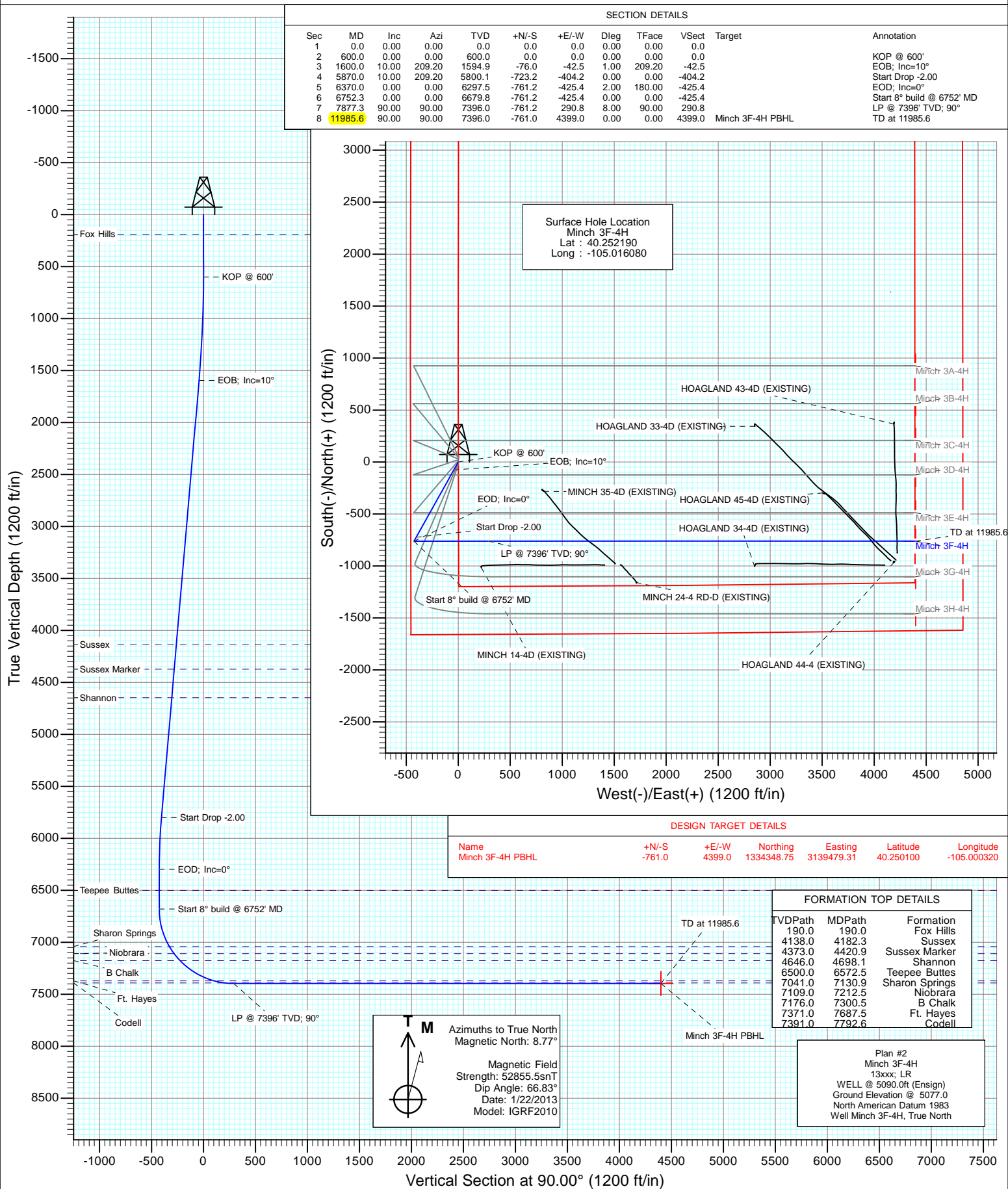




Project: DJ Wattenberg
Site: S4-T3N-R68W (Minch)
Well: Minch 3F-4H
Wellbore: Hz
Design: Plan #2



Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Minch 3F-4H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 5090.0ft (Ensign)
Project:	DJ Wattenberg	MD Reference:	WELL @ 5090.0ft (Ensign)
Site:	S4-T3N-R68W (Minch)	North Reference:	True
Well:	Minch 3F-4H	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		S4-T3N-R68W (Minch)			
Site Position:		Northing:	1,334,165.55 ft	Latitude:	40.249600
From:	Lat/Long	Easting:	3,139,290.53 ft	Longitude:	-105.001000
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	0.32 °

Well	Minch 3F-4H					
Well Position	+N/-S	0.0 ft	Northing:	1,335,085.69 ft	Latitude:	40.252190
	+E/-W	0.0 ft	Easting:	3,135,076.18 ft	Longitude:	-105.016080
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	5,077.0 ft

Wellbore	Hz				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	1/22/2013	8.77	66.83	52,856

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	90.00	

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	
600.0	0.00	0.00	600.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,600.0	10.00	209.20	1,594.9	-76.0	-42.5	1.00	1.00	0.00	209.20	
5,870.0	10.00	209.20	5,800.1	-723.2	-404.2	0.00	0.00	0.00	0.00	
6,370.0	0.00	0.00	6,297.5	-761.2	-425.4	2.00	-2.00	0.00	180.00	
6,752.3	0.00	0.00	6,679.8	-761.2	-425.4	0.00	0.00	0.00	0.00	
7,877.3	90.00	90.00	7,396.0	-761.2	290.8	8.00	8.00	0.00	90.00	
11,985.6	90.00	90.00	7,396.0	-761.0	4,399.0	0.00	0.00	0.00	0.00	Minch 3F-4H PBHL

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Minch 3F-4H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 5090.0ft (Ensign)
Project:	DJ Wattenberg	MD Reference:	WELL @ 5090.0ft (Ensign)
Site:	S4-T3N-R68W (Minch)	North Reference:	True
Well:	Minch 3F-4H	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	
190.0	0.00	0.00	190.0	0.0	0.0	0.0	0.00	0.00	Fox Hills
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	KOP @ 600'
700.0	1.00	209.20	700.0	-0.8	-0.4	-0.4	1.00	1.00	
800.0	2.00	209.20	800.0	-3.0	-1.7	-1.7	1.00	1.00	
900.0	3.00	209.20	899.9	-6.9	-3.8	-3.8	1.00	1.00	
1,000.0	4.00	209.20	999.7	-12.2	-6.8	-6.8	1.00	1.00	
1,100.0	5.00	209.20	1,099.4	-19.0	-10.6	-10.6	1.00	1.00	
1,200.0	6.00	209.20	1,198.9	-27.4	-15.3	-15.3	1.00	1.00	
1,300.0	7.00	209.20	1,298.3	-37.3	-20.8	-20.8	1.00	1.00	
1,400.0	8.00	209.20	1,397.4	-48.7	-27.2	-27.2	1.00	1.00	
1,500.0	9.00	209.20	1,496.3	-61.6	-34.4	-34.4	1.00	1.00	
1,600.0	10.00	209.20	1,594.9	-76.0	-42.5	-42.5	1.00	1.00	EOB; Inc=10°
1,700.0	10.00	209.20	1,693.4	-91.1	-50.9	-50.9	0.00	0.00	
1,800.0	10.00	209.20	1,791.9	-106.3	-59.4	-59.4	0.00	0.00	
1,900.0	10.00	209.20	1,890.4	-121.5	-67.9	-67.9	0.00	0.00	
2,000.0	10.00	209.20	1,988.9	-136.6	-76.4	-76.4	0.00	0.00	
2,100.0	10.00	209.20	2,087.3	-151.8	-84.8	-84.8	0.00	0.00	
2,200.0	10.00	209.20	2,185.8	-166.9	-93.3	-93.3	0.00	0.00	
2,300.0	10.00	209.20	2,284.3	-182.1	-101.8	-101.8	0.00	0.00	
2,400.0	10.00	209.20	2,382.8	-197.2	-110.2	-110.2	0.00	0.00	
2,500.0	10.00	209.20	2,481.3	-212.4	-118.7	-118.7	0.00	0.00	
2,600.0	10.00	209.20	2,579.7	-227.6	-127.2	-127.2	0.00	0.00	
2,700.0	10.00	209.20	2,678.2	-242.7	-135.7	-135.7	0.00	0.00	
2,800.0	10.00	209.20	2,776.7	-257.9	-144.1	-144.1	0.00	0.00	
2,900.0	10.00	209.20	2,875.2	-273.0	-152.6	-152.6	0.00	0.00	
3,000.0	10.00	209.20	2,973.7	-288.2	-161.1	-161.1	0.00	0.00	
3,100.0	10.00	209.20	3,072.1	-303.4	-169.5	-169.5	0.00	0.00	
3,200.0	10.00	209.20	3,170.6	-318.5	-178.0	-178.0	0.00	0.00	
3,300.0	10.00	209.20	3,269.1	-333.7	-186.5	-186.5	0.00	0.00	
3,400.0	10.00	209.20	3,367.6	-348.8	-195.0	-195.0	0.00	0.00	
3,500.0	10.00	209.20	3,466.1	-364.0	-203.4	-203.4	0.00	0.00	
3,600.0	10.00	209.20	3,564.5	-379.1	-211.9	-211.9	0.00	0.00	
3,700.0	10.00	209.20	3,663.0	-394.3	-220.4	-220.4	0.00	0.00	
3,800.0	10.00	209.20	3,761.5	-409.5	-228.8	-228.8	0.00	0.00	
3,900.0	10.00	209.20	3,860.0	-424.6	-237.3	-237.3	0.00	0.00	
4,000.0	10.00	209.20	3,958.5	-439.8	-245.8	-245.8	0.00	0.00	
4,100.0	10.00	209.20	4,057.0	-454.9	-254.3	-254.3	0.00	0.00	
4,182.3	10.00	209.20	4,138.0	-467.4	-261.2	-261.2	0.00	0.00	Sussex
4,200.0	10.00	209.20	4,155.4	-470.1	-262.7	-262.7	0.00	0.00	
4,300.0	10.00	209.20	4,253.9	-485.3	-271.2	-271.2	0.00	0.00	
4,400.0	10.00	209.20	4,352.4	-500.4	-279.7	-279.7	0.00	0.00	
4,420.9	10.00	209.20	4,373.0	-503.6	-281.4	-281.4	0.00	0.00	Sussex Marker
4,500.0	10.00	209.20	4,450.9	-515.6	-288.1	-288.1	0.00	0.00	
4,600.0	10.00	209.20	4,549.4	-530.7	-296.6	-296.6	0.00	0.00	
4,698.1	10.00	209.20	4,646.0	-545.6	-304.9	-304.9	0.00	0.00	Shannon
4,700.0	10.00	209.20	4,647.8	-545.9	-305.1	-305.1	0.00	0.00	

