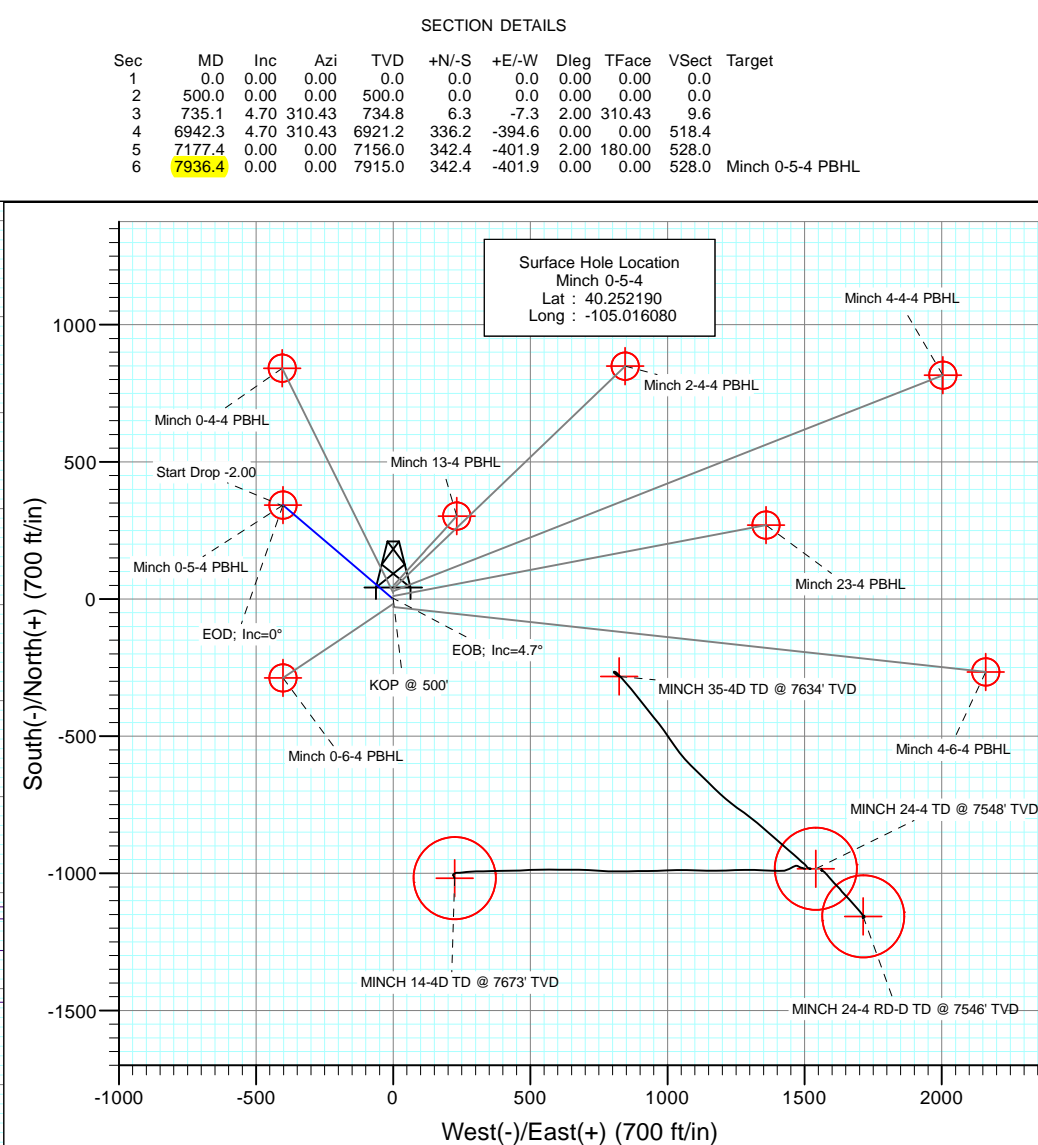
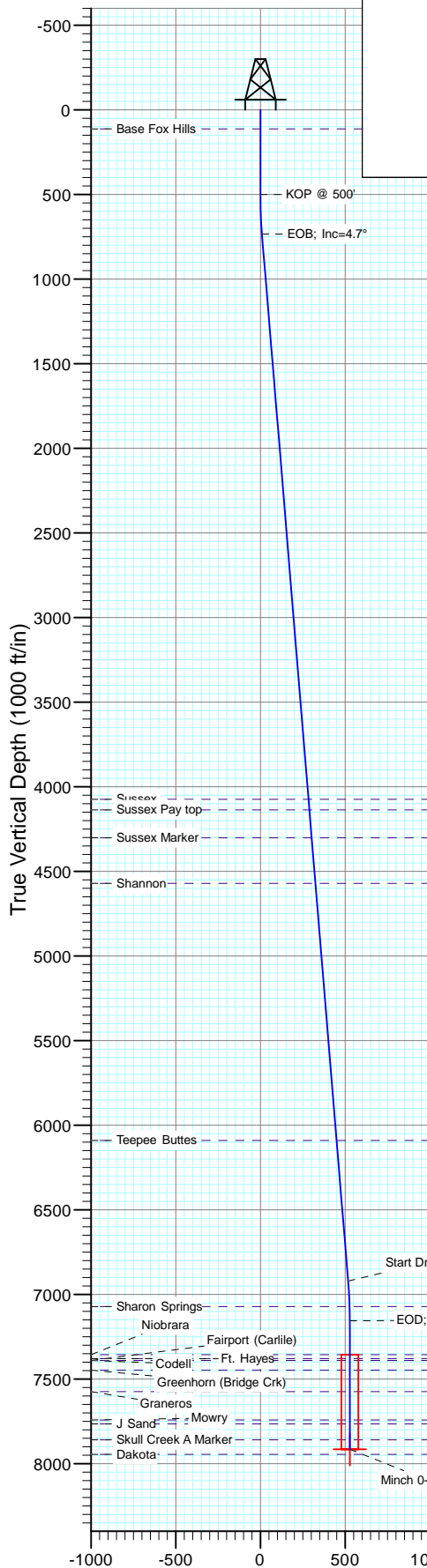
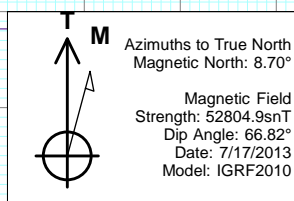




Project: DJ Wattenberg
Site: S4-T3N-R68W (Minch)
Well: Minch 0-5-4
Wellbore: DD
Design: Plan #1



DESIGN TARGET DETAILS				
Name	+N/-S	+E/-W	North	Latitude
Minch 0-5-4 PBHL	342.4	-401.9	1335425.94	40.253130
			3134672.39	-105.017520



FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
113.0	113.0	Base Fox Hills
4074.0	4085.5	Sussex
4137.0	4148.7	Sussex Pay top
4302.0	4314.3	Sussex Marker
4571.0	4584.2	Shannon
6090.0	6108.3	Teepee Buttes
7072.0	7093.4	Sharon Springs
7356.0	7377.4	Niobrara
7379.0	7400.4	Ft. Hayes
7390.0	7411.4	Codell
7390.0	7411.4	Fairport (Carlile)
7448.0	7469.4	Greenhorn (Bridge Crk)
7574.0	7595.4	Graneros
7742.0	7763.4	Mowry
7765.0	7786.4	J Sand
7859.0	7880.4	Skull Creek A Marker

Plan #1
Minch 0-5-4
13xxx; LR
WELL @ 5090.0ft (Original Well Elev)
Ground Elevation @ 5077.0
North American Datum 1983
Well Minch 0-5-4, True North

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Minch 0-5-4
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 5090.0ft (Original Well Elev)
Project:	DJ Wattenberg	MD Reference:	WELL @ 5090.0ft (Original Well Elev)
Site:	S4-T3N-R68W (Minch)	North Reference:	True
Well:	Minch 0-5-4	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
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 0-5-4					
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	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	7/17/2013	8.70	66.82	52,805

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	310.43

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.00	0.00	0.00	0.00	
735.1	4.70	310.43	734.8	6.3	-7.3	2.00	2.00	0.00	310.43	
6,942.3	4.70	310.43	6,921.2	336.2	-394.6	0.00	0.00	0.00	0.00	
7,177.4	0.00	0.00	7,156.0	342.4	-401.9	2.00	-2.00	0.00	180.00	
7,936.4	0.00	0.00	7,915.0	342.4	-401.9	0.00	0.00	0.00	0.00	Minch 0-5-4 PBHL

