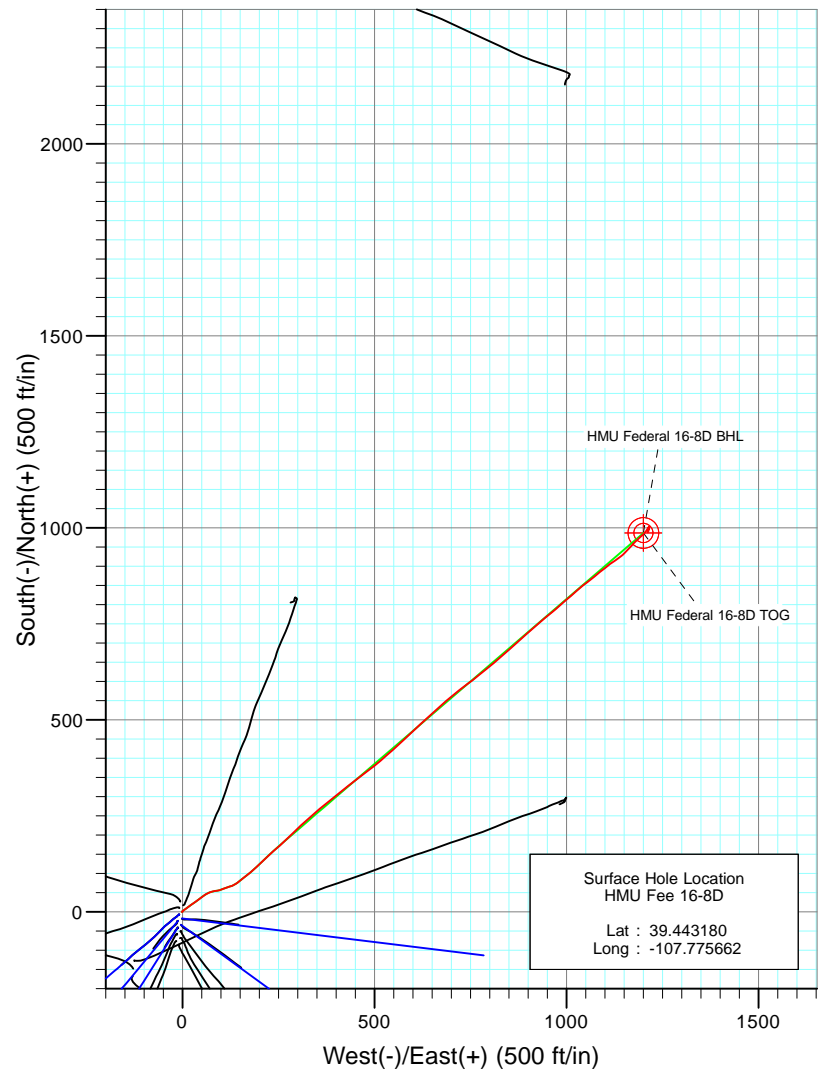
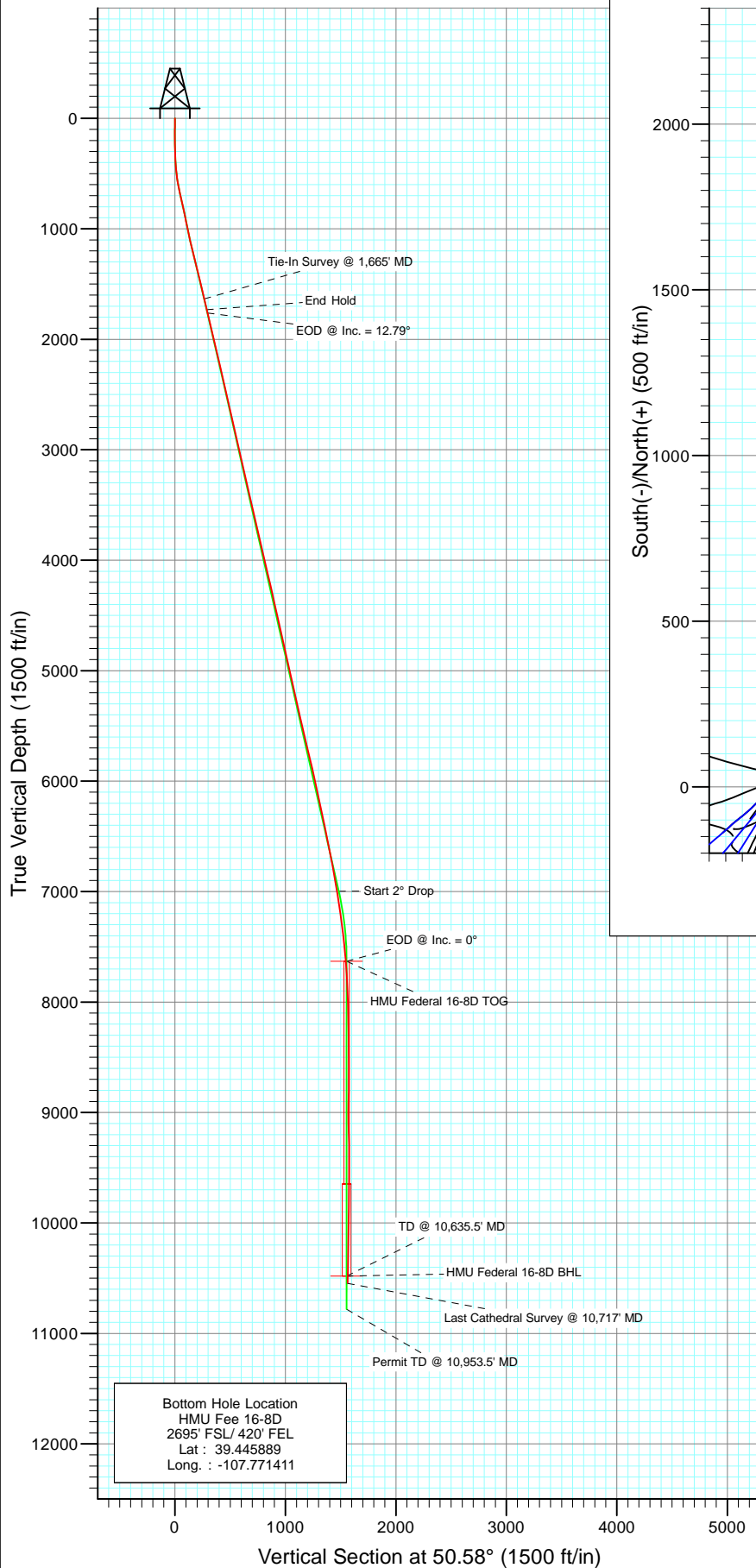




