 | 62.7 | -117.34 | 3,386.8 | 184.7 | 479.1 | 366.8 | 112.29 | 4.267 | |
| 11,100.0 | 7,411.0 | 11,287.7 | 7,631.0 | 65.1 | 64.4 | -117.34 | 3,486.8 | 184.7 | 479.1 | 363.7 | 115.33 | 4.154 | |
| 11,200.0 | 7,411.0 | 11,387.7 | 7,631.0 | 66.8 | 66.1 | -117.34 | 3,586.8 | 184.7 | 479.1 | 360.7 | 118.38 | 4.047 | |
| 11,300.0 | 7,411.0 | 11,487.7 | 7,631.0 | 68.5 | 67.8 | -117.34 | 3,686.8 | 184.7 | 479.1 | 357.6 | 121.43 | 3.945 | |
| 11,400.0 | 7,411.0 | 11,587.7 | 7,631.0 | 70.2 | 69.5 | -117.34 | 3,786.8 | 184.7 | 479.0 | 354.6 | 124.49 | 3.848 | |
| 11,500.0 | 7,411.0 | 11,687.7 | 7,631.0 | 71.9 | 71.3 | -117.34 | 3,886.8 | 184.7 | 479.0 | 351.5 | 127.55 | 3.756 | |
| 11,600.0 | 7,411.0 | 11,787.7 | 7,631.0 | 73.6 | 73.0 | -117.34 | 3,986.8 | 184.7 | 479.0 | 348.4 | 130.61 | 3.668 | |
| 11,700.0 | 7,411.0 | 11,887.7 | 7,631.0 | 75.4 | 74.7 | -117.34 | 4,086.8 | 184.7 | 479.0 | 345.3 | 133.67 | 3.584 | |
| 11,800.0 | 7,411.0 | 11,987.7 | 7,631.0 | 77.1 | 76.4 | -117.34 | 4,186.8 | 184.7 | 479.0 | 342.3 | 136.74 | 3.503 | |
| 11,900.0 | 7,411.0 | 12,087.7 | 7,631.0 | 78.8 | 78.2 | -117.34 | 4,286.8 | 184.7 | 479.0 | 339.2 | 139.80 | 3.426 | |
| 11,970.0 | 7,411.0 | 12,157.8 | 7,631.0 | 80.0 | 79.4 | -117.34 | 4,356.8 | 184.7 | 479.0 | 337.0 | 141.95 | 3.374 SF | |

Cathedral Energy Services

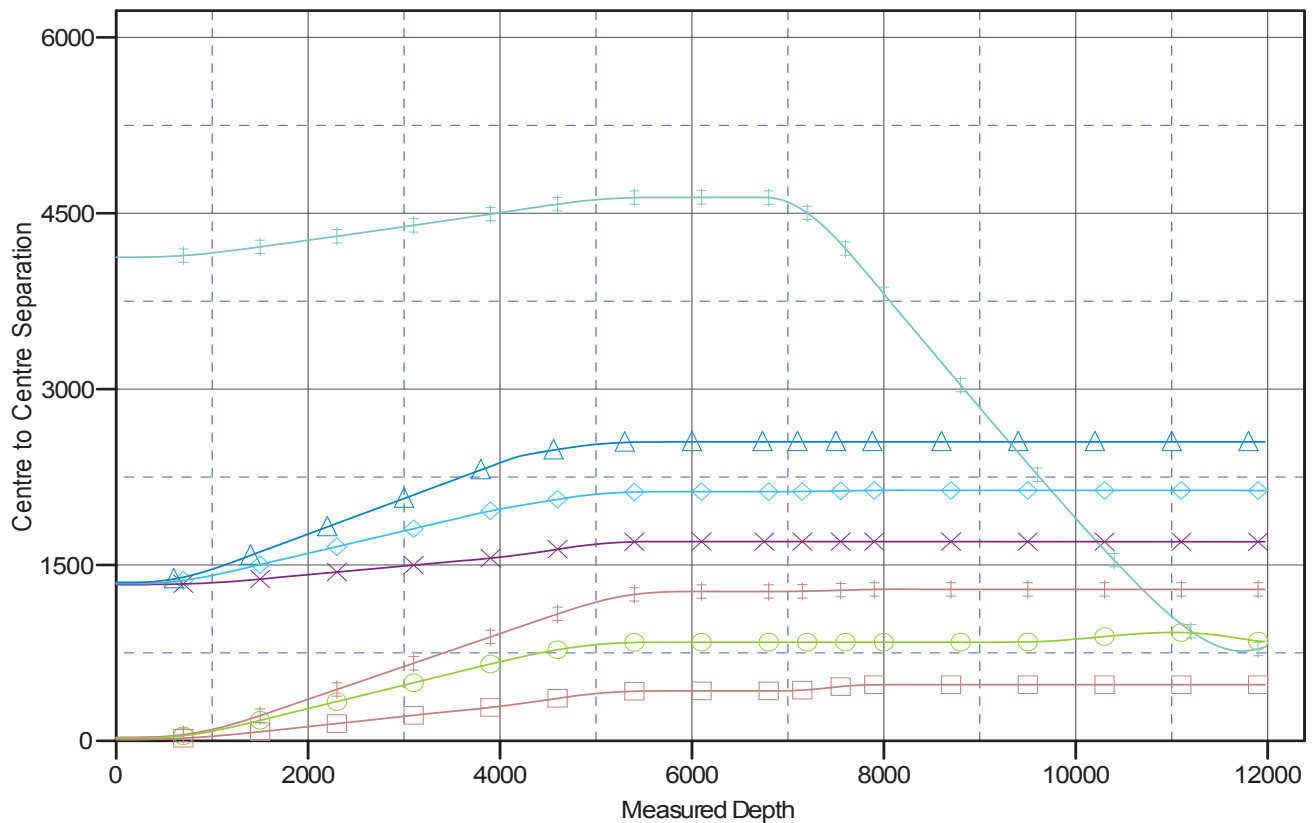
Anticollision Report

| | | | |
|---------------------------|-----------------------------|-------------------------------------|-----------------------------|
| Company: | EnCana Oil & Gas (USA) Inc | Local Co-ordinate Reference: | Well Mathews 4G-14H |
| Project: | DJ Wattenberg | TVD Reference: | Well @ 5117.0ft (Ensign) |
| Reference Site: | SWSE S14 T1N-R66W (Mathews) | MD Reference: | Well @ 5117.0ft (Ensign) |
| Site Error: | 0.0ft | North Reference: | True |
| Reference Well: | Mathews 4G-14H | Survey Calculation Method: | Minimum Curvature |
| Well Error: | 0.0ft | Output errors are at | 2.00 sigma |
| Reference Wellbore | HZ | Database: | USA EDM 5000 Multi Users DB |
| Reference Design: | Plan #3 | Offset TVD Reference: | Offset Datum |

Reference Depths are relative to Well @ 5117.0ft (Ensign)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Mathews 4G-14H
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.49°

Ladder Plot



LEGEND

Mathews1 (Existing), VT (Existing), Existing V0
Mathews4F-14H, HZ, Plan #3 V0
Mathews4C-14H, HZ, Plan #3 V0
Mathews4B-14H, HZ, Plan #3 V0
Mathews4A-14H, HZ, Plan #3 V0