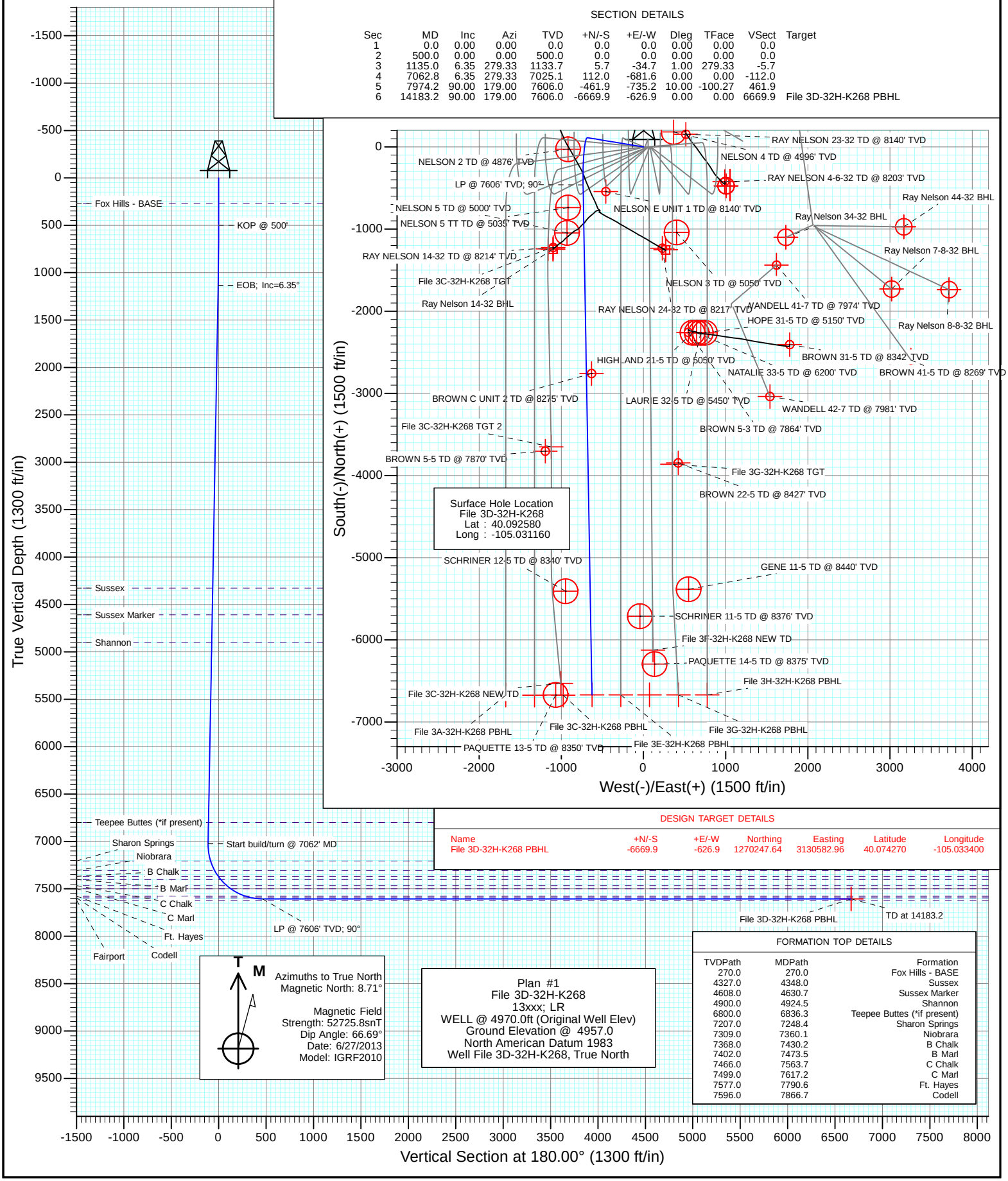
encana natural gas

Project: DJ Wattenberg
Site: S32-T2N-R68W (File)
Well: File 3D-32H-K268
Wellbore: Hz
Design: Plan #1

CATHEDRAL

SECTION DETAILS

| Sec | MD | Inc | Azi | TVD | +N/-S | +E/-W | Dleg | TFace | VSect | Target |
|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 0.0 | 0.00 | 0.00 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.0 | |
| 2 | 500.0 | 0.00 | 0.00 | 500.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.0 | |
| 3 | 1135.0 | 6.35 | 279.33 | 1133.7 | 5.7 | -34.7 | 1.00 | 279.33 | -5.7 | |
| 4 | 7062.8 | 6.35 | 279.33 | 7025.1 | 112.0 | -681.6 | 0.00 | 0.00 | -112.0 | |
| 5 | 7974.2 | 90.00 | 179.00 | 7606.0 | -461.9 | -735.2 | 10.00 | -100.27 | 461.9 | |
| 6 | 14183.2 | 90.00 | 179.00 | 7606.0 | -6669.9 | -626.9 | 0.00 | 0.00 | 6669.9 | File 3D-32H-K268 PBHL |




DESIGN TARGET DETAILS

| Name | +N/-S | +E/-W | Northing | Easting | Latitude | Longitude |
|---|---|---|---|---|---|---|
| File 3D-32H-K268 PBHL | -6669.9 | -626.9 | 1270247.64 | 3130582.96 | 40.074270 | -105.033400 |

FORMATION TOP DETAILS

| TVDPath | MDPath | Formation |
|---|---|---|
| 270.0 | 270.0 | Fox Hills - BASE |
| 4327.0 | 4348.0 | Sussex |
| 4608.0 | 4630.7 | Sussex Marker |
| 4900.0 | 4924.5 | Shannon |
| 6800.0 | 6836.3 | Teepee Buttes (*if present) |
| 7207.0 | 7248.4 | Sharon Springs |
| 7309.0 | 7360.1 | Niobrara |
| 7368.0 | 7430.2 | B Chalk |
| 7402.0 | 7473.5 | B Marl |
| 7466.0 | 7563.7 | C Chalk |
| 7499.0 | 7617.2 | C Marl |
| 7577.0 | 7790.6 | Ft. Hayes |
| 7596.0 | 7866.7 | Codell |

T M

Azimuths to True North
Magnetic North: 8.71°

Magnetic Field
Strength: 52725.8snT
Dip Angle: 66.69°
Date: 6/27/2013
Model: IGRF2010

Plan #1
File 3D-32H-K268
13xxx; LR
WELL @ 4970.0ft (Original Well Elev)
Ground Elevation @ 4957.0
North American Datum 1983
Well File 3D-32H-K268, True North

# Planning Report

| | | | |
|---|---|---|---|
| **Database:** | USA EDM 5000 Multi Users DB | **Local Co-ordinate Reference:** | Well File 3D-32H-K268 |
| **Company:** | EnCana Oil & Gas (USA) Inc | **TVD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Project:** | DJ Wattenberg | **MD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Site:** | S32-T2N-R68W (File) | **North Reference:** | True |
| **Well:** | File 3D-32H-K268 | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | Hz | | |
| **Design:** | Plan #1 | | |

**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** S32-T2N-R68W (File)

| | | | | | |
|---|---|---|---|---|---|
| **Site Position:** | | **Northing:** | 1,275,973.93 ft | **Latitude:** | 40.089950 |
| **From:** | Lat/Long | **Easting:** | 3,133,277.97 ft | **Longitude:** | -105.023660 |
| **Position Uncertainty:** | 0.0 ft | **Slot Radius:** | 13.200 in | **Grid Convergence:** | 0.31 ° |

**Well** File 3D-32H-K268

| | | | | | | |
|---|---|---|---|---|---|---|
| **Well Position** | **+N/-S** | 0.0 ft | **Northing:** | 1,276,920.77 ft | **Latitude:** | 40.092580 |
| | **+E/-W** | 0.0 ft | **Easting:** | 3,131,174.55 ft | **Longitude:** | -105.031160 |
| **Position Uncertainty** | | 0.0 ft | **Wellhead Elevation:** | ft | **Ground Level:** | 4,957.0 ft |

**Wellbore** Hz

| Magnetics | Model Name | Sample Date | Declination (°) | Dip Angle (°) | Field Strength (nT) |
|---|---|---|---|---|---|
| | IGRF2010 | 6/27/2013 | 8.71 | 66.69 | 52,726 |

**Design** Plan #1

**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 | 180.00 |

**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 | |
| 500.0 | 0.00 | 0.00 | 500.0 | 0.0 | 0.0 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 1,135.0 | 6.35 | 279.33 | 1,133.7 | 5.7 | -34.7 | 1.00 | 1.00 | 0.00 | 279.33 | |
| 7,062.8 | 6.35 | 279.33 | 7,025.1 | 112.0 | -681.6 | 0.00 | 0.00 | 0.00 | 0.00 | |
| 7,974.2 | 90.00 | 179.00 | 7,606.0 | -461.9 | -735.2 | 10.00 | 9.18 | -11.01 | -100.27 | |
| 14,183.2 | 90.00 | 179.00 | 7,606.0 | -6,669.9 | -626.9 | 0.00 | 0.00 | 0.00 | 0.00 | File 3D-32H-K268 PB |

| | | | |
|---|---|---|---|
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| **Company:** | EnCana Oil & Gas (USA) Inc | **TVD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Project:** | DJ Wattenberg | **MD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Site:** | S32-T2N-R68W (File) | **North Reference:** | True |
| **Well:** | File 3D-32H-K268 | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | Hz | | |
| **Design:** | Plan #1 | | |

**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 | |
| 270.0 | 0.00 | 0.00 | 270.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | Fox Hills - BASE |
| 300.0 | 0.00 | 0.00 | 300.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | |
| 400.0 | 0.00 | 0.00 | 400.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | |
| 500.0 | 0.00 | 0.00 | 500.0 | 0.0 | 0.0 | 0.0 | 0.00 | 0.00 | KOP @ 500' |
| 600.0 | 1.00 | 279.33 | 600.0 | 0.1 | -0.9 | -0.1 | 1.00 | 1.00 | |
| 700.0 | 2.00 | 279.33 | 700.0 | 0.6 | -3.4 | -0.6 | 1.00 | 1.00 | |
| 800.0 | 3.00 | 279.33 | 799.9 | 1.3 | -7.7 | -1.3 | 1.00 | 1.00 | |
| 900.0 | 4.00 | 279.33 | 899.7 | 2.3 | -13.8 | -2.3 | 1.00 | 1.00 | |
| 1,000.0 | 5.00 | 279.33 | 999.4 | 3.5 | -21.5 | -3.5 | 1.00 | 1.00 | |
| 1,100.0 | 6.00 | 279.33 | 1,098.9 | 5.1 | -31.0 | -5.1 | 1.00 | 1.00 | |
| 1,135.0 | 6.35 | 279.33 | 1,133.7 | 5.7 | -34.7 | -5.7 | 1.00 | 1.00 | EOB; Inc=6.35° |
| 1,200.0 | 6.35 | 279.33 | 1,198.3 | 6.9 | -41.8 | -6.9 | 0.00 | 0.00 | |
| 1,300.0 | 6.35 | 279.33 | 1,297.7 | 8.7 | -52.7 | -8.7 | 0.00 | 0.00 | |
| 1,400.0 | 6.35 | 279.33 | 1,397.1 | 10.5 | -63.6 | -10.5 | 0.00 | 0.00 | |
| 1,500.0 | 6.35 | 279.33 | 1,496.5 | 12.2 | -74.5 | -12.2 | 0.00 | 0.00 | |
| 1,600.0 | 6.35 | 279.33 | 1,595.8 | 14.0 | -85.4 | -14.0 | 0.00 | 0.00 | |
| 1,700.0 | 6.35 | 279.33 | 1,695.2 | 15.8 | -96.3 | -15.8 | 0.00 | 0.00 | |
| 1,800.0 | 6.35 | 279.33 | 1,794.6 | 17.6 | -107.3 | -17.6 | 0.00 | 0.00 | |
| 1,900.0 | 6.35 | 279.33 | 1,894.0 | 19.4 | -118.2 | -19.4 | 0.00 | 0.00 | |
| 2,000.0 | 6.35 | 279.33 | 1,993.4 | 21.2 | -129.1 | -21.2 | 0.00 | 0.00 | |
| 2,100.0 | 6.35 | 279.33 | 2,092.8 | 23.0 | -140.0 | -23.0 | 0.00 | 0.00 | |
| 2,200.0 | 6.35 | 279.33 | 2,192.2 | 24.8 | -150.9 | -24.8 | 0.00 | 0.00 | |
| 2,300.0 | 6.35 | 279.33 | 2,291.6 | 26.6 | -161.8 | -26.6 | 0.00 | 0.00 | |
| 2,400.0 | 6.35 | 279.33 | 2,390.9 | 28.4 | -172.7 | -28.4 | 0.00 | 0.00 | |
| 2,500.0 | 6.35 | 279.33 | 2,490.3 | 30.2 | -183.7 | -30.2 | 0.00 | 0.00 | |
| 2,600.0 | 6.35 | 279.33 | 2,589.7 | 32.0 | -194.6 | -32.0 | 0.00 | 0.00 | |
| 2,700.0 | 6.35 | 279.33 | 2,689.1 | 33.8 | -205.5 | -33.8 | 0.00 | 0.00 | |
| 2,800.0 | 6.35 | 279.33 | 2,788.5 | 35.6 | -216.4 | -35.6 | 0.00 | 0.00 | |
| 2,900.0 | 6.35 | 279.33 | 2,887.9 | 37.4 | -227.3 | -37.4 | 0.00 | 0.00 | |
| 3,000.0 | 6.35 | 279.33 | 2,987.3 | 39.1 | -238.2 | -39.1 | 0.00 | 0.00 | |
| 3,100.0 | 6.35 | 279.33 | 3,086.6 | 40.9 | -249.1 | -40.9 | 0.00 | 0.00 | |
| 3,200.0 | 6.35 | 279.33 | 3,186.0 | 42.7 | -260.1 | -42.7 | 0.00 | 0.00 | |
| 3,300.0 | 6.35 | 279.33 | 3,285.4 | 44.5 | -271.0 | -44.5 | 0.00 | 0.00 | |
| 3,400.0 | 6.35 | 279.33 | 3,384.8 | 46.3 | -281.9 | -46.3 | 0.00 | 0.00 | |
| 3,500.0 | 6.35 | 279.33 | 3,484.2 | 48.1 | -292.8 | -48.1 | 0.00 | 0.00 | |
| 3,600.0 | 6.35 | 279.33 | 3,583.6 | 49.9 | -303.7 | -49.9 | 0.00 | 0.00 | |
| 3,700.0 | 6.35 | 279.33 | 3,683.0 | 51.7 | -314.6 | -51.7 | 0.00 | 0.00 | |
| 3,800.0 | 6.35 | 279.33 | 3,782.4 | 53.5 | -325.5 | -53.5 | 0.00 | 0.00 | |
| 3,900.0 | 6.35 | 279.33 | 3,881.7 | 55.3 | -336.5 | -55.3 | 0.00 | 0.00 | |
| 4,000.0 | 6.35 | 279.33 | 3,981.1 | 57.1 | -347.4 | -57.1 | 0.00 | 0.00 | |
| 4,100.0 | 6.35 | 279.33 | 4,080.5 | 58.9 | -358.3 | -58.9 | 0.00 | 0.00 | |
| 4,200.0 | 6.35 | 279.33 | 4,179.9 | 60.7 | -369.2 | -60.7 | 0.00 | 0.00 | |
| 4,300.0 | 6.35 | 279.33 | 4,279.3 | 62.5 | -380.1 | -62.5 | 0.00 | 0.00 | |
| 4,348.0 | 6.35 | 279.33 | 4,327.0 | 63.3 | -385.3 | -63.3 | 0.00 | 0.00 | Sussex |
| 4,400.0 | 6.35 | 279.33 | 4,378.7 | 64.3 | -391.0 | -64.3 | 0.00 | 0.00 | |
| 4,500.0 | 6.35 | 279.33 | 4,478.1 | 66.1 | -401.9 | -66.1 | 0.00 | 0.00 | |
| 4,600.0 | 6.35 | 279.33 | 4,577.4 | 67.8 | -412.9 | -67.8 | 0.00 | 0.00 | |
| 4,630.7 | 6.35 | 279.33 | 4,608.0 | 68.4 | -416.2 | -68.4 | 0.00 | 0.00 | Sussex Marker |
| 4,700.0 | 6.35 | 279.33 | 4,676.8 | 69.6 | -423.8 | -69.6 | 0.00 | 0.00 | |

| | | | |
|---|---|---|---|
| **Database:** | USA EDM 5000 Multi Users DB | **Local Co-ordinate Reference:** | Well File 3D-32H-K268 |
| **Company:** | EnCana Oil & Gas (USA) Inc | **TVD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Project:** | DJ Wattenberg | **MD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Site:** | S32-T2N-R68W (File) | **North Reference:** | True |
| **Well:** | File 3D-32H-K268 | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | Hz | | |
| **Design:** | Plan #1 | | |

**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 |
|---|---|---|---|---|---|---|---|---|---|
| 4,800.0 | 6.35 | 279.33 | 4,776.2 | 71.4 | -434.7 | -71.4 | 0.00 | 0.00 | |
| 4,900.0 | 6.35 | 279.33 | 4,875.6 | 73.2 | -445.6 | -73.2 | 0.00 | 0.00 | |
| 4,924.5 | 6.35 | 279.33 | 4,900.0 | 73.7 | -448.3 | -73.7 | 0.00 | 0.00 | Shannon |
| 5,000.0 | 6.35 | 279.33 | 4,975.0 | 75.0 | -456.5 | -75.0 | 0.00 | 0.00 | |
| 5,100.0 | 6.35 | 279.33 | 5,074.4 | 76.8 | -467.4 | -76.8 | 0.00 | 0.00 | |
| 5,200.0 | 6.35 | 279.33 | 5,173.8 | 78.6 | -478.3 | -78.6 | 0.00 | 0.00 | |
| 5,300.0 | 6.35 | 279.33 | 5,273.1 | 80.4 | -489.2 | -80.4 | 0.00 | 0.00 | |
| 5,400.0 | 6.35 | 279.33 | 5,372.5 | 82.2 | -500.2 | -82.2 | 0.00 | 0.00 | |
| 5,500.0 | 6.35 | 279.33 | 5,471.9 | 84.0 | -511.1 | -84.0 | 0.00 | 0.00 | |
| 5,600.0 | 6.35 | 279.33 | 5,571.3 | 85.8 | -522.0 | -85.8 | 0.00 | 0.00 | |
| 5,700.0 | 6.35 | 279.33 | 5,670.7 | 87.6 | -532.9 | -87.6 | 0.00 | 0.00 | |
| 5,800.0 | 6.35 | 279.33 | 5,770.1 | 89.4 | -543.8 | -89.4 | 0.00 | 0.00 | |
| 5,900.0 | 6.35 | 279.33 | 5,869.5 | 91.2 | -554.7 | -91.2 | 0.00 | 0.00 | |
| 6,000.0 | 6.35 | 279.33 | 5,968.9 | 93.0 | -565.6 | -93.0 | 0.00 | 0.00 | |
| 6,100.0 | 6.35 | 279.33 | 6,068.2 | 94.7 | -576.6 | -94.7 | 0.00 | 0.00 | |
| 6,200.0 | 6.35 | 279.33 | 6,167.6 | 96.5 | -587.5 | -96.5 | 0.00 | 0.00 | |
| 6,300.0 | 6.35 | 279.33 | 6,267.0 | 98.3 | -598.4 | -98.3 | 0.00 | 0.00 | |
| 6,400.0 | 6.35 | 279.33 | 6,366.4 | 100.1 | -609.3 | -100.1 | 0.00 | 0.00 | |
| 6,500.0 | 6.35 | 279.33 | 6,465.8 | 101.9 | -620.2 | -101.9 | 0.00 | 0.00 | |
| 6,600.0 | 6.35 | 279.33 | 6,565.2 | 103.7 | -631.1 | -103.7 | 0.00 | 0.00 | |
| 6,700.0 | 6.35 | 279.33 | 6,664.6 | 105.5 | -642.0 | -105.5 | 0.00 | 0.00 | |
| 6,800.0 | 6.35 | 279.33 | 6,763.9 | 107.3 | -653.0 | -107.3 | 0.00 | 0.00 | |
| 6,836.3 | 6.35 | 279.33 | 6,800.0 | 108.0 | -656.9 | -108.0 | 0.00 | 0.00 | Teepee Buttes (*if present) |
| 6,900.0 | 6.35 | 279.33 | 6,863.3 | 109.1 | -663.9 | -109.1 | 0.00 | 0.00 | |
| 7,000.0 | 6.35 | 279.33 | 6,962.7 | 110.9 | -674.8 | -110.9 | 0.00 | 0.00 | |
| 7,062.8 | 6.35 | 279.33 | 7,025.1 | 112.0 | -681.6 | -112.0 | 0.00 | 0.00 | Start build/turn @ 7062' MD |
| 7,100.0 | 6.76 | 246.49 | 7,062.1 | 111.5 | -685.7 | -111.5 | 10.00 | 1.10 | |
| 7,200.0 | 14.03 | 204.99 | 7,160.5 | 98.1 | -696.2 | -98.1 | 10.00 | 7.27 | |
| 7,248.4 | 18.48 | 198.12 | 7,207.0 | 85.5 | -701.1 | -85.5 | 10.00 | 9.19 | Sharon Springs |
| 7,300.0 | 23.39 | 193.66 | 7,255.2 | 67.8 | -706.1 | -67.8 | 10.00 | 9.52 | |
| 7,360.1 | 29.21 | 190.29 | 7,309.0 | 41.7 | -711.5 | -41.7 | 10.00 | 9.69 | Niobrara |
| 7,400.0 | 33.11 | 188.66 | 7,343.2 | 21.4 | -714.9 | -21.4 | 10.00 | 9.78 | |
| 7,430.2 | 36.07 | 187.64 | 7,368.0 | 4.4 | -717.3 | -4.4 | 10.00 | 9.81 | B Chalk |
| 7,473.5 | 40.33 | 186.41 | 7,402.0 | -22.2 | -720.6 | 22.2 | 10.00 | 9.84 | B Marl |
| 7,500.0 | 42.95 | 185.75 | 7,421.8 | -39.7 | -722.4 | 39.7 | 10.00 | 9.86 | |
| 7,563.7 | 49.25 | 184.41 | 7,466.0 | -85.4 | -726.5 | 85.4 | 10.00 | 9.88 | C Chalk |
| 7,600.0 | 52.84 | 183.76 | 7,488.8 | -113.5 | -728.5 | 113.5 | 10.00 | 9.90 | |
| 7,617.2 | 54.55 | 183.47 | 7,499.0 | -127.4 | -729.3 | 127.4 | 10.00 | 9.91 | C Marl |
| 7,700.0 | 62.76 | 182.23 | 7,542.0 | -197.9 | -732.8 | 197.9 | 10.00 | 9.92 | |
| 7,790.6 | 71.75 | 181.07 | 7,577.0 | -281.3 | -735.2 | 281.3 | 10.00 | 9.93 | Ft. Hayes |
| 7,800.0 | 72.69 | 180.96 | 7,579.9 | -290.3 | -735.4 | 290.3 | 10.00 | 9.93 | |
| 7,866.7 | 79.31 | 180.18 | 7,596.0 | -355.0 | -736.0 | 355.0 | 10.00 | 9.94 | Codell |
| 7,900.0 | 82.63 | 179.81 | 7,601.2 | -387.9 | -736.0 | 387.9 | 10.00 | 9.94 | |
| 7,974.2 | 90.00 | 179.00 | 7,606.0 | -461.9 | -735.2 | 461.9 | 10.00 | 9.94 | LP @ 7606' TVD; 90° |
| 8,000.0 | 90.00 | 179.00 | 7,606.0 | -487.7 | -734.8 | 487.7 | 0.00 | 0.00 | |
| 8,100.0 | 90.00 | 179.00 | 7,606.0 | -587.7 | -733.0 | 587.7 | 0.00 | 0.00 | |
| 8,200.0 | 90.00 | 179.00 | 7,606.0 | -687.6 | -731.3 | 687.6 | 0.00 | 0.00 | |
| 8,300.0 | 90.00 | 179.00 | 7,606.0 | -787.6 | -729.5 | 787.6 | 0.00 | 0.00 | |
| 8,400.0 | 90.00 | 179.00 | 7,606.0 | -887.6 | -727.8 | 887.6 | 0.00 | 0.00 | |
| 8,500.0 | 90.00 | 179.00 | 7,606.0 | -987.6 | -726.0 | 987.6 | 0.00 | 0.00 | |
| 8,600.0 | 90.00 | 179.00 | 7,606.0 | -1,087.6 | -724.3 | 1,087.6 | 0.00 | 0.00 | |
| 8,700.0 | 90.00 | 179.00 | 7,606.0 | -1,187.6 | -722.6 | 1,187.6 | 0.00 | 0.00 | |

| | | | |
|---|---|---|---|
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| **Project:** | DJ Wattenberg | **MD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Site:** | S32-T2N-R68W (File) | **North Reference:** | True |
| **Well:** | File 3D-32H-K268 | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | Hz | | |
| **Design:** | Plan #1 | | |

**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 |
|---|---|---|---|---|---|---|---|---|---|
| 8,800.0 | 90.00 | 179.00 | 7,606.0 | -1,287.5 | -720.8 | 1,287.5 | 0.00 | 0.00 | |
| 8,900.0 | 90.00 | 179.00 | 7,606.0 | -1,387.5 | -719.1 | 1,387.5 | 0.00 | 0.00 | |
| 9,000.0 | 90.00 | 179.00 | 7,606.0 | -1,487.5 | -717.3 | 1,487.5 | 0.00 | 0.00 | |
| 9,100.0 | 90.00 | 179.00 | 7,606.0 | -1,587.5 | -715.6 | 1,587.5 | 0.00 | 0.00 | |
| 9,200.0 | 90.00 | 179.00 | 7,606.0 | -1,687.5 | -713.8 | 1,687.5 | 0.00 | 0.00 | |
| 9,300.0 | 90.00 | 179.00 | 7,606.0 | -1,787.5 | -712.1 | 1,787.5 | 0.00 | 0.00 | |
| 9,400.0 | 90.00 | 179.00 | 7,606.0 | -1,887.5 | -710.3 | 1,887.5 | 0.00 | 0.00 | |
| 9,500.0 | 90.00 | 179.00 | 7,606.0 | -1,987.4 | -708.6 | 1,987.4 | 0.00 | 0.00 | |
| 9,600.0 | 90.00 | 179.00 | 7,606.0 | -2,087.4 | -706.8 | 2,087.4 | 0.00 | 0.00 | |
| 9,700.0 | 90.00 | 179.00 | 7,606.0 | -2,187.4 | -705.1 | 2,187.4 | 0.00 | 0.00 | |
| 9,800.0 | 90.00 | 179.00 | 7,606.0 | -2,287.4 | -703.4 | 2,287.4 | 0.00 | 0.00 | |
| 9,900.0 | 90.00 | 179.00 | 7,606.0 | -2,387.4 | -701.6 | 2,387.4 | 0.00 | 0.00 | |
| 10,000.0 | 90.00 | 179.00 | 7,606.0 | -2,487.4 | -699.9 | 2,487.4 | 0.00 | 0.00 | |
| 10,100.0 | 90.00 | 179.00 | 7,606.0 | -2,587.3 | -698.1 | 2,587.3 | 0.00 | 0.00 | |
| 10,200.0 | 90.00 | 179.00 | 7,606.0 | -2,687.3 | -696.4 | 2,687.3 | 0.00 | 0.00 | |
| 10,300.0 | 90.00 | 179.00 | 7,606.0 | -2,787.3 | -694.6 | 2,787.3 | 0.00 | 0.00 | |
| 10,400.0 | 90.00 | 179.00 | 7,606.0 | -2,887.3 | -692.9 | 2,887.3 | 0.00 | 0.00 | |
| 10,500.0 | 90.00 | 179.00 | 7,606.0 | -2,987.3 | -691.1 | 2,987.3 | 0.00 | 0.00 | |
| 10,600.0 | 90.00 | 179.00 | 7,606.0 | -3,087.3 | -689.4 | 3,087.3 | 0.00 | 0.00 | |
| 10,700.0 | 90.00 | 179.00 | 7,606.0 | -3,187.3 | -687.7 | 3,187.3 | 0.00 | 0.00 | |
| 10,800.0 | 90.00 | 179.00 | 7,606.0 | -3,287.2 | -685.9 | 3,287.2 | 0.00 | 0.00 | |
| 10,900.0 | 90.00 | 179.00 | 7,606.0 | -3,387.2 | -684.2 | 3,387.2 | 0.00 | 0.00 | |
| 11,000.0 | 90.00 | 179.00 | 7,606.0 | -3,487.2 | -682.4 | 3,487.2 | 0.00 | 0.00 | |
| 11,100.0 | 90.00 | 179.00 | 7,606.0 | -3,587.2 | -680.7 | 3,587.2 | 0.00 | 0.00 | |
| 11,200.0 | 90.00 | 179.00 | 7,606.0 | -3,687.2 | -678.9 | 3,687.2 | 0.00 | 0.00 | |
| 11,300.0 | 90.00 | 179.00 | 7,606.0 | -3,787.2 | -677.2 | 3,787.2 | 0.00 | 0.00 | |
| 11,400.0 | 90.00 | 179.00 | 7,606.0 | -3,887.2 | -675.4 | 3,887.2 | 0.00 | 0.00 | |
| 11,500.0 | 90.00 | 179.00 | 7,606.0 | -3,987.1 | -673.7 | 3,987.1 | 0.00 | 0.00 | |
| 11,600.0 | 90.00 | 179.00 | 7,606.0 | -4,087.1 | -671.9 | 4,087.1 | 0.00 | 0.00 | |
| 11,700.0 | 90.00 | 179.00 | 7,606.0 | -4,187.1 | -670.2 | 4,187.1 | 0.00 | 0.00 | |
| 11,800.0 | 90.00 | 179.00 | 7,606.0 | -4,287.1 | -668.5 | 4,287.1 | 0.00 | 0.00 | |
| 11,900.0 | 90.00 | 179.00 | 7,606.0 | -4,387.1 | -666.7 | 4,387.1 | 0.00 | 0.00 | |
| 12,000.0 | 90.00 | 179.00 | 7,606.0 | -4,487.1 | -665.0 | 4,487.1 | 0.00 | 0.00 | |
| 12,100.0 | 90.00 | 179.00 | 7,606.0 | -4,587.0 | -663.2 | 4,587.0 | 0.00 | 0.00 | |
| 12,200.0 | 90.00 | 179.00 | 7,606.0 | -4,687.0 | -661.5 | 4,687.0 | 0.00 | 0.00 | |
| 12,300.0 | 90.00 | 179.00 | 7,606.0 | -4,787.0 | -659.7 | 4,787.0 | 0.00 | 0.00 | |
| 12,400.0 | 90.00 | 179.00 | 7,606.0 | -4,887.0 | -658.0 | 4,887.0 | 0.00 | 0.00 | |
| 12,500.0 | 90.00 | 179.00 | 7,606.0 | -4,987.0 | -656.2 | 4,987.0 | 0.00 | 0.00 | |
| 12,600.0 | 90.00 | 179.00 | 7,606.0 | -5,087.0 | -654.5 | 5,087.0 | 0.00 | 0.00 | |
| 12,700.0 | 90.00 | 179.00 | 7,606.0 | -5,187.0 | -652.7 | 5,187.0 | 0.00 | 0.00 | |
| 12,800.0 | 90.00 | 179.00 | 7,606.0 | -5,286.9 | -651.0 | 5,286.9 | 0.00 | 0.00 | |
| 12,900.0 | 90.00 | 179.00 | 7,606.0 | -5,386.9 | -649.3 | 5,386.9 | 0.00 | 0.00 | |
| 13,000.0 | 90.00 | 179.00 | 7,606.0 | -5,486.9 | -647.5 | 5,486.9 | 0.00 | 0.00 | |
| 13,100.0 | 90.00 | 179.00 | 7,606.0 | -5,586.9 | -645.8 | 5,586.9 | 0.00 | 0.00 | |
| 13,200.0 | 90.00 | 179.00 | 7,606.0 | -5,686.9 | -644.0 | 5,686.9 | 0.00 | 0.00 | |
| 13,300.0 | 90.00 | 179.00 | 7,606.0 | -5,786.9 | -642.3 | 5,786.9 | 0.00 | 0.00 | |
| 13,400.0 | 90.00 | 179.00 | 7,606.0 | -5,886.8 | -640.5 | 5,886.8 | 0.00 | 0.00 | |
| 13,500.0 | 90.00 | 179.00 | 7,606.0 | -5,986.8 | -638.8 | 5,986.8 | 0.00 | 0.00 | |
| 13,600.0 | 90.00 | 179.00 | 7,606.0 | -6,086.8 | -637.0 | 6,086.8 | 0.00 | 0.00 | |
| 13,700.0 | 90.00 | 179.00 | 7,606.0 | -6,186.8 | -635.3 | 6,186.8 | 0.00 | 0.00 | |
| 13,800.0 | 90.00 | 179.00 | 7,606.0 | -6,286.8 | -633.5 | 6,286.8 | 0.00 | 0.00 | |
| 13,900.0 | 90.00 | 179.00 | 7,606.0 | -6,386.8 | -631.8 | 6,386.8 | 0.00 | 0.00 | |

| | | | |
|---|---|---|---|
| **Database:** | USA EDM 5000 Multi Users DB | **Local Co-ordinate Reference:** | Well File 3D-32H-K268 |
| **Company:** | EnCana Oil & Gas (USA) Inc | **TVD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Project:** | DJ Wattenberg | **MD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Site:** | S32-T2N-R68W (File) | **North Reference:** | True |
| **Well:** | File 3D-32H-K268 | **Survey Calculation Method:** | Minimum Curvature |
| **Wellbore:** | Hz | | |
| **Design:** | Plan #1 | | |