Project: Mamm Creek  
Site: J16W Pad  
Well: HMU Fee 16-8D  
Wellbore: DD  
Design: Final Survey

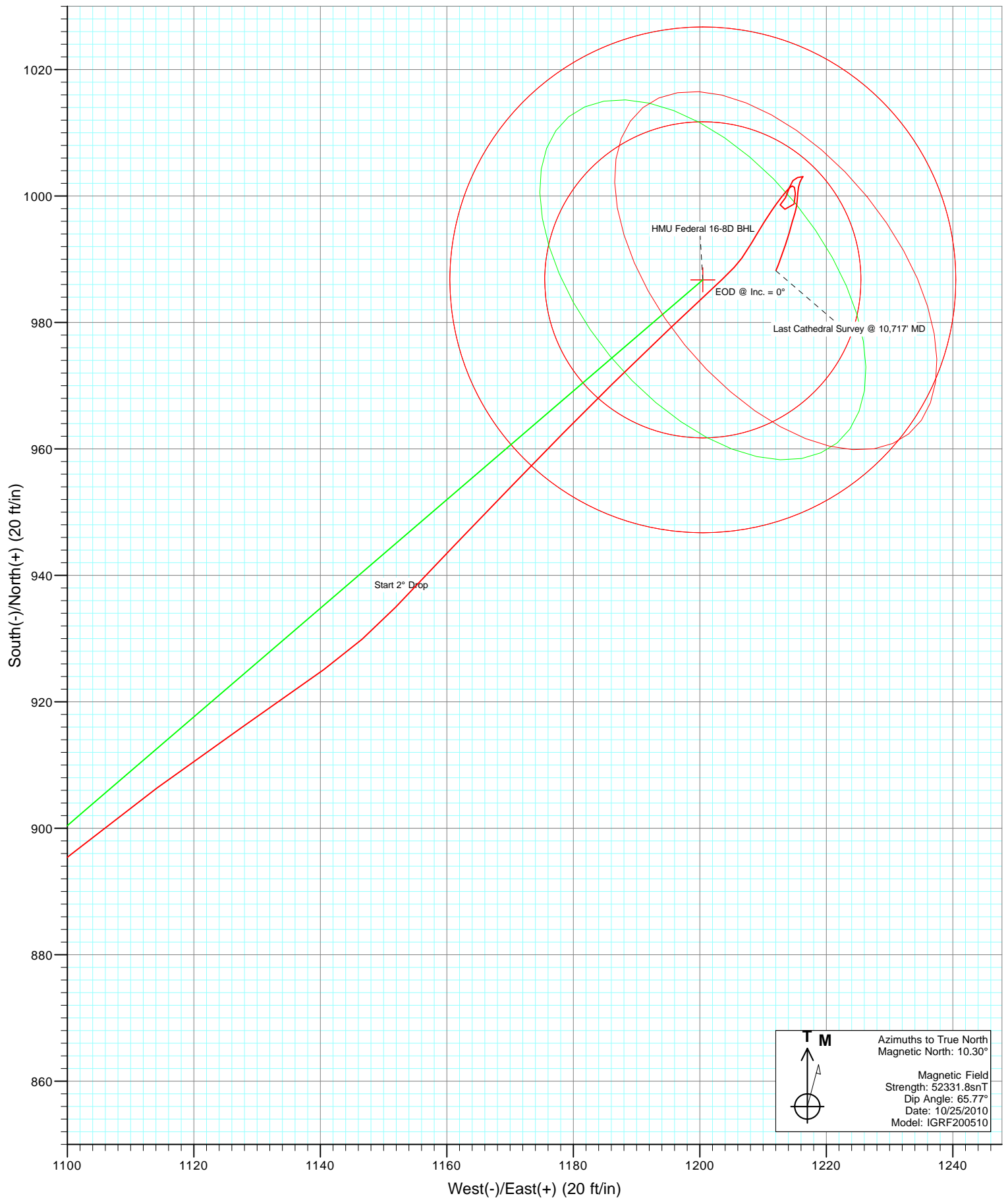


Azimuths to True North  
Magnetic North: 10.30°

Magnetic Field  
Strength: 52331.8snT  
Dip Angle: 65.77°  
Date: 10/25/2010  
Model: IGRF200510