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Minch 0-5-4
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 5090.0ft (Original Well Elev)
Project:	DJ Wattenberg	MD Reference:	WELL @ 5090.0ft (Original Well Elev)
Site:	S4-T3N-R68W (Minch)	North Reference:	True
Well:	Minch 0-5-4	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
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	
113.0	0.00	0.00	113.0	0.0	0.0	0.0	0.00	0.00	Base 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	KOP @ 500'
600.0	2.00	310.43	600.0	1.1	-1.3	1.7	2.00	2.00	
700.0	4.00	310.43	699.8	4.5	-5.3	7.0	2.00	2.00	
735.1	4.70	310.43	734.8	6.3	-7.3	9.6	2.00	2.00	EOB; Inc=4.7°
800.0	4.70	310.43	799.5	9.7	-11.4	15.0	0.00	0.00	
900.0	4.70	310.43	899.2	15.0	-17.6	23.2	0.00	0.00	
1,000.0	4.70	310.43	998.8	20.3	-23.9	31.4	0.00	0.00	
1,100.0	4.70	310.43	1,098.5	25.6	-30.1	39.5	0.00	0.00	
1,200.0	4.70	310.43	1,198.2	31.0	-36.3	47.7	0.00	0.00	
1,300.0	4.70	310.43	1,297.8	36.3	-42.6	55.9	0.00	0.00	
1,400.0	4.70	310.43	1,397.5	41.6	-48.8	64.1	0.00	0.00	
1,500.0	4.70	310.43	1,497.2	46.9	-55.1	72.3	0.00	0.00	
1,600.0	4.70	310.43	1,596.8	52.2	-61.3	80.5	0.00	0.00	
1,700.0	4.70	310.43	1,696.5	57.5	-67.5	88.7	0.00	0.00	
1,800.0	4.70	310.43	1,796.2	62.9	-73.8	96.9	0.00	0.00	
1,900.0	4.70	310.43	1,895.8	68.2	-80.0	105.1	0.00	0.00	
2,000.0	4.70	310.43	1,995.5	73.5	-86.3	113.3	0.00	0.00	
2,100.0	4.70	310.43	2,095.1	78.8	-92.5	121.5	0.00	0.00	
2,200.0	4.70	310.43	2,194.8	84.1	-98.7	129.7	0.00	0.00	
2,300.0	4.70	310.43	2,294.5	89.4	-105.0	137.9	0.00	0.00	
2,400.0	4.70	310.43	2,394.1	94.8	-111.2	146.1	0.00	0.00	
2,500.0	4.70	310.43	2,493.8	100.1	-117.4	154.3	0.00	0.00	
2,600.0	4.70	310.43	2,593.5	105.4	-123.7	162.5	0.00	0.00	
2,700.0	4.70	310.43	2,693.1	110.7	-129.9	170.7	0.00	0.00	
2,800.0	4.70	310.43	2,792.8	116.0	-136.2	178.9	0.00	0.00	
2,900.0	4.70	310.43	2,892.5	121.3	-142.4	187.1	0.00	0.00	
3,000.0	4.70	310.43	2,992.1	126.6	-148.6	195.3	0.00	0.00	
3,100.0	4.70	310.43	3,091.8	132.0	-154.9	203.5	0.00	0.00	
3,200.0	4.70	310.43	3,191.4	137.3	-161.1	211.7	0.00	0.00	
3,300.0	4.70	310.43	3,291.1	142.6	-167.4	219.9	0.00	0.00	
3,400.0	4.70	310.43	3,390.8	147.9	-173.6	228.1	0.00	0.00	
3,500.0	4.70	310.43	3,490.4	153.2	-179.8	236.3	0.00	0.00	
3,600.0	4.70	310.43	3,590.1	158.5	-186.1	244.5	0.00	0.00	
3,700.0	4.70	310.43	3,689.8	163.9	-192.3	252.6	0.00	0.00	
3,800.0	4.70	310.43	3,789.4	169.2	-198.5	260.8	0.00	0.00	
3,900.0	4.70	310.43	3,889.1	174.5	-204.8	269.0	0.00	0.00	
4,000.0	4.70	310.43	3,988.8	179.8	-211.0	277.2	0.00	0.00	
4,085.5	4.70	310.43	4,074.0	184.3	-216.4	284.2	0.00	0.00	Sussex
4,100.0	4.70	310.43	4,088.4	185.1	-217.3	285.4	0.00	0.00	
4,148.7	4.70	310.43	4,137.0	187.7	-220.3	289.4	0.00	0.00	Sussex Pay top
4,200.0	4.70	310.43	4,188.1	190.4	-223.5	293.6	0.00	0.00	
4,300.0	4.70	310.43	4,287.7	195.7	-229.7	301.8	0.00	0.00	
4,314.3	4.70	310.43	4,302.0	196.5	-230.6	303.0	0.00	0.00	Sussex Marker
4,400.0	4.70	310.43	4,387.4	201.1	-236.0	310.0	0.00	0.00	
4,500.0	4.70	310.43	4,487.1	206.4	-242.2	318.2	0.00	0.00	
4,584.2	4.70	310.43	4,571.0	210.9	-247.5	325.1	0.00	0.00	Shannon

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Minch 0-5-4
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 5090.0ft (Original Well Elev)
Project:	DJ Wattenberg	MD Reference:	WELL @ 5090.0ft (Original Well Elev)
Site:	S4-T3N-R68W (Minch)	North Reference:	True
Well:	Minch 0-5-4	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
4,600.0	4.70	310.43	4,586.7	211.7	-248.5	326.4	0.00	0.00	
4,700.0	4.70	310.43	4,686.4	217.0	-254.7	334.6	0.00	0.00	
4,800.0	4.70	310.43	4,786.1	222.3	-260.9	342.8	0.00	0.00	
4,900.0	4.70	310.43	4,885.7	227.6	-267.2	351.0	0.00	0.00	
5,000.0	4.70	310.43	4,985.4	233.0	-273.4	359.2	0.00	0.00	
5,100.0	4.70	310.43	5,085.1	238.3	-279.7	367.4	0.00	0.00	
5,200.0	4.70	310.43	5,184.7	243.6	-285.9	375.6	0.00	0.00	
5,300.0	4.70	310.43	5,284.4	248.9	-292.1	383.8	0.00	0.00	
5,400.0	4.70	310.43	5,384.0	254.2	-298.4	392.0	0.00	0.00	
5,500.0	4.70	310.43	5,483.7	259.5	-304.6	400.2	0.00	0.00	
5,600.0	4.70	310.43	5,583.4	264.8	-310.8	408.4	0.00	0.00	
5,700.0	4.70	310.43	5,683.0	270.2	-317.1	416.6	0.00	0.00	
5,800.0	4.70	310.43	5,782.7	275.5	-323.3	424.8	0.00	0.00	
5,900.0	4.70	310.43	5,882.4	280.8	-329.6	433.0	0.00	0.00	
6,000.0	4.70	310.43	5,982.0	286.1	-335.8	441.2	0.00	0.00	
6,100.0	4.70	310.43	6,081.7	291.4	-342.0	449.4	0.00	0.00	
6,108.3	4.70	310.43	6,090.0	291.9	-342.6	450.0	0.00	0.00	Teepee Buttes
6,200.0	4.70	310.43	6,181.3	296.7	-348.3	457.5	0.00	0.00	
6,300.0	4.70	310.43	6,281.0	302.1	-354.5	465.7	0.00	0.00	
6,400.0	4.70	310.43	6,380.7	307.4	-360.8	473.9	0.00	0.00	
6,500.0	4.70	310.43	6,480.3	312.7	-367.0	482.1	0.00	0.00	
6,600.0	4.70	310.43	6,580.0	318.0	-373.2	490.3	0.00	0.00	
6,700.0	4.70	310.43	6,679.7	323.3	-379.5	498.5	0.00	0.00	
6,800.0	4.70	310.43	6,779.3	328.6	-385.7	506.7	0.00	0.00	
6,900.0	4.70	310.43	6,879.0	333.9	-391.9	514.9	0.00	0.00	
6,942.3	4.70	310.43	6,921.2	336.2	-394.6	518.4	0.00	0.00	Start Drop -2.00
7,000.0	3.55	310.43	6,978.7	338.9	-397.7	522.5	2.00	-2.00	
7,093.4	1.68	310.43	7,072.0	341.7	-401.0	526.8	2.00	-2.00	Sharon Springs
7,100.0	1.55	310.43	7,078.6	341.8	-401.1	527.0	2.00	-2.00	
7,177.4	0.00	0.00	7,156.0	342.4	-401.9	528.0	2.00	-2.00	EOD; Inc=0°
7,200.0	0.00	0.00	7,178.6	342.4	-401.9	528.0	0.00	0.00	
7,300.0	0.00	0.00	7,278.6	342.4	-401.9	528.0	0.00	0.00	
7,377.4	0.00	0.00	7,356.0	342.4	-401.9	528.0	0.00	0.00	Niobrara
7,400.0	0.00	0.00	7,378.6	342.4	-401.9	528.0	0.00	0.00	
7,400.4	0.00	0.00	7,379.0	342.4	-401.9	528.0	0.00	0.00	Ft. Hayes
7,411.4	0.00	0.00	7,390.0	342.4	-401.9	528.0	0.00	0.00	Codell - Fairport (Carlile)
7,469.4	0.00	0.00	7,448.0	342.4	-401.9	528.0	0.00	0.00	Greenhorn (Bridge Crk)
7,500.0	0.00	0.00	7,478.6	342.4	-401.9	528.0	0.00	0.00	
7,595.4	0.00	0.00	7,574.0	342.4	-401.9	528.0	0.00	0.00	Graneros
7,600.0	0.00	0.00	7,578.6	342.4	-401.9	528.0	0.00	0.00	
7,700.0	0.00	0.00	7,678.6	342.4	-401.9	528.0	0.00	0.00	
7,763.4	0.00	0.00	7,742.0	342.4	-401.9	528.0	0.00	0.00	Mowry
7,786.4	0.00	0.00	7,765.0	342.4	-401.9	528.0	0.00	0.00	J Sand
7,800.0	0.00	0.00	7,778.6	342.4	-401.9	528.0	0.00	0.00	
7,880.4	0.00	0.00	7,859.0	342.4	-401.9	528.0	0.00	0.00	Skull Creek A Marker
7,900.0	0.00	0.00	7,878.6	342.4	-401.9	528.0	0.00	0.00	
7,936.4	0.00	0.00	7,915.0	342.4	-401.9	528.0	0.00	0.00	TD at 7936.4 - Minch 0-5-4 PBHL

