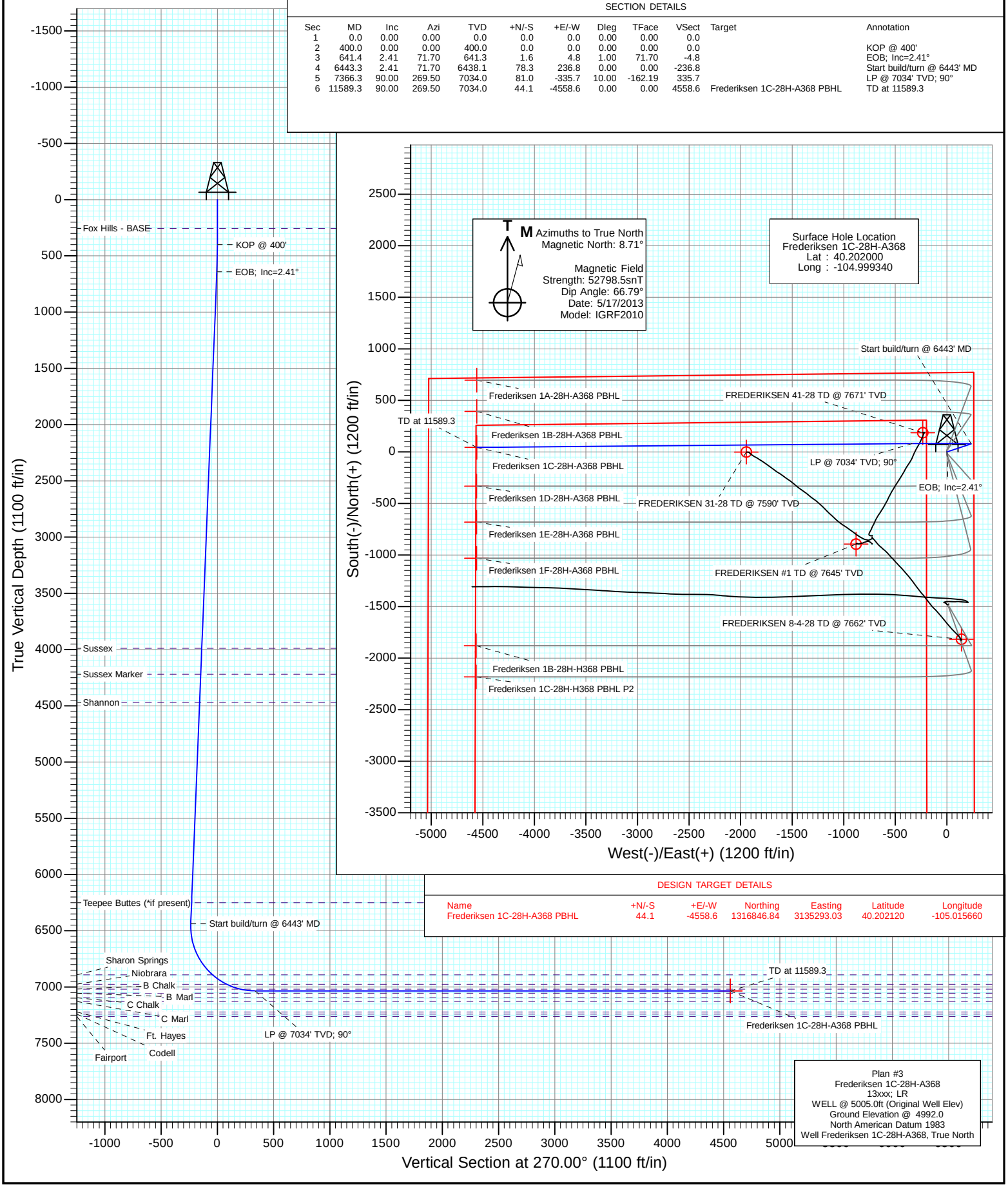
Project: DJ Wattenberg
Site: S28-T3N-R68W (Frederiksen)
Well: Frederiksen 1C-28H-A368
Wellbore: Hz
Design: Plan #3

CATHEDRAL

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target	Annotation
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0		
2	400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.0		KOP @ 400'
3	641.4	2.41	71.70	641.3	1.6	4.8	1.00	71.70	-4.8		EOB; Inc=2.41°
4	6443.3	2.41	71.70	6438.1	78.3	236.8	0.00	0.00	-236.8		Start build/turn @ 6443' MD
5	7366.3	90.00	269.50	7034.0	81.0	-335.7	10.00	-162.19	335.7		LP @ 7034' TVD; 90°
6	11589.3	90.00	269.50	7034.0	44.1	-4558.6	0.00	0.00	4558.6	Frederiksen 1C-28H-A368 PBHL	TD at 11589.3



DESIGN TARGET DETAILS

Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Frederiksen 1C-28H-A368 PBHL	44.1	-4558.6	1316846.84	3135293.03	40.202120	-105.015660

Plan #3
Frederiksen 1C-28H-A368
13xxx; LR
WELL @ 5005.0ft (Original Well Elev)
Ground Elevation @ 4992.0
North American Datum 1983
Well Frederiksen 1C-28H-A368, True North

Planning Report

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Frederiksen 1C-28H-A368
Company:	EnCana Oil & Gas (USA) Inc	**TVD Reference:**	WELL @ 5005.0ft (Original Well Elev)
Project:	DJ Wattenberg	**MD Reference:**	WELL @ 5005.0ft (Original Well Elev)
Site:	S28-T3N-R68W (Frederiksen)	**North Reference:**	True
Well:	Frederiksen 1C-28H-A368	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #3		

Project DJ Wattenberg

Map System:	US State Plane 1983	**System Datum:**	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site 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 1C-28H-A368

Well Position	**+N/-S**	0.0 ft	**Northing:**	1,316,828.44 ft	**Latitude:**	40.202000
	+E/-W	0.0 ft	**Easting:**	3,139,851.78 ft	**Longitude:**	-104.999340
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	4,992.0 ft

Wellbore Hz

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/17/2013	8.71	66.79	52,798

Design Plan #3

Audit Notes:

Version:		**Phase:**	PLAN	**Tie On Depth:**	0.0

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	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	
400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.00	0.00	
641.4	2.41	71.70	641.3	1.6	4.8	1.00	1.00	0.00	71.70	
6,443.3	2.41	71.70	6,438.1	78.3	236.8	0.00	0.00	0.00	0.00	
7,366.3	90.00	269.50	7,034.0	81.0	-335.7	10.00	9.49	-17.57	-162.19	
11,589.3	90.00	269.50	7,034.0	44.1	-4,558.6	0.00	0.00	0.00	0.00	Frederiksen 1C-28H-A

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Frederiksen 1C-28H-A368
Company:	EnCana Oil & Gas (USA) Inc	**TVD Reference:**	WELL @ 5005.0ft (Original Well Elev)
Project:	DJ Wattenberg	**MD Reference:**	WELL @ 5005.0ft (Original Well Elev)
Site:	S28-T3N-R68W (Frederiksen)	**North Reference:**	True
Well:	Frederiksen 1C-28H-A368	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #3		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	
255.0	0.00	0.00	255.0	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	KOP @ 400'
500.0	1.00	71.70	500.0	0.3	0.8	-0.8	1.00	1.00	
600.0	2.00	71.70	600.0	1.1	3.3	-3.3	1.00	1.00	
641.4	2.41	71.70	641.3	1.6	4.8	-4.8	1.00	1.00	EOB; Inc=2.41°
700.0	2.41	71.70	699.9	2.4	7.2	-7.2	0.00	0.00	
800.0	2.41	71.70	799.8	3.7	11.2	-11.2	0.00	0.00	
900.0	2.41	71.70	899.7	5.0	15.2	-15.2	0.00	0.00	
1,000.0	2.41	71.70	999.6	6.3	19.2	-19.2	0.00	0.00	
1,100.0	2.41	71.70	1,099.5	7.7	23.2	-23.2	0.00	0.00	
1,200.0	2.41	71.70	1,199.4	9.0	27.2	-27.2	0.00	0.00	
1,300.0	2.41	71.70	1,299.3	10.3	31.2	-31.2	0.00	0.00	
1,400.0	2.41	71.70	1,399.3	11.6	35.2	-35.2	0.00	0.00	
1,500.0	2.41	71.70	1,499.2	12.9	39.2	-39.2	0.00	0.00	
1,600.0	2.41	71.70	1,599.1	14.3	43.2	-43.2	0.00	0.00	
1,700.0	2.41	71.70	1,699.0	15.6	47.2	-47.2	0.00	0.00	
1,800.0	2.41	71.70	1,798.9	16.9	51.2	-51.2	0.00	0.00	
1,900.0	2.41	71.70	1,898.8	18.2	55.2	-55.2	0.00	0.00	
2,000.0	2.41	71.70	1,998.7	19.6	59.2	-59.2	0.00	0.00	
2,100.0	2.41	71.70	2,098.6	20.9	63.1	-63.1	0.00	0.00	
2,200.0	2.41	71.70	2,198.5	22.2	67.1	-67.1	0.00	0.00	
2,300.0	2.41	71.70	2,298.5	23.5	71.1	-71.1	0.00	0.00	
2,400.0	2.41	71.70	2,398.4	24.8	75.1	-75.1	0.00	0.00	
2,500.0	2.41	71.70	2,498.3	26.2	79.1	-79.1	0.00	0.00	
2,600.0	2.41	71.70	2,598.2	27.5	83.1	-83.1	0.00	0.00	
2,700.0	2.41	71.70	2,698.1	28.8	87.1	-87.1	0.00	0.00	
2,800.0	2.41	71.70	2,798.0	30.1	91.1	-91.1	0.00	0.00	
2,900.0	2.41	71.70	2,897.9	31.5	95.1	-95.1	0.00	0.00	
3,000.0	2.41	71.70	2,997.8	32.8	99.1	-99.1	0.00	0.00	
3,100.0	2.41	71.70	3,097.7	34.1	103.1	-103.1	0.00	0.00	
3,200.0	2.41	71.70	3,197.7	35.4	107.1	-107.1	0.00	0.00	
3,300.0	2.41	71.70	3,297.6	36.7	111.1	-111.1	0.00	0.00	
3,400.0	2.41	71.70	3,397.5	38.1	115.1	-115.1	0.00	0.00	
3,500.0	2.41	71.70	3,497.4	39.4	119.1	-119.1	0.00	0.00	
3,600.0	2.41	71.70	3,597.3	40.7	123.1	-123.1	0.00	0.00	
3,700.0	2.41	71.70	3,697.2	42.0	127.1	-127.1	0.00	0.00	
3,800.0	2.41	71.70	3,797.1	43.4	131.1	-131.1	0.00	0.00	
3,900.0	2.41	71.70	3,897.0	44.7	135.1	-135.1	0.00	0.00	
3,992.0	2.41	71.70	3,989.0	45.9	138.8	-138.8	0.00	0.00	Sussex
4,000.0	2.41	71.70	3,996.9	46.0	139.1	-139.1	0.00	0.00	
4,100.0	2.41	71.70	4,096.9	47.3	143.1	-143.1	0.00	0.00	
4,200.0	2.41	71.70	4,196.8	48.7	147.1	-147.1	0.00	0.00	
4,222.2	2.41	71.70	4,219.0	48.9	148.0	-148.0	0.00	0.00	Sussex Marker
4,300.0	2.41	71.70	4,296.7	50.0	151.1	-151.1	0.00	0.00	
4,400.0	2.41	71.70	4,396.6	51.3	155.1	-155.1	0.00	0.00	
4,473.5	2.41	71.70	4,470.0	52.3	158.1	-158.1	0.00	0.00	Shannon
4,500.0	2.41	71.70	4,496.5	52.6	159.1	-159.1	0.00	0.00	
4,600.0	2.41	71.70	4,596.4	53.9	163.1	-163.1	0.00	0.00	