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Minch 3F-4H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 5090.0ft (Ensign)
Project:	DJ Wattenberg	MD Reference:	WELL @ 5090.0ft (Ensign)
Site:	S4-T3N-R68W (Minch)	North Reference:	True
Well:	Minch 3F-4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
4,800.0	10.00	209.20	4,746.3	-561.0	-313.6	-313.6	0.00	0.00	
4,900.0	10.00	209.20	4,844.8	-576.2	-322.0	-322.0	0.00	0.00	
5,000.0	10.00	209.20	4,943.3	-591.4	-330.5	-330.5	0.00	0.00	
5,100.0	10.00	209.20	5,041.8	-606.5	-339.0	-339.0	0.00	0.00	
5,200.0	10.00	209.20	5,140.2	-621.7	-347.4	-347.4	0.00	0.00	
5,300.0	10.00	209.20	5,238.7	-636.8	-355.9	-355.9	0.00	0.00	
5,400.0	10.00	209.20	5,337.2	-652.0	-364.4	-364.4	0.00	0.00	
5,500.0	10.00	209.20	5,435.7	-667.2	-372.9	-372.9	0.00	0.00	
5,600.0	10.00	209.20	5,534.2	-682.3	-381.3	-381.3	0.00	0.00	
5,700.0	10.00	209.20	5,632.6	-697.5	-389.8	-389.8	0.00	0.00	
5,800.0	10.00	209.20	5,731.1	-712.6	-398.3	-398.3	0.00	0.00	
5,870.0	10.00	209.20	5,800.1	-723.2	-404.2	-404.2	0.00	0.00	Start Drop -2.00
5,900.0	9.40	209.20	5,829.6	-727.6	-406.7	-406.7	2.00	-2.00	
6,000.0	7.40	209.20	5,928.6	-740.4	-413.8	-413.8	2.00	-2.00	
6,100.0	5.40	209.20	6,027.9	-750.1	-419.2	-419.2	2.00	-2.00	
6,200.0	3.40	209.20	6,127.6	-756.8	-423.0	-423.0	2.00	-2.00	
6,300.0	1.40	209.20	6,227.5	-760.5	-425.0	-425.0	2.00	-2.00	
6,370.0	0.00	0.00	6,297.5	-761.2	-425.4	-425.4	2.00	-2.00	EOD; Inc=0°
6,400.0	0.00	0.00	6,327.5	-761.2	-425.4	-425.4	0.00	0.00	
6,500.0	0.00	0.00	6,427.5	-761.2	-425.4	-425.4	0.00	0.00	
6,572.5	0.00	0.00	6,500.0	-761.2	-425.4	-425.4	0.00	0.00	Teepee Buttes
6,600.0	0.00	0.00	6,527.5	-761.2	-425.4	-425.4	0.00	0.00	
6,700.0	0.00	0.00	6,627.5	-761.2	-425.4	-425.4	0.00	0.00	
6,752.3	0.00	0.00	6,679.8	-761.2	-425.4	-425.4	0.00	0.00	Start 8° build @ 6752' MD
6,800.0	3.82	90.00	6,727.5	-761.2	-423.8	-423.8	8.00	8.00	
6,900.0	11.82	90.00	6,826.5	-761.2	-410.3	-410.3	8.00	8.00	
7,000.0	19.82	90.00	6,922.6	-761.2	-383.0	-383.0	8.00	8.00	
7,100.0	27.82	90.00	7,014.0	-761.2	-342.7	-342.7	8.00	8.00	
7,130.9	30.29	90.00	7,041.0	-761.2	-327.7	-327.7	8.00	8.00	Sharon Springs
7,200.0	35.82	90.00	7,098.9	-761.2	-290.0	-290.0	8.00	8.00	
7,212.5	36.82	90.00	7,109.0	-761.2	-282.6	-282.6	8.00	8.00	Niobrara
7,300.0	43.82	90.00	7,175.7	-761.2	-226.0	-226.0	8.00	8.00	
7,300.5	43.85	90.00	7,176.0	-761.2	-225.7	-225.7	8.00	8.00	B Chalk
7,400.0	51.82	90.00	7,242.8	-761.2	-152.0	-152.0	8.00	8.00	
7,500.0	59.82	90.00	7,298.9	-761.2	-69.3	-69.3	8.00	8.00	
7,600.0	67.82	90.00	7,343.0	-761.2	20.4	20.4	8.00	8.00	
7,687.5	74.82	90.00	7,371.0	-761.2	103.2	103.2	8.00	8.00	Ft. Hayes
7,700.0	75.82	90.00	7,374.2	-761.2	115.3	115.3	8.00	8.00	
7,792.6	83.23	90.00	7,391.0	-761.2	206.3	206.3	8.00	8.00	Codell
7,800.0	83.82	90.00	7,391.8	-761.2	213.6	213.6	8.00	8.00	
7,877.3	90.00	90.00	7,396.0	-761.2	290.8	290.8	8.00	8.00	LP @ 7396' TVD; 90°
7,900.0	90.00	90.00	7,396.0	-761.2	313.5	313.5	0.00	0.00	
8,000.0	90.00	90.00	7,396.0	-761.2	413.5	413.5	0.00	0.00	
8,100.0	90.00	90.00	7,396.0	-761.2	513.5	513.5	0.00	0.00	
8,200.0	90.00	90.00	7,396.0	-761.2	613.5	613.5	0.00	0.00	
8,300.0	90.00	90.00	7,396.0	-761.2	713.5	713.5	0.00	0.00	
8,400.0	90.00	90.00	7,396.0	-761.2	813.5	813.5	0.00	0.00	
8,500.0	90.00	90.00	7,396.0	-761.2	913.5	913.5	0.00	0.00	
8,600.0	90.00	90.00	7,396.0	-761.1	1,013.5	1,013.5	0.00	0.00	
8,700.0	90.00	90.00	7,396.0	-761.1	1,113.5	1,113.5	0.00	0.00	
8,800.0	90.00	90.00	7,396.0	-761.1	1,213.5	1,213.5	0.00	0.00	
8,900.0	90.00	90.00	7,396.0	-761.1	1,313.5	1,313.5	0.00	0.00	

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Minch 3F-4H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 5090.0ft (Ensign)
Project:	DJ Wattenberg	MD Reference:	WELL @ 5090.0ft (Ensign)
Site:	S4-T3N-R68W (Minch)	North Reference:	True
Well:	Minch 3F-4H	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
9,000.0	90.00	90.00	7,396.0	-761.1	1,413.5	1,413.5	0.00	0.00	
9,100.0	90.00	90.00	7,396.0	-761.1	1,513.5	1,513.5	0.00	0.00	
9,200.0	90.00	90.00	7,396.0	-761.1	1,613.5	1,613.5	0.00	0.00	
9,300.0	90.00	90.00	7,396.0	-761.1	1,713.5	1,713.5	0.00	0.00	
9,400.0	90.00	90.00	7,396.0	-761.1	1,813.5	1,813.5	0.00	0.00	
9,500.0	90.00	90.00	7,396.0	-761.1	1,913.5	1,913.5	0.00	0.00	
9,600.0	90.00	90.00	7,396.0	-761.1	2,013.5	2,013.5	0.00	0.00	
9,700.0	90.00	90.00	7,396.0	-761.1	2,113.5	2,113.5	0.00	0.00	
9,800.0	90.00	90.00	7,396.0	-761.1	2,213.5	2,213.5	0.00	0.00	
9,900.0	90.00	90.00	7,396.0	-761.1	2,313.5	2,313.5	0.00	0.00	
10,000.0	90.00	90.00	7,396.0	-761.1	2,413.5	2,413.5	0.00	0.00	
10,100.0	90.00	90.00	7,396.0	-761.1	2,513.5	2,513.5	0.00	0.00	
10,200.0	90.00	90.00	7,396.0	-761.1	2,613.5	2,613.5	0.00	0.00	
10,300.0	90.00	90.00	7,396.0	-761.1	2,713.5	2,713.5	0.00	0.00	
10,400.0	90.00	90.00	7,396.0	-761.0	2,813.5	2,813.5	0.00	0.00	
10,500.0	90.00	90.00	7,396.0	-761.0	2,913.5	2,913.5	0.00	0.00	
10,600.0	90.00	90.00	7,396.0	-761.0	3,013.5	3,013.5	0.00	0.00	
10,700.0	90.00	90.00	7,396.0	-761.0	3,113.5	3,113.5	0.00	0.00	
10,800.0	90.00	90.00	7,396.0	-761.0	3,213.5	3,213.5	0.00	0.00	
10,900.0	90.00	90.00	7,396.0	-761.0	3,313.5	3,313.5	0.00	0.00	
11,000.0	90.00	90.00	7,396.0	-761.0	3,413.5	3,413.5	0.00	0.00	
11,100.0	90.00	90.00	7,396.0	-761.0	3,513.5	3,513.5	0.00	0.00	
11,200.0	90.00	90.00	7,396.0	-761.0	3,613.5	3,613.5	0.00	0.00	
11,300.0	90.00	90.00	7,396.0	-761.0	3,713.5	3,713.5	0.00	0.00	
11,400.0	90.00	90.00	7,396.0	-761.0	3,813.5	3,813.5	0.00	0.00	
11,500.0	90.00	90.00	7,396.0	-761.0	3,913.5	3,913.5	0.00	0.00	
11,600.0	90.00	90.00	7,396.0	-761.0	4,013.5	4,013.5	0.00	0.00	
11,700.0	90.00	90.00	7,396.0	-761.0	4,113.5	4,113.5	0.00	0.00	
11,800.0	90.00	90.00	7,396.0	-761.0	4,213.5	4,213.5	0.00	0.00	
11,900.0	90.00	90.00	7,396.0	-761.0	4,313.5	4,313.5	0.00	0.00	
11,985.6	90.00	90.00	7,396.0	-761.0	4,399.0	4,399.0	0.00	0.00	TD at 11985.6 - Minch 3F-4H PBHL

Targets									
Target Name									
- hit/miss target	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- Shape									
Minch 3F-4H PBHL	0.00	0.00	7,396.0	-761.0	4,399.0	1,334,348.75	3,139,479.31	40.250100	-105.000320
- plan hits target center									
- Point									

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Minch 3F-4H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 5090.0ft (Ensign)
Project:	DJ Wattenberg	MD Reference:	WELL @ 5090.0ft (Ensign)
Site:	S4-T3N-R68W (Minch)	North Reference:	True
Well:	Minch 3F-4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
190.0	190.0	Fox Hills				
4,182.3	4,138.0	Sussex				
4,420.9	4,373.0	Sussex Marker				
4,698.1	4,646.0	Shannon				
6,572.5	6,500.0	Teepee Buttes				
7,130.9	7,041.0	Sharon Springs				
7,212.5	7,109.0	Niobrara				
7,300.5	7,176.0	B Chalk				
7,687.5	7,371.0	Ft. Hayes				
7,792.6	7,391.0	Codell				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
600.0	600.0	0.0	0.0	KOP @ 600'	
1,600.0	1,594.9	-76.0	-42.5	EOB; Inc=10°	
5,870.0	5,800.1	-723.2	-404.2	Start Drop -2.00	
6,370.0	6,297.5	-761.2	-425.4	EOD; Inc=0°	
6,752.3	6,679.8	-761.2	-425.4	Start 8° build @ 6752' MD	
7,877.3	7,396.0	-761.2	290.8	LP @ 7396' TVD; 90°	
11,985.6	7,396.0	-761.0	4,399.0	TD at 11985.6	

EnCana Oil & Gas (USA) Inc

DJ Wattenberg

S4-T3N-R68W (Minch)

Minch 3F-4H

Hz

Plan #2

Anticollision Report

28 January, 2013

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Minch 3F-4H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5090.0ft (Ensign)
Reference Site:	S4-T3N-R68W (Minch)	MD Reference:	WELL @ 5090.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Minch 3F-4H	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 #2	Offset TVD Reference:	Offset Datum

Reference	Plan #2		
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	1/28/2013		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	11,985.6	Plan #2 (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
S4-T3N-R68W (Minch)						
HOAGLAND 33-4D (EXISTING) - Existing - Existing						Out of range
HOAGLAND 34-4D (EXISTING) - Existing - Existing	10,440.1	7,494.7	233.6	132.7	2.317	CC, ES, SF
HOAGLAND 43-4D (EXISTING) - Existing - Existing						Out of range
HOAGLAND 44-4 (EXISTING) - Existing - Existing						Out of range
HOAGLAND 45-4D (EXISTING) - Existing - Existing	11,099.2	7,418.1	458.9	351.2	4.259	CC
HOAGLAND 45-4D (EXISTING) - Existing - Existing	11,100.0	7,418.1	458.9	351.1	4.258	ES, SF
MINCH 14-4D (EXISTING) - Existing - Existing	7,807.8	7,530.0	254.0	213.8	6.316	CC, ES, SF
MINCH 24-4 RD-D (EXISTING) - Existing - Existing						Out of range
MINCH 35-4D (EXISTING) - Existing - Existing	8,405.2	7,493.8	482.3	438.2	10.923	CC, ES
MINCH 35-4D (EXISTING) - Existing - Existing	8,500.0	7,497.6	491.5	445.3	10.631	SF
Minch 3A-4H - Hz - Plan #1	200.0	200.0	51.1	50.4	78.248	CC, ES
Minch 3A-4H - Hz - Plan #1	700.0	694.9	71.4	69.0	29.759	SF
Minch 3B-4H - Hz - Plan #2	400.0	400.0	40.2	38.8	29.735	CC, ES
Minch 3B-4H - Hz - Plan #2	700.0	698.2	46.8	44.4	19.521	SF
Minch 3C-4H - Hz - Plan #1	600.0	600.0	29.3	27.2	14.288	CC, ES
Minch 3C-4H - Hz - Plan #1	800.0	799.6	33.5	30.8	12.200	SF
Minch 3D-4H - Hz - Plan #2	481.8	481.9	20.7	19.1	12.565	CC
Minch 3D-4H - Hz - Plan #2	500.0	500.1	20.7	19.0	12.104	ES
Minch 3D-4H - Hz - Plan #2	700.0	699.4	25.6	23.2	10.433	SF
Minch 3E-4H - Hz - Plan #1	600.0	600.0	10.9	8.9	5.334	CC, ES
Minch 3E-4H - Hz - Plan #1	11,985.6	11,747.9	345.8	164.3	1.905	SF
Minch 3G-4H - Hz - Plan #1	400.0	400.0	7.3	5.9	5.393	CC, ES
Minch 3G-4H - Hz - Plan #1	11,985.6	11,800.5	402.7	207.7	2.065	SF
Minch 3H-4H - Hz - Plan #2	200.0	200.0	18.2	17.6	27.904	CC, ES
Minch 3H-4H - Hz - Plan #2	6,400.0	6,369.8	454.4	414.6	11.391	SF

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

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Minch 3F-4H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5090.0ft (Ensign)
Reference Site:	S4-T3N-R68W (Minch)	MD Reference:	WELL @ 5090.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Minch 3F-4H	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 #2	Offset TVD Reference:	Offset Datum

