

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Project:</b>	DJ Wattenberg	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>North Reference:</b>	True
<b>Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HZ		
<b>Design:</b>	Plan #2		

<b>Project</b>	DJ Wattenberg		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	Colorado Northern Zone		

Site		S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)			
Site Position:		Northing:	1,265,219.42 ft	Latitude:	40.060530
From:	Lat/Long	Easting:	3,126,139.27 ft	Longitude:	-105.049370
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	0.29 °

Well	Woolley-Sosa 2D-7H-E168					
Well Position	+N/-S	0.0 ft	Northing:	1,267,517.52 ft	Latitude:	40.066855
	+E/-W	0.0 ft	Easting:	3,124,957.68 ft	Longitude:	-105.053550
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,994.0 ft

<b>Wellbore</b>	HZ				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	6/28/2013	8.72	66.66	52,709

<b>Design</b>	Plan #2			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	180.00

<b>Plan Sections</b>										
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	
1,201.3	7.01	39.48	1,199.5	33.1	27.3	1.00	1.00	0.00	39.48	
6,919.5	7.01	39.48	6,875.0	572.0	471.1	0.00	0.00	0.00	0.00	
7,873.6	90.00	180.00	7,500.0	1.6	520.0	10.00	8.70	14.73	140.31	
11,244.1	90.00	180.00	7,500.0	-3,369.0	520.0	0.00	0.00	0.00	0.00	
11,444.1	90.00	176.00	7,500.0	-3,568.8	527.0	2.00	0.00	-2.00	-90.00	
12,194.1	90.00	176.00	7,500.0	-4,317.0	579.3	0.00	0.00	0.00	0.00	
12,393.7	90.00	179.99	7,500.0	-4,516.4	586.3	2.00	0.00	2.00	90.00	
15,805.8	90.00	179.99	7,500.0	-7,928.5	586.8	0.00	0.00	0.00	0.00	Woolley-Sosa 2D-7H-

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<b>Project:</b>	DJ Wattenberg	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>North Reference:</b>	True
<b>Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HZ		
<b>Design:</b>	Plan #2		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	
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	Fox Hills - BASE
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	KOP @ 500' MD
600.0	1.00	39.48	600.0	0.7	0.6	-0.7	1.00	1.00	
700.0	2.00	39.48	700.0	2.7	2.2	-2.7	1.00	1.00	
800.0	3.00	39.48	799.9	6.1	5.0	-6.1	1.00	1.00	
900.0	4.00	39.48	899.7	10.8	8.9	-10.8	1.00	1.00	
1,000.0	5.00	39.48	999.4	16.8	13.9	-16.8	1.00	1.00	
1,100.0	6.00	39.48	1,098.9	24.2	20.0	-24.2	1.00	1.00	
1,200.0	7.00	39.48	1,198.3	33.0	27.2	-33.0	1.00	1.00	
1,201.3	7.01	39.48	1,199.5	33.1	27.3	-33.1	1.00	1.00	EOB; 7.01°
1,300.0	7.01	39.48	1,297.5	42.4	34.9	-42.4	0.00	0.00	
1,400.0	7.01	39.48	1,396.8	51.8	42.7	-51.8	0.00	0.00	
1,500.0	7.01	39.48	1,496.0	61.2	50.4	-61.2	0.00	0.00	
1,600.0	7.01	39.48	1,595.3	70.7	58.2	-70.7	0.00	0.00	
1,700.0	7.01	39.48	1,694.5	80.1	66.0	-80.1	0.00	0.00	
1,800.0	7.01	39.48	1,793.8	89.5	73.7	-89.5	0.00	0.00	
1,900.0	7.01	39.48	1,893.0	98.9	81.5	-98.9	0.00	0.00	
2,000.0	7.01	39.48	1,992.3	108.4	89.3	-108.4	0.00	0.00	
2,100.0	7.01	39.48	2,091.5	117.8	97.0	-117.8	0.00	0.00	
2,200.0	7.01	39.48	2,190.8	127.2	104.8	-127.2	0.00	0.00	
2,300.0	7.01	39.48	2,290.0	136.6	112.5	-136.6	0.00	0.00	
2,400.0	7.01	39.48	2,389.3	146.1	120.3	-146.1	0.00	0.00	
2,500.0	7.01	39.48	2,488.5	155.5	128.1	-155.5	0.00	0.00	
2,600.0	7.01	39.48	2,587.8	164.9	135.8	-164.9	0.00	0.00	
2,700.0	7.01	39.48	2,687.0	174.3	143.6	-174.3	0.00	0.00	
2,800.0	7.01	39.48	2,786.3	183.8	151.3	-183.8	0.00	0.00	
2,900.0	7.01	39.48	2,885.5	193.2	159.1	-193.2	0.00	0.00	
3,000.0	7.01	39.48	2,984.8	202.6	166.9	-202.6	0.00	0.00	
3,100.0	7.01	39.48	3,084.1	212.0	174.6	-212.0	0.00	0.00	
3,200.0	7.01	39.48	3,183.3	221.5	182.4	-221.5	0.00	0.00	
3,300.0	7.01	39.48	3,282.6	230.9	190.2	-230.9	0.00	0.00	
3,400.0	7.01	39.48	3,381.8	240.3	197.9	-240.3	0.00	0.00	
3,500.0	7.01	39.48	3,481.1	249.7	205.7	-249.7	0.00	0.00	
3,600.0	7.01	39.48	3,580.3	259.1	213.4	-259.1	0.00	0.00	
3,700.0	7.01	39.48	3,679.6	268.6	221.2	-268.6	0.00	0.00	
3,800.0	7.01	39.48	3,778.8	278.0	229.0	-278.0	0.00	0.00	
3,900.0	7.01	39.48	3,878.1	287.4	236.7	-287.4	0.00	0.00	
4,000.0	7.01	39.48	3,977.3	296.8	244.5	-296.8	0.00	0.00	
4,100.0	7.01	39.48	4,076.6	306.3	252.3	-306.3	0.00	0.00	
4,200.0	7.01	39.48	4,175.8	315.7	260.0	-315.7	0.00	0.00	
4,300.0	7.01	39.48	4,275.1	325.1	267.8	-325.1	0.00	0.00	
4,400.0	7.01	39.48	4,374.3	334.5	275.5	-334.5	0.00	0.00	
4,464.2	7.01	39.48	4,438.0	340.6	280.5	-340.6	0.00	0.00	Sussex
4,500.0	7.01	39.48	4,473.6	344.0	283.3	-344.0	0.00	0.00	
4,600.0	7.01	39.48	4,572.8	353.4	291.1	-353.4	0.00	0.00	
4,700.0	7.01	39.48	4,672.1	362.8	298.8	-362.8	0.00	0.00	
4,800.0	7.01	39.48	4,771.3	372.2	306.6	-372.2	0.00	0.00	
4,900.0	7.01	39.48	4,870.6	381.7	314.4	-381.7	0.00	0.00	

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<b>Project:</b>	DJ Wattenberg	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>North Reference:</b>	True
<b>Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HZ		
<b>Design:</b>	Plan #2		

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
5,000.0	7.01	39.48	4,969.8	391.1	322.1	-391.1	0.00	0.00	
5,035.4	7.01	39.48	5,005.0	394.4	324.9	-394.4	0.00	0.00	Shannon
5,100.0	7.01	39.48	5,069.1	400.5	329.9	-400.5	0.00	0.00	
5,200.0	7.01	39.48	5,168.3	409.9	337.6	-409.9	0.00	0.00	
5,300.0	7.01	39.48	5,267.6	419.4	345.4	-419.4	0.00	0.00	
5,400.0	7.01	39.48	5,366.8	428.8	353.2	-428.8	0.00	0.00	
5,500.0	7.01	39.48	5,466.1	438.2	360.9	-438.2	0.00	0.00	
5,600.0	7.01	39.48	5,565.4	447.6	368.7	-447.6	0.00	0.00	
5,700.0	7.01	39.48	5,664.6	457.1	376.5	-457.1	0.00	0.00	
5,800.0	7.01	39.48	5,763.9	466.5	384.2	-466.5	0.00	0.00	
5,900.0	7.01	39.48	5,863.1	475.9	392.0	-475.9	0.00	0.00	
6,000.0	7.01	39.48	5,962.4	485.3	399.7	-485.3	0.00	0.00	
6,100.0	7.01	39.48	6,061.6	494.8	407.5	-494.8	0.00	0.00	
6,200.0	7.01	39.48	6,160.9	504.2	415.3	-504.2	0.00	0.00	
6,300.0	7.01	39.48	6,260.1	513.6	423.0	-513.6	0.00	0.00	
6,400.0	7.01	39.48	6,359.4	523.0	430.8	-523.0	0.00	0.00	
6,500.0	7.01	39.48	6,458.6	532.5	438.6	-532.5	0.00	0.00	
6,569.9	7.01	39.48	6,528.0	539.0	444.0	-539.0	0.00	0.00	Teepee Buttes (*if present)
6,600.0	7.01	39.48	6,557.9	541.9	446.3	-541.9	0.00	0.00	
6,700.0	7.01	39.48	6,657.1	551.3	454.1	-551.3	0.00	0.00	
6,800.0	7.01	39.48	6,756.4	560.7	461.8	-560.7	0.00	0.00	
6,900.0	7.01	39.48	6,855.6	570.1	469.6	-570.1	0.00	0.00	
6,919.5	7.01	39.48	6,875.0	572.0	471.1	-572.0	0.00	0.00	Start 10° Build/Turn
7,000.0	5.19	120.64	6,955.1	573.9	477.4	-573.9	10.00	-2.26	
7,100.0	13.40	160.83	7,053.8	560.6	485.1	-560.6	10.00	8.21	
7,200.0	23.06	169.41	7,148.7	530.4	492.5	-530.4	10.00	9.66	
7,300.0	32.92	173.06	7,236.9	484.0	499.4	-484.0	10.00	9.86	
7,400.0	42.83	175.16	7,315.8	423.0	505.6	-423.0	10.00	9.92	
7,405.8	43.41	175.26	7,320.0	419.1	505.9	-419.1	10.03	9.96	Sharon Springs
7,480.9	50.87	176.35	7,371.0	364.2	509.9	-364.2	10.00	9.94	Niobrara
7,500.0	52.78	176.59	7,382.8	349.2	510.8	-349.2	9.99	9.94	
7,600.0	62.73	177.69	7,436.1	264.8	515.0	-264.8	10.00	9.96	
7,700.0	72.70	178.60	7,474.0	172.5	518.0	-172.5	10.00	9.96	
7,751.1	77.79	179.03	7,487.0	123.1	519.0	-123.1	10.00	9.97	B Chalk
7,800.0	82.67	179.42	7,495.3	74.9	519.6	-74.9	10.00	9.97	
7,873.6	90.00	180.00	7,500.0	1.6	520.0	-1.6	10.00	9.97	LP @ 7500' TVD
7,900.0	90.00	180.00	7,500.0	-24.9	520.0	24.9	0.00	0.00	
8,000.0	90.00	180.00	7,500.0	-124.9	520.0	124.9	0.00	0.00	
8,100.0	90.00	180.00	7,500.0	-224.9	520.0	224.9	0.00	0.00	
8,200.0	90.00	180.00	7,500.0	-324.9	520.0	324.9	0.00	0.00	
8,300.0	90.00	180.00	7,500.0	-424.9	520.0	424.9	0.00	0.00	
8,400.0	90.00	180.00	7,500.0	-524.9	520.0	524.9	0.00	0.00	
8,500.0	90.00	180.00	7,500.0	-624.9	520.0	624.9	0.00	0.00	
8,600.0	90.00	180.00	7,500.0	-724.9	520.0	724.9	0.00	0.00	
8,700.0	90.00	180.00	7,500.0	-824.9	520.0	824.9	0.00	0.00	
8,800.0	90.00	180.00	7,500.0	-924.9	520.0	924.9	0.00	0.00	
8,900.0	90.00	180.00	7,500.0	-1,024.9	520.0	1,024.9	0.00	0.00	
9,000.0	90.00	180.00	7,500.0	-1,124.9	520.0	1,124.9	0.00	0.00	
9,100.0	90.00	180.00	7,500.0	-1,224.9	520.0	1,224.9	0.00	0.00	
9,200.0	90.00	180.00	7,500.0	-1,324.9	520.0	1,324.9	0.00	0.00	
9,300.0	90.00	180.00	7,500.0	-1,424.9	520.0	1,424.9	0.00	0.00	
9,400.0	90.00	180.00	7,500.0	-1,524.9	520.0	1,524.9	0.00	0.00	

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<b>Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HZ		
<b>Design:</b>	Plan #2		

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
9,500.0	90.00	180.00	7,500.0	-1,624.9	520.0	1,624.9	0.00	0.00	
9,600.0	90.00	180.00	7,500.0	-1,724.9	520.0	1,724.9	0.00	0.00	
9,700.0	90.00	180.00	7,500.0	-1,824.9	520.0	1,824.9	0.00	0.00	
9,800.0	90.00	180.00	7,500.0	-1,924.9	520.0	1,924.9	0.00	0.00	
9,900.0	90.00	180.00	7,500.0	-2,024.9	520.0	2,024.9	0.00	0.00	
10,000.0	90.00	180.00	7,500.0	-2,124.9	520.0	2,124.9	0.00	0.00	
10,100.0	90.00	180.00	7,500.0	-2,224.9	520.0	2,224.9	0.00	0.00	
10,200.0	90.00	180.00	7,500.0	-2,324.9	520.0	2,324.9	0.00	0.00	
10,300.0	90.00	180.00	7,500.0	-2,424.9	520.0	2,424.9	0.00	0.00	
10,400.0	90.00	180.00	7,500.0	-2,524.9	520.0	2,524.9	0.00	0.00	
10,500.0	90.00	180.00	7,500.0	-2,624.9	520.0	2,624.9	0.00	0.00	
10,600.0	90.00	180.00	7,500.0	-2,724.9	520.0	2,724.9	0.00	0.00	
10,700.0	90.00	180.00	7,500.0	-2,824.9	520.0	2,824.9	0.00	0.00	
10,800.0	90.00	180.00	7,500.0	-2,924.9	520.0	2,924.9	0.00	0.00	
10,900.0	90.00	180.00	7,500.0	-3,024.9	520.0	3,024.9	0.00	0.00	
11,000.0	90.00	180.00	7,500.0	-3,124.9	520.0	3,124.9	0.00	0.00	
11,100.0	90.00	180.00	7,500.0	-3,224.9	520.0	3,224.9	0.00	0.00	
11,200.0	90.00	180.00	7,500.0	-3,324.9	520.0	3,324.9	0.00	0.00	
11,244.1	90.00	180.00	7,500.0	-3,369.0	520.0	3,369.0	0.00	0.00	Start 2° Turn
11,300.0	90.00	178.88	7,500.0	-3,424.9	520.5	3,424.9	2.00	0.00	
11,400.0	90.00	176.88	7,500.0	-3,524.8	524.2	3,524.8	2.00	0.00	
11,444.1	90.00	176.00	7,500.0	-3,568.8	527.0	3,568.8	2.00	0.00	EOT; 176°
11,500.0	90.00	176.00	7,500.0	-3,624.6	530.9	3,624.6	0.00	0.00	
11,600.0	90.00	176.00	7,500.0	-3,724.3	537.9	3,724.3	0.00	0.00	
11,700.0	90.00	176.00	7,500.0	-3,824.1	544.8	3,824.1	0.00	0.00	
11,800.0	90.00	176.00	7,500.0	-3,923.9	551.8	3,923.9	0.00	0.00	
11,900.0	90.00	176.00	7,500.0	-4,023.6	558.8	4,023.6	0.00	0.00	
12,000.0	90.00	176.00	7,500.0	-4,123.4	565.8	4,123.4	0.00	0.00	
12,100.0	90.00	176.00	7,500.0	-4,223.1	572.7	4,223.1	0.00	0.00	
12,194.1	90.00	176.00	7,500.0	-4,317.0	579.3	4,317.0	0.00	0.00	Start 2° Turn
12,200.0	90.00	176.12	7,500.0	-4,322.9	579.7	4,322.9	1.99	0.00	
12,300.0	90.00	178.12	7,500.0	-4,422.8	584.7	4,422.8	2.00	0.00	
12,393.7	90.00	179.99	7,500.0	-4,516.4	586.3	4,516.4	2.00	0.00	EOT; 180°
12,400.0	90.00	179.99	7,500.0	-4,522.7	586.3	4,522.7	0.00	0.00	
12,500.0	90.00	179.99	7,500.0	-4,622.7	586.3	4,622.7	0.00	0.00	
12,600.0	90.00	179.99	7,500.0	-4,722.7	586.3	4,722.7	0.00	0.00	
12,700.0	90.00	179.99	7,500.0	-4,822.7	586.3	4,822.7	0.00	0.00	
12,800.0	90.00	179.99	7,500.0	-4,922.7	586.3	4,922.7	0.00	0.00	
12,900.0	90.00	179.99	7,500.0	-5,022.7	586.4	5,022.7	0.00	0.00	
13,000.0	90.00	179.99	7,500.0	-5,122.7	586.4	5,122.7	0.00	0.00	
13,100.0	90.00	179.99	7,500.0	-5,222.7	586.4	5,222.7	0.00	0.00	
13,200.0	90.00	179.99	7,500.0	-5,322.7	586.4	5,322.7	0.00	0.00	
13,300.0	90.00	179.99	7,500.0	-5,422.7	586.4	5,422.7	0.00	0.00	
13,400.0	90.00	179.99	7,500.0	-5,522.7	586.4	5,522.7	0.00	0.00	
13,500.0	90.00	179.99	7,500.0	-5,622.7	586.4	5,622.7	0.00	0.00	
13,600.0	90.00	179.99	7,500.0	-5,722.7	586.5	5,722.7	0.00	0.00	
13,700.0	90.00	179.99	7,500.0	-5,822.7	586.5	5,822.7	0.00	0.00	
13,800.0	90.00	179.99	7,500.0	-5,922.7	586.5	5,922.7	0.00	0.00	
13,900.0	90.00	179.99	7,500.0	-6,022.7	586.5	6,022.7	0.00	0.00	
14,000.0	90.00	179.99	7,500.0	-6,122.7	586.5	6,122.7	0.00	0.00	
14,100.0	90.00	179.99	7,500.0	-6,222.7	586.5	6,222.7	0.00	0.00	
14,200.0	90.00	179.99	7,500.0	-6,322.7	586.6	6,322.7	0.00	0.00	

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Project:</b>	DJ Wattenberg	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>North Reference:</b>	True
<b>Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HZ		
<b>Design:</b>	Plan #2		

### 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
14,300.0	90.00	179.99	7,500.0	-6,422.7	586.6	6,422.7	0.00	0.00	
14,400.0	90.00	179.99	7,500.0	-6,522.7	586.6	6,522.7	0.00	0.00	
14,500.0	90.00	179.99	7,500.0	-6,622.7	586.6	6,622.7	0.00	0.00	
14,600.0	90.00	179.99	7,500.0	-6,722.7	586.6	6,722.7	0.00	0.00	
14,700.0	90.00	179.99	7,500.0	-6,822.7	586.6	6,822.7	0.00	0.00	
14,800.0	90.00	179.99	7,500.0	-6,922.7	586.7	6,922.7	0.00	0.00	
14,900.0	90.00	179.99	7,500.0	-7,022.7	586.7	7,022.7	0.00	0.00	
15,000.0	90.00	179.99	7,500.0	-7,122.7	586.7	7,122.7	0.00	0.00	
15,100.0	90.00	179.99	7,500.0	-7,222.7	586.7	7,222.7	0.00	0.00	
15,200.0	90.00	179.99	7,500.0	-7,322.7	586.7	7,322.7	0.00	0.00	
15,300.0	90.00	179.99	7,500.0	-7,422.7	586.7	7,422.7	0.00	0.00	
15,400.0	90.00	179.99	7,500.0	-7,522.7	586.8	7,522.7	0.00	0.00	
15,500.0	90.00	179.99	7,500.0	-7,622.7	586.8	7,622.7	0.00	0.00	
15,600.0	90.00	179.99	7,500.0	-7,722.7	586.8	7,722.7	0.00	0.00	
15,700.0	90.00	179.99	7,500.0	-7,822.7	586.8	7,822.7	0.00	0.00	
15,800.0	90.00	179.99	7,500.0	-7,922.7	586.8	7,922.7	0.00	0.00	
15,805.8	90.00	179.99	7,500.0	-7,928.5	586.8	7,928.5	0.00	0.00	TD at 15805.8

### Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
Woolley-Sosa 2D-7H-E1	0.00	0.00	7,500.0	-7,928.5	586.8	1,259,592.10	3,125,584.40	40.045090	-105.051454
- plan hits target center									
- Point									
Woolley-Sosa 2D-7H-E1	0.00	0.00	7,747.0	-7,928.5	586.8	1,259,592.10	3,125,584.40	40.045090	-105.051454
- plan misses target center by 247.0ft at 15805.8ft MD (7500.0 TVD, -7928.5 N, 586.8 E)									
- Point									

### Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
400.0	400.0	Fox Hills - BASE			
4,464.2	4,438.0	Sussex			
5,035.4	5,005.0	Shannon			
6,569.9	6,528.0	Teepee Buttes (*if present)			
7,405.8	7,320.0	Sharon Springs			
7,480.9	7,371.0	Niobrara			
7,751.1	7,487.0	B Chalk			

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Project:</b>	DJ Wattenberg	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>North Reference:</b>	True
<b>Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HZ		
<b>Design:</b>	Plan #2		

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
500.0	500.0	0.0	0.0	KOP @ 500' MD
1,201.3	1,199.5	33.1	27.3	EOB; 7.01°
6,919.5	6,875.0	572.0	471.1	Start 10° Build/Turn
7,873.6	7,500.0	1.6	520.0	LP @ 7500' TVD
11,244.1	7,500.0	-3,369.0	520.0	Start 2° Turn
11,444.1	7,500.0	-3,568.8	527.0	EOT; 176°
12,194.1	7,500.0	-4,317.0	579.3	Start 2° Turn
12,393.7	7,500.0	-4,516.4	586.3	EOT; 180°
15,805.8	7,500.0	-7,928.5	586.8	TD at 15805.8

# **EnCana Oil & Gas (USA) Inc**

**DJ Wattenberg**

**S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)**

**Woolley-Sosa 2D-7H-E168**

**HZ**

**Plan #2**

## **Anticollision Report**

**10 December, 2014**



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

<b>Reference</b>	Plan #2
<b>Filter type:</b>	NO GLOBAL FILTER: Using user defined selection & filtering criteria
<b>Interpolation Method:</b>	Stations
<b>Depth Range:</b>	Unlimited
<b>Results Limited by:</b>	Maximum center-center distance of 5,280.0ft
<b>Warning Levels Evaluated at:</b>	2.00 Sigma
<b>Error Model:</b>	Systematic Ellipse
<b>Scan Method:</b>	Closest Approach 3D
<b>Error Surface:</b>	Elliptical Conic

Survey Tool Program		Date	12/9/2014		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	15,805.8	Plan #2 (HZ)	Geolink MWD	Geolink MWD	

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

### Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance		Separation Factor	Warning
			Between Centres (ft)	Between Ellipses (ft)		
S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)						
BEARDEN 24-6 (EXISTING) - ENCANA WELL - PLAN O	10,885.2	7,558.0	939.0	864.8	12.645	CC
BEARDEN 24-6 (EXISTING) - ENCANA WELL - PLAN O	10,900.0	7,558.0	939.1	864.6	12.603	ES
BEARDEN 24-6 (EXISTING) - ENCANA WELL - PLAN O	11,100.0	7,558.0	963.3	885.4	12.362	SF
Morgan Hills 1A-7H-A168 - HZ - Plan #2	12,393.7	14,162.1	1,862.6	1,666.0	9.473	CC
Morgan Hills 1A-7H-A168 - HZ - Plan #2	15,805.8	17,574.2	1,862.6	1,547.0	5.902	ES, SF
Sosa 11-18 - DD - DD	11,440.4	7,596.2	549.7	465.4	6.521	CC
Sosa 11-18 - DD - DD	11,444.1	7,596.2	549.7	465.4	6.515	ES
Sosa 11-18 - DD - DD	11,500.0	7,596.4	553.0	467.7	6.481	SF
Sosa 11-18 - DD - Plan #1	11,429.5	7,589.3	552.3	468.2	6.566	CC
Sosa 11-18 - DD - Plan #1	11,444.1	7,589.3	552.6	468.1	6.545	ES
Sosa 11-18 - DD - Plan #1	11,500.0	7,589.3	557.1	471.8	6.525	SF
Sosa 12-18 - DD - DD	13,115.7	7,645.6	606.5	490.3	5.219	CC, ES
Sosa 12-18 - DD - DD	13,200.0	7,645.3	612.4	494.7	5.204	SF
Sosa 12-18 - DD - Plan #3	13,088.2	7,633.1	617.2	501.8	5.350	CC
Sosa 12-18 - DD - Plan #3	13,100.0	7,633.1	617.3	501.7	5.342	ES, SF
Sosa 21-18 - DD (MWD) - DD	11,556.7	7,684.1	1,003.6	918.6	11.800	CC, ES
Sosa 21-18 - DD (MWD) - DD	11,800.0	7,679.0	1,032.7	943.5	11.572	SF
Sosa 21-18 - DD (MWD) - Plan #2	11,561.5	7,652.2	1,010.1	925.0	11.877	CC, ES
Sosa 21-18 - DD (MWD) - Plan #2	11,800.0	7,652.2	1,037.8	948.7	11.642	SF
Sosa 22-18 - DD - DD	12,977.4	7,650.8	867.3	755.3	7.743	CC
Sosa 22-18 - DD - DD	13,000.0	7,650.9	867.6	755.2	7.718	ES
Sosa 22-18 - DD - DD	13,100.0	7,651.4	876.0	761.8	7.674	SF
Sosa 22-18 - DD - Plan #2	12,960.9	7,646.1	852.5	741.0	7.644	CC, ES
Sosa 22-18 - DD - Plan #2	13,100.0	7,646.1	863.8	749.9	7.581	SF
SOSAA UNIT 1 (EXISTING) - EXISTING - EXISTING	12,166.6	7,512.3	108.6	16.9	1.184	Level 2, CC, ES, SF
THOMAS 24-7 (EXISTING) - ENCANA WELL - SURVEY	10,310.3	7,521.4	902.4	842.7	15.098	CC, ES
THOMAS 24-7 (EXISTING) - ENCANA WELL - SURVEY	10,500.0	7,520.3	922.2	859.2	14.646	SF
THOMAS 24-7 (Existing) - Existing - NO SURVEYS	10,179.9	7,495.0	649.2	591.8	11.311	CC
THOMAS 24-7 (Existing) - Existing - NO SURVEYS	10,200.0	7,495.0	649.5	591.7	11.251	ES
THOMAS 24-7 (Existing) - Existing - NO SURVEYS	10,300.0	7,495.0	660.2	600.8	11.114	SF
THOMAS 2-8-7 (EXISTING) - ENCANA WELL - SURVEY	10,884.4	7,577.0	209.6	135.7	2.838	CC, ES
THOMAS 2-8-7 (EXISTING) - ENCANA WELL - SURVEY	10,900.0	7,577.0	210.2	136.0	2.835	SF
Thomas 7-12 (Existing) - Existing - NO SURVEYS	8,858.3	7,488.0	560.9	524.4	15.393	CC, ES
Thomas 7-12 (Existing) - Existing - NO SURVEYS	9,000.0	7,488.0	578.5	540.0	15.029	SF
THOMAS E UNIT 1 (EXISTING) - Existing - NO SURVEY	9,074.3	7,494.0	401.4	361.8	10.133	CC, ES
THOMAS E UNIT 1 (EXISTING) - Existing - NO SURVEY	9,100.0	7,494.0	402.2	362.2	10.056	SF
WOOLLEY 12-7 (EXISTING) - ENCANA WELL - NO SUR	1,400.9	1,485.7	124.6	119.3	23.365	CC, ES
WOOLLEY 12-7 (EXISTING) - ENCANA WELL - NO SUR	2,100.0	2,179.5	151.1	143.0	18.640	SF
WOOLLEY 22-7 (EXISTING) - ENCANA WELL - SURVE	7,739.0	7,768.3	906.1	863.8	21.451	CC, ES, SF
WOOLLEY 2-4-7 (EXISTING) - ENCANA WELL - SURVE	8,165.7	7,938.5	390.2	339.4	7.678	CC, ES
WOOLLEY 2-4-7 (EXISTING) - ENCANA WELL - SURVE	8,200.0	7,938.3	391.7	340.6	7.668	SF
WOOLLEY F UNIT 1 (EXISTING) - ENCANA WELL - GY	7,029.3	7,028.5	392.8	368.2	15.946	CC, ES
WOOLLEY F UNIT 1 (EXISTING) - ENCANA WELL - GY	7,050.0	7,048.8	393.1	368.4	15.939	SF
Woolley-Becky 2A-7H-E168 - Hz - Plan #2	805.4	806.4	20.4	17.6	7.109	CC, ES, SF
Woolley-Becky 2B-7H-E168 - Hz - Plan #2	854.7	854.4	40.2	37.2	13.463	CC
Woolley-Becky 2B-7H-E168 - Hz - Plan #2	900.0	899.6	40.3	37.2	12.797	ES
Woolley-Becky 2B-7H-E168 - Hz - Plan #2	1,100.0	1,098.7	45.5	41.6	11.671	SF
Woolley-Becky 2C-7H-E168 - Hz - Plan #4	739.7	738.2	58.8	56.3	23.177	CC
Woolley-Becky 2C-7H-E168 - Hz - Plan #4	800.0	797.9	59.0	56.3	21.446	ES
Woolley-Becky 2C-7H-E168 - Hz - Plan #4	7,806.6	7,532.3	112.9	86.0	4.204	SF
Woolley-Becky 2D-7H-E168 - Hz - Plan #4	500.0	500.0	70.0	68.3	41.160	CC
Woolley-Becky 2D-7H-E168 - Hz - Plan #4	600.0	598.8	70.3	68.2	34.332	ES
Woolley-Becky 2D-7H-E168 - Hz - Plan #4	7,628.2	7,573.2	168.7	140.8	6.055	SF

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

### Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance		Separation Factor	Warning
			Between Centres (ft)	Between Ellipses (ft)		
S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)						
Woolley-Becky 2E-7H-E168 - Hz - Plan #2	400.0	400.0	80.0	78.7	59.255	CC, ES
Woolley-Becky 2E-7H-E168 - Hz - Plan #2	7,848.9	7,520.2	357.1	330.3	13.312	SF
Woolley-Becky 2F-7H-E168 - Hz - Plan #3	300.0	300.0	90.1	89.1	89.960	CC, ES
Woolley-Becky 2F-7H-E168 - Hz - Plan #3	7,000.0	6,925.4	893.3	858.4	25.596	SF
Woolley-Becky 2G-7H-E168 - Hz - Plan #2	233.3	233.3	99.9	99.2	129.915	CC
Woolley-Becky 2G-7H-E168 - Hz - Plan #2	300.0	299.2	100.1	99.1	100.094	ES
Woolley-Becky 2G-7H-E168 - Hz - Plan #2	7,000.0	6,877.8	1,188.6	1,153.6	33.959	SF
Woolley-Becky 2H-7H-E168 - Hz - Plan #3	200.0	200.0	110.0	109.3	168.509	CC, ES
Woolley-Becky 2H-7H-E168 - Hz - Plan #3	1,600.0	1,556.3	230.7	224.7	38.257	SF
Woolley-Sosa 2A-7H-E168 - Hz - Plan #2	200.0	200.0	478.0	477.4	732.335	CC
Woolley-Sosa 2A-7H-E168 - Hz - Plan #2	500.0	499.7	478.1	476.4	279.364	ES
Woolley-Sosa 2A-7H-E168 - Hz - Plan #2	15,805.8	15,936.0	1,091.8	815.7	3.954	SF
Woolley-Sosa 2B-7H-E168 - HZ - Plan #2	300.0	300.0	19.9	18.9	19.835	CC, ES
Woolley-Sosa 2B-7H-E168 - HZ - Plan #2	15,805.8	15,706.0	690.2	407.4	2.441	SF
Woolley-Sosa 2C-7H-E168 - HZ - Plan #2	591.3	591.4	9.4	7.4	4.661	CC
Woolley-Sosa 2C-7H-E168 - HZ - Plan #2	600.0	600.1	9.4	7.4	4.593	ES
Woolley-Sosa 2C-7H-E168 - HZ - Plan #2	15,805.8	15,952.8	405.2	175.0	1.760	SF
Woolley-Sosa 2E-7H-E168 - HZ - Plan #3	764.9	764.8	8.0	5.4	3.042	CC, ES
Woolley-Sosa 2E-7H-E168 - HZ - Plan #3	15,805.8	16,074.8	424.3	189.1	1.804	SF
Woolley-Sosa 2F-7H-E168 - HZ - Plan #2	300.0	300.0	20.2	19.2	20.118	CC, ES
Woolley-Sosa 2F-7H-E168 - HZ - Plan #2	15,805.8	15,829.9	699.9	417.0	2.474	SF
Woolley-Sosa 2G-7H-E168 - HZ - Plan #2	200.0	200.0	29.9	29.3	45.881	CC, ES
Woolley-Sosa 2G-7H-E168 - HZ - Plan #2	15,805.8	16,128.1	1,077.0	800.9	3.901	SF

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - BEARDEN 24-6 (EXISTING) - ENCANA WELL - PL										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		
0.0	0.0	0.0	0.0	0.0	0.0	153.08	-2,304.0	1,170.0	2,584.1				
100.0	100.0	85.0	85.0	0.2	0.1	153.08	-2,304.0	1,170.0	2,584.1	2,583.8	0.28	9,346.475	
200.0	200.0	185.0	185.0	0.3	0.3	153.08	-2,304.0	1,170.0	2,584.1	2,583.4	0.62	4,158.762	
300.0	300.0	285.0	285.0	0.5	0.5	153.08	-2,304.0	1,170.0	2,584.1	2,583.1	0.97	2,662.832	
400.0	400.0	385.0	385.0	0.7	0.6	153.08	-2,304.0	1,170.0	2,584.1	2,582.7	1.32	1,958.388	
500.0	500.0	485.0	485.0	0.8	0.8	153.08	-2,304.0	1,170.0	2,584.1	2,582.4	1.67	1,548.688	
600.0	600.0	585.0	585.0	1.0	1.0	113.62	-2,304.0	1,170.0	2,584.4	2,582.4	2.02	1,280.709	
700.0	700.0	685.0	685.0	1.2	1.2	113.66	-2,304.0	1,170.0	2,585.5	2,583.1	2.37	1,091.193	
800.0	799.9	784.9	784.9	1.4	1.3	113.73	-2,304.0	1,170.0	2,587.2	2,584.5	2.73	949.325	
900.0	899.7	884.7	884.7	1.6	1.5	113.83	-2,304.0	1,170.0	2,589.7	2,586.6	3.09	838.500	
1,000.0	999.4	984.4	984.4	1.8	1.7	113.96	-2,304.0	1,170.0	2,592.9	2,589.4	3.46	749.048	
1,100.0	1,098.9	1,083.9	1,083.9	2.0	1.9	114.12	-2,304.0	1,170.0	2,596.8	2,592.9	3.85	674.993	
1,201.3	1,199.5	1,184.6	1,184.6	2.2	2.0	114.30	-2,304.0	1,170.0	2,601.5	2,597.3	4.25	611.706	
1,300.0	1,297.5	1,282.5	1,282.5	2.5	2.2	114.54	-2,304.0	1,170.0	2,606.5	2,601.9	4.65	559.957	
1,400.0	1,396.8	1,381.8	1,381.8	2.7	2.4	114.79	-2,304.0	1,170.0	2,611.7	2,606.6	5.07	515.468	
1,500.0	1,496.0	1,481.0	1,481.0	3.0	2.6	115.03	-2,304.0	1,170.0	2,616.8	2,611.4	5.48	477.395	
1,600.0	1,595.3	1,541.9	1,541.9	3.3	2.7	115.18	-2,304.3	1,170.1	2,622.6	2,616.8	5.83	449.660	
1,700.0	1,694.5	1,600.0	1,600.0	3.5	2.8	115.32	-2,305.6	1,170.7	2,630.3	2,624.1	6.18	425.583	
1,800.0	1,793.8	1,645.2	1,645.1	3.8	2.8	115.43	-2,307.4	1,171.4	2,639.7	2,633.2	6.51	405.625	
1,900.0	1,893.0	1,700.0	1,699.8	4.0	2.9	115.56	-2,310.5	1,172.6	2,651.0	2,644.1	6.85	386.870	
2,000.0	1,992.3	1,747.7	1,747.4	4.3	3.0	115.68	-2,313.9	1,174.1	2,664.0	2,656.9	7.19	370.724	
2,100.0	2,091.5	1,800.0	1,799.5	4.6	3.1	115.81	-2,318.5	1,176.0	2,678.9	2,671.4	7.53	355.873	
2,200.0	2,190.8	1,849.1	1,848.2	4.8	3.2	115.93	-2,323.7	1,178.1	2,695.6	2,687.7	7.87	342.724	
2,300.0	2,290.0	1,900.0	1,898.7	5.1	3.3	116.05	-2,329.8	1,180.6	2,714.0	2,705.8	8.20	330.773	
2,400.0	2,389.3	1,949.2	1,947.4	5.4	3.5	116.17	-2,336.5	1,183.3	2,734.1	2,725.6	8.54	320.034	
2,500.0	2,488.5	2,000.0	1,997.5	5.7	3.6	116.30	-2,344.3	1,186.5	2,756.0	2,747.2	8.88	310.256	
2,600.0	2,587.8	2,047.8	2,044.5	5.9	3.7	116.41	-2,352.3	1,189.8	2,779.7	2,770.4	9.22	301.511	
2,700.0	2,687.0	2,117.6	2,112.9	6.2	3.9	116.58	-2,365.1	1,195.0	2,804.8	2,795.2	9.59	292.425	
2,800.0	2,786.3	2,213.7	2,207.0	6.5	4.2	116.80	-2,382.8	1,202.3	2,830.2	2,820.2	10.01	282.801	
2,900.0	2,885.5	2,309.8	2,301.2	6.7	4.5	117.03	-2,400.6	1,209.5	2,855.7	2,845.3	10.42	273.957	
3,000.0	2,984.8	2,405.9	2,395.4	7.0	4.8	117.24	-2,418.3	1,216.8	2,881.2	2,870.4	10.84	265.805	
3,100.0	3,084.0	2,502.0	2,489.6	7.3	5.1	117.46	-2,436.0	1,224.0	2,906.8	2,895.5	11.25	258.266	
3,200.0	3,183.3	2,598.1	2,583.8	7.6	5.4	117.67	-2,453.8	1,231.3	2,932.3	2,920.7	11.67	251.273	
3,300.0	3,282.5	2,694.2	2,677.9	7.8	5.7	117.88	-2,471.5	1,238.6	2,958.0	2,945.9	12.08	244.770	
3,400.0	3,381.8	2,790.3	2,772.1	8.1	6.1	118.08	-2,489.2	1,245.8	2,983.6	2,971.1	12.50	238.708	
3,500.0	3,481.1	2,886.4	2,866.3	8.4	6.4	118.28	-2,507.0	1,253.1	3,009.3	2,996.4	12.91	233.045	
3,600.0	3,580.3	2,982.5	2,960.5	8.7	6.8	118.48	-2,524.7	1,260.3	3,035.1	3,021.7	13.33	227.742	
3,700.0	3,679.6	3,078.6	3,054.6	8.9	7.1	118.67	-2,542.4	1,267.6	3,060.8	3,047.1	13.74	222.766	
3,800.0	3,778.8	3,174.7	3,148.8	9.2	7.5	118.86	-2,560.2	1,274.9	3,086.6	3,072.5	14.15	218.087	
3,900.0	3,878.1	3,270.9	3,243.0	9.5	7.8	119.05	-2,577.9	1,282.1	3,112.4	3,097.9	14.57	213.680	
4,000.0	3,977.3	3,367.0	3,337.2	9.8	8.2	119.23	-2,595.6	1,289.4	3,138.3	3,123.3	14.98	209.522	
4,100.0	4,076.6	3,463.1	3,431.4	10.0	8.5	119.41	-2,613.3	1,296.6	3,164.2	3,148.8	15.39	205.592	
4,200.0	4,175.8	3,559.2	3,525.5	10.3	8.9	119.59	-2,631.1	1,303.9	3,190.1	3,174.3	15.80	201.873	
4,300.0	4,275.1	3,655.3	3,619.7	10.6	9.2	119.76	-2,648.8	1,311.2	3,216.0	3,199.8	16.21	198.347	
4,400.0	4,374.3	3,751.4	3,713.9	10.9	9.6	119.94	-2,666.5	1,318.4	3,242.0	3,225.4	16.63	194.999	
4,500.0	4,473.6	3,847.5	3,808.1	11.1	9.9	120.11	-2,684.3	1,325.7	3,268.0	3,251.0	17.04	191.818	
4,600.0	4,572.8	3,943.6	3,902.2	11.4	10.3	120.27	-2,702.0	1,332.9	3,294.0	3,276.6	17.45	188.789	
4,700.0	4,672.1	4,039.7	3,996.4	11.7	10.7	120.44	-2,719.7	1,340.2	3,320.1	3,302.2	17.86	185.904	
4,800.0	4,771.3	4,135.8	4,090.6	12.0	11.0	120.60	-2,737.5	1,347.4	3,346.2	3,327.9	18.27	183.151	
4,900.0	4,870.6	4,231.9	4,184.8	12.2	11.4	120.76	-2,755.2	1,354.7	3,372.3	3,353.6	18.68	180.522	
5,000.0	4,969.8	4,328.0	4,278.9	12.5	11.8	120.92	-2,772.9	1,362.0	3,398.4	3,379.3	19.09	178.009	
5,100.0	5,069.1	4,424.1	4,373.1	12.8	12.1	121.07	-2,790.7	1,369.2	3,424.6	3,405.1	19.50	175.604	

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - BEARDEN 24-6 (EXISTING) - ENCANA WELL - PL												Offset Site Error:	0.0 ft
Survey Program: O-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
5,200.0	5,168.3	4,520.2	4,467.3	13.1	12.5	121.22	-2,808.4	1,376.5	3,450.7	3,430.8	19.91	173.300	
5,300.0	5,267.6	4,616.4	4,561.5	13.3	12.9	121.37	-2,826.1	1,383.7	3,476.9	3,456.6	20.32	171.090	
5,400.0	5,366.8	4,712.5	4,655.7	13.6	13.2	121.52	-2,843.9	1,391.0	3,503.1	3,482.4	20.73	168.971	
5,500.0	5,466.1	4,808.6	4,749.8	13.9	13.6	121.67	-2,861.6	1,398.3	3,529.4	3,508.2	21.14	166.935	
5,600.0	5,565.3	4,904.7	4,844.0	14.2	14.0	121.81	-2,879.3	1,405.5	3,555.6	3,534.1	21.55	164.977	
5,700.0	5,664.6	5,000.8	4,938.2	14.4	14.3	121.95	-2,897.1	1,412.8	3,581.9	3,560.0	21.96	163.095	
5,800.0	5,763.8	5,096.9	5,032.4	14.7	14.7	122.09	-2,914.8	1,420.0	3,608.2	3,585.9	22.37	161.282	
5,900.0	5,863.1	5,193.0	5,126.5	15.0	15.1	122.23	-2,932.5	1,427.3	3,634.6	3,611.8	22.78	159.536	
6,000.0	5,962.3	5,290.3	5,223.4	15.3	15.3	122.37	-2,950.2	1,434.6	3,660.9	3,637.9	23.19	157.799	
6,100.0	6,061.6	5,386.6	5,319.6	15.5	15.5	122.51	-2,967.9	1,441.9	3,687.2	3,664.2	23.60	156.062	
6,200.0	6,160.9	5,482.9	5,415.9	15.8	15.8	122.65	-2,985.6	1,449.2	3,713.5	3,690.5	24.01	154.325	
6,300.0	6,260.1	5,579.2	5,512.2	16.1	16.1	122.79	-2,999.9	1,456.5	3,739.8	3,716.8	24.42	152.588	
6,400.0	6,359.4	5,675.5	5,608.5	16.4	16.4	122.93	-3,014.2	1,463.8	3,766.1	3,743.1	24.83	150.851	
6,500.0	6,458.6	5,771.8	5,704.8	16.6	16.6	123.07	-3,028.5	1,471.1	3,792.4	3,769.4	25.24	149.114	
6,600.0	6,557.9	5,868.1	5,801.1	16.9	16.9	123.21	-3,042.8	1,478.4	3,818.7	3,795.7	25.65	147.377	
6,700.0	6,657.1	5,964.4	5,897.4	17.2	17.2	123.35	-3,057.1	1,485.7	3,845.0	3,822.0	26.06	145.640	
6,800.0	6,756.4	6,060.7	5,993.7	17.5	17.5	123.49	-3,071.4	1,493.0	3,871.3	3,848.3	26.47	143.903	
6,900.0	6,855.6	6,157.0	6,090.0	17.7	17.7	123.63	-3,085.7	1,500.3	3,897.6	3,874.6	26.88	142.166	
6,919.5	6,875.0	6,932.9	6,860.0	17.8	18.0	124.90	-3,010.0	1,459.0	3,715.7	3,687.5	28.19	131.804	
6,950.0	6,905.3	6,963.3	6,890.3	17.9	18.0	102.40	-3,010.0	1,459.0	3,717.1	3,688.7	28.37	131.030	
7,000.0	6,955.1	7,013.1	6,940.1	17.9	18.1	44.16	-3,010.0	1,459.0	3,715.9	3,687.4	28.54	130.222	
7,050.0	7,004.8	7,062.7	6,989.8	17.9	18.2	15.05	-3,010.0	1,459.0	3,710.6	3,682.0	28.55	129.964	
7,100.0	7,053.8	7,111.8	7,038.8	17.9	18.2	4.02	-3,010.0	1,459.0	3,701.1	3,672.7	28.41	130.254	
7,150.0	7,101.9	7,159.9	7,086.9	17.9	18.3	-1.56	-3,010.0	1,459.0	3,687.5	3,659.4	28.13	131.090	
7,200.0	7,148.7	7,206.7	7,133.7	17.8	18.3	-5.09	-3,010.0	1,459.0	3,669.9	3,642.2	27.70	132.470	
7,250.0	7,193.8	7,251.8	7,178.8	17.7	18.4	-7.73	-3,010.0	1,459.0	3,648.5	3,621.4	27.15	134.382	
7,300.0	7,236.9	7,294.9	7,221.9	17.5	18.4	-10.00	-3,010.0	1,459.0	3,623.4	3,596.9	26.49	136.792	
7,350.0	7,277.7	7,335.6	7,262.7	17.4	18.5	-12.16	-3,010.0	1,459.0	3,594.8	3,569.1	25.75	139.623	
7,400.0	7,315.7	7,373.7	7,300.8	17.2	18.5	-14.42	-3,010.0	1,459.0	3,563.0	3,538.0	24.97	142.709	
7,450.0	7,350.9	7,408.8	7,335.9	17.1	18.6	-16.95	-3,010.0	1,459.0	3,528.1	3,503.9	24.21	145.733	
7,500.0	7,382.8	7,440.8	7,367.8	16.9	18.6	-19.91	-3,010.0	1,459.0	3,490.5	3,466.9	23.56	148.132	
7,550.0	7,411.3	7,469.3	7,396.3	16.7	18.6	-23.54	-3,010.0	1,459.0	3,450.4	3,427.3	23.16	149.007	
7,600.0	7,436.1	7,494.1	7,421.1	16.6	18.7	-28.14	-3,010.0	1,459.0	3,408.2	3,385.1	23.16	147.148	
7,650.0	7,457.1	7,515.0	7,442.1	16.5	18.7	-34.16	-3,010.0	1,459.0	3,364.2	3,340.4	23.79	141.399	
7,700.0	7,474.0	7,531.9	7,459.0	16.4	18.7	-42.17	-3,010.0	1,459.0	3,318.7	3,293.5	25.24	131.506	
7,750.0	7,486.8	7,544.7	7,471.8	16.4	18.7	-52.83	-3,010.0	1,459.0	3,272.1	3,244.7	27.48	119.065	
7,800.0	7,495.3	7,553.2	7,480.3	16.4	18.7	-66.50	-3,010.0	1,459.0	3,224.8	3,194.8	30.00	107.505	
7,850.0	7,499.5	7,557.5	7,484.5	16.5	18.7	-82.37	-3,010.0	1,459.0	3,177.1	3,145.5	31.62	100.481	
7,873.6	7,500.0	7,558.0	7,485.0	16.5	18.7	-90.00	-3,010.0	1,459.0	3,154.6	3,122.8	31.77	99.309	
7,900.0	7,500.0	7,558.0	7,485.0	16.5	18.7	-90.00	-3,010.0	1,459.0	3,129.4	3,097.5	31.83	98.311	
8,000.0	7,500.0	7,558.0	7,485.0	16.9	18.7	-90.00	-3,010.0	1,459.0	3,034.1	3,001.9	32.21	94.184	
8,100.0	7,500.0	7,558.0	7,485.0	17.4	18.7	-90.00	-3,010.0	1,459.0	2,939.2	2,906.4	32.80	89.614	
8,200.0	7,500.0	7,558.0	7,485.0	18.0	18.7	-90.00	-3,010.0	1,459.0	2,844.6	2,811.1	33.56	84.763	
8,300.0	7,500.0	7,558.0	7,485.0	18.8	18.7	-90.00	-3,010.0	1,459.0	2,750.4	2,715.9	34.47	79.784	
8,400.0	7,500.0	7,558.0	7,485.0	19.7	18.7	-90.00	-3,010.0	1,459.0	2,656.6	2,621.1	35.52	74.801	
8,500.0	7,500.0	7,558.0	7,485.0	20.7	18.7	-90.00	-3,010.0	1,459.0	2,563.3	2,526.7	36.67	69.911	
8,600.0	7,500.0	7,558.0	7,485.0	21.9	18.7	-90.00	-3,010.0	1,459.0	2,470.6	2,432.7	37.90	65.179	
8,700.0	7,500.0	7,558.0	7,485.0	23.1	18.7	-90.00	-3,010.0	1,459.0	2,378.4	2,339.2	39.22	60.649	
8,800.0	7,500.0	7,558.0	7,485.0	24.3	18.7	-90.00	-3,010.0	1,459.0	2,286.8	2,246.3	40.59	56.344	
8,900.0	7,500.0	7,558.0	7,485.0	25.6	18.7	-90.00	-3,010.0	1,459.0	2,196.0	2,154.0	42.01	52.276	
9,000.0	7,500.0	7,558.0	7,485.0	27.0	18.7	-90.00	-3,010.0	1,459.0	2,106.1	2,062.6	43.47	48.447	
9,100.0	7,500.0	7,558.0	7,485.0	28.4	18.7	-90.00	-3,010.0	1,459.0	2,017.1	1,972.1	44.97	44.854	

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - BEARDEN 24-6 (EXISTING) - ENCANA WELL - PL												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
9,200.0	7,500.0	7,558.0	7,485.0	29.9	18.7	-90.00	-3,010.0	1,459.0	1,929.1	1,882.6	46.50	41.489	
9,300.0	7,500.0	7,558.0	7,485.0	31.4	18.7	-90.00	-3,010.0	1,459.0	1,842.4	1,794.4	48.05	38.344	
9,400.0	7,500.0	7,558.0	7,485.0	32.9	18.7	-90.00	-3,010.0	1,459.0	1,757.1	1,707.5	49.62	35.410	
9,500.0	7,500.0	7,558.0	7,485.0	34.4	18.7	-90.00	-3,010.0	1,459.0	1,673.4	1,622.2	51.21	32.676	
9,600.0	7,500.0	7,558.0	7,485.0	36.0	18.7	-90.00	-3,010.0	1,459.0	1,591.7	1,538.8	52.82	30.133	
9,700.0	7,500.0	7,558.0	7,485.0	37.5	18.7	-90.00	-3,010.0	1,459.0	1,512.1	1,457.6	54.44	27.774	
9,800.0	7,500.0	7,558.0	7,485.0	39.1	18.7	-90.00	-3,010.0	1,459.0	1,435.0	1,379.0	56.07	25.592	
9,900.0	7,500.0	7,558.0	7,485.0	40.7	18.7	-90.00	-3,010.0	1,459.0	1,361.0	1,303.3	57.72	23.580	
10,000.0	7,500.0	7,558.0	7,485.0	42.3	18.7	-90.00	-3,010.0	1,459.0	1,290.4	1,231.1	59.37	21.736	
10,100.0	7,500.0	7,558.0	7,485.0	43.9	18.7	-90.00	-3,010.0	1,459.0	1,224.0	1,163.0	61.03	20.056	
10,200.0	7,500.0	7,558.0	7,485.0	45.6	18.7	-90.00	-3,010.0	1,459.0	1,162.4	1,099.7	62.70	18.540	
10,300.0	7,500.0	7,558.0	7,485.0	47.2	18.7	-90.00	-3,010.0	1,459.0	1,106.4	1,042.1	64.37	17.189	
10,400.0	7,500.0	7,558.0	7,485.0	48.9	18.7	-90.00	-3,010.0	1,459.0	1,056.9	990.9	66.05	16.002	
10,500.0	7,500.0	7,558.0	7,485.0	50.5	18.7	-90.00	-3,010.0	1,459.0	1,014.9	947.2	67.73	14.984	
10,600.0	7,500.0	7,558.0	7,485.0	52.2	18.7	-90.00	-3,010.0	1,459.0	981.4	911.9	69.42	14.136	
10,700.0	7,500.0	7,558.0	7,485.0	53.8	18.7	-90.00	-3,010.0	1,459.0	957.1	886.0	71.12	13.458	
10,800.0	7,500.0	7,558.0	7,485.0	55.5	18.7	-90.00	-3,010.0	1,459.0	942.9	870.1	72.81	12.949	
10,885.2	7,500.0	7,558.0	7,485.0	57.0	18.7	-90.00	-3,010.0	1,459.0	939.0	864.8	74.26	12.645 CC	
10,900.0	7,500.0	7,558.0	7,485.0	57.2	18.7	-90.00	-3,010.0	1,459.0	939.1	864.6	74.51	12.603 ES	
11,000.0	7,500.0	7,558.0	7,485.0	58.9	18.7	-90.00	-3,010.0	1,459.0	946.0	869.8	76.22	12.412	
11,100.0	7,500.0	7,558.0	7,485.0	60.6	18.7	-90.00	-3,010.0	1,459.0	963.3	885.4	77.92	12.362 SF	
11,200.0	7,500.0	7,558.0	7,485.0	62.3	18.7	-90.00	-3,010.0	1,459.0	990.4	910.8	79.63	12.437	
11,244.1	7,500.0	7,558.0	7,485.0	63.0	18.7	-90.00	-3,010.0	1,459.0	1,005.3	924.9	80.39	12.505	
11,300.0	7,500.0	7,558.0	7,485.0	64.0	18.7	-90.00	-3,010.0	1,459.0	1,026.1	944.5	81.57	12.579	
11,400.0	7,500.0	7,558.0	7,485.0	65.7	18.7	-90.00	-3,010.0	1,459.0	1,067.1	983.5	83.63	12.761	
11,444.1	7,500.0	7,558.0	7,485.0	66.4	18.7	-90.00	-3,010.0	1,459.0	1,086.7	1,002.2	84.51	12.859	
11,500.0	7,500.0	7,558.0	7,485.0	67.4	18.7	-90.00	-3,010.0	1,459.0	1,113.2	1,027.7	85.47	13.024	
11,600.0	7,500.0	7,558.0	7,485.0	69.1	18.7	-90.00	-3,010.0	1,459.0	1,165.7	1,078.5	87.19	13.370	
11,700.0	7,500.0	7,558.0	7,485.0	70.8	18.7	-90.00	-3,010.0	1,459.0	1,224.1	1,135.2	88.91	13.768	
11,800.0	7,500.0	7,558.0	7,485.0	72.5	18.7	-90.00	-3,010.0	1,459.0	1,287.7	1,197.0	90.63	14.208	
11,900.0	7,500.0	7,558.0	7,485.0	74.2	18.7	-90.00	-3,010.0	1,459.0	1,355.6	1,263.3	92.36	14.679	
12,000.0	7,500.0	7,558.0	7,485.0	76.0	18.7	-90.00	-3,010.0	1,459.0	1,427.4	1,333.3	94.08	15.172	
12,100.0	7,500.0	7,558.0	7,485.0	77.7	18.7	-90.00	-3,010.0	1,459.0	1,502.4	1,406.6	95.81	15.681	
12,194.1	7,500.0	7,558.0	7,485.0	79.3	18.7	-90.00	-3,010.0	1,459.0	1,575.5	1,478.0	97.44	16.170	
12,200.0	7,500.0	7,558.0	7,485.0	79.4	18.7	-90.00	-3,010.0	1,459.0	1,580.1	1,482.6	97.52	16.203	
12,300.0	7,500.0	7,558.0	7,485.0	81.1	18.7	-90.00	-3,010.0	1,459.0	1,661.4	1,562.4	98.93	16.794	
12,393.7	7,500.0	7,558.0	7,485.0	82.7	18.7	-90.00	-3,010.0	1,459.0	1,740.9	1,640.8	100.15	17.383	
12,400.0	7,500.0	7,558.0	7,485.0	82.9	18.7	-90.00	-3,010.0	1,459.0	1,746.4	1,646.1	100.26	17.418	
12,500.0	7,500.0	7,558.0	7,485.0	84.6	18.7	-90.00	-3,010.0	1,459.0	1,833.7	1,731.7	101.99	17.979	
12,600.0	7,500.0	7,558.0	7,485.0	86.3	18.7	-90.00	-3,010.0	1,459.0	1,922.2	1,818.5	103.72	18.532	
12,700.0	7,500.0	7,558.0	7,485.0	88.0	18.7	-90.00	-3,010.0	1,459.0	2,011.8	1,906.4	105.46	19.078	
12,800.0	7,500.0	7,558.0	7,485.0	89.7	18.7	-90.00	-3,010.0	1,459.0	2,102.4	1,995.2	107.19	19.614	
12,900.0	7,500.0	7,558.0	7,485.0	91.5	18.7	-90.00	-3,010.0	1,459.0	2,193.7	2,084.8	108.92	20.140	
13,000.0	7,500.0	7,558.0	7,485.0	93.2	18.7	-90.00	-3,010.0	1,459.0	2,285.8	2,175.2	110.66	20.657	
13,100.0	7,500.0	7,558.0	7,485.0	94.9	18.7	-90.00	-3,010.0	1,459.0	2,378.5	2,266.2	112.39	21.163	
13,200.0	7,500.0	7,558.0	7,485.0	96.6	18.7	-90.00	-3,010.0	1,459.0	2,471.8	2,357.7	114.13	21.659	
13,300.0	7,500.0	7,558.0	7,485.0	98.4	18.7	-90.00	-3,010.0	1,459.0	2,565.6	2,449.8	115.86	22.143	
13,400.0	7,500.0	7,558.0	7,485.0	100.1	18.7	-90.00	-3,010.0	1,459.0	2,659.9	2,542.3	117.60	22.618	
13,500.0	7,500.0	7,558.0	7,485.0	101.8	18.7	-90.00	-3,010.0	1,459.0	2,754.5	2,635.2	119.34	23.082	
13,600.0	7,500.0	7,558.0	7,485.0	103.5	18.7	-90.00	-3,010.0	1,459.0	2,849.6	2,728.5	121.08	23.535	
13,700.0	7,500.0	7,558.0	7,485.0	105.3	18.7	-90.00	-3,010.0	1,459.0	2,944.9	2,822.1	122.82	23.978	
13,800.0	7,500.0	7,558.0	7,485.0	107.0	18.7	-90.00	-3,010.0	1,459.0	3,040.6	2,916.0	124.56	24.411	

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - BEARDEN 24-6 (EXISTING) - ENCANA WELL - PL													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		
13,900.0	7,500.0	7,558.0	7,485.0	108.7	18.7	-90.00	-3,010.0	1,459.0	3,136.5	3,010.2	126.30	24.834		
14,000.0	7,500.0	7,558.0	7,485.0	110.5	18.7	-90.00	-3,010.0	1,459.0	3,232.7	3,104.6	128.04	25.248		
14,100.0	7,500.0	7,558.0	7,485.0	112.2	18.7	-90.00	-3,010.0	1,459.0	3,329.1	3,199.3	129.78	25.652		
14,200.0	7,500.0	7,558.0	7,485.0	113.9	18.7	-90.00	-3,010.0	1,459.0	3,425.7	3,294.1	131.52	26.047		
14,300.0	7,500.0	7,558.0	7,485.0	115.7	18.7	-90.00	-3,010.0	1,459.0	3,522.4	3,389.2	133.26	26.433		
14,400.0	7,500.0	7,558.0	7,485.0	117.4	18.7	-90.00	-3,010.0	1,459.0	3,619.4	3,484.4	135.00	26.810		
14,500.0	7,500.0	7,558.0	7,485.0	119.1	18.7	-90.00	-3,010.0	1,459.0	3,716.5	3,579.8	136.74	27.179		
14,600.0	7,500.0	7,558.0	7,485.0	120.9	18.7	-90.00	-3,010.0	1,459.0	3,813.8	3,675.3	138.49	27.539		
14,700.0	7,500.0	7,558.0	7,485.0	122.6	18.7	-90.00	-3,010.0	1,459.0	3,911.2	3,771.0	140.23	27.892		
14,800.0	7,500.0	7,558.0	7,485.0	124.3	18.7	-90.00	-3,010.0	1,459.0	4,008.8	3,866.8	141.97	28.236		
14,900.0	7,500.0	7,558.0	7,485.0	126.1	18.7	-90.00	-3,010.0	1,459.0	4,106.4	3,962.7	143.72	28.573		
15,000.0	7,500.0	7,558.0	7,485.0	127.8	18.7	-90.00	-3,010.0	1,459.0	4,204.2	4,058.7	145.46	28.903		
15,100.0	7,500.0	7,558.0	7,485.0	129.6	18.7	-90.00	-3,010.0	1,459.0	4,302.1	4,154.9	147.20	29.225		
15,200.0	7,500.0	7,558.0	7,485.0	131.3	18.7	-90.00	-3,010.0	1,459.0	4,400.0	4,251.1	148.95	29.541		
15,300.0	7,500.0	7,558.0	7,485.0	133.0	18.7	-90.00	-3,010.0	1,459.0	4,498.1	4,347.4	150.69	29.849		
15,400.0	7,500.0	7,558.0	7,485.0	134.8	18.7	-90.00	-3,010.0	1,459.0	4,596.2	4,443.8	152.44	30.151		
15,500.0	7,500.0	7,558.0	7,485.0	136.5	18.7	-90.00	-3,010.0	1,459.0	4,694.4	4,540.3	154.18	30.447		
15,600.0	7,500.0	7,558.0	7,485.0	138.3	18.7	-90.00	-3,010.0	1,459.0	4,792.7	4,636.8	155.93	30.737		
15,700.0	7,500.0	7,558.0	7,485.0	140.0	18.7	-90.00	-3,010.0	1,459.0	4,891.1	4,733.4	157.67	31.020		
15,805.8	7,500.0	7,558.0	7,485.0	141.8	18.7	-90.00	-3,010.0	1,459.0	4,995.2	4,835.7	159.52	31.314		



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Morgan Hills 1A-7H-A168 - HZ - Plan #2													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	29.0	29.0	0.0	0.0	65.60	1,870.2	4,122.3	4,526.7					
100.0	100.0	129.0	129.0	0.2	0.2	65.60	1,870.2	4,122.3	4,526.7	4,526.3	0.35	N/A		
200.0	200.0	278.0	278.0	0.3	0.5	65.59	1,870.3	4,121.8	4,526.5	4,525.8	0.79	5,732.747		
300.0	300.0	546.7	546.5	0.5	1.0	65.52	1,872.5	4,112.1	4,523.6	4,522.1	1.46	3,094.707		
400.0	400.0	813.8	812.6	0.7	1.6	65.34	1,877.5	4,090.3	4,516.9	4,514.7	2.22	2,035.971		
500.0	500.0	1,078.3	1,074.8	0.8	2.3	65.08	1,885.2	4,056.8	4,506.6	4,503.5	3.11	1,449.232		
600.0	600.0	1,338.8	1,331.3	1.0	3.2	25.31	1,895.4	4,012.4	4,492.0	4,488.3	3.69	1,216.117		
700.0	700.0	1,594.0	1,580.3	1.2	4.2	24.98	1,907.9	3,957.8	4,472.3	4,467.7	4.59	973.783		
800.0	799.9	1,730.8	1,712.8	1.4	4.9	24.84	1,915.5	3,924.6	4,448.7	4,443.5	5.19	857.366		
900.0	899.7	1,826.7	1,805.6	1.6	5.3	24.78	1,920.9	3,901.0	4,423.4	4,417.7	5.66	781.416		
1,000.0	999.4	1,922.3	1,898.1	1.8	5.7	24.73	1,926.3	3,877.5	4,396.6	4,390.5	6.13	716.769		
1,100.0	1,098.9	2,017.6	1,990.3	2.0	6.2	24.70	1,931.7	3,854.1	4,368.4	4,361.8	6.61	661.081		
1,201.3	1,199.5	2,113.7	2,083.3	2.2	6.6	24.68	1,937.1	3,830.5	4,338.3	4,331.2	7.09	612.013		
1,300.0	1,297.5	2,207.1	2,173.7	2.5	7.1	24.54	1,942.3	3,807.6	4,308.2	4,300.6	7.58	568.467		
1,400.0	1,396.8	2,301.8	2,265.3	2.7	7.5	24.39	1,947.7	3,784.3	4,277.7	4,269.7	8.08	529.509		
1,500.0	1,496.0	2,396.4	2,356.9	3.0	8.0	24.24	1,953.0	3,761.1	4,247.3	4,238.7	8.58	494.914		
1,600.0	1,595.3	2,491.1	2,448.5	3.3	8.4	24.09	1,958.3	3,737.8	4,216.9	4,207.8	9.09	464.010		
1,700.0	1,694.5	2,585.8	2,540.2	3.5	8.9	23.94	1,963.7	3,714.5	4,186.5	4,176.9	9.60	436.252		
1,800.0	1,793.8	2,680.5	2,631.8	3.8	9.4	23.79	1,969.0	3,691.3	4,156.2	4,146.1	10.11	411.194		
1,900.0	1,893.0	2,775.1	2,723.4	4.0	9.8	23.63	1,974.3	3,668.0	4,125.8	4,115.2	10.62	388.470		
2,000.0	1,992.3	2,869.8	2,815.0	4.3	10.3	23.47	1,979.7	3,644.8	4,095.5	4,084.4	11.14	367.772		
2,100.0	2,091.5	2,964.5	2,906.6	4.6	10.7	23.31	1,985.0	3,621.5	4,065.3	4,053.6	11.65	348.847		
2,200.0	2,190.8	3,059.1	2,998.2	4.8	11.2	23.15	1,990.3	3,598.2	4,035.0	4,022.9	12.17	331.481		
2,300.0	2,290.0	3,153.8	3,089.8	5.1	11.6	22.98	1,995.7	3,575.0	4,004.8	3,992.1	12.69	315.490		
2,400.0	2,389.3	3,248.5	3,181.5	5.4	12.1	22.81	2,001.0	3,551.7	3,974.7	3,961.4	13.22	300.720		
2,500.0	2,488.5	3,343.2	3,273.1	5.7	12.5	22.64	2,006.3	3,528.5	3,944.5	3,930.8	13.74	287.039		
2,600.0	2,587.8	3,437.8	3,364.7	5.9	13.0	22.47	2,011.7	3,505.2	3,914.4	3,900.1	14.27	274.331		
2,700.0	2,687.0	3,532.5	3,456.3	6.2	13.5	22.29	2,017.0	3,482.0	3,884.3	3,869.5	14.80	262.498		
2,800.0	2,786.3	3,627.2	3,547.9	6.5	13.9	22.11	2,022.3	3,458.7	3,854.3	3,839.0	15.33	251.454		
2,900.0	2,885.5	3,721.8	3,639.5	6.7	14.4	21.93	2,027.7	3,435.4	3,824.3	3,808.4	15.86	241.124		
3,000.0	2,984.8	3,816.5	3,731.1	7.0	14.8	21.75	2,033.0	3,412.2	3,794.3	3,777.9	16.39	231.440		
3,100.0	3,084.0	3,911.2	3,822.8	7.3	15.3	21.56	2,038.3	3,388.9	3,764.4	3,747.5	16.93	222.346		
3,200.0	3,183.3	4,005.9	3,914.4	7.6	15.7	21.37	2,043.7	3,365.7	3,734.5	3,717.0	17.47	213.789		
3,300.0	3,282.5	4,100.5	4,006.0	7.8	16.2	21.18	2,049.0	3,342.4	3,704.7	3,686.6	18.01	205.724		
3,400.0	3,381.8	4,195.2	4,097.6	8.1	16.7	20.98	2,054.3	3,319.1	3,674.8	3,656.3	18.55	198.110		
3,500.0	3,481.1	4,289.9	4,189.2	8.4	17.1	20.78	2,059.7	3,295.9	3,645.1	3,626.0	19.09	190.911		
3,600.0	3,580.3	4,384.5	4,280.8	8.7	17.6	20.58	2,065.0	3,272.6	3,615.3	3,595.7	19.64	184.095		
3,700.0	3,679.6	4,479.2	4,372.4	8.9	18.0	20.37	2,070.3	3,249.4	3,585.6	3,565.5	20.19	177.632		
3,800.0	3,778.8	4,573.9	4,464.1	9.2	18.5	20.16	2,075.7	3,226.1	3,556.0	3,535.3	20.74	171.495		
3,900.0	3,878.1	4,668.6	4,555.7	9.5	18.9	19.95	2,081.0	3,202.9	3,526.4	3,505.1	21.29	165.662		
4,000.0	3,977.3	4,763.2	4,647.3	9.8	19.4	19.73	2,086.3	3,179.6	3,496.8	3,475.0	21.84	160.110		
4,100.0	4,076.6	4,857.9	4,738.9	10.0	19.9	19.51	2,091.7	3,156.3	3,467.3	3,444.9	22.40	154.820		
4,200.0	4,175.8	4,952.6	4,830.5	10.3	20.3	19.29	2,097.0	3,133.1	3,437.9	3,414.9	22.95	149.774		
4,300.0	4,275.1	5,047.2	4,922.1	10.6	20.8	19.06	2,102.3	3,109.8	3,408.5	3,385.0	23.51	144.957		
4,400.0	4,374.3	5,141.9	5,013.7	10.9	21.2	18.83	2,107.7	3,086.6	3,379.1	3,355.0	24.08	140.352		
4,500.0	4,473.6	5,236.6	5,105.4	11.1	21.7	18.59	2,113.0	3,063.3	3,349.8	3,325.2	24.64	135.948		
4,600.0	4,572.8	5,331.3	5,197.0	11.4	22.2	18.35	2,118.3	3,040.0	3,320.5	3,295.3	25.21	131.730		
4,700.0	4,672.1	5,425.9	5,288.6	11.7	22.6	18.11	2,123.7	3,016.8	3,291.4	3,265.6	25.78	127.688		
4,800.0	4,771.3	5,520.6	5,380.2	12.0	23.1	17.86	2,129.0	2,993.5	3,262.2	3,235.9	26.35	123.812		
4,900.0	4,870.6	5,615.3	5,471.8	12.2	23.5	17.61	2,134.3	2,970.3	3,233.1	3,206.2	26.92	120.092		
5,000.0	4,969.8	5,709.9	5,563.4	12.5	24.0	17.35	2,139.7	2,947.0	3,204.1	3,176.6	27.50	116.518		
5,100.0	5,069.1	5,804.6	5,655.1	12.8	24.4	17.09	2,145.0	2,923.8	3,175.1	3,147.1	28.08	113.083		