**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 |
|---|---|---|---|---|---|---|---|---|---|
| 14,000.0 | 90.00 | 179.00 | 7,606.0 | -6,486.8 | -630.1 | 6,486.8 | 0.00 | 0.00 | |
| 14,100.0 | 90.00 | 179.00 | 7,606.0 | -6,586.7 | -628.3 | 6,586.7 | 0.00 | 0.00 | |
| 14,183.2 | 90.00 | 179.00 | 7,606.0 | -6,669.9 | -626.9 | 6,669.9 | 0.00 | 0.00 | TD at 14183.2 |

**Targets**

| Target Name - hit/miss target - Shape | Dip Angle (°) | Dip Dir. (°) | TVD (ft) | +N/-S (ft) | +E/-W (ft) | Northing (ft) | Easting (ft) | Latitude | Longitude |
|---|---|---|---|---|---|---|---|---|---|
| File 3D-32H-K268 PBHL<br>- plan hits target center<br>- Point | 0.00 | 0.00 | 7,606.0 | -6,669.9 | -626.9 | 1,270,247.64 | 3,130,582.96 | 40.074270 | -105.033400 |

**Formations**

| Measured Depth (ft) | Vertical Depth (ft) | Name | Lithology | Dip (°) | Dip Direction (°) |
|---|---|---|---|---|---|
| 270.0 | 270.0 | Fox Hills - BASE | | | |
| 4,348.0 | 4,327.0 | Sussex | | | |
| 4,630.7 | 4,608.0 | Sussex Marker | | | |
| 4,924.5 | 4,900.0 | Shannon | | | |
| 6,836.3 | 6,800.0 | Teepee Buttes (*if present) | | | |
| 7,248.4 | 7,207.0 | Sharon Springs | | | |
| 7,360.1 | 7,309.0 | Niobrara | | | |
| 7,430.2 | 7,368.0 | B Chalk | | | |
| 7,473.5 | 7,402.0 | B Marl | | | |
| 7,563.7 | 7,466.0 | C Chalk | | | |
| 7,617.2 | 7,499.0 | C Marl | | | |
| 7,790.6 | 7,577.0 | Ft. Hayes | | | |
| 7,866.7 | 7,596.0 | Codell | | | |

**Plan Annotations**

| Measured Depth (ft) | Vertical Depth (ft) | Local Coordinates +N/-S (ft) | Local Coordinates +E/-W (ft) | Comment |
|---|---|---|---|---|
| 500.0 | 500.0 | 0.0 | 0.0 | KOP @ 500' |
| 1,135.0 | 1,133.7 | 5.7 | -34.7 | EOB; Inc=6.35° |
| 7,062.8 | 7,025.1 | 112.0 | -681.6 | Start build/turn @ 7062' MD |
| 7,974.2 | 7,606.0 | -461.9 | -735.2 | LP @ 7606' TVD; 90° |
| 14,183.2 | 7,606.0 | -6,669.9 | -626.9 | TD at 14183.2 |

# EnCana Oil & Gas (USA) Inc

**DJ Wattenberg**
**S32-T2N-R68W (File)**
**File 3D-32H-K268**
**Hz**
**Plan #1**

# Anticollision Report

**28 June, 2013**

| | | | |
|---|---|---|---|
| **Company:** | EnCana Oil & Gas (USA) Inc | **Local Co-ordinate Reference:** | Well File 3D-32H-K268 |
| **Project:** | DJ Wattenberg | **TVD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Reference Site:** | S32-T2N-R68W (File) | **MD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | File 3D-32H-K268 | **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 #1 | **Offset TVD Reference:** | Offset Datum |

| | |
|---|---|
| **Reference** | Plan #1 |

| | | | |
|---|---|---|---|
| **Filter type:** | NO GLOBAL FILTER: Using user defined selection & filtering criteria | | |
| **Interpolation Method:** | MD Interval 100.0ft | **Error Model:** | Systematic Ellipse |
| **Depth Range:** | Unlimited | **Scan Method:** | Closest Approach 3D |
| **Results Limited by:** | Maximum center-center distance of 500.0ft | **Error Surface:** | Elliptical Conic |
| **Warning Levels Evaluated at:** | 2.00 **Sigma** | | |

**Survey Tool Program** **Date** 6/28/2013

| From (ft) | To (ft) | Survey (Wellbore) | Tool Name | Description |
|---|---|---|---|---|
| 0.0 | 14,183.2 | Plan #1 (Hz) | Geolink MWD | Geolink MWD |

| | | | |
|---|---|---|---|
| **Company:** | EnCana Oil & Gas (USA) Inc | **Local Co-ordinate Reference:** | Well File 3D-32H-K268 |
| **Project:** | DJ Wattenberg | **TVD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Reference Site:** | S32-T2N-R68W (File) | **MD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | File 3D-32H-K268 | **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 #1 | **Offset TVD Reference:** | Offset Datum |

**Summary**

| Site Name<br>Offset Well - Wellbore - Design | Reference Measured Depth (ft) | Offset Measured Depth (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|
| S32-T2N-R68W (File) | | | | | | |
| ANDERSON 21-32 (EXISTING) - ENCANA WELL - NO S | | | | | | Out of range |
| ANDERSON 22-32 (EXISTING) - KPK WELL - NO SURV | | | | | | Out of range |
| ANDERSON 22-32 ENC (EXISTING) - ENCANA WELL - | | | | | | Out of range |
| ANDERSON TRUST 2 A (EXISTING) - ENCANA WELL - | | | | | | Out of range |
| ANDERSON TRUST C UNIT 2 (EXISTING) - ENCANA W | | | | | | Out of range |
| BROWN 22-5 (EXISTING) - ENCANA WELL - NO SURV | | | | | | Out of range |
| BROWN 31-5 (EXISTING) - ENCANA WELL - SURVEYS | | | | | | Out of range |
| BROWN 41-5 (EXISTING) - ENCANA WELL - Plan #2 | | | | | | Out of range |
| BROWN 5-3 (EXISTING) - ENCANA WELL - NO SURVE | | | | | | Out of range |
| BROWN 5-5 (EXISTING) - ENCANA WELL - NO SURVE | | | | | | Out of range |
| BROWN C UNIT 2 (EXISTING) - ENCANA WELL - NO S | 10,272.1 | 7,636.0 | 63.1 | -1.8 | 0.972 | Level 1, CC, ES, SF |
| FEDERAL NOAA 11-32 (EXISTING) - ENCANA WELL - N | | | | | | Out of range |
| File 3A-32H-K268 - Hz - Plan #1 | 200.0 | 200.0 | 17.2 | 16.5 | 26.314 | CC, ES |
| File 3A-32H-K268 - Hz - Plan #1 | 500.0 | 498.8 | 25.0 | 23.3 | 14.556 | SF |
| File 3B-32H-K268 - Hz - Plan #1 | 300.0 | 300.0 | 11.2 | 10.2 | 11.171 | CC, ES |
| File 3B-32H-K268 - Hz - Plan #1 | 500.0 | 499.5 | 14.7 | 13.0 | 8.606 | SF |
| File 3C-32H-K268 - Hz - Plan #1 | 400.0 | 400.0 | 6.7 | 5.3 | 4.943 | CC, ES |
| File 3C-32H-K268 - Hz - Plan #1 | 14,036.9 | 13,499.5 | 440.5 | 239.5 | 2.191 | SF |
| File 3E-32H-K268 - Hz - Plan #1 | 500.0 | 501.0 | 14.5 | 12.8 | 8.495 | CC, ES |
| File 3E-32H-K268 - Hz - Plan #1 | 14,183.2 | 13,918.4 | 418.1 | 217.2 | 2.081 | SF |
| File 3F-32H-K268 - Hz - Plan #1 | 500.0 | 501.0 | 19.6 | 17.9 | 11.509 | CC, ES |
| File 3F-32H-K268 - Hz - Plan #1 | 700.0 | 701.0 | 23.0 | 20.6 | 9.602 | SF |
| File 3G-32H-K268 - Hz - Plan #1 | 366.3 | 367.3 | 25.4 | 24.2 | 20.599 | CC |
| File 3G-32H-K268 - Hz - Plan #1 | 400.0 | 401.0 | 25.4 | 24.1 | 18.809 | ES |
| File 3G-32H-K268 - Hz - Plan #1 | 600.0 | 600.0 | 29.5 | 27.5 | 14.406 | SF |
| File 3H-32H-K268 - Hz - Plan #1 | 332.0 | 333.0 | 30.8 | 29.7 | 27.596 | CC |
| File 3H-32H-K268 - Hz - Plan #1 | 400.0 | 400.7 | 31.0 | 29.6 | 22.924 | ES |
| File 3H-32H-K268 - Hz - Plan #1 | 600.0 | 599.5 | 37.0 | 35.0 | 18.084 | SF |
| File 3I-32H-K268 - Hz - Plan #1 | 845.1 | 848.7 | 28.1 | 25.1 | 9.189 | CC, ES |
| File 3I-32H-K268 - Hz - Plan #1 | 1,000.0 | 1,003.4 | 31.1 | 27.3 | 8.164 | SF |
| File 3J-32H-K268 - Hz - Plan #1 | 875.8 | 880.1 | 36.3 | 33.2 | 11.601 | CC |
| File 3J-32H-K268 - Hz - Plan #1 | 900.0 | 904.3 | 36.3 | 33.1 | 11.244 | ES |
| File 3J-32H-K268 - Hz - Plan #1 | 1,100.0 | 1,104.1 | 41.8 | 37.6 | 9.937 | SF |
| File 3K-32H-K268 - Hz - Plan #1 | 773.7 | 777.5 | 51.3 | 48.6 | 19.087 | CC |
| File 3K-32H-K268 - Hz - Plan #1 | 800.0 | 803.8 | 51.3 | 48.5 | 18.432 | ES |
| File 3K-32H-K268 - Hz - Plan #1 | 7,749.8 | 7,768.0 | 104.0 | 75.7 | 3.676 | SF |
| File 3L-32H-K268 - Hz - Plan #1 | 653.4 | 656.0 | 57.2 | 55.0 | 25.477 | CC |
| File 3L-32H-K268 - Hz - Plan #1 | 700.0 | 702.8 | 57.3 | 54.9 | 23.765 | ES |
| File 3L-32H-K268 - Hz - Plan #1 | 7,414.8 | 7,768.3 | 222.0 | 195.5 | 8.375 | SF |
| File 3M-32H-K268 - Hz - Plan #1 | 552.2 | 554.1 | 73.5 | 71.6 | 38.320 | CC, ES |
| File 3M-32H-K268 - Hz - Plan #1 | 1,000.0 | 1,000.1 | 96.9 | 93.3 | 26.381 | SF |
| File 3N-32H-K268 - Hz - Plan #1 | 266.3 | 267.3 | 78.3 | 77.5 | 88.413 | CC |
| File 3N-32H-K268 - Hz - Plan #1 | 400.0 | 400.7 | 78.5 | 77.2 | 58.068 | ES |
| File 3N-32H-K268 - Hz - Plan #1 | 900.0 | 896.9 | 103.5 | 100.3 | 32.579 | SF |
| File 3O-32H-K268 - Hz - Plan #1 | 232.1 | 233.1 | 84.0 | 83.2 | 109.616 | CC |
| File 3O-32H-K268 - Hz - Plan #1 | 300.0 | 300.5 | 84.2 | 83.2 | 83.922 | ES |
| File 3O-32H-K268 - Hz - Plan #1 | 900.0 | 891.0 | 124.6 | 121.5 | 39.759 | SF |
| File 3P-32H-K268 - Hz - Plan #1 | 166.3 | 167.3 | 89.5 | 89.0 | 166.728 | CC |
| File 3P-32H-K268 - Hz - Plan #1 | 200.0 | 201.0 | 89.5 | 88.9 | 136.791 | ES |
| File 3P-32H-K268 - Hz - Plan #1 | 800.0 | 790.7 | 123.5 | 120.7 | 44.750 | SF |
| GENE 11-5 (EXISTING) - KERR-MCGEE WELL - NO SU | | | | | | Out of range |
| HIGHLAND 21-5 (EXISTING) - KPK WELL - NO SURVE | | | | | | Out of range |
| HOPE 31-5 (EXISTING) - KPK WELL - NO SURVEYS | | | | | | Out of range |

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

| | | | |
|---|---|---|---|
| **Company:** | EnCana Oil & Gas (USA) Inc | **Local Co-ordinate Reference:** | Well File 3D-32H-K268 |
| **Project:** | DJ Wattenberg | **TVD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Reference Site:** | S32-T2N-R68W (File) | **MD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | File 3D-32H-K268 | **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 #1 | **Offset TVD Reference:** | Offset Datum |

**Summary**

| Site Name<br>Offset Well - Wellbore - Design | Reference Measured Depth (ft) | Offset Measured Depth (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Separation Factor | Warning |
|---|---|---|---|---|---|---|
| S32-T2N-R68W (File) | | | | | | |
| LAURIE 32-5 (EXISTING) - KPK WELL - NO SURVEYS | | | | | | Out of range |
| NATALIE 33-5 (EXISTING) - KPK WELL - NO SURVEYS | | | | | | Out of range |
| NELSON 1 A (EXISTING) - TEXAS TEA WELL - NO SUR | | | | | | Out of range |
| NELSON 2 (EXISTING) - TEXAS TEA WELL - NO SURV | 4,977.0 | 4,876.0 | 478.7 | 461.1 | 27.099 | CC, ES |
| NELSON 2 (EXISTING) - TEXAS TEA WELL - NO SURV | 5,000.0 | 4,876.0 | 479.3 | 461.6 | 27.064 | SF |
| NELSON 3 (EXISTING) - TEXAS TEA WELL - NO SURV | | | | | | Out of range |
| NELSON 4 (EXISTING) - TEXAS TEA WELL - NO SURV | 500.0 | 500.0 | 409.3 | 407.5 | 237.871 | CC, ES |
| NELSON 4 (EXISTING) - TEXAS TEA WELL - NO SURV | 1,700.0 | 1,695.2 | 491.8 | 485.8 | 81.767 | SF |
| NELSON 5 (EXISTING) - VESSELS WELL - NO SURVE | | | | | | Out of range |
| NELSON 5 TT (EXISTING) - TEXAS TEA WELL - NO SU | | | | | | Out of range |
| NELSON 6 (EXISTING) - VESSELS WELL - NO SURVE | | | | | | Out of range |
| NELSON E UNIT 1 (EXISTING) - ENCANA WELL - NO S | 8,060.7 | 7,596.0 | 276.0 | 245.7 | 9.094 | CC, ES |
| NELSON E UNIT 1 (EXISTING) - ENCANA WELL - NO S | 8,100.0 | 7,596.0 | 278.8 | 248.0 | 9.053 | SF |
| PAQUETTE 13-5 (EXISTING) - KERR-MCGEE WELL - N | 14,175.8 | 7,637.0 | 442.4 | 310.0 | 3.341 | CC |
| PAQUETTE 13-5 (EXISTING) - KERR-MCGEE WELL - N | 14,183.2 | 7,637.0 | 442.4 | 309.9 | 3.338 | ES, SF |
| PAQUETTE 14-5 (EXISTING) - KERR-MCGEE WELL - N | | | | | | Out of range |
| RAY NELSON 0-4-32 (EXISTING) - ENCANA WELL - NO | | | | | | Out of range |
| RAY NELSON 12-32 (EXISTING) - ENCANA WELL - NO | | | | | | Out of range |
| RAY NELSON 13-32 (EXISTING) - ENCANA WELL - SU | | | | | | Out of range |
| RAY NELSON 14-32 (EXISTING) - ENCANA WELL - SU | 8,731.4 | 7,666.2 | 377.6 | 335.9 | 9.060 | CC, ES |
| RAY NELSON 14-32 (EXISTING) - ENCANA WELL - SU | 8,800.0 | 7,665.9 | 383.7 | 341.0 | 8.981 | SF |
| RAY NELSON 23-32 (EXISTING) - ENCANA WELL - NO | | | | | | Out of range |
| RAY NELSON 24-32 (EXISTING) - ENCANA WELL - SU | | | | | | Out of range |
| RAY NELSON 2-4-32 (EXISTING) - ENCANA WELL - NO | | | | | | Out of range |
| Ray Nelson 33-32 - DD - Plan #1 | | | | | | Out of range |
| Ray Nelson 34-32 - DD - Plan #2 | | | | | | Out of range |
| Ray Nelson 44-32 - DD - Plan #2 | | | | | | Out of range |
| RAY NELSON 4-4-32 (EXISTING) - ENCANA WELL - SU | | | | | | Out of range |
| RAY NELSON 4-6-32 (EXISTING) - ENCANA WELL - SU | | | | | | Out of range |
| Ray Nelson 7-8-32 - DD - Plan #1 | | | | | | Out of range |
| Ray Nelson 8-8-32 - DD - Plan #2 | | | | | | Out of range |
| SCHRINER 11-5 (EXISTING) - KERR-MCGEE WELL - N | | | | | | Out of range |
| SCHRINER 12-5 (EXISTING) - KERR-MCGEE WELL - N | 12,916.3 | 7,662.0 | 299.7 | 189.2 | 2.711 | CC, ES, SF |
| WANDELL 33-7 (EXISTING) - ENCANA WELL - Plan #1 | | | | | | Out of range |
| WANDELL 41-7 (EXISTING) - ENCANA WELL - Plan #1 | | | | | | Out of range |
| WANDELL 42-7 (EXISTING) - ENCANA WELL - Plan #1 | | | | | | Out of range |
| WANDELL 43-7 (EXISTING) - ENCANA WELL - Plan #1 | | | | | | Out of range |

| | | | |
|---|---|---|---|
| **Company:** | EnCana Oil & Gas (USA) Inc | **Local Co-ordinate Reference:** | Well File 3D-32H-K268 |
| **Project:** | DJ Wattenberg | **TVD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Reference Site:** | S32-T2N-R68W (File) | **MD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | File 3D-32H-K268 | **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 #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** S32-T2N-R68W (File) - BROWN C UNIT 2 (EXISTING) - ENCANA WELL - NO SURVEYS

**Offset Site Error:** 0.0 ft

**Survey Program:** 8275-Geolink MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 9,800.0 | 7,606.0 | 7,636.0 | 7,636.0 | 45.5 | 13.3 | -90.00 | -2,758.3 | -632.1 | 476.3 | 419.3 | 56.93 | 8.366 | |
| 9,900.0 | 7,606.0 | 7,636.0 | 7,636.0 | 47.1 | 13.3 | -90.00 | -2,758.3 | -632.1 | 377.4 | 318.8 | 58.61 | 6.439 | |
| 10,000.0 | 7,606.0 | 7,636.0 | 7,636.0 | 48.8 | 13.3 | -90.00 | -2,758.3 | -632.1 | 279.3 | 219.0 | 60.29 | 4.633 | |
| 10,100.0 | 7,606.0 | 7,636.0 | 7,636.0 | 50.4 | 13.3 | -90.00 | -2,758.3 | -632.1 | 183.3 | 121.3 | 61.98 | 2.957 | |
| 10,200.0 | 7,606.0 | 7,636.0 | 7,636.0 | 52.0 | 13.3 | -90.00 | -2,758.3 | -632.1 | 95.8 | 32.1 | 63.67 | 1.504 | |
| 10,272.1 | 7,606.0 | 7,636.0 | 7,636.0 | 53.2 | 13.3 | -90.00 | -2,758.3 | -632.1 | 63.1 | -1.8 | 64.89 | 0.972 | Level 1, CC, ES, SF |
| 10,300.0 | 7,606.0 | 7,636.0 | 7,636.0 | 53.7 | 13.3 | -90.00 | -2,758.3 | -632.1 | 69.0 | 3.6 | 65.37 | 1.055 | Level 2 |
| 10,400.0 | 7,606.0 | 7,636.0 | 7,636.0 | 55.3 | 13.3 | -90.00 | -2,758.3 | -632.1 | 142.6 | 75.5 | 67.07 | 2.126 | |
| 10,500.0 | 7,606.0 | 7,636.0 | 7,636.0 | 57.0 | 13.3 | -90.00 | -2,758.3 | -632.1 | 236.5 | 167.7 | 68.77 | 3.439 | |
| 10,600.0 | 7,606.0 | 7,636.0 | 7,636.0 | 58.6 | 13.3 | -90.00 | -2,758.3 | -632.1 | 333.9 | 263.4 | 70.48 | 4.738 | |
| 10,700.0 | 7,606.0 | 7,636.0 | 7,636.0 | 60.3 | 13.3 | -90.00 | -2,758.3 | -632.1 | 432.5 | 360.4 | 72.19 | 5.992 | |

| | | | |
|---|---|---|---|
| **Company:** | EnCana Oil & Gas (USA) Inc | **Local Co-ordinate Reference:** | Well File 3D-32H-K268 |
| **Project:** | DJ Wattenberg | **TVD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Reference Site:** | S32-T2N-R68W (File) | **MD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | File 3D-32H-K268 | **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 #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** S32-T2N-R68W (File) - File 3A-32H-K268 - Hz - Plan #1

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-Geolink MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -102.23 | -3.6 | -16.8 | 17.2 | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.2 | 0.2 | -102.23 | -3.6 | -16.8 | 17.2 | 16.9 | 0.30 | 56.559 | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | -102.23 | -3.6 | -16.8 | 17.2 | 16.5 | 0.65 | 26.314 | CC, ES |
| 300.0 | 300.0 | 299.7 | 299.7 | 0.5 | 0.5 | -102.00 | -3.8 | -17.6 | 18.0 | 17.0 | 1.00 | 18.005 | |
| 400.0 | 400.0 | 399.3 | 399.3 | 0.7 | 0.7 | -101.42 | -4.1 | -20.2 | 20.6 | 19.3 | 1.36 | 15.231 | |
| 500.0 | 500.0 | 498.8 | 498.7 | 0.8 | 0.9 | -100.72 | -4.6 | -24.5 | 25.0 | 23.3 | 1.72 | 14.556 | SF |
| 600.0 | 600.0 | 598.2 | 597.9 | 1.0 | 1.1 | -19.93 | -5.4 | -30.5 | 30.2 | 28.2 | 2.05 | 14.776 | |
| 700.0 | 700.0 | 697.5 | 696.9 | 1.2 | 1.3 | -20.64 | -6.4 | -38.2 | 35.6 | 33.2 | 2.39 | 14.858 | |
| 800.0 | 799.9 | 796.7 | 795.6 | 1.4 | 1.5 | -21.84 | -7.6 | -47.6 | 41.0 | 38.3 | 2.74 | 14.952 | |
| 900.0 | 899.7 | 895.8 | 894.1 | 1.6 | 1.8 | -23.36 | -9.1 | -58.6 | 46.6 | 43.5 | 3.10 | 15.054 | |
| 1,000.0 | 999.4 | 994.8 | 992.2 | 1.8 | 2.0 | -25.08 | -10.7 | -71.4 | 52.3 | 48.9 | 3.45 | 15.157 | |
| 1,100.0 | 1,098.9 | 1,093.6 | 1,090.0 | 2.0 | 2.3 | -26.91 | -12.6 | -85.8 | 58.2 | 54.4 | 3.82 | 15.254 | |
| 1,200.0 | 1,198.3 | 1,192.4 | 1,187.4 | 2.2 | 2.6 | -28.69 | -14.7 | -101.8 | 64.7 | 60.5 | 4.20 | 15.417 | |
| 1,300.0 | 1,297.7 | 1,290.9 | 1,284.3 | 2.5 | 3.0 | -29.88 | -16.9 | -119.5 | 72.8 | 68.2 | 4.58 | 15.885 | |
| 1,400.0 | 1,397.1 | 1,389.1 | 1,380.6 | 2.7 | 3.4 | -30.53 | -19.4 | -138.7 | 82.5 | 77.5 | 4.97 | 16.610 | |
| 1,500.0 | 1,496.5 | 1,487.0 | 1,476.2 | 3.0 | 3.8 | -30.79 | -22.1 | -159.5 | 93.9 | 88.6 | 5.36 | 17.537 | |
| 1,600.0 | 1,595.8 | 1,584.5 | 1,571.0 | 3.2 | 4.2 | -30.77 | -25.0 | -181.9 | 107.0 | 101.2 | 5.74 | 18.628 | |
| 1,700.0 | 1,695.2 | 1,682.1 | 1,665.6 | 3.5 | 4.6 | -30.57 | -28.1 | -205.8 | 121.6 | 115.5 | 6.13 | 19.843 | |
| 1,800.0 | 1,794.6 | 1,780.9 | 1,761.3 | 3.7 | 5.1 | -30.36 | -31.3 | -230.4 | 136.6 | 130.1 | 6.51 | 20.973 | |
| 1,900.0 | 1,894.0 | 1,879.8 | 1,857.0 | 4.0 | 5.5 | -30.19 | -34.5 | -255.0 | 151.7 | 144.8 | 6.90 | 21.975 | |
| 2,000.0 | 1,993.4 | 1,978.6 | 1,952.7 | 4.2 | 6.0 | -30.06 | -37.7 | -279.7 | 166.7 | 159.4 | 7.29 | 22.867 | |
| 2,100.0 | 2,092.8 | 2,077.5 | 2,048.4 | 4.5 | 6.5 | -29.94 | -40.9 | -304.3 | 181.8 | 174.1 | 7.68 | 23.668 | |
| 2,200.0 | 2,192.2 | 2,176.4 | 2,144.0 | 4.7 | 6.9 | -29.85 | -44.1 | -328.9 | 196.8 | 188.8 | 8.07 | 24.390 | |
| 2,300.0 | 2,291.6 | 2,275.2 | 2,239.7 | 5.0 | 7.4 | -29.77 | -47.3 | -353.6 | 211.9 | 203.4 | 8.46 | 25.044 | |
| 2,400.0 | 2,390.9 | 2,374.1 | 2,335.4 | 5.2 | 7.9 | -29.69 | -50.5 | -378.2 | 227.0 | 218.1 | 8.85 | 25.640 | |
| 2,500.0 | 2,490.3 | 2,472.9 | 2,431.1 | 5.5 | 8.4 | -29.63 | -53.7 | -402.8 | 242.0 | 232.8 | 9.24 | 26.185 | |
| 2,600.0 | 2,589.7 | 2,571.8 | 2,526.8 | 5.7 | 8.8 | -29.58 | -56.9 | -427.5 | 257.1 | 247.4 | 9.63 | 26.684 | |
| 2,700.0 | 2,689.1 | 2,670.7 | 2,622.5 | 6.0 | 9.3 | -29.53 | -60.1 | -452.1 | 272.1 | 262.1 | 10.03 | 27.144 | |
| 2,800.0 | 2,788.5 | 2,769.5 | 2,718.2 | 6.3 | 9.8 | -29.48 | -63.3 | -476.7 | 287.2 | 276.8 | 10.42 | 27.569 | |
| 2,900.0 | 2,887.9 | 2,868.4 | 2,813.9 | 6.5 | 10.2 | -29.44 | -66.5 | -501.4 | 302.2 | 291.4 | 10.81 | 27.963 | |
| 3,000.0 | 2,987.3 | 2,967.2 | 2,909.6 | 6.8 | 10.7 | -29.41 | -69.6 | -526.0 | 317.3 | 306.1 | 11.20 | 28.328 | |
| 3,100.0 | 3,086.6 | 3,066.1 | 3,005.2 | 7.0 | 11.2 | -29.37 | -72.8 | -550.6 | 332.4 | 320.8 | 11.59 | 28.669 | |
| 3,200.0 | 3,186.0 | 3,165.0 | 3,100.9 | 7.3 | 11.7 | -29.34 | -76.0 | -575.3 | 347.4 | 335.4 | 11.99 | 28.987 | |
| 3,300.0 | 3,285.4 | 3,263.8 | 3,196.6 | 7.6 | 12.1 | -29.32 | -79.2 | -599.9 | 362.5 | 350.1 | 12.38 | 29.285 | |
| 3,400.0 | 3,384.8 | 3,362.7 | 3,292.3 | 7.8 | 12.6 | -29.29 | -82.4 | -624.5 | 377.5 | 364.8 | 12.77 | 29.564 | |
| 3,500.0 | 3,484.2 | 3,461.5 | 3,388.0 | 8.1 | 13.1 | -29.27 | -85.6 | -649.2 | 392.6 | 379.4 | 13.16 | 29.826 | |
| 3,600.0 | 3,583.6 | 3,560.4 | 3,483.7 | 8.3 | 13.6 | -29.25 | -88.8 | -673.8 | 407.6 | 394.1 | 13.56 | 30.073 | |
| 3,700.0 | 3,683.0 | 3,659.3 | 3,579.4 | 8.6 | 14.0 | -29.23 | -92.0 | -698.4 | 422.7 | 408.8 | 13.95 | 30.305 | |
| 3,800.0 | 3,782.4 | 3,758.1 | 3,675.1 | 8.8 | 14.5 | -29.21 | -95.2 | -723.0 | 437.8 | 423.4 | 14.34 | 30.525 | |
| 3,900.0 | 3,881.7 | 3,857.0 | 3,770.7 | 9.1 | 15.0 | -29.19 | -98.4 | -747.7 | 452.8 | 438.1 | 14.73 | 30.733 | |
| 4,000.0 | 3,981.1 | 3,955.8 | 3,866.4 | 9.4 | 15.5 | -29.17 | -101.6 | -772.3 | 467.9 | 452.7 | 15.13 | 30.930 | |
| 4,100.0 | 4,080.5 | 4,054.7 | 3,962.1 | 9.6 | 16.0 | -29.16 | -104.8 | -796.9 | 482.9 | 467.4 | 15.52 | 31.117 | |
| 4,200.0 | 4,179.9 | 4,153.6 | 4,057.8 | 9.9 | 16.4 | -29.14 | -108.0 | -821.6 | 498.0 | 482.1 | 15.91 | 31.295 | |

| | | | |
|---|---|---|---|
| **Company:** | EnCana Oil & Gas (USA) Inc | **Local Co-ordinate Reference:** | Well File 3D-32H-K268 |
| **Project:** | DJ Wattenberg | **TVD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Reference Site:** | S32-T2N-R68W (File) | **MD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | File 3D-32H-K268 | **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 #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** S32-T2N-R68W (File) - File 3B-32H-K268 - Hz - Plan #1

