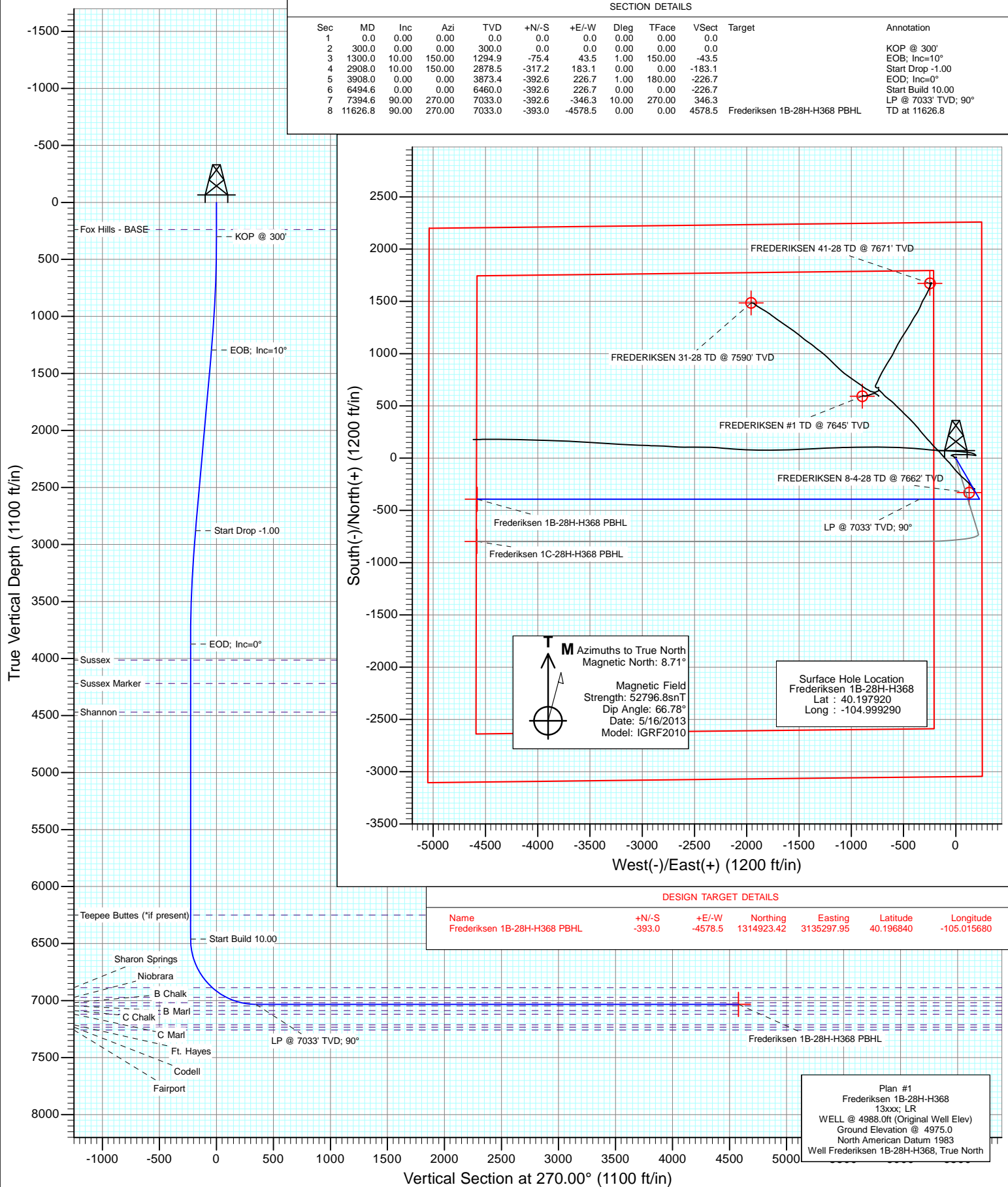




Project: DJ Wattenberg
Site: S28-T3N-R68W (Frederiksen)
Well: Frederiksen 1B-28H-H368
Wellbore: Hz
Design: Plan #1



Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Frederiksen 1B-28H-H368
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 4988.0ft (Original Well Elev)
Project:	DJ Wattenberg	MD Reference:	WELL @ 4988.0ft (Original Well Elev)
Site:	S28-T3N-R68W (Frederiksen)	North Reference:	True
Well:	Frederiksen 1B-28H-H368	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		S28-T3N-R68W (Frederiksen)			
Site Position:		Northing:	1,315,349.57 ft	Latitude:	40.197940
From:	Lat/Long	Easting:	3,139,876.89 ft	Longitude:	-104.999280
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	0.32 °

Well	Frederiksen 1B-28H-H368					
Well Position	+N/-S	0.0 ft	Northing:	1,315,342.26 ft	Latitude:	40.197920
	+E/-W	0.0 ft	Easting:	3,139,874.13 ft	Longitude:	-104.999290
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,975.0 ft

Wellbore	Hz				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/16/2013	8.71	66.78	52,797

Design	Plan #1				
Audit Notes:					
Version:	Phase:	PLAN		Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(ft)	(ft)	(ft)	(°)	
	0.0	0.0	0.0	270.00	

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	
300.0	0.00	0.00	300.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,300.0	10.00	150.00	1,294.9	-75.4	43.5	1.00	1.00	0.00	150.00	
2,908.0	10.00	150.00	2,878.5	-317.2	183.1	0.00	0.00	0.00	0.00	
3,908.0	0.00	0.00	3,873.4	-392.6	226.7	1.00	-1.00	0.00	180.00	
6,494.6	0.00	0.00	6,460.0	-392.6	226.7	0.00	0.00	0.00	0.00	
7,394.6	90.00	270.00	7,033.0	-392.6	-346.3	10.00	10.00	0.00	270.00	
11,626.8	90.00	270.00	7,033.0	-393.0	-4,578.5	0.00	0.00	0.00	0.00	Frederiksen 1B-28H-H368