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Project:	DJ Wattenberg	**MD Reference:**	WELL @ 5005.0ft (Original Well Elev)
Site:	S28-T3N-R68W (Frederiksen)	**North Reference:**	True
Well:	Frederiksen 1C-28H-A368	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #3		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
4,700.0	2.41	71.70	4,696.3	55.3	167.1	-167.1	0.00	0.00	
4,800.0	2.41	71.70	4,796.2	56.6	171.1	-171.1	0.00	0.00	
4,900.0	2.41	71.70	4,896.2	57.9	175.1	-175.1	0.00	0.00	
5,000.0	2.41	71.70	4,996.1	59.2	179.1	-179.1	0.00	0.00	
5,100.0	2.41	71.70	5,096.0	60.6	183.1	-183.1	0.00	0.00	
5,200.0	2.41	71.70	5,195.9	61.9	187.1	-187.1	0.00	0.00	
5,300.0	2.41	71.70	5,295.8	63.2	191.1	-191.1	0.00	0.00	
5,400.0	2.41	71.70	5,395.7	64.5	195.1	-195.1	0.00	0.00	
5,500.0	2.41	71.70	5,495.6	65.8	199.1	-199.1	0.00	0.00	
5,600.0	2.41	71.70	5,595.5	67.2	203.1	-203.1	0.00	0.00	
5,700.0	2.41	71.70	5,695.4	68.5	207.1	-207.1	0.00	0.00	
5,800.0	2.41	71.70	5,795.4	69.8	211.1	-211.1	0.00	0.00	
5,900.0	2.41	71.70	5,895.3	71.1	215.1	-215.1	0.00	0.00	
6,000.0	2.41	71.70	5,995.2	72.5	219.1	-219.1	0.00	0.00	
6,100.0	2.41	71.70	6,095.1	73.8	223.1	-223.1	0.00	0.00	
6,200.0	2.41	71.70	6,195.0	75.1	227.1	-227.1	0.00	0.00	
6,255.1	2.41	71.70	6,250.0	75.8	229.3	-229.3	0.00	0.00	Teepee Buttes (*if present)
6,300.0	2.41	71.70	6,294.9	76.4	231.1	-231.1	0.00	0.00	
6,400.0	2.41	71.70	6,394.8	77.7	235.1	-235.1	0.00	0.00	
6,443.3	2.41	71.70	6,438.1	78.3	236.8	-236.8	0.00	0.00	Start build/turn @ 6443' MD
6,500.0	3.45	281.85	6,494.8	79.0	236.3	-236.3	10.00	1.83	
6,600.0	13.39	272.60	6,593.6	80.2	221.7	-221.7	10.00	9.94	
6,700.0	23.38	271.21	6,688.3	81.1	190.3	-190.3	10.00	9.99	
6,800.0	33.38	270.62	6,776.2	81.8	142.8	-142.8	10.00	10.00	
6,900.0	43.37	270.28	6,854.5	82.3	80.8	-80.8	10.00	10.00	
6,954.1	48.78	270.15	6,892.0	82.5	41.9	-41.9	10.00	10.00	Sharon Springs
7,000.0	53.37	270.05	6,920.8	82.5	6.1	-6.1	10.00	10.00	
7,100.0	63.37	269.87	6,973.2	82.5	-78.9	78.9	10.00	10.00	
7,104.0	63.77	269.86	6,975.0	82.4	-82.5	82.5	10.00	10.00	Niobrara
7,200.0	73.37	269.72	7,010.0	82.1	-171.7	171.7	10.00	10.00	
7,234.9	76.86	269.67	7,019.0	81.9	-205.5	205.5	10.00	10.00	B Chalk
7,300.0	83.37	269.59	7,030.2	81.5	-269.6	269.6	10.00	10.00	
7,366.3	90.00	269.50	7,034.0	81.0	-335.7	335.7	10.00	10.00	LP @ 7034' TVD; 90°
7,400.0	90.00	269.50	7,034.0	80.7	-369.4	369.4	0.00	0.00	
7,500.0	90.00	269.50	7,034.0	79.8	-469.4	469.4	0.00	0.00	
7,600.0	90.00	269.50	7,034.0	79.0	-569.4	569.4	0.00	0.00	
7,700.0	90.00	269.50	7,034.0	78.1	-669.4	669.4	0.00	0.00	
7,800.0	90.00	269.50	7,034.0	77.2	-769.4	769.4	0.00	0.00	
7,900.0	90.00	269.50	7,034.0	76.3	-869.4	869.4	0.00	0.00	
8,000.0	90.00	269.50	7,034.0	75.5	-969.4	969.4	0.00	0.00	
8,100.0	90.00	269.50	7,034.0	74.6	-1,069.4	1,069.4	0.00	0.00	
8,200.0	90.00	269.50	7,034.0	73.7	-1,169.4	1,169.4	0.00	0.00	
8,300.0	90.00	269.50	7,034.0	72.8	-1,269.4	1,269.4	0.00	0.00	
8,400.0	90.00	269.50	7,034.0	72.0	-1,369.4	1,369.4	0.00	0.00	
8,500.0	90.00	269.50	7,034.0	71.1	-1,469.4	1,469.4	0.00	0.00	
8,600.0	90.00	269.50	7,034.0	70.2	-1,569.4	1,569.4	0.00	0.00	
8,700.0	90.00	269.50	7,034.0	69.4	-1,669.4	1,669.4	0.00	0.00	
8,800.0	90.00	269.50	7,034.0	68.5	-1,769.4	1,769.4	0.00	0.00	
8,900.0	90.00	269.50	7,034.0	67.6	-1,869.4	1,869.4	0.00	0.00	
9,000.0	90.00	269.50	7,034.0	66.7	-1,969.3	1,969.3	0.00	0.00	
9,100.0	90.00	269.50	7,034.0	65.9	-2,069.3	2,069.3	0.00	0.00	
9,200.0	90.00	269.50	7,034.0	65.0	-2,169.3	2,169.3	0.00	0.00	

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Well:	Frederiksen 1C-28H-A368	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #3		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
9,300.0	90.00	269.50	7,034.0	64.1	-2,269.3	2,269.3	0.00	0.00	
9,400.0	90.00	269.50	7,034.0	63.2	-2,369.3	2,369.3	0.00	0.00	
9,500.0	90.00	269.50	7,034.0	62.4	-2,469.3	2,469.3	0.00	0.00	
9,600.0	90.00	269.50	7,034.0	61.5	-2,569.3	2,569.3	0.00	0.00	
9,700.0	90.00	269.50	7,034.0	60.6	-2,669.3	2,669.3	0.00	0.00	
9,800.0	90.00	269.50	7,034.0	59.8	-2,769.3	2,769.3	0.00	0.00	
9,900.0	90.00	269.50	7,034.0	58.9	-2,869.3	2,869.3	0.00	0.00	
10,000.0	90.00	269.50	7,034.0	58.0	-2,969.3	2,969.3	0.00	0.00	
10,100.0	90.00	269.50	7,034.0	57.1	-3,069.3	3,069.3	0.00	0.00	
10,200.0	90.00	269.50	7,034.0	56.3	-3,169.3	3,169.3	0.00	0.00	
10,300.0	90.00	269.50	7,034.0	55.4	-3,269.3	3,269.3	0.00	0.00	
10,400.0	90.00	269.50	7,034.0	54.5	-3,369.3	3,369.3	0.00	0.00	
10,500.0	90.00	269.50	7,034.0	53.6	-3,469.3	3,469.3	0.00	0.00	
10,600.0	90.00	269.50	7,034.0	52.8	-3,569.3	3,569.3	0.00	0.00	
10,700.0	90.00	269.50	7,034.0	51.9	-3,669.3	3,669.3	0.00	0.00	
10,800.0	90.00	269.50	7,034.0	51.0	-3,769.3	3,769.3	0.00	0.00	
10,900.0	90.00	269.50	7,034.0	50.2	-3,869.3	3,869.3	0.00	0.00	
11,000.0	90.00	269.50	7,034.0	49.3	-3,969.3	3,969.3	0.00	0.00	
11,100.0	90.00	269.50	7,034.0	48.4	-4,069.3	4,069.3	0.00	0.00	
11,200.0	90.00	269.50	7,034.0	47.5	-4,169.3	4,169.3	0.00	0.00	
11,300.0	90.00	269.50	7,034.0	46.7	-4,269.3	4,269.3	0.00	0.00	
11,400.0	90.00	269.50	7,034.0	45.8	-4,369.3	4,369.3	0.00	0.00	
11,500.0	90.00	269.50	7,034.0	44.9	-4,469.3	4,469.3	0.00	0.00	
11,589.3	90.00	269.50	7,034.0	44.1	-4,558.6	4,558.6	0.00	0.00	TD at 11589.3

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
Frederiksen 1C-28H-A3(	0.00	0.00	7,034.0	44.1	-4,558.6	1,316,846.84	3,135,293.03	40.202120	-105.015660
- plan hits target center									
- Point									

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
255.0	255.0	Fox Hills - BASE			
3,992.0	3,989.0	Sussex			
4,222.2	4,219.0	Sussex Marker			
4,473.5	4,470.0	Shannon			
6,255.1	6,250.0	Teepee Buttes (*if present)			
6,954.1	6,892.0	Sharon Springs			
7,104.0	6,975.0	Niobrara			
7,234.9	7,019.0	B Chalk			

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Frederiksen 1C-28H-A368
Company:	EnCana Oil & Gas (USA) Inc	**TVD Reference:**	WELL @ 5005.0ft (Original Well Elev)
Project:	DJ Wattenberg	**MD Reference:**	WELL @ 5005.0ft (Original Well Elev)
Site:	S28-T3N-R68W (Frederiksen)	**North Reference:**	True
Well:	Frederiksen 1C-28H-A368	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #3		

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
400.0	400.0	0.0	0.0	KOP @ 400'
641.4	641.3	1.6	4.8	EOB; Inc=2.41°
6,443.3	6,438.1	78.3	236.8	Start build/turn @ 6443' MD
7,366.3	7,034.0	81.0	-335.7	LP @ 7034' TVD; 90°
11,589.3	7,034.0	44.1	-4,558.6	TD at 11589.3

EnCana Oil & Gas (USA) Inc

DJ Wattenberg
S28-T3N-R68W (Frederiksen)
Frederiksen 1C-28H-A368
Hz
Plan #3

Anticollision Report

16 September, 2013

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Frederiksen 1C-28H-A368
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 5005.0ft (Original Well Elev)
Reference Site:	S28-T3N-R68W (Frederiksen)	**MD Reference:**	WELL @ 5005.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Frederiksen 1C-28H-A368	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Reference Plan #3

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

Survey Tool Program **Date** 9/16/2013

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	11,589.3	Plan #3 (Hz)	MWD	Geolink MWD

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
S28-T3N-R68W (Frederiksen)						
FREDERIKSEN #1 (Existing) - DD - GYRO						Out of range
FREDERIKSEN 1A-28H (Existing) - Hz - Hz						Out of range
Frederiksen 1A-28H-A368 - Hz - Plan #3	200.0	200.0	18.4	17.8	28.230	CC, ES
Frederiksen 1A-28H-A368 - Hz - Plan #3	600.0	598.2	30.5	28.4	14.845	SF
Frederiksen 1B-28H-A368 - Hz - Plan #3	300.0	300.0	10.9	9.9	10.909	CC, ES
Frederiksen 1B-28H-A368 - Hz - Plan #3	11,589.3	11,813.2	411.6	213.3	2.075	SF
Frederiksen 1B-28H-H368 - Hz - Plan #1						Out of range
Frederiksen 1C-28H-H368 - Hz - Plan #2						Out of range
Frederiksen 1D-28H-A368 - Hz - Plan #3	400.0	400.0	10.9	9.6	8.090	CC
Frederiksen 1D-28H-A368 - Hz - Plan #3	500.0	500.0	11.2	9.5	6.606	ES
Frederiksen 1D-28H-A368 - Hz - Plan #3	11,589.3	11,825.3	433.4	231.5	2.146	SF
Frederiksen 1E-28H-A368 - Hz - Plan #3	400.0	400.0	21.9	20.5	16.180	CC, ES
Frederiksen 1E-28H-A368 - Hz - Plan #3	600.0	599.2	26.3	24.2	12.801	SF
Frederiksen 1F-28H-A368 - Hz - Plan #3	200.0	199.0	29.1	28.5	44.766	CC, ES
Frederiksen 1F-28H-A368 - Hz - Plan #3	600.0	596.4	43.6	41.6	21.292	SF
FREDERIKSEN 31-28 (Existing) - DD - GYRO	8,956.1	7,222.9	69.6	5.7	1.089	Level 2, CC, ES, SF
FREDERIKSEN 41-28 (Existing) - DD - GYRO	7,255.5	7,147.9	105.8	83.5	4.734	CC, ES, SF
FREDERIKSEN 8-4-28 (Existing) - DD - GYRO						Out of range