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-Geolink MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -89.98 | 0.0 | -11.2 | 11.2 | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.2 | 0.2 | -89.98 | 0.0 | -11.2 | 11.2 | 10.9 | 0.30 | 36.850 | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | -89.98 | 0.0 | -11.2 | 11.2 | 10.5 | 0.65 | 17.144 | |
| 300.0 | 300.0 | 300.0 | 300.0 | 0.5 | 0.5 | -89.98 | 0.0 | -11.2 | 11.2 | 10.2 | 1.00 | 11.171 | CC, ES |
| 400.0 | 400.0 | 399.8 | 399.8 | 0.7 | 0.7 | -89.60 | 0.1 | -12.1 | 12.1 | 10.7 | 1.35 | 8.924 | |
| 500.0 | 500.0 | 499.5 | 499.5 | 0.8 | 0.9 | -88.72 | 0.3 | -14.6 | 14.7 | 13.0 | 1.70 | 8.606 | SF |
| 600.0 | 600.0 | 599.2 | 599.0 | 1.0 | 1.0 | -7.47 | 0.7 | -19.0 | 18.1 | 16.1 | 2.05 | 8.859 | |
| 700.0 | 700.0 | 698.8 | 698.5 | 1.2 | 1.2 | -7.39 | 1.3 | -25.0 | 21.6 | 19.2 | 2.40 | 9.026 | |
| 800.0 | 799.9 | 798.3 | 797.7 | 1.4 | 1.4 | -7.61 | 2.0 | -32.8 | 25.1 | 22.4 | 2.74 | 9.152 | |
| 900.0 | 899.7 | 897.8 | 896.7 | 1.6 | 1.7 | -8.01 | 2.9 | -42.2 | 28.6 | 25.5 | 3.09 | 9.251 | |
| 1,000.0 | 999.4 | 997.2 | 995.5 | 1.8 | 1.9 | -8.54 | 3.9 | -53.4 | 32.1 | 28.7 | 3.44 | 9.331 | |
| 1,100.0 | 1,098.9 | 1,096.6 | 1,094.0 | 2.0 | 2.2 | -9.17 | 5.1 | -66.2 | 35.6 | 31.8 | 3.79 | 9.396 | |
| 1,200.0 | 1,198.3 | 1,195.8 | 1,192.2 | 2.2 | 2.5 | -9.76 | 6.5 | -80.8 | 39.5 | 35.3 | 4.14 | 9.533 | |
| 1,300.0 | 1,297.7 | 1,295.0 | 1,290.0 | 2.5 | 2.8 | -10.04 | 8.0 | -97.0 | 45.0 | 40.5 | 4.49 | 10.005 | |
| 1,400.0 | 1,397.1 | 1,393.9 | 1,387.2 | 2.7 | 3.1 | -10.05 | 9.7 | -114.8 | 52.2 | 47.3 | 4.85 | 10.763 | |
| 1,500.0 | 1,496.5 | 1,493.4 | 1,484.9 | 3.0 | 3.5 | -9.95 | 11.5 | -133.9 | 60.5 | 55.3 | 5.20 | 11.622 | |
| 1,600.0 | 1,595.8 | 1,593.1 | 1,582.7 | 3.2 | 3.8 | -9.87 | 13.2 | -152.9 | 68.7 | 63.2 | 5.56 | 12.374 | |
| 1,700.0 | 1,695.2 | 1,692.7 | 1,680.5 | 3.5 | 4.2 | -9.81 | 15.0 | -172.0 | 77.0 | 71.1 | 5.91 | 13.036 | |
| 1,800.0 | 1,794.6 | 1,792.4 | 1,778.3 | 3.7 | 4.6 | -9.76 | 16.8 | -191.0 | 85.3 | 79.1 | 6.26 | 13.623 | |
| 1,900.0 | 1,894.0 | 1,892.0 | 1,876.1 | 4.0 | 4.9 | -9.72 | 18.6 | -210.1 | 93.6 | 87.0 | 6.62 | 14.146 | |
| 2,000.0 | 1,993.4 | 1,991.7 | 1,973.9 | 4.2 | 5.3 | -9.68 | 20.3 | -229.1 | 101.9 | 95.0 | 6.97 | 14.617 | |
| 2,100.0 | 2,092.8 | 2,091.3 | 2,071.7 | 4.5 | 5.7 | -9.65 | 22.1 | -248.2 | 110.2 | 102.9 | 7.33 | 15.042 | |
| 2,200.0 | 2,192.2 | 2,191.0 | 2,169.5 | 4.7 | 6.1 | -9.63 | 23.9 | -267.2 | 118.5 | 110.8 | 7.68 | 15.428 | |
| 2,300.0 | 2,291.6 | 2,290.6 | 2,267.3 | 5.0 | 6.4 | -9.61 | 25.7 | -286.3 | 126.8 | 118.8 | 8.04 | 15.779 | |
| 2,400.0 | 2,390.9 | 2,390.3 | 2,365.1 | 5.2 | 6.8 | -9.59 | 27.5 | -305.4 | 135.1 | 126.7 | 8.39 | 16.101 | |
| 2,500.0 | 2,490.3 | 2,490.0 | 2,462.9 | 5.5 | 7.2 | -9.57 | 29.2 | -324.4 | 143.4 | 134.7 | 8.75 | 16.397 | |
| 2,600.0 | 2,589.7 | 2,589.6 | 2,560.7 | 5.7 | 7.6 | -9.55 | 31.0 | -343.5 | 151.7 | 142.6 | 9.10 | 16.669 | |
| 2,700.0 | 2,689.1 | 2,689.3 | 2,658.5 | 6.0 | 7.9 | -9.54 | 32.8 | -362.5 | 160.0 | 150.5 | 9.45 | 16.922 | |
| 2,800.0 | 2,788.5 | 2,788.9 | 2,756.3 | 6.3 | 8.3 | -9.53 | 34.6 | -381.6 | 168.3 | 158.5 | 9.81 | 17.156 | |
| 2,900.0 | 2,887.9 | 2,888.6 | 2,854.1 | 6.5 | 8.7 | -9.52 | 36.3 | -400.6 | 176.6 | 166.4 | 10.16 | 17.373 | |
| 3,000.0 | 2,987.3 | 2,988.2 | 2,951.9 | 6.8 | 9.1 | -9.51 | 38.1 | -419.7 | 184.9 | 174.4 | 10.52 | 17.576 | |
| 3,100.0 | 3,086.6 | 3,087.9 | 3,049.7 | 7.0 | 9.5 | -9.50 | 39.9 | -438.7 | 193.2 | 182.3 | 10.87 | 17.766 | |
| 3,200.0 | 3,186.0 | 3,187.5 | 3,147.5 | 7.3 | 9.8 | -9.49 | 41.7 | -457.8 | 201.5 | 190.2 | 11.23 | 17.943 | |
| 3,300.0 | 3,285.4 | 3,287.2 | 3,245.3 | 7.6 | 10.2 | -9.48 | 43.5 | -476.9 | 209.8 | 198.2 | 11.58 | 18.110 | |
| 3,400.0 | 3,384.8 | 3,386.9 | 3,343.1 | 7.8 | 10.6 | -9.48 | 45.2 | -495.9 | 218.0 | 206.1 | 11.94 | 18.267 | |
| 3,500.0 | 3,484.2 | 3,486.5 | 3,440.9 | 8.1 | 11.0 | -9.47 | 47.0 | -515.0 | 226.3 | 214.1 | 12.29 | 18.415 | |
| 3,600.0 | 3,583.6 | 3,586.2 | 3,538.7 | 8.3 | 11.3 | -9.46 | 48.8 | -534.0 | 234.6 | 222.0 | 12.65 | 18.554 | |
| 3,700.0 | 3,683.0 | 3,685.8 | 3,636.5 | 8.6 | 11.7 | -9.46 | 50.6 | -553.1 | 242.9 | 229.9 | 13.00 | 18.686 | |
| 3,800.0 | 3,782.4 | 3,785.5 | 3,734.3 | 8.8 | 12.1 | -9.45 | 52.4 | -572.1 | 251.2 | 237.9 | 13.36 | 18.811 | |
| 3,900.0 | 3,881.7 | 3,885.1 | 3,832.1 | 9.1 | 12.5 | -9.45 | 54.1 | -591.2 | 259.5 | 245.8 | 13.71 | 18.929 | |
| 4,000.0 | 3,981.1 | 3,984.8 | 3,929.9 | 9.4 | 12.9 | -9.44 | 55.9 | -610.2 | 267.8 | 253.7 | 14.06 | 19.042 | |
| 4,100.0 | 4,080.5 | 4,084.4 | 4,027.7 | 9.6 | 13.2 | -9.44 | 57.7 | -629.3 | 276.1 | 261.7 | 14.42 | 19.149 | |
| 4,200.0 | 4,179.9 | 4,184.1 | 4,125.5 | 9.9 | 13.6 | -9.43 | 59.5 | -648.4 | 284.4 | 269.6 | 14.77 | 19.251 | |
| 4,300.0 | 4,279.3 | 4,283.7 | 4,223.3 | 10.1 | 14.0 | -9.43 | 61.2 | -667.4 | 292.7 | 277.6 | 15.13 | 19.347 | |
| 4,400.0 | 4,378.7 | 4,383.4 | 4,321.1 | 10.4 | 14.4 | -9.43 | 63.0 | -686.5 | 301.0 | 285.5 | 15.48 | 19.440 | |
| 4,500.0 | 4,478.1 | 4,483.1 | 4,418.9 | 10.7 | 14.8 | -9.42 | 64.8 | -705.5 | 309.3 | 293.4 | 15.84 | 19.528 | |
| 4,600.0 | 4,577.4 | 4,582.7 | 4,516.7 | 10.9 | 15.2 | -9.42 | 66.6 | -724.6 | 317.6 | 301.4 | 16.19 | 19.613 | |
| 4,700.0 | 4,676.8 | 4,682.4 | 4,614.5 | 11.2 | 15.5 | -9.42 | 68.4 | -743.6 | 325.9 | 309.3 | 16.55 | 19.694 | |
| 4,800.0 | 4,776.2 | 4,782.0 | 4,712.3 | 11.4 | 15.9 | -9.41 | 70.1 | -762.7 | 334.2 | 317.3 | 16.90 | 19.771 | |
| 4,900.0 | 4,875.6 | 4,881.7 | 4,810.1 | 11.7 | 16.3 | -9.41 | 71.9 | -781.7 | 342.5 | 325.2 | 17.26 | 19.846 | |
| 5,000.0 | 4,975.0 | 4,981.3 | 4,907.9 | 12.0 | 16.7 | -9.41 | 73.7 | -800.8 | 350.8 | 333.1 | 17.61 | 19.917 | |
| 5,100.0 | 5,074.4 | 5,081.0 | 5,005.7 | 12.2 | 17.1 | -9.40 | 75.5 | -819.8 | 359.1 | 341.1 | 17.97 | 19.985 | |

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

| | | | |
|---|---|---|---|
| **Company:** | EnCana Oil & Gas (USA) Inc | **Local Co-ordinate Reference:** | Well File 3D-32H-K268 |
| **Project:** | DJ Wattenberg | **TVD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Reference Site:** | S32-T2N-R68W (File) | **MD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | File 3D-32H-K268 | **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 #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** S32-T2N-R68W (File) - File 3B-32H-K268 - Hz - Plan #1

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-Geolink MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5,200.0 | 5,173.8 | 5,180.6 | 5,103.5 | 12.5 | 17.4 | -9.40 | 77.2 | -838.9 | 367.3 | 349.0 | 18.32 | 20.051 | |
| 5,300.0 | 5,273.1 | 5,280.3 | 5,201.3 | 12.7 | 17.8 | -9.40 | 79.0 | -858.0 | 375.6 | 357.0 | 18.68 | 20.115 | |
| 5,400.0 | 5,372.5 | 5,380.0 | 5,299.1 | 13.0 | 18.2 | -9.40 | 80.8 | -877.0 | 383.9 | 364.9 | 19.03 | 20.175 | |
| 5,500.0 | 5,471.9 | 5,479.6 | 5,396.9 | 13.3 | 18.6 | -9.40 | 82.6 | -896.1 | 392.2 | 372.8 | 19.38 | 20.234 | |
| 5,600.0 | 5,571.3 | 5,579.3 | 5,494.7 | 13.5 | 19.0 | -9.39 | 84.4 | -915.1 | 400.5 | 380.8 | 19.74 | 20.291 | |
| 5,700.0 | 5,670.7 | 5,678.9 | 5,592.5 | 13.8 | 19.3 | -9.39 | 86.1 | -934.2 | 408.8 | 388.7 | 20.09 | 20.345 | |
| 5,800.0 | 5,770.1 | 5,778.6 | 5,690.3 | 14.1 | 19.7 | -9.39 | 87.9 | -953.2 | 417.1 | 396.7 | 20.45 | 20.398 | |
| 5,900.0 | 5,869.5 | 5,878.2 | 5,788.1 | 14.3 | 20.1 | -9.39 | 89.7 | -972.3 | 425.4 | 404.6 | 20.80 | 20.449 | |
| 6,000.0 | 5,968.9 | 5,977.9 | 5,885.9 | 14.6 | 20.5 | -9.39 | 91.5 | -991.3 | 433.7 | 412.5 | 21.16 | 20.498 | |
| 6,100.0 | 6,068.2 | 6,077.5 | 5,983.7 | 14.8 | 20.9 | -9.38 | 93.3 | -1,010.4 | 442.0 | 420.5 | 21.51 | 20.546 | |
| 6,200.0 | 6,167.6 | 6,177.2 | 6,081.5 | 15.1 | 21.2 | -9.38 | 95.0 | -1,029.5 | 450.3 | 428.4 | 21.87 | 20.592 | |
| 6,300.0 | 6,267.0 | 6,276.9 | 6,179.3 | 15.4 | 21.6 | -9.38 | 96.8 | -1,048.5 | 458.6 | 436.4 | 22.22 | 20.637 | |
| 6,400.0 | 6,366.4 | 6,376.5 | 6,277.1 | 15.6 | 22.0 | -9.38 | 98.6 | -1,067.6 | 466.9 | 444.3 | 22.58 | 20.680 | |
| 6,500.0 | 6,465.8 | 6,476.2 | 6,374.9 | 15.9 | 22.4 | -9.38 | 100.4 | -1,086.6 | 475.2 | 452.2 | 22.93 | 20.722 | |
| 6,600.0 | 6,565.2 | 6,575.8 | 6,472.7 | 16.1 | 22.8 | -9.38 | 102.1 | -1,105.7 | 483.5 | 460.2 | 23.29 | 20.762 | |
| 6,700.0 | 6,664.6 | 6,675.5 | 6,570.5 | 16.4 | 23.2 | -9.38 | 103.9 | -1,124.7 | 491.8 | 468.1 | 23.64 | 20.801 | |

| | | | |
|---|---|---|---|
| **Company:** | EnCana Oil & Gas (USA) Inc | **Local Co-ordinate Reference:** | Well File 3D-32H-K268 |
| **Project:** | DJ Wattenberg | **TVD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Reference Site:** | S32-T2N-R68W (File) | **MD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | File 3D-32H-K268 | **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 #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** S32-T2N-R68W (File) - File 3C-32H-K268 - Hz - Plan #1

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-Geolink MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | -123.07 | -3.6 | -5.6 | 6.7 | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.2 | 0.2 | -123.07 | -3.6 | -5.6 | 6.7 | 6.4 | 0.30 | 21.986 | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | -123.07 | -3.6 | -5.6 | 6.7 | 6.0 | 0.65 | 10.229 | |
| 300.0 | 300.0 | 300.0 | 300.0 | 0.5 | 0.5 | -123.07 | -3.6 | -5.6 | 6.7 | 5.7 | 1.00 | 6.665 | |
| 400.0 | 400.0 | 400.0 | 400.0 | 0.7 | 0.7 | -123.07 | -3.6 | -5.6 | 6.7 | 5.3 | 1.35 | 4.943 | CC, ES |
| 500.0 | 500.0 | 499.9 | 499.9 | 0.8 | 0.9 | -120.97 | -3.9 | -6.4 | 7.5 | 5.8 | 1.70 | 4.416 | |
| 600.0 | 600.0 | 599.7 | 599.7 | 1.0 | 1.0 | -39.25 | -4.5 | -9.0 | 9.4 | 7.3 | 2.05 | 4.565 | |
| 700.0 | 700.0 | 699.5 | 699.4 | 1.2 | 1.2 | -41.76 | -5.6 | -13.2 | 11.5 | 9.1 | 2.40 | 4.809 | |
| 800.0 | 799.9 | 799.3 | 799.0 | 1.4 | 1.4 | -45.96 | -7.2 | -19.0 | 14.1 | 11.4 | 2.76 | 5.127 | |
| 900.0 | 899.7 | 899.0 | 898.3 | 1.6 | 1.6 | -50.77 | -9.1 | -26.6 | 17.2 | 14.1 | 3.13 | 5.508 | |
| 1,000.0 | 999.4 | 998.6 | 997.5 | 1.8 | 1.8 | -55.57 | -11.5 | -35.8 | 20.9 | 17.4 | 3.52 | 5.937 | |
| 1,100.0 | 1,098.9 | 1,098.2 | 1,096.4 | 2.0 | 2.1 | -60.04 | -14.4 | -46.7 | 25.2 | 21.2 | 3.94 | 6.392 | |
| 1,200.0 | 1,198.3 | 1,197.6 | 1,195.1 | 2.2 | 2.3 | -63.44 | -17.7 | -59.2 | 30.3 | 25.9 | 4.38 | 6.906 | |
| 1,300.0 | 1,297.7 | 1,297.0 | 1,293.3 | 2.5 | 2.6 | -64.21 | -21.4 | -73.4 | 36.7 | 31.9 | 4.84 | 7.589 | |
| 1,400.0 | 1,397.1 | 1,396.1 | 1,391.1 | 2.7 | 2.9 | -63.29 | -25.5 | -89.2 | 44.5 | 39.2 | 5.29 | 8.407 | |
| 1,500.0 | 1,496.5 | 1,495.6 | 1,489.1 | 3.0 | 3.3 | -61.83 | -29.9 | -106.1 | 53.2 | 47.5 | 5.74 | 9.271 | |
| 1,600.0 | 1,595.8 | 1,595.2 | 1,587.1 | 3.2 | 3.6 | -60.76 | -34.4 | -123.2 | 62.0 | 55.8 | 6.19 | 10.013 | |
| 1,700.0 | 1,695.2 | 1,694.8 | 1,685.1 | 3.5 | 3.9 | -59.95 | -38.8 | -140.2 | 70.8 | 64.2 | 6.65 | 10.653 | |
| 1,800.0 | 1,794.6 | 1,794.4 | 1,783.2 | 3.7 | 4.3 | -59.33 | -43.3 | -157.2 | 79.6 | 72.5 | 7.10 | 11.209 | |
| 1,900.0 | 1,894.0 | 1,894.1 | 1,881.2 | 4.0 | 4.6 | -58.82 | -47.7 | -174.3 | 88.4 | 80.9 | 7.56 | 11.697 | |
| 2,000.0 | 1,993.4 | 1,993.7 | 1,979.3 | 4.2 | 4.9 | -58.41 | -52.2 | -191.3 | 97.2 | 89.2 | 8.02 | 12.127 | |
| 2,100.0 | 2,092.8 | 2,093.3 | 2,077.3 | 4.5 | 5.3 | -58.07 | -56.6 | -208.3 | 106.1 | 97.6 | 8.48 | 12.509 | |
| 2,200.0 | 2,192.2 | 2,192.9 | 2,175.3 | 4.7 | 5.6 | -57.78 | -61.1 | -225.4 | 114.9 | 106.0 | 8.94 | 12.851 | |
| 2,300.0 | 2,291.6 | 2,292.5 | 2,273.4 | 5.0 | 6.0 | -57.53 | -65.5 | -242.4 | 123.7 | 114.3 | 9.40 | 13.159 | |
| 2,400.0 | 2,390.9 | 2,392.1 | 2,371.4 | 5.2 | 6.3 | -57.31 | -70.0 | -259.4 | 132.6 | 122.7 | 9.87 | 13.437 | |
| 2,500.0 | 2,490.3 | 2,491.7 | 2,469.5 | 5.5 | 6.7 | -57.12 | -74.5 | -276.5 | 141.4 | 131.1 | 10.33 | 13.689 | |
| 2,600.0 | 2,589.7 | 2,591.3 | 2,567.5 | 5.7 | 7.0 | -56.96 | -78.9 | -293.5 | 150.2 | 139.4 | 10.79 | 13.919 | |
| 2,700.0 | 2,689.1 | 2,690.9 | 2,665.5 | 6.0 | 7.4 | -56.81 | -83.4 | -310.5 | 159.1 | 147.8 | 11.26 | 14.129 | |
| 2,800.0 | 2,788.5 | 2,790.5 | 2,763.6 | 6.3 | 7.7 | -56.68 | -87.8 | -327.6 | 167.9 | 156.2 | 11.72 | 14.323 | |
| 2,900.0 | 2,887.9 | 2,890.1 | 2,861.6 | 6.5 | 8.1 | -56.56 | -92.3 | -344.6 | 176.8 | 164.6 | 12.19 | 14.501 | |
| 3,000.0 | 2,987.3 | 2,989.7 | 2,959.7 | 6.8 | 8.4 | -56.45 | -96.7 | -361.6 | 185.6 | 172.9 | 12.66 | 14.666 | |
| 3,100.0 | 3,086.6 | 3,089.4 | 3,057.7 | 7.0 | 8.8 | -56.35 | -101.2 | -378.7 | 194.4 | 181.3 | 13.12 | 14.819 | |
| 3,200.0 | 3,186.0 | 3,189.0 | 3,155.7 | 7.3 | 9.1 | -56.26 | -105.6 | -395.7 | 203.3 | 189.7 | 13.59 | 14.961 | |
| 3,300.0 | 3,285.4 | 3,288.6 | 3,253.8 | 7.6 | 9.5 | -56.18 | -110.1 | -412.7 | 212.1 | 198.1 | 14.05 | 15.093 | |
| 3,400.0 | 3,384.8 | 3,388.2 | 3,351.8 | 7.8 | 9.9 | -56.10 | -114.5 | -429.8 | 221.0 | 206.4 | 14.52 | 15.217 | |
| 3,500.0 | 3,484.2 | 3,487.8 | 3,449.9 | 8.1 | 10.2 | -56.04 | -119.0 | -446.8 | 229.8 | 214.8 | 14.99 | 15.332 | |
| 3,600.0 | 3,583.6 | 3,587.4 | 3,547.9 | 8.3 | 10.6 | -55.97 | -123.4 | -463.8 | 238.6 | 223.2 | 15.46 | 15.441 | |
| 3,700.0 | 3,683.0 | 3,687.0 | 3,645.9 | 8.6 | 10.9 | -55.91 | -127.9 | -480.9 | 247.5 | 231.6 | 15.92 | 15.543 | |
| 3,800.0 | 3,782.4 | 3,786.6 | 3,744.0 | 8.8 | 11.3 | -55.85 | -132.3 | -497.9 | 256.3 | 239.9 | 16.39 | 15.639 | |
| 3,900.0 | 3,881.7 | 3,886.2 | 3,842.0 | 9.1 | 11.6 | -55.80 | -136.8 | -514.9 | 265.2 | 248.3 | 16.86 | 15.730 | |
| 4,000.0 | 3,981.1 | 3,985.8 | 3,940.0 | 9.4 | 12.0 | -55.75 | -141.2 | -531.9 | 274.0 | 256.7 | 17.33 | 15.816 | |
| 4,100.0 | 4,080.5 | 4,085.4 | 4,038.1 | 9.6 | 12.3 | -55.71 | -145.7 | -549.0 | 282.9 | 265.1 | 17.79 | 15.897 | |
| 4,200.0 | 4,179.9 | 4,185.0 | 4,136.1 | 9.9 | 12.7 | -55.67 | -150.1 | -566.0 | 291.7 | 273.4 | 18.26 | 15.974 | |
| 4,300.0 | 4,279.3 | 4,284.6 | 4,234.2 | 10.1 | 13.0 | -55.62 | -154.6 | -583.0 | 300.6 | 281.8 | 18.73 | 16.046 | |
| 4,400.0 | 4,378.7 | 4,384.3 | 4,332.2 | 10.4 | 13.4 | -55.59 | -159.0 | -600.1 | 309.4 | 290.2 | 19.20 | 16.116 | |
| 4,500.0 | 4,478.1 | 4,483.9 | 4,430.2 | 10.7 | 13.8 | -55.55 | -163.5 | -617.1 | 318.2 | 298.6 | 19.67 | 16.182 | |
| 4,600.0 | 4,577.4 | 4,583.5 | 4,528.3 | 10.9 | 14.1 | -55.52 | -168.0 | -634.1 | 327.1 | 307.0 | 20.14 | 16.244 | |
| 4,700.0 | 4,676.8 | 4,683.1 | 4,626.3 | 11.2 | 14.5 | -55.48 | -172.4 | -651.2 | 335.9 | 315.3 | 20.60 | 16.304 | |
| 4,800.0 | 4,776.2 | 4,782.7 | 4,724.4 | 11.4 | 14.8 | -55.45 | -176.9 | -668.2 | 344.8 | 323.7 | 21.07 | 16.362 | |
| 4,900.0 | 4,875.6 | 4,882.3 | 4,822.4 | 11.7 | 15.2 | -55.43 | -181.3 | -685.2 | 353.6 | 332.1 | 21.54 | 16.416 | |
| 5,000.0 | 4,975.0 | 4,981.9 | 4,920.4 | 12.0 | 15.5 | -55.40 | -185.8 | -702.3 | 362.5 | 340.5 | 22.01 | 16.468 | |
| 5,100.0 | 5,074.4 | 5,081.5 | 5,018.5 | 12.2 | 15.9 | -55.37 | -190.2 | -719.3 | 371.3 | 348.8 | 22.48 | 16.519 | |

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

| | | | |
|---|---|---|---|
| **Company:** | EnCana Oil & Gas (USA) Inc | **Local Co-ordinate Reference:** | Well File 3D-32H-K268 |
| **Project:** | DJ Wattenberg | **TVD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Reference Site:** | S32-T2N-R68W (File) | **MD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | File 3D-32H-K268 | **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 #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** S32-T2N-R68W (File) - File 3C-32H-K268 - Hz - Plan #1

