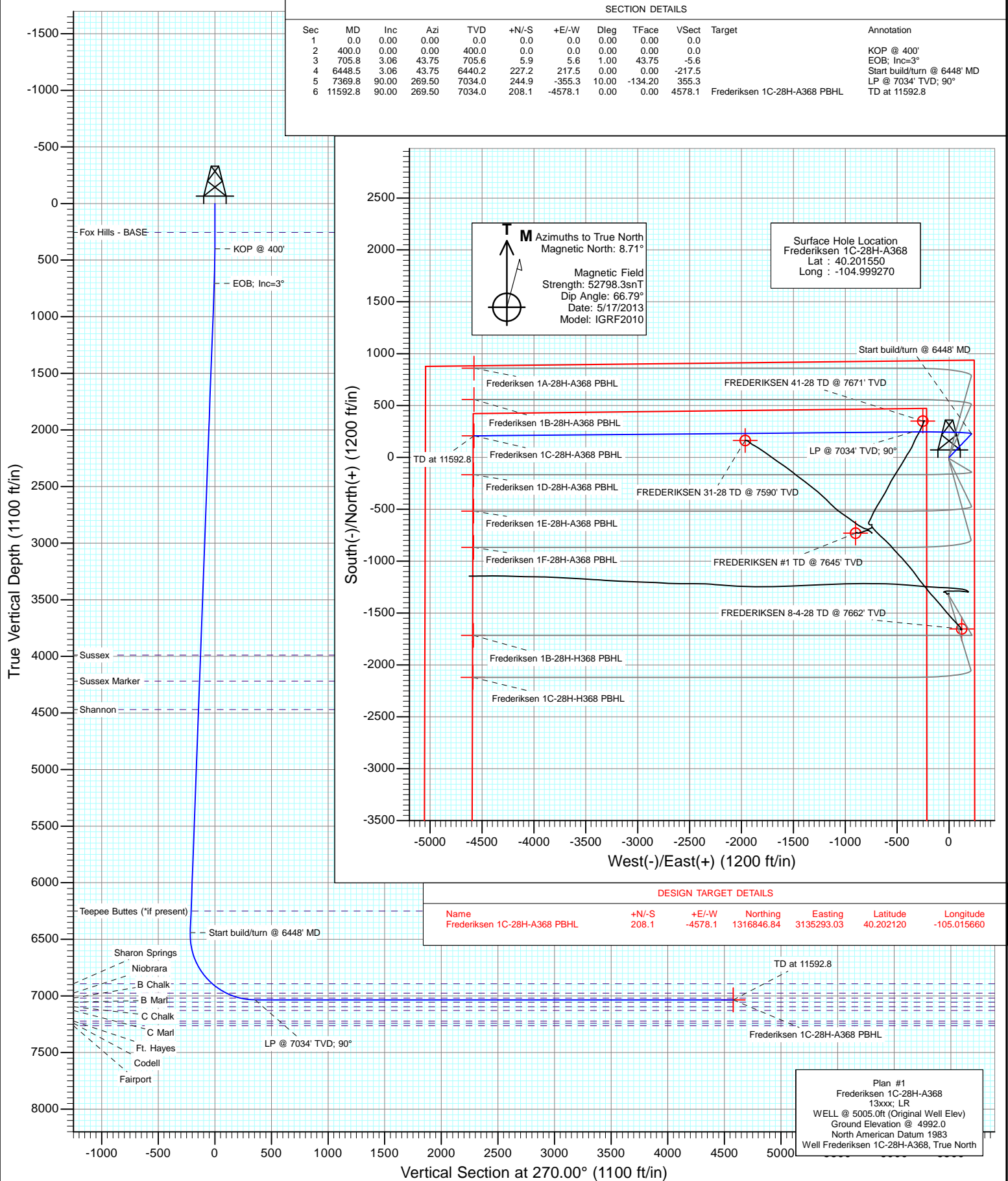




Project: DJ Wattenberg
Site: S28-T3N-R68W (Frederiksen)
Well: Frederiksen 1C-28H-A368
Wellbore: Hz
Design: Plan #1



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 #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 1C-28H-A368					
Well Position	+N/-S	0.0 ft	Northing:	1,316,664.62 ft	Latitude:	40.201550
	+E/-W	0.0 ft	Easting:	3,139,872.25 ft	Longitude:	-104.999270
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 #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	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	
705.8	3.06	43.75	705.6	5.9	5.6	1.00	1.00	0.00	43.75	
6,448.5	3.06	43.75	6,440.2	227.2	217.5	0.00	0.00	0.00	0.00	
7,369.8	90.00	269.50	7,034.0	244.9	-355.3	10.00	9.44	-14.57	-134.20	
11,592.8	90.00	269.50	7,034.0	208.1	-4,578.1	0.00	0.00	0.00	0.00	Frederiksen 1C-28H-4

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 #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	
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	43.75	500.0	0.6	0.6	-0.6	1.00	1.00	
600.0	2.00	43.75	600.0	2.5	2.4	-2.4	1.00	1.00	
700.0	3.00	43.75	699.9	5.7	5.4	-5.4	1.00	1.00	
705.8	3.06	43.75	705.6	5.9	5.6	-5.6	1.00	1.00	EOB; Inc=3°
800.0	3.06	43.75	799.7	9.5	9.1	-9.1	0.00	0.00	
900.0	3.06	43.75	899.6	13.4	12.8	-12.8	0.00	0.00	
1,000.0	3.06	43.75	999.4	17.2	16.5	-16.5	0.00	0.00	
1,100.0	3.06	43.75	1,099.3	21.1	20.2	-20.2	0.00	0.00	
1,200.0	3.06	43.75	1,199.2	24.9	23.9	-23.9	0.00	0.00	
1,300.0	3.06	43.75	1,299.0	28.8	27.6	-27.6	0.00	0.00	
1,400.0	3.06	43.75	1,398.9	32.6	31.2	-31.2	0.00	0.00	
1,500.0	3.06	43.75	1,498.7	36.5	34.9	-34.9	0.00	0.00	
1,600.0	3.06	43.75	1,598.6	40.4	38.6	-38.6	0.00	0.00	
1,700.0	3.06	43.75	1,698.4	44.2	42.3	-42.3	0.00	0.00	
1,800.0	3.06	43.75	1,798.3	48.1	46.0	-46.0	0.00	0.00	
1,900.0	3.06	43.75	1,898.2	51.9	49.7	-49.7	0.00	0.00	
2,000.0	3.06	43.75	1,998.0	55.8	53.4	-53.4	0.00	0.00	
2,100.0	3.06	43.75	2,097.9	59.6	57.1	-57.1	0.00	0.00	
2,200.0	3.06	43.75	2,197.7	63.5	60.8	-60.8	0.00	0.00	
2,300.0	3.06	43.75	2,297.6	67.3	64.4	-64.4	0.00	0.00	
2,400.0	3.06	43.75	2,397.4	71.2	68.1	-68.1	0.00	0.00	
2,500.0	3.06	43.75	2,497.3	75.0	71.8	-71.8	0.00	0.00	
2,600.0	3.06	43.75	2,597.2	78.9	75.5	-75.5	0.00	0.00	
2,700.0	3.06	43.75	2,697.0	82.7	79.2	-79.2	0.00	0.00	
2,800.0	3.06	43.75	2,796.9	86.6	82.9	-82.9	0.00	0.00	
2,900.0	3.06	43.75	2,896.7	90.5	86.6	-86.6	0.00	0.00	
3,000.0	3.06	43.75	2,996.6	94.3	90.3	-90.3	0.00	0.00	
3,100.0	3.06	43.75	3,096.4	98.2	94.0	-94.0	0.00	0.00	
3,200.0	3.06	43.75	3,196.3	102.0	97.6	-97.6	0.00	0.00	
3,300.0	3.06	43.75	3,296.2	105.9	101.3	-101.3	0.00	0.00	
3,400.0	3.06	43.75	3,396.0	109.7	105.0	-105.0	0.00	0.00	
3,500.0	3.06	43.75	3,495.9	113.6	108.7	-108.7	0.00	0.00	
3,600.0	3.06	43.75	3,595.7	117.4	112.4	-112.4	0.00	0.00	
3,700.0	3.06	43.75	3,695.6	121.3	116.1	-116.1	0.00	0.00	
3,800.0	3.06	43.75	3,795.4	125.1	119.8	-119.8	0.00	0.00	
3,900.0	3.06	43.75	3,895.3	129.0	123.5	-123.5	0.00	0.00	
3,993.8	3.06	43.75	3,989.0	132.6	126.9	-126.9	0.00	0.00	Sussex
4,000.0	3.06	43.75	3,995.2	132.8	127.1	-127.1	0.00	0.00	
4,100.0	3.06	43.75	4,095.0	136.7	130.8	-130.8	0.00	0.00	
4,200.0	3.06	43.75	4,194.9	140.5	134.5	-134.5	0.00	0.00	
4,224.2	3.06	43.75	4,219.0	141.5	135.4	-135.4	0.00	0.00	Sussex Marker
4,300.0	3.06	43.75	4,294.7	144.4	138.2	-138.2	0.00	0.00	
4,400.0	3.06	43.75	4,394.6	148.3	141.9	-141.9	0.00	0.00	
4,475.5	3.06	43.75	4,470.0	151.2	144.7	-144.7	0.00	0.00	Shannon
4,500.0	3.06	43.75	4,494.5	152.1	145.6	-145.6	0.00	0.00	
4,600.0	3.06	43.75	4,594.3	156.0	149.3	-149.3	0.00	0.00	