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Frederiksen 1C-28H-A368
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 5005.0ft (Original Well Elev)
Reference Site:	S28-T3N-R68W (Frederiksen)	**MD Reference:**	WELL @ 5005.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Frederiksen 1C-28H-A368	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design S28-T3N-R68W (Frederiksen) - Frederiksen 1A-28H-A368 - Hz - Plan #3

Offset Site Error: 0.0 ft

Survey Program: 0-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	8.72	18.2	2.8	18.4				
100.0	100.0	100.0	100.0	0.2	0.2	8.72	18.2	2.8	18.4	18.1	0.30	60.678	
200.0	200.0	200.0	200.0	0.3	0.3	8.72	18.2	2.8	18.4	17.8	0.65	28.230	CC, ES
300.0	300.0	299.7	299.7	0.5	0.5	9.25	19.0	3.1	19.3	18.3	1.00	19.238	
400.0	400.0	399.3	399.3	0.7	0.7	10.59	21.5	4.0	21.8	20.5	1.36	16.113	
500.0	500.0	498.8	498.7	0.9	0.9	-61.11	25.5	5.5	25.7	24.0	1.70	15.128	
600.0	600.0	598.2	597.9	1.0	1.1	-63.38	31.2	7.7	30.5	28.4	2.05	14.845	SF
641.4	641.3	639.3	638.9	1.1	1.2	-64.73	34.0	8.7	32.7	30.5	2.20	14.871	
700.0	699.9	697.5	696.8	1.2	1.3	-66.46	38.4	10.4	36.3	33.9	2.41	15.075	
800.0	799.8	796.5	795.4	1.4	1.5	-68.18	47.3	13.7	43.9	41.1	2.77	15.824	
900.0	899.7	895.8	894.2	1.6	1.7	-68.93	57.4	17.5	52.7	49.6	3.14	16.815	
1,000.0	999.6	995.4	993.1	1.8	2.0	-69.43	67.7	21.4	61.8	58.3	3.50	17.623	
1,100.0	1,099.5	1,095.0	1,092.1	2.0	2.2	-69.80	78.0	25.2	70.8	66.9	3.87	18.272	
1,200.0	1,199.4	1,194.6	1,191.1	2.1	2.5	-70.09	88.3	29.1	79.8	75.5	4.24	18.804	
1,300.0	1,299.3	1,294.2	1,290.1	2.3	2.7	-70.31	98.6	33.0	88.8	84.2	4.61	19.248	
1,400.0	1,399.3	1,393.8	1,389.1	2.5	3.0	-70.50	108.9	36.8	97.8	92.8	4.99	19.623	
1,500.0	1,499.2	1,493.4	1,488.1	2.7	3.3	-70.66	119.2	40.7	106.8	101.5	5.36	19.945	
1,600.0	1,599.1	1,593.0	1,587.0	2.9	3.5	-70.79	129.5	44.6	115.9	110.1	5.73	20.223	
1,700.0	1,699.0	1,692.6	1,686.0	3.1	3.8	-70.90	139.8	48.4	124.9	118.8	6.10	20.467	
1,800.0	1,798.9	1,792.2	1,785.0	3.3	4.0	-71.00	150.1	52.3	133.9	127.4	6.47	20.682	
1,900.0	1,898.8	1,891.7	1,884.0	3.5	4.3	-71.08	160.4	56.1	142.9	136.1	6.85	20.872	
2,000.0	1,998.7	1,991.3	1,983.0	3.6	4.5	-71.15	170.7	60.0	152.0	144.7	7.22	21.043	
2,100.0	2,098.6	2,090.9	2,081.9	3.8	4.8	-71.22	181.0	63.9	161.0	153.4	7.59	21.196	
2,200.0	2,198.5	2,190.5	2,180.9	4.0	5.0	-71.28	191.3	67.7	170.0	162.0	7.97	21.334	
2,300.0	2,298.5	2,290.1	2,279.9	4.2	5.3	-71.33	201.6	71.6	179.0	170.7	8.34	21.460	
2,400.0	2,398.4	2,389.7	2,378.9	4.4	5.6	-71.38	211.9	75.5	188.1	179.3	8.72	21.575	
2,500.0	2,498.3	2,489.3	2,477.9	4.6	5.8	-71.43	222.2	79.3	197.1	188.0	9.09	21.680	
2,600.0	2,598.2	2,588.9	2,576.9	4.8	6.1	-71.47	232.5	83.2	206.1	196.6	9.46	21.776	
2,700.0	2,698.1	2,688.5	2,675.8	5.0	6.3	-71.50	242.8	87.1	215.1	205.3	9.84	21.865	
2,800.0	2,798.0	2,788.1	2,774.8	5.2	6.6	-71.54	253.1	90.9	224.1	213.9	10.21	21.948	
2,900.0	2,897.9	2,887.7	2,873.8	5.3	6.9	-71.57	263.4	94.8	233.2	222.6	10.59	22.024	
3,000.0	2,997.8	2,987.3	2,972.8	5.5	7.1	-71.60	273.7	98.6	242.2	231.2	10.96	22.096	
3,100.0	3,097.7	3,086.8	3,071.8	5.7	7.4	-71.62	284.0	102.5	251.2	239.9	11.34	22.162	
3,200.0	3,197.7	3,186.4	3,170.8	5.9	7.6	-71.65	294.3	106.4	260.2	248.5	11.71	22.224	
3,300.0	3,297.6	3,286.0	3,269.7	6.1	7.9	-71.67	304.6	110.2	269.3	257.2	12.08	22.282	
3,400.0	3,397.5	3,385.6	3,368.7	6.3	8.1	-71.69	314.9	114.1	278.3	265.8	12.46	22.337	
3,500.0	3,497.4	3,485.2	3,467.7	6.5	8.4	-71.71	325.2	118.0	287.3	274.5	12.83	22.388	
3,600.0	3,597.3	3,584.8	3,566.7	6.7	8.7	-71.73	335.5	121.8	296.3	283.1	13.21	22.436	
3,700.0	3,697.2	3,684.4	3,665.7	6.9	8.9	-71.75	345.8	125.7	305.4	291.8	13.58	22.482	
3,800.0	3,797.1	3,784.0	3,764.7	7.0	9.2	-71.77	356.1	129.6	314.4	300.4	13.96	22.525	
3,900.0	3,897.0	3,883.6	3,863.6	7.2	9.4	-71.78	366.4	133.4	323.4	309.1	14.33	22.566	
4,000.0	3,996.9	3,983.2	3,962.6	7.4	9.7	-71.80	376.7	137.3	332.4	317.7	14.71	22.605	
4,100.0	4,096.9	4,082.8	4,061.6	7.6	10.0	-71.81	387.0	141.2	341.5	326.4	15.08	22.642	
4,200.0	4,196.8	4,182.4	4,160.6	7.8	10.2	-71.82	397.3	145.0	350.5	335.0	15.46	22.677	
4,300.0	4,296.7	4,282.0	4,259.6	8.0	10.5	-71.84	407.6	148.9	359.5	343.7	15.83	22.710	
4,400.0	4,396.6	4,381.5	4,358.5	8.2	10.7	-71.85	417.9	152.7	368.5	352.3	16.21	22.742	
4,500.0	4,496.5	4,481.1	4,457.5	8.4	11.0	-71.86	428.2	156.6	377.6	361.0	16.58	22.772	
4,600.0	4,596.4	4,580.7	4,556.5	8.6	11.2	-71.87	438.5	160.5	386.6	369.6	16.95	22.801	
4,700.0	4,696.3	4,680.3	4,655.5	8.8	11.5	-71.88	448.7	164.3	395.6	378.3	17.33	22.829	
4,800.0	4,796.2	4,779.9	4,754.5	8.9	11.8	-71.89	459.0	168.2	404.6	386.9	17.70	22.855	
4,900.0	4,896.2	4,879.5	4,853.5	9.1	12.0	-71.90	469.3	172.1	413.7	395.6	18.08	22.880	
5,000.0	4,996.1	4,979.1	4,952.4	9.3	12.3	-71.91	479.6	175.9	422.7	404.2	18.45	22.905	

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 Frederiksen 1C-28H-A368
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 5005.0ft (Original Well Elev)
Reference Site:	S28-T3N-R68W (Frederiksen)	**MD Reference:**	WELL @ 5005.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Frederiksen 1C-28H-A368	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design S28-T3N-R68W (Frederiksen) - Frederiksen 1A-28H-A368 - Hz - Plan #3

Offset Site Error: 0.0 ft

Survey Program: 0-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	5,096.0	5,078.7	5,051.4	9.5	12.5	-71.92	489.9	179.8	431.7	412.9	18.83	22.928	
5,200.0	5,195.9	5,178.3	5,150.4	9.7	12.8	-71.93	500.2	183.7	440.7	421.5	19.20	22.951	
5,300.0	5,295.8	5,277.9	5,249.4	9.9	13.1	-71.94	510.5	187.5	449.8	430.2	19.58	22.972	
5,400.0	5,395.7	5,377.5	5,348.4	10.1	13.3	-71.95	520.8	191.4	458.8	438.8	19.95	22.993	
5,500.0	5,495.6	5,477.1	5,447.4	10.3	13.6	-71.95	531.1	195.3	467.8	447.5	20.33	23.013	
5,600.0	5,595.5	5,576.6	5,546.3	10.5	13.8	-71.96	541.4	199.1	476.8	456.1	20.70	23.032	
5,700.0	5,695.4	5,676.2	5,645.3	10.6	14.1	-71.97	551.7	203.0	485.9	464.8	21.08	23.051	
5,800.0	5,795.4	5,775.8	5,744.3	10.8	14.4	-71.97	562.0	206.8	494.9	473.4	21.45	23.068	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Frederiksen 1C-28H-A368
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 5005.0ft (Original Well Elev)
Reference Site:	S28-T3N-R68W (Frederiksen)	**MD Reference:**	WELL @ 5005.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Frederiksen 1C-28H-A368	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design S28-T3N-R68W (Frederiksen) - Frederiksen 1B-28H-A368 - Hz - Plan #3