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



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Morgan Hills 1A-7H-A168 - HZ - Plan #2												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	
5,200.0	5,168.3	9,235.8	7,530.0	13.1	42.6	57.26	410.3	2,448.1	3,145.7	3,100.4	45.25	69.513	
5,300.0	5,267.6	9,226.4	7,530.0	13.3	42.5	56.99	419.7	2,448.1	3,067.5	3,022.2	45.22	67.831	
5,400.0	5,366.8	9,216.9	7,530.0	13.6	42.4	56.71	429.1	2,448.1	2,990.5	2,945.3	45.19	66.176	
5,500.0	5,466.1	9,207.5	7,530.0	13.9	42.3	56.43	438.6	2,448.1	2,915.0	2,869.8	45.16	64.551	
5,600.0	5,565.3	9,198.1	7,530.0	14.2	42.2	56.16	448.0	2,448.1	2,840.9	2,795.7	45.12	62.958	
5,700.0	5,664.6	9,188.7	7,530.0	14.4	42.1	55.88	457.4	2,448.1	2,768.4	2,723.3	45.09	61.399	
5,800.0	5,763.8	9,179.3	7,530.0	14.7	42.0	55.60	466.8	2,448.1	2,697.6	2,652.6	45.05	59.877	
5,900.0	5,863.1	9,169.8	7,530.0	15.0	41.9	55.33	476.2	2,448.1	2,628.7	2,583.7	45.02	58.396	
6,000.0	5,962.3	9,160.4	7,530.0	15.3	41.8	55.05	485.7	2,448.0	2,561.8	2,516.9	44.98	56.958	
6,100.0	6,061.6	9,151.0	7,530.0	15.5	41.7	54.77	495.1	2,448.0	2,497.1	2,452.2	44.94	55.569	
6,200.0	6,160.9	9,141.6	7,530.0	15.8	41.6	54.49	504.5	2,448.0	2,434.8	2,389.9	44.90	54.230	
6,300.0	6,260.1	9,132.1	7,530.0	16.1	41.5	54.21	513.9	2,448.0	2,375.0	2,330.1	44.86	52.947	
6,400.0	6,359.4	9,122.7	7,530.0	16.4	41.4	53.94	523.4	2,448.0	2,317.9	2,273.1	44.81	51.725	
6,500.0	6,458.6	9,113.3	7,530.0	16.6	41.3	53.66	532.8	2,448.0	2,263.8	2,219.0	44.77	50.566	
6,600.0	6,557.9	9,103.9	7,530.0	16.9	41.2	53.38	542.2	2,448.0	2,212.8	2,168.1	44.72	49.478	
6,700.0	6,657.1	9,094.4	7,530.0	17.2	41.1	53.10	551.6	2,448.0	2,165.2	2,120.5	44.68	48.462	
6,800.0	6,756.4	9,085.0	7,530.0	17.5	41.0	52.82	561.1	2,448.0	2,121.2	2,076.6	44.63	47.526	
6,900.0	6,855.6	9,075.6	7,530.0	17.7	40.9	52.54	570.5	2,448.0	2,081.0	2,036.5	44.59	46.675	
6,919.5	6,875.0	9,073.8	7,530.0	17.8	40.9	52.49	572.3	2,448.0	2,073.7	2,029.1	44.58	46.519	
6,950.0	6,905.3	9,071.7	7,530.0	17.9	40.9	28.64	574.4	2,448.0	2,062.4	2,018.5	43.94	46.936	
7,000.0	6,955.1	9,071.8	7,530.0	17.9	40.9	-31.50	574.3	2,448.0	2,044.9	2,001.8	43.01	47.544	
7,050.0	7,004.8	9,076.3	7,530.0	17.9	40.9	-62.12	569.8	2,448.0	2,028.4	1,986.1	42.25	48.005	
7,100.0	7,053.8	9,085.1	7,530.0	17.9	41.0	-74.25	561.0	2,448.0	2,013.2	1,971.5	41.70	48.282	
7,150.0	7,101.9	9,098.2	7,530.0	17.9	41.1	-80.50	547.9	2,448.0	1,999.4	1,958.1	41.35	48.358	
7,200.0	7,148.7	9,115.4	7,530.0	17.8	41.3	-84.29	530.7	2,448.0	1,987.0	1,945.8	41.20	48.227	
7,250.0	7,193.8	9,136.6	7,530.0	17.7	41.5	-86.76	509.5	2,448.0	1,976.0	1,934.8	41.25	47.905	
7,300.0	7,236.9	9,161.7	7,530.0	17.5	41.8	-88.40	484.4	2,448.0	1,966.4	1,925.0	41.47	47.419	
7,350.0	7,277.7	9,190.5	7,530.0	17.4	42.1	-89.49	455.6	2,448.1	1,958.2	1,916.4	41.85	46.797	
7,400.0	7,315.7	9,222.7	7,530.0	17.2	42.5	-90.18	423.4	2,448.1	1,951.3	1,908.9	42.36	46.066	
7,450.0	7,350.9	9,258.2	7,530.0	17.1	42.9	-90.56	387.9	2,448.1	1,945.5	1,902.5	42.98	45.262	
7,500.0	7,382.8	9,296.5	7,530.0	16.9	43.3	-90.73	349.6	2,448.1	1,940.8	1,897.1	43.70	44.417	
7,550.0	7,411.3	9,337.5	7,530.0	16.7	43.8	-90.74	308.5	2,448.1	1,937.1	1,892.6	44.48	43.545	
7,600.0	7,436.1	9,380.9	7,530.0	16.6	44.3	-90.66	265.2	2,448.1	1,934.2	1,888.8	45.33	42.671	
7,650.0	7,457.1	9,426.3	7,530.0	16.5	44.8	-90.51	219.8	2,448.1	1,932.0	1,885.7	46.22	41.802	
7,700.0	7,474.0	9,473.3	7,530.0	16.4	45.4	-90.35	172.8	2,448.1	1,930.3	1,883.2	47.15	40.943	
7,750.0	7,486.8	9,521.6	7,530.0	16.4	46.0	-90.21	124.5	2,448.1	1,929.2	1,881.1	48.12	40.094	
7,800.0	7,495.3	9,570.8	7,530.0	16.4	46.6	-90.10	75.3	2,448.1	1,928.5	1,879.4	49.13	39.253	
7,850.0	7,499.5	9,620.6	7,530.0	16.5	47.2	-90.04	25.5	2,448.1	1,928.2	1,878.0	50.19	38.419	
7,872.3	7,500.0	9,643.0	7,530.0	16.5	47.5	-90.03	3.1	2,448.1	1,928.1	1,877.5	50.68	38.047	
7,873.6	7,500.0	9,644.2	7,530.0	16.5	47.5	-90.03	1.9	2,448.1	1,928.1	1,877.4	50.70	38.027	
7,900.0	7,500.0	9,670.6	7,530.0	16.5	47.8	-90.03	-24.5	2,448.1	1,928.1	1,876.9	51.20	37.657	
8,000.0	7,500.0	9,770.6	7,530.0	16.9	49.1	-90.03	-124.5	2,448.2	1,928.2	1,874.9	53.23	36.222	
8,100.0	7,500.0	9,870.6	7,530.0	17.4	50.4	-90.03	-224.5	2,448.2	1,928.2	1,872.7	55.47	34.762	
8,200.0	7,500.0	9,970.6	7,530.0	18.0	51.8	-90.03	-324.5	2,448.2	1,928.2	1,870.3	57.89	33.307	
8,300.0	7,500.0	10,070.6	7,530.0	18.8	53.1	-90.03	-424.5	2,448.2	1,928.2	1,867.7	60.47	31.885	
8,400.0	7,500.0	10,170.6	7,530.0	19.7	54.5	-90.03	-524.5	2,448.2	1,928.2	1,865.0	63.19	30.514	
8,500.0	7,500.0	10,270.6	7,530.0	20.7	55.9	-90.03	-624.5	2,448.2	1,928.2	1,862.2	66.02	29.206	
8,600.0	7,500.0	10,370.6	7,530.0	21.9	57.4	-90.03	-724.5	2,448.3	1,928.3	1,859.3	68.95	27.968	
8,700.0	7,500.0	10,470.6	7,530.0	23.1	58.8	-90.03	-824.5	2,448.3	1,928.3	1,856.3	71.95	26.801	
8,800.0	7,500.0	10,570.6	7,530.0	24.3	60.3	-90.03	-924.5	2,448.3	1,928.3	1,853.3	75.01	25.705	
8,900.0	7,500.0	10,670.6	7,530.0	25.6	61.7	-90.03	-1,024.5	2,448.3	1,928.3	1,850.2	78.13	24.679	
9,000.0	7,500.0	10,770.6	7,530.0	27.0	63.2	-90.03	-1,124.5	2,448.3	1,928.3	1,847.0	81.30	23.719	

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Morgan Hills 1A-7H-A168 - HZ - Plan #2													Offset Site Error:	0.0 ft
Survey Program: O-Geolink 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	
9,100.0	7,500.0	10,870.6	7,530.0	28.4	64.7	-90.03	-1,224.5	2,448.3	1,928.3	1,843.8	84.50	22.820		
9,200.0	7,500.0	10,970.6	7,530.0	29.9	66.3	-90.03	-1,324.5	2,448.4	1,928.4	1,840.6	87.74	21.978		
9,300.0	7,500.0	11,070.6	7,530.0	31.4	67.8	-90.03	-1,424.5	2,448.4	1,928.4	1,837.4	91.00	21.191		
9,400.0	7,500.0	11,170.6	7,530.0	32.9	69.3	-90.03	-1,524.5	2,448.4	1,928.4	1,834.1	94.29	20.452		
9,500.0	7,500.0	11,270.6	7,530.0	34.4	70.9	-90.03	-1,624.5	2,448.4	1,928.4	1,830.8	97.59	19.760		
9,600.0	7,500.0	11,370.6	7,530.0	36.0	72.5	-90.03	-1,724.5	2,448.4	1,928.4	1,827.5	100.92	19.109		
9,700.0	7,500.0	11,470.6	7,530.0	37.5	74.0	-90.03	-1,824.5	2,448.4	1,928.4	1,824.2	104.26	18.497		
9,800.0	7,500.0	11,570.6	7,530.0	39.1	75.6	-90.03	-1,924.5	2,448.4	1,928.5	1,820.8	107.61	17.921		
9,900.0	7,500.0	11,670.6	7,530.0	40.7	77.2	-90.03	-2,024.5	2,448.5	1,928.5	1,817.5	110.98	17.377		
10,000.0	7,500.0	11,770.6	7,530.0	42.3	78.8	-90.03	-2,124.5	2,448.5	1,928.5	1,814.1	114.35	16.864		
10,100.0	7,500.0	11,870.6	7,530.0	43.9	80.4	-90.03	-2,224.5	2,448.5	1,928.5	1,810.8	117.74	16.380		
10,200.0	7,500.0	11,970.6	7,530.0	45.6	82.0	-90.03	-2,324.5	2,448.5	1,928.5	1,807.4	121.13	15.921		
10,300.0	7,500.0	12,070.6	7,530.0	47.2	83.6	-90.03	-2,424.5	2,448.5	1,928.5	1,804.0	124.53	15.486		
10,400.0	7,500.0	12,170.6	7,530.0	48.9	85.2	-90.03	-2,524.5	2,448.5	1,928.5	1,800.6	127.94	15.074		
10,500.0	7,500.0	12,270.6	7,530.0	50.5	86.8	-90.03	-2,624.5	2,448.6	1,928.6	1,797.2	131.36	14.682		
10,600.0	7,500.0	12,370.6	7,530.0	52.2	88.5	-90.03	-2,724.5	2,448.6	1,928.6	1,793.8	134.78	14.310		
10,700.0	7,500.0	12,470.6	7,530.0	53.8	90.1	-90.03	-2,824.5	2,448.6	1,928.6	1,790.4	138.20	13.955		
10,800.0	7,500.0	12,570.6	7,530.0	55.5	91.7	-90.03	-2,924.5	2,448.6	1,928.6	1,787.0	141.63	13.617		
10,900.0	7,500.0	12,670.6	7,530.0	57.2	93.4	-90.03	-3,024.5	2,448.6	1,928.6	1,783.6	145.07	13.295		
11,000.0	7,500.0	12,770.6	7,530.0	58.9	95.0	-90.03	-3,124.5	2,448.6	1,928.6	1,780.1	148.50	12.987		
11,100.0	7,500.0	12,870.6	7,530.0	60.6	96.7	-90.03	-3,224.5	2,448.7	1,928.7	1,776.7	151.95	12.693		
11,200.0	7,500.0	12,970.6	7,530.0	62.3	98.3	-90.03	-3,324.5	2,448.7	1,928.7	1,773.3	155.39	12.412		
11,244.1	7,500.0	13,014.8	7,530.0	63.0	99.1	-90.03	-3,368.7	2,448.7	1,928.7	1,771.8	156.91	12.291		
11,300.0	7,500.0	13,070.6	7,530.0	64.0	100.0	-90.03	-3,424.5	2,448.7	1,928.2	1,769.7	158.42	12.171		
11,400.0	7,500.0	13,170.5	7,530.0	65.7	101.7	-90.03	-3,524.5	2,448.7	1,924.5	1,763.5	160.98	11.954		
11,444.1	7,500.0	13,214.6	7,530.0	66.4	102.4	-90.03	-3,568.5	2,448.7	1,921.7	1,759.7	162.06	11.859		
11,500.0	7,500.0	13,270.3	7,530.0	67.4	103.3	-90.03	-3,624.2	2,448.7	1,917.9	1,753.9	163.98	11.696		
11,600.0	7,500.0	13,370.1	7,530.0	69.1	105.0	-90.03	-3,724.0	2,448.7	1,910.9	1,743.5	167.43	11.413		
11,700.0	7,500.0	13,469.8	7,530.0	70.8	106.6	-90.03	-3,823.8	2,448.8	1,903.9	1,733.1	170.88	11.142		
11,800.0	7,500.0	13,569.6	7,530.0	72.5	108.3	-90.03	-3,923.5	2,448.8	1,897.0	1,722.7	174.33	10.882		
11,900.0	7,500.0	13,669.4	7,530.0	74.2	110.0	-90.03	-4,023.3	2,448.8	1,890.0	1,712.2	177.78	10.631		
12,000.0	7,500.0	13,769.1	7,530.0	76.0	111.7	-90.03	-4,123.0	2,448.8	1,883.1	1,701.8	181.24	10.390		
12,100.0	7,500.0	13,868.9	7,530.0	77.7	113.3	-90.03	-4,222.8	2,448.8	1,876.1	1,691.4	184.70	10.158		
12,194.1	7,500.0	13,962.8	7,530.0	79.3	114.9	-90.03	-4,316.7	2,448.8	1,869.6	1,681.6	187.96	9.947		
12,200.0	7,500.0	13,968.6	7,530.0	79.4	115.0	-90.03	-4,322.5	2,448.8	1,869.1	1,680.9	188.22	9.930		
12,300.0	7,500.0	14,068.5	7,530.0	81.1	116.7	-90.03	-4,422.4	2,448.9	1,864.1	1,671.5	192.66	9.676		
12,393.7	7,500.0	14,162.1	7,530.0	82.7	118.3	-90.03	-4,516.1	2,448.9	1,862.6	1,666.0	196.63	9.473 CC		
12,393.7	7,500.0	14,162.2	7,530.0	82.7	118.3	-90.03	-4,516.1	2,448.9	1,862.6	1,666.0	196.63	9.473		
12,400.0	7,500.0	14,168.5	7,530.0	82.9	118.4	-90.03	-4,522.4	2,448.9	1,862.6	1,665.8	196.85	9.462		
12,500.0	7,500.0	14,268.5	7,530.0	84.6	120.1	-90.03	-4,622.4	2,448.9	1,862.6	1,662.3	200.32	9.298		
12,600.0	7,500.0	14,368.5	7,530.0	86.3	121.8	-90.03	-4,722.4	2,448.9	1,862.6	1,658.8	203.80	9.139		
12,700.0	7,500.0	14,468.5	7,530.0	88.0	123.4	-90.03	-4,822.4	2,448.9	1,862.6	1,655.3	207.27	8.986		
12,800.0	7,500.0	14,568.5	7,530.0	89.7	125.1	-90.03	-4,922.4	2,448.9	1,862.6	1,651.9	210.75	8.838		
12,900.0	7,500.0	14,668.5	7,530.0	91.5	126.8	-90.03	-5,022.4	2,449.0	1,862.6	1,648.4	214.23	8.695		
13,000.0	7,500.0	14,768.5	7,530.0	93.2	128.5	-90.03	-5,122.4	2,449.0	1,862.6	1,644.9	217.71	8.556		
13,100.0	7,500.0	14,868.5	7,530.0	94.9	130.2	-90.03	-5,222.4	2,449.0	1,862.6	1,641.4	221.19	8.421		
13,200.0	7,500.0	14,968.5	7,530.0	96.6	131.9	-90.03	-5,322.4	2,449.0	1,862.6	1,637.9	224.67	8.291		
13,300.0	7,500.0	15,068.5	7,530.0	98.4	133.6	-90.03	-5,422.4	2,449.0	1,862.6	1,634.5	228.15	8.164		
13,400.0	7,500.0	15,168.5	7,530.0	100.1	135.3	-90.03	-5,522.4	2,449.0	1,862.6	1,631.0	231.63	8.041		
13,500.0	7,500.0	15,268.5	7,530.0	101.8	137.0	-90.03	-5,622.4	2,449.1	1,862.6	1,627.5	235.11	7.922		
13,600.0	7,500.0	15,368.5	7,530.0	103.5	138.7	-90.03	-5,722.4	2,449.1	1,862.6	1,624.0	238.60	7.807		
13,700.0	7,500.0	15,468.5	7,530.0	105.3	140.4	-90.03	-5,822.4	2,449.1	1,862.6	1,620.5	242.08	7.694		

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Morgan Hills 1A-7H-A168 - HZ - Plan #2													Offset Site Error:	0.0 ft
Survey Program: 0-Geolink MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total		Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Separation Factor		
13,800.0	7,500.0	15,568.5	7,530.0	107.0	142.2	-90.03	-5,922.4	2,449.1	1,862.6	1,617.1	245.57	7.585		
13,900.0	7,500.0	15,668.5	7,530.0	108.7	143.9	-90.03	-6,022.4	2,449.1	1,862.6	1,613.6	249.05	7.479		
14,000.0	7,500.0	15,768.5	7,530.0	110.5	145.6	-90.03	-6,122.4	2,449.1	1,862.6	1,610.1	252.54	7.376		
14,100.0	7,500.0	15,868.5	7,530.0	112.2	147.3	-90.03	-6,222.4	2,449.2	1,862.6	1,606.6	256.03	7.275		
14,200.0	7,500.0	15,968.5	7,530.0	113.9	149.0	-90.03	-6,322.4	2,449.2	1,862.6	1,603.1	259.51	7.177		
14,300.0	7,500.0	16,068.5	7,530.0	115.7	150.7	-90.03	-6,422.4	2,449.2	1,862.6	1,599.6	263.00	7.082		
14,400.0	7,500.0	16,168.5	7,530.0	117.4	152.4	-90.03	-6,522.4	2,449.2	1,862.6	1,596.1	266.49	6.989		
14,500.0	7,500.0	16,268.5	7,530.0	119.1	154.1	-90.03	-6,622.4	2,449.2	1,862.6	1,592.6	269.98	6.899		
14,600.0	7,500.0	16,368.5	7,530.0	120.9	155.8	-90.03	-6,722.4	2,449.2	1,862.6	1,589.2	273.47	6.811		
14,700.0	7,500.0	16,468.5	7,530.0	122.6	157.6	-90.03	-6,822.4	2,449.3	1,862.6	1,585.7	276.96	6.725		
14,800.0	7,500.0	16,568.5	7,530.0	124.3	159.3	-90.03	-6,922.4	2,449.3	1,862.6	1,582.2	280.45	6.642		
14,900.0	7,500.0	16,668.5	7,530.0	126.1	161.0	-90.03	-7,022.4	2,449.3	1,862.6	1,578.7	283.94	6.560		
15,000.0	7,500.0	16,768.5	7,530.0	127.8	162.7	-90.03	-7,122.4	2,449.3	1,862.6	1,575.2	287.43	6.480		
15,100.0	7,500.0	16,868.5	7,530.0	129.6	164.4	-90.03	-7,222.4	2,449.3	1,862.6	1,571.7	290.93	6.402		
15,200.0	7,500.0	16,968.5	7,530.0	131.3	166.2	-90.03	-7,322.4	2,449.3	1,862.6	1,568.2	294.42	6.326		
15,300.0	7,500.0	17,068.5	7,530.0	133.0	167.9	-90.03	-7,422.4	2,449.4	1,862.6	1,564.7	297.91	6.252		
15,400.0	7,500.0	17,168.5	7,530.0	134.8	169.6	-90.03	-7,522.4	2,449.4	1,862.6	1,561.2	301.41	6.180		
15,500.0	7,500.0	17,268.5	7,530.0	136.5	171.3	-90.03	-7,622.4	2,449.4	1,862.6	1,557.7	304.90	6.109		
15,600.0	7,500.0	17,368.5	7,530.0	138.3	173.0	-90.03	-7,722.4	2,449.4	1,862.6	1,554.2	308.39	6.040		
15,700.0	7,500.0	17,468.5	7,530.0	140.0	174.8	-90.03	-7,822.4	2,449.4	1,862.6	1,550.7	311.89	5.972		
15,805.8	7,500.0	17,574.2	7,530.0	141.8	176.6	-90.03	-7,928.2	2,449.4	1,862.6	1,547.0	315.58	5.902 ES, SF		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Sosa 11-18 - DD - DD													Offset Site Error: 0.0 ft			
Survey Program: 811-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)	Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning			
0.0	0.0	27.2	27.2	0.0	0.0	173.16	-4,267.5	512.3	4,298.1							
100.0	100.0	140.4	140.4	0.2	0.2	173.16	-4,267.3	512.2	4,297.9	4,297.5	0.39	N/A				
200.0	200.0	253.6	253.6	0.3	0.4	173.16	-4,266.7	512.0	4,297.4	4,296.6	0.76	5,631.850				
300.0	300.0	366.9	366.9	0.5	0.6	173.16	-4,265.8	511.6	4,296.5	4,295.4	1.13	3,793.836				
400.0	400.0	480.1	480.1	0.7	0.8	173.17	-4,264.5	511.1	4,295.4	4,293.9	1.50	2,859.880				
500.0	500.0	593.3	593.3	0.8	1.0	173.17	-4,262.9	510.5	4,293.9	4,292.1	1.87	2,294.536				
600.0	600.0	706.5	706.4	1.0	1.2	133.72	-4,261.0	509.8	4,292.8	4,290.5	2.24	1,919.249				
700.0	700.0	849.9	849.9	1.2	1.5	133.77	-4,258.0	508.6	4,292.5	4,289.8	2.66	1,613.565				
800.0	799.9	1,485.7	1,480.7	1.4	3.1	134.64	-4,202.7	460.3	4,284.0	4,279.9	4.10	1,044.785				
900.0	899.7	1,604.4	1,597.2	1.6	3.5	134.97	-4,185.6	445.4	4,272.5	4,267.9	4.57	935.767				
1,000.0	999.4	1,643.1	1,635.3	1.8	3.6	135.12	-4,180.3	440.4	4,262.9	4,258.1	4.85	879.490				
1,100.0	1,098.9	1,842.0	1,830.9	2.0	4.3	135.65	-4,153.2	416.7	4,255.6	4,250.1	5.52	771.043				
1,201.3	1,199.5	1,924.0	1,911.3	2.2	4.6	135.92	-4,140.8	406.7	4,247.2	4,241.3	5.93	715.979				
1,300.0	1,297.5	1,996.5	1,982.4	2.5	4.9	136.11	-4,130.2	397.7	4,240.2	4,233.9	6.32	670.650				
1,400.0	1,396.8	2,116.0	2,099.8	2.7	5.3	136.42	-4,112.7	383.3	4,233.2	4,226.4	6.83	619.451				
1,500.0	1,496.0	2,203.0	2,185.1	3.0	5.6	136.65	-4,099.7	372.7	4,226.1	4,218.8	7.28	580.772				
1,600.0	1,595.3	2,254.9	2,236.1	3.3	5.8	136.79	-4,092.3	366.2	4,219.7	4,212.1	7.63	553.084				
1,700.0	1,694.5	2,352.4	2,332.0	3.5	6.1	137.04	-4,079.3	354.6	4,214.2	4,206.1	8.10	520.593				
1,800.0	1,793.8	2,496.0	2,473.2	3.8	6.7	137.41	-4,058.3	338.5	4,207.6	4,198.9	8.68	484.921				
1,900.0	1,893.0	2,560.0	2,536.1	4.0	6.9	137.57	-4,048.9	331.4	4,201.2	4,192.2	9.06	463.854				
2,000.0	1,992.3	2,719.0	2,692.2	4.3	7.5	137.98	-4,025.8	312.7	4,195.0	4,185.3	9.70	432.504				
2,100.0	2,091.5	2,782.0	2,754.1	4.6	7.7	138.15	-4,016.5	305.2	4,188.5	4,178.4	10.08	415.374				
2,200.0	2,190.8	2,856.7	2,827.6	4.8	8.0	138.34	-4,006.0	296.6	4,182.8	4,172.3	10.50	398.347				
2,300.0	2,290.0	2,965.7	2,934.7	5.1	8.4	138.63	-3,990.3	283.9	4,176.9	4,165.9	11.01	379.353				
2,400.0	2,389.3	3,067.1	3,034.3	5.4	8.7	138.90	-3,975.7	272.0	4,171.0	4,159.5	11.50	362.572				
2,500.0	2,488.5	3,162.3	3,127.9	5.7	9.1	139.15	-3,962.2	260.9	4,165.5	4,153.5	11.98	347.692				
2,600.0	2,587.8	3,264.3	3,228.1	5.9	9.4	139.42	-3,947.5	249.0	4,159.8	4,147.4	12.48	333.395				
2,700.0	2,687.0	3,337.0	3,299.6	6.2	9.7	139.61	-3,937.1	240.5	4,154.5	4,141.6	12.89	322.224				
2,800.0	2,786.3	3,448.3	3,409.1	6.5	10.1	139.90	-3,922.0	227.8	4,149.9	4,136.5	13.42	309.285				
2,900.0	2,885.5	3,552.1	3,511.1	6.7	10.5	140.18	-3,907.0	215.5	4,144.5	4,130.6	13.92	297.673				
3,000.0	2,984.8	3,645.6	3,603.0	7.0	10.8	140.43	-3,893.8	204.7	4,139.5	4,125.1	14.40	287.489				
3,100.0	3,084.0	3,740.3	3,696.1	7.3	11.2	140.68	-3,880.4	194.0	4,134.5	4,119.7	14.88	277.946				
3,200.0	3,183.3	3,854.1	3,808.0	7.6	11.6	140.98	-3,864.3	180.9	4,129.6	4,114.2	15.42	267.895				
3,300.0	3,282.5	3,976.1	3,927.9	7.8	12.0	141.31	-3,846.2	166.8	4,124.2	4,108.2	15.97	258.277				
3,400.0	3,381.8	4,054.0	4,004.4	8.1	12.3	141.51	-3,834.6	158.4	4,118.9	4,102.5	16.40	251.205				
3,500.0	3,481.1	4,149.0	4,097.9	8.4	12.6	141.75	-3,820.9	148.3	4,113.9	4,097.1	16.87	243.858				
3,600.0	3,580.3	4,230.2	4,177.8	8.7	12.9	141.97	-3,809.3	139.2	4,109.3	4,092.0	17.32	237.207				
3,700.0	3,679.6	4,297.3	4,243.7	8.9	13.2	142.15	-3,800.1	131.1	4,105.3	4,087.6	17.73	231.519				
3,800.0	3,778.8	4,384.2	4,329.3	9.2	13.5	142.39	-3,788.8	121.2	4,102.1	4,083.9	18.19	225.487				
3,900.0	3,878.1	4,471.4	4,415.2	9.5	13.8	142.62	-3,777.3	111.6	4,098.9	4,080.3	18.65	219.794				
4,000.0	3,977.3	4,546.5	4,489.3	9.8	14.0	142.81	-3,768.1	103.6	4,096.5	4,077.5	19.07	214.787				
4,100.0	4,076.6	4,665.9	4,607.0	10.0	14.4	143.13	-3,752.7	90.4	4,093.6	4,074.0	19.63	208.582				
4,200.0	4,175.8	4,754.2	4,694.0	10.3	14.7	143.35	-3,741.7	80.9	4,091.3	4,071.2	20.08	203.747				
4,300.0	4,275.1	4,840.0	4,778.7	10.6	15.0	143.57	-3,731.0	72.3	4,089.1	4,068.5	20.52	199.245				
4,400.0	4,374.3	4,906.1	4,844.1	10.9	15.2	143.73	-3,723.3	66.2	4,087.6	4,066.7	20.91	195.515				
4,500.0	4,473.6	5,037.0	4,973.7	11.1	15.6	144.03	-3,708.2	55.0	4,086.5	4,065.0	21.44	190.556				
4,600.0	4,572.8	5,100.0	5,036.1	11.4	15.8	144.17	-3,701.1	49.9	4,085.3	4,063.5	21.81	187.298				
4,655.9	4,628.3	5,121.0	5,056.9	11.6	15.9	144.21	-3,698.9	48.2	4,085.2	4,063.2	21.99	185.813				
4,700.0	4,672.1	5,153.4	5,089.0	11.7	16.0	144.29	-3,695.6	45.4	4,085.2	4,063.1	22.16	184.328				
4,800.0	4,771.3	5,287.8	5,222.0	12.0	16.4	144.61	-3,681.2	33.2	4,084.9	4,062.2	22.72	179.782				
4,869.2	4,840.0	5,337.3	5,271.1	12.1	16.5	144.72	-3,675.8	28.8	4,084.8	4,061.8	23.00	177.631				
4,900.0	4,870.6	5,359.0	5,292.6	12.2	16.6	144.77	-3,673.5	26.9	4,084.8	4,061.7	23.12	176.704				

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Sosa 11-18 - DD - DD													Offset Site Error: 0.0 ft			
Survey Program: 811-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				
5,000.0	4,969.8	5,460.6	5,393.2	12.5	16.9	145.01	-3,663.1	18.1	4,085.2	4,061.6	23.58	173.219				
5,100.0	5,069.1	5,531.5	5,463.5	12.8	17.1	145.16	-3,655.9	12.2	4,085.7	4,061.7	23.97	170.447				
5,200.0	5,168.3	5,640.4	5,571.6	13.1	17.4	145.40	-3,645.2	3.5	4,086.5	4,062.1	24.45	167.167				
5,300.0	5,267.6	5,706.0	5,636.7	13.3	17.6	145.54	-3,638.8	-1.4	4,087.6	4,062.8	24.81	164.745				
5,400.0	5,366.8	5,801.0	5,731.0	13.6	17.8	145.74	-3,630.3	-8.0	4,089.3	4,064.0	25.24	162.023				
5,500.0	5,466.1	5,841.0	5,770.9	13.9	17.9	145.82	-3,627.1	-10.7	4,091.9	4,066.4	25.54	160.232				
5,600.0	5,565.3	5,897.0	5,826.6	14.2	18.0	145.93	-3,623.3	-14.2	4,095.8	4,069.9	25.87	158.321				
5,700.0	5,664.6	5,960.0	5,889.4	14.4	18.2	146.04	-3,619.5	-17.7	4,100.5	4,074.3	26.21	156.472				
5,800.0	5,763.8	6,024.0	5,953.2	14.7	18.3	146.14	-3,616.2	-20.4	4,106.0	4,079.5	26.53	154.744				
5,900.0	5,863.1	6,099.8	6,029.0	15.0	18.4	146.25	-3,613.1	-22.5	4,112.4	4,085.6	26.86	153.128				
6,000.0	5,962.3	6,159.5	6,088.6	15.3	18.5	146.31	-3,611.2	-23.1	4,119.6	4,092.5	27.15	151.722				
6,100.0	6,061.6	6,215.0	6,144.1	15.5	18.5	146.38	-3,610.1	-23.6	4,127.9	4,100.4	27.44	150.419				
6,200.0	6,160.9	6,326.4	6,255.5	15.8	18.7	146.50	-3,608.5	-24.7	4,136.8	4,108.9	27.81	148.733				
6,300.0	6,260.1	6,406.0	6,335.1	16.1	18.8	146.58	-3,607.2	-24.8	4,145.4	4,117.2	28.12	147.392				
6,400.0	6,359.4	6,470.0	6,399.1	16.4	18.8	146.63	-3,606.6	-24.1	4,154.6	4,126.2	28.41	146.260				
6,500.0	6,458.6	6,538.5	6,467.5	16.6	18.9	146.68	-3,606.4	-23.5	4,164.6	4,135.9	28.71	145.048				
6,600.0	6,557.9	6,640.8	6,569.8	16.9	19.0	146.79	-3,607.0	-24.2	4,175.4	4,146.4	29.06	143.681				
6,700.0	6,657.1	6,757.1	6,686.2	17.2	19.1	146.89	-3,606.9	-24.3	4,185.6	4,156.2	29.42	142.255				
6,800.0	6,756.4	6,887.5	6,816.5	17.5	19.3	147.01	-3,606.3	-24.2	4,195.4	4,165.6	29.80	140.767				
6,900.0	6,855.6	6,984.3	6,913.4	17.7	19.4	147.10	-3,605.5	-23.9	4,204.9	4,174.7	30.14	139.520				
6,919.5	6,875.0	7,003.2	6,932.3	17.8	19.4	147.11	-3,605.4	-23.8	4,206.7	4,176.5	30.20	139.281				
6,950.0	6,905.3	7,027.0	6,956.0	17.9	19.4	124.53	-3,605.2	-23.7	4,208.8	4,178.5	30.34	138.725				
7,000.0	6,955.1	7,074.3	7,003.3	17.9	19.5	66.31	-3,604.9	-23.5	4,208.8	4,178.4	30.44	138.279				
7,050.0	7,004.8	7,121.0	7,050.0	17.9	19.5	37.41	-3,604.7	-23.3	4,204.6	4,174.2	30.37	138.466				
7,100.0	7,053.8	7,180.7	7,109.7	17.9	19.6	26.80	-3,604.4	-23.0	4,196.1	4,165.9	30.15	139.192				
7,150.0	7,101.9	7,235.8	7,164.9	17.9	19.7	21.86	-3,604.0	-22.8	4,183.1	4,153.4	29.76	140.551				
7,200.0	7,148.7	7,278.1	7,207.1	17.8	19.7	19.18	-3,603.6	-22.6	4,166.1	4,136.9	29.21	142.602				
7,250.0	7,193.8	7,318.8	7,247.9	17.7	19.8	17.67	-3,603.3	-22.5	4,145.1	4,116.6	28.53	145.282				
7,300.0	7,236.9	7,342.0	7,271.0	17.5	19.8	16.82	-3,603.1	-22.4	4,120.4	4,092.7	27.71	148.698				
7,350.0	7,277.7	7,392.2	7,321.2	17.4	19.9	16.54	-3,602.9	-22.2	4,092.0	4,065.1	26.83	152.496				
7,400.0	7,315.7	7,425.1	7,354.1	17.2	19.9	16.62	-3,602.7	-22.2	4,060.2	4,034.4	25.88	156.917				
7,450.0	7,350.9	7,455.6	7,384.6	17.1	19.9	17.09	-3,602.7	-22.1	4,025.4	4,000.5	24.90	161.688				
7,500.0	7,382.8	7,483.3	7,412.3	16.9	20.0	17.98	-3,602.6	-22.0	3,987.6	3,963.7	23.95	166.501				
7,550.0	7,411.3	7,508.0	7,437.0	16.7	20.0	19.37	-3,602.6	-21.9	3,947.2	3,924.1	23.11	170.807				
7,600.0	7,436.1	7,529.6	7,458.7	16.6	20.0	21.45	-3,602.6	-21.9	3,904.6	3,882.1	22.48	173.700				
7,650.0	7,457.1	7,548.0	7,477.0	16.5	20.0	24.56	-3,602.6	-21.8	3,859.9	3,837.7	22.21	173.789				
7,700.0	7,474.0	7,562.8	7,491.8	16.4	20.0	29.32	-3,602.7	-21.8	3,813.6	3,791.0	22.54	169.161				
7,750.0	7,486.8	7,574.1	7,503.1	16.4	20.0	37.05	-3,602.7	-21.8	3,765.9	3,742.0	23.87	157.744				
7,800.0	7,495.3	7,581.7	7,510.7	16.4	20.1	50.47	-3,602.7	-21.7	3,717.3	3,690.6	26.72	139.104				
7,850.0	7,499.5	7,585.5	7,514.5	16.5	20.1	74.10	-3,602.7	-21.7	3,668.1	3,637.5	30.55	120.053				
7,873.6	7,500.0	7,586.0	7,515.0	16.5	20.1	89.05	-3,602.7	-21.7	3,644.8	3,613.4	31.41	116.042				
7,900.0	7,500.0	7,586.1	7,515.1	16.5	20.1	89.06	-3,602.7	-21.7	3,618.6	3,587.2	31.47	114.969				
8,000.0	7,500.0	7,586.3	7,515.3	16.9	20.1	89.08	-3,602.7	-21.7	3,519.8	3,487.9	31.86	110.480				
8,100.0	7,500.0	7,586.6	7,515.6	17.4	20.1	89.11	-3,602.7	-21.7	3,421.0	3,388.6	32.44	105.445				
8,200.0	7,500.0	7,586.8	7,515.9	18.0	20.1	89.14	-3,602.7	-21.7	3,322.3	3,289.1	33.21	100.053				
8,300.0	7,500.0	7,587.1	7,516.1	18.8	20.1	89.17	-3,602.7	-21.7	3,223.7	3,189.6	34.12	94.481				
8,400.0	7,500.0	7,587.4	7,516.4	19.7	20.1	89.19	-3,602.7	-21.7	3,125.2	3,090.0	35.16	88.875				
8,500.0	7,500.0	7,587.6	7,516.6	20.7	20.1	89.22	-3,602.7	-21.7	3,026.7	2,990.4	36.31	83.349				
8,600.0	7,500.0	7,587.9	7,516.9	21.9	20.1	89.25	-3,602.7	-21.7	2,928.4	2,890.9	37.55	77.980				
8,700.0	7,500.0	7,588.1	7,517.2	23.1	20.1	89.28	-3,602.7	-21.7	2,830.2	2,791.3	38.87	72.820				
8,800.0	7,500.0	7,588.4	7,517.4	24.3	20.1	89.30	-3,602.7	-21.7	2,732.1	2,691.9	40.24	67.899				
8,900.0	7,500.0	7,588.7	7,517.7	25.6	20.1	89.33	-3,602.7	-21.7	2,634.2	2,592.5	41.66	63.230				

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Sosa 11-18 - DD - DD													Offset Site Error: 0.0 ft			
Survey Program: 811-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			
9,000.0	7,500.0	7,589.0	7,518.0	27.0	20.1	89.36	-3,602.7	-21.7	2,536.4	2,493.3	43.12	58.817				
9,100.0	7,500.0	7,589.2	7,518.2	28.4	20.1	89.39	-3,602.7	-21.7	2,438.8	2,394.2	44.62	54.654				
9,200.0	7,500.0	7,589.5	7,518.5	29.9	20.1	89.42	-3,602.7	-21.7	2,341.4	2,295.3	46.15	50.734				
9,300.0	7,500.0	7,589.8	7,518.8	31.4	20.1	89.45	-3,602.7	-21.7	2,244.2	2,196.5	47.70	47.046				
9,400.0	7,500.0	7,590.1	7,519.1	32.9	20.1	89.48	-3,602.7	-21.7	2,147.3	2,098.1	49.28	43.577				
9,500.0	7,500.0	7,590.3	7,519.4	34.4	20.1	89.51	-3,602.7	-21.7	2,050.7	1,999.9	50.87	40.314				
9,600.0	7,500.0	7,590.6	7,519.6	36.0	20.1	89.54	-3,602.7	-21.7	1,954.5	1,902.0	52.48	37.245				
9,700.0	7,500.0	7,590.9	7,519.9	37.5	20.1	89.57	-3,602.7	-21.7	1,858.6	1,804.5	54.10	34.356				
9,800.0	7,500.0	7,591.2	7,520.2	39.1	20.1	89.60	-3,602.7	-21.7	1,763.2	1,707.4	55.73	31.638				
9,900.0	7,500.0	7,591.5	7,520.5	40.7	20.1	89.63	-3,602.7	-21.7	1,668.3	1,610.9	57.37	29.078				
10,000.0	7,500.0	7,591.8	7,520.8	42.3	20.1	89.66	-3,602.7	-21.7	1,574.0	1,515.0	59.03	26.667				
10,100.0	7,500.0	7,592.1	7,521.1	43.9	20.1	89.69	-3,602.7	-21.7	1,480.5	1,419.9	60.69	24.397				
10,200.0	7,500.0	7,592.4	7,521.4	45.6	20.1	89.72	-3,602.7	-21.7	1,388.0	1,325.6	62.35	22.260				
10,300.0	7,500.0	7,592.7	7,521.7	47.2	20.1	89.75	-3,602.7	-21.7	1,296.5	1,232.5	64.03	20.249				
10,400.0	7,500.0	7,593.0	7,522.0	48.9	20.1	89.79	-3,602.7	-21.7	1,206.3	1,140.6	65.71	18.359				
10,500.0	7,500.0	7,593.3	7,522.3	50.5	20.1	89.82	-3,602.7	-21.7	1,117.9	1,050.5	67.39	16.588				
10,600.0	7,500.0	7,593.6	7,522.6	52.2	20.1	89.85	-3,602.7	-21.7	1,031.6	962.5	69.08	14.933				
10,700.0	7,500.0	7,593.9	7,522.9	53.8	20.1	89.88	-3,602.7	-21.7	947.9	877.1	70.78	13.393				
10,800.0	7,500.0	7,594.2	7,523.2	55.5	20.1	89.91	-3,602.7	-21.7	867.7	795.3	72.47	11.973				
10,900.0	7,500.0	7,594.5	7,523.5	57.2	20.1	89.95	-3,602.7	-21.7	792.1	717.9	74.17	10.679				
11,000.0	7,500.0	7,594.8	7,523.8	58.9	20.1	89.98	-3,602.7	-21.7	722.4	646.5	75.88	9.520				
11,100.0	7,500.0	7,595.1	7,524.1	60.6	20.1	90.01	-3,602.7	-21.7	660.5	582.9	77.58	8.513				
11,200.0	7,500.0	7,595.4	7,524.5	62.3	20.1	90.05	-3,602.7	-21.7	608.8	529.5	79.29	7.678				
11,244.1	7,500.0	7,595.6	7,524.6	63.0	20.1	90.06	-3,602.7	-21.7	590.0	509.9	80.05	7.370				
11,300.0	7,500.0	7,595.8	7,524.8	64.0	20.1	90.08	-3,602.7	-21.7	570.7	489.4	81.29	7.021				
11,400.0	7,500.0	7,596.1	7,525.1	65.7	20.1	90.11	-3,602.8	-21.7	551.5	468.0	83.45	6.609				
11,440.4	7,500.0	7,596.2	7,525.2	66.4	20.1	90.13	-3,602.8	-21.7	549.7	465.4	84.30	6.521 CC				
11,444.1	7,500.0	7,596.2	7,525.3	66.4	20.1	90.13	-3,602.8	-21.7	549.7	465.4	84.37	6.515 ES				
11,500.0	7,500.0	7,596.4	7,525.5	67.4	20.1	90.15	-3,602.8	-21.7	553.0	467.7	85.33	6.481 SF				
11,600.0	7,500.0	7,596.8	7,525.8	69.1	20.1	90.19	-3,602.8	-21.7	572.6	485.6	87.05	6.578				
11,700.0	7,500.0	7,597.1	7,526.1	70.8	20.1	90.22	-3,602.8	-21.7	608.2	519.5	88.77	6.852				
11,800.0	7,500.0	7,597.5	7,526.5	72.5	20.1	90.26	-3,602.8	-21.7	657.3	566.8	90.49	7.263				
11,900.0	7,500.0	7,597.8	7,526.8	74.2	20.1	90.30	-3,602.8	-21.7	717.0	624.8	92.22	7.775				
12,000.0	7,500.0	7,598.2	7,527.2	76.0	20.1	90.33	-3,602.8	-21.7	784.9	691.0	93.94	8.355				
12,100.0	7,500.0	7,598.5	7,527.6	77.7	20.1	90.37	-3,602.8	-21.7	859.2	763.5	95.67	8.980				
12,194.1	7,500.0	7,598.9	7,527.9	79.3	20.1	90.40	-3,602.8	-21.7	933.5	836.2	97.30	9.594				
12,200.0	7,500.0	7,598.9	7,527.9	79.4	20.1	90.41	-3,602.8	-21.7	938.2	840.8	97.38	9.635				
12,300.0	7,500.0	7,599.3	7,528.3	81.1	20.1	90.42	-3,602.8	-21.7	1,019.9	921.2	98.68	10.335				
12,393.7	7,500.0	7,599.6	7,528.6	82.7	20.1	90.43	-3,602.8	-21.7	1,097.4	997.6	99.81	10.995				
12,400.0	7,500.0	7,599.6	7,528.6	82.9	20.1	90.43	-3,602.8	-21.7	1,102.7	1,002.8	99.92	11.036				
12,500.0	7,500.0	7,600.0	7,529.0	84.6	20.1	90.47	-3,602.8	-21.7	1,187.4	1,085.8	101.65	11.681				
12,600.0	7,500.0	7,600.3	7,529.3	86.3	20.1	90.50	-3,602.8	-21.7	1,274.4	1,171.0	103.38	12.326				
12,700.0	7,500.0	7,600.7	7,529.7	88.0	20.1	90.54	-3,602.8	-21.7	1,363.1	1,258.0	105.12	12.967				
12,800.0	7,500.0	7,601.0	7,530.0	89.7	20.1	90.57	-3,602.8	-21.7	1,453.3	1,346.4	106.85	13.601				
12,900.0	7,500.0	7,601.4	7,530.4	91.5	20.1	90.60	-3,602.8	-21.7	1,544.7	1,436.1	108.58	14.226				
13,000.0	7,500.0	7,601.8	7,530.8	93.2	20.1	90.64	-3,602.8	-21.7	1,637.1	1,526.8	110.32	14.840				
13,100.0	7,500.0	7,602.1	7,531.1	94.9	20.1	90.67	-3,602.8	-21.7	1,730.3	1,618.3	112.05	15.442				
13,200.0	7,500.0	7,602.5	7,531.5	96.6	20.1	90.71	-3,602.8	-21.7	1,824.3	1,710.5	113.79	16.033				
13,300.0	7,500.0	7,602.9	7,531.9	98.4	20.1	90.74	-3,602.8	-21.7	1,918.9	1,803.3	115.52	16.610				
13,400.0	7,500.0	7,603.2	7,532.3	100.1	20.1	90.78	-3,602.8	-21.7	2,014.0	1,896.7	117.26	17.175				
13,500.0	7,500.0	7,603.6	7,532.6	101.8	20.1	90.81	-3,602.8	-21.7	2,109.5	1,990.5	118.99	17.728				
13,600.0	7,500.0	7,604.0	7,533.0	103.5	20.1	90.85	-3,602.8	-21.7	2,205.5	2,084.7	120.73	18.267				

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Sosa 11-18 - DD - DD													Offset Site Error:	0.0 ft
Survey Program: 811-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		
13,700.0	7,500.0	7,604.4	7,533.4	105.3	20.1	90.89	-3,602.8	-21.7	2,301.8	2,179.3	122.47	18.794		
13,800.0	7,500.0	7,604.8	7,533.8	107.0	20.1	90.92	-3,602.8	-21.7	2,398.3	2,274.1	124.21	19.309		
13,900.0	7,500.0	7,605.2	7,534.2	108.7	20.1	90.96	-3,602.8	-21.7	2,495.2	2,369.3	125.95	19.812		
14,000.0	7,500.0	7,605.6	7,534.6	110.5	20.1	91.00	-3,602.8	-21.7	2,592.3	2,464.6	127.69	20.302		
14,100.0	7,500.0	7,606.0	7,535.0	112.2	20.1	91.04	-3,602.8	-21.7	2,689.6	2,560.2	129.43	20.781		
14,200.0	7,500.0	7,606.4	7,535.4	113.9	20.1	91.07	-3,602.8	-21.7	2,787.1	2,656.0	131.16	21.249		
14,300.0	7,500.0	7,606.8	7,535.8	115.7	20.1	91.11	-3,602.8	-21.7	2,884.8	2,751.9	132.90	21.706		
14,400.0	7,500.0	7,607.2	7,536.2	117.4	20.1	91.15	-3,602.8	-21.7	2,982.6	2,848.0	134.64	22.152		
14,500.0	7,500.0	7,607.6	7,536.6	119.1	20.1	91.19	-3,602.8	-21.7	3,080.6	2,944.2	136.39	22.588		
14,600.0	7,500.0	7,608.0	7,537.0	120.9	20.1	91.23	-3,602.8	-21.7	3,178.7	3,040.6	138.13	23.013		
14,700.0	7,500.0	7,608.4	7,537.5	122.6	20.1	91.27	-3,602.8	-21.7	3,276.9	3,137.0	139.87	23.429		
14,800.0	7,500.0	7,608.9	7,537.9	124.3	20.1	91.31	-3,602.8	-21.7	3,375.2	3,233.6	141.61	23.835		
14,900.0	7,500.0	7,609.3	7,538.3	126.1	20.1	91.35	-3,602.8	-21.7	3,473.6	3,330.3	143.35	24.232		
15,000.0	7,500.0	7,609.7	7,538.8	127.8	20.1	91.39	-3,602.8	-21.7	3,572.1	3,427.0	145.09	24.620		
15,100.0	7,500.0	7,610.2	7,539.2	129.6	20.1	91.43	-3,602.8	-21.7	3,670.7	3,523.9	146.83	24.999		
15,200.0	7,500.0	7,610.6	7,539.6	131.3	20.1	91.47	-3,602.8	-21.7	3,769.4	3,620.8	148.57	25.370		
15,300.0	7,500.0	7,611.1	7,540.1	133.0	20.1	91.51	-3,602.8	-21.7	3,868.1	3,717.8	150.31	25.733		
15,400.0	7,500.0	7,611.5	7,540.5	134.8	20.1	91.56	-3,602.8	-21.7	3,966.9	3,814.8	152.06	26.088		
15,500.0	7,500.0	7,612.0	7,541.0	136.5	20.1	91.60	-3,602.8	-21.7	4,065.7	3,911.9	153.80	26.435		
15,600.0	7,500.0	7,612.4	7,541.4	138.3	20.1	91.64	-3,602.8	-21.7	4,164.6	4,009.1	155.54	26.775		
15,700.0	7,500.0	7,612.9	7,541.9	140.0	20.1	91.68	-3,602.8	-21.7	4,263.6	4,106.3	157.28	27.108		
15,805.8	7,500.0	7,613.4	7,542.4	141.8	20.1	91.73	-3,602.8	-21.7	4,368.3	4,209.2	159.12	27.452		



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Sosa 11-18 - DD - 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	24.0	24.0	0.0	0.0	173.16	-4,267.5	512.3	4,298.2					
100.0	100.0	124.0	124.0	0.2	0.2	173.16	-4,267.5	512.3	4,298.2	4,297.8	0.34	N/A		
200.0	200.0	224.0	224.0	0.3	0.4	173.16	-4,267.5	512.3	4,298.2	4,297.5	0.69	6,218.684		
300.0	300.0	324.0	324.0	0.5	0.5	173.16	-4,267.5	512.3	4,298.2	4,297.1	1.04	4,131.913		
400.0	400.0	424.0	424.0	0.7	0.7	173.16	-4,267.5	512.3	4,298.2	4,296.8	1.39	3,093.757		
500.0	500.0	524.0	524.0	0.8	0.9	173.16	-4,267.5	512.3	4,298.2	4,296.4	1.74	2,472.527		
600.0	600.0	624.0	624.0	1.0	1.1	133.68	-4,267.5	512.3	4,298.8	4,296.7	2.09	2,059.224		
700.0	700.0	724.0	724.0	1.2	1.2	133.69	-4,267.5	512.3	4,300.6	4,298.1	2.44	1,764.101		
800.0	799.9	823.9	823.9	1.4	1.4	133.71	-4,267.5	512.3	4,303.6	4,300.8	2.79	1,542.153		
900.0	899.7	923.7	923.7	1.6	1.6	133.74	-4,267.5	512.3	4,307.8	4,304.7	3.15	1,368.577		
1,000.0	999.4	1,023.4	1,023.4	1.8	1.8	133.78	-4,267.5	512.3	4,313.2	4,309.7	3.51	1,228.637		
1,100.0	1,098.9	1,122.9	1,122.9	2.0	1.9	133.82	-4,267.5	512.3	4,319.9	4,316.0	3.88	1,113.057		
1,201.3	1,199.5	1,790.5	1,787.0	2.2	3.3	134.93	-4,222.9	476.9	4,316.6	4,311.3	5.31	812.593		
1,300.0	1,297.5	1,887.7	1,883.0	2.5	3.6	135.15	-4,211.2	467.6	4,312.3	4,306.5	5.72	754.234		
1,400.0	1,396.8	1,986.2	1,980.3	2.7	3.8	135.37	-4,199.3	458.2	4,307.9	4,301.8	6.13	702.271		
1,500.0	1,496.0	2,084.6	2,077.6	3.0	4.1	135.59	-4,187.4	448.7	4,303.6	4,297.0	6.56	656.414		
1,600.0	1,595.3	2,183.1	2,174.9	3.3	4.4	135.82	-4,175.6	439.3	4,299.3	4,292.4	6.98	615.736		
1,700.0	1,694.5	2,281.5	2,272.2	3.5	4.7	136.04	-4,163.7	429.9	4,295.2	4,287.8	7.41	579.469		
1,800.0	1,793.8	2,380.0	2,369.4	3.8	4.9	136.26	-4,151.8	420.5	4,291.1	4,283.2	7.85	546.973		
1,900.0	1,893.0	2,478.5	2,466.7	4.0	5.2	136.49	-4,139.9	411.0	4,287.0	4,278.7	8.28	517.720		
2,000.0	1,992.3	2,576.9	2,564.0	4.3	5.5	136.71	-4,128.0	401.6	4,283.1	4,274.3	8.72	491.269		
2,100.0	2,091.5	2,675.4	2,661.3	4.6	5.8	136.94	-4,116.1	392.2	4,279.1	4,270.0	9.16	467.252		
2,200.0	2,190.8	2,773.8	2,758.6	4.8	6.1	137.16	-4,104.3	382.8	4,275.3	4,265.7	9.60	445.360		
2,300.0	2,290.0	2,872.3	2,855.9	5.1	6.4	137.39	-4,092.4	373.3	4,271.5	4,261.5	10.04	425.333		
2,400.0	2,389.3	2,970.8	2,953.2	5.4	6.7	137.61	-4,080.5	363.9	4,267.8	4,257.4	10.49	406.948		
2,500.0	2,488.5	3,069.2	3,050.4	5.7	7.0	137.84	-4,068.6	354.5	4,264.2	4,253.3	10.93	390.018		
2,600.0	2,587.8	3,167.7	3,147.7	5.9	7.3	138.07	-4,056.7	345.1	4,260.7	4,249.3	11.38	374.381		
2,700.0	2,687.0	3,266.2	3,245.0	6.2	7.6	138.29	-4,044.8	335.6	4,257.2	4,245.3	11.83	359.898		
2,800.0	2,786.3	3,364.6	3,342.3	6.5	7.9	138.52	-4,033.0	326.2	4,253.7	4,241.5	12.28	346.449		
2,900.0	2,885.5	3,463.1	3,439.6	6.7	8.2	138.75	-4,021.1	316.8	4,250.4	4,237.7	12.73	333.930		
3,000.0	2,984.8	3,561.5	3,536.9	7.0	8.6	138.98	-4,009.2	307.4	4,247.1	4,233.9	13.18	322.249		
3,100.0	3,084.0	3,660.0	3,634.2	7.3	8.9	139.21	-3,997.3	297.9	4,243.9	4,230.2	13.63	311.327		
3,200.0	3,183.3	3,758.5	3,731.4	7.6	9.2	139.43	-3,985.4	288.5	4,240.7	4,226.6	14.08	301.094		
3,300.0	3,282.5	3,856.9	3,828.7	7.8	9.5	139.66	-3,973.5	279.1	4,237.7	4,223.1	14.54	291.488		
3,400.0	3,381.8	3,955.4	3,926.0	8.1	9.8	139.89	-3,961.7	269.6	4,234.6	4,219.7	14.99	282.454		
3,500.0	3,481.1	4,053.8	4,023.3	8.4	10.1	140.12	-3,949.8	260.2	4,231.7	4,216.3	15.45	273.943		
3,600.0	3,580.3	4,152.3	4,120.6	8.7	10.4	140.35	-3,937.9	250.8	4,228.8	4,212.9	15.90	265.913		
3,700.0	3,679.6	4,250.8	4,217.9	8.9	10.7	140.58	-3,926.0	241.4	4,226.0	4,209.7	16.36	258.325		
3,800.0	3,778.8	4,349.2	4,315.2	9.2	11.0	140.81	-3,914.1	231.9	4,223.3	4,206.5	16.82	251.143		
3,900.0	3,878.1	4,447.7	4,412.4	9.5	11.3	141.04	-3,902.2	222.5	4,220.7	4,203.4	17.27	244.337		
4,000.0	3,977.3	4,546.2	4,509.7	9.8	11.7	141.28	-3,890.4	213.1	4,218.1	4,200.3	17.73	237.878		
4,100.0	4,076.6	4,644.6	4,607.0	10.0	12.0	141.51	-3,878.5	203.7	4,215.6	4,197.4	18.19	231.741		
4,200.0	4,175.8	4,743.1	4,704.3	10.3	12.3	141.74	-3,866.6	194.2	4,213.1	4,194.5	18.65	225.904		
4,300.0	4,275.1	4,841.5	4,801.6	10.6	12.6	141.97	-3,854.7	184.8	4,210.7	4,191.6	19.11	220.344		
4,400.0	4,374.3	4,940.0	4,898.9	10.9	12.9	142.20	-3,842.8	175.4	4,208.4	4,188.9	19.57	215.044		
4,500.0	4,473.6	5,038.5	4,996.2	11.1	13.2	142.44	-3,830.9	166.0	4,206.2	4,186.2	20.03	209.986		
4,600.0	4,572.8	5,136.9	5,093.5	11.4	13.5	142.67	-3,819.1	156.5	4,204.1	4,183.6	20.49	205.154		
4,700.0	4,672.1	5,235.4	5,190.7	11.7	13.8	142.90	-3,807.2	147.1	4,202.0	4,181.0	20.95	200.533		
4,800.0	4,771.3	5,333.8	5,288.0	12.0	14.2	143.14	-3,795.3	137.7	4,200.0	4,178.5	21.42	196.110		
4,900.0	4,870.6	5,432.3	5,385.3	12.2	14.5	143.37	-3,783.4	128.3	4,198.0	4,176.1	21.88	191.874		
5,000.0	4,969.8	5,530.8	5,482.6	12.5	14.8	143.60	-3,771.5	118.8	4,196.1	4,173.8	22.34	187.813		
5,100.0	5,069.1	5,629.2	5,579.9	12.8	15.1	143.84	-3,759.6	109.4	4,194.3	4,171.5	22.81	183.916		

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



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Sosa 11-18 - DD - Plan #1												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
5,200.0	5,168.3	5,727.7	5,677.2	13.1	15.4	144.07	-3,747.8	100.0	4,192.6	4,169.3	23.27	180.174	
5,300.0	5,267.6	5,826.2	5,774.5	13.3	15.7	144.30	-3,735.9	90.6	4,191.0	4,167.2	23.73	176.578	
5,400.0	5,366.8	5,924.6	5,871.7	13.6	16.0	144.54	-3,724.0	81.1	4,189.4	4,165.2	24.20	173.120	
5,500.0	5,466.1	6,023.1	5,969.0	13.9	16.4	144.77	-3,712.1	71.7	4,187.9	4,163.2	24.66	169.793	
5,600.0	5,565.3	6,121.5	6,066.3	14.2	16.7	145.01	-3,700.2	62.3	4,186.4	4,161.3	25.13	166.589	
5,700.0	5,664.6	6,220.0	6,163.6	14.4	17.0	145.24	-3,688.3	52.8	4,185.1	4,159.5	25.60	163.501	
5,800.0	5,763.8	6,318.5	6,260.9	14.7	17.3	145.48	-3,676.5	43.4	4,183.8	4,157.7	26.06	160.525	
5,900.0	5,863.1	6,416.9	6,358.2	15.0	17.6	145.71	-3,664.6	34.0	4,182.5	4,156.0	26.53	157.654	
6,000.0	5,962.3	6,515.4	6,455.5	15.3	17.9	145.95	-3,652.7	24.6	4,181.4	4,154.4	27.00	154.882	
6,100.0	6,061.6	6,613.8	6,552.7	15.5	18.2	146.18	-3,640.8	15.1	4,180.3	4,152.9	27.47	152.205	
6,200.0	6,160.9	6,712.3	6,650.0	15.8	18.6	146.42	-3,628.9	5.7	4,179.3	4,151.4	27.93	149.619	
6,300.0	6,260.1	6,810.8	6,747.3	16.1	18.9	146.65	-3,617.0	-3.7	4,178.4	4,150.0	28.40	147.118	
6,373.3	6,332.8	6,847.3	6,783.4	16.3	19.0	146.74	-3,612.8	-7.1	4,178.0	4,149.4	28.64	145.866	
6,400.0	6,359.4	6,860.1	6,796.2	16.4	19.0	146.77	-3,611.4	-8.2	4,178.1	4,149.4	28.73	145.427	
6,500.0	6,458.6	6,900.0	6,835.7	16.6	19.1	146.86	-3,607.3	-11.4	4,179.1	4,150.0	29.03	143.934	
6,600.0	6,557.9	6,956.9	6,892.2	16.9	19.3	146.97	-3,602.2	-15.5	4,181.3	4,151.9	29.36	142.397	
6,700.0	6,657.1	7,000.0	6,935.1	17.2	19.4	147.05	-3,598.9	-18.1	4,184.7	4,155.1	29.66	141.076	
6,800.0	6,756.4	7,054.3	6,989.2	17.5	19.5	147.14	-3,595.5	-20.8	4,189.4	4,159.4	29.97	139.786	
6,900.0	6,855.6	7,100.0	7,034.8	17.7	19.5	147.21	-3,593.3	-22.5	4,195.3	4,165.0	30.26	138.635	
6,919.5	6,875.0	7,100.0	7,034.8	17.8	19.5	147.21	-3,593.3	-22.5	4,196.6	4,166.3	30.30	138.492	
6,950.0	6,905.3	7,127.5	7,062.3	17.9	19.6	124.65	-3,592.2	-23.4	4,197.9	4,167.5	30.45	137.869	
7,000.0	6,955.1	7,151.9	7,086.7	17.9	19.6	66.44	-3,591.5	-24.0	4,196.8	4,166.3	30.52	137.508	
7,050.0	7,004.8	7,200.0	7,134.8	17.9	19.7	37.56	-3,590.4	-24.8	4,191.9	4,161.4	30.46	137.621	
7,100.0	7,053.8	7,200.0	7,134.8	17.9	19.7	26.88	-3,590.4	-24.8	4,182.6	4,152.5	30.16	138.678	
7,150.0	7,101.9	7,224.0	7,158.8	17.9	19.7	21.90	-3,590.1	-25.1	4,169.6	4,139.9	29.74	140.217	
7,200.0	7,148.7	7,256.3	7,191.0	17.8	19.7	19.22	-3,590.0	-25.2	4,152.8	4,123.6	29.18	142.334	
7,250.0	7,193.8	7,283.1	7,217.8	17.7	19.8	17.67	-3,590.0	-25.2	4,132.1	4,103.6	28.48	145.113	
7,300.0	7,236.9	7,326.2	7,260.9	17.5	19.8	16.86	-3,590.0	-25.2	4,107.6	4,080.0	27.68	148.389	
7,350.0	7,277.7	7,366.9	7,301.7	17.4	19.9	16.55	-3,590.0	-25.2	4,079.5	4,052.7	26.79	152.250	
7,400.0	7,315.7	7,405.0	7,339.8	17.2	19.9	16.65	-3,590.0	-25.2	4,047.9	4,022.1	25.85	156.615	
7,450.0	7,350.9	7,440.2	7,374.9	17.1	19.9	17.14	-3,590.0	-25.2	4,013.2	3,988.3	24.88	161.315	
7,500.0	7,382.8	7,472.1	7,406.8	16.9	20.0	18.05	-3,590.0	-25.2	3,975.5	3,951.6	23.94	166.034	
7,550.0	7,411.3	7,500.6	7,435.3	16.7	20.0	19.48	-3,590.0	-25.2	3,935.2	3,912.0	23.12	170.214	
7,600.0	7,436.1	7,525.4	7,460.1	16.6	20.0	21.61	-3,590.0	-25.2	3,892.5	3,870.0	22.51	172.936	
7,650.0	7,457.1	7,546.3	7,481.1	16.5	20.1	24.79	-3,590.0	-25.2	3,847.8	3,825.5	22.27	172.796	
7,700.0	7,474.0	7,563.2	7,498.0	16.4	20.1	29.66	-3,590.0	-25.2	3,801.5	3,778.8	22.64	167.886	
7,750.0	7,486.8	7,576.0	7,510.8	16.4	20.1	37.55	-3,590.0	-25.2	3,753.8	3,729.8	24.03	156.199	
7,800.0	7,495.3	7,584.6	7,519.3	16.4	20.1	51.24	-3,590.0	-25.2	3,705.2	3,678.2	26.94	137.516	
7,850.0	7,499.5	7,588.8	7,523.5	16.5	20.1	75.10	-3,590.0	-25.2	3,656.0	3,625.2	30.72	119.010	
7,873.6	7,500.0	7,589.3	7,524.0	16.5	20.1	90.00	-3,590.0	-25.2	3,632.7	3,601.2	31.48	115.401	
7,900.0	7,500.0	7,589.3	7,524.0	16.5	20.1	90.00	-3,590.0	-25.2	3,606.5	3,575.0	31.54	114.332	
8,000.0	7,500.0	7,589.3	7,524.0	16.9	20.1	90.00	-3,590.0	-25.2	3,507.7	3,475.8	31.93	109.863	
8,100.0	7,500.0	7,589.3	7,524.0	17.4	20.1	90.00	-3,590.0	-25.2	3,409.0	3,376.5	32.51	104.854	
8,200.0	7,500.0	7,589.3	7,524.0	18.0	20.1	90.00	-3,590.0	-25.2	3,310.3	3,277.0	33.27	99.490	
8,300.0	7,500.0	7,589.3	7,524.0	18.8	20.1	90.00	-3,590.0	-25.2	3,211.7	3,177.5	34.19	93.947	
8,400.0	7,500.0	7,589.3	7,524.0	19.7	20.1	90.00	-3,590.0	-25.2	3,113.2	3,078.0	35.23	88.370	
8,500.0	7,500.0	7,589.3	7,524.0	20.7	20.1	90.00	-3,590.0	-25.2	3,014.8	2,978.4	36.38	82.872	
8,600.0	7,500.0	7,589.3	7,524.0	21.9	20.1	90.00	-3,590.0	-25.2	2,916.5	2,878.9	37.62	77.531	
8,700.0	7,500.0	7,589.3	7,524.0	23.1	20.1	90.00	-3,590.0	-25.2	2,818.3	2,779.4	38.93	72.397	
8,800.0	7,500.0	7,589.3	7,524.0	24.3	20.1	90.00	-3,590.0	-25.2	2,720.3	2,680.0	40.30	67.500	
8,900.0	7,500.0	7,589.3	7,524.0	25.6	20.1	90.00	-3,590.0	-25.2	2,622.4	2,580.7	41.72	62.854	
9,000.0	7,500.0	7,589.3	7,524.0	27.0	20.1	90.00	-3,590.0	-25.2	2,524.7	2,481.5	43.19	58.461	