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 #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
4,700.0	3.06	43.75	4,694.2	159.8	153.0	-153.0	0.00	0.00	
4,800.0	3.06	43.75	4,794.0	163.7	156.7	-156.7	0.00	0.00	
4,900.0	3.06	43.75	4,893.9	167.5	160.3	-160.3	0.00	0.00	
5,000.0	3.06	43.75	4,993.7	171.4	164.0	-164.0	0.00	0.00	
5,100.0	3.06	43.75	5,093.6	175.2	167.7	-167.7	0.00	0.00	
5,200.0	3.06	43.75	5,193.5	179.1	171.4	-171.4	0.00	0.00	
5,300.0	3.06	43.75	5,293.3	182.9	175.1	-175.1	0.00	0.00	
5,400.0	3.06	43.75	5,393.2	186.8	178.8	-178.8	0.00	0.00	
5,500.0	3.06	43.75	5,493.0	190.6	182.5	-182.5	0.00	0.00	
5,600.0	3.06	43.75	5,592.9	194.5	186.2	-186.2	0.00	0.00	
5,700.0	3.06	43.75	5,692.7	198.4	189.9	-189.9	0.00	0.00	
5,800.0	3.06	43.75	5,792.6	202.2	193.5	-193.5	0.00	0.00	
5,900.0	3.06	43.75	5,892.5	206.1	197.2	-197.2	0.00	0.00	
6,000.0	3.06	43.75	5,992.3	209.9	200.9	-200.9	0.00	0.00	
6,100.0	3.06	43.75	6,092.2	213.8	204.6	-204.6	0.00	0.00	
6,200.0	3.06	43.75	6,192.0	217.6	208.3	-208.3	0.00	0.00	
6,258.1	3.06	43.75	6,250.0	219.9	210.4	-210.4	0.00	0.00	Teepee Buttes (*if present)
6,300.0	3.06	43.75	6,291.9	221.5	212.0	-212.0	0.00	0.00	
6,400.0	3.06	43.75	6,391.7	225.3	215.7	-215.7	0.00	0.00	
6,448.5	3.06	43.75	6,440.2	227.2	217.5	-217.5	0.00	0.00	Start build/turn @ 6448' MD
6,500.0	3.73	305.44	6,491.6	229.2	217.0	-217.0	10.00	1.31	
6,600.0	13.20	278.89	6,590.4	232.8	203.1	-203.1	10.00	9.47	
6,700.0	23.12	274.64	6,685.4	236.2	172.2	-172.2	10.00	9.92	
6,800.0	33.08	272.87	6,773.5	239.1	125.2	-125.2	10.00	9.97	
6,900.0	43.06	271.85	6,852.1	241.6	63.7	-63.7	10.00	9.98	
6,957.4	48.80	271.42	6,892.0	242.8	22.4	-22.4	10.00	9.99	Sharon Springs
7,000.0	53.05	271.15	6,918.8	243.5	-10.6	10.6	10.00	9.99	
7,100.0	63.04	270.62	6,971.7	244.8	-95.3	95.3	10.00	9.99	
7,107.4	63.78	270.58	6,975.0	244.9	-101.9	101.9	10.00	9.99	Niobrara
7,200.0	73.03	270.17	7,009.0	245.4	-187.9	187.9	10.00	9.99	
7,238.4	76.87	270.01	7,019.0	245.5	-225.0	225.0	10.00	9.99	B Chalk
7,300.0	83.02	269.77	7,029.8	245.4	-285.6	285.6	10.00	9.99	
7,369.8	90.00	269.50	7,034.0	244.9	-355.3	355.3	10.00	9.99	LP @ 7034' TVD; 90°
7,400.0	90.00	269.50	7,034.0	244.7	-385.5	385.5	0.00	0.00	
7,500.0	90.00	269.50	7,034.0	243.8	-485.5	485.5	0.00	0.00	
7,600.0	90.00	269.50	7,034.0	242.9	-585.5	585.5	0.00	0.00	
7,700.0	90.00	269.50	7,034.0	242.0	-685.5	685.5	0.00	0.00	
7,800.0	90.00	269.50	7,034.0	241.2	-785.5	785.5	0.00	0.00	
7,900.0	90.00	269.50	7,034.0	240.3	-885.5	885.5	0.00	0.00	
8,000.0	90.00	269.50	7,034.0	239.4	-985.5	985.5	0.00	0.00	
8,100.0	90.00	269.50	7,034.0	238.6	-1,085.4	1,085.4	0.00	0.00	
8,200.0	90.00	269.50	7,034.0	237.7	-1,185.4	1,185.4	0.00	0.00	
8,300.0	90.00	269.50	7,034.0	236.8	-1,285.4	1,285.4	0.00	0.00	
8,400.0	90.00	269.50	7,034.0	235.9	-1,385.4	1,385.4	0.00	0.00	
8,500.0	90.00	269.50	7,034.0	235.1	-1,485.4	1,485.4	0.00	0.00	
8,600.0	90.00	269.50	7,034.0	234.2	-1,585.4	1,585.4	0.00	0.00	
8,700.0	90.00	269.50	7,034.0	233.3	-1,685.4	1,685.4	0.00	0.00	
8,800.0	90.00	269.50	7,034.0	232.4	-1,785.4	1,785.4	0.00	0.00	
8,900.0	90.00	269.50	7,034.0	231.6	-1,885.4	1,885.4	0.00	0.00	
9,000.0	90.00	269.50	7,034.0	230.7	-1,985.4	1,985.4	0.00	0.00	
9,100.0	90.00	269.50	7,034.0	229.8	-2,085.4	2,085.4	0.00	0.00	
9,200.0	90.00	269.50	7,034.0	229.0	-2,185.4	2,185.4	0.00	0.00	

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 #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
9,300.0	90.00	269.50	7,034.0	228.1	-2,285.4	2,285.4	0.00	0.00	
9,400.0	90.00	269.50	7,034.0	227.2	-2,385.4	2,385.4	0.00	0.00	
9,500.0	90.00	269.50	7,034.0	226.3	-2,485.4	2,485.4	0.00	0.00	
9,600.0	90.00	269.50	7,034.0	225.5	-2,585.4	2,585.4	0.00	0.00	
9,700.0	90.00	269.50	7,034.0	224.6	-2,685.4	2,685.4	0.00	0.00	
9,800.0	90.00	269.50	7,034.0	223.7	-2,785.4	2,785.4	0.00	0.00	
9,900.0	90.00	269.50	7,034.0	222.8	-2,885.4	2,885.4	0.00	0.00	
10,000.0	90.00	269.50	7,034.0	222.0	-2,985.4	2,985.4	0.00	0.00	
10,100.0	90.00	269.50	7,034.0	221.1	-3,085.4	3,085.4	0.00	0.00	
10,200.0	90.00	269.50	7,034.0	220.2	-3,185.4	3,185.4	0.00	0.00	
10,300.0	90.00	269.50	7,034.0	219.4	-3,285.4	3,285.4	0.00	0.00	
10,400.0	90.00	269.50	7,034.0	218.5	-3,385.4	3,385.4	0.00	0.00	
10,500.0	90.00	269.50	7,034.0	217.6	-3,485.4	3,485.4	0.00	0.00	
10,600.0	90.00	269.50	7,034.0	216.7	-3,585.4	3,585.4	0.00	0.00	
10,700.0	90.00	269.50	7,034.0	215.9	-3,685.3	3,685.3	0.00	0.00	
10,800.0	90.00	269.50	7,034.0	215.0	-3,785.3	3,785.3	0.00	0.00	
10,900.0	90.00	269.50	7,034.0	214.1	-3,885.3	3,885.3	0.00	0.00	
11,000.0	90.00	269.50	7,034.0	213.2	-3,985.3	3,985.3	0.00	0.00	
11,100.0	90.00	269.50	7,034.0	212.4	-4,085.3	4,085.3	0.00	0.00	
11,200.0	90.00	269.50	7,034.0	211.5	-4,185.3	4,185.3	0.00	0.00	
11,300.0	90.00	269.50	7,034.0	210.6	-4,285.3	4,285.3	0.00	0.00	
11,400.0	90.00	269.50	7,034.0	209.8	-4,385.3	4,385.3	0.00	0.00	
11,500.0	90.00	269.50	7,034.0	208.9	-4,485.3	4,485.3	0.00	0.00	
11,592.8	90.00	269.50	7,034.0	208.1	-4,578.1	4,578.1	0.00	0.00	TD at 11592.8 - Frederiksen 1C-28H-A368 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 1C-28H-A368	0.00	0.00	7,034.0	208.1	-4,578.1	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			
3,993.8	3,989.0	Sussex			
4,224.2	4,219.0	Sussex Marker			
4,475.5	4,470.0	Shannon			
6,258.1	6,250.0	Teepee Buttes (*if present)			
6,957.4	6,892.0	Sharon Springs			
7,107.4	6,975.0	Niobrara			
7,238.4	7,019.0	B Chalk			

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 #1		

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
400.0	400.0	0.0	0.0	KOP @ 400'
705.8	705.6	5.9	5.6	EOB; Inc=3°
6,448.5	6,440.2	227.2	217.5	Start build/turn @ 6448' MD
7,369.8	7,034.0	244.9	-355.3	LP @ 7034' TVD; 90°
11,592.8	7,034.0	208.1	-4,578.1	TD at 11592.8

EnCana Oil & Gas (USA) Inc

DJ Wattenberg

S28-T3N-R68W (Frederiksen)

Frederiksen 1C-28H-A368

Hz

Plan #1

Anticollision Report

17 May, 2013

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 #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	11,592.8	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 (Existing) - Hz - Hz						Out of range
Frederiksen 1A-28H-A368 - Hz - Plan #1	200.0	200.0	18.2	17.6	27.904	CC, ES
Frederiksen 1A-28H-A368 - Hz - Plan #1	700.0	697.7	33.5	31.1	13.907	SF
Frederiksen 1B-28H-A368 - Hz - Plan #1	300.0	300.0	10.9	9.9	10.909	CC, ES
Frederiksen 1B-28H-A368 - Hz - Plan #1	11,592.8	11,823.8	411.6	212.9	2.071	SF
Frederiksen 1B-28H-H368 - Hz - Plan #1						Out of range
Frederiksen 1C-28H-H368 - Hz - Plan #1						Out of range
Frederiksen 1D-28H-A368 - Hz - Plan #1	400.0	400.0	10.9	9.6	8.090	CC, ES
Frederiksen 1D-28H-A368 - Hz - Plan #1	11,592.8	11,812.5	433.4	231.1	2.142	SF
Frederiksen 1E-28H-A368 - Hz - Plan #1	400.0	400.0	21.9	20.5	16.180	CC, ES
Frederiksen 1E-28H-A368 - Hz - Plan #1	600.0	599.2	27.5	25.5	13.428	SF
Frederiksen 1F-28H-A368 - Hz - Plan #1	200.0	200.0	29.1	28.5	44.646	CC, ES
Frederiksen 1F-28H-A368 - Hz - Plan #1	500.0	498.2	37.3	35.6	21.984	SF
FREDERIKSEN 31-28 (Existing) - DD - GYRO	8,959.6	7,222.9	69.7	5.4	1.085	Level 2, CC, ES, SF
FREDERIKSEN 41-28 (Existing) - DD - GYRO	7,259.6	7,148.0	106.1	83.6	4.716	CC, ES, SF
FREDERIKSEN 8-4-28 (Existing) - DD - GYRO						Out of range

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 #1	Offset TVD Reference:	Offset Datum