Offset Design													S4-T3N-R68W (Minch) - HOAGLAND 34-4D (EXISTING) - Existing - Existing		Offset Site Error:		0.0 ft
Survey Program:													1451-MWD		Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance										
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Total Uncertainty	Separation	Warning				
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	Axis	Factor					
10,000.0	7,396.0	7,503.3	7,327.2	66.3	24.7	88.82	-994.7	2,853.5	498.2	407.9	90.26	5.519					
10,100.0	7,396.0	7,501.3	7,325.2	68.7	24.7	88.34	-994.6	2,853.5	412.5	319.9	92.67	4.452					
10,200.0	7,396.0	7,499.4	7,323.3	71.1	24.7	87.86	-994.5	2,853.5	334.9	239.9	95.07	3.523					
10,300.0	7,396.0	7,497.4	7,321.3	73.5	24.7	87.38	-994.4	2,853.6	272.4	174.9	97.47	2.794					
10,400.0	7,396.0	7,495.5	7,319.4	75.9	24.7	86.90	-994.3	2,853.6	237.0	137.1	99.86	2.373					
10,440.1	7,396.0	7,494.7	7,318.6	76.9	24.7	86.71	-994.2	2,853.6	233.6	132.7	100.82	2.317	CC, ES, SF				
10,500.0	7,396.0	7,493.5	7,317.4	78.3	24.7	86.42	-994.1	2,853.7	241.1	138.9	102.24	2.358					
10,600.0	7,396.0	7,491.6	7,315.5	80.7	24.7	85.95	-994.0	2,853.7	283.0	178.4	104.62	2.705					
10,700.0	7,396.0	7,489.7	7,313.6	83.2	24.7	85.48	-993.9	2,853.7	349.4	242.4	106.99	3.265					
10,800.0	7,396.0	7,487.7	7,311.7	85.6	24.7	85.01	-993.8	2,853.8	429.0	319.6	109.35	3.923					

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Minch 3F-4H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5090.0ft (Ensign)
Reference Site:	S4-T3N-R68W (Minch)	MD Reference:	WELL @ 5090.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Minch 3F-4H	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 #2	Offset TVD Reference:	Offset Datum

Offset Design S4-T3N-R68W (Minch) - HOAGLAND 45-4D (EXISTING) - Existing - Existing													Offset Site Error: 0.0 ft
Survey Program: 1388-MWD													Offset Well Error: 0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
11,000.0	7,396.0	7,422.8	7,325.3	90.5	19.2	-89.16	-302.1	3,512.4	469.5	364.1	105.35	4.456	
11,099.2	7,396.0	7,418.1	7,320.6	92.9	19.2	-88.57	-302.2	3,512.6	458.9	351.2	107.75	4.259 CC	
11,100.0	7,396.0	7,418.1	7,320.5	92.9	19.2	-88.57	-302.2	3,512.7	458.9	351.1	107.77	4.258 ES, SF	
11,200.0	7,396.0	7,413.3	7,315.8	95.3	19.2	-87.98	-302.4	3,512.9	469.8	359.6	110.19	4.264	

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Minch 3F-4H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5090.0ft (Ensign)
Reference Site:	S4-T3N-R68W (Minch)	MD Reference:	WELL @ 5090.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Minch 3F-4H	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 #2	Offset TVD Reference:	Offset Datum

Offset Design												S4-T3N-R68W (Minch) - MINCH 14-4D (EXISTING) - Existing - Existing		Offset Site Error:		0.0 ft	
Survey Program:												1638-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					
7,400.0	7,242.8	7,377.6	7,211.0	18.7	23.6	46.65	-1,011.9	221.0	449.5	417.5	32.00	14.046					
7,500.0	7,298.9	7,434.5	7,267.9	18.7	23.6	58.85	-1,013.1	221.4	384.7	350.6	34.07	11.293					
7,600.0	7,343.0	7,479.1	7,312.5	18.8	23.6	72.02	-1,014.0	221.7	323.2	286.7	36.53	8.848					
7,700.0	7,374.2	7,510.7	7,344.1	19.2	23.6	82.80	-1,014.7	221.8	275.1	236.5	38.55	7.135					
7,800.0	7,391.8	7,529.1	7,362.4	19.9	23.7	88.59	-1,015.1	221.9	254.1	214.0	40.09	6.338					
7,807.8	7,392.6	7,530.0	7,363.3	20.0	23.7	88.79	-1,015.1	221.9	254.0	213.8	40.22	6.316	CC, ES, SF				
7,900.0	7,396.0	7,534.1	7,367.5	20.9	23.7	88.98	-1,015.2	222.0	270.0	228.4	41.68	6.479					
8,000.0	7,396.0	7,535.0	7,368.3	22.3	23.7	89.16	-1,015.2	222.0	318.2	274.7	43.44	7.324					
8,100.0	7,396.0	7,535.8	7,369.1	23.9	23.7	89.35	-1,015.2	222.0	386.7	341.4	45.34	8.529					
8,200.0	7,396.0	7,536.7	7,370.0	25.7	23.7	89.55	-1,015.3	222.0	466.7	419.4	47.35	9.858					

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Minch 3F-4H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5090.0ft (Ensign)
Reference Site:	S4-T3N-R68W (Minch)	MD Reference:	WELL @ 5090.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Minch 3F-4H	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 #2	Offset TVD Reference:	Offset Datum

Offset Design S4-T3N-R68W (Minch) - MINCH 35-4D (EXISTING) - Existing - Existing													Offset Site Error: 0.0 ft
Survey Program: 1512-MWD													Offset Well Error: 0.0 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
8,300.0	7,396.0	7,489.6	7,377.4	27.6	20.3	-90.64	-278.9	818.4	493.6	451.7	41.89	11.783	
8,400.0	7,396.0	7,493.6	7,381.4	29.6	20.3	-91.11	-278.9	818.6	482.3	438.3	44.04	10.952	
8,405.2	7,396.0	7,493.8	7,381.6	29.7	20.3	-91.14	-278.9	818.6	482.3	438.2	44.15	10.923 CC, ES	
8,500.0	7,396.0	7,497.6	7,385.4	31.7	20.3	-91.59	-279.0	818.8	491.5	445.3	46.23	10.631 SF	

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Minch 3F-4H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5090.0ft (Ensign)
Reference Site:	S4-T3N-R68W (Minch)	MD Reference:	WELL @ 5090.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Minch 3F-4H	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 #2	Offset TVD Reference:	Offset Datum

Offset Design S4-T3N-R68W (Minch) - Minch 3A-4H - 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					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)	Total Uncertainty Axis			
0.0	0.0	0.0	0.0	0.0	0.0	3.13	51.0	2.8	51.1					
100.0	100.0	100.0	100.0	0.2	0.2	3.13	51.0	2.8	51.1	50.8	0.30	168.188		
200.0	200.0	200.0	200.0	0.3	0.3	3.13	51.0	2.8	51.1	50.4	0.65	78.248 CC, ES		
300.0	300.0	299.2	299.2	0.5	0.5	2.67	51.8	2.4	51.8	50.8	1.00	51.808		
400.0	400.0	398.4	398.3	0.7	0.7	1.34	54.1	1.3	54.1	52.8	1.35	40.145		
500.0	500.0	497.4	497.3	0.8	0.9	-0.62	57.9	-0.6	58.0	56.3	1.70	34.199		
600.0	600.0	596.3	596.0	1.0	1.1	-2.97	63.3	-3.3	63.5	61.5	2.04	31.079		
700.0	700.0	694.9	694.3	1.2	1.3	145.72	70.1	-6.7	71.4	69.0	2.40	29.759 SF		
800.0	800.0	793.0	791.9	1.4	1.5	144.31	78.5	-10.8	82.4	79.7	2.75	29.966		
900.0	899.9	890.6	888.9	1.6	1.7	143.49	88.3	-15.6	96.5	93.4	3.10	31.084		
1,000.0	999.7	987.4	985.0	1.7	2.0	143.10	99.4	-21.1	113.5	110.0	3.46	32.803		
1,100.0	1,099.4	1,083.5	1,080.0	2.0	2.3	142.99	111.9	-27.3	133.4	129.6	3.82	34.928		
1,200.0	1,198.9	1,178.5	1,173.8	2.2	2.6	143.05	125.7	-34.1	156.3	152.1	4.19	37.327		
1,300.0	1,298.3	1,272.5	1,266.3	2.4	2.9	143.21	140.7	-41.6	182.0	177.5	4.56	39.909		
1,400.0	1,397.4	1,365.4	1,357.4	2.7	3.3	143.41	156.9	-49.5	210.6	205.7	4.94	42.606		
1,500.0	1,496.3	1,456.9	1,446.9	2.9	3.6	143.62	174.1	-58.0	242.0	236.6	5.33	45.369		
1,600.0	1,594.9	1,547.1	1,534.7	3.2	4.0	143.83	192.3	-67.0	276.1	270.3	5.73	48.161		
1,700.0	1,693.4	1,636.0	1,621.0	3.5	4.4	144.16	211.5	-76.5	312.2	306.1	6.15	50.794		
1,800.0	1,791.9	1,725.4	1,707.4	3.9	4.8	144.33	231.9	-86.6	349.7	343.1	6.57	53.242		
1,900.0	1,890.4	1,817.9	1,796.8	4.2	5.2	144.46	253.4	-97.2	387.5	380.5	7.00	55.362		
2,000.0	1,988.9	1,910.5	1,886.3	4.5	5.7	144.57	274.9	-107.9	425.2	417.8	7.43	57.211		
2,100.0	2,087.3	2,003.1	1,975.7	4.8	6.1	144.66	296.3	-118.5	463.0	455.2	7.87	58.835		

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Minch 3F-4H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5090.0ft (Ensign)
Reference Site:	S4-T3N-R68W (Minch)	MD Reference:	WELL @ 5090.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Minch 3F-4H	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 #2	Offset TVD Reference:	Offset Datum

Offset Design S4-T3N-R68W (Minch) - Minch 3B-4H - Hz - Plan #2													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	3.98	40.1	2.8	40.2					
100.0	100.0	100.0	100.0	0.2	0.2	3.98	40.1	2.8	40.2	39.9	0.30	132.270		
200.0	200.0	200.0	200.0	0.3	0.3	3.98	40.1	2.8	40.2	39.5	0.65	61.537		
300.0	300.0	300.0	300.0	0.5	0.5	3.98	40.1	2.8	40.2	39.2	1.00	40.096		
400.0	400.0	400.0	400.0	0.7	0.7	3.98	40.1	2.8	40.2	38.8	1.35	29.735 CC, ES		
500.0	500.0	499.5	499.5	0.8	0.8	3.14	40.7	2.2	40.8	39.1	1.70	24.012		
600.0	600.0	598.9	598.9	1.0	1.0	0.77	42.7	0.6	42.7	40.7	2.05	20.874		
700.0	700.0	698.2	698.1	1.2	1.2	148.61	46.0	-2.2	46.8	44.4	2.40	19.521 SF		
800.0	800.0	797.2	796.9	1.4	1.4	146.08	50.6	-6.1	53.9	51.2	2.75	19.586		
900.0	899.9	895.9	895.3	1.6	1.6	144.19	56.5	-11.0	63.9	60.8	3.11	20.554		
1,000.0	999.7	994.0	993.0	1.7	1.8	142.88	63.6	-17.0	76.8	73.3	3.47	22.118		
1,100.0	1,099.4	1,091.5	1,089.9	2.0	2.1	142.02	72.0	-24.0	92.5	88.7	3.84	24.079		
1,200.0	1,198.9	1,188.3	1,185.9	2.2	2.3	141.49	81.6	-32.0	111.0	106.8	4.22	26.302		
1,300.0	1,298.3	1,284.3	1,280.8	2.4	2.6	141.16	92.2	-41.0	132.2	127.6	4.61	28.692		
1,400.0	1,397.4	1,379.3	1,374.6	2.7	2.9	140.97	104.0	-50.9	156.2	151.2	5.01	31.178		
1,500.0	1,496.3	1,473.3	1,467.1	2.9	3.2	140.86	116.9	-61.6	182.9	177.4	5.42	33.708		
1,600.0	1,594.9	1,566.2	1,558.2	3.2	3.5	140.79	130.7	-73.2	212.1	206.3	5.85	36.244		
1,700.0	1,693.4	1,660.2	1,650.1	3.5	3.9	140.87	145.6	-85.7	243.1	236.8	6.30	38.585		
1,800.0	1,791.9	1,755.2	1,743.1	3.9	4.2	140.91	160.7	-98.4	274.2	267.5	6.76	40.578		
1,900.0	1,890.4	1,850.3	1,836.1	4.2	4.6	140.95	175.8	-111.1	305.3	298.1	7.22	42.290		
2,000.0	1,988.9	1,945.3	1,929.0	4.5	5.0	140.98	191.0	-123.8	336.4	328.7	7.69	43.772		
2,100.0	2,087.3	2,040.4	2,022.0	4.8	5.3	141.01	206.1	-136.5	367.5	359.3	8.15	45.066		
2,200.0	2,185.8	2,135.4	2,115.0	5.2	5.7	141.03	221.3	-149.2	398.6	389.9	8.63	46.203		
2,300.0	2,284.3	2,230.5	2,207.9	5.5	6.1	141.05	236.4	-161.9	429.6	420.5	9.10	47.211		
2,400.0	2,382.8	2,325.5	2,300.9	5.8	6.5	141.07	251.5	-174.6	460.7	451.1	9.58	48.108		
2,500.0	2,481.3	2,420.6	2,393.9	6.2	6.8	141.08	266.7	-187.4	491.8	481.7	10.05	48.911		