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Minch 0-5-4
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 5090.0ft (Original Well Elev)
Project:	DJ Wattenberg	MD Reference:	WELL @ 5090.0ft (Original Well Elev)
Site:	S4-T3N-R68W (Minch)	North Reference:	True
Well:	Minch 0-5-4	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
Minch 0-5-4 PBHL	0.00	0.00	7,915.0	342.4	-401.9	1,335,425.94	3,134,672.39	40.253130	-105.017520
- plan hits target center									
- Circle (radius 50.0)									

Formations						
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction	
(ft)	(ft)			(°)	(°)	
113.0	113.0	Base Fox Hills				
4,085.5	4,074.0	Sussex				
4,148.7	4,137.0	Sussex Pay top				
4,314.3	4,302.0	Sussex Marker				
4,584.2	4,571.0	Shannon				
6,108.3	6,090.0	Teepee Buttes				
7,093.4	7,072.0	Sharon Springs				
7,377.4	7,356.0	Niobrara				
7,400.4	7,379.0	Ft. Hayes				
7,411.4	7,390.0	Fairport (Carlile)				
7,411.4	7,390.0	Codell				
7,469.4	7,448.0	Greenhorn (Bridge Crk)				
7,595.4	7,574.0	Graneros				
7,763.4	7,742.0	Mowry				
7,786.4	7,765.0	J Sand				
7,880.4	7,859.0	Skull Creek A Marker				

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates			
(ft)	(ft)	+N/-S	+E/-W	Comment	
(ft)	(ft)	(ft)	(ft)		
500.0	500.0	0.0	0.0	KOP @ 500'	
735.1	734.8	6.3	-7.3	EOB; Inc=4.7°	
6,942.3	6,921.2	336.2	-394.6	Start Drop -2.00	
7,177.4	7,156.0	342.4	-401.9	EOD; Inc=0°	
7,936.4	7,915.0	342.4	-401.9	TD at 7936.4	

EnCana Oil & Gas (USA) Inc

DJ Wattenberg

S4-T3N-R68W (Minch)

Minch 0-5-4

DD

Plan #1

Anticollision Report

17 July, 2013

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Minch 0-5-4
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5090.0ft (Original Well Elev)
Reference Site:	S4-T3N-R68W (Minch)	MD Reference:	WELL @ 5090.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Minch 0-5-4	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	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	7/17/2013		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	7,935.8	Plan #1 (DD)	Geolink 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						
S4-T3N-R68W (Minch)						
HOAGLAND 33-4D (EXISTING) - Existing - Existing						Out of range
HOAGLAND 34-4D (EXISTING) - Existing - Existing						Out of range
HOAGLAND 43-4D (EXISTING) - Existing - Existing						Out of range
HOAGLAND 44-4 (EXISTING) - Existing - Existing						Out of range
HOAGLAND 45-4D (EXISTING) - Existing - Existing						Out of range
Minch 0-4-4 - DD - Plan #1	500.0	500.0	21.9	20.2	12.858	CC, ES
Minch 0-4-4 - DD - Plan #1	800.0	797.8	26.5	23.7	9.511	SF
Minch 0-6-4 - DD - Plan #1	500.0	500.0	18.2	16.5	10.712	CC, ES
Minch 0-6-4 - DD - Plan #1	600.0	599.6	20.3	18.3	9.906	SF
Minch 13-4 - DD - Plan #1	500.0	500.0	51.1	49.4	30.048	CC
Minch 13-4 - DD - Plan #1	600.0	598.6	51.4	49.4	25.104	ES
Minch 13-4 - DD - Plan #1	1,100.0	1,095.5	69.6	65.7	17.713	SF
MINCH 14-4D (EXISTING) - Existing - Existing						Out of range
Minch 23-4 - DD - Plan #1	594.4	594.3	10.6	8.5	5.199	CC
Minch 23-4 - DD - Plan #1	600.0	599.8	10.6	8.5	5.152	ES, SF
Minch 2-4-4 - DD - Plan #1	500.0	500.0	40.2	38.5	23.629	CC
Minch 2-4-4 - DD - Plan #1	600.0	598.9	40.5	38.4	19.763	ES
Minch 2-4-4 - DD - Plan #1	800.0	795.2	48.2	45.5	17.358	SF
MINCH 24-4 (EXISTING) - EXISTING - EXISTING						Out of range
MINCH 24-4 RD-D (EXISTING) - Existing - Existing						Out of range
MINCH 35-4D (EXISTING) - Existing - Existing						Out of range
Minch 4-4-4 - DD - Plan #1	200.0	200.0	29.3	28.6	44.851	CC, ES
Minch 4-4-4 - DD - Plan #1	500.0	497.5	38.9	37.2	22.929	SF
Minch 4-6-4 - DD - Plan #1	500.0	500.0	29.1	27.4	17.141	CC, ES
Minch 4-6-4 - DD - Plan #1	600.0	599.8	30.6	28.6	14.928	SF