Offset Design S28-T3N-R68W (Frederiksen) - Frederiksen 1A-28H-A368 - 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)				
0.0	0.0	0.0	0.0	0.0	0.0	0.00	18.2	0.0	18.2					
100.0	100.0	100.0	100.0	0.2	0.2	0.00	18.2	0.0	18.2	17.9	0.30	59.977		
200.0	200.0	200.0	200.0	0.3	0.3	0.00	18.2	0.0	18.2	17.6	0.65	27.904 CC, ES		
300.0	300.0	299.7	299.7	0.5	0.5	0.70	19.0	0.2	19.1	18.1	1.00	19.016		
400.0	400.0	399.3	399.3	0.7	0.7	2.49	21.6	0.9	21.6	20.2	1.35	15.941		
500.0	500.0	498.8	498.7	0.9	0.9	-40.29	25.7	2.1	25.2	23.5	1.70	14.811		
600.0	600.0	598.3	598.0	1.0	1.1	-41.06	31.5	3.7	29.1	27.1	2.05	14.202		
700.0	699.9	697.7	697.1	1.2	1.3	-42.92	39.0	5.8	33.5	31.1	2.41	13.907 SF		
800.0	799.7	796.9	795.9	1.4	1.5	-44.65	48.1	8.4	38.8	36.0	2.77	14.021		
900.0	899.6	896.0	894.3	1.6	1.8	-45.30	58.9	11.4	45.8	42.7	3.13	14.629		
1,000.0	999.4	995.0	992.4	1.8	2.0	-45.24	71.2	14.9	54.4	50.9	3.50	15.564		
1,100.0	1,099.3	1,094.6	1,091.1	2.0	2.3	-45.06	84.1	18.5	63.5	59.7	3.86	16.442		
1,200.0	1,199.2	1,194.2	1,189.8	2.2	2.6	-44.92	97.0	22.1	72.6	68.4	4.23	17.165		
1,300.0	1,299.0	1,293.7	1,288.5	2.4	2.9	-44.82	109.8	25.7	81.8	77.2	4.60	17.771		
1,400.0	1,398.9	1,393.3	1,387.2	2.6	3.1	-44.73	122.7	29.3	90.9	85.9	4.97	18.285		
1,500.0	1,498.7	1,492.9	1,485.9	2.8	3.4	-44.67	135.6	32.9	100.0	94.6	5.34	18.727		
1,600.0	1,598.6	1,592.5	1,584.5	3.0	3.7	-44.61	148.5	36.5	109.1	103.4	5.71	19.110		
1,700.0	1,698.4	1,692.1	1,683.2	3.1	4.0	-44.56	161.4	40.2	118.2	112.1	6.08	19.447		
1,800.0	1,798.3	1,791.7	1,781.9	3.3	4.3	-44.52	174.3	43.8	127.3	120.9	6.45	19.744		
1,900.0	1,898.2	1,891.2	1,880.6	3.5	4.6	-44.48	187.2	47.4	136.4	129.6	6.82	20.008		
2,000.0	1,998.0	1,990.8	1,979.3	3.7	4.9	-44.45	200.1	51.0	145.5	138.3	7.19	20.245		
2,100.0	2,097.9	2,090.4	2,077.9	3.9	5.1	-44.42	212.9	54.6	154.6	147.1	7.56	20.459		
2,200.0	2,197.7	2,190.0	2,176.6	4.1	5.4	-44.40	225.8	58.2	163.7	155.8	7.93	20.652		
2,300.0	2,297.6	2,289.6	2,275.3	4.3	5.7	-44.38	238.7	61.8	172.8	164.5	8.30	20.828		
2,400.0	2,397.4	2,389.2	2,374.0	4.5	6.0	-44.36	251.6	65.5	182.0	173.3	8.67	20.988		
2,500.0	2,497.3	2,488.8	2,472.7	4.7	6.3	-44.34	264.5	69.1	191.1	182.0	9.04	21.135		
2,600.0	2,597.2	2,588.3	2,571.3	4.9	6.6	-44.32	277.4	72.7	200.2	190.8	9.41	21.271		
2,700.0	2,697.0	2,687.9	2,670.0	5.1	6.9	-44.31	290.3	76.3	209.3	199.5	9.78	21.396		
2,800.0	2,796.9	2,787.5	2,768.7	5.3	7.2	-44.29	303.1	79.9	218.4	208.2	10.15	21.512		
2,900.0	2,896.7	2,887.1	2,867.4	5.5	7.5	-44.28	316.0	83.5	227.5	217.0	10.52	21.620		
3,000.0	2,996.6	2,986.7	2,966.1	5.7	7.7	-44.27	328.9	87.1	236.6	225.7	10.89	21.720		
3,100.0	3,096.4	3,086.3	3,064.7	5.9	8.0	-44.26	341.8	90.8	245.7	234.5	11.26	21.813		
3,200.0	3,196.3	3,185.8	3,163.4	6.1	8.3	-44.25	354.7	94.4	254.8	243.2	11.64	21.901		
3,300.0	3,296.2	3,285.4	3,262.1	6.3	8.6	-44.24	367.6	98.0	263.9	251.9	12.01	21.983		
3,400.0	3,396.0	3,385.0	3,360.8	6.5	8.9	-44.23	380.5	101.6	273.1	260.7	12.38	22.060		
3,500.0	3,495.9	3,484.6	3,459.5	6.7	9.2	-44.22	393.4	105.2	282.2	269.4	12.75	22.133		
3,600.0	3,595.7	3,584.2	3,558.1	6.9	9.5	-44.21	406.2	108.8	291.3	278.1	13.12	22.201		
3,700.0	3,695.6	3,683.8	3,656.8	7.1	9.8	-44.21	419.1	112.4	300.4	286.9	13.49	22.266		
3,800.0	3,795.4	3,783.4	3,755.5	7.3	10.1	-44.20	432.0	116.1	309.5	295.6	13.86	22.327		
3,900.0	3,895.3	3,882.9	3,854.2	7.5	10.4	-44.19	444.9	119.7	318.6	304.4	14.23	22.385		
4,000.0	3,995.2	3,982.5	3,952.9	7.7	10.6	-44.19	457.8	123.3	327.7	313.1	14.60	22.440		
4,100.0	4,095.0	4,082.1	4,051.6	7.9	10.9	-44.18	470.7	126.9	336.8	321.8	14.97	22.493		
4,200.0	4,194.9	4,181.7	4,150.2	8.1	11.2	-44.18	483.6	130.5	345.9	330.6	15.35	22.542		
4,300.0	4,294.7	4,281.3	4,248.9	8.3	11.5	-44.17	496.4	134.1	355.0	339.3	15.72	22.590		
4,400.0	4,394.6	4,380.9	4,347.6	8.5	11.8	-44.17	509.3	137.8	364.1	348.1	16.09	22.635		
4,500.0	4,494.5	4,480.4	4,446.3	8.7	12.1	-44.16	522.2	141.4	373.3	356.8	16.46	22.678		
4,600.0	4,594.3	4,580.0	4,545.0	8.9	12.4	-44.16	535.1	145.0	382.4	365.5	16.83	22.719		
4,700.0	4,694.2	4,679.6	4,643.6	9.1	12.7	-44.15	548.0	148.6	391.5	374.3	17.20	22.758		
4,800.0	4,794.0	4,779.2	4,742.3	9.3	13.0	-44.15	560.9	152.2	400.6	383.0	17.57	22.796		
4,900.0	4,893.9	4,878.8	4,841.0	9.5	13.3	-44.15	573.8	155.8	409.7	391.7	17.94	22.832		
5,000.0	4,993.7	4,978.4	4,939.7	9.7	13.6	-44.14	586.6	159.4	418.8	400.5	18.31	22.867		
5,100.0	5,093.6	5,077.9	5,038.4	9.9	13.8	-44.14	599.5	163.1	427.9	409.2	18.69	22.900		

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 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 #1	Offset TVD Reference:	Offset Datum

Offset Design													S28-T3N-R68W (Frederiksen) - Frederiksen 1A-28H-A368 - 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							Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre		Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor					
							+N/-S (ft)	+E/-W (ft)									
5,200.0	5,193.5	5,177.5	5,137.0	10.1	14.1	-44.14	612.4	166.7	437.0	418.0	19.06	22.932					
5,300.0	5,293.3	5,277.1	5,235.7	10.3	14.4	-44.13	625.3	170.3	446.1	426.7	19.43	22.963					
5,400.0	5,393.2	5,376.7	5,334.4	10.5	14.7	-44.13	638.2	173.9	455.2	435.4	19.80	22.993					
5,500.0	5,493.0	5,476.3	5,433.1	10.6	15.0	-44.13	651.1	177.5	464.3	444.2	20.17	23.021					
5,600.0	5,592.9	5,575.9	5,531.8	10.8	15.3	-44.12	664.0	181.1	473.5	452.9	20.54	23.049					
5,700.0	5,692.7	5,675.5	5,630.4	11.0	15.6	-44.12	676.9	184.7	482.6	461.7	20.91	23.075					
5,800.0	5,792.6	5,775.0	5,729.1	11.2	15.9	-44.12	689.7	188.4	491.7	470.4	21.28	23.101					

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 #1	Offset TVD Reference:	Offset Datum