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-Geolink MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5,200.0 | 5,173.8 | 5,181.1 | 5,116.5 | 12.5 | 16.2 | -55.35 | -194.7 | -736.3 | 380.2 | 357.2 | 22.95 | 16.567 | |
| 5,300.0 | 5,273.1 | 5,280.7 | 5,214.6 | 12.7 | 16.6 | -55.32 | -199.1 | -753.4 | 389.0 | 365.6 | 23.42 | 16.613 | |
| 5,400.0 | 5,372.5 | 5,380.3 | 5,312.6 | 13.0 | 17.0 | -55.30 | -203.6 | -770.4 | 397.9 | 374.0 | 23.89 | 16.657 | |
| 5,500.0 | 5,471.9 | 5,479.9 | 5,410.6 | 13.3 | 17.3 | -55.28 | -208.0 | -787.4 | 406.7 | 382.3 | 24.35 | 16.699 | |
| 5,600.0 | 5,571.3 | 5,579.5 | 5,508.7 | 13.5 | 17.7 | -55.26 | -212.5 | -804.5 | 415.5 | 390.7 | 24.82 | 16.740 | |
| 5,700.0 | 5,670.7 | 5,679.2 | 5,606.7 | 13.8 | 18.0 | -55.24 | -216.9 | -821.5 | 424.4 | 399.1 | 25.29 | 16.779 | |
| 5,800.0 | 5,770.1 | 5,778.8 | 5,704.8 | 14.1 | 18.4 | -55.22 | -221.4 | -838.5 | 433.2 | 407.5 | 25.76 | 16.817 | |
| 5,900.0 | 5,869.5 | 5,878.4 | 5,802.8 | 14.3 | 18.7 | -55.20 | -225.8 | -855.6 | 442.1 | 415.8 | 26.23 | 16.854 | |
| 6,000.0 | 5,968.9 | 5,978.0 | 5,900.8 | 14.6 | 19.1 | -55.18 | -230.3 | -872.6 | 450.9 | 424.2 | 26.70 | 16.889 | |
| 6,100.0 | 6,068.2 | 6,077.6 | 5,998.9 | 14.8 | 19.5 | -55.16 | -234.7 | -889.6 | 459.8 | 432.6 | 27.17 | 16.923 | |
| 6,200.0 | 6,167.6 | 6,177.2 | 6,096.9 | 15.1 | 19.8 | -55.15 | -239.2 | -906.7 | 468.6 | 441.0 | 27.64 | 16.955 | |
| 6,300.0 | 6,267.0 | 6,276.8 | 6,195.0 | 15.4 | 20.2 | -55.13 | -243.6 | -923.7 | 477.5 | 449.4 | 28.11 | 16.987 | |
| 6,400.0 | 6,366.4 | 6,376.4 | 6,293.0 | 15.6 | 20.5 | -55.12 | -248.1 | -940.7 | 486.3 | 457.7 | 28.58 | 17.018 | |
| 6,500.0 | 6,465.8 | 6,476.0 | 6,391.0 | 15.9 | 20.9 | -55.10 | -252.6 | -957.8 | 495.2 | 466.1 | 29.05 | 17.047 | |
| 8,000.0 | 7,606.0 | 7,537.3 | 7,317.4 | 21.0 | 26.2 | 53.90 | -584.1 | -1,128.8 | 497.8 | 468.4 | 29.42 | 16.922 | |
| 8,100.0 | 7,606.0 | 7,600.0 | 7,342.2 | 21.9 | 26.7 | 56.79 | -641.3 | -1,135.1 | 483.8 | 452.3 | 31.54 | 15.340 | |
| 8,200.0 | 7,606.0 | 7,674.8 | 7,363.5 | 22.9 | 27.5 | 59.41 | -712.6 | -1,141.2 | 477.0 | 443.1 | 33.92 | 14.060 | |
| 8,269.7 | 7,606.0 | 7,727.7 | 7,372.9 | 23.6 | 28.0 | 60.65 | -764.6 | -1,144.7 | 475.7 | 440.1 | 35.57 | 13.373 | |
| 8,300.0 | 7,606.0 | 7,750.0 | 7,375.4 | 24.0 | 28.2 | 61.01 | -786.7 | -1,145.9 | 475.9 | 439.7 | 36.25 | 13.129 | |
| 8,400.0 | 7,606.0 | 7,836.3 | 7,378.0 | 25.1 | 29.1 | 61.57 | -872.9 | -1,149.3 | 479.5 | 440.9 | 38.60 | 12.420 | |
| 8,500.0 | 7,606.0 | 7,936.2 | 7,378.0 | 26.3 | 30.2 | 61.87 | -972.7 | -1,152.8 | 484.1 | 442.9 | 41.16 | 11.762 | |
| 8,600.0 | 7,606.0 | 8,036.0 | 7,378.0 | 27.6 | 31.3 | 62.16 | -1,072.5 | -1,156.3 | 488.7 | 444.9 | 43.80 | 11.157 | |
| 8,700.0 | 7,606.0 | 8,135.9 | 7,378.0 | 29.0 | 32.5 | 62.44 | -1,172.3 | -1,159.8 | 493.3 | 446.8 | 46.52 | 10.604 | |
| 8,800.0 | 7,606.0 | 8,238.3 | 7,378.0 | 30.3 | 33.8 | 62.72 | -1,274.7 | -1,163.3 | 497.9 | 448.6 | 49.35 | 10.089 | |
| 10,300.0 | 7,606.0 | 9,760.3 | 7,378.0 | 53.7 | 55.8 | 62.87 | -2,796.3 | -1,139.5 | 499.9 | 406.4 | 93.54 | 5.345 | |
| 10,400.0 | 7,606.0 | 9,860.3 | 7,378.0 | 55.3 | 57.4 | 62.85 | -2,896.3 | -1,137.5 | 499.7 | 403.1 | 96.56 | 5.175 | |
| 10,500.0 | 7,606.0 | 9,960.3 | 7,378.0 | 57.0 | 59.0 | 62.84 | -2,996.3 | -1,135.4 | 499.5 | 399.9 | 99.58 | 5.016 | |
| 10,600.0 | 7,606.0 | 10,060.3 | 7,378.0 | 58.6 | 60.6 | 62.82 | -3,096.2 | -1,133.4 | 499.2 | 396.6 | 102.60 | 4.866 | |
| 10,700.0 | 7,606.0 | 10,160.3 | 7,378.0 | 60.3 | 62.2 | 62.81 | -3,196.2 | -1,131.4 | 499.0 | 393.3 | 105.63 | 4.724 | |
| 10,800.0 | 7,606.0 | 10,260.3 | 7,378.0 | 62.0 | 63.8 | 62.80 | -3,296.2 | -1,129.4 | 498.7 | 390.1 | 108.66 | 4.590 | |
| 10,900.0 | 7,606.0 | 10,360.3 | 7,378.0 | 63.6 | 65.5 | 62.78 | -3,396.2 | -1,127.3 | 498.5 | 386.8 | 111.70 | 4.463 | |
| 11,000.0 | 7,606.0 | 10,460.3 | 7,378.0 | 65.3 | 67.1 | 62.77 | -3,496.2 | -1,125.3 | 498.2 | 383.5 | 114.74 | 4.342 | |
| 11,100.0 | 7,606.0 | 10,560.3 | 7,378.0 | 67.0 | 68.7 | 62.75 | -3,596.1 | -1,123.3 | 498.0 | 380.2 | 117.78 | 4.228 | |
| 11,172.0 | 7,606.0 | 10,631.1 | 7,378.0 | 68.2 | 69.9 | 62.74 | -3,666.9 | -1,121.9 | 497.8 | 377.9 | 119.96 | 4.150 | |
| 11,200.0 | 7,606.0 | 10,657.0 | 7,378.0 | 68.7 | 70.3 | 62.75 | -3,692.9 | -1,121.5 | 497.9 | 377.1 | 120.79 | 4.122 | |
| 11,300.0 | 7,606.0 | 10,751.3 | 7,378.0 | 70.4 | 71.9 | 62.81 | -3,787.2 | -1,121.0 | 499.0 | 375.2 | 123.83 | 4.030 | |
| 13,200.0 | 7,606.0 | 12,694.9 | 7,378.0 | 102.9 | 104.6 | 62.63 | -5,729.4 | -1,083.7 | 497.1 | 314.3 | 182.83 | 2.719 | |
| 13,300.0 | 7,606.0 | 12,794.6 | 7,378.0 | 104.7 | 106.3 | 62.20 | -5,828.6 | -1,074.1 | 490.1 | 304.9 | 185.24 | 2.646 | |
| 13,400.0 | 7,606.0 | 12,894.2 | 7,378.0 | 106.4 | 107.9 | 61.77 | -5,927.8 | -1,064.5 | 483.2 | 295.6 | 187.60 | 2.575 | |
| 13,500.0 | 7,606.0 | 12,993.9 | 7,378.0 | 108.1 | 109.6 | 61.32 | -6,027.0 | -1,054.9 | 476.2 | 286.3 | 189.90 | 2.508 | |
| 13,600.0 | 7,606.0 | 13,093.6 | 7,378.0 | 109.8 | 111.3 | 60.86 | -6,126.3 | -1,045.3 | 469.3 | 277.2 | 192.15 | 2.442 | |
| 13,700.0 | 7,606.0 | 13,193.3 | 7,378.0 | 111.6 | 113.0 | 60.38 | -6,225.5 | -1,035.8 | 462.4 | 268.1 | 194.33 | 2.380 | |
| 13,800.0 | 7,606.0 | 13,293.0 | 7,378.0 | 113.3 | 114.7 | 59.89 | -6,324.7 | -1,026.2 | 455.6 | 259.2 | 196.44 | 2.319 | |
| 13,900.0 | 7,606.0 | 13,392.7 | 7,378.0 | 115.0 | 116.4 | 59.39 | -6,424.0 | -1,016.6 | 448.8 | 250.3 | 198.48 | 2.261 | |
| 14,000.0 | 7,606.0 | 13,492.4 | 7,378.0 | 116.8 | 118.0 | 58.87 | -6,523.2 | -1,007.0 | 442.0 | 241.6 | 200.45 | 2.205 | |
| 14,036.9 | 7,606.0 | 13,499.5 | 7,378.0 | 117.4 | 118.2 | 58.83 | -6,530.2 | -1,006.3 | 440.5 | 239.5 | 201.03 | 2.191 | SF |
| 14,100.0 | 7,606.0 | 13,499.5 | 7,378.0 | 118.5 | 118.2 | 58.83 | -6,530.2 | -1,006.3 | 445.0 | 243.1 | 201.97 | 2.203 | |
| 14,183.2 | 7,606.0 | 13,499.5 | 7,378.0 | 119.9 | 118.2 | 58.83 | -6,530.2 | -1,006.3 | 464.2 | 261.0 | 203.22 | 2.284 | |

| | | | |
|---|---|---|---|
| **Company:** | EnCana Oil & Gas (USA) Inc | **Local Co-ordinate Reference:** | Well File 3D-32H-K268 |
| **Project:** | DJ Wattenberg | **TVD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Reference Site:** | S32-T2N-R68W (File) | **MD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | File 3D-32H-K268 | **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 #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** S32-T2N-R68W (File) - File 3E-32H-K268 - Hz - Plan #1

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-Geolink MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 104.61 | -3.6 | 14.0 | 14.5 | | | | |
| 100.0 | 100.0 | 101.0 | 101.0 | 0.2 | 0.2 | 104.61 | -3.6 | 14.0 | 14.5 | 14.2 | 0.31 | 47.330 | |
| 200.0 | 200.0 | 201.0 | 201.0 | 0.3 | 0.3 | 104.61 | -3.6 | 14.0 | 14.5 | 13.8 | 0.65 | 22.088 | |
| 300.0 | 300.0 | 301.0 | 301.0 | 0.5 | 0.5 | 104.61 | -3.6 | 14.0 | 14.5 | 13.5 | 1.00 | 14.405 | |
| 400.0 | 400.0 | 401.0 | 401.0 | 0.7 | 0.7 | 104.61 | -3.6 | 14.0 | 14.5 | 13.1 | 1.35 | 10.688 | |
| 500.0 | 500.0 | 501.0 | 501.0 | 0.8 | 0.9 | 104.61 | -3.6 | 14.0 | 14.5 | 12.8 | 1.70 | 8.495 | CC, ES |
| 600.0 | 600.0 | 601.0 | 601.0 | 1.0 | 1.0 | -175.02 | -3.6 | 14.0 | 15.3 | 13.3 | 2.05 | 7.474 | |
| 700.0 | 700.0 | 701.3 | 701.3 | 1.2 | 1.2 | -176.24 | -3.3 | 13.2 | 17.1 | 14.7 | 2.40 | 7.108 | |
| 800.0 | 799.9 | 801.6 | 801.5 | 1.4 | 1.4 | -178.50 | -2.3 | 10.7 | 18.8 | 16.1 | 2.75 | 6.849 | |
| 900.0 | 899.7 | 901.8 | 901.6 | 1.6 | 1.6 | 178.54 | -0.6 | 6.7 | 20.7 | 17.6 | 3.10 | 6.696 | |
| 1,000.0 | 999.4 | 1,001.7 | 1,001.5 | 1.8 | 1.7 | 176.06 | 1.3 | 2.4 | 24.0 | 20.6 | 3.44 | 6.971 | |
| 1,100.0 | 1,098.9 | 1,101.6 | 1,101.2 | 2.0 | 1.9 | 174.52 | 3.1 | -2.0 | 29.1 | 25.3 | 3.79 | 7.663 | |
| 1,200.0 | 1,198.3 | 1,201.4 | 1,200.9 | 2.2 | 2.1 | 173.70 | 5.0 | -6.4 | 35.5 | 31.4 | 4.14 | 8.567 | |
| 1,300.0 | 1,297.7 | 1,301.1 | 1,300.6 | 2.5 | 2.3 | 173.14 | 6.8 | -10.7 | 42.0 | 37.5 | 4.50 | 9.351 | |
| 1,400.0 | 1,397.1 | 1,400.9 | 1,400.2 | 2.7 | 2.5 | 172.74 | 8.7 | -15.1 | 48.6 | 43.7 | 4.85 | 10.021 | |
| 1,500.0 | 1,496.5 | 1,500.7 | 1,499.9 | 3.0 | 2.7 | 172.43 | 10.5 | -19.5 | 55.1 | 49.9 | 5.20 | 10.599 | |
| 1,600.0 | 1,595.8 | 1,600.5 | 1,599.6 | 3.2 | 2.9 | 172.19 | 12.4 | -23.8 | 61.7 | 56.1 | 5.55 | 11.104 | |
| 1,700.0 | 1,695.2 | 1,700.3 | 1,699.2 | 3.5 | 3.1 | 171.99 | 14.2 | -28.2 | 68.2 | 62.3 | 5.91 | 11.549 | |
| 1,800.0 | 1,794.6 | 1,800.1 | 1,798.9 | 3.7 | 3.3 | 171.83 | 16.1 | -32.6 | 74.8 | 68.5 | 6.26 | 11.942 | |
| 1,900.0 | 1,894.0 | 1,899.9 | 1,898.6 | 4.0 | 3.4 | 171.69 | 18.0 | -36.9 | 81.3 | 74.7 | 6.62 | 12.294 | |
| 2,000.0 | 1,993.4 | 1,999.6 | 1,998.3 | 4.2 | 3.6 | 171.58 | 19.8 | -41.3 | 87.9 | 80.9 | 6.97 | 12.610 | |
| 2,100.0 | 2,092.8 | 2,099.4 | 2,097.9 | 4.5 | 3.8 | 171.48 | 21.7 | -45.7 | 94.4 | 87.1 | 7.32 | 12.895 | |
| 2,200.0 | 2,192.2 | 2,199.2 | 2,197.6 | 4.7 | 4.0 | 171.39 | 23.5 | -50.0 | 101.0 | 93.3 | 7.68 | 13.153 | |
| 2,300.0 | 2,291.6 | 2,299.0 | 2,297.3 | 5.0 | 4.2 | 171.31 | 25.4 | -54.4 | 107.5 | 99.5 | 8.03 | 13.389 | |
| 2,400.0 | 2,390.9 | 2,398.8 | 2,397.0 | 5.2 | 4.4 | 171.25 | 27.2 | -58.8 | 114.1 | 105.7 | 8.39 | 13.605 | |
| 2,500.0 | 2,490.3 | 2,498.6 | 2,496.6 | 5.5 | 4.6 | 171.19 | 29.1 | -63.2 | 120.6 | 111.9 | 8.74 | 13.803 | |
| 2,600.0 | 2,589.7 | 2,598.4 | 2,596.3 | 5.7 | 4.8 | 171.13 | 30.9 | -67.5 | 127.2 | 118.1 | 9.09 | 13.986 | |
| 2,700.0 | 2,689.1 | 2,698.1 | 2,696.0 | 6.0 | 5.0 | 171.08 | 32.8 | -71.9 | 133.7 | 124.3 | 9.45 | 14.155 | |
| 2,800.0 | 2,788.5 | 2,797.9 | 2,795.6 | 6.3 | 5.2 | 171.04 | 34.6 | -76.3 | 140.3 | 130.5 | 9.80 | 14.311 | |
| 2,900.0 | 2,887.9 | 2,897.7 | 2,895.3 | 6.5 | 5.4 | 171.00 | 36.5 | -80.6 | 146.8 | 136.7 | 10.16 | 14.457 | |
| 3,000.0 | 2,987.3 | 2,997.5 | 2,995.0 | 6.8 | 5.6 | 170.96 | 38.3 | -85.0 | 153.4 | 142.9 | 10.51 | 14.593 | |
| 3,100.0 | 3,086.6 | 3,097.3 | 3,094.7 | 7.0 | 5.7 | 170.93 | 40.2 | -89.4 | 159.9 | 149.1 | 10.87 | 14.720 | |
| 3,200.0 | 3,186.0 | 3,197.1 | 3,194.3 | 7.3 | 5.9 | 170.90 | 42.0 | -93.7 | 166.5 | 155.3 | 11.22 | 14.838 | |
| 3,300.0 | 3,285.4 | 3,296.9 | 3,294.0 | 7.6 | 6.1 | 170.87 | 43.9 | -98.1 | 173.0 | 161.5 | 11.58 | 14.950 | |
| 3,400.0 | 3,384.8 | 3,396.6 | 3,393.7 | 7.8 | 6.3 | 170.84 | 45.7 | -102.5 | 179.6 | 167.7 | 11.93 | 15.055 | |
| 3,500.0 | 3,484.2 | 3,496.4 | 3,493.4 | 8.1 | 6.5 | 170.82 | 47.6 | -106.8 | 186.2 | 173.9 | 12.28 | 15.154 | |
| 3,600.0 | 3,583.6 | 3,596.2 | 3,593.0 | 8.3 | 6.7 | 170.80 | 49.4 | -111.2 | 192.7 | 180.1 | 12.64 | 15.247 | |
| 3,700.0 | 3,683.0 | 3,696.0 | 3,692.7 | 8.6 | 6.9 | 170.77 | 51.3 | -115.6 | 199.3 | 186.3 | 12.99 | 15.335 | |
| 3,800.0 | 3,782.4 | 3,795.8 | 3,792.4 | 8.8 | 7.1 | 170.75 | 53.1 | -119.9 | 205.8 | 192.5 | 13.35 | 15.418 | |
| 3,900.0 | 3,881.7 | 3,895.6 | 3,892.0 | 9.1 | 7.3 | 170.74 | 55.0 | -124.3 | 212.4 | 198.7 | 13.70 | 15.497 | |
| 4,000.0 | 3,981.1 | 3,995.3 | 3,991.7 | 9.4 | 7.5 | 170.72 | 56.9 | -128.7 | 218.9 | 204.9 | 14.06 | 15.573 | |
| 4,100.0 | 4,080.5 | 4,095.1 | 4,091.4 | 9.6 | 7.7 | 170.70 | 58.7 | -133.0 | 225.5 | 211.1 | 14.41 | 15.644 | |
| 4,200.0 | 4,179.9 | 4,194.9 | 4,191.1 | 9.9 | 7.9 | 170.69 | 60.6 | -137.4 | 232.0 | 217.3 | 14.77 | 15.712 | |
| 4,300.0 | 4,279.3 | 4,294.7 | 4,290.7 | 10.1 | 8.1 | 170.67 | 62.4 | -141.8 | 238.6 | 223.4 | 15.12 | 15.777 | |
| 4,400.0 | 4,378.7 | 4,394.5 | 4,390.4 | 10.4 | 8.2 | 170.66 | 64.3 | -146.1 | 245.1 | 229.6 | 15.48 | 15.838 | |
| 4,500.0 | 4,478.1 | 4,494.3 | 4,490.1 | 10.7 | 8.4 | 170.64 | 66.1 | -150.5 | 251.7 | 235.8 | 15.83 | 15.897 | |
| 4,600.0 | 4,577.4 | 4,594.1 | 4,589.7 | 10.9 | 8.6 | 170.63 | 68.0 | -154.9 | 258.2 | 242.0 | 16.19 | 15.954 | |
| 4,700.0 | 4,676.8 | 4,693.8 | 4,689.4 | 11.2 | 8.8 | 170.62 | 69.8 | -159.2 | 264.8 | 248.2 | 16.54 | 16.008 | |
| 4,800.0 | 4,776.2 | 4,793.6 | 4,789.1 | 11.4 | 9.0 | 170.61 | 71.7 | -163.6 | 271.3 | 254.4 | 16.90 | 16.059 | |
| 4,900.0 | 4,875.6 | 4,893.4 | 4,888.8 | 11.7 | 9.2 | 170.60 | 73.5 | -168.0 | 277.9 | 260.6 | 17.25 | 16.109 | |
| 5,000.0 | 4,975.0 | 4,993.2 | 4,988.4 | 12.0 | 9.4 | 170.59 | 75.4 | -172.3 | 284.4 | 266.8 | 17.61 | 16.156 | |
| 5,100.0 | 5,074.4 | 5,093.0 | 5,088.1 | 12.2 | 9.6 | 170.58 | 77.2 | -176.7 | 291.0 | 273.0 | 17.96 | 16.202 | |

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

| | | | |
|---|---|---|---|
| **Company:** | EnCana Oil & Gas (USA) Inc | **Local Co-ordinate Reference:** | Well File 3D-32H-K268 |
| **Project:** | DJ Wattenberg | **TVD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Reference Site:** | S32-T2N-R68W (File) | **MD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | File 3D-32H-K268 | **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 #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** S32-T2N-R68W (File) - File 3E-32H-K268 - Hz - Plan #1

**Survey Program:** 0-Geolink MWD

**Offset Site Error:** 0.0 ft

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5,200.0 | 5,173.8 | 5,192.8 | 5,187.8 | 12.5 | 9.8 | 170.57 | 79.1 | -181.1 | 297.5 | 279.2 | 18.31 | 16.246 | |
| 5,300.0 | 5,273.1 | 5,292.6 | 5,287.5 | 12.7 | 10.0 | 170.56 | 80.9 | -185.4 | 304.1 | 285.4 | 18.67 | 16.288 | |
| 5,400.0 | 5,372.5 | 5,392.3 | 5,387.1 | 13.0 | 10.2 | 170.55 | 82.8 | -189.8 | 310.6 | 291.6 | 19.02 | 16.329 | |
| 5,500.0 | 5,471.9 | 5,492.1 | 5,486.8 | 13.3 | 10.4 | 170.54 | 84.6 | -194.2 | 317.2 | 297.8 | 19.38 | 16.368 | |
| 5,600.0 | 5,571.3 | 5,591.9 | 5,586.5 | 13.5 | 10.6 | 170.53 | 86.5 | -198.5 | 323.8 | 304.0 | 19.73 | 16.406 | |
| 5,700.0 | 5,670.7 | 5,691.7 | 5,686.1 | 13.8 | 10.7 | 170.52 | 88.3 | -202.9 | 330.3 | 310.2 | 20.09 | 16.442 | |
| 5,800.0 | 5,770.1 | 5,791.5 | 5,785.8 | 14.1 | 10.9 | 170.52 | 90.2 | -207.3 | 336.9 | 316.4 | 20.44 | 16.477 | |
| 5,900.0 | 5,869.5 | 5,891.3 | 5,885.5 | 14.3 | 11.1 | 170.51 | 92.0 | -211.7 | 343.4 | 322.6 | 20.80 | 16.511 | |
| 6,000.0 | 5,968.9 | 5,991.0 | 5,985.2 | 14.6 | 11.3 | 170.50 | 93.9 | -216.0 | 350.0 | 328.8 | 21.15 | 16.544 | |
| 6,100.0 | 6,068.2 | 6,090.8 | 6,084.8 | 14.8 | 11.5 | 170.50 | 95.7 | -220.4 | 356.5 | 335.0 | 21.51 | 16.576 | |
| 6,200.0 | 6,167.6 | 6,190.6 | 6,184.5 | 15.1 | 11.7 | 170.49 | 97.6 | -224.8 | 363.1 | 341.2 | 21.86 | 16.606 | |
| 6,300.0 | 6,267.0 | 6,290.4 | 6,284.2 | 15.4 | 11.9 | 170.48 | 99.5 | -229.1 | 369.6 | 347.4 | 22.22 | 16.636 | |
| 6,400.0 | 6,366.4 | 6,390.2 | 6,383.8 | 15.6 | 12.1 | 170.48 | 101.3 | -233.5 | 376.2 | 353.6 | 22.57 | 16.665 | |
| 6,500.0 | 6,465.8 | 6,490.0 | 6,483.5 | 15.9 | 12.3 | 170.47 | 103.2 | -237.9 | 382.7 | 359.8 | 22.93 | 16.693 | |
| 6,600.0 | 6,565.2 | 6,589.8 | 6,583.2 | 16.1 | 12.5 | 170.47 | 105.0 | -242.2 | 389.3 | 366.0 | 23.28 | 16.720 | |
| 6,700.0 | 6,664.6 | 6,689.5 | 6,682.9 | 16.4 | 12.7 | 170.46 | 106.9 | -246.6 | 395.8 | 372.2 | 23.64 | 16.746 | |
| 6,800.0 | 6,763.9 | 6,789.3 | 6,782.5 | 16.7 | 12.9 | 170.46 | 108.7 | -251.0 | 402.4 | 378.4 | 23.99 | 16.771 | |
| 6,900.0 | 6,863.3 | 6,888.7 | 6,881.5 | 16.9 | 13.0 | 171.37 | 104.0 | -255.3 | 409.0 | 384.7 | 24.28 | 16.846 | |
| 7,000.0 | 6,962.7 | 6,983.1 | 6,973.6 | 17.2 | 13.2 | 174.38 | 83.8 | -259.3 | 416.4 | 392.0 | 24.46 | 17.024 | |
| 7,100.0 | 7,062.1 | 7,068.9 | 7,053.3 | 17.4 | 13.3 | -148.31 | 52.6 | -262.8 | 427.0 | 402.3 | 24.69 | 17.296 | |
| 7,200.0 | 7,160.5 | 7,150.0 | 7,123.7 | 17.7 | 13.4 | -102.17 | 12.4 | -265.9 | 440.4 | 415.3 | 25.11 | 17.537 | |
| 7,300.0 | 7,255.2 | 7,227.2 | 7,184.7 | 17.8 | 13.6 | -86.84 | -34.6 | -268.6 | 454.9 | 429.2 | 25.70 | 17.700 | |
| 7,400.0 | 7,343.2 | 7,300.0 | 7,236.0 | 18.0 | 13.8 | -78.56 | -86.2 | -270.8 | 469.5 | 443.2 | 26.32 | 17.836 | |
| 7,500.0 | 7,421.8 | 7,375.9 | 7,282.1 | 18.3 | 14.1 | -72.93 | -146.4 | -272.9 | 483.0 | 456.1 | 26.92 | 17.943 | |
| 7,600.0 | 7,488.8 | 7,450.0 | 7,319.0 | 18.6 | 14.5 | -68.97 | -210.6 | -274.5 | 494.7 | 467.3 | 27.40 | 18.052 | |
| 8,800.0 | 7,606.0 | 8,536.0 | 7,378.0 | 30.3 | 27.7 | -62.70 | -1,287.5 | -277.1 | 499.4 | 450.2 | 49.15 | 10.159 | |
| 8,900.0 | 7,606.0 | 8,636.0 | 7,378.0 | 31.7 | 29.3 | -62.61 | -1,387.5 | -277.1 | 497.8 | 445.9 | 51.90 | 9.592 | |
| 9,000.0 | 7,606.0 | 8,736.0 | 7,378.0 | 33.2 | 30.8 | -62.52 | -1,487.5 | -277.1 | 496.3 | 441.6 | 54.67 | 9.077 | |
| 9,100.0 | 7,606.0 | 8,836.0 | 7,378.0 | 34.7 | 32.4 | -62.42 | -1,587.5 | -277.1 | 494.7 | 437.2 | 57.48 | 8.607 | |
| 9,200.0 | 7,606.0 | 8,936.0 | 7,378.0 | 36.1 | 34.0 | -62.33 | -1,687.5 | -277.1 | 493.2 | 432.9 | 60.30 | 8.178 | |
| 9,300.0 | 7,606.0 | 9,036.0 | 7,378.0 | 37.7 | 35.6 | -62.23 | -1,787.5 | -277.1 | 491.6 | 428.5 | 63.14 | 7.786 | |
| 9,400.0 | 7,606.0 | 9,136.0 | 7,378.0 | 39.2 | 37.3 | -62.14 | -1,887.5 | -277.1 | 490.1 | 424.1 | 66.00 | 7.426 | |
| 9,500.0 | 7,606.0 | 9,235.9 | 7,378.0 | 40.8 | 38.9 | -62.04 | -1,987.4 | -277.1 | 488.5 | 419.7 | 68.87 | 7.094 | |
| 9,600.0 | 7,606.0 | 9,335.9 | 7,378.0 | 42.3 | 40.6 | -61.95 | -2,087.4 | -277.1 | 487.0 | 415.3 | 71.75 | 6.788 | |
| 9,700.0 | 7,606.0 | 9,435.9 | 7,378.0 | 43.9 | 42.2 | -61.85 | -2,187.4 | -277.1 | 485.5 | 410.8 | 74.63 | 6.505 | |
| 9,800.0 | 7,606.0 | 9,535.9 | 7,378.0 | 45.5 | 43.9 | -61.75 | -2,287.4 | -277.1 | 483.9 | 406.4 | 77.52 | 6.242 | |
| 9,900.0 | 7,606.0 | 9,635.9 | 7,378.0 | 47.1 | 45.5 | -61.65 | -2,387.4 | -277.1 | 482.4 | 402.0 | 80.42 | 5.998 | |
| 10,000.0 | 7,606.0 | 9,735.9 | 7,378.0 | 48.8 | 47.2 | -61.56 | -2,487.4 | -277.1 | 480.8 | 397.5 | 83.32 | 5.771 | |
| 10,100.0 | 7,606.0 | 9,835.8 | 7,378.0 | 50.4 | 48.9 | -61.46 | -2,587.3 | -277.1 | 479.3 | 393.1 | 86.22 | 5.559 | |
| 10,200.0 | 7,606.0 | 9,935.8 | 7,378.0 | 52.0 | 50.6 | -61.36 | -2,687.3 | -277.1 | 477.8 | 388.7 | 89.13 | 5.361 | |
| 10,300.0 | 7,606.0 | 10,035.8 | 7,378.0 | 53.7 | 52.3 | -61.26 | -2,787.3 | -277.1 | 476.2 | 384.2 | 92.03 | 5.175 | |
| 10,400.0 | 7,606.0 | 10,135.8 | 7,378.0 | 55.3 | 54.0 | -61.15 | -2,887.3 | -277.1 | 474.7 | 379.8 | 94.94 | 5.000 | |
| 10,500.0 | 7,606.0 | 10,235.8 | 7,378.0 | 57.0 | 55.7 | -61.05 | -2,987.3 | -277.1 | 473.2 | 375.4 | 97.84 | 4.836 | |
| 10,600.0 | 7,606.0 | 10,335.8 | 7,378.0 | 58.6 | 57.4 | -60.95 | -3,087.3 | -277.1 | 471.7 | 370.9 | 100.74 | 4.682 | |
| 10,700.0 | 7,606.0 | 10,435.8 | 7,378.0 | 60.3 | 59.1 | -60.85 | -3,187.3 | -277.1 | 470.1 | 366.5 | 103.64 | 4.536 | |
| 10,800.0 | 7,606.0 | 10,535.7 | 7,378.0 | 62.0 | 60.8 | -60.74 | -3,287.2 | -277.1 | 468.6 | 362.1 | 106.54 | 4.398 | |
| 10,900.0 | 7,606.0 | 10,635.7 | 7,378.0 | 63.6 | 62.5 | -60.64 | -3,387.2 | -277.1 | 467.1 | 357.7 | 109.44 | 4.268 | |
| 11,000.0 | 7,606.0 | 10,735.7 | 7,378.0 | 65.3 | 64.2 | -60.53 | -3,487.2 | -277.1 | 465.6 | 353.2 | 112.33 | 4.145 | |
| 11,100.0 | 7,606.0 | 10,835.7 | 7,378.0 | 67.0 | 65.9 | -60.43 | -3,587.2 | -277.1 | 464.1 | 348.8 | 115.21 | 4.028 | |
| 11,200.0 | 7,606.0 | 10,935.7 | 7,378.0 | 68.7 | 67.7 | -60.32 | -3,687.2 | -277.1 | 462.5 | 344.4 | 118.10 | 3.917 | |
| 11,300.0 | 7,606.0 | 11,035.7 | 7,378.0 | 70.4 | 69.4 | -60.21 | -3,787.2 | -277.1 | 461.0 | 340.0 | 120.98 | 3.811 | |
| 11,400.0 | 7,606.0 | 11,135.6 | 7,378.0 | 72.1 | 71.1 | -60.10 | -3,887.2 | -277.1 | 459.5 | 335.7 | 123.85 | 3.710 | |

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

| | | | |
|---|---|---|---|
| **Company:** | EnCana Oil & Gas (USA) Inc | **Local Co-ordinate Reference:** | Well File 3D-32H-K268 |
| **Project:** | DJ Wattenberg | **TVD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Reference Site:** | S32-T2N-R68W (File) | **MD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | File 3D-32H-K268 | **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 #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** S32-T2N-R68W (File) - File 3E-32H-K268 - Hz - Plan #1