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Minch 3F-4H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5090.0ft (Ensign)
Reference Site:	S4-T3N-R68W (Minch)	MD Reference:	WELL @ 5090.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Minch 3F-4H	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 #2	Offset TVD Reference:	Offset Datum

Offset Design S4-T3N-R68W (Minch) - Minch 3C-4H - Hz - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													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)						
0.0	0.0	0.0	0.0	0.0	0.0	5.47	29.1	2.8	29.3					
100.0	100.0	100.0	100.0	0.2	0.2	5.47	29.1	2.8	29.3	0.30	96.403			
200.0	200.0	200.0	200.0	0.3	0.3	5.47	29.1	2.8	29.3	0.65	44.851			
300.0	300.0	300.0	300.0	0.5	0.5	5.47	29.1	2.8	29.3	1.00	29.223			
400.0	400.0	400.0	400.0	0.7	0.7	5.47	29.1	2.8	29.3	1.35	21.672			
500.0	500.0	500.0	500.0	0.8	0.8	5.47	29.1	2.8	29.3	1.70	17.222			
600.0	600.0	600.0	600.0	1.0	1.0	5.47	29.1	2.8	29.3	2.05	14.288 CC, ES			
700.0	700.0	699.8	699.8	1.2	1.2	155.36	29.5	2.0	30.3	2.40	12.648			
800.0	800.0	799.6	799.6	1.4	1.4	152.96	30.5	-0.4	33.5	2.75	12.200 SF			
900.0	899.9	899.2	899.1	1.6	1.6	149.85	32.1	-4.4	39.0	3.10	12.554			
1,000.0	999.7	998.6	998.2	1.7	1.7	146.71	34.4	-10.0	46.7	3.47	13.469			
1,100.0	1,099.4	1,097.6	1,097.0	2.0	1.9	143.94	37.3	-17.2	56.8	3.84	14.775			
1,200.0	1,198.9	1,196.3	1,195.2	2.2	2.2	141.65	40.9	-25.9	69.2	4.24	16.344			
1,300.0	1,298.3	1,294.4	1,292.7	2.4	2.4	139.79	45.1	-36.1	84.0	4.64	18.077			
1,400.0	1,397.4	1,392.1	1,389.6	2.7	2.6	138.31	49.9	-47.8	101.0	5.07	19.900			
1,500.0	1,496.3	1,489.1	1,485.5	2.9	2.9	137.12	55.3	-60.9	120.3	5.53	21.755			
1,600.0	1,594.9	1,585.4	1,580.6	3.2	3.2	136.15	61.2	-75.4	141.8	6.01	23.600			
1,700.0	1,693.4	1,682.6	1,676.3	3.5	3.5	135.46	67.6	-91.0	164.6	6.51	25.285			
1,800.0	1,791.9	1,779.9	1,772.1	3.9	3.8	134.93	74.0	-106.7	187.5	7.02	26.696			
1,900.0	1,890.4	1,877.3	1,868.0	4.2	4.1	134.51	80.4	-122.3	210.3	7.54	27.889			
2,000.0	1,988.9	1,974.6	1,963.9	4.5	4.4	134.18	86.9	-137.9	233.1	8.07	28.907			
2,100.0	2,087.3	2,072.0	2,059.7	4.8	4.8	133.91	93.3	-153.6	256.0	8.59	29.785			
2,200.0	2,185.8	2,169.3	2,155.6	5.2	5.1	133.68	99.7	-169.2	278.9	9.13	30.548			
2,300.0	2,284.3	2,266.7	2,251.5	5.5	5.4	133.48	106.1	-184.8	301.7	9.67	31.215			
2,400.0	2,382.8	2,364.0	2,347.3	5.8	5.7	133.32	112.5	-200.5	324.6	10.21	31.804			
2,500.0	2,481.3	2,461.4	2,443.2	6.2	6.1	133.17	118.9	-216.1	347.5	10.75	32.326			
2,600.0	2,579.7	2,558.7	2,539.1	6.5	6.4	133.04	125.3	-231.8	370.3	11.29	32.793			
2,700.0	2,678.2	2,656.0	2,634.9	6.9	6.7	132.93	131.8	-247.4	393.2	11.84	33.211			
2,800.0	2,776.7	2,753.4	2,730.8	7.2	7.1	132.83	138.2	-263.0	416.1	12.39	33.588			
2,900.0	2,875.2	2,850.7	2,826.7	7.6	7.4	132.74	144.6	-278.7	438.9	12.94	33.930			
3,000.0	2,973.7	2,948.1	2,922.5	7.9	7.8	132.66	151.0	-294.3	461.8	13.49	34.241			
3,100.0	3,072.1	3,045.4	3,018.4	8.2	8.1	132.59	157.4	-310.0	484.7	14.04	34.525			

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Minch 3F-4H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5090.0ft (Ensign)
Reference Site:	S4-T3N-R68W (Minch)	MD Reference:	WELL @ 5090.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Minch 3F-4H	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 #2	Offset TVD Reference:	Offset Datum

Offset Design S4-T3N-R68W (Minch) - Minch 3D-4H - Hz - Plan #2													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning	
0.0	0.0	0.0	0.0	0.0	0.0	0.00	21.9	0.0	21.9					
100.0	100.0	100.0	100.0	0.2	0.2	0.00	21.9	0.0	21.9	21.6	0.30	71.973		
200.0	200.0	200.0	200.0	0.3	0.3	0.00	21.9	0.0	21.9	21.2	0.65	33.485		
300.0	300.0	300.1	300.1	0.5	0.5	-2.20	21.6	-0.8	21.6	20.6	1.00	21.534		
400.0	400.0	400.2	400.1	0.7	0.7	-9.08	20.7	-3.3	21.0	19.7	1.36	15.488		
481.8	481.8	481.9	481.8	0.8	0.8	-18.50	19.7	-6.6	20.7	19.1	1.65	12.565 CC		
500.0	500.0	500.1	500.0	0.8	0.9	-21.05	19.4	-7.5	20.7	19.0	1.71	12.104 ES		
600.0	600.0	599.8	599.5	1.0	1.1	-37.19	17.4	-13.2	21.9	19.8	2.07	10.579		
700.0	700.0	699.4	698.8	1.2	1.3	98.64	15.0	-20.6	25.6	23.2	2.46	10.433 SF		
800.0	800.0	798.8	797.7	1.4	1.5	88.86	11.9	-29.6	31.8	29.0	2.82	11.255		
900.0	899.9	898.0	896.2	1.6	1.8	83.23	8.4	-40.3	39.7	36.5	3.20	12.391		
1,000.0	999.7	996.9	994.3	1.7	2.0	80.24	4.3	-52.5	48.8	45.2	3.59	13.595		
1,100.0	1,099.4	1,095.6	1,092.0	2.0	2.3	78.83	-0.3	-66.2	59.1	55.1	4.01	14.763		
1,200.0	1,198.9	1,194.1	1,189.1	2.2	2.6	78.37	-5.4	-81.6	70.5	66.0	4.45	15.851		
1,300.0	1,298.3	1,293.3	1,286.8	2.4	3.0	78.80	-10.9	-97.9	82.3	77.3	4.92	16.718		
1,400.0	1,397.4	1,392.6	1,384.7	2.7	3.3	80.16	-16.4	-114.3	93.7	88.3	5.43	17.248		
1,500.0	1,496.3	1,491.9	1,482.4	2.9	3.6	82.14	-21.8	-130.6	105.0	99.0	5.99	17.518		
1,600.0	1,594.9	1,591.2	1,580.2	3.2	4.0	84.57	-27.3	-147.0	116.2	109.6	6.60	17.604		
1,700.0	1,693.4	1,690.4	1,677.9	3.5	4.3	87.05	-32.8	-163.3	127.6	120.3	7.23	17.635		
1,800.0	1,791.9	1,789.6	1,775.6	3.9	4.7	89.13	-38.3	-179.6	139.1	131.2	7.88	17.665		
1,900.0	1,890.4	1,888.8	1,873.3	4.2	5.0	90.89	-43.7	-196.0	150.8	142.3	8.52	17.695		
2,000.0	1,988.9	1,988.1	1,971.0	4.5	5.4	92.39	-49.2	-212.3	162.6	153.5	9.17	17.726		
2,100.0	2,087.3	2,087.3	2,068.7	4.8	5.7	93.69	-54.7	-228.7	174.6	164.7	9.83	17.757		
2,200.0	2,185.8	2,186.5	2,166.4	5.2	6.0	94.82	-60.1	-245.0	186.5	176.1	10.49	17.787		
2,300.0	2,284.3	2,285.7	2,264.1	5.5	6.4	95.82	-65.6	-261.3	198.6	187.5	11.15	17.817		
2,400.0	2,382.8	2,384.9	2,361.8	5.8	6.7	96.70	-71.1	-277.7	210.7	198.9	11.81	17.846		
2,500.0	2,481.3	2,484.1	2,459.5	6.2	7.1	97.49	-76.5	-294.0	222.9	210.4	12.47	17.874		
2,600.0	2,579.7	2,583.3	2,557.3	6.5	7.4	98.19	-82.0	-310.3	235.1	221.9	13.13	17.902		
2,700.0	2,678.2	2,682.6	2,655.0	6.9	7.8	98.83	-87.5	-326.7	247.3	233.5	13.79	17.928		
2,800.0	2,776.7	2,781.8	2,752.7	7.2	8.1	99.40	-92.9	-343.0	259.5	245.1	14.46	17.953		
2,900.0	2,875.2	2,882.3	2,851.7	7.6	8.5	99.98	-98.4	-359.4	271.7	256.6	15.12	17.971		
3,000.0	2,973.7	2,984.1	2,952.3	7.9	8.8	100.78	-103.4	-374.4	283.0	267.3	15.77	17.949		
3,100.0	3,072.1	3,086.0	3,053.2	8.2	9.1	101.83	-107.9	-387.8	293.6	277.2	16.41	17.892		
3,200.0	3,170.6	3,187.9	3,154.4	8.6	9.4	103.11	-111.8	-399.4	303.4	286.3	17.03	17.811		
3,300.0	3,269.1	3,289.8	3,255.7	8.9	9.6	104.60	-115.1	-409.4	312.5	294.8	17.64	17.718		
3,400.0	3,367.6	3,391.5	3,357.0	9.3	9.8	106.29	-117.9	-417.6	321.0	302.8	18.21	17.624		
3,500.0	3,466.1	3,493.0	3,458.3	9.6	10.0	108.18	-120.1	-424.1	329.0	310.3	18.76	17.539		
3,600.0	3,564.5	3,594.3	3,559.4	10.0	10.2	110.25	-121.7	-428.9	336.8	317.5	19.27	17.475		
3,700.0	3,663.0	3,695.2	3,660.3	10.3	10.3	112.49	-122.7	-432.0	344.3	324.6	19.74	17.443		
3,800.0	3,761.5	3,795.8	3,760.9	10.7	10.4	114.90	-123.2	-433.4	351.9	331.7	20.16	17.453		
3,900.0	3,860.0	3,894.9	3,860.0	11.0	10.5	117.38	-123.2	-433.5	359.7	339.1	20.54	17.507		
4,000.0	3,958.5	3,993.4	3,958.5	11.4	10.6	119.75	-123.2	-433.5	368.1	347.2	20.90	17.612		
4,100.0	4,057.0	4,091.9	4,057.0	11.7	10.8	122.02	-123.2	-433.5	377.1	355.8	21.23	17.761		
4,200.0	4,155.4	4,190.3	4,155.4	12.1	10.9	124.18	-123.2	-433.5	386.7	365.1	21.54	17.949		
4,300.0	4,253.9	4,288.8	4,253.9	12.4	11.0	126.23	-123.2	-433.5	396.8	374.9	21.84	18.171		
4,400.0	4,352.4	4,387.3	4,352.4	12.7	11.1	128.19	-123.2	-433.5	407.4	385.3	22.12	18.421		
4,500.0	4,450.9	4,485.8	4,450.9	13.1	11.2	130.04	-123.2	-433.5	418.4	396.1	22.38	18.695		
4,600.0	4,549.4	4,584.3	4,549.4	13.4	11.3	131.80	-123.2	-433.5	429.9	407.3	22.64	18.990		
4,700.0	4,647.8	4,682.7	4,647.8	13.8	11.5	133.46	-123.2	-433.5	441.8	418.9	22.89	19.302		
4,800.0	4,746.3	4,781.2	4,746.3	14.1	11.6	135.04	-123.2	-433.5	454.0	430.9	23.13	19.628		
4,900.0	4,844.8	4,879.7	4,844.8	14.5	11.7	136.54	-123.2	-433.5	466.5	443.2	23.37	19.965		
5,000.0	4,943.3	4,978.2	4,943.3	14.8	11.8	137.95	-123.2	-433.5	479.4	455.8	23.60	20.311		