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Sosa 11-18 - DD - 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	Factor	
9,100.0	7,500.0	7,589.3	7,524.0	28.4	20.1	90.00	-3,590.0	-25.2	2,427.1	2,382.4	44.68	54.318	
9,200.0	7,500.0	7,589.3	7,524.0	29.9	20.1	90.00	-3,590.0	-25.2	2,329.8	2,283.6	46.21	50.417	
9,300.0	7,500.0	7,589.3	7,524.0	31.4	20.1	90.00	-3,590.0	-25.2	2,232.7	2,184.9	47.76	46.746	
9,400.0	7,500.0	7,589.3	7,524.0	32.9	20.1	90.00	-3,590.0	-25.2	2,135.9	2,086.5	49.34	43.292	
9,500.0	7,500.0	7,589.3	7,524.0	34.4	20.1	90.00	-3,590.0	-25.2	2,039.3	1,988.4	50.93	40.044	
9,600.0	7,500.0	7,589.3	7,524.0	36.0	20.1	90.00	-3,590.0	-25.2	1,943.2	1,890.6	52.53	36.988	
9,700.0	7,500.0	7,589.3	7,524.0	37.5	20.1	90.00	-3,590.0	-25.2	1,847.4	1,793.2	54.15	34.113	
9,800.0	7,500.0	7,589.3	7,524.0	39.1	20.1	90.00	-3,590.0	-25.2	1,752.1	1,696.3	55.79	31.407	
9,900.0	7,500.0	7,589.3	7,524.0	40.7	20.1	90.00	-3,590.0	-25.2	1,657.3	1,599.9	57.43	28.858	
10,000.0	7,500.0	7,589.3	7,524.0	42.3	20.1	90.00	-3,590.0	-25.2	1,563.3	1,504.2	59.08	26.459	
10,100.0	7,500.0	7,589.3	7,524.0	43.9	20.1	90.00	-3,590.0	-25.2	1,469.9	1,409.2	60.74	24.200	
10,200.0	7,500.0	7,589.3	7,524.0	45.6	20.1	90.00	-3,590.0	-25.2	1,377.6	1,315.2	62.41	22.073	
10,300.0	7,500.0	7,589.3	7,524.0	47.2	20.1	90.00	-3,590.0	-25.2	1,286.3	1,222.3	64.08	20.073	
10,400.0	7,500.0	7,589.3	7,524.0	48.9	20.1	90.00	-3,590.0	-25.2	1,196.5	1,130.8	65.76	18.195	
10,500.0	7,500.0	7,589.3	7,524.0	50.5	20.1	90.00	-3,590.0	-25.2	1,108.4	1,041.0	67.45	16.434	
10,600.0	7,500.0	7,589.3	7,524.0	52.2	20.1	90.00	-3,590.0	-25.2	1,022.6	953.4	69.14	14.791	
10,700.0	7,500.0	7,589.3	7,524.0	53.8	20.1	90.00	-3,590.0	-25.2	939.5	868.6	70.83	13.264	
10,800.0	7,500.0	7,589.3	7,524.0	55.5	20.1	90.00	-3,590.0	-25.2	860.0	787.5	72.53	11.858	
10,900.0	7,500.0	7,589.3	7,524.0	57.2	20.1	90.00	-3,590.0	-25.2	785.2	711.0	74.23	10.579	
11,000.0	7,500.0	7,589.3	7,524.0	58.9	20.1	90.00	-3,590.0	-25.2	716.6	640.7	75.93	9.438	
11,100.0	7,500.0	7,589.3	7,524.0	60.6	20.1	90.00	-3,590.0	-25.2	656.2	578.5	77.64	8.451	
11,200.0	7,500.0	7,589.3	7,524.0	62.3	20.1	90.00	-3,590.0	-25.2	606.2	526.9	79.35	7.640	
11,244.1	7,500.0	7,589.3	7,524.0	63.0	20.1	90.00	-3,590.0	-25.2	588.3	508.2	80.10	7.344	
11,300.0	7,500.0	7,589.3	7,524.0	64.0	20.1	90.00	-3,590.0	-25.2	570.2	488.8	81.34	7.010	
11,400.0	7,500.0	7,589.3	7,524.0	65.7	20.1	90.00	-3,590.0	-25.2	553.3	469.8	83.50	6.626	
11,429.5	7,500.0	7,589.3	7,524.0	66.2	20.1	90.00	-3,590.0	-25.2	552.3	468.2	84.12	6.566 CC	
11,444.1	7,500.0	7,589.3	7,524.0	66.4	20.1	90.00	-3,590.0	-25.2	552.6	468.1	84.43	6.545 ES	
11,500.0	7,500.0	7,589.3	7,524.0	67.4	20.1	90.00	-3,590.0	-25.2	557.1	471.8	85.39	6.525 SF	
11,600.0	7,500.0	7,589.3	7,524.0	69.1	20.1	90.00	-3,590.0	-25.2	578.9	491.7	87.11	6.645	
11,700.0	7,500.0	7,589.3	7,524.0	70.8	20.1	90.00	-3,590.0	-25.2	616.2	527.4	88.83	6.937	
11,800.0	7,500.0	7,589.3	7,524.0	72.5	20.1	90.00	-3,590.0	-25.2	666.6	576.1	90.55	7.362	
11,900.0	7,500.0	7,589.3	7,524.0	74.2	20.1	90.00	-3,590.0	-25.2	727.4	635.1	92.27	7.883	
12,000.0	7,500.0	7,589.3	7,524.0	76.0	20.1	90.00	-3,590.0	-25.2	796.1	702.1	94.00	8.469	
12,100.0	7,500.0	7,589.3	7,524.0	77.7	20.1	90.00	-3,590.0	-25.2	870.8	775.1	95.73	9.097	
12,194.1	7,500.0	7,589.3	7,524.0	79.3	20.1	90.00	-3,590.0	-25.2	945.5	848.2	97.35	9.712	
12,200.0	7,500.0	7,589.3	7,524.0	79.4	20.1	90.00	-3,590.0	-25.2	950.3	852.8	97.43	9.753	
12,300.0	7,500.0	7,589.3	7,524.0	81.1	20.1	90.00	-3,590.0	-25.2	1,032.2	933.5	98.73	10.455	
12,393.7	7,500.0	7,589.3	7,524.0	82.7	20.1	90.00	-3,590.0	-25.2	1,110.0	1,010.2	99.87	11.115	
12,400.0	7,500.0	7,589.3	7,524.0	82.9	20.1	90.00	-3,590.0	-25.2	1,115.3	1,015.3	99.98	11.156	
12,500.0	7,500.0	7,589.3	7,524.0	84.6	20.1	90.00	-3,590.0	-25.2	1,200.2	1,098.5	101.71	11.801	
12,600.0	7,500.0	7,589.3	7,524.0	86.3	20.1	90.00	-3,590.0	-25.2	1,287.3	1,183.8	103.44	12.445	
12,700.0	7,500.0	7,589.3	7,524.0	88.0	20.1	90.00	-3,590.0	-25.2	1,376.1	1,270.9	105.17	13.085	
12,800.0	7,500.0	7,589.3	7,524.0	89.7	20.1	90.00	-3,590.0	-25.2	1,466.4	1,359.4	106.90	13.717	
12,900.0	7,500.0	7,589.3	7,524.0	91.5	20.1	90.00	-3,590.0	-25.2	1,557.8	1,449.2	108.64	14.340	
13,000.0	7,500.0	7,589.3	7,524.0	93.2	20.1	90.00	-3,590.0	-25.2	1,650.2	1,539.9	110.37	14.952	
13,100.0	7,500.0	7,589.3	7,524.0	94.9	20.1	90.00	-3,590.0	-25.2	1,743.5	1,631.4	112.11	15.553	
13,200.0	7,500.0	7,589.3	7,524.0	96.6	20.1	90.00	-3,590.0	-25.2	1,837.5	1,723.7	113.84	16.141	
13,300.0	7,500.0	7,589.3	7,524.0	98.4	20.1	90.00	-3,590.0	-25.2	1,932.1	1,816.5	115.58	16.717	
13,400.0	7,500.0	7,589.3	7,524.0	100.1	20.1	90.00	-3,590.0	-25.2	2,027.2	1,909.9	117.32	17.280	
13,500.0	7,500.0	7,589.3	7,524.0	101.8	20.1	90.00	-3,590.0	-25.2	2,122.8	2,003.7	119.05	17.830	
13,600.0	7,500.0	7,589.3	7,524.0	103.5	20.1	90.00	-3,590.0	-25.2	2,218.7	2,097.9	120.79	18.368	
13,700.0	7,500.0	7,589.3	7,524.0	105.3	20.1	90.00	-3,590.0	-25.2	2,315.0	2,192.5	122.53	18.893	

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Sosa 11-18 - DD - 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			
13,800.0	7,500.0	7,589.3	7,524.0	107.0	20.1	90.00	-3,590.0	-25.2	2,411.6	2,287.3	124.27	19.406		
13,900.0	7,500.0	7,589.3	7,524.0	108.7	20.1	90.00	-3,590.0	-25.2	2,508.5	2,382.5	126.01	19.907		
14,000.0	7,500.0	7,589.3	7,524.0	110.5	20.1	90.00	-3,590.0	-25.2	2,605.6	2,477.8	127.75	20.396		
14,100.0	7,500.0	7,589.3	7,524.0	112.2	20.1	90.00	-3,590.0	-25.2	2,702.9	2,573.4	129.49	20.873		
14,200.0	7,500.0	7,589.3	7,524.0	113.9	20.1	90.00	-3,590.0	-25.2	2,800.4	2,669.2	131.23	21.339		
14,300.0	7,500.0	7,589.3	7,524.0	115.7	20.1	90.00	-3,590.0	-25.2	2,898.1	2,765.1	132.97	21.794		
14,400.0	7,500.0	7,589.3	7,524.0	117.4	20.1	90.00	-3,590.0	-25.2	2,995.9	2,861.2	134.72	22.239		
14,500.0	7,500.0	7,589.3	7,524.0	119.1	20.1	90.00	-3,590.0	-25.2	3,093.8	2,957.4	136.46	22.673		
14,600.0	7,500.0	7,589.3	7,524.0	120.9	20.1	90.00	-3,590.0	-25.2	3,191.9	3,053.7	138.20	23.096		
14,700.0	7,500.0	7,589.3	7,524.0	122.6	20.1	90.00	-3,590.0	-25.2	3,290.1	3,150.2	139.94	23.510		
14,800.0	7,500.0	7,589.3	7,524.0	124.3	20.1	90.00	-3,590.0	-25.2	3,388.4	3,246.8	141.69	23.915		
14,900.0	7,500.0	7,589.3	7,524.0	126.1	20.1	90.00	-3,590.0	-25.2	3,486.9	3,343.4	143.43	24.310		
15,000.0	7,500.0	7,589.3	7,524.0	127.8	20.1	90.00	-3,590.0	-25.2	3,585.3	3,440.2	145.17	24.697		
15,100.0	7,500.0	7,589.3	7,524.0	129.6	20.1	90.00	-3,590.0	-25.2	3,683.9	3,537.0	146.92	25.075		
15,200.0	7,500.0	7,589.3	7,524.0	131.3	20.1	90.00	-3,590.0	-25.2	3,782.6	3,633.9	148.66	25.444		
15,300.0	7,500.0	7,589.3	7,524.0	133.0	20.1	90.00	-3,590.0	-25.2	3,881.3	3,730.9	150.41	25.805		
15,400.0	7,500.0	7,589.3	7,524.0	134.8	20.1	90.00	-3,590.0	-25.2	3,980.1	3,827.9	152.15	26.159		
15,500.0	7,500.0	7,589.3	7,524.0	136.5	20.1	90.00	-3,590.0	-25.2	4,078.9	3,925.0	153.90	26.504		
15,600.0	7,500.0	7,589.3	7,524.0	138.3	20.1	90.00	-3,590.0	-25.2	4,177.8	4,022.2	155.64	26.842		
15,700.0	7,500.0	7,589.3	7,524.0	140.0	20.1	90.00	-3,590.0	-25.2	4,276.8	4,119.4	157.39	27.173		
15,805.8	7,500.0	7,589.3	7,524.0	141.8	20.1	90.00	-3,590.0	-25.2	4,381.5	4,222.2	159.23	27.516		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Sosa 12-18 - DD - DD													Offset Site Error: 0.0 ft			
Survey Program: 56-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	17.3	17.3	0.0	0.0	172.75	-4,267.5	543.0	4,302.0							
100.0	100.0	99.0	99.0	0.2	0.1	172.76	-4,268.0	542.1	4,302.4	4,302.1	0.30	N/A				
200.0	200.0	196.1	196.1	0.3	0.3	172.78	-4,268.7	540.9	4,302.9	4,302.3	0.65	6,665.889				
300.0	300.0	267.9	267.8	0.5	0.4	172.79	-4,269.5	540.2	4,303.9	4,302.9	0.95	4,546.515				
400.0	400.0	339.4	339.3	0.7	0.6	172.80	-4,270.6	539.7	4,305.4	4,304.2	1.25	3,450.266				
500.0	500.0	396.3	396.2	0.8	0.7	172.81	-4,272.1	539.2	4,307.9	4,306.4	1.52	2,825.172				
600.0	600.0	450.0	449.9	1.0	0.8	133.32	-4,274.1	538.6	4,312.0	4,310.2	1.79	2,409.321				
700.0	700.0	490.6	490.4	1.2	0.9	133.29	-4,276.1	538.2	4,318.6	4,316.5	2.04	2,119.675				
800.0	799.9	547.8	547.5	1.4	1.0	133.26	-4,279.7	537.5	4,327.5	4,325.2	2.32	1,866.866				
900.0	899.7	606.0	605.6	1.6	1.1	133.23	-4,283.7	536.6	4,338.5	4,335.9	2.61	1,665.083				
1,000.0	999.4	668.0	667.4	1.8	1.2	133.21	-4,288.5	535.3	4,351.4	4,348.5	2.91	1,496.941				
1,100.0	1,098.9	766.9	765.9	2.0	1.4	133.24	-4,297.0	533.1	4,366.2	4,362.9	3.28	1,329.472				
1,201.3	1,199.5	860.6	859.2	2.2	1.6	133.26	-4,304.7	530.7	4,382.1	4,378.5	3.67	1,195.636				
1,300.0	1,297.5	919.1	917.5	2.5	1.8	133.36	-4,310.1	529.2	4,399.0	4,395.0	3.98	1,104.275				
1,400.0	1,396.8	968.9	967.0	2.7	1.9	133.44	-4,315.1	527.8	4,417.1	4,412.8	4.29	1,028.963				
1,500.0	1,496.0	1,004.0	1,001.9	3.0	2.0	133.50	-4,319.0	526.7	4,436.4	4,431.8	4.58	969.145				
1,600.0	1,595.3	1,068.0	1,065.3	3.3	2.2	133.62	-4,327.0	524.7	4,456.9	4,452.0	4.92	906.135				
1,700.0	1,694.5	1,095.8	1,092.9	3.5	2.3	133.67	-4,330.9	523.8	4,478.6	4,473.4	5.19	862.254				
1,800.0	1,793.8	1,133.0	1,129.6	3.8	2.4	133.73	-4,336.4	522.6	4,501.6	4,496.1	5.49	820.247				
1,900.0	1,893.0	1,197.0	1,192.7	4.0	2.6	133.85	-4,346.8	520.1	4,525.7	4,519.8	5.84	775.386				
2,000.0	1,992.3	1,234.0	1,229.1	4.3	2.7	133.93	-4,353.3	518.3	4,550.8	4,544.7	6.14	741.372				
2,100.0	2,091.5	1,298.7	1,292.5	4.6	2.9	134.07	-4,365.2	513.8	4,576.9	4,570.4	6.50	703.754				
2,200.0	2,190.8	1,417.7	1,408.8	4.8	3.4	134.40	-4,387.5	501.3	4,603.2	4,596.2	7.02	656.144				
2,300.0	2,290.0	1,465.4	1,455.2	5.1	3.6	134.54	-4,396.5	495.4	4,629.7	4,622.3	7.36	628.892				
2,400.0	2,389.3	1,516.0	1,504.4	5.4	3.8	134.68	-4,406.7	489.3	4,657.2	4,649.5	7.71	603.658				
2,500.0	2,488.5	1,624.5	1,609.8	5.7	4.2	134.99	-4,428.6	476.3	4,685.0	4,676.8	8.21	570.309				
2,600.0	2,587.8	1,674.6	1,658.6	5.9	4.5	135.13	-4,438.8	470.4	4,713.2	4,704.6	8.57	549.864				
2,700.0	2,687.0	1,738.0	1,720.0	6.2	4.8	135.31	-4,452.6	462.7	4,742.6	4,733.7	8.96	529.067				
2,800.0	2,786.3	1,780.8	1,761.3	6.5	5.0	135.43	-4,462.3	457.3	4,772.8	4,763.5	9.31	512.851				
2,900.0	2,885.5	1,940.4	1,915.6	6.7	5.7	135.88	-4,497.6	437.3	4,802.9	4,793.0	9.95	482.835				
3,000.0	2,984.8	2,053.8	2,025.8	7.0	6.2	136.18	-4,521.5	424.0	4,832.1	4,821.6	10.47	461.660				
3,100.0	3,084.0	2,143.1	2,112.4	7.3	6.6	136.43	-4,540.0	412.9	4,861.1	4,850.2	10.93	444.814				
3,200.0	3,183.3	2,259.7	2,225.5	7.6	7.1	136.74	-4,564.4	398.4	4,890.3	4,878.8	11.45	427.048				
3,300.0	3,282.5	2,362.1	2,325.1	7.8	7.5	137.00	-4,585.2	386.8	4,919.0	4,907.1	11.93	412.434				
3,400.0	3,381.8	2,531.0	2,489.1	8.1	8.3	137.45	-4,618.1	364.5	4,946.9	4,934.3	12.61	392.152				
3,500.0	3,481.1	2,630.0	2,585.5	8.4	8.7	137.72	-4,636.4	350.9	4,974.0	4,960.9	13.10	379.792				
3,600.0	3,580.3	2,699.5	2,653.3	8.7	9.0	137.89	-4,649.3	342.6	5,001.4	4,987.9	13.49	370.781				
3,700.0	3,679.6	2,750.6	2,703.0	8.9	9.2	138.01	-4,659.3	336.7	5,029.7	5,015.9	13.84	363.391				
3,800.0	3,778.8	2,819.0	2,769.5	9.2	9.5	138.18	-4,673.3	328.2	5,059.0	5,044.8	14.24	355.237				
3,900.0	3,878.1	2,869.2	2,818.1	9.5	9.8	138.31	-4,684.0	321.7	5,088.9	5,074.3	14.59	348.713				
4,000.0	3,977.3	2,965.5	2,911.3	9.8	10.2	138.55	-4,704.5	309.4	5,119.2	5,104.1	15.06	339.971				
4,100.0	4,076.6	3,102.9	3,044.6	10.0	10.9	138.90	-4,733.0	291.6	5,148.9	5,133.3	15.63	329.482				
4,200.0	4,175.8	3,216.9	3,155.2	10.3	11.4	139.18	-4,756.1	276.9	5,178.3	5,162.1	16.13	321.005				
4,300.0	4,275.1	3,324.7	3,260.0	10.6	11.9	139.43	-4,777.7	263.4	5,207.6	5,190.9	16.61	313.471				
4,400.0	4,374.3	3,416.3	3,349.1	10.9	12.3	139.64	-4,795.9	252.4	5,236.7	5,219.6	17.05	307.141				
4,500.0	4,473.6	3,472.7	3,403.9	11.1	12.5	139.77	-4,807.2	245.5	5,266.1	5,248.7	17.41	302.515				
7,873.6	7,500.0	7,660.4	7,541.6	16.5	23.8	91.87	-5,238.5	-20.1	5,267.8	5,232.5	35.33	149.099				
7,900.0	7,500.0	7,660.4	7,541.5	16.5	23.8	91.86	-5,238.5	-20.1	5,241.5	5,206.1	35.40	148.079				
8,000.0	7,500.0	7,660.1	7,541.3	16.9	23.8	91.83	-5,238.5	-20.1	5,142.1	5,106.3	35.78	143.714				
8,100.0	7,500.0	7,659.9	7,541.0	17.4	23.8	91.81	-5,238.5	-20.1	5,042.6	5,006.3	36.36	138.676				
8,200.0	7,500.0	7,659.6	7,540.8	18.0	23.8	91.78	-5,238.5	-20.1	4,943.2	4,906.1	37.12	133.159				
8,300.0	7,500.0	7,659.4	7,540.5	18.8	23.8	91.75	-5,238.5	-20.1	4,843.8	4,805.8	38.04	127.351				

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Sosa 12-18 - DD - DD												Offset Site Error:	0.0 ft
Survey Program: 56-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
8,400.0	7,500.0	7,659.1	7,540.3	19.7	23.8	91.73	-5,238.5	-20.1	4,744.5	4,705.4	39.08	121.414	
8,500.0	7,500.0	7,658.9	7,540.0	20.7	23.8	91.70	-5,238.5	-20.1	4,645.1	4,604.9	40.23	115.478	
8,600.0	7,500.0	7,658.6	7,539.8	21.9	23.8	91.67	-5,238.5	-20.1	4,545.8	4,504.4	41.46	109.637	
8,700.0	7,500.0	7,658.3	7,539.5	23.1	23.8	91.65	-5,238.5	-20.1	4,446.6	4,403.8	42.77	103.958	
8,800.0	7,500.0	7,658.1	7,539.3	24.3	23.8	91.62	-5,238.5	-20.1	4,347.3	4,303.2	44.14	98.482	
8,900.0	7,500.0	7,657.8	7,539.0	25.6	23.8	91.59	-5,238.5	-20.1	4,248.1	4,202.5	45.56	93.234	
9,000.0	7,500.0	7,657.6	7,538.7	27.0	23.8	91.56	-5,238.5	-20.1	4,148.9	4,101.9	47.03	88.226	
9,100.0	7,500.0	7,657.3	7,538.5	28.4	23.8	91.54	-5,238.5	-20.1	4,049.8	4,001.3	48.52	83.461	
9,200.0	7,500.0	7,657.0	7,538.2	29.9	23.8	91.51	-5,238.5	-20.1	3,950.7	3,900.7	50.05	78.935	
9,300.0	7,500.0	7,656.8	7,538.0	31.4	23.8	91.48	-5,238.5	-20.1	3,851.7	3,800.1	51.60	74.643	
9,400.0	7,500.0	7,656.5	7,537.7	32.9	23.8	91.45	-5,238.5	-20.1	3,752.7	3,699.5	53.17	70.574	
9,500.0	7,500.0	7,656.2	7,537.4	34.4	23.8	91.42	-5,238.5	-20.1	3,653.8	3,599.0	54.77	66.717	
9,600.0	7,500.0	7,656.0	7,537.1	36.0	23.8	91.39	-5,238.5	-20.1	3,554.9	3,498.5	56.37	63.062	
9,700.0	7,500.0	7,655.7	7,536.9	37.5	23.8	91.36	-5,238.5	-20.1	3,456.1	3,398.1	57.99	59.596	
9,800.0	7,500.0	7,655.4	7,536.6	39.1	23.8	91.34	-5,238.5	-20.1	3,357.4	3,297.7	59.62	56.309	
9,900.0	7,500.0	7,655.1	7,536.3	40.7	23.8	91.31	-5,238.5	-20.1	3,258.7	3,197.4	61.27	53.189	
10,000.0	7,500.0	7,654.9	7,536.0	42.3	23.8	91.28	-5,238.5	-20.1	3,160.1	3,097.2	62.92	50.226	
10,100.0	7,500.0	7,654.6	7,535.8	43.9	23.8	91.25	-5,238.5	-20.1	3,061.7	2,997.1	64.58	47.410	
10,200.0	7,500.0	7,654.3	7,535.5	45.6	23.8	91.22	-5,238.5	-20.1	2,963.3	2,897.0	66.25	44.732	
10,300.0	7,500.0	7,654.0	7,535.2	47.2	23.8	91.19	-5,238.5	-20.1	2,865.0	2,797.1	67.92	42.183	
10,400.0	7,500.0	7,653.7	7,534.9	48.9	23.8	91.16	-5,238.5	-20.1	2,766.9	2,697.3	69.60	39.755	
10,500.0	7,500.0	7,653.5	7,534.6	50.5	23.8	91.13	-5,238.5	-20.1	2,668.9	2,597.6	71.28	37.440	
10,600.0	7,500.0	7,653.2	7,534.3	52.2	23.8	91.10	-5,238.5	-20.1	2,571.0	2,498.0	72.97	35.233	
10,700.0	7,500.0	7,652.9	7,534.1	53.8	23.8	91.07	-5,238.5	-20.1	2,473.3	2,398.7	74.67	33.125	
10,800.0	7,500.0	7,652.6	7,533.8	55.5	23.8	91.03	-5,238.5	-20.1	2,375.8	2,299.5	76.36	31.112	
10,900.0	7,500.0	7,652.3	7,533.5	57.2	23.8	91.00	-5,238.5	-20.1	2,278.6	2,200.5	78.06	29.189	
11,000.0	7,500.0	7,652.0	7,533.2	58.9	23.8	90.97	-5,238.5	-20.1	2,181.6	2,101.8	79.77	27.349	
11,100.0	7,500.0	7,651.7	7,532.9	60.6	23.8	90.94	-5,238.5	-20.1	2,084.8	2,003.3	81.48	25.588	
11,200.0	7,500.0	7,651.4	7,532.6	62.3	23.8	90.91	-5,238.5	-20.1	1,988.4	1,905.2	83.18	23.904	
11,244.1	7,500.0	7,651.3	7,532.4	63.0	23.8	90.90	-5,238.5	-20.1	1,946.0	1,862.0	83.94	23.183	
11,300.0	7,500.0	7,651.1	7,532.3	64.0	23.8	90.82	-5,238.5	-20.1	1,892.5	1,807.6	84.90	22.291	
11,400.0	7,500.0	7,650.8	7,532.0	65.7	23.8	90.72	-5,238.5	-20.1	1,798.1	1,711.5	86.56	20.773	
11,444.1	7,500.0	7,650.7	7,531.9	66.4	23.8	90.68	-5,238.5	-20.1	1,757.0	1,669.7	87.27	20.134	
11,500.0	7,500.0	7,650.5	7,531.7	67.4	23.8	90.67	-5,238.5	-20.1	1,705.4	1,617.2	88.23	19.330	
11,600.0	7,500.0	7,650.3	7,531.4	69.1	23.8	90.64	-5,238.5	-20.1	1,613.7	1,523.8	89.94	17.941	
11,700.0	7,500.0	7,650.0	7,531.2	70.8	23.8	90.62	-5,238.5	-20.1	1,523.1	1,431.4	91.67	16.616	
11,800.0	7,500.0	7,649.7	7,530.9	72.5	23.8	90.60	-5,238.5	-20.1	1,433.7	1,340.3	93.39	15.352	
11,900.0	7,500.0	7,649.4	7,530.6	74.2	23.8	90.57	-5,238.5	-20.1	1,345.8	1,250.7	95.11	14.149	
12,000.0	7,500.0	7,649.2	7,530.3	76.0	23.8	90.55	-5,238.5	-20.1	1,259.7	1,162.9	96.84	13.008	
12,100.0	7,500.0	7,648.9	7,530.0	77.7	23.8	90.52	-5,238.5	-20.1	1,175.8	1,077.2	98.57	11.929	
12,194.1	7,500.0	7,648.6	7,529.8	79.3	23.8	90.50	-5,238.5	-20.1	1,099.3	999.1	100.19	10.972	
12,200.0	7,500.0	7,648.6	7,529.8	79.4	23.8	90.50	-5,238.5	-20.1	1,094.6	994.3	100.30	10.913	
12,300.0	7,500.0	7,648.3	7,529.5	81.1	23.8	90.50	-5,238.5	-20.1	1,015.6	913.5	102.11	9.946	
12,393.7	7,500.0	7,648.0	7,529.2	82.7	23.8	90.49	-5,238.5	-20.1	943.0	839.3	103.70	9.093	
12,400.0	7,500.0	7,648.0	7,529.2	82.9	23.8	90.49	-5,238.5	-20.1	938.1	834.3	103.81	9.037	
12,500.0	7,500.0	7,647.6	7,528.8	84.6	23.8	90.45	-5,238.5	-20.1	864.3	758.7	105.54	8.189	
12,600.0	7,500.0	7,647.3	7,528.5	86.3	23.8	90.42	-5,238.5	-20.1	796.1	688.9	107.28	7.421	
12,700.0	7,500.0	7,647.0	7,528.2	88.0	23.8	90.39	-5,238.5	-20.1	735.3	626.3	109.01	6.746	
12,800.0	7,500.0	7,646.7	7,527.8	89.7	23.8	90.36	-5,238.5	-20.1	683.8	573.0	110.74	6.175	
12,900.0	7,500.0	7,646.3	7,527.5	91.5	23.8	90.33	-5,238.5	-20.1	643.7	531.3	112.48	5.723	
13,000.0	7,500.0	7,646.0	7,527.2	93.2	23.8	90.30	-5,238.5	-20.1	617.5	503.3	114.21	5.406	
13,100.0	7,500.0	7,645.7	7,526.8	94.9	23.8	90.27	-5,238.5	-20.1	606.7	490.8	115.95	5.233	

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Sosa 12-18 - DD - DD												Offset Site Error: 0.0 ft	
Survey Program: 56-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	
13,115.7	7,500.0	7,645.6	7,526.8	95.2	23.8	90.26	-5,238.5	-20.1	606.5	490.3	116.22	5.219	CC, ES
13,200.0	7,500.0	7,645.3	7,526.5	96.6	23.8	90.23	-5,238.5	-20.1	612.4	494.7	117.68	5.204	SF
13,300.0	7,500.0	7,645.0	7,526.2	98.4	23.8	90.20	-5,238.5	-20.1	633.9	514.5	119.42	5.308	
13,400.0	7,500.0	7,644.6	7,525.8	100.1	23.8	90.17	-5,238.5	-20.1	669.9	548.7	121.16	5.529	
13,500.0	7,500.0	7,644.3	7,525.5	101.8	23.8	90.14	-5,238.5	-20.1	718.0	595.1	122.89	5.843	
13,600.0	7,500.0	7,643.9	7,525.1	103.5	23.8	90.10	-5,238.5	-20.1	776.2	651.5	124.63	6.228	
13,700.0	7,500.0	7,643.6	7,524.8	105.3	23.8	90.07	-5,238.5	-20.2	842.2	715.8	126.37	6.665	
13,800.0	7,500.0	7,643.2	7,524.4	107.0	23.8	90.04	-5,238.5	-20.2	914.4	786.3	128.11	7.138	
13,900.0	7,500.0	7,642.9	7,524.0	108.7	23.8	90.00	-5,238.5	-20.2	991.5	861.6	129.85	7.636	
14,000.0	7,500.0	7,642.5	7,523.7	110.5	23.8	89.97	-5,238.5	-20.2	1,072.3	940.7	131.59	8.149	
14,100.0	7,500.0	7,642.1	7,523.3	112.2	23.8	89.94	-5,238.5	-20.2	1,156.2	1,022.8	133.33	8.672	
14,200.0	7,500.0	7,641.8	7,523.0	113.9	23.8	89.90	-5,238.5	-20.2	1,242.4	1,107.3	135.07	9.198	
14,300.0	7,500.0	7,641.4	7,522.6	115.7	23.8	89.87	-5,238.5	-20.2	1,330.6	1,193.8	136.81	9.726	
14,400.0	7,500.0	7,641.0	7,522.2	117.4	23.8	89.83	-5,238.5	-20.2	1,420.3	1,281.8	138.55	10.251	
14,500.0	7,500.0	7,640.7	7,521.9	119.1	23.8	89.80	-5,238.5	-20.2	1,511.3	1,371.0	140.29	10.773	
14,600.0	7,500.0	7,640.3	7,521.5	120.9	23.8	89.76	-5,238.5	-20.2	1,603.4	1,461.4	142.04	11.289	
14,700.0	7,500.0	7,639.9	7,521.1	122.6	23.8	89.73	-5,238.5	-20.2	1,696.4	1,552.6	143.78	11.799	
14,800.0	7,500.0	7,639.5	7,520.7	124.3	23.8	89.69	-5,238.5	-20.2	1,790.2	1,644.7	145.52	12.302	
14,900.0	7,500.0	7,639.2	7,520.3	126.1	23.8	89.65	-5,238.5	-20.2	1,884.6	1,737.3	147.26	12.797	
15,000.0	7,500.0	7,638.8	7,520.0	127.8	23.8	89.62	-5,238.5	-20.2	1,979.5	1,830.5	149.01	13.285	
15,100.0	7,500.0	7,638.4	7,519.6	129.6	23.8	89.58	-5,238.5	-20.2	2,074.9	1,924.2	150.75	13.764	
15,200.0	7,500.0	7,638.0	7,519.2	131.3	23.8	89.54	-5,238.5	-20.2	2,170.7	2,018.3	152.49	14.235	
15,300.0	7,500.0	7,637.6	7,518.8	133.0	23.8	89.51	-5,238.5	-20.2	2,266.9	2,112.7	154.24	14.698	
15,400.0	7,500.0	7,637.2	7,518.4	134.8	23.8	89.47	-5,238.5	-20.2	2,363.4	2,207.5	155.98	15.152	
15,500.0	7,500.0	7,636.8	7,518.0	136.5	23.8	89.43	-5,238.5	-20.2	2,460.2	2,302.5	157.73	15.598	
15,600.0	7,500.0	7,636.4	7,517.6	138.3	23.8	89.39	-5,238.5	-20.2	2,557.3	2,397.8	159.47	16.036	
15,700.0	7,500.0	7,636.0	7,517.2	140.0	23.8	89.36	-5,238.5	-20.2	2,654.5	2,493.3	161.21	16.466	
15,805.8	7,500.0	7,635.6	7,516.7	141.8	23.8	89.31	-5,238.5	-20.2	2,757.6	2,594.5	163.06	16.912	

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Sosa 12-18 - DD - Plan #3													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	24.0	24.0	0.0	0.0	172.75	-4,267.5	543.1	4,301.9							
100.0	100.0	124.0	124.0	0.2	0.2	172.75	-4,267.5	543.1	4,301.9	4,301.6	0.34	N/A				
156.1	156.1	180.1	180.1	0.2	0.3	172.75	-4,267.5	543.1	4,301.9	4,301.4	0.54	7,995.424				
200.0	200.0	200.0	200.0	0.3	0.3	172.75	-4,267.5	543.1	4,302.0	4,301.4	0.65	6,625.972				
300.0	300.0	271.5	271.5	0.5	0.4	172.75	-4,268.0	543.0	4,302.7	4,301.7	0.95	4,533.782				
400.0	400.0	329.2	329.2	0.7	0.5	172.75	-4,269.0	542.9	4,304.4	4,303.2	1.23	3,512.963				
500.0	500.0	400.0	400.0	0.8	0.7	172.76	-4,271.0	542.8	4,307.1	4,305.6	1.53	2,822.962				
600.0	600.0	444.4	444.3	1.0	0.8	133.26	-4,272.7	542.6	4,311.4	4,309.6	1.77	2,429.501				
700.0	700.0	500.0	499.9	1.2	0.9	133.23	-4,275.3	542.4	4,317.8	4,315.8	2.05	2,108.565				
800.0	799.9	559.1	558.9	1.4	1.0	133.21	-4,278.7	542.1	4,326.4	4,324.1	2.33	1,856.784				
900.0	899.7	628.2	627.8	1.6	1.1	133.18	-4,283.4	541.7	4,337.2	4,334.6	2.63	1,646.428				
1,000.0	999.4	727.2	726.6	1.8	1.3	133.19	-4,290.3	541.1	4,349.4	4,346.4	3.00	1,451.096				
1,100.0	1,098.9	825.0	824.1	2.0	1.5	133.20	-4,297.1	540.5	4,362.8	4,359.4	3.37	1,296.021				
1,201.3	1,199.5	876.5	875.5	2.2	1.6	133.15	-4,301.0	539.8	4,378.1	4,374.5	3.67	1,193.318				
1,300.0	1,297.5	925.9	924.6	2.5	1.8	133.24	-4,305.3	538.6	4,394.8	4,390.8	3.97	1,106.974				
1,400.0	1,396.8	1,000.0	998.3	2.7	1.9	133.37	-4,313.0	535.7	4,412.8	4,408.5	4.33	1,020.274				
1,500.0	1,496.0	1,000.0	998.3	3.0	1.9	133.37	-4,313.0	535.7	4,431.9	4,427.3	4.55	975.054				
1,600.0	1,595.3	1,073.5	1,071.1	3.3	2.1	133.53	-4,321.9	531.4	4,451.9	4,447.0	4.91	906.266				
1,700.0	1,694.5	1,100.0	1,097.3	3.5	2.2	133.59	-4,325.5	529.5	4,473.2	4,468.1	5.19	862.180				
1,800.0	1,793.8	1,169.7	1,166.1	3.8	2.4	133.76	-4,335.6	523.8	4,495.5	4,489.9	5.56	808.094				
1,900.0	1,893.0	1,217.1	1,212.6	4.0	2.6	133.88	-4,343.2	519.3	4,518.9	4,513.0	5.89	766.832				
2,000.0	1,992.3	1,277.7	1,271.9	4.3	2.8	134.05	-4,353.6	512.7	4,543.4	4,537.1	6.26	725.956				
2,100.0	2,091.5	1,372.3	1,364.5	4.6	3.2	134.31	-4,370.0	502.3	4,568.2	4,561.5	6.71	680.943				
2,200.0	2,190.8	1,466.9	1,457.2	4.8	3.5	134.57	-4,386.5	491.9	4,593.2	4,586.0	7.16	641.208				
2,300.0	2,290.0	1,561.6	1,549.8	5.1	3.9	134.83	-4,402.9	481.5	4,618.2	4,610.6	7.62	605.973				
2,400.0	2,389.3	1,656.2	1,642.4	5.4	4.2	135.08	-4,419.4	471.0	4,643.3	4,635.2	8.08	574.605				
2,500.0	2,488.5	1,750.9	1,735.0	5.7	4.6	135.33	-4,435.8	460.6	4,668.5	4,660.0	8.54	546.558				
2,600.0	2,587.8	1,845.5	1,827.6	5.9	5.0	135.58	-4,452.2	450.2	4,693.8	4,684.8	9.00	521.370				
2,700.0	2,687.0	1,940.1	1,920.2	6.2	5.3	135.83	-4,468.7	439.8	4,719.2	4,709.7	9.46	498.654				
2,800.0	2,786.3	2,034.8	2,012.8	6.5	5.7	136.07	-4,485.1	429.4	4,744.6	4,734.7	9.92	478.081				
2,900.0	2,885.5	2,129.4	2,105.5	6.7	6.1	136.31	-4,501.6	418.9	4,770.2	4,759.8	10.38	459.376				
3,000.0	2,984.8	2,224.0	2,198.1	7.0	6.4	136.55	-4,518.0	408.5	4,795.8	4,785.0	10.84	442.308				
3,100.0	3,084.0	2,318.7	2,290.7	7.3	6.8	136.79	-4,534.4	398.1	4,821.5	4,810.2	11.30	426.677				
3,200.0	3,183.3	2,413.3	2,383.3	7.6	7.2	137.02	-4,550.9	387.7	4,847.3	4,835.5	11.76	412.317				
3,300.0	3,282.5	2,508.0	2,475.9	7.8	7.6	137.25	-4,567.3	377.3	4,873.1	4,860.9	12.21	399.084				
3,400.0	3,381.8	2,602.6	2,568.5	8.1	7.9	137.48	-4,583.8	366.8	4,899.1	4,886.4	12.66	386.853				
3,500.0	3,481.1	2,697.2	2,661.1	8.4	8.3	137.71	-4,600.2	356.4	4,925.1	4,912.0	13.12	375.518				
3,600.0	3,580.3	2,791.9	2,753.8	8.7	8.7	137.93	-4,616.6	346.0	4,951.2	4,937.6	13.57	364.987				
3,700.0	3,679.6	2,886.5	2,846.4	8.9	9.1	138.15	-4,633.1	335.6	4,977.3	4,963.3	14.01	355.181				
3,800.0	3,778.8	2,981.2	2,939.0	9.2	9.4	138.37	-4,649.5	325.1	5,003.6	4,989.1	14.46	346.028				
3,900.0	3,878.1	3,075.8	3,031.6	9.5	9.8	138.59	-4,666.0	314.7	5,029.9	5,015.0	14.90	337.467				
4,000.0	3,977.3	3,170.4	3,124.2	9.8	10.2	138.81	-4,682.4	304.3	5,056.2	5,040.9	15.35	329.444				
4,100.0	4,076.6	3,265.1	3,216.8	10.0	10.6	139.02	-4,698.8	293.9	5,082.7	5,066.9	15.79	321.911				
4,200.0	4,175.8	3,359.7	3,309.5	10.3	10.9	139.23	-4,715.3	283.5	5,109.2	5,093.0	16.23	314.826				
4,300.0	4,275.1	3,454.3	3,402.1	10.6	11.3	139.44	-4,731.7	273.0	5,135.8	5,119.1	16.67	308.151				
4,400.0	4,374.3	3,549.0	3,494.7	10.9	11.7	139.65	-4,748.1	262.6	5,162.4	5,145.3	17.10	301.852				
4,500.0	4,473.6	3,643.6	3,587.3	11.1	12.1	139.85	-4,764.6	252.2	5,189.1	5,171.6	17.54	295.898				
4,600.0	4,572.8	3,738.3	3,679.9	11.4	12.4	140.06	-4,781.0	241.8	5,215.9	5,197.9	17.97	290.264				
4,700.0	4,672.1	3,832.9	3,772.5	11.7	12.8	140.26	-4,797.5	231.4	5,242.7	5,224.3	18.40	284.925				
4,800.0	4,771.3	3,927.5	3,865.1	12.0	13.2	140.46	-4,813.9	220.9	5,269.6	5,250.8	18.83	279.858				
7,850.0	7,499.5	7,632.7	7,523.5	16.5	23.5	69.29	-5,211.0	-30.8	5,265.0	5,232.0	32.98	159.635				
7,873.6	7,500.0	7,633.1	7,524.0	16.5	23.5	90.00	-5,211.0	-30.8	5,241.6	5,206.7	34.93	150.057				

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



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Sosa 12-18 - DD - Plan #3													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		
7,900.0	7,500.0	7,633.1	7,524.0	16.5	23.5	90.00	-5,211.0	-30.8	5,215.3	5,180.3	35.00	149.024		
8,000.0	7,500.0	7,633.1	7,524.0	16.9	23.5	90.00	-5,211.0	-30.8	5,115.9	5,080.5	35.38	144.598		
8,100.0	7,500.0	7,633.1	7,524.0	17.4	23.5	90.00	-5,211.0	-30.8	5,016.5	4,980.5	35.96	139.487		
8,200.0	7,500.0	7,633.1	7,524.0	18.0	23.5	90.00	-5,211.0	-30.8	4,917.1	4,880.4	36.72	133.890		
8,300.0	7,500.0	7,633.1	7,524.0	18.8	23.5	90.00	-5,211.0	-30.8	4,817.7	4,780.1	37.64	128.000		
8,400.0	7,500.0	7,633.1	7,524.0	19.7	23.5	90.00	-5,211.0	-30.8	4,718.4	4,679.7	38.68	121.982		
8,500.0	7,500.0	7,633.1	7,524.0	20.7	23.5	90.00	-5,211.0	-30.8	4,619.1	4,579.3	39.83	115.967		
8,600.0	7,500.0	7,633.1	7,524.0	21.9	23.5	90.00	-5,211.0	-30.8	4,519.8	4,478.7	41.07	110.053		
8,700.0	7,500.0	7,633.1	7,524.0	23.1	23.5	90.00	-5,211.0	-30.8	4,420.6	4,378.2	42.38	104.306		
8,800.0	7,500.0	7,633.1	7,524.0	24.3	23.5	90.00	-5,211.0	-30.8	4,321.4	4,277.6	43.75	98.769		
8,900.0	7,500.0	7,633.1	7,524.0	25.6	23.5	90.00	-5,211.0	-30.8	4,222.2	4,177.0	45.17	93.465		
9,000.0	7,500.0	7,633.1	7,524.0	27.0	23.5	90.00	-5,211.0	-30.8	4,123.1	4,076.5	46.64	88.408		
9,100.0	7,500.0	7,633.1	7,524.0	28.4	23.5	90.00	-5,211.0	-30.8	4,024.0	3,975.9	48.14	83.598		
9,200.0	7,500.0	7,633.1	7,524.0	29.9	23.5	90.00	-5,211.0	-30.8	3,925.0	3,875.3	49.66	79.033		
9,300.0	7,500.0	7,633.1	7,524.0	31.4	23.5	90.00	-5,211.0	-30.8	3,826.0	3,774.8	51.21	74.705		
9,400.0	7,500.0	7,633.1	7,524.0	32.9	23.5	90.00	-5,211.0	-30.8	3,727.1	3,674.3	52.79	70.605		
9,500.0	7,500.0	7,633.1	7,524.0	34.4	23.5	90.00	-5,211.0	-30.8	3,628.2	3,573.8	54.38	66.720		
9,600.0	7,500.0	7,633.1	7,524.0	36.0	23.5	90.00	-5,211.0	-30.8	3,529.4	3,473.4	55.99	63.040		
9,700.0	7,500.0	7,633.1	7,524.0	37.5	23.5	90.00	-5,211.0	-30.8	3,430.6	3,373.0	57.61	59.553		
9,800.0	7,500.0	7,633.1	7,524.0	39.1	23.5	90.00	-5,211.0	-30.8	3,332.0	3,272.7	59.24	56.246		
9,900.0	7,500.0	7,633.1	7,524.0	40.7	23.5	90.00	-5,211.0	-30.8	3,233.4	3,172.5	60.88	53.109		
10,000.0	7,500.0	7,633.1	7,524.0	42.3	23.5	90.00	-5,211.0	-30.8	3,134.9	3,072.4	62.53	50.131		
10,100.0	7,500.0	7,633.1	7,524.0	43.9	23.5	90.00	-5,211.0	-30.8	3,036.5	2,972.3	64.19	47.302		
10,200.0	7,500.0	7,633.1	7,524.0	45.6	23.5	90.00	-5,211.0	-30.8	2,938.2	2,872.4	65.86	44.612		
10,300.0	7,500.0	7,633.1	7,524.0	47.2	23.5	90.00	-5,211.0	-30.8	2,840.1	2,772.5	67.53	42.053		
10,400.0	7,500.0	7,633.1	7,524.0	48.9	23.5	90.00	-5,211.0	-30.8	2,742.0	2,672.8	69.21	39.616		
10,500.0	7,500.0	7,633.1	7,524.0	50.5	23.5	90.00	-5,211.0	-30.8	2,644.1	2,573.2	70.90	37.294		
10,600.0	7,500.0	7,633.1	7,524.0	52.2	23.5	90.00	-5,211.0	-30.8	2,546.4	2,473.8	72.59	35.080		
10,700.0	7,500.0	7,633.1	7,524.0	53.8	23.5	90.00	-5,211.0	-30.8	2,448.9	2,374.6	74.28	32.968		
10,800.0	7,500.0	7,633.1	7,524.0	55.5	23.5	90.00	-5,211.0	-30.8	2,351.5	2,275.6	75.98	30.950		
10,900.0	7,500.0	7,633.1	7,524.0	57.2	23.5	90.00	-5,211.0	-30.8	2,254.5	2,176.8	77.68	29.023		
11,000.0	7,500.0	7,633.1	7,524.0	58.9	23.5	90.00	-5,211.0	-30.8	2,157.6	2,078.2	79.38	27.180		
11,100.0	7,500.0	7,633.1	7,524.0	60.6	23.5	90.00	-5,211.0	-30.8	2,061.1	1,980.0	81.09	25.417		
11,200.0	7,500.0	7,633.1	7,524.0	62.3	23.5	90.00	-5,211.0	-30.8	1,964.9	1,882.1	82.80	23.731		
11,244.1	7,500.0	7,633.1	7,524.0	63.0	23.5	90.00	-5,211.0	-30.8	1,922.6	1,839.0	83.55	23.010		
11,300.0	7,500.0	7,633.1	7,524.0	64.0	23.5	90.00	-5,211.0	-30.8	1,869.3	1,784.8	84.51	22.118		
11,400.0	7,500.0	7,633.1	7,524.0	65.7	23.5	90.00	-5,211.0	-30.8	1,775.2	1,689.0	86.17	20.601		
11,444.1	7,500.0	7,633.1	7,524.0	66.4	23.5	90.00	-5,211.0	-30.8	1,734.3	1,647.4	86.88	19.963		
11,500.0	7,500.0	7,633.1	7,524.0	67.4	23.5	90.00	-5,211.0	-30.8	1,682.9	1,595.1	87.83	19.160		
11,600.0	7,500.0	7,633.1	7,524.0	69.1	23.5	90.00	-5,211.0	-30.8	1,591.7	1,502.2	89.55	17.774		
11,700.0	7,500.0	7,633.1	7,524.0	70.8	23.5	90.00	-5,211.0	-30.8	1,501.6	1,410.4	91.27	16.452		
11,800.0	7,500.0	7,633.1	7,524.0	72.5	23.5	90.00	-5,211.0	-30.8	1,412.9	1,319.9	93.00	15.193		
11,900.0	7,500.0	7,633.1	7,524.0	74.2	23.5	90.00	-5,211.0	-30.8	1,325.7	1,231.0	94.72	13.996		
12,000.0	7,500.0	7,633.1	7,524.0	76.0	23.5	90.00	-5,211.0	-30.8	1,240.5	1,144.1	96.45	12.862		
12,100.0	7,500.0	7,633.1	7,524.0	77.7	23.5	90.00	-5,211.0	-30.8	1,157.7	1,059.5	98.17	11.792		
12,194.1	7,500.0	7,633.1	7,524.0	79.3	23.5	90.00	-5,211.0	-30.8	1,082.3	982.5	99.80	10.845		
12,200.0	7,500.0	7,633.1	7,524.0	79.4	23.5	90.00	-5,211.0	-30.8	1,077.7	977.8	99.91	10.787		
12,300.0	7,500.0	7,633.1	7,524.0	81.1	23.5	90.00	-5,211.0	-30.8	1,000.1	898.4	101.72	9.832		
12,393.7	7,500.0	7,633.1	7,524.0	82.7	23.5	90.00	-5,211.0	-30.8	929.1	825.8	103.32	8.993		
12,400.0	7,500.0	7,633.1	7,524.0	82.9	23.5	90.00	-5,211.0	-30.8	924.4	821.0	103.42	8.938		
12,500.0	7,500.0	7,633.1	7,524.0	84.6	23.5	90.00	-5,211.0	-30.8	852.6	747.4	105.16	8.108		
12,600.0	7,500.0	7,633.1	7,524.0	86.3	23.5	90.00	-5,211.0	-30.8	786.9	680.0	106.89	7.362		

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



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Sosa 12-18 - DD - Plan #3												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
12,700.0	7,500.0	7,633.1	7,524.0	88.0	23.5	90.00	-5,211.0	-30.8	729.1	620.5	108.62	6.713	
12,800.0	7,500.0	7,633.1	7,524.0	89.7	23.5	90.00	-5,211.0	-30.8	681.1	570.8	110.35	6.173	
12,900.0	7,500.0	7,633.1	7,524.0	91.5	23.5	90.00	-5,211.0	-30.8	645.2	533.1	112.09	5.757	
13,000.0	7,500.0	7,633.1	7,524.0	93.2	23.5	90.00	-5,211.0	-30.8	623.4	509.6	113.82	5.477	
13,088.2	7,500.0	7,633.1	7,524.0	94.7	23.5	90.00	-5,211.0	-30.8	617.2	501.8	115.35	5.350 CC	
13,100.0	7,500.0	7,633.1	7,524.0	94.9	23.5	90.00	-5,211.0	-30.8	617.3	501.7	115.56	5.342 ES, SF	
13,200.0	7,500.0	7,633.1	7,524.0	96.6	23.5	90.00	-5,211.0	-30.8	627.2	509.9	117.29	5.348	
13,300.0	7,500.0	7,633.1	7,524.0	98.4	23.5	90.00	-5,211.0	-30.8	652.5	533.5	119.03	5.482	
13,400.0	7,500.0	7,633.1	7,524.0	100.1	23.5	90.00	-5,211.0	-30.8	691.5	570.7	120.77	5.726	
13,500.0	7,500.0	7,633.1	7,524.0	101.8	23.5	90.00	-5,211.0	-30.8	742.0	619.5	122.50	6.057	
13,600.0	7,500.0	7,633.1	7,524.0	103.5	23.5	90.00	-5,211.0	-30.8	801.8	677.5	124.24	6.453	
13,700.0	7,500.0	7,633.1	7,524.0	105.3	23.5	90.00	-5,211.0	-30.8	869.0	743.1	125.98	6.898	
13,800.0	7,500.0	7,633.1	7,524.0	107.0	23.5	90.00	-5,211.0	-30.8	942.1	814.4	127.72	7.376	
13,900.0	7,500.0	7,633.1	7,524.0	108.7	23.5	90.00	-5,211.0	-30.8	1,019.8	890.3	129.46	7.877	
14,000.0	7,500.0	7,633.1	7,524.0	110.5	23.5	90.00	-5,211.0	-30.8	1,101.1	969.9	131.20	8.392	
14,100.0	7,500.0	7,633.1	7,524.0	112.2	23.5	90.00	-5,211.0	-30.8	1,185.2	1,052.2	132.94	8.915	
14,200.0	7,500.0	7,633.1	7,524.0	113.9	23.5	90.00	-5,211.0	-30.8	1,271.6	1,136.9	134.68	9.442	
14,300.0	7,500.0	7,633.1	7,524.0	115.7	23.5	90.00	-5,211.0	-30.8	1,359.9	1,223.5	136.42	9.968	
14,400.0	7,500.0	7,633.1	7,524.0	117.4	23.5	90.00	-5,211.0	-30.8	1,449.7	1,311.6	138.17	10.493	
14,500.0	7,500.0	7,633.1	7,524.0	119.1	23.5	90.00	-5,211.0	-30.8	1,540.8	1,400.9	139.91	11.013	
14,600.0	7,500.0	7,633.1	7,524.0	120.9	23.5	90.00	-5,211.0	-30.8	1,632.9	1,491.3	141.65	11.528	
14,700.0	7,500.0	7,633.1	7,524.0	122.6	23.5	90.00	-5,211.0	-30.8	1,725.9	1,582.5	143.39	12.036	
14,800.0	7,500.0	7,633.1	7,524.0	124.3	23.5	90.00	-5,211.0	-30.8	1,819.7	1,674.5	145.14	12.538	
14,900.0	7,500.0	7,633.1	7,524.0	126.1	23.5	90.00	-5,211.0	-30.8	1,914.0	1,767.2	146.88	13.031	
15,000.0	7,500.0	7,633.1	7,524.0	127.8	23.5	90.00	-5,211.0	-30.8	2,009.0	1,860.3	148.62	13.517	
15,100.0	7,500.0	7,633.1	7,524.0	129.6	23.5	90.00	-5,211.0	-30.8	2,104.4	1,954.0	150.37	13.995	
15,200.0	7,500.0	7,633.1	7,524.0	131.3	23.5	90.00	-5,211.0	-30.8	2,200.2	2,048.0	152.11	14.464	
15,300.0	7,500.0	7,633.1	7,524.0	133.0	23.5	90.00	-5,211.0	-30.8	2,296.3	2,142.5	153.86	14.925	
15,400.0	7,500.0	7,633.1	7,524.0	134.8	23.5	90.00	-5,211.0	-30.8	2,392.8	2,237.2	155.60	15.378	
15,500.0	7,500.0	7,633.1	7,524.0	136.5	23.5	90.00	-5,211.0	-30.8	2,489.5	2,332.2	157.35	15.822	
15,600.0	7,500.0	7,633.1	7,524.0	138.3	23.5	90.00	-5,211.0	-30.8	2,586.5	2,427.4	159.09	16.258	
15,700.0	7,500.0	7,633.1	7,524.0	140.0	23.5	90.00	-5,211.0	-30.8	2,683.7	2,522.9	160.84	16.686	
15,805.8	7,500.0	7,633.1	7,524.0	141.8	23.5	90.00	-5,211.0	-30.8	2,786.8	2,624.1	162.68	17.130	

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Sosa 21-18 - DD (MWD) - DD													Offset Site Error: 0.0 ft			
Survey Program: 814-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	23.2	23.2	0.0	0.0	172.97	-4,267.5	526.3	4,299.9							
100.0	100.0	123.9	123.9	0.2	0.2	172.97	-4,267.5	526.3	4,299.8	4,299.5	0.36	N/A				
200.0	200.0	224.7	224.7	0.3	0.4	172.97	-4,267.5	526.3	4,299.8	4,299.1	0.71	6,044.231				
300.0	300.0	325.5	325.5	0.5	0.6	172.97	-4,267.4	526.3	4,299.8	4,298.7	1.06	4,061.867				
400.0	400.0	426.2	426.2	0.7	0.7	172.97	-4,267.4	526.4	4,299.7	4,298.3	1.41	3,058.660				
500.0	500.0	527.0	527.0	0.8	0.9	172.97	-4,267.3	526.4	4,299.6	4,297.9	1.75	2,452.826				
507.8	507.8	534.9	534.9	0.9	0.9	133.49	-4,267.3	526.4	4,299.6	4,297.8	1.78	2,415.519				
600.0	600.0	627.7	627.7	1.0	1.1	133.49	-4,267.2	526.5	4,300.1	4,298.0	2.10	2,047.545				
700.0	700.0	728.5	728.5	1.2	1.2	133.51	-4,267.0	526.5	4,301.8	4,299.3	2.45	1,756.912				
800.0	799.9	828.9	828.9	1.4	1.4	133.53	-4,266.9	526.6	4,304.7	4,301.9	2.80	1,537.580				
900.0	899.7	1,106.8	1,106.3	1.6	1.9	133.49	-4,260.6	540.0	4,308.2	4,304.7	3.50	1,232.497				
985.5	984.9	1,254.5	1,252.8	1.8	2.3	133.37	-4,250.7	556.0	4,308.0	4,304.0	3.99	1,079.556				
1,000.0	999.4	1,270.5	1,268.6	1.8	2.3	133.35	-4,249.6	558.1	4,308.0	4,303.9	4.06	1,062.029				
1,100.0	1,098.9	1,537.3	1,530.3	2.0	3.2	132.98	-4,223.2	602.2	4,306.6	4,301.5	5.05	853.482				
1,201.3	1,199.5	1,773.2	1,758.5	2.2	4.2	132.54	-4,191.7	652.6	4,304.3	4,298.1	6.18	696.620				
1,300.0	1,297.5	1,865.0	1,846.9	2.5	4.6	132.35	-4,177.3	673.0	4,300.0	4,293.3	6.78	634.248				
1,400.0	1,396.8	1,929.0	1,908.5	2.7	4.9	132.22	-4,167.6	687.5	4,296.3	4,289.0	7.28	590.293				
1,500.0	1,496.0	2,014.3	1,990.6	3.0	5.3	132.04	-4,155.2	706.9	4,293.2	4,285.4	7.87	545.357				
1,600.0	1,595.3	2,142.5	2,114.2	3.3	5.9	131.78	-4,136.4	735.3	4,289.9	4,281.3	8.66	495.209				
1,700.0	1,694.5	2,216.0	2,185.0	3.5	6.3	131.62	-4,125.6	752.0	4,286.8	4,277.6	9.23	464.483				
1,800.0	1,793.8	2,325.2	2,290.2	3.8	6.8	131.39	-4,109.7	776.6	4,283.8	4,273.9	9.95	430.643				
1,900.0	1,893.0	2,406.0	2,368.2	4.0	7.2	131.23	-4,098.2	794.4	4,281.2	4,270.7	10.54	406.068				
2,000.0	1,992.3	2,486.9	2,446.3	4.3	7.6	131.07	-4,087.1	812.1	4,279.1	4,267.9	11.14	384.217				
2,100.0	2,091.5	2,568.1	2,524.8	4.6	8.0	130.91	-4,076.1	829.7	4,277.1	4,265.4	11.74	364.450				
2,200.0	2,190.8	2,659.2	2,612.9	4.8	8.4	130.73	-4,064.3	849.7	4,275.9	4,263.5	12.39	345.188				
2,300.0	2,290.0	2,800.4	2,749.2	5.1	9.1	130.45	-4,044.6	881.0	4,273.6	4,260.3	13.28	321.865				
2,400.0	2,389.3	2,886.8	2,832.6	5.4	9.5	130.27	-4,032.6	900.0	4,271.5	4,257.6	13.92	306.910				
2,500.0	2,488.5	3,003.9	2,945.6	5.7	10.1	130.03	-4,016.3	926.2	4,269.5	4,254.8	14.71	290.326				
2,600.0	2,587.8	3,137.0	3,073.8	5.9	10.8	129.75	-3,996.5	955.9	4,266.6	4,251.0	15.59	273.646				
2,700.0	2,687.0	3,205.8	3,139.9	6.2	11.1	129.60	-3,986.2	971.6	4,263.8	4,247.7	16.16	263.865				
2,800.0	2,786.3	3,283.9	3,215.2	6.5	11.5	129.44	-3,975.1	989.3	4,261.9	4,245.1	16.78	253.976				
2,900.0	2,885.5	3,359.0	3,287.6	6.7	11.9	129.28	-3,964.7	1,006.5	4,260.3	4,242.9	17.38	245.078				
3,000.0	2,984.8	3,499.9	3,423.7	7.0	12.5	129.00	-3,945.7	1,037.4	4,259.0	4,240.7	18.29	232.862				
3,100.0	3,084.0	3,575.4	3,496.6	7.3	12.9	128.84	-3,935.1	1,054.2	4,257.2	4,238.3	18.90	225.253				
3,200.0	3,183.3	3,671.2	3,588.8	7.6	13.4	128.63	-3,921.8	1,076.3	4,255.8	4,236.2	19.62	216.863				
3,300.0	3,282.5	3,764.5	3,678.6	7.8	13.9	128.43	-3,908.8	1,098.1	4,254.5	4,234.2	20.32	209.339				
3,400.0	3,381.8	3,846.1	3,757.5	8.1	14.3	128.27	-3,898.0	1,115.8	4,253.5	4,232.6	20.95	203.037				
3,500.0	3,481.1	3,931.0	3,839.7	8.4	14.7	128.10	-3,887.2	1,134.0	4,253.1	4,231.5	21.59	196.998				
3,600.0	3,580.3	4,025.8	3,931.5	8.7	15.1	127.92	-3,875.3	1,154.5	4,252.9	4,230.6	22.28	190.845				
3,700.0	3,679.6	4,212.6	4,111.9	8.9	16.0	127.54	-3,849.4	1,195.4	4,251.4	4,228.0	23.44	181.364				
3,800.0	3,778.8	4,312.8	4,208.6	9.2	16.5	127.34	-3,834.5	1,217.4	4,249.1	4,225.0	24.18	175.754				
3,900.0	3,878.1	4,393.4	4,286.3	9.5	16.9	127.18	-3,822.7	1,234.9	4,247.1	4,222.3	24.81	171.166				
4,000.0	3,977.3	4,439.0	4,330.4	9.8	17.2	127.09	-3,816.4	1,244.7	4,245.9	4,220.7	25.27	167.991				
4,081.0	4,057.7	4,503.0	4,392.4	10.0	17.5	126.96	-3,808.1	1,258.3	4,245.7	4,219.9	25.77	164.731				
4,100.0	4,076.6	4,511.0	4,400.2	10.0	17.5	126.95	-3,807.2	1,260.0	4,245.7	4,219.9	25.86	164.197				
4,200.0	4,175.8	4,655.6	4,540.4	10.3	18.2	126.68	-3,788.8	1,290.5	4,245.6	4,218.8	26.79	158.474				
4,300.0	4,275.1	4,743.9	4,625.9	10.6	18.6	126.52	-3,777.1	1,308.8	4,245.0	4,217.5	27.44	154.691				
4,400.0	4,374.3	4,825.9	4,705.6	10.9	18.9	126.38	-3,766.9	1,324.9	4,244.7	4,216.7	28.03	151.414				
4,404.8	4,379.1	4,829.8	4,709.4	10.9	19.0	126.37	-3,766.4	1,325.6	4,244.7	4,216.7	28.06	151.263				
4,500.0	4,473.6	4,911.3	4,789.0	11.1	19.3	126.25	-3,756.8	1,340.4	4,244.9	4,216.3	28.63	148.260				
4,600.0	4,572.8	5,005.4	4,881.1	11.4	19.7	126.13	-3,746.0	1,356.9	4,245.3	4,216.1	29.26	145.101				
4,700.0	4,672.1	5,095.9	4,969.6	11.7	20.0	126.01	-3,736.0	1,372.4	4,245.9	4,216.0	29.86	142.192				

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

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## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Sosa 21-18 - DD (MWD) - DD													Offset Site Error:	0.0 ft
Survey Program: 814-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)				
4,800.0	4,771.3	5,184.2	5,056.3	12.0	20.4	125.91	-3,726.5	1,386.9	4,246.8	4,216.3	30.45	139.485		
4,900.0	4,870.6	5,285.9	5,155.9	12.2	20.8	125.78	-3,715.6	1,404.2	4,247.8	4,216.7	31.10	136.593		
5,000.0	4,969.8	5,384.5	5,252.6	12.5	21.1	125.66	-3,705.1	1,420.2	4,248.8	4,217.1	31.71	133.978		
5,100.0	5,069.1	5,457.8	5,324.6	12.8	21.4	125.59	-3,697.8	1,431.4	4,250.1	4,217.9	32.22	131.897		
5,200.0	5,168.3	5,527.8	5,393.5	13.1	21.7	125.52	-3,691.3	1,442.0	4,252.1	4,219.4	32.72	129.949		
5,300.0	5,267.6	5,674.4	5,537.6	13.3	22.2	125.37	-3,677.3	1,464.7	4,254.0	4,220.5	33.51	126.945		
5,400.0	5,366.8	5,744.5	5,606.7	13.6	22.4	125.30	-3,670.4	1,475.2	4,255.5	4,221.5	34.00	125.154		
5,500.0	5,466.1	5,815.8	5,677.0	13.9	22.7	125.25	-3,664.3	1,485.1	4,257.9	4,223.4	34.48	123.474		
5,600.0	5,565.3	5,900.0	5,760.1	14.2	23.0	125.19	-3,657.6	1,496.7	4,260.8	4,225.8	35.01	121.699		
5,700.0	5,664.6	5,983.7	5,842.8	14.4	23.2	125.13	-3,651.2	1,507.9	4,264.1	4,228.5	35.52	120.052		
5,800.0	5,763.8	6,098.3	5,956.5	14.7	23.5	125.10	-3,643.6	1,520.4	4,267.6	4,231.6	36.07	118.331		
5,900.0	5,863.1	6,184.3	6,042.0	15.0	23.7	125.10	-3,638.2	1,527.6	4,270.8	4,234.3	36.50	117.003		
6,000.0	5,962.3	6,256.2	6,113.6	15.3	23.9	125.12	-3,634.3	1,532.7	4,274.5	4,237.6	36.89	115.869		
6,100.0	6,061.6	6,322.1	6,179.3	15.5	24.0	125.14	-3,631.4	1,536.8	4,278.9	4,241.7	37.24	114.892		
6,200.0	6,160.9	6,392.2	6,249.3	15.8	24.1	125.19	-3,629.3	1,539.8	4,284.2	4,246.6	37.58	114.017		
6,300.0	6,260.1	6,506.0	6,363.1	16.1	24.2	125.31	-3,626.3	1,541.0	4,289.0	4,251.1	37.89	113.189		
6,400.0	6,359.4	6,571.0	6,428.1	16.4	24.2	125.41	-3,625.5	1,540.2	4,294.6	4,256.4	38.16	112.536		
6,500.0	6,458.6	6,621.5	6,478.6	16.6	24.3	125.48	-3,625.7	1,539.7	4,301.5	4,263.0	38.44	111.904		
6,600.0	6,557.9	6,728.7	6,585.7	16.9	24.4	125.62	-3,625.7	1,539.8	4,308.7	4,269.9	38.76	111.159		
6,700.0	6,657.1	6,844.9	6,702.0	17.2	24.5	125.77	-3,625.2	1,540.5	4,315.5	4,276.4	39.09	110.392		
6,800.0	6,756.4	6,952.6	6,809.7	17.5	24.6	125.90	-3,624.4	1,540.8	4,322.1	4,282.7	39.42	109.650		
6,900.0	6,855.6	7,075.6	6,932.6	17.7	24.7	126.06	-3,623.1	1,541.1	4,328.3	4,288.6	39.75	108.883		
6,919.5	6,875.0	7,099.9	6,956.9	17.8	24.7	126.09	-3,622.8	1,541.1	4,329.5	4,289.6	39.82	108.736		
6,950.0	6,905.3	7,137.9	6,995.0	17.9	24.7	103.57	-3,622.2	1,541.0	4,330.4	4,290.5	39.91	108.509		
7,000.0	6,955.1	7,202.9	7,059.9	17.9	24.8	45.33	-3,621.1	1,540.8	4,328.5	4,288.6	39.88	108.527		
7,050.0	7,004.8	7,258.8	7,115.8	17.9	24.9	16.20	-3,620.0	1,540.6	4,322.2	4,282.6	39.64	109.043		
7,100.0	7,053.8	7,303.0	7,160.0	17.9	24.9	5.16	-3,619.1	1,540.5	4,311.8	4,272.6	39.17	110.077		
7,150.0	7,101.9	7,364.8	7,221.8	17.9	25.0	-0.42	-3,617.9	1,540.3	4,297.2	4,258.7	38.52	111.568		
7,200.0	7,148.7	7,419.5	7,276.5	17.8	25.0	-3.94	-3,616.6	1,540.0	4,278.5	4,240.8	37.67	113.591		
7,250.0	7,193.8	7,464.9	7,321.9	17.7	25.1	-6.57	-3,615.5	1,539.6	4,255.9	4,219.3	36.63	116.176		
7,300.0	7,236.9	7,506.6	7,363.5	17.5	25.1	-8.81	-3,614.6	1,539.0	4,229.7	4,194.3	35.45	119.307		
7,350.0	7,277.7	7,543.1	7,400.0	17.4	25.1	-10.93	-3,613.9	1,538.4	4,200.1	4,165.9	34.15	122.980		
7,400.0	7,315.7	7,577.3	7,434.3	17.2	25.2	-13.14	-3,613.2	1,537.9	4,167.2	4,134.4	32.78	127.124		
7,450.0	7,350.9	7,613.1	7,470.0	17.1	25.2	-15.61	-3,612.5	1,537.2	4,131.4	4,100.0	31.40	131.576		
7,500.0	7,382.8	7,645.5	7,502.4	16.9	25.2	-18.54	-3,611.9	1,536.6	4,092.9	4,062.8	30.08	136.055		
7,550.0	7,411.3	7,674.2	7,531.1	16.7	25.2	-22.16	-3,611.3	1,536.1	4,052.0	4,023.0	28.94	140.019		
7,600.0	7,436.1	7,699.1	7,555.9	16.6	25.3	-26.84	-3,610.8	1,535.6	4,009.0	3,980.9	28.12	142.575		
7,650.0	7,457.1	7,717.2	7,574.1	16.5	25.3	-33.03	-3,610.5	1,535.2	3,964.2	3,936.4	27.81	142.567		
7,700.0	7,474.0	7,731.1	7,587.9	16.4	25.3	-41.49	-3,610.2	1,534.9	3,918.1	3,889.9	28.21	138.877		
7,750.0	7,486.8	7,741.4	7,598.2	16.4	25.3	-53.13	-3,610.0	1,534.7	3,870.9	3,841.5	29.39	131.689		
7,800.0	7,495.3	7,748.0	7,604.9	16.4	25.3	-68.47	-3,609.9	1,534.6	3,823.0	3,792.2	30.88	123.810		
7,850.0	7,499.5	7,750.9	7,607.8	16.5	25.3	-86.35	-3,609.8	1,534.5	3,774.9	3,743.3	31.55	119.655		
7,873.6	7,500.0	7,751.0	7,607.8	16.5	25.3	-94.78	-3,609.8	1,534.5	3,752.2	3,720.8	31.35	119.688		
7,900.0	7,500.0	7,750.5	7,607.4	16.5	25.3	-94.76	-3,609.9	1,534.5	3,726.7	3,695.3	31.42	118.625		
8,000.0	7,500.0	7,749.0	7,605.8	16.9	25.3	-94.67	-3,609.9	1,534.6	3,630.6	3,598.8	31.80	114.160		
8,100.0	7,500.0	7,747.4	7,604.3	17.4	25.3	-94.58	-3,609.9	1,534.6	3,534.8	3,502.4	32.39	109.133		
8,200.0	7,500.0	7,745.8	7,602.7	18.0	25.3	-94.49	-3,609.9	1,534.6	3,439.1	3,406.0	33.15	103.734		
8,300.0	7,500.0	7,744.2	7,601.1	18.8	25.3	-94.40	-3,610.0	1,534.7	3,343.7	3,309.7	34.07	98.146		
8,400.0	7,500.0	7,742.6	7,599.5	19.7	25.3	-94.31	-3,610.0	1,534.7	3,248.6	3,213.5	35.11	92.518		
8,500.0	7,500.0	7,741.0	7,597.9	20.7	25.3	-94.22	-3,610.0	1,534.7	3,153.8	3,117.5	36.26	86.966		
8,600.0	7,500.0	7,739.4	7,596.2	21.9	25.3	-94.13	-3,610.1	1,534.8	3,059.3	3,021.8	37.50	81.572		
8,700.0	7,500.0	7,737.7	7,594.6	23.1	25.3	-94.03	-3,610.1	1,534.8	2,965.2	2,926.4	38.82	76.389		