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-Geolink MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 11,500.0 | 7,606.0 | 11,235.6 | 7,378.0 | 73.8 | 72.8 | -60.00 | -3,987.1 | -277.1 | 458.0 | 331.3 | 126.72 | 3.614 | |
| 11,600.0 | 7,606.0 | 11,335.6 | 7,378.0 | 75.5 | 74.5 | -59.89 | -4,087.1 | -277.1 | 456.5 | 326.9 | 129.58 | 3.523 | |
| 11,700.0 | 7,606.0 | 11,435.6 | 7,378.0 | 77.2 | 76.3 | -59.78 | -4,187.1 | -277.1 | 455.0 | 322.5 | 132.44 | 3.435 | |
| 11,800.0 | 7,606.0 | 11,535.6 | 7,378.0 | 78.9 | 78.0 | -59.67 | -4,287.1 | -277.1 | 453.5 | 318.2 | 135.29 | 3.352 | |
| 11,900.0 | 7,606.0 | 11,635.6 | 7,378.0 | 80.6 | 79.7 | -59.55 | -4,387.1 | -277.1 | 452.0 | 313.8 | 138.13 | 3.272 | |
| 12,000.0 | 7,606.0 | 11,735.6 | 7,378.0 | 82.3 | 81.4 | -59.44 | -4,487.1 | -277.1 | 450.5 | 309.5 | 140.97 | 3.195 | |
| 12,100.0 | 7,606.0 | 11,835.5 | 7,378.0 | 84.0 | 83.2 | -59.33 | -4,587.0 | -277.1 | 449.0 | 305.2 | 143.80 | 3.122 | |
| 12,200.0 | 7,606.0 | 11,935.5 | 7,378.0 | 85.7 | 84.9 | -59.21 | -4,687.0 | -277.1 | 447.5 | 300.8 | 146.63 | 3.052 | |
| 12,300.0 | 7,606.0 | 12,035.5 | 7,378.0 | 87.4 | 86.6 | -59.10 | -4,787.0 | -277.1 | 446.0 | 296.5 | 149.44 | 2.984 | |
| 12,400.0 | 7,606.0 | 12,135.5 | 7,378.0 | 89.2 | 88.4 | -58.98 | -4,887.0 | -277.1 | 444.5 | 292.2 | 152.25 | 2.919 | |
| 12,500.0 | 7,606.0 | 12,235.5 | 7,378.0 | 90.9 | 90.1 | -58.87 | -4,987.0 | -277.1 | 443.0 | 287.9 | 155.06 | 2.857 | |
| 12,600.0 | 7,606.0 | 12,335.5 | 7,378.0 | 92.6 | 91.8 | -58.75 | -5,087.0 | -277.1 | 441.5 | 283.6 | 157.85 | 2.797 | |
| 12,700.0 | 7,606.0 | 12,435.4 | 7,378.0 | 94.3 | 93.6 | -58.63 | -5,187.0 | -277.1 | 440.0 | 279.3 | 160.64 | 2.739 | |
| 12,800.0 | 7,606.0 | 12,535.4 | 7,378.0 | 96.0 | 95.3 | -58.51 | -5,286.9 | -277.1 | 438.5 | 275.1 | 163.42 | 2.683 | |
| 12,900.0 | 7,606.0 | 12,635.4 | 7,378.0 | 97.8 | 97.0 | -58.39 | -5,386.9 | -277.1 | 437.0 | 270.8 | 166.19 | 2.630 | |
| 13,000.0 | 7,606.0 | 12,735.4 | 7,378.0 | 99.5 | 98.8 | -58.27 | -5,486.9 | -277.1 | 435.5 | 266.6 | 168.95 | 2.578 | |
| 13,100.0 | 7,606.0 | 12,835.4 | 7,378.0 | 101.2 | 100.5 | -58.15 | -5,586.9 | -277.1 | 434.0 | 262.3 | 171.70 | 2.528 | |
| 13,200.0 | 7,606.0 | 12,935.4 | 7,378.0 | 102.9 | 102.3 | -58.03 | -5,686.9 | -277.1 | 432.6 | 258.1 | 174.44 | 2.480 | |
| 13,300.0 | 7,606.0 | 13,035.4 | 7,378.0 | 104.7 | 104.0 | -57.91 | -5,786.9 | -277.1 | 431.1 | 253.9 | 177.18 | 2.433 | |
| 13,400.0 | 7,606.0 | 13,135.3 | 7,378.0 | 106.4 | 105.7 | -57.78 | -5,886.8 | -277.1 | 429.6 | 249.7 | 179.90 | 2.388 | |
| 13,500.0 | 7,606.0 | 13,235.3 | 7,378.0 | 108.1 | 107.5 | -57.66 | -5,986.8 | -277.1 | 428.1 | 245.5 | 182.62 | 2.344 | |
| 13,600.0 | 7,606.0 | 13,335.3 | 7,378.0 | 109.8 | 109.2 | -57.53 | -6,086.8 | -277.1 | 426.7 | 241.3 | 185.32 | 2.302 | |
| 13,700.0 | 7,606.0 | 13,435.3 | 7,378.0 | 111.6 | 111.0 | -57.41 | -6,186.8 | -277.1 | 425.2 | 237.2 | 188.02 | 2.261 | |
| 13,800.0 | 7,606.0 | 13,535.3 | 7,378.0 | 113.3 | 112.7 | -57.28 | -6,286.8 | -277.1 | 423.7 | 233.0 | 190.70 | 2.222 | |
| 13,900.0 | 7,606.0 | 13,635.3 | 7,378.0 | 115.0 | 114.4 | -57.15 | -6,386.8 | -277.1 | 422.2 | 228.9 | 193.38 | 2.184 | |
| 14,000.0 | 7,606.0 | 13,735.3 | 7,378.0 | 116.8 | 116.2 | -57.02 | -6,486.8 | -277.1 | 420.8 | 224.7 | 196.04 | 2.146 | |
| 14,100.0 | 7,606.0 | 13,835.2 | 7,378.0 | 118.5 | 117.9 | -56.89 | -6,586.7 | -277.1 | 419.3 | 220.6 | 198.70 | 2.110 | |
| 14,183.2 | 7,606.0 | 13,918.4 | 7,378.0 | 119.9 | 119.4 | -56.79 | -6,669.9 | -277.1 | 418.1 | 217.2 | 200.90 | 2.081 | SF |

| | | | |
|---|---|---|---|
| **Company:** | EnCana Oil & Gas (USA) Inc | **Local Co-ordinate Reference:** | Well File 3D-32H-K268 |
| **Project:** | DJ Wattenberg | **TVD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Reference Site:** | S32-T2N-R68W (File) | **MD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | File 3D-32H-K268 | **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 #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** S32-T2N-R68W (File) - File 3F-32H-K268 - Hz - Plan #1

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-Geolink MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 90.01 | 0.0 | 19.6 | 19.6 | | | | |
| 100.0 | 100.0 | 101.0 | 101.0 | 0.2 | 0.2 | 90.01 | 0.0 | 19.6 | 19.6 | 19.3 | 0.31 | 64.119 | |
| 200.0 | 200.0 | 201.0 | 201.0 | 0.3 | 0.3 | 90.01 | 0.0 | 19.6 | 19.6 | 18.9 | 0.65 | 29.922 | |
| 300.0 | 300.0 | 301.0 | 301.0 | 0.5 | 0.5 | 90.01 | 0.0 | 19.6 | 19.6 | 18.6 | 1.00 | 19.515 | |
| 400.0 | 400.0 | 401.0 | 401.0 | 0.7 | 0.7 | 90.01 | 0.0 | 19.6 | 19.6 | 18.2 | 1.35 | 14.479 | |
| 500.0 | 500.0 | 501.0 | 501.0 | 0.8 | 0.9 | 90.01 | 0.0 | 19.6 | 19.6 | 17.9 | 1.70 | 11.509 | CC, ES |
| 600.0 | 600.0 | 601.0 | 601.0 | 1.0 | 1.0 | 171.07 | 0.0 | 19.6 | 20.4 | 18.4 | 2.05 | 9.971 | |
| 700.0 | 700.0 | 701.0 | 701.0 | 1.2 | 1.2 | 172.08 | 0.0 | 19.6 | 23.0 | 20.6 | 2.40 | 9.602 | SF |
| 800.0 | 799.9 | 800.9 | 800.9 | 1.4 | 1.4 | 173.33 | 0.0 | 19.6 | 27.4 | 24.6 | 2.75 | 9.962 | |
| 900.0 | 899.7 | 900.7 | 900.7 | 1.6 | 1.5 | 174.54 | 0.0 | 19.6 | 33.4 | 30.3 | 3.09 | 10.807 | |
| 1,000.0 | 999.4 | 1,000.4 | 1,000.4 | 1.8 | 1.7 | 175.57 | 0.0 | 19.6 | 41.3 | 37.8 | 3.44 | 11.993 | |
| 1,100.0 | 1,098.9 | 1,099.9 | 1,099.9 | 2.0 | 1.9 | 176.40 | 0.0 | 19.6 | 50.8 | 47.0 | 3.78 | 13.428 | |
| 1,200.0 | 1,198.3 | 1,199.3 | 1,199.3 | 2.2 | 2.1 | 177.04 | 0.0 | 19.6 | 61.7 | 57.6 | 4.13 | 14.950 | |
| 1,300.0 | 1,297.7 | 1,298.7 | 1,298.7 | 2.5 | 2.2 | 177.49 | 0.0 | 19.6 | 72.8 | 68.3 | 4.48 | 16.256 | |
| 1,400.0 | 1,397.1 | 1,398.1 | 1,398.1 | 2.7 | 2.4 | 177.82 | 0.0 | 19.6 | 83.8 | 79.0 | 4.83 | 17.374 | |
| 1,500.0 | 1,496.5 | 1,497.5 | 1,497.5 | 3.0 | 2.6 | 178.07 | 0.0 | 19.6 | 94.9 | 89.7 | 5.17 | 18.343 | |
| 1,600.0 | 1,595.8 | 1,596.8 | 1,596.8 | 3.2 | 2.8 | 178.27 | 0.0 | 19.6 | 106.0 | 100.4 | 5.52 | 19.190 | |
| 1,700.0 | 1,695.2 | 1,696.2 | 1,696.2 | 3.5 | 2.9 | 178.44 | 0.0 | 19.6 | 117.0 | 111.1 | 5.87 | 19.937 | |
| 1,800.0 | 1,794.6 | 1,795.6 | 1,795.6 | 3.7 | 3.1 | 178.57 | 0.0 | 19.6 | 128.1 | 121.9 | 6.22 | 20.601 | |
| 1,900.0 | 1,894.0 | 1,895.0 | 1,895.0 | 4.0 | 3.3 | 178.69 | 0.0 | 19.6 | 139.1 | 132.6 | 6.56 | 21.194 | |
| 2,000.0 | 1,993.4 | 1,994.4 | 1,994.4 | 4.2 | 3.5 | 178.78 | 0.0 | 19.6 | 150.2 | 143.3 | 6.91 | 21.728 | |
| 2,100.0 | 2,092.8 | 2,093.8 | 2,093.8 | 4.5 | 3.6 | 178.87 | 0.0 | 19.6 | 161.2 | 154.0 | 7.26 | 22.211 | |
| 2,200.0 | 2,192.2 | 2,193.2 | 2,193.2 | 4.7 | 3.8 | 178.94 | 0.0 | 19.6 | 172.3 | 164.7 | 7.61 | 22.650 | |
| 2,300.0 | 2,291.6 | 2,292.6 | 2,292.6 | 5.0 | 4.0 | 179.00 | 0.0 | 19.6 | 183.4 | 175.4 | 7.95 | 23.050 | |
| 2,400.0 | 2,390.9 | 2,391.9 | 2,391.9 | 5.2 | 4.2 | 179.06 | 0.0 | 19.6 | 194.4 | 186.1 | 8.30 | 23.417 | |
| 2,500.0 | 2,490.3 | 2,491.3 | 2,491.3 | 5.5 | 4.3 | 179.11 | 0.0 | 19.6 | 205.5 | 196.8 | 8.65 | 23.755 | |
| 2,600.0 | 2,589.7 | 2,590.7 | 2,590.7 | 5.7 | 4.5 | 179.16 | 0.0 | 19.6 | 216.5 | 207.5 | 9.00 | 24.066 | |
| 2,700.0 | 2,689.1 | 2,690.1 | 2,690.1 | 6.0 | 4.7 | 179.20 | 0.0 | 19.6 | 227.6 | 218.2 | 9.35 | 24.354 | |
| 2,800.0 | 2,788.5 | 2,789.5 | 2,789.5 | 6.3 | 4.8 | 179.23 | 0.0 | 19.6 | 238.7 | 229.0 | 9.69 | 24.622 | |
| 2,900.0 | 2,887.9 | 2,888.9 | 2,888.9 | 6.5 | 5.0 | 179.27 | 0.0 | 19.6 | 249.7 | 239.7 | 10.04 | 24.871 | |
| 3,000.0 | 2,987.3 | 2,988.3 | 2,988.3 | 6.8 | 5.2 | 179.30 | 0.0 | 19.6 | 260.8 | 250.4 | 10.39 | 25.103 | |
| 3,100.0 | 3,086.6 | 3,087.6 | 3,087.6 | 7.0 | 5.4 | 179.33 | 0.0 | 19.6 | 271.8 | 261.1 | 10.74 | 25.321 | |
| 3,200.0 | 3,186.0 | 3,187.0 | 3,187.0 | 7.3 | 5.5 | 179.35 | 0.0 | 19.6 | 282.9 | 271.8 | 11.08 | 25.525 | |
| 3,300.0 | 3,285.4 | 3,286.4 | 3,286.4 | 7.6 | 5.7 | 179.38 | 0.0 | 19.6 | 293.9 | 282.5 | 11.43 | 25.716 | |
| 3,400.0 | 3,384.8 | 3,385.8 | 3,385.8 | 7.8 | 5.9 | 179.40 | 0.0 | 19.6 | 305.0 | 293.2 | 11.78 | 25.896 | |
| 3,500.0 | 3,484.2 | 3,485.2 | 3,485.2 | 8.1 | 6.1 | 179.42 | 0.0 | 19.6 | 316.1 | 303.9 | 12.13 | 26.066 | |
| 3,600.0 | 3,583.6 | 3,584.6 | 3,584.6 | 8.3 | 6.2 | 179.44 | 0.0 | 19.6 | 327.1 | 314.7 | 12.47 | 26.226 | |
| 3,700.0 | 3,683.0 | 3,684.0 | 3,684.0 | 8.6 | 6.4 | 179.46 | 0.0 | 19.6 | 338.2 | 325.4 | 12.82 | 26.378 | |
| 3,800.0 | 3,782.4 | 3,783.4 | 3,783.4 | 8.8 | 6.6 | 179.48 | 0.0 | 19.6 | 349.2 | 336.1 | 13.17 | 26.522 | |
| 3,900.0 | 3,881.7 | 3,882.7 | 3,882.7 | 9.1 | 6.8 | 179.49 | 0.0 | 19.6 | 360.3 | 346.8 | 13.52 | 26.658 | |
| 4,000.0 | 3,981.1 | 3,982.1 | 3,982.1 | 9.4 | 6.9 | 179.51 | 0.0 | 19.6 | 371.4 | 357.5 | 13.86 | 26.787 | |
| 4,100.0 | 4,080.5 | 4,081.5 | 4,081.5 | 9.6 | 7.1 | 179.52 | 0.0 | 19.6 | 382.4 | 368.2 | 14.21 | 26.910 | |
| 4,200.0 | 4,179.9 | 4,180.9 | 4,180.9 | 9.9 | 7.3 | 179.54 | 0.0 | 19.6 | 393.5 | 378.9 | 14.56 | 27.028 | |
| 4,300.0 | 4,279.3 | 4,280.3 | 4,280.3 | 10.1 | 7.4 | 179.55 | 0.0 | 19.6 | 404.5 | 389.6 | 14.91 | 27.139 | |
| 4,400.0 | 4,378.7 | 4,379.7 | 4,379.7 | 10.4 | 7.6 | 179.56 | 0.0 | 19.6 | 415.6 | 400.4 | 15.25 | 27.246 | |
| 4,500.0 | 4,478.1 | 4,479.1 | 4,479.1 | 10.7 | 7.8 | 179.57 | 0.0 | 19.6 | 426.7 | 411.1 | 15.60 | 27.348 | |
| 4,600.0 | 4,577.4 | 4,578.4 | 4,578.4 | 10.9 | 8.0 | 179.58 | 0.0 | 19.6 | 437.7 | 421.8 | 15.95 | 27.446 | |
| 4,700.0 | 4,676.8 | 4,677.8 | 4,677.8 | 11.2 | 8.1 | 179.59 | 0.0 | 19.6 | 448.8 | 432.5 | 16.30 | 27.539 | |
| 4,800.0 | 4,776.2 | 4,777.2 | 4,777.2 | 11.4 | 8.3 | 179.60 | 0.0 | 19.6 | 459.8 | 443.2 | 16.64 | 27.628 | |
| 4,900.0 | 4,875.6 | 4,876.6 | 4,876.6 | 11.7 | 8.5 | 179.61 | 0.0 | 19.6 | 470.9 | 453.9 | 16.99 | 27.714 | |
| 5,000.0 | 4,975.0 | 4,976.0 | 4,976.0 | 12.0 | 8.7 | 179.62 | 0.0 | 19.6 | 482.0 | 464.6 | 17.34 | 27.796 | |
| 5,100.0 | 5,074.4 | 5,075.4 | 5,075.4 | 12.2 | 8.8 | 179.63 | 0.0 | 19.6 | 493.0 | 475.3 | 17.69 | 27.876 | |

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

| | | | |
|---|---|---|---|
| **Company:** | EnCana Oil & Gas (USA) Inc | **Local Co-ordinate Reference:** | Well File 3D-32H-K268 |
| **Project:** | DJ Wattenberg | **TVD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Reference Site:** | S32-T2N-R68W (File) | **MD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | File 3D-32H-K268 | **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 #1 | **Offset TVD Reference:** | Offset Datum |

| | | | |
|---|---|---|---|
| **Company:** | EnCana Oil & Gas (USA) Inc | **Local Co-ordinate Reference:** | Well File 3D-32H-K268 |
| **Project:** | DJ Wattenberg | **TVD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Reference Site:** | S32-T2N-R68W (File) | **MD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | File 3D-32H-K268 | **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 #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** S32-T2N-R68W (File) - File 3G-32H-K268 - Hz - Plan #1

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-Geolink MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 98.23 | -3.6 | 25.2 | 25.4 | | | | |
| 100.0 | 100.0 | 101.0 | 101.0 | 0.2 | 0.2 | 98.23 | -3.6 | 25.2 | 25.4 | 25.1 | 0.31 | 83.297 | |
| 200.0 | 200.0 | 201.0 | 201.0 | 0.3 | 0.3 | 98.23 | -3.6 | 25.2 | 25.4 | 24.8 | 0.65 | 38.872 | |
| 300.0 | 300.0 | 301.0 | 301.0 | 0.5 | 0.5 | 98.23 | -3.6 | 25.2 | 25.4 | 24.4 | 1.00 | 25.351 | |
| 366.3 | 366.3 | 367.3 | 367.3 | 0.6 | 0.6 | 98.23 | -3.6 | 25.2 | 25.4 | 24.2 | 1.24 | 20.599 | CC |
| 400.0 | 400.0 | 401.0 | 401.0 | 0.7 | 0.7 | 98.23 | -3.6 | 25.2 | 25.4 | 24.1 | 1.35 | 18.809 | ES |
| 500.0 | 500.0 | 500.6 | 500.6 | 0.8 | 0.9 | 97.41 | -3.4 | 26.0 | 26.2 | 24.5 | 1.70 | 15.425 | |
| 600.0 | 600.0 | 600.0 | 600.0 | 1.0 | 1.0 | 176.03 | -2.6 | 28.5 | 29.5 | 27.5 | 2.05 | 14.406 | SF |
| 700.0 | 700.0 | 699.3 | 699.2 | 1.2 | 1.2 | 173.68 | -1.3 | 32.7 | 36.2 | 33.8 | 2.40 | 15.095 | |
| 800.0 | 799.9 | 798.5 | 798.2 | 1.4 | 1.4 | 171.75 | 0.4 | 38.2 | 46.1 | 43.3 | 2.74 | 16.786 | |
| 900.0 | 899.7 | 897.8 | 897.3 | 1.6 | 1.6 | 170.70 | 2.2 | 44.1 | 57.9 | 54.9 | 3.09 | 18.740 | |
| 1,000.0 | 999.4 | 996.8 | 996.2 | 1.8 | 1.8 | 170.24 | 4.0 | 49.9 | 71.5 | 68.1 | 3.44 | 20.803 | |
| 1,100.0 | 1,098.9 | 1,095.7 | 1,094.8 | 2.0 | 2.0 | 170.12 | 5.7 | 55.7 | 86.8 | 83.0 | 3.78 | 22.944 | |
| 1,200.0 | 1,198.3 | 1,194.3 | 1,193.2 | 2.2 | 2.2 | 170.18 | 7.5 | 61.5 | 103.4 | 99.3 | 4.13 | 25.037 | |
| 1,300.0 | 1,297.7 | 1,292.9 | 1,291.6 | 2.5 | 2.4 | 170.24 | 9.3 | 67.3 | 120.2 | 115.7 | 4.48 | 26.817 | |
| 1,400.0 | 1,397.1 | 1,391.5 | 1,390.0 | 2.7 | 2.6 | 170.28 | 11.1 | 73.1 | 136.9 | 132.1 | 4.83 | 28.339 | |
| 1,500.0 | 1,496.5 | 1,490.0 | 1,488.4 | 3.0 | 2.8 | 170.31 | 12.9 | 78.9 | 153.6 | 148.5 | 5.18 | 29.654 | |
| 1,600.0 | 1,595.8 | 1,588.6 | 1,586.8 | 3.2 | 3.0 | 170.34 | 14.7 | 84.6 | 170.4 | 164.8 | 5.53 | 30.802 | |
| 1,700.0 | 1,695.2 | 1,687.2 | 1,685.2 | 3.5 | 3.2 | 170.36 | 16.4 | 90.4 | 187.1 | 181.2 | 5.88 | 31.812 | |
| 1,800.0 | 1,794.6 | 1,785.8 | 1,783.6 | 3.7 | 3.4 | 170.38 | 18.2 | 96.2 | 203.8 | 197.6 | 6.23 | 32.709 | |
| 1,900.0 | 1,894.0 | 1,884.4 | 1,882.0 | 4.0 | 3.6 | 170.40 | 20.0 | 102.0 | 220.6 | 214.0 | 6.58 | 33.510 | |
| 2,000.0 | 1,993.4 | 1,983.0 | 1,980.4 | 4.2 | 3.8 | 170.41 | 21.8 | 107.8 | 237.3 | 230.4 | 6.93 | 34.230 | |
| 2,100.0 | 2,092.8 | 2,081.6 | 2,078.9 | 4.5 | 4.0 | 170.42 | 23.6 | 113.6 | 254.0 | 246.8 | 7.28 | 34.880 | |
| 2,200.0 | 2,192.2 | 2,180.2 | 2,177.3 | 4.7 | 4.2 | 170.43 | 25.3 | 119.4 | 270.8 | 263.1 | 7.63 | 35.470 | |
| 2,300.0 | 2,291.6 | 2,278.8 | 2,275.7 | 5.0 | 4.4 | 170.44 | 27.1 | 125.2 | 287.5 | 279.5 | 7.98 | 36.009 | |
| 2,400.0 | 2,390.9 | 2,377.4 | 2,374.1 | 5.2 | 4.6 | 170.45 | 28.9 | 131.0 | 304.2 | 295.9 | 8.33 | 36.502 | |
| 2,500.0 | 2,490.3 | 2,475.9 | 2,472.5 | 5.5 | 4.8 | 170.46 | 30.7 | 136.7 | 321.0 | 312.3 | 8.69 | 36.955 | |
| 2,600.0 | 2,589.7 | 2,574.5 | 2,570.9 | 5.7 | 5.0 | 170.46 | 32.5 | 142.5 | 337.7 | 328.7 | 9.04 | 37.373 | |
| 2,700.0 | 2,689.1 | 2,673.1 | 2,669.3 | 6.0 | 5.2 | 170.47 | 34.2 | 148.3 | 354.4 | 345.0 | 9.39 | 37.759 | |
| 2,800.0 | 2,788.5 | 2,771.7 | 2,767.7 | 6.3 | 5.4 | 170.48 | 36.0 | 154.1 | 371.2 | 361.4 | 9.74 | 38.118 | |
| 2,900.0 | 2,887.9 | 2,870.3 | 2,866.1 | 6.5 | 5.6 | 170.48 | 37.8 | 159.9 | 387.9 | 377.8 | 10.09 | 38.451 | |
| 3,000.0 | 2,987.3 | 2,968.9 | 2,964.5 | 6.8 | 5.8 | 170.49 | 39.6 | 165.7 | 404.6 | 394.2 | 10.44 | 38.762 | |
| 3,100.0 | 3,086.6 | 3,067.5 | 3,062.9 | 7.0 | 6.0 | 170.49 | 41.4 | 171.5 | 421.4 | 410.6 | 10.79 | 39.053 | |
| 3,200.0 | 3,186.0 | 3,166.1 | 3,161.3 | 7.3 | 6.2 | 170.49 | 43.2 | 177.3 | 438.1 | 426.9 | 11.14 | 39.325 | |
| 3,300.0 | 3,285.4 | 3,264.7 | 3,259.7 | 7.6 | 6.4 | 170.50 | 44.9 | 183.1 | 454.8 | 443.3 | 11.49 | 39.581 | |
| 3,400.0 | 3,384.8 | 3,363.3 | 3,358.1 | 7.8 | 6.6 | 170.50 | 46.7 | 188.9 | 471.6 | 459.7 | 11.84 | 39.822 | |
| 3,500.0 | 3,484.2 | 3,461.8 | 3,456.5 | 8.1 | 6.8 | 170.50 | 48.5 | 194.6 | 488.3 | 476.1 | 12.19 | 40.049 | |

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

| | | | |
|---|---|---|---|
| **Company:** | EnCana Oil & Gas (USA) Inc | **Local Co-ordinate Reference:** | Well File 3D-32H-K268 |
| **Project:** | DJ Wattenberg | **TVD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Reference Site:** | S32-T2N-R68W (File) | **MD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | File 3D-32H-K268 | **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 #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** S32-T2N-R68W (File) - File 3H-32H-K268 - Hz - Plan #1

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-Geolink MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 90.00 | 0.0 | 30.8 | 30.8 | | | | |
| 100.0 | 100.0 | 101.0 | 101.0 | 0.2 | 0.2 | 90.00 | 0.0 | 30.8 | 30.8 | 30.5 | 0.31 | 100.759 | |
| 200.0 | 200.0 | 201.0 | 201.0 | 0.3 | 0.3 | 90.00 | 0.0 | 30.8 | 30.8 | 30.1 | 0.65 | 47.021 | |
| 300.0 | 300.0 | 301.0 | 301.0 | 0.5 | 0.5 | 90.00 | 0.0 | 30.8 | 30.8 | 29.8 | 1.00 | 30.666 | |
| 332.0 | 332.0 | 333.0 | 333.0 | 0.6 | 0.6 | 90.00 | 0.0 | 30.8 | 30.8 | 29.7 | 1.12 | 27.596 | CC |
| 400.0 | 400.0 | 400.7 | 400.7 | 0.7 | 0.7 | 89.93 | 0.0 | 31.0 | 31.0 | 29.6 | 1.35 | 22.924 | ES |
| 500.0 | 500.0 | 500.0 | 500.0 | 0.8 | 0.9 | 89.44 | 0.3 | 32.7 | 32.7 | 31.0 | 1.70 | 19.235 | |
| 600.0 | 600.0 | 599.5 | 599.4 | 1.0 | 1.0 | 169.52 | 0.9 | 36.1 | 37.0 | 35.0 | 2.05 | 18.084 | SF |
| 700.0 | 700.0 | 698.5 | 698.3 | 1.2 | 1.2 | 169.16 | 1.7 | 41.2 | 44.8 | 42.4 | 2.39 | 18.695 | |
| 800.0 | 799.9 | 797.0 | 796.5 | 1.4 | 1.4 | 169.02 | 2.8 | 48.0 | 55.9 | 53.2 | 2.74 | 20.403 | |
| 900.0 | 899.7 | 894.9 | 894.0 | 1.6 | 1.6 | 168.99 | 4.2 | 56.3 | 70.4 | 67.3 | 3.08 | 22.838 | |
| 1,000.0 | 999.4 | 992.3 | 990.9 | 1.8 | 1.9 | 169.04 | 5.8 | 66.2 | 88.3 | 84.8 | 3.43 | 25.761 | |
| 1,100.0 | 1,098.9 | 1,090.2 | 1,088.3 | 2.0 | 2.1 | 169.19 | 7.5 | 76.7 | 108.3 | 104.5 | 3.77 | 28.727 | |
| 1,200.0 | 1,198.3 | 1,187.9 | 1,185.5 | 2.2 | 2.3 | 169.42 | 9.2 | 87.1 | 129.6 | 125.5 | 4.11 | 31.503 | |
| 1,300.0 | 1,297.7 | 1,285.6 | 1,282.6 | 2.5 | 2.6 | 169.61 | 10.9 | 97.5 | 151.0 | 146.6 | 4.46 | 33.858 | |
| 1,400.0 | 1,397.1 | 1,383.3 | 1,379.7 | 2.7 | 2.8 | 169.75 | 12.7 | 107.9 | 172.5 | 167.7 | 4.81 | 35.872 | |
| 1,500.0 | 1,496.5 | 1,481.0 | 1,476.8 | 3.0 | 3.0 | 169.86 | 14.4 | 118.3 | 193.9 | 188.8 | 5.16 | 37.614 | |
| 1,600.0 | 1,595.8 | 1,578.6 | 1,573.9 | 3.2 | 3.3 | 169.95 | 16.1 | 128.7 | 215.4 | 209.9 | 5.50 | 39.135 | |
| 1,700.0 | 1,695.2 | 1,676.3 | 1,671.0 | 3.5 | 3.5 | 170.02 | 17.8 | 139.1 | 236.8 | 231.0 | 5.85 | 40.475 | |
| 1,800.0 | 1,794.6 | 1,774.0 | 1,768.1 | 3.7 | 3.8 | 170.08 | 19.5 | 149.5 | 258.3 | 252.1 | 6.20 | 41.665 | |
| 1,900.0 | 1,894.0 | 1,871.7 | 1,865.2 | 4.0 | 4.0 | 170.13 | 21.2 | 159.9 | 279.7 | 273.1 | 6.55 | 42.727 | |
| 2,000.0 | 1,993.4 | 1,969.3 | 1,962.3 | 4.2 | 4.3 | 170.17 | 22.9 | 170.3 | 301.1 | 294.2 | 6.89 | 43.682 | |
| 2,100.0 | 2,092.8 | 2,067.0 | 2,059.4 | 4.5 | 4.5 | 170.21 | 24.6 | 180.7 | 322.6 | 315.3 | 7.24 | 44.545 | |
| 2,200.0 | 2,192.2 | 2,164.7 | 2,156.5 | 4.7 | 4.8 | 170.24 | 26.3 | 191.1 | 344.0 | 336.4 | 7.59 | 45.329 | |
| 2,300.0 | 2,291.6 | 2,262.3 | 2,253.6 | 5.0 | 5.0 | 170.27 | 28.0 | 201.5 | 365.5 | 357.5 | 7.94 | 46.044 | |
| 2,400.0 | 2,390.9 | 2,360.0 | 2,350.7 | 5.2 | 5.3 | 170.29 | 29.7 | 211.9 | 386.9 | 378.6 | 8.29 | 46.698 | |
| 2,500.0 | 2,490.3 | 2,457.7 | 2,447.8 | 5.5 | 5.5 | 170.32 | 31.4 | 222.4 | 408.3 | 399.7 | 8.63 | 47.300 | |
| 2,600.0 | 2,589.7 | 2,555.4 | 2,544.9 | 5.7 | 5.8 | 170.34 | 33.1 | 232.8 | 429.8 | 420.8 | 8.98 | 47.855 | |
| 2,700.0 | 2,689.1 | 2,653.0 | 2,642.0 | 6.0 | 6.0 | 170.36 | 34.9 | 243.2 | 451.2 | 441.9 | 9.33 | 48.368 | |
| 2,800.0 | 2,788.5 | 2,750.7 | 2,739.1 | 6.3 | 6.3 | 170.37 | 36.6 | 253.6 | 472.7 | 463.0 | 9.68 | 48.845 | |
| 2,900.0 | 2,887.9 | 2,848.4 | 2,836.2 | 6.5 | 6.5 | 170.39 | 38.3 | 264.0 | 494.1 | 484.1 | 10.03 | 49.288 | |

| | | | |
|---|---|---|---|
| **Company:** | EnCana Oil & Gas (USA) Inc | **Local Co-ordinate Reference:** | Well File 3D-32H-K268 |
| **Project:** | DJ Wattenberg | **TVD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Reference Site:** | S32-T2N-R68W (File) | **MD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | File 3D-32H-K268 | **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 #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** S32-T2N-R68W (File) - File 3I-32H-K268 - Hz - Plan #1