Project: Mamm Creek  
Site: J16W Pad  
Well: HMU Fee 16-8D  
Wellbore: DD  
Design: DD



# Cathedral Energy Services

## Survey Report

|                  |                            |                                     |                                      |
|------------------|----------------------------|-------------------------------------|--------------------------------------|
| <b>Company:</b>  | EnCana Oil & Gas (USA) Inc | <b>Local Co-ordinate Reference:</b> | Well HMU Fee 16-8D                   |
| <b>Project:</b>  | Mamm Creek                 | <b>TVD Reference:</b>               | WELL @ 7667.0ft (Original Well Elev) |
| <b>Site:</b>     | J16W Pad                   | <b>MD Reference:</b>                | WELL @ 7667.0ft (Original Well Elev) |
| <b>Well:</b>     | HMU Fee 16-8D              | <b>North Reference:</b>             | True                                 |
| <b>Wellbore:</b> | DD                         | <b>Survey Calculation Method:</b>   | Minimum Curvature                    |
| <b>Design:</b>   | DD                         | <b>Database:</b>                    | USA EDM 5000 Multi Users DB          |

|                    |                           |                      |                |
|--------------------|---------------------------|----------------------|----------------|
| <b>Project</b>     | Mamm Creek                |                      |                |
| <b>Map System:</b> | US State Plane 1983       | <b>System Datum:</b> | Mean Sea Level |
| <b>Geo Datum:</b>  | North American Datum 1983 |                      |                |
| <b>Map Zone:</b>   | Colorado Central Zone     |                      |                |

| Site                  |          | J16W Pad     |                 |                   |             |
|-----------------------|----------|--------------|-----------------|-------------------|-------------|
| Site Position:        |          | Northing:    | 1,594,381.52 ft | Latitude:         | 39.443239   |
| From:                 | Lat/Long | Easting:     | 2,357,395.39 ft | Longitude:        | -107.775670 |
| Position Uncertainty: | 0.0 ft   | Slot Radius: | 13.200 in       | Grid Convergence: | -1.44 °     |

| Well                 | HMU Fee 16-8D |        |                     |                 |               |             |
|----------------------|---------------|--------|---------------------|-----------------|---------------|-------------|
| Well Position        | +N/-S         | 0.0 ft | Northing:           | 1,594,359.97 ft | Latitude:     | 39.443180   |
|                      | +E/-W         | 0.0 ft | Easting:            | 2,357,397.11 ft | Longitude:    | -107.775662 |
| Position Uncertainty |               | 0.0 ft | Wellhead Elevation: | ft              | Ground Level: | 7,645.0 ft  |

|                  |                   |                    |                        |                      |                            |
|------------------|-------------------|--------------------|------------------------|----------------------|----------------------------|
| <b>Wellbore</b>  | DD                |                    |                        |                      |                            |
| <b>Magnetics</b> | <b>Model Name</b> | <b>Sample Date</b> | <b>Declination (°)</b> | <b>Dip Angle (°)</b> | <b>Field Strength (nT)</b> |
|                  | IGRF200510        | 10/25/2010         | 10.30                  | 65.77                | 52,332                     |

|                   |                          |               |               |                   |
|-------------------|--------------------------|---------------|---------------|-------------------|
| Design            | DD                       |               |               |                   |
| Audit Notes:      |                          |               |               |                   |
| Version:          | 1.0                      | Phase:        | ACTUAL        | Tie On Depth: 0.0 |
| Vertical Section: | Depth From (TVD)<br>(ft) | +N/-S<br>(ft) | +E/-W<br>(ft) | Direction<br>(°)  |
|                   | 0.0                      | 0.0           | 0.0           | 50.58             |

|                       |                |                          |                  |                    |  |
|-----------------------|----------------|--------------------------|------------------|--------------------|--|
| <b>Survey Program</b> | <b>Date</b>    | 2/17/2012                |                  |                    |  |
| <b>From (ft)</b>      | <b>To (ft)</b> | <b>Survey (Wellbore)</b> | <b>Tool Name</b> | <b>Description</b> |  |
| 79.0                  | 10,717.0       | Survey #1 (DD)           | MWD              | Geolink MWD        |  |