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Frederiksen 1B-28H-H368
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 4988.0ft (Original Well Elev)
Project:	DJ Wattenberg	MD Reference:	WELL @ 4988.0ft (Original Well Elev)
Site:	S28-T3N-R68W (Frederiksen)	North Reference:	True
Well:	Frederiksen 1B-28H-H368	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	
238.0	0.00	0.00	238.0	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	KOP @ 300'
400.0	1.00	150.00	400.0	-0.8	0.4	-0.4	1.00	1.00	
500.0	2.00	150.00	500.0	-3.0	1.7	-1.7	1.00	1.00	
600.0	3.00	150.00	599.9	-6.8	3.9	-3.9	1.00	1.00	
700.0	4.00	150.00	699.7	-12.1	7.0	-7.0	1.00	1.00	
800.0	5.00	150.00	799.4	-18.9	10.9	-10.9	1.00	1.00	
900.0	6.00	150.00	898.9	-27.2	15.7	-15.7	1.00	1.00	
1,000.0	7.00	150.00	998.3	-37.0	21.4	-21.4	1.00	1.00	
1,100.0	8.00	150.00	1,097.4	-48.3	27.9	-27.9	1.00	1.00	
1,200.0	9.00	150.00	1,196.3	-61.1	35.3	-35.3	1.00	1.00	
1,300.0	10.00	150.00	1,294.9	-75.4	43.5	-43.5	1.00	1.00	EOD; Inc=10°
1,400.0	10.00	150.00	1,393.4	-90.4	52.2	-52.2	0.00	0.00	
1,500.0	10.00	150.00	1,491.9	-105.5	60.9	-60.9	0.00	0.00	
1,600.0	10.00	150.00	1,590.4	-120.5	69.6	-69.6	0.00	0.00	
1,700.0	10.00	150.00	1,688.9	-135.5	78.3	-78.3	0.00	0.00	
1,800.0	10.00	150.00	1,787.3	-150.6	86.9	-86.9	0.00	0.00	
1,900.0	10.00	150.00	1,885.8	-165.6	95.6	-95.6	0.00	0.00	
2,000.0	10.00	150.00	1,984.3	-180.7	104.3	-104.3	0.00	0.00	
2,100.0	10.00	150.00	2,082.8	-195.7	113.0	-113.0	0.00	0.00	
2,200.0	10.00	150.00	2,181.3	-210.7	121.7	-121.7	0.00	0.00	
2,300.0	10.00	150.00	2,279.7	-225.8	130.3	-130.3	0.00	0.00	
2,400.0	10.00	150.00	2,378.2	-240.8	139.0	-139.0	0.00	0.00	
2,500.0	10.00	150.00	2,476.7	-255.8	147.7	-147.7	0.00	0.00	
2,600.0	10.00	150.00	2,575.2	-270.9	156.4	-156.4	0.00	0.00	
2,700.0	10.00	150.00	2,673.7	-285.9	165.1	-165.1	0.00	0.00	
2,800.0	10.00	150.00	2,772.1	-301.0	173.8	-173.8	0.00	0.00	
2,900.0	10.00	150.00	2,870.6	-316.0	182.4	-182.4	0.00	0.00	
2,908.0	10.00	150.00	2,878.5	-317.2	183.1	-183.1	0.00	0.00	Start Drop -1.00
3,000.0	9.08	150.00	2,969.2	-330.4	190.8	-190.8	1.00	-1.00	
3,100.0	8.08	150.00	3,068.1	-343.3	198.2	-198.2	1.00	-1.00	
3,200.0	7.08	150.00	3,167.2	-354.7	204.8	-204.8	1.00	-1.00	
3,300.0	6.08	150.00	3,266.6	-364.7	210.5	-210.5	1.00	-1.00	
3,400.0	5.08	150.00	3,366.1	-373.1	215.4	-215.4	1.00	-1.00	
3,500.0	4.08	150.00	3,465.8	-380.0	219.4	-219.4	1.00	-1.00	
3,600.0	3.08	150.00	3,565.6	-385.4	222.5	-222.5	1.00	-1.00	
3,700.0	2.08	150.00	3,665.5	-389.3	224.8	-224.8	1.00	-1.00	
3,800.0	1.08	150.00	3,765.4	-391.7	226.1	-226.1	1.00	-1.00	
3,900.0	0.08	150.00	3,865.4	-392.6	226.7	-226.7	1.00	-1.00	
3,908.0	0.00	0.00	3,873.4	-392.6	226.7	-226.7	1.00	-1.00	EOD; Inc=0°
4,000.0	0.00	0.00	3,965.4	-392.6	226.7	-226.7	0.00	0.00	
4,048.6	0.00	0.00	4,014.0	-392.6	226.7	-226.7	0.00	0.00	Sussex
4,100.0	0.00	0.00	4,065.4	-392.6	226.7	-226.7	0.00	0.00	
4,200.0	0.00	0.00	4,165.4	-392.6	226.7	-226.7	0.00	0.00	
4,253.6	0.00	0.00	4,219.0	-392.6	226.7	-226.7	0.00	0.00	Sussex Marker
4,300.0	0.00	0.00	4,265.4	-392.6	226.7	-226.7	0.00	0.00	
4,400.0	0.00	0.00	4,365.4	-392.6	226.7	-226.7	0.00	0.00	
4,500.0	0.00	0.00	4,465.4	-392.6	226.7	-226.7	0.00	0.00	
4,504.6	0.00	0.00	4,470.0	-392.6	226.7	-226.7	0.00	0.00	Shannon

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Frederiksen 1B-28H-H368
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 4988.0ft (Original Well Elev)
Project:	DJ Wattenberg	MD Reference:	WELL @ 4988.0ft (Original Well Elev)
Site:	S28-T3N-R68W (Frederiksen)	North Reference:	True
Well:	Frederiksen 1B-28H-H368	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
4,600.0	0.00	0.00	4,565.4	-392.6	226.7	-226.7	0.00	0.00	
4,700.0	0.00	0.00	4,665.4	-392.6	226.7	-226.7	0.00	0.00	
4,800.0	0.00	0.00	4,765.4	-392.6	226.7	-226.7	0.00	0.00	
4,900.0	0.00	0.00	4,865.4	-392.6	226.7	-226.7	0.00	0.00	
5,000.0	0.00	0.00	4,965.4	-392.6	226.7	-226.7	0.00	0.00	
5,100.0	0.00	0.00	5,065.4	-392.6	226.7	-226.7	0.00	0.00	
5,200.0	0.00	0.00	5,165.4	-392.6	226.7	-226.7	0.00	0.00	
5,300.0	0.00	0.00	5,265.4	-392.6	226.7	-226.7	0.00	0.00	
5,400.0	0.00	0.00	5,365.4	-392.6	226.7	-226.7	0.00	0.00	
5,500.0	0.00	0.00	5,465.4	-392.6	226.7	-226.7	0.00	0.00	
5,600.0	0.00	0.00	5,565.4	-392.6	226.7	-226.7	0.00	0.00	
5,700.0	0.00	0.00	5,665.4	-392.6	226.7	-226.7	0.00	0.00	
5,800.0	0.00	0.00	5,765.4	-392.6	226.7	-226.7	0.00	0.00	
5,900.0	0.00	0.00	5,865.4	-392.6	226.7	-226.7	0.00	0.00	
6,000.0	0.00	0.00	5,965.4	-392.6	226.7	-226.7	0.00	0.00	
6,100.0	0.00	0.00	6,065.4	-392.6	226.7	-226.7	0.00	0.00	
6,200.0	0.00	0.00	6,165.4	-392.6	226.7	-226.7	0.00	0.00	
6,284.6	0.00	0.00	6,250.0	-392.6	226.7	-226.7	0.00	0.00	Teepee Buttes (*if present)
6,300.0	0.00	0.00	6,265.4	-392.6	226.7	-226.7	0.00	0.00	
6,400.0	0.00	0.00	6,365.4	-392.6	226.7	-226.7	0.00	0.00	
6,494.6	0.00	0.00	6,460.0	-392.6	226.7	-226.7	0.00	0.00	Start Build 10.00
6,500.0	0.54	270.00	6,465.4	-392.6	226.6	-226.6	10.00	10.00	
6,600.0	10.54	270.00	6,564.8	-392.6	217.0	-217.0	10.00	10.00	
6,700.0	20.54	270.00	6,661.1	-392.6	190.2	-190.2	10.00	10.00	
6,800.0	30.54	270.00	6,751.2	-392.6	147.2	-147.2	10.00	10.00	
6,900.0	40.54	270.00	6,832.4	-392.6	89.1	-89.1	10.00	10.00	
6,974.9	48.02	270.00	6,886.0	-392.6	36.9	-36.9	10.00	10.00	Sharon Springs
7,000.0	50.54	270.00	6,902.4	-392.6	17.8	-17.8	10.00	10.00	
7,100.0	60.54	270.00	6,958.9	-392.6	-64.5	64.5	10.00	10.00	
7,127.8	63.32	270.00	6,972.0	-392.6	-89.0	89.0	10.00	10.00	Niobrara
7,200.0	70.54	270.00	7,000.3	-392.6	-155.4	155.4	10.00	10.00	
7,263.2	76.86	270.00	7,018.0	-392.6	-216.1	216.1	10.00	10.00	B Chalk
7,300.0	80.54	270.00	7,025.2	-392.6	-252.1	252.1	10.00	10.00	
7,394.6	90.00	270.00	7,033.0	-392.6	-346.3	346.3	10.00	10.00	LP @ 7033' TVD; 90°
7,400.0	90.00	270.00	7,033.0	-392.6	-351.7	351.7	0.00	0.00	
7,500.0	90.00	270.00	7,033.0	-392.6	-451.7	451.7	0.00	0.00	
7,600.0	90.00	270.00	7,033.0	-392.7	-551.7	551.7	0.00	0.00	
7,700.0	90.00	270.00	7,033.0	-392.7	-651.7	651.7	0.00	0.00	
7,800.0	90.00	270.00	7,033.0	-392.7	-751.7	751.7	0.00	0.00	
7,900.0	90.00	270.00	7,033.0	-392.7	-851.7	851.7	0.00	0.00	
8,000.0	90.00	270.00	7,033.0	-392.7	-951.7	951.7	0.00	0.00	
8,100.0	90.00	270.00	7,033.0	-392.7	-1,051.7	1,051.7	0.00	0.00	
8,200.0	90.00	270.00	7,033.0	-392.7	-1,151.7	1,151.7	0.00	0.00	
8,300.0	90.00	270.00	7,033.0	-392.7	-1,251.7	1,251.7	0.00	0.00	
8,400.0	90.00	270.00	7,033.0	-392.7	-1,351.7	1,351.7	0.00	0.00	
8,500.0	90.00	270.00	7,033.0	-392.7	-1,451.7	1,451.7	0.00	0.00	
8,600.0	90.00	270.00	7,033.0	-392.7	-1,551.7	1,551.7	0.00	0.00	
8,700.0	90.00	270.00	7,033.0	-392.7	-1,651.7	1,651.7	0.00	0.00	
8,800.0	90.00	270.00	7,033.0	-392.8	-1,751.7	1,751.7	0.00	0.00	
8,900.0	90.00	270.00	7,033.0	-392.8	-1,851.7	1,851.7	0.00	0.00	
9,000.0	90.00	270.00	7,033.0	-392.8	-1,951.7	1,951.7	0.00	0.00	
9,100.0	90.00	270.00	7,033.0	-392.8	-2,051.7	2,051.7	0.00	0.00	