Offset Design S28-T3N-R68W (Frederiksen) - Frederiksen 1B-28H-A368 - 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)				
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	1.68	11.7	0.3	11.7	10.4	1.35	8.684		
500.0	500.0	499.6	499.6	0.9	0.9	-40.46	14.1	1.4	13.5	11.8	1.70	7.953		
600.0	600.0	599.3	599.2	1.0	1.0	-41.21	18.1	3.1	15.6	13.6	2.05	7.615		
700.0	699.9	699.0	698.7	1.2	1.2	-43.46	23.7	5.5	18.1	15.6	2.41	7.495		
800.0	799.7	798.7	798.0	1.4	1.4	-45.08	30.8	8.6	21.4	18.6	2.77	7.720		
900.0	899.6	898.5	897.5	1.6	1.7	-45.27	39.0	12.1	25.7	22.5	3.14	8.186		
1,000.0	999.4	998.4	997.0	1.8	1.9	-45.40	47.1	15.6	30.0	26.5	3.50	8.553		
1,100.0	1,099.3	1,098.4	1,096.5	2.0	2.1	-45.49	55.2	19.1	34.3	30.4	3.87	8.847		
1,200.0	1,199.2	1,198.3	1,196.1	2.2	2.3	-45.57	63.3	22.6	38.6	34.3	4.24	9.088		
1,300.0	1,299.0	1,298.2	1,295.6	2.4	2.6	-45.63	71.5	26.1	42.8	38.2	4.61	9.289		
1,400.0	1,398.9	1,398.1	1,395.1	2.6	2.8	-45.68	79.6	29.5	47.1	42.2	4.98	9.459		
1,500.0	1,498.7	1,498.0	1,494.6	2.8	3.0	-45.72	87.7	33.0	51.4	46.1	5.35	9.605		
1,600.0	1,598.6	1,597.9	1,594.1	3.0	3.2	-45.76	95.8	36.5	55.7	50.0	5.73	9.731		
1,700.0	1,698.4	1,697.8	1,693.6	3.1	3.5	-45.79	104.0	40.0	60.0	53.9	6.10	9.841		
1,800.0	1,798.3	1,797.7	1,793.2	3.3	3.7	-45.81	112.1	43.5	64.3	57.8	6.47	9.939		
1,900.0	1,898.2	1,897.6	1,892.7	3.5	3.9	-45.84	120.2	47.0	68.6	61.7	6.84	10.025		
2,000.0	1,998.0	1,997.5	1,992.2	3.7	4.2	-45.86	128.4	50.5	72.9	65.7	7.21	10.102		
2,100.0	2,097.9	2,097.4	2,091.7	3.9	4.4	-45.87	136.5	54.0	77.2	69.6	7.59	10.172		
2,200.0	2,197.7	2,197.3	2,191.2	4.1	4.6	-45.89	144.6	57.5	81.5	73.5	7.96	10.235		
2,300.0	2,297.6	2,297.2	2,290.7	4.3	4.9	-45.90	152.7	61.0	85.7	77.4	8.33	10.292		
2,400.0	2,397.4	2,397.2	2,390.2	4.5	5.1	-45.92	160.9	64.5	90.0	81.3	8.70	10.344		
2,500.0	2,497.3	2,497.1	2,489.8	4.7	5.3	-45.93	169.0	68.0	94.3	85.3	9.08	10.391		
2,600.0	2,597.2	2,597.0	2,589.3	4.9	5.6	-45.94	177.1	71.5	98.6	89.2	9.45	10.435		
2,700.0	2,697.0	2,696.9	2,688.8	5.1	5.8	-45.95	185.2	75.0	102.9	93.1	9.82	10.476		
2,800.0	2,796.9	2,796.8	2,788.3	5.3	6.0	-45.96	193.4	78.5	107.2	97.0	10.20	10.513		
2,900.0	2,896.7	2,896.7	2,887.8	5.5	6.2	-45.97	201.5	82.0	111.5	100.9	10.57	10.548		
3,000.0	2,996.6	2,996.6	2,987.3	5.7	6.5	-45.97	209.6	85.5	115.8	104.8	10.94	10.580		
3,100.0	3,096.4	3,096.5	3,086.9	5.9	6.7	-45.98	217.7	89.0	120.1	108.8	11.32	10.610		
3,200.0	3,196.3	3,196.4	3,186.4	6.1	6.9	-45.99	225.9	92.5	124.4	112.7	11.69	10.638		
3,300.0	3,296.2	3,296.3	3,285.9	6.3	7.2	-46.00	234.0	96.0	128.7	116.6	12.06	10.665		
3,400.0	3,396.0	3,396.2	3,385.4	6.5	7.4	-46.00	242.1	99.5	132.9	120.5	12.44	10.689		
3,500.0	3,495.9	3,496.1	3,484.9	6.7	7.6	-46.01	250.3	103.0	137.2	124.4	12.81	10.713		
3,600.0	3,595.7	3,596.0	3,584.4	6.9	7.9	-46.01	258.4	106.5	141.5	128.3	13.18	10.735		
3,700.0	3,695.6	3,696.0	3,683.9	7.1	8.1	-46.02	266.5	110.0	145.8	132.3	13.56	10.756		
3,800.0	3,795.4	3,795.9	3,783.5	7.3	8.3	-46.02	274.6	113.5	150.1	136.2	13.93	10.775		
3,900.0	3,895.3	3,895.8	3,883.0	7.5	8.6	-46.03	282.8	117.0	154.4	140.1	14.30	10.794		
4,000.0	3,995.2	3,995.7	3,982.5	7.7	8.8	-46.03	290.9	120.5	158.7	144.0	14.68	10.811		
4,100.0	4,095.0	4,095.6	4,082.0	7.9	9.0	-46.03	299.0	124.0	163.0	147.9	15.05	10.828		
4,200.0	4,194.9	4,195.5	4,181.5	8.1	9.3	-46.04	307.1	127.5	167.3	151.8	15.43	10.844		
4,300.0	4,294.7	4,295.4	4,281.0	8.3	9.5	-46.04	315.3	131.0	171.6	155.8	15.80	10.859		
4,400.0	4,394.6	4,395.3	4,380.6	8.5	9.7	-46.04	323.4	134.5	175.9	159.7	16.17	10.874		
4,500.0	4,494.5	4,495.2	4,480.1	8.7	10.0	-46.05	331.5	138.0	180.1	163.6	16.55	10.887		
4,600.0	4,594.3	4,595.1	4,579.6	8.9	10.2	-46.05	339.6	141.5	184.4	167.5	16.92	10.900		
4,700.0	4,694.2	4,695.0	4,679.1	9.1	10.4	-46.05	347.8	144.9	188.7	171.4	17.29	10.913		
4,800.0	4,794.0	4,794.9	4,778.6	9.3	10.7	-46.06	355.9	148.4	193.0	175.3	17.67	10.925		
4,900.0	4,893.9	4,894.9	4,878.1	9.5	10.9	-46.06	364.0	151.9	197.3	179.3	18.04	10.937		
5,000.0	4,993.7	4,994.8	4,977.6	9.7	11.1	-46.06	372.1	155.4	201.6	183.2	18.41	10.948		
5,100.0	5,093.6	5,094.7	5,077.2	9.9	11.4	-46.06	380.3	158.9	205.9	187.1	18.79	10.958		

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 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 #1	Offset TVD Reference:	Offset Datum

Offset Design S28-T3N-R68W (Frederiksen) - Frederiksen 1B-28H-A368 - 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							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
5,200.0	5,193.5	5,194.6	5,176.7	10.1	11.6	-46.07	388.4	162.4	210.2	191.0	19.16	10.968		
5,300.0	5,293.3	5,294.5	5,276.2	10.3	11.8	-46.07	396.5	165.9	214.5	194.9	19.54	10.978		
5,400.0	5,393.2	5,394.4	5,375.7	10.5	12.1	-46.07	404.7	169.4	218.8	198.8	19.91	10.988		
5,500.0	5,493.0	5,494.3	5,475.2	10.6	12.3	-46.07	412.8	172.9	223.0	202.8	20.28	10.997		
5,600.0	5,592.9	5,594.2	5,574.7	10.8	12.5	-46.07	420.9	176.4	227.3	206.7	20.66	11.006		
5,700.0	5,692.7	5,694.1	5,674.3	11.0	12.8	-46.08	429.0	179.9	231.6	210.6	21.03	11.014		
5,800.0	5,792.6	5,794.0	5,773.8	11.2	13.0	-46.08	437.2	183.4	235.9	214.5	21.40	11.022		
5,900.0	5,892.5	5,893.9	5,873.3	11.4	13.2	-46.08	445.3	186.9	240.2	218.4	21.78	11.030		
6,000.0	5,992.3	5,993.8	5,972.8	11.6	13.5	-46.08	453.4	190.4	244.5	222.3	22.15	11.038		
6,100.0	6,092.2	6,093.7	6,072.3	11.8	13.7	-46.08	461.5	193.9	248.8	226.3	22.53	11.045		
6,200.0	6,192.0	6,193.7	6,171.8	12.0	13.9	-46.08	469.7	197.4	253.1	230.2	22.90	11.052		
6,300.0	6,291.9	6,293.6	6,271.3	12.2	14.2	-46.09	477.8	200.9	257.4	234.1	23.27	11.059		
6,400.0	6,391.7	6,393.5	6,370.9	12.4	14.4	-46.09	485.9	204.4	261.7	238.0	23.65	11.065		
6,500.0	6,491.6	6,493.3	6,470.3	12.6	14.6	52.40	494.0	207.9	265.9	241.9	23.97	11.090		
6,600.0	6,590.4	6,591.6	6,568.2	12.7	14.8	81.98	502.0	211.3	270.2	246.2	24.01	11.257		
6,700.0	6,685.4	6,685.4	6,661.7	12.7	15.1	91.92	509.7	214.6	277.8	253.9	23.85	11.646		
6,800.0	6,773.5	6,787.4	6,763.0	12.7	15.2	100.54	517.9	208.8	291.2	267.6	23.67	12.307		
6,900.0	6,852.1	6,899.1	6,870.9	12.8	15.4	107.76	526.7	181.9	309.3	285.7	23.57	13.121		
7,000.0	6,918.8	7,022.8	6,981.8	12.9	15.5	113.82	535.8	128.3	329.7	306.1	23.62	13.960		
7,100.0	6,971.7	7,160.6	7,088.5	13.4	15.6	118.72	544.5	42.2	349.9	325.9	23.96	14.601		
7,200.0	7,009.0	7,313.4	7,179.2	14.4	16.0	122.31	551.9	-79.9	366.8	342.0	24.83	14.774		
7,300.0	7,029.8	7,478.9	7,237.5	15.8	17.2	124.35	556.7	-234.2	377.8	351.1	26.64	14.179		
7,400.0	7,034.0	7,631.2	7,251.0	17.4	19.0	124.72	557.8	-385.5	381.0	351.5	29.43	12.945		
7,500.0	7,034.0	7,731.2	7,251.0	19.2	20.6	124.65	557.8	-485.5	381.7	349.3	32.41	11.775		
7,600.0	7,034.0	7,831.2	7,251.0	21.1	22.4	124.57	557.8	-585.5	382.4	346.8	35.62	10.734		
7,700.0	7,034.0	7,931.2	7,251.0	23.1	24.3	124.50	557.8	-685.5	383.1	344.1	39.01	9.822		
7,800.0	7,034.0	8,031.2	7,251.0	25.3	26.3	124.43	557.8	-785.5	383.8	341.3	42.53	9.026		
7,900.0	7,034.0	8,131.2	7,251.0	27.4	28.4	124.35	557.8	-885.5	384.6	338.4	46.15	8.333		
8,000.0	7,034.0	8,231.2	7,251.0	29.7	30.6	124.28	557.8	-985.5	385.3	335.4	49.85	7.728		
8,100.0	7,034.0	8,331.2	7,251.0	31.9	32.7	124.21	557.8	-1,085.4	386.0	332.4	53.63	7.198		
8,200.0	7,034.0	8,431.2	7,251.0	34.2	35.0	124.13	557.8	-1,185.4	386.7	329.3	57.46	6.731		
8,300.0	7,034.0	8,531.1	7,251.0	36.5	37.2	124.06	557.8	-1,285.4	387.4	326.1	61.33	6.317		
8,400.0	7,034.0	8,631.1	7,251.0	38.9	39.5	123.99	557.8	-1,385.4	388.2	322.9	65.25	5.949		
8,500.0	7,034.0	8,731.1	7,251.0	41.2	41.9	123.92	557.8	-1,485.4	388.9	319.7	69.20	5.620		
8,600.0	7,034.0	8,831.1	7,251.0	43.6	44.2	123.85	557.8	-1,585.4	389.6	316.4	73.18	5.324		
8,700.0	7,034.0	8,931.1	7,251.0	46.0	46.5	123.78	557.8	-1,685.4	390.3	313.2	77.18	5.057		
8,800.0	7,034.0	9,031.1	7,251.0	48.3	48.9	123.70	557.8	-1,785.4	391.1	309.9	81.21	4.815		
8,900.0	7,034.0	9,131.1	7,251.0	50.7	51.3	123.63	557.8	-1,885.4	391.8	306.5	85.26	4.595		
9,000.0	7,034.0	9,231.1	7,251.0	53.1	53.6	123.56	557.8	-1,985.4	392.5	303.2	89.33	4.394		
9,100.0	7,034.0	9,331.1	7,251.0	55.5	56.0	123.49	557.8	-2,085.4	393.3	299.8	93.42	4.210		
9,200.0	7,034.0	9,431.1	7,251.0	58.0	58.4	123.42	557.8	-2,185.4	394.0	296.5	97.52	4.040		
9,300.0	7,034.0	9,531.1	7,251.0	60.4	60.8	123.35	557.8	-2,285.4	394.7	293.1	101.63	3.884		
9,400.0	7,034.0	9,631.1	7,251.0	62.8	63.2	123.28	557.8	-2,385.4	395.4	289.7	105.76	3.739		
9,500.0	7,034.0	9,731.1	7,251.0	65.2	65.6	123.21	557.8	-2,485.4	396.2	286.3	109.91	3.605		
9,600.0	7,034.0	9,831.1	7,251.0	67.7	68.1	123.14	557.8	-2,585.4	396.9	282.8	114.06	3.480		
9,700.0	7,034.0	9,931.1	7,251.0	70.1	70.5	123.08	557.8	-2,685.4	397.6	279.4	118.22	3.363		
9,800.0	7,034.0	10,031.1	7,251.0	72.5	72.9	123.01	557.8	-2,785.4	398.4	276.0	122.40	3.255		
9,900.0	7,034.0	10,131.1	7,251.0	75.0	75.3	122.94	557.8	-2,885.4	399.1	272.5	126.59	3.153		
10,000.0	7,034.0	10,231.1	7,251.0	77.4	77.8	122.87	557.8	-2,985.4	399.8	269.0	130.78	3.057		
10,100.0	7,034.0	10,331.1	7,251.0	79.8	80.2	122.80	557.8	-3,085.4	400.6	265.6	134.99	2.967		
10,200.0	7,034.0	10,431.1	7,251.0	82.3	82.6	122.74	557.8	-3,185.4	401.3	262.1	139.20	2.883		
10,300.0	7,034.0	10,531.1	7,251.0	84.7	85.1	122.67	557.8	-3,285.4	402.0	258.6	143.43	2.803		