|                            |                        |                    |                            |                   |                   |                              |                              |                             |                              |  |
|----------------------------|------------------------|--------------------|----------------------------|-------------------|-------------------|------------------------------|------------------------------|-----------------------------|------------------------------|--|
| <b>Survey</b>              |                        |                    |                            |                   |                   |                              |                              |                             |                              |  |
| <b>Measured Depth (ft)</b> | <b>Inclination (°)</b> | <b>Azimuth (°)</b> | <b>Vertical Depth (ft)</b> | <b>+N/-S (ft)</b> | <b>+E/-W (ft)</b> | <b>Vertical Section (ft)</b> | <b>Dogleg Rate (°/100ft)</b> | <b>Build Rate (°/100ft)</b> | <b>Formations / Comments</b> |  |
| 0.0                        | 0.00                   | 0.00               | 0.0                        | 0.0               | 0.0               | 0.0                          | 0.00                         | 0.00                        |                              |  |
| 79.0                       | 1.10                   | 257.90             | 79.0                       | -0.2              | -0.7              | -0.7                         | 1.39                         | 1.39                        |                              |  |
| 110.0                      | 0.70                   | 226.00             | 110.0                      | -0.4              | -1.2              | -1.1                         | 2.02                         | -1.29                       |                              |  |
| 141.0                      | 0.20                   | 254.60             | 141.0                      | -0.5              | -1.4              | -1.4                         | 1.72                         | -1.61                       |                              |  |
| 172.0                      | 0.50                   | 359.50             | 172.0                      | -0.4              | -1.4              | -1.3                         | 1.88                         | 0.97                        |                              |  |
| 203.0                      | 0.70                   | 3.70               | 203.0                      | -0.1              | -1.4              | -1.1                         | 0.66                         | 0.65                        |                              |  |
| 234.0                      | 1.00                   | 28.50              | 234.0                      | 0.4               | -1.3              | -0.7                         | 1.51                         | 0.97                        |                              |  |
| 264.0                      | 1.50                   | 45.70              | 264.0                      | 0.9               | -0.9              | -0.1                         | 2.07                         | 1.67                        |                              |  |
| 294.0                      | 1.60                   | 39.50              | 294.0                      | 1.5               | -0.3              | 0.7                          | 0.65                         | 0.33                        |                              |  |
| 325.0                      | 2.20                   | 46.00              | 324.9                      | 2.2               | 0.4               | 1.7                          | 2.05                         | 1.94                        |                              |  |
| 356.0                      | 3.20                   | 57.30              | 355.9                      | 3.1               | 1.6               | 3.2                          | 3.64                         | 3.23                        |                              |  |
| 386.0                      | 3.40                   | 58.80              | 385.9                      | 4.0               | 3.0               | 4.9                          | 0.73                         | 0.67                        |                              |  |
| 417.0                      | 4.10                   | 56.30              | 416.8                      | 5.1               | 4.7               | 6.9                          | 2.32                         | 2.26                        |                              |  |

# Cathedral Energy Services

## Survey Report

|                  |                            |                                     |                                      |
|------------------|----------------------------|-------------------------------------|--------------------------------------|
| <b>Company:</b>  | EnCana Oil & Gas (USA) Inc | <b>Local Co-ordinate Reference:</b> | Well HMU Fee 16-8D                   |
| <b>Project:</b>  | Mamm Creek                 | <b>TVD Reference:</b>               | WELL @ 7667.0ft (Original Well Elev) |
| <b>Site:</b>     | J16W Pad                   | <b>MD Reference:</b>                | WELL @ 7667.0ft (Original Well Elev) |
| <b>Well:</b>     | HMU Fee 16-8D              | <b>North Reference:</b>             | True                                 |
| <b>Wellbore:</b> | DD                         | <b>Survey Calculation Method:</b>   | Minimum Curvature                    |
| <b>Design:</b>   | DD                         | <b>Database:</b>                    | USA EDM 5000 Multi Users DB          |