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Frederiksen 1B-28H-H368
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 4988.0ft (Original Well Elev)
Project:	DJ Wattenberg	MD Reference:	WELL @ 4988.0ft (Original Well Elev)
Site:	S28-T3N-R68W (Frederiksen)	North Reference:	True
Well:	Frederiksen 1B-28H-H368	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
9,200.0	90.00	270.00	7,033.0	-392.8	-2,151.7	2,151.7	0.00	0.00	
9,300.0	90.00	270.00	7,033.0	-392.8	-2,251.7	2,251.7	0.00	0.00	
9,400.0	90.00	270.00	7,033.0	-392.8	-2,351.7	2,351.7	0.00	0.00	
9,500.0	90.00	270.00	7,033.0	-392.8	-2,451.7	2,451.7	0.00	0.00	
9,600.0	90.00	270.00	7,033.0	-392.8	-2,551.7	2,551.7	0.00	0.00	
9,700.0	90.00	270.00	7,033.0	-392.8	-2,651.7	2,651.7	0.00	0.00	
9,800.0	90.00	270.00	7,033.0	-392.8	-2,751.7	2,751.7	0.00	0.00	
9,900.0	90.00	270.00	7,033.0	-392.8	-2,851.7	2,851.7	0.00	0.00	
10,000.0	90.00	270.00	7,033.0	-392.9	-2,951.7	2,951.7	0.00	0.00	
10,100.0	90.00	270.00	7,033.0	-392.9	-3,051.7	3,051.7	0.00	0.00	
10,200.0	90.00	270.00	7,033.0	-392.9	-3,151.7	3,151.7	0.00	0.00	
10,300.0	90.00	270.00	7,033.0	-392.9	-3,251.7	3,251.7	0.00	0.00	
10,400.0	90.00	270.00	7,033.0	-392.9	-3,351.7	3,351.7	0.00	0.00	
10,500.0	90.00	270.00	7,033.0	-392.9	-3,451.7	3,451.7	0.00	0.00	
10,600.0	90.00	270.00	7,033.0	-392.9	-3,551.7	3,551.7	0.00	0.00	
10,700.0	90.00	270.00	7,033.0	-392.9	-3,651.7	3,651.7	0.00	0.00	
10,800.0	90.00	270.00	7,033.0	-392.9	-3,751.7	3,751.7	0.00	0.00	
10,900.0	90.00	270.00	7,033.0	-392.9	-3,851.7	3,851.7	0.00	0.00	
11,000.0	90.00	270.00	7,033.0	-392.9	-3,951.7	3,951.7	0.00	0.00	
11,100.0	90.00	270.00	7,033.0	-392.9	-4,051.7	4,051.7	0.00	0.00	
11,200.0	90.00	270.00	7,033.0	-393.0	-4,151.7	4,151.7	0.00	0.00	
11,300.0	90.00	270.00	7,033.0	-393.0	-4,251.7	4,251.7	0.00	0.00	
11,400.0	90.00	270.00	7,033.0	-393.0	-4,351.7	4,351.7	0.00	0.00	
11,500.0	90.00	270.00	7,033.0	-393.0	-4,451.7	4,451.7	0.00	0.00	
11,600.0	90.00	270.00	7,033.0	-393.0	-4,551.7	4,551.7	0.00	0.00	
11,626.8	90.00	270.00	7,033.0	-393.0	-4,578.5	4,578.5	0.00	0.00	TD at 11626.8 - Frederiksen 1B-28H-H368 PBH

Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
Frederiksen 1B-28H-H368	0.00	0.00	7,033.0	-393.0	-4,578.5	1,314,923.42	3,135,297.95	40.196840	-105.015680
- plan hits target center									
- Point									

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
238.0	238.0	Fox Hills - BASE			
4,048.6	4,014.0	Sussex			
4,253.6	4,219.0	Sussex Marker			
4,504.6	4,470.0	Shannon			
6,284.6	6,250.0	Teepee Buttes (*if present)			
6,974.9	6,886.0	Sharon Springs			
7,127.8	6,972.0	Niobrara			
7,263.2	7,018.0	B Chalk			

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Frederiksen 1B-28H-H368
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 4988.0ft (Original Well Elev)
Project:	DJ Wattenberg	MD Reference:	WELL @ 4988.0ft (Original Well Elev)
Site:	S28-T3N-R68W (Frederiksen)	North Reference:	True
Well:	Frederiksen 1B-28H-H368	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
300.0	300.0	0.0	0.0	KOP @ 300'
1,300.0	1,294.9	-75.4	43.5	EOB; Inc=10°
2,908.0	2,878.5	-317.2	183.1	Start Drop -1.00
3,908.0	3,873.4	-392.6	226.7	EOD; Inc=0°
6,494.6	6,460.0	-392.6	226.7	Start Build 10.00
7,394.6	7,033.0	-392.6	-346.3	LP @ 7033' TVD; 90°
11,626.8	7,033.0	-393.0	-4,578.5	TD at 11626.8

EnCana Oil & Gas (USA) Inc

DJ Wattenberg

S28-T3N-R68W (Frederiksen)

Frederiksen 1B-28H-H368

Hz

Plan #1

Anticollision Report

17 May, 2013

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Frederiksen 1B-28H-H368
Project:	DJ Wattenberg	TVD Reference:	WELL @ 4988.0ft (Original Well Elev)
Reference Site:	S28-T3N-R68W (Frederiksen)	MD Reference:	WELL @ 4988.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Frederiksen 1B-28H-H368	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	5/17/2013		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	11,626.0	Plan #1 (Hz)	MWD	Geolink MWD

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
S28-T3N-R68W (Frederiksen)						
Frederiksen #1 (Existing) - DD - GYRO						Out of range
Frederiksen 1A-28H - Hz - Hz	300.0	300.0	7.8	6.8	7.669	CC, ES
Frederiksen 1A-28H - Hz - Hz	9,700.0	9,675.3	498.9	362.1	3.646	SF
Frederiksen 1C-28H-H368 - Hz - Plan #1	200.0	200.0	10.9	10.3	16.742	CC, ES
Frederiksen 1C-28H-H368 - Hz - Plan #1	11,626.8	11,831.2	451.1	241.7	2.155	SF
Frederiksen 31-28 (Existing) - DD - GYRO						Out of range
Frederiksen 41-28 (Existing) - DD - GYRO						Out of range
Frederiksen 8-4-28 (Existing) - DD - GYRO	5,900.0	6,041.8	103.1	65.0	2.705	SF
Frederiksen 8-4-28 (Existing) - DD - GYRO	6,762.7	6,895.5	93.0	61.0	2.910	CC
Frederiksen 8-4-28 (Existing) - DD - GYRO	6,800.0	6,928.3	94.7	60.6	2.781	ES