Offset Site Error: 0.0 ft

Survey Program: 0-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	0.00	10.9	0.0	10.9				
100.0	100.0	100.0	100.0	0.2	0.2	0.00	10.9	0.0	10.9	10.6	0.30	35.986	
200.0	200.0	200.0	200.0	0.3	0.3	0.00	10.9	0.0	10.9	10.3	0.65	16.742	
300.0	300.0	300.0	300.0	0.5	0.5	0.00	10.9	0.0	10.9	9.9	1.00	10.909	CC, ES
400.0	400.0	399.8	399.8	0.7	0.7	2.38	11.7	0.5	11.7	10.3	1.35	8.631	
500.0	500.0	499.6	499.6	0.9	0.9	-67.00	13.8	1.9	13.6	11.9	1.70	7.993	
600.0	600.0	599.4	599.2	1.0	1.0	-67.99	17.4	4.4	16.4	14.3	2.06	7.968	
641.4	641.3	640.6	640.4	1.1	1.1	-69.00	19.3	5.6	17.8	15.6	2.20	8.065	
700.0	699.9	699.0	698.7	1.2	1.2	-70.00	22.5	7.7	20.1	17.7	2.42	8.329	
800.0	799.8	798.9	798.4	1.4	1.4	-70.78	28.1	11.5	24.5	21.7	2.78	8.791	
900.0	899.7	898.9	898.1	1.6	1.6	-71.32	33.8	15.3	28.8	25.6	3.15	9.139	
1,000.0	999.6	998.8	997.7	1.8	1.8	-71.73	39.4	19.1	33.1	29.6	3.52	9.410	
1,100.0	1,099.5	1,098.7	1,097.4	2.0	2.0	-72.04	45.1	22.9	37.5	33.6	3.89	9.627	
1,200.0	1,199.4	1,198.6	1,197.1	2.1	2.3	-72.28	50.7	26.7	41.8	37.5	4.26	9.804	
1,300.0	1,299.3	1,298.5	1,296.8	2.3	2.5	-72.48	56.4	30.4	46.1	41.5	4.64	9.952	
1,400.0	1,399.3	1,398.4	1,396.4	2.5	2.7	-72.65	62.0	34.2	50.5	45.5	5.01	10.076	
1,500.0	1,499.2	1,498.3	1,496.1	2.7	2.9	-72.79	67.7	38.0	54.8	49.4	5.38	10.182	
1,600.0	1,599.1	1,598.2	1,595.8	2.9	3.1	-72.90	73.3	41.8	59.1	53.4	5.76	10.274	
1,700.0	1,699.0	1,698.1	1,695.5	3.1	3.3	-73.01	79.0	45.6	63.5	57.4	6.13	10.355	
1,800.0	1,798.9	1,798.0	1,795.1	3.3	3.5	-73.10	84.6	49.4	67.8	61.3	6.51	10.425	
1,900.0	1,898.8	1,897.9	1,894.8	3.5	3.7	-73.17	90.3	53.2	72.2	65.3	6.88	10.488	
2,000.0	1,998.7	1,997.8	1,994.5	3.6	3.9	-73.24	95.9	56.9	76.5	69.2	7.26	10.544	
2,100.0	2,098.6	2,097.7	2,094.2	3.8	4.1	-73.31	101.6	60.7	80.8	73.2	7.63	10.594	
2,200.0	2,198.5	2,197.6	2,193.8	4.0	4.3	-73.36	107.2	64.5	85.2	77.2	8.01	10.639	
2,300.0	2,298.5	2,297.5	2,293.5	4.2	4.6	-73.41	112.9	68.3	89.5	81.1	8.38	10.681	
2,400.0	2,398.4	2,397.4	2,393.2	4.4	4.8	-73.46	118.5	72.1	93.9	85.1	8.76	10.718	
2,500.0	2,498.3	2,497.3	2,492.8	4.6	5.0	-73.50	124.2	75.9	98.2	89.1	9.13	10.752	
2,600.0	2,598.2	2,597.2	2,592.5	4.8	5.2	-73.54	129.8	79.7	102.5	93.0	9.51	10.784	
2,700.0	2,698.1	2,697.2	2,692.2	5.0	5.4	-73.57	135.5	83.4	106.9	97.0	9.88	10.813	
2,800.0	2,798.0	2,797.1	2,791.9	5.2	5.6	-73.61	141.1	87.2	111.2	100.9	10.26	10.840	
2,900.0	2,897.9	2,897.0	2,891.5	5.3	5.8	-73.64	146.8	91.0	115.5	104.9	10.63	10.865	
3,000.0	2,997.8	2,996.9	2,991.2	5.5	6.0	-73.66	152.4	94.8	119.9	108.9	11.01	10.888	
3,100.0	3,097.7	3,096.8	3,090.9	5.7	6.2	-73.69	158.1	98.6	124.2	112.8	11.39	10.910	
3,200.0	3,197.7	3,196.7	3,190.6	5.9	6.4	-73.71	163.7	102.4	128.6	116.8	11.76	10.930	
3,300.0	3,297.6	3,296.6	3,290.2	6.1	6.7	-73.74	169.4	106.2	132.9	120.8	12.14	10.949	
3,400.0	3,397.5	3,396.5	3,389.9	6.3	6.9	-73.76	175.0	109.9	137.2	124.7	12.51	10.967	
3,500.0	3,497.4	3,496.4	3,489.6	6.5	7.1	-73.78	180.7	113.7	141.6	128.7	12.89	10.983	
3,600.0	3,597.3	3,596.3	3,589.3	6.7	7.3	-73.79	186.3	117.5	145.9	132.7	13.27	10.999	
3,700.0	3,697.2	3,696.2	3,688.9	6.9	7.5	-73.81	192.0	121.3	150.3	136.6	13.64	11.014	
3,800.0	3,797.1	3,796.1	3,788.6	7.0	7.7	-73.83	197.6	125.1	154.6	140.6	14.02	11.028	
3,900.0	3,897.0	3,896.0	3,888.3	7.2	7.9	-73.84	203.3	128.9	158.9	144.5	14.39	11.041	
4,000.0	3,996.9	3,995.9	3,988.0	7.4	8.1	-73.86	208.9	132.7	163.3	148.5	14.77	11.054	
4,100.0	4,096.9	4,095.8	4,087.6	7.6	8.3	-73.87	214.6	136.4	167.6	152.5	15.15	11.066	
4,200.0	4,196.8	4,195.7	4,187.3	7.8	8.6	-73.89	220.2	140.2	172.0	156.4	15.52	11.077	
4,300.0	4,296.7	4,295.6	4,287.0	8.0	8.8	-73.90	225.8	144.0	176.3	160.4	15.90	11.088	
4,400.0	4,396.6	4,395.6	4,386.7	8.2	9.0	-73.91	231.5	147.8	180.6	164.4	16.28	11.098	
4,500.0	4,496.5	4,495.5	4,486.3	8.4	9.2	-73.92	237.1	151.6	185.0	168.3	16.65	11.108	
4,600.0	4,596.4	4,595.4	4,586.0	8.6	9.4	-73.93	242.8	155.4	189.3	172.3	17.03	11.118	
4,700.0	4,696.3	4,695.3	4,685.7	8.8	9.6	-73.94	248.4	159.2	193.6	176.2	17.40	11.127	
4,800.0	4,796.2	4,795.2	4,785.4	8.9	9.8	-73.95	254.1	162.9	198.0	180.2	17.78	11.135	
4,900.0	4,896.2	4,895.1	4,885.0	9.1	10.0	-73.96	259.7	166.7	202.3	184.2	18.16	11.143	
5,000.0	4,996.1	4,995.0	4,984.7	9.3	10.2	-73.97	265.4	170.5	206.7	188.1	18.53	11.151	

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 Frederiksen 1C-28H-A368
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 5005.0ft (Original Well Elev)
Reference Site:	S28-T3N-R68W (Frederiksen)	**MD Reference:**	WELL @ 5005.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Frederiksen 1C-28H-A368	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design S28-T3N-R68W (Frederiksen) - Frederiksen 1B-28H-A368 - Hz - Plan #3

Offset Site Error: 0.0 ft

Survey Program: 0-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	5,096.0	5,094.9	5,084.4	9.5	10.5	-73.98	271.0	174.3	211.0	192.1	18.91	11.159	
5,200.0	5,195.9	5,194.8	5,184.0	9.7	10.7	-73.99	276.7	178.1	215.3	196.1	19.29	11.166	
5,300.0	5,295.8	5,294.7	5,283.7	9.9	10.9	-74.00	282.3	181.9	219.7	200.0	19.66	11.173	
5,400.0	5,395.7	5,394.6	5,383.4	10.1	11.1	-74.01	288.0	185.7	224.0	204.0	20.04	11.180	
5,500.0	5,495.6	5,494.5	5,483.1	10.3	11.3	-74.01	293.6	189.4	228.4	207.9	20.41	11.186	
5,600.0	5,595.5	5,594.4	5,582.7	10.5	11.5	-74.02	299.3	193.2	232.7	211.9	20.79	11.193	
5,700.0	5,695.4	5,694.3	5,682.4	10.6	11.7	-74.03	304.9	197.0	237.0	215.9	21.17	11.199	
5,800.0	5,795.4	5,794.2	5,782.1	10.8	11.9	-74.03	310.6	200.8	241.4	219.8	21.54	11.204	
5,900.0	5,895.3	5,894.1	5,881.8	11.0	12.1	-74.04	316.2	204.6	245.7	223.8	21.92	11.210	
6,000.0	5,995.2	5,994.0	5,981.4	11.2	12.3	-74.05	321.9	208.4	250.1	227.8	22.30	11.215	
6,100.0	6,095.1	6,094.0	6,081.1	11.4	12.6	-74.05	327.5	212.2	254.4	231.7	22.67	11.221	
6,200.0	6,195.0	6,193.9	6,180.8	11.6	12.8	-74.06	333.2	215.9	258.7	235.7	23.05	11.226	
6,300.0	6,294.9	6,293.8	6,280.5	11.8	13.0	-74.06	338.8	219.7	263.1	239.6	23.42	11.230	
6,400.0	6,394.8	6,393.7	6,380.1	12.0	13.2	-74.07	344.5	223.5	267.4	243.6	23.80	11.235	
6,443.3	6,438.1	6,437.0	6,423.3	12.1	13.3	-74.07	346.9	225.2	269.3	245.3	23.96	11.237	
6,450.0	6,444.8	6,443.6	6,430.0	12.1	13.3	-67.56	347.3	225.4	269.6	245.6	23.99	11.237	
6,500.0	6,494.8	6,493.5	6,479.7	12.1	13.4	76.10	350.1	227.3	271.7	247.5	24.13	11.258	
6,550.0	6,544.5	6,542.9	6,529.1	12.2	13.5	84.66	352.9	229.2	273.7	249.5	24.21	11.307	
6,600.0	6,593.6	6,591.6	6,577.6	12.2	13.6	88.58	355.7	231.0	276.1	251.9	24.23	11.396	
6,650.0	6,641.6	6,639.0	6,624.9	12.2	13.7	92.12	358.4	232.8	279.3	255.1	24.20	11.540	
6,700.0	6,688.3	6,686.1	6,671.9	12.2	13.8	95.82	361.0	234.4	283.8	259.7	24.13	11.761	
6,750.0	6,733.3	6,736.5	6,722.2	12.2	13.9	99.54	363.9	232.8	289.8	265.8	24.03	12.061	
6,800.0	6,776.2	6,789.0	6,774.2	12.2	13.9	103.04	366.8	226.5	297.0	273.1	23.91	12.421	
6,850.0	6,816.7	6,843.9	6,827.7	12.2	14.0	106.32	369.9	214.7	305.2	281.5	23.79	12.831	
6,900.0	6,854.5	6,901.4	6,882.3	12.2	14.0	109.40	373.0	197.0	314.3	290.6	23.67	13.275	
6,950.0	6,889.3	6,961.8	6,937.5	12.3	14.0	112.25	376.1	172.6	323.8	300.2	23.58	13.730	
7,000.0	6,920.8	7,025.4	6,992.4	12.4	14.0	114.87	379.2	140.8	333.6	310.0	23.54	14.168	
7,050.0	6,948.9	7,092.3	7,046.0	12.7	14.1	117.24	382.2	101.0	343.2	319.7	23.58	14.555	
7,100.0	6,973.2	7,162.8	7,097.1	13.1	14.1	119.33	385.1	52.5	352.5	328.7	23.76	14.832	
7,150.0	6,993.7	7,236.7	7,143.8	13.5	14.3	121.13	387.8	-4.6	360.9	336.8	24.07	14.993	
7,200.0	7,010.0	7,314.0	7,184.4	14.0	14.5	122.59	390.1	-70.2	368.2	343.6	24.63	14.946	
7,250.0	7,022.2	7,394.2	7,216.9	14.7	15.1	123.70	391.9	-143.5	374.0	348.6	25.45	14.697	
7,300.0	7,030.2	7,476.8	7,239.2	15.4	15.9	124.42	393.2	-222.9	378.2	351.6	26.57	14.235	
7,350.0	7,033.8	7,560.9	7,250.1	16.2	17.0	124.73	393.8	-306.2	380.4	352.5	27.97	13.604	
7,366.3	7,034.0	7,588.5	7,251.0	16.5	17.4	124.74	393.9	-333.8	380.7	352.3	28.48	13.369	
7,400.0	7,034.0	7,624.1	7,251.0	17.0	18.0	124.72	393.9	-369.4	381.0	351.5	29.45	12.938	
7,500.0	7,034.0	7,724.1	7,251.0	18.8	19.7	124.65	393.9	-469.4	381.7	349.3	32.40	11.782	
7,600.0	7,034.0	7,824.1	7,251.0	20.8	21.6	124.57	393.9	-569.4	382.4	346.8	35.58	10.748	
7,700.0	7,034.0	7,924.1	7,251.0	22.8	23.6	124.50	393.9	-669.4	383.1	344.2	38.94	9.839	
7,800.0	7,034.0	8,024.1	7,251.0	25.0	25.6	124.42	393.9	-769.4	383.9	341.4	42.44	9.045	
7,900.0	7,034.0	8,124.1	7,251.0	27.2	27.8	124.35	393.9	-869.4	384.6	338.5	46.05	8.352	
8,000.0	7,034.0	8,224.1	7,251.0	29.4	29.9	124.28	393.9	-969.4	385.3	335.6	49.74	7.747	
8,100.0	7,034.0	8,324.1	7,251.0	31.7	32.2	124.20	393.9	-1,069.4	386.0	332.5	53.50	7.215	
8,200.0	7,034.0	8,424.1	7,251.0	33.9	34.4	124.13	393.9	-1,169.4	386.8	329.4	57.32	6.747	
8,300.0	7,034.0	8,524.0	7,251.0	36.3	36.7	124.06	393.9	-1,269.4	387.5	326.3	61.19	6.332	
8,400.0	7,034.0	8,624.0	7,251.0	38.6	39.0	123.99	393.9	-1,369.4	388.2	323.1	65.10	5.963	
8,500.0	7,034.0	8,724.0	7,251.0	41.0	41.4	123.92	393.9	-1,469.4	388.9	319.9	69.04	5.633	
8,600.0	7,034.0	8,824.0	7,251.0	43.3	43.7	123.84	393.9	-1,569.4	389.6	316.6	73.01	5.337	
8,700.0	7,034.0	8,924.0	7,251.0	45.7	46.1	123.77	393.9	-1,669.4	390.4	313.4	77.02	5.069	
8,800.0	7,034.0	9,024.0	7,251.0	48.1	48.5	123.70	393.9	-1,769.4	391.1	310.1	81.04	4.826	
8,900.0	7,034.0	9,124.0	7,251.0	50.5	50.8	123.63	393.9	-1,869.4	391.8	306.7	85.09	4.605	
9,000.0	7,034.0	9,224.0	7,251.0	52.9	53.2	123.56	393.9	-1,969.3	392.6	303.4	89.15	4.403	