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 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 #1	Offset TVD Reference:	Offset Datum

Offset Design													S28-T3N-R68W (Frederiksen) - Frederiksen 1B-28H-A368 - 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							Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor					
10,400.0	7,034.0	10,631.1	7,251.0	87.2	87.5	122.60	557.8	-3,385.4	402.8	255.1	147.66	2.728					
10,500.0	7,034.0	10,731.1	7,251.0	89.6	89.9	122.53	557.8	-3,485.4	403.5	251.6	151.90	2.656					
10,600.0	7,034.0	10,831.1	7,251.0	92.1	92.4	122.47	557.8	-3,585.4	404.2	248.1	156.14	2.589					
10,700.0	7,034.0	10,931.1	7,251.0	94.5	94.8	122.40	557.8	-3,685.3	405.0	244.6	160.40	2.525					
10,800.0	7,034.0	11,031.1	7,251.0	97.0	97.3	122.34	557.8	-3,785.3	405.7	241.0	164.66	2.464					
10,900.0	7,034.0	11,131.0	7,251.0	99.4	99.7	122.27	557.8	-3,885.3	406.4	237.5	168.93	2.406					
11,000.0	7,034.0	11,231.0	7,251.0	101.9	102.2	122.20	557.8	-3,985.3	407.2	234.0	173.21	2.351					
11,100.0	7,034.0	11,331.0	7,251.0	104.4	104.6	122.14	557.8	-4,085.3	407.9	230.4	177.49	2.298					
11,200.0	7,034.0	11,431.0	7,251.0	106.8	107.1	122.07	557.8	-4,185.3	408.7	226.9	181.78	2.248					
11,300.0	7,034.0	11,531.0	7,251.0	109.3	109.5	122.01	557.8	-4,285.3	409.4	223.3	186.08	2.200					
11,400.0	7,034.0	11,631.0	7,251.0	111.7	112.0	121.94	557.8	-4,385.3	410.1	219.8	190.38	2.154					
11,500.0	7,034.0	11,731.0	7,251.0	114.2	114.4	121.88	557.8	-4,485.3	410.9	216.2	194.69	2.110					
11,592.8	7,034.0	11,823.8	7,251.0	116.5	116.7	121.82	557.8	-4,578.1	411.6	212.9	198.69	2.071 SF					

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 #1	Offset TVD Reference:	Offset Datum

Offset Design S28-T3N-R68W (Frederiksen) - Frederiksen 1D-28H-A368 - 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		
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, ES		
500.0	500.0	500.0	500.0	0.9	0.8	139.24	-10.9	0.0	11.6	9.9	1.70	6.808		
600.0	600.0	600.0	600.0	1.0	1.0	146.41	-10.9	0.0	13.7	11.6	2.05	6.667		
700.0	699.9	699.9	699.9	1.2	1.2	154.33	-10.9	0.0	17.5	15.1	2.40	7.280		
800.0	799.7	799.7	799.7	1.4	1.4	160.25	-10.9	0.0	22.4	19.6	2.75	8.148		
900.0	899.6	899.6	899.6	1.6	1.5	164.01	-10.9	0.0	27.5	24.4	3.10	8.871		
1,000.0	999.4	999.4	999.4	1.8	1.7	166.59	-10.9	0.0	32.6	29.2	3.45	9.471		
1,100.0	1,099.3	1,099.3	1,099.3	2.0	1.9	168.47	-10.9	0.0	37.8	34.0	3.79	9.974		
1,200.0	1,199.2	1,199.2	1,199.2	2.2	2.1	169.88	-10.9	0.0	43.1	38.9	4.14	10.399		
1,300.0	1,299.0	1,299.0	1,299.0	2.4	2.2	170.99	-10.9	0.0	48.3	43.9	4.49	10.763		
1,400.0	1,398.9	1,398.9	1,398.9	2.6	2.4	171.89	-10.9	0.0	53.6	48.8	4.84	11.078		
1,500.0	1,498.7	1,498.7	1,498.7	2.8	2.6	172.62	-10.9	0.0	58.9	53.7	5.19	11.353		
1,600.0	1,598.6	1,598.6	1,598.6	3.0	2.8	173.23	-10.9	0.0	64.2	58.7	5.54	11.594		
1,700.0	1,698.4	1,698.4	1,698.4	3.1	2.9	173.75	-10.9	0.0	69.5	63.6	5.89	11.808		
1,800.0	1,798.3	1,798.3	1,798.3	3.3	3.1	174.19	-10.9	0.0	74.8	68.6	6.23	11.998		
1,900.0	1,898.2	1,898.2	1,898.2	3.5	3.3	174.58	-10.9	0.0	80.1	73.5	6.58	12.169		
2,000.0	1,998.0	1,998.0	1,998.0	3.7	3.5	174.92	-10.9	0.0	85.4	78.5	6.93	12.324		
2,100.0	2,097.9	2,097.9	2,097.9	3.9	3.6	175.22	-10.9	0.0	90.7	83.5	7.28	12.464		
2,200.0	2,197.7	2,197.7	2,197.7	4.1	3.8	175.48	-10.9	0.0	96.1	88.4	7.63	12.591		
2,300.0	2,297.6	2,297.6	2,297.6	4.3	4.0	175.72	-10.9	0.0	101.4	93.4	7.98	12.707		
2,400.0	2,397.4	2,397.4	2,397.4	4.5	4.2	175.93	-10.9	0.0	106.7	98.4	8.33	12.814		
2,500.0	2,497.3	2,497.3	2,497.3	4.7	4.3	176.13	-10.9	0.0	112.0	103.3	8.68	12.913		
2,600.0	2,597.2	2,597.2	2,597.2	4.9	4.5	176.30	-10.9	0.0	117.3	108.3	9.02	13.004		
2,700.0	2,697.0	2,697.0	2,697.0	5.1	4.7	176.46	-10.9	0.0	122.7	113.3	9.37	13.088		
2,800.0	2,796.9	2,796.9	2,796.9	5.3	4.9	176.61	-10.9	0.0	128.0	118.3	9.72	13.166		
2,900.0	2,896.7	2,896.7	2,896.7	5.5	5.0	176.75	-10.9	0.0	133.3	123.2	10.07	13.239		
3,000.0	2,996.6	2,996.6	2,996.6	5.7	5.2	176.87	-10.9	0.0	138.6	128.2	10.42	13.307		
3,100.0	3,096.4	3,096.4	3,096.4	5.9	5.4	176.99	-10.9	0.0	144.0	133.2	10.77	13.371		
3,200.0	3,196.3	3,196.3	3,196.3	6.1	5.6	177.09	-10.9	0.0	149.3	138.2	11.12	13.431		
3,300.0	3,296.2	3,296.2	3,296.2	6.3	5.7	177.19	-10.9	0.0	154.6	143.2	11.46	13.487		
3,400.0	3,396.0	3,396.0	3,396.0	6.5	5.9	177.29	-10.9	0.0	160.0	148.1	11.81	13.540		
3,500.0	3,495.9	3,495.9	3,495.9	6.7	6.1	177.38	-10.9	0.0	165.3	153.1	12.16	13.590		
3,600.0	3,595.7	3,596.2	3,596.2	6.9	6.3	177.19	-11.3	0.7	170.5	158.0	12.51	13.624		
3,700.0	3,695.6	3,696.6	3,696.6	7.1	6.4	176.45	-12.7	2.9	175.4	162.5	12.86	13.633		
3,800.0	3,795.4	3,796.9	3,796.8	7.3	6.6	175.20	-14.9	6.6	180.0	166.8	13.22	13.621		
3,900.0	3,895.3	3,897.1	3,896.7	7.5	6.8	173.47	-18.0	11.8	184.6	171.0	13.57	13.595		
4,000.0	3,995.2	3,997.0	3,996.4	7.7	7.0	171.31	-21.9	18.5	189.1	175.2	13.94	13.566		
4,100.0	4,095.0	4,096.6	4,095.6	7.9	7.2	168.99	-26.4	26.0	193.9	179.6	14.31	13.549		
4,200.0	4,194.9	4,196.2	4,194.8	8.1	7.3	166.79	-30.8	33.4	199.0	184.3	14.69	13.549		
4,300.0	4,294.7	4,295.8	4,294.0	8.3	7.5	164.70	-35.2	40.8	204.3	189.3	15.06	13.563		
4,400.0	4,394.6	4,395.4	4,393.2	8.5	7.7	162.71	-39.6	48.3	209.9	194.5	15.45	13.590		
4,500.0	4,494.5	4,494.9	4,492.4	8.7	7.9	160.84	-44.1	55.7	215.8	200.0	15.84	13.628		
4,600.0	4,594.3	4,594.5	4,591.6	8.9	8.1	159.06	-48.5	63.1	221.9	205.7	16.22	13.676		
4,700.0	4,694.2	4,694.1	4,690.9	9.1	8.3	157.38	-52.9	70.6	228.2	211.5	16.62	13.731		
4,800.0	4,794.0	4,793.7	4,790.1	9.3	8.5	155.79	-57.4	78.0	234.6	217.6	17.01	13.793		
4,900.0	4,893.9	4,893.3	4,889.3	9.5	8.7	154.29	-61.8	85.4	241.3	223.9	17.41	13.861		
5,000.0	4,993.7	4,992.9	4,988.5	9.7	8.9	152.86	-66.2	92.9	248.1	230.3	17.80	13.934		
5,100.0	5,093.6	5,092.5	5,087.7	9.9	9.1	151.52	-70.6	100.3	255.0	236.8	18.20	14.010		