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Sosa 21-18 - DD (MWD) - DD													Offset Site Error: 0.0 ft			
Survey Program: 814-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				
8,800.0	7,500.0	7,736.0	7,592.9	24.3	25.3	-93.94	-3,610.1	1,534.8	2,871.5	2,831.3	40.19	71.447				
8,900.0	7,500.0	7,734.4	7,591.2	25.6	25.3	-93.85	-3,610.1	1,534.9	2,778.2	2,736.6	41.61	66.763				
9,000.0	7,500.0	7,732.7	7,589.6	27.0	25.3	-93.75	-3,610.2	1,534.9	2,685.4	2,642.3	43.08	62.339				
9,100.0	7,500.0	7,731.0	7,587.9	28.4	25.3	-93.66	-3,610.2	1,534.9	2,593.1	2,548.5	44.58	58.173				
9,200.0	7,500.0	7,729.3	7,586.1	29.9	25.3	-93.56	-3,610.2	1,535.0	2,501.4	2,455.3	46.10	54.255				
9,300.0	7,500.0	7,727.5	7,584.4	31.4	25.3	-93.46	-3,610.3	1,535.0	2,410.4	2,362.7	47.66	50.577				
9,400.0	7,500.0	7,725.8	7,582.7	32.9	25.3	-93.36	-3,610.3	1,535.0	2,320.1	2,270.9	49.23	47.126				
9,500.0	7,500.0	7,724.0	7,580.9	34.4	25.3	-93.26	-3,610.3	1,535.1	2,230.7	2,179.8	50.83	43.889				
9,600.0	7,500.0	7,722.3	7,579.1	36.0	25.3	-93.16	-3,610.4	1,535.1	2,142.1	2,089.7	52.43	40.854				
9,700.0	7,500.0	7,720.5	7,577.3	37.5	25.3	-93.06	-3,610.4	1,535.2	2,054.7	2,000.6	54.06	38.010				
9,800.0	7,500.0	7,718.7	7,575.5	39.1	25.3	-92.96	-3,610.4	1,535.2	1,968.4	1,912.7	55.69	35.345				
9,900.0	7,500.0	7,716.8	7,573.7	40.7	25.3	-92.86	-3,610.5	1,535.2	1,883.5	1,826.1	57.34	32.850				
10,000.0	7,500.0	7,715.0	7,571.9	42.3	25.3	-92.76	-3,610.5	1,535.3	1,800.1	1,741.1	58.99	30.515				
10,100.0	7,500.0	7,713.2	7,570.0	43.9	25.3	-92.65	-3,610.5	1,535.3	1,718.5	1,657.8	60.65	28.334				
10,200.0	7,500.0	7,711.3	7,568.2	45.6	25.3	-92.55	-3,610.6	1,535.3	1,638.9	1,576.6	62.32	26.298				
10,300.0	7,500.0	7,709.4	7,566.3	47.2	25.3	-92.44	-3,610.6	1,535.4	1,561.7	1,497.7	64.00	24.403				
10,400.0	7,500.0	7,707.5	7,564.4	48.9	25.3	-92.33	-3,610.7	1,535.4	1,487.2	1,421.5	65.68	22.643				
10,500.0	7,500.0	7,705.6	7,562.5	50.5	25.3	-92.23	-3,610.7	1,535.4	1,415.8	1,348.5	67.37	21.017				
10,600.0	7,500.0	7,703.7	7,560.5	52.2	25.3	-92.12	-3,610.7	1,535.5	1,348.1	1,279.0	69.06	19.522				
10,700.0	7,500.0	7,701.6	7,558.5	53.8	25.3	-92.00	-3,610.8	1,535.5	1,284.6	1,213.9	70.75	18.156				
10,800.0	7,500.0	7,699.6	7,556.5	55.5	25.3	-91.89	-3,610.8	1,535.6	1,226.0	1,153.5	72.45	16.921				
10,900.0	7,500.0	7,697.6	7,554.5	57.2	25.3	-91.78	-3,610.9	1,535.6	1,173.0	1,098.8	74.16	15.817				
11,000.0	7,500.0	7,695.6	7,552.5	58.9	25.3	-91.66	-3,610.9	1,535.6	1,126.3	1,050.5	75.86	14.847				
11,100.0	7,500.0	7,693.6	7,550.5	60.6	25.3	-91.55	-3,610.9	1,535.7	1,086.9	1,009.4	77.57	14.012				
11,200.0	7,500.0	7,691.6	7,548.5	62.3	25.3	-91.44	-3,611.0	1,535.7	1,055.6	976.3	79.28	13.314				
11,244.1	7,500.0	7,690.7	7,547.6	63.0	25.3	-91.39	-3,611.0	1,535.7	1,044.5	964.4	80.04	13.049				
11,300.0	7,500.0	7,689.6	7,546.4	64.0	25.3	-91.33	-3,611.0	1,535.8	1,032.4	951.5	80.92	12.758				
11,400.0	7,500.0	7,687.5	7,544.4	65.7	25.3	-91.22	-3,611.1	1,535.8	1,015.5	933.0	82.46	12.314				
11,444.1	7,500.0	7,686.5	7,543.4	66.4	25.3	-91.17	-3,611.1	1,535.8	1,009.9	926.8	83.12	12.150				
11,500.0	7,500.0	7,685.4	7,542.2	67.4	25.3	-91.10	-3,611.1	1,535.8	1,005.2	921.2	84.08	11.956				
11,556.7	7,500.0	7,684.1	7,541.0	68.3	25.3	-91.03	-3,611.1	1,535.9	1,003.6	918.6	85.05	11.800 CC, ES				
11,600.0	7,500.0	7,683.2	7,540.1	69.1	25.3	-90.98	-3,611.1	1,535.9	1,004.6	918.8	85.80	11.708				
11,700.0	7,500.0	7,681.1	7,538.0	70.8	25.3	-90.86	-3,611.2	1,535.9	1,013.8	926.3	87.52	11.584				
11,800.0	7,500.0	7,679.0	7,535.9	72.5	25.3	-90.73	-3,611.2	1,536.0	1,032.7	943.5	89.24	11.572 SF				
11,900.0	7,500.0	7,676.9	7,533.7	74.2	25.2	-90.61	-3,611.3	1,536.0	1,060.7	969.7	90.97	11.660				
12,000.0	7,500.0	7,674.7	7,531.6	76.0	25.2	-90.49	-3,611.3	1,536.0	1,097.1	1,004.5	92.70	11.836				
12,100.0	7,500.0	7,672.6	7,529.5	77.7	25.2	-90.37	-3,611.3	1,536.1	1,141.2	1,046.8	94.42	12.086				
12,194.1	7,500.0	7,670.6	7,527.5	79.3	25.2	-90.26	-3,611.4	1,536.1	1,188.9	1,092.8	96.05	12.378				
12,200.0	7,500.0	7,670.5	7,527.4	79.4	25.2	-90.25	-3,611.4	1,536.1	1,192.0	1,095.9	96.17	12.396				
12,300.0	7,500.0	7,668.4	7,525.3	81.1	25.2	-90.14	-3,611.4	1,536.2	1,250.4	1,152.3	98.09	12.748				
12,393.7	7,500.0	7,666.6	7,523.4	82.7	25.2	-90.03	-3,611.5	1,536.2	1,312.0	1,212.2	99.81	13.145				
12,400.0	7,500.0	7,666.4	7,523.3	82.9	25.2	-90.02	-3,611.5	1,536.2	1,316.3	1,216.4	99.92	13.174				
12,500.0	7,500.0	7,664.5	7,521.4	84.6	25.2	-89.90	-3,611.5	1,536.2	1,387.4	1,285.8	101.65	13.650				
12,600.0	7,500.0	7,662.5	7,519.4	86.3	25.2	-89.78	-3,611.5	1,536.3	1,461.9	1,358.5	103.38	14.142				
12,700.0	7,500.0	7,660.5	7,517.4	88.0	25.2	-89.66	-3,611.6	1,536.3	1,539.3	1,434.2	105.11	14.645				
12,800.0	7,500.0	7,658.5	7,515.4	89.7	25.2	-89.54	-3,611.6	1,536.4	1,619.1	1,512.3	106.84	15.155				
12,900.0	7,500.0	7,656.6	7,513.5	91.5	25.2	-89.43	-3,611.7	1,536.4	1,701.1	1,592.5	108.57	15.669				
13,000.0	7,500.0	7,654.6	7,511.5	93.2	25.2	-89.31	-3,611.7	1,536.4	1,784.9	1,674.6	110.30	16.182				
13,100.0	7,500.0	7,652.7	7,509.6	94.9	25.2	-89.19	-3,611.7	1,536.5	1,870.3	1,758.3	112.03	16.695				
13,200.0	7,500.0	7,650.7	7,507.6	96.6	25.2	-89.07	-3,611.8	1,536.5	1,957.1	1,843.3	113.76	17.203				
13,300.0	7,500.0	7,648.8	7,505.7	98.4	25.2	-88.95	-3,611.8	1,536.5	2,045.1	1,929.6	115.49	17.707				
13,400.0	7,500.0	7,646.8	7,503.7	100.1	25.2	-88.84	-3,611.9	1,536.6	2,134.1	2,016.9	117.23	18.205				

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Sosa 21-18 - DD (MWD) - DD											Offset Site Error: 0.0 ft		
Survey Program: 814-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
13,500.0	7,500.0	7,644.8	7,501.8	101.8	25.2	-88.72	-3,611.9	1,536.6	2,224.1	2,105.2	118.96	18.697	
13,600.0	7,500.0	7,642.9	7,499.8	103.5	25.2	-88.60	-3,611.9	1,536.7	2,314.9	2,194.2	120.69	19.181	
13,700.0	7,500.0	7,641.0	7,497.9	105.3	25.2	-88.48	-3,612.0	1,536.7	2,406.4	2,284.0	122.42	19.657	
13,800.0	7,500.0	7,639.0	7,495.9	107.0	25.2	-88.37	-3,612.0	1,536.7	2,498.6	2,374.5	124.15	20.126	
13,900.0	7,500.0	7,637.1	7,494.0	108.7	25.2	-88.25	-3,612.0	1,536.8	2,591.4	2,465.5	125.88	20.586	
14,000.0	7,500.0	7,635.1	7,492.0	110.5	25.2	-88.13	-3,612.1	1,536.8	2,684.6	2,557.0	127.61	21.037	
14,100.0	7,500.0	7,633.2	7,490.1	112.2	25.2	-88.02	-3,612.1	1,536.8	2,778.4	2,649.0	129.34	21.481	
14,200.0	7,500.0	7,631.3	7,488.2	113.9	25.2	-87.90	-3,612.2	1,536.9	2,872.5	2,741.5	131.07	21.915	
14,300.0	7,500.0	7,629.3	7,486.3	115.7	25.2	-87.79	-3,612.2	1,536.9	2,967.1	2,834.3	132.80	22.342	
14,400.0	7,500.0	7,627.4	7,484.3	117.4	25.2	-87.67	-3,612.2	1,536.9	3,062.0	2,927.4	134.53	22.760	
14,500.0	7,500.0	7,625.5	7,482.4	119.1	25.2	-87.55	-3,612.3	1,537.0	3,157.2	3,020.9	136.26	23.170	
14,600.0	7,500.0	7,623.6	7,480.5	120.9	25.2	-87.44	-3,612.3	1,537.0	3,252.6	3,114.7	137.99	23.571	
14,700.0	7,500.0	7,621.6	7,478.6	122.6	25.2	-87.32	-3,612.3	1,537.1	3,348.4	3,208.7	139.72	23.965	
14,800.0	7,500.0	7,619.7	7,476.6	124.3	25.2	-87.21	-3,612.4	1,537.1	3,444.4	3,302.9	141.45	24.351	
14,900.0	7,500.0	7,617.8	7,474.7	126.1	25.2	-87.09	-3,612.4	1,537.1	3,540.6	3,397.4	143.17	24.729	
15,000.0	7,500.0	7,615.9	7,472.8	127.8	25.2	-86.98	-3,612.5	1,537.2	3,637.0	3,492.1	144.90	25.100	
15,100.0	7,500.0	7,614.0	7,470.9	129.6	25.2	-86.86	-3,612.5	1,537.2	3,733.6	3,587.0	146.63	25.464	
15,200.0	7,500.0	7,612.1	7,469.0	131.3	25.2	-86.75	-3,612.5	1,537.2	3,830.4	3,682.0	148.35	25.820	
15,300.0	7,500.0	7,610.2	7,467.1	133.0	25.2	-86.64	-3,612.6	1,537.3	3,927.3	3,777.2	150.08	26.169	
15,400.0	7,500.0	7,608.3	7,465.2	134.8	25.2	-86.52	-3,612.6	1,537.3	4,024.4	3,872.6	151.80	26.511	
15,500.0	7,500.0	7,606.4	7,463.3	136.5	25.2	-86.41	-3,612.6	1,537.3	4,121.6	3,968.1	153.52	26.847	
15,600.0	7,500.0	7,604.5	7,461.4	138.3	25.2	-86.29	-3,612.7	1,537.4	4,219.0	4,063.7	155.24	27.176	
15,700.0	7,500.0	7,602.6	7,459.5	140.0	25.2	-86.18	-3,612.7	1,537.4	4,316.5	4,159.5	156.97	27.499	
15,805.8	7,500.0	7,600.6	7,457.5	141.8	25.2	-86.06	-3,612.7	1,537.4	4,419.7	4,260.9	158.79	27.834	

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Sosa 21-18 - DD (MWD) - 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	23.0	23.0	0.0	0.0	172.97	-4,267.5	526.3	4,299.9					
100.0	100.0	123.0	123.0	0.2	0.2	172.97	-4,267.5	526.3	4,299.9	4,299.5	0.34	N/A		
200.0	200.0	223.0	223.0	0.3	0.4	172.97	-4,267.5	526.3	4,299.9	4,299.2	0.69	6,236.891		
300.0	300.0	323.0	323.0	0.5	0.5	172.97	-4,267.5	526.3	4,299.9	4,298.8	1.04	4,140.493		
400.0	400.0	423.0	423.0	0.7	0.7	172.97	-4,267.5	526.3	4,299.9	4,298.5	1.39	3,098.873		
500.0	500.0	523.0	523.0	0.8	0.9	172.97	-4,267.5	526.3	4,299.9	4,298.1	1.74	2,475.990		
600.0	600.0	623.0	623.0	1.0	1.1	133.50	-4,267.5	526.3	4,300.5	4,298.4	2.09	2,061.758		
700.0	700.0	723.0	723.0	1.2	1.2	133.51	-4,267.5	526.3	4,302.3	4,299.8	2.44	1,766.048		
800.0	799.9	822.9	822.9	1.4	1.4	133.53	-4,267.5	526.3	4,305.3	4,302.5	2.79	1,543.694		
900.0	899.7	922.7	922.7	1.6	1.6	133.56	-4,267.5	526.3	4,309.5	4,306.3	3.15	1,369.817		
1,000.0	999.4	1,022.4	1,022.4	1.8	1.8	133.59	-4,267.5	526.3	4,314.9	4,311.4	3.51	1,229.642		
1,100.0	1,098.9	1,121.9	1,121.9	2.0	1.9	133.64	-4,267.5	526.3	4,321.5	4,317.6	3.88	1,113.869		
1,201.3	1,199.5	1,267.1	1,267.1	2.2	2.2	133.73	-4,267.1	526.9	4,329.4	4,325.0	4.34	996.960		
1,300.0	1,297.5	1,561.1	1,560.1	2.5	2.7	133.82	-4,255.3	545.4	4,334.5	4,329.4	5.11	848.884		
1,400.0	1,396.8	1,843.0	1,837.6	2.7	3.5	133.56	-4,228.7	586.7	4,335.2	4,329.1	6.03	718.452		
1,500.0	1,496.0	1,942.4	1,934.5	3.0	3.8	133.41	-4,216.9	605.1	4,333.9	4,327.4	6.56	660.770		
1,600.0	1,595.3	2,041.7	2,031.5	3.3	4.2	133.27	-4,205.1	623.5	4,332.8	4,325.7	7.10	610.221		
1,700.0	1,694.5	2,141.1	2,128.4	3.5	4.5	133.12	-4,193.3	641.9	4,331.6	4,323.9	7.66	565.761		
1,800.0	1,793.8	2,240.5	2,225.4	3.8	4.9	132.98	-4,181.5	660.3	4,330.5	4,322.2	8.22	526.566		
1,900.0	1,893.0	2,339.9	2,322.3	4.0	5.3	132.83	-4,169.7	678.7	4,329.3	4,320.5	8.80	491.892		
2,000.0	1,992.3	2,439.3	2,419.3	4.3	5.7	132.68	-4,157.9	697.1	4,328.3	4,318.9	9.39	461.091		
2,100.0	2,091.5	2,538.6	2,516.2	4.6	6.1	132.54	-4,146.1	715.5	4,327.2	4,317.2	9.98	433.611		
2,200.0	2,190.8	2,638.0	2,613.2	4.8	6.5	132.39	-4,134.3	733.9	4,326.2	4,315.6	10.58	408.985		
2,300.0	2,290.0	2,737.4	2,710.1	5.1	6.9	132.25	-4,122.5	752.3	4,325.2	4,314.0	11.18	386.821		
2,400.0	2,389.3	2,836.8	2,807.1	5.4	7.3	132.10	-4,110.7	770.7	4,324.2	4,312.4	11.79	366.789		
2,500.0	2,488.5	2,936.1	2,904.0	5.7	7.7	131.95	-4,098.9	789.1	4,323.3	4,310.9	12.40	348.611		
2,600.0	2,587.8	3,035.5	3,000.9	5.9	8.1	131.81	-4,087.1	807.5	4,322.4	4,309.4	13.02	332.053		
2,700.0	2,687.0	3,134.9	3,097.9	6.2	8.5	131.66	-4,075.3	825.9	4,321.5	4,307.9	13.64	316.916		
2,800.0	2,786.3	3,234.3	3,194.8	6.5	8.9	131.52	-4,063.5	844.3	4,320.7	4,306.4	14.26	303.033		
2,900.0	2,885.5	3,333.7	3,291.8	6.7	9.3	131.37	-4,051.7	862.7	4,319.8	4,305.0	14.88	290.258		
3,000.0	2,984.8	3,433.0	3,388.7	7.0	9.7	131.22	-4,039.9	881.0	4,319.0	4,303.5	15.51	278.468		
3,100.0	3,084.0	3,532.4	3,485.7	7.3	10.1	131.08	-4,028.1	899.4	4,318.3	4,302.1	16.14	267.557		
3,200.0	3,183.3	3,631.8	3,582.6	7.6	10.5	130.93	-4,016.3	917.8	4,317.5	4,300.8	16.77	257.433		
3,300.0	3,282.5	3,731.2	3,679.6	7.8	10.9	130.78	-4,004.5	936.2	4,316.8	4,299.4	17.41	248.016		
3,400.0	3,381.8	3,830.5	3,776.5	8.1	11.4	130.64	-3,992.7	954.6	4,316.2	4,298.1	18.04	239.235		
3,500.0	3,481.1	3,929.9	3,873.5	8.4	11.8	130.49	-3,980.9	973.0	4,315.5	4,296.8	18.68	231.030		
3,600.0	3,580.3	4,029.3	3,970.4	8.7	12.2	130.34	-3,969.1	991.4	4,314.9	4,295.6	19.32	223.348		
3,700.0	3,679.6	4,128.7	4,067.3	8.9	12.6	130.20	-3,957.3	1,009.8	4,314.3	4,294.3	19.96	216.140		
3,800.0	3,778.8	4,228.1	4,164.3	9.2	13.0	130.05	-3,945.5	1,028.2	4,313.7	4,293.1	20.60	209.366		
3,900.0	3,878.1	4,327.4	4,261.2	9.5	13.5	129.90	-3,933.7	1,046.6	4,313.2	4,291.9	21.25	202.987		
4,000.0	3,977.3	4,426.8	4,358.2	9.8	13.9	129.76	-3,921.9	1,065.0	4,312.7	4,290.8	21.89	196.972		
4,100.0	4,076.6	4,526.2	4,455.1	10.0	14.3	129.61	-3,910.1	1,083.4	4,312.2	4,289.7	22.54	191.289		
4,200.0	4,175.8	4,625.6	4,552.1	10.3	14.7	129.46	-3,898.3	1,101.8	4,311.7	4,288.6	23.19	185.914		
4,300.0	4,275.1	4,724.9	4,649.0	10.6	15.1	129.31	-3,886.5	1,120.2	4,311.3	4,287.5	23.84	180.822		
4,400.0	4,374.3	4,824.3	4,746.0	10.9	15.5	129.17	-3,874.7	1,138.6	4,310.9	4,286.4	24.50	175.991		
4,500.0	4,473.6	4,923.7	4,842.9	11.1	16.0	129.02	-3,862.9	1,157.0	4,310.6	4,285.4	25.15	171.403		
4,600.0	4,572.8	5,023.1	4,939.8	11.4	16.4	128.87	-3,851.1	1,175.4	4,310.2	4,284.4	25.80	167.039		
4,700.0	4,672.1	5,122.5	5,036.8	11.7	16.8	128.73	-3,839.3	1,193.8	4,309.9	4,283.5	26.46	162.885		
4,800.0	4,771.3	5,221.8	5,133.7	12.0	17.2	128.58	-3,827.5	1,212.2	4,309.6	4,282.5	27.12	158.925		
4,900.0	4,870.6	5,321.2	5,230.7	12.2	17.7	128.43	-3,815.7	1,230.5	4,309.4	4,281.6	27.78	155.147		
5,000.0	4,969.8	5,420.6	5,327.6	12.5	18.1	128.29	-3,803.9	1,248.9	4,309.2	4,280.7	28.44	151.539		
5,100.0	5,069.1	5,520.0	5,424.6	12.8	18.5	128.14	-3,792.1	1,267.3	4,309.0	4,279.9	29.10	148.088		

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Sosa 21-18 - DD (MWD) - Plan #2													Offset Site Error:	0.0 ft
Survey Program: O-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	5,168.3	5,619.3	5,521.5	13.1	18.9	127.99	-3,780.3	1,285.7	4,308.8	4,279.1	29.76	144.787		
5,300.0	5,267.6	5,718.7	5,618.5	13.3	19.3	127.84	-3,768.5	1,304.1	4,308.7	4,278.3	30.42	141.624		
5,400.0	5,366.8	5,818.1	5,715.4	13.6	19.8	127.70	-3,756.7	1,322.5	4,308.6	4,277.5	31.09	138.593		
5,500.0	5,466.1	5,917.5	5,812.4	13.9	20.2	127.55	-3,744.9	1,340.9	4,308.5	4,276.8	31.75	135.684		
5,600.0	5,565.3	6,016.9	5,909.3	14.2	20.6	127.40	-3,733.1	1,359.3	4,308.5	4,276.0	32.42	132.892		
5,700.0	5,664.6	6,116.2	6,006.2	14.4	21.0	127.26	-3,721.3	1,377.7	4,308.4	4,275.4	33.09	130.208		
5,715.9	5,680.4	6,132.1	6,021.7	14.5	21.1	127.23	-3,719.4	1,380.6	4,308.4	4,275.2	33.20	129.790		
5,800.0	5,763.8	6,215.6	6,103.2	14.7	21.4	127.11	-3,709.5	1,396.1	4,308.5	4,274.7	33.76	127.628		
5,900.0	5,863.1	6,315.0	6,200.1	15.0	21.9	126.96	-3,697.7	1,414.5	4,308.5	4,274.1	34.43	125.144		
6,000.0	5,962.3	6,414.4	6,297.1	15.3	22.3	126.81	-3,685.9	1,432.9	4,308.6	4,273.5	35.10	122.753		
6,100.0	6,061.6	6,513.8	6,394.0	15.5	22.7	126.67	-3,674.1	1,451.3	4,308.7	4,272.9	35.77	120.449		
6,200.0	6,160.9	6,613.1	6,491.0	15.8	23.1	126.52	-3,662.3	1,469.7	4,308.8	4,272.3	36.44	118.227		
6,300.0	6,260.1	6,700.0	6,575.7	16.1	23.5	126.39	-3,652.0	1,485.7	4,309.0	4,271.9	37.06	116.256		
6,400.0	6,359.4	6,772.0	6,646.2	16.4	23.8	126.30	-3,644.1	1,498.1	4,309.7	4,272.1	37.58	114.687		
6,500.0	6,458.6	6,839.4	6,712.5	16.6	24.0	126.23	-3,637.5	1,508.3	4,311.2	4,273.1	38.05	113.300		
6,600.0	6,557.9	6,900.0	6,772.4	16.9	24.2	126.19	-3,632.3	1,516.4	4,313.4	4,275.0	38.49	112.079		
6,700.0	6,657.1	6,974.6	6,846.3	17.2	24.4	126.16	-3,626.9	1,524.8	4,316.4	4,277.5	38.92	110.897		
6,800.0	6,756.4	7,042.3	6,913.6	17.5	24.5	126.16	-3,622.9	1,531.1	4,320.2	4,280.9	39.32	109.880		
6,900.0	6,855.6	7,100.0	6,971.0	17.7	24.6	126.17	-3,620.1	1,535.4	4,324.7	4,285.0	39.68	109.000		
6,919.5	6,875.0	7,123.1	6,994.0	17.8	24.7	126.18	-3,619.2	1,536.8	4,325.6	4,285.9	39.76	108.801		
6,950.0	6,905.3	7,143.7	7,014.6	17.9	24.7	103.62	-3,618.5	1,538.0	4,326.4	4,286.6	39.85	108.559		
7,000.0	6,955.1	7,177.5	7,048.3	17.9	24.8	45.32	-3,617.4	1,539.6	4,324.4	4,284.6	39.83	108.573		
7,050.0	7,004.8	7,200.0	7,070.8	17.9	24.8	16.16	-3,616.9	1,540.5	4,318.4	4,278.9	39.57	109.134		
7,100.0	7,053.8	7,244.2	7,115.0	17.9	24.8	5.12	-3,616.0	1,541.8	4,308.4	4,269.3	39.11	110.167		
7,150.0	7,101.9	7,276.7	7,147.5	17.9	24.9	-0.45	-3,615.6	1,542.4	4,294.5	4,256.1	38.43	111.750		
7,200.0	7,148.7	7,308.4	7,179.2	17.8	24.9	-3.94	-3,615.4	1,542.7	4,276.8	4,239.2	37.56	113.873		
7,250.0	7,193.8	7,346.0	7,216.8	17.7	24.9	-6.53	-3,615.4	1,542.8	4,255.3	4,218.8	36.52	116.533		
7,300.0	7,236.9	7,389.1	7,259.9	17.5	25.0	-8.72	-3,615.4	1,542.8	4,230.1	4,194.8	35.33	119.725		
7,350.0	7,277.7	7,429.9	7,300.7	17.4	25.0	-10.80	-3,615.4	1,542.8	4,201.5	4,167.4	34.03	123.463		
7,400.0	7,315.7	7,468.0	7,338.8	17.2	25.1	-12.94	-3,615.4	1,542.8	4,169.5	4,136.8	32.65	127.699		
7,450.0	7,350.9	7,503.1	7,373.9	17.1	25.1	-15.32	-3,615.4	1,542.8	4,134.5	4,103.3	31.25	132.309		
7,500.0	7,382.8	7,535.1	7,405.8	16.9	25.1	-18.10	-3,615.4	1,542.8	4,096.7	4,066.8	29.90	137.023		
7,550.0	7,411.3	7,563.5	7,434.3	16.7	25.1	-21.51	-3,615.4	1,542.8	4,056.5	4,027.8	28.70	141.337		
7,600.0	7,436.1	7,588.3	7,459.1	16.6	25.2	-25.87	-3,615.4	1,542.8	4,014.1	3,986.3	27.80	144.406		
7,650.0	7,457.1	7,609.3	7,480.1	16.5	25.2	-31.62	-3,615.4	1,542.8	3,969.8	3,942.5	27.37	145.029		
7,700.0	7,474.0	7,626.2	7,497.0	16.4	25.2	-39.43	-3,615.4	1,542.8	3,924.1	3,896.4	27.64	141.996		
7,750.0	7,486.8	7,639.0	7,509.8	16.4	25.2	-50.14	-3,615.4	1,542.8	3,877.2	3,848.5	28.69	135.133		
7,800.0	7,495.3	7,647.5	7,518.3	16.4	25.2	-64.40	-3,615.4	1,542.8	3,829.5	3,799.3	30.23	126.665		
7,850.0	7,499.5	7,651.7	7,522.5	16.5	25.2	-81.60	-3,615.4	1,542.8	3,781.5	3,750.2	31.29	120.869		
7,873.6	7,500.0	7,652.2	7,523.0	16.5	25.2	-90.00	-3,615.4	1,542.8	3,758.8	3,727.5	31.32	120.005		
7,900.0	7,500.0	7,652.2	7,523.0	16.5	25.2	-90.00	-3,615.4	1,542.8	3,733.4	3,702.0	31.39	118.943		
8,000.0	7,500.0	7,652.2	7,523.0	16.9	25.2	-90.00	-3,615.4	1,542.8	3,637.3	3,605.5	31.77	114.483		
8,100.0	7,500.0	7,652.2	7,523.0	17.4	25.2	-90.00	-3,615.4	1,542.8	3,541.4	3,509.1	32.36	109.456		
8,200.0	7,500.0	7,652.2	7,523.0	18.0	25.2	-90.00	-3,615.4	1,542.8	3,445.8	3,412.7	33.12	104.053		
8,300.0	7,500.0	7,652.2	7,523.0	18.8	25.2	-90.00	-3,615.4	1,542.8	3,350.5	3,316.4	34.03	98.457		
8,400.0	7,500.0	7,652.2	7,523.0	19.7	25.2	-90.00	-3,615.4	1,542.8	3,255.4	3,220.3	35.07	92.819		
8,500.0	7,500.0	7,652.2	7,523.0	20.7	25.2	-90.00	-3,615.4	1,542.8	3,160.6	3,124.4	36.22	87.256		
8,600.0	7,500.0	7,652.2	7,523.0	21.9	25.2	-90.00	-3,615.4	1,542.8	3,066.2	3,028.7	37.46	81.850		
8,700.0	7,500.0	7,652.2	7,523.0	23.1	25.2	-90.00	-3,615.4	1,542.8	2,972.1	2,933.3	38.77	76.655		
8,800.0	7,500.0	7,652.2	7,523.0	24.3	25.2	-90.00	-3,615.4	1,542.8	2,878.4	2,838.2	40.14	71.702		
8,900.0	7,500.0	7,652.2	7,523.0	25.6	25.2	-90.00	-3,615.4	1,542.8	2,785.1	2,743.6	41.57	67.006		
9,000.0	7,500.0	7,652.2	7,523.0	27.0	25.2	-90.00	-3,615.4	1,542.8	2,692.4	2,649.3	43.03	62.572		

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



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Sosa 21-18 - DD (MWD) - 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)				
9,100.0	7,500.0	7,652.2	7,523.0	28.4	25.2	-90.00	-3,615.4	1,542.8	2,600.1	2,555.6	44.53	58.395		
9,200.0	7,500.0	7,652.2	7,523.0	29.9	25.2	-90.00	-3,615.4	1,542.8	2,508.5	2,462.5	46.05	54.469		
9,300.0	7,500.0	7,652.2	7,523.0	31.4	25.2	-90.00	-3,615.4	1,542.8	2,417.5	2,369.9	47.61	50.783		
9,400.0	7,500.0	7,652.2	7,523.0	32.9	25.2	-90.00	-3,615.4	1,542.8	2,327.3	2,278.1	49.18	47.323		
9,500.0	7,500.0	7,652.2	7,523.0	34.4	25.2	-90.00	-3,615.4	1,542.8	2,237.9	2,187.2	50.77	44.079		
9,600.0	7,500.0	7,652.2	7,523.0	36.0	25.2	-90.00	-3,615.4	1,542.8	2,149.5	2,097.1	52.38	41.038		
9,700.0	7,500.0	7,652.2	7,523.0	37.5	25.2	-90.00	-3,615.4	1,542.8	2,062.1	2,008.1	54.00	38.188		
9,800.0	7,500.0	7,652.2	7,523.0	39.1	25.2	-90.00	-3,615.4	1,542.8	1,975.8	1,920.2	55.63	35.517		
9,900.0	7,500.0	7,652.2	7,523.0	40.7	25.2	-90.00	-3,615.4	1,542.8	1,891.0	1,833.7	57.27	33.017		
10,000.0	7,500.0	7,652.2	7,523.0	42.3	25.2	-90.00	-3,615.4	1,542.8	1,807.7	1,748.8	58.93	30.678		
10,100.0	7,500.0	7,652.2	7,523.0	43.9	25.2	-90.00	-3,615.4	1,542.8	1,726.2	1,665.6	60.59	28.491		
10,200.0	7,500.0	7,652.2	7,523.0	45.6	25.2	-90.00	-3,615.4	1,542.8	1,646.7	1,584.4	62.25	26.452		
10,300.0	7,500.0	7,652.2	7,523.0	47.2	25.2	-90.00	-3,615.4	1,542.8	1,569.5	1,505.6	63.93	24.552		
10,400.0	7,500.0	7,652.2	7,523.0	48.9	25.2	-90.00	-3,615.4	1,542.8	1,495.1	1,429.5	65.61	22.789		
10,500.0	7,500.0	7,652.2	7,523.0	50.5	25.2	-90.00	-3,615.4	1,542.8	1,423.8	1,356.5	67.29	21.159		
10,600.0	7,500.0	7,652.2	7,523.0	52.2	25.2	-90.00	-3,615.4	1,542.8	1,356.1	1,287.2	68.98	19.660		
10,700.0	7,500.0	7,652.2	7,523.0	53.8	25.2	-90.00	-3,615.4	1,542.8	1,292.7	1,222.0	70.67	18.291		
10,800.0	7,500.0	7,652.2	7,523.0	55.5	25.2	-90.00	-3,615.4	1,542.8	1,234.1	1,161.7	72.37	17.052		
10,900.0	7,500.0	7,652.2	7,523.0	57.2	25.2	-90.00	-3,615.4	1,542.8	1,181.0	1,106.9	74.07	15.944		
11,000.0	7,500.0	7,652.2	7,523.0	58.9	25.2	-90.00	-3,615.4	1,542.8	1,134.3	1,058.5	75.77	14.970		
11,100.0	7,500.0	7,652.2	7,523.0	60.6	25.2	-90.00	-3,615.4	1,542.8	1,094.8	1,017.3	77.48	14.130		
11,200.0	7,500.0	7,652.2	7,523.0	62.3	25.2	-90.00	-3,615.4	1,542.8	1,063.2	984.0	79.19	13.426		
11,244.1	7,500.0	7,652.2	7,523.0	63.0	25.2	-90.00	-3,615.4	1,542.8	1,052.0	972.1	79.95	13.159		
11,300.0	7,500.0	7,652.2	7,523.0	64.0	25.2	-90.00	-3,615.4	1,542.8	1,039.8	959.0	80.83	12.864		
11,400.0	7,500.0	7,652.2	7,523.0	65.7	25.2	-90.00	-3,615.4	1,542.8	1,022.5	940.2	82.37	12.415		
11,444.1	7,500.0	7,652.2	7,523.0	66.4	25.2	-90.00	-3,615.4	1,542.8	1,016.8	933.8	83.02	12.248		
11,500.0	7,500.0	7,652.2	7,523.0	67.4	25.2	-90.00	-3,615.4	1,542.8	1,011.9	927.9	83.98	12.049		
11,561.5	7,500.0	7,652.2	7,523.0	68.4	25.2	-90.00	-3,615.4	1,542.8	1,010.1	925.0	85.04	11.877 CC, ES		
11,600.0	7,500.0	7,652.2	7,523.0	69.1	25.2	-90.00	-3,615.4	1,542.8	1,010.8	925.1	85.70	11.794		
11,700.0	7,500.0	7,652.2	7,523.0	70.8	25.2	-90.00	-3,615.4	1,542.8	1,019.5	932.1	87.42	11.662		
11,800.0	7,500.0	7,652.2	7,523.0	72.5	25.2	-90.00	-3,615.4	1,542.8	1,037.8	948.7	89.14	11.642 SF		
11,900.0	7,500.0	7,652.2	7,523.0	74.2	25.2	-90.00	-3,615.4	1,542.8	1,065.3	974.4	90.87	11.723		
12,000.0	7,500.0	7,652.2	7,523.0	76.0	25.2	-90.00	-3,615.4	1,542.8	1,101.1	1,008.6	92.59	11.892		
12,100.0	7,500.0	7,652.2	7,523.0	77.7	25.2	-90.00	-3,615.4	1,542.8	1,144.7	1,050.3	94.32	12.136		
12,194.1	7,500.0	7,652.2	7,523.0	79.3	25.2	-90.00	-3,615.4	1,542.8	1,191.8	1,095.9	95.95	12.422		
12,200.0	7,500.0	7,652.2	7,523.0	79.4	25.2	-90.00	-3,615.4	1,542.8	1,195.0	1,098.9	96.06	12.439		
12,300.0	7,500.0	7,652.2	7,523.0	81.1	25.2	-90.00	-3,615.4	1,542.8	1,252.8	1,154.8	97.98	12.786		
12,393.7	7,500.0	7,652.2	7,523.0	82.7	25.2	-90.00	-3,615.4	1,542.8	1,314.0	1,214.3	99.71	13.179		
12,400.0	7,500.0	7,652.2	7,523.0	82.9	25.2	-90.00	-3,615.4	1,542.8	1,318.3	1,218.5	99.82	13.208		
12,500.0	7,500.0	7,652.2	7,523.0	84.6	25.2	-90.00	-3,615.4	1,542.8	1,389.1	1,287.5	101.55	13.679		
12,600.0	7,500.0	7,652.2	7,523.0	86.3	25.2	-90.00	-3,615.4	1,542.8	1,463.2	1,359.9	103.28	14.168		
12,700.0	7,500.0	7,652.2	7,523.0	88.0	25.2	-90.00	-3,615.4	1,542.8	1,540.2	1,435.2	105.01	14.668		
12,800.0	7,500.0	7,652.2	7,523.0	89.7	25.2	-90.00	-3,615.4	1,542.8	1,619.8	1,513.1	106.74	15.175		
12,900.0	7,500.0	7,652.2	7,523.0	91.5	25.2	-90.00	-3,615.4	1,542.8	1,701.5	1,593.0	108.48	15.686		
13,000.0	7,500.0	7,652.2	7,523.0	93.2	25.2	-90.00	-3,615.4	1,542.8	1,785.1	1,674.9	110.21	16.197		
13,100.0	7,500.0	7,652.2	7,523.0	94.9	25.2	-90.00	-3,615.4	1,542.8	1,870.3	1,758.4	111.95	16.707		
13,200.0	7,500.0	7,652.2	7,523.0	96.6	25.2	-90.00	-3,615.4	1,542.8	1,956.9	1,843.2	113.68	17.214		
13,300.0	7,500.0	7,652.2	7,523.0	98.4	25.2	-90.00	-3,615.4	1,542.8	2,044.7	1,929.3	115.42	17.716		
13,400.0	7,500.0	7,652.2	7,523.0	100.1	25.2	-90.00	-3,615.4	1,542.8	2,133.6	2,016.5	117.16	18.212		
13,500.0	7,500.0	7,652.2	7,523.0	101.8	25.2	-90.00	-3,615.4	1,542.8	2,223.5	2,104.6	118.89	18.701		
13,600.0	7,500.0	7,652.2	7,523.0	103.5	25.2	-90.00	-3,615.4	1,542.8	2,314.1	2,193.5	120.63	19.183		
13,700.0	7,500.0	7,652.2	7,523.0	105.3	25.2	-90.00	-3,615.4	1,542.8	2,405.5	2,283.2	122.37	19.658		

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



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Sosa 21-18 - DD (MWD) - 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		
13,800.0	7,500.0	7,652.2	7,523.0	107.0	25.2	-90.00	-3,615.4	1,542.8	2,497.6	2,373.5	124.11	20.124		
13,900.0	7,500.0	7,652.2	7,523.0	108.7	25.2	-90.00	-3,615.4	1,542.8	2,590.3	2,464.4	125.85	20.582		
14,000.0	7,500.0	7,652.2	7,523.0	110.5	25.2	-90.00	-3,615.4	1,542.8	2,683.5	2,555.9	127.59	21.032		
14,100.0	7,500.0	7,652.2	7,523.0	112.2	25.2	-90.00	-3,615.4	1,542.8	2,777.1	2,647.8	129.33	21.473		
14,200.0	7,500.0	7,652.2	7,523.0	113.9	25.2	-90.00	-3,615.4	1,542.8	2,871.2	2,740.1	131.07	21.905		
14,300.0	7,500.0	7,652.2	7,523.0	115.7	25.2	-90.00	-3,615.4	1,542.8	2,965.7	2,832.9	132.81	22.329		
14,400.0	7,500.0	7,652.2	7,523.0	117.4	25.2	-90.00	-3,615.4	1,542.8	3,060.5	2,925.9	134.56	22.745		
14,500.0	7,500.0	7,652.2	7,523.0	119.1	25.2	-90.00	-3,615.4	1,542.8	3,155.6	3,019.3	136.30	23.152		
14,600.0	7,500.0	7,652.2	7,523.0	120.9	25.2	-90.00	-3,615.4	1,542.8	3,251.1	3,113.0	138.04	23.552		
14,700.0	7,500.0	7,652.2	7,523.0	122.6	25.2	-90.00	-3,615.4	1,542.8	3,346.8	3,207.0	139.78	23.943		
14,800.0	7,500.0	7,652.2	7,523.0	124.3	25.2	-90.00	-3,615.4	1,542.8	3,442.7	3,301.2	141.53	24.326		
14,900.0	7,500.0	7,652.2	7,523.0	126.1	25.2	-90.00	-3,615.4	1,542.8	3,538.9	3,395.6	143.27	24.701		
15,000.0	7,500.0	7,652.2	7,523.0	127.8	25.2	-90.00	-3,615.4	1,542.8	3,635.3	3,490.3	145.01	25.068		
15,100.0	7,500.0	7,652.2	7,523.0	129.6	25.2	-90.00	-3,615.4	1,542.8	3,731.8	3,585.1	146.76	25.428		
15,200.0	7,500.0	7,652.2	7,523.0	131.3	25.2	-90.00	-3,615.4	1,542.8	3,828.6	3,680.1	148.50	25.781		
15,300.0	7,500.0	7,652.2	7,523.0	133.0	25.2	-90.00	-3,615.4	1,542.8	3,925.5	3,775.2	150.25	26.127		
15,400.0	7,500.0	7,652.2	7,523.0	134.8	25.2	-90.00	-3,615.4	1,542.8	4,022.6	3,870.6	151.99	26.465		
15,500.0	7,500.0	7,652.2	7,523.0	136.5	25.2	-90.00	-3,615.4	1,542.8	4,119.8	3,966.0	153.74	26.797		
15,600.0	7,500.0	7,652.2	7,523.0	138.3	25.2	-90.00	-3,615.4	1,542.8	4,217.1	4,061.6	155.48	27.122		
15,700.0	7,500.0	7,652.2	7,523.0	140.0	25.2	-90.00	-3,615.4	1,542.8	4,314.5	4,157.3	157.23	27.441		
15,805.8	7,500.0	7,652.2	7,523.0	141.8	25.2	-90.00	-3,615.4	1,542.8	4,417.7	4,258.7	159.07	27.771		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Sosa 22-18 - DD - DD													Offset Site Error:	0.0 ft
Survey Program: 41-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	33.7	33.7	0.0	0.0	172.56	-4,267.5	557.1	4,303.7					
100.0	100.0	118.0	118.0	0.2	0.2	172.56	-4,267.4	557.3	4,303.6	4,303.3	0.33	N/A		
200.0	200.0	178.0	178.0	0.3	0.3	172.55	-4,267.9	557.9	4,304.4	4,303.8	0.61	7,045.948		
300.0	300.0	207.9	207.8	0.5	0.3	172.54	-4,268.5	558.6	4,306.4	4,305.6	0.84	5,137.995		
400.0	400.0	270.0	269.9	0.7	0.5	172.52	-4,270.4	560.7	4,309.8	4,308.7	1.12	3,846.061		
500.0	500.0	298.6	298.4	0.8	0.5	172.50	-4,271.6	562.1	4,314.3	4,312.9	1.35	3,205.677		
600.0	600.0	362.0	361.6	1.0	0.7	132.94	-4,275.0	565.8	4,320.8	4,319.1	1.66	2,609.347		
700.0	700.0	362.0	361.6	1.2	0.7	132.88	-4,275.0	565.8	4,329.8	4,327.9	1.83	2,363.863		
800.0	799.9	426.0	425.3	1.4	0.8	132.76	-4,279.6	570.7	4,341.1	4,338.9	2.14	2,024.742		
900.0	899.7	454.0	453.1	1.6	0.9	132.65	-4,282.0	573.2	4,355.1	4,352.7	2.39	1,825.829		
1,000.0	999.4	511.5	510.1	1.8	1.1	132.50	-4,287.5	578.7	4,371.4	4,368.7	2.70	1,616.340		
1,100.0	1,098.9	546.0	544.1	2.0	1.2	132.35	-4,291.3	582.4	4,390.2	4,387.2	2.98	1,473.491		
1,201.3	1,199.5	599.3	596.7	2.2	1.4	132.18	-4,297.6	588.8	4,411.6	4,408.3	3.33	1,326.316		
1,300.0	1,297.5	642.0	638.6	2.5	1.5	132.16	-4,303.2	594.6	4,434.2	4,430.6	3.65	1,215.803		
1,400.0	1,396.8	698.0	693.4	2.7	1.7	132.13	-4,311.0	603.0	4,458.2	4,454.2	4.02	1,108.711		
1,500.0	1,496.0	829.4	822.0	3.0	2.3	132.06	-4,329.5	623.3	4,482.5	4,477.9	4.60	975.375		
1,600.0	1,595.3	900.1	891.2	3.3	2.5	132.02	-4,339.4	633.5	4,506.4	4,501.4	5.01	899.395		
1,700.0	1,694.5	940.0	930.2	3.5	2.7	132.00	-4,345.1	639.5	4,531.1	4,525.8	5.35	847.256		
1,800.0	1,793.8	1,004.0	992.6	3.8	3.0	131.96	-4,355.0	650.0	4,556.9	4,551.1	5.76	790.651		
1,900.0	1,893.0	1,044.8	1,032.2	4.0	3.2	131.93	-4,361.8	657.1	4,583.7	4,577.6	6.12	749.371		
2,000.0	1,992.3	1,112.8	1,098.0	4.3	3.5	131.87	-4,373.5	669.4	4,611.4	4,604.9	6.56	703.107		
2,100.0	2,091.5	1,197.1	1,179.5	4.6	3.9	131.80	-4,388.3	685.2	4,639.5	4,632.4	7.05	657.661		
2,200.0	2,190.8	1,368.3	1,345.2	4.8	4.7	131.65	-4,417.7	716.6	4,667.4	4,659.6	7.82	596.815		
2,300.0	2,290.0	1,470.6	1,444.4	5.1	5.2	131.56	-4,433.9	735.3	4,693.8	4,685.5	8.37	560.519		
2,400.0	2,389.3	1,555.8	1,527.1	5.4	5.5	131.49	-4,447.7	750.6	4,720.5	4,711.6	8.87	532.219		
2,500.0	2,488.5	1,629.5	1,598.6	5.7	5.9	131.44	-4,459.8	763.7	4,747.4	4,738.1	9.33	508.874		
2,600.0	2,587.8	1,713.5	1,680.1	5.9	6.3	131.37	-4,474.0	778.9	4,774.8	4,765.0	9.83	485.725		
2,700.0	2,687.0	1,793.8	1,757.7	6.2	6.7	131.30	-4,487.6	793.9	4,802.4	4,792.1	10.32	465.340		
2,800.0	2,786.3	1,925.0	1,884.6	6.5	7.3	131.19	-4,509.7	818.7	4,830.0	4,819.0	10.98	439.877		
2,900.0	2,885.5	2,009.1	1,966.0	6.7	7.7	131.11	-4,523.5	834.7	4,857.1	4,845.6	11.48	423.024		
3,000.0	2,984.8	2,114.6	2,068.2	7.0	8.2	131.03	-4,541.0	854.2	4,884.4	4,872.3	12.05	405.383		
3,100.0	3,084.0	2,175.2	2,126.9	7.3	8.5	130.98	-4,551.3	865.3	4,911.9	4,899.4	12.47	393.789		
3,200.0	3,183.3	2,319.2	2,266.4	7.6	9.2	130.88	-4,576.0	891.1	4,939.8	4,926.6	13.14	375.806		
3,300.0	3,282.5	2,425.6	2,369.7	7.8	9.7	130.80	-4,593.1	910.2	4,966.4	4,952.7	13.72	362.020		
3,400.0	3,381.8	2,497.0	2,438.8	8.1	10.0	130.74	-4,604.9	923.7	4,993.6	4,979.4	14.19	352.008		
3,500.0	3,481.1	2,585.8	2,524.7	8.4	10.4	130.68	-4,620.0	940.0	5,021.2	5,006.5	14.69	341.776		
3,600.0	3,580.3	2,697.1	2,632.8	8.7	10.9	130.61	-4,638.5	959.4	5,048.3	5,033.0	15.26	330.848		
3,700.0	3,679.6	2,791.4	2,724.4	8.9	11.4	130.55	-4,654.2	975.6	5,075.4	5,059.6	15.78	321.706		
3,800.0	3,778.8	2,904.7	2,834.3	9.2	11.9	130.47	-4,672.4	996.0	5,102.0	5,085.7	16.37	311.683		
3,900.0	3,878.1	2,975.0	2,902.4	9.5	12.2	130.42	-4,684.2	1,009.0	5,129.4	5,112.6	16.82	304.901		
4,000.0	3,977.3	3,004.8	2,931.2	9.8	12.4	130.40	-4,689.5	1,014.4	5,157.4	5,140.3	17.15	300.720		
4,100.0	4,076.6	3,071.0	2,995.1	10.0	12.7	130.36	-4,701.6	1,026.5	5,186.3	5,168.7	17.59	294.893		
4,200.0	4,175.8	3,179.5	3,100.0	10.3	13.2	130.29	-4,721.3	1,045.9	5,215.0	5,196.9	18.15	287.306		
4,300.0	4,275.1	3,328.7	3,244.3	10.6	14.0	130.19	-4,748.2	1,073.3	5,243.8	5,225.0	18.85	278.200		
4,400.0	4,374.3	3,483.0	3,393.6	10.9	14.7	130.07	-4,773.8	1,102.5	5,271.3	5,251.7	19.58	269.206		
7,800.0	7,495.3	7,618.6	7,482.8	16.4	25.4	-51.67	-5,099.8	1,453.4	5,258.4	5,230.1	28.25	186.163		
7,850.0	7,499.5	7,623.5	7,487.7	16.5	25.4	-75.04	-5,099.8	1,453.4	5,209.4	5,176.5	32.84	158.615		
7,873.6	7,500.0	7,624.2	7,488.3	16.5	25.4	-87.87	-5,099.8	1,453.4	5,186.2	5,152.7	33.52	154.729		
7,900.0	7,500.0	7,624.3	7,488.5	16.5	25.4	-87.88	-5,099.8	1,453.4	5,160.2	5,126.6	33.58	153.652		
8,000.0	7,500.0	7,624.9	7,489.1	16.9	25.4	-87.92	-5,099.8	1,453.4	5,061.9	5,027.9	33.97	149.023		
8,100.0	7,500.0	7,625.4	7,489.6	17.4	25.4	-87.95	-5,099.8	1,453.4	4,963.6	4,929.1	34.55	143.665		
8,200.0	7,500.0	7,626.0	7,490.2	18.0	25.4	-87.99	-5,099.8	1,453.4	4,865.4	4,830.1	35.31	137.792		

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Sosa 22-18 - DD - DD												Offset Site Error:	0.0 ft
Survey Program: 41-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	7,500.0	7,626.6	7,490.7	18.8	25.4	-88.02	-5,099.8	1,453.4	4,767.3	4,731.1	36.22	131.611	
8,400.0	7,500.0	7,627.1	7,491.3	19.7	25.4	-88.05	-5,099.8	1,453.4	4,669.3	4,632.0	37.26	125.302	
8,500.0	7,500.0	7,627.7	7,491.8	20.7	25.4	-88.09	-5,099.8	1,453.4	4,571.4	4,533.0	38.41	119.006	
8,600.0	7,500.0	7,628.2	7,492.4	21.9	25.4	-88.12	-5,099.8	1,453.4	4,473.5	4,433.9	39.65	112.825	
8,700.0	7,500.0	7,628.7	7,492.9	23.1	25.4	-88.15	-5,099.8	1,453.5	4,375.8	4,334.8	40.96	106.829	
8,800.0	7,500.0	7,629.3	7,493.5	24.3	25.4	-88.19	-5,099.8	1,453.5	4,278.1	4,235.8	42.33	101.063	
8,900.0	7,500.0	7,629.8	7,494.0	25.6	25.4	-88.22	-5,099.8	1,453.5	4,180.6	4,136.9	43.75	95.552	
9,000.0	7,500.0	7,630.4	7,494.5	27.0	25.4	-88.25	-5,099.8	1,453.5	4,083.2	4,038.0	45.21	90.306	
9,100.0	7,500.0	7,630.9	7,495.1	28.4	25.4	-88.29	-5,099.8	1,453.5	3,985.9	3,939.2	46.71	85.329	
9,200.0	7,500.0	7,631.4	7,495.6	29.9	25.4	-88.32	-5,099.8	1,453.5	3,888.8	3,840.5	48.24	80.615	
9,300.0	7,500.0	7,632.0	7,496.1	31.4	25.4	-88.35	-5,099.8	1,453.5	3,791.8	3,742.0	49.79	76.154	
9,400.0	7,500.0	7,632.5	7,496.7	32.9	25.4	-88.38	-5,099.8	1,453.5	3,694.9	3,643.6	51.36	71.937	
9,500.0	7,500.0	7,633.0	7,497.2	34.4	25.4	-88.42	-5,099.8	1,453.5	3,598.3	3,545.3	52.95	67.950	
9,600.0	7,500.0	7,633.6	7,497.7	36.0	25.4	-88.45	-5,099.8	1,453.5	3,501.8	3,447.2	54.56	64.181	
9,700.0	7,500.0	7,634.1	7,498.2	37.5	25.4	-88.48	-5,099.8	1,453.5	3,405.5	3,349.3	56.18	60.616	
9,800.0	7,500.0	7,634.6	7,498.8	39.1	25.4	-88.51	-5,099.8	1,453.5	3,309.5	3,251.6	57.81	57.243	
9,900.0	7,500.0	7,635.1	7,499.3	40.7	25.4	-88.54	-5,099.9	1,453.5	3,213.7	3,154.2	59.46	54.050	
10,000.0	7,500.0	7,635.6	7,499.8	42.3	25.4	-88.58	-5,099.9	1,453.5	3,118.1	3,057.0	61.11	51.025	
10,100.0	7,500.0	7,636.2	7,500.3	43.9	25.4	-88.61	-5,099.9	1,453.5	3,022.8	2,960.1	62.77	48.158	
10,200.0	7,500.0	7,636.7	7,500.8	45.6	25.4	-88.64	-5,099.9	1,453.5	2,927.9	2,863.5	64.44	45.438	
10,300.0	7,500.0	7,637.2	7,501.4	47.2	25.4	-88.67	-5,099.9	1,453.5	2,833.3	2,767.2	66.11	42.857	
10,400.0	7,500.0	7,637.7	7,501.9	48.9	25.4	-88.70	-5,099.9	1,453.5	2,739.1	2,671.3	67.79	40.405	
10,500.0	7,500.0	7,638.2	7,502.4	50.5	25.4	-88.73	-5,099.9	1,453.5	2,645.3	2,575.8	69.48	38.075	
10,600.0	7,500.0	7,638.7	7,502.9	52.2	25.4	-88.76	-5,099.9	1,453.5	2,552.0	2,480.8	71.16	35.860	
10,700.0	7,500.0	7,639.2	7,503.4	53.8	25.4	-88.80	-5,099.9	1,453.5	2,459.2	2,386.3	72.86	33.753	
10,800.0	7,500.0	7,639.7	7,503.9	55.5	25.4	-88.83	-5,099.9	1,453.6	2,367.0	2,292.4	74.56	31.748	
10,900.0	7,500.0	7,640.2	7,504.4	57.2	25.4	-88.86	-5,099.9	1,453.6	2,275.4	2,199.2	76.26	29.839	
11,000.0	7,500.0	7,640.7	7,504.9	58.9	25.4	-88.89	-5,099.9	1,453.6	2,184.6	2,106.7	77.96	28.022	
11,100.0	7,500.0	7,641.2	7,505.4	60.6	25.4	-88.92	-5,099.9	1,453.6	2,094.6	2,015.0	79.67	26.292	
11,200.0	7,500.0	7,641.7	7,505.9	62.3	25.4	-88.95	-5,099.9	1,453.6	2,005.6	1,924.2	81.38	24.646	
11,244.1	7,500.0	7,641.9	7,506.1	63.0	25.4	-88.96	-5,099.9	1,453.6	1,966.7	1,884.5	82.13	23.945	
11,300.0	7,500.0	7,642.2	7,506.4	64.0	25.4	-88.94	-5,099.9	1,453.6	1,917.4	1,834.0	83.48	22.969	
11,400.0	7,500.0	7,642.7	7,506.9	65.7	25.4	-88.90	-5,099.9	1,453.6	1,828.9	1,743.1	85.83	21.309	
11,444.1	7,500.0	7,643.0	7,507.1	66.4	25.4	-88.89	-5,099.9	1,453.6	1,789.7	1,702.8	86.84	20.609	
11,500.0	7,500.0	7,643.3	7,507.5	67.4	25.4	-88.91	-5,099.9	1,453.6	1,740.2	1,652.4	87.80	19.820	
11,600.0	7,500.0	7,643.8	7,508.0	69.1	25.4	-88.95	-5,099.9	1,453.6	1,652.6	1,563.1	89.52	18.461	
11,700.0	7,500.0	7,644.4	7,508.6	70.8	25.4	-88.99	-5,099.9	1,453.6	1,566.5	1,475.2	91.24	17.169	
11,800.0	7,500.0	7,644.9	7,509.1	72.5	25.4	-89.03	-5,099.9	1,453.6	1,482.1	1,389.1	92.96	15.943	
11,900.0	7,500.0	7,645.5	7,509.6	74.2	25.4	-89.06	-5,099.9	1,453.6	1,399.8	1,305.1	94.69	14.783	
12,000.0	7,500.0	7,646.0	7,510.2	76.0	25.4	-89.10	-5,099.9	1,453.6	1,319.9	1,223.5	96.41	13.690	
12,100.0	7,500.0	7,646.6	7,510.7	77.7	25.4	-89.14	-5,099.9	1,453.6	1,242.9	1,144.8	98.14	12.665	
12,194.1	7,500.0	7,647.1	7,511.2	79.3	25.4	-89.18	-5,099.9	1,453.6	1,173.7	1,073.9	99.77	11.764	
12,200.0	7,500.0	7,647.1	7,511.3	79.4	25.4	-89.18	-5,099.9	1,453.6	1,169.5	1,069.6	99.84	11.714	
12,300.0	7,500.0	7,647.6	7,511.8	81.1	25.4	-89.24	-5,099.9	1,453.6	1,101.7	1,000.7	100.95	10.913	
12,393.7	7,500.0	7,648.1	7,512.2	82.7	25.4	-89.29	-5,099.9	1,453.6	1,045.4	943.5	101.90	10.259	
12,400.0	7,500.0	7,648.1	7,512.3	82.9	25.4	-89.29	-5,099.9	1,453.6	1,041.9	939.9	102.01	10.213	
12,500.0	7,500.0	7,648.6	7,512.8	84.6	25.4	-89.32	-5,099.9	1,453.6	990.0	886.3	103.74	9.543	
12,600.0	7,500.0	7,649.0	7,513.2	86.3	25.4	-89.35	-5,099.9	1,453.6	945.9	840.4	105.48	8.967	
12,700.0	7,500.0	7,649.5	7,513.7	88.0	25.4	-89.38	-5,099.9	1,453.6	910.6	803.4	107.21	8.494	
12,800.0	7,500.0	7,650.0	7,514.2	89.7	25.4	-89.41	-5,099.9	1,453.6	885.3	776.3	108.94	8.126	
12,900.0	7,500.0	7,650.4	7,514.6	91.5	25.4	-89.45	-5,099.9	1,453.6	870.8	760.1	110.68	7.868	
12,977.4	7,500.0	7,650.8	7,515.0	92.8	25.4	-89.47	-5,099.9	1,453.7	867.3	755.3	112.02	7.743 CC	

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Sosa 22-18 - DD - DD													Offset Site Error:	0.0 ft
Survey Program: 41-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total		Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Separation Factor		
13,000.0	7,500.0	7,650.9	7,515.1	93.2	25.4	-89.48	-5,099.9	1,453.7	867.6	755.2	112.41	7.718 ES		
13,100.0	7,500.0	7,651.4	7,515.5	94.9	25.4	-89.51	-5,099.9	1,453.7	876.0	761.8	114.15	7.674 SF		
13,200.0	7,500.0	7,651.8	7,516.0	96.6	25.4	-89.54	-5,099.9	1,453.7	895.4	779.6	115.88	7.727		
13,300.0	7,500.0	7,652.3	7,516.5	98.4	25.4	-89.57	-5,099.9	1,453.7	925.4	807.8	117.62	7.868		
13,400.0	7,500.0	7,652.7	7,516.9	100.1	25.4	-89.60	-5,099.9	1,453.7	964.8	845.5	119.36	8.083		
13,500.0	7,500.0	7,653.2	7,517.4	101.8	25.4	-89.63	-5,099.9	1,453.7	1,012.6	891.5	121.10	8.362		
13,600.0	7,500.0	7,653.7	7,517.8	103.5	25.4	-89.66	-5,099.9	1,453.7	1,067.7	944.8	122.84	8.692		
13,700.0	7,500.0	7,654.1	7,518.3	105.3	25.4	-89.69	-5,099.9	1,453.7	1,128.9	1,004.3	124.58	9.062		
13,800.0	7,500.0	7,654.6	7,518.7	107.0	25.4	-89.72	-5,099.9	1,453.7	1,195.4	1,069.1	126.32	9.464		
13,900.0	7,500.0	7,655.0	7,519.2	108.7	25.4	-89.75	-5,099.9	1,453.7	1,266.3	1,138.2	128.06	9.889		
14,000.0	7,500.0	7,655.4	7,519.6	110.5	25.4	-89.78	-5,099.9	1,453.7	1,340.9	1,211.1	129.80	10.331		
14,100.0	7,500.0	7,655.9	7,520.1	112.2	25.4	-89.81	-5,099.9	1,453.7	1,418.6	1,287.1	131.54	10.785		
14,200.0	7,500.0	7,656.3	7,520.5	113.9	25.4	-89.83	-5,100.0	1,453.7	1,499.0	1,365.7	133.28	11.247		
14,300.0	7,500.0	7,656.8	7,520.9	115.7	25.4	-89.86	-5,100.0	1,453.7	1,581.6	1,446.6	135.02	11.714		
14,400.0	7,500.0	7,657.2	7,521.4	117.4	25.4	-89.89	-5,100.0	1,453.7	1,666.2	1,529.4	136.76	12.183		
14,500.0	7,500.0	7,657.7	7,521.8	119.1	25.4	-89.92	-5,100.0	1,453.7	1,752.3	1,613.8	138.51	12.652		
14,600.0	7,500.0	7,658.1	7,522.3	120.9	25.4	-89.95	-5,100.0	1,453.7	1,839.9	1,699.6	140.25	13.119		
14,700.0	7,500.0	7,658.5	7,522.7	122.6	25.4	-89.98	-5,100.0	1,453.7	1,928.7	1,786.7	141.99	13.583		
14,800.0	7,500.0	7,659.0	7,523.1	124.3	25.4	-90.01	-5,100.0	1,453.7	2,018.5	1,874.7	143.73	14.043		
14,900.0	7,500.0	7,659.4	7,523.6	126.1	25.4	-90.04	-5,100.0	1,453.7	2,109.2	1,963.7	145.48	14.498		
15,000.0	7,500.0	7,659.8	7,524.0	127.8	25.4	-90.06	-5,100.0	1,453.7	2,200.7	2,053.5	147.22	14.948		
15,100.0	7,500.0	7,660.3	7,524.4	129.6	25.4	-90.09	-5,100.0	1,453.7	2,293.0	2,144.0	148.97	15.393		
15,200.0	7,500.0	7,660.7	7,524.8	131.3	25.4	-90.12	-5,100.0	1,453.7	2,385.9	2,235.1	150.71	15.831		
15,300.0	7,500.0	7,661.1	7,525.3	133.0	25.4	-90.15	-5,100.0	1,453.7	2,479.3	2,326.8	152.45	16.262		
15,400.0	7,500.0	7,661.5	7,525.7	134.8	25.4	-90.18	-5,100.0	1,453.8	2,573.2	2,419.0	154.20	16.687		
15,500.0	7,500.0	7,662.0	7,526.1	136.5	25.4	-90.21	-5,100.0	1,453.8	2,667.6	2,511.6	155.94	17.106		
15,600.0	7,500.0	7,662.4	7,526.5	138.3	25.4	-90.23	-5,100.0	1,453.8	2,762.3	2,604.6	157.69	17.517		
15,700.0	7,500.0	7,662.8	7,527.0	140.0	25.4	-90.26	-5,100.0	1,453.8	2,857.4	2,698.0	159.44	17.922		
15,805.8	7,500.0	7,663.2	7,527.4	141.8	25.4	-90.29	-5,100.0	1,453.8	2,958.4	2,797.1	161.28	18.343		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Sosa 22-18 - DD - 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	23.0	23.0	0.0	0.0	172.56	-4,267.5	557.1	4,303.7							
100.0	100.0	123.0	123.0	0.2	0.2	172.56	-4,267.5	557.1	4,303.7	4,303.4	0.34	N/A				
156.7	156.7	179.7	179.7	0.3	0.3	172.56	-4,267.5	557.1	4,303.7	4,303.2	0.54	7,995.154				
200.0	200.0	200.0	200.0	0.3	0.3	172.56	-4,267.5	557.1	4,303.8	4,303.1	0.65	6,628.738				
300.0	300.0	257.1	257.1	0.5	0.4	172.56	-4,267.9	557.5	4,304.7	4,303.8	0.92	4,659.813				
400.0	400.0	300.0	300.0	0.7	0.5	172.55	-4,268.7	558.3	4,306.8	4,305.7	1.17	3,672.033				
500.0	500.0	349.8	349.7	0.8	0.6	172.53	-4,270.2	559.9	4,310.2	4,308.8	1.44	3,003.432				
600.0	600.0	400.0	399.8	1.0	0.7	132.99	-4,272.3	562.2	4,315.5	4,313.8	1.71	2,528.609				
700.0	700.0	442.2	441.9	1.2	0.8	132.92	-4,274.5	564.6	4,323.1	4,321.2	1.97	2,199.716				
800.0	799.9	500.0	499.5	1.4	0.9	132.83	-4,278.2	568.6	4,333.2	4,331.0	2.26	1,920.110				
900.0	899.7	533.9	533.1	1.6	1.0	132.72	-4,280.7	571.3	4,345.7	4,343.2	2.51	1,729.595				
1,000.0	999.4	600.0	598.7	1.8	1.2	132.59	-4,286.5	577.5	4,360.7	4,357.8	2.84	1,533.987				
1,100.0	1,098.9	600.0	598.7	2.0	1.2	132.46	-4,286.5	577.5	4,378.0	4,374.9	3.04	1,439.796				
1,201.3	1,199.5	670.2	668.1	2.2	1.4	132.30	-4,293.7	585.3	4,397.7	4,394.3	3.42	1,287.190				
1,300.0	1,297.5	700.0	697.5	2.5	1.5	132.29	-4,297.1	589.0	4,418.9	4,415.2	3.70	1,194.719				
1,400.0	1,396.8	758.6	755.1	2.7	1.7	132.27	-4,304.4	596.9	4,441.4	4,437.3	4.07	1,090.903				
1,500.0	1,496.0	806.3	801.8	3.0	1.9	132.25	-4,310.9	604.0	4,465.1	4,460.6	4.42	1,010.839				
1,600.0	1,595.3	895.3	888.8	3.3	2.2	132.20	-4,323.6	617.7	4,489.4	4,484.6	4.88	919.920				
1,700.0	1,694.5	992.2	983.5	3.5	2.6	132.14	-4,337.5	632.6	4,513.8	4,508.5	5.37	840.497				
1,800.0	1,793.8	1,089.1	1,078.3	3.8	3.0	132.09	-4,351.3	647.6	4,538.2	4,532.4	5.86	773.797				
1,900.0	1,893.0	1,186.0	1,173.0	4.0	3.4	132.03	-4,365.1	662.5	4,562.6	4,556.2	6.36	717.123				
2,000.0	1,992.3	1,282.9	1,267.7	4.3	3.8	131.98	-4,378.9	677.5	4,587.0	4,580.1	6.86	668.448				
2,100.0	2,091.5	1,379.8	1,362.4	4.6	4.2	131.93	-4,392.8	692.4	4,611.4	4,604.0	7.36	626.237				
2,200.0	2,190.8	1,476.6	1,457.2	4.8	4.6	131.87	-4,406.6	707.3	4,635.8	4,627.9	7.87	589.309				
2,300.0	2,290.0	1,573.5	1,551.9	5.1	5.0	131.82	-4,420.4	722.3	4,660.2	4,651.9	8.37	556.751				
2,400.0	2,389.3	1,670.4	1,646.6	5.4	5.4	131.77	-4,434.2	737.2	4,684.6	4,675.8	8.88	527.843				
2,500.0	2,488.5	1,767.3	1,741.3	5.7	5.8	131.72	-4,448.0	752.2	4,709.1	4,699.7	9.38	502.011				
2,600.0	2,587.8	1,864.2	1,836.1	5.9	6.1	131.67	-4,461.9	767.1	4,733.5	4,723.6	9.89	478.795				
2,700.0	2,687.0	1,961.1	1,930.8	6.2	6.5	131.62	-4,475.7	782.0	4,757.9	4,747.5	10.39	457.823				
2,800.0	2,786.3	2,058.0	2,025.5	6.5	6.9	131.57	-4,489.5	797.0	4,782.3	4,771.4	10.90	438.785				
2,900.0	2,885.5	2,154.9	2,120.3	6.7	7.3	131.52	-4,503.3	811.9	4,806.7	4,795.3	11.41	421.430				
3,000.0	2,984.8	2,251.8	2,215.0	7.0	7.7	131.47	-4,517.2	826.8	4,831.2	4,819.3	11.91	405.545				
3,100.0	3,084.0	2,348.6	2,309.7	7.3	8.1	131.43	-4,531.0	841.8	4,855.6	4,843.2	12.42	390.953				
3,200.0	3,183.3	2,445.5	2,404.4	7.6	8.5	131.38	-4,544.8	856.7	4,880.1	4,867.1	12.93	377.502				
3,300.0	3,282.5	2,542.4	2,499.2	7.8	8.9	131.33	-4,558.6	871.7	4,904.5	4,891.1	13.43	365.065				
3,400.0	3,381.8	2,639.3	2,593.9	8.1	9.3	131.29	-4,572.5	886.6	4,928.9	4,915.0	13.94	353.532				
3,500.0	3,481.1	2,736.2	2,688.6	8.4	9.7	131.24	-4,586.3	901.5	4,953.4	4,938.9	14.45	342.809				
3,600.0	3,580.3	2,833.1	2,783.4	8.7	10.1	131.19	-4,600.1	916.5	4,977.8	4,962.9	14.96	332.813				
3,700.0	3,679.6	2,930.0	2,878.1	8.9	10.5	131.15	-4,613.9	931.4	5,002.3	4,986.8	15.46	323.474				
3,800.0	3,778.8	3,026.9	2,972.8	9.2	10.9	131.11	-4,627.7	946.4	5,026.8	5,010.8	15.97	314.728				
3,900.0	3,878.1	3,123.8	3,067.5	9.5	11.3	131.06	-4,641.6	961.3	5,051.2	5,034.7	16.48	306.522				
4,000.0	3,977.3	3,220.7	3,162.3	9.8	11.7	131.02	-4,655.4	976.2	5,075.7	5,058.7	16.99	298.807				
4,100.0	4,076.6	3,317.5	3,257.0	10.0	12.1	130.97	-4,669.2	991.2	5,100.1	5,082.6	17.49	291.541				
4,200.0	4,175.8	3,414.4	3,351.7	10.3	12.5	130.93	-4,683.0	1,006.1	5,124.6	5,106.6	18.00	284.685				
4,300.0	4,275.1	3,511.3	3,446.4	10.6	12.9	130.89	-4,696.9	1,021.1	5,149.1	5,130.6	18.51	278.206				
4,400.0	4,374.3	3,608.2	3,541.2	10.9	13.3	130.85	-4,710.7	1,036.0	5,173.6	5,154.5	19.02	272.074				
4,500.0	4,473.6	3,705.1	3,635.9	11.1	13.7	130.81	-4,724.5	1,050.9	5,198.0	5,178.5	19.52	266.262				
4,600.0	4,572.8	3,802.0	3,730.6	11.4	14.1	130.76	-4,738.3	1,065.9	5,222.5	5,202.5	20.03	260.745				
4,700.0	4,672.1	3,898.9	3,825.4	11.7	14.5	130.72	-4,752.2	1,080.8	5,247.0	5,226.5	20.54	255.501				
4,800.0	4,771.3	3,995.8	3,920.1	12.0	14.9	130.68	-4,766.0	1,095.8	5,271.5	5,250.4	21.04	250.512				
7,800.0	7,495.3	7,641.4	7,518.3	16.4	25.0	-52.75	-5,083.5	1,438.9	5,239.7	5,211.3	28.40	184.501				
7,850.0	7,499.5	7,645.6	7,522.5	16.5	25.0	-76.93	-5,083.5	1,438.9	5,190.6	5,157.7	32.85	158.033				