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Minch 0-5-4
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5090.0ft (Original Well Elev)
Reference Site:	S4-T3N-R68W (Minch)	MD Reference:	WELL @ 5090.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Minch 0-5-4	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T3N-R68W (Minch) - Minch 0-4-4 - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: O-Geolink 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	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	300.0	300.0	0.5	0.5	0.00	21.9	0.0	21.9	20.9	1.00	21.818		
400.0	400.0	400.0	400.0	0.7	0.7	0.00	21.9	0.0	21.9	20.5	1.35	16.180		
500.0	500.0	500.0	500.0	0.8	0.8	0.00	21.9	0.0	21.9	20.2	1.70	12.858 CC, ES		
600.0	600.0	599.3	599.3	1.0	1.0	50.99	23.4	-0.8	22.3	20.2	2.05	10.877		
700.0	699.8	698.6	698.4	1.2	1.2	54.95	28.0	-3.0	23.7	21.2	2.41	9.823		
800.0	799.5	797.8	797.3	1.4	1.4	59.21	35.7	-6.8	26.5	23.7	2.79	9.511 SF		
900.0	899.2	896.9	895.6	1.6	1.7	59.08	46.5	-12.2	32.1	28.9	3.18	10.096		
1,000.0	998.8	996.1	993.8	1.8	1.9	56.61	59.7	-18.7	40.1	36.5	3.58	11.202		
1,100.0	1,098.5	1,095.8	1,092.2	2.0	2.2	54.77	73.3	-25.4	48.3	44.3	3.98	12.155		
1,200.0	1,198.2	1,195.4	1,190.7	2.3	2.5	53.47	86.9	-32.1	56.6	52.2	4.37	12.939		
1,300.0	1,297.8	1,295.1	1,289.2	2.5	2.8	52.50	100.5	-38.8	64.9	60.1	4.77	13.594		
1,400.0	1,397.5	1,394.7	1,387.7	2.7	3.1	51.75	114.1	-45.5	73.2	68.1	5.18	14.149		
1,500.0	1,497.2	1,494.4	1,486.2	2.9	3.4	51.16	127.7	-52.3	81.6	76.0	5.58	14.624		
1,600.0	1,596.8	1,594.0	1,584.7	3.1	3.7	50.67	141.3	-59.0	89.9	83.9	5.98	15.035		
1,700.0	1,696.5	1,693.7	1,683.2	3.4	4.0	50.27	154.9	-65.7	98.2	91.9	6.38	15.395		
1,800.0	1,796.2	1,793.3	1,781.7	3.6	4.3	49.93	168.4	-72.4	106.6	99.8	6.78	15.712		
1,900.0	1,895.8	1,893.0	1,880.2	3.8	4.6	49.64	182.0	-79.1	114.9	107.7	7.19	15.993		
2,000.0	1,995.5	1,992.6	1,978.7	4.0	4.9	49.39	195.6	-85.8	123.3	115.7	7.59	16.245		
2,100.0	2,095.1	2,092.3	2,077.2	4.2	5.2	49.17	209.2	-92.5	131.6	123.6	7.99	16.471		
2,200.0	2,194.8	2,191.9	2,175.6	4.5	5.6	48.98	222.8	-99.2	140.0	131.6	8.39	16.675		
2,300.0	2,294.5	2,291.6	2,274.1	4.7	5.9	48.80	236.4	-105.9	148.3	139.5	8.80	16.860		
2,400.0	2,394.1	2,391.2	2,372.6	4.9	6.2	48.65	250.0	-112.6	156.7	147.5	9.20	17.030		
2,500.0	2,493.8	2,490.9	2,471.1	5.1	6.5	48.51	263.5	-119.3	165.1	155.5	9.61	17.184		
2,600.0	2,593.5	2,590.5	2,569.6	5.4	6.8	48.39	277.1	-126.0	173.4	163.4	10.01	17.327		
2,700.0	2,693.1	2,690.2	2,668.1	5.6	7.1	48.28	290.7	-132.8	181.8	171.4	10.41	17.458		
2,800.0	2,792.8	2,789.8	2,766.6	5.8	7.4	48.17	304.3	-139.5	190.1	179.3	10.82	17.579		
2,900.0	2,892.5	2,889.5	2,865.1	6.0	7.7	48.08	317.9	-146.2	198.5	187.3	11.22	17.692		
3,000.0	2,992.1	2,989.1	2,963.6	6.3	8.1	47.99	331.5	-152.9	206.9	195.2	11.62	17.797		
3,100.0	3,091.8	3,088.8	3,062.1	6.5	8.4	47.91	345.1	-159.6	215.2	203.2	12.03	17.894		
3,200.0	3,191.4	3,188.4	3,160.6	6.7	8.7	47.84	358.7	-166.3	223.6	211.2	12.43	17.986		
3,300.0	3,291.1	3,288.1	3,259.0	6.9	9.0	47.77	372.2	-173.0	231.9	219.1	12.84	18.071		
3,400.0	3,390.8	3,387.7	3,357.5	7.2	9.3	47.71	385.8	-179.7	240.3	227.1	13.24	18.151		
3,500.0	3,490.4	3,487.4	3,456.0	7.4	9.6	47.65	399.4	-186.4	248.7	235.0	13.64	18.227		
3,600.0	3,590.1	3,587.0	3,554.5	7.6	10.0	47.59	413.0	-193.1	257.0	243.0	14.05	18.298		
3,700.0	3,689.8	3,686.7	3,653.0	7.8	10.3	47.54	426.6	-199.8	265.4	250.9	14.45	18.365		
3,800.0	3,789.4	3,786.3	3,751.5	8.1	10.6	47.49	440.2	-206.5	273.8	258.9	14.86	18.429		
3,900.0	3,889.1	3,886.0	3,850.0	8.3	10.9	47.44	453.8	-213.3	282.1	266.9	15.26	18.489		
4,000.0	3,988.8	3,985.6	3,948.5	8.5	11.2	47.40	467.3	-220.0	290.5	274.8	15.66	18.546		
4,100.0	4,088.4	4,085.3	4,047.0	8.7	11.5	47.36	480.9	-226.7	298.9	282.8	16.07	18.600		
4,200.0	4,188.1	4,184.9	4,145.5	9.0	11.8	47.32	494.5	-233.4	307.2	290.7	16.47	18.651		
4,300.0	4,287.7	4,284.6	4,243.9	9.2	12.2	47.28	508.1	-240.1	315.6	298.7	16.88	18.700		
4,400.0	4,387.4	4,384.2	4,342.4	9.4	12.5	47.25	521.7	-246.8	324.0	306.7	17.28	18.747		
4,500.0	4,487.1	4,483.9	4,440.9	9.6	12.8	47.22	535.3	-253.5	332.3	314.6	17.68	18.791		
4,600.0	4,586.7	4,583.5	4,539.4	9.9	13.1	47.18	548.9	-260.2	340.7	322.6	18.09	18.834		
4,700.0	4,686.4	4,683.2	4,637.9	10.1	13.4	47.15	562.5	-266.9	349.0	330.6	18.49	18.875		
4,800.0	4,786.1	4,782.8	4,736.4	10.3	13.7	47.13	576.0	-273.6	357.4	338.5	18.90	18.913		
4,900.0	4,885.7	4,882.5	4,834.9	10.5	14.1	47.10	589.6	-280.3	365.8	346.5	19.30	18.951		
5,000.0	4,985.4	4,982.1	4,933.4	10.8	14.4	47.07	603.2	-287.0	374.1	354.4	19.71	18.987		
5,100.0	5,085.1	5,081.8	5,031.9	11.0	14.7	47.05	616.8	-293.8	382.5	362.4	20.11	19.021		