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 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 #1	Offset TVD Reference:	Offset Datum

Offset Design S28-T3N-R68W (Frederiksen) - Frederiksen 1D-28H-A368 - 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)				
5,200.0	5,193.5	5,192.0	5,186.9	10.1	9.3	150.24	-75.1	107.8	262.1	243.5	18.60	14.090		
5,300.0	5,293.3	5,291.6	5,286.1	10.3	9.5	149.04	-79.5	115.2	269.3	250.3	19.00	14.173		
5,400.0	5,393.2	5,391.2	5,385.3	10.5	9.7	147.89	-83.9	122.6	276.6	257.2	19.40	14.257		
5,500.0	5,493.0	5,490.8	5,484.5	10.6	9.9	146.81	-88.3	130.1	284.0	264.2	19.80	14.344		
5,600.0	5,592.9	5,590.4	5,583.7	10.8	10.2	145.78	-92.8	137.5	291.5	271.3	20.20	14.431		
5,700.0	5,692.7	5,690.0	5,682.9	11.0	10.4	144.80	-97.2	144.9	299.1	278.5	20.60	14.520		
5,800.0	5,792.6	5,789.5	5,782.1	11.2	10.6	143.87	-101.6	152.4	306.8	285.8	21.00	14.609		
5,900.0	5,892.5	5,889.1	5,881.3	11.4	10.8	142.99	-106.0	159.8	314.5	293.1	21.40	14.698		
6,000.0	5,992.3	5,988.7	5,980.5	11.6	11.0	142.15	-110.5	167.3	322.4	300.6	21.80	14.787		
6,100.0	6,092.2	6,088.3	6,079.8	11.8	11.2	141.34	-114.9	174.7	330.2	308.0	22.20	14.876		
6,200.0	6,192.0	6,187.9	6,179.0	12.0	11.4	140.58	-119.3	182.1	338.2	315.6	22.60	14.965		
6,300.0	6,291.9	6,287.5	6,278.2	12.2	11.6	139.85	-123.7	189.6	346.2	323.2	23.00	15.053		
6,400.0	6,391.7	6,387.0	6,377.4	12.4	11.9	139.16	-128.2	197.0	354.3	330.9	23.40	15.141		
6,500.0	6,491.6	6,486.5	6,476.4	12.6	12.1	-123.25	-132.6	204.4	362.3	338.5	23.78	15.238		
6,600.0	6,590.4	6,583.7	6,573.3	12.7	12.3	-99.36	-136.9	211.7	370.2	346.2	24.07	15.381		
6,700.0	6,685.4	6,678.4	6,667.6	12.7	12.5	-99.61	-141.1	217.9	380.5	356.2	24.25	15.688		
6,800.0	6,773.5	6,781.3	6,770.1	12.7	12.6	-102.72	-145.7	210.6	394.2	369.9	24.27	16.245		
6,900.0	6,852.1	6,894.0	6,878.7	12.8	12.6	-106.33	-150.5	181.8	410.4	386.3	24.17	16.981		
7,000.0	6,918.8	7,018.4	6,989.5	12.9	12.6	-109.91	-155.5	126.1	427.6	403.5	24.13	17.721		
7,100.0	6,971.7	7,156.4	7,095.2	13.4	12.7	-113.14	-160.2	37.9	443.9	419.4	24.46	18.145		
7,200.0	7,009.0	7,308.4	7,183.5	14.4	13.4	-115.73	-164.1	-85.1	456.9	431.3	25.63	17.828		
7,300.0	7,029.8	7,471.9	7,239.0	15.8	15.2	-117.36	-166.6	-238.4	464.5	436.4	28.06	16.551		
7,400.0	7,034.0	7,619.8	7,251.0	17.4	17.5	-117.79	-167.1	-385.5	465.5	434.0	31.44	14.807		
7,500.0	7,034.0	7,719.8	7,251.0	19.2	19.2	-117.84	-167.1	-485.5	464.7	430.1	34.60	13.433		
7,600.0	7,034.0	7,819.8	7,251.0	21.1	21.2	-117.89	-167.1	-585.5	463.9	425.9	37.99	12.211		
7,700.0	7,034.0	7,919.8	7,251.0	23.1	23.2	-117.94	-167.1	-685.5	463.2	421.6	41.57	11.143		
7,800.0	7,034.0	8,019.8	7,251.0	25.3	25.3	-117.99	-167.1	-785.5	462.4	417.1	45.28	10.212		
7,900.0	7,034.0	8,119.8	7,251.0	27.4	27.5	-118.04	-167.1	-885.5	461.6	412.5	49.09	9.403		
8,000.0	7,034.0	8,219.8	7,251.0	29.7	29.7	-118.09	-167.1	-985.5	460.9	407.9	52.98	8.698		
8,100.0	7,034.0	8,319.8	7,251.0	31.9	31.9	-118.14	-167.1	-1,085.4	460.1	403.1	56.94	8.080		
8,200.0	7,034.0	8,419.8	7,251.0	34.2	34.2	-118.19	-167.1	-1,185.4	459.3	398.4	60.94	7.537		
8,300.0	7,034.0	8,519.8	7,251.0	36.5	36.5	-118.25	-167.1	-1,285.4	458.5	393.6	64.99	7.056		
8,400.0	7,034.0	8,619.8	7,251.0	38.9	38.9	-118.30	-167.1	-1,385.4	457.8	388.7	69.07	6.628		
8,500.0	7,034.0	8,719.8	7,251.0	41.2	41.2	-118.35	-167.1	-1,485.4	457.0	383.8	73.17	6.246		
8,600.0	7,034.0	8,819.8	7,251.0	43.6	43.6	-118.40	-167.1	-1,585.4	456.2	378.9	77.29	5.903		
8,700.0	7,034.0	8,919.8	7,251.0	46.0	45.9	-118.45	-167.1	-1,685.4	455.5	374.0	81.43	5.594		
8,800.0	7,034.0	9,019.8	7,251.0	48.3	48.3	-118.51	-167.1	-1,785.4	454.7	369.1	85.58	5.313		
8,900.0	7,034.0	9,119.8	7,251.0	50.7	50.7	-118.56	-167.1	-1,885.4	453.9	364.2	89.74	5.058		
9,000.0	7,034.0	9,219.8	7,251.0	53.1	53.1	-118.61	-167.1	-1,985.4	453.2	359.3	93.92	4.825		
9,100.0	7,034.0	9,319.8	7,251.0	55.5	55.5	-118.66	-167.1	-2,085.4	452.4	354.3	98.10	4.612		
9,200.0	7,034.0	9,419.8	7,251.0	58.0	57.9	-118.72	-167.1	-2,185.4	451.6	349.4	102.28	4.416		
9,300.0	7,034.0	9,519.8	7,251.0	60.4	60.3	-118.77	-167.1	-2,285.4	450.9	344.4	106.47	4.235		
9,400.0	7,034.0	9,619.8	7,251.0	62.8	62.8	-118.82	-167.1	-2,385.4	450.1	339.4	110.67	4.067		
9,500.0	7,034.0	9,719.8	7,251.0	65.2	65.2	-118.88	-167.1	-2,485.4	449.3	334.5	114.86	3.912		
9,600.0	7,034.0	9,819.8	7,251.0	67.7	67.6	-118.93	-167.1	-2,585.4	448.6	329.5	119.06	3.768		
9,700.0	7,034.0	9,919.7	7,251.0	70.1	70.1	-118.99	-167.1	-2,685.4	447.8	324.6	123.26	3.633		
9,800.0	7,034.0	10,019.7	7,251.0	72.5	72.5	-119.04	-167.1	-2,785.4	447.1	319.6	127.46	3.508		
9,900.0	7,034.0	10,119.7	7,251.0	75.0	74.9	-119.09	-167.1	-2,885.4	446.3	314.6	131.65	3.390		
10,000.0	7,034.0	10,219.7	7,251.0	77.4	77.4	-119.15	-167.1	-2,985.4	445.5	309.7	135.85	3.280		
10,100.0	7,034.0	10,319.7	7,251.0	79.8	79.8	-119.20	-167.1	-3,085.4	444.8	304.7	140.05	3.176		
10,200.0	7,034.0	10,419.7	7,251.0	82.3	82.3	-119.26	-167.1	-3,185.4	444.0	299.8	144.24	3.078		
10,300.0	7,034.0	10,519.7	7,251.0	84.7	84.7	-119.31	-167.1	-3,285.4	443.2	294.8	148.44	2.986		