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Sosa 22-18 - DD - 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
7,873.6	7,500.0	7,646.1	7,523.0	16.5	25.0	-90.00	-5,083.5	1,438.9	5,167.4	5,134.1	33.31	155.133	
7,900.0	7,500.0	7,646.1	7,523.0	16.5	25.0	-90.00	-5,083.5	1,438.9	5,141.4	5,108.0	33.38	154.048	
8,000.0	7,500.0	7,646.1	7,523.0	16.9	25.0	-90.00	-5,083.5	1,438.9	5,043.0	5,009.3	33.76	149.384	
8,100.0	7,500.0	7,646.1	7,523.0	17.4	25.0	-90.00	-5,083.5	1,438.9	4,944.7	4,910.4	34.34	143.983	
8,200.0	7,500.0	7,646.1	7,523.0	18.0	25.0	-90.00	-5,083.5	1,438.9	4,846.5	4,811.4	35.10	138.064	
8,300.0	7,500.0	7,646.1	7,523.0	18.8	25.0	-90.00	-5,083.5	1,438.9	4,748.4	4,712.3	36.02	131.836	
8,400.0	7,500.0	7,646.1	7,523.0	19.7	25.0	-90.00	-5,083.5	1,438.9	4,650.3	4,613.2	37.06	125.481	
8,500.0	7,500.0	7,646.1	7,523.0	20.7	25.0	-90.00	-5,083.5	1,438.9	4,552.3	4,514.1	38.21	119.140	
8,600.0	7,500.0	7,646.1	7,523.0	21.9	25.0	-90.00	-5,083.5	1,438.9	4,454.4	4,415.0	39.45	112.918	
8,700.0	7,500.0	7,646.1	7,523.0	23.1	25.0	-90.00	-5,083.5	1,438.9	4,356.6	4,315.8	40.76	106.886	
8,800.0	7,500.0	7,646.1	7,523.0	24.3	25.0	-90.00	-5,083.5	1,438.9	4,258.9	4,216.8	42.13	101.087	
8,900.0	7,500.0	7,646.1	7,523.0	25.6	25.0	-90.00	-5,083.5	1,438.9	4,161.3	4,117.8	43.55	95.547	
9,000.0	7,500.0	7,646.1	7,523.0	27.0	25.0	-90.00	-5,083.5	1,438.9	4,063.8	4,018.8	45.02	90.276	
9,100.0	7,500.0	7,646.1	7,523.0	28.4	25.0	-90.00	-5,083.5	1,438.9	3,966.5	3,920.0	46.51	85.276	
9,200.0	7,500.0	7,646.1	7,523.0	29.9	25.0	-90.00	-5,083.5	1,438.9	3,869.3	3,821.2	48.04	80.541	
9,300.0	7,500.0	7,646.1	7,523.0	31.4	25.0	-90.00	-5,083.5	1,438.9	3,772.2	3,722.6	49.59	76.063	
9,400.0	7,500.0	7,646.1	7,523.0	32.9	25.0	-90.00	-5,083.5	1,438.9	3,675.3	3,624.2	51.17	71.831	
9,500.0	7,500.0	7,646.1	7,523.0	34.4	25.0	-90.00	-5,083.5	1,438.9	3,578.6	3,525.8	52.76	67.830	
9,600.0	7,500.0	7,646.1	7,523.0	36.0	25.0	-90.00	-5,083.5	1,438.9	3,482.0	3,427.7	54.36	64.049	
9,700.0	7,500.0	7,646.1	7,523.0	37.5	25.0	-90.00	-5,083.5	1,438.9	3,385.7	3,329.7	55.99	60.474	
9,800.0	7,500.0	7,646.1	7,523.0	39.1	25.0	-90.00	-5,083.5	1,438.9	3,289.5	3,231.9	57.62	57.092	
9,900.0	7,500.0	7,646.1	7,523.0	40.7	25.0	-90.00	-5,083.5	1,438.9	3,193.6	3,134.4	59.26	53.892	
10,000.0	7,500.0	7,646.1	7,523.0	42.3	25.0	-90.00	-5,083.5	1,438.9	3,098.0	3,037.1	60.91	50.860	
10,100.0	7,500.0	7,646.1	7,523.0	43.9	25.0	-90.00	-5,083.5	1,438.9	3,002.7	2,940.1	62.57	47.987	
10,200.0	7,500.0	7,646.1	7,523.0	45.6	25.0	-90.00	-5,083.5	1,438.9	2,907.6	2,843.4	64.24	45.262	
10,300.0	7,500.0	7,646.1	7,523.0	47.2	25.0	-90.00	-5,083.5	1,438.9	2,812.9	2,747.0	65.91	42.676	
10,400.0	7,500.0	7,646.1	7,523.0	48.9	25.0	-90.00	-5,083.5	1,438.9	2,718.6	2,651.0	67.59	40.220	
10,500.0	7,500.0	7,646.1	7,523.0	50.5	25.0	-90.00	-5,083.5	1,438.9	2,624.7	2,555.4	69.28	37.887	
10,600.0	7,500.0	7,646.1	7,523.0	52.2	25.0	-90.00	-5,083.5	1,438.9	2,531.3	2,460.3	70.97	35.668	
10,700.0	7,500.0	7,646.1	7,523.0	53.8	25.0	-90.00	-5,083.5	1,438.9	2,438.4	2,365.7	72.66	33.558	
10,800.0	7,500.0	7,646.1	7,523.0	55.5	25.0	-90.00	-5,083.5	1,438.9	2,346.0	2,271.7	74.36	31.551	
10,900.0	7,500.0	7,646.1	7,523.0	57.2	25.0	-90.00	-5,083.5	1,438.9	2,254.4	2,178.3	76.06	29.640	
11,000.0	7,500.0	7,646.1	7,523.0	58.9	25.0	-90.00	-5,083.5	1,438.9	2,163.4	2,085.7	77.76	27.821	
11,100.0	7,500.0	7,646.1	7,523.0	60.6	25.0	-90.00	-5,083.5	1,438.9	2,073.3	1,993.9	79.47	26.090	
11,200.0	7,500.0	7,646.1	7,523.0	62.3	25.0	-90.00	-5,083.5	1,438.9	1,984.2	1,903.0	81.18	24.442	
11,244.1	7,500.0	7,646.1	7,523.0	63.0	25.0	-90.00	-5,083.5	1,438.9	1,945.2	1,863.2	81.93	23.741	
11,300.0	7,500.0	7,646.1	7,523.0	64.0	25.0	-90.00	-5,083.5	1,438.9	1,895.9	1,812.6	83.27	22.767	
11,400.0	7,500.0	7,646.1	7,523.0	65.7	25.0	-90.00	-5,083.5	1,438.9	1,807.2	1,721.6	85.61	21.110	
11,444.1	7,500.0	7,646.1	7,523.0	66.4	25.0	-90.00	-5,083.5	1,438.9	1,767.9	1,681.3	86.62	20.411	
11,500.0	7,500.0	7,646.1	7,523.0	67.4	25.0	-90.00	-5,083.5	1,438.9	1,718.4	1,630.8	87.58	19.621	
11,600.0	7,500.0	7,646.1	7,523.0	69.1	25.0	-90.00	-5,083.5	1,438.9	1,630.7	1,541.4	89.30	18.261	
11,700.0	7,500.0	7,646.1	7,523.0	70.8	25.0	-90.00	-5,083.5	1,438.9	1,544.5	1,453.4	91.02	16.969	
11,800.0	7,500.0	7,646.1	7,523.0	72.5	25.0	-90.00	-5,083.5	1,438.9	1,460.0	1,367.3	92.74	15.743	
11,900.0	7,500.0	7,646.1	7,523.0	74.2	25.0	-90.00	-5,083.5	1,438.9	1,377.6	1,283.2	94.46	14.584	
12,000.0	7,500.0	7,646.1	7,523.0	76.0	25.0	-90.00	-5,083.5	1,438.9	1,297.8	1,201.6	96.19	13.492	
12,100.0	7,500.0	7,646.1	7,523.0	77.7	25.0	-90.00	-5,083.5	1,438.9	1,220.8	1,122.9	97.92	12.468	
12,194.1	7,500.0	7,646.1	7,523.0	79.3	25.0	-90.00	-5,083.5	1,438.9	1,151.7	1,052.1	99.54	11.569	
12,200.0	7,500.0	7,646.1	7,523.0	79.4	25.0	-90.00	-5,083.5	1,438.9	1,147.5	1,047.9	99.61	11.519	
12,300.0	7,500.0	7,646.1	7,523.0	81.1	25.0	-90.00	-5,083.5	1,438.9	1,079.9	979.1	100.74	10.720	
12,393.7	7,500.0	7,646.1	7,523.0	82.7	25.0	-90.00	-5,083.5	1,438.9	1,024.0	922.3	101.70	10.069	
12,400.0	7,500.0	7,646.1	7,523.0	82.9	25.0	-90.00	-5,083.5	1,438.9	1,020.5	918.7	101.81	10.024	
12,500.0	7,500.0	7,646.1	7,523.0	84.6	25.0	-90.00	-5,083.5	1,438.9	969.1	865.6	103.54	9.360	

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Sosa 22-18 - DD - 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)			
12,600.0	7,500.0	7,646.1	7,523.0	86.3	25.0	-90.00	-5,083.5	1,438.9	925.8	820.5	105.27	8.794	
12,700.0	7,500.0	7,646.1	7,523.0	88.0	25.0	-90.00	-5,083.5	1,438.9	891.5	784.5	107.00	8.332	
12,800.0	7,500.0	7,646.1	7,523.0	89.7	25.0	-90.00	-5,083.5	1,438.9	867.6	758.8	108.73	7.979	
12,900.0	7,500.0	7,646.1	7,523.0	91.5	25.0	-90.00	-5,083.5	1,438.9	854.7	744.2	110.47	7.737	
12,960.9	7,500.0	7,646.1	7,523.0	92.5	25.0	-90.00	-5,083.5	1,438.9	852.5	741.0	111.52	7.644 CC, ES	
13,000.0	7,500.0	7,646.1	7,523.0	93.2	25.0	-90.00	-5,083.5	1,438.9	853.4	741.2	112.20	7.606	
13,100.0	7,500.0	7,646.1	7,523.0	94.9	25.0	-90.00	-5,083.5	1,438.9	863.8	749.9	113.94	7.581 SF	
13,200.0	7,500.0	7,646.1	7,523.0	96.6	25.0	-90.00	-5,083.5	1,438.9	885.4	769.7	115.67	7.654	
13,300.0	7,500.0	7,646.1	7,523.0	98.4	25.0	-90.00	-5,083.5	1,438.9	917.5	800.1	117.41	7.814	
13,400.0	7,500.0	7,646.1	7,523.0	100.1	25.0	-90.00	-5,083.5	1,438.9	959.0	839.8	119.15	8.049	
13,500.0	7,500.0	7,646.1	7,523.0	101.8	25.0	-90.00	-5,083.5	1,438.9	1,008.7	887.8	120.88	8.344	
13,600.0	7,500.0	7,646.1	7,523.0	103.5	25.0	-90.00	-5,083.5	1,438.9	1,065.5	942.9	122.62	8.689	
13,700.0	7,500.0	7,646.1	7,523.0	105.3	25.0	-90.00	-5,083.5	1,438.9	1,128.3	1,003.9	124.36	9.073	
13,800.0	7,500.0	7,646.1	7,523.0	107.0	25.0	-90.00	-5,083.5	1,438.9	1,196.2	1,070.1	126.10	9.486	
13,900.0	7,500.0	7,646.1	7,523.0	108.7	25.0	-90.00	-5,083.5	1,438.9	1,268.4	1,140.5	127.84	9.921	
14,000.0	7,500.0	7,646.1	7,523.0	110.5	25.0	-90.00	-5,083.5	1,438.9	1,344.1	1,214.5	129.58	10.372	
14,100.0	7,500.0	7,646.1	7,523.0	112.2	25.0	-90.00	-5,083.5	1,438.9	1,422.8	1,291.5	131.32	10.834	
14,200.0	7,500.0	7,646.1	7,523.0	113.9	25.0	-90.00	-5,083.5	1,438.9	1,504.1	1,371.0	133.06	11.303	
14,300.0	7,500.0	7,646.1	7,523.0	115.7	25.0	-90.00	-5,083.5	1,438.9	1,587.5	1,452.6	134.80	11.776	
14,400.0	7,500.0	7,646.1	7,523.0	117.4	25.0	-90.00	-5,083.5	1,438.9	1,672.7	1,536.1	136.55	12.250	
14,500.0	7,500.0	7,646.1	7,523.0	119.1	25.0	-90.00	-5,083.5	1,438.9	1,759.4	1,621.2	138.29	12.723	
14,600.0	7,500.0	7,646.1	7,523.0	120.9	25.0	-90.00	-5,083.5	1,438.9	1,847.6	1,707.5	140.03	13.194	
14,700.0	7,500.0	7,646.1	7,523.0	122.6	25.0	-90.00	-5,083.5	1,438.9	1,936.8	1,795.1	141.77	13.661	
14,800.0	7,500.0	7,646.1	7,523.0	124.3	25.0	-90.00	-5,083.5	1,438.9	2,027.1	1,883.6	143.52	14.124	
14,900.0	7,500.0	7,646.1	7,523.0	126.1	25.0	-90.00	-5,083.5	1,438.9	2,118.2	1,973.0	145.26	14.582	
15,000.0	7,500.0	7,646.1	7,523.0	127.8	25.0	-90.00	-5,083.5	1,438.9	2,210.2	2,063.1	147.01	15.034	
15,100.0	7,500.0	7,646.1	7,523.0	129.6	25.0	-90.00	-5,083.5	1,438.9	2,302.7	2,154.0	148.75	15.481	
15,200.0	7,500.0	7,646.1	7,523.0	131.3	25.0	-90.00	-5,083.5	1,438.9	2,395.9	2,245.4	150.49	15.920	
15,300.0	7,500.0	7,646.1	7,523.0	133.0	25.0	-90.00	-5,083.5	1,438.9	2,489.6	2,337.4	152.24	16.353	
15,400.0	7,500.0	7,646.1	7,523.0	134.8	25.0	-90.00	-5,083.5	1,438.9	2,583.8	2,429.8	153.98	16.780	
15,500.0	7,500.0	7,646.1	7,523.0	136.5	25.0	-90.00	-5,083.5	1,438.9	2,678.4	2,522.7	155.73	17.199	
15,600.0	7,500.0	7,646.1	7,523.0	138.3	25.0	-90.00	-5,083.5	1,438.9	2,773.4	2,615.9	157.47	17.612	
15,700.0	7,500.0	7,646.1	7,523.0	140.0	25.0	-90.00	-5,083.5	1,438.9	2,868.7	2,709.5	159.22	18.017	
15,805.8	7,500.0	7,646.1	7,523.0	141.8	25.0	-90.00	-5,083.5	1,438.9	2,969.9	2,808.8	161.07	18.439	



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - SOSAA UNIT 1 (EXISTING) - EXISTING - EXISTIN										Offset Site Error: 0.0 ft			
Survey Program: 100-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	172.77	-4,325.8	548.7	4,360.4				
100.0	100.0	83.2	83.2	0.2	0.1	172.77	-4,326.0	548.9	4,360.7	4,360.4	0.30	N/A	
200.0	200.0	163.6	163.6	0.3	0.3	172.77	-4,326.5	549.2	4,361.4	4,360.8	0.61	7,124.463	
300.0	300.0	270.6	270.6	0.5	0.5	172.77	-4,327.6	549.1	4,362.4	4,361.5	0.97	4,479.003	
400.0	400.0	368.8	368.8	0.7	0.6	172.77	-4,328.4	548.8	4,363.2	4,361.8	1.32	3,304.766	
500.0	500.0	475.4	475.4	0.8	0.8	172.78	-4,329.3	548.7	4,364.0	4,362.3	1.68	2,595.849	
600.0	600.0	599.7	599.7	1.0	1.0	133.31	-4,329.9	548.1	4,365.0	4,362.9	2.07	2,107.105	
700.0	700.0	690.9	690.9	1.2	1.2	133.33	-4,330.1	547.6	4,367.0	4,364.6	2.41	1,814.620	
800.0	799.9	800.0	800.0	1.4	1.4	133.36	-4,330.5	546.8	4,370.2	4,367.5	2.78	1,574.222	
900.0	899.7	898.2	898.2	1.6	1.6	133.40	-4,330.7	545.7	4,374.6	4,371.4	3.13	1,397.266	
1,000.0	999.4	989.0	989.0	1.8	1.7	133.44	-4,331.1	544.7	4,380.2	4,376.7	3.48	1,258.902	
1,100.0	1,098.9	1,104.6	1,104.5	2.0	1.9	133.52	-4,331.5	542.9	4,387.0	4,383.1	3.88	1,130.790	
1,201.3	1,199.5	1,206.7	1,206.7	2.2	2.1	133.59	-4,331.7	541.3	4,394.9	4,390.7	4.27	1,029.557	
1,300.0	1,297.5	1,302.1	1,302.0	2.5	2.3	133.73	-4,331.9	539.3	4,403.3	4,398.6	4.65	947.371	
1,400.0	1,396.8	1,414.7	1,414.6	2.7	2.5	133.90	-4,332.0	536.6	4,411.6	4,406.5	5.06	871.242	
1,500.0	1,496.0	1,503.4	1,503.2	3.0	2.6	134.02	-4,332.1	534.8	4,419.9	4,414.5	5.44	812.785	
1,600.0	1,595.3	1,624.9	1,624.8	3.3	2.9	134.19	-4,331.8	532.5	4,428.0	4,422.1	5.87	753.973	
1,700.0	1,694.5	1,712.0	1,711.8	3.5	3.0	134.31	-4,331.7	530.7	4,436.2	4,429.9	6.25	709.976	
1,800.0	1,793.8	1,837.0	1,836.8	3.8	3.2	134.49	-4,331.2	527.6	4,444.1	4,437.4	6.69	663.988	
1,900.0	1,893.0	1,925.8	1,925.6	4.0	3.4	134.62	-4,330.7	525.2	4,451.9	4,444.8	7.07	629.309	
2,000.0	1,992.3	2,011.6	2,011.4	4.3	3.5	134.74	-4,330.6	522.9	4,460.1	4,452.6	7.45	598.600	
2,100.0	2,091.5	2,122.9	2,122.6	4.6	3.7	134.91	-4,330.2	519.9	4,468.1	4,460.3	7.87	567.566	
2,200.0	2,190.8	2,200.0	2,199.6	4.8	3.9	135.02	-4,330.2	518.0	4,476.5	4,468.3	8.23	543.657	
2,300.0	2,290.0	2,320.3	2,319.9	5.1	4.1	135.20	-4,330.2	514.3	4,484.9	4,476.2	8.67	517.029	
2,400.0	2,389.3	2,425.5	2,425.0	5.4	4.3	135.36	-4,329.9	510.8	4,493.1	4,484.0	9.09	494.409	
2,500.0	2,488.5	2,552.9	2,552.3	5.7	4.5	135.55	-4,328.8	506.4	4,500.6	4,491.1	9.54	471.720	
2,600.0	2,587.8	2,639.5	2,638.9	5.9	4.7	135.68	-4,328.0	503.7	4,508.2	4,498.3	9.92	454.463	
2,700.0	2,687.0	2,722.9	2,722.3	6.2	4.8	135.79	-4,327.5	501.7	4,516.1	4,505.9	10.29	438.810	
2,800.0	2,786.3	2,819.6	2,818.9	6.5	5.0	135.92	-4,327.1	499.6	4,524.3	4,513.6	10.69	423.371	
2,900.0	2,885.5	2,927.5	2,926.9	6.7	5.2	136.06	-4,326.4	497.8	4,532.4	4,521.3	11.10	408.375	
3,000.0	2,984.8	3,027.9	3,027.2	7.0	5.4	136.19	-4,325.7	496.3	4,540.4	4,528.9	11.50	394.873	
3,100.0	3,084.0	3,118.2	3,117.5	7.3	5.5	136.30	-4,325.2	494.6	4,548.5	4,536.7	11.88	382.838	
3,200.0	3,183.3	3,213.2	3,212.5	7.6	5.7	136.43	-4,324.7	492.9	4,556.8	4,544.5	12.27	371.351	
3,300.0	3,282.5	3,300.0	3,299.3	7.8	5.8	136.53	-4,324.6	491.8	4,565.4	4,552.8	12.65	361.038	
3,400.0	3,381.8	3,391.2	3,390.5	8.1	6.0	136.64	-4,324.6	490.9	4,574.3	4,561.3	13.03	351.169	
3,500.0	3,481.1	3,480.3	3,479.5	8.4	6.2	136.74	-4,324.7	490.2	4,583.2	4,569.8	13.40	341.946	
3,600.0	3,580.3	3,578.2	3,577.4	8.7	6.3	136.86	-4,324.9	489.3	4,592.3	4,578.6	13.80	332.882	
3,700.0	3,679.6	3,687.2	3,686.5	8.9	6.5	136.98	-4,325.0	488.4	4,601.4	4,587.2	14.21	323.906	
3,800.0	3,778.8	3,782.8	3,782.1	9.2	6.7	137.09	-4,325.1	487.9	4,610.3	4,595.7	14.59	315.932	
3,900.0	3,878.1	3,883.1	3,882.4	9.5	6.9	137.20	-4,325.1	487.1	4,619.3	4,604.4	14.99	308.180	
4,000.0	3,977.3	3,978.1	3,977.4	9.8	7.0	137.32	-4,325.3	485.8	4,628.4	4,613.0	15.38	300.998	
4,100.0	4,076.6	4,083.3	4,082.6	10.0	7.2	137.45	-4,325.4	483.9	4,637.5	4,621.7	15.78	293.833	
4,200.0	4,175.8	4,202.1	4,201.3	10.3	7.4	137.60	-4,325.3	481.5	4,646.3	4,630.1	16.21	286.621	
4,300.0	4,275.1	4,305.0	4,304.1	10.6	7.6	137.73	-4,324.9	479.0	4,654.9	4,638.3	16.61	280.184	
4,400.0	4,374.3	4,400.0	4,399.1	10.9	7.8	137.86	-4,324.6	476.4	4,663.5	4,646.5	17.00	274.287	
4,500.0	4,473.6	4,488.6	4,487.7	11.1	7.9	137.98	-4,324.4	474.3	4,672.3	4,654.9	17.38	268.873	
4,600.0	4,572.8	4,579.2	4,578.3	11.4	8.1	138.09	-4,324.4	472.7	4,681.3	4,663.5	17.76	263.646	
4,700.0	4,672.1	4,713.6	4,712.6	11.7	8.3	138.25	-4,324.0	470.2	4,690.0	4,671.8	18.21	257.577	
4,800.0	4,771.3	4,800.0	4,799.1	12.0	8.5	138.36	-4,323.6	468.5	4,698.7	4,680.1	18.58	252.891	
4,900.0	4,870.6	4,908.5	4,907.5	12.2	8.7	138.49	-4,323.2	466.2	4,707.4	4,688.4	18.99	247.914	
5,000.0	4,969.8	5,026.9	5,025.9	12.5	8.9	138.63	-4,322.1	464.4	4,715.6	4,696.2	19.41	242.948	
5,100.0	5,069.1	5,127.3	5,126.3	12.8	9.1	138.74	-4,321.1	463.2	4,723.8	4,704.0	19.80	238.550	

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - SOSA A UNIT 1 (EXISTING) - EXISTING - EXISTIN											Offset Site Error:		0.0 ft
Survey Program: 100-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	
5,200.0	5,168.3	5,251.9	5,250.9	13.1	9.3	138.88	-4,319.4	461.8	4,731.6	4,711.4	20.23	233.847	
5,300.0	5,267.6	5,351.3	5,350.2	13.3	9.5	138.99	-4,317.7	461.0	4,739.1	4,718.5	20.62	229.805	
5,400.0	5,366.8	5,438.4	5,437.4	13.6	9.6	139.08	-4,316.4	460.3	4,746.9	4,725.9	20.99	226.138	
5,500.0	5,466.1	5,536.7	5,535.7	13.9	9.8	139.19	-4,315.2	459.3	4,754.8	4,733.5	21.38	222.421	
5,600.0	5,565.3	5,638.5	5,637.4	14.2	10.0	139.29	-4,313.7	458.6	4,762.6	4,740.8	21.77	218.777	
5,700.0	5,664.6	5,723.8	5,722.7	14.4	10.1	139.38	-4,312.7	458.1	4,770.7	4,748.6	22.13	215.545	
5,800.0	5,763.8	5,844.2	5,843.1	14.7	10.3	139.50	-4,311.1	457.5	4,778.7	4,756.1	22.55	211.871	
5,900.0	5,863.1	5,939.6	5,938.5	15.0	10.5	139.60	-4,309.5	457.2	4,786.4	4,763.4	22.93	208.698	
6,000.0	5,962.3	6,011.8	6,010.7	15.3	10.6	139.67	-4,308.7	457.1	4,794.5	4,771.2	23.28	205.989	
6,100.0	6,061.6	6,088.2	6,087.1	15.5	10.8	139.74	-4,308.1	456.8	4,803.2	4,779.6	23.62	203.317	
6,200.0	6,160.9	6,159.1	6,158.0	15.8	10.9	139.82	-4,308.0	456.3	4,812.4	4,788.4	23.96	200.816	
6,300.0	6,260.1	6,245.7	6,244.5	16.1	11.0	139.91	-4,308.4	455.3	4,822.2	4,797.8	24.33	198.206	
6,400.0	6,359.4	6,397.6	6,396.4	16.4	11.3	140.06	-4,308.4	454.5	4,831.6	4,806.8	24.80	194.822	
6,500.0	6,458.6	6,500.0	6,498.9	16.6	11.5	140.16	-4,307.7	453.8	4,840.3	4,815.1	25.19	192.145	
6,600.0	6,557.9	6,593.6	6,592.5	16.9	11.6	140.26	-4,307.1	453.1	4,849.1	4,823.5	25.57	189.663	
6,700.0	6,657.1	6,707.3	6,706.2	17.2	11.8	140.37	-4,306.3	452.3	4,857.8	4,831.8	25.97	187.018	
6,800.0	6,756.4	6,834.2	6,833.0	17.5	12.1	140.50	-4,304.7	451.3	4,865.9	4,839.5	26.40	184.283	
6,900.0	6,855.6	6,934.4	6,933.2	17.7	12.2	140.60	-4,303.2	450.7	4,873.9	4,847.1	26.79	181.933	
6,919.5	6,875.0	6,952.0	6,950.9	17.8	12.3	140.62	-4,302.9	450.6	4,875.4	4,848.6	26.86	181.505	
6,950.0	6,905.3	6,979.8	6,978.6	17.9	12.3	118.06	-4,302.5	450.6	4,877.1	4,850.1	26.99	180.694	
7,000.0	6,955.1	7,023.7	7,022.5	17.9	12.4	59.84	-4,301.9	450.6	4,876.3	4,849.2	27.08	180.071	
7,050.0	7,004.8	7,066.1	7,065.0	17.9	12.5	30.87	-4,301.4	450.8	4,871.2	4,844.2	27.02	180.304	
7,100.0	7,053.8	7,110.5	7,109.3	17.9	12.5	20.12	-4,300.9	451.0	4,861.9	4,835.1	26.81	181.356	
7,150.0	7,101.9	7,164.1	7,162.9	17.9	12.6	14.98	-4,300.3	451.7	4,848.4	4,821.9	26.47	183.160	
7,200.0	7,148.7	7,219.9	7,218.7	17.8	12.7	12.06	-4,299.7	452.9	4,830.6	4,804.6	26.00	185.809	
7,250.0	7,193.8	7,281.7	7,280.4	17.7	12.8	10.21	-4,298.7	455.3	4,808.7	4,783.3	25.40	189.291	
7,300.0	7,236.9	7,319.1	7,317.8	17.5	12.9	8.94	-4,298.1	457.4	4,782.9	4,758.3	24.66	193.962	
7,350.0	7,277.7	7,345.5	7,344.1	17.4	12.9	8.04	-4,297.8	458.9	4,753.6	4,729.8	23.80	199.737	
7,400.0	7,315.7	7,370.2	7,368.8	17.2	13.0	7.40	-4,297.5	460.5	4,721.0	4,698.1	22.86	206.536	
7,450.0	7,350.9	7,400.0	7,398.5	17.1	13.0	6.94	-4,297.3	462.4	4,685.3	4,663.4	21.87	214.262	
7,500.0	7,382.8	7,415.0	7,413.5	16.9	13.0	6.63	-4,297.2	463.5	4,646.7	4,625.9	20.83	223.078	
7,550.0	7,411.3	7,435.2	7,433.7	16.7	13.1	6.45	-4,297.1	464.8	4,605.6	4,585.8	19.81	232.541	
7,600.0	7,436.1	7,452.9	7,451.3	16.6	13.1	6.40	-4,297.0	465.9	4,562.2	4,543.4	18.82	242.363	
7,650.0	7,457.1	7,467.9	7,466.3	16.5	13.1	6.50	-4,297.0	466.7	4,516.8	4,498.9	17.93	251.897	
7,700.0	7,474.0	7,480.1	7,478.4	16.4	13.1	6.84	-4,297.0	467.4	4,469.8	4,452.6	17.18	260.166	
7,750.0	7,486.8	7,500.0	7,498.3	16.4	13.2	7.66	-4,297.1	468.5	4,421.5	4,404.9	16.65	265.603	
7,800.0	7,495.3	7,500.0	7,498.3	16.4	13.2	9.64	-4,297.1	468.5	4,372.3	4,355.9	16.40	266.569	
7,850.0	7,499.5	7,500.0	7,498.3	16.5	13.2	19.60	-4,297.1	468.5	4,322.5	4,305.2	17.34	249.316	
7,873.6	7,500.0	7,500.0	7,498.3	16.5	13.2	82.61	-4,297.1	468.5	4,299.0	4,272.4	26.61	161.564	
7,900.0	7,500.0	7,500.0	7,498.3	16.5	13.2	82.61	-4,297.1	468.5	4,272.5	4,245.8	26.67	160.174	
8,000.0	7,500.0	7,500.0	7,498.3	16.9	13.2	82.61	-4,297.1	468.5	4,172.5	4,145.5	27.06	154.206	
8,100.0	7,500.0	7,500.0	7,498.3	17.4	13.2	82.61	-4,297.1	468.5	4,072.5	4,044.9	27.64	147.339	
8,200.0	7,500.0	7,500.0	7,498.3	18.0	13.2	82.61	-4,297.1	468.5	3,972.5	3,944.1	28.40	139.884	
8,300.0	7,500.0	7,500.0	7,498.3	18.8	13.2	82.61	-4,297.1	468.5	3,872.6	3,843.2	29.31	132.130	
8,400.0	7,500.0	7,500.0	7,498.3	19.7	13.2	82.61	-4,297.1	468.5	3,772.6	3,742.2	30.35	124.319	
8,500.0	7,500.0	7,500.0	7,498.3	20.7	13.2	82.61	-4,297.1	468.5	3,672.6	3,641.1	31.49	116.630	
8,600.0	7,500.0	7,500.0	7,498.3	21.9	13.2	82.61	-4,297.1	468.5	3,572.6	3,539.9	32.72	109.187	
8,700.0	7,500.0	7,500.0	7,498.3	23.1	13.2	82.61	-4,297.1	468.5	3,472.6	3,438.6	34.02	102.067	
8,800.0	7,500.0	7,500.0	7,498.3	24.3	13.2	82.61	-4,297.1	468.5	3,372.6	3,337.2	35.39	95.311	
8,900.0	7,500.0	7,500.0	7,498.3	25.6	13.2	82.61	-4,297.1	468.5	3,272.6	3,235.8	36.80	88.937	
9,000.0	7,500.0	7,500.0	7,498.3	27.0	13.2	82.61	-4,297.1	468.5	3,172.6	3,134.4	38.25	82.945	
9,100.0	7,500.0	7,500.0	7,498.3	28.4	13.2	82.61	-4,297.1	468.5	3,072.6	3,032.9	39.74	77.325	

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - SOSA A UNIT 1 (EXISTING) - EXISTING - EXISTIN											Offset Site Error: 0.0 ft		
Survey Program: 100-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
9,200.0	7,500.0	7,500.0	7,498.3	29.9	13.2	82.61	-4,297.1	468.5	2,972.7	2,931.4	41.25	72.059	
9,300.0	7,500.0	7,500.0	7,498.3	31.4	13.2	82.61	-4,297.1	468.5	2,872.7	2,829.9	42.79	67.129	
9,400.0	7,500.0	7,500.0	7,498.3	32.9	13.2	82.61	-4,297.1	468.5	2,772.7	2,728.3	44.35	62.512	
9,500.0	7,500.0	7,500.0	7,498.3	34.4	13.2	82.61	-4,297.1	468.5	2,672.7	2,626.8	45.93	58.186	
9,600.0	7,500.0	7,500.0	7,498.3	36.0	13.2	82.61	-4,297.1	468.5	2,572.7	2,525.2	47.53	54.130	
9,700.0	7,500.0	7,500.0	7,498.3	37.5	13.2	82.61	-4,297.1	468.5	2,472.8	2,423.6	49.14	50.324	
9,800.0	7,500.0	7,500.0	7,498.3	39.1	13.2	82.61	-4,297.1	468.5	2,372.8	2,322.0	50.76	46.748	
9,900.0	7,500.0	7,500.0	7,498.3	40.7	13.2	82.61	-4,297.1	468.5	2,272.8	2,220.4	52.39	43.385	
10,000.0	7,500.0	7,503.7	7,502.1	42.3	13.2	86.72	-4,297.1	468.7	2,172.8	2,118.5	54.34	39.983	
10,100.0	7,500.0	7,504.0	7,502.3	43.9	13.2	86.99	-4,297.1	468.8	2,072.9	2,016.8	56.01	37.006	
10,200.0	7,500.0	7,504.2	7,502.6	45.6	13.2	87.27	-4,297.1	468.8	1,972.9	1,915.2	57.69	34.197	
10,300.0	7,500.0	7,504.5	7,502.8	47.2	13.2	87.54	-4,297.1	468.8	1,872.9	1,813.5	59.38	31.543	
10,400.0	7,500.0	7,504.7	7,503.0	48.9	13.2	87.82	-4,297.1	468.8	1,773.0	1,711.9	61.07	29.034	
10,500.0	7,500.0	7,505.0	7,503.3	50.5	13.2	88.09	-4,297.1	468.8	1,673.0	1,610.2	62.76	26.658	
10,600.0	7,500.0	7,505.2	7,503.5	52.2	13.2	88.37	-4,297.1	468.8	1,573.1	1,508.6	64.46	24.405	
10,700.0	7,500.0	7,505.5	7,503.8	53.8	13.2	88.65	-4,297.1	468.8	1,473.1	1,407.0	66.16	22.267	
10,800.0	7,500.0	7,505.7	7,504.0	55.5	13.2	88.94	-4,297.1	468.8	1,373.2	1,305.3	67.86	20.235	
10,900.0	7,500.0	7,506.0	7,504.3	57.2	13.2	89.22	-4,297.1	468.9	1,273.3	1,203.7	69.57	18.302	
11,000.0	7,500.0	7,506.2	7,504.6	58.9	13.2	89.51	-4,297.1	468.9	1,173.3	1,102.1	71.28	16.462	
11,100.0	7,500.0	7,506.5	7,504.8	60.6	13.2	89.79	-4,297.1	468.9	1,073.4	1,000.5	72.99	14.708	
11,200.0	7,500.0	7,506.8	7,505.1	62.3	13.2	90.08	-4,297.1	468.9	973.6	898.9	74.70	13.034	
11,244.1	7,500.0	7,506.9	7,505.2	63.0	13.2	90.21	-4,297.1	468.9	929.5	854.0	75.45	12.319	
11,300.0	7,500.0	7,507.0	7,505.4	64.0	13.2	90.30	-4,297.1	468.9	873.8	797.2	76.57	11.412	
11,400.0	7,500.0	7,507.5	7,505.8	65.7	13.2	90.48	-4,297.1	468.9	774.3	695.8	78.51	9.862	
11,444.1	7,500.0	7,507.8	7,506.1	66.4	13.2	90.56	-4,297.1	469.0	730.6	651.2	79.35	9.207	
11,500.0	7,500.0	7,508.1	7,506.4	67.4	13.2	90.75	-4,297.1	469.0	675.4	595.1	80.31	8.410	
11,600.0	7,500.0	7,508.7	7,507.0	69.1	13.2	91.07	-4,297.1	469.0	576.9	494.9	82.02	7.034	
11,700.0	7,500.0	7,509.3	7,507.7	70.8	13.2	91.40	-4,297.1	469.0	479.1	395.3	83.73	5.721	
11,800.0	7,500.0	7,510.0	7,508.3	72.5	13.2	91.73	-4,297.1	469.1	382.3	296.9	85.44	4.475	
11,900.0	7,500.0	7,510.6	7,508.9	74.2	13.2	92.07	-4,297.1	469.1	287.9	200.7	87.15	3.303	
12,000.0	7,500.0	7,511.2	7,509.5	76.0	13.2	92.40	-4,297.1	469.1	198.9	110.0	88.86	2.238	
12,100.0	7,500.0	7,511.9	7,510.2	77.7	13.2	92.73	-4,297.1	469.2	127.4	36.8	90.57	1.407	Level 3
12,166.6	7,500.0	7,512.3	7,510.6	78.8	13.2	92.96	-4,297.1	469.2	108.6	16.9	91.70	1.184	Level 2, CC, ES, SF
12,194.1	7,500.0	7,512.5	7,510.8	79.3	13.2	93.05	-4,297.1	469.2	112.0	19.9	92.17	1.215	Level 2
12,200.0	7,500.0	7,512.5	7,510.8	79.4	13.2	93.07	-4,297.1	469.2	113.6	21.3	92.26	1.231	Level 2
12,300.0	7,500.0	7,513.0	7,511.4	81.1	13.2	93.27	-4,297.1	469.2	170.8	77.0	93.75	1.821	
12,393.7	7,500.0	7,513.4	7,511.7	82.7	13.2	93.28	-4,297.1	469.3	248.7	153.6	95.09	2.615	
12,400.0	7,500.0	7,513.4	7,511.7	82.9	13.2	93.29	-4,297.1	469.3	254.2	159.0	95.19	2.671	
12,500.0	7,500.0	7,513.7	7,512.0	84.6	13.2	93.43	-4,297.1	469.3	346.1	249.2	96.91	3.571	
12,600.0	7,500.0	7,514.0	7,512.3	86.3	13.2	93.57	-4,297.1	469.3	441.5	342.8	98.62	4.476	
12,700.0	7,500.0	7,514.3	7,512.6	88.0	13.2	93.71	-4,297.1	469.3	538.5	438.2	100.34	5.367	
12,800.0	7,500.0	7,514.6	7,512.9	89.7	13.2	93.86	-4,297.1	469.3	636.5	534.4	102.05	6.237	
12,900.0	7,500.0	7,514.9	7,513.2	91.5	13.2	94.00	-4,297.1	469.3	735.0	631.3	103.77	7.083	
13,000.0	7,500.0	7,515.2	7,513.5	93.2	13.2	94.15	-4,297.1	469.3	833.9	728.4	105.48	7.906	
13,100.0	7,500.0	7,515.5	7,513.8	94.9	13.2	94.29	-4,297.1	469.4	933.0	825.8	107.19	8.704	
13,200.0	7,500.0	7,515.8	7,514.1	96.6	13.2	94.44	-4,297.1	469.4	1,032.3	923.4	108.91	9.479	
13,300.0	7,500.0	7,516.1	7,514.4	98.4	13.2	94.59	-4,297.1	469.4	1,131.7	1,021.1	110.62	10.231	
13,400.0	7,500.0	7,516.4	7,514.7	100.1	13.2	94.74	-4,297.1	469.4	1,231.2	1,118.9	112.33	10.961	
13,500.0	7,500.0	7,516.7	7,515.0	101.8	13.2	94.89	-4,297.1	469.4	1,330.8	1,216.8	114.04	11.670	
13,600.0	7,500.0	7,517.0	7,515.3	103.5	13.2	95.04	-4,297.1	469.4	1,430.4	1,314.7	115.74	12.359	
13,700.0	7,500.0	7,517.3	7,515.6	105.3	13.2	95.19	-4,297.1	469.5	1,530.1	1,412.7	117.45	13.028	
13,800.0	7,500.0	7,517.6	7,515.9	107.0	13.2	95.34	-4,297.1	469.5	1,629.8	1,510.7	119.16	13.678	

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - SOSA A UNIT 1 (EXISTING) - EXISTING - EXISTIN										Offset Site Error:		0.0 ft	
Survey Program: 100-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	
13,900.0	7,500.0	7,517.9	7,516.2	108.7	13.2	95.49	-4,297.1	469.5	1,729.6	1,608.7	120.86	14.311	
14,000.0	7,500.0	7,518.2	7,516.5	110.5	13.2	95.65	-4,297.1	469.5	1,829.4	1,706.8	122.56	14.926	
14,100.0	7,500.0	7,518.6	7,516.9	112.2	13.2	95.80	-4,297.1	469.5	1,929.2	1,804.9	124.27	15.525	
14,200.0	7,500.0	7,518.9	7,517.2	113.9	13.2	95.96	-4,297.1	469.5	2,029.0	1,903.0	125.97	16.108	
14,300.0	7,500.0	7,519.2	7,517.5	115.7	13.2	96.12	-4,297.1	469.5	2,128.8	2,001.2	127.66	16.675	
14,400.0	7,500.0	7,519.5	7,517.8	117.4	13.2	96.27	-4,297.1	469.6	2,228.7	2,099.3	129.36	17.229	
14,500.0	7,500.0	7,519.9	7,518.2	119.1	13.2	96.43	-4,297.1	469.6	2,328.6	2,197.5	131.06	17.768	
14,600.0	7,500.0	7,520.2	7,518.5	120.9	13.2	96.59	-4,297.1	469.6	2,428.4	2,295.7	132.75	18.294	
14,700.0	7,500.0	7,520.5	7,518.8	122.6	13.2	96.75	-4,297.1	469.6	2,528.3	2,393.9	134.44	18.807	
14,800.0	7,500.0	7,520.8	7,519.1	124.3	13.2	96.92	-4,297.1	469.6	2,628.2	2,492.1	136.13	19.307	
14,900.0	7,500.0	7,521.2	7,519.5	126.1	13.2	97.08	-4,297.1	469.6	2,728.1	2,590.3	137.81	19.796	
15,000.0	7,500.0	7,521.5	7,519.8	127.8	13.2	97.24	-4,297.1	469.7	2,828.0	2,688.5	139.50	20.273	
15,100.0	7,500.0	7,521.9	7,520.2	129.6	13.2	97.41	-4,297.1	469.7	2,928.0	2,786.8	141.18	20.739	
15,200.0	7,500.0	7,522.2	7,520.5	131.3	13.2	97.57	-4,297.1	469.7	3,027.9	2,885.0	142.86	21.195	
15,300.0	7,500.0	7,522.5	7,520.8	133.0	13.2	97.74	-4,297.1	469.7	3,127.8	2,983.3	144.54	21.640	
15,400.0	7,500.0	7,522.9	7,521.2	134.8	13.2	97.91	-4,297.1	469.7	3,227.7	3,081.5	146.21	22.076	
15,500.0	7,500.0	7,523.2	7,521.5	136.5	13.2	98.08	-4,297.1	469.8	3,327.7	3,179.8	147.88	22.502	
15,600.0	7,500.0	7,523.6	7,521.9	138.3	13.2	98.25	-4,297.1	469.8	3,427.6	3,278.1	149.55	22.919	
15,700.0	7,500.0	7,523.9	7,522.2	140.0	13.2	98.42	-4,297.1	469.8	3,527.6	3,376.3	151.22	23.328	
15,805.8	7,500.0	7,524.3	7,522.6	141.8	13.2	98.60	-4,297.1	469.8	3,633.3	3,480.3	152.98	23.750	

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<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - THOMAS 24-7 (EXISTING) - ENCANA WELL - SUR											Offset Site Error: 0.0 ft		
Survey Program: 1024-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	11.3	11.3	0.0	0.0	153.08	-2,304.0	1,170.0	2,584.1				
100.0	100.0	114.1	114.1	0.2	0.2	153.08	-2,304.0	1,170.0	2,584.0	2,583.7	0.35	7,400.784	
200.0	200.0	216.9	216.9	0.3	0.4	153.08	-2,303.8	1,170.0	2,583.8	2,583.1	0.70	3,683.687	
300.0	300.0	319.7	319.7	0.5	0.6	153.07	-2,303.4	1,170.0	2,583.6	2,582.5	1.05	2,451.890	
400.0	400.0	422.5	422.5	0.7	0.7	153.07	-2,303.0	1,170.0	2,583.2	2,581.8	1.41	1,837.282	
500.0	500.0	525.3	525.3	0.8	0.9	153.06	-2,302.4	1,170.0	2,582.7	2,580.9	1.76	1,468.892	
593.9	593.9	621.9	621.9	1.0	1.1	113.60	-2,301.7	1,170.0	2,582.4	2,580.3	2.08	1,238.920	
600.0	600.0	628.1	628.1	1.0	1.1	113.60	-2,301.7	1,170.0	2,582.4	2,580.3	2.11	1,226.344	
700.0	700.0	730.9	730.9	1.2	1.3	113.64	-2,300.8	1,170.1	2,582.7	2,580.3	2.46	1,050.077	
800.0	799.9	833.6	833.6	1.4	1.4	113.71	-2,299.9	1,170.1	2,583.7	2,580.8	2.82	916.885	
900.0	899.7	936.3	936.3	1.6	1.6	113.82	-2,298.8	1,170.1	2,585.2	2,582.0	3.18	812.083	
1,000.0	999.4	1,034.4	1,034.4	1.8	1.8	113.94	-2,297.7	1,170.1	2,587.3	2,583.8	3.55	728.520	
1,100.0	1,098.9	1,105.2	1,105.2	2.0	1.9	114.03	-2,297.2	1,170.4	2,590.9	2,587.0	3.89	666.483	
1,201.3	1,199.5	1,183.0	1,183.0	2.2	2.0	114.15	-2,297.5	1,171.4	2,596.4	2,592.1	4.25	610.320	
1,300.0	1,297.5	1,244.0	1,244.0	2.5	2.2	114.28	-2,298.3	1,172.5	2,603.3	2,598.7	4.59	566.858	
1,400.0	1,396.8	1,322.7	1,322.6	2.7	2.3	114.46	-2,300.1	1,174.2	2,611.3	2,606.3	4.97	525.508	
1,500.0	1,496.0	1,408.0	1,407.8	3.0	2.4	114.65	-2,302.4	1,176.2	2,619.9	2,614.6	5.36	488.712	
1,600.0	1,595.3	1,490.5	1,490.3	3.3	2.6	114.82	-2,304.9	1,178.8	2,629.2	2,623.4	5.75	457.144	
1,700.0	1,694.5	1,564.0	1,563.7	3.5	2.7	114.96	-2,307.3	1,182.0	2,639.2	2,633.0	6.13	430.603	
1,800.0	1,793.8	1,642.1	1,641.6	3.8	2.9	115.08	-2,310.0	1,186.5	2,650.0	2,643.5	6.52	406.456	
1,900.0	1,893.0	1,724.8	1,724.0	4.0	3.0	115.19	-2,313.2	1,192.5	2,661.8	2,654.9	6.92	384.598	
2,000.0	1,992.3	1,820.5	1,819.4	4.3	3.2	115.32	-2,317.1	1,199.8	2,673.9	2,666.6	7.35	363.896	
2,100.0	2,091.5	1,917.5	1,916.0	4.6	3.4	115.44	-2,321.0	1,207.2	2,686.1	2,678.3	7.78	345.259	
2,200.0	2,190.8	2,025.1	2,023.2	4.8	3.6	115.57	-2,325.4	1,215.4	2,698.3	2,690.0	8.23	327.762	
2,300.0	2,290.0	2,104.0	2,101.8	5.1	3.8	115.67	-2,328.7	1,221.3	2,710.5	2,701.9	8.63	313.950	
2,400.0	2,389.3	2,188.1	2,185.5	5.4	4.0	115.77	-2,332.7	1,228.1	2,723.5	2,714.5	9.05	301.102	
2,500.0	2,488.5	2,273.7	2,270.7	5.7	4.2	115.88	-2,337.2	1,235.1	2,737.0	2,727.5	9.46	289.268	
2,600.0	2,587.8	2,380.9	2,377.4	5.9	4.4	116.00	-2,343.0	1,244.3	2,750.9	2,741.0	9.92	277.385	
2,700.0	2,687.0	2,527.5	2,523.4	6.2	4.7	116.20	-2,350.0	1,254.5	2,763.4	2,753.0	10.44	264.628	
2,800.0	2,786.3	2,627.1	2,622.7	6.5	4.9	116.33	-2,353.6	1,261.4	2,775.1	2,764.2	10.89	254.906	
2,900.0	2,885.5	2,707.4	2,702.8	6.7	5.1	116.42	-2,356.8	1,267.5	2,787.2	2,775.9	11.29	246.792	
3,000.0	2,984.8	2,807.4	2,802.4	7.0	5.3	116.54	-2,361.3	1,274.8	2,799.7	2,788.0	11.74	238.535	
3,100.0	3,084.0	2,926.3	2,920.9	7.3	5.6	116.70	-2,366.2	1,283.0	2,811.8	2,799.6	12.21	230.197	
3,200.0	3,183.3	3,023.0	3,017.3	7.6	5.8	116.82	-2,369.9	1,289.6	2,823.5	2,810.9	12.65	223.138	
3,300.0	3,282.5	3,118.0	3,112.0	7.8	6.0	116.94	-2,373.6	1,296.3	2,835.4	2,822.4	13.09	216.652	
3,400.0	3,381.8	3,205.5	3,199.1	8.1	6.2	117.04	-2,377.3	1,302.6	2,847.7	2,834.2	13.51	210.773	
3,500.0	3,481.1	3,326.6	3,319.9	8.4	6.4	117.18	-2,381.9	1,311.3	2,859.6	2,845.6	14.00	204.303	
3,600.0	3,580.3	3,409.5	3,402.5	8.7	6.6	117.27	-2,384.9	1,317.7	2,871.6	2,857.2	14.42	199.202	
3,700.0	3,679.6	3,507.0	3,499.6	8.9	6.8	117.37	-2,388.7	1,325.3	2,883.8	2,869.0	14.86	194.105	
3,800.0	3,778.8	3,602.7	3,595.0	9.2	7.1	117.48	-2,392.7	1,332.2	2,896.2	2,880.9	15.29	189.358	
3,900.0	3,878.1	3,711.7	3,703.6	9.5	7.3	117.59	-2,396.9	1,340.8	2,908.4	2,892.7	15.77	184.474	
4,000.0	3,977.3	3,812.0	3,803.5	9.8	7.5	117.68	-2,400.3	1,348.9	2,920.4	2,904.2	16.22	180.070	
4,100.0	4,076.6	3,896.9	3,888.1	10.0	7.7	117.77	-2,403.7	1,355.4	2,932.7	2,916.1	16.64	176.269	
4,200.0	4,175.8	3,988.8	3,979.5	10.3	7.9	117.86	-2,407.6	1,362.8	2,945.4	2,928.3	17.07	172.499	
4,300.0	4,275.1	4,089.2	4,079.5	10.6	8.2	117.95	-2,411.8	1,371.1	2,958.1	2,940.6	17.53	168.760	
4,400.0	4,374.3	4,179.1	4,169.0	10.9	8.4	118.04	-2,415.6	1,378.6	2,971.0	2,953.1	17.96	165.409	
4,500.0	4,473.6	4,262.3	4,251.8	11.1	8.6	118.11	-2,419.5	1,385.8	2,984.4	2,966.0	18.38	162.340	
4,600.0	4,572.8	4,386.1	4,375.1	11.4	8.9	118.23	-2,425.3	1,395.8	2,997.6	2,978.7	18.88	158.783	
4,700.0	4,672.1	4,507.9	4,496.4	11.7	9.1	118.34	-2,430.1	1,405.4	3,010.0	2,990.6	19.37	155.358	
4,800.0	4,771.3	4,636.7	4,624.8	12.0	9.4	118.47	-2,434.3	1,415.0	3,021.6	3,001.7	19.88	151.991	
4,900.0	4,870.6	4,746.8	4,734.6	12.2	9.7	118.59	-2,437.5	1,422.0	3,032.5	3,012.2	20.34	149.067	
5,000.0	4,969.8	4,886.0	4,873.6	12.5	9.9	118.79	-2,441.4	1,428.5	3,042.8	3,022.0	20.84	146.018	

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

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## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
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<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
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<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - THOMAS 24-7 (EXISTING) - ENCANA WELL - SUR												Offset Site Error:	0.0 ft
Survey Program: 1024-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
5,100.0	5,069.1	5,076.5	5,064.1	12.8	10.2	119.16	-2,444.5	1,430.3	3,050.5	3,029.1	21.39	142.608	
5,200.0	5,168.3	5,175.8	5,163.4	13.1	10.4	119.37	-2,445.1	1,430.2	3,057.0	3,035.2	21.80	140.239	
5,300.0	5,267.6	5,296.2	5,283.8	13.3	10.5	119.62	-2,445.6	1,429.8	3,063.3	3,041.1	22.24	137.749	
5,400.0	5,366.8	5,401.7	5,389.3	13.6	10.7	119.83	-2,445.4	1,429.2	3,069.0	3,046.3	22.65	135.471	
5,500.0	5,466.1	5,502.8	5,490.3	13.9	10.9	120.05	-2,445.3	1,428.5	3,074.8	3,051.7	23.06	133.326	
5,600.0	5,565.3	5,606.4	5,593.9	14.2	11.0	120.26	-2,445.0	1,427.6	3,080.4	3,057.0	23.47	131.228	
5,700.0	5,664.6	5,701.5	5,689.0	14.4	11.1	120.46	-2,444.8	1,426.9	3,086.1	3,062.2	23.87	129.274	
5,800.0	5,763.8	5,806.1	5,793.7	14.7	11.3	120.68	-2,444.5	1,426.1	3,091.9	3,067.6	24.29	127.312	
5,900.0	5,863.1	5,917.8	5,905.3	15.0	11.5	120.91	-2,443.9	1,425.1	3,097.3	3,072.6	24.71	125.355	
6,000.0	5,962.3	6,019.5	6,007.0	15.3	11.6	121.12	-2,443.2	1,424.0	3,102.6	3,077.5	25.11	123.539	
6,100.0	6,061.6	6,112.0	6,099.6	15.5	11.8	121.31	-2,442.5	1,422.9	3,107.9	3,082.4	25.51	121.837	
6,200.0	6,160.9	6,202.9	6,190.4	15.8	11.9	121.49	-2,441.9	1,422.9	3,113.7	3,087.8	25.90	120.198	
6,300.0	6,260.1	6,307.4	6,294.9	16.1	12.1	121.68	-2,441.2	1,422.8	3,119.4	3,093.1	26.32	118.517	
6,400.0	6,359.4	6,406.1	6,393.6	16.4	12.2	121.87	-2,440.3	1,422.8	3,125.1	3,098.4	26.73	116.925	
6,500.0	6,458.6	6,503.3	6,490.8	16.6	12.4	122.05	-2,439.7	1,422.8	3,130.9	3,103.8	27.13	115.401	
6,600.0	6,557.9	6,600.0	6,587.5	16.9	12.5	122.23	-2,439.0	1,422.6	3,136.8	3,109.2	27.53	113.933	
6,700.0	6,657.1	6,690.9	6,678.4	17.2	12.7	122.40	-2,438.7	1,422.3	3,142.8	3,114.9	27.92	112.553	
6,800.0	6,756.4	6,784.9	6,772.4	17.5	12.8	122.58	-2,438.5	1,422.2	3,149.2	3,120.9	28.32	111.208	
6,900.0	6,855.6	6,881.5	6,869.0	17.7	13.0	122.77	-2,438.4	1,421.9	3,155.7	3,127.0	28.72	109.889	
6,919.5	6,875.0	6,899.9	6,887.4	17.8	13.0	122.80	-2,438.4	1,421.9	3,157.0	3,128.2	28.79	109.639	
6,950.0	6,905.3	6,928.8	6,916.3	17.9	13.0	100.31	-2,438.4	1,421.9	3,158.3	3,129.3	28.93	109.169	
7,000.0	6,955.1	6,978.5	6,966.0	17.9	13.1	42.07	-2,438.5	1,421.9	3,157.0	3,127.9	29.03	108.745	
7,050.0	7,004.8	7,028.3	7,015.8	17.9	13.2	12.94	-2,438.5	1,421.8	3,151.5	3,122.6	28.98	108.743	
7,100.0	7,053.8	7,078.8	7,066.3	17.9	13.3	1.87	-2,438.5	1,421.8	3,142.0	3,113.2	28.79	109.152	
7,150.0	7,101.9	7,131.0	7,118.5	17.9	13.4	-3.77	-2,438.4	1,421.8	3,128.4	3,099.9	28.45	109.963	
7,200.0	7,148.7	7,190.7	7,178.2	17.8	13.5	-7.40	-2,438.1	1,421.9	3,110.7	3,082.7	27.99	111.127	
7,250.0	7,193.8	7,245.7	7,233.2	17.7	13.6	-10.19	-2,437.7	1,422.0	3,089.0	3,061.6	27.41	112.710	
7,300.0	7,236.9	7,296.6	7,284.1	17.5	13.6	-12.65	-2,437.1	1,422.1	3,063.6	3,036.9	26.71	114.683	
7,350.0	7,277.7	7,332.8	7,320.3	17.4	13.7	-15.03	-2,436.6	1,422.2	3,034.7	3,008.8	25.92	117.079	
7,400.0	7,315.7	7,363.4	7,350.9	17.2	13.7	-17.52	-2,436.3	1,422.3	3,002.8	2,977.7	25.08	119.729	
7,450.0	7,350.9	7,392.1	7,379.6	17.1	13.8	-20.31	-2,436.1	1,422.3	2,968.0	2,943.7	24.25	122.391	
7,500.0	7,382.8	7,424.5	7,412.0	16.9	13.8	-23.65	-2,435.8	1,422.4	2,930.5	2,907.0	23.52	124.614	
7,550.0	7,411.3	7,453.4	7,440.8	16.7	13.9	-27.73	-2,435.6	1,422.4	2,890.7	2,867.7	22.97	125.861	
7,600.0	7,436.1	7,478.4	7,465.9	16.6	13.9	-32.84	-2,435.5	1,422.4	2,848.8	2,826.0	22.73	125.321	
7,650.0	7,457.1	7,497.8	7,485.3	16.5	14.0	-39.32	-2,435.3	1,422.4	2,805.2	2,782.2	22.95	122.254	
7,700.0	7,474.0	7,512.5	7,500.0	16.4	14.0	-47.60	-2,435.2	1,422.4	2,760.2	2,736.5	23.70	116.447	
7,750.0	7,486.8	7,523.6	7,511.1	16.4	14.0	-58.04	-2,435.2	1,422.4	2,714.2	2,689.2	24.93	108.872	
7,800.0	7,495.3	7,530.9	7,518.4	16.4	14.0	-70.57	-2,435.1	1,422.5	2,667.5	2,641.3	26.23	101.707	
7,850.0	7,499.5	7,534.4	7,521.8	16.5	14.0	-84.28	-2,435.1	1,422.5	2,620.6	2,593.6	26.97	97.155	
7,873.6	7,500.0	7,534.7	7,522.1	16.5	14.0	-90.71	-2,435.1	1,422.5	2,598.5	2,571.5	27.01	96.218	
7,900.0	7,500.0	7,534.5	7,522.0	16.5	14.0	-90.70	-2,435.1	1,422.5	2,573.7	2,546.6	27.07	95.070	
8,000.0	7,500.0	7,534.0	7,521.5	16.9	14.0	-90.67	-2,435.1	1,422.5	2,480.3	2,452.8	27.46	90.340	
8,100.0	7,500.0	7,533.5	7,521.0	17.4	14.0	-90.63	-2,435.1	1,422.5	2,387.4	2,359.4	28.04	85.147	
8,200.0	7,500.0	7,533.0	7,520.4	18.0	14.0	-90.60	-2,435.1	1,422.5	2,295.1	2,266.3	28.80	79.694	
8,300.0	7,500.0	7,532.4	7,519.9	18.8	14.0	-90.57	-2,435.1	1,422.5	2,203.6	2,173.8	29.71	74.160	
8,400.0	7,500.0	7,531.9	7,519.4	19.7	14.0	-90.53	-2,435.1	1,422.5	2,112.7	2,082.0	30.76	68.693	
8,500.0	7,500.0	7,531.4	7,518.9	20.7	14.0	-90.50	-2,435.1	1,422.5	2,022.8	1,990.9	31.91	63.398	
8,600.0	7,500.0	7,530.8	7,518.3	21.9	14.0	-90.46	-2,435.1	1,422.5	1,933.8	1,900.6	33.14	58.345	
8,700.0	7,500.0	7,530.3	7,517.8	23.1	14.0	-90.43	-2,435.1	1,422.5	1,845.9	1,811.5	34.45	53.575	
8,800.0	7,500.0	7,529.8	7,517.3	24.3	14.0	-90.40	-2,435.1	1,422.5	1,759.4	1,723.5	35.83	49.108	
8,900.0	7,500.0	7,529.2	7,516.7	25.6	14.0	-90.36	-2,435.1	1,422.5	1,674.3	1,637.1	37.25	44.951	
9,000.0	7,500.0	7,528.7	7,516.2	27.0	14.0	-90.33	-2,435.1	1,422.5	1,591.0	1,552.3	38.71	41.100	