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Minch 0-5-4
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5090.0ft (Original Well Elev)
Reference Site:	S4-T3N-R68W (Minch)	MD Reference:	WELL @ 5090.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Minch 0-5-4	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T3N-R68W (Minch) - Minch 0-4-4 - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-Geolink 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)						
5,200.0	5,184.7	5,181.4	5,130.4	11.2	15.0	47.02	630.4	-300.5	390.9	370.4	20.51	19.054		
5,300.0	5,284.4	5,281.1	5,228.9	11.4	15.3	47.00	644.0	-307.2	399.2	378.3	20.92	19.085		
5,400.0	5,384.0	5,380.7	5,327.3	11.7	15.6	46.98	657.6	-313.9	407.6	386.3	21.32	19.116		
5,500.0	5,483.7	5,480.4	5,425.8	11.9	16.0	46.96	671.1	-320.6	416.0	394.2	21.73	19.145		
5,600.0	5,583.4	5,580.0	5,524.3	12.1	16.3	46.94	684.7	-327.3	424.3	402.2	22.13	19.173		
5,700.0	5,683.0	5,679.7	5,622.8	12.4	16.6	46.92	698.3	-334.0	432.7	410.2	22.54	19.201		
5,800.0	5,782.7	5,779.3	5,721.3	12.6	16.9	46.90	711.9	-340.7	441.1	418.1	22.94	19.227		
5,900.0	5,882.4	5,879.0	5,819.8	12.8	17.2	46.88	725.5	-347.4	449.4	426.1	23.34	19.252		
6,000.0	5,982.0	5,978.6	5,918.3	13.0	17.5	46.86	739.1	-354.1	457.8	434.1	23.75	19.277		
6,100.0	6,081.7	6,078.3	6,016.8	13.3	17.9	46.85	752.7	-360.8	466.2	442.0	24.15	19.300		
6,200.0	6,181.3	6,177.9	6,115.3	13.5	18.2	46.83	766.3	-367.5	474.5	450.0	24.56	19.323		
6,300.0	6,281.0	6,277.6	6,213.8	13.7	18.5	46.82	779.8	-374.3	482.9	457.9	24.96	19.345		
6,400.0	6,380.7	6,377.2	6,312.3	13.9	18.8	46.80	793.4	-381.0	491.3	465.9	25.37	19.367		
6,500.0	6,480.3	6,476.9	6,410.7	14.2	19.1	46.79	807.0	-387.7	499.6	473.9	25.77	19.388		
7,100.0	7,078.6	7,146.8	7,078.6	15.4	20.3	49.17	841.5	-404.7	499.8	471.3	28.47	17.557		
7,200.0	7,178.6	7,246.8	7,178.6	15.6	20.4	-0.32	841.5	-404.7	499.1	470.3	28.76	17.351		
7,300.0	7,278.6	7,346.8	7,278.6	15.7	20.5	-0.32	841.5	-404.7	499.1	470.0	29.07	17.168		
7,400.0	7,378.6	7,446.8	7,378.6	15.9	20.6	-0.32	841.5	-404.7	499.1	469.7	29.38	16.989		
7,500.0	7,478.6	7,546.8	7,478.6	16.0	20.7	-0.32	841.5	-404.7	499.1	469.4	29.69	16.812		
7,600.0	7,578.6	7,646.8	7,578.6	16.1	20.8	-0.32	841.5	-404.7	499.1	469.1	29.99	16.639		
7,700.0	7,678.6	7,746.8	7,678.6	16.3	20.9	-0.32	841.5	-404.7	499.1	468.8	30.30	16.469		
7,800.0	7,778.6	7,846.8	7,778.6	16.4	21.0	-0.32	841.5	-404.7	499.1	468.5	30.61	16.302		
7,900.0	7,878.6	7,946.8	7,878.6	16.6	21.2	-0.32	841.5	-404.7	499.1	468.2	30.93	16.138		
7,915.8	7,894.4	7,962.6	7,894.4	16.6	21.2	-0.32	841.5	-404.7	499.1	468.1	30.97	16.113		
7,936.4	7,915.0	7,968.2	7,900.0	16.6	21.2	-0.32	841.5	-404.7	499.3	468.3	31.02	16.099		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Minch 0-5-4
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5090.0ft (Original Well Elev)
Reference Site:	S4-T3N-R68W (Minch)	MD Reference:	WELL @ 5090.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Minch 0-5-4	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T3N-R68W (Minch) - Minch 0-6-4 - DD - Plan #1													Offset Site Error: 0.0 ft	
Survey Program: 0-Geolink 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	-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	59.964		
200.0	200.0	200.0	200.0	0.3	0.3	-180.00	-18.2	0.0	18.2	17.6	0.65	27.898		
300.0	300.0	300.0	300.0	0.5	0.5	-180.00	-18.2	0.0	18.2	17.2	1.00	18.177		
400.0	400.0	400.0	400.0	0.7	0.7	-180.00	-18.2	0.0	18.2	16.9	1.35	13.480		
500.0	500.0	500.0	500.0	0.8	0.8	-180.00	-18.2	0.0	18.2	16.5	1.70	10.712 CC, ES		
600.0	600.0	599.6	599.6	1.0	1.0	-130.08	-19.2	-1.4	20.3	18.3	2.05	9.906 SF		
700.0	699.8	698.9	698.8	1.2	1.2	-129.33	-22.1	-5.7	26.6	24.2	2.41	11.030		
800.0	799.5	798.3	797.9	1.4	1.4	-129.00	-26.3	-12.1	36.1	33.3	2.79	12.937		
900.0	899.2	897.9	897.1	1.6	1.6	-128.93	-30.7	-18.6	45.8	42.6	3.18	14.412		
1,000.0	998.8	997.4	996.3	1.8	1.8	-128.88	-35.1	-25.1	55.5	51.9	3.57	15.540		
1,100.0	1,098.5	1,096.9	1,095.6	2.0	2.0	-128.84	-39.4	-31.6	65.1	61.2	3.97	16.428		
1,200.0	1,198.2	1,196.5	1,194.8	2.3	2.2	-128.82	-43.8	-38.1	74.8	70.5	4.37	17.142		
1,300.0	1,297.8	1,296.0	1,294.0	2.5	2.5	-128.80	-48.1	-44.6	84.5	79.7	4.77	17.728		
1,400.0	1,397.5	1,395.5	1,393.2	2.7	2.7	-128.78	-52.5	-51.1	94.2	89.0	5.17	18.217		
1,500.0	1,497.2	1,495.1	1,492.4	2.9	2.9	-128.77	-56.8	-57.6	103.9	98.3	5.58	18.630		
1,600.0	1,596.8	1,594.6	1,591.7	3.1	3.1	-128.76	-61.2	-64.1	113.6	107.6	5.98	18.984		
1,700.0	1,696.5	1,694.1	1,690.9	3.4	3.3	-128.75	-65.6	-70.6	123.3	116.9	6.39	19.291		
1,800.0	1,796.2	1,793.6	1,790.1	3.6	3.5	-128.74	-69.9	-77.1	132.9	126.1	6.80	19.558		
1,900.0	1,895.8	1,893.2	1,889.3	3.8	3.8	-128.73	-74.3	-83.6	142.6	135.4	7.21	19.794		
2,000.0	1,995.5	1,992.7	1,988.5	4.0	4.0	-128.73	-78.6	-90.1	152.3	144.7	7.61	20.003		
2,100.0	2,095.1	2,092.2	2,087.8	4.2	4.2	-128.72	-83.0	-96.6	162.0	154.0	8.02	20.189		
2,200.0	2,194.8	2,191.8	2,187.0	4.5	4.4	-128.72	-87.3	-103.1	171.7	163.3	8.43	20.357		
2,300.0	2,294.5	2,291.3	2,286.2	4.7	4.6	-128.71	-91.7	-109.6	181.4	172.5	8.84	20.508		
2,400.0	2,394.1	2,390.8	2,385.4	4.9	4.8	-128.71	-96.1	-116.1	191.1	181.8	9.25	20.646		
2,500.0	2,493.8	2,490.4	2,484.7	5.1	5.1	-128.71	-100.4	-122.6	200.7	191.1	9.66	20.771		
2,600.0	2,593.5	2,589.9	2,583.9	5.4	5.3	-128.70	-104.8	-129.1	210.4	200.4	10.08	20.886		
2,700.0	2,693.1	2,689.4	2,683.1	5.6	5.5	-128.70	-109.1	-135.6	220.1	209.6	10.49	20.991		
2,800.0	2,792.8	2,788.9	2,782.3	5.8	5.7	-128.70	-113.5	-142.1	229.8	218.9	10.90	21.088		
2,900.0	2,892.5	2,888.5	2,881.5	6.0	5.9	-128.70	-117.8	-148.6	239.5	228.2	11.31	21.177		
3,000.0	2,992.1	2,988.0	2,980.8	6.3	6.2	-128.69	-122.2	-155.1	249.2	237.5	11.72	21.261		
3,100.0	3,091.8	3,087.5	3,080.0	6.5	6.4	-128.69	-126.6	-161.5	258.9	246.7	12.13	21.338		
3,200.0	3,191.4	3,187.1	3,179.2	6.7	6.6	-128.69	-130.9	-168.0	268.6	256.0	12.54	21.410		
3,300.0	3,291.1	3,286.6	3,278.4	6.9	6.8	-128.69	-135.3	-174.5	278.2	265.3	12.96	21.477		
3,400.0	3,390.8	3,386.1	3,377.7	7.2	7.0	-128.69	-139.6	-181.0	287.9	274.6	13.37	21.540		
3,500.0	3,490.4	3,485.6	3,476.9	7.4	7.3	-128.69	-144.0	-187.5	297.6	283.8	13.78	21.599		
3,600.0	3,590.1	3,585.2	3,576.1	7.6	7.5	-128.68	-148.3	-194.0	307.3	293.1	14.19	21.655		
3,700.0	3,689.8	3,684.7	3,675.3	7.8	7.7	-128.68	-152.7	-200.5	317.0	302.4	14.60	21.707		
3,800.0	3,789.4	3,784.2	3,774.5	8.1	7.9	-128.68	-157.1	-207.0	326.7	311.7	15.01	21.757		
3,900.0	3,889.1	3,883.8	3,873.8	8.3	8.2	-128.68	-161.4	-213.5	336.4	320.9	15.43	21.803		
4,000.0	3,988.8	3,983.3	3,973.0	8.5	8.4	-128.68	-165.8	-220.0	346.0	330.2	15.84	21.848		
4,100.0	4,088.4	4,082.8	4,072.2	8.7	8.6	-128.68	-170.1	-226.5	355.7	339.5	16.25	21.889		
4,200.0	4,188.1	4,182.4	4,171.4	9.0	8.8	-128.68	-174.5	-233.0	365.4	348.8	16.66	21.929		
4,300.0	4,287.7	4,281.9	4,270.7	9.2	9.0	-128.68	-178.8	-239.5	375.1	358.0	17.08	21.967		
4,400.0	4,387.4	4,381.4	4,369.9	9.4	9.3	-128.68	-183.2	-246.0	384.8	367.3	17.49	22.003		
4,500.0	4,487.1	4,480.9	4,469.1	9.6	9.5	-128.67	-187.6	-252.5	394.5	376.6	17.90	22.037		
4,600.0	4,586.7	4,580.5	4,568.3	9.9	9.7	-128.67	-191.9	-259.0	404.2	385.8	18.31	22.070		
4,700.0	4,686.4	4,680.0	4,667.5	10.1	9.9	-128.67	-196.3	-265.5	413.8	395.1	18.73	22.101		
4,800.0	4,786.1	4,779.5	4,766.8	10.3	10.1	-128.67	-200.6	-272.0	423.5	404.4	19.14	22.131		
4,900.0	4,885.7	4,879.1	4,866.0	10.5	10.4	-128.67	-205.0	-278.5	433.2	413.7	19.55	22.159		
5,000.0	4,985.4	4,978.6	4,965.2	10.8	10.6	-128.67	-209.3	-285.0	442.9	422.9	19.96	22.187		
5,100.0	5,085.1	5,078.1	5,064.4	11.0	10.8	-128.67	-213.7	-291.5	452.6	432.2	20.38	22.213		