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-Geolink MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 94.65 | -3.6 | 44.8 | 44.9 | | | | |
| 100.0 | 100.0 | 101.0 | 101.0 | 0.2 | 0.2 | 94.65 | -3.6 | 44.8 | 44.9 | 44.6 | 0.31 | 147.043 | |
| 200.0 | 200.0 | 201.0 | 201.0 | 0.3 | 0.3 | 94.65 | -3.6 | 44.8 | 44.9 | 44.3 | 0.65 | 68.618 | |
| 300.0 | 300.0 | 301.7 | 301.7 | 0.5 | 0.5 | 95.17 | -4.0 | 43.9 | 44.1 | 43.1 | 1.01 | 43.858 | |
| 400.0 | 400.0 | 402.3 | 402.3 | 0.7 | 0.7 | 96.82 | -5.0 | 41.4 | 41.8 | 40.4 | 1.36 | 30.685 | |
| 500.0 | 500.0 | 502.9 | 502.7 | 0.8 | 0.9 | 100.00 | -6.6 | 37.3 | 37.9 | 36.2 | 1.72 | 22.025 | |
| 600.0 | 600.0 | 603.2 | 602.9 | 1.0 | 1.1 | -173.85 | -8.8 | 31.6 | 33.7 | 31.6 | 2.07 | 16.272 | |
| 700.0 | 700.0 | 703.5 | 702.8 | 1.2 | 1.3 | -165.34 | -11.7 | 24.2 | 30.3 | 27.9 | 2.45 | 12.382 | |
| 800.0 | 799.9 | 803.6 | 802.5 | 1.4 | 1.5 | -153.57 | -15.3 | 15.2 | 28.4 | 25.5 | 2.86 | 9.920 | |
| 845.1 | 844.9 | 848.7 | 847.3 | 1.5 | 1.6 | -147.42 | -17.1 | 10.6 | 28.1 | 25.1 | 3.06 | 9.189 | CC, ES |
| 900.0 | 899.7 | 903.6 | 901.8 | 1.6 | 1.8 | -139.62 | -19.5 | 4.6 | 28.5 | 25.2 | 3.31 | 8.595 | |
| 1,000.0 | 999.4 | 1,003.4 | 1,000.8 | 1.8 | 2.1 | -125.95 | -24.3 | -7.6 | 31.1 | 27.3 | 3.81 | 8.164 | SF |
| 1,100.0 | 1,098.9 | 1,103.0 | 1,099.3 | 2.0 | 2.4 | -114.66 | -29.7 | -21.3 | 36.1 | 31.8 | 4.33 | 8.337 | |
| 1,200.0 | 1,198.3 | 1,202.5 | 1,197.4 | 2.2 | 2.7 | -105.87 | -35.7 | -36.6 | 42.9 | 38.1 | 4.86 | 8.834 | |
| 1,300.0 | 1,297.7 | 1,301.7 | 1,294.9 | 2.5 | 3.0 | -97.94 | -42.4 | -53.5 | 51.2 | 45.8 | 5.39 | 9.498 | |
| 1,400.0 | 1,397.1 | 1,400.5 | 1,391.8 | 2.7 | 3.4 | -90.87 | -49.6 | -71.8 | 60.9 | 55.0 | 5.90 | 10.332 | |
| 1,500.0 | 1,496.5 | 1,499.0 | 1,487.9 | 3.0 | 3.8 | -84.71 | -57.4 | -91.6 | 72.4 | 66.0 | 6.39 | 11.330 | |
| 1,600.0 | 1,595.8 | 1,597.0 | 1,583.2 | 3.2 | 4.2 | -79.40 | -65.8 | -112.9 | 85.5 | 78.7 | 6.86 | 12.474 | |
| 1,700.0 | 1,695.2 | 1,695.3 | 1,678.4 | 3.5 | 4.7 | -74.94 | -74.7 | -135.5 | 100.2 | 92.9 | 7.30 | 13.719 | |
| 1,800.0 | 1,794.6 | 1,793.9 | 1,774.0 | 3.7 | 5.1 | -71.58 | -83.6 | -158.2 | 115.4 | 107.7 | 7.75 | 14.899 | |
| 1,900.0 | 1,894.0 | 1,892.5 | 1,869.5 | 4.0 | 5.6 | -69.00 | -92.6 | -181.0 | 130.9 | 122.7 | 8.19 | 15.987 | |
| 2,000.0 | 1,993.4 | 1,991.2 | 1,965.1 | 4.2 | 6.0 | -66.98 | -101.6 | -203.7 | 146.6 | 138.0 | 8.63 | 16.986 | |
| 2,100.0 | 2,092.8 | 2,089.8 | 2,060.7 | 4.5 | 6.5 | -65.34 | -110.5 | -226.5 | 162.5 | 153.4 | 9.08 | 17.901 | |
| 2,200.0 | 2,192.2 | 2,188.5 | 2,156.2 | 4.7 | 7.0 | -64.00 | -119.5 | -249.2 | 178.5 | 169.0 | 9.52 | 18.740 | |
| 2,300.0 | 2,291.6 | 2,287.1 | 2,251.8 | 5.0 | 7.4 | -62.88 | -128.5 | -272.0 | 194.5 | 184.6 | 9.97 | 19.509 | |
| 2,400.0 | 2,390.9 | 2,385.7 | 2,347.3 | 5.2 | 7.9 | -61.92 | -137.5 | -294.7 | 210.7 | 200.2 | 10.42 | 20.216 | |
| 2,500.0 | 2,490.3 | 2,484.4 | 2,442.9 | 5.5 | 8.3 | -61.11 | -146.4 | -317.5 | 226.8 | 215.9 | 10.87 | 20.867 | |
| 2,600.0 | 2,589.7 | 2,583.0 | 2,538.4 | 5.7 | 8.8 | -60.40 | -155.4 | -340.2 | 243.0 | 231.7 | 11.32 | 21.469 | |
| 2,700.0 | 2,689.1 | 2,681.6 | 2,634.0 | 6.0 | 9.3 | -59.78 | -164.4 | -363.0 | 259.2 | 247.5 | 11.77 | 22.026 | |
| 2,800.0 | 2,788.5 | 2,780.3 | 2,729.6 | 6.3 | 9.7 | -59.24 | -173.3 | -385.7 | 275.5 | 263.3 | 12.22 | 22.543 | |
| 2,900.0 | 2,887.9 | 2,878.9 | 2,825.1 | 6.5 | 10.2 | -58.75 | -182.3 | -408.5 | 291.8 | 279.1 | 12.67 | 23.024 | |
| 3,000.0 | 2,987.3 | 2,977.6 | 2,920.7 | 6.8 | 10.7 | -58.32 | -191.3 | -431.3 | 308.1 | 295.0 | 13.13 | 23.472 | |
| 3,100.0 | 3,086.6 | 3,076.2 | 3,016.2 | 7.0 | 11.1 | -57.93 | -200.2 | -454.0 | 324.4 | 310.8 | 13.58 | 23.891 | |
| 3,200.0 | 3,186.0 | 3,174.8 | 3,111.8 | 7.3 | 11.6 | -57.57 | -209.2 | -476.8 | 340.7 | 326.7 | 14.03 | 24.283 | |
| 3,300.0 | 3,285.4 | 3,273.5 | 3,207.3 | 7.6 | 12.1 | -57.25 | -218.2 | -499.5 | 357.1 | 342.6 | 14.49 | 24.651 | |
| 3,400.0 | 3,384.8 | 3,372.1 | 3,302.9 | 7.8 | 12.5 | -56.96 | -227.1 | -522.3 | 373.4 | 358.5 | 14.94 | 24.996 | |
| 3,500.0 | 3,484.2 | 3,470.7 | 3,398.5 | 8.1 | 13.0 | -56.69 | -236.1 | -545.0 | 389.8 | 374.4 | 15.39 | 25.322 | |
| 3,600.0 | 3,583.6 | 3,569.4 | 3,494.0 | 8.3 | 13.5 | -56.45 | -245.1 | -567.8 | 406.1 | 390.3 | 15.85 | 25.629 | |
| 3,700.0 | 3,683.0 | 3,668.0 | 3,589.6 | 8.6 | 13.9 | -56.22 | -254.0 | -590.5 | 422.5 | 406.2 | 16.30 | 25.918 | |
| 3,800.0 | 3,782.4 | 3,766.6 | 3,685.1 | 8.8 | 14.4 | -56.01 | -263.0 | -613.3 | 438.9 | 422.1 | 16.76 | 26.193 | |
| 3,900.0 | 3,881.7 | 3,865.3 | 3,780.7 | 9.1 | 14.9 | -55.81 | -272.0 | -636.0 | 455.3 | 438.1 | 17.21 | 26.452 | |
| 4,000.0 | 3,981.1 | 3,963.9 | 3,876.2 | 9.4 | 15.3 | -55.63 | -281.0 | -658.8 | 471.7 | 454.0 | 17.67 | 26.699 | |
| 4,100.0 | 4,080.5 | 4,062.6 | 3,971.8 | 9.6 | 15.8 | -55.46 | -289.9 | -681.6 | 488.1 | 469.9 | 18.12 | 26.933 | |

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

| | | | |
|---|---|---|---|
| **Company:** | EnCana Oil & Gas (USA) Inc | **Local Co-ordinate Reference:** | Well File 3D-32H-K268 |
| **Project:** | DJ Wattenberg | **TVD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Reference Site:** | S32-T2N-R68W (File) | **MD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | File 3D-32H-K268 | **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 #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** S32-T2N-R68W (File) - File 3J-32H-K268 - Hz - Plan #1

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-Geolink MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 90.00 | 0.0 | 50.4 | 50.4 | | | | |
| 100.0 | 100.0 | 101.0 | 101.0 | 0.2 | 0.2 | 90.00 | 0.0 | 50.4 | 50.4 | 50.1 | 0.31 | 164.878 | |
| 200.0 | 200.0 | 201.0 | 201.0 | 0.3 | 0.3 | 90.00 | 0.0 | 50.4 | 50.4 | 49.7 | 0.65 | 76.943 | |
| 300.0 | 300.0 | 301.4 | 301.4 | 0.5 | 0.5 | 90.11 | -0.1 | 50.2 | 50.2 | 49.2 | 1.00 | 49.938 | |
| 400.0 | 400.0 | 402.2 | 402.1 | 0.7 | 0.7 | 91.07 | -0.9 | 48.6 | 48.6 | 47.2 | 1.36 | 35.807 | |
| 500.0 | 500.0 | 502.8 | 502.7 | 0.8 | 0.9 | 93.17 | -2.5 | 45.4 | 45.5 | 43.8 | 1.71 | 26.540 | |
| 600.0 | 600.0 | 603.4 | 603.1 | 1.0 | 1.1 | 177.62 | -4.9 | 40.6 | 41.9 | 39.8 | 2.06 | 20.287 | |
| 700.0 | 700.0 | 703.8 | 703.3 | 1.2 | 1.3 | -176.41 | -8.1 | 34.3 | 38.8 | 36.4 | 2.43 | 15.989 | |
| 800.0 | 799.9 | 804.1 | 803.2 | 1.4 | 1.5 | -168.03 | -12.1 | 26.5 | 36.8 | 34.0 | 2.81 | 13.086 | |
| 875.8 | 875.6 | 880.1 | 878.8 | 1.5 | 1.7 | -160.26 | -15.6 | 19.5 | 36.3 | 33.2 | 3.13 | 11.601 | CC |
| 900.0 | 899.7 | 904.3 | 902.8 | 1.6 | 1.7 | -157.59 | -16.8 | 17.1 | 36.3 | 33.1 | 3.23 | 11.244 | ES |
| 1,000.0 | 999.4 | 1,004.3 | 1,002.1 | 1.8 | 2.0 | -146.20 | -22.4 | 6.1 | 37.9 | 34.2 | 3.70 | 10.258 | |
| 1,100.0 | 1,098.9 | 1,104.1 | 1,100.9 | 2.0 | 2.3 | -135.39 | -28.7 | -6.3 | 41.8 | 37.6 | 4.21 | 9.937 | SF |
| 1,200.0 | 1,198.3 | 1,203.7 | 1,199.3 | 2.2 | 2.6 | -125.92 | -35.7 | -20.3 | 47.7 | 43.0 | 4.76 | 10.036 | |
| 1,300.0 | 1,297.7 | 1,303.0 | 1,297.1 | 2.5 | 2.9 | -117.01 | -43.6 | -35.7 | 54.9 | 49.6 | 5.32 | 10.321 | |
| 1,400.0 | 1,397.1 | 1,402.1 | 1,394.3 | 2.7 | 3.3 | -108.81 | -52.1 | -52.6 | 63.6 | 57.7 | 5.89 | 10.807 | |
| 1,500.0 | 1,496.5 | 1,500.9 | 1,491.1 | 3.0 | 3.7 | -101.57 | -61.3 | -70.9 | 74.0 | 67.5 | 6.43 | 11.496 | |
| 1,600.0 | 1,595.8 | 1,600.0 | 1,587.9 | 3.2 | 4.0 | -95.98 | -70.7 | -89.3 | 85.3 | 78.3 | 6.95 | 12.264 | |
| 1,700.0 | 1,695.2 | 1,699.0 | 1,684.8 | 3.5 | 4.4 | -91.73 | -80.0 | -107.8 | 97.2 | 89.8 | 7.46 | 13.032 | |
| 1,800.0 | 1,794.6 | 1,798.1 | 1,781.6 | 3.7 | 4.8 | -88.42 | -89.4 | -126.3 | 109.6 | 101.6 | 7.96 | 13.767 | |
| 1,900.0 | 1,894.0 | 1,897.2 | 1,878.5 | 4.0 | 5.2 | -85.79 | -98.8 | -144.8 | 122.3 | 113.8 | 8.46 | 14.457 | |
| 2,000.0 | 1,993.4 | 1,996.2 | 1,975.4 | 4.2 | 5.6 | -83.65 | -108.1 | -163.3 | 135.1 | 126.2 | 8.95 | 15.099 | |
| 2,100.0 | 2,092.8 | 2,095.3 | 2,072.2 | 4.5 | 6.0 | -81.89 | -117.5 | -181.8 | 148.1 | 138.7 | 9.44 | 15.693 | |
| 2,200.0 | 2,192.2 | 2,194.3 | 2,169.1 | 4.7 | 6.4 | -80.41 | -126.8 | -200.3 | 161.3 | 151.3 | 9.93 | 16.242 | |
| 2,300.0 | 2,291.6 | 2,293.4 | 2,266.0 | 5.0 | 6.8 | -79.15 | -136.2 | -218.8 | 174.5 | 164.1 | 10.42 | 16.748 | |
| 2,400.0 | 2,390.9 | 2,392.4 | 2,362.8 | 5.2 | 7.2 | -78.08 | -145.5 | -237.3 | 187.8 | 176.9 | 10.91 | 17.216 | |
| 2,500.0 | 2,490.3 | 2,491.5 | 2,459.7 | 5.5 | 7.6 | -77.14 | -154.9 | -255.7 | 201.1 | 189.7 | 11.40 | 17.649 | |
| 2,600.0 | 2,589.7 | 2,590.5 | 2,556.6 | 5.7 | 8.0 | -76.32 | -164.2 | -274.2 | 214.5 | 202.6 | 11.88 | 18.050 | |
| 2,700.0 | 2,689.1 | 2,689.6 | 2,653.4 | 6.0 | 8.4 | -75.60 | -173.6 | -292.7 | 227.9 | 215.6 | 12.37 | 18.422 | |
| 2,800.0 | 2,788.5 | 2,788.7 | 2,750.3 | 6.3 | 8.8 | -74.95 | -183.0 | -311.2 | 241.4 | 228.5 | 12.86 | 18.769 | |
| 2,900.0 | 2,887.9 | 2,887.7 | 2,847.2 | 6.5 | 9.2 | -74.38 | -192.3 | -329.7 | 254.9 | 241.5 | 13.35 | 19.092 | |
| 3,000.0 | 2,987.3 | 2,986.8 | 2,944.0 | 6.8 | 9.6 | -73.86 | -201.7 | -348.2 | 268.4 | 254.6 | 13.84 | 19.394 | |
| 3,100.0 | 3,086.6 | 3,085.8 | 3,040.9 | 7.0 | 10.0 | -73.40 | -211.0 | -366.7 | 281.9 | 267.6 | 14.33 | 19.676 | |
| 3,200.0 | 3,186.0 | 3,184.9 | 3,137.7 | 7.3 | 10.4 | -72.97 | -220.4 | -385.2 | 295.5 | 280.7 | 14.82 | 19.940 | |
| 3,300.0 | 3,285.4 | 3,283.9 | 3,234.6 | 7.6 | 10.8 | -72.58 | -229.7 | -403.6 | 309.0 | 293.7 | 15.31 | 20.189 | |
| 3,400.0 | 3,384.8 | 3,383.0 | 3,331.5 | 7.8 | 11.2 | -72.23 | -239.1 | -422.1 | 322.6 | 306.8 | 15.80 | 20.423 | |
| 3,500.0 | 3,484.2 | 3,482.0 | 3,428.3 | 8.1 | 11.6 | -71.90 | -248.4 | -440.6 | 336.2 | 319.9 | 16.29 | 20.643 | |
| 3,600.0 | 3,583.6 | 3,581.1 | 3,525.2 | 8.3 | 12.0 | -71.60 | -257.8 | -459.1 | 349.8 | 333.0 | 16.78 | 20.851 | |
| 3,700.0 | 3,683.0 | 3,680.2 | 3,622.1 | 8.6 | 12.4 | -71.32 | -267.2 | -477.6 | 363.4 | 346.1 | 17.27 | 21.047 | |
| 3,800.0 | 3,782.4 | 3,779.2 | 3,718.9 | 8.8 | 12.8 | -71.07 | -276.5 | -496.1 | 377.0 | 359.3 | 17.76 | 21.233 | |
| 3,900.0 | 3,881.7 | 3,878.3 | 3,815.8 | 9.1 | 13.2 | -70.83 | -285.9 | -514.6 | 390.6 | 372.4 | 18.25 | 21.409 | |
| 4,000.0 | 3,981.1 | 3,977.3 | 3,912.7 | 9.4 | 13.6 | -70.60 | -295.2 | -533.1 | 404.3 | 385.5 | 18.74 | 21.576 | |
| 4,100.0 | 4,080.5 | 4,076.4 | 4,009.5 | 9.6 | 14.1 | -70.39 | -304.6 | -551.5 | 417.9 | 398.7 | 19.23 | 21.735 | |
| 4,200.0 | 4,179.9 | 4,175.4 | 4,106.4 | 9.9 | 14.5 | -70.20 | -313.9 | -570.0 | 431.5 | 411.8 | 19.72 | 21.887 | |
| 4,300.0 | 4,279.3 | 4,274.5 | 4,203.2 | 10.1 | 14.9 | -70.01 | -323.3 | -588.5 | 445.2 | 425.0 | 20.21 | 22.031 | |
| 4,400.0 | 4,378.7 | 4,373.5 | 4,300.1 | 10.4 | 15.3 | -69.84 | -332.6 | -607.0 | 458.8 | 438.1 | 20.70 | 22.168 | |
| 4,500.0 | 4,478.1 | 4,472.6 | 4,397.0 | 10.7 | 15.7 | -69.68 | -342.0 | -625.5 | 472.5 | 451.3 | 21.19 | 22.299 | |
| 4,600.0 | 4,577.4 | 4,571.7 | 4,493.8 | 10.9 | 16.1 | -69.52 | -351.3 | -644.0 | 486.1 | 464.4 | 21.68 | 22.424 | |
| 4,700.0 | 4,676.8 | 4,670.7 | 4,590.7 | 11.2 | 16.5 | -69.38 | -360.7 | -662.5 | 499.8 | 477.6 | 22.17 | 22.544 | |
| 7,400.0 | 7,343.2 | 7,866.7 | 7,378.0 | 18.0 | 26.0 | 84.93 | 21.4 | -1,194.5 | 480.8 | 454.1 | 26.71 | 17.999 | |
| 7,500.0 | 7,421.8 | 7,802.4 | 7,376.4 | 18.3 | 26.0 | 81.68 | -42.9 | -1,194.2 | 474.0 | 447.3 | 26.76 | 17.712 | |
| 7,500.7 | 7,422.4 | 7,801.9 | 7,376.4 | 18.3 | 26.0 | 81.65 | -43.4 | -1,194.2 | 474.0 | 447.3 | 26.76 | 17.711 | |

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

| | | | |
|---|---|---|---|
| **Company:** | EnCana Oil & Gas (USA) Inc | **Local Co-ordinate Reference:** | Well File 3D-32H-K268 |
| **Project:** | DJ Wattenberg | **TVD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Reference Site:** | S32-T2N-R68W (File) | **MD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | File 3D-32H-K268 | **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 #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** S32-T2N-R68W (File) - File 3J-32H-K268 - Hz - Plan #1

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-Geolink MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7,600.0 | 7,488.8 | 7,737.4 | 7,368.0 | 18.6 | 26.0 | 76.45 | -107.3 | -1,192.6 | 479.9 | 453.0 | 26.83 | 17.882 | |
| 7,700.0 | 7,542.0 | 7,675.7 | 7,353.5 | 19.0 | 26.0 | 70.44 | -167.3 | -1,189.8 | 495.7 | 468.9 | 26.79 | 18.501 | |

| | | | |
|---|---|---|---|
| **Company:** | EnCana Oil & Gas (USA) Inc | **Local Co-ordinate Reference:** | Well File 3D-32H-K268 |
| **Project:** | DJ Wattenberg | **TVD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Reference Site:** | S32-T2N-R68W (File) | **MD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | File 3D-32H-K268 | **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 #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** S32-T2N-R68W (File) - File 3K-32H-K268 - Hz - Plan #1

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-Geolink MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 93.72 | -3.6 | 56.0 | 56.1 | | | | |
| 100.0 | 100.0 | 101.0 | 101.0 | 0.2 | 0.2 | 93.72 | -3.6 | 56.0 | 56.1 | 55.8 | 0.31 | 183.585 | |
| 200.0 | 200.0 | 201.0 | 201.0 | 0.3 | 0.3 | 93.72 | -3.6 | 56.0 | 56.1 | 55.4 | 0.65 | 85.673 | |
| 300.0 | 300.0 | 301.0 | 301.0 | 0.5 | 0.5 | 93.72 | -3.6 | 56.0 | 56.1 | 55.1 | 1.00 | 55.874 | |
| 400.0 | 400.0 | 401.4 | 401.4 | 0.7 | 0.7 | 93.87 | -3.8 | 55.8 | 55.9 | 54.5 | 1.35 | 41.300 | |
| 500.0 | 500.0 | 502.1 | 502.1 | 0.8 | 0.9 | 95.04 | -4.8 | 54.3 | 54.5 | 52.8 | 1.71 | 31.977 | |
| 600.0 | 600.0 | 602.8 | 602.7 | 1.0 | 1.0 | 178.27 | -6.8 | 51.4 | 52.7 | 50.7 | 2.06 | 25.627 | |
| 700.0 | 700.0 | 703.4 | 703.1 | 1.2 | 1.2 | -177.65 | -9.9 | 47.0 | 51.6 | 49.2 | 2.42 | 21.348 | |
| 773.7 | 773.6 | 777.5 | 777.1 | 1.3 | 1.4 | -173.70 | -12.8 | 42.9 | 51.3 | 48.6 | 2.69 | 19.087 CC | |
| 800.0 | 799.9 | 803.8 | 803.4 | 1.4 | 1.4 | -172.11 | -13.9 | 41.2 | 51.3 | 48.5 | 2.78 | 18.432 ES | |
| 900.0 | 899.7 | 904.2 | 903.3 | 1.6 | 1.6 | -165.40 | -19.0 | 34.0 | 52.3 | 49.2 | 3.17 | 16.497 | |
| 1,000.0 | 999.4 | 1,004.3 | 1,002.9 | 1.8 | 1.9 | -158.02 | -25.0 | 25.3 | 54.9 | 51.3 | 3.59 | 15.306 | |
| 1,100.0 | 1,098.9 | 1,104.3 | 1,102.1 | 2.0 | 2.1 | -150.59 | -32.0 | 15.3 | 59.3 | 55.3 | 4.04 | 14.686 | |
| 1,200.0 | 1,198.3 | 1,204.1 | 1,200.9 | 2.2 | 2.4 | -143.50 | -40.0 | 3.8 | 65.4 | 60.9 | 4.53 | 14.423 | |
| 1,300.0 | 1,297.7 | 1,303.6 | 1,299.2 | 2.5 | 2.7 | -136.48 | -48.8 | -8.9 | 72.3 | 67.2 | 5.06 | 14.276 | |
| 1,400.0 | 1,397.1 | 1,402.9 | 1,397.3 | 2.7 | 3.0 | -130.50 | -57.9 | -21.9 | 80.1 | 74.5 | 5.60 | 14.294 | |
| 1,500.0 | 1,496.5 | 1,502.3 | 1,495.4 | 3.0 | 3.3 | -125.61 | -67.0 | -34.9 | 88.6 | 82.5 | 6.14 | 14.420 | |
| 1,600.0 | 1,595.8 | 1,601.7 | 1,593.5 | 3.2 | 3.6 | -121.61 | -76.0 | -47.9 | 97.6 | 91.0 | 6.69 | 14.605 | |
| 1,700.0 | 1,695.2 | 1,701.1 | 1,691.6 | 3.5 | 4.0 | -118.29 | -85.1 | -60.9 | 107.1 | 99.8 | 7.22 | 14.822 | |
| 1,800.0 | 1,794.6 | 1,800.5 | 1,789.7 | 3.7 | 4.3 | -115.51 | -94.2 | -73.9 | 116.8 | 109.0 | 7.76 | 15.052 | |
| 1,900.0 | 1,894.0 | 1,899.8 | 1,887.8 | 4.0 | 4.6 | -113.17 | -103.2 | -86.9 | 126.8 | 118.5 | 8.29 | 15.284 | |
| 2,000.0 | 1,993.4 | 1,999.2 | 1,985.9 | 4.2 | 4.9 | -111.17 | -112.3 | -99.9 | 136.9 | 128.1 | 8.83 | 15.511 | |
| 2,100.0 | 2,092.8 | 2,098.6 | 2,084.0 | 4.5 | 5.2 | -109.45 | -121.4 | -112.9 | 147.2 | 137.8 | 9.36 | 15.731 | |
| 2,200.0 | 2,192.2 | 2,198.0 | 2,182.1 | 4.7 | 5.5 | -107.95 | -130.4 | -125.9 | 157.6 | 147.7 | 9.89 | 15.941 | |
| 2,300.0 | 2,291.6 | 2,297.3 | 2,280.2 | 5.0 | 5.9 | -106.64 | -139.5 | -138.9 | 168.1 | 157.7 | 10.41 | 16.141 | |
| 2,400.0 | 2,390.9 | 2,396.7 | 2,378.4 | 5.2 | 6.2 | -105.48 | -148.5 | -151.9 | 178.7 | 167.7 | 10.94 | 16.330 | |
| 2,500.0 | 2,490.3 | 2,496.1 | 2,476.5 | 5.5 | 6.5 | -104.45 | -157.6 | -164.9 | 189.3 | 177.8 | 11.47 | 16.509 | |
| 2,600.0 | 2,589.7 | 2,595.5 | 2,574.6 | 5.7 | 6.8 | -103.54 | -166.7 | -177.9 | 200.0 | 188.0 | 11.99 | 16.677 | |
| 2,700.0 | 2,689.1 | 2,694.9 | 2,672.7 | 6.0 | 7.2 | -102.71 | -175.7 | -190.9 | 210.7 | 198.2 | 12.52 | 16.836 | |
| 2,800.0 | 2,788.5 | 2,794.2 | 2,770.8 | 6.3 | 7.5 | -101.97 | -184.8 | -203.9 | 221.5 | 208.5 | 13.04 | 16.986 | |
| 2,900.0 | 2,887.9 | 2,893.6 | 2,868.9 | 6.5 | 7.8 | -101.29 | -193.9 | -216.9 | 232.3 | 218.7 | 13.56 | 17.127 | |
| 3,000.0 | 2,987.3 | 2,993.0 | 2,967.0 | 6.8 | 8.1 | -100.68 | -202.9 | -230.0 | 243.1 | 229.1 | 14.09 | 17.261 | |
| 3,100.0 | 3,086.6 | 3,092.4 | 3,065.1 | 7.0 | 8.5 | -100.11 | -212.0 | -243.0 | 254.0 | 239.4 | 14.61 | 17.387 | |
| 3,200.0 | 3,186.0 | 3,191.8 | 3,163.2 | 7.3 | 8.8 | -99.60 | -221.1 | -256.0 | 264.9 | 249.8 | 15.13 | 17.506 | |
| 3,300.0 | 3,285.4 | 3,291.1 | 3,261.3 | 7.6 | 9.1 | -99.12 | -230.1 | -269.0 | 275.8 | 260.1 | 15.65 | 17.618 | |
| 3,400.0 | 3,384.8 | 3,390.5 | 3,359.4 | 7.8 | 9.4 | -98.68 | -239.2 | -282.0 | 286.7 | 270.5 | 16.18 | 17.725 | |
| 3,500.0 | 3,484.2 | 3,489.9 | 3,457.5 | 8.1 | 9.8 | -98.27 | -248.2 | -295.0 | 297.7 | 281.0 | 16.70 | 17.826 | |
| 3,600.0 | 3,583.6 | 3,589.3 | 3,555.6 | 8.3 | 10.1 | -97.90 | -257.3 | -308.0 | 308.6 | 291.4 | 17.22 | 17.922 | |
| 3,700.0 | 3,683.0 | 3,688.6 | 3,653.7 | 8.6 | 10.4 | -97.54 | -266.4 | -321.0 | 319.6 | 301.8 | 17.74 | 18.014 | |
| 3,800.0 | 3,782.4 | 3,788.0 | 3,751.8 | 8.8 | 10.7 | -97.21 | -275.4 | -334.0 | 330.5 | 312.3 | 18.26 | 18.100 | |
| 3,900.0 | 3,881.7 | 3,887.4 | 3,850.0 | 9.1 | 11.1 | -96.91 | -284.5 | -347.0 | 341.5 | 322.7 | 18.78 | 18.183 | |
| 4,000.0 | 3,981.1 | 3,986.8 | 3,948.1 | 9.4 | 11.4 | -96.62 | -293.6 | -360.0 | 352.5 | 333.2 | 19.30 | 18.262 | |
| 4,100.0 | 4,080.5 | 4,086.2 | 4,046.2 | 9.6 | 11.7 | -96.35 | -302.6 | -373.0 | 363.5 | 343.7 | 19.82 | 18.337 | |
| 4,200.0 | 4,179.9 | 4,185.5 | 4,144.3 | 9.9 | 12.1 | -96.09 | -311.7 | -386.0 | 374.5 | 354.2 | 20.35 | 18.409 | |
| 4,300.0 | 4,279.3 | 4,284.9 | 4,242.4 | 10.1 | 12.4 | -95.85 | -320.8 | -399.0 | 385.6 | 364.7 | 20.87 | 18.477 | |
| 4,400.0 | 4,378.7 | 4,384.3 | 4,340.5 | 10.4 | 12.7 | -95.62 | -329.8 | -412.0 | 396.6 | 375.2 | 21.39 | 18.543 | |
| 4,500.0 | 4,478.1 | 4,483.7 | 4,438.6 | 10.7 | 13.0 | -95.41 | -338.9 | -425.0 | 407.6 | 385.7 | 21.91 | 18.606 | |
| 4,600.0 | 4,577.4 | 4,583.1 | 4,536.7 | 10.9 | 13.4 | -95.20 | -347.9 | -438.0 | 418.6 | 396.2 | 22.43 | 18.666 | |
| 4,700.0 | 4,676.8 | 4,682.4 | 4,634.8 | 11.2 | 13.7 | -95.01 | -357.0 | -451.0 | 429.7 | 406.7 | 22.95 | 18.724 | |
| 4,800.0 | 4,776.2 | 4,781.8 | 4,732.9 | 11.4 | 14.0 | -94.83 | -366.1 | -464.0 | 440.7 | 417.3 | 23.47 | 18.779 | |
| 4,900.0 | 4,875.6 | 4,881.2 | 4,831.0 | 11.7 | 14.3 | -94.65 | -375.1 | -477.0 | 451.8 | 427.8 | 23.99 | 18.832 | |
| 5,000.0 | 4,975.0 | 4,980.6 | 4,929.1 | 12.0 | 14.7 | -94.48 | -384.2 | -490.0 | 462.8 | 438.3 | 24.51 | 18.883 | |