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - THOMAS 24-7 (EXISTING) - ENCANA WELL - SUR													Offset Site Error: 0.0 ft	
Survey Program: 1024-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		
9,100.0	7,500.0	7,528.2	7,515.6	28.4	14.0	-90.29	-2,435.1	1,422.5	1,509.7	1,469.5	40.21	37.548		
9,200.0	7,500.0	7,527.6	7,515.1	29.9	14.0	-90.26	-2,435.1	1,422.5	1,430.8	1,389.1	41.73	34.283		
9,300.0	7,500.0	7,527.1	7,514.5	31.4	14.0	-90.22	-2,435.1	1,422.5	1,354.7	1,311.4	43.29	31.295		
9,400.0	7,500.0	7,526.5	7,514.0	32.9	14.0	-90.19	-2,435.2	1,422.5	1,281.8	1,237.0	44.86	28.574		
9,500.0	7,500.0	7,526.0	7,513.4	34.4	14.0	-90.15	-2,435.2	1,422.5	1,212.8	1,166.4	46.45	26.111		
9,600.0	7,500.0	7,525.4	7,512.9	36.0	14.0	-90.12	-2,435.2	1,422.5	1,148.5	1,100.4	48.06	23.898		
9,700.0	7,500.0	7,524.8	7,512.3	37.5	14.0	-90.08	-2,435.2	1,422.5	1,089.4	1,039.8	49.68	21.931		
9,800.0	7,500.0	7,524.3	7,511.8	39.1	14.0	-90.05	-2,435.2	1,422.5	1,036.7	985.4	51.31	20.206		
9,900.0	7,500.0	7,523.7	7,511.2	40.7	14.0	-90.01	-2,435.2	1,422.4	991.3	938.4	52.95	18.722		
10,000.0	7,500.0	7,523.1	7,510.6	42.3	14.0	-89.98	-2,435.2	1,422.4	954.3	899.7	54.60	17.478		
10,100.0	7,500.0	7,522.6	7,510.1	43.9	14.0	-89.94	-2,435.2	1,422.4	926.6	870.4	56.26	16.470		
10,200.0	7,500.0	7,522.0	7,509.5	45.6	14.0	-89.90	-2,435.2	1,422.4	909.2	851.2	57.93	15.695		
10,300.0	7,500.0	7,521.4	7,508.9	47.2	14.0	-89.87	-2,435.2	1,422.4	902.5	842.9	59.60	15.143		
10,310.3	7,500.0	7,521.4	7,508.8	47.4	14.0	-89.86	-2,435.2	1,422.4	902.4	842.7	59.77	15.098 CC, ES		
10,400.0	7,500.0	7,520.9	7,508.3	48.9	14.0	-89.83	-2,435.2	1,422.4	906.9	845.6	61.28	14.799		
10,500.0	7,500.0	7,520.3	7,507.8	50.5	14.0	-89.79	-2,435.2	1,422.4	922.2	859.2	62.96	14.646 SF		
10,600.0	7,500.0	7,519.7	7,507.2	52.2	14.0	-89.76	-2,435.2	1,422.4	947.8	883.1	64.65	14.660		
10,700.0	7,500.0	7,519.1	7,506.6	53.8	14.0	-89.72	-2,435.2	1,422.4	983.0	916.6	66.34	14.816		
10,800.0	7,500.0	7,518.5	7,506.0	55.5	14.0	-89.68	-2,435.2	1,422.4	1,026.7	958.7	68.04	15.090		
10,900.0	7,500.0	7,517.9	7,505.4	57.2	14.0	-89.64	-2,435.2	1,422.4	1,078.0	1,008.3	69.74	15.458		
11,000.0	7,500.0	7,517.3	7,504.8	58.9	14.0	-89.61	-2,435.2	1,422.4	1,135.8	1,064.4	71.44	15.898		
11,100.0	7,500.0	7,516.7	7,504.2	60.6	14.0	-89.57	-2,435.2	1,422.4	1,199.2	1,126.0	73.15	16.394		
11,200.0	7,500.0	7,516.1	7,503.6	62.3	14.0	-89.53	-2,435.2	1,422.4	1,267.2	1,192.4	74.86	16.929		
11,244.1	7,500.0	7,515.9	7,503.4	63.0	14.0	-89.51	-2,435.2	1,422.4	1,298.6	1,223.0	75.61	17.175		
11,300.0	7,500.0	7,515.5	7,503.0	64.0	14.0	-89.50	-2,435.2	1,422.4	1,339.0	1,262.2	76.74	17.448		
11,400.0	7,500.0	7,514.9	7,502.4	65.7	14.0	-89.49	-2,435.2	1,422.4	1,412.1	1,333.4	78.71	17.940		
11,444.1	7,500.0	7,514.7	7,502.2	66.4	14.0	-89.48	-2,435.2	1,422.4	1,444.6	1,365.1	79.56	18.158		
11,500.0	7,500.0	7,514.3	7,501.8	67.4	14.0	-89.46	-2,435.2	1,422.4	1,486.4	1,405.9	80.52	18.461		
11,600.0	7,500.0	7,513.8	7,501.2	69.1	14.0	-89.42	-2,435.2	1,422.4	1,563.4	1,481.2	82.24	19.012		
11,700.0	7,500.0	7,513.2	7,500.6	70.8	14.0	-89.39	-2,435.2	1,422.4	1,642.9	1,559.0	83.95	19.569		
11,800.0	7,500.0	7,512.5	7,500.0	72.5	14.0	-89.35	-2,435.2	1,422.4	1,724.5	1,638.9	85.68	20.129		
11,900.0	7,500.0	7,511.9	7,499.4	74.2	14.0	-89.32	-2,435.2	1,422.4	1,808.0	1,720.6	87.40	20.687		
12,000.0	7,500.0	7,511.3	7,498.8	76.0	14.0	-89.28	-2,435.2	1,422.4	1,893.1	1,803.9	89.12	21.241		
12,100.0	7,500.0	7,510.7	7,498.2	77.7	14.0	-89.25	-2,435.2	1,422.4	1,979.5	1,888.7	90.85	21.789		
12,194.1	7,500.0	7,510.1	7,497.6	79.3	14.0	-89.21	-2,435.3	1,422.4	2,062.1	1,969.6	92.47	22.299		
12,200.0	7,500.0	7,510.1	7,497.6	79.4	14.0	-89.21	-2,435.3	1,422.4	2,067.2	1,974.7	92.56	22.333		
12,300.0	7,500.0	7,509.5	7,497.0	81.1	14.0	-89.11	-2,435.3	1,422.4	2,156.8	2,062.8	94.05	22.934		
12,393.7	7,500.0	7,508.9	7,496.4	82.7	14.0	-89.00	-2,435.3	1,422.4	2,242.9	2,147.5	95.35	23.521		
12,400.0	7,500.0	7,508.8	7,496.3	82.9	14.0	-88.99	-2,435.3	1,422.4	2,248.7	2,153.3	95.46	23.556		
12,500.0	7,500.0	7,508.2	7,495.7	84.6	14.0	-88.95	-2,435.3	1,422.4	2,341.9	2,244.7	97.19	24.095		
12,600.0	7,500.0	7,507.6	7,495.0	86.3	14.0	-88.91	-2,435.3	1,422.4	2,435.5	2,336.6	98.92	24.621		
12,700.0	7,500.0	7,506.9	7,494.4	88.0	14.0	-88.86	-2,435.3	1,422.4	2,529.7	2,429.0	100.65	25.133		
12,800.0	7,500.0	7,506.3	7,493.7	89.7	14.0	-88.82	-2,435.3	1,422.4	2,624.2	2,521.9	102.38	25.632		
12,900.0	7,500.0	7,505.6	7,493.1	91.5	14.0	-88.77	-2,435.3	1,422.4	2,719.2	2,615.1	104.11	26.118		
13,000.0	7,500.0	7,505.0	7,492.4	93.2	14.0	-88.73	-2,435.3	1,422.4	2,814.5	2,708.7	105.84	26.591		
13,100.0	7,500.0	7,504.3	7,491.8	94.9	14.0	-88.68	-2,435.3	1,422.4	2,910.2	2,802.6	107.58	27.052		
13,200.0	7,500.0	7,503.6	7,491.1	96.6	14.0	-88.64	-2,435.3	1,422.4	3,006.1	2,896.8	109.31	27.501		
13,300.0	7,500.0	7,503.0	7,490.5	98.4	14.0	-88.59	-2,435.3	1,422.4	3,102.2	2,991.2	111.04	27.938		
13,400.0	7,500.0	7,502.3	7,489.8	100.1	14.0	-88.55	-2,435.3	1,422.4	3,198.7	3,085.9	112.78	28.363		
13,500.0	7,500.0	7,501.6	7,489.1	101.8	14.0	-88.50	-2,435.3	1,422.4	3,295.3	3,180.8	114.51	28.777		
13,600.0	7,500.0	7,501.0	7,488.4	103.5	14.0	-88.45	-2,435.3	1,422.4	3,392.1	3,275.8	116.24	29.181		
13,700.0	7,500.0	7,500.3	7,487.8	105.3	14.0	-88.41	-2,435.3	1,422.4	3,489.1	3,371.1	117.98	29.574		

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



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - THOMAS 24-7 (EXISTING) - ENCANA WELL - SUR													Offset Site Error:	0.0 ft
Survey Program: 1024-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		
13,800.0	7,500.0	7,499.6	7,487.1	107.0	14.0	-88.36	-2,435.3	1,422.4	3,586.3	3,466.5	119.71	29.957		
13,900.0	7,500.0	7,498.9	7,486.4	108.7	14.0	-88.31	-2,435.3	1,422.4	3,683.6	3,562.1	121.45	30.330		
14,000.0	7,500.0	7,498.2	7,485.7	110.5	14.0	-88.27	-2,435.3	1,422.4	3,781.0	3,657.8	123.19	30.694		
14,100.0	7,500.0	7,497.5	7,485.0	112.2	14.0	-88.22	-2,435.3	1,422.4	3,878.6	3,753.7	124.92	31.048		
14,200.0	7,500.0	7,496.8	7,484.3	113.9	14.0	-88.17	-2,435.3	1,422.4	3,976.3	3,849.6	126.66	31.394		
14,300.0	7,500.0	7,496.1	7,483.6	115.7	14.0	-88.12	-2,435.3	1,422.4	4,074.1	3,945.7	128.40	31.731		
14,400.0	7,500.0	7,495.4	7,482.9	117.4	14.0	-88.08	-2,435.3	1,422.4	4,172.0	4,041.9	130.13	32.060		
14,500.0	7,500.0	7,494.7	7,482.2	119.1	14.0	-88.03	-2,435.4	1,422.4	4,270.1	4,138.2	131.87	32.381		
14,600.0	7,500.0	7,494.0	7,481.5	120.9	14.0	-87.98	-2,435.4	1,422.4	4,368.2	4,234.6	133.61	32.694		
14,700.0	7,500.0	7,493.3	7,480.8	122.6	14.0	-87.93	-2,435.4	1,422.4	4,466.3	4,331.0	135.34	33.000		
14,800.0	7,500.0	7,492.6	7,480.1	124.3	14.0	-87.88	-2,435.4	1,422.4	4,564.6	4,427.5	137.08	33.299		
14,900.0	7,500.0	7,491.9	7,479.3	126.1	14.0	-87.83	-2,435.4	1,422.4	4,663.0	4,524.1	138.82	33.591		
15,000.0	7,500.0	7,491.1	7,478.6	127.8	14.0	-87.78	-2,435.4	1,422.4	4,761.4	4,620.8	140.55	33.876		
15,100.0	7,500.0	7,490.4	7,477.9	129.6	13.9	-87.73	-2,435.4	1,422.4	4,859.8	4,717.5	142.29	34.154		
15,200.0	7,500.0	7,489.7	7,477.2	131.3	13.9	-87.68	-2,435.4	1,422.4	4,958.4	4,814.3	144.03	34.426		
15,300.0	7,500.0	7,488.9	7,476.4	133.0	13.9	-87.63	-2,435.4	1,422.4	5,057.0	4,911.2	145.77	34.692		
15,400.0	7,500.0	7,488.2	7,475.7	134.8	13.9	-87.58	-2,435.4	1,422.4	5,155.6	5,008.1	147.50	34.952		
15,500.0	7,500.0	7,487.5	7,474.9	136.5	13.9	-87.53	-2,435.4	1,422.4	5,254.3	5,105.1	149.24	35.207		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - THOMAS 24-7 (Existing) - Existing - NO SURVEYS													Offset Site Error:	0.0 ft
Survey Program: 8365-Geolink 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	153.10	-2,304.8	1,169.2	2,584.3					
100.0	100.0	95.0	95.0	0.2	0.2	153.10	-2,304.8	1,169.2	2,584.3	2,584.0	0.32	8,130.760		
200.0	200.0	195.0	195.0	0.3	0.3	153.10	-2,304.8	1,169.2	2,584.3	2,583.7	0.67	3,875.095		
300.0	300.0	295.0	295.0	0.5	0.5	153.10	-2,304.8	1,169.2	2,584.3	2,583.3	1.02	2,543.709		
400.0	400.0	395.0	395.0	0.7	0.7	153.10	-2,304.8	1,169.2	2,584.3	2,583.0	1.37	1,893.240		
500.0	500.0	495.0	495.0	0.8	0.9	153.10	-2,304.8	1,169.2	2,584.3	2,582.6	1.71	1,507.696		
600.0	600.0	595.0	595.0	1.0	1.0	113.64	-2,304.8	1,169.2	2,584.7	2,582.6	2.06	1,252.575		
700.0	700.0	695.0	695.0	1.2	1.2	113.68	-2,304.8	1,169.2	2,585.7	2,583.3	2.41	1,070.731		
800.0	799.9	794.9	794.9	1.4	1.4	113.76	-2,304.8	1,169.2	2,587.5	2,584.7	2.77	933.827		
900.0	899.7	894.7	894.7	1.6	1.6	113.86	-2,304.8	1,169.2	2,590.0	2,586.8	3.13	826.412		
1,000.0	999.4	994.4	994.4	1.8	1.7	113.99	-2,304.8	1,169.2	2,593.2	2,589.7	3.51	739.412		
1,100.0	1,098.9	1,093.9	1,093.9	2.0	1.9	114.14	-2,304.8	1,169.2	2,597.1	2,593.2	3.89	667.182		
1,201.3	1,199.5	1,194.5	1,194.5	2.2	2.1	114.33	-2,304.8	1,169.2	2,601.8	2,597.5	4.30	605.308		
1,300.0	1,297.5	1,292.5	1,292.5	2.5	2.3	114.57	-2,304.8	1,169.2	2,606.8	2,602.1	4.70	554.611		
1,400.0	1,396.8	1,391.8	1,391.8	2.7	2.4	114.81	-2,304.8	1,169.2	2,612.0	2,606.9	5.11	510.951		
1,500.0	1,496.0	1,491.0	1,491.0	3.0	2.6	115.05	-2,304.8	1,169.2	2,617.1	2,611.6	5.53	473.532		
1,600.0	1,595.3	1,590.3	1,590.3	3.3	2.8	115.29	-2,304.8	1,169.2	2,622.4	2,616.4	5.94	441.174		
1,700.0	1,694.5	1,689.5	1,689.5	3.5	2.9	115.53	-2,304.8	1,169.2	2,627.6	2,621.3	6.36	412.957		
1,800.0	1,793.8	1,788.8	1,788.8	3.8	3.1	115.77	-2,304.8	1,169.2	2,633.0	2,626.2	6.78	388.162		
1,900.0	1,893.0	1,888.0	1,888.0	4.0	3.3	116.01	-2,304.8	1,169.2	2,638.3	2,631.1	7.20	366.221		
2,000.0	1,992.3	1,987.3	1,987.3	4.3	3.5	116.24	-2,304.8	1,169.2	2,643.7	2,636.1	7.63	346.681		
2,100.0	2,091.5	2,086.5	2,086.5	4.6	3.6	116.48	-2,304.8	1,169.2	2,649.2	2,641.1	8.05	329.178		
2,200.0	2,190.8	2,185.8	2,185.8	4.8	3.8	116.71	-2,304.8	1,169.2	2,654.7	2,646.2	8.47	313.415		
2,300.0	2,290.0	2,285.0	2,285.0	5.1	4.0	116.95	-2,304.8	1,169.2	2,660.2	2,651.3	8.89	299.151		
2,400.0	2,389.3	2,384.3	2,384.3	5.4	4.2	117.18	-2,304.8	1,169.2	2,665.8	2,656.5	9.32	286.185		
2,500.0	2,488.5	2,483.5	2,483.5	5.7	4.3	117.41	-2,304.8	1,169.2	2,671.5	2,661.7	9.74	274.351		
2,600.0	2,587.8	2,582.8	2,582.8	5.9	4.5	117.64	-2,304.8	1,169.2	2,677.1	2,667.0	10.16	263.509		
2,700.0	2,687.0	2,682.0	2,682.0	6.2	4.7	117.87	-2,304.8	1,169.2	2,682.8	2,672.3	10.58	253.542		
2,800.0	2,786.3	2,781.3	2,781.3	6.5	4.9	118.10	-2,304.8	1,169.2	2,688.6	2,677.6	11.00	244.348		
2,900.0	2,885.5	2,880.5	2,880.5	6.7	5.0	118.33	-2,304.8	1,169.2	2,694.4	2,683.0	11.42	235.843		
3,000.0	2,984.8	2,979.8	2,979.8	7.0	5.2	118.55	-2,304.8	1,169.2	2,700.3	2,688.4	11.85	227.954		
3,100.0	3,084.0	3,079.0	3,079.0	7.3	5.4	118.78	-2,304.8	1,169.2	2,706.2	2,693.9	12.27	220.616		
3,200.0	3,183.3	3,178.3	3,178.3	7.6	5.5	119.00	-2,304.8	1,169.2	2,712.1	2,699.4	12.69	213.775		
3,300.0	3,282.5	3,277.5	3,277.5	7.8	5.7	119.23	-2,304.8	1,169.2	2,718.1	2,705.0	13.11	207.382		
3,400.0	3,381.8	3,376.8	3,376.8	8.1	5.9	119.45	-2,304.8	1,169.2	2,724.1	2,710.6	13.53	201.396		
3,500.0	3,481.1	3,476.1	3,476.1	8.4	6.1	119.67	-2,304.8	1,169.2	2,730.1	2,716.2	13.94	195.779		
3,600.0	3,580.3	3,575.3	3,575.3	8.7	6.2	119.89	-2,304.8	1,169.2	2,736.2	2,721.9	14.36	190.499		
3,700.0	3,679.6	3,674.6	3,674.6	8.9	6.4	120.11	-2,304.8	1,169.2	2,742.4	2,727.6	14.78	185.527		
3,800.0	3,778.8	3,773.8	3,773.8	9.2	6.6	120.33	-2,304.8	1,169.2	2,748.6	2,733.4	15.20	180.837		
3,900.0	3,878.1	3,873.1	3,873.1	9.5	6.8	120.55	-2,304.8	1,169.2	2,754.8	2,739.2	15.62	176.406		
4,000.0	3,977.3	3,972.3	3,972.3	9.8	6.9	120.77	-2,304.8	1,169.2	2,761.0	2,745.0	16.03	172.213		
4,100.0	4,076.6	4,071.6	4,071.6	10.0	7.1	120.98	-2,304.8	1,169.2	2,767.3	2,750.9	16.45	168.241		
4,200.0	4,175.8	4,170.8	4,170.8	10.3	7.3	121.20	-2,304.8	1,169.2	2,773.7	2,756.8	16.86	164.472		
4,300.0	4,275.1	4,270.1	4,270.1	10.6	7.5	121.41	-2,304.8	1,169.2	2,780.1	2,762.8	17.28	160.891		
4,400.0	4,374.3	4,369.3	4,369.3	10.9	7.6	121.63	-2,304.8	1,169.2	2,786.5	2,768.8	17.69	157.485		
4,500.0	4,473.6	4,468.6	4,468.6	11.1	7.8	121.84	-2,304.8	1,169.2	2,792.9	2,774.8	18.11	154.242		
4,600.0	4,572.8	4,567.8	4,567.8	11.4	8.0	122.05	-2,304.8	1,169.2	2,799.4	2,780.9	18.52	151.151		
4,700.0	4,672.1	4,667.1	4,667.1	11.7	8.1	122.26	-2,304.8	1,169.2	2,806.0	2,787.0	18.93	148.200		
4,800.0	4,771.3	4,766.3	4,766.3	12.0	8.3	122.47	-2,304.8	1,169.2	2,812.5	2,793.2	19.35	145.382		
4,900.0	4,870.6	4,865.6	4,865.6	12.2	8.5	122.68	-2,304.8	1,169.2	2,819.1	2,799.4	19.76	142.687		
5,000.0	4,969.8	4,964.8	4,964.8	12.5	8.7	122.88	-2,304.8	1,169.2	2,825.8	2,805.6	20.17	140.108		
5,100.0	5,069.1	5,064.1	5,064.1	12.8	8.8	123.09	-2,304.8	1,169.2	2,832.5	2,811.9	20.58	137.637		

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - THOMAS 24-7 (Existing) - Existing - NO SURVEYS												Offset Site Error:	0.0 ft
Survey Program: 8365-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	
5,200.0	5,168.3	5,163.3	5,163.3	13.1	9.0	123.30	-2,304.8	1,169.2	2,839.2	2,818.2	20.99	135.269	
5,300.0	5,267.6	5,262.6	5,262.6	13.3	9.2	123.50	-2,304.8	1,169.2	2,845.9	2,824.5	21.40	132.996	
5,400.0	5,366.8	5,361.8	5,361.8	13.6	9.4	123.70	-2,304.8	1,169.2	2,852.7	2,830.9	21.81	130.814	
5,500.0	5,466.1	5,461.1	5,461.1	13.9	9.5	123.91	-2,304.8	1,169.2	2,859.6	2,837.3	22.22	128.717	
5,600.0	5,565.3	5,560.3	5,560.3	14.2	9.7	124.11	-2,304.8	1,169.2	2,866.4	2,843.8	22.62	126.700	
5,700.0	5,664.6	5,659.6	5,659.6	14.4	9.9	124.31	-2,304.8	1,169.2	2,873.3	2,850.3	23.03	124.760	
5,800.0	5,763.8	5,758.8	5,758.8	14.7	10.1	124.51	-2,304.8	1,169.2	2,880.3	2,856.8	23.44	122.891	
5,900.0	5,863.1	5,858.1	5,858.1	15.0	10.2	124.71	-2,304.8	1,169.2	2,887.2	2,863.4	23.84	121.090	
6,000.0	5,962.3	5,957.3	5,957.3	15.3	10.4	124.90	-2,304.8	1,169.2	2,894.2	2,870.0	24.25	119.354	
6,100.0	6,061.6	6,056.6	6,056.6	15.5	10.6	125.10	-2,304.8	1,169.2	2,901.3	2,876.6	24.65	117.679	
6,200.0	6,160.9	6,155.9	6,155.9	15.8	10.7	125.30	-2,304.8	1,169.2	2,908.3	2,883.3	25.06	116.062	
6,300.0	6,260.1	6,255.1	6,255.1	16.1	10.9	125.49	-2,304.8	1,169.2	2,915.4	2,890.0	25.46	114.500	
6,400.0	6,359.4	6,354.4	6,354.4	16.4	11.1	125.69	-2,304.8	1,169.2	2,922.6	2,896.7	25.87	112.991	
6,500.0	6,458.6	6,453.6	6,453.6	16.6	11.3	125.88	-2,304.8	1,169.2	2,929.8	2,903.5	26.27	111.532	
6,600.0	6,557.9	6,552.9	6,552.9	16.9	11.4	126.07	-2,304.8	1,169.2	2,937.0	2,910.3	26.67	110.120	
6,700.0	6,657.1	6,652.1	6,652.1	17.2	11.6	126.26	-2,304.8	1,169.2	2,944.2	2,917.1	27.07	108.754	
6,800.0	6,756.4	6,751.4	6,751.4	17.5	11.8	126.45	-2,304.8	1,169.2	2,951.5	2,924.0	27.47	107.431	
6,900.0	6,855.6	6,850.6	6,850.6	17.7	12.0	126.64	-2,304.8	1,169.2	2,958.8	2,930.9	27.87	106.149	
6,919.5	6,875.0	6,870.0	6,870.0	17.8	12.0	126.68	-2,304.8	1,169.2	2,960.2	2,932.3	27.95	105.904	
6,950.0	6,905.3	6,900.3	6,900.3	17.9	12.0	104.18	-2,304.8	1,169.2	2,961.7	2,933.6	28.07	105.496	
7,000.0	6,955.1	6,950.1	6,950.1	17.9	12.1	45.97	-2,304.8	1,169.2	2,960.6	2,932.5	28.16	105.151	
7,050.0	7,004.8	6,999.8	6,999.8	17.9	12.2	16.89	-2,304.8	1,169.2	2,955.4	2,927.3	28.09	105.194	
7,100.0	7,053.8	7,048.8	7,048.8	17.9	12.3	5.90	-2,304.8	1,169.2	2,945.9	2,918.0	27.89	105.627	
7,150.0	7,101.9	7,096.9	7,096.9	17.9	12.4	0.38	-2,304.8	1,169.2	2,932.3	2,904.8	27.55	106.453	
7,200.0	7,148.7	7,143.7	7,143.7	17.8	12.5	-3.08	-2,304.8	1,169.2	2,914.7	2,887.7	27.07	107.674	
7,250.0	7,193.8	7,188.8	7,188.8	17.7	12.5	-5.64	-2,304.8	1,169.2	2,893.3	2,866.8	26.47	109.293	
7,300.0	7,236.9	7,231.9	7,231.9	17.5	12.6	-7.81	-2,304.8	1,169.2	2,868.1	2,842.3	25.77	111.300	
7,350.0	7,277.7	7,272.7	7,272.7	17.4	12.7	-9.85	-2,304.8	1,169.2	2,839.4	2,814.4	24.98	113.664	
7,400.0	7,315.7	7,310.7	7,310.7	17.2	12.8	-11.96	-2,304.8	1,169.2	2,807.3	2,783.2	24.14	116.315	
7,450.0	7,350.9	7,345.9	7,345.9	17.1	12.8	-14.31	-2,304.8	1,169.2	2,772.3	2,749.0	23.28	119.101	
7,500.0	7,382.8	7,377.8	7,377.8	16.9	12.9	-17.07	-2,304.8	1,169.2	2,734.4	2,712.0	22.46	121.737	
7,550.0	7,411.3	7,406.3	7,406.3	16.7	12.9	-20.48	-2,304.8	1,169.2	2,694.1	2,672.3	21.78	123.717	
7,600.0	7,436.1	7,431.1	7,431.1	16.6	13.0	-24.84	-2,304.8	1,169.2	2,651.6	2,630.2	21.35	124.223	
7,650.0	7,457.1	7,452.1	7,452.1	16.5	13.0	-30.63	-2,304.8	1,169.2	2,607.2	2,585.9	21.34	122.150	
7,700.0	7,474.0	7,469.0	7,469.0	16.4	13.0	-38.55	-2,304.8	1,169.2	2,561.4	2,539.4	21.99	116.504	
7,750.0	7,486.8	7,481.8	7,481.8	16.4	13.1	-49.46	-2,304.8	1,169.2	2,514.5	2,491.1	23.40	107.471	
7,800.0	7,495.3	7,490.3	7,490.3	16.4	13.1	-64.04	-2,304.8	1,169.2	2,466.7	2,441.5	25.29	97.546	
7,850.0	7,499.5	7,494.5	7,494.5	16.5	13.1	-81.53	-2,304.8	1,169.2	2,418.6	2,392.0	26.65	90.750	
7,873.6	7,500.0	7,495.0	7,495.0	16.5	13.1	-90.00	-2,304.8	1,169.2	2,395.9	2,369.2	26.80	89.410	
7,900.0	7,500.0	7,495.0	7,495.0	16.5	13.1	-90.00	-2,304.8	1,169.2	2,370.5	2,343.6	26.86	88.244	
8,000.0	7,500.0	7,495.0	7,495.0	16.9	13.1	-90.00	-2,304.8	1,169.2	2,274.5	2,247.3	27.25	83.478	
8,100.0	7,500.0	7,495.0	7,495.0	17.4	13.1	-90.00	-2,304.8	1,169.2	2,178.8	2,151.0	27.83	78.290	
8,200.0	7,500.0	7,495.0	7,495.0	18.0	13.1	-90.00	-2,304.8	1,169.2	2,083.6	2,055.0	28.59	72.875	
8,300.0	7,500.0	7,495.0	7,495.0	18.8	13.1	-90.00	-2,304.8	1,169.2	1,988.8	1,959.3	29.51	67.406	
8,400.0	7,500.0	7,495.0	7,495.0	19.7	13.1	-90.00	-2,304.8	1,169.2	1,894.6	1,864.0	30.55	62.020	
8,500.0	7,500.0	7,495.0	7,495.0	20.7	13.1	-90.00	-2,304.8	1,169.2	1,801.0	1,769.3	31.70	56.817	
8,600.0	7,500.0	7,495.0	7,495.0	21.9	13.1	-90.00	-2,304.8	1,169.2	1,708.1	1,675.1	32.94	51.860	
8,700.0	7,500.0	7,495.0	7,495.0	23.1	13.1	-90.00	-2,304.8	1,169.2	1,616.0	1,581.8	34.25	47.186	
8,800.0	7,500.0	7,495.0	7,495.0	24.3	13.1	-90.00	-2,304.8	1,169.2	1,525.0	1,489.3	35.62	42.813	
8,900.0	7,500.0	7,495.0	7,495.0	25.6	13.1	-90.00	-2,304.8	1,169.2	1,435.1	1,398.1	37.04	38.744	
9,000.0	7,500.0	7,495.0	7,495.0	27.0	13.1	-90.00	-2,304.8	1,169.2	1,346.7	1,308.2	38.50	34.975	
9,100.0	7,500.0	7,495.0	7,495.0	28.4	13.1	-90.00	-2,304.8	1,169.2	1,260.0	1,220.0	40.00	31.498	

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - THOMAS 24-7 (Existing) - Existing - NO SURVEYS													Offset Site Error: 0.0 ft	
Survey Program: 8365-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		
9,200.0	7,500.0	7,495.0	7,495.0	29.9	13.1	-90.00	-2,304.8	1,169.2	1,175.4	1,133.9	41.53	28.303		
9,300.0	7,500.0	7,495.0	7,495.0	31.4	13.1	-90.00	-2,304.8	1,169.2	1,093.4	1,050.4	43.08	25.381		
9,400.0	7,500.0	7,495.0	7,495.0	32.9	13.1	-90.00	-2,304.8	1,169.2	1,014.7	970.1	44.65	22.724		
9,500.0	7,500.0	7,495.0	7,495.0	34.4	13.1	-90.00	-2,304.8	1,169.2	940.0	893.8	46.25	20.327		
9,600.0	7,500.0	7,495.0	7,495.0	36.0	13.1	-90.00	-2,304.8	1,169.2	870.5	822.6	47.85	18.190		
9,700.0	7,500.0	7,495.0	7,495.0	37.5	13.1	-90.00	-2,304.8	1,169.2	807.3	757.8	49.47	16.318		
9,800.0	7,500.0	7,495.0	7,495.0	39.1	13.1	-90.00	-2,304.8	1,169.2	752.2	701.0	51.11	14.718		
9,900.0	7,500.0	7,495.0	7,495.0	40.7	13.1	-90.00	-2,304.8	1,169.2	706.9	654.2	52.75	13.402		
10,000.0	7,500.0	7,495.0	7,495.0	42.3	13.1	-90.00	-2,304.8	1,169.2	673.6	619.2	54.40	12.383		
10,100.0	7,500.0	7,495.0	7,495.0	43.9	13.1	-90.00	-2,304.8	1,169.2	654.1	598.0	56.06	11.667		
10,179.9	7,500.0	7,495.0	7,495.0	45.2	13.1	-90.00	-2,304.8	1,169.2	649.2	591.8	57.39	11.311 CC		
10,200.0	7,500.0	7,495.0	7,495.0	45.6	13.1	-90.00	-2,304.8	1,169.2	649.5	591.7	57.73	11.251 ES		
10,300.0	7,500.0	7,495.0	7,495.0	47.2	13.1	-90.00	-2,304.8	1,169.2	660.2	600.8	59.40	11.114 SF		
10,400.0	7,500.0	7,495.0	7,495.0	48.9	13.1	-90.00	-2,304.8	1,169.2	685.5	624.4	61.08	11.222		
10,500.0	7,500.0	7,495.0	7,495.0	50.5	13.1	-90.00	-2,304.8	1,169.2	723.8	661.0	62.77	11.532		
10,600.0	7,500.0	7,495.0	7,495.0	52.2	13.1	-90.00	-2,304.8	1,169.2	773.2	708.8	64.45	11.997		
10,700.0	7,500.0	7,495.0	7,495.0	53.8	13.1	-90.00	-2,304.8	1,169.2	831.8	765.7	66.15	12.575		
10,800.0	7,500.0	7,495.0	7,495.0	55.5	13.1	-90.00	-2,304.8	1,169.2	897.7	829.9	67.85	13.232		
10,900.0	7,500.0	7,495.0	7,495.0	57.2	13.1	-90.00	-2,304.8	1,169.2	969.5	900.0	69.55	13.941		
11,000.0	7,500.0	7,495.0	7,495.0	58.9	13.1	-90.00	-2,304.8	1,169.2	1,045.9	974.7	71.25	14.680		
11,100.0	7,500.0	7,495.0	7,495.0	60.6	13.1	-90.00	-2,304.8	1,169.2	1,126.1	1,053.1	72.96	15.435		
11,200.0	7,500.0	7,495.0	7,495.0	62.3	13.1	-90.00	-2,304.8	1,169.2	1,209.1	1,134.5	74.67	16.194		
11,244.1	7,500.0	7,495.0	7,495.0	63.0	13.1	-90.00	-2,304.8	1,169.2	1,246.6	1,171.2	75.42	16.529		
11,300.0	7,500.0	7,495.0	7,495.0	64.0	13.1	-90.00	-2,304.8	1,169.2	1,294.4	1,217.8	76.54	16.911		
11,400.0	7,500.0	7,495.0	7,495.0	65.7	13.1	-90.00	-2,304.8	1,169.2	1,380.0	1,301.5	78.48	17.584		
11,444.1	7,500.0	7,495.0	7,495.0	66.4	13.1	-90.00	-2,304.8	1,169.2	1,417.9	1,338.5	79.32	17.875		
11,500.0	7,500.0	7,495.0	7,495.0	67.4	13.1	-90.00	-2,304.8	1,169.2	1,466.1	1,385.8	80.28	18.262		
11,600.0	7,500.0	7,495.0	7,495.0	69.1	13.1	-90.00	-2,304.8	1,169.2	1,553.6	1,471.6	82.00	18.947		
11,700.0	7,500.0	7,495.0	7,495.0	70.8	13.1	-90.00	-2,304.8	1,169.2	1,642.6	1,558.9	83.72	19.621		
11,800.0	7,500.0	7,495.0	7,495.0	72.5	13.1	-90.00	-2,304.8	1,169.2	1,732.8	1,647.3	85.44	20.281		
11,900.0	7,500.0	7,495.0	7,495.0	74.2	13.1	-90.00	-2,304.8	1,169.2	1,824.0	1,736.8	87.16	20.926		
12,000.0	7,500.0	7,495.0	7,495.0	76.0	13.1	-90.00	-2,304.8	1,169.2	1,916.1	1,827.2	88.89	21.556		
12,100.0	7,500.0	7,495.0	7,495.0	77.7	13.1	-90.00	-2,304.8	1,169.2	2,008.9	1,918.3	90.62	22.170		
12,194.1	7,500.0	7,495.0	7,495.0	79.3	13.1	-90.00	-2,304.8	1,169.2	2,096.9	2,004.7	92.24	22.732		
12,200.0	7,500.0	7,495.0	7,495.0	79.4	13.1	-90.00	-2,304.8	1,169.2	2,102.4	2,010.1	92.34	22.769		
12,300.0	7,500.0	7,495.0	7,495.0	81.1	13.1	-90.00	-2,304.8	1,169.2	2,197.1	2,103.3	93.85	23.411		
12,393.7	7,500.0	7,495.0	7,495.0	82.7	13.1	-90.00	-2,304.8	1,169.2	2,287.2	2,192.0	95.18	24.029		
12,400.0	7,500.0	7,495.0	7,495.0	82.9	13.1	-90.00	-2,304.8	1,169.2	2,293.3	2,198.0	95.29	24.066		
12,500.0	7,500.0	7,495.0	7,495.0	84.6	13.1	-90.00	-2,304.8	1,169.2	2,390.1	2,293.1	97.02	24.635		
12,600.0	7,500.0	7,495.0	7,495.0	86.3	13.1	-90.00	-2,304.8	1,169.2	2,487.2	2,388.5	98.75	25.186		
12,700.0	7,500.0	7,495.0	7,495.0	88.0	13.1	-90.00	-2,304.8	1,169.2	2,584.5	2,484.0	100.49	25.720		
12,800.0	7,500.0	7,495.0	7,495.0	89.7	13.1	-90.00	-2,304.8	1,169.2	2,682.0	2,579.8	102.22	26.238		
12,900.0	7,500.0	7,495.0	7,495.0	91.5	13.1	-90.00	-2,304.8	1,169.2	2,779.7	2,675.8	103.95	26.740		
13,000.0	7,500.0	7,495.0	7,495.0	93.2	13.1	-90.00	-2,304.8	1,169.2	2,877.6	2,771.9	105.69	27.227		
13,100.0	7,500.0	7,495.0	7,495.0	94.9	13.1	-90.00	-2,304.8	1,169.2	2,975.6	2,868.2	107.42	27.700		
13,200.0	7,500.0	7,495.0	7,495.0	96.6	13.1	-90.00	-2,304.8	1,169.2	3,073.7	2,964.5	109.16	28.158		
13,300.0	7,500.0	7,495.0	7,495.0	98.4	13.1	-90.00	-2,304.8	1,169.2	3,171.9	3,061.1	110.90	28.603		
13,400.0	7,500.0	7,495.0	7,495.0	100.1	13.1	-90.00	-2,304.8	1,169.2	3,270.3	3,157.7	112.63	29.035		
13,500.0	7,500.0	7,495.0	7,495.0	101.8	13.1	-90.00	-2,304.8	1,169.2	3,368.7	3,254.4	114.37	29.455		
13,600.0	7,500.0	7,495.0	7,495.0	103.5	13.1	-90.00	-2,304.8	1,169.2	3,467.3	3,351.2	116.11	29.862		
13,700.0	7,500.0	7,495.0	7,495.0	105.3	13.1	-90.00	-2,304.8	1,169.2	3,565.9	3,448.0	117.85	30.258		
13,800.0	7,500.0	7,495.0	7,495.0	107.0	13.1	-90.00	-2,304.8	1,169.2	3,664.6	3,545.0	119.59	30.643		

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - THOMAS 24-7 (Existing) - Existing - NO SURVEYS											Offset Site Error:		0.0 ft	
Survey Program: 8365-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		
13,900.0	7,500.0	7,495.0	7,495.0	108.7	13.1	-90.00	-2,304.8	1,169.2	3,763.3	3,642.0	121.33	31.018		
14,000.0	7,500.0	7,495.0	7,495.0	110.5	13.1	-90.00	-2,304.8	1,169.2	3,862.2	3,739.1	123.07	31.382		
14,100.0	7,500.0	7,495.0	7,495.0	112.2	13.1	-90.00	-2,304.8	1,169.2	3,961.0	3,836.2	124.81	31.737		
14,200.0	7,500.0	7,495.0	7,495.0	113.9	13.1	-90.00	-2,304.8	1,169.2	4,060.0	3,933.4	126.55	32.082		
14,300.0	7,500.0	7,495.0	7,495.0	115.7	13.1	-90.00	-2,304.8	1,169.2	4,159.0	4,030.7	128.29	32.418		
14,400.0	7,500.0	7,495.0	7,495.0	117.4	13.1	-90.00	-2,304.8	1,169.2	4,258.0	4,128.0	130.03	32.746		
14,500.0	7,500.0	7,495.0	7,495.0	119.1	13.1	-90.00	-2,304.8	1,169.2	4,357.1	4,225.3	131.78	33.064		
14,600.0	7,500.0	7,495.0	7,495.0	120.9	13.1	-90.00	-2,304.8	1,169.2	4,456.2	4,322.7	133.52	33.375		
14,700.0	7,500.0	7,495.0	7,495.0	122.6	13.1	-90.00	-2,304.8	1,169.2	4,555.4	4,420.1	135.26	33.678		
14,800.0	7,500.0	7,495.0	7,495.0	124.3	13.1	-90.00	-2,304.8	1,169.2	4,654.6	4,517.5	137.00	33.974		
14,900.0	7,500.0	7,495.0	7,495.0	126.1	13.1	-90.00	-2,304.8	1,169.2	4,753.8	4,615.0	138.75	34.262		
15,000.0	7,500.0	7,495.0	7,495.0	127.8	13.1	-90.00	-2,304.8	1,169.2	4,853.0	4,712.5	140.49	34.543		
15,100.0	7,500.0	7,495.0	7,495.0	129.6	13.1	-90.00	-2,304.8	1,169.2	4,952.3	4,810.1	142.24	34.818		
15,200.0	7,500.0	7,495.0	7,495.0	131.3	13.1	-90.00	-2,304.8	1,169.2	5,051.6	4,907.7	143.98	35.086		
15,300.0	7,500.0	7,495.0	7,495.0	133.0	13.1	-90.00	-2,304.8	1,169.2	5,151.0	5,005.3	145.72	35.347		
15,400.0	7,500.0	7,495.0	7,495.0	134.8	13.1	-90.00	-2,304.8	1,169.2	5,250.4	5,102.9	147.47	35.603		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - THOMAS 2-8-7 (EXISTING) - ENCANA WELL - SUR													Offset Site Error: 0.0 ft	
Survey Program: 838-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	11.7	11.7	0.0	0.0	153.37	-2,333.2	1,170.0	2,610.1					
100.0	100.0	118.2	118.2	0.2	0.2	153.37	-2,333.1	1,169.8	2,609.9	2,609.6	0.35	7,361.787		
200.0	200.0	224.7	224.7	0.3	0.4	153.38	-2,332.8	1,169.3	2,609.5	2,608.8	0.71	3,666.971		
300.0	300.0	331.2	331.2	0.5	0.6	153.39	-2,332.5	1,168.6	2,608.9	2,607.8	1.07	2,441.103		
400.0	400.0	437.7	437.7	0.7	0.8	153.40	-2,331.9	1,167.5	2,608.0	2,606.6	1.43	1,829.114		
500.0	500.0	544.1	544.1	0.8	1.0	153.42	-2,331.2	1,166.1	2,606.9	2,605.1	1.78	1,462.141		
600.0	600.0	650.6	650.6	1.0	1.1	114.00	-2,330.4	1,164.5	2,605.8	2,603.7	2.15	1,210.868		
700.0	700.0	757.0	756.9	1.2	1.3	114.09	-2,329.4	1,162.5	2,605.2	2,602.7	2.51	1,036.588		
768.8	768.7	830.1	830.0	1.3	1.5	114.17	-2,328.7	1,161.0	2,605.1	2,602.4	2.76	942.325		
800.0	799.9	854.5	854.5	1.4	1.5	114.21	-2,328.4	1,160.5	2,605.2	2,602.3	2.86	909.549		
900.0	899.7	909.0	908.9	1.6	1.6	114.27	-2,328.2	1,159.9	2,606.9	2,603.7	3.15	828.116		
1,000.0	999.4	985.5	985.4	1.8	1.7	114.37	-2,328.9	1,159.4	2,610.6	2,607.1	3.48	749.728		
1,100.0	1,098.9	1,060.0	1,059.9	2.0	1.9	114.51	-2,330.9	1,158.1	2,616.2	2,612.4	3.83	683.289		
1,201.3	1,199.5	1,113.8	1,113.6	2.2	2.0	114.61	-2,333.4	1,156.8	2,624.0	2,619.8	4.16	630.301		
1,300.0	1,297.5	1,179.6	1,179.2	2.5	2.1	114.85	-2,337.6	1,154.7	2,633.4	2,628.9	4.52	582.955		
1,400.0	1,396.8	1,263.9	1,263.2	2.7	2.2	115.18	-2,344.1	1,151.4	2,643.9	2,639.0	4.92	537.087		
1,500.0	1,496.0	1,370.6	1,369.5	3.0	2.5	115.59	-2,352.0	1,146.8	2,654.2	2,648.8	5.38	493.554		
1,600.0	1,595.3	1,465.9	1,464.4	3.3	2.7	115.98	-2,359.7	1,142.3	2,664.9	2,659.1	5.82	458.269		
1,700.0	1,694.5	1,555.8	1,553.9	3.5	2.8	116.33	-2,366.9	1,138.1	2,675.8	2,669.6	6.24	428.522		
1,800.0	1,793.8	1,633.7	1,631.5	3.8	3.0	116.65	-2,373.6	1,134.4	2,687.4	2,680.7	6.66	403.722		
1,900.0	1,893.0	1,708.0	1,705.2	4.0	3.2	116.96	-2,380.8	1,130.4	2,699.8	2,692.7	7.07	382.134		
2,000.0	1,992.3	1,787.8	1,784.5	4.3	3.4	117.30	-2,389.5	1,125.9	2,713.2	2,705.7	7.49	362.173		
2,100.0	2,091.5	1,875.5	1,871.3	4.6	3.6	117.70	-2,399.6	1,119.9	2,727.1	2,719.1	7.94	343.260		
2,200.0	2,190.8	1,952.0	1,947.0	4.8	3.8	118.06	-2,409.4	1,114.3	2,742.0	2,733.6	8.38	327.341		
2,300.0	2,290.0	2,019.9	2,014.0	5.1	4.0	118.39	-2,418.9	1,109.1	2,757.9	2,749.1	8.80	313.522		
2,400.0	2,389.3	2,092.0	2,085.1	5.4	4.3	118.75	-2,429.5	1,102.9	2,774.6	2,765.4	9.23	300.543		
2,500.0	2,488.5	2,173.4	2,165.1	5.7	4.5	119.17	-2,442.5	1,095.6	2,792.4	2,782.7	9.69	288.124		
2,600.0	2,587.8	2,283.1	2,273.1	5.9	4.9	119.71	-2,459.4	1,086.4	2,810.1	2,799.9	10.22	275.006		
2,700.0	2,687.0	2,394.5	2,382.9	6.2	5.2	120.26	-2,476.2	1,076.9	2,827.7	2,816.9	10.75	263.023		
2,800.0	2,786.3	2,493.6	2,480.4	6.5	5.5	120.74	-2,490.9	1,067.9	2,845.0	2,833.8	11.26	252.762		
2,900.0	2,885.5	2,590.0	2,575.3	6.7	5.9	121.22	-2,505.3	1,058.4	2,862.5	2,850.7	11.76	243.331		
3,000.0	2,984.8	2,678.8	2,662.6	7.0	6.2	121.66	-2,518.7	1,049.5	2,880.2	2,868.0	12.24	235.316		
3,100.0	3,084.0	2,758.5	2,741.0	7.3	6.4	122.04	-2,530.9	1,042.4	2,898.6	2,885.9	12.69	228.464		
3,200.0	3,183.3	2,870.0	2,850.8	7.6	6.8	122.55	-2,547.9	1,032.9	2,917.3	2,904.1	13.21	220.855		
3,300.0	3,282.5	2,960.6	2,940.1	7.8	7.1	122.96	-2,561.4	1,025.3	2,935.8	2,922.1	13.68	214.649		
3,400.0	3,381.8	3,067.0	3,044.9	8.1	7.4	123.44	-2,577.1	1,016.1	2,954.3	2,940.2	14.18	208.290		
3,500.0	3,481.1	3,151.7	3,128.3	8.4	7.7	123.81	-2,589.6	1,008.7	2,973.0	2,958.4	14.63	203.154		
3,600.0	3,580.3	3,277.6	3,252.4	8.7	8.1	124.36	-2,607.9	997.9	2,991.7	2,976.5	15.18	197.115		
3,700.0	3,679.6	3,365.5	3,339.2	8.9	8.4	124.73	-2,620.2	990.7	3,010.1	2,994.5	15.62	192.664		
3,800.0	3,778.8	3,448.0	3,420.5	9.2	8.7	125.07	-2,632.2	983.8	3,029.0	3,013.0	16.07	188.547		
3,900.0	3,878.1	3,524.0	3,495.3	9.5	9.0	125.40	-2,643.7	976.8	3,048.7	3,032.2	16.50	184.804		
4,000.0	3,977.3	3,638.5	3,607.9	9.8	9.4	125.90	-2,661.4	966.0	3,068.6	3,051.6	17.01	180.410		
4,100.0	4,076.6	3,751.2	3,719.0	10.0	9.8	126.37	-2,677.8	955.9	3,087.9	3,070.4	17.51	176.377		
4,200.0	4,175.8	3,855.2	3,821.6	10.3	10.1	126.78	-2,692.3	947.5	3,107.1	3,089.1	17.98	172.843		
4,300.0	4,275.1	3,956.8	3,921.8	10.6	10.4	127.18	-2,706.3	938.6	3,126.0	3,107.6	18.45	169.454		
4,400.0	4,374.3	4,040.0	4,003.9	10.9	10.7	127.51	-2,718.0	931.1	3,145.4	3,126.5	18.88	166.614		
4,500.0	4,473.6	4,115.0	4,077.7	11.1	11.0	127.82	-2,728.9	923.7	3,165.2	3,145.9	19.30	164.019		
4,600.0	4,572.8	4,197.2	4,158.6	11.4	11.3	128.16	-2,741.5	915.5	3,185.7	3,166.0	19.72	161.514		
4,700.0	4,672.1	4,309.7	4,269.3	11.7	11.7	128.61	-2,758.7	905.1	3,206.7	3,186.4	20.21	158.644		
4,800.0	4,771.3	4,465.0	4,422.4	12.0	12.2	129.20	-2,779.7	890.9	3,225.8	3,205.0	20.78	155.224		
4,900.0	4,870.6	4,529.9	4,486.5	12.2	12.4	129.44	-2,788.4	885.0	3,245.2	3,224.0	21.16	153.354		
5,000.0	4,969.8	4,642.3	4,597.3	12.5	12.8	129.86	-2,803.9	874.9	3,265.0	3,243.4	21.63	150.930		

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - THOMAS 2-8-7 (EXISTING) - ENCANA WELL - SUR													Offset Site Error:	0.0 ft
Survey Program:		838-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	5,069.1	4,705.4	4,659.5	12.8	13.0	130.09	-2,812.6	869.3	3,285.1	3,263.1	22.00	149.291		
5,200.0	5,168.3	4,783.0	4,735.9	13.1	13.3	130.38	-2,824.4	861.9	3,306.4	3,284.0	22.41	147.525		
5,300.0	5,267.6	4,934.9	4,885.7	13.3	13.8	130.93	-2,845.9	847.6	3,326.9	3,303.9	22.96	144.921		
5,400.0	5,366.8	5,031.7	4,981.1	13.6	14.1	131.28	-2,858.7	838.8	3,346.7	3,323.3	23.39	143.084		
5,500.0	5,466.1	5,125.5	5,073.7	13.9	14.4	131.61	-2,871.2	830.2	3,366.7	3,342.9	23.81	141.402		
5,600.0	5,565.3	5,211.0	5,158.2	14.2	14.7	131.89	-2,882.5	823.1	3,386.9	3,362.7	24.20	139.937		
5,700.0	5,664.6	5,331.8	5,277.6	14.4	15.0	132.27	-2,898.7	814.1	3,407.5	3,382.8	24.66	138.186		
5,800.0	5,763.8	5,448.0	5,392.5	14.7	15.4	132.64	-2,913.0	804.7	3,426.9	3,401.8	25.11	136.455		
5,900.0	5,863.1	5,519.9	5,463.5	15.0	15.6	132.87	-2,922.0	798.5	3,446.7	3,421.2	25.48	135.259		
6,000.0	5,962.3	5,602.3	5,544.9	15.3	15.9	133.13	-2,932.9	791.5	3,467.2	3,441.3	25.87	134.005		
6,100.0	6,061.6	5,714.5	5,655.7	15.5	16.3	133.49	-2,947.8	781.5	3,487.8	3,461.5	26.31	132.553		
6,200.0	6,160.9	5,863.0	5,802.6	15.8	16.7	133.94	-2,965.6	769.5	3,507.3	3,480.5	26.81	130.836		
6,300.0	6,260.1	5,945.9	5,884.7	16.1	17.0	134.19	-2,975.0	762.9	3,526.4	3,499.2	27.18	129.719		
6,400.0	6,359.4	6,065.7	6,003.4	16.4	17.3	134.53	-2,988.8	754.1	3,545.7	3,518.1	27.61	128.416		
6,500.0	6,458.6	6,491.5	6,427.8	16.6	18.1	135.42	-3,015.1	738.1	3,560.4	3,532.1	28.39	125.394		
6,600.0	6,557.9	6,641.5	6,577.8	16.9	18.3	135.64	-3,016.1	737.3	3,569.9	3,541.1	28.79	124.007		
6,700.0	6,657.1	6,755.9	6,692.2	17.2	18.4	135.80	-3,015.5	737.1	3,578.1	3,549.0	29.14	122.771		
6,800.0	6,756.4	6,864.8	6,801.0	17.5	18.5	135.96	-3,014.7	736.9	3,586.2	3,556.7	29.50	121.582		
6,900.0	6,855.6	6,972.8	6,909.1	17.7	18.6	136.11	-3,013.5	736.5	3,593.8	3,564.0	29.85	120.404		
6,919.5	6,875.0	6,991.9	6,928.2	17.8	18.7	136.13	-3,013.3	736.4	3,595.3	3,565.4	29.91	120.186		
6,950.0	6,905.3	7,021.5	6,957.8	17.9	18.7	113.60	-3,013.0	736.3	3,596.9	3,566.8	30.05	119.715		
7,000.0	6,955.1	7,069.5	7,005.8	17.9	18.7	55.40	-3,012.4	736.1	3,595.9	3,565.8	30.13	119.359		
7,050.0	7,004.8	7,117.3	7,053.5	17.9	18.8	26.40	-3,011.9	735.8	3,590.6	3,560.6	30.04	119.516		
7,100.0	7,053.8	7,160.8	7,097.1	17.9	18.8	15.59	-3,011.5	735.4	3,581.1	3,551.3	29.79	120.203		
7,150.0	7,101.9	7,201.2	7,137.5	17.9	18.9	10.35	-3,011.2	735.1	3,567.4	3,538.0	29.38	121.432		
7,200.0	7,148.7	7,245.2	7,181.4	17.8	18.9	7.27	-3,011.0	734.6	3,549.7	3,520.9	28.82	123.184		
7,250.0	7,193.8	7,301.6	7,237.9	17.7	19.0	5.24	-3,010.6	733.7	3,527.9	3,499.8	28.13	125.420		
7,300.0	7,236.9	7,345.4	7,281.6	17.5	19.1	3.73	-3,010.2	733.0	3,502.2	3,474.9	27.29	128.324		
7,350.0	7,277.7	7,379.0	7,315.2	17.4	19.1	2.52	-3,010.0	732.4	3,472.9	3,446.6	26.33	131.921		
7,400.0	7,315.7	7,410.5	7,346.7	17.2	19.1	1.46	-3,009.8	731.9	3,440.3	3,415.1	25.26	136.183		
7,450.0	7,350.9	7,442.1	7,378.3	17.1	19.2	0.46	-3,009.7	731.4	3,404.6	3,380.5	24.13	141.098		
7,500.0	7,382.8	7,472.6	7,408.8	16.9	19.2	-0.57	-3,009.6	730.9	3,366.0	3,343.1	22.96	146.624		
7,550.0	7,411.3	7,499.7	7,435.9	16.7	19.3	-1.74	-3,009.5	730.6	3,324.8	3,303.0	21.78	152.640		
7,600.0	7,436.1	7,523.3	7,459.5	16.6	19.3	-3.19	-3,009.4	730.2	3,281.3	3,260.7	20.66	158.834		
7,650.0	7,457.1	7,543.0	7,479.2	16.5	19.3	-5.16	-3,009.3	730.0	3,235.9	3,216.2	19.67	164.546		
7,700.0	7,474.0	7,558.9	7,495.1	16.4	19.3	-8.15	-3,009.3	729.8	3,188.9	3,169.9	18.94	168.343		
7,750.0	7,486.8	7,570.8	7,507.0	16.4	19.3	-13.39	-3,009.3	729.7	3,140.5	3,121.7	18.83	166.755		
7,800.0	7,495.3	7,578.8	7,515.0	16.4	19.3	-24.90	-3,009.3	729.6	3,091.3	3,070.7	20.59	150.129		
7,850.0	7,499.5	7,582.7	7,518.9	16.5	19.4	-59.86	-3,009.2	729.5	3,041.6	3,013.1	28.54	106.572		
7,873.6	7,500.0	7,583.1	7,519.3	16.5	19.4	-92.27	-3,009.2	729.5	3,018.1	2,986.7	31.37	96.216		
7,900.0	7,500.0	7,583.1	7,519.3	16.5	19.4	-92.26	-3,009.2	729.5	2,991.7	2,960.3	31.43	95.175		
8,000.0	7,500.0	7,582.9	7,519.1	16.9	19.4	-92.20	-3,009.2	729.5	2,892.0	2,860.2	31.82	90.889		
8,100.0	7,500.0	7,582.7	7,518.9	17.4	19.4	-92.15	-3,009.2	729.5	2,792.3	2,759.9	32.40	86.171		
8,200.0	7,500.0	7,582.5	7,518.7	18.0	19.4	-92.10	-3,009.2	729.5	2,692.6	2,659.4	33.17	81.185		
8,300.0	7,500.0	7,582.3	7,518.5	18.8	19.4	-92.04	-3,009.2	729.5	2,592.9	2,558.8	34.08	76.080		
8,400.0	7,500.0	7,582.1	7,518.3	19.7	19.4	-91.99	-3,009.2	729.5	2,493.2	2,458.1	35.12	70.982		
8,500.0	7,500.0	7,581.9	7,518.1	20.7	19.4	-91.94	-3,009.2	729.5	2,393.6	2,357.3	36.28	65.984		
8,600.0	7,500.0	7,581.7	7,517.9	21.9	19.4	-91.88	-3,009.2	729.5	2,294.0	2,256.5	37.51	61.150		
8,700.0	7,500.0	7,581.5	7,517.7	23.1	19.4	-91.83	-3,009.2	729.5	2,194.4	2,155.6	38.83	56.519		
8,800.0	7,500.0	7,581.3	7,517.5	24.3	19.4	-91.77	-3,009.3	729.5	2,094.9	2,054.7	40.20	52.113		
8,900.0	7,500.0	7,581.1	7,517.3	25.6	19.4	-91.72	-3,009.3	729.5	1,995.4	1,953.8	41.62	47.943		
9,000.0	7,500.0	7,580.9	7,517.1	27.0	19.4	-91.66	-3,009.3	729.6	1,896.0	1,852.9	43.08	44.007		

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



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - THOMAS 2-8-7 (EXISTING) - ENCANA WELL - SUR													Offset Site Error: 0.0 ft	
Survey Program: 838-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		
9,100.0	7,500.0	7,580.7	7,516.9	28.4	19.4	-91.61	-3,009.3	729.6	1,796.7	1,752.1	44.58	40.299		
9,200.0	7,500.0	7,580.5	7,516.7	29.9	19.4	-91.55	-3,009.3	729.6	1,697.4	1,651.3	46.11	36.811		
9,300.0	7,500.0	7,580.3	7,516.5	31.4	19.4	-91.50	-3,009.3	729.6	1,598.2	1,550.5	47.66	33.531		
9,400.0	7,500.0	7,580.1	7,516.3	32.9	19.4	-91.44	-3,009.3	729.6	1,499.1	1,449.9	49.24	30.447		
9,500.0	7,500.0	7,579.9	7,516.1	34.4	19.4	-91.39	-3,009.3	729.6	1,400.2	1,349.3	50.83	27.547		
9,600.0	7,500.0	7,579.7	7,515.9	36.0	19.4	-91.33	-3,009.3	729.6	1,301.4	1,248.9	52.44	24.818		
9,700.0	7,500.0	7,579.5	7,515.7	37.5	19.4	-91.28	-3,009.3	729.6	1,202.8	1,148.7	54.06	22.250		
9,800.0	7,500.0	7,579.3	7,515.5	39.1	19.4	-91.22	-3,009.3	729.6	1,104.5	1,048.8	55.69	19.832		
9,900.0	7,500.0	7,579.1	7,515.3	40.7	19.3	-91.17	-3,009.3	729.6	1,006.5	949.1	57.33	17.554		
10,000.0	7,500.0	7,578.9	7,515.1	42.3	19.3	-91.11	-3,009.3	729.6	908.9	849.9	58.99	15.409		
10,100.0	7,500.0	7,578.7	7,514.9	43.9	19.3	-91.05	-3,009.3	729.6	811.9	751.3	60.65	13.388		
10,200.0	7,500.0	7,578.4	7,514.7	45.6	19.3	-91.00	-3,009.3	729.6	715.8	653.5	62.31	11.487		
10,300.0	7,500.0	7,578.2	7,514.4	47.2	19.3	-90.94	-3,009.3	729.6	620.8	556.9	63.99	9.703		
10,400.0	7,500.0	7,578.0	7,514.2	48.9	19.3	-90.88	-3,009.3	729.6	527.8	462.1	65.67	8.037		
10,500.0	7,500.0	7,577.8	7,514.0	50.5	19.3	-90.83	-3,009.3	729.6	437.8	370.5	67.35	6.501		
10,600.0	7,500.0	7,577.6	7,513.8	52.2	19.3	-90.77	-3,009.3	729.6	353.3	284.2	69.04	5.117		
10,700.0	7,500.0	7,577.4	7,513.6	53.8	19.3	-90.71	-3,009.3	729.6	279.2	208.4	70.74	3.947		
10,800.0	7,500.0	7,577.2	7,513.4	55.5	19.3	-90.65	-3,009.3	729.6	226.0	153.5	72.43	3.120		
10,884.4	7,500.0	7,577.0	7,513.2	56.9	19.3	-90.60	-3,009.3	729.6	209.6	135.7	73.87	2.838 CC, ES		
10,900.0	7,500.0	7,577.0	7,513.2	57.2	19.3	-90.60	-3,009.3	729.6	210.2	136.0	74.13	2.835 SF		
11,000.0	7,500.0	7,576.8	7,513.0	58.9	19.3	-90.54	-3,009.3	729.6	239.4	163.5	75.84	3.156		
11,100.0	7,500.0	7,576.6	7,512.8	60.6	19.3	-90.48	-3,009.3	729.6	300.7	223.2	77.55	3.878		
11,200.0	7,500.0	7,576.3	7,512.6	62.3	19.3	-90.42	-3,009.3	729.6	378.9	299.6	79.25	4.780		
11,244.1	7,500.0	7,576.3	7,512.5	63.0	19.3	-90.40	-3,009.3	729.6	416.4	336.3	80.01	5.204		
11,300.0	7,500.0	7,576.1	7,512.3	64.0	19.3	-90.35	-3,009.3	729.6	465.2	384.2	81.02	5.742		
11,400.0	7,500.0	7,575.9	7,512.1	65.7	19.3	-90.26	-3,009.3	729.6	554.9	472.1	82.78	6.704		
11,444.1	7,500.0	7,575.8	7,512.0	66.4	19.3	-90.23	-3,009.3	729.6	595.1	511.6	83.53	7.125		
11,500.0	7,500.0	7,575.6	7,511.8	67.4	19.3	-90.19	-3,009.3	729.6	646.6	562.1	84.49	7.653		
11,600.0	7,500.0	7,575.3	7,511.5	69.1	19.3	-90.12	-3,009.3	729.6	740.3	654.1	86.20	8.588		
11,700.0	7,500.0	7,575.0	7,511.2	70.8	19.3	-90.05	-3,009.3	729.6	835.5	747.6	87.92	9.503		
11,800.0	7,500.0	7,574.7	7,510.9	72.5	19.3	-89.98	-3,009.3	729.6	931.7	842.0	89.65	10.393		
11,900.0	7,500.0	7,574.4	7,510.6	74.2	19.3	-89.91	-3,009.3	729.6	1,028.6	937.2	91.37	11.258		
12,000.0	7,500.0	7,574.1	7,510.3	76.0	19.3	-89.84	-3,009.3	729.6	1,126.1	1,033.0	93.09	12.096		
12,100.0	7,500.0	7,573.8	7,510.0	77.7	19.3	-89.77	-3,009.3	729.6	1,223.9	1,129.1	94.82	12.908		
12,194.1	7,500.0	7,573.6	7,509.8	79.3	19.3	-89.70	-3,009.3	729.6	1,316.4	1,219.9	96.45	13.649		
12,200.0	7,500.0	7,573.5	7,509.7	79.4	19.3	-89.70	-3,009.3	729.6	1,322.1	1,225.6	96.55	13.694		
12,300.0	7,500.0	7,573.3	7,509.5	81.1	19.3	-89.54	-3,009.3	729.6	1,420.9	1,322.6	98.25	14.461		
12,393.7	7,500.0	7,573.0	7,509.2	82.7	19.3	-89.30	-3,009.3	729.6	1,513.9	1,414.2	99.76	15.176		
12,400.0	7,500.0	7,573.0	7,509.2	82.9	19.3	-89.29	-3,009.3	729.6	1,520.2	1,420.4	99.87	15.223		
12,500.0	7,500.0	7,572.8	7,509.0	84.6	19.3	-89.20	-3,009.3	729.6	1,619.8	1,518.2	101.59	15.944		
12,600.0	7,500.0	7,572.6	7,508.8	86.3	19.3	-89.11	-3,009.3	729.6	1,719.4	1,616.1	103.32	16.641		
12,700.0	7,500.0	7,572.4	7,508.6	88.0	19.3	-89.02	-3,009.3	729.6	1,819.1	1,714.0	105.05	17.316		
12,800.0	7,500.0	7,572.1	7,508.3	89.7	19.3	-88.93	-3,009.3	729.6	1,918.8	1,812.0	106.78	17.970		
12,900.0	7,500.0	7,571.9	7,508.1	91.5	19.3	-88.84	-3,009.3	729.6	2,018.5	1,910.0	108.51	18.602		
13,000.0	7,500.0	7,571.7	7,507.9	93.2	19.3	-88.75	-3,009.3	729.6	2,118.3	2,008.1	110.24	19.215		
13,100.0	7,500.0	7,571.5	7,507.7	94.9	19.3	-88.66	-3,009.3	729.7	2,218.1	2,106.1	111.97	19.809		
13,200.0	7,500.0	7,571.2	7,507.4	96.6	19.3	-88.57	-3,009.3	729.7	2,317.9	2,204.2	113.70	20.386		
13,300.0	7,500.0	7,571.0	7,507.2	98.4	19.3	-88.48	-3,009.3	729.7	2,417.7	2,302.3	115.43	20.945		
13,400.0	7,500.0	7,570.8	7,507.0	100.1	19.3	-88.39	-3,009.3	729.7	2,517.5	2,400.4	117.16	21.487		
13,500.0	7,500.0	7,570.5	7,506.7	101.8	19.3	-88.30	-3,009.3	729.7	2,617.4	2,498.5	118.89	22.014		
13,600.0	7,500.0	7,570.3	7,506.5	103.5	19.3	-88.21	-3,009.3	729.7	2,717.2	2,596.6	120.63	22.526		
13,700.0	7,500.0	7,570.1	7,506.3	105.3	19.3	-88.11	-3,009.3	729.7	2,817.1	2,694.7	122.36	23.023		

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - THOMAS 2-8-7 (EXISTING) - ENCANA WELL - SUR										Offset Site Error:		0.0 ft		
Survey Program: 838-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		
13,800.0	7,500.0	7,569.8	7,506.1	107.0	19.3	-88.02	-3,009.3	729.7	2,917.0	2,792.9	124.09	23.507		
13,900.0	7,500.0	7,569.6	7,505.8	108.7	19.3	-87.93	-3,009.3	729.7	3,016.8	2,891.0	125.82	23.977		
14,000.0	7,500.0	7,569.4	7,505.6	110.5	19.3	-87.84	-3,009.3	729.7	3,116.7	2,989.2	127.55	24.435		
14,100.0	7,500.0	7,569.1	7,505.4	112.2	19.3	-87.74	-3,009.3	729.7	3,216.6	3,087.3	129.28	24.881		
14,200.0	7,500.0	7,568.9	7,505.1	113.9	19.3	-87.65	-3,009.3	729.7	3,316.5	3,185.5	131.01	25.314		
14,300.0	7,500.0	7,568.7	7,504.9	115.7	19.3	-87.56	-3,009.3	729.7	3,416.4	3,283.7	132.74	25.737		
14,400.0	7,500.0	7,568.4	7,504.6	117.4	19.3	-87.46	-3,009.3	729.7	3,516.4	3,381.9	134.47	26.149		
14,500.0	7,500.0	7,568.2	7,504.4	119.1	19.3	-87.37	-3,009.3	729.7	3,616.3	3,480.1	136.21	26.550		
14,600.0	7,500.0	7,568.0	7,504.2	120.9	19.3	-87.27	-3,009.3	729.7	3,716.2	3,578.3	137.94	26.942		
14,700.0	7,500.0	7,567.7	7,503.9	122.6	19.3	-87.18	-3,009.3	729.7	3,816.1	3,676.5	139.66	27.323		
14,800.0	7,500.0	7,567.5	7,503.7	124.3	19.3	-87.08	-3,009.3	729.7	3,916.1	3,774.7	141.39	27.696		
14,900.0	7,500.0	7,567.2	7,503.5	126.1	19.3	-86.99	-3,009.3	729.7	4,016.0	3,872.9	143.12	28.060		
15,000.0	7,500.0	7,567.0	7,503.2	127.8	19.3	-86.89	-3,009.3	729.7	4,115.9	3,971.1	144.85	28.415		
15,100.0	7,500.0	7,566.8	7,503.0	129.6	19.3	-86.80	-3,009.3	729.7	4,215.9	4,069.3	146.58	28.762		
15,200.0	7,500.0	7,566.5	7,502.7	131.3	19.3	-86.70	-3,009.3	729.7	4,315.8	4,167.5	148.31	29.100		
15,300.0	7,500.0	7,566.3	7,502.5	133.0	19.3	-86.61	-3,009.3	729.7	4,415.8	4,265.7	150.03	29.432		
15,400.0	7,500.0	7,566.0	7,502.2	134.8	19.3	-86.51	-3,009.3	729.7	4,515.7	4,363.9	151.76	29.755		
15,500.0	7,500.0	7,565.8	7,502.0	136.5	19.3	-86.41	-3,009.3	729.7	4,615.6	4,462.2	153.49	30.072		
15,600.0	7,500.0	7,565.6	7,501.8	138.3	19.3	-86.32	-3,009.3	729.7	4,715.6	4,560.4	155.21	30.382		
15,700.0	7,500.0	7,565.3	7,501.5	140.0	19.3	-86.22	-3,009.3	729.7	4,815.6	4,658.6	156.94	30.685		
15,805.8	7,500.0	7,565.0	7,501.3	141.8	19.3	-86.11	-3,009.3	729.7	4,921.3	4,762.5	158.76	30.998		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Thomas 7-12 (Existing) - Existing - NO SURVEYS													Offset Site Error:	0.0 ft
Survey Program: 7894-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	-177.62	-983.2	-40.9	984.1					
100.0	100.0	88.0	88.0	0.2	0.2	-177.62	-983.2	-40.9	984.0	983.7	0.31	3,219.681		
200.0	200.0	188.0	188.0	0.3	0.3	-177.62	-983.2	-40.9	984.0	983.4	0.65	1,503.043		
300.0	300.0	288.0	288.0	0.5	0.5	-177.62	-983.2	-40.9	984.0	983.0	1.00	980.350		
400.0	400.0	388.0	388.0	0.7	0.7	-177.62	-983.2	-40.9	984.0	982.7	1.35	727.394		
500.0	500.0	488.0	488.0	0.8	0.9	-177.62	-983.2	-40.9	984.0	982.3	1.70	578.202		
600.0	600.0	588.0	588.0	1.0	1.0	142.93	-983.2	-40.9	984.7	982.7	2.05	480.127		
700.0	700.0	688.0	688.0	1.2	1.2	143.01	-983.2	-40.9	986.8	984.4	2.40	411.064		
800.0	799.9	787.9	787.9	1.4	1.4	143.14	-983.2	-40.9	990.3	987.6	2.75	359.870		
900.0	899.7	887.7	887.7	1.6	1.5	143.32	-983.2	-40.9	995.2	992.1	3.11	320.453		
1,000.0	999.4	987.4	987.4	1.8	1.7	143.55	-983.2	-40.9	1,001.5	998.0	3.46	289.208		
1,100.0	1,098.9	1,086.9	1,086.9	2.0	1.9	143.83	-983.2	-40.9	1,009.2	1,005.4	3.82	263.875		
1,201.3	1,199.5	1,187.5	1,187.5	2.2	2.1	144.15	-983.2	-40.9	1,018.6	1,014.4	4.20	242.714		
1,300.0	1,297.5	1,285.5	1,285.5	2.5	2.2	144.55	-983.2	-40.9	1,028.4	1,023.8	4.56	225.348		
1,400.0	1,396.8	1,384.8	1,384.8	2.7	2.4	144.94	-983.2	-40.9	1,038.4	1,033.4	4.94	210.340		
1,500.0	1,496.0	1,484.0	1,484.0	3.0	2.6	145.32	-983.2	-40.9	1,048.4	1,043.1	5.31	197.423		
1,600.0	1,595.3	1,583.3	1,583.3	3.3	2.8	145.69	-983.2	-40.9	1,058.5	1,052.8	5.68	186.202		
1,700.0	1,694.5	1,682.5	1,682.5	3.5	2.9	146.06	-983.2	-40.9	1,068.6	1,062.6	6.06	176.373		
1,800.0	1,793.8	1,781.8	1,781.8	3.8	3.1	146.42	-983.2	-40.9	1,078.8	1,072.4	6.43	167.697		
1,900.0	1,893.0	1,881.0	1,881.0	4.0	3.3	146.78	-983.2	-40.9	1,089.0	1,082.2	6.81	159.989		
2,000.0	1,992.3	1,980.3	1,980.3	4.3	3.5	147.13	-983.2	-40.9	1,099.3	1,092.1	7.18	153.097		
2,100.0	2,091.5	2,079.5	2,079.5	4.6	3.6	147.47	-983.2	-40.9	1,109.6	1,102.0	7.55	146.902		
2,200.0	2,190.8	2,178.8	2,178.8	4.8	3.8	147.80	-983.2	-40.9	1,119.9	1,112.0	7.93	141.304		
2,300.0	2,290.0	2,278.0	2,278.0	5.1	4.0	148.13	-983.2	-40.9	1,130.3	1,122.0	8.30	136.223		
2,400.0	2,389.3	2,377.3	2,377.3	5.4	4.1	148.45	-983.2	-40.9	1,140.7	1,132.0	8.67	131.591		
2,500.0	2,488.5	2,476.5	2,476.5	5.7	4.3	148.77	-983.2	-40.9	1,151.1	1,142.1	9.04	127.353		
2,600.0	2,587.8	2,575.8	2,575.8	5.9	4.5	149.08	-983.2	-40.9	1,161.6	1,152.2	9.41	123.460		
2,700.0	2,687.0	2,675.0	2,675.0	6.2	4.7	149.39	-983.2	-40.9	1,172.1	1,162.3	9.78	119.874		
2,800.0	2,786.3	2,774.3	2,774.3	6.5	4.8	149.69	-983.2	-40.9	1,182.7	1,172.5	10.15	116.558		
2,900.0	2,885.5	2,873.5	2,873.5	6.7	5.0	149.99	-983.2	-40.9	1,193.2	1,182.7	10.51	113.486		
3,000.0	2,984.8	2,972.8	2,972.8	7.0	5.2	150.28	-983.2	-40.9	1,203.8	1,193.0	10.88	110.630		
3,100.0	3,084.0	3,072.0	3,072.0	7.3	5.4	150.56	-983.2	-40.9	1,214.5	1,203.2	11.25	107.970		
3,200.0	3,183.3	3,171.3	3,171.3	7.6	5.5	150.84	-983.2	-40.9	1,225.1	1,213.5	11.61	105.486		
3,300.0	3,282.5	3,270.5	3,270.5	7.8	5.7	151.12	-983.2	-40.9	1,235.8	1,223.9	11.98	103.161		
3,400.0	3,381.8	3,369.8	3,369.8	8.1	5.9	151.39	-983.2	-40.9	1,246.6	1,234.2	12.34	100.981		
3,500.0	3,481.1	3,469.1	3,469.1	8.4	6.1	151.65	-983.2	-40.9	1,257.3	1,244.6	12.71	98.933		
3,600.0	3,580.3	3,568.3	3,568.3	8.7	6.2	151.91	-983.2	-40.9	1,268.1	1,255.0	13.07	97.006		
3,700.0	3,679.6	3,667.6	3,667.6	8.9	6.4	152.17	-983.2	-40.9	1,278.9	1,265.5	13.44	95.188		
3,800.0	3,778.8	3,766.8	3,766.8	9.2	6.6	152.42	-983.2	-40.9	1,289.7	1,275.9	13.80	93.472		
3,900.0	3,878.1	3,866.1	3,866.1	9.5	6.7	152.67	-983.2	-40.9	1,300.6	1,286.4	14.16	91.849		
4,000.0	3,977.3	3,965.3	3,965.3	9.8	6.9	152.92	-983.2	-40.9	1,311.5	1,296.9	14.52	90.311		
4,100.0	4,076.6	4,064.6	4,064.6	10.0	7.1	153.16	-983.2	-40.9	1,322.3	1,307.5	14.88	88.853		
4,200.0	4,175.8	4,163.8	4,163.8	10.3	7.3	153.39	-983.2	-40.9	1,333.3	1,318.0	15.24	87.468		
4,300.0	4,275.1	4,263.1	4,263.1	10.6	7.4	153.63	-983.2	-40.9	1,344.2	1,328.6	15.60	86.151		
4,400.0	4,374.3	4,362.3	4,362.3	10.9	7.6	153.86	-983.2	-40.9	1,355.2	1,339.2	15.96	84.898		
4,500.0	4,473.6	4,461.6	4,461.6	11.1	7.8	154.08	-983.2	-40.9	1,366.2	1,349.8	16.32	83.703		
4,600.0	4,572.8	4,560.8	4,560.8	11.4	8.0	154.30	-983.2	-40.9	1,377.2	1,360.5	16.68	82.563		
4,700.0	4,672.1	4,660.1	4,660.1	11.7	8.1	154.52	-983.2	-40.9	1,388.2	1,371.2	17.04	81.474		
4,800.0	4,771.3	4,759.3	4,759.3	12.0	8.3	154.74	-983.2	-40.9	1,399.2	1,381.9	17.40	80.433		
4,900.0	4,870.6	4,858.6	4,858.6	12.2	8.5	154.95	-983.2	-40.9	1,410.3	1,392.6	17.75	79.437		
5,000.0	4,969.8	4,957.8	4,957.8	12.5	8.7	155.16	-983.2	-40.9	1,421.4	1,403.3	18.11	78.483		
5,100.0	5,069.1	5,057.1	5,057.1	12.8	8.8	155.36	-983.2	-40.9	1,432.5	1,414.0	18.47	77.569		