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

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Frederiksen 1C-28H-A368
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 5005.0ft (Original Well Elev)
Reference Site:	S28-T3N-R68W (Frederiksen)	**MD Reference:**	WELL @ 5005.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Frederiksen 1C-28H-A368	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design S28-T3N-R68W (Frederiksen) - Frederiksen 1B-28H-A368 - Hz - Plan #3

Offset Site Error: 0.0 ft

Survey Program: 0-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
9,100.0	7,034.0	9,324.0	7,251.0	55.3	55.6	123.49	393.9	-2,069.3	393.3	300.0	93.23	4.218	
9,200.0	7,034.0	9,424.0	7,251.0	57.7	58.0	123.42	393.9	-2,169.3	394.0	296.7	97.33	4.048	
9,300.0	7,034.0	9,524.0	7,251.0	60.1	60.4	123.35	393.9	-2,269.3	394.7	293.3	101.44	3.891	
9,400.0	7,034.0	9,624.0	7,251.0	62.6	62.8	123.28	393.9	-2,369.3	395.5	289.9	105.57	3.746	
9,500.0	7,034.0	9,724.0	7,251.0	65.0	65.3	123.21	393.9	-2,469.3	396.2	286.5	109.71	3.611	
9,600.0	7,034.0	9,824.0	7,251.0	67.4	67.7	123.14	393.9	-2,569.3	396.9	283.1	113.86	3.486	
9,700.0	7,034.0	9,924.0	7,251.0	69.9	70.1	123.07	393.9	-2,669.3	397.7	279.6	118.02	3.369	
9,800.0	7,034.0	10,024.0	7,251.0	72.3	72.5	123.00	393.9	-2,769.3	398.4	276.2	122.20	3.260	
9,900.0	7,034.0	10,124.0	7,251.0	74.7	75.0	122.94	393.9	-2,869.3	399.1	272.7	126.38	3.158	
10,000.0	7,034.0	10,224.0	7,251.0	77.2	77.4	122.87	393.9	-2,969.3	399.9	269.3	130.58	3.062	
10,100.0	7,034.0	10,324.0	7,251.0	79.6	79.8	122.80	393.9	-3,069.3	400.6	265.8	134.78	2.972	
10,200.0	7,034.0	10,424.0	7,251.0	82.1	82.3	122.73	393.9	-3,169.3	401.3	262.3	138.99	2.887	
10,300.0	7,034.0	10,524.0	7,251.0	84.5	84.7	122.67	393.9	-3,269.3	402.1	258.8	143.21	2.807	
10,400.0	7,034.0	10,624.0	7,251.0	87.0	87.2	122.60	393.9	-3,369.3	402.8	255.3	147.44	2.732	
10,500.0	7,034.0	10,724.0	7,251.0	89.4	89.6	122.53	393.9	-3,469.3	403.5	251.8	151.68	2.660	
10,600.0	7,034.0	10,824.0	7,251.0	91.9	92.1	122.47	393.9	-3,569.3	404.3	248.3	155.93	2.593	
10,700.0	7,034.0	10,924.0	7,251.0	94.3	94.5	122.40	393.9	-3,669.3	405.0	244.8	160.18	2.528	
10,800.0	7,034.0	11,024.0	7,251.0	96.8	97.0	122.33	393.9	-3,769.3	405.7	241.3	164.44	2.467	
10,900.0	7,034.0	11,124.0	7,251.0	99.2	99.4	122.27	393.9	-3,869.3	406.5	237.8	168.71	2.409	
11,000.0	7,034.0	11,223.9	7,251.0	101.7	101.9	122.20	393.9	-3,969.3	407.2	234.2	172.99	2.354	
11,100.0	7,034.0	11,323.9	7,251.0	104.2	104.3	122.14	393.9	-4,069.3	407.9	230.7	177.27	2.301	
11,200.0	7,034.0	11,423.9	7,251.0	106.6	106.8	122.07	393.9	-4,169.3	408.7	227.1	181.56	2.251	
11,300.0	7,034.0	11,523.9	7,251.0	109.1	109.2	122.01	393.9	-4,269.3	409.4	223.6	185.85	2.203	
11,400.0	7,034.0	11,623.9	7,251.0	111.5	111.7	121.94	393.9	-4,369.3	410.2	220.0	190.16	2.157	
11,500.0	7,034.0	11,723.9	7,251.0	114.0	114.1	121.88	393.9	-4,469.3	410.9	216.4	194.46	2.113	
11,589.3	7,034.0	11,813.2	7,251.0	116.2	116.3	121.82	393.9	-4,558.5	411.6	213.3	198.32	2.075	SF

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Frederiksen 1C-28H-A368
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 5005.0ft (Original Well Elev)
Reference Site:	S28-T3N-R68W (Frederiksen)	**MD Reference:**	WELL @ 5005.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Frederiksen 1C-28H-A368	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design S28-T3N-R68W (Frederiksen) - Frederiksen 1D-28H-A368 - Hz - Plan #3

Offset Site Error: 0.0 ft

Survey Program: 0-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	-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	
300.0	300.0	300.0	300.0	0.5	0.5	-180.00	-10.9	0.0	10.9	9.9	1.00	10.909	
400.0	400.0	400.0	400.0	0.7	0.7	-180.00	-10.9	0.0	10.9	9.6	1.35	8.090	CC
500.0	500.0	500.0	500.0	0.9	0.8	112.52	-10.9	0.0	11.2	9.5	1.70	6.606	ES
600.0	600.0	600.0	600.0	1.0	1.0	123.69	-10.9	0.0	12.5	10.4	2.05	6.080	
641.4	641.3	641.3	641.3	1.1	1.1	129.35	-10.9	0.0	13.4	11.2	2.20	6.110	
700.0	699.9	699.9	699.9	1.2	1.2	136.60	-10.9	0.0	15.1	12.7	2.40	6.289	
800.0	799.8	799.8	799.8	1.4	1.4	145.65	-10.9	0.0	18.4	15.6	2.75	6.685	
900.0	899.7	899.7	899.7	1.6	1.5	151.85	-10.9	0.0	22.0	18.9	3.10	7.095	
1,000.0	999.6	999.6	999.6	1.8	1.7	156.26	-10.9	0.0	25.8	22.3	3.45	7.476	
1,100.0	1,099.5	1,099.5	1,099.5	2.0	1.9	159.54	-10.9	0.0	29.7	25.9	3.80	7.818	
1,200.0	1,199.4	1,199.4	1,199.4	2.1	2.1	162.04	-10.9	0.0	33.7	29.5	4.15	8.120	
1,300.0	1,299.3	1,299.3	1,299.3	2.3	2.2	164.01	-10.9	0.0	37.7	33.2	4.50	8.386	
1,400.0	1,399.3	1,399.3	1,399.3	2.5	2.4	165.61	-10.9	0.0	41.8	36.9	4.84	8.622	
1,500.0	1,499.2	1,499.2	1,499.2	2.7	2.6	166.91	-10.9	0.0	45.9	40.7	5.19	8.831	
1,600.0	1,599.1	1,599.1	1,599.1	2.9	2.8	168.01	-10.9	0.0	50.0	44.4	5.54	9.018	
1,700.0	1,699.0	1,699.0	1,699.0	3.1	2.9	168.93	-10.9	0.0	54.1	48.2	5.89	9.185	
1,800.0	1,798.9	1,798.9	1,798.9	3.3	3.1	169.73	-10.9	0.0	58.2	52.0	6.24	9.335	
1,900.0	1,898.8	1,898.8	1,898.8	3.5	3.3	170.42	-10.9	0.0	62.4	55.8	6.59	9.470	
2,000.0	1,998.7	1,998.7	1,998.7	3.6	3.5	171.02	-10.9	0.0	66.5	59.6	6.94	9.594	
2,100.0	2,098.6	2,098.6	2,098.6	3.8	3.6	171.55	-10.9	0.0	70.7	63.4	7.29	9.706	
2,200.0	2,198.5	2,198.5	2,198.5	4.0	3.8	172.03	-10.9	0.0	74.9	67.2	7.63	9.809	
2,300.0	2,298.5	2,298.5	2,298.5	4.2	4.0	172.45	-10.9	0.0	79.1	71.1	7.98	9.903	
2,400.0	2,398.4	2,398.4	2,398.4	4.4	4.2	172.83	-10.9	0.0	83.2	74.9	8.33	9.990	
2,500.0	2,498.3	2,498.3	2,498.3	4.6	4.3	173.18	-10.9	0.0	87.4	78.7	8.68	10.070	
2,600.0	2,598.2	2,598.2	2,598.2	4.8	4.5	173.49	-10.9	0.0	91.6	82.6	9.03	10.144	
2,700.0	2,698.1	2,698.1	2,698.1	5.0	4.7	173.78	-10.9	0.0	95.8	86.4	9.38	10.214	
2,800.0	2,798.0	2,798.0	2,798.0	5.2	4.9	174.04	-10.9	0.0	100.0	90.2	9.73	10.278	
2,900.0	2,897.9	2,897.9	2,897.9	5.3	5.0	174.28	-10.9	0.0	104.2	94.1	10.07	10.338	
3,000.0	2,997.8	2,997.8	2,997.8	5.5	5.2	174.50	-10.9	0.0	108.3	97.9	10.42	10.394	
3,100.0	3,097.7	3,097.7	3,097.7	5.7	5.4	174.71	-10.9	0.0	112.5	101.8	10.77	10.447	
3,200.0	3,197.7	3,197.7	3,197.7	5.9	5.6	174.90	-10.9	0.0	116.7	105.6	11.12	10.496	
3,300.0	3,297.6	3,297.6	3,297.6	6.1	5.7	175.07	-10.9	0.0	120.9	109.5	11.47	10.543	
3,400.0	3,397.5	3,397.5	3,397.5	6.3	5.9	175.24	-10.9	0.0	125.1	113.3	11.82	10.587	
3,500.0	3,497.4	3,497.4	3,497.4	6.5	6.1	175.39	-10.9	0.0	129.3	117.2	12.17	10.628	
3,600.0	3,597.3	3,598.0	3,598.0	6.7	6.3	175.20	-11.6	0.6	133.2	120.7	12.52	10.644	
3,700.0	3,697.2	3,698.7	3,698.7	6.9	6.4	174.31	-13.5	2.3	136.6	123.8	12.87	10.616	
3,800.0	3,797.1	3,799.3	3,799.2	7.0	6.6	172.78	-16.7	5.2	139.5	126.3	13.22	10.550	
3,900.0	3,897.0	3,899.8	3,899.5	7.2	6.8	170.62	-21.3	9.3	142.1	128.5	13.58	10.458	
4,000.0	3,996.9	4,000.1	3,999.5	7.4	7.0	167.87	-27.1	14.6	144.4	130.5	13.95	10.354	
4,100.0	4,096.9	4,100.2	4,099.1	7.6	7.2	164.54	-34.3	21.0	146.9	132.6	14.33	10.252	
4,200.0	4,196.8	4,199.9	4,198.2	7.8	7.4	160.69	-42.7	28.6	149.7	134.9	14.72	10.168	
4,300.0	4,296.7	4,299.3	4,296.8	8.0	7.6	156.54	-51.9	36.9	153.1	137.9	15.12	10.123	
4,400.0	4,396.6	4,398.6	4,395.3	8.2	7.8	152.57	-61.3	45.3	157.3	141.7	15.53	10.126	
4,500.0	4,496.5	4,497.9	4,493.8	8.4	8.0	148.82	-70.6	53.7	162.2	146.2	15.95	10.170	
4,600.0	4,596.4	4,597.3	4,592.4	8.6	8.2	145.31	-79.9	62.0	167.7	151.4	16.37	10.249	
4,700.0	4,696.3	4,696.6	4,690.9	8.8	8.4	142.03	-89.2	70.4	173.9	157.1	16.79	10.359	
4,800.0	4,796.2	4,795.9	4,789.4	8.9	8.6	138.98	-98.5	78.8	180.6	163.4	17.21	10.495	
4,900.0	4,896.2	4,895.3	4,888.0	9.1	8.8	136.15	-107.8	87.2	187.8	170.1	17.63	10.651	
5,000.0	4,996.1	4,994.6	4,986.5	9.3	9.1	133.54	-117.1	95.5	195.4	177.3	18.05	10.824	