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Minch 0-5-4
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5090.0ft (Original Well Elev)
Reference Site:	S4-T3N-R68W (Minch)	MD Reference:	WELL @ 5090.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Minch 0-5-4	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design												S4-T3N-R68W (Minch) - Minch 0-6-4 - DD - Plan #1		Offset Site Error:		0.0 ft	
Survey Program:												0-Geolink MWD		Offset Well Error:		0.0 ft	
Reference		Offset		Semi Major Axis				Distance				Warning					
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre	Between Centres	Between Ellipses	Total Uncertainty	Separation Factor						
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	Axis						
5,200.0	5,184.7	5,177.7	5,163.7	11.2	11.0	-128.67	-218.1	-298.0	462.3	441.5	20.79	22.238					
5,300.0	5,284.4	5,277.2	5,262.9	11.4	11.2	-128.67	-222.4	-304.5	472.0	450.8	21.20	22.262					
5,400.0	5,384.0	5,376.7	5,362.1	11.7	11.5	-128.67	-226.8	-311.0	481.6	460.0	21.61	22.285					
5,500.0	5,483.7	5,476.2	5,461.3	11.9	11.7	-128.67	-231.1	-317.5	491.3	469.3	22.03	22.308					

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Minch 0-5-4
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5090.0ft (Original Well Elev)
Reference Site:	S4-T3N-R68W (Minch)	MD Reference:	WELL @ 5090.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Minch 0-5-4	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T3N-R68W (Minch) - Minch 13-4 - DD - Plan #1														Offset Site Error:	0.0 ft
Survey Program: O-Geolink 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	Factor			
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	168.201			
200.0	200.0	200.0	200.0	0.3	0.3	3.13	51.0	2.8	51.1	50.4	0.65	78.254			
300.0	300.0	300.0	300.0	0.5	0.5	3.13	51.0	2.8	51.1	50.1	1.00	50.988			
400.0	400.0	400.0	400.0	0.7	0.7	3.13	51.0	2.8	51.1	49.7	1.35	37.813			
500.0	500.0	500.0	500.0	0.8	0.8	3.13	51.0	2.8	51.1	49.4	1.70	30.048 CC			
600.0	600.0	598.6	598.6	1.0	1.0	55.41	52.3	3.9	51.4	49.4	2.05	25.104 ES			
700.0	699.8	697.4	697.3	1.2	1.2	63.13	55.8	7.2	52.8	50.4	2.41	21.961			
800.0	799.5	797.0	796.7	1.4	1.4	73.29	59.8	10.8	54.9	52.1	2.78	19.756			
900.0	899.2	896.5	896.0	1.6	1.6	82.67	63.8	14.5	58.5	55.4	3.16	18.523			
1,000.0	998.8	996.0	995.4	1.8	1.8	90.78	67.9	18.1	63.5	60.0	3.54	17.924			
1,100.0	1,098.5	1,095.5	1,094.7	2.0	2.0	97.60	71.9	21.8	69.6	65.7	3.93	17.713 SF			
1,200.0	1,198.2	1,195.0	1,194.1	2.3	2.2	103.26	75.9	25.4	76.5	72.2	4.31	17.732			
1,300.0	1,297.8	1,294.5	1,293.4	2.5	2.4	107.95	79.9	29.1	84.0	79.3	4.70	17.882			
1,400.0	1,397.5	1,394.0	1,392.8	2.7	2.5	111.86	83.9	32.8	92.0	86.9	5.08	18.104			
1,500.0	1,497.2	1,493.5	1,492.1	2.9	2.7	115.13	87.9	36.4	100.4	94.9	5.47	18.362			
1,600.0	1,596.8	1,593.0	1,591.5	3.1	2.9	117.89	91.9	40.1	109.0	103.1	5.85	18.636			
1,700.0	1,696.5	1,692.5	1,690.8	3.4	3.1	120.24	96.0	43.7	117.8	111.6	6.23	18.911			
1,800.0	1,796.2	1,792.0	1,790.2	3.6	3.3	122.26	100.0	47.4	126.8	120.2	6.61	19.181			
1,900.0	1,895.8	1,891.5	1,889.5	3.8	3.5	124.01	104.0	51.0	136.0	129.0	6.99	19.442			
2,000.0	1,995.5	1,991.0	1,988.9	4.0	3.7	125.54	108.0	54.7	145.3	137.9	7.38	19.691			
2,100.0	2,095.1	2,090.5	2,088.3	4.2	3.9	126.89	112.0	58.3	154.6	146.8	7.76	19.928			
2,200.0	2,194.8	2,190.0	2,187.6	4.5	4.1	128.08	116.0	62.0	164.0	155.9	8.14	20.152			
2,300.0	2,294.5	2,289.5	2,287.0	4.7	4.3	129.15	120.0	65.7	173.5	165.0	8.52	20.364			
2,400.0	2,394.1	2,389.0	2,386.3	4.9	4.5	130.10	124.1	69.3	183.0	174.1	8.90	20.563			
2,500.0	2,493.8	2,488.5	2,485.7	5.1	4.7	130.96	128.1	73.0	192.6	183.3	9.28	20.751			
2,600.0	2,593.5	2,588.0	2,585.0	5.4	4.9	131.73	132.1	76.6	202.2	192.6	9.66	20.929			
2,700.0	2,693.1	2,687.5	2,684.4	5.6	5.1	132.44	136.1	80.3	211.9	201.9	10.04	21.096			
2,800.0	2,792.8	2,787.0	2,783.7	5.8	5.3	133.08	140.1	83.9	221.6	211.2	10.43	21.254			
2,900.0	2,892.5	2,886.5	2,883.1	6.0	5.5	133.67	144.1	87.6	231.3	220.5	10.81	21.403			
3,000.0	2,992.1	2,986.0	2,982.4	6.3	5.7	134.21	148.1	91.2	241.0	229.8	11.19	21.545			
3,100.0	3,091.8	3,085.5	3,081.8	6.5	5.9	134.72	152.2	94.9	250.8	239.2	11.57	21.678			
3,200.0	3,191.4	3,185.0	3,181.1	6.7	6.1	135.18	156.2	98.5	260.6	248.6	11.95	21.805			
3,300.0	3,291.1	3,284.5	3,280.5	6.9	6.3	135.61	160.2	102.2	270.3	258.0	12.33	21.925			
3,400.0	3,390.8	3,384.0	3,379.8	7.2	6.5	136.01	164.2	105.9	280.1	267.4	12.71	22.039			
3,500.0	3,490.4	3,483.5	3,479.2	7.4	6.7	136.38	168.2	109.5	289.9	276.9	13.09	22.147			
3,600.0	3,590.1	3,583.0	3,578.5	7.6	6.9	136.73	172.2	113.2	299.8	286.3	13.47	22.250			
3,700.0	3,689.8	3,682.5	3,677.9	7.8	7.1	137.05	176.2	116.8	309.6	295.8	13.85	22.348			
3,800.0	3,789.4	3,782.0	3,777.2	8.1	7.3	137.36	180.3	120.5	319.4	305.2	14.23	22.441			
3,900.0	3,889.1	3,881.5	3,876.6	8.3	7.5	137.65	184.3	124.1	329.3	314.7	14.62	22.530			
4,000.0	3,988.8	3,981.0	3,975.9	8.5	7.7	137.92	188.3	127.8	339.2	324.2	15.00	22.616			
4,100.0	4,088.4	4,080.5	4,075.3	8.7	7.9	138.17	192.3	131.4	349.0	333.6	15.38	22.697			
4,200.0	4,188.1	4,180.0	4,174.6	9.0	8.1	138.42	196.3	135.1	358.9	343.1	15.76	22.775			
4,300.0	4,287.7	4,279.5	4,274.0	9.2	8.3	138.64	200.3	138.7	368.8	352.6	16.14	22.849			
4,400.0	4,387.4	4,379.0	4,373.4	9.4	8.5	138.86	204.3	142.4	378.7	362.1	16.52	22.921			
4,500.0	4,487.1	4,478.5	4,472.7	9.6	8.7	139.07	208.4	146.1	388.5	371.6	16.90	22.989			
4,600.0	4,586.7	4,578.0	4,572.1	9.9	8.8	139.26	212.4	149.7	398.4	381.2	17.28	23.055			
4,700.0	4,686.4	4,677.5	4,671.4	10.1	9.0	139.45	216.4	153.4	408.3	390.7	17.66	23.118			
4,800.0	4,786.1	4,777.0	4,770.8	10.3	9.2	139.63	220.4	157.0	418.2	400.2	18.04	23.179			
4,900.0	4,885.7	4,876.5	4,870.1	10.5	9.4	139.79	224.4	160.7	428.1	409.7	18.42	23.238			
5,000.0	4,985.4	4,976.0	4,969.5	10.8	9.6	139.96	228.4	164.3	438.1	419.3	18.81	23.294			
5,100.0	5,085.1	5,075.5	5,068.8	11.0	9.8	140.11	232.4	168.0	448.0	428.8	19.19	23.348			