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Thomas 7-12 (Existing) - Existing - NO SURVEYS												Offset Site Error:	0.0 ft
Survey Program: 7894-Geolink MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
5,200.0	5,168.3	5,156.3	5,156.3	13.1	9.0	155.56	-983.2	-40.9	1,443.6	1,424.8	18.82	76.691	
5,300.0	5,267.6	5,255.6	5,255.6	13.3	9.2	155.76	-983.2	-40.9	1,454.8	1,435.6	19.18	75.849	
5,400.0	5,366.8	5,354.8	5,354.8	13.6	9.3	155.96	-983.2	-40.9	1,465.9	1,446.4	19.54	75.039	
5,500.0	5,466.1	5,454.1	5,454.1	13.9	9.5	156.15	-983.2	-40.9	1,477.1	1,457.2	19.89	74.260	
5,600.0	5,565.3	5,553.3	5,553.3	14.2	9.7	156.34	-983.2	-40.9	1,488.3	1,468.0	20.25	73.511	
5,700.0	5,664.6	5,652.6	5,652.6	14.4	9.9	156.53	-983.2	-40.9	1,499.5	1,478.9	20.60	72.789	
5,800.0	5,763.8	5,751.8	5,751.8	14.7	10.0	156.71	-983.2	-40.9	1,510.7	1,489.7	20.95	72.094	
5,900.0	5,863.1	5,851.1	5,851.1	15.0	10.2	156.89	-983.2	-40.9	1,521.9	1,500.6	21.31	71.423	
6,000.0	5,962.3	5,950.3	5,950.3	15.3	10.4	157.07	-983.2	-40.9	1,533.2	1,511.5	21.66	70.776	
6,100.0	6,061.6	6,049.6	6,049.6	15.5	10.6	157.25	-983.2	-40.9	1,544.5	1,522.4	22.02	70.151	
6,200.0	6,160.9	6,148.9	6,148.9	15.8	10.7	157.42	-983.2	-40.9	1,555.7	1,533.4	22.37	69.548	
6,300.0	6,260.1	6,248.1	6,248.1	16.1	10.9	157.59	-983.2	-40.9	1,567.0	1,544.3	22.72	68.964	
6,400.0	6,359.4	6,347.4	6,347.4	16.4	11.1	157.76	-983.2	-40.9	1,578.3	1,555.3	23.07	68.400	
6,500.0	6,458.6	6,446.6	6,446.6	16.6	11.3	157.93	-983.2	-40.9	1,589.7	1,566.2	23.43	67.854	
6,600.0	6,557.9	6,545.9	6,545.9	16.9	11.4	158.09	-983.2	-40.9	1,601.0	1,577.2	23.78	67.325	
6,700.0	6,657.1	6,645.1	6,645.1	17.2	11.6	158.25	-983.2	-40.9	1,612.3	1,588.2	24.13	66.813	
6,800.0	6,756.4	6,744.4	6,744.4	17.5	11.8	158.41	-983.2	-40.9	1,623.7	1,599.2	24.48	66.317	
6,900.0	6,855.6	6,843.6	6,843.6	17.7	11.9	158.57	-983.2	-40.9	1,635.1	1,610.2	24.84	65.836	
6,919.5	6,875.0	6,863.0	6,863.0	17.8	12.0	158.60	-983.2	-40.9	1,637.3	1,612.4	24.90	65.744	
6,950.0	6,905.3	6,893.3	6,893.3	17.9	12.0	135.99	-983.2	-40.9	1,640.0	1,614.9	25.05	65.474	
7,000.0	6,955.1	6,943.1	6,943.1	17.9	12.1	77.82	-983.2	-40.9	1,641.1	1,615.9	25.18	65.178	
7,050.0	7,004.8	6,992.8	6,992.8	17.9	12.2	49.08	-983.2	-40.9	1,638.1	1,612.9	25.18	65.064	
7,100.0	7,053.8	7,041.8	7,041.8	17.9	12.3	38.75	-983.2	-40.9	1,631.0	1,605.9	25.05	65.117	
7,150.0	7,101.9	7,089.9	7,089.9	17.9	12.4	34.21	-983.2	-40.9	1,619.8	1,595.0	24.80	65.321	
7,200.0	7,148.7	7,136.7	7,136.7	17.8	12.5	32.11	-983.2	-40.9	1,604.8	1,580.3	24.45	65.646	
7,250.0	7,193.8	7,181.8	7,181.8	17.7	12.5	31.32	-983.2	-40.9	1,586.0	1,562.0	24.01	66.051	
7,300.0	7,236.9	7,224.9	7,224.9	17.5	12.6	31.43	-983.2	-40.9	1,563.5	1,540.0	23.52	66.467	
7,350.0	7,277.7	7,265.7	7,265.7	17.4	12.7	32.24	-983.2	-40.9	1,537.7	1,514.7	23.02	66.793	
7,400.0	7,315.7	7,303.7	7,303.7	17.2	12.7	33.72	-983.2	-40.9	1,508.7	1,486.1	22.56	66.880	
7,450.0	7,350.9	7,338.9	7,338.9	17.1	12.8	35.86	-983.2	-40.9	1,476.7	1,454.5	22.19	66.534	
7,500.0	7,382.8	7,370.8	7,370.8	16.9	12.9	38.75	-983.2	-40.9	1,442.1	1,420.1	22.01	65.528	
7,550.0	7,411.3	7,399.3	7,399.3	16.7	12.9	42.49	-983.2	-40.9	1,405.2	1,383.1	22.07	63.661	
7,600.0	7,436.1	7,424.1	7,424.1	16.6	13.0	47.19	-983.2	-40.9	1,366.2	1,343.8	22.45	60.856	
7,650.0	7,457.1	7,445.1	7,445.1	16.5	13.0	52.99	-983.2	-40.9	1,325.6	1,302.5	23.15	57.256	
7,700.0	7,474.0	7,462.0	7,462.0	16.4	13.0	59.95	-983.2	-40.9	1,283.7	1,259.6	24.11	53.240	
7,750.0	7,486.8	7,474.8	7,474.8	16.4	13.0	67.97	-983.2	-40.9	1,240.8	1,215.7	25.16	49.316	
7,800.0	7,495.3	7,483.3	7,483.3	16.4	13.1	76.76	-983.2	-40.9	1,197.4	1,171.3	26.07	45.928	
7,850.0	7,499.5	7,487.5	7,487.5	16.5	13.1	85.82	-983.2	-40.9	1,153.8	1,127.1	26.65	43.295	
7,873.6	7,500.0	7,488.0	7,488.0	16.5	13.1	90.00	-983.2	-40.9	1,133.3	1,106.5	26.79	42.310	
7,900.0	7,500.0	7,488.0	7,488.0	16.5	13.1	90.00	-983.2	-40.9	1,110.4	1,083.5	26.85	41.354	
8,000.0	7,500.0	7,488.0	7,488.0	16.9	13.1	90.00	-983.2	-40.9	1,025.3	998.1	27.23	37.648	
8,100.0	7,500.0	7,488.0	7,488.0	17.4	13.1	90.00	-983.2	-40.9	943.2	915.4	27.82	33.906	
8,200.0	7,500.0	7,488.0	7,488.0	18.0	13.1	90.00	-983.2	-40.9	864.8	836.3	28.58	30.261	
8,300.0	7,500.0	7,488.0	7,488.0	18.8	13.1	90.00	-983.2	-40.9	791.4	761.9	29.49	26.833	
8,400.0	7,500.0	7,488.0	7,488.0	19.7	13.1	90.00	-983.2	-40.9	724.3	693.8	30.54	23.720	
8,500.0	7,500.0	7,488.0	7,488.0	20.7	13.1	90.00	-983.2	-40.9	665.6	633.9	31.69	21.005	
8,600.0	7,500.0	7,488.0	7,488.0	21.9	13.1	90.00	-983.2	-40.9	617.5	584.6	32.92	18.755	
8,700.0	7,500.0	7,488.0	7,488.0	23.1	13.1	90.00	-983.2	-40.9	582.8	548.5	34.24	17.023	
8,800.0	7,500.0	7,488.0	7,488.0	24.3	13.1	90.00	-983.2	-40.9	563.9	528.3	35.61	15.837	
8,858.3	7,500.0	7,488.0	7,488.0	25.1	13.1	90.00	-983.2	-40.9	560.9	524.4	36.44	15.393 CC, ES	
8,900.0	7,500.0	7,488.0	7,488.0	25.6	13.1	90.00	-983.2	-40.9	562.4	525.4	37.03	15.189	
9,000.0	7,500.0	7,488.0	7,488.0	27.0	13.1	90.00	-983.2	-40.9	578.5	540.0	38.49	15.029 SF	

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Thomas 7-12 (Existing) - Existing - NO SURVEYS													Offset Site Error: 0.0 ft			
Survey Program: 7894-Geolink 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			
9,100.0	7,500.0	7,488.0	7,488.0	28.4	13.1	90.00	-983.2	-40.9	610.7	570.7	39.99	15.272				
9,200.0	7,500.0	7,488.0	7,488.0	29.9	13.1	90.00	-983.2	-40.9	656.7	615.2	41.52	15.819				
9,300.0	7,500.0	7,488.0	7,488.0	31.4	13.1	90.00	-983.2	-40.9	713.9	670.8	43.07	16.576				
9,400.0	7,500.0	7,488.0	7,488.0	32.9	13.1	90.00	-983.2	-40.9	779.7	735.1	44.64	17.466				
9,500.0	7,500.0	7,488.0	7,488.0	34.4	13.1	90.00	-983.2	-40.9	852.2	806.0	46.23	18.433				
9,600.0	7,500.0	7,488.0	7,488.0	36.0	13.1	90.00	-983.2	-40.9	929.9	882.0	47.84	19.437				
9,700.0	7,500.0	7,488.0	7,488.0	37.5	13.1	90.00	-983.2	-40.9	1,011.4	962.0	49.46	20.449				
9,800.0	7,500.0	7,488.0	7,488.0	39.1	13.1	90.00	-983.2	-40.9	1,096.1	1,045.0	51.09	21.452				
9,900.0	7,500.0	7,488.0	7,488.0	40.7	13.1	90.00	-983.2	-40.9	1,183.1	1,130.3	52.74	22.434				
10,000.0	7,500.0	7,488.0	7,488.0	42.3	13.1	90.00	-983.2	-40.9	1,272.0	1,217.6	54.39	23.387				
10,100.0	7,500.0	7,488.0	7,488.0	43.9	13.1	90.00	-983.2	-40.9	1,362.5	1,306.4	56.05	24.309				
10,200.0	7,500.0	7,488.0	7,488.0	45.6	13.1	90.00	-983.2	-40.9	1,454.2	1,396.5	57.72	25.196				
10,300.0	7,500.0	7,488.0	7,488.0	47.2	13.1	90.00	-983.2	-40.9	1,546.9	1,487.5	59.39	26.047				
10,400.0	7,500.0	7,488.0	7,488.0	48.9	13.1	90.00	-983.2	-40.9	1,640.5	1,579.5	61.07	26.864				
10,500.0	7,500.0	7,488.0	7,488.0	50.5	13.1	90.00	-983.2	-40.9	1,734.8	1,672.1	62.75	27.645				
10,600.0	7,500.0	7,488.0	7,488.0	52.2	13.1	90.00	-983.2	-40.9	1,829.8	1,765.3	64.44	28.394				
10,700.0	7,500.0	7,488.0	7,488.0	53.8	13.1	90.00	-983.2	-40.9	1,925.2	1,859.1	66.14	29.110				
10,800.0	7,500.0	7,488.0	7,488.0	55.5	13.1	90.00	-983.2	-40.9	2,021.1	1,953.2	67.83	29.795				
10,900.0	7,500.0	7,488.0	7,488.0	57.2	13.1	90.00	-983.2	-40.9	2,117.3	2,047.8	69.53	30.450				
11,000.0	7,500.0	7,488.0	7,488.0	58.9	13.1	90.00	-983.2	-40.9	2,213.9	2,142.7	71.24	31.078				
11,100.0	7,500.0	7,488.0	7,488.0	60.6	13.1	90.00	-983.2	-40.9	2,310.8	2,237.8	72.94	31.679				
11,200.0	7,500.0	7,488.0	7,488.0	62.3	13.1	90.00	-983.2	-40.9	2,407.9	2,333.3	74.65	32.254				
11,244.1	7,500.0	7,488.0	7,488.0	63.0	13.1	90.00	-983.2	-40.9	2,450.9	2,375.4	75.41	32.501				
11,300.0	7,500.0	7,488.0	7,488.0	64.0	13.1	90.00	-983.2	-40.9	2,505.4	2,428.9	76.52	32.740				
11,400.0	7,500.0	7,488.0	7,488.0	65.7	13.1	90.00	-983.2	-40.9	2,603.7	2,525.2	78.47	33.181				
11,444.1	7,500.0	7,488.0	7,488.0	66.4	13.1	90.00	-983.2	-40.9	2,647.3	2,568.0	79.31	33.380				
11,500.0	7,500.0	7,488.0	7,488.0	67.4	13.1	90.00	-983.2	-40.9	2,702.5	2,622.3	80.27	33.670				
11,600.0	7,500.0	7,488.0	7,488.0	69.1	13.1	90.00	-983.2	-40.9	2,801.6	2,719.6	81.98	34.172				
11,700.0	7,500.0	7,488.0	7,488.0	70.8	13.1	90.00	-983.2	-40.9	2,900.6	2,816.9	83.70	34.653				
11,800.0	7,500.0	7,488.0	7,488.0	72.5	13.1	90.00	-983.2	-40.9	2,999.8	2,914.4	85.43	35.115				
11,900.0	7,500.0	7,488.0	7,488.0	74.2	13.1	90.00	-983.2	-40.9	3,099.0	3,011.8	87.15	35.558				
12,000.0	7,500.0	7,488.0	7,488.0	76.0	13.1	90.00	-983.2	-40.9	3,198.2	3,109.3	88.88	35.985				
12,100.0	7,500.0	7,488.0	7,488.0	77.7	13.1	90.00	-983.2	-40.9	3,297.5	3,206.9	90.60	36.395				
12,194.1	7,500.0	7,488.0	7,488.0	79.3	13.1	90.00	-983.2	-40.9	3,391.0	3,298.8	92.23	36.766				
12,200.0	7,500.0	7,488.0	7,488.0	79.4	13.1	90.00	-983.2	-40.9	3,396.8	3,304.5	92.32	36.793				
12,300.0	7,500.0	7,488.0	7,488.0	81.1	13.1	90.00	-983.2	-40.9	3,496.0	3,402.1	93.84	37.256				
12,393.7	7,500.0	7,488.0	7,488.0	82.7	13.1	90.00	-983.2	-40.9	3,588.4	3,493.3	95.17	37.705				
12,400.0	7,500.0	7,488.0	7,488.0	82.9	13.1	90.00	-983.2	-40.9	3,594.7	3,499.4	95.28	37.727				
12,500.0	7,500.0	7,488.0	7,488.0	84.6	13.1	90.00	-983.2	-40.9	3,693.2	3,596.2	97.01	38.070				
12,600.0	7,500.0	7,488.0	7,488.0	86.3	13.1	90.00	-983.2	-40.9	3,791.8	3,693.0	98.74	38.401				
12,700.0	7,500.0	7,488.0	7,488.0	88.0	13.1	90.00	-983.2	-40.9	3,890.4	3,789.9	100.47	38.721				
12,800.0	7,500.0	7,488.0	7,488.0	89.7	13.1	90.00	-983.2	-40.9	3,989.1	3,886.9	102.21	39.030				
12,900.0	7,500.0	7,488.0	7,488.0	91.5	13.1	90.00	-983.2	-40.9	4,087.9	3,984.0	103.94	39.329				
13,000.0	7,500.0	7,488.0	7,488.0	93.2	13.1	90.00	-983.2	-40.9	4,186.8	4,081.1	105.68	39.619				
13,100.0	7,500.0	7,488.0	7,488.0	94.9	13.1	90.00	-983.2	-40.9	4,285.7	4,178.3	107.41	39.900				
13,200.0	7,500.0	7,488.0	7,488.0	96.6	13.1	90.00	-983.2	-40.9	4,384.6	4,275.5	109.15	40.172				
13,300.0	7,500.0	7,488.0	7,488.0	98.4	13.1	90.00	-983.2	-40.9	4,483.6	4,372.7	110.88	40.435				
13,400.0	7,500.0	7,488.0	7,488.0	100.1	13.1	90.00	-983.2	-40.9	4,582.7	4,470.0	112.62	40.691				
13,500.0	7,500.0	7,488.0	7,488.0	101.8	13.1	90.00	-983.2	-40.9	4,681.7	4,567.4	114.36	40.939				
13,600.0	7,500.0	7,488.0	7,488.0	103.5	13.1	90.00	-983.2	-40.9	4,780.9	4,664.8	116.10	41.180				
13,700.0	7,500.0	7,488.0	7,488.0	105.3	13.1	90.00	-983.2	-40.9	4,880.0	4,762.2	117.84	41.414				
13,800.0	7,500.0	7,488.0	7,488.0	107.0	13.1	90.00	-983.2	-40.9	4,979.2	4,859.6	119.58	41.641				

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design													S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Thomas 7-12 (Existing) - Existing - NO SURVEYS													Offset Site Error:		0.0 ft	
Survey Program:													7894-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																	
13,900.0	7,500.0	7,488.0	7,488.0	108.7	13.1	90.00	-983.2	-40.9	5,078.4	4,957.1	121.32	41.861																	
14,000.0	7,500.0	7,488.0	7,488.0	110.5	13.1	90.00	-983.2	-40.9	5,177.7	5,054.6	123.06	42.076																	
14,100.0	7,500.0	7,488.0	7,488.0	112.2	13.1	90.00	-983.2	-40.9	5,277.0	5,152.2	124.80	42.285																	

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - THOMAS E UNIT 1 (EXISTING) - Existing - NO SUR										Offset Site Error:		0.0 ft	
Survey Program: 8332-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	142.46	-1,199.2	921.4	1,512.3				
100.0	100.0	94.0	94.0	0.2	0.2	142.46	-1,199.2	921.4	1,512.3	1,512.0	0.32	4,784.199	
200.0	200.0	194.0	194.0	0.3	0.3	142.46	-1,199.2	921.4	1,512.3	1,511.6	0.67	2,273.564	
300.0	300.0	294.0	294.0	0.5	0.5	142.46	-1,199.2	921.4	1,512.3	1,511.3	1.01	1,491.080	
400.0	400.0	394.0	394.0	0.7	0.7	142.46	-1,199.2	921.4	1,512.3	1,510.9	1.36	1,109.297	
500.0	500.0	494.0	494.0	0.8	0.9	142.46	-1,199.2	921.4	1,512.3	1,510.6	1.71	883.167	
600.0	600.0	594.0	594.0	1.0	1.0	103.02	-1,199.2	921.4	1,512.5	1,510.4	2.06	733.568	
700.0	700.0	694.0	694.0	1.2	1.2	103.11	-1,199.2	921.4	1,513.1	1,510.7	2.41	626.883	
800.0	799.9	793.9	793.9	1.4	1.4	103.26	-1,199.2	921.4	1,514.1	1,511.3	2.77	546.468	
900.0	899.7	893.7	893.7	1.6	1.6	103.47	-1,199.2	921.4	1,515.5	1,512.4	3.14	483.271	
1,000.0	999.4	993.4	993.4	1.8	1.7	103.74	-1,199.2	921.4	1,517.3	1,513.8	3.51	431.990	
1,100.0	1,098.9	1,092.9	1,092.9	2.0	1.9	104.06	-1,199.2	921.4	1,519.7	1,515.8	3.90	389.344	
1,201.3	1,199.5	1,193.5	1,193.5	2.2	2.1	104.45	-1,199.2	921.4	1,522.5	1,518.2	4.32	352.764	
1,300.0	1,297.5	1,291.5	1,291.5	2.5	2.3	104.89	-1,199.2	921.4	1,525.6	1,520.9	4.72	322.878	
1,400.0	1,396.8	1,390.8	1,390.8	2.7	2.4	105.33	-1,199.2	921.4	1,528.8	1,523.6	5.14	297.189	
1,500.0	1,496.0	1,490.0	1,490.0	3.0	2.6	105.77	-1,199.2	921.4	1,532.1	1,526.5	5.57	275.218	
1,600.0	1,595.3	1,589.3	1,589.3	3.3	2.8	106.20	-1,199.2	921.4	1,535.5	1,529.5	5.99	256.259	
1,700.0	1,694.5	1,688.5	1,688.5	3.5	2.9	106.63	-1,199.2	921.4	1,538.9	1,532.5	6.42	239.760	
1,800.0	1,793.8	1,787.8	1,787.8	3.8	3.1	107.07	-1,199.2	921.4	1,542.5	1,535.7	6.85	225.292	
1,900.0	1,893.0	1,887.0	1,887.0	4.0	3.3	107.50	-1,199.2	921.4	1,546.2	1,538.9	7.28	212.516	
2,000.0	1,992.3	1,986.3	1,986.3	4.3	3.5	107.92	-1,199.2	921.4	1,549.9	1,542.2	7.70	201.160	
2,100.0	2,091.5	2,085.5	2,085.5	4.6	3.6	108.35	-1,199.2	921.4	1,553.7	1,545.6	8.13	191.008	
2,200.0	2,190.8	2,184.8	2,184.8	4.8	3.8	108.77	-1,199.2	921.4	1,557.6	1,549.1	8.56	181.882	
2,300.0	2,290.0	2,284.0	2,284.0	5.1	4.0	109.19	-1,199.2	921.4	1,561.6	1,552.6	8.99	173.640	
2,400.0	2,389.3	2,383.3	2,383.3	5.4	4.2	109.61	-1,199.2	921.4	1,565.7	1,556.3	9.42	166.162	
2,500.0	2,488.5	2,482.5	2,482.5	5.7	4.3	110.03	-1,199.2	921.4	1,569.9	1,560.0	9.85	159.350	
2,600.0	2,587.8	2,581.8	2,581.8	5.9	4.5	110.44	-1,199.2	921.4	1,574.1	1,563.9	10.28	153.121	
2,700.0	2,687.0	2,681.0	2,681.0	6.2	4.7	110.86	-1,199.2	921.4	1,578.5	1,567.8	10.71	147.404	
2,800.0	2,786.3	2,780.3	2,780.3	6.5	4.9	111.27	-1,199.2	921.4	1,582.9	1,571.7	11.14	142.141	
2,900.0	2,885.5	2,879.5	2,879.5	6.7	5.0	111.68	-1,199.2	921.4	1,587.4	1,575.8	11.56	137.282	
3,000.0	2,984.8	2,978.8	2,978.8	7.0	5.2	112.08	-1,199.2	921.4	1,592.0	1,580.0	11.99	132.783	
3,100.0	3,084.0	3,078.0	3,078.0	7.3	5.4	112.48	-1,199.2	921.4	1,596.6	1,584.2	12.41	128.606	
3,200.0	3,183.3	3,177.3	3,177.3	7.6	5.5	112.89	-1,199.2	921.4	1,601.4	1,588.5	12.84	124.720	
3,300.0	3,282.5	3,276.5	3,276.5	7.8	5.7	113.28	-1,199.2	921.4	1,606.2	1,592.9	13.26	121.095	
3,400.0	3,381.8	3,375.8	3,375.8	8.1	5.9	113.68	-1,199.2	921.4	1,611.1	1,597.4	13.69	117.707	
3,500.0	3,481.1	3,475.1	3,475.1	8.4	6.1	114.07	-1,199.2	921.4	1,616.0	1,601.9	14.11	114.535	
3,600.0	3,580.3	3,574.3	3,574.3	8.7	6.2	114.47	-1,199.2	921.4	1,621.1	1,606.6	14.53	111.559	
3,700.0	3,679.6	3,673.6	3,673.6	8.9	6.4	114.86	-1,199.2	921.4	1,626.2	1,611.3	14.95	108.762	
3,800.0	3,778.8	3,772.8	3,772.8	9.2	6.6	115.24	-1,199.2	921.4	1,631.4	1,616.0	15.37	106.129	
3,900.0	3,878.1	3,872.1	3,872.1	9.5	6.8	115.63	-1,199.2	921.4	1,636.7	1,620.9	15.79	103.646	
4,000.0	3,977.3	3,971.3	3,971.3	9.8	6.9	116.01	-1,199.2	921.4	1,642.0	1,625.8	16.21	101.302	
4,100.0	4,076.6	4,070.6	4,070.6	10.0	7.1	116.39	-1,199.2	921.4	1,647.5	1,630.8	16.63	99.086	
4,200.0	4,175.8	4,169.8	4,169.8	10.3	7.3	116.76	-1,199.2	921.4	1,653.0	1,635.9	17.04	96.988	
4,300.0	4,275.1	4,269.1	4,269.1	10.6	7.5	117.14	-1,199.2	921.4	1,658.5	1,641.1	17.46	94.998	
4,400.0	4,374.3	4,368.3	4,368.3	10.9	7.6	117.51	-1,199.2	921.4	1,664.2	1,646.3	17.87	93.111	
4,500.0	4,473.6	4,467.6	4,467.6	11.1	7.8	117.88	-1,199.2	921.4	1,669.9	1,651.6	18.29	91.317	
4,600.0	4,572.8	4,566.8	4,566.8	11.4	8.0	118.25	-1,199.2	921.4	1,675.7	1,657.0	18.70	89.611	
4,700.0	4,672.1	4,666.1	4,666.1	11.7	8.1	118.61	-1,199.2	921.4	1,681.5	1,662.4	19.11	87.986	
4,800.0	4,771.3	4,765.3	4,765.3	12.0	8.3	118.97	-1,199.2	921.4	1,687.4	1,667.9	19.52	86.438	
4,900.0	4,870.6	4,864.6	4,864.6	12.2	8.5	119.33	-1,199.2	921.4	1,693.4	1,673.5	19.93	84.961	
5,000.0	4,969.8	4,963.8	4,963.8	12.5	8.7	119.69	-1,199.2	921.4	1,699.4	1,679.1	20.34	83.551	
5,100.0	5,069.1	5,063.1	5,063.1	12.8	8.8	120.04	-1,199.2	921.4	1,705.6	1,684.8	20.75	82.203	

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



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - THOMAS E UNIT 1 (EXISTING) - Existing - NO SUR												Offset Site Error:	0.0 ft
Survey Program: 8332-Geolink MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
5,200.0	5,168.3	5,162.3	5,162.3	13.1	9.0	120.40	-1,199.2	921.4	1,711.7	1,690.6	21.16	80.914	
5,300.0	5,267.6	5,261.6	5,261.6	13.3	9.2	120.74	-1,199.2	921.4	1,718.0	1,696.4	21.56	79.680	
5,400.0	5,366.8	5,360.8	5,360.8	13.6	9.4	121.09	-1,199.2	921.4	1,724.3	1,702.3	21.97	78.498	
5,500.0	5,466.1	5,460.1	5,460.1	13.9	9.5	121.44	-1,199.2	921.4	1,730.7	1,708.3	22.37	77.364	
5,600.0	5,565.3	5,559.3	5,559.3	14.2	9.7	121.78	-1,199.2	921.4	1,737.1	1,714.3	22.77	76.277	
5,700.0	5,664.6	5,658.6	5,658.6	14.4	9.9	122.12	-1,199.2	921.4	1,743.6	1,720.4	23.18	75.234	
5,800.0	5,763.8	5,757.8	5,757.8	14.7	10.0	122.45	-1,199.2	921.4	1,750.1	1,726.6	23.58	74.232	
5,900.0	5,863.1	5,857.1	5,857.1	15.0	10.2	122.79	-1,199.2	921.4	1,756.8	1,732.8	23.98	73.268	
6,000.0	5,962.3	5,956.3	5,956.3	15.3	10.4	123.12	-1,199.2	921.4	1,763.4	1,739.1	24.38	72.342	
6,100.0	6,061.6	6,055.6	6,055.6	15.5	10.6	123.45	-1,199.2	921.4	1,770.2	1,745.4	24.78	71.450	
6,200.0	6,160.9	6,154.9	6,154.9	15.8	10.7	123.78	-1,199.2	921.4	1,777.0	1,751.8	25.17	70.592	
6,300.0	6,260.1	6,254.1	6,254.1	16.1	10.9	124.10	-1,199.2	921.4	1,783.8	1,758.3	25.57	69.765	
6,400.0	6,359.4	6,353.4	6,353.4	16.4	11.1	124.42	-1,199.2	921.4	1,790.7	1,764.8	25.96	68.968	
6,500.0	6,458.6	6,452.6	6,452.6	16.6	11.3	124.74	-1,199.2	921.4	1,797.7	1,771.3	26.36	68.199	
6,600.0	6,557.9	6,551.9	6,551.9	16.9	11.4	125.06	-1,199.2	921.4	1,804.7	1,778.0	26.75	67.457	
6,700.0	6,657.1	6,651.1	6,651.1	17.2	11.6	125.37	-1,199.2	921.4	1,811.8	1,784.6	27.15	66.741	
6,800.0	6,756.4	6,750.4	6,750.4	17.5	11.8	125.68	-1,199.2	921.4	1,818.9	1,791.4	27.54	66.050	
6,900.0	6,855.6	6,849.6	6,849.6	17.7	12.0	125.99	-1,199.2	921.4	1,826.1	1,798.2	27.93	65.382	
6,919.5	6,875.0	6,869.0	6,869.0	17.8	12.0	126.05	-1,199.2	921.4	1,827.5	1,799.5	28.01	65.254	
6,950.0	6,905.3	6,899.3	6,899.3	17.9	12.0	103.59	-1,199.2	921.4	1,828.9	1,800.8	28.12	65.030	
7,000.0	6,955.1	6,949.1	6,949.1	17.9	12.1	45.42	-1,199.2	921.4	1,827.9	1,799.7	28.20	64.812	
7,050.0	7,004.8	6,998.8	6,998.8	17.9	12.2	16.37	-1,199.2	921.4	1,822.6	1,794.4	28.14	64.773	
7,100.0	7,053.8	7,047.8	7,047.8	17.9	12.3	5.39	-1,199.2	921.4	1,813.1	1,785.2	27.93	64.912	
7,150.0	7,101.9	7,095.9	7,095.9	17.9	12.4	-0.14	-1,199.2	921.4	1,799.5	1,771.9	27.59	65.228	
7,200.0	7,148.7	7,142.7	7,142.7	17.8	12.5	-3.63	-1,199.2	921.4	1,781.9	1,754.8	27.11	65.720	
7,250.0	7,193.8	7,187.8	7,187.8	17.7	12.5	-6.24	-1,199.2	921.4	1,760.5	1,734.0	26.52	66.381	
7,300.0	7,236.9	7,230.9	7,230.9	17.5	12.6	-8.48	-1,199.2	921.4	1,735.3	1,709.5	25.82	67.198	
7,350.0	7,277.7	7,271.7	7,271.7	17.4	12.7	-10.64	-1,199.2	921.4	1,706.6	1,681.6	25.05	68.140	
7,400.0	7,315.7	7,309.7	7,309.7	17.2	12.8	-12.90	-1,199.2	921.4	1,674.7	1,650.4	24.22	69.149	
7,450.0	7,350.9	7,344.9	7,344.9	17.1	12.8	-15.46	-1,199.2	921.4	1,639.7	1,616.3	23.39	70.115	
7,500.0	7,382.8	7,376.8	7,376.8	16.9	12.9	-18.50	-1,199.2	921.4	1,601.9	1,579.3	22.61	70.845	
7,550.0	7,411.3	7,405.3	7,405.3	16.7	12.9	-22.28	-1,199.2	921.4	1,561.7	1,539.7	21.99	71.017	
7,600.0	7,436.1	7,430.1	7,430.1	16.6	13.0	-27.12	-1,199.2	921.4	1,519.4	1,497.8	21.66	70.158	
7,650.0	7,457.1	7,451.1	7,451.1	16.5	13.0	-33.50	-1,199.2	921.4	1,475.3	1,453.5	21.79	67.718	
7,700.0	7,474.0	7,468.0	7,468.0	16.4	13.0	-42.01	-1,199.2	921.4	1,429.8	1,407.2	22.55	63.396	
7,750.0	7,486.8	7,480.8	7,480.8	16.4	13.1	-53.24	-1,199.2	921.4	1,383.2	1,359.2	23.97	57.696	
7,800.0	7,495.3	7,489.3	7,489.3	16.4	13.1	-67.24	-1,199.2	921.4	1,336.0	1,310.3	25.63	52.119	
7,850.0	7,499.5	7,493.5	7,493.5	16.5	13.1	-82.80	-1,199.2	921.4	1,288.5	1,261.8	26.69	48.277	
7,873.6	7,500.0	7,494.0	7,494.0	16.5	13.1	-90.00	-1,199.2	921.4	1,266.1	1,239.3	26.80	47.250	
7,900.0	7,500.0	7,494.0	7,494.0	16.5	13.1	-90.00	-1,199.2	921.4	1,241.0	1,214.2	26.86	46.202	
8,000.0	7,500.0	7,494.0	7,494.0	16.9	13.1	-90.00	-1,199.2	921.4	1,146.9	1,119.6	27.24	42.095	
8,100.0	7,500.0	7,494.0	7,494.0	17.4	13.1	-90.00	-1,199.2	921.4	1,053.8	1,025.9	27.83	37.867	
8,200.0	7,500.0	7,494.0	7,494.0	18.0	13.1	-90.00	-1,199.2	921.4	962.1	933.5	28.59	33.651	
8,300.0	7,500.0	7,494.0	7,494.0	18.8	13.1	-90.00	-1,199.2	921.4	872.2	842.7	29.50	29.562	
8,400.0	7,500.0	7,494.0	7,494.0	19.7	13.1	-90.00	-1,199.2	921.4	784.8	754.2	30.55	25.691	
8,500.0	7,500.0	7,494.0	7,494.0	20.7	13.1	-90.00	-1,199.2	921.4	700.7	669.0	31.70	22.107	
8,600.0	7,500.0	7,494.0	7,494.0	21.9	13.1	-90.00	-1,199.2	921.4	621.4	588.4	32.93	18.867	
8,700.0	7,500.0	7,494.0	7,494.0	23.1	13.1	-90.00	-1,199.2	921.4	548.9	514.6	34.25	16.027	
8,800.0	7,500.0	7,494.0	7,494.0	24.3	13.1	-90.00	-1,199.2	921.4	486.2	450.6	35.62	13.650	
8,900.0	7,500.0	7,494.0	7,494.0	25.6	13.1	-90.00	-1,199.2	921.4	437.6	400.6	37.04	11.815	
9,000.0	7,500.0	7,494.0	7,494.0	27.0	13.1	-90.00	-1,199.2	921.4	408.2	369.7	38.50	10.603	
9,074.3	7,500.0	7,494.0	7,494.0	28.1	13.1	-90.00	-1,199.2	921.4	401.4	361.8	39.62	10.133 CC, ES	

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - THOMAS E UNIT 1 (EXISTING) - Existing - NO SUR										Offset Site Error:		0.0 ft	
Survey Program: 8332-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	
9,100.0	7,500.0	7,494.0	7,494.0	28.4	13.1	-90.00	-1,199.2	921.4	402.2	362.2	40.00	10.056 SF	
9,200.0	7,500.0	7,494.0	7,494.0	29.9	13.1	-90.00	-1,199.2	921.4	420.6	379.1	41.53	10.129	
9,300.0	7,500.0	7,494.0	7,494.0	31.4	13.1	-90.00	-1,199.2	921.4	460.5	417.4	43.08	10.690	
9,400.0	7,500.0	7,494.0	7,494.0	32.9	13.1	-90.00	-1,199.2	921.4	516.9	472.3	44.65	11.576	
9,500.0	7,500.0	7,494.0	7,494.0	34.4	13.1	-90.00	-1,199.2	921.4	585.1	538.8	46.24	12.652	
9,600.0	7,500.0	7,494.0	7,494.0	36.0	13.1	-90.00	-1,199.2	921.4	661.4	613.6	47.85	13.822	
9,700.0	7,500.0	7,494.0	7,494.0	37.5	13.1	-90.00	-1,199.2	921.4	743.4	693.9	49.47	15.026	
9,800.0	7,500.0	7,494.0	7,494.0	39.1	13.1	-90.00	-1,199.2	921.4	829.3	778.2	51.10	16.228	
9,900.0	7,500.0	7,494.0	7,494.0	40.7	13.1	-90.00	-1,199.2	921.4	918.1	865.3	52.75	17.405	
10,000.0	7,500.0	7,494.0	7,494.0	42.3	13.1	-90.00	-1,199.2	921.4	1,009.0	954.6	54.40	18.547	
10,100.0	7,500.0	7,494.0	7,494.0	43.9	13.1	-90.00	-1,199.2	921.4	1,101.4	1,045.4	56.06	19.648	
10,200.0	7,500.0	7,494.0	7,494.0	45.6	13.1	-90.00	-1,199.2	921.4	1,195.1	1,137.4	57.73	20.703	
10,300.0	7,500.0	7,494.0	7,494.0	47.2	13.1	-90.00	-1,199.2	921.4	1,289.7	1,230.3	59.40	21.713	
10,400.0	7,500.0	7,494.0	7,494.0	48.9	13.1	-90.00	-1,199.2	921.4	1,385.1	1,324.0	61.08	22.677	
10,500.0	7,500.0	7,494.0	7,494.0	50.5	13.1	-90.00	-1,199.2	921.4	1,481.1	1,418.3	62.76	23.598	
10,600.0	7,500.0	7,494.0	7,494.0	52.2	13.1	-90.00	-1,199.2	921.4	1,577.6	1,513.1	64.45	24.477	
10,700.0	7,500.0	7,494.0	7,494.0	53.8	13.1	-90.00	-1,199.2	921.4	1,674.5	1,608.4	66.15	25.315	
10,800.0	7,500.0	7,494.0	7,494.0	55.5	13.1	-90.00	-1,199.2	921.4	1,771.7	1,703.9	67.84	26.115	
10,900.0	7,500.0	7,494.0	7,494.0	57.2	13.1	-90.00	-1,199.2	921.4	1,869.3	1,799.7	69.54	26.879	
11,000.0	7,500.0	7,494.0	7,494.0	58.9	13.1	-90.00	-1,199.2	921.4	1,967.1	1,895.8	71.25	27.609	
11,100.0	7,500.0	7,494.0	7,494.0	60.6	13.1	-90.00	-1,199.2	921.4	2,065.1	1,992.1	72.95	28.306	
11,200.0	7,500.0	7,494.0	7,494.0	62.3	13.1	-90.00	-1,199.2	921.4	2,163.2	2,088.6	74.66	28.973	
11,244.1	7,500.0	7,494.0	7,494.0	63.0	13.1	-90.00	-1,199.2	921.4	2,206.6	2,131.2	75.42	29.258	
11,300.0	7,500.0	7,494.0	7,494.0	64.0	13.1	-90.00	-1,199.2	921.4	2,261.5	2,184.9	76.54	29.548	
11,400.0	7,500.0	7,494.0	7,494.0	65.7	13.1	-90.00	-1,199.2	921.4	2,359.3	2,280.8	78.48	30.062	
11,444.1	7,500.0	7,494.0	7,494.0	66.4	13.1	-90.00	-1,199.2	921.4	2,402.3	2,322.9	79.32	30.287	
11,500.0	7,500.0	7,494.0	7,494.0	67.4	13.1	-90.00	-1,199.2	921.4	2,456.6	2,376.3	80.28	30.602	
11,600.0	7,500.0	7,494.0	7,494.0	69.1	13.1	-90.00	-1,199.2	921.4	2,554.1	2,472.1	81.99	31.150	
11,700.0	7,500.0	7,494.0	7,494.0	70.8	13.1	-90.00	-1,199.2	921.4	2,651.8	2,568.0	83.72	31.676	
11,800.0	7,500.0	7,494.0	7,494.0	72.5	13.1	-90.00	-1,199.2	921.4	2,749.6	2,664.2	85.44	32.182	
11,900.0	7,500.0	7,494.0	7,494.0	74.2	13.1	-90.00	-1,199.2	921.4	2,847.6	2,760.4	87.16	32.670	
12,000.0	7,500.0	7,494.0	7,494.0	76.0	13.1	-90.00	-1,199.2	921.4	2,945.7	2,856.8	88.89	33.140	
12,100.0	7,500.0	7,494.0	7,494.0	77.7	13.1	-90.00	-1,199.2	921.4	3,044.0	2,953.3	90.61	33.592	
12,194.1	7,500.0	7,494.0	7,494.0	79.3	13.1	-90.00	-1,199.2	921.4	3,136.5	3,044.3	92.24	34.003	
12,200.0	7,500.0	7,494.0	7,494.0	79.4	13.1	-90.00	-1,199.2	921.4	3,142.3	3,050.0	92.33	34.032	
12,300.0	7,500.0	7,494.0	7,494.0	81.1	13.1	-90.00	-1,199.2	921.4	3,241.1	3,147.2	93.85	34.536	
12,393.7	7,500.0	7,494.0	7,494.0	82.7	13.1	-90.00	-1,199.2	921.4	3,334.1	3,238.9	95.18	35.029	
12,400.0	7,500.0	7,494.0	7,494.0	82.9	13.1	-90.00	-1,199.2	921.4	3,340.4	3,245.1	95.29	35.054	
12,500.0	7,500.0	7,494.0	7,494.0	84.6	13.1	-90.00	-1,199.2	921.4	3,439.9	3,342.9	97.02	35.455	
12,600.0	7,500.0	7,494.0	7,494.0	86.3	13.1	-90.00	-1,199.2	921.4	3,539.4	3,440.7	98.75	35.841	
12,700.0	7,500.0	7,494.0	7,494.0	88.0	13.1	-90.00	-1,199.2	921.4	3,639.0	3,538.5	100.48	36.214	
12,800.0	7,500.0	7,494.0	7,494.0	89.7	13.1	-90.00	-1,199.2	921.4	3,738.6	3,636.4	102.22	36.575	
12,900.0	7,500.0	7,494.0	7,494.0	91.5	13.1	-90.00	-1,199.2	921.4	3,838.2	3,734.2	103.95	36.923	
13,000.0	7,500.0	7,494.0	7,494.0	93.2	13.1	-90.00	-1,199.2	921.4	3,937.8	3,832.1	105.69	37.259	
13,100.0	7,500.0	7,494.0	7,494.0	94.9	13.1	-90.00	-1,199.2	921.4	4,037.4	3,930.0	107.42	37.585	
13,200.0	7,500.0	7,494.0	7,494.0	96.6	13.1	-90.00	-1,199.2	921.4	4,137.1	4,028.0	109.16	37.900	
13,300.0	7,500.0	7,494.0	7,494.0	98.4	13.1	-90.00	-1,199.2	921.4	4,236.8	4,125.9	110.89	38.206	
13,400.0	7,500.0	7,494.0	7,494.0	100.1	13.1	-90.00	-1,199.2	921.4	4,336.5	4,223.8	112.63	38.502	
13,500.0	7,500.0	7,494.0	7,494.0	101.8	13.1	-90.00	-1,199.2	921.4	4,436.2	4,321.8	114.37	38.788	
13,600.0	7,500.0	7,494.0	7,494.0	103.5	13.1	-90.00	-1,199.2	921.4	4,535.9	4,419.8	116.11	39.066	
13,700.0	7,500.0	7,494.0	7,494.0	105.3	13.1	-90.00	-1,199.2	921.4	4,635.6	4,517.8	117.85	39.336	
13,800.0	7,500.0	7,494.0	7,494.0	107.0	13.1	-90.00	-1,199.2	921.4	4,735.4	4,615.8	119.59	39.598	

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design												S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - THOMAS E UNIT 1 (EXISTING) - Existing - NO SUR		Offset Site Error:		0.0 ft	
Survey Program: 8332-Geolink 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 Factor	Warning				
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	Axis						
13,900.0	7,500.0	7,494.0	7,494.0	108.7	13.1	-90.00	-1,199.2	921.4	4,835.1	4,713.8	121.33	39.853					
14,000.0	7,500.0	7,494.0	7,494.0	110.5	13.1	-90.00	-1,199.2	921.4	4,934.9	4,811.8	123.07	40.100					
14,100.0	7,500.0	7,494.0	7,494.0	112.2	13.1	-90.00	-1,199.2	921.4	5,034.7	4,909.9	124.81	40.340					
14,200.0	7,500.0	7,494.0	7,494.0	113.9	13.1	-90.00	-1,199.2	921.4	5,134.5	5,007.9	126.55	40.573					
14,300.0	7,500.0	7,494.0	7,494.0	115.7	13.1	-90.00	-1,199.2	921.4	5,234.2	5,106.0	128.29	40.800					

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - WOOLLEY 12-7 (EXISTING) - ENCANA WELL - NO													Offset Site Error:	0.0 ft
Survey Program: 8325-Geolink 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	88.0	88.0	0.0	0.2	-22.18	131.1	-53.5	141.6					
100.0	100.0	188.0	188.0	0.2	0.3	-22.18	131.1	-53.5	141.6	141.1	0.48	294.928		
200.0	200.0	288.0	288.0	0.3	0.5	-22.18	131.1	-53.5	141.6	140.8	0.83	170.777		
300.0	300.0	388.0	388.0	0.5	0.7	-22.18	131.1	-53.5	141.6	140.4	1.18	120.185		
400.0	400.0	488.0	488.0	0.7	0.9	-22.18	131.1	-53.5	141.6	140.1	1.53	92.718		
500.0	500.0	588.0	588.0	0.8	1.0	-22.18	131.1	-53.5	141.6	139.7	1.88	75.470		
600.0	600.0	688.0	688.0	1.0	1.2	-61.97	131.1	-53.5	141.2	139.0	2.23	63.439		
700.0	700.0	788.0	788.0	1.2	1.4	-62.93	131.1	-53.5	140.0	137.4	2.58	54.322		
800.0	799.9	887.9	887.9	1.4	1.5	-64.55	131.1	-53.5	138.1	135.1	2.93	47.073		
900.0	899.7	987.7	987.7	1.6	1.7	-66.90	131.1	-53.5	135.5	132.2	3.30	41.116		
1,000.0	999.4	1,087.4	1,087.4	1.8	1.9	-70.04	131.1	-53.5	132.7	129.0	3.67	36.121		
1,100.0	1,098.9	1,186.9	1,186.9	2.0	2.1	-74.04	131.1	-53.5	129.7	125.6	4.07	31.901		
1,201.3	1,199.5	1,287.5	1,287.5	2.2	2.2	-79.02	131.1	-53.5	127.0	122.5	4.48	28.318		
1,300.0	1,297.5	1,385.5	1,385.5	2.5	2.4	-84.40	131.1	-53.5	125.2	120.3	4.90	25.545		
1,400.0	1,396.8	1,484.8	1,484.8	2.7	2.6	-89.95	131.1	-53.5	124.6	119.3	5.33	23.382		
1,400.9	1,397.7	1,485.7	1,485.7	2.7	2.6	-90.00	131.1	-53.5	124.6	119.3	5.33	23.365 CC, ES		
1,500.0	1,496.0	1,584.0	1,584.0	3.0	2.8	-95.50	131.1	-53.5	125.2	119.5	5.76	21.754		
1,600.0	1,595.3	1,683.3	1,683.3	3.3	2.9	-100.96	131.1	-53.5	127.0	120.8	6.18	20.563		
1,700.0	1,694.5	1,782.5	1,782.5	3.5	3.1	-106.22	131.1	-53.5	129.9	123.3	6.58	19.723		
1,800.0	1,793.8	1,881.8	1,881.8	3.8	3.3	-111.21	131.1	-53.5	133.8	126.8	6.98	19.166		
1,900.0	1,893.0	1,981.0	1,981.0	4.0	3.5	-115.89	131.1	-53.5	138.7	131.4	7.37	18.830		
2,000.0	1,992.3	2,080.3	2,080.3	4.3	3.6	-120.22	131.1	-53.5	144.5	136.8	7.74	18.669		
2,100.0	2,091.5	2,179.5	2,179.5	4.6	3.8	-124.21	131.1	-53.5	151.1	143.0	8.10	18.640 SF		
2,200.0	2,190.8	2,278.8	2,278.8	4.8	4.0	-127.85	131.1	-53.5	158.3	149.8	8.46	18.713		
2,300.0	2,290.0	2,378.0	2,378.0	5.1	4.2	-131.16	131.1	-53.5	166.1	157.3	8.81	18.861		
2,400.0	2,389.3	2,477.3	2,477.3	5.4	4.3	-134.17	131.1	-53.5	174.4	165.2	9.15	19.065		
2,500.0	2,488.5	2,576.5	2,576.5	5.7	4.5	-136.90	131.1	-53.5	183.1	173.7	9.49	19.308		
2,600.0	2,587.8	2,675.8	2,675.8	5.9	4.7	-139.38	131.1	-53.5	192.3	182.4	9.82	19.579		
2,700.0	2,687.0	2,775.0	2,775.0	6.2	4.8	-141.63	131.1	-53.5	201.7	191.6	10.15	19.868		
2,800.0	2,786.3	2,874.3	2,874.3	6.5	5.0	-143.68	131.1	-53.5	211.5	201.0	10.48	20.168		
2,900.0	2,885.5	2,973.5	2,973.5	6.7	5.2	-145.55	131.1	-53.5	221.4	210.6	10.82	20.473		
3,000.0	2,984.8	3,072.8	3,072.8	7.0	5.4	-147.25	131.1	-53.5	231.6	220.5	11.15	20.781		
3,100.0	3,084.0	3,172.0	3,172.0	7.3	5.5	-148.81	131.1	-53.5	242.0	230.5	11.48	21.087		
3,200.0	3,183.3	3,271.3	3,271.3	7.6	5.7	-150.24	131.1	-53.5	252.6	240.7	11.81	21.389		
3,300.0	3,282.5	3,370.5	3,370.5	7.8	5.9	-151.56	131.1	-53.5	263.2	251.1	12.14	21.687		
3,400.0	3,381.8	3,469.8	3,469.8	8.1	6.1	-152.78	131.1	-53.5	274.1	261.6	12.47	21.977		
3,500.0	3,481.1	3,569.1	3,569.1	8.4	6.2	-153.90	131.1	-53.5	285.0	272.2	12.80	22.261		
3,600.0	3,580.3	3,668.3	3,668.3	8.7	6.4	-154.94	131.1	-53.5	296.0	282.9	13.13	22.538		
3,700.0	3,679.6	3,767.6	3,767.6	8.9	6.6	-155.90	131.1	-53.5	307.1	293.7	13.47	22.806		
3,800.0	3,778.8	3,866.8	3,866.8	9.2	6.7	-156.80	131.1	-53.5	318.3	304.5	13.80	23.066		
3,900.0	3,878.1	3,966.1	3,966.1	9.5	6.9	-157.63	131.1	-53.5	329.6	315.5	14.13	23.318		
4,000.0	3,977.3	4,065.3	4,065.3	9.8	7.1	-158.41	131.1	-53.5	340.9	326.5	14.47	23.562		
4,100.0	4,076.6	4,164.6	4,164.6	10.0	7.3	-159.14	131.1	-53.5	352.3	337.5	14.80	23.798		
4,200.0	4,175.8	4,263.8	4,263.8	10.3	7.4	-159.82	131.1	-53.5	363.8	348.6	15.14	24.026		
4,300.0	4,275.1	4,363.1	4,363.1	10.6	7.6	-160.47	131.1	-53.5	375.3	359.8	15.48	24.247		
4,400.0	4,374.3	4,462.3	4,462.3	10.9	7.8	-161.07	131.1	-53.5	386.8	371.0	15.81	24.460		
4,500.0	4,473.6	4,561.6	4,561.6	11.1	8.0	-161.64	131.1	-53.5	398.4	382.2	16.15	24.667		
4,600.0	4,572.8	4,660.8	4,660.8	11.4	8.1	-162.18	131.1	-53.5	410.0	393.5	16.49	24.866		
4,700.0	4,672.1	4,760.1	4,760.1	11.7	8.3	-162.69	131.1	-53.5	421.6	404.8	16.83	25.059		
4,800.0	4,771.3	4,859.3	4,859.3	12.0	8.5	-163.17	131.1	-53.5	433.3	416.2	17.16	25.245		
4,900.0	4,870.6	4,958.6	4,958.6	12.2	8.7	-163.62	131.1	-53.5	445.0	427.5	17.50	25.426		
5,000.0	4,969.8	5,057.8	5,057.8	12.5	8.8	-164.05	131.1	-53.5	456.8	438.9	17.84	25.600		

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - WOOLLEY 12-7 (EXISTING) - ENCANA WELL - NO													Offset Site Error: 0.0 ft	
Survey Program: 8325-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		
5,100.0	5,069.1	5,157.1	5,157.1	12.8	9.0	-164.46	131.1	-53.5	468.5	450.3	18.18	25.769		
5,200.0	5,168.3	5,256.3	5,256.3	13.1	9.2	-164.85	131.1	-53.5	480.3	461.8	18.52	25.932		
5,300.0	5,267.6	5,355.6	5,355.6	13.3	9.3	-165.22	131.1	-53.5	492.1	473.2	18.86	26.090		
5,400.0	5,366.8	5,454.8	5,454.8	13.6	9.5	-165.58	131.1	-53.5	503.9	484.7	19.20	26.243		
5,500.0	5,466.1	5,554.1	5,554.1	13.9	9.7	-165.91	131.1	-53.5	515.8	496.2	19.54	26.392		
5,600.0	5,565.3	5,653.3	5,653.3	14.2	9.9	-166.24	131.1	-53.5	527.6	507.7	19.88	26.536		
5,700.0	5,664.6	5,752.6	5,752.6	14.4	10.0	-166.55	131.1	-53.5	539.5	519.3	20.22	26.675		
5,800.0	5,763.8	5,851.8	5,851.8	14.7	10.2	-166.84	131.1	-53.5	551.4	530.8	20.57	26.810		
5,900.0	5,863.1	5,951.1	5,951.1	15.0	10.4	-167.12	131.1	-53.5	563.3	542.4	20.91	26.942		
6,000.0	5,962.3	6,050.3	6,050.3	15.3	10.6	-167.39	131.1	-53.5	575.2	553.9	21.25	27.069		
6,100.0	6,061.6	6,149.6	6,149.6	15.5	10.7	-167.65	131.1	-53.5	587.1	565.5	21.59	27.193		
6,200.0	6,160.9	6,248.9	6,248.9	15.8	10.9	-167.90	131.1	-53.5	599.1	577.1	21.93	27.313		
6,300.0	6,260.1	6,348.1	6,348.1	16.1	11.1	-168.14	131.1	-53.5	611.0	588.7	22.28	27.429		
6,400.0	6,359.4	6,447.4	6,447.4	16.4	11.3	-168.37	131.1	-53.5	623.0	600.3	22.62	27.543		
6,500.0	6,458.6	6,546.6	6,546.6	16.6	11.4	-168.60	131.1	-53.5	634.9	612.0	22.96	27.653		
6,600.0	6,557.9	6,645.9	6,645.9	16.9	11.6	-168.81	131.1	-53.5	646.9	623.6	23.30	27.760		
6,700.0	6,657.1	6,745.1	6,745.1	17.2	11.8	-169.02	131.1	-53.5	658.9	635.2	23.65	27.864		
6,800.0	6,756.4	6,844.4	6,844.4	17.5	11.9	-169.21	131.1	-53.5	670.9	646.9	23.99	27.966		
6,900.0	6,855.6	6,943.6	6,943.6	17.7	12.1	-169.41	131.1	-53.5	682.9	658.5	24.33	28.064		
6,919.5	6,875.0	6,963.0	6,963.0	17.8	12.2	-169.44	131.1	-53.5	685.2	660.8	24.40	28.083		
6,950.0	6,905.3	6,993.3	6,993.3	17.9	12.2	167.73	131.1	-53.5	688.4	663.8	24.52	28.072		
7,000.0	6,955.1	7,043.1	7,043.1	17.9	12.3	109.46	131.1	-53.5	691.3	666.6	24.69	27.994		
7,050.0	7,004.8	7,092.8	7,092.8	17.9	12.4	80.92	131.1	-53.5	691.4	666.6	24.83	27.841		
7,100.0	7,053.8	7,141.8	7,141.8	17.9	12.5	71.08	131.1	-53.5	688.9	663.9	24.95	27.609		
7,150.0	7,101.9	7,189.9	7,189.9	17.9	12.5	67.32	131.1	-53.5	683.8	658.7	25.06	27.290		
7,200.0	7,148.7	7,236.7	7,236.7	17.8	12.6	66.22	131.1	-53.5	676.4	651.2	25.17	26.874		
7,250.0	7,193.8	7,281.8	7,281.8	17.7	12.7	66.64	131.1	-53.5	667.0	641.7	25.31	26.355		
7,300.0	7,236.9	7,324.9	7,324.9	17.5	12.8	68.08	131.1	-53.5	655.9	630.4	25.48	25.738		
7,350.0	7,277.7	7,365.7	7,365.7	17.4	12.9	70.24	131.1	-53.5	643.6	617.9	25.70	25.042		
7,400.0	7,315.7	7,403.7	7,403.7	17.2	12.9	72.92	131.1	-53.5	630.7	604.7	25.95	24.303		
7,450.0	7,350.9	7,438.9	7,438.9	17.1	13.0	75.92	131.1	-53.5	617.6	591.4	26.20	23.567		
7,500.0	7,382.8	7,470.8	7,470.8	16.9	13.0	79.06	131.1	-53.5	605.0	578.5	26.43	22.885		
7,550.0	7,411.3	7,499.3	7,499.3	16.7	13.1	82.13	131.1	-53.5	593.6	566.9	26.61	22.302		
7,600.0	7,436.1	7,524.1	7,524.1	16.6	13.1	84.95	131.1	-53.5	584.0	557.2	26.73	21.847		
7,650.0	7,457.1	7,545.1	7,545.1	16.5	13.2	87.34	131.1	-53.5	576.9	550.1	26.79	21.536		
7,700.0	7,474.0	7,562.0	7,562.0	16.4	13.2	89.18	131.1	-53.5	572.9	546.1	26.81	21.371		
7,731.2	7,482.5	7,570.5	7,570.5	16.4	13.2	90.00	131.1	-53.5	572.2	545.4	26.82	21.334		
7,750.0	7,486.8	7,574.8	7,574.8	16.4	13.2	90.36	131.1	-53.5	572.5	545.6	26.82	21.344		
7,800.0	7,495.3	7,583.3	7,583.3	16.4	13.2	90.79	131.1	-53.5	575.8	549.0	26.85	21.445		
7,850.0	7,499.5	7,587.5	7,587.5	16.5	13.2	90.44	131.1	-53.5	583.1	556.2	26.92	21.664		
7,873.6	7,500.0	7,588.0	7,588.0	16.5	13.2	90.00	131.1	-53.5	587.9	561.0	26.96	21.807		
7,900.0	7,500.0	7,588.0	7,588.0	16.5	13.2	90.00	131.1	-53.5	594.3	567.3	27.03	21.990		
8,000.0	7,500.0	7,588.0	7,588.0	16.9	13.2	90.00	131.1	-53.5	628.0	600.6	27.41	22.912		
8,100.0	7,500.0	7,588.0	7,588.0	17.4	13.2	90.00	131.1	-53.5	675.0	647.0	27.99	24.112		
8,200.0	7,500.0	7,588.0	7,588.0	18.0	13.2	90.00	131.1	-53.5	732.7	703.9	28.75	25.480		
8,300.0	7,500.0	7,588.0	7,588.0	18.8	13.2	90.00	131.1	-53.5	798.7	769.1	29.67	26.923		
8,400.0	7,500.0	7,588.0	7,588.0	19.7	13.2	90.00	131.1	-53.5	871.3	840.6	30.71	28.372		
8,500.0	7,500.0	7,588.0	7,588.0	20.7	13.2	90.00	131.1	-53.5	948.9	917.0	31.86	29.783		
8,600.0	7,500.0	7,588.0	7,588.0	21.9	13.2	90.00	131.1	-53.5	1,030.3	997.2	33.10	31.129		
8,700.0	7,500.0	7,588.0	7,588.0	23.1	13.2	90.00	131.1	-53.5	1,114.8	1,080.4	34.41	32.398		
8,800.0	7,500.0	7,588.0	7,588.0	24.3	13.2	90.00	131.1	-53.5	1,201.7	1,165.9	35.78	33.583		
8,900.0	7,500.0	7,588.0	7,588.0	25.6	13.2	90.00	131.1	-53.5	1,290.4	1,253.2	37.20	34.686		