| Survey              |                 |             |                     |            |            |                       |                       |                      |                       |
|---------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|-----------------------|
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Formations / Comments |
| 448.0               | 4.90            | 53.80       | 447.7               | 6.5        | 6.7        | 9.3                   | 2.66                  | 2.58                 |                       |
| 479.0               | 5.80            | 55.00       | 478.6               | 8.2        | 9.1        | 12.2                  | 2.93                  | 2.90                 |                       |
| 510.0               | 6.80            | 53.60       | 509.4               | 10.2       | 11.8       | 15.6                  | 3.26                  | 3.23                 |                       |
| 540.0               | 8.20            | 52.60       | 539.1               | 12.5       | 15.0       | 19.5                  | 4.69                  | 4.67                 |                       |
| 571.0               | 8.90            | 52.50       | 569.8               | 15.3       | 18.6       | 24.1                  | 2.26                  | 2.26                 |                       |
| 662.0               | 12.00           | 55.60       | 659.3               | 25.0       | 32.0       | 40.6                  | 3.46                  | 3.41                 |                       |
| 754.0               | 13.60           | 51.40       | 749.0               | 37.1       | 48.4       | 60.9                  | 2.01                  | 1.74                 |                       |
| 846.0               | 12.00           | 62.70       | 838.7               | 48.3       | 65.3       | 81.1                  | 3.22                  | -1.74                |                       |
| 937.0               | 13.00           | 82.00       | 927.6               | 54.0       | 83.9       | 99.1                  | 4.70                  | 1.10                 |                       |
| 1,030.0             | 13.40           | 70.80       | 1,018.1             | 59.0       | 104.4      | 118.1                 | 2.78                  | 0.43                 |                       |
| 1,122.0             | 13.10           | 70.10       | 1,107.7             | 66.1       | 124.3      | 138.0                 | 0.37                  | -0.33                |                       |
| 1,213.0             | 13.50           | 54.20       | 1,196.3             | 75.8       | 142.6      | 158.3                 | 4.03                  | 0.44                 |                       |
| 1,304.0             | 13.90           | 52.30       | 1,284.7             | 88.7       | 159.9      | 179.8                 | 0.66                  | 0.44                 |                       |
| 1,397.0             | 13.80           | 48.70       | 1,375.0             | 102.8      | 177.0      | 202.1                 | 0.93                  | -0.11                |                       |
| 1,488.0             | 13.50           | 47.40       | 1,463.4             | 117.2      | 193.0      | 223.5                 | 0.47                  | -0.33                |                       |
| 1,580.0             | 13.70           | 46.30       | 1,552.8             | 132.0      | 208.8      | 245.1                 | 0.36                  | 0.22                 |                       |
| 1,665.0             | 13.50           | 46.70       | 1,635.5             | 145.8      | 223.3      | 265.0                 | 0.26                  | -0.24                |                       |
| 1,743.0             | 13.80           | 49.10       | 1,711.3             | 158.1      | 236.9      | 283.4                 | 0.82                  | 0.38                 |                       |
| 1,836.0             | 13.70           | 48.40       | 1,801.6             | 172.7      | 253.6      | 305.5                 | 0.21                  | -0.11                |                       |
| 1,931.0             | 13.40           | 46.10       | 1,893.9             | 187.8      | 269.9      | 327.7                 | 0.65                  | -0.32                |                       |
| 2,027.0             | 13.10           | 45.00       | 1,987.4             | 203.2      | 285.6      | 349.7                 | 0.41                  | -0.31                |                       |
| 2,122.0             | 13.10           | 46.30       | 2,079.9             | 218.2      | 301.0      | 371.1                 | 0.31                  | 0.00                 |                       |
| 2,217.0             | 13.10           | 48.60       | 2,172.4             | 232.8      | 316.9      | 392.6                 | 0.55                  | 0.00                 |                       |
| 2,313.0             | 12.90           | 48.70       | 2,266.0             | 247.0      | 333.1      | 414.2                 | 0.21                  | -0.21                |                       |
| 2,408.0             | 13.00           | 49.60       | 2,358.6             | 261.0      | 349.2      | 435.5                 | 0.24                  | 0.11                 |                       |
| 2,504.0             | 12.50           | 49.80       | 2,452.2             | 274.7      | 365.3      | 456.6                 | 0.52                  | -0.52                |                       |
| 2,599.0             | 12.70           | 49.50       | 2,544.9             | 288.1      | 381.1      | 477.4                 | 0.22                  | 0.21                 |                       |
| 2,694.0             | 12.80           | 52.50       | 2,637.6             | 301.3      | 397.4      | 498.3                 | 0.70                  | 0.11                 |                       |
| 2,790.0             | 12.40           | 52.00       | 2,731.3             | 314.1      | 414.0      | 519.3                 | 0.43                  | -0.42                |                       |
| 2,885.0             | 13.40           | 52.40       | 2,823.9             | 327.1      | 430.7      | 540.5                 | 1.06                  | 1.05                 |                       |
| 2,980.0             | 13.30           | 52.50       | 2,916.3             | 340.5      | 448.1      | 562.4                 | 0.11                  | -0.11                |                       |
| 3,076.0             | 13.10           | 53.10       | 3,009.8             | 353.7      | 465.6      | 584.3                 | 0.25                  | -0.21                |                       |
| 3,171.0             | 12.70           | 52.40       | 3,102.4             | 366.6      | 482.5      | 605.5                 | 0.45                  | -0.42                |                       |
| 3,267.0             | 12.90           | 50.30       | 3,196.0             | 379.8      | 499.1      | 626.7                 | 0.53                  | 0.21                 |                       |
| 3,362.0             | 12.80           | 49.70       | 3,288.6             | 393.4      | 515.3      | 647.9                 | 0.18                  | -0.11                |                       |
| 3,457.0             | 12.80           | 49.50       | 3,381.2             | 407.1      | 531.3      | 668.9                 | 0.05                  | 0.00                 |                       |
| 3,553.0             | 12.30           | 47.30       | 3,474.9             | 420.9      | 546.9      | 689.8                 | 0.72                  | -0.52                |                       |
| 3,648.0             | 12.80           | 47.60       | 3,567.7             | 434.9      | 562.1      | 710.4                 | 0.53                  | 0.53                 |                       |
| 3,744.0             | 13.50           | 48.20       | 3,661.2             | 449.5      | 578.3      | 732.2                 | 0.74                  | 0.73                 |                       |
| 3,839.0             | 13.10           | 47.10       | 3,753.6             | 464.2      | 594.5      | 754.0                 | 0.50                  | -0.42                |                       |
| 3,935.0             | 12.70           | 46.60       | 3,847.2             | 478.9      | 610.1      | 775.4                 | 0.43                  | -0.42                |                       |
| 4,029.0             | 13.60           | 46.50       | 3,938.7             | 493.6      | 625.6      | 796.7                 | 0.96                  | 0.96                 |                       |
| 4,125.0             | 13.00           | 45.40       | 4,032.1             | 508.9      | 641.5      | 818.7                 | 0.68                  | -0.62                |                       |
| 4,220.0             | 13.30           | 48.00       | 4,124.7             | 523.8      | 657.2      | 840.3                 | 0.70                  | 0.32                 |                       |
| 4,316.0             | 13.20           | 50.90       | 4,218.1             | 538.1      | 673.9      | 862.3                 | 0.70                  | -0.10                |                       |
| 4,411.0             | 12.70           | 50.20       | 4,310.7             | 551.6      | 690.4      | 883.6                 | 0.55                  | -0.53                |                       |
| 4,507.0             | 12.40           | 49.60       | 4,404.4             | 565.0      | 706.3      | 904.4                 | 0.34                  | -0.31                |                       |
| 4,602.0             | 12.70           | 52.10       | 4,497.1             | 578.0      | 722.3      | 925.1                 | 0.65                  | 0.32                 |                       |
| 4,697.0             | 12.30           | 53.00       | 4,589.9             | 590.5      | 738.7      | 945.6                 | 0.47                  | -0.42                |                       |
| 4,792.0             | 13.00           | 52.00       | 4,682.2             | 603.2      | 755.2      | 966.4                 | 0.77                  | 0.74                 |                       |
| 4,888.0             | 12.40           | 51.40       | 4,776.2             | 616.3      | 771.7      | 987.5                 | 0.64                  | -0.62                |                       |
| 4,983.0             | 13.10           | 50.40       | 4,868.9             | 629.5      | 788.0      | 1,008.5               | 0.77                  | 0.74                 |                       |
| 5,078.0             | 12.60           | 51.40       | 4,961.5             | 642.8      | 804.4      | 1,029.6               | 0.58                  | -0.53                |                       |