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 Frederiksen 1C-28H-A368
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 5005.0ft (Original Well Elev)
Reference Site:	S28-T3N-R68W (Frederiksen)	**MD Reference:**	WELL @ 5005.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Frederiksen 1C-28H-A368	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design S28-T3N-R68W (Frederiksen) - Frederiksen 1D-28H-A368 - Hz - Plan #3

Offset Site Error: 0.0 ft

Survey Program: 0-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	5,096.0	5,093.9	5,085.0	9.5	9.3	131.13	-126.4	103.9	203.3	184.9	18.47	11.011	
5,200.0	5,195.9	5,193.2	5,183.6	9.7	9.5	128.90	-135.7	112.3	211.6	192.8	18.88	11.209	
5,300.0	5,295.8	5,292.6	5,282.1	9.9	9.8	126.84	-145.0	120.7	220.2	201.0	19.29	11.416	
5,400.0	5,395.7	5,391.9	5,380.6	10.1	10.0	124.93	-154.4	129.1	229.1	209.4	19.70	11.628	
5,500.0	5,495.6	5,491.2	5,479.2	10.3	10.3	123.17	-163.7	137.4	238.2	218.1	20.11	11.845	
5,600.0	5,595.5	5,590.5	5,577.7	10.5	10.5	121.54	-173.0	145.8	247.5	227.0	20.52	12.065	
5,700.0	5,695.4	5,689.9	5,676.2	10.6	10.7	120.03	-182.3	154.2	257.0	236.1	20.92	12.286	
5,800.0	5,795.4	5,789.2	5,774.8	10.8	11.0	118.63	-191.6	162.6	266.7	245.3	21.32	12.508	
5,900.0	5,895.3	5,888.5	5,873.3	11.0	11.2	117.32	-200.9	170.9	276.5	254.7	21.72	12.729	
6,000.0	5,995.2	5,987.9	5,971.8	11.2	11.5	116.11	-210.2	179.3	286.4	264.3	22.12	12.950	
6,100.0	6,095.1	6,087.2	6,070.4	11.4	11.7	114.98	-219.5	187.7	296.5	273.9	22.51	13.169	
6,200.0	6,195.0	6,186.5	6,168.9	11.6	12.0	113.92	-228.8	196.1	306.6	283.7	22.91	13.386	
6,300.0	6,294.9	6,285.8	6,267.5	11.8	12.2	112.93	-238.1	204.5	316.9	293.6	23.30	13.601	
6,400.0	6,394.8	6,385.2	6,366.0	12.0	12.5	112.00	-247.5	212.8	327.2	303.5	23.69	13.813	
6,443.3	6,438.1	6,428.2	6,408.7	12.1	12.6	111.61	-251.5	216.5	331.7	307.9	23.86	13.904	
6,450.0	6,444.8	6,434.8	6,415.3	12.1	12.6	118.15	-252.1	217.0	332.4	308.5	23.89	13.917	
6,500.0	6,494.8	6,484.3	6,464.3	12.1	12.7	-98.95	-256.7	221.2	337.5	313.4	24.05	14.030	
6,550.0	6,544.5	6,533.1	6,512.8	12.2	12.9	-92.71	-261.3	225.3	342.5	318.3	24.18	14.162	
6,600.0	6,593.6	6,581.0	6,560.2	12.2	13.0	-92.48	-265.8	229.3	347.7	323.4	24.27	14.324	
6,650.0	6,641.6	6,627.4	6,606.3	12.2	13.1	-93.72	-270.2	233.3	353.5	329.2	24.33	14.532	
6,700.0	6,688.3	6,673.9	6,652.4	12.2	13.2	-95.70	-274.5	236.8	360.5	336.1	24.34	14.810	
6,750.0	6,733.3	6,723.5	6,701.8	12.2	13.3	-97.96	-279.2	237.1	368.5	344.2	24.32	15.156	
6,800.0	6,776.2	6,775.4	6,753.3	12.2	13.4	-100.24	-284.0	232.9	377.5	353.2	24.26	15.559	
6,850.0	6,816.7	6,829.8	6,806.6	12.2	13.4	-102.50	-289.1	223.4	387.2	363.1	24.20	16.005	
6,900.0	6,854.5	6,887.3	6,861.7	12.2	13.5	-104.70	-294.3	207.9	397.5	373.4	24.13	16.477	
6,950.0	6,889.3	6,948.0	6,917.8	12.3	13.5	-106.84	-299.6	185.6	408.1	384.0	24.08	16.950	
7,000.0	6,920.8	7,012.3	6,974.5	12.4	13.5	-108.88	-304.9	155.6	418.7	394.7	24.08	17.389	
7,050.0	6,948.9	7,080.7	7,030.6	12.7	13.5	-110.80	-310.2	117.0	429.1	404.9	24.17	17.751	
7,100.0	6,973.2	7,153.3	7,084.7	13.1	13.6	-112.57	-315.4	68.9	438.8	414.4	24.40	17.986	
7,150.0	6,993.7	7,230.2	7,134.9	13.5	13.7	-114.16	-320.1	11.0	447.5	422.7	24.81	18.037	
7,200.0	7,010.0	7,311.3	7,179.0	14.0	14.1	-115.52	-324.3	-56.9	454.9	429.4	25.51	17.831	
7,250.0	7,022.2	7,396.1	7,214.5	14.7	14.6	-116.59	-327.6	-133.7	460.5	434.0	26.51	17.371	
7,300.0	7,030.2	7,483.8	7,238.9	15.4	15.6	-117.34	-329.9	-217.9	464.2	436.4	27.87	16.656	
7,350.0	7,033.8	7,573.3	7,250.3	16.2	16.8	-117.73	-331.0	-306.6	465.7	436.2	29.56	15.755	
7,366.3	7,034.0	7,602.5	7,251.0	16.5	17.2	-117.77	-331.1	-335.7	465.7	435.5	30.16	15.439	
7,400.0	7,034.0	7,636.2	7,251.0	17.0	17.8	-117.79	-331.1	-369.4	465.4	434.3	31.17	14.931	
7,500.0	7,034.0	7,736.1	7,251.0	18.8	19.5	-117.84	-331.1	-469.4	464.7	430.4	34.32	13.540	
7,600.0	7,034.0	7,836.1	7,251.0	20.8	21.4	-117.89	-331.1	-569.4	463.9	426.2	37.71	12.304	
7,700.0	7,034.0	7,936.1	7,251.0	22.8	23.4	-117.94	-331.1	-669.4	463.1	421.9	41.27	11.221	
7,800.0	7,034.0	8,036.1	7,251.0	25.0	25.5	-117.99	-331.1	-769.4	462.4	417.4	44.98	10.280	
7,900.0	7,034.0	8,136.1	7,251.0	27.2	27.6	-118.04	-331.1	-869.4	461.6	412.8	48.79	9.461	
8,000.0	7,034.0	8,236.1	7,251.0	29.4	29.8	-118.09	-331.1	-969.4	460.8	408.1	52.68	8.748	
8,100.0	7,034.0	8,336.1	7,251.0	31.7	32.0	-118.14	-331.1	-1,069.4	460.1	403.4	56.63	8.123	
8,200.0	7,034.0	8,436.1	7,251.0	33.9	34.3	-118.20	-331.1	-1,169.4	459.3	398.6	60.64	7.574	
8,300.0	7,034.0	8,536.1	7,251.0	36.3	36.6	-118.25	-331.1	-1,269.4	458.5	393.8	64.68	7.089	
8,400.0	7,034.0	8,636.1	7,251.0	38.6	38.9	-118.30	-331.1	-1,369.4	457.7	389.0	68.76	6.657	
8,500.0	7,034.0	8,736.1	7,251.0	41.0	41.2	-118.35	-331.1	-1,469.4	457.0	384.1	72.86	6.272	
8,600.0	7,034.0	8,836.1	7,251.0	43.3	43.6	-118.40	-331.1	-1,569.4	456.2	379.2	76.98	5.926	
8,700.0	7,034.0	8,936.1	7,251.0	45.7	45.9	-118.46	-331.1	-1,669.4	455.4	374.3	81.12	5.615	
8,800.0	7,034.0	9,036.1	7,251.0	48.1	48.3	-118.51	-331.1	-1,769.4	454.7	369.4	85.27	5.332	
8,900.0	7,034.0	9,136.1	7,251.0	50.5	50.7	-118.56	-331.1	-1,869.4	453.9	364.5	89.44	5.075	
9,000.0	7,034.0	9,236.1	7,251.0	52.9	53.1	-118.61	-331.1	-1,969.3	453.1	359.5	93.61	4.841	

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 Frederiksen 1C-28H-A368
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 5005.0ft (Original Well Elev)
Reference Site:	S28-T3N-R68W (Frederiksen)	**MD Reference:**	WELL @ 5005.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Frederiksen 1C-28H-A368	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design S28-T3N-R68W (Frederiksen) - Frederiksen 1D-28H-A368 - Hz - Plan #3

Offset Site Error: 0.0 ft

Survey Program: 0-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
9,100.0	7,034.0	9,336.1	7,251.0	55.3	55.5	-118.67	-331.1	-2,069.3	452.4	354.6	97.79	4.626	
9,200.0	7,034.0	9,436.1	7,251.0	57.7	57.9	-118.72	-331.1	-2,169.3	451.6	349.6	101.97	4.429	
9,300.0	7,034.0	9,536.1	7,251.0	60.1	60.3	-118.77	-331.1	-2,269.3	450.8	344.7	106.16	4.247	
9,400.0	7,034.0	9,636.1	7,251.0	62.6	62.7	-118.83	-331.1	-2,369.3	450.1	339.7	110.36	4.078	
9,500.0	7,034.0	9,736.1	7,251.0	65.0	65.1	-118.88	-331.1	-2,469.3	449.3	334.8	114.55	3.922	
9,600.0	7,034.0	9,836.1	7,251.0	67.4	67.6	-118.93	-331.1	-2,569.3	448.6	329.8	118.75	3.777	
9,700.0	7,034.0	9,936.1	7,251.0	69.9	70.0	-118.99	-331.1	-2,669.3	447.8	324.8	122.95	3.642	
9,800.0	7,034.0	10,036.1	7,251.0	72.3	72.4	-119.04	-331.1	-2,769.3	447.0	319.9	127.15	3.516	
9,900.0	7,034.0	10,136.1	7,251.0	74.7	74.8	-119.10	-331.1	-2,869.3	446.3	314.9	131.35	3.398	
10,000.0	7,034.0	10,236.1	7,251.0	77.2	77.3	-119.15	-331.1	-2,969.3	445.5	310.0	135.55	3.287	
10,100.0	7,034.0	10,336.1	7,251.0	79.6	79.7	-119.21	-331.1	-3,069.3	444.7	305.0	139.74	3.183	
10,200.0	7,034.0	10,436.0	7,251.0	82.1	82.2	-119.26	-331.1	-3,169.3	444.0	300.0	143.94	3.085	
10,300.0	7,034.0	10,536.0	7,251.0	84.5	84.6	-119.32	-331.1	-3,269.3	443.2	295.1	148.13	2.992	
10,400.0	7,034.0	10,636.0	7,251.0	87.0	87.1	-119.37	-331.1	-3,369.3	442.5	290.1	152.32	2.905	
10,500.0	7,034.0	10,736.0	7,251.0	89.4	89.5	-119.43	-331.1	-3,469.3	441.7	285.2	156.51	2.822	
10,600.0	7,034.0	10,836.0	7,251.0	91.9	91.9	-119.48	-331.1	-3,569.3	440.9	280.2	160.70	2.744	
10,700.0	7,034.0	10,936.0	7,251.0	94.3	94.4	-119.54	-331.1	-3,669.3	440.2	275.3	164.88	2.670	
10,800.0	7,034.0	11,036.0	7,251.0	96.8	96.8	-119.59	-331.1	-3,769.3	439.4	270.4	169.06	2.599	
10,900.0	7,034.0	11,136.0	7,251.0	99.2	99.3	-119.65	-331.1	-3,869.3	438.7	265.4	173.24	2.532	
11,000.0	7,034.0	11,236.0	7,251.0	101.7	101.7	-119.71	-331.1	-3,969.3	437.9	260.5	177.41	2.468	
11,100.0	7,034.0	11,336.0	7,251.0	104.2	104.2	-119.76	-331.1	-4,069.3	437.1	255.6	181.58	2.407	
11,200.0	7,034.0	11,436.0	7,251.0	106.6	106.7	-119.82	-331.1	-4,169.3	436.4	250.6	185.75	2.349	
11,300.0	7,034.0	11,536.0	7,251.0	109.1	109.1	-119.88	-331.1	-4,269.3	435.6	245.7	189.91	2.294	
11,400.0	7,034.0	11,636.0	7,251.0	111.5	111.6	-119.93	-331.1	-4,369.3	434.9	240.8	194.07	2.241	
11,500.0	7,034.0	11,736.0	7,251.0	114.0	114.0	-119.99	-331.1	-4,469.3	434.1	235.9	198.23	2.190	
11,589.3	7,034.0	11,825.3	7,251.0	116.2	116.2	-120.04	-331.1	-4,558.6	433.4	231.5	201.93	2.146	SF