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 Minch 3F-4H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5090.0ft (Ensign)
Reference Site:	S4-T3N-R68W (Minch)	MD Reference:	WELL @ 5090.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Minch 3F-4H	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 #2	Offset TVD Reference:	Offset Datum

Offset Design S4-T3N-R68W (Minch) - Minch 3D-4H - Hz - Plan #2													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	
5,100.0	5,041.8	5,076.7	5,041.8	15.2	12.0	139.30	-123.2	-433.5	492.5	468.7	23.83	20.665	

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Minch 3F-4H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5090.0ft (Ensign)
Reference Site:	S4-T3N-R68W (Minch)	MD Reference:	WELL @ 5090.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Minch 3F-4H	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 #2	Offset TVD Reference:	Offset Datum

Offset Design S4-T3N-R68W (Minch) - Minch 3E-4H - Hz - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													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)						
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		
400.0	400.0	400.0	400.0	0.7	0.7	0.00	10.9	0.0	10.9	9.6	1.35	8.090		
500.0	500.0	500.0	500.0	0.8	0.8	0.00	10.9	0.0	10.9	9.2	1.70	6.429		
600.0	600.0	600.0	600.0	1.0	1.0	0.00	10.9	0.0	10.9	8.9	2.05	5.334 CC, ES		
700.0	700.0	700.0	700.0	1.2	1.2	152.88	10.9	0.0	11.7	9.3	2.40	4.878		
800.0	800.0	800.0	800.0	1.4	1.4	157.73	10.9	0.0	14.1	11.3	2.75	5.126		
900.0	899.9	900.1	900.1	1.6	1.5	161.57	10.3	-0.6	17.4	14.3	3.10	5.631		
1,000.0	999.7	1,000.4	1,000.3	1.7	1.7	163.27	8.3	-2.3	21.0	17.5	3.44	6.085		
1,100.0	1,099.4	1,100.6	1,100.5	2.0	1.9	163.71	4.9	-5.1	24.6	20.8	3.80	6.490		
1,200.0	1,198.9	1,201.0	1,200.7	2.2	2.1	163.37	0.3	-9.1	28.4	24.3	4.15	6.852		
1,300.0	1,298.3	1,301.4	1,300.7	2.4	2.3	162.53	-5.7	-14.3	32.4	27.8	4.51	7.178		
1,400.0	1,397.4	1,401.8	1,400.7	2.7	2.5	161.37	-13.0	-20.6	36.4	31.5	4.87	7.472		
1,500.0	1,496.3	1,502.3	1,500.5	2.9	2.7	159.98	-21.7	-28.0	40.6	35.4	5.25	7.737		
1,600.0	1,594.9	1,602.8	1,600.2	3.2	3.0	158.45	-31.6	-36.6	45.0	39.4	5.65	7.972		
1,700.0	1,693.4	1,702.7	1,699.1	3.5	3.2	157.06	-42.2	-45.7	49.6	43.5	6.06	8.174		
1,800.0	1,791.9	1,802.6	1,798.0	3.9	3.5	155.91	-52.7	-54.7	54.1	47.6	6.49	8.342		
1,900.0	1,890.4	1,902.5	1,896.9	4.2	3.8	154.94	-63.3	-63.8	58.7	51.8	6.92	8.481		
2,000.0	1,988.9	2,002.4	1,995.9	4.5	4.0	154.11	-73.8	-72.9	63.3	55.9	7.36	8.596		
2,100.0	2,087.3	2,102.3	2,094.8	4.8	4.3	153.39	-84.3	-81.9	67.9	60.1	7.81	8.693		
2,200.0	2,185.8	2,202.2	2,193.7	5.2	4.6	152.76	-94.9	-91.0	72.5	64.3	8.26	8.775		
2,300.0	2,284.3	2,302.0	2,292.6	5.5	4.9	152.21	-105.4	-100.1	77.1	68.4	8.72	8.844		
2,400.0	2,382.8	2,401.9	2,391.5	5.8	5.2	151.72	-116.0	-109.1	81.8	72.6	9.18	8.903		
2,500.0	2,481.3	2,501.8	2,490.5	6.2	5.5	151.28	-126.5	-118.2	86.4	76.8	9.65	8.953		
2,600.0	2,579.7	2,601.7	2,589.4	6.5	5.7	150.89	-137.0	-127.3	91.0	80.9	10.12	8.996		
2,700.0	2,678.2	2,701.6	2,688.3	6.9	6.0	150.53	-147.6	-136.3	95.7	85.1	10.59	9.033		
2,800.0	2,776.7	2,801.5	2,787.2	7.2	6.3	150.21	-158.1	-145.4	100.3	89.3	11.07	9.066		
2,900.0	2,875.2	2,901.4	2,886.1	7.6	6.6	149.92	-168.7	-154.5	105.0	93.4	11.54	9.094		
3,000.0	2,973.7	3,001.3	2,985.0	7.9	6.9	149.65	-179.2	-163.5	109.6	97.6	12.02	9.119		
3,100.0	3,072.1	3,101.2	3,084.0	8.2	7.2	149.40	-189.7	-172.6	114.3	101.8	12.50	9.141		
3,200.0	3,170.6	3,201.1	3,182.9	8.6	7.5	149.18	-200.3	-181.7	118.9	105.9	12.98	9.160		
3,300.0	3,269.1	3,301.0	3,281.8	8.9	7.8	148.97	-210.8	-190.7	123.6	110.1	13.47	9.177		
3,400.0	3,367.6	3,400.8	3,380.7	9.3	8.1	148.77	-221.4	-199.8	128.2	114.3	13.95	9.192		
3,500.0	3,466.1	3,500.7	3,479.6	9.6	8.4	148.59	-231.9	-208.9	132.9	118.5	14.44	9.205		
3,600.0	3,564.5	3,600.6	3,578.6	10.0	8.7	148.42	-242.4	-217.9	137.6	122.6	14.92	9.217		
3,700.0	3,663.0	3,700.5	3,677.5	10.3	9.0	148.26	-253.0	-227.0	142.2	126.8	15.41	9.228		
3,800.0	3,761.5	3,800.4	3,776.4	10.7	9.2	148.11	-263.5	-236.1	146.9	131.0	15.90	9.238		
3,900.0	3,860.0	3,900.3	3,875.3	11.0	9.5	147.98	-274.1	-245.1	151.5	135.2	16.39	9.246		
4,000.0	3,958.5	4,000.2	3,974.2	11.4	9.8	147.85	-284.6	-254.2	156.2	139.3	16.88	9.254		
4,100.0	4,057.0	4,100.1	4,073.2	11.7	10.1	147.72	-295.1	-263.3	160.9	143.5	17.37	9.261		
4,200.0	4,155.4	4,200.0	4,172.1	12.1	10.4	147.61	-305.7	-272.3	165.5	147.7	17.86	9.268		
4,300.0	4,253.9	4,299.9	4,271.0	12.4	10.7	147.50	-316.2	-281.4	170.2	151.9	18.35	9.274		
4,400.0	4,352.4	4,399.8	4,369.9	12.7	11.0	147.39	-326.8	-290.5	174.9	156.0	18.85	9.279		
4,500.0	4,450.9	4,499.6	4,468.8	13.1	11.3	147.29	-337.3	-299.5	179.5	160.2	19.34	9.284		
4,600.0	4,549.4	4,599.5	4,567.7	13.4	11.6	147.20	-347.8	-308.6	184.2	164.4	19.83	9.288		
4,700.0	4,647.8	4,699.4	4,666.7	13.8	11.9	147.11	-358.4	-317.6	188.9	168.5	20.33	9.292		
4,800.0	4,746.3	4,799.3	4,765.6	14.1	12.2	147.03	-368.9	-326.7	193.5	172.7	20.82	9.296		
4,900.0	4,844.8	4,899.2	4,864.5	14.5	12.5	146.95	-379.5	-335.8	198.2	176.9	21.32	9.299		
5,000.0	4,943.3	4,999.1	4,963.4	14.8	12.8	146.87	-390.0	-344.8	202.9	181.1	21.81	9.302		
5,100.0	5,041.8	5,099.0	5,062.3	15.2	13.1	146.80	-400.5	-353.9	207.6	185.2	22.31	9.305		

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 Minch 3F-4H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5090.0ft (Ensign)
Reference Site:	S4-T3N-R68W (Minch)	MD Reference:	WELL @ 5090.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Minch 3F-4H	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 #2	Offset TVD Reference:	Offset Datum