# Cathedral Energy Services

## Survey Report

|                  |                            |                                     |                                      |
|------------------|----------------------------|-------------------------------------|--------------------------------------|
| <b>Company:</b>  | EnCana Oil & Gas (USA) Inc | <b>Local Co-ordinate Reference:</b> | Well HMU Fee 16-8D                   |
| <b>Project:</b>  | Mamm Creek                 | <b>TVD Reference:</b>               | WELL @ 7667.0ft (Original Well Elev) |
| <b>Site:</b>     | J16W Pad                   | <b>MD Reference:</b>                | WELL @ 7667.0ft (Original Well Elev) |
| <b>Well:</b>     | HMU Fee 16-8D              | <b>North Reference:</b>             | True                                 |
| <b>Wellbore:</b> | DD                         | <b>Survey Calculation Method:</b>   | Minimum Curvature                    |
| <b>Design:</b>   | DD                         | <b>Database:</b>                    | USA EDM 5000 Multi Users DB          |

| Survey              |                 |             |                     |            |            |                       |                       |                      |                       |
|---------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|-----------------------|
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Formations / Comments |
| 5,173.0             | 12.90           | 49.70       | 5,054.1             | 656.2      | 820.6      | 1,050.6               | 0.51                  | 0.32                 |                       |
| 5,268.0             | 12.00           | 47.70       | 5,146.9             | 669.7      | 836.0      | 1,071.0               | 1.05                  | -0.95                |                       |
| 5,364.0             | 13.00           | 48.60       | 5,240.6             | 683.5      | 851.5      | 1,091.8               | 1.06                  | 1.04                 |                       |
| 5,459.0             | 13.20           | 48.10       | 5,333.2             | 697.8      | 867.5      | 1,113.3               | 0.24                  | 0.21                 |                       |
| 5,554.0             | 12.70           | 48.40       | 5,425.7             | 712.0      | 883.4      | 1,134.6               | 0.53                  | -0.53                |                       |
| 5,650.0             | 13.20           | 47.70       | 5,519.3             | 726.4      | 899.4      | 1,156.1               | 0.55                  | 0.52                 |                       |
| 5,744.0             | 12.70           | 48.90       | 5,610.9             | 740.4      | 915.1      | 1,177.1               | 0.60                  | -0.53                |                       |
| 5,839.0             | 13.90           | 48.80       | 5,703.4             | 754.8      | 931.6      | 1,199.0               | 1.26                  | 1.26                 |                       |
| 5,934.0             | 12.90           | 50.20       | 5,795.8             | 769.1      | 948.3      | 1,221.0               | 1.11                  | -1.05                |                       |
| 6,030.0             | 13.20           | 51.90       | 5,889.3             | 782.7      | 965.2      | 1,242.7               | 0.51                  | 0.31                 |                       |
| 6,125.0             | 12.20           | 48.40       | 5,982.0             | 796.1      | 981.2      | 1,263.5               | 1.33                  | -1.05                |                       |
| 6,221.0             | 12.20           | 47.90       | 6,075.8             | 809.6      | 996.3      | 1,283.8               | 0.11                  | 0.00                 |                       |
| 6,315.0             | 12.70           | 49.70       | 6,167.6             | 823.0      | 1,011.6    | 1,304.1               | 0.67                  | 0.53                 |                       |
| 6,411.0             | 11.70           | 49.50       | 6,261.4             | 836.1      | 1,027.0    | 1,324.3               | 1.04                  | -1.04                |                       |
| 6,506.0             | 11.90           | 51.00       | 6,354.4             | 848.5      | 1,042.0    | 1,343.8               | 0.39                  | 0.21                 |                       |
| 6,601.0             | 12.20           | 51.20       | 6,447.3             | 861.0      | 1,057.4    | 1,363.6               | 0.32                  | 0.32                 |                       |
| 6,696.0             | 11.50           | 51.10       | 6,540.3             | 873.2      | 1,072.6    | 1,383.1               | 0.74                  | -0.74                |                       |
| 6,792.0             | 10.50           | 50.60       | 6,634.5             | 884.8      | 1,086.8    | 1,401.4               | 1.05                  | -1.04                |                       |
| 6,887.0             | 10.90           | 51.60       | 6,727.9             | 895.9      | 1,100.5    | 1,419.1               | 0.46                  | 0.42                 |                       |
| 6,982.0             | 10.00           | 53.20       | 6,821.3             | 906.4      | 1,114.2    | 1,436.3               | 1.00                  | -0.95                |                       |
| 7,078.0             | 9.70            | 55.70       | 6,915.9             | 915.9      | 1,127.5    | 1,452.7               | 0.54                  | -0.31                |                       |
| 7,173.0             | 9.60            | 53.90       | 7,009.6             | 925.1      | 1,140.6    | 1,468.5               | 0.33                  | -0.11                |                       |
| 7,268.0             | 8.70            | 43.60       | 7,103.4             | 935.0      | 1,151.9    | 1,483.6               | 1.96                  | -0.95                |                       |