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 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 #1	Offset TVD Reference:	Offset Datum

Offset Design													S28-T3N-R68W (Frederiksen) - Frederiksen 1D-28H-A368 - 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							Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor					
10,400.0	7,034.0	10,619.7	7,251.0	87.2	87.1	-119.37	-167.1	-3,385.4	442.5	289.9	152.63	2.899					
10,500.0	7,034.0	10,719.7	7,251.0	89.6	89.6	-119.42	-167.1	-3,485.4	441.7	284.9	156.82	2.817					
10,600.0	7,034.0	10,819.7	7,251.0	92.1	92.0	-119.48	-167.1	-3,585.4	441.0	280.0	161.00	2.739					
10,700.0	7,034.0	10,919.7	7,251.0	94.5	94.5	-119.54	-167.1	-3,685.3	440.2	275.0	165.19	2.665					
10,800.0	7,034.0	11,019.7	7,251.0	97.0	96.9	-119.59	-167.1	-3,785.3	439.4	270.1	169.37	2.595					
10,900.0	7,034.0	11,119.7	7,251.0	99.4	99.4	-119.65	-167.1	-3,885.3	438.7	265.1	173.54	2.528					
11,000.0	7,034.0	11,219.7	7,251.0	101.9	101.9	-119.70	-167.1	-3,985.3	437.9	260.2	177.72	2.464					
11,100.0	7,034.0	11,319.7	7,251.0	104.4	104.3	-119.76	-167.1	-4,085.3	437.2	255.3	181.89	2.404					
11,200.0	7,034.0	11,419.7	7,251.0	106.8	106.8	-119.82	-167.1	-4,185.3	436.4	250.4	186.05	2.346					
11,300.0	7,034.0	11,519.7	7,251.0	109.3	109.2	-119.88	-167.1	-4,285.3	435.7	245.4	190.22	2.290					
11,400.0	7,034.0	11,619.7	7,251.0	111.7	111.7	-119.93	-167.1	-4,385.3	434.9	240.5	194.37	2.237					
11,500.0	7,034.0	11,719.7	7,251.0	114.2	114.1	-119.99	-167.1	-4,485.3	434.1	235.6	198.53	2.187					
11,592.8	7,034.0	11,812.5	7,251.0	116.5	116.4	-120.04	-167.1	-4,578.1	433.4	231.1	202.38	2.142 SF					

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 #1	Offset TVD Reference:	Offset Datum

Offset Design S28-T3N-R68W (Frederiksen) - Frederiksen 1E-28H-A368 - 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	-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	136.80	-22.6	0.4	23.3	21.6	1.70	13.693		
600.0	600.0	599.2	599.1	1.0	1.0	138.09	-25.0	1.5	27.5	25.5	2.05	13.428 SF		
700.0	699.9	698.4	698.3	1.2	1.2	139.53	-28.9	3.4	34.6	32.2	2.40	14.408		
800.0	799.7	797.4	797.1	1.4	1.4	140.19	-34.3	6.0	44.0	41.2	2.76	15.932		
900.0	899.6	896.1	895.5	1.6	1.6	139.72	-41.2	9.3	54.8	51.7	3.12	17.567		
1,000.0	999.4	995.4	994.4	1.8	1.8	139.07	-48.9	13.0	66.4	62.9	3.49	19.044		
1,100.0	1,099.3	1,094.8	1,093.4	2.0	2.0	138.62	-56.5	16.7	77.9	74.1	3.85	20.237		
1,200.0	1,199.2	1,194.1	1,192.4	2.2	2.2	138.28	-64.2	20.4	89.5	85.2	4.22	21.219		
1,300.0	1,299.0	1,293.4	1,291.3	2.4	2.5	138.02	-71.9	24.1	101.0	96.4	4.58	22.041		
1,400.0	1,398.9	1,392.7	1,390.3	2.6	2.7	137.81	-79.5	27.8	112.6	107.6	4.95	22.740		
1,500.0	1,498.7	1,492.1	1,489.3	2.8	2.9	137.65	-87.2	31.5	124.1	118.8	5.32	23.340		
1,600.0	1,598.6	1,591.4	1,588.2	3.0	3.1	137.51	-94.9	35.2	135.7	130.0	5.69	23.861		
1,700.0	1,698.4	1,690.7	1,687.2	3.1	3.4	137.39	-102.5	38.9	147.2	141.2	6.05	24.318		
1,800.0	1,798.3	1,790.1	1,786.2	3.3	3.6	137.29	-110.2	42.6	158.8	152.3	6.42	24.722		
1,900.0	1,898.2	1,889.4	1,885.1	3.5	3.8	137.20	-117.9	46.3	170.3	163.5	6.79	25.081		
2,000.0	1,998.0	1,988.7	1,984.1	3.7	4.0	137.12	-125.5	50.0	181.9	174.7	7.16	25.402		
2,100.0	2,097.9	2,088.1	2,083.1	3.9	4.3	137.06	-133.2	53.7	193.4	185.9	7.53	25.692		
2,200.0	2,197.7	2,187.4	2,182.0	4.1	4.5	137.00	-140.9	57.4	205.0	197.1	7.90	25.954		
2,300.0	2,297.6	2,286.7	2,281.0	4.3	4.7	136.95	-148.5	61.1	216.5	208.3	8.27	26.193		
2,400.0	2,397.4	2,386.0	2,379.9	4.5	4.9	136.90	-156.2	64.8	228.1	219.5	8.64	26.411		
2,500.0	2,497.3	2,485.4	2,478.9	4.7	5.2	136.85	-163.9	68.5	239.7	230.6	9.01	26.610		
2,600.0	2,597.2	2,584.7	2,577.9	4.9	5.4	136.82	-171.6	72.2	251.2	241.8	9.38	26.794		
2,700.0	2,697.0	2,684.0	2,676.8	5.1	5.6	136.78	-179.2	75.9	262.8	253.0	9.75	26.964		
2,800.0	2,796.9	2,783.4	2,775.8	5.3	5.8	136.75	-186.9	79.6	274.3	264.2	10.11	27.121		
2,900.0	2,896.7	2,882.7	2,874.8	5.5	6.1	136.72	-194.6	83.3	285.9	275.4	10.48	27.267		
3,000.0	2,996.6	2,982.0	2,973.7	5.7	6.3	136.69	-202.2	87.0	297.4	286.6	10.85	27.403		
3,100.0	3,096.4	3,081.4	3,072.7	5.9	6.5	136.66	-209.9	90.7	309.0	297.8	11.22	27.530		
3,200.0	3,196.3	3,180.7	3,171.7	6.1	6.7	136.64	-217.6	94.4	320.5	309.0	11.59	27.649		
3,300.0	3,296.2	3,280.0	3,270.6	6.3	7.0	136.62	-225.2	98.1	332.1	320.1	11.96	27.760		
3,400.0	3,396.0	3,379.3	3,369.6	6.5	7.2	136.60	-232.9	101.8	343.7	331.3	12.33	27.864		
3,500.0	3,495.9	3,478.7	3,468.6	6.7	7.4	136.58	-240.6	105.4	355.2	342.5	12.70	27.963		
3,600.0	3,595.7	3,578.0	3,567.5	6.9	7.7	136.56	-248.2	109.1	366.8	353.7	13.07	28.056		
3,700.0	3,695.6	3,677.3	3,666.5	7.1	7.9	136.54	-255.9	112.8	378.3	364.9	13.44	28.143		
3,800.0	3,795.4	3,776.7	3,765.4	7.3	8.1	136.53	-263.6	116.5	389.9	376.1	13.81	28.226		
3,900.0	3,895.3	3,876.0	3,864.4	7.5	8.3	136.51	-271.2	120.2	401.4	387.3	14.18	28.305		
4,000.0	3,995.2	3,975.3	3,963.4	7.7	8.6	136.50	-278.9	123.9	413.0	398.4	14.55	28.379		
4,100.0	4,095.0	4,074.7	4,062.3	7.9	8.8	136.48	-286.6	127.6	424.6	409.6	14.92	28.450		
4,200.0	4,194.9	4,174.0	4,161.3	8.1	9.0	136.47	-294.3	131.3	436.1	420.8	15.29	28.517		
4,300.0	4,294.7	4,273.3	4,260.3	8.3	9.3	136.46	-301.9	135.0	447.7	432.0	15.66	28.581		
4,400.0	4,394.6	4,372.6	4,359.2	8.5	9.5	136.45	-309.6	138.7	459.2	443.2	16.03	28.643		
4,500.0	4,494.5	4,472.0	4,458.2	8.7	9.7	136.44	-317.3	142.4	470.8	454.4	16.40	28.701		
4,600.0	4,594.3	4,571.3	4,557.2	8.9	9.9	136.43	-324.9	146.1	482.3	465.6	16.77	28.757		
4,700.0	4,694.2	4,670.6	4,656.1	9.1	10.2	136.42	-332.6	149.8	493.9	476.7	17.14	28.810		

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 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 #1	Offset TVD Reference:	Offset Datum