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Frederiksen 1B-28H-H368
Project:	DJ Wattenberg	TVD Reference:	WELL @ 4988.0ft (Original Well Elev)
Reference Site:	S28-T3N-R68W (Frederiksen)	MD Reference:	WELL @ 4988.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Frederiksen 1B-28H-H368	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 S28-T3N-R68W (Frederiksen) - Frederiksen 1A-28H - Hz - Hz														Offset Site Error:	0.0 ft
Survey Program: 835-MWD														Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total		Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Separation Factor			
0.0	0.0	0.0	0.0	0.0	0.0	20.99	7.3	2.8	7.8						
100.0	100.0	100.0	100.0	0.2	0.2	20.99	7.3	2.8	7.8	7.5	0.32	24.081			
200.0	200.0	200.0	200.0	0.3	0.3	20.99	7.3	2.8	7.8	7.1	0.67	11.633			
300.0	300.0	300.0	300.0	0.5	0.5	20.99	7.3	2.8	7.8	6.8	1.02	7.669 CC, ES			
400.0	400.0	400.0	400.0	0.7	0.7	-133.65	7.3	2.8	8.4	7.0	1.36	6.141			
500.0	500.0	500.0	500.0	0.9	0.9	-144.17	7.3	2.8	10.4	8.6	1.71	6.052			
600.0	599.9	599.9	599.9	1.0	1.0	-154.57	7.3	2.8	14.1	12.1	2.06	6.864			
700.0	699.7	699.7	699.7	1.2	1.2	-162.15	7.3	2.8	19.8	17.4	2.40	8.244			
800.0	799.4	799.4	799.4	1.4	1.4	-167.17	7.3	2.8	27.4	24.6	2.75	9.969			
900.0	898.9	898.6	898.6	1.7	1.5	-170.47	7.5	2.7	37.0	33.9	3.09	11.979			
1,000.0	998.3	999.0	999.0	1.9	1.7	-172.18	7.5	3.2	48.1	44.6	3.44	13.980			
1,100.0	1,097.4	1,096.3	1,096.3	2.2	1.9	-173.55	7.7	3.4	61.1	57.3	3.78	16.172			
1,200.0	1,196.3	1,195.4	1,195.3	2.5	2.1	-174.37	9.4	3.2	77.5	73.3	4.12	18.806			
1,300.0	1,294.9	1,296.3	1,296.3	2.8	2.2	-174.62	9.4	4.6	93.3	88.9	4.46	20.909			
1,400.0	1,393.4	1,393.0	1,392.9	3.1	2.4	-176.54	8.3	2.8	110.4	105.6	4.80	22.983			
1,500.0	1,491.9	1,492.1	1,492.0	3.5	2.6	-177.66	7.8	1.5	127.9	122.7	5.15	24.840			
1,600.0	1,590.4	1,591.3	1,591.2	3.8	2.8	-178.37	7.1	0.6	145.0	139.5	5.50	26.387			
1,700.0	1,688.9	1,689.1	1,689.0	4.1	2.9	-179.15	5.5	-0.5	161.5	155.7	5.84	27.662			
1,800.0	1,787.3	1,784.6	1,784.5	4.5	3.1	-179.70	5.8	-2.3	180.1	173.9	6.18	29.135			
1,900.0	1,885.8	1,885.0	1,884.8	4.8	3.3	-179.72	6.8	-2.8	198.5	192.0	6.53	30.413			
2,000.0	1,984.3	1,985.8	1,985.7	5.1	3.4	-179.67	6.8	-2.5	215.7	208.8	6.88	31.363			
2,100.0	2,082.8	2,084.3	2,084.2	5.5	3.6	-179.84	5.8	-2.6	232.3	225.1	7.22	32.160			
2,200.0	2,181.3	2,181.7	2,181.5	5.8	3.8	179.87	4.9	-3.5	249.4	241.8	7.57	32.950			
2,300.0	2,279.7	2,283.2	2,283.1	6.2	4.0	179.95	4.8	-3.1	266.4	258.5	7.92	33.643			
2,400.0	2,378.2	2,381.2	2,381.0	6.5	4.1	179.99	3.6	-2.1	282.2	273.9	8.26	34.153			
2,500.0	2,476.7	2,475.5	2,475.3	6.9	4.3	-179.79	3.9	-1.0	299.3	290.7	8.60	34.804			
2,600.0	2,575.2	2,572.9	2,572.7	7.2	4.5	-179.74	4.8	-1.1	317.5	308.6	8.94	35.496			
2,700.0	2,673.7	2,667.3	2,667.1	7.6	4.6	179.96	4.9	-3.1	336.0	326.7	9.28	36.194			
2,800.0	2,772.1	2,772.0	2,771.8	7.9	4.8	179.97	6.4	-3.9	355.0	345.4	9.64	36.832			
2,900.0	2,870.6	2,874.1	2,873.8	8.3	5.0	179.90	5.6	-3.9	371.7	361.7	9.99	37.202			
3,000.0	2,969.2	2,964.1	2,963.8	8.6	5.2	179.53	4.3	-6.2	388.4	378.1	10.33	37.585			
3,100.0	3,068.1	3,068.7	3,068.4	8.9	5.3	179.63	5.7	-6.2	404.5	393.8	10.70	37.804			
3,200.0	3,167.2	3,163.6	3,163.2	9.2	5.5	179.66	5.9	-6.2	417.9	406.9	11.05	37.823			
3,300.0	3,266.6	3,253.1	3,252.8	9.4	5.7	179.38	6.4	-9.0	431.4	420.0	11.39	37.885			
3,400.0	3,366.1	3,367.0	3,366.6	9.6	5.9	179.35	7.4	-10.0	442.2	430.5	11.76	37.592			
3,500.0	3,465.8	3,462.0	3,461.6	9.8	6.0	179.22	6.9	-11.1	450.4	438.3	12.11	37.199			
3,600.0	3,565.6	3,572.3	3,571.9	10.0	6.2	179.16	6.7	-11.6	456.7	444.2	12.47	36.610			
3,700.0	3,665.5	3,660.9	3,660.5	10.2	6.4	179.10	6.4	-12.1	461.2	448.4	12.80	36.029			
3,800.0	3,765.4	3,768.9	3,768.4	10.3	6.6	179.09	6.3	-12.1	463.9	450.8	13.16	35.252			
3,900.0	3,865.4	3,866.6	3,866.2	10.4	6.7	178.94	5.5	-13.1	464.7	451.2	13.50	34.423			
3,989.7	3,955.2	3,955.7	3,955.3	10.5	6.9	178.89	5.0	-13.3	464.4	450.6	13.81	33.625			
4,000.0	3,965.4	3,964.5	3,964.0	10.6	6.9	-31.11	5.0	-13.3	464.3	446.9	17.45	26.607			
4,100.0	4,065.4	4,051.7	4,051.2	10.7	7.1	-31.04	6.6	-13.6	466.2	448.5	17.72	26.307			
4,200.0	4,165.4	4,147.3	4,146.8	10.8	7.2	-31.01	9.7	-15.1	469.7	451.7	18.01	26.085			
4,300.0	4,265.4	4,244.8	4,244.2	10.9	7.4	-31.06	13.1	-17.7	474.0	455.7	18.30	25.904			
4,400.0	4,365.4	4,345.0	4,344.2	11.0	7.6	-31.22	16.2	-21.1	478.5	459.9	18.60	25.728			
4,500.0	4,465.4	4,445.5	4,444.7	11.1	7.8	-31.47	18.9	-25.2	482.8	463.9	18.90	25.549			
4,600.0	4,565.4	4,545.3	4,544.4	11.3	7.9	-31.79	21.1	-29.7	487.1	467.9	19.20	25.371			
4,700.0	4,665.4	4,646.0	4,644.8	11.4	8.1	-32.14	23.2	-34.5	491.4	471.9	19.50	25.197			
4,800.0	4,765.4	4,753.8	4,752.5	11.5	8.3	-32.52	24.7	-39.4	495.1	475.2	19.82	24.978			
4,900.0	4,865.4	4,859.6	4,858.3	11.6	8.5	-32.88	24.7	-43.1	496.9	476.8	20.13	24.684			
5,000.0	4,965.4	4,962.6	4,961.3	11.8	8.7	-32.93	25.3	-44.0	497.9	477.5	20.44	24.360			