| 7,363.0             | 7.90            | 43.50       | 7,197.4             | 944.9      | 1,161.4    | 1,497.2               | 0.84                  | -0.84                |                       |
| 7,459.0             | 7.40            | 44.40       | 7,292.5             | 954.1      | 1,170.2    | 1,509.9               | 0.54                  | -0.52                |                       |
| 7,554.0             | 6.80            | 44.10       | 7,386.8             | 962.5      | 1,178.4    | 1,521.6               | 0.63                  | -0.63                |                       |
| 7,649.0             | 6.40            | 45.90       | 7,481.1             | 970.2      | 1,186.1    | 1,532.4               | 0.47                  | -0.42                |                       |
| 7,744.0             | 5.70            | 46.20       | 7,575.6             | 977.2      | 1,193.4    | 1,542.4               | 0.74                  | -0.74                |                       |
| 7,800.2             | 4.53            | 46.68       | 7,631.6             | 980.7      | 1,197.0    | 1,547.4               | 2.08                  | -2.08                | HMU Federal 16-8D TOG |
| 7,840.0             | 3.70            | 47.20       | 7,671.3             | 982.6      | 1,199.1    | 1,550.2               | 2.08                  | -2.08                |                       |
| 7,935.0             | 3.70            | 46.30       | 7,766.1             | 986.8      | 1,203.5    | 1,556.4               | 0.06                  | 0.00                 |                       |
| 8,031.0             | 1.80            | 35.80       | 7,862.0             | 990.2      | 1,206.7    | 1,560.9               | 2.04                  | -1.98                |                       |
| 8,126.0             | 1.70            | 29.40       | 7,956.9             | 992.6      | 1,208.2    | 1,563.7               | 0.23                  | -0.11                |                       |
| 8,221.0             | 1.70            | 31.50       | 8,051.9             | 995.0      | 1,209.6    | 1,566.3               | 0.07                  | 0.00                 |                       |
| 8,316.0             | 1.50            | 35.20       | 8,146.8             | 997.3      | 1,211.1    | 1,568.8               | 0.24                  | -0.21                |                       |
| 8,411.0             | 1.20            | 33.60       | 8,241.8             | 999.1      | 1,212.4    | 1,571.0               | 0.32                  | -0.32                |                       |
| 8,506.0             | 0.90            | 43.50       | 8,336.8             | 1,000.5    | 1,213.4    | 1,572.7               | 0.37                  | -0.32                |                       |
| 8,601.0             | 0.40            | 39.90       | 8,431.8             | 1,001.3    | 1,214.2    | 1,573.8               | 0.53                  | -0.53                |                       |
| 8,696.0             | 0.30            | 72.10       | 8,526.8             | 1,001.6    | 1,214.6    | 1,574.3               | 0.23                  | -0.11                |                       |
| 8,791.0             | 0.40            | 156.80      | 8,621.8             | 1,001.4    | 1,215.0    | 1,574.4               | 0.50                  | 0.11                 |                       |
| 8,887.0             | 0.80            | 179.90      | 8,717.8             | 1,000.4    | 1,215.1    | 1,573.9               | 0.48                  | 0.42                 |                       |
| 8,982.0             | 1.20            | 191.60      | 8,812.8             | 998.7      | 1,214.9    | 1,572.7               | 0.47                  | 0.42                 |                       |
| 9,077.0             | 1.50            | 276.10      | 8,907.7             | 997.9      | 1,213.5    | 1,571.1               | 1.93                  | 0.32                 |                       |
| 9,173.0             | 0.90            | 41.00       | 9,003.7             | 998.6      | 1,212.7    | 1,571.0               | 2.24                  | -0.62                |                       |
| 9,268.0             | 0.80            | 32.00       | 9,098.7             | 999.7      | 1,213.6    | 1,572.3               | 0.18                  | -0.11                |                       |
| 9,363.0             | 1.50            | 15.80       | 9,193.7             | 1,001.5    | 1,214.2    | 1,574.0               | 0.81                  | 0.74                 |                       |
| 9,458.0             | 1.10            | 75.30       | 9,288.7             | 1,002.9    | 1,215.5    | 1,575.8               | 1.41                  | -0.42                |                       |
| 9,554.0             | 0.10            | 199.30      | 9,384.7             | 1,003.1    | 1,216.3    | 1,576.6               | 1.21                  | -1.04                |                       |
| 9,649.0             | 0.30            | 219.90      | 9,479.7             | 1,002.8    | 1,216.1    | 1,576.3               | 0.22                  | 0.21                 |                       |
| 9,744.0             | 0.50            | 198.90      | 9,574.7             | 1,002.2    | 1,215.8    | 1,575.7               | 0.26                  | 0.21                 |                       |
| 9,840.0             | 0.50            | 193.00      | 9,670.7             | 1,001.4    | 1,215.6    | 1,575.0               | 0.05                  | 0.00                 |                       |
| 9,935.0             | 0.50            | 181.80      | 9,765.7             | 1,000.6    | 1,215.5    | 1,574.4               | 0.10                  | 0.00                 |                       |
| 10,031.0            | 0.70            | 186.10      | 9,861.7             | 999.6      | 1,215.4    | 1,573.7               | 0.21                  | 0.21                 |                       |