Offset Design S28-T3N-R68W (Frederiksen) - Frederiksen 1F-28H-A368 - 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						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-180.00	-29.1	0.0	29.1					
100.0	100.0	100.0	100.0	0.2	0.2	-180.00	-29.1	0.0	29.1	28.8	0.30	95.963		
200.0	200.0	200.0	200.0	0.3	0.3	-180.00	-29.1	0.0	29.1	28.5	0.65	44.646 CC, ES		
300.0	300.0	299.5	299.5	0.5	0.5	179.56	-30.0	0.2	30.0	29.0	1.00	29.946		
400.0	400.0	398.9	398.9	0.7	0.7	178.38	-32.5	0.9	32.5	31.2	1.35	24.066		
500.0	500.0	498.2	498.1	0.9	0.9	133.96	-36.6	2.1	37.3	35.6	1.70	21.984 SF		
600.0	600.0	597.2	596.9	1.0	1.1	134.54	-42.4	3.7	45.1	43.0	2.05	21.997		
700.0	699.9	695.8	695.2	1.2	1.3	135.74	-49.8	5.7	55.7	53.3	2.40	23.183		
800.0	799.7	794.0	792.9	1.4	1.5	136.77	-58.8	8.2	68.7	65.9	2.76	24.893		
900.0	899.6	891.6	890.0	1.6	1.7	137.14	-69.3	11.1	83.3	80.2	3.12	26.720		
1,000.0	999.4	989.7	987.3	1.8	2.0	137.16	-81.3	14.4	99.3	95.8	3.48	28.546		
1,100.0	1,099.3	1,088.4	1,085.1	2.0	2.3	137.15	-93.4	17.8	115.4	111.6	3.84	30.055		
1,200.0	1,199.2	1,187.1	1,183.0	2.2	2.5	137.14	-105.6	21.2	131.6	127.4	4.20	31.297		
1,300.0	1,299.0	1,285.8	1,280.9	2.4	2.8	137.14	-117.8	24.5	147.7	143.2	4.57	32.337		
1,400.0	1,398.9	1,384.5	1,378.8	2.6	3.1	137.13	-130.0	27.9	163.9	159.0	4.93	33.220		
1,500.0	1,498.7	1,483.2	1,476.6	2.8	3.4	137.13	-142.1	31.3	180.0	174.7	5.30	33.979		
1,600.0	1,598.6	1,581.8	1,574.5	3.0	3.6	137.13	-154.3	34.6	196.2	190.5	5.66	34.638		
1,700.0	1,698.4	1,680.5	1,672.4	3.1	3.9	137.13	-166.5	38.0	212.4	206.3	6.03	35.216		
1,800.0	1,798.3	1,779.2	1,770.3	3.3	4.2	137.12	-178.7	41.4	228.5	222.1	6.40	35.726		
1,900.0	1,898.2	1,877.9	1,868.1	3.5	4.5	137.12	-190.8	44.8	244.7	237.9	6.76	36.181		
2,000.0	1,998.0	1,976.6	1,966.0	3.7	4.7	137.12	-203.0	48.1	260.8	253.7	7.13	36.588		
2,100.0	2,097.9	2,075.3	2,063.9	3.9	5.0	137.12	-215.2	51.5	277.0	269.5	7.49	36.954		
2,200.0	2,197.7	2,174.0	2,161.7	4.1	5.3	137.12	-227.4	54.9	293.1	285.3	7.86	37.286		
2,300.0	2,297.6	2,272.6	2,259.6	4.3	5.6	137.12	-239.5	58.2	309.3	301.1	8.23	37.588		
2,400.0	2,397.4	2,371.3	2,357.5	4.5	5.8	137.12	-251.7	61.6	325.4	316.8	8.59	37.864		
2,500.0	2,497.3	2,470.0	2,455.4	4.7	6.1	137.11	-263.9	65.0	341.6	332.6	8.96	38.117		
2,600.0	2,597.2	2,568.7	2,553.2	4.9	6.4	137.11	-276.1	68.3	357.7	348.4	9.33	38.350		
2,700.0	2,697.0	2,667.4	2,651.1	5.1	6.7	137.11	-288.2	71.7	373.9	364.2	9.70	38.565		
2,800.0	2,796.9	2,766.1	2,749.0	5.3	7.0	137.11	-300.4	75.1	390.1	380.0	10.06	38.764		
2,900.0	2,896.7	2,864.8	2,846.9	5.5	7.2	137.11	-312.6	78.4	406.2	395.8	10.43	38.948		
3,000.0	2,996.6	2,963.4	2,944.7	5.7	7.5	137.11	-324.8	81.8	422.4	411.6	10.80	39.121		
3,100.0	3,096.4	3,062.1	3,042.6	5.9	7.8	137.11	-337.0	85.2	438.5	427.4	11.16	39.281		
3,200.0	3,196.3	3,160.8	3,140.5	6.1	8.1	137.11	-349.1	88.6	454.7	443.1	11.53	39.432		
3,300.0	3,296.2	3,259.5	3,238.4	6.3	8.3	137.11	-361.3	91.9	470.8	458.9	11.90	39.573		
3,400.0	3,396.0	3,358.2	3,336.2	6.5	8.6	137.11	-373.5	95.3	487.0	474.7	12.26	39.705		

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 #1	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		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
8,500.0	7,034.0	7,219.0	7,010.2	41.2	14.2	-87.71	161.3	-1,944.3	464.8	411.6	53.21	8.736		
8,600.0	7,034.0	7,219.8	7,011.1	43.6	14.2	-88.41	161.4	-1,944.3	366.2	310.6	55.60	6.587		
8,700.0	7,034.0	7,220.7	7,011.9	46.0	14.2	-89.11	161.4	-1,944.3	268.7	210.7	57.99	4.634		
8,800.0	7,034.0	7,221.5	7,012.8	48.3	14.2	-89.83	161.4	-1,944.4	174.1	113.7	60.39	2.883		
8,900.0	7,034.0	7,222.4	7,013.7	50.7	14.2	-90.55	161.4	-1,944.4	91.6	28.9	62.78	1.460 Level 3		
8,959.6	7,034.0	7,222.9	7,014.2	52.2	14.2	-90.98	161.4	-1,944.4	69.7	5.4	64.21	1.085 Level 2, CC, ES, SF		
9,000.0	7,034.0	7,223.3	7,014.6	53.1	14.2	-91.28	161.4	-1,944.4	80.5	15.4	65.18	1.236 Level 2		
9,100.0	7,034.0	7,224.2	7,015.5	55.5	14.2	-92.02	161.4	-1,944.4	156.8	89.2	67.57	2.320		
9,200.0	7,034.0	7,225.1	7,016.4	58.0	14.2	-92.76	161.4	-1,944.4	250.3	180.4	69.95	3.579		
9,300.0	7,034.0	7,226.0	7,017.3	60.4	14.2	-93.52	161.5	-1,944.4	347.5	275.2	72.32	4.805		
9,400.0	7,034.0	7,227.0	7,018.2	62.8	14.2	-94.28	161.5	-1,944.4	445.9	371.2	74.68	5.971		

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 #1	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		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)				Between Centres (ft)	Between Ellipses (ft)	
4,700.0	4,694.2	4,855.1	4,738.7	9.1	8.9	-135.87	143.6	-339.2	496.8	480.1	16.68	29.784		
4,800.0	4,794.0	4,960.9	4,839.5	9.3	9.2	-132.86	173.4	-325.9	487.2	469.9	17.35	28.085		
4,900.0	4,893.9	5,063.3	4,936.8	9.5	9.5	-129.92	201.4	-311.1	477.0	459.0	17.99	26.519		
5,000.0	4,993.7	5,155.4	5,025.0	9.7	9.7	-127.45	224.2	-297.8	467.7	449.2	18.55	25.216		
5,100.0	5,093.6	5,246.1	5,112.4	9.9	9.9	-125.12	245.5	-286.3	461.1	442.0	19.09	24.157		
5,200.0	5,193.5	5,339.1	5,202.4	10.1	10.2	-122.80	266.6	-275.6	456.4	436.8	19.62	23.266		
5,300.0	5,293.3	5,432.0	5,292.5	10.3	10.4	-120.54	287.1	-266.1	453.8	433.6	20.13	22.544		
5,400.0	5,393.2	5,526.5	5,384.6	10.5	10.6	-118.50	306.1	-257.9	452.8	432.2	20.60	21.981		
5,416.6	5,409.7	5,542.3	5,400.1	10.5	10.6	-118.19	309.0	-256.6	452.8	432.1	20.67	21.903		
5,500.0	5,493.0	5,622.8	5,479.3	10.6	10.7	-116.81	322.7	-251.0	453.2	432.2	21.03	21.553		
5,600.0	5,592.9	5,721.8	5,577.2	10.8	10.8	-115.62	335.8	-245.5	454.2	432.8	21.40	21.227		
5,700.0	5,692.7	5,821.0	5,676.0	11.0	10.9	-115.04	344.3	-241.5	455.4	433.7	21.71	20.981		
5,800.0	5,792.6	5,920.4	5,775.2	11.2	11.0	-114.93	349.5	-238.9	456.8	434.9	21.98	20.786		
5,900.0	5,892.5	6,020.5	5,875.3	11.4	11.1	-115.06	352.8	-236.9	458.3	436.0	22.23	20.613		
6,000.0	5,992.3	6,118.6	5,973.4	11.6	11.1	-115.47	353.9	-235.8	459.8	437.4	22.45	20.481		
6,100.0	6,092.2	6,215.0	6,069.7	11.8	11.2	-116.07	353.8	-235.8	462.2	439.5	22.66	20.396		
6,200.0	6,192.0	6,314.4	6,169.2	12.0	11.2	-116.70	353.6	-236.2	464.8	442.0	22.87	20.328		
6,300.0	6,291.9	6,411.2	6,266.0	12.2	11.2	-117.33	353.3	-237.1	468.0	444.9	23.07	20.287		
6,400.0	6,391.7	6,508.9	6,363.6	12.4	11.3	-117.99	352.8	-238.5	471.8	448.5	23.27	20.275		
6,500.0	6,491.6	6,606.7	6,461.4	12.6	11.3	-20.39	352.3	-240.4	473.9	450.4	23.41	20.238		
6,600.0	6,590.4	6,710.6	6,565.3	12.7	11.3	6.25	352.0	-242.0	460.8	437.5	23.21	19.849		
6,700.0	6,685.4	6,804.6	6,659.2	12.7	11.4	11.85	352.2	-242.9	431.0	408.4	22.63	19.047		
6,800.0	6,773.5	6,894.6	6,749.3	12.7	11.4	16.69	352.3	-243.9	386.0	364.3	21.74	17.754		
6,900.0	6,852.1	6,973.8	6,828.4	12.8	11.4	23.65	352.1	-244.6	327.5	306.7	20.72	15.802		
7,000.0	6,918.8	7,041.8	6,896.5	12.9	11.5	35.89	352.0	-245.2	258.4	238.4	20.01	12.917		
7,100.0	6,971.7	7,095.9	6,950.6	13.4	11.5	56.88	351.8	-245.5	184.4	163.9	20.43	9.026		
7,200.0	7,009.0	7,133.3	6,988.0	14.4	11.5	80.89	351.6	-245.7	120.8	99.1	21.70	5.568		
7,259.6	7,023.4	7,148.0	7,002.7	15.2	11.5	90.13	351.5	-245.8	106.1	83.6	22.49	4.716 CC, ES, SF		
7,300.0	7,029.8	7,154.6	7,009.3	15.8	11.5	92.92	351.5	-245.9	113.4	90.3	23.02	4.924		
7,400.0	7,034.0	7,159.7	7,014.4	17.4	11.5	90.74	351.5	-245.9	175.8	151.1	24.72	7.111		
7,500.0	7,034.0	7,160.6	7,015.2	19.2	11.5	91.22	351.5	-245.9	262.7	236.1	26.54	9.895		
7,600.0	7,034.0	7,161.5	7,016.1	21.1	11.5	91.70	351.5	-245.9	356.5	328.0	28.50	12.508		
7,700.0	7,034.0	7,162.4	7,017.0	23.1	11.5	92.18	351.5	-245.9	453.0	422.4	30.55	14.825		

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 #1	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°