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

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Minch 0-5-4
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5090.0ft (Original Well Elev)
Reference Site:	S4-T3N-R68W (Minch)	MD Reference:	WELL @ 5090.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Minch 0-5-4	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design													S4-T3N-R68W (Minch) - Minch 13-4 - DD - Plan #1		Offset Site Error:		0.0 ft
Survey Program:													0-Geolink MWD		Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning			
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre +N/-S	Centre +E/-W	Between Centres	Between Ellipses	Total Uncertainty Axis	Separation Factor					
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	(ft)	(ft)	(ft)	(ft)							
5,200.0	5,184.7	5,175.0	5,168.2	11.2	10.0	140.26	236.5	171.6	457.9	438.3	19.57	23.400					
5,300.0	5,284.4	5,274.5	5,267.5	11.4	10.2	140.40	240.5	175.3	467.8	447.9	19.95	23.451					
5,400.0	5,384.0	5,374.0	5,366.9	11.7	10.4	140.53	244.5	179.0	477.7	457.4	20.33	23.499					
5,500.0	5,483.7	5,473.5	5,466.2	11.9	10.6	140.66	248.5	182.6	487.7	466.9	20.71	23.546					
5,600.0	5,583.4	5,573.0	5,565.6	12.1	10.8	140.79	252.5	186.3	497.6	476.5	21.09	23.592					