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Frederiksen 1C-28H-A368
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 5005.0ft (Original Well Elev)
Reference Site:	S28-T3N-R68W (Frederiksen)	**MD Reference:**	WELL @ 5005.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Frederiksen 1C-28H-A368	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design S28-T3N-R68W (Frederiksen) - Frederiksen 1E-28H-A368 - Hz - Plan #3

Offset Site Error: 0.0 ft

Survey Program: 0-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	-180.00	-21.9	0.0	21.9				
100.0	100.0	100.0	100.0	0.2	0.2	-180.00	-21.9	0.0	21.9	21.6	0.30	71.972	
200.0	200.0	200.0	200.0	0.3	0.3	-180.00	-21.9	0.0	21.9	21.2	0.65	33.484	
300.0	300.0	300.0	300.0	0.5	0.5	-180.00	-21.9	0.0	21.9	20.9	1.00	21.817	
400.0	400.0	400.0	400.0	0.7	0.7	-180.00	-21.9	0.0	21.9	20.5	1.35	16.180	CC, ES
500.0	500.0	499.6	499.6	0.9	0.8	109.55	-22.7	0.3	22.9	21.2	1.70	13.498	
600.0	600.0	599.2	599.1	1.0	1.0	112.69	-25.1	1.3	26.3	24.2	2.05	12.801	SF
641.4	641.3	640.3	640.2	1.1	1.1	114.23	-26.5	1.9	28.3	26.1	2.20	12.879	
700.0	699.9	698.6	698.4	1.2	1.2	115.98	-29.1	2.9	31.8	29.4	2.41	13.203	
800.0	799.8	797.8	797.5	1.4	1.4	117.17	-34.7	5.1	38.9	36.2	2.77	14.069	
900.0	899.7	896.8	896.1	1.6	1.6	116.91	-41.9	7.9	47.6	44.4	3.13	15.194	
1,000.0	999.6	995.5	994.4	1.8	1.8	115.88	-50.6	11.4	57.7	54.2	3.50	16.497	
1,100.0	1,099.5	1,094.4	1,092.7	2.0	2.1	114.58	-60.7	15.4	69.1	65.3	3.87	17.879	
1,200.0	1,199.4	1,193.7	1,191.4	2.1	2.3	113.58	-71.0	19.4	80.8	76.5	4.24	19.056	
1,300.0	1,299.3	1,293.0	1,290.1	2.3	2.5	112.84	-81.3	23.5	92.4	87.8	4.61	20.045	
1,400.0	1,399.3	1,392.3	1,388.8	2.5	2.8	112.26	-91.6	27.6	104.0	99.1	4.98	20.887	
1,500.0	1,499.2	1,491.6	1,487.5	2.7	3.0	111.80	-101.9	31.6	115.7	110.3	5.35	21.613	
1,600.0	1,599.1	1,591.0	1,586.2	2.9	3.3	111.42	-112.2	35.7	127.4	121.6	5.73	22.244	
1,700.0	1,699.0	1,690.3	1,684.9	3.1	3.5	111.11	-122.5	39.8	139.0	132.9	6.10	22.797	
1,800.0	1,798.9	1,789.6	1,783.6	3.3	3.8	110.84	-132.8	43.9	150.7	144.2	6.47	23.287	
1,900.0	1,898.8	1,888.9	1,882.3	3.5	4.0	110.61	-143.1	47.9	162.4	155.5	6.84	23.724	
2,000.0	1,998.7	1,988.2	1,981.0	3.6	4.3	110.42	-153.4	52.0	174.0	166.8	7.22	24.115	
2,100.0	2,098.6	2,087.5	2,079.7	3.8	4.6	110.24	-163.7	56.1	185.7	178.1	7.59	24.468	
2,200.0	2,198.5	2,186.8	2,178.4	4.0	4.8	110.09	-174.0	60.1	197.4	189.4	7.96	24.787	
2,300.0	2,298.5	2,286.2	2,277.1	4.2	5.1	109.96	-184.3	64.2	209.1	200.7	8.34	25.078	
2,400.0	2,398.4	2,385.5	2,375.7	4.4	5.3	109.84	-194.6	68.3	220.7	212.0	8.71	25.343	
2,500.0	2,498.3	2,484.8	2,474.4	4.6	5.6	109.73	-204.9	72.4	232.4	223.3	9.08	25.587	
2,600.0	2,598.2	2,584.1	2,573.1	4.8	5.8	109.63	-215.2	76.4	244.1	234.6	9.46	25.812	
2,700.0	2,698.1	2,683.4	2,671.8	5.0	6.1	109.54	-225.5	80.5	255.8	245.9	9.83	26.019	
2,800.0	2,798.0	2,782.7	2,770.5	5.2	6.3	109.46	-235.8	84.6	267.4	257.2	10.20	26.211	
2,900.0	2,897.9	2,882.0	2,869.2	5.3	6.6	109.39	-246.1	88.6	279.1	268.6	10.58	26.389	
3,000.0	2,997.8	2,981.4	2,967.9	5.5	6.9	109.32	-256.4	92.7	290.8	279.9	10.95	26.556	
3,100.0	3,097.7	3,080.7	3,066.6	5.7	7.1	109.25	-266.7	96.8	302.5	291.2	11.32	26.711	
3,200.0	3,197.7	3,180.0	3,165.3	5.9	7.4	109.20	-277.0	100.9	314.2	302.5	11.70	26.856	
3,300.0	3,297.6	3,279.3	3,264.0	6.1	7.6	109.14	-287.3	104.9	325.9	313.8	12.07	26.992	
3,400.0	3,397.5	3,378.6	3,362.7	6.3	7.9	109.09	-297.6	109.0	337.5	325.1	12.45	27.120	
3,500.0	3,497.4	3,477.9	3,461.4	6.5	8.2	109.04	-307.9	113.1	349.2	336.4	12.82	27.241	
3,600.0	3,597.3	3,577.2	3,560.1	6.7	8.4	109.00	-318.2	117.1	360.9	347.7	13.19	27.355	
3,700.0	3,697.2	3,676.6	3,658.8	6.9	8.7	108.96	-328.5	121.2	372.6	359.0	13.57	27.462	
3,800.0	3,797.1	3,775.9	3,757.5	7.0	8.9	108.92	-338.8	125.3	384.3	370.3	13.94	27.564	
3,900.0	3,897.0	3,875.2	3,856.2	7.2	9.2	108.88	-349.1	129.4	396.0	381.6	14.32	27.660	
4,000.0	3,996.9	3,974.5	3,954.9	7.4	9.4	108.85	-359.4	133.4	407.6	393.0	14.69	27.751	
4,100.0	4,096.9	4,073.8	4,053.6	7.6	9.7	108.82	-369.7	137.5	419.3	404.3	15.06	27.838	
4,200.0	4,196.8	4,173.1	4,152.3	7.8	10.0	108.79	-380.0	141.6	431.0	415.6	15.44	27.921	
4,300.0	4,296.7	4,272.5	4,251.0	8.0	10.2	108.76	-390.3	145.6	442.7	426.9	15.81	27.999	
4,400.0	4,396.6	4,371.8	4,349.7	8.2	10.5	108.73	-400.6	149.7	454.4	438.2	16.18	28.074	
4,500.0	4,496.5	4,471.1	4,448.3	8.4	10.7	108.70	-410.9	153.8	466.1	449.5	16.56	28.146	
4,600.0	4,596.4	4,570.4	4,547.0	8.6	11.0	108.68	-421.2	157.9	477.8	460.8	16.93	28.214	
4,700.0	4,696.3	4,669.7	4,645.7	8.8	11.3	108.65	-431.5	161.9	489.4	472.1	17.31	28.280	

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 Frederiksen 1C-28H-A368
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 5005.0ft (Original Well Elev)
Reference Site:	S28-T3N-R68W (Frederiksen)	**MD Reference:**	WELL @ 5005.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Frederiksen 1C-28H-A368	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design S28-T3N-R68W (Frederiksen) - Frederiksen 1F-28H-A368 - Hz - Plan #3

Offset Site Error: 0.0 ft

Survey Program: 0-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	-180.00	-29.1	0.0	29.2				
100.0	100.0	99.0	99.0	0.2	0.2	-180.00	-29.1	0.0	29.1	28.8	0.30	96.445	
200.0	200.0	199.0	199.0	0.3	0.3	-180.00	-29.1	0.0	29.1	28.5	0.65	44.766	CC, ES
300.0	300.0	298.5	298.5	0.5	0.5	179.60	-30.0	0.2	30.0	29.0	1.00	29.972	
400.0	400.0	397.9	397.9	0.7	0.7	178.52	-32.5	0.8	32.5	31.1	1.35	24.033	
500.0	500.0	497.3	497.1	0.9	0.9	106.59	-36.6	1.9	37.0	35.3	1.70	21.782	
600.0	600.0	596.4	596.0	1.0	1.1	108.09	-42.4	3.4	43.6	41.6	2.05	21.292	SF
641.4	641.3	637.3	636.8	1.1	1.1	109.01	-45.3	4.1	47.0	44.8	2.20	21.421	
700.0	699.9	695.1	694.5	1.2	1.3	110.20	-49.9	5.2	52.5	50.1	2.41	21.807	
800.0	799.8	793.6	792.6	1.4	1.5	111.37	-58.9	7.5	63.0	60.3	2.77	22.791	
900.0	899.7	891.8	890.1	1.6	1.7	111.80	-69.6	10.2	75.2	72.1	3.13	24.054	
1,000.0	999.6	989.5	987.0	1.8	2.0	111.77	-81.8	13.3	89.1	85.6	3.49	25.504	
1,100.0	1,099.5	1,086.7	1,083.2	2.0	2.3	111.47	-95.5	16.8	104.5	100.7	3.86	27.090	
1,200.0	1,199.4	1,185.3	1,180.6	2.1	2.6	111.12	-110.3	20.5	120.8	116.6	4.23	28.579	
1,300.0	1,299.3	1,284.0	1,278.1	2.3	2.9	110.85	-125.1	24.3	137.1	132.5	4.60	29.826	
1,400.0	1,399.3	1,382.7	1,375.6	2.5	3.2	110.64	-139.8	28.0	153.3	148.4	4.96	30.886	
1,500.0	1,499.2	1,481.3	1,473.0	2.7	3.5	110.47	-154.6	31.8	169.6	164.3	5.33	31.796	
1,600.0	1,599.1	1,580.0	1,570.5	2.9	3.8	110.32	-169.4	35.5	185.9	180.2	5.70	32.587	
1,700.0	1,699.0	1,678.7	1,668.0	3.1	4.1	110.21	-184.2	39.3	202.2	196.1	6.07	33.281	
1,800.0	1,798.9	1,777.3	1,765.5	3.3	4.4	110.10	-199.0	43.0	218.4	212.0	6.44	33.894	
1,900.0	1,898.8	1,876.0	1,863.0	3.5	4.7	110.02	-213.7	46.7	234.7	227.9	6.82	34.439	
2,000.0	1,998.7	1,974.6	1,960.5	3.6	5.1	109.94	-228.5	50.5	251.0	243.8	7.19	34.928	
2,100.0	2,098.6	2,073.3	2,057.9	3.8	5.4	109.88	-243.3	54.2	267.3	259.7	7.56	35.368	
2,200.0	2,198.5	2,172.0	2,155.4	4.0	5.7	109.82	-258.1	58.0	283.6	275.6	7.93	35.767	
2,300.0	2,298.5	2,270.6	2,252.9	4.2	6.0	109.76	-272.8	61.7	299.8	291.5	8.30	36.129	
2,400.0	2,398.4	2,369.3	2,350.4	4.4	6.3	109.72	-287.6	65.4	316.1	307.5	8.67	36.461	
2,500.0	2,498.3	2,468.0	2,447.9	4.6	6.6	109.67	-302.4	69.2	332.4	323.4	9.04	36.765	
2,600.0	2,598.2	2,566.6	2,545.3	4.8	6.9	109.64	-317.2	72.9	348.7	339.3	9.41	37.044	
2,700.0	2,698.1	2,665.3	2,642.8	5.0	7.3	109.60	-331.9	76.7	365.0	355.2	9.78	37.302	
2,800.0	2,798.0	2,764.0	2,740.3	5.2	7.6	109.57	-346.7	80.4	381.3	371.1	10.16	37.542	
2,900.0	2,897.9	2,862.6	2,837.8	5.3	7.9	109.54	-361.5	84.2	397.5	387.0	10.53	37.764	
3,000.0	2,997.8	2,961.3	2,935.3	5.5	8.2	109.51	-376.3	87.9	413.8	402.9	10.90	37.971	
3,100.0	3,097.7	3,060.0	3,032.7	5.7	8.5	109.49	-391.1	91.6	430.1	418.8	11.27	38.164	
3,200.0	3,197.7	3,158.6	3,130.2	5.9	8.8	109.46	-405.8	95.4	446.4	434.7	11.64	38.345	
3,300.0	3,297.6	3,257.3	3,227.7	6.1	9.1	109.44	-420.6	99.1	462.7	450.7	12.01	38.514	
3,400.0	3,397.5	3,356.0	3,325.2	6.3	9.5	109.42	-435.4	102.9	479.0	466.6	12.38	38.673	
3,500.0	3,497.4	3,454.6	3,422.7	6.5	9.8	109.40	-450.2	106.6	495.2	482.5	12.76	38.823	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Frederiksen 1C-28H-A368
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 5005.0ft (Original Well Elev)
Reference Site:	S28-T3N-R68W (Frederiksen)	**MD Reference:**	WELL @ 5005.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Frederiksen 1C-28H-A368	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design S28-T3N-R68W (Frederiksen) - FREDERIKSEN 31-28 (Existing) - DD - GYRO