Offset Design S4-T3N-R68W (Minch) - Minch 3E-4H - 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			
5,200.0	5,140.2	5,198.9	5,161.3	15.5	13.4	146.73	-411.1	-363.0	212.2	189.4	22.80	9.308		
5,300.0	5,238.7	5,298.8	5,260.2	15.9	13.7	146.66	-421.6	-372.0	216.9	193.6	23.30	9.310		
5,400.0	5,337.2	5,398.7	5,359.1	16.2	14.0	146.60	-432.1	-381.1	221.6	197.8	23.79	9.312		
5,500.0	5,435.7	5,498.5	5,458.0	16.6	14.3	146.53	-442.7	-390.2	226.2	201.9	24.29	9.314		
5,600.0	5,534.2	5,596.4	5,555.0	16.9	14.6	146.55	-452.7	-398.8	231.2	206.5	24.76	9.340		
5,700.0	5,632.6	5,693.4	5,651.3	17.3	14.8	146.84	-461.4	-406.3	237.4	212.2	25.15	9.439		
5,800.0	5,731.1	5,790.2	5,747.5	17.6	15.0	147.39	-468.8	-412.7	244.8	219.3	25.47	9.608		
5,900.0	5,829.6	5,886.7	5,843.7	18.0	15.3	148.16	-475.0	-418.0	253.2	227.5	25.74	9.840		
6,000.0	5,928.6	5,983.2	5,940.0	18.3	15.4	148.89	-480.0	-422.3	260.8	234.8	25.98	10.038		
6,100.0	6,027.9	6,079.7	6,036.4	18.5	15.6	149.43	-483.8	-425.5	266.6	240.3	26.22	10.168		
6,200.0	6,127.6	6,176.2	6,132.9	18.7	15.8	149.79	-486.3	-427.7	270.6	244.2	26.45	10.231		
6,300.0	6,227.5	6,272.8	6,229.4	18.8	15.9	150.01	-487.6	-428.8	272.9	246.3	26.68	10.229		
6,400.0	6,327.5	6,370.9	6,327.5	18.9	16.0	-0.73	-487.8	-428.9	273.5	242.1	31.36	8.721		
6,500.0	6,427.5	6,470.9	6,427.5	19.0	16.1	-0.73	-487.8	-428.9	273.5	241.9	31.61	8.652		
6,600.0	6,527.5	6,571.1	6,527.6	19.1	16.2	-0.21	-487.8	-426.4	273.5	241.5	31.96	8.557		
6,611.0	6,538.5	6,582.0	6,538.5	19.1	16.2	0.00	-487.8	-425.4	273.5	241.5	32.02	8.539		
6,700.0	6,627.5	6,669.1	6,624.4	19.2	16.2	2.90	-487.8	-411.6	273.8	241.1	32.74	8.365		
6,800.0	6,727.5	6,762.0	6,713.5	19.3	16.1	-81.84	-487.8	-385.5	276.5	250.6	25.88	10.682		
6,900.0	6,826.5	6,850.0	6,794.1	19.3	15.9	-76.56	-487.8	-350.3	281.8	256.8	25.00	11.273		
7,000.0	6,922.6	6,938.2	6,869.9	19.2	15.7	-71.61	-487.8	-305.4	289.1	264.7	24.39	11.853		
7,100.0	7,014.0	7,022.8	6,937.0	19.1	15.6	-67.28	-487.8	-253.8	297.7	273.6	24.11	12.346		
7,200.0	7,098.9	7,105.6	6,996.3	18.9	15.5	-63.52	-487.8	-196.1	306.8	282.7	24.08	12.741		
7,300.0	7,175.7	7,186.9	7,047.6	18.8	15.4	-60.35	-487.8	-133.2	315.9	291.7	24.25	13.029		
7,400.0	7,242.8	7,266.9	7,090.9	18.7	15.4	-57.74	-487.8	-65.9	324.4	299.8	24.60	13.186		
7,500.0	7,298.9	7,350.0	7,127.6	18.7	15.5	-55.59	-487.8	8.6	332.0	306.9	25.04	13.257		
7,600.0	7,343.0	7,424.2	7,152.9	18.8	15.9	-54.10	-487.8	78.3	338.1	312.4	25.68	13.166		
7,700.0	7,374.2	7,500.0	7,171.1	19.2	16.5	-53.03	-487.8	151.9	342.6	316.0	26.56	12.897		
7,800.0	7,391.8	7,579.2	7,181.7	19.9	17.5	-52.39	-487.8	230.4	345.2	317.4	27.79	12.422		
7,900.0	7,396.0	7,662.4	7,184.0	20.9	18.7	-52.21	-487.8	313.5	346.0	316.4	29.56	11.706		
8,000.0	7,396.0	7,762.4	7,184.0	22.3	20.4	-52.21	-487.8	413.5	346.0	313.6	32.36	10.691		
8,100.0	7,396.0	7,862.4	7,184.0	23.9	22.3	-52.21	-487.8	513.5	346.0	310.6	35.37	9.781		
8,200.0	7,396.0	7,962.4	7,184.0	25.7	24.2	-52.21	-487.8	613.5	346.0	307.4	38.55	8.975		
8,300.0	7,396.0	8,062.4	7,184.0	27.6	26.3	-52.21	-487.7	713.5	346.0	304.1	41.85	8.267		
8,400.0	7,396.0	8,162.4	7,184.0	29.6	28.4	-52.21	-487.7	813.5	346.0	300.7	45.25	7.646		
8,500.0	7,396.0	8,262.4	7,184.0	31.7	30.6	-52.21	-487.7	913.5	346.0	297.2	48.73	7.100		
8,600.0	7,396.0	8,362.4	7,184.0	33.8	32.8	-52.21	-487.7	1,013.5	346.0	293.7	52.27	6.619		
8,700.0	7,396.0	8,462.4	7,184.0	36.0	35.0	-52.21	-487.7	1,113.5	346.0	290.1	55.86	6.194		
8,800.0	7,396.0	8,562.4	7,184.0	38.2	37.3	-52.21	-487.7	1,213.5	346.0	286.5	59.49	5.815		
8,900.0	7,396.0	8,662.4	7,184.0	40.5	39.6	-52.21	-487.7	1,313.5	346.0	282.8	63.16	5.478		
9,000.0	7,396.0	8,762.4	7,184.0	42.7	41.9	-52.21	-487.7	1,413.5	345.9	279.1	66.85	5.175		
9,100.0	7,396.0	8,862.4	7,184.0	45.0	44.3	-52.21	-487.7	1,513.5	345.9	275.4	70.57	4.902		
9,200.0	7,396.0	8,962.4	7,184.0	47.3	46.6	-52.21	-487.7	1,613.5	345.9	271.6	74.31	4.655		
9,300.0	7,396.0	9,062.4	7,184.0	49.7	49.0	-52.21	-487.7	1,713.5	345.9	267.9	78.06	4.431		
9,400.0	7,396.0	9,162.4	7,184.0	52.0	51.4	-52.20	-487.7	1,813.5	345.9	264.1	81.84	4.227		
9,500.0	7,396.0	9,262.4	7,184.0	54.4	53.7	-52.20	-487.7	1,913.5	345.9	260.3	85.62	4.040		
9,600.0	7,396.0	9,362.4	7,184.0	56.7	56.1	-52.20	-487.7	2,013.5	345.9	256.5	89.42	3.869		
9,700.0	7,396.0	9,462.4	7,184.0	59.1	58.5	-52.20	-487.7	2,113.5	345.9	252.7	93.22	3.711		
9,800.0	7,396.0	9,562.4	7,184.0	61.5	60.9	-52.20	-487.7	2,213.5	345.9	248.9	97.04	3.565		
9,900.0	7,396.0	9,662.4	7,184.0	63.9	63.3	-52.20	-487.7	2,313.5	345.9	245.0	100.86	3.430		
10,000.0	7,396.0	9,762.4	7,184.0	66.3	65.8	-52.20	-487.7	2,413.5	345.9	241.2	104.69	3.304		
10,100.0	7,396.0	9,862.4	7,184.0	68.7	68.2	-52.20	-487.7	2,513.5	345.9	237.4	108.52	3.187		
10,200.0	7,396.0	9,962.4	7,184.0	71.1	70.6	-52.20	-487.7	2,613.5	345.9	233.5	112.37	3.078		

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 Minch 3F-4H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5090.0ft (Ensign)
Reference Site:	S4-T3N-R68W (Minch)	MD Reference:	WELL @ 5090.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Minch 3F-4H	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 #2	Offset TVD Reference:	Offset Datum

Offset Design S4-T3N-R68W (Minch) - Minch 3E-4H - Hz - Plan #1												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												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)					
10,300.0	7,396.0	10,062.4	7,184.0	73.5	73.0	-52.20	-487.7	2,713.5	345.9	229.7	116.21	2.976	
10,400.0	7,396.0	10,162.4	7,184.0	75.9	75.4	-52.20	-487.7	2,813.5	345.9	225.8	120.06	2.881	
10,500.0	7,396.0	10,262.4	7,184.0	78.3	77.9	-52.20	-487.7	2,913.5	345.9	222.0	123.92	2.791	
10,600.0	7,396.0	10,362.4	7,184.0	80.7	80.3	-52.20	-487.7	3,013.5	345.9	218.1	127.78	2.707	
10,700.0	7,396.0	10,462.4	7,184.0	83.2	82.7	-52.20	-487.7	3,113.5	345.9	214.2	131.64	2.627	
10,800.0	7,396.0	10,562.4	7,184.0	85.6	85.2	-52.20	-487.7	3,213.5	345.9	210.4	135.50	2.552	
10,900.0	7,396.0	10,662.4	7,184.0	88.0	87.6	-52.20	-487.7	3,313.5	345.9	206.5	139.37	2.482	
11,000.0	7,396.0	10,762.4	7,184.0	90.5	90.1	-52.20	-487.7	3,413.5	345.9	202.6	143.24	2.415	
11,100.0	7,396.0	10,862.4	7,184.0	92.9	92.5	-52.20	-487.7	3,513.5	345.9	198.7	147.11	2.351	
11,200.0	7,396.0	10,962.4	7,184.0	95.3	95.0	-52.19	-487.7	3,613.5	345.9	194.9	150.99	2.291	
11,300.0	7,396.0	11,062.4	7,184.0	97.8	97.4	-52.19	-487.7	3,713.5	345.8	191.0	154.87	2.233	
11,400.0	7,396.0	11,162.4	7,184.0	100.2	99.9	-52.19	-487.7	3,813.5	345.8	187.1	158.75	2.179	
11,500.0	7,396.0	11,262.4	7,184.0	102.6	102.3	-52.19	-487.7	3,913.5	345.8	183.2	162.63	2.127	
11,600.0	7,396.0	11,362.4	7,184.0	105.1	104.8	-52.19	-487.7	4,013.5	345.8	179.3	166.51	2.077	
11,700.0	7,396.0	11,462.4	7,184.0	107.5	107.2	-52.19	-487.7	4,113.5	345.8	175.4	170.39	2.030	
11,800.0	7,396.0	11,562.4	7,184.0	110.0	109.7	-52.19	-487.7	4,213.5	345.8	171.5	174.28	1.984	
11,900.0	7,396.0	11,662.4	7,184.0	112.4	112.1	-52.19	-487.7	4,313.5	345.8	167.7	178.16	1.941	
11,968.0	7,396.0	11,730.5	7,184.0	114.1	113.8	-52.19	-487.7	4,381.5	345.8	165.0	180.81	1.913	
11,985.6	7,396.0	11,747.9	7,184.0	114.5	114.2	-52.19	-487.7	4,399.0	345.8	164.3	181.49	1.905 SF	

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Minch 3F-4H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5090.0ft (Ensign)
Reference Site:	S4-T3N-R68W (Minch)	MD Reference:	WELL @ 5090.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Minch 3F-4H	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 #2	Offset TVD Reference:	Offset Datum

Offset Design S4-T3N-R68W (Minch) - Minch 3G-4H - 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	-7.3	0.0	7.3					
100.0	100.0	100.0	100.0	0.2	0.2	-180.00	-7.3	0.0	7.3	7.0	0.30	23.991		
200.0	200.0	200.0	200.0	0.3	0.3	-180.00	-7.3	0.0	7.3	6.6	0.65	11.162		
300.0	300.0	300.0	300.0	0.5	0.5	-180.00	-7.3	0.0	7.3	6.3	1.00	7.273		
400.0	400.0	400.0	400.0	0.7	0.7	-180.00	-7.3	0.0	7.3	5.9	1.35	5.393 CC, ES		
500.0	500.0	499.9	499.9	0.8	0.9	-177.56	-8.1	-0.3	8.1	6.4	1.70	4.761		
600.0	600.0	599.7	599.6	1.0	1.0	-172.51	-10.5	-1.4	10.6	8.5	2.05	5.158		
700.0	700.0	699.4	699.3	1.2	1.2	-18.16	-14.5	-3.1	14.0	11.6	2.40	5.832		
800.0	800.0	799.1	798.8	1.4	1.4	-16.58	-20.0	-5.5	17.5	14.7	2.75	6.356		
900.0	899.9	898.7	898.1	1.6	1.6	-16.00	-27.2	-8.6	21.0	17.9	3.10	6.775		
1,000.0	999.7	998.2	997.2	1.7	1.8	-15.99	-35.9	-12.4	24.5	21.1	3.45	7.118		
1,100.0	1,099.4	1,097.7	1,096.0	2.0	2.1	-16.34	-46.3	-16.8	28.1	24.3	3.80	7.402		
1,200.0	1,198.9	1,197.2	1,194.6	2.2	2.3	-16.92	-58.1	-21.9	31.7	27.6	4.15	7.641		
1,300.0	1,298.3	1,296.5	1,292.9	2.4	2.6	-17.66	-71.6	-27.7	35.4	30.9	4.51	7.843		
1,400.0	1,397.4	1,395.8	1,390.8	2.7	2.9	-18.51	-86.6	-34.2	39.1	34.2	4.88	8.013		
1,500.0	1,496.3	1,495.1	1,488.5	2.9	3.3	-19.45	-103.1	-41.3	42.8	37.6	5.25	8.151		
1,600.0	1,594.9	1,595.1	1,586.7	3.2	3.6	-20.79	-120.3	-48.7	45.5	39.9	5.64	8.073		
1,700.0	1,693.4	1,695.1	1,684.9	3.5	3.9	-22.39	-137.6	-56.2	47.5	41.5	6.06	7.843		
1,800.0	1,791.9	1,795.0	1,783.1	3.9	4.3	-23.85	-154.8	-63.6	49.5	43.0	6.49	7.633		
1,900.0	1,890.4	1,895.0	1,881.2	4.2	4.7	-25.21	-172.1	-71.0	51.5	44.6	6.93	7.439		
2,000.0	1,988.9	1,995.0	1,979.4	4.5	5.0	-26.46	-189.3	-78.5	53.6	46.2	7.38	7.259		
2,100.0	2,087.3	2,095.0	2,077.6	4.8	5.4	-27.61	-206.6	-85.9	55.7	47.8	7.85	7.092		
2,200.0	2,185.8	2,194.9	2,175.8	5.2	5.7	-28.69	-223.8	-93.3	57.7	49.4	8.32	6.937		
2,300.0	2,284.3	2,294.9	2,274.0	5.5	6.1	-29.68	-241.1	-100.8	59.9	51.1	8.81	6.794		
2,400.0	2,382.8	2,394.9	2,372.2	5.8	6.5	-30.61	-258.3	-108.2	62.0	52.7	9.31	6.661		
2,500.0	2,481.3	2,494.9	2,470.4	6.2	6.8	-31.48	-275.5	-115.6	64.1	54.3	9.81	6.537		
2,600.0	2,579.7	2,594.8	2,568.6	6.5	7.2	-32.29	-292.8	-123.1	66.3	56.0	10.32	6.421		
2,700.0	2,678.2	2,694.8	2,666.8	6.9	7.6	-33.05	-310.0	-130.5	68.5	57.6	10.84	6.314		
2,800.0	2,776.7	2,794.8	2,765.0	7.2	7.9	-33.76	-327.3	-137.9	70.7	59.3	11.37	6.214		
2,900.0	2,875.2	2,894.7	2,863.2	7.6	8.3	-34.43	-344.5	-145.4	72.8	60.9	11.90	6.120		
3,000.0	2,973.7	2,994.7	2,961.4	7.9	8.7	-35.06	-361.8	-152.8	75.1	62.6	12.44	6.033		
3,100.0	3,072.1	3,094.7	3,059.6	8.2	9.0	-35.66	-379.0	-160.2	77.3	64.3	12.98	5.951		
3,200.0	3,170.6	3,194.7	3,157.8	8.6	9.4	-36.22	-396.3	-167.7	79.5	66.0	13.53	5.875		
3,300.0	3,269.1	3,294.6	3,255.9	8.9	9.8	-36.75	-413.5	-175.1	81.7	67.6	14.08	5.803		
3,400.0	3,367.6	3,394.6	3,354.1	9.3	10.1	-37.25	-430.8	-182.5	83.9	69.3	14.63	5.736		
3,500.0	3,466.1	3,494.6	3,452.3	9.6	10.5	-37.73	-448.0	-190.0	86.2	71.0	15.19	5.673		
3,600.0	3,564.5	3,594.5	3,550.5	10.0	10.9	-38.18	-465.2	-197.4	88.4	72.7	15.75	5.613		
3,700.0	3,663.0	3,694.5	3,648.7	10.3	11.2	-38.61	-482.5	-204.8	90.7	74.4	16.32	5.557		
3,800.0	3,761.5	3,794.5	3,746.9	10.7	11.6	-39.02	-499.7	-212.3	92.9	76.0	16.88	5.504		
3,900.0	3,860.0	3,894.5	3,845.1	11.0	12.0	-39.41	-517.0	-219.7	95.2	77.7	17.45	5.454		
4,000.0	3,958.5	3,994.4	3,943.3	11.4	12.3	-39.78	-534.2	-227.1	97.5	79.4	18.02	5.407		
4,100.0	4,057.0	4,094.4	4,041.5	11.7	12.7	-40.14	-551.5	-234.6	99.7	81.1	18.60	5.362		
4,200.0	4,155.4	4,194.4	4,139.7	12.1	13.1	-40.48	-568.7	-242.0	102.0	82.8	19.17	5.320		
4,300.0	4,253.9	4,294.4	4,237.9	12.4	13.5	-40.80	-586.0	-249.4	104.3	84.5	19.75	5.280		
4,400.0	4,352.4	4,394.3	4,336.1	12.7	13.8	-41.11	-603.2	-256.9	106.6	86.2	20.33	5.241		
4,500.0	4,450.9	4,494.3	4,434.3	13.1	14.2	-41.41	-620.5	-264.3	108.8	87.9	20.91	5.205		
4,600.0	4,549.4	4,594.3	4,532.4	13.4	14.6	-41.69	-637.7	-271.7	111.1	89.6	21.49	5.171		
4,700.0	4,647.8	4,694.2	4,630.6	13.8	14.9	-41.97	-654.9	-279.2	113.4	91.3	22.07	5.138		
4,800.0	4,746.3	4,794.2	4,728.8	14.1	15.3	-42.23	-672.2	-286.6	115.7	93.0	22.66	5.106		
4,900.0	4,844.8	4,894.2	4,827.0	14.5	15.7	-42.48	-689.4	-294.1	118.0	94.7	23.24	5.076		
5,000.0	4,943.3	4,994.2	4,925.2	14.8	16.0	-42.73	-706.7	-301.5	120.3	96.4	23.83	5.048		
5,100.0	5,041.8	5,094.1	5,023.4	15.2	16.4	-42.96	-723.9	-308.9	122.6	98.2	24.42	5.020		