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

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Frederiksen 1B-28H-H368
Project:	DJ Wattenberg	TVD Reference:	WELL @ 4988.0ft (Original Well Elev)
Reference Site:	S28-T3N-R68W (Frederiksen)	MD Reference:	WELL @ 4988.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Frederiksen 1B-28H-H368	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 S28-T3N-R68W (Frederiksen) - Frederiksen 1A-28H - Hz - Hz													Offset Site Error:	0.0 ft
Survey Program: 835-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Total Uncertainty Axis	Separation Factor	Warning	
Depth (ft)	(ft)	Depth (ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)				
5,100.0	5,065.4	5,066.3	5,064.9	11.9	8.9	-32.52	27.6	-41.2	498.3	477.6	20.75	24.011		
5,200.0	5,165.4	5,181.5	5,179.8	12.0	9.1	-31.55	30.8	-33.3	497.1	476.0	21.08	23.576		
5,300.0	5,265.4	5,286.6	5,284.2	12.2	9.2	-30.31	33.0	-22.1	493.3	471.9	21.40	23.057		
5,400.0	5,365.4	5,399.8	5,396.5	12.3	9.4	-28.76	34.8	-7.9	488.5	466.8	21.72	22.492		
5,500.0	5,465.4	5,529.8	5,524.0	12.4	9.6	-26.14	34.5	17.1	479.3	457.3	22.06	21.729		
5,600.0	5,565.4	5,622.4	5,613.7	12.6	9.8	-23.64	33.4	40.2	467.5	445.1	22.33	20.931		
5,700.0	5,665.4	5,712.8	5,701.2	12.7	10.0	-20.96	34.2	63.1	458.4	435.8	22.60	20.288		
5,800.0	5,765.4	5,816.7	5,801.5	12.8	10.3	-17.69	35.1	90.2	450.4	427.5	22.86	19.698		
5,900.0	5,865.4	5,918.2	5,900.1	13.0	10.5	-14.77	34.2	114.1	442.7	419.6	23.12	19.149		
6,000.0	5,965.4	6,014.2	5,993.9	13.1	10.8	-12.25	32.0	134.5	435.4	412.1	23.37	18.633		
6,100.0	6,065.4	6,115.8	6,093.0	13.3	11.0	-9.43	29.4	156.6	428.7	405.1	23.61	18.153		
6,200.0	6,165.4	6,208.4	6,183.5	13.4	11.3	-6.83	27.5	176.3	423.5	399.6	23.84	17.761		
6,300.0	6,265.4	6,297.0	6,271.2	13.5	11.5	-5.19	25.5	188.7	419.8	395.7	24.09	17.425		
6,337.9	6,303.4	6,329.0	6,303.1	13.6	11.5	-4.89	25.3	190.9	419.4	395.2	24.19	17.336		
6,400.0	6,365.4	6,378.9	6,353.0	13.7	11.6	-4.69	26.4	192.3	420.5	396.2	24.36	17.261		
6,500.0	6,465.4	6,465.1	6,439.0	13.8	11.8	84.99	29.9	189.8	424.9	401.4	23.55	18.045		
6,600.0	6,564.8	6,551.0	6,524.4	13.9	11.9	84.55	35.8	182.9	431.6	407.9	23.74	18.184		
6,700.0	6,661.1	6,637.7	6,608.9	13.9	11.9	84.63	44.4	165.8	440.8	417.0	23.84	18.493		
6,800.0	6,751.2	6,749.3	6,712.9	13.9	12.0	85.28	53.4	126.9	448.1	424.2	23.91	18.746		
6,900.0	6,832.4	6,847.5	6,800.0	13.9	12.0	86.62	58.8	81.8	452.6	428.5	24.06	18.811		
7,000.0	6,902.4	6,944.6	6,880.9	14.0	12.1	88.76	62.8	28.4	456.1	431.6	24.44	18.658		
7,100.0	6,958.9	7,050.7	6,958.9	14.3	12.4	91.31	67.4	-43.0	460.5	435.2	25.25	18.234		
7,200.0	7,000.3	7,153.6	7,015.1	14.9	13.0	92.83	71.2	-128.8	464.8	438.1	26.72	17.398		
7,300.0	7,025.2	7,241.5	7,046.7	15.9	13.9	93.42	76.2	-210.5	471.2	442.3	28.81	16.352		
7,400.0	7,033.0	7,343.7	7,063.6	17.4	15.2	93.66	85.3	-310.7	480.7	449.0	31.72	15.156		
7,500.0	7,033.0	7,445.9	7,063.8	19.1	16.9	93.62	94.0	-412.6	489.2	454.1	35.10	13.937		
7,600.0	7,033.0	7,563.3	7,056.4	20.9	19.0	92.72	101.6	-529.4	495.3	456.2	39.14	12.654		
7,700.0	7,033.0	7,679.1	7,046.3	22.9	21.2	91.53	105.2	-644.7	498.0	454.6	43.45	11.463		
7,800.0	7,033.0	7,785.2	7,039.5	24.9	23.4	90.75	105.9	-750.6	498.6	450.9	47.74	10.443		
7,900.0	7,033.0	7,891.7	7,034.5	27.1	25.7	90.18	105.6	-856.9	498.3	446.1	52.20	9.547		
8,000.0	7,033.0	7,994.6	7,029.0	29.2	27.9	89.54	104.2	-959.7	497.0	440.3	56.68	8.769		
8,100.0	7,033.0	8,100.3	7,024.7	31.5	30.3	89.04	101.7	-1,065.3	494.7	433.4	61.30	8.069		
8,200.0	7,033.0	8,206.9	7,021.4	33.7	32.7	88.65	98.1	-1,171.7	491.3	425.3	66.01	7.443		
8,300.0	7,033.0	8,309.9	7,019.3	36.0	35.1	88.38	93.7	-1,274.6	487.1	416.4	70.69	6.891		
8,400.0	7,033.0	8,409.3	7,017.0	38.3	37.4	88.10	89.2	-1,373.9	482.6	407.3	75.32	6.408		
8,500.0	7,033.0	8,509.1	7,014.5	40.7	39.7	87.78	84.7	-1,473.6	478.3	398.3	79.99	5.980		
8,600.0	7,033.0	8,607.6	7,013.2	43.0	42.1	87.61	80.2	-1,572.0	473.8	389.2	84.67	5.596		
8,700.0	7,033.0	8,695.8	7,015.7	45.4	44.1	87.89	77.6	-1,660.1	470.7	381.6	89.15	5.280		
8,800.0	7,033.0	8,791.0	7,020.7	47.7	46.4	88.49	76.5	-1,755.2	469.5	375.6	93.83	5.003		
8,866.4	7,033.0	8,854.1	7,024.6	49.3	47.9	88.97	76.4	-1,818.2	469.2	372.3	96.94	4.840		
8,900.0	7,033.0	8,885.8	7,026.7	50.1	48.7	89.23	76.5	-1,849.8	469.3	370.8	98.51	4.764		
9,000.0	7,033.0	8,971.0	7,032.8	52.5	50.7	89.98	77.4	-1,934.7	470.5	367.5	102.95	4.570		
9,100.0	7,033.0	9,066.0	7,039.8	54.9	53.0	90.82	80.9	-2,029.4	474.2	366.6	107.62	4.406		
9,200.0	7,033.0	9,155.1	7,046.0	57.3	55.1	91.55	86.6	-2,118.1	480.7	368.5	112.14	4.286		
9,300.0	7,033.0	9,244.8	7,051.2	59.7	57.3	92.14	93.6	-2,207.4	488.8	372.1	116.68	4.189		
9,400.0	7,033.0	9,374.3	7,043.8	62.2	60.4	91.24	103.3	-2,336.2	496.5	374.2	122.26	4.061		
9,500.0	7,033.0	9,487.0	7,033.6	64.6	63.1	90.07	105.2	-2,448.5	498.0	370.6	127.43	3.908		
9,600.0	7,033.0	9,593.2	7,025.6	67.0	65.7	89.15	105.4	-2,554.4	498.3	365.9	132.42	3.763		
9,639.0	7,033.0	9,629.7	7,023.4	67.9	66.5	88.90	105.2	-2,590.7	498.1	363.8	134.24	3.710		
9,700.0	7,033.0	9,675.3	7,020.9	69.4	67.7	88.60	105.7	-2,636.3	498.9	362.1	136.82	3.646 SF		