Offset Site Error: 0.0 ft

Survey Program: 200-Gyro

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	7,034.0	7,219.0	7,010.2	41.0	14.2	-87.74	-2.6	-1,924.8	461.3	408.3	53.07	8.693	
8,600.0	7,034.0	7,219.8	7,011.1	43.3	14.2	-88.43	-2.6	-1,924.8	362.8	307.3	55.46	6.542	
8,700.0	7,034.0	7,220.7	7,012.0	45.7	14.2	-89.14	-2.6	-1,924.8	265.4	207.5	57.85	4.587	
8,800.0	7,034.0	7,221.6	7,012.8	48.1	14.2	-89.85	-2.5	-1,924.8	170.9	110.7	60.25	2.837	
8,900.0	7,034.0	7,222.5	7,013.7	50.5	14.2	-90.57	-2.5	-1,924.8	89.4	26.8	62.64	1.427	Level 3
8,956.1	7,034.0	7,222.9	7,014.2	51.8	14.2	-90.98	-2.5	-1,924.8	69.6	5.7	63.98	1.089	Level 2, CC, ES, SF
9,000.0	7,034.0	7,223.3	7,014.6	52.9	14.2	-91.30	-2.5	-1,924.8	82.3	17.3	65.03	1.266	Level 3
9,100.0	7,034.0	7,224.2	7,015.5	55.3	14.2	-92.04	-2.5	-1,924.8	159.9	92.5	67.42	2.372	
9,200.0	7,034.0	7,225.1	7,016.4	57.7	14.2	-92.79	-2.5	-1,924.8	253.7	183.9	69.80	3.634	
9,300.0	7,034.0	7,226.1	7,017.3	60.1	14.2	-93.54	-2.5	-1,924.8	350.9	278.7	72.17	4.862	
9,400.0	7,034.0	7,227.0	7,018.2	62.6	14.2	-94.31	-2.5	-1,924.8	449.3	374.8	74.53	6.029	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Frederiksen 1C-28H-A368
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 5005.0ft (Original Well Elev)
Reference Site:	S28-T3N-R68W (Frederiksen)	**MD Reference:**	WELL @ 5005.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Frederiksen 1C-28H-A368	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Offset Design S28-T3N-R68W (Frederiksen) - FREDERIKSEN 41-28 (Existing) - DD - GYRO

Offset Site Error: 0.0 ft

Survey Program: 200-Gyro

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
4,700.0	4,696.3	4,874.1	4,756.9	8.8	9.0	-170.01	-15.0	-317.4	496.3	480.4	15.92	31.175	
4,800.0	4,796.2	4,980.5	4,858.0	8.9	9.3	-166.80	14.9	-303.7	483.7	467.2	16.57	29.187	
4,900.0	4,896.2	5,078.9	4,951.7	9.1	9.5	-163.83	41.4	-289.3	470.9	453.7	17.18	27.417	
5,000.0	4,996.1	5,168.0	5,037.2	9.3	9.8	-161.28	63.3	-276.5	459.8	442.1	17.72	25.953	
5,100.0	5,096.0	5,258.6	5,124.5	9.5	10.0	-158.73	84.4	-265.2	451.7	433.4	18.26	24.741	
5,200.0	5,195.9	5,350.8	5,213.7	9.7	10.2	-156.16	105.3	-254.8	445.7	426.9	18.79	23.718	
5,300.0	5,295.8	5,442.9	5,303.1	9.9	10.4	-153.62	125.5	-245.5	441.9	422.6	19.31	22.891	
5,400.0	5,395.7	5,536.0	5,394.0	10.1	10.6	-151.33	144.0	-237.6	440.3	420.5	19.78	22.257	
5,442.1	5,437.7	5,575.6	5,432.9	10.2	10.6	-150.45	151.0	-234.6	440.2	420.2	19.97	22.040	
5,500.0	5,495.6	5,631.0	5,487.4	10.3	10.7	-149.36	160.0	-230.9	440.4	420.2	20.21	21.787	
5,600.0	5,595.5	5,728.1	5,583.5	10.5	10.9	-147.90	172.5	-225.6	441.6	421.0	20.58	21.451	
5,700.0	5,695.4	5,825.7	5,680.7	10.6	10.9	-147.03	180.7	-221.8	443.4	422.5	20.89	21.222	
5,800.0	5,795.4	5,924.3	5,779.2	10.8	11.0	-146.62	185.7	-219.3	445.7	424.6	21.16	21.061	
5,900.0	5,895.3	6,023.9	5,878.7	11.0	11.1	-146.45	189.0	-217.3	448.2	426.7	21.41	20.930	
6,000.0	5,995.2	6,121.4	5,976.2	11.2	11.1	-146.57	190.0	-216.2	450.9	429.3	21.63	20.848	
6,100.0	6,095.1	6,217.8	6,072.5	11.4	11.2	-146.88	189.8	-216.3	454.5	432.6	21.83	20.816	
6,200.0	6,195.0	6,317.3	6,172.0	11.6	11.2	-147.20	189.6	-216.7	458.3	436.3	22.04	20.797	
6,300.0	6,294.9	6,414.1	6,268.8	11.8	11.2	-147.54	189.3	-217.5	462.6	440.4	22.24	20.805	
6,400.0	6,394.8	6,511.8	6,366.5	12.0	11.3	-147.90	188.9	-219.0	467.5	445.1	22.44	20.838	
6,443.3	6,438.1	6,554.0	6,408.7	12.1	11.3	-148.06	188.7	-219.8	469.8	447.3	22.52	20.860	
6,450.0	6,444.8	6,560.4	6,415.2	12.1	11.3	-141.56	188.7	-219.9	470.1	447.6	22.54	20.861	
6,500.0	6,494.8	6,609.9	6,464.6	12.1	11.3	1.60	188.4	-221.0	470.2	447.6	22.59	20.814	
6,550.0	6,544.5	6,662.7	6,517.4	12.2	11.3	9.04	188.1	-221.9	465.9	443.4	22.56	20.656	
6,600.0	6,593.6	6,713.7	6,568.4	12.2	11.3	11.33	188.1	-222.4	457.1	434.7	22.43	20.380	
6,650.0	6,641.6	6,761.2	6,615.9	12.2	11.4	12.87	188.1	-222.9	444.2	422.0	22.22	19.995	
6,700.0	6,688.3	6,807.6	6,662.3	12.2	11.4	14.39	188.3	-223.4	427.4	405.4	21.92	19.494	
6,750.0	6,733.3	6,853.6	6,708.3	12.2	11.4	16.15	188.4	-223.9	406.7	385.1	21.57	18.857	
6,800.0	6,776.2	6,897.4	6,752.1	12.2	11.4	18.34	188.4	-224.3	382.3	361.1	21.16	18.066	
6,850.0	6,816.7	6,938.2	6,792.8	12.2	11.4	21.17	188.3	-224.7	354.5	333.8	20.73	17.098	
6,900.0	6,854.5	6,976.2	6,830.9	12.2	11.5	24.94	188.2	-225.1	323.7	303.3	20.33	15.923	
6,950.0	6,889.3	7,011.5	6,866.2	12.3	11.5	30.06	188.1	-225.4	290.2	270.2	20.01	14.507	
7,000.0	6,920.8	7,043.9	6,898.5	12.4	11.5	37.08	188.1	-225.6	254.7	234.8	19.87	12.817	
7,050.0	6,948.9	7,072.6	6,927.2	12.7	11.5	46.43	187.9	-225.8	217.8	197.8	20.02	10.879	
7,100.0	6,973.2	7,097.4	6,952.1	13.1	11.5	58.06	187.8	-226.0	180.9	160.4	20.48	8.834	
7,150.0	6,993.7	7,117.9	6,972.5	13.5	11.5	70.52	187.7	-226.1	146.4	125.3	21.09	6.939	
7,200.0	7,010.0	7,134.3	6,989.0	14.0	11.5	81.69	187.7	-226.2	118.7	97.1	21.69	5.474	
7,250.0	7,022.2	7,146.8	7,001.4	14.7	11.5	89.52	187.6	-226.3	105.9	83.7	22.28	4.755	
7,255.5	7,023.3	7,147.9	7,002.6	14.8	11.5	90.13	187.6	-226.3	105.8	83.5	22.35	4.734	CC, ES, SF
7,300.0	7,030.2	7,155.1	7,009.7	15.4	11.5	93.05	187.6	-226.3	114.6	91.6	22.96	4.989	
7,350.0	7,033.8	7,159.1	7,013.7	16.2	11.5	91.97	187.6	-226.4	141.4	117.6	23.79	5.945	
7,366.3	7,034.0	7,159.4	7,014.1	16.5	11.5	90.60	187.6	-226.4	152.7	128.7	24.07	6.346	
7,400.0	7,034.0	7,159.7	7,014.4	17.0	11.5	90.76	187.6	-226.4	178.6	153.9	24.64	7.248	
7,500.0	7,034.0	7,160.6	7,015.3	18.8	11.5	91.23	187.6	-226.4	265.9	239.4	26.45	10.052	
7,600.0	7,034.0	7,161.5	7,016.2	20.8	11.5	91.71	187.6	-226.4	359.8	331.4	28.40	12.671	
7,700.0	7,034.0	7,162.4	7,017.1	22.8	11.5	92.20	187.6	-226.4	456.4	425.9	30.44	14.990	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Frederiksen 1C-28H-A368
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 5005.0ft (Original Well Elev)
Reference Site:	S28-T3N-R68W (Frederiksen)	**MD Reference:**	WELL @ 5005.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Frederiksen 1C-28H-A368	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #3	**Offset TVD Reference:**	Offset Datum

Reference Depths are relative to WELL @ 5005.0ft (Original Well Elev)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Frederiksen 1C-28H-A368
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.32°