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 Minch 3F-4H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5090.0ft (Ensign)
Reference Site:	S4-T3N-R68W (Minch)	MD Reference:	WELL @ 5090.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Minch 3F-4H	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 #2	Offset TVD Reference:	Offset Datum

Offset Design S4-T3N-R68W (Minch) - Minch 3G-4H - 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	5,140.2	5,194.1	5,121.6	15.5	16.8	-43.19	-741.2	-316.4	124.9	99.9	25.00	4.994		
5,300.0	5,238.7	5,294.1	5,219.8	15.9	17.2	-43.40	-758.4	-323.8	127.2	101.6	25.59	4.969		
5,400.0	5,337.2	5,394.1	5,318.0	16.2	17.5	-43.61	-775.7	-331.2	129.5	103.3	26.18	4.945		
5,500.0	5,435.7	5,494.0	5,416.2	16.6	17.9	-43.82	-792.9	-338.7	131.8	105.0	26.77	4.922		
5,600.0	5,534.2	5,594.0	5,514.4	16.9	18.3	-44.01	-810.2	-346.1	134.1	106.7	27.37	4.900		
5,700.0	5,632.6	5,694.0	5,612.6	17.3	18.6	-44.20	-827.4	-353.5	136.4	108.4	27.96	4.878		
5,800.0	5,731.1	5,793.9	5,710.8	17.6	19.0	-44.38	-844.6	-361.0	138.7	110.1	28.55	4.858		
5,900.0	5,829.6	5,893.9	5,809.0	18.0	19.4	-44.52	-861.9	-368.4	141.1	112.0	29.13	4.844		
6,000.0	5,928.6	5,993.8	5,907.1	18.3	19.8	-43.98	-879.1	-375.8	145.4	116.0	29.47	4.935		
6,100.0	6,027.9	6,093.5	6,005.0	18.5	20.1	-42.60	-896.3	-383.2	152.3	122.8	29.52	5.160		
6,200.0	6,127.6	6,192.8	6,102.6	18.7	20.5	-40.58	-913.5	-390.6	161.9	132.6	29.31	5.523		
6,300.0	6,227.5	6,291.8	6,199.7	18.8	20.9	-38.11	-930.5	-398.0	174.4	145.5	28.92	6.030		
6,400.0	6,327.5	6,390.1	6,296.3	18.9	21.2	173.83	-947.5	-405.3	189.9	153.9	35.98	5.279		
6,500.0	6,427.5	6,488.3	6,392.8	19.0	21.6	176.38	-964.4	-412.6	206.5	169.5	37.03	5.578		
6,600.0	6,527.5	6,585.9	6,488.8	19.1	21.9	177.81	-981.3	-417.0	223.6	185.8	37.80	5.915		
6,700.0	6,627.5	6,682.5	6,583.5	19.2	22.2	176.06	-997.9	-409.1	241.3	203.4	37.87	6.372		
6,800.0	6,727.5	6,775.7	6,673.1	19.3	22.4	81.43	-1,013.7	-389.3	260.5	230.5	30.04	8.674		
6,900.0	6,826.5	6,866.3	6,757.1	19.3	22.5	76.44	-1,028.4	-358.9	280.8	249.5	31.26	8.981		
7,000.0	6,922.6	6,955.1	6,835.1	19.2	22.6	72.24	-1,042.1	-318.9	301.1	269.3	31.78	9.475		
7,100.0	7,014.0	7,042.3	6,906.5	19.1	22.6	68.74	-1,054.6	-270.3	320.8	289.2	31.59	10.156		
7,200.0	7,098.9	7,128.3	6,970.5	18.9	22.7	65.85	-1,065.9	-214.2	339.2	308.4	30.79	11.017		
7,300.0	7,175.7	7,213.3	7,026.9	18.8	22.8	63.51	-1,075.8	-151.5	355.9	326.3	29.59	12.025		
7,400.0	7,242.8	7,300.0	7,076.5	18.7	22.9	61.63	-1,084.5	-80.9	370.4	342.1	28.29	13.093		
7,500.0	7,298.9	7,381.1	7,114.9	18.7	23.1	60.22	-1,091.3	-9.9	382.5	355.2	27.31	14.004		
7,600.0	7,343.0	7,464.2	7,145.9	18.8	23.3	59.19	-1,096.7	67.0	391.9	364.9	26.97	14.528		
7,700.0	7,374.2	7,550.0	7,168.5	19.2	23.7	58.52	-1,100.7	149.6	398.4	370.7	27.73	14.366		
7,800.0	7,391.8	7,629.8	7,180.6	19.9	24.2	58.22	-1,102.8	228.4	401.9	372.3	29.67	13.547		
7,900.0	7,396.0	7,715.0	7,184.0	20.9	24.8	58.22	-1,103.4	313.5	402.5	370.0	32.53	12.373		
8,000.0	7,396.0	7,815.0	7,184.0	22.3	25.8	58.22	-1,103.4	413.5	402.6	367.1	35.44	11.359		
8,100.0	7,396.0	7,915.0	7,184.0	23.9	27.0	58.22	-1,103.4	513.5	402.6	364.0	38.59	10.433		
8,200.0	7,396.0	8,015.0	7,184.0	25.7	28.4	58.22	-1,103.4	613.5	402.6	360.6	41.92	9.603		
8,300.0	7,396.0	8,115.0	7,184.0	27.6	30.0	58.22	-1,103.4	713.5	402.6	357.2	45.40	8.867		
8,400.0	7,396.0	8,215.0	7,184.0	29.6	31.8	58.22	-1,103.4	813.5	402.6	353.6	48.99	8.217		
8,500.0	7,396.0	8,315.0	7,184.0	31.7	33.7	58.22	-1,103.4	913.5	402.6	349.9	52.68	7.642		
8,600.0	7,396.0	8,415.0	7,184.0	33.8	35.6	58.22	-1,103.4	1,013.5	402.6	346.1	56.44	7.133		
8,700.0	7,396.0	8,515.0	7,184.0	36.0	37.7	58.22	-1,103.4	1,113.5	402.6	342.3	60.26	6.680		
8,800.0	7,396.0	8,615.0	7,184.0	38.2	39.7	58.22	-1,103.4	1,213.5	402.6	338.5	64.13	6.277		
8,900.0	7,396.0	8,715.0	7,184.0	40.5	41.9	58.23	-1,103.4	1,313.5	402.6	334.6	68.04	5.917		
9,000.0	7,396.0	8,815.0	7,184.0	42.7	44.1	58.23	-1,103.4	1,413.5	402.6	330.6	71.99	5.593		
9,100.0	7,396.0	8,915.0	7,184.0	45.0	46.3	58.23	-1,103.4	1,513.5	402.6	326.6	75.96	5.300		
9,200.0	7,396.0	9,015.0	7,184.0	47.3	48.5	58.23	-1,103.4	1,613.5	402.6	322.7	79.96	5.035		
9,300.0	7,396.0	9,115.0	7,184.0	49.7	50.8	58.23	-1,103.4	1,713.5	402.6	318.6	83.98	4.794		
9,400.0	7,396.0	9,215.0	7,184.0	52.0	53.1	58.23	-1,103.4	1,813.5	402.6	314.6	88.02	4.574		
9,500.0	7,396.0	9,315.0	7,184.0	54.4	55.4	58.23	-1,103.4	1,913.5	402.6	310.6	92.07	4.373		
9,600.0	7,396.0	9,415.0	7,184.0	56.7	57.7	58.23	-1,103.4	2,013.5	402.6	306.5	96.13	4.188		
9,700.0	7,396.0	9,515.0	7,184.0	59.1	60.0	58.23	-1,103.4	2,113.5	402.6	302.4	100.21	4.018		
9,800.0	7,396.0	9,615.0	7,184.0	61.5	62.4	58.23	-1,103.4	2,213.5	402.6	298.3	104.30	3.860		
9,900.0	7,396.0	9,715.0	7,184.0	63.9	64.7	58.23	-1,103.4	2,313.5	402.6	294.2	108.40	3.714		
10,000.0	7,396.0	9,815.0	7,184.0	66.3	67.1	58.23	-1,103.4	2,413.5	402.6	290.1	112.51	3.579		
10,100.0	7,396.0	9,915.0	7,184.0	68.7	69.4	58.23	-1,103.4	2,513.5	402.7	286.0	116.62	3.453		
10,200.0	7,396.0	10,015.0	7,184.0	71.1	71.8	58.23	-1,103.4	2,613.5	402.7	281.9	120.75	3.335		
10,300.0	7,396.0	10,115.0	7,184.0	73.5	74.2	58.23	-1,103.4	2,713.5	402.7	277.8	124.87	3.225		

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 Minch 3F-4H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5090.0ft (Ensign)
Reference Site:	S4-T3N-R68W (Minch)	MD Reference:	WELL @ 5090.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Minch 3F-4H	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 #2	Offset TVD Reference:	Offset Datum