# Cathedral Energy Services

## Survey Report

|                  |                            |                                     |                                      |
|------------------|----------------------------|-------------------------------------|--------------------------------------|
| <b>Company:</b>  | EnCana Oil & Gas (USA) Inc | <b>Local Co-ordinate Reference:</b> | Well HMU Fee 16-8D                   |
| <b>Project:</b>  | Mamm Creek                 | <b>TVD Reference:</b>               | WELL @ 7667.0ft (Original Well Elev) |
| <b>Site:</b>     | J16W Pad                   | <b>MD Reference:</b>                | WELL @ 7667.0ft (Original Well Elev) |
| <b>Well:</b>     | HMU Fee 16-8D              | <b>North Reference:</b>             | True                                 |
| <b>Wellbore:</b> | DD                         | <b>Survey Calculation Method:</b>   | Minimum Curvature                    |
| <b>Design:</b>   | DD                         | <b>Database:</b>                    | USA EDM 5000 Multi Users DB          |

| Survey              |                 |             |                     |            |            |                       |                       |                      |                                    |
|---------------------|-----------------|-------------|---------------------|------------|------------|-----------------------|-----------------------|----------------------|------------------------------------|
| Measured Depth (ft) | Inclination (°) | Azimuth (°) | Vertical Depth (ft) | +N/-S (ft) | +E/-W (ft) | Vertical Section (ft) | Dogleg Rate (°/100ft) | Build Rate (°/100ft) | Formations / Comments              |
| 10,126.0            | 0.70            | 186.60      | 9,956.7             | 998.4      | 1,215.3    | 1,572.9               | 0.01                  | 0.00                 |                                    |
| 10,222.0            | 0.70            | 198.20      | 10,052.6            | 997.3      | 1,215.1    | 1,571.9               | 0.15                  | 0.00                 |                                    |
| 10,317.0            | 1.10            | 197.60      | 10,147.6            | 995.9      | 1,214.6    | 1,570.7               | 0.42                  | 0.42                 |                                    |
| 10,412.0            | 1.10            | 193.00      | 10,242.6            | 994.1      | 1,214.1    | 1,569.2               | 0.09                  | 0.00                 |                                    |
| 10,508.0            | 1.20            | 201.10      | 10,338.6            | 992.3      | 1,213.6    | 1,567.6               | 0.20                  | 0.10                 |                                    |
| 10,603.0            | 1.20            | 197.20      | 10,433.6            | 990.4      | 1,212.9    | 1,565.9               | 0.09                  | 0.00                 |                                    |
| 10,651.6            | 1.20            | 201.75      | 10,482.1            | 989.5      | 1,212.6    | 1,565.0               | 0.20                  | 0.00                 | HMU Federal 16-8D BHL              |
| 10,667.0            | 1.20            | 203.20      | 10,497.6            | 989.2      | 1,212.4    | 1,564.7               | 0.20                  | 0.01                 |                                    |
| 10,717.0            | 1.20            | 203.20      | 10,547.6            | 988.2      | 1,212.0    | 1,563.8               | 0.00                  | 0.00                 | Last Cathedral Survey @ 10,717' MD |

| Targets   |               |              |          |            |            |               |              |           |             |
|---|---------------|--------------|----------|------------|------------|---------------|--------------|-----------|-------------|
| Target Name   | Dip Angle (°) | Dip Dir. (°) | TVD (ft) | +N/-S (ft) | +E/-W (ft) | Northing (ft) | Easting (ft) | Latitude  | Longitude   |
| HMU Federal 16-8D TOC<br>- hit/miss target<br>- Shape   | 0.00          | 0.00         | 7,631.0  | 986.7      | 1,200.5    | 1,595,316.35  | 2,358,621.94 | 39.445889 | -107.771411 |
| - actual wellpath misses target center by 7.1ft at 7800.2ft MD (7631.6 TVD, 980.7 N, 1197.0 E)<br>- Circle (radius 25.0)    |               |              |          |            |            |               |              |           |             |
| HMU Federal 16-8D BHL<br>- hit/miss target<br>- Shape   | 0.00          | 0.00         | 10,482.0 | 986.7      | 1,200.5    | 1,595,316.35  | 2,358,621.94 | 39.445889 | -107.771411 |
| - actual wellpath misses target center by 12.4ft at 10651.6ft MD (10482.1 TVD, 989.5 N, 1212.6 E)<br>- Circle (radius 40.0) |               |              |          |            |            |               |              |           |             |

| Design Annotations  |                     |                   |            |                                    |
|---------------------|---------------------|-------------------|------------|------------------------------------|
| Measured Depth (ft) | Vertical Depth (ft) | Local Coordinates |            | Comment                            |
|                     |                     | +N/-S (ft)        | +E/-W (ft) |                                    |
| 10,717.0            | 10,547.6            | 988.2             | 1,212.0    | Last Cathedral Survey @ 10,717' MD |

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