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

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Frederiksen 1B-28H-H368
Project:	DJ Wattenberg	TVD Reference:	WELL @ 4988.0ft (Original Well Elev)
Reference Site:	S28-T3N-R68W (Frederiksen)	MD Reference:	WELL @ 4988.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Frederiksen 1B-28H-H368	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 S28-T3N-R68W (Frederiksen) - Frederiksen 1C-28H-H368 - Hz - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis			
0.0	0.0	0.0	0.0	0.0	0.0	-180.00	-10.9	0.0	10.9					
100.0	100.0	100.0	100.0	0.2	0.2	-180.00	-10.9	0.0	10.9	10.6	0.30	35.986		
200.0	200.0	200.0	200.0	0.3	0.3	-180.00	-10.9	0.0	10.9	10.3	0.65	16.742 CC, ES		
300.0	300.0	299.8	299.8	0.5	0.5	178.78	-11.8	0.3	11.8	10.8	1.00	11.742		
400.0	400.0	399.6	399.5	0.7	0.7	27.58	-14.3	1.0	13.5	12.2	1.35	10.010		
500.0	500.0	499.3	499.2	0.9	0.9	28.06	-18.4	2.3	15.4	13.7	1.70	9.064		
600.0	599.9	599.0	598.7	1.0	1.1	29.66	-24.2	4.0	17.5	15.4	2.05	8.501		
700.0	699.7	698.7	698.1	1.2	1.3	31.98	-31.7	6.3	19.7	17.3	2.41	8.153		
800.0	799.4	798.3	797.2	1.4	1.5	34.75	-40.8	9.0	22.1	19.3	2.79	7.934		
900.0	898.9	897.9	896.2	1.7	1.8	37.76	-51.6	12.3	24.8	21.6	3.18	7.795		
1,000.0	998.3	997.8	995.4	1.9	2.0	41.70	-63.2	15.8	27.0	23.4	3.60	7.493		
1,100.0	1,097.4	1,097.8	1,094.6	2.2	2.3	47.54	-74.9	19.3	28.1	24.0	4.09	6.884		
1,200.0	1,196.3	1,197.7	1,193.7	2.5	2.5	55.68	-86.6	22.8	28.5	23.8	4.66	6.118		
1,300.0	1,294.9	1,297.6	1,292.8	2.8	2.8	66.57	-98.3	26.3	28.7	23.3	5.35	5.367		
1,400.0	1,393.4	1,397.4	1,391.9	3.1	3.1	78.58	-109.9	29.9	29.7	23.6	6.08	4.885		
1,500.0	1,491.9	1,497.2	1,491.0	3.5	3.4	89.37	-121.6	33.4	31.9	25.1	6.77	4.714		
1,600.0	1,590.4	1,597.0	1,590.0	3.8	3.6	98.49	-133.2	36.9	35.1	27.7	7.38	4.751		
1,700.0	1,688.9	1,696.8	1,689.1	4.1	3.9	105.95	-144.9	40.4	39.0	31.1	7.93	4.914		
1,800.0	1,787.3	1,796.6	1,788.2	4.5	4.2	111.97	-156.5	43.9	43.4	35.0	8.44	5.148		
1,900.0	1,885.8	1,896.4	1,887.2	4.8	4.4	116.83	-168.2	47.4	48.3	39.4	8.91	5.418		
2,000.0	1,984.3	1,996.2	1,986.3	5.1	4.7	120.78	-179.9	50.9	53.4	44.0	9.36	5.702		
2,100.0	2,082.8	2,096.0	2,085.3	5.5	5.0	124.03	-191.5	54.5	58.7	48.9	9.81	5.988		
2,200.0	2,181.3	2,195.8	2,184.4	5.8	5.3	126.73	-203.2	58.0	64.2	54.0	10.24	6.268		
2,300.0	2,279.7	2,295.6	2,283.5	6.2	5.5	129.00	-214.8	61.5	69.8	59.1	10.68	6.539		
2,400.0	2,378.2	2,395.4	2,382.5	6.5	5.8	130.94	-226.5	65.0	75.5	64.4	11.11	6.798		
2,500.0	2,476.7	2,495.2	2,481.6	6.9	6.1	132.60	-238.2	68.5	81.3	69.7	11.54	7.045		
2,600.0	2,575.2	2,595.1	2,580.7	7.2	6.3	134.04	-249.8	72.0	87.1	75.1	11.97	7.278		
2,700.0	2,673.7	2,694.9	2,679.7	7.6	6.6	135.30	-261.5	75.6	93.0	80.6	12.40	7.499		
2,800.0	2,772.1	2,794.7	2,778.8	7.9	6.9	136.40	-273.1	79.1	98.9	86.1	12.83	7.709		
2,900.0	2,870.6	2,894.5	2,877.8	8.3	7.2	137.39	-284.8	82.6	104.9	91.6	13.26	7.906		
3,000.0	2,969.2	2,994.3	2,976.9	8.6	7.4	138.04	-296.5	86.1	110.3	96.6	13.71	8.045		
3,100.0	3,068.1	3,094.2	3,076.1	8.9	7.7	138.05	-308.1	89.6	114.4	100.2	14.20	8.060		
3,200.0	3,167.2	3,194.2	3,175.3	9.2	8.0	137.49	-319.8	93.1	117.3	102.6	14.73	7.963		
3,300.0	3,266.6	3,294.1	3,274.5	9.4	8.3	136.37	-331.5	96.7	118.9	103.6	15.30	7.768		
3,400.0	3,366.1	3,394.1	3,373.7	9.6	8.5	134.69	-343.2	100.2	119.3	103.4	15.93	7.490		
3,500.0	3,465.8	3,494.0	3,472.8	9.8	8.8	132.39	-354.8	103.7	118.6	102.0	16.60	7.147		
3,600.0	3,565.6	3,593.8	3,571.9	10.0	9.1	129.42	-366.5	107.2	117.0	99.7	17.32	6.758		
3,700.0	3,665.5	3,693.5	3,670.8	10.2	9.4	125.67	-378.1	110.7	114.7	96.6	18.08	6.345		
3,800.0	3,765.4	3,793.0	3,769.6	10.3	9.6	121.03	-389.7	114.2	112.0	93.1	18.87	5.936		
3,900.0	3,865.4	3,892.4	3,868.3	10.4	9.9	115.39	-401.4	117.7	109.3	89.6	19.65	5.562		
4,000.0	3,965.4	3,991.6	3,966.8	10.6	10.2	-100.93	-412.9	121.2	107.4	93.0	14.38	7.467		
4,090.3	4,055.8	4,081.3	4,055.8	10.7	10.4	-106.78	-423.4	124.4	106.8	92.4	14.41	7.412		
4,100.0	4,065.4	4,090.9	4,065.3	10.7	10.4	-107.41	-424.5	124.7	106.8	92.4	14.42	7.405		
4,200.0	4,165.4	4,190.1	4,163.8	10.8	10.7	-113.87	-436.1	128.2	107.6	93.0	14.68	7.334		
4,300.0	4,265.4	4,289.4	4,262.3	10.9	11.0	-120.15	-447.7	131.7	109.8	94.7	15.14	7.253		
4,400.0	4,365.4	4,388.6	4,360.8	11.0	11.3	-126.13	-459.3	135.2	113.3	97.5	15.79	7.177		
4,500.0	4,465.4	4,487.9	4,459.3	11.1	11.5	-131.70	-470.9	138.7	117.9	101.4	16.56	7.123		
4,600.0	4,565.4	4,587.1	4,557.8	11.3	11.8	-136.80	-482.5	142.2	123.6	106.2	17.40	7.105		
4,700.0	4,665.4	4,686.4	4,656.4	11.4	12.1	-141.44	-494.1	145.7	130.2	111.9	18.26	7.128		
4,800.0	4,765.4	4,785.6	4,754.9	11.5	12.4	-145.60	-505.7	149.2	137.5	118.4	19.12	7.193		
4,900.0	4,865.4	4,884.9	4,853.4	11.6	12.6	-149.33	-517.3	152.7	145.5	125.5	19.95	7.294		
5,000.0	4,965.4	4,984.1	4,951.9	11.8	12.9	-152.67	-528.9	156.2	154.0	133.3	20.74	7.426		