Offset Design S4-T3N-R68W (Minch) - Minch 3G-4H - Hz - Plan #1												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)			
10,400.0	7,396.0	10,215.0	7,184.0	75.9	76.6	58.23	-1,103.4	2,813.5	402.7	273.7	129.01	3.121	
10,500.0	7,396.0	10,315.0	7,184.0	78.3	79.0	58.23	-1,103.4	2,913.5	402.7	269.5	133.15	3.024	
10,600.0	7,396.0	10,415.0	7,184.0	80.7	81.4	58.23	-1,103.4	3,013.5	402.7	265.4	137.29	2.933	
10,700.0	7,396.0	10,515.0	7,184.0	83.2	83.8	58.23	-1,103.4	3,113.5	402.7	261.2	141.44	2.847	
10,800.0	7,396.0	10,615.0	7,184.0	85.6	86.2	58.23	-1,103.4	3,213.5	402.7	257.1	145.59	2.766	
10,900.0	7,396.0	10,715.0	7,184.0	88.0	88.6	58.23	-1,103.4	3,313.5	402.7	252.9	149.74	2.689	
11,000.0	7,396.0	10,815.0	7,184.0	90.5	91.0	58.23	-1,103.4	3,413.5	402.7	248.8	153.90	2.617	
11,100.0	7,396.0	10,915.0	7,184.0	92.9	93.4	58.23	-1,103.4	3,513.5	402.7	244.6	158.06	2.548	
11,200.0	7,396.0	11,015.0	7,184.0	95.3	95.8	58.23	-1,103.4	3,613.5	402.7	240.5	162.22	2.482	
11,300.0	7,396.0	11,115.0	7,184.0	97.8	98.3	58.24	-1,103.4	3,713.5	402.7	236.3	166.39	2.420	
11,400.0	7,396.0	11,215.0	7,184.0	100.2	100.7	58.24	-1,103.4	3,813.5	402.7	232.2	170.56	2.361	
11,500.0	7,396.0	11,315.0	7,184.0	102.6	103.1	58.24	-1,103.4	3,913.5	402.7	228.0	174.73	2.305	
11,600.0	7,396.0	11,415.0	7,184.0	105.1	105.6	58.24	-1,103.4	4,013.5	402.7	223.8	178.90	2.251	
11,700.0	7,396.0	11,515.0	7,184.0	107.5	108.0	58.24	-1,103.4	4,113.5	402.7	219.7	183.08	2.200	
11,800.0	7,396.0	11,615.0	7,184.0	110.0	110.4	58.24	-1,103.4	4,213.5	402.7	215.5	187.25	2.151	
11,900.0	7,396.0	11,715.0	7,184.0	112.4	112.9	58.24	-1,103.4	4,313.5	402.7	211.3	191.43	2.104	
11,985.6	7,396.0	11,800.5	7,184.0	114.5	114.9	58.24	-1,103.4	4,399.0	402.7	207.7	195.01	2.065 SF	

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Minch 3F-4H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5090.0ft (Ensign)
Reference Site:	S4-T3N-R68W (Minch)	MD Reference:	WELL @ 5090.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Minch 3F-4H	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 #2	Offset TVD Reference:	Offset Datum

Offset Design S4-T3N-R68W (Minch) - Minch 3H-4H - Hz - Plan #2													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	-180.00	-18.2	0.0	18.2					
100.0	100.0	100.0	100.0	0.2	0.2	-180.00	-18.2	0.0	18.2	17.9	0.30	59.977		
200.0	200.0	200.0	200.0	0.3	0.3	-180.00	-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	-179.19	-19.0	-0.3	19.0	18.0	1.00	19.010		
400.0	400.0	399.3	399.3	0.7	0.7	-177.15	-21.5	-1.1	21.5	20.2	1.35	15.931		
500.0	500.0	498.8	498.7	0.8	0.9	-174.63	-25.6	-2.4	25.8	24.1	1.71	15.101		
600.0	600.0	598.2	597.8	1.0	1.1	-172.24	-31.4	-4.3	31.7	29.7	2.06	15.375		
700.0	700.0	697.3	696.7	1.2	1.3	-19.83	-38.7	-6.7	38.6	36.2	2.40	16.121		
800.0	800.0	796.3	795.3	1.4	1.5	-19.13	-47.7	-9.6	45.6	42.8	2.74	16.614		
900.0	899.9	895.3	893.6	1.6	1.8	-18.97	-58.3	-13.0	52.6	49.5	3.09	17.013		
1,000.0	999.7	994.0	991.5	1.7	2.0	-19.15	-70.5	-17.0	59.7	56.3	3.44	17.342		
1,100.0	1,099.4	1,092.7	1,089.1	2.0	2.3	-19.58	-84.2	-21.5	66.9	63.1	3.80	17.614		
1,200.0	1,198.9	1,191.2	1,186.3	2.2	2.6	-20.17	-99.6	-26.4	74.1	69.9	4.15	17.838		
1,300.0	1,298.3	1,289.7	1,283.1	2.4	3.0	-20.88	-116.5	-31.9	81.4	76.9	4.52	18.020		
1,400.0	1,397.4	1,387.9	1,379.5	2.7	3.3	-21.68	-134.9	-37.9	88.7	83.9	4.89	18.160		
1,500.0	1,496.3	1,486.1	1,475.3	2.9	3.7	-22.55	-154.9	-44.4	96.2	90.9	5.27	18.259		
1,600.0	1,594.9	1,585.5	1,572.2	3.2	4.1	-23.54	-176.2	-51.4	103.2	97.5	5.67	18.212		
1,700.0	1,693.4	1,685.3	1,669.4	3.5	4.6	-24.61	-197.7	-58.4	109.5	103.4	6.08	17.994		
1,800.0	1,791.9	1,785.1	1,766.6	3.9	5.0	-25.58	-219.1	-65.3	115.8	109.2	6.51	17.781		
1,900.0	1,890.4	1,884.9	1,863.8	4.2	5.4	-26.44	-240.5	-72.3	122.1	115.1	6.95	17.575		
2,000.0	1,988.9	1,984.7	1,961.0	4.5	5.8	-27.21	-262.0	-79.3	128.4	121.1	7.39	17.378		
2,100.0	2,087.3	2,084.4	2,058.2	4.8	6.2	-27.92	-283.4	-86.2	134.8	127.0	7.84	17.189		
2,200.0	2,185.8	2,184.2	2,155.4	5.2	6.7	-28.56	-304.8	-93.2	141.2	132.9	8.30	17.009		
2,300.0	2,284.3	2,284.0	2,252.6	5.5	7.1	-29.14	-326.3	-100.2	147.6	138.9	8.77	16.838		
2,400.0	2,382.8	2,383.8	2,349.8	5.8	7.5	-29.67	-347.7	-107.1	154.1	144.8	9.24	16.676		
2,500.0	2,481.3	2,483.6	2,447.0	6.2	7.9	-30.17	-369.1	-114.1	160.5	150.8	9.71	16.523		
2,600.0	2,579.7	2,583.4	2,544.2	6.5	8.4	-30.62	-390.6	-121.1	166.9	156.7	10.19	16.378		
2,700.0	2,678.2	2,683.1	2,641.4	6.9	8.8	-31.04	-412.0	-128.0	173.4	162.7	10.68	16.240		
2,800.0	2,776.7	2,782.9	2,738.6	7.2	9.2	-31.43	-433.4	-135.0	179.9	168.7	11.16	16.111		
2,900.0	2,875.2	2,882.7	2,835.8	7.6	9.6	-31.80	-454.9	-142.0	186.3	174.7	11.66	15.988		
3,000.0	2,973.7	2,982.5	2,933.1	7.9	10.1	-32.13	-476.3	-149.0	192.8	180.7	12.15	15.872		
3,100.0	3,072.1	3,082.3	3,030.3	8.2	10.5	-32.45	-497.7	-155.9	199.3	186.7	12.64	15.762		
3,200.0	3,170.6	3,182.1	3,127.5	8.6	10.9	-32.75	-519.2	-162.9	205.8	192.7	13.14	15.658		
3,300.0	3,269.1	3,281.8	3,224.7	8.9	11.3	-33.03	-540.6	-169.9	212.3	198.7	13.64	15.560		
3,400.0	3,367.6	3,381.6	3,321.9	9.3	11.8	-33.29	-562.0	-176.8	218.8	204.7	14.15	15.466		
3,500.0	3,466.1	3,481.4	3,419.1	9.6	12.2	-33.54	-583.5	-183.8	225.3	210.7	14.65	15.378		
3,600.0	3,564.5	3,581.2	3,516.3	10.0	12.6	-33.77	-604.9	-190.8	231.8	216.7	15.16	15.293		
3,700.0	3,663.0	3,681.0	3,613.5	10.3	13.1	-33.99	-626.3	-197.7	238.3	222.7	15.67	15.213		
3,800.0	3,761.5	3,780.8	3,710.7	10.7	13.5	-34.20	-647.8	-204.7	244.9	228.7	16.18	15.137		
3,900.0	3,860.0	3,880.5	3,807.9	11.0	13.9	-34.39	-669.2	-211.7	251.4	234.7	16.69	15.065		
4,000.0	3,958.5	3,980.3	3,905.1	11.4	14.3	-34.58	-690.6	-218.6	257.9	240.7	17.20	14.996		
4,100.0	4,057.0	4,080.1	4,002.3	11.7	14.8	-34.76	-712.1	-225.6	264.4	246.7	17.71	14.930		
4,200.0	4,155.4	4,179.9	4,099.5	12.1	15.2	-34.93	-733.5	-232.6	271.0	252.7	18.23	14.867		
4,300.0	4,253.9	4,279.7	4,196.7	12.4	15.6	-35.09	-754.9	-239.6	277.5	258.8	18.74	14.807		
4,400.0	4,352.4	4,379.5	4,293.9	12.7	16.1	-35.25	-776.4	-246.5	284.0	264.8	19.26	14.749		
4,500.0	4,450.9	4,479.2	4,391.1	13.1	16.5	-35.40	-797.8	-253.5	290.6	270.8	19.77	14.694		
4,600.0	4,549.4	4,579.0	4,488.3	13.4	16.9	-35.54	-819.2	-260.5	297.1	276.8	20.29	14.641		
4,700.0	4,647.8	4,678.8	4,585.5	13.8	17.4	-35.67	-840.7	-267.4	303.6	282.8	20.81	14.591		
4,800.0	4,746.3	4,778.6	4,682.7	14.1	17.8	-35.80	-862.1	-274.4	310.2	288.9	21.33	14.542		
4,900.0	4,844.8	4,878.4	4,779.9	14.5	18.2	-35.92	-883.5	-281.4	316.7	294.9	21.85	14.496		
5,000.0	4,943.3	4,978.2	4,877.1	14.8	18.6	-36.04	-905.0	-288.3	323.3	300.9	22.37	14.451		
5,100.0	5,041.8	5,077.9	4,974.4	15.2	19.1	-36.16	-926.4	-295.3	329.8	306.9	22.89	14.408		

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 Minch 3F-4H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5090.0ft (Ensign)
Reference Site:	S4-T3N-R68W (Minch)	MD Reference:	WELL @ 5090.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Minch 3F-4H	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 #2	Offset TVD Reference:	Offset Datum

Offset Design S4-T3N-R68W (Minch) - Minch 3H-4H - Hz - Plan #2												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	5,140.2	5,177.7	5,071.6	15.5	19.5	-36.27	-947.8	-302.3	336.4	313.0	23.41	14.367		
5,300.0	5,238.7	5,277.5	5,168.8	15.9	19.9	-36.37	-969.3	-309.2	342.9	319.0	23.94	14.327		
5,400.0	5,337.2	5,377.3	5,266.0	16.2	20.4	-36.47	-990.7	-316.2	349.5	325.0	24.46	14.289		
5,500.0	5,435.7	5,477.1	5,363.2	16.6	20.8	-36.57	-1,012.1	-323.2	356.0	331.0	24.98	14.252		
5,600.0	5,534.2	5,576.9	5,460.4	16.9	21.2	-36.67	-1,033.6	-330.2	362.6	337.1	25.50	14.216		
5,700.0	5,632.6	5,676.6	5,557.6	17.3	21.7	-36.76	-1,055.0	-337.1	369.1	343.1	26.03	14.182		
5,800.0	5,731.1	5,776.4	5,654.8	17.6	22.1	-36.85	-1,076.4	-344.1	375.7	349.1	26.55	14.148		
5,900.0	5,829.6	5,876.2	5,752.0	18.0	22.5	-36.94	-1,097.9	-351.1	382.4	355.3	27.07	14.122		
6,000.0	5,928.6	5,975.8	5,849.0	18.3	22.9	-36.88	-1,119.3	-358.0	391.1	363.6	27.50	14.223		
6,100.0	6,027.9	6,075.1	5,945.7	18.5	23.4	-36.57	-1,140.6	-365.0	402.7	374.9	27.80	14.484		
6,200.0	6,127.6	6,173.9	6,042.0	18.7	23.8	-36.02	-1,161.8	-371.9	417.1	389.1	27.99	14.900		
6,300.0	6,227.5	6,272.2	6,137.7	18.8	24.2	-35.29	-1,182.9	-378.7	434.4	406.3	28.08	15.468		
6,400.0	6,327.5	6,369.8	6,232.8	18.9	24.6	174.85	-1,203.9	-385.5	454.4	414.6	39.90	11.391 SF		
6,500.0	6,427.5	6,467.2	6,327.7	19.0	25.1	175.92	-1,224.8	-392.3	475.4	434.7	40.66	11.690		
6,600.0	6,527.5	6,564.6	6,422.6	19.1	25.5	176.89	-1,245.7	-399.1	496.5	455.0	41.41	11.989		

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Minch 3F-4H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5090.0ft (Ensign)
Reference Site:	S4-T3N-R68W (Minch)	MD Reference:	WELL @ 5090.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Minch 3F-4H	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 #2	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 5090.0ft (Ensign)

Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: Minch 3F-4H

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.31°