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

| | | | |
|---|---|---|---|
| **Company:** | EnCana Oil & Gas (USA) Inc | **Local Co-ordinate Reference:** | Well File 3D-32H-K268 |
| **Project:** | DJ Wattenberg | **TVD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Reference Site:** | S32-T2N-R68W (File) | **MD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | File 3D-32H-K268 | **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 #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** S32-T2N-R68W (File) - File 3K-32H-K268 - Hz - Plan #1

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-Geolink MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 5,100.0 | 5,074.4 | 5,079.9 | 5,027.2 | 12.2 | 15.0 | -94.33 | -393.3 | -503.0 | 473.9 | 448.8 | 25.03 | 18.933 | |
| 5,200.0 | 5,173.8 | 5,179.3 | 5,125.3 | 12.5 | 15.3 | -94.17 | -402.3 | -516.0 | 484.9 | 459.4 | 25.55 | 18.980 | |
| 5,300.0 | 5,273.1 | 5,278.7 | 5,223.4 | 12.7 | 15.7 | -94.03 | -411.4 | -529.0 | 496.0 | 469.9 | 26.07 | 19.026 | |
| 7,200.0 | 7,160.5 | 8,118.4 | 7,606.0 | 17.7 | 21.4 | 109.17 | 98.1 | -844.8 | 468.7 | 437.3 | 31.37 | 14.941 | |
| 7,300.0 | 7,255.2 | 8,088.1 | 7,606.0 | 17.8 | 21.3 | 128.90 | 67.8 | -844.8 | 376.4 | 343.8 | 32.51 | 11.578 | |
| 7,400.0 | 7,343.2 | 8,041.7 | 7,606.0 | 18.0 | 21.2 | 134.60 | 21.4 | -844.8 | 292.3 | 260.7 | 31.62 | 9.243 | |
| 7,500.0 | 7,421.8 | 7,961.8 | 7,603.4 | 18.3 | 21.1 | 130.04 | -58.4 | -844.5 | 218.7 | 189.0 | 29.72 | 7.361 | |
| 7,600.0 | 7,488.8 | 7,877.2 | 7,589.3 | 18.6 | 21.1 | 117.27 | -141.7 | -842.6 | 154.0 | 125.5 | 28.52 | 5.398 | |
| 7,700.0 | 7,542.0 | 7,802.7 | 7,566.9 | 19.0 | 21.1 | 96.74 | -212.7 | -839.6 | 110.4 | 82.0 | 28.40 | 3.888 | |
| 7,749.8 | 7,562.9 | 7,768.0 | 7,553.4 | 19.3 | 21.2 | 83.73 | -244.6 | -837.8 | 104.0 | 75.7 | 28.30 | 3.676 | SF |
| 7,800.0 | 7,579.9 | 7,734.3 | 7,538.4 | 19.6 | 21.2 | 70.11 | -274.8 | -835.8 | 110.2 | 82.6 | 27.59 | 3.994 | |
| 7,900.0 | 7,601.2 | 7,669.7 | 7,505.0 | 20.2 | 21.3 | 46.96 | -329.8 | -831.4 | 148.1 | 123.2 | 24.90 | 5.948 | |
| 8,000.0 | 7,606.0 | 7,608.0 | 7,467.6 | 21.0 | 21.4 | 32.77 | -378.5 | -826.5 | 199.4 | 176.5 | 22.86 | 8.724 | |
| 8,100.0 | 7,606.0 | 7,550.0 | 7,427.8 | 21.9 | 21.5 | 25.43 | -420.4 | -821.2 | 260.5 | 239.0 | 21.51 | 12.112 | |
| 8,200.0 | 7,606.0 | 7,509.3 | 7,397.5 | 22.9 | 21.6 | 21.29 | -447.3 | -817.2 | 330.2 | 309.3 | 20.88 | 15.816 | |
| 8,300.0 | 7,606.0 | 7,471.5 | 7,367.7 | 24.0 | 21.7 | 18.08 | -470.2 | -813.2 | 406.2 | 385.8 | 20.44 | 19.870 | |
| 8,400.0 | 7,606.0 | 7,450.0 | 7,350.1 | 25.1 | 21.7 | 16.48 | -482.4 | -810.9 | 486.9 | 466.5 | 20.42 | 23.847 | |

| | | | |
|---|---|---|---|
| **Company:** | EnCana Oil & Gas (USA) Inc | **Local Co-ordinate Reference:** | Well File 3D-32H-K268 |
| **Project:** | DJ Wattenberg | **TVD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Reference Site:** | S32-T2N-R68W (File) | **MD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | File 3D-32H-K268 | **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 #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** S32-T2N-R68W (File) - File 3L-32H-K268 - Hz - Plan #1

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-Geolink MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 90.00 | 0.0 | 58.8 | 58.8 | | | | |
| 100.0 | 100.0 | 101.0 | 101.0 | 0.2 | 0.2 | 90.00 | 0.0 | 58.8 | 58.8 | 58.4 | 0.31 | 192.358 | |
| 200.0 | 200.0 | 201.0 | 201.0 | 0.3 | 0.3 | 90.00 | 0.0 | 58.8 | 58.8 | 58.1 | 0.65 | 89.767 | |
| 300.0 | 300.0 | 301.0 | 301.0 | 0.5 | 0.5 | 90.00 | 0.0 | 58.8 | 58.8 | 57.7 | 1.00 | 58.544 | |
| 400.0 | 400.0 | 401.0 | 401.0 | 0.7 | 0.7 | 90.00 | 0.0 | 58.8 | 58.8 | 57.4 | 1.35 | 43.435 | |
| 500.0 | 500.0 | 501.7 | 501.7 | 0.8 | 0.9 | 90.66 | -0.7 | 58.2 | 58.2 | 56.5 | 1.70 | 34.150 | |
| 600.0 | 600.0 | 602.3 | 602.3 | 1.0 | 1.0 | 173.49 | -2.7 | 56.4 | 57.3 | 55.3 | 2.06 | 27.896 | |
| 653.4 | 653.4 | 656.0 | 655.9 | 1.1 | 1.1 | 175.31 | -4.3 | 55.0 | 57.2 | 55.0 | 2.25 | 25.477 CC | |
| 700.0 | 700.0 | 702.8 | 702.7 | 1.2 | 1.2 | 177.26 | -6.0 | 53.5 | 57.3 | 54.9 | 2.41 | 23.765 ES | |
| 800.0 | 799.9 | 803.2 | 802.9 | 1.4 | 1.4 | -177.54 | -10.7 | 49.4 | 58.4 | 55.6 | 2.78 | 21.032 | |
| 900.0 | 899.7 | 903.4 | 902.8 | 1.6 | 1.6 | -171.30 | -16.6 | 44.2 | 61.0 | 57.8 | 3.16 | 19.315 | |
| 1,000.0 | 999.4 | 1,003.4 | 1,002.3 | 1.8 | 1.8 | -164.53 | -23.9 | 37.8 | 65.4 | 61.8 | 3.56 | 18.372 | |
| 1,100.0 | 1,098.9 | 1,103.2 | 1,101.4 | 2.0 | 2.1 | -157.83 | -32.4 | 30.3 | 71.8 | 67.9 | 3.99 | 18.024 | |
| 1,200.0 | 1,198.3 | 1,202.6 | 1,200.0 | 2.2 | 2.3 | -151.93 | -41.7 | 22.1 | 80.3 | 75.8 | 4.44 | 18.091 | |
| 1,300.0 | 1,297.7 | 1,301.9 | 1,298.6 | 2.5 | 2.6 | -147.21 | -51.1 | 13.8 | 89.5 | 84.6 | 4.90 | 18.253 | |
| 1,400.0 | 1,397.1 | 1,401.2 | 1,397.1 | 2.7 | 2.9 | -143.39 | -60.5 | 5.6 | 99.1 | 93.8 | 5.37 | 18.450 | |
| 1,500.0 | 1,496.5 | 1,500.6 | 1,495.6 | 3.0 | 3.1 | -140.26 | -69.9 | -2.7 | 109.2 | 103.3 | 5.85 | 18.657 | |
| 1,600.0 | 1,595.8 | 1,599.9 | 1,594.2 | 3.2 | 3.4 | -137.66 | -79.3 | -10.9 | 119.5 | 113.1 | 6.33 | 18.862 | |
| 1,700.0 | 1,695.2 | 1,699.2 | 1,692.7 | 3.5 | 3.7 | -135.47 | -88.7 | -19.2 | 130.0 | 123.2 | 6.82 | 19.059 | |
| 1,800.0 | 1,794.6 | 1,798.6 | 1,791.3 | 3.7 | 3.9 | -133.62 | -98.1 | -27.4 | 140.7 | 133.4 | 7.31 | 19.246 | |
| 1,900.0 | 1,894.0 | 1,897.9 | 1,889.8 | 4.0 | 4.2 | -132.02 | -107.5 | -35.7 | 151.5 | 143.7 | 7.80 | 19.422 | |
| 2,000.0 | 1,993.4 | 1,997.2 | 1,988.4 | 4.2 | 4.5 | -130.64 | -116.9 | -43.9 | 162.4 | 154.1 | 8.29 | 19.585 | |
| 2,100.0 | 2,092.8 | 2,096.6 | 2,086.9 | 4.5 | 4.7 | -129.43 | -126.3 | -52.2 | 173.4 | 164.6 | 8.78 | 19.737 | |
| 2,200.0 | 2,192.2 | 2,195.9 | 2,185.4 | 4.7 | 5.0 | -128.37 | -135.7 | -60.4 | 184.4 | 175.1 | 9.28 | 19.879 | |
| 2,300.0 | 2,291.6 | 2,295.2 | 2,284.0 | 5.0 | 5.3 | -127.43 | -145.1 | -68.7 | 195.5 | 185.7 | 9.77 | 20.010 | |
| 2,400.0 | 2,390.9 | 2,394.6 | 2,382.5 | 5.2 | 5.6 | -126.59 | -154.5 | -76.9 | 206.7 | 196.4 | 10.26 | 20.133 | |
| 2,500.0 | 2,490.3 | 2,493.9 | 2,481.1 | 5.5 | 5.8 | -125.83 | -163.9 | -85.2 | 217.9 | 207.1 | 10.76 | 20.247 | |
| 2,600.0 | 2,589.7 | 2,593.2 | 2,579.6 | 5.7 | 6.1 | -125.15 | -173.3 | -93.4 | 229.1 | 217.8 | 11.25 | 20.353 | |
| 2,700.0 | 2,689.1 | 2,692.6 | 2,678.2 | 6.0 | 6.4 | -124.54 | -182.6 | -101.7 | 240.3 | 228.6 | 11.75 | 20.453 | |
| 2,800.0 | 2,788.5 | 2,791.9 | 2,776.7 | 6.3 | 6.7 | -123.97 | -192.0 | -109.9 | 251.6 | 239.4 | 12.25 | 20.546 | |
| 2,900.0 | 2,887.9 | 2,891.2 | 2,875.2 | 6.5 | 6.9 | -123.46 | -201.4 | -118.2 | 262.9 | 250.2 | 12.74 | 20.633 | |
| 3,000.0 | 2,987.3 | 2,990.6 | 2,973.8 | 6.8 | 7.2 | -122.99 | -210.8 | -126.4 | 274.2 | 261.0 | 13.24 | 20.714 | |
| 3,100.0 | 3,086.6 | 3,089.9 | 3,072.3 | 7.0 | 7.5 | -122.55 | -220.2 | -134.7 | 285.6 | 271.8 | 13.73 | 20.791 | |
| 3,200.0 | 3,186.0 | 3,189.2 | 3,170.9 | 7.3 | 7.8 | -122.15 | -229.6 | -142.9 | 296.9 | 282.7 | 14.23 | 20.863 | |
| 3,300.0 | 3,285.4 | 3,288.6 | 3,269.4 | 7.6 | 8.1 | -121.78 | -239.0 | -151.2 | 308.3 | 293.6 | 14.73 | 20.932 | |
| 3,400.0 | 3,384.8 | 3,387.9 | 3,368.0 | 7.8 | 8.3 | -121.44 | -248.4 | -159.4 | 319.7 | 304.4 | 15.22 | 20.996 | |
| 3,500.0 | 3,484.2 | 3,487.2 | 3,466.5 | 8.1 | 8.6 | -121.11 | -257.8 | -167.7 | 331.0 | 315.3 | 15.72 | 21.057 | |
| 3,600.0 | 3,583.6 | 3,586.6 | 3,565.0 | 8.3 | 8.9 | -120.81 | -267.2 | -175.9 | 342.4 | 326.2 | 16.22 | 21.114 | |
| 3,700.0 | 3,683.0 | 3,685.9 | 3,663.6 | 8.6 | 9.2 | -120.53 | -276.6 | -184.2 | 353.8 | 337.1 | 16.72 | 21.169 | |
| 3,800.0 | 3,782.4 | 3,785.2 | 3,762.1 | 8.8 | 9.4 | -120.27 | -286.0 | -192.4 | 365.3 | 348.0 | 17.21 | 21.221 | |
| 3,900.0 | 3,881.7 | 3,884.6 | 3,860.7 | 9.1 | 9.7 | -120.02 | -295.4 | -200.7 | 376.7 | 359.0 | 17.71 | 21.270 | |
| 4,000.0 | 3,981.1 | 3,983.9 | 3,959.2 | 9.4 | 10.0 | -119.79 | -304.8 | -208.9 | 388.1 | 369.9 | 18.21 | 21.317 | |
| 4,100.0 | 4,080.5 | 4,083.2 | 4,057.8 | 9.6 | 10.3 | -119.57 | -314.2 | -217.2 | 399.5 | 380.8 | 18.70 | 21.361 | |
| 4,200.0 | 4,179.9 | 4,182.6 | 4,156.3 | 9.9 | 10.6 | -119.37 | -323.5 | -225.4 | 411.0 | 391.8 | 19.20 | 21.404 | |
| 4,300.0 | 4,279.3 | 4,281.9 | 4,254.9 | 10.1 | 10.8 | -119.17 | -332.9 | -233.7 | 422.4 | 402.7 | 19.70 | 21.444 | |
| 4,400.0 | 4,378.7 | 4,381.2 | 4,353.4 | 10.4 | 11.1 | -118.98 | -342.3 | -241.9 | 433.9 | 413.7 | 20.20 | 21.483 | |
| 4,500.0 | 4,478.1 | 4,480.6 | 4,451.9 | 10.7 | 11.4 | -118.81 | -351.7 | -250.2 | 445.3 | 424.6 | 20.69 | 21.520 | |
| 4,600.0 | 4,577.4 | 4,579.9 | 4,550.5 | 10.9 | 11.7 | -118.64 | -361.1 | -258.4 | 456.8 | 435.6 | 21.19 | 21.556 | |
| 4,700.0 | 4,676.8 | 4,679.2 | 4,649.0 | 11.2 | 11.9 | -118.48 | -370.5 | -266.7 | 468.2 | 446.5 | 21.69 | 21.590 | |
| 4,800.0 | 4,776.2 | 4,778.6 | 4,747.6 | 11.4 | 12.2 | -118.33 | -379.9 | -274.9 | 479.7 | 457.5 | 22.19 | 21.622 | |
| 4,900.0 | 4,875.6 | 4,877.9 | 4,846.1 | 11.7 | 12.5 | -118.19 | -389.3 | -283.2 | 491.2 | 468.5 | 22.68 | 21.654 | |
| 7,000.0 | 6,962.7 | 7,865.9 | 7,378.0 | 17.2 | 17.0 | 172.52 | 110.9 | -495.1 | 451.6 | 425.4 | 26.20 | 17.236 | |

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

| | | | |
|---|---|---|---|
| **Company:** | EnCana Oil & Gas (USA) Inc | **Local Co-ordinate Reference:** | Well File 3D-32H-K268 |
| **Project:** | DJ Wattenberg | **TVD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Reference Site:** | S32-T2N-R68W (File) | **MD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | File 3D-32H-K268 | **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 #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** S32-T2N-R68W (File) - File 3L-32H-K268 - Hz - Plan #1

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-Geolink MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7,100.0 | 7,062.1 | 7,866.5 | 7,378.0 | 17.4 | 17.0 | -160.16 | 111.5 | -495.1 | 368.1 | 341.4 | 26.71 | 13.780 | |
| 7,200.0 | 7,160.5 | 7,853.2 | 7,378.0 | 17.7 | 16.9 | -126.51 | 98.1 | -495.1 | 295.5 | 268.1 | 27.34 | 10.808 | |
| 7,300.0 | 7,255.2 | 7,822.8 | 7,378.0 | 17.8 | 16.8 | -114.66 | 67.8 | -495.1 | 243.6 | 216.6 | 27.01 | 9.017 | |
| 7,400.0 | 7,343.2 | 7,776.4 | 7,378.0 | 18.0 | 16.7 | -102.01 | 21.4 | -495.1 | 222.3 | 195.8 | 26.52 | 8.385 | |
| 7,414.8 | 7,355.4 | 7,768.3 | 7,378.0 | 18.1 | 16.7 | -99.86 | 13.2 | -495.1 | 222.0 | 195.5 | 26.51 | 8.375 | SF |
| 7,500.0 | 7,421.8 | 7,719.3 | 7,376.9 | 18.3 | 16.6 | -87.03 | -35.7 | -495.0 | 232.0 | 205.2 | 26.79 | 8.661 | |
| 7,600.0 | 7,488.8 | 7,663.3 | 7,370.8 | 18.6 | 16.6 | -72.71 | -91.4 | -494.5 | 263.4 | 236.1 | 27.27 | 9.659 | |
| 7,700.0 | 7,542.0 | 7,608.4 | 7,359.6 | 19.0 | 16.6 | -60.39 | -145.1 | -493.6 | 306.1 | 279.2 | 26.86 | 11.397 | |
| 7,800.0 | 7,579.9 | 7,550.0 | 7,342.1 | 19.6 | 16.6 | -50.37 | -200.7 | -492.1 | 352.5 | 327.1 | 25.34 | 13.910 | |
| 7,900.0 | 7,601.2 | 7,500.0 | 7,322.7 | 20.2 | 16.7 | -43.49 | -246.8 | -490.5 | 397.9 | 374.6 | 23.36 | 17.032 | |
| 8,000.0 | 7,606.0 | 7,450.0 | 7,299.3 | 21.0 | 16.9 | -39.05 | -290.9 | -488.5 | 440.5 | 418.4 | 22.03 | 19.990 | |
| 8,100.0 | 7,606.0 | 7,400.0 | 7,272.2 | 21.9 | 17.0 | -36.88 | -332.9 | -486.3 | 487.7 | 465.4 | 22.27 | 21.898 | |

| | | | |
|---|---|---|---|
| **Company:** | EnCana Oil & Gas (USA) Inc | **Local Co-ordinate Reference:** | Well File 3D-32H-K268 |
| **Project:** | DJ Wattenberg | **TVD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Reference Site:** | S32-T2N-R68W (File) | **MD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | File 3D-32H-K268 | **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 #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** S32-T2N-R68W (File) - File 3M-32H-K268 - Hz - Plan #1

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-Geolink MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 92.76 | -3.6 | 75.5 | 75.6 | | | | |
| 100.0 | 100.0 | 101.0 | 101.0 | 0.2 | 0.2 | 92.76 | -3.6 | 75.5 | 75.6 | 75.3 | 0.31 | 247.604 | |
| 200.0 | 200.0 | 201.0 | 201.0 | 0.3 | 0.3 | 92.76 | -3.6 | 75.5 | 75.6 | 75.0 | 0.65 | 115.547 | |
| 300.0 | 300.0 | 301.4 | 301.4 | 0.5 | 0.5 | 93.41 | -4.5 | 75.2 | 75.4 | 74.4 | 1.00 | 75.045 | |
| 400.0 | 400.0 | 401.7 | 401.6 | 0.7 | 0.7 | 95.37 | -7.0 | 74.4 | 74.7 | 73.3 | 1.35 | 55.127 | |
| 500.0 | 500.0 | 501.9 | 501.7 | 0.8 | 0.9 | 98.69 | -11.1 | 72.9 | 73.7 | 72.0 | 1.71 | 43.236 | |
| 552.2 | 552.2 | 554.1 | 553.9 | 0.9 | 1.0 | -178.35 | -14.0 | 71.9 | 73.5 | 71.6 | 1.92 | 38.320 | CC, ES |
| 600.0 | 600.0 | 601.9 | 601.5 | 1.0 | 1.1 | -175.95 | -16.9 | 70.8 | 73.7 | 71.6 | 2.10 | 35.159 | |
| 700.0 | 700.0 | 701.6 | 701.0 | 1.2 | 1.3 | -170.17 | -24.3 | 68.2 | 75.9 | 73.4 | 2.48 | 30.536 | |
| 800.0 | 799.9 | 801.2 | 800.1 | 1.4 | 1.5 | -164.17 | -33.0 | 65.2 | 80.6 | 77.7 | 2.88 | 27.978 | |
| 900.0 | 899.7 | 900.7 | 899.2 | 1.6 | 1.7 | -159.22 | -41.6 | 62.1 | 87.7 | 84.4 | 3.28 | 26.766 | |
| 1,000.0 | 999.4 | 1,000.1 | 998.1 | 1.8 | 2.0 | -155.45 | -50.3 | 59.1 | 96.9 | 93.3 | 3.67 | 26.381 | SF |
| 1,100.0 | 1,098.9 | 1,099.3 | 1,097.0 | 2.0 | 2.2 | -152.75 | -59.0 | 56.0 | 108.1 | 104.0 | 4.08 | 26.508 | |
| 1,200.0 | 1,198.3 | 1,198.5 | 1,195.7 | 2.2 | 2.4 | -150.91 | -67.6 | 52.9 | 120.6 | 116.1 | 4.49 | 26.877 | |
| 1,300.0 | 1,297.7 | 1,297.6 | 1,294.4 | 2.5 | 2.7 | -149.45 | -76.3 | 49.9 | 133.3 | 128.4 | 4.90 | 27.196 | |
| 1,400.0 | 1,397.1 | 1,396.7 | 1,393.1 | 2.7 | 2.9 | -148.24 | -84.9 | 46.8 | 146.0 | 140.7 | 5.32 | 27.461 | |
| 1,500.0 | 1,496.5 | 1,495.9 | 1,491.8 | 3.0 | 3.1 | -147.23 | -93.6 | 43.8 | 158.8 | 153.1 | 5.74 | 27.685 | |
| 1,600.0 | 1,595.8 | 1,595.0 | 1,590.6 | 3.2 | 3.4 | -146.37 | -102.3 | 40.7 | 171.7 | 165.5 | 6.16 | 27.876 | |
| 1,700.0 | 1,695.2 | 1,694.2 | 1,689.3 | 3.5 | 3.6 | -145.63 | -110.9 | 37.7 | 184.6 | 178.0 | 6.58 | 28.039 | |
| 1,800.0 | 1,794.6 | 1,793.3 | 1,788.0 | 3.7 | 3.8 | -144.99 | -119.6 | 34.6 | 197.5 | 190.5 | 7.01 | 28.179 | |
| 1,900.0 | 1,894.0 | 1,892.4 | 1,886.7 | 4.0 | 4.1 | -144.42 | -128.2 | 31.6 | 210.5 | 203.0 | 7.44 | 28.302 | |
| 2,000.0 | 1,993.4 | 1,991.6 | 1,985.4 | 4.2 | 4.3 | -143.92 | -136.9 | 28.5 | 223.4 | 215.5 | 7.86 | 28.409 | |
| 2,100.0 | 2,092.8 | 2,090.7 | 2,084.1 | 4.5 | 4.5 | -143.48 | -145.5 | 25.5 | 236.4 | 228.1 | 8.29 | 28.504 | |
| 2,200.0 | 2,192.2 | 2,189.9 | 2,182.8 | 4.7 | 4.8 | -143.08 | -154.2 | 22.4 | 249.4 | 240.6 | 8.72 | 28.588 | |
| 2,300.0 | 2,291.6 | 2,289.0 | 2,281.6 | 5.0 | 5.0 | -142.72 | -162.8 | 19.3 | 262.4 | 253.2 | 9.15 | 28.663 | |
| 2,400.0 | 2,390.9 | 2,388.1 | 2,380.3 | 5.2 | 5.2 | -142.40 | -171.5 | 16.3 | 275.4 | 265.8 | 9.58 | 28.730 | |
| 2,500.0 | 2,490.3 | 2,487.3 | 2,479.0 | 5.5 | 5.5 | -142.10 | -180.2 | 13.2 | 288.4 | 278.4 | 10.02 | 28.791 | |
| 2,600.0 | 2,589.7 | 2,586.4 | 2,577.7 | 5.7 | 5.7 | -141.83 | -188.8 | 10.2 | 301.4 | 290.9 | 10.45 | 28.846 | |
| 2,700.0 | 2,689.1 | 2,685.6 | 2,676.4 | 6.0 | 5.9 | -141.59 | -197.5 | 7.1 | 314.4 | 303.5 | 10.88 | 28.896 | |
| 2,800.0 | 2,788.5 | 2,784.7 | 2,775.1 | 6.3 | 6.2 | -141.36 | -206.1 | 4.1 | 327.4 | 316.1 | 11.31 | 28.942 | |
| 2,900.0 | 2,887.9 | 2,883.8 | 2,873.8 | 6.5 | 6.4 | -141.15 | -214.8 | 1.0 | 340.5 | 328.7 | 11.75 | 28.984 | |
| 3,000.0 | 2,987.3 | 2,983.0 | 2,972.5 | 6.8 | 6.6 | -140.95 | -223.4 | -2.0 | 353.5 | 341.3 | 12.18 | 29.022 | |
| 3,100.0 | 3,086.6 | 3,082.1 | 3,071.3 | 7.0 | 6.9 | -140.77 | -232.1 | -5.1 | 366.6 | 354.0 | 12.62 | 29.057 | |
| 3,200.0 | 3,186.0 | 3,181.3 | 3,170.0 | 7.3 | 7.1 | -140.60 | -240.7 | -8.2 | 379.6 | 366.6 | 13.05 | 29.090 | |
| 3,300.0 | 3,285.4 | 3,280.4 | 3,268.7 | 7.6 | 7.3 | -140.44 | -249.4 | -11.2 | 392.7 | 379.2 | 13.48 | 29.121 | |
| 3,400.0 | 3,384.8 | 3,379.5 | 3,367.4 | 7.8 | 7.6 | -140.30 | -258.1 | -14.3 | 405.7 | 391.8 | 13.92 | 29.149 | |
| 3,500.0 | 3,484.2 | 3,478.7 | 3,466.1 | 8.1 | 7.8 | -140.16 | -266.7 | -17.3 | 418.8 | 404.4 | 14.35 | 29.175 | |
| 3,600.0 | 3,583.6 | 3,577.8 | 3,564.8 | 8.3 | 8.1 | -140.03 | -275.4 | -20.4 | 431.8 | 417.0 | 14.79 | 29.200 | |
| 3,700.0 | 3,683.0 | 3,677.0 | 3,663.5 | 8.6 | 8.3 | -139.91 | -284.0 | -23.4 | 444.9 | 429.7 | 15.22 | 29.223 | |
| 3,800.0 | 3,782.4 | 3,776.1 | 3,762.3 | 8.8 | 8.5 | -139.79 | -292.7 | -26.5 | 457.9 | 442.3 | 15.66 | 29.244 | |
| 3,900.0 | 3,881.7 | 3,875.2 | 3,861.0 | 9.1 | 8.8 | -139.68 | -301.3 | -29.5 | 471.0 | 454.9 | 16.09 | 29.265 | |
| 4,000.0 | 3,981.1 | 3,974.4 | 3,959.7 | 9.4 | 9.0 | -139.58 | -310.0 | -32.6 | 484.1 | 467.5 | 16.53 | 29.284 | |
| 4,100.0 | 4,080.5 | 4,073.5 | 4,058.4 | 9.6 | 9.2 | -139.48 | -318.6 | -35.7 | 497.1 | 480.2 | 16.97 | 29.302 | |

| | | | |
|---|---|---|---|
| **Company:** | EnCana Oil & Gas (USA) Inc | **Local Co-ordinate Reference:** | Well File 3D-32H-K268 |
| **Project:** | DJ Wattenberg | **TVD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Reference Site:** | S32-T2N-R68W (File) | **MD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | File 3D-32H-K268 | **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 #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** S32-T2N-R68W (File) - File 3N-32H-K268 - Hz - Plan #1