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

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Frederiksen 1B-28H-H368
Project:	DJ Wattenberg	TVD Reference:	WELL @ 4988.0ft (Original Well Elev)
Reference Site:	S28-T3N-R68W (Frederiksen)	MD Reference:	WELL @ 4988.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Frederiksen 1B-28H-H368	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 S28-T3N-R68W (Frederiksen) - Frederiksen 1C-28H-H368 - Hz - Plan #1												Offset Site Error: 0.0 ft			
Survey Program: 0-MWD														Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance								
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning		
5,100.0	5,065.4	5,083.4	5,050.4	11.9	13.2	-155.64	-540.5	159.7	163.0	141.5	21.50	7.583			
5,200.0	5,165.4	5,182.6	5,148.9	12.0	13.5	-158.30	-552.1	163.2	172.4	150.2	22.22	7.760			
5,300.0	5,265.4	5,281.9	5,247.4	12.2	13.7	-160.69	-563.7	166.7	182.2	159.3	22.91	7.953			
5,400.0	5,365.4	5,381.2	5,345.9	12.3	14.0	-162.82	-575.3	170.2	192.2	168.6	23.56	8.157			
5,500.0	5,465.4	5,480.4	5,444.4	12.4	14.3	-164.75	-586.9	173.7	202.5	178.3	24.19	8.370			
5,600.0	5,565.4	5,579.7	5,543.0	12.6	14.5	-166.49	-598.4	177.2	212.9	188.1	24.79	8.588			
5,700.0	5,665.4	5,678.9	5,641.5	12.7	14.8	-168.06	-610.0	180.7	223.6	198.2	25.37	8.810			
5,800.0	5,765.4	5,778.2	5,740.0	12.8	15.1	-169.49	-621.6	184.2	234.3	208.4	25.94	9.035			
5,900.0	5,865.4	5,877.4	5,838.5	13.0	15.4	-170.80	-633.2	187.7	245.3	218.8	26.49	9.260			
6,000.0	5,965.4	5,976.7	5,937.0	13.1	15.6	-171.99	-644.8	191.2	256.3	229.3	27.02	9.486			
6,100.0	6,065.4	6,075.9	6,035.5	13.3	15.9	-173.09	-656.4	194.7	267.4	239.9	27.54	9.710			
6,200.0	6,165.4	6,175.2	6,134.0	13.4	16.2	-174.09	-668.0	198.2	278.7	250.6	28.06	9.933			
6,300.0	6,265.4	6,274.4	6,232.5	13.5	16.5	-175.02	-679.6	201.7	290.0	261.4	28.56	10.154			
6,400.0	6,365.4	6,373.7	6,331.1	13.7	16.7	-175.88	-691.2	205.2	301.4	272.3	29.06	10.372			
6,500.0	6,465.4	6,472.9	6,429.6	13.8	17.0	-86.62	-702.8	208.7	312.8	288.6	24.20	12.925			
6,600.0	6,564.8	6,571.3	6,527.2	13.9	17.3	-87.91	-714.3	212.1	323.9	299.6	24.32	13.320			
6,700.0	6,661.1	6,665.8	6,621.0	13.9	17.5	-91.64	-725.3	215.4	336.1	312.0	24.11	13.939			
6,800.0	6,751.2	6,762.6	6,717.0	13.9	17.8	-96.68	-736.6	214.1	352.1	328.3	23.85	14.768			
6,900.0	6,832.4	6,869.2	6,820.9	13.9	18.0	-101.50	-748.9	194.4	371.7	347.9	23.75	15.648			
7,000.0	6,902.4	6,987.1	6,929.4	14.0	18.1	-105.90	-761.6	150.5	393.1	369.1	23.91	16.439			
7,100.0	6,958.9	7,118.8	7,037.1	14.3	18.3	-109.78	-774.3	76.3	414.3	389.8	24.43	16.960			
7,200.0	7,000.3	7,266.1	7,134.0	14.9	18.6	-112.99	-785.7	-33.4	432.8	407.3	25.47	16.990			
7,300.0	7,025.2	7,428.3	7,204.9	15.9	19.3	-115.25	-794.0	-178.5	445.9	418.6	27.37	16.295			
7,400.0	7,033.0	7,601.0	7,232.9	17.4	20.7	-116.29	-797.3	-348.2	451.4	421.1	30.29	14.906			
7,500.0	7,033.0	7,704.4	7,233.0	19.1	22.0	-116.30	-797.3	-451.7	451.4	417.9	33.51	13.473			
7,600.0	7,033.0	7,804.4	7,233.0	20.9	23.4	-116.30	-797.3	-551.7	451.4	414.5	36.93	12.222			
7,700.0	7,033.0	7,904.4	7,233.0	22.9	25.1	-116.30	-797.3	-651.7	451.4	410.9	40.56	11.130			
7,800.0	7,033.0	8,004.4	7,233.0	24.9	26.9	-116.30	-797.3	-751.7	451.4	407.1	44.33	10.182			
7,900.0	7,033.0	8,104.4	7,233.0	27.1	28.9	-116.30	-797.3	-851.7	451.4	403.2	48.22	9.361			
8,000.0	7,033.0	8,204.4	7,233.0	29.2	30.9	-116.30	-797.3	-951.7	451.4	399.2	52.20	8.648			
8,100.0	7,033.0	8,304.4	7,233.0	31.5	33.0	-116.30	-797.3	-1,051.7	451.4	395.1	56.24	8.026			
8,200.0	7,033.0	8,404.4	7,233.0	33.7	35.1	-116.30	-797.3	-1,151.7	451.4	391.0	60.34	7.480			
8,300.0	7,033.0	8,504.4	7,233.0	36.0	37.3	-116.30	-797.3	-1,251.7	451.4	386.9	64.49	6.999			
8,400.0	7,033.0	8,604.4	7,233.0	38.3	39.5	-116.30	-797.3	-1,351.7	451.4	382.7	68.67	6.573			
8,500.0	7,033.0	8,704.4	7,233.0	40.7	41.8	-116.30	-797.3	-1,451.7	451.4	378.5	72.88	6.193			
8,600.0	7,033.0	8,804.4	7,233.0	43.0	44.1	-116.30	-797.3	-1,551.7	451.3	374.2	77.12	5.852			
8,700.0	7,033.0	8,904.4	7,233.0	45.4	46.4	-116.30	-797.3	-1,651.7	451.3	370.0	81.38	5.546			
8,800.0	7,033.0	9,004.4	7,233.0	47.7	48.7	-116.30	-797.3	-1,751.7	451.3	365.7	85.66	5.269			
8,900.0	7,033.0	9,104.4	7,233.0	50.1	51.0	-116.30	-797.3	-1,851.7	451.3	361.4	89.95	5.017			
9,000.0	7,033.0	9,204.4	7,233.0	52.5	53.4	-116.31	-797.3	-1,951.7	451.3	357.1	94.26	4.788			
9,100.0	7,033.0	9,304.4	7,233.0	54.9	55.8	-116.31	-797.3	-2,051.7	451.3	352.7	98.58	4.578			
9,200.0	7,033.0	9,404.4	7,233.0	57.3	58.1	-116.31	-797.3	-2,151.7	451.3	348.4	102.91	4.385			
9,300.0	7,033.0	9,504.4	7,233.0	59.7	60.5	-116.31	-797.3	-2,251.7	451.3	344.0	107.25	4.208			
9,400.0	7,033.0	9,604.4	7,233.0	62.2	62.9	-116.31	-797.3	-2,351.7	451.3	339.7	111.59	4.044			
9,500.0	7,033.0	9,704.4	7,233.0	64.6	65.3	-116.31	-797.3	-2,451.7	451.3	335.3	115.94	3.892			
9,600.0	7,033.0	9,804.4	7,233.0	67.0	67.7	-116.31	-797.3	-2,551.7	451.3	331.0	120.30	3.751			
9,700.0	7,033.0	9,904.4	7,233.0	69.4	70.1	-116.31	-797.3	-2,651.7	451.3	326.6	124.67	3.620			
9,800.0	7,033.0	10,004.4	7,233.0	71.9	72.5	-116.31	-797.3	-2,751.7	451.3	322.2	129.04	3.497			
9,900.0	7,033.0	10,104.4	7,233.0	74.3	74.9	-116.31	-797.3	-2,851.7	451.2	317.8	133.41	3.382			
10,000.0	7,033.0	10,204.4	7,233.0	76.7	77.3	-116.31	-797.3	-2,951.7	451.2	313.4	137.79	3.275			
10,100.0	7,033.0	10,304.4	7,233.0	79.2	79.7	-116.31	-797.3	-3,051.7	451.2	309.1	142.17	3.174			
10,200.0	7,033.0	10,404.4	7,233.0	81.6	82.2	-116.31	-797.3	-3,151.7	451.2	304.7	146.56	3.079			