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Minch 0-5-4
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5090.0ft (Original Well Elev)
Reference Site:	S4-T3N-R68W (Minch)	MD Reference:	WELL @ 5090.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Minch 0-5-4	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T3N-R68W (Minch) - Minch 23-4 - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-Geolink 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	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		
594.4	594.4	594.3	594.2	1.0	1.0	64.40	11.2	1.5	10.6	8.5	2.03	5.199 CC		
600.0	600.0	599.8	599.8	1.0	1.0	66.25	11.3	1.7	10.6	8.5	2.05	5.152 ES, SF		
700.0	699.8	699.1	698.9	1.2	1.2	106.83	12.2	6.8	14.4	12.0	2.41	5.962		
800.0	799.5	797.3	796.7	1.4	1.4	130.30	13.8	15.1	27.0	24.2	2.76	9.771		
900.0	899.2	894.4	893.1	1.6	1.7	137.77	16.0	26.6	44.7	41.6	3.12	14.334		
1,000.0	998.8	990.3	987.9	1.8	1.9	140.36	18.8	41.1	65.9	62.4	3.48	18.967		
1,100.0	1,098.5	1,084.7	1,080.6	2.0	2.2	141.21	22.0	58.4	90.4	86.5	3.84	23.556		
1,200.0	1,198.2	1,177.5	1,171.2	2.3	2.6	141.34	25.8	78.3	117.9	113.7	4.20	28.083		
1,300.0	1,297.8	1,273.1	1,264.1	2.5	3.0	141.28	30.0	100.4	147.1	142.5	4.57	32.195		
1,400.0	1,397.5	1,368.7	1,357.1	2.7	3.4	141.23	34.3	122.6	176.2	171.3	4.94	35.680		
1,500.0	1,497.2	1,464.4	1,450.0	2.9	3.8	141.20	38.5	144.7	205.4	200.1	5.31	38.669		
1,600.0	1,596.8	1,560.0	1,543.0	3.1	4.2	141.18	42.7	166.8	234.5	228.9	5.68	41.258		
1,700.0	1,696.5	1,655.7	1,636.0	3.4	4.6	141.16	46.9	188.9	263.7	257.6	6.06	43.522		
1,800.0	1,796.2	1,751.3	1,728.9	3.6	5.0	141.14	51.1	211.0	292.9	286.4	6.43	45.518		
1,900.0	1,895.8	1,847.0	1,821.9	3.8	5.5	141.13	55.3	233.1	322.0	315.2	6.81	47.290		
2,000.0	1,995.5	1,942.7	1,914.9	4.0	5.9	141.12	59.5	255.3	351.2	344.0	7.19	48.873		
2,100.0	2,095.1	2,038.3	2,007.8	4.2	6.3	141.11	63.7	277.4	380.3	372.8	7.56	50.296		
2,200.0	2,194.8	2,134.0	2,100.8	4.5	6.8	141.11	67.9	299.5	409.5	401.6	7.94	51.581		
2,300.0	2,294.5	2,229.6	2,193.8	4.7	7.2	141.10	72.1	321.6	438.7	430.3	8.32	52.749		
2,400.0	2,394.1	2,325.3	2,286.7	4.9	7.6	141.09	76.3	343.7	467.8	459.1	8.69	53.813		
2,500.0	2,493.8	2,420.9	2,379.7	5.1	8.0	141.09	80.6	365.9	497.0	487.9	9.07	54.787		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Minch 0-5-4
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5090.0ft (Original Well Elev)
Reference Site:	S4-T3N-R68W (Minch)	MD Reference:	WELL @ 5090.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Minch 0-5-4	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T3N-R68W (Minch) - Minch 2-4-4 - DD - Plan #1													Offset Site Error: 0.0 ft	
Survey Program: 0-Geolink MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Total Uncertainty	Separation		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	Axis	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		
500.0	500.0	500.0	500.0	0.8	0.8	3.98	40.1	2.8	40.2	38.5	1.70	23.629 CC		
600.0	600.0	598.9	598.9	1.0	1.0	57.14	41.3	4.0	40.5	38.4	2.05	19.763 ES		
700.0	699.8	697.4	697.3	1.2	1.2	67.30	44.8	7.7	42.4	40.0	2.41	17.599		
800.0	799.5	795.2	794.7	1.4	1.4	80.72	50.6	13.8	48.2	45.5	2.78	17.358 SF		
900.0	899.2	892.3	891.1	1.6	1.6	91.27	58.6	22.1	59.6	56.4	3.15	18.895		
1,000.0	998.8	988.4	986.0	1.8	1.9	98.16	68.8	32.8	75.6	72.1	3.53	21.435		
1,100.0	1,098.5	1,083.9	1,079.9	2.0	2.2	102.37	81.1	45.5	95.6	91.7	3.91	24.468		
1,200.0	1,198.2	1,181.4	1,175.5	2.3	2.6	105.10	94.4	59.4	117.0	112.7	4.30	27.232		
1,300.0	1,297.8	1,279.0	1,271.2	2.5	2.9	106.98	107.7	73.2	138.6	134.0	4.69	29.544		
1,400.0	1,397.5	1,376.5	1,366.8	2.7	3.3	108.36	121.0	87.1	160.3	155.3	5.09	31.491		
1,500.0	1,497.2	1,474.1	1,462.4	2.9	3.6	109.40	134.2	100.9	182.1	176.6	5.49	33.145		
1,600.0	1,596.8	1,571.7	1,558.1	3.1	4.0	110.23	147.5	114.8	203.9	198.0	5.90	34.563		
1,700.0	1,696.5	1,669.2	1,653.7	3.4	4.3	110.89	160.8	128.6	225.8	219.5	6.31	35.791		
1,800.0	1,796.2	1,766.8	1,749.4	3.6	4.7	111.44	174.1	142.5	247.6	240.9	6.72	36.862		
1,900.0	1,895.8	1,864.3	1,845.0	3.8	5.1	111.90	187.4	156.3	269.5	262.4	7.13	37.803		
2,000.0	1,995.5	1,961.9	1,940.7	4.0	5.4	112.29	200.7	170.2	291.4	283.9	7.54	38.636		
2,100.0	2,095.1	2,059.4	2,036.3	4.2	5.8	112.62	214.0	184.0	313.3	305.4	7.96	39.379		
2,200.0	2,194.8	2,157.0	2,132.0	4.5	6.2	112.91	227.2	197.9	335.3	326.9	8.37	40.044		
2,300.0	2,294.5	2,254.5	2,227.6	4.7	6.6	113.17	240.5	211.7	357.2	348.4	8.79	40.643		
2,400.0	2,394.1	2,352.1	2,323.3	4.9	6.9	113.39	253.8	225.6	379.1	369.9	9.21	41.186		
2,500.0	2,493.8	2,449.6	2,418.9	5.1	7.3	113.59	267.1	239.4	401.1	391.5	9.62	41.679		
2,600.0	2,593.5	2,547.2	2,514.6	5.4	7.7	113.77	280.4	253.3	423.0	413.0	10.04	42.129		
2,700.0	2,693.1	2,644.7	2,610.2	5.6	8.1	113.94	293.7	267.1	445.0	434.5	10.46	42.541		
2,800.0	2,792.8	2,742.3	2,705.9	5.8	8.4	114.08	307.0	281.0	466.9	456.0	10.88	42.920		
2,900.0	2,892.5	2,839.9	2,801.5	6.0	8.8	114.22	320.3	294.8	488.9	477.6	11.30	43.270		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Minch 0-5-4
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5090.0ft (Original Well Elev)
Reference Site:	S4-T3N-R68W (Minch)	MD Reference:	WELL @ 5090.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Minch 0-5-4	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T3N-R68W (Minch) - Minch 4-4-4 - DD - Plan #1												Offset Site Error:	0.0 ft
Survey Program: 0-Geolink MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Total Uncertainty Axis	Separation Factor	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(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	29.0	0.30	96.403	
200.0	200.0	200.0	200.0	0.3	0.3	5.47	29.1	2.8	29.3	28.6	0.65	44.851	CC, ES
300.0	300.0	299.5	299.5	0.5	0.5	8.40	29.8	4.4	30.1	29.1	1.00	30.070	
400.0	400.0	398.8	398.6	0.7	0.7	16.21	31.7	9.2	33.0	31.7	1.35	24.470	
500.0	500.0	497.5	497.0	0.8	0.9	26.25	34.8	17.2	38.9	37.2	1.70	22.929	SF
600.0	600.0	595.5	594.2	1.0	1.2	87.15	39.1	28.2	48.4	46.3	2.09	23.183	
700.0	699.8	692.1	689.7	1.2	1.5	98.67	44.6	42.0	62.8	60.4	2.43	25.814	
800.0	799.5	786.9	782.8	1.4	1.8	107.99	51.1	58.6	83.0	80.2	2.77	29.902	
900.0	899.2	880.3	873.9	1.6	2.2	113.88	58.6	77.6	107.7	104.6	3.12	34.523	
1,000.0	998.8	971.9	962.6	1.8	2.7	117.55	67.0	99.0	136.3	132.8	3.47	39.254	
1,100.0	1,098.5	1,061.7	1,048.7	2.0	3.1	119.89	76.2	122.5	168.3	164.4	3.83	43.950	
1,200.0	1,198.2	1,149.5	1,132.2	2.3	3.7	121.41	86.2	147.9	203.3	199.1	4.19	48.566	
1,300.0	1,297.8	1,235.3	1,212.9	2.5	4.2	122.43	96.9	175.0	241.3	236.8	4.54	53.100	
1,400.0	1,397.5	1,326.6	1,298.2	2.7	4.8	123.19	108.7	205.2	280.9	276.0	4.92	57.139	
1,500.0	1,497.2	1,418.4	1,384.0	2.9	5.4	123.76	120.7	235.6	320.5	315.2	5.29	60.582	
1,600.0	1,596.8	1,510.1	1,469.8	3.1	6.0	124.21	132.6	265.9	360.1	354.4	5.67	63.548	
1,700.0	1,696.5	1,601.9	1,555.6	3.4	6.6	124.57	144.6	296.3	399.8	393.7	6.05	66.126	
1,800.0	1,796.2	1,693.7	1,641.4	3.6	7.2	124.86	156.5	326.7	439.4	433.0	6.43	68.384	
1,900.0	1,895.8	1,785.5	1,727.1	3.8	7.8	125.11	168.4	357.0	479.1	472.3	6.81	70.377	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Minch 0-5-4
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5090.0ft (Original Well Elev)
Reference Site:	S4-T3N-R68W (Minch)	MD Reference:	WELL @ 5090.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Minch 0-5-4	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design S4-T3N-R68W (Minch) - Minch 4-6-4 - DD - Plan #1												Offset Site Error: 0.0 ft	
Survey Program: 0-Geolink MWD												Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Total Uncertainty Axis	Separation Factor	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)			
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	95.950	
200.0	200.0	200.0	200.0	0.3	0.3	-180.00	-29.1	0.0	29.1	28.5	0.65	44.640	
300.0	300.0	300.0	300.0	0.5	0.5	-180.00	-29.1	0.0	29.1	28.1	1.00	29.086	
400.0	400.0	400.0	400.0	0.7	0.7	-180.00	-29.1	0.0	29.1	27.8	1.35	21.570	
500.0	500.0	500.0	500.0	0.8	0.8	-180.00	-29.1	0.0	29.1	27.4	1.70	17.141 CC, ES	
600.0	600.0	599.8	599.8	1.0	1.0	-136.13	-29.3	1.7	30.6	28.6	2.05	14.928 SF	
700.0	699.8	698.9	698.7	1.2	1.2	-149.79	-29.9	6.9	36.5	34.1	2.41	15.166	
800.0	799.5	796.8	796.3	1.4	1.4	-163.64	-30.8	15.3	48.6	45.8	2.77	17.563	
900.0	899.2	893.6	892.4	1.6	1.6	-173.71	-32.1	26.8	65.1	62.0	3.13	20.826	
1,000.0	998.8	989.0	986.6	1.8	1.9	179.17	-33.7	41.4	85.6	82.1	3.49	24.548	
1,100.0	1,098.5	1,082.9	1,078.9	2.0	2.2	174.03	-35.6	58.8	109.7	105.8	3.84	28.531	
1,200.0	1,198.2	1,175.1	1,168.9	2.3	2.6	170.21	-37.8	78.7	137.2	133.0	4.20	32.661	
1,300.0	1,297.8	1,265.5	1,256.5	2.5	3.0	167.30	-40.2	101.1	167.9	163.4	4.55	36.875	
1,400.0	1,397.5	1,354.0	1,341.4	2.7	3.4	165.02	-42.9	125.6	201.8	196.9	4.90	41.135	
1,500.0	1,497.2	1,440.4	1,423.6	2.9	3.9	163.19	-45.8	152.1	238.5	233.3	5.25	45.417	
1,600.0	1,596.8	1,524.7	1,503.0	3.1	4.4	161.70	-48.9	180.2	278.2	272.6	5.60	49.706	
1,700.0	1,696.5	1,606.8	1,579.4	3.4	5.0	160.46	-52.1	209.9	320.5	314.5	5.93	53.995	
1,800.0	1,796.2	1,695.0	1,661.1	3.6	5.6	159.36	-55.8	243.3	364.5	358.2	6.28	57.998	
1,900.0	1,895.8	1,784.6	1,743.9	3.8	6.2	158.48	-59.5	277.2	408.6	402.0	6.64	61.582	
2,000.0	1,995.5	1,874.2	1,826.7	4.0	6.9	157.77	-63.2	311.1	452.8	445.8	6.99	64.821	
2,100.0	2,095.1	1,963.8	1,909.6	4.2	7.5	157.19	-66.9	345.0	497.0	489.7	7.34	67.762	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Minch 0-5-4
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5090.0ft (Original Well Elev)
Reference Site:	S4-T3N-R68W (Minch)	MD Reference:	WELL @ 5090.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Minch 0-5-4	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	DD	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to WELL @ 5090.0ft (Original Well Elev)
 Offset Depths are relative to Offset Datum
 Central Meridian is -105.500000 °

Coordinates are relative to: Minch 0-5-4
 Coordinate System is US State Plane 1983, Colorado Northern Zone
 Grid Convergence at Surface is: 0.31°