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-Geolink MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 90.00 | 0.0 | 78.3 | 78.3 | | | | |
| 100.0 | 100.0 | 101.0 | 101.0 | 0.2 | 0.2 | 90.00 | 0.0 | 78.3 | 78.3 | 78.0 | 0.31 | 256.477 | |
| 200.0 | 200.0 | 201.0 | 201.0 | 0.3 | 0.3 | 90.00 | 0.0 | 78.3 | 78.3 | 77.7 | 0.65 | 119.690 | |
| 266.3 | 266.3 | 267.3 | 267.3 | 0.4 | 0.4 | 90.00 | 0.0 | 78.3 | 78.3 | 77.5 | 0.89 | 88.413 | CC |
| 300.0 | 300.0 | 301.0 | 301.0 | 0.5 | 0.5 | 90.00 | 0.0 | 78.3 | 78.3 | 77.3 | 1.00 | 78.059 | |
| 400.0 | 400.0 | 400.7 | 400.7 | 0.7 | 0.7 | 90.63 | -0.9 | 78.5 | 78.5 | 77.2 | 1.35 | 58.068 | ES |
| 500.0 | 500.0 | 500.4 | 500.3 | 0.8 | 0.9 | 92.49 | -3.4 | 79.0 | 79.1 | 77.4 | 1.70 | 46.513 | |
| 600.0 | 600.0 | 600.0 | 599.9 | 1.0 | 1.0 | 176.21 | -7.7 | 79.9 | 81.1 | 79.1 | 2.06 | 39.313 | |
| 700.0 | 700.0 | 699.2 | 698.8 | 1.2 | 1.2 | -179.80 | -13.6 | 81.1 | 85.7 | 83.3 | 2.43 | 35.295 | |
| 800.0 | 799.9 | 798.0 | 797.4 | 1.4 | 1.4 | -175.34 | -21.2 | 82.6 | 93.2 | 90.4 | 2.80 | 33.255 | |
| 900.0 | 899.7 | 896.9 | 895.9 | 1.6 | 1.7 | -171.00 | -30.2 | 84.4 | 103.5 | 100.3 | 3.18 | 32.579 | SF |
| 1,000.0 | 999.4 | 995.9 | 994.4 | 1.8 | 1.9 | -167.56 | -39.3 | 86.2 | 116.1 | 112.5 | 3.55 | 32.681 | |
| 1,100.0 | 1,098.9 | 1,094.7 | 1,092.8 | 2.0 | 2.1 | -164.99 | -48.3 | 88.0 | 130.6 | 126.7 | 3.93 | 33.270 | |
| 1,200.0 | 1,198.3 | 1,193.3 | 1,190.9 | 2.2 | 2.3 | -163.10 | -57.4 | 89.8 | 146.7 | 142.4 | 4.31 | 34.071 | |
| 1,300.0 | 1,297.7 | 1,291.9 | 1,289.1 | 2.5 | 2.6 | -161.61 | -66.5 | 91.6 | 163.0 | 158.3 | 4.69 | 34.763 | |
| 1,400.0 | 1,397.1 | 1,390.5 | 1,387.2 | 2.7 | 2.8 | -160.40 | -75.5 | 93.5 | 179.4 | 174.3 | 5.07 | 35.356 | |
| 1,500.0 | 1,496.5 | 1,489.0 | 1,485.4 | 3.0 | 3.0 | -159.38 | -84.6 | 95.3 | 195.8 | 190.4 | 5.46 | 35.867 | |
| 1,600.0 | 1,595.8 | 1,587.6 | 1,583.5 | 3.2 | 3.3 | -158.53 | -93.6 | 97.1 | 212.3 | 206.5 | 5.85 | 36.312 | |
| 1,700.0 | 1,695.2 | 1,686.2 | 1,681.7 | 3.5 | 3.5 | -157.79 | -102.7 | 98.9 | 228.9 | 222.6 | 6.24 | 36.700 | |
| 1,800.0 | 1,794.6 | 1,784.8 | 1,779.8 | 3.7 | 3.7 | -157.16 | -111.8 | 100.7 | 245.5 | 238.8 | 6.63 | 37.043 | |
| 1,900.0 | 1,894.0 | 1,883.4 | 1,878.0 | 4.0 | 4.0 | -156.61 | -120.8 | 102.5 | 262.1 | 255.0 | 7.02 | 37.346 | |
| 2,000.0 | 1,993.4 | 1,982.0 | 1,976.1 | 4.2 | 4.2 | -156.12 | -129.9 | 104.3 | 278.7 | 271.3 | 7.41 | 37.616 | |
| 2,100.0 | 2,092.8 | 2,080.5 | 2,074.3 | 4.5 | 4.4 | -155.68 | -139.0 | 106.2 | 295.3 | 287.5 | 7.80 | 37.858 | |
| 2,200.0 | 2,192.2 | 2,179.1 | 2,172.4 | 4.7 | 4.7 | -155.30 | -148.0 | 108.0 | 312.0 | 303.8 | 8.19 | 38.076 | |
| 2,300.0 | 2,291.6 | 2,277.7 | 2,270.6 | 5.0 | 4.9 | -154.95 | -157.1 | 109.8 | 328.6 | 320.0 | 8.59 | 38.273 | |
| 2,400.0 | 2,390.9 | 2,376.3 | 2,368.7 | 5.2 | 5.1 | -154.64 | -166.1 | 111.6 | 345.3 | 336.3 | 8.98 | 38.452 | |
| 2,500.0 | 2,490.3 | 2,474.9 | 2,466.9 | 5.5 | 5.4 | -154.35 | -175.2 | 113.4 | 362.0 | 352.6 | 9.37 | 38.615 | |
| 2,600.0 | 2,589.7 | 2,573.5 | 2,565.0 | 5.7 | 5.6 | -154.09 | -184.3 | 115.2 | 378.7 | 368.9 | 9.77 | 38.765 | |
| 2,700.0 | 2,689.1 | 2,672.0 | 2,663.2 | 6.0 | 5.8 | -153.85 | -193.3 | 117.1 | 395.4 | 385.2 | 10.16 | 38.902 | |
| 2,800.0 | 2,788.5 | 2,770.6 | 2,761.3 | 6.3 | 6.1 | -153.63 | -202.4 | 118.9 | 412.1 | 401.5 | 10.56 | 39.029 | |
| 2,900.0 | 2,887.9 | 2,869.2 | 2,859.5 | 6.5 | 6.3 | -153.43 | -211.4 | 120.7 | 428.8 | 417.8 | 10.95 | 39.146 | |
| 3,000.0 | 2,987.3 | 2,967.8 | 2,957.6 | 6.8 | 6.5 | -153.25 | -220.5 | 122.5 | 445.5 | 434.2 | 11.35 | 39.255 | |
| 3,100.0 | 3,086.6 | 3,066.4 | 3,055.8 | 7.0 | 6.8 | -153.07 | -229.6 | 124.3 | 462.2 | 450.5 | 11.75 | 39.356 | |
| 3,200.0 | 3,186.0 | 3,165.0 | 3,153.9 | 7.3 | 7.0 | -152.91 | -238.6 | 126.1 | 479.0 | 466.8 | 12.14 | 39.450 | |
| 3,300.0 | 3,285.4 | 3,263.5 | 3,252.1 | 7.6 | 7.2 | -152.76 | -247.7 | 127.9 | 495.7 | 483.1 | 12.54 | 39.537 | |

| | | | |
|---|---|---|---|
| **Company:** | EnCana Oil & Gas (USA) Inc | **Local Co-ordinate Reference:** | Well File 3D-32H-K268 |
| **Project:** | DJ Wattenberg | **TVD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Reference Site:** | S32-T2N-R68W (File) | **MD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | File 3D-32H-K268 | **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 #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** S32-T2N-R68W (File) - File 3O-32H-K268 - Hz - Plan #1

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-Geolink MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 92.48 | -3.6 | 83.9 | 84.0 | | | | |
| 100.0 | 100.0 | 101.0 | 101.0 | 0.2 | 0.2 | 92.48 | -3.6 | 83.9 | 84.0 | 83.7 | 0.31 | 275.055 | |
| 200.0 | 200.0 | 201.0 | 201.0 | 0.3 | 0.3 | 92.48 | -3.6 | 83.9 | 84.0 | 83.4 | 0.65 | 128.359 | |
| 232.1 | 232.1 | 233.1 | 233.1 | 0.4 | 0.4 | 92.48 | -3.6 | 83.9 | 84.0 | 83.2 | 0.77 | 109.616 | CC |
| 300.0 | 300.0 | 300.5 | 300.5 | 0.5 | 0.5 | 92.60 | -3.8 | 84.1 | 84.2 | 83.2 | 1.00 | 83.922 | ES |
| 400.0 | 400.0 | 400.0 | 400.0 | 0.7 | 0.7 | 93.50 | -5.2 | 85.1 | 85.3 | 83.9 | 1.35 | 63.100 | |
| 500.0 | 500.0 | 498.5 | 498.5 | 0.8 | 0.9 | 95.21 | -7.9 | 87.2 | 87.6 | 85.9 | 1.70 | 51.502 | |
| 600.0 | 600.0 | 597.3 | 597.1 | 1.0 | 1.0 | 178.29 | -12.1 | 90.2 | 92.0 | 89.9 | 2.06 | 44.717 | |
| 700.0 | 700.0 | 695.7 | 695.3 | 1.2 | 1.2 | -178.86 | -17.5 | 94.3 | 99.6 | 97.2 | 2.42 | 41.239 | |
| 800.0 | 799.9 | 793.6 | 792.8 | 1.4 | 1.5 | -175.91 | -24.3 | 99.4 | 110.4 | 107.7 | 2.77 | 39.808 | |
| 900.0 | 899.7 | 891.0 | 889.6 | 1.6 | 1.7 | -173.11 | -32.3 | 105.4 | 124.6 | 121.5 | 3.13 | 39.759 | SF |
| 1,000.0 | 999.4 | 989.4 | 987.5 | 1.8 | 1.9 | -170.77 | -41.0 | 112.0 | 141.3 | 137.8 | 3.49 | 40.444 | |
| 1,100.0 | 1,098.9 | 1,087.6 | 1,085.1 | 2.0 | 2.2 | -169.04 | -49.7 | 118.5 | 159.9 | 156.0 | 3.85 | 41.501 | |
| 1,200.0 | 1,198.3 | 1,185.5 | 1,182.4 | 2.2 | 2.4 | -167.78 | -58.3 | 125.0 | 179.8 | 175.6 | 4.21 | 42.685 | |
| 1,300.0 | 1,297.7 | 1,283.4 | 1,279.7 | 2.5 | 2.7 | -166.78 | -67.0 | 131.5 | 200.0 | 195.4 | 4.58 | 43.694 | |
| 1,400.0 | 1,397.1 | 1,381.3 | 1,377.0 | 2.7 | 2.9 | -165.97 | -75.7 | 138.0 | 220.2 | 215.3 | 4.94 | 44.558 | |
| 1,500.0 | 1,496.5 | 1,479.2 | 1,474.2 | 3.0 | 3.2 | -165.29 | -84.3 | 144.5 | 240.5 | 235.1 | 5.31 | 45.303 | |
| 1,600.0 | 1,595.8 | 1,577.1 | 1,571.5 | 3.2 | 3.4 | -164.72 | -93.0 | 151.0 | 260.7 | 255.0 | 5.67 | 45.953 | |
| 1,700.0 | 1,695.2 | 1,675.0 | 1,668.8 | 3.5 | 3.7 | -164.23 | -101.6 | 157.5 | 281.0 | 275.0 | 6.04 | 46.523 | |
| 1,800.0 | 1,794.6 | 1,772.9 | 1,766.1 | 3.7 | 3.9 | -163.81 | -110.3 | 163.9 | 301.3 | 294.9 | 6.41 | 47.027 | |
| 1,900.0 | 1,894.0 | 1,870.8 | 1,863.4 | 4.0 | 4.2 | -163.44 | -119.0 | 170.4 | 321.6 | 314.9 | 6.77 | 47.476 | |
| 2,000.0 | 1,993.4 | 1,968.7 | 1,960.7 | 4.2 | 4.4 | -163.12 | -127.6 | 176.9 | 342.0 | 334.8 | 7.14 | 47.878 | |
| 2,100.0 | 2,092.8 | 2,066.6 | 2,058.0 | 4.5 | 4.7 | -162.83 | -136.3 | 183.4 | 362.3 | 354.8 | 7.51 | 48.239 | |
| 2,200.0 | 2,192.2 | 2,164.4 | 2,155.3 | 4.7 | 4.9 | -162.57 | -144.9 | 189.9 | 382.7 | 374.8 | 7.88 | 48.566 | |
| 2,300.0 | 2,291.6 | 2,262.3 | 2,252.6 | 5.0 | 5.2 | -162.34 | -153.6 | 196.4 | 403.0 | 394.8 | 8.25 | 48.863 | |
| 2,400.0 | 2,390.9 | 2,360.2 | 2,349.9 | 5.2 | 5.4 | -162.13 | -162.3 | 202.9 | 423.4 | 414.8 | 8.62 | 49.134 | |
| 2,500.0 | 2,490.3 | 2,458.1 | 2,447.2 | 5.5 | 5.7 | -161.94 | -170.9 | 209.4 | 443.7 | 434.8 | 8.99 | 49.382 | |
| 2,600.0 | 2,589.7 | 2,556.0 | 2,544.5 | 5.7 | 5.9 | -161.76 | -179.6 | 215.9 | 464.1 | 454.8 | 9.36 | 49.610 | |
| 2,700.0 | 2,689.1 | 2,653.9 | 2,641.8 | 6.0 | 6.2 | -161.61 | -188.2 | 222.4 | 484.5 | 474.8 | 9.72 | 49.820 | |

| | | | |
|---|---|---|---|
| **Company:** | EnCana Oil & Gas (USA) Inc | **Local Co-ordinate Reference:** | Well File 3D-32H-K268 |
| **Project:** | DJ Wattenberg | **TVD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Reference Site:** | S32-T2N-R68W (File) | **MD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | File 3D-32H-K268 | **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 #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** S32-T2N-R68W (File) - File 3P-32H-K268 - Hz - Plan #1

**Offset Site Error:** 0.0 ft

**Survey Program:** 0-Geolink MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 1.0 | 1.0 | 0.0 | 0.0 | 90.00 | 0.0 | 89.5 | 89.5 | | | | |
| 100.0 | 100.0 | 101.0 | 101.0 | 0.2 | 0.2 | 90.00 | 0.0 | 89.5 | 89.5 | 89.2 | 0.31 | 293.117 | |
| 166.3 | 166.3 | 167.3 | 167.3 | 0.3 | 0.3 | 90.00 | 0.0 | 89.5 | 89.5 | 89.0 | 0.54 | 166.728 | CC |
| 200.0 | 200.0 | 201.0 | 201.0 | 0.3 | 0.3 | 90.00 | 0.0 | 89.5 | 89.5 | 88.9 | 0.65 | 136.791 | ES |
| 300.0 | 300.0 | 300.0 | 300.0 | 0.5 | 0.5 | 90.34 | -0.5 | 90.2 | 90.2 | 89.2 | 1.00 | 90.022 | |
| 400.0 | 400.0 | 398.5 | 398.4 | 0.7 | 0.7 | 91.30 | -2.1 | 92.2 | 92.3 | 91.0 | 1.35 | 68.316 | |
| 500.0 | 500.0 | 497.1 | 496.9 | 0.8 | 0.9 | 92.82 | -4.7 | 95.6 | 95.8 | 94.1 | 1.70 | 56.212 | |
| 600.0 | 600.0 | 595.4 | 595.1 | 1.0 | 1.1 | 175.45 | -8.3 | 100.3 | 101.7 | 99.7 | 2.05 | 49.527 | |
| 700.0 | 700.0 | 693.4 | 692.7 | 1.2 | 1.3 | 177.69 | -13.0 | 106.3 | 110.9 | 108.5 | 2.41 | 46.083 | |
| 800.0 | 799.9 | 790.7 | 789.7 | 1.4 | 1.5 | 179.97 | -18.6 | 113.6 | 123.5 | 120.7 | 2.76 | 44.750 | SF |
| 900.0 | 899.7 | 887.3 | 885.7 | 1.6 | 1.7 | -177.90 | -25.2 | 122.1 | 139.4 | 136.3 | 3.11 | 44.829 | |
| 1,000.0 | 999.4 | 983.1 | 980.6 | 1.8 | 2.0 | -175.99 | -32.7 | 131.8 | 158.8 | 155.3 | 3.46 | 45.895 | |
| 1,100.0 | 1,098.9 | 1,078.1 | 1,074.7 | 2.0 | 2.3 | -174.34 | -41.1 | 142.7 | 181.4 | 177.6 | 3.81 | 47.674 | |
| 1,200.0 | 1,198.3 | 1,174.9 | 1,170.4 | 2.2 | 2.6 | -173.01 | -50.0 | 154.2 | 206.1 | 201.9 | 4.16 | 49.573 | |
| 1,300.0 | 1,297.7 | 1,271.7 | 1,266.0 | 2.5 | 2.9 | -171.97 | -58.9 | 165.7 | 231.0 | 226.4 | 4.51 | 51.197 | |
| 1,400.0 | 1,397.1 | 1,368.5 | 1,361.7 | 2.7 | 3.1 | -171.14 | -67.8 | 177.3 | 255.9 | 251.0 | 4.87 | 52.596 | |
| 1,500.0 | 1,496.5 | 1,465.3 | 1,457.4 | 3.0 | 3.4 | -170.46 | -76.7 | 188.8 | 280.8 | 275.6 | 5.22 | 53.812 | |
| 1,600.0 | 1,595.8 | 1,562.0 | 1,553.1 | 3.2 | 3.7 | -169.88 | -85.6 | 200.4 | 305.8 | 300.3 | 5.57 | 54.877 | |
| 1,700.0 | 1,695.2 | 1,658.8 | 1,648.8 | 3.5 | 4.0 | -169.40 | -94.6 | 211.9 | 330.9 | 324.9 | 5.93 | 55.817 | |
| 1,800.0 | 1,794.6 | 1,755.6 | 1,744.4 | 3.7 | 4.3 | -168.98 | -103.5 | 223.4 | 355.9 | 349.6 | 6.28 | 56.653 | |
| 1,900.0 | 1,894.0 | 1,852.4 | 1,840.1 | 4.0 | 4.6 | -168.61 | -112.4 | 235.0 | 380.9 | 374.3 | 6.64 | 57.400 | |
| 2,000.0 | 1,993.4 | 1,949.2 | 1,935.8 | 4.2 | 4.9 | -168.30 | -121.3 | 246.5 | 406.0 | 399.0 | 6.99 | 58.072 | |
| 2,100.0 | 2,092.8 | 2,046.0 | 2,031.5 | 4.5 | 5.2 | -168.01 | -130.2 | 258.1 | 431.1 | 423.7 | 7.35 | 58.679 | |
| 2,200.0 | 2,192.2 | 2,142.8 | 2,127.2 | 4.7 | 5.6 | -167.76 | -139.2 | 269.6 | 456.2 | 448.5 | 7.70 | 59.230 | |
| 2,300.0 | 2,291.6 | 2,239.5 | 2,222.8 | 5.0 | 5.9 | -167.54 | -148.1 | 281.2 | 481.3 | 473.2 | 8.06 | 59.733 | |

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|---|---|---|---|
| **Company:** | EnCana Oil & Gas (USA) Inc | **Local Co-ordinate Reference:** | Well File 3D-32H-K268 |
| **Project:** | DJ Wattenberg | **TVD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Reference Site:** | S32-T2N-R68W (File) | **MD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | File 3D-32H-K268 | **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 #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** S32-T2N-R68W (File) - NELSON 2 (EXISTING) - TEXAS TEA WELL - NO SURVEYS

**Offset Site Error:** 0.0 ft

**Survey Program:** 4876-Geolink MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4,800.0 | 4,776.2 | 4,749.2 | 4,749.2 | 11.4 | 8.3 | -21.18 | -29.1 | -918.8 | 494.4 | 477.3 | 17.09 | 28.937 | |
| 4,900.0 | 4,875.6 | 4,848.6 | 4,848.6 | 11.7 | 8.5 | -21.66 | -29.1 | -918.8 | 484.1 | 466.7 | 17.47 | 27.716 | |
| 4,977.0 | 4,952.2 | 4,876.0 | 4,876.0 | 11.9 | 8.5 | -21.79 | -29.1 | -918.8 | 478.7 | 461.1 | 17.67 | 27.099 | CC, ES |
| 5,000.0 | 4,975.0 | 4,876.0 | 4,876.0 | 12.0 | 8.5 | -21.79 | -29.1 | -918.8 | 479.3 | 461.6 | 17.71 | 27.064 | SF |
| 5,100.0 | 5,074.4 | 4,876.0 | 4,876.0 | 12.2 | 8.5 | -21.79 | -29.1 | -918.8 | 494.3 | 476.4 | 17.90 | 27.616 | |

| | | | |
|---|---|---|---|
| **Company:** | EnCana Oil & Gas (USA) Inc | **Local Co-ordinate Reference:** | Well File 3D-32H-K268 |
| **Project:** | DJ Wattenberg | **TVD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Reference Site:** | S32-T2N-R68W (File) | **MD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | File 3D-32H-K268 | **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 #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** S32-T2N-R68W (File) - NELSON 4 (EXISTING) - TEXAS TEA WELL - NO SURVEYS

**Offset Site Error:** 0.0 ft

**Survey Program:** 4996-MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 0.0 | 63.57 | 182.1 | 366.5 | 409.3 | | | | |
| 100.0 | 100.0 | 100.0 | 100.0 | 0.2 | 0.2 | 63.57 | 182.1 | 366.5 | 409.3 | 408.9 | 0.33 | 1,255.587 | |
| 200.0 | 200.0 | 200.0 | 200.0 | 0.3 | 0.3 | 63.57 | 182.1 | 366.5 | 409.3 | 408.6 | 0.67 | 606.679 | |
| 300.0 | 300.0 | 300.0 | 300.0 | 0.5 | 0.5 | 63.57 | 182.1 | 366.5 | 409.3 | 408.2 | 1.02 | 399.968 | |
| 400.0 | 400.0 | 400.0 | 400.0 | 0.7 | 0.7 | 63.57 | 182.1 | 366.5 | 409.3 | 407.9 | 1.37 | 298.323 | |
| 500.0 | 500.0 | 500.0 | 500.0 | 0.8 | 0.9 | 63.57 | 182.1 | 366.5 | 409.3 | 407.5 | 1.72 | 237.871 | CC, ES |
| 600.0 | 600.0 | 600.0 | 600.0 | 1.0 | 1.0 | 144.31 | 182.1 | 366.5 | 410.0 | 407.9 | 2.07 | 198.132 | |
| 700.0 | 700.0 | 700.0 | 700.0 | 1.2 | 1.2 | 144.51 | 182.1 | 366.5 | 412.1 | 409.7 | 2.42 | 170.407 | |
| 800.0 | 799.9 | 799.9 | 799.9 | 1.4 | 1.4 | 144.84 | 182.1 | 366.5 | 415.7 | 412.9 | 2.77 | 150.122 | |
| 900.0 | 899.7 | 899.7 | 899.7 | 1.6 | 1.6 | 145.29 | 182.1 | 366.5 | 420.7 | 417.6 | 3.12 | 134.766 | |
| 1,000.0 | 999.4 | 999.4 | 999.4 | 1.8 | 1.7 | 145.85 | 182.1 | 366.5 | 427.2 | 423.7 | 3.48 | 122.850 | |
| 1,100.0 | 1,098.9 | 1,098.9 | 1,098.9 | 2.0 | 1.9 | 146.51 | 182.1 | 366.5 | 435.1 | 431.3 | 3.84 | 113.437 | |
| 1,200.0 | 1,198.3 | 1,198.3 | 1,198.3 | 2.2 | 2.1 | 147.27 | 182.1 | 366.5 | 444.3 | 440.1 | 4.20 | 105.838 | |
| 1,300.0 | 1,297.7 | 1,297.7 | 1,297.7 | 2.5 | 2.3 | 148.03 | 182.1 | 366.5 | 453.7 | 449.1 | 4.56 | 99.449 | |
| 1,400.0 | 1,397.1 | 1,397.1 | 1,397.1 | 2.7 | 2.4 | 148.75 | 182.1 | 366.5 | 463.1 | 458.2 | 4.93 | 94.018 | |
| 1,500.0 | 1,496.5 | 1,496.5 | 1,496.5 | 3.0 | 2.6 | 149.45 | 182.1 | 366.5 | 472.6 | 467.3 | 5.29 | 89.352 | |
| 1,600.0 | 1,595.8 | 1,595.8 | 1,595.8 | 3.2 | 2.8 | 150.11 | 182.1 | 366.5 | 482.2 | 476.5 | 5.65 | 85.306 | |
| 1,700.0 | 1,695.2 | 1,695.2 | 1,695.2 | 3.5 | 3.0 | 150.75 | 182.1 | 366.5 | 491.8 | 485.8 | 6.01 | 81.767 | SF |

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

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|---|---|---|---|
| **Company:** | EnCana Oil & Gas (USA) Inc | **Local Co-ordinate Reference:** | Well File 3D-32H-K268 |
| **Project:** | DJ Wattenberg | **TVD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Reference Site:** | S32-T2N-R68W (File) | **MD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | File 3D-32H-K268 | **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 #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** S32-T2N-R68W (File) - NELSON E UNIT 1 (EXISTING) - ENCANA WELL - NO SURVEYS

**Offset Site Error:** 0.0 ft

**Survey Program:** 8140-Geolink MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 7,700.0 | 7,542.0 | 7,532.0 | 7,532.0 | 19.0 | 13.1 | -62.03 | -543.5 | -457.7 | 441.7 | 415.4 | 26.31 | 16.791 | |
| 7,800.0 | 7,579.9 | 7,569.9 | 7,569.9 | 19.6 | 13.2 | -75.30 | -543.5 | -457.7 | 375.7 | 348.2 | 27.57 | 13.628 | |
| 7,900.0 | 7,601.2 | 7,591.2 | 7,591.2 | 20.2 | 13.2 | -85.86 | -543.5 | -457.7 | 318.8 | 290.1 | 28.69 | 11.114 | |
| 8,000.0 | 7,606.0 | 7,596.0 | 7,596.0 | 21.0 | 13.3 | -90.00 | -543.5 | -457.7 | 282.6 | 253.0 | 29.67 | 9.526 | |
| 8,060.7 | 7,606.0 | 7,596.0 | 7,596.0 | 21.5 | 13.3 | -90.00 | -543.5 | -457.7 | 276.0 | 245.7 | 30.35 | 9.094 | CC, ES |
| 8,100.0 | 7,606.0 | 7,596.0 | 7,596.0 | 21.9 | 13.3 | -90.00 | -543.5 | -457.7 | 278.8 | 248.0 | 30.80 | 9.053 | SF |
| 8,200.0 | 7,606.0 | 7,596.0 | 7,596.0 | 22.9 | 13.3 | -90.00 | -543.5 | -457.7 | 309.2 | 277.2 | 32.02 | 9.656 | |
| 8,300.0 | 7,606.0 | 7,596.0 | 7,596.0 | 24.0 | 13.3 | -90.00 | -543.5 | -457.7 | 365.4 | 332.0 | 33.33 | 10.963 | |
| 8,400.0 | 7,606.0 | 7,596.0 | 7,596.0 | 25.1 | 13.3 | -90.00 | -543.5 | -457.7 | 437.4 | 402.7 | 34.70 | 12.608 | |

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|---|---|---|---|
| **Company:** | EnCana Oil & Gas (USA) Inc | **Local Co-ordinate Reference:** | Well File 3D-32H-K268 |
| **Project:** | DJ Wattenberg | **TVD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Reference Site:** | S32-T2N-R68W (File) | **MD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | File 3D-32H-K268 | **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 #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** S32-T2N-R68W (File) - PAQUETTE 13-5 (EXISTING) - KERR-MCGEE WELL - NO SURVEYS

**Offset Site Error:** 0.0 ft

**Survey Program:** 8350-Geolink MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 14,000.0 | 7,606.0 | 7,637.0 | 7,637.0 | 116.8 | 13.3 | 90.00 | -6,670.3 | -1,069.3 | 476.0 | 346.7 | 129.36 | 3.680 | |
| 14,100.0 | 7,606.0 | 7,637.0 | 7,637.0 | 118.5 | 13.3 | 90.00 | -6,670.3 | -1,069.3 | 448.8 | 317.7 | 131.11 | 3.423 | |
| 14,175.8 | 7,606.0 | 7,637.0 | 7,637.0 | 119.8 | 13.3 | 90.00 | -6,670.3 | -1,069.3 | 442.4 | 310.0 | 132.43 | 3.341 | CC |
| 14,183.2 | 7,606.0 | 7,637.0 | 7,637.0 | 119.9 | 13.3 | 90.00 | -6,670.3 | -1,069.3 | 442.4 | 309.9 | 132.56 | 3.338 | ES, SF |

| | | | |
|---|---|---|---|
| **Company:** | EnCana Oil & Gas (USA) Inc | **Local Co-ordinate Reference:** | Well File 3D-32H-K268 |
| **Project:** | DJ Wattenberg | **TVD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Reference Site:** | S32-T2N-R68W (File) | **MD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | File 3D-32H-K268 | **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 #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** S32-T2N-R68W (File) - RAY NELSON 14-32 (EXISTING) - ENCANA WELL - SURVEYS

**Offset Site Error:** 0.0 ft

**Survey Program:** 88-MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 8,500.0 | 7,606.0 | 7,667.4 | 7,616.9 | 26.3 | 18.4 | 90.14 | -1,225.5 | -1,099.5 | 442.8 | 404.6 | 38.23 | 11.584 | |
| 8,600.0 | 7,606.0 | 7,666.9 | 7,616.4 | 27.6 | 18.4 | 90.07 | -1,225.5 | -1,099.5 | 399.8 | 360.1 | 39.69 | 10.071 | |
| 8,700.0 | 7,606.0 | 7,666.4 | 7,615.9 | 29.0 | 18.4 | 89.99 | -1,225.5 | -1,099.5 | 378.9 | 337.7 | 41.19 | 9.197 | |
| 8,731.4 | 7,606.0 | 7,666.2 | 7,615.8 | 29.4 | 18.4 | 89.97 | -1,225.5 | -1,099.5 | 377.6 | 335.9 | 41.67 | 9.060 | CC, ES |
| 8,800.0 | 7,606.0 | 7,665.9 | 7,615.4 | 30.3 | 18.4 | 89.91 | -1,225.5 | -1,099.5 | 383.7 | 341.0 | 42.73 | 8.981 | SF |
| 8,900.0 | 7,606.0 | 7,665.4 | 7,614.9 | 31.7 | 18.4 | 89.84 | -1,225.5 | -1,099.5 | 413.5 | 369.2 | 44.28 | 9.338 | |
| 9,000.0 | 7,606.0 | 7,664.9 | 7,614.4 | 33.2 | 18.4 | 89.76 | -1,225.5 | -1,099.5 | 463.4 | 417.5 | 45.86 | 10.104 | |

| | | | |
|---|---|---|---|
| **Company:** | EnCana Oil & Gas (USA) Inc | **Local Co-ordinate Reference:** | Well File 3D-32H-K268 |
| **Project:** | DJ Wattenberg | **TVD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Reference Site:** | S32-T2N-R68W (File) | **MD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | File 3D-32H-K268 | **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 #1 | **Offset TVD Reference:** | Offset Datum |

**Offset Design** S32-T2N-R68W (File) - SCHRINER 12-5 (EXISTING) - KERR-MCGEE WELL - NO SURVEYS

**Offset Site Error:** 0.0 ft

**Survey Program:** 8340-Geolink MWD

**Offset Well Error:** 0.0 ft

| Reference Measured Depth (ft) | Reference Vertical Depth (ft) | Offset Measured Depth (ft) | Offset Vertical Depth (ft) | Semi Major Axis Reference (ft) | Semi Major Axis Offset (ft) | Highside Toolface (°) | Offset Wellbore Centre +N/-S (ft) | Offset Wellbore Centre +E/-W (ft) | Distance Between Centres (ft) | Distance Between Ellipses (ft) | Total Uncertainty Axis | Separation Factor | Warning |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 12,600.0 | 7,606.0 | 7,662.0 | 7,662.0 | 92.6 | 13.4 | 90.00 | -5,408.4 | -948.6 | 435.7 | 330.7 | 105.04 | 4.148 | |
| 12,700.0 | 7,606.0 | 7,662.0 | 7,662.0 | 94.3 | 13.4 | 90.00 | -5,408.4 | -948.6 | 369.6 | 262.8 | 106.78 | 3.461 | |
| 12,800.0 | 7,606.0 | 7,662.0 | 7,662.0 | 96.0 | 13.4 | 90.00 | -5,408.4 | -948.6 | 321.5 | 213.0 | 108.52 | 2.962 | |
| 12,900.0 | 7,606.0 | 7,662.0 | 7,662.0 | 97.8 | 13.4 | 90.00 | -5,408.4 | -948.6 | 300.2 | 189.9 | 110.25 | 2.722 | |
| 12,916.3 | 7,606.0 | 7,662.0 | 7,662.0 | 98.0 | 13.4 | 90.00 | -5,408.4 | -948.6 | 299.7 | 189.2 | 110.54 | 2.711 | CC, ES, SF |
| 13,000.0 | 7,606.0 | 7,662.0 | 7,662.0 | 99.5 | 13.4 | 90.00 | -5,408.4 | -948.6 | 311.2 | 199.2 | 111.99 | 2.779 | |
| 13,100.0 | 7,606.0 | 7,662.0 | 7,662.0 | 101.2 | 13.4 | 90.00 | -5,408.4 | -948.6 | 351.5 | 237.8 | 113.73 | 3.091 | |
| 13,200.0 | 7,606.0 | 7,662.0 | 7,662.0 | 102.9 | 13.4 | 90.00 | -5,408.4 | -948.6 | 412.7 | 297.2 | 115.47 | 3.574 | |
| 13,300.0 | 7,606.0 | 7,662.0 | 7,662.0 | 104.7 | 13.4 | 90.00 | -5,408.4 | -948.6 | 486.9 | 369.7 | 117.21 | 4.154 | |

| | | | |
|---|---|---|---|
| **Company:** | EnCana Oil & Gas (USA) Inc | **Local Co-ordinate Reference:** | Well File 3D-32H-K268 |
| **Project:** | DJ Wattenberg | **TVD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Reference Site:** | S32-T2N-R68W (File) | **MD Reference:** | WELL @ 4970.0ft (Original Well Elev) |
| **Site Error:** | 0.0ft | **North Reference:** | True |
| **Reference Well:** | File 3D-32H-K268 | **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 #1 | **Offset TVD Reference:** | Offset Datum |

Reference Depths are relative to WELL @ 4970.0ft (Original Well Elev)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: File 3D-32H-K268
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.30°