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

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Frederiksen 1B-28H-H368
Project:	DJ Wattenberg	TVD Reference:	WELL @ 4988.0ft (Original Well Elev)
Reference Site:	S28-T3N-R68W (Frederiksen)	MD Reference:	WELL @ 4988.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Frederiksen 1B-28H-H368	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 S28-T3N-R68W (Frederiksen) - Frederiksen 1C-28H-H368 - Hz - Plan #1												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)			
10,300.0	7,033.0	10,504.4	7,233.0	84.0	84.6	-116.31	-797.3	-3,251.7	451.2	300.3	150.95	2.989	
10,400.0	7,033.0	10,604.4	7,233.0	86.5	87.0	-116.31	-797.3	-3,351.7	451.2	295.9	155.34	2.905	
10,500.0	7,033.0	10,704.4	7,233.0	88.9	89.5	-116.31	-797.3	-3,451.7	451.2	291.5	159.73	2.825	
10,600.0	7,033.0	10,804.4	7,233.0	91.4	91.9	-116.31	-797.3	-3,551.7	451.2	287.1	164.13	2.749	
10,700.0	7,033.0	10,904.4	7,233.0	93.8	94.3	-116.31	-797.3	-3,651.7	451.2	282.7	168.53	2.677	
10,800.0	7,033.0	11,004.4	7,233.0	96.3	96.8	-116.31	-797.3	-3,751.7	451.2	278.2	172.93	2.609	
10,900.0	7,033.0	11,104.4	7,233.0	98.7	99.2	-116.31	-797.3	-3,851.7	451.2	273.8	177.33	2.544	
11,000.0	7,033.0	11,204.4	7,233.0	101.2	101.6	-116.31	-797.3	-3,951.7	451.2	269.4	181.74	2.483	
11,100.0	7,033.0	11,304.4	7,233.0	103.6	104.1	-116.32	-797.3	-4,051.7	451.2	265.0	186.14	2.424	
11,200.0	7,033.0	11,404.4	7,233.0	106.1	106.5	-116.32	-797.3	-4,151.7	451.1	260.6	190.55	2.368	
11,300.0	7,033.0	11,504.4	7,233.0	108.6	109.0	-116.32	-797.3	-4,251.7	451.1	256.2	194.96	2.314	
11,400.0	7,033.0	11,604.4	7,233.0	111.0	111.4	-116.32	-797.3	-4,351.7	451.1	251.8	199.37	2.263	
11,500.0	7,033.0	11,704.4	7,233.0	113.5	113.9	-116.32	-797.3	-4,451.7	451.1	247.3	203.78	2.214	
11,600.0	7,033.0	11,804.4	7,233.0	115.9	116.3	-116.32	-797.3	-4,551.7	451.1	242.9	208.19	2.167	
11,626.8	7,033.0	11,831.2	7,233.0	116.6	117.0	-116.32	-797.3	-4,578.5	451.1	241.7	209.37	2.155 SF	

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Frederiksen 1B-28H-H368
Project:	DJ Wattenberg	TVD Reference:	WELL @ 4988.0ft (Original Well Elev)
Reference Site:	S28-T3N-R68W (Frederiksen)	MD Reference:	WELL @ 4988.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Frederiksen 1B-28H-H368	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 S28-T3N-R68W (Frederiksen) - Frederiksen 8-4-28 (Existing) - DD - GYRO													Offset Site Error:	0.0 ft
Survey Program: 141-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance			Total Uncertainty Axis	Separation Factor	Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)				Between Ellipses (ft)	
3,900.0	3,865.4	4,124.7	3,989.6	10.4	18.9	170.39	-40.5	-64.8	474.7	460.6	14.10	33.655		
4,000.0	3,965.4	4,229.5	4,090.3	10.6	19.4	-39.56	-62.6	-45.9	447.0	417.1	29.86	14.972		
4,100.0	4,065.4	4,338.4	4,194.0	10.7	20.1	-39.61	-88.4	-25.1	416.5	385.9	30.61	13.606		
4,200.0	4,165.4	4,429.8	4,280.8	10.8	20.6	-39.56	-110.4	-6.5	385.0	353.7	31.26	12.316		
4,300.0	4,265.4	4,518.0	4,364.9	10.9	21.1	-39.48	-130.4	10.7	355.1	323.2	31.86	11.146		
4,400.0	4,365.4	4,614.4	4,457.0	11.0	21.6	-39.14	-151.0	30.1	325.8	293.3	32.51	10.021		
4,500.0	4,465.4	4,707.8	4,546.4	11.1	22.1	-38.51	-170.1	49.7	296.7	263.6	33.13	8.957		
4,600.0	4,565.4	4,801.6	4,636.3	11.3	22.6	-37.61	-188.2	69.2	268.6	234.9	33.73	7.964		
4,700.0	4,665.4	4,895.3	4,726.2	11.4	23.1	-36.36	-205.6	89.0	241.0	206.7	34.29	7.027		
4,800.0	4,765.4	4,986.3	4,814.0	11.5	23.5	-35.19	-222.0	106.4	215.2	180.4	34.80	6.184		
4,900.0	4,865.4	5,077.7	4,902.9	11.6	23.9	-34.10	-237.2	121.4	192.2	157.0	35.26	5.452		
5,000.0	4,965.4	5,171.1	4,994.3	11.8	24.3	-33.02	-251.1	134.7	171.9	136.3	35.68	4.819		
5,100.0	5,065.4	5,265.1	5,086.7	11.9	24.6	-31.82	-263.4	146.5	154.1	118.1	36.04	4.277		
5,200.0	5,165.4	5,359.8	5,180.3	12.0	24.9	-30.68	-274.0	156.3	139.2	102.8	36.35	3.828		
5,300.0	5,265.4	5,456.1	5,275.8	12.2	25.1	-29.80	-283.3	164.1	126.7	90.1	36.65	3.457		
5,400.0	5,365.4	5,553.3	5,372.5	12.3	25.3	-29.16	-291.5	170.3	116.3	79.3	36.94	3.147		
5,500.0	5,465.4	5,648.3	5,467.2	12.4	25.5	-28.56	-297.1	174.7	108.9	71.8	37.16	2.931		
5,600.0	5,565.4	5,745.3	5,564.2	12.6	25.6	-28.29	-300.1	176.9	105.1	67.7	37.38	2.811		
5,700.0	5,665.4	5,843.7	5,662.5	12.7	25.7	-28.66	-301.9	177.1	103.3	65.7	37.64	2.745		
5,800.0	5,765.4	5,942.7	5,761.5	12.8	25.7	-29.31	-303.0	176.3	102.8	64.9	37.90	2.712		
5,806.6	5,772.0	5,949.2	5,768.0	12.9	25.7	-29.34	-303.0	176.3	102.8	64.9	37.92	2.711		
5,900.0	5,865.4	6,041.8	5,860.7	13.0	25.8	-29.56	-302.9	175.8	103.1	65.0	38.12	2.705 SF		
6,000.0	5,965.4	6,141.4	5,960.2	13.1	25.8	-29.52	-302.0	175.3	104.2	65.8	38.31	2.719		
6,100.0	6,065.4	6,241.1	6,059.9	13.3	25.9	-29.91	-301.2	174.1	105.5	66.9	38.54	2.737		
6,200.0	6,165.4	6,341.3	6,160.1	13.4	25.9	-30.55	-300.6	172.3	106.9	68.1	38.79	2.755		
6,300.0	6,265.4	6,441.6	6,260.3	13.5	26.0	-31.16	-300.1	170.8	108.0	69.0	39.04	2.768		
6,400.0	6,365.4	6,542.0	6,360.7	13.7	26.0	-31.76	-300.0	169.4	108.9	69.6	39.30	2.771		
6,500.0	6,465.4	6,642.0	6,460.7	13.8	26.1	57.65	-300.2	168.1	109.4	85.8	23.62	4.632		
6,600.0	6,564.8	6,741.0	6,559.8	13.9	26.2	61.76	-300.1	166.6	105.3	80.8	24.48	4.303		
6,700.0	6,661.1	6,837.7	6,656.4	13.9	26.2	75.67	-299.8	165.2	96.2	68.0	28.14	3.417		
6,762.7	6,718.5	6,895.5	6,714.2	13.9	26.3	89.62	-299.6	164.5	93.0	61.0	31.97	2.910 CC		
6,800.0	6,751.2	6,928.3	6,747.0	13.9	26.3	98.92	-299.5	164.2	94.7	60.6	34.04	2.781 ES		
6,900.0	6,832.4	7,008.4	6,827.2	13.9	26.4	121.02	-299.1	164.2	119.9	83.9	35.94	3.335		
7,000.0	6,902.4	7,075.0	6,893.7	14.0	26.4	133.75	-298.5	165.3	174.9	141.1	33.83	5.171		
7,100.0	6,958.9	7,126.8	6,945.4	14.3	26.5	138.09	-297.8	166.9	250.2	219.0	31.24	8.009		
7,200.0	7,000.3	7,165.9	6,984.6	14.9	26.5	135.46	-297.3	168.2	337.5	307.4	30.17	11.187		
7,300.0	7,025.2	7,188.5	7,007.1	15.9	26.6	120.07	-297.1	168.9	432.0	398.9	33.06	13.068		

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Frederiksen 1B-28H-H368
Project:	DJ Wattenberg	TVD Reference:	WELL @ 4988.0ft (Original Well Elev)
Reference Site:	S28-T3N-R68W (Frederiksen)	MD Reference:	WELL @ 4988.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Frederiksen 1B-28H-H368	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 @ 4988.0ft (Original Well Elev)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Frederiksen 1B-28H-H368
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.32°