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - WOOLLEY 12-7 (EXISTING) - ENCANA WELL - NO													Offset Site Error:	0.0 ft
Survey Program: 8325-Geolink 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)				
9,000.0	7,500.0	7,588.0	7,588.0	27.0	13.2	90.00	131.1	-53.5	1,380.7	1,342.1	38.67	35.709		
9,100.0	7,500.0	7,588.0	7,588.0	28.4	13.2	90.00	131.1	-53.5	1,472.3	1,432.1	40.16	36.656		
9,200.0	7,500.0	7,588.0	7,588.0	29.9	13.2	90.00	131.1	-53.5	1,564.9	1,523.2	41.69	37.534		
9,300.0	7,500.0	7,588.0	7,588.0	31.4	13.2	90.00	131.1	-53.5	1,658.3	1,615.1	43.24	38.348		
9,400.0	7,500.0	7,588.0	7,588.0	32.9	13.2	90.00	131.1	-53.5	1,752.5	1,707.7	44.82	39.103		
9,500.0	7,500.0	7,588.0	7,588.0	34.4	13.2	90.00	131.1	-53.5	1,847.3	1,800.9	46.41	39.805		
9,600.0	7,500.0	7,588.0	7,588.0	36.0	13.2	90.00	131.1	-53.5	1,942.6	1,894.6	48.02	40.458		
9,700.0	7,500.0	7,588.0	7,588.0	37.5	13.2	90.00	131.1	-53.5	2,038.3	1,988.7	49.64	41.066		
9,800.0	7,500.0	7,588.0	7,588.0	39.1	13.2	90.00	131.1	-53.5	2,134.5	2,083.2	51.27	41.634		
9,900.0	7,500.0	7,588.0	7,588.0	40.7	13.2	90.00	131.1	-53.5	2,231.0	2,178.0	52.91	42.164		
10,000.0	7,500.0	7,588.0	7,588.0	42.3	13.2	90.00	131.1	-53.5	2,327.7	2,273.2	54.56	42.662		
10,100.0	7,500.0	7,588.0	7,588.0	43.9	13.2	90.00	131.1	-53.5	2,424.8	2,368.6	56.22	43.128		
10,200.0	7,500.0	7,588.0	7,588.0	45.6	13.2	90.00	131.1	-53.5	2,522.1	2,464.2	57.89	43.566		
10,300.0	7,500.0	7,588.0	7,588.0	47.2	13.2	90.00	131.1	-53.5	2,619.5	2,560.0	59.56	43.979		
10,400.0	7,500.0	7,588.0	7,588.0	48.9	13.2	90.00	131.1	-53.5	2,717.2	2,656.0	61.24	44.367		
10,500.0	7,500.0	7,588.0	7,588.0	50.5	13.2	90.00	131.1	-53.5	2,815.0	2,752.1	62.93	44.734		
10,600.0	7,500.0	7,588.0	7,588.0	52.2	13.2	90.00	131.1	-53.5	2,913.0	2,848.4	64.62	45.081		
10,700.0	7,500.0	7,588.0	7,588.0	53.8	13.2	90.00	131.1	-53.5	3,011.1	2,944.8	66.31	45.409		
10,800.0	7,500.0	7,588.0	7,588.0	55.5	13.2	90.00	131.1	-53.5	3,109.3	3,041.3	68.01	45.720		
10,900.0	7,500.0	7,588.0	7,588.0	57.2	13.2	90.00	131.1	-53.5	3,207.7	3,138.0	69.71	46.016		
11,000.0	7,500.0	7,588.0	7,588.0	58.9	13.2	90.00	131.1	-53.5	3,306.1	3,234.7	71.41	46.296		
11,100.0	7,500.0	7,588.0	7,588.0	60.6	13.2	90.00	131.1	-53.5	3,404.6	3,331.5	73.12	46.563		
11,200.0	7,500.0	7,588.0	7,588.0	62.3	13.2	90.00	131.1	-53.5	3,503.3	3,428.4	74.83	46.817		
11,244.1	7,500.0	7,588.0	7,588.0	63.0	13.2	90.00	131.1	-53.5	3,546.8	3,471.2	75.58	46.926		
11,300.0	7,500.0	7,588.0	7,588.0	64.0	13.2	90.00	131.1	-53.5	3,602.0	3,525.3	76.70	46.963		
11,400.0	7,500.0	7,588.0	7,588.0	65.7	13.2	90.00	131.1	-53.5	3,701.3	3,622.6	78.64	47.064		
11,444.1	7,500.0	7,588.0	7,588.0	66.4	13.2	90.00	131.1	-53.5	3,745.2	3,665.7	79.48	47.121		
11,500.0	7,500.0	7,588.0	7,588.0	67.4	13.2	90.00	131.1	-53.5	3,800.9	3,720.4	80.44	47.251		
11,600.0	7,500.0	7,588.0	7,588.0	69.1	13.2	90.00	131.1	-53.5	3,900.5	3,818.4	82.16	47.476		
11,700.0	7,500.0	7,588.0	7,588.0	70.8	13.2	90.00	131.1	-53.5	4,000.2	3,916.3	83.88	47.690		
11,800.0	7,500.0	7,588.0	7,588.0	72.5	13.2	90.00	131.1	-53.5	4,099.9	4,014.3	85.60	47.895		
11,900.0	7,500.0	7,588.0	7,588.0	74.2	13.2	90.00	131.1	-53.5	4,199.6	4,112.3	87.33	48.091		
12,000.0	7,500.0	7,588.0	7,588.0	76.0	13.2	90.00	131.1	-53.5	4,299.3	4,210.3	89.05	48.279		
12,100.0	7,500.0	7,588.0	7,588.0	77.7	13.2	90.00	131.1	-53.5	4,399.0	4,308.3	90.78	48.459		
12,194.1	7,500.0	7,588.0	7,588.0	79.3	13.2	90.00	131.1	-53.5	4,492.9	4,400.5	92.41	48.621		
12,200.0	7,500.0	7,588.0	7,588.0	79.4	13.2	90.00	131.1	-53.5	4,498.8	4,406.3	92.50	48.637		
12,300.0	7,500.0	7,588.0	7,588.0	81.1	13.2	90.00	131.1	-53.5	4,598.4	4,504.4	94.01	48.913		
12,393.7	7,500.0	7,588.0	7,588.0	82.7	13.2	90.00	131.1	-53.5	4,691.4	4,596.0	95.35	49.204		
12,400.0	7,500.0	7,588.0	7,588.0	82.9	13.2	90.00	131.1	-53.5	4,697.6	4,602.2	95.46	49.213		
12,500.0	7,500.0	7,588.0	7,588.0	84.6	13.2	90.00	131.1	-53.5	4,796.7	4,699.5	97.19	49.356		
12,600.0	7,500.0	7,588.0	7,588.0	86.3	13.2	90.00	131.1	-53.5	4,895.8	4,796.9	98.92	49.494		
12,700.0	7,500.0	7,588.0	7,588.0	88.0	13.2	90.00	131.1	-53.5	4,995.0	4,894.3	100.65	49.628		
12,800.0	7,500.0	7,588.0	7,588.0	89.7	13.2	90.00	131.1	-53.5	5,094.2	4,991.8	102.38	49.757		
12,900.0	7,500.0	7,588.0	7,588.0	91.5	13.2	90.00	131.1	-53.5	5,193.4	5,089.3	104.12	49.881		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - WOOLLEY 22-7 (EXISTING) - ENCANA WELL - SU										Offset Site Error:		0.0 ft	
Survey Program: 71-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	52.2	52.2	0.0	0.1	37.20	1,594.1	1,210.1	2,001.4				
100.0	100.0	151.2	151.2	0.2	0.3	37.21	1,594.1	1,210.2	2,001.4	2,001.0	0.42	4,814.699	
200.0	200.0	246.4	246.4	0.3	0.4	37.19	1,594.4	1,210.0	2,001.5	2,000.8	0.76	2,645.936	
300.0	300.0	383.1	383.1	0.5	0.7	37.16	1,594.7	1,208.7	2,001.3	2,000.1	1.17	1,710.083	
400.0	400.0	525.9	525.8	0.7	0.9	37.28	1,589.0	1,209.4	1,998.2	1,996.6	1.59	1,254.016	
500.0	500.0	811.0	807.6	0.8	1.7	38.25	1,548.8	1,220.8	1,988.6	1,986.3	2.28	872.512	
600.0	600.0	902.0	896.6	1.0	2.0	-0.80	1,530.8	1,225.3	1,975.1	1,972.2	2.91	679.598	
700.0	700.0	1,121.6	1,110.5	1.2	3.0	0.33	1,481.8	1,234.8	1,958.5	1,954.7	3.82	513.291	
800.0	799.9	1,290.8	1,272.2	1.4	3.8	1.44	1,432.7	1,240.5	1,933.5	1,928.8	4.68	413.423	
900.0	899.7	1,393.2	1,369.3	1.6	4.4	2.20	1,400.2	1,244.2	1,905.5	1,900.2	5.31	359.060	
1,000.0	999.4	1,491.7	1,462.4	1.8	5.0	3.01	1,368.2	1,248.6	1,876.1	1,870.2	5.95	315.381	
1,100.0	1,098.9	1,573.9	1,539.9	2.0	5.5	3.73	1,341.2	1,252.5	1,845.3	1,838.7	6.52	283.107	
1,201.3	1,199.5	1,652.4	1,614.2	2.2	5.9	4.44	1,316.0	1,256.5	1,813.4	1,806.3	7.08	256.030	
1,300.0	1,297.5	1,745.0	1,701.6	2.5	6.5	5.30	1,286.2	1,261.9	1,782.3	1,774.6	7.75	230.068	
1,400.0	1,396.8	1,830.5	1,782.2	2.7	7.0	6.15	1,258.1	1,267.3	1,751.0	1,742.6	8.40	208.574	
1,500.0	1,496.0	1,949.0	1,894.0	3.0	7.7	7.33	1,219.5	1,274.0	1,720.0	1,710.8	9.21	186.706	
1,600.0	1,595.3	2,026.7	1,967.5	3.3	8.1	8.10	1,194.5	1,277.2	1,688.6	1,678.8	9.81	172.122	
1,700.0	1,694.5	2,089.6	2,027.1	3.5	8.5	8.74	1,174.8	1,280.3	1,658.9	1,648.5	10.33	160.529	
1,800.0	1,793.8	2,178.8	2,112.0	3.8	9.0	9.66	1,147.7	1,285.8	1,630.9	1,619.9	11.02	148.040	
1,900.0	1,893.0	2,286.3	2,213.7	4.0	9.6	10.86	1,113.7	1,292.3	1,602.5	1,590.6	11.84	135.337	
2,000.0	1,992.3	2,380.6	2,302.7	4.3	10.2	11.98	1,082.9	1,298.1	1,574.2	1,561.6	12.60	124.936	
2,100.0	2,091.5	2,476.2	2,393.2	4.6	10.8	13.10	1,052.5	1,303.2	1,546.2	1,532.9	13.35	115.792	
2,200.0	2,190.8	2,567.8	2,480.1	4.8	11.3	14.20	1,023.6	1,307.6	1,518.8	1,504.7	14.10	107.751	
2,300.0	2,290.0	2,661.8	2,569.3	5.1	11.8	15.34	994.3	1,311.7	1,491.7	1,476.9	14.85	100.442	
2,400.0	2,389.3	2,764.2	2,666.3	5.4	12.4	16.65	962.1	1,316.4	1,465.3	1,449.6	15.69	93.398	
2,500.0	2,488.5	2,908.7	2,802.2	5.7	13.3	18.63	913.2	1,320.4	1,436.8	1,419.9	16.85	85.255	
2,600.0	2,587.8	2,987.1	2,875.5	5.9	13.8	19.80	885.3	1,322.4	1,408.0	1,390.4	17.60	79.979	
2,700.0	2,687.0	3,074.5	2,957.1	6.2	14.4	21.15	854.4	1,325.1	1,380.6	1,362.1	18.42	74.934	
2,800.0	2,786.3	3,151.6	3,029.4	6.5	14.9	22.36	827.4	1,327.6	1,354.4	1,335.2	19.19	70.592	
2,900.0	2,885.5	3,251.8	3,123.1	6.7	15.5	24.01	792.4	1,331.4	1,329.6	1,309.4	20.13	66.040	
3,000.0	2,984.8	3,359.8	3,224.3	7.0	16.2	25.82	754.6	1,333.6	1,304.2	1,283.1	21.13	61.724	
3,100.0	3,084.0	3,433.0	3,293.0	7.3	16.6	27.06	729.4	1,335.1	1,280.2	1,258.3	21.88	58.519	
3,200.0	3,183.3	3,492.5	3,349.1	7.6	17.0	28.08	709.7	1,337.2	1,258.9	1,236.4	22.50	55.940	
3,300.0	3,282.5	3,566.2	3,419.1	7.8	17.4	29.32	686.9	1,340.7	1,240.5	1,217.3	23.23	53.398	
3,400.0	3,381.8	3,643.3	3,492.5	8.1	17.8	30.63	663.6	1,344.9	1,224.0	1,200.0	23.98	51.033	
3,500.0	3,481.1	3,720.8	3,566.3	8.4	18.3	31.96	640.6	1,350.3	1,210.0	1,185.3	24.73	48.932	
3,600.0	3,580.3	3,833.0	3,674.2	8.7	18.8	33.77	610.7	1,357.0	1,197.1	1,171.4	25.62	46.715	
3,700.0	3,679.6	3,976.3	3,812.9	8.9	19.5	35.96	574.7	1,359.6	1,181.6	1,154.9	26.69	44.264	
3,800.0	3,778.8	4,064.1	3,897.0	9.2	20.0	37.47	549.5	1,360.1	1,165.1	1,137.6	27.49	42.377	
3,900.0	3,878.1	4,132.0	3,961.8	9.5	20.3	38.72	529.4	1,362.3	1,151.7	1,123.6	28.17	40.879	
4,000.0	3,977.3	4,208.0	4,034.0	9.8	20.8	40.19	506.0	1,366.3	1,141.2	1,112.2	28.94	39.429	
4,100.0	4,076.6	4,315.5	4,135.1	10.0	21.5	42.45	469.9	1,371.9	1,131.5	1,101.6	29.97	37.752	
4,200.0	4,175.8	4,411.9	4,225.3	10.3	22.1	44.57	436.0	1,375.8	1,122.3	1,091.4	30.92	36.302	
4,300.0	4,275.1	4,490.8	4,299.0	10.6	22.6	46.33	408.3	1,379.4	1,115.1	1,083.4	31.71	35.168	
4,400.0	4,374.3	4,577.3	4,380.5	10.9	23.1	48.19	379.6	1,383.8	1,110.1	1,077.6	32.49	34.169	
4,500.0	4,473.6	4,664.9	4,464.0	11.1	23.6	49.95	353.4	1,388.5	1,107.0	1,073.8	33.22	33.327	
4,600.0	4,572.8	4,761.2	4,556.1	11.4	24.1	51.82	325.9	1,393.9	1,105.3	1,071.3	33.96	32.546	
4,700.0	4,672.1	4,878.3	4,668.6	11.7	24.7	54.02	294.0	1,398.9	1,103.6	1,068.9	34.76	31.754	
4,800.0	4,771.3	4,976.8	4,763.7	12.0	25.1	55.84	268.2	1,401.5	1,101.5	1,066.1	35.41	31.103	
4,900.0	4,870.6	5,067.3	4,851.5	12.2	25.5	57.40	246.6	1,404.5	1,100.8	1,064.8	35.98	30.594	
5,000.0	4,969.8	5,176.7	4,958.5	12.5	25.9	59.10	224.2	1,408.2	1,100.6	1,064.1	36.54	30.123	
5,100.0	5,069.1	5,285.2	5,065.4	12.8	26.3	60.59	206.1	1,411.0	1,099.9	1,062.9	37.02	29.707	

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



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - WOOLLEY 22-7 (EXISTING) - ENCANA WELL - SU												Offset Site Error:	0.0 ft
Survey Program: 71-Geolink MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
5,200.0	5,168.3	5,392.6	5,171.7	13.1	26.6	61.95	190.6	1,413.3	1,098.9	1,061.4	37.47	29.326	
5,300.0	5,267.6	5,506.3	5,284.6	13.3	26.9	63.27	177.0	1,414.8	1,097.0	1,059.2	37.88	28.961	
5,400.0	5,366.8	5,621.6	5,399.4	13.6	27.1	64.44	166.7	1,415.2	1,094.1	1,055.9	38.24	28.608	
5,500.0	5,466.1	5,717.4	5,495.0	13.9	27.2	65.30	160.6	1,415.6	1,090.9	1,052.3	38.55	28.295	
5,600.0	5,565.3	5,842.3	5,619.9	14.2	27.3	66.17	157.4	1,416.9	1,087.6	1,048.8	38.82	28.014	
5,700.0	5,664.6	5,947.4	5,725.0	14.4	27.4	66.82	157.3	1,415.5	1,081.5	1,042.4	39.09	27.664	
5,800.0	5,763.8	6,032.4	5,810.0	14.7	27.5	67.35	157.1	1,415.3	1,076.6	1,037.2	39.36	27.353	
5,900.0	5,863.1	6,130.8	5,908.3	15.0	27.5	67.94	156.8	1,416.0	1,072.6	1,033.0	39.61	27.078	
6,000.0	5,962.3	6,232.8	6,010.3	15.3	27.6	68.53	157.2	1,416.7	1,068.6	1,028.7	39.87	26.803	
6,100.0	6,061.6	6,327.4	6,104.9	15.5	27.7	69.07	157.7	1,417.4	1,064.7	1,024.6	40.12	26.536	
6,200.0	6,160.9	6,423.9	6,201.4	15.8	27.7	69.62	158.1	1,418.6	1,061.4	1,021.0	40.38	26.285	
6,300.0	6,260.1	6,527.7	6,305.3	16.1	27.8	70.23	158.5	1,419.7	1,058.0	1,017.4	40.64	26.036	
6,400.0	6,359.4	6,628.6	6,406.1	16.4	27.9	70.83	158.8	1,420.3	1,054.5	1,013.6	40.90	25.784	
6,500.0	6,458.6	6,727.0	6,504.5	16.6	27.9	71.43	159.0	1,421.0	1,051.0	1,009.9	41.15	25.539	
6,600.0	6,557.9	6,825.0	6,602.5	16.9	28.0	72.03	159.1	1,421.7	1,047.8	1,006.4	41.41	25.302	
6,700.0	6,657.1	6,922.7	6,700.2	17.2	28.1	72.64	159.0	1,422.5	1,044.9	1,003.2	41.67	25.075	
6,800.0	6,756.4	7,020.9	6,798.4	17.5	28.2	73.26	158.9	1,423.4	1,042.2	1,000.2	41.93	24.857	
6,900.0	6,855.6	7,118.2	6,895.7	17.7	28.2	73.88	158.6	1,424.3	1,039.7	997.5	42.18	24.647	
6,919.5	6,875.0	7,136.3	6,913.8	17.8	28.3	74.00	158.5	1,424.5	1,039.3	997.0	42.24	24.606	
6,950.0	6,905.3	7,164.9	6,942.3	17.9	28.3	74.58	158.3	1,424.9	1,038.3	996.1	42.28	24.560	
7,000.0	6,955.1	7,211.7	6,989.2	17.9	28.3	-6.96	157.9	1,425.5	1,035.5	993.2	42.33	24.466	
7,050.0	7,004.8	7,258.4	7,035.9	17.9	28.4	-36.50	157.3	1,426.2	1,031.1	988.7	42.36	24.342	
7,100.0	7,053.8	7,309.9	7,087.4	17.9	28.4	-48.22	156.5	1,427.0	1,025.1	982.7	42.40	24.179	
7,150.0	7,101.9	7,363.2	7,140.7	17.9	28.5	-54.77	155.9	1,427.6	1,017.3	974.8	42.44	23.969	
7,200.0	7,148.7	7,415.1	7,192.5	17.8	28.5	-59.53	155.4	1,428.0	1,007.8	965.4	42.49	23.720	
7,250.0	7,193.8	7,465.5	7,243.0	17.7	28.6	-63.60	155.0	1,428.1	997.1	954.5	42.54	23.436	
7,300.0	7,236.9	7,514.9	7,292.3	17.5	28.6	-67.42	154.7	1,428.0	985.3	942.7	42.60	23.127	
7,350.0	7,277.7	7,561.4	7,338.9	17.4	28.7	-71.15	154.5	1,427.6	972.7	930.1	42.65	22.808	
7,400.0	7,315.7	7,604.9	7,382.3	17.2	28.7	-74.79	154.4	1,427.0	959.9	917.2	42.68	22.493	
7,450.0	7,350.9	7,641.4	7,418.9	17.1	28.7	-78.18	154.3	1,426.4	947.3	904.7	42.66	22.207	
7,500.0	7,382.8	7,671.8	7,449.2	16.9	28.7	-81.23	154.2	1,425.9	935.7	893.1	42.61	21.961	
7,550.0	7,411.3	7,698.8	7,476.3	16.7	28.8	-83.99	154.2	1,425.4	925.4	882.8	42.53	21.757	
7,600.0	7,436.1	7,722.4	7,499.8	16.6	28.8	-86.39	154.1	1,425.1	916.9	874.5	42.44	21.603	
7,650.0	7,457.1	7,742.3	7,519.8	16.5	28.8	-88.36	154.1	1,424.9	910.6	868.3	42.35	21.501	
7,700.0	7,474.0	7,758.5	7,535.9	16.4	28.8	-89.84	154.1	1,424.7	907.0	864.7	42.27	21.454	
7,739.0	7,484.3	7,768.3	7,545.7	16.4	28.8	-90.61	154.0	1,424.6	906.1	863.8	42.24	21.451 CC, ES, SF	
7,750.0	7,486.8	7,770.7	7,548.1	16.4	28.8	-90.77	154.0	1,424.6	906.1	863.9	42.22	21.459	
7,800.0	7,495.3	7,778.8	7,556.2	16.4	28.8	-91.13	154.0	1,424.5	908.3	866.1	42.22	21.516	
7,850.0	7,499.5	7,782.9	7,560.3	16.5	28.8	-90.88	154.0	1,424.4	913.6	871.4	42.26	21.619	
7,873.6	7,500.0	7,783.4	7,560.8	16.5	28.8	-90.56	154.0	1,424.4	917.2	874.9	42.30	21.683	
7,900.0	7,500.0	7,783.4	7,560.9	16.5	28.8	-90.56	154.0	1,424.4	922.0	879.6	42.37	21.762	
8,000.0	7,500.0	7,783.6	7,561.0	16.9	28.8	-90.57	154.0	1,424.4	946.5	903.7	42.75	22.139	
8,100.0	7,500.0	7,783.8	7,561.2	17.4	28.8	-90.58	154.0	1,424.4	980.6	937.3	43.33	22.629	
8,200.0	7,500.0	7,783.9	7,561.3	18.0	28.8	-90.59	154.0	1,424.4	1,023.4	979.3	44.10	23.209	
8,300.0	7,500.0	7,784.1	7,561.5	18.8	28.8	-90.60	154.0	1,424.4	1,073.9	1,028.8	45.01	23.858	
8,400.0	7,500.0	7,784.2	7,561.7	19.7	28.8	-90.61	154.0	1,424.4	1,130.9	1,084.8	46.05	24.557	
8,500.0	7,500.0	7,784.4	7,561.8	20.7	28.8	-90.62	154.0	1,424.4	1,193.6	1,146.4	47.20	25.287	
8,600.0	7,500.0	7,784.6	7,562.0	21.9	28.8	-90.63	154.0	1,424.4	1,261.1	1,212.7	48.44	26.034	
8,700.0	7,500.0	7,784.7	7,562.1	23.1	28.8	-90.64	154.0	1,424.4	1,332.8	1,283.0	49.75	26.788	
8,800.0	7,500.0	7,784.9	7,562.3	24.3	28.8	-90.65	154.0	1,424.4	1,407.9	1,356.7	51.12	27.538	
8,900.0	7,500.0	7,785.0	7,562.5	25.6	28.8	-90.66	154.0	1,424.4	1,485.9	1,433.3	52.55	28.277	
9,000.0	7,500.0	7,785.2	7,562.6	27.0	28.8	-90.67	154.0	1,424.4	1,566.4	1,512.4	54.01	29.002	

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - WOOLLEY 22-7 (EXISTING) - ENCANA WELL - SU													Offset Site Error:	0.0 ft
Survey Program: 71-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		
9,100.0	7,500.0	7,785.4	7,562.8	28.4	28.8	-90.68	154.0	1,424.4	1,649.1	1,593.5	55.51	29.708		
9,200.0	7,500.0	7,785.5	7,562.9	29.9	28.8	-90.69	154.0	1,424.4	1,733.5	1,676.5	57.04	30.394		
9,300.0	7,500.0	7,785.7	7,563.1	31.4	28.8	-90.70	154.0	1,424.4	1,819.6	1,761.0	58.59	31.058		
9,400.0	7,500.0	7,785.8	7,563.3	32.9	28.8	-90.71	154.0	1,424.4	1,907.0	1,846.9	60.16	31.699		
9,500.0	7,500.0	7,786.0	7,563.4	34.4	28.8	-90.72	154.0	1,424.4	1,995.6	1,933.9	61.75	32.317		
9,600.0	7,500.0	7,786.2	7,563.6	36.0	28.8	-90.73	154.0	1,424.4	2,085.2	2,021.9	63.36	32.912		
9,700.0	7,500.0	7,786.3	7,563.7	37.5	28.8	-90.74	154.0	1,424.4	2,175.8	2,110.8	64.98	33.484		
9,800.0	7,500.0	7,786.5	7,563.9	39.1	28.8	-90.75	154.0	1,424.4	2,267.1	2,200.5	66.61	34.035		
9,900.0	7,500.0	7,786.6	7,564.1	40.7	28.8	-90.76	154.0	1,424.4	2,359.1	2,290.9	68.25	34.564		
10,000.0	7,500.0	7,786.8	7,564.2	42.3	28.8	-90.77	154.0	1,424.4	2,451.8	2,381.9	69.91	35.073		
10,100.0	7,500.0	7,786.9	7,564.4	43.9	28.8	-90.78	154.0	1,424.4	2,545.0	2,473.5	71.57	35.562		
10,200.0	7,500.0	7,787.1	7,564.5	45.6	28.8	-90.79	154.0	1,424.4	2,638.7	2,565.5	73.23	36.032		
10,300.0	7,500.0	7,787.3	7,564.7	47.2	28.8	-90.80	154.0	1,424.4	2,732.9	2,658.0	74.91	36.484		
10,400.0	7,500.0	7,787.4	7,564.8	48.9	28.8	-90.81	154.0	1,424.4	2,827.4	2,750.9	76.59	36.919		
10,500.0	7,500.0	7,787.6	7,565.0	50.5	28.8	-90.82	154.0	1,424.4	2,922.4	2,844.1	78.27	37.337		
10,600.0	7,500.0	7,787.7	7,565.2	52.2	28.8	-90.83	154.0	1,424.4	3,017.6	2,937.7	79.96	37.739		
10,700.0	7,500.0	7,787.9	7,565.3	53.8	28.8	-90.84	154.0	1,424.4	3,113.2	3,031.5	81.65	38.127		
10,800.0	7,500.0	7,788.1	7,565.5	55.5	28.8	-90.85	154.0	1,424.4	3,209.0	3,125.6	83.35	38.500		
10,900.0	7,500.0	7,788.2	7,565.6	57.2	28.8	-90.86	154.0	1,424.4	3,305.0	3,220.0	85.05	38.860		
11,000.0	7,500.0	7,788.4	7,565.8	58.9	28.8	-90.87	154.0	1,424.4	3,401.3	3,314.6	86.75	39.207		
11,100.0	7,500.0	7,788.5	7,565.9	60.6	28.8	-90.88	154.0	1,424.4	3,497.8	3,409.4	88.46	39.541		
11,200.0	7,500.0	7,788.7	7,566.1	62.3	28.8	-90.89	154.0	1,424.4	3,594.5	3,504.4	90.17	39.864		
11,244.1	7,500.0	7,788.7	7,566.2	63.0	28.8	-90.90	154.0	1,424.4	3,637.3	3,546.3	90.92	40.003		
11,300.0	7,500.0	7,788.8	7,566.3	64.0	28.8	-90.84	154.0	1,424.4	3,691.3	3,599.2	92.10	40.078		
11,400.0	7,500.0	7,789.0	7,566.4	65.7	28.8	-90.75	154.0	1,424.4	3,787.3	3,693.2	94.14	40.232		
11,444.1	7,500.0	7,789.0	7,566.4	66.4	28.8	-90.72	154.0	1,424.4	3,829.5	3,734.5	95.00	40.309		
11,500.0	7,500.0	7,789.1	7,566.5	67.4	28.8	-90.72	154.0	1,424.4	3,882.8	3,786.8	95.96	40.461		
11,600.0	7,500.0	7,789.2	7,566.6	69.1	28.8	-90.72	154.0	1,424.4	3,978.4	3,880.7	97.68	40.728		
11,700.0	7,500.0	7,789.3	7,566.7	70.8	28.8	-90.73	154.0	1,424.4	4,074.2	3,974.8	99.40	40.987		
11,800.0	7,500.0	7,789.3	7,566.8	72.5	28.8	-90.73	154.0	1,424.4	4,170.2	4,069.1	101.12	41.238		
11,900.0	7,500.0	7,789.4	7,566.9	74.2	28.8	-90.74	154.0	1,424.4	4,266.4	4,163.5	102.85	41.482		
12,000.0	7,500.0	7,789.5	7,567.0	76.0	28.8	-90.74	154.0	1,424.4	4,362.7	4,258.1	104.57	41.719		
12,100.0	7,500.0	7,789.6	7,567.1	77.7	28.8	-90.75	154.0	1,424.4	4,459.2	4,352.9	106.30	41.949		
12,194.1	7,500.0	7,789.7	7,567.1	79.3	28.8	-90.75	154.0	1,424.4	4,550.2	4,442.3	107.93	42.159		
12,200.0	7,500.0	7,789.7	7,567.2	79.4	28.8	-90.76	154.0	1,424.4	4,555.9	4,447.9	108.02	42.178		
12,300.0	7,500.0	7,789.8	7,567.3	81.1	28.8	-90.88	154.0	1,424.4	4,653.1	4,543.7	109.45	42.514		
12,393.7	7,500.0	7,790.0	7,567.4	82.7	28.8	-91.05	154.0	1,424.4	4,745.0	4,634.3	110.68	42.871		
12,400.0	7,500.0	7,790.0	7,567.4	82.9	28.8	-91.05	154.0	1,424.4	4,751.2	4,640.5	110.79	42.885		
12,500.0	7,500.0	7,790.1	7,567.6	84.6	28.8	-91.06	154.0	1,424.4	4,849.7	4,737.2	112.52	43.101		
12,600.0	7,500.0	7,790.3	7,567.7	86.3	28.8	-91.07	154.0	1,424.4	4,948.2	4,834.0	114.25	43.310		
12,700.0	7,500.0	7,790.5	7,567.9	88.0	28.8	-91.08	154.0	1,424.4	5,046.8	4,930.8	115.98	43.514		
12,800.0	7,500.0	7,790.6	7,568.0	89.7	28.8	-91.10	154.0	1,424.4	5,145.4	5,027.7	117.71	43.711		
12,900.0	7,500.0	7,790.8	7,568.2	91.5	28.8	-91.11	154.0	1,424.4	5,244.1	5,124.7	119.45	43.903		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - WOOLLEY 2-4-7 (EXISTING) - ENCANA WELL - SU											Offset Site Error: 0.0 ft		
Survey Program: 41-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	106.0	106.0	0.0	0.2	37.35	1,583.8	1,208.9	1,993.2				
100.0	100.0	306.8	306.5	0.2	0.6	37.42	1,574.2	1,204.2	1,988.0	1,987.3	0.70	2,832.134	
200.0	200.0	503.3	501.8	0.3	1.1	37.65	1,553.4	1,198.3	1,977.7	1,976.5	1.24	1,598.583	
300.0	300.0	617.3	614.5	0.5	1.5	37.88	1,537.1	1,195.7	1,965.1	1,963.4	1.61	1,217.298	
400.0	400.0	755.4	750.6	0.7	1.9	38.26	1,513.3	1,193.2	1,950.1	1,948.1	2.03	959.823	
500.0	500.0	868.4	861.5	0.8	2.4	38.63	1,491.6	1,191.8	1,934.1	1,931.7	2.40	805.300	
600.0	600.0	940.9	932.7	1.0	2.6	-0.61	1,478.1	1,191.4	1,918.2	1,915.3	2.95	650.643	
700.0	700.0	1,084.7	1,073.8	1.2	3.2	-0.10	1,450.5	1,190.4	1,900.4	1,896.9	3.50	542.717	
800.0	799.9	1,311.0	1,293.3	1.4	4.2	0.86	1,396.2	1,184.9	1,876.1	1,871.7	4.35	431.589	
900.0	899.7	1,445.6	1,422.1	1.6	4.9	1.56	1,357.5	1,179.7	1,845.5	1,840.5	4.97	371.509	
1,000.0	999.4	1,567.6	1,538.0	1.8	5.6	2.30	1,319.7	1,175.0	1,811.8	1,806.2	5.59	324.387	
1,100.0	1,098.9	1,692.7	1,656.1	2.0	6.4	3.15	1,278.6	1,169.9	1,775.1	1,768.9	6.25	283.947	
1,201.3	1,199.5	1,882.1	1,831.7	2.2	7.7	4.72	1,208.4	1,160.6	1,732.8	1,725.5	7.30	237.340	
1,300.0	1,297.5	1,975.7	1,917.1	2.5	8.4	5.64	1,170.4	1,156.2	1,688.7	1,680.7	7.98	211.683	
1,400.0	1,396.8	2,081.1	2,012.8	2.7	9.2	6.75	1,126.6	1,150.6	1,643.4	1,634.7	8.75	187.806	
1,500.0	1,496.0	2,184.5	2,106.0	3.0	10.0	7.95	1,082.1	1,145.6	1,597.8	1,588.2	9.58	166.805	
1,600.0	1,595.3	2,313.7	2,220.8	3.3	11.0	9.69	1,023.0	1,139.4	1,550.8	1,540.1	10.66	145.457	
1,700.0	1,694.5	2,394.2	2,292.0	3.5	11.7	10.83	985.8	1,134.5	1,503.2	1,491.8	11.42	131.609	
1,800.0	1,793.8	2,473.0	2,361.9	3.8	12.3	11.99	949.9	1,129.6	1,456.5	1,444.3	12.19	119.479	
1,900.0	1,893.0	2,534.4	2,416.7	4.0	12.8	12.92	922.3	1,126.0	1,411.2	1,398.4	12.84	109.872	
2,000.0	1,992.3	2,616.4	2,490.3	4.3	13.4	14.21	886.4	1,121.5	1,367.4	1,353.8	13.66	100.092	
2,100.0	2,091.5	2,703.9	2,569.0	4.6	14.1	15.61	848.7	1,115.7	1,324.0	1,309.5	14.55	90.991	
2,200.0	2,190.8	2,772.7	2,630.7	4.8	14.7	16.81	818.7	1,111.8	1,281.7	1,266.3	15.32	83.635	
2,300.0	2,290.0	2,858.3	2,708.0	5.1	15.3	18.38	782.0	1,108.0	1,241.6	1,225.3	16.27	76.298	
2,400.0	2,389.3	2,968.3	2,806.6	5.4	16.2	20.51	733.7	1,100.7	1,200.0	1,182.5	17.48	68.635	
2,500.0	2,488.5	3,059.9	2,888.7	5.7	16.9	22.39	693.6	1,094.0	1,159.3	1,140.7	18.56	62.476	
2,600.0	2,587.8	3,141.8	2,962.2	5.9	17.6	24.13	658.3	1,087.1	1,119.1	1,099.5	19.55	57.234	
2,700.0	2,687.0	3,236.0	3,046.9	6.2	18.3	26.26	617.7	1,079.3	1,080.2	1,059.5	20.73	52.119	
2,800.0	2,786.3	3,310.5	3,113.5	6.5	18.9	28.09	584.9	1,073.0	1,042.2	1,020.4	21.75	47.926	
2,900.0	2,885.5	3,398.9	3,192.6	6.7	19.6	30.40	545.9	1,066.7	1,006.6	983.6	22.96	43.840	
3,000.0	2,984.8	3,481.5	3,266.3	7.0	20.3	32.68	509.3	1,059.8	971.7	947.5	24.14	40.246	
3,100.0	3,084.0	3,554.8	3,331.7	7.3	20.9	34.84	476.7	1,054.7	939.6	914.4	25.25	37.214	
3,200.0	3,183.3	3,640.3	3,408.1	7.6	21.5	37.49	438.7	1,049.4	910.3	883.8	26.53	34.318	
3,300.0	3,282.5	3,736.5	3,494.2	7.8	22.3	40.58	396.3	1,042.0	882.3	854.4	27.93	31.592	
3,400.0	3,381.8	3,825.4	3,574.2	8.1	23.0	43.51	358.2	1,034.2	856.1	826.9	29.21	29.310	
3,500.0	3,481.1	3,909.5	3,650.6	8.4	23.6	46.28	324.1	1,026.1	832.1	801.8	30.39	27.382	
3,600.0	3,580.3	3,986.8	3,721.0	8.7	24.2	48.91	293.0	1,019.2	811.3	779.8	31.48	25.768	
3,700.0	3,679.6	4,063.4	3,790.7	8.9	24.7	51.63	261.9	1,013.4	794.4	761.8	32.56	24.398	
3,800.0	3,778.8	4,145.6	3,865.3	9.2	25.4	54.67	227.8	1,007.5	780.9	747.2	33.68	23.187	
3,900.0	3,878.1	4,219.0	3,931.7	9.5	25.9	57.47	196.7	1,003.7	772.3	737.6	34.66	22.281	
4,000.0	3,977.3	4,294.6	4,000.0	9.8	26.5	60.40	164.5	1,000.8	768.4	732.8	35.61	21.578	
4,061.7	4,038.5	4,346.7	4,047.1	9.9	26.9	62.42	142.3	998.8	767.7	731.5	36.20	21.208	
4,100.0	4,076.6	4,378.8	4,076.3	10.0	27.1	63.66	128.8	997.6	768.0	731.4	36.54	21.015	
4,200.0	4,175.8	4,461.5	4,150.8	10.3	27.8	66.89	93.1	994.4	771.2	733.8	37.42	20.609	
4,300.0	4,275.1	4,548.9	4,228.0	10.6	28.6	70.49	52.5	990.0	778.3	740.1	38.25	20.349	
4,400.0	4,374.3	4,634.6	4,303.4	10.9	29.3	74.02	12.1	984.9	788.8	749.9	38.93	20.263	
4,500.0	4,473.6	4,720.9	4,380.0	11.1	30.0	77.40	-27.3	980.1	802.9	763.4	39.45	20.349	
4,600.0	4,572.8	4,823.7	4,473.4	11.4	30.7	81.01	-70.1	975.9	819.3	779.4	39.86	20.554	
4,700.0	4,672.1	4,934.4	4,576.1	11.7	31.4	84.46	-111.1	971.6	836.1	796.0	40.12	20.839	
4,800.0	4,771.3	5,048.7	4,683.8	12.0	32.1	87.69	-148.9	966.0	852.0	811.7	40.27	21.155	
4,900.0	4,870.6	5,157.1	4,787.1	12.2	32.7	90.46	-181.6	961.1	868.3	827.9	40.33	21.526	
5,000.0	4,969.8	5,276.2	4,902.1	12.5	33.2	93.09	-211.9	956.4	883.3	843.0	40.32	21.910	

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - WOOLLEY 2-4-7 (EXISTING) - ENCANA WELL - SU												Offset Site Error:	0.0 ft
Survey Program: 41-Geolink MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
5,100.0	5,069.1	5,399.2	5,022.6	12.8	33.6	95.37	-236.7	952.6	896.4	856.2	40.25	22.274	
5,200.0	5,168.3	5,510.5	5,132.3	13.1	34.0	97.17	-255.1	949.7	908.1	867.9	40.22	22.582	
5,300.0	5,267.6	5,646.1	5,266.7	13.3	34.3	99.10	-272.5	945.9	917.6	877.5	40.09	22.888	
5,400.0	5,366.8	5,767.0	5,387.1	13.6	34.5	100.59	-282.9	942.3	924.5	884.5	40.02	23.100	
5,500.0	5,466.1	5,878.7	5,498.6	13.9	34.7	101.75	-288.6	940.0	929.5	889.5	39.99	23.243	
5,600.0	5,565.3	6,000.0	5,619.9	14.2	34.8	102.84	-291.6	938.0	933.0	893.1	39.96	23.352	
5,700.0	5,664.6	6,107.9	5,727.7	14.4	34.8	103.74	-291.7	936.0	934.8	894.9	39.97	23.390	
5,800.0	5,763.8	6,205.9	5,825.7	14.7	34.9	104.53	-291.6	934.3	936.7	896.7	40.01	23.412	
5,900.0	5,863.1	6,303.7	5,923.5	15.0	34.9	105.32	-291.7	932.6	938.9	898.8	40.05	23.444	
6,000.0	5,962.3	6,402.3	6,022.0	15.3	35.0	106.11	-291.8	930.9	941.4	901.3	40.08	23.487	
6,100.0	6,061.6	6,501.0	6,120.8	15.5	35.1	106.90	-292.0	929.3	944.1	904.0	40.11	23.536	
6,200.0	6,160.9	6,600.9	6,220.6	15.8	35.1	107.66	-291.8	928.1	946.9	906.8	40.13	23.594	
6,300.0	6,260.1	6,699.9	6,319.6	16.1	35.2	108.37	-291.2	927.5	949.9	909.7	40.18	23.642	
6,400.0	6,359.4	6,797.1	6,416.8	16.4	35.2	109.06	-290.8	926.9	953.1	912.9	40.23	23.692	
6,500.0	6,458.6	6,895.1	6,514.8	16.6	35.3	109.77	-290.6	926.2	956.7	916.5	40.28	23.754	
6,600.0	6,557.9	6,993.7	6,613.4	16.9	35.3	110.48	-290.6	925.5	960.6	920.2	40.32	23.823	
6,700.0	6,657.1	7,093.0	6,712.7	17.2	35.4	111.21	-290.8	924.5	964.6	924.2	40.37	23.895	
6,800.0	6,756.4	7,192.4	6,812.2	17.5	35.5	111.95	-291.0	923.3	968.7	928.3	40.41	23.975	
6,900.0	6,855.6	7,291.9	6,911.7	17.7	35.5	112.70	-291.3	921.9	973.0	932.5	40.44	24.057	
6,919.5	6,875.0	7,311.3	6,931.0	17.8	35.6	112.84	-291.4	921.6	973.8	933.4	40.45	24.074	
6,950.0	6,905.3	7,341.7	6,961.5	17.9	35.6	90.49	-291.4	921.1	974.4	934.0	40.40	24.120	
7,000.0	6,955.1	7,392.3	7,012.0	17.9	35.6	32.38	-291.6	920.3	972.3	932.0	40.30	24.127	
7,050.0	7,004.8	7,443.0	7,062.7	17.9	35.7	3.23	-291.7	919.5	966.3	926.1	40.18	24.046	
7,100.0	7,053.8	7,493.1	7,112.8	17.9	35.7	-8.02	-291.8	918.6	956.3	916.3	40.06	23.874	
7,150.0	7,101.9	7,542.2	7,161.9	17.9	35.7	-14.00	-291.8	917.7	942.6	902.7	39.93	23.606	
7,200.0	7,148.7	7,589.3	7,209.0	17.8	35.8	-18.13	-291.8	916.8	925.2	885.4	39.82	23.233	
7,250.0	7,193.8	7,634.7	7,254.4	17.7	35.8	-21.62	-291.8	915.9	904.3	864.6	39.77	22.740	
7,300.0	7,236.9	7,678.1	7,297.7	17.5	35.8	-25.00	-291.8	915.1	880.2	840.4	39.81	22.109	
7,350.0	7,277.7	7,719.2	7,338.8	17.4	35.8	-28.59	-291.7	914.3	852.9	812.9	40.01	21.320	
7,400.0	7,315.7	7,758.1	7,377.8	17.2	35.9	-32.63	-291.6	913.5	823.0	782.5	40.43	20.357	
7,450.0	7,350.9	7,793.9	7,413.6	17.1	35.9	-37.31	-291.5	912.9	790.5	749.4	41.13	19.222	
7,500.0	7,382.8	7,826.4	7,446.0	16.9	35.9	-42.75	-291.3	912.2	756.0	713.9	42.15	17.938	
7,550.0	7,411.3	7,855.2	7,474.8	16.7	35.9	-49.02	-291.2	911.7	719.9	676.4	43.47	16.561	
7,600.0	7,436.1	7,880.2	7,499.8	16.6	35.9	-56.05	-291.0	911.2	682.7	637.7	44.99	15.175	
7,650.0	7,457.1	7,900.6	7,520.2	16.5	35.9	-63.54	-290.9	910.8	644.9	598.5	46.48	13.876	
7,700.0	7,474.0	7,916.8	7,536.4	16.4	36.0	-71.08	-290.7	910.5	607.3	559.5	47.73	12.723	
7,750.0	7,486.8	7,928.9	7,548.5	16.4	36.0	-78.18	-290.6	910.3	570.3	521.8	48.59	11.738	
7,800.0	7,495.3	7,936.8	7,556.5	16.4	36.0	-84.38	-290.6	910.1	535.0	485.9	49.06	10.905	
7,850.0	7,499.5	7,940.6	7,560.2	16.5	36.0	-89.36	-290.5	910.1	501.9	452.7	49.24	10.193	
7,873.6	7,500.0	7,940.8	7,560.5	16.5	36.0	-91.24	-290.5	910.1	487.4	438.1	49.28	9.891	
7,900.0	7,500.0	7,940.6	7,560.2	16.5	36.0	-91.21	-290.5	910.1	472.0	422.7	49.34	9.566	
8,000.0	7,500.0	7,939.8	7,559.4	16.9	36.0	-91.09	-290.6	910.1	423.9	374.2	49.73	8.524	
8,100.0	7,500.0	7,939.0	7,558.7	17.4	36.0	-90.98	-290.6	910.1	395.7	345.3	50.32	7.864	
8,165.7	7,500.0	7,938.5	7,558.1	17.8	36.0	-90.90	-290.6	910.1	390.2	339.4	50.82	7.678 CC, ES	
8,200.0	7,500.0	7,938.3	7,557.9	18.0	36.0	-90.86	-290.6	910.1	391.7	340.6	51.08	7.668 SF	
8,300.0	7,500.0	7,937.5	7,557.1	18.8	36.0	-90.75	-290.6	910.1	412.6	360.6	52.00	7.936	
8,400.0	7,500.0	7,936.7	7,556.3	19.7	36.0	-90.63	-290.6	910.2	455.1	402.1	53.04	8.581	
8,500.0	7,500.0	7,935.9	7,555.5	20.7	36.0	-90.52	-290.6	910.2	513.8	459.6	54.19	9.481	
8,600.0	7,500.0	7,935.1	7,554.7	21.9	36.0	-90.40	-290.6	910.2	583.8	528.4	55.43	10.532	
8,700.0	7,500.0	7,934.3	7,554.0	23.1	36.0	-90.29	-290.6	910.2	661.6	604.8	56.74	11.659	
8,800.0	7,500.0	7,933.6	7,553.2	24.3	36.0	-90.17	-290.6	910.2	744.7	686.6	58.11	12.814	
8,900.0	7,500.0	7,932.8	7,552.4	25.6	36.0	-90.06	-290.6	910.2	831.5	772.0	59.54	13.966	

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - WOOLLEY 2-4-7 (EXISTING) - ENCANA WELL - SU											Offset Site Error:		0.0 ft
Survey Program: 41-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	
9,000.0	7,500.0	7,932.0	7,551.6	27.0	36.0	-89.95	-290.6	910.2	921.0	860.0	61.00	15.098	
9,100.0	7,500.0	7,931.3	7,550.9	28.4	36.0	-89.84	-290.6	910.2	1,012.5	950.0	62.50	16.200	
9,200.0	7,500.0	7,930.5	7,550.1	29.9	36.0	-89.72	-290.6	910.3	1,105.4	1,041.4	64.02	17.266	
9,300.0	7,500.0	7,929.7	7,549.4	31.4	36.0	-89.61	-290.6	910.3	1,199.5	1,133.9	65.58	18.292	
9,400.0	7,500.0	7,929.0	7,548.6	32.9	36.0	-89.50	-290.6	910.3	1,294.5	1,227.3	67.15	19.278	
9,500.0	7,500.0	7,928.2	7,547.8	34.4	36.0	-89.39	-290.6	910.3	1,390.1	1,321.4	68.74	20.224	
9,600.0	7,500.0	7,927.5	7,547.1	36.0	36.0	-89.28	-290.7	910.3	1,486.4	1,416.0	70.34	21.130	
9,700.0	7,500.0	7,926.7	7,546.3	37.5	36.0	-89.17	-290.7	910.3	1,583.1	1,511.1	71.96	21.999	
9,800.0	7,500.0	7,926.0	7,545.6	39.1	36.0	-89.06	-290.7	910.3	1,680.2	1,606.6	73.59	22.831	
9,900.0	7,500.0	7,925.2	7,544.8	40.7	36.0	-88.95	-290.7	910.3	1,777.6	1,702.4	75.23	23.628	
10,000.0	7,500.0	7,924.5	7,544.1	42.3	36.0	-88.84	-290.7	910.4	1,875.3	1,798.4	76.88	24.392	
10,100.0	7,500.0	7,923.7	7,543.4	43.9	36.0	-88.73	-290.7	910.4	1,973.2	1,894.7	78.54	25.125	
10,200.0	7,500.0	7,923.0	7,542.6	45.6	36.0	-88.62	-290.7	910.4	2,071.3	1,991.1	80.20	25.827	
10,300.0	7,500.0	7,922.3	7,541.9	47.2	36.0	-88.52	-290.7	910.4	2,169.6	2,087.7	81.87	26.501	
10,400.0	7,500.0	7,921.5	7,541.2	48.9	36.0	-88.41	-290.7	910.4	2,268.0	2,184.5	83.54	27.148	
10,500.0	7,500.0	7,920.8	7,540.4	50.5	36.0	-88.30	-290.7	910.4	2,366.6	2,281.4	85.22	27.770	
10,600.0	7,500.0	7,920.1	7,539.7	52.2	36.0	-88.20	-290.7	910.4	2,465.3	2,378.4	86.91	28.367	
10,700.0	7,500.0	7,919.4	7,539.0	53.8	36.0	-88.09	-290.7	910.4	2,564.1	2,475.5	88.59	28.942	
10,800.0	7,500.0	7,918.6	7,538.2	55.5	36.0	-87.98	-290.7	910.5	2,663.0	2,572.7	90.28	29.495	
10,900.0	7,500.0	7,917.9	7,537.5	57.2	36.0	-87.88	-290.7	910.5	2,761.9	2,669.9	91.98	30.028	
11,000.0	7,500.0	7,917.2	7,536.8	58.9	36.0	-87.77	-290.7	910.5	2,860.9	2,767.3	93.67	30.542	
11,100.0	7,500.0	7,916.5	7,536.1	60.6	36.0	-87.67	-290.7	910.5	2,960.0	2,864.7	95.37	31.037	
11,200.0	7,500.0	7,915.8	7,535.4	62.3	36.0	-87.56	-290.7	910.5	3,059.2	2,962.1	97.07	31.514	
11,244.1	7,500.0	7,915.4	7,535.1	63.0	36.0	-87.52	-290.7	910.5	3,103.0	3,005.2	97.82	31.720	
11,300.0	7,500.0	7,915.0	7,534.7	64.0	36.0	-87.80	-290.7	910.5	3,158.3	3,059.5	98.85	31.949	
11,400.0	7,500.0	7,914.3	7,533.9	65.7	36.0	-88.15	-290.8	910.5	3,257.1	3,156.5	100.61	32.374	
11,444.1	7,500.0	7,913.9	7,533.5	66.4	36.0	-88.27	-290.8	910.5	3,300.5	3,199.2	101.35	32.566	
11,500.0	7,500.0	7,913.5	7,533.1	67.4	36.0	-88.23	-290.8	910.5	3,355.4	3,253.1	102.30	32.799	
11,600.0	7,500.0	7,912.6	7,532.3	69.1	36.0	-88.15	-290.8	910.6	3,453.8	3,349.8	104.02	33.204	
11,700.0	7,500.0	7,911.8	7,531.4	70.8	36.0	-88.07	-290.8	910.6	3,552.2	3,446.5	105.73	33.597	
11,800.0	7,500.0	7,911.0	7,530.6	72.5	36.0	-88.00	-290.8	910.6	3,650.8	3,543.3	107.45	33.978	
11,900.0	7,500.0	7,910.2	7,529.8	74.2	36.0	-87.92	-290.8	910.6	3,749.4	3,640.2	109.16	34.346	
12,000.0	7,500.0	7,909.4	7,529.0	76.0	36.0	-87.85	-290.8	910.6	3,848.1	3,737.2	110.88	34.704	
12,100.0	7,500.0	7,908.6	7,528.2	77.7	36.0	-87.77	-290.8	910.6	3,946.9	3,834.3	112.60	35.051	
12,194.1	7,500.0	7,907.8	7,527.4	79.3	36.0	-87.70	-290.8	910.6	4,039.9	3,925.7	114.22	35.368	
12,200.0	7,500.0	7,907.8	7,527.4	79.4	36.0	-87.66	-290.8	910.6	4,045.7	3,931.4	114.33	35.387	
12,300.0	7,500.0	7,907.0	7,526.6	81.1	36.0	-86.85	-290.8	910.7	4,144.8	4,028.8	115.99	35.735	
12,393.7	7,500.0	7,906.3	7,526.0	82.7	35.9	-85.42	-290.8	910.7	4,238.1	4,120.8	117.31	36.127	
12,400.0	7,500.0	7,906.3	7,525.9	82.9	35.9	-85.41	-290.8	910.7	4,244.4	4,127.0	117.42	36.148	
12,500.0	7,500.0	7,905.6	7,525.2	84.6	35.9	-85.29	-290.8	910.7	4,344.1	4,225.0	119.12	36.467	
12,600.0	7,500.0	7,904.9	7,524.5	86.3	35.9	-85.17	-290.8	910.7	4,443.8	4,323.0	120.83	36.778	
12,700.0	7,500.0	7,904.2	7,523.9	88.0	35.9	-85.05	-290.8	910.7	4,543.6	4,421.0	122.53	37.080	
12,800.0	7,500.0	7,903.6	7,523.2	89.7	35.9	-84.93	-290.8	910.7	4,643.3	4,519.1	124.24	37.374	
12,900.0	7,500.0	7,902.9	7,522.5	91.5	35.9	-84.82	-290.8	910.7	4,743.1	4,617.1	125.94	37.661	
13,000.0	7,500.0	7,902.2	7,521.8	93.2	35.9	-84.70	-290.8	910.7	4,842.8	4,715.2	127.65	37.939	
13,100.0	7,500.0	7,901.5	7,521.2	94.9	35.9	-84.58	-290.9	910.8	4,942.6	4,813.3	129.35	38.211	
13,200.0	7,500.0	7,900.9	7,520.5	96.6	35.9	-84.46	-290.9	910.8	5,042.4	4,911.3	131.05	38.476	
13,300.0	7,500.0	7,900.2	7,519.8	98.4	35.9	-84.35	-290.9	910.8	5,142.2	5,009.4	132.76	38.734	
13,400.0	7,500.0	7,899.5	7,519.1	100.1	35.9	-84.23	-290.9	910.8	5,242.0	5,107.5	134.46	38.986	

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - WOOLLEY F UNIT 1 (EXISTING) - ENCANA WELL											Offset Site Error: 0.0 ft		
Survey Program: 100-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	33.0	33.0	0.0	0.1	46.42	801.1	841.9	1,162.1				
100.0	100.0	121.7	121.7	0.2	0.2	46.45	801.3	842.9	1,163.1	1,162.8	0.37	3,170.768	
200.0	200.0	219.7	219.7	0.3	0.4	46.51	801.6	844.9	1,164.7	1,164.0	0.72	1,627.883	
300.0	300.0	332.7	332.6	0.5	0.6	46.55	801.7	846.2	1,165.7	1,164.6	1.09	1,072.677	
400.0	400.0	436.3	436.2	0.7	0.8	46.55	801.8	846.4	1,165.9	1,164.4	1.44	809.231	
500.0	500.0	535.9	535.9	0.8	0.9	46.53	802.3	846.3	1,166.1	1,164.4	1.79	652.118	
600.0	600.0	639.7	639.7	1.0	1.1	7.05	802.3	846.2	1,165.2	1,163.1	2.14	544.136	
700.0	700.0	744.8	744.7	1.2	1.3	7.07	802.3	845.9	1,162.4	1,159.9	2.50	465.224	
800.0	799.9	848.9	848.9	1.4	1.5	7.06	802.2	844.6	1,157.1	1,154.3	2.85	405.517	
900.0	899.7	948.8	948.8	1.6	1.7	7.06	802.3	843.3	1,150.2	1,147.0	3.20	359.377	
1,000.0	999.4	1,050.3	1,050.2	1.8	1.8	7.08	802.0	842.1	1,141.3	1,137.8	3.55	321.519	
1,100.0	1,098.9	1,151.4	1,151.3	2.0	2.0	7.13	801.6	840.8	1,130.7	1,126.8	3.90	290.080	
1,201.3	1,199.5	1,254.1	1,254.0	2.2	2.2	7.17	801.3	839.1	1,117.9	1,113.6	4.25	263.019	
1,300.0	1,297.5	1,348.5	1,348.4	2.5	2.4	7.19	801.2	837.4	1,104.5	1,099.9	4.59	240.724	
1,400.0	1,396.8	1,443.2	1,443.1	2.7	2.5	7.20	801.5	835.9	1,091.5	1,086.6	4.93	221.409	
1,500.0	1,496.0	1,543.3	1,543.2	3.0	2.7	7.20	802.1	834.4	1,078.7	1,073.4	5.28	204.255	
1,600.0	1,595.3	1,641.6	1,641.4	3.3	2.9	7.21	802.5	832.8	1,065.6	1,060.0	5.63	189.310	
1,700.0	1,694.5	1,736.1	1,736.0	3.5	3.0	7.21	803.2	831.5	1,053.0	1,047.0	5.97	176.363	
1,800.0	1,793.8	1,835.2	1,835.0	3.8	3.2	7.21	804.1	830.2	1,040.6	1,034.3	6.32	164.636	
1,900.0	1,893.0	1,933.6	1,933.4	4.0	3.4	7.20	805.2	828.7	1,028.2	1,021.5	6.67	154.150	
2,000.0	1,992.3	2,027.8	2,027.6	4.3	3.6	7.17	806.5	827.4	1,016.0	1,009.0	7.01	144.898	
2,100.0	2,091.5	2,120.2	2,120.0	4.6	3.7	7.15	808.2	826.6	1,004.5	997.2	7.35	136.653	
2,200.0	2,190.8	2,215.8	2,215.6	4.8	3.9	7.12	810.4	826.0	993.6	985.9	7.70	129.102	
2,300.0	2,290.0	2,314.3	2,314.0	5.1	4.1	7.10	812.7	825.8	982.9	974.8	8.05	122.159	
2,400.0	2,389.3	2,418.3	2,418.0	5.4	4.2	7.09	814.8	825.5	971.9	963.5	8.40	115.641	
2,500.0	2,488.5	2,521.0	2,520.7	5.7	4.4	7.12	816.1	825.3	960.6	951.8	8.76	109.644	
2,600.0	2,587.8	2,622.1	2,621.8	5.9	4.6	7.15	817.2	825.1	949.0	939.9	9.11	104.120	
2,700.0	2,687.0	2,723.3	2,723.0	6.2	4.8	7.19	818.0	824.6	937.1	927.7	9.47	98.982	
2,800.0	2,786.3	2,821.8	2,821.5	6.5	4.9	7.23	818.8	824.3	925.3	915.5	9.82	94.262	
2,900.0	2,885.5	2,924.3	2,924.0	6.7	5.1	7.27	819.6	823.7	913.3	903.1	10.17	89.780	
3,000.0	2,984.8	3,025.3	3,025.0	7.0	5.3	7.27	820.6	822.6	901.0	890.5	10.53	85.593	
3,100.0	3,084.0	3,125.5	3,125.2	7.3	5.5	7.28	821.5	821.4	888.7	877.8	10.88	81.683	
3,200.0	3,183.3	3,227.0	3,226.7	7.6	5.7	7.28	822.2	819.9	876.0	864.8	11.23	77.977	
3,300.0	3,282.5	3,324.8	3,324.4	7.8	5.8	7.27	823.1	818.4	863.3	851.8	11.58	74.535	
3,400.0	3,381.8	3,420.1	3,419.7	8.1	6.0	7.25	824.3	817.0	851.0	839.1	11.93	71.350	
3,500.0	3,481.1	3,514.7	3,514.3	8.4	6.2	7.24	825.5	816.1	839.2	826.9	12.27	68.391	
3,600.0	3,580.3	3,607.5	3,607.1	8.7	6.3	7.24	827.2	815.7	828.0	815.4	12.61	65.663	
3,700.0	3,679.6	3,700.5	3,700.0	8.9	6.5	7.22	829.5	815.8	817.6	804.7	12.95	63.135	
3,800.0	3,778.8	3,808.2	3,807.7	9.2	6.7	7.18	832.4	815.5	807.1	793.8	13.32	60.607	
3,900.0	3,878.1	3,913.2	3,912.7	9.5	6.9	7.18	834.1	815.0	795.8	782.1	13.68	58.180	
4,000.0	3,977.3	4,018.4	4,017.9	9.8	7.1	7.20	835.2	814.1	783.8	769.7	14.04	55.827	
4,100.0	4,076.6	4,125.9	4,125.3	10.0	7.2	7.21	835.5	812.4	770.6	756.2	14.40	53.499	
4,200.0	4,175.8	4,223.7	4,223.1	10.3	7.4	7.20	835.9	810.3	757.2	742.5	14.75	51.327	
4,300.0	4,275.1	4,321.9	4,321.3	10.6	7.6	7.22	836.0	808.6	744.0	728.9	15.10	49.263	
4,400.0	4,374.3	4,420.4	4,419.9	10.9	7.8	7.26	836.0	807.2	730.8	715.4	15.45	47.299	
4,500.0	4,473.6	4,521.2	4,520.6	11.1	7.9	7.23	836.5	804.9	717.5	701.7	15.81	45.390	
4,600.0	4,572.8	4,615.1	4,614.5	11.4	8.1	7.13	837.9	802.5	704.5	688.4	16.15	43.627	
4,700.0	4,672.1	4,716.1	4,715.4	11.7	8.3	7.06	839.2	800.4	691.8	675.3	16.50	41.920	
4,800.0	4,771.3	4,817.1	4,816.4	12.0	8.5	7.02	840.0	798.4	678.7	661.9	16.86	40.265	
4,900.0	4,870.6	4,915.4	4,914.7	12.2	8.6	7.06	840.0	797.0	665.7	648.5	17.20	38.693	
5,000.0	4,969.8	5,016.7	5,016.0	12.5	8.8	7.15	839.6	795.8	652.4	634.9	17.56	37.156	
5,100.0	5,069.1	5,113.4	5,112.7	12.8	9.0	7.19	839.7	794.4	639.3	621.4	17.91	35.703	

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - WOOLLEY F UNIT 1 (EXISTING) - ENCANA WELL											Offset Site Error: 0.0 ft		
Survey Program: 100-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	
5,200.0	5,168.3	5,214.0	5,213.2	13.1	9.2	7.18	840.2	792.6	626.2	607.9	18.26	34.295	
5,300.0	5,267.6	5,313.9	5,313.2	13.3	9.3	7.16	840.6	790.5	612.8	594.2	18.61	32.927	
5,400.0	5,366.8	5,406.4	5,405.6	13.6	9.5	7.17	841.1	789.1	600.1	581.1	18.95	31.667	
5,500.0	5,466.1	5,508.6	5,507.8	13.9	9.7	7.22	841.6	788.1	587.6	568.3	19.31	30.434	
5,600.0	5,565.3	5,607.1	5,606.3	14.2	9.9	7.26	842.1	786.9	574.9	555.2	19.66	29.248	
5,700.0	5,664.6	5,709.1	5,708.3	14.4	10.0	7.26	842.7	785.3	562.0	542.0	20.01	28.084	
5,800.0	5,763.8	5,810.1	5,809.3	14.7	10.2	7.23	843.2	783.2	548.7	528.3	20.37	26.941	
5,900.0	5,863.1	5,908.1	5,907.2	15.0	10.4	7.20	843.6	781.0	535.4	514.6	20.72	25.843	
6,000.0	5,962.3	6,006.5	6,005.6	15.3	10.6	7.18	844.1	779.1	522.2	501.1	21.06	24.791	
6,100.0	6,061.6	6,110.4	6,109.5	15.5	10.8	7.17	844.3	776.8	508.6	487.2	21.42	23.739	
6,200.0	6,160.9	6,209.3	6,208.3	15.8	10.9	7.16	844.1	774.3	494.5	472.8	21.77	22.713	
6,300.0	6,260.1	6,307.1	6,306.1	16.1	11.1	7.15	844.0	772.0	480.6	458.5	22.12	21.727	
6,400.0	6,359.4	6,404.0	6,403.0	16.4	11.3	7.17	844.0	770.1	467.1	444.6	22.47	20.789	
6,500.0	6,458.6	6,500.8	6,499.7	16.6	11.4	7.13	844.7	768.2	454.0	431.2	22.82	19.900	
6,600.0	6,557.9	6,598.6	6,597.5	16.9	11.6	7.10	845.6	766.6	441.4	418.2	23.16	19.056	
6,700.0	6,657.1	6,698.5	6,697.5	17.2	11.8	7.12	846.3	765.3	428.8	405.3	23.52	18.236	
6,800.0	6,756.4	6,798.3	6,797.3	17.5	12.0	7.15	846.8	764.0	416.1	392.2	23.87	17.433	
6,900.0	6,855.6	6,900.2	6,899.1	17.7	12.2	7.21	846.9	762.4	403.0	378.7	24.22	16.634	
6,919.5	6,875.0	6,919.5	6,918.5	17.8	12.2	7.20	846.9	762.0	400.3	376.0	24.29	16.479	
6,950.0	6,905.3	6,949.8	6,948.8	17.9	12.2	-15.73	847.0	761.4	396.8	372.3	24.42	16.247	
7,000.0	6,955.1	6,999.6	6,998.5	17.9	12.3	-74.79	847.3	760.2	393.4	368.8	24.57	16.006	
7,029.3	6,984.3	7,028.5	7,027.4	17.9	12.4	-96.00	847.4	759.5	392.8	368.2	24.63	15.946 CC, ES	
7,050.0	7,004.8	7,048.8	7,047.7	17.9	12.4	-104.80	847.4	759.1	393.1	368.4	24.66	15.939 SF	
7,100.0	7,053.8	7,097.6	7,096.5	17.9	12.5	-116.72	847.4	758.3	396.1	371.4	24.68	16.050	
7,150.0	7,101.9	7,147.4	7,146.3	17.9	12.6	-123.23	847.2	757.5	402.5	377.9	24.63	16.342	
7,200.0	7,148.7	7,196.0	7,194.9	17.8	12.7	-127.65	847.0	756.4	412.3	387.8	24.50	16.827	
7,250.0	7,193.8	7,243.2	7,242.0	17.7	12.8	-131.01	846.8	755.1	425.7	401.4	24.29	17.522	
7,300.0	7,236.9	7,288.4	7,287.2	17.5	12.8	-133.69	846.4	753.6	442.8	418.8	24.01	18.441	
7,350.0	7,277.7	7,336.3	7,335.1	17.4	12.9	-136.12	845.6	751.9	463.6	439.9	23.65	19.600	
7,400.0	7,315.7	7,384.1	7,382.9	17.2	13.0	-138.23	844.0	749.9	487.6	464.3	23.23	20.993	
7,450.0	7,350.9	7,426.8	7,425.4	17.1	13.1	-139.68	841.7	748.2	514.8	492.1	22.77	22.615	
7,500.0	7,382.8	7,466.1	7,464.7	16.9	13.1	-140.52	838.8	747.4	545.5	523.2	22.32	24.444	
7,550.0	7,411.3	7,500.0	7,498.4	16.7	13.2	-140.57	835.6	747.5	579.2	557.2	21.94	26.398	
7,600.0	7,436.1	7,523.9	7,522.1	16.6	13.2	-139.44	833.2	747.8	616.1	594.3	21.75	28.326	
7,650.0	7,457.1	7,542.1	7,540.3	16.5	13.3	-137.19	831.7	748.2	656.0	634.2	21.81	30.073	
7,700.0	7,474.0	7,557.0	7,555.1	16.4	13.3	-133.64	830.5	748.6	698.6	676.3	22.22	31.444	
7,750.0	7,486.8	7,568.5	7,566.6	16.4	13.3	-128.22	829.7	748.9	743.2	720.1	23.05	32.243	
7,800.0	7,495.3	7,576.7	7,574.8	16.4	13.3	-120.04	829.1	749.1	789.4	765.1	24.35	32.416	
7,850.0	7,499.5	7,581.8	7,579.8	16.5	13.3	-107.97	828.8	749.3	836.8	810.9	25.93	32.274	
7,873.6	7,500.0	7,583.1	7,581.2	16.5	13.3	-100.66	828.7	749.4	859.4	832.9	26.57	32.344	
7,900.0	7,500.0	7,600.0	7,598.0	16.5	13.4	-104.62	827.7	750.0	885.1	858.7	26.37	33.560	
8,000.0	7,500.0	7,600.0	7,598.0	16.9	13.4	-104.62	827.7	750.0	981.8	955.1	26.76	36.696	
8,100.0	7,500.0	7,600.0	7,598.0	17.4	13.4	-104.62	827.7	750.0	1,079.1	1,051.8	27.33	39.486	
8,200.0	7,500.0	7,600.0	7,598.0	18.0	13.4	-104.62	827.7	750.0	1,176.9	1,148.8	28.07	41.921	
8,300.0	7,500.0	7,600.0	7,598.0	18.8	13.4	-104.62	827.7	750.0	1,275.0	1,246.0	28.96	44.018	
8,400.0	7,500.0	7,600.0	7,598.0	19.7	13.4	-104.62	827.7	750.0	1,373.3	1,343.4	29.98	45.810	
8,500.0	7,500.0	7,600.0	7,598.0	20.7	13.4	-104.62	827.7	750.0	1,471.9	1,440.8	31.10	47.335	
8,600.0	7,500.0	7,600.0	7,598.0	21.9	13.4	-104.62	827.7	750.0	1,570.7	1,538.4	32.30	48.631	
8,700.0	7,500.0	7,600.0	7,598.0	23.1	13.4	-104.62	827.7	750.0	1,669.6	1,636.0	33.57	49.735	
8,800.0	7,500.0	7,600.0	7,598.0	24.3	13.4	-104.62	827.7	750.0	1,768.7	1,733.8	34.90	50.677	
8,900.0	7,500.0	7,618.8	7,616.8	25.6	13.4	-108.87	826.8	750.7	1,867.6	1,831.9	35.71	52.298	
9,000.0	7,500.0	7,621.8	7,619.8	27.0	13.4	-109.51	826.7	750.8	1,966.8	1,929.8	36.99	53.166	

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



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - WOOLLEY F UNIT 1 (EXISTING) - ENCANA WELL													Offset Site Error: 0.0 ft	
Survey Program: 100-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		
9,100.0	7,500.0	7,624.6	7,622.6	28.4	13.4	-110.12	826.5	750.8	2,066.1	2,027.8	38.30	53.944		
9,200.0	7,500.0	7,627.3	7,625.3	29.9	13.4	-110.71	826.4	750.9	2,165.4	2,125.8	39.62	54.648		
9,300.0	7,500.0	7,630.0	7,627.9	31.4	13.4	-111.27	826.3	751.0	2,264.8	2,223.8	40.96	55.288		
9,400.0	7,500.0	7,632.5	7,630.4	32.9	13.4	-111.80	826.2	751.1	2,364.2	2,321.9	42.31	55.874		
9,500.0	7,500.0	7,634.9	7,632.8	34.4	13.4	-112.31	826.1	751.2	2,463.7	2,420.0	43.67	56.413		
9,600.0	7,500.0	7,637.2	7,635.2	36.0	13.4	-112.79	826.0	751.2	2,563.2	2,518.1	45.04	56.912		
9,700.0	7,500.0	7,639.5	7,637.4	37.5	13.4	-113.26	825.9	751.3	2,662.7	2,616.3	46.41	57.376		
9,800.0	7,500.0	7,641.6	7,639.6	39.1	13.4	-113.70	825.8	751.4	2,762.3	2,714.5	47.78	57.810		
9,900.0	7,500.0	7,643.7	7,641.7	40.7	13.4	-114.13	825.7	751.4	2,861.9	2,812.7	49.16	58.218		
10,000.0	7,500.0	7,645.8	7,643.7	42.3	13.4	-114.54	825.7	751.5	2,961.5	2,910.9	50.54	58.601		
10,100.0	7,500.0	7,647.7	7,645.6	43.9	13.4	-114.93	825.6	751.6	3,061.1	3,009.2	51.92	58.964		
10,200.0	7,500.0	7,649.6	7,647.5	45.6	13.4	-115.31	825.5	751.6	3,160.8	3,107.5	53.30	59.307		
10,300.0	7,500.0	7,651.4	7,649.4	47.2	13.5	-115.68	825.5	751.7	3,260.5	3,205.8	54.67	59.634		
10,400.0	7,500.0	7,653.2	7,651.1	48.9	13.5	-116.02	825.4	751.7	3,360.2	3,304.1	56.05	59.945		
10,500.0	7,500.0	7,654.9	7,652.8	50.5	13.5	-116.36	825.3	751.7	3,459.9	3,402.4	57.43	60.242		
10,600.0	7,500.0	7,656.6	7,654.5	52.2	13.5	-116.69	825.3	751.8	3,559.6	3,500.8	58.81	60.527		
10,700.0	7,500.0	7,658.2	7,656.1	53.8	13.5	-117.00	825.2	751.8	3,659.3	3,599.2	60.19	60.800		
10,800.0	7,500.0	7,659.8	7,657.7	55.5	13.5	-117.30	825.2	751.9	3,759.1	3,697.5	61.56	61.062		
10,900.0	7,500.0	7,661.3	7,659.2	57.2	13.5	-117.59	825.1	751.9	3,858.9	3,795.9	62.94	61.315		
11,000.0	7,500.0	7,662.8	7,660.7	58.9	13.5	-117.87	825.1	751.9	3,958.6	3,894.3	64.31	61.558		
11,100.0	7,500.0	7,664.2	7,662.1	60.6	13.5	-118.14	825.0	752.0	4,058.4	3,992.7	65.68	61.792		
11,200.0	7,500.0	7,665.6	7,663.5	62.3	13.5	-118.41	825.0	752.0	4,158.2	4,091.2	67.05	62.019		
11,244.1	7,500.0	7,666.2	7,664.1	63.0	13.5	-118.52	825.0	752.0	4,202.3	4,134.6	67.65	62.117		
11,300.0	7,500.0	7,666.9	7,664.8	64.0	13.5	-111.98	824.9	752.0	4,258.0	4,186.1	71.91	59.209		
11,400.0	7,500.0	7,668.3	7,666.2	65.7	13.5	-105.44	824.9	752.1	4,357.5	4,281.3	76.27	57.131		
11,444.1	7,500.0	7,668.9	7,666.8	66.4	13.5	-103.63	824.9	752.1	4,401.4	4,323.7	77.64	56.687		
11,500.0	7,500.0	7,669.6	7,667.5	67.4	13.5	-103.71	824.9	752.1	4,456.8	4,378.2	78.56	56.735		
11,600.0	7,500.0	7,700.0	7,697.9	69.1	13.5	-106.74	824.1	752.7	4,556.3	4,477.0	79.26	57.485		
11,700.0	7,500.0	7,700.0	7,697.9	70.8	13.5	-106.74	824.1	752.7	4,655.6	4,574.6	80.91	57.541		
11,800.0	7,500.0	7,700.0	7,697.9	72.5	13.5	-106.74	824.1	752.7	4,754.9	4,672.3	82.56	57.594		
11,900.0	7,500.0	7,700.0	7,697.9	74.2	13.5	-106.74	824.1	752.7	4,854.2	4,770.0	84.21	57.644		
12,000.0	7,500.0	7,700.0	7,697.9	76.0	13.5	-106.74	824.1	752.7	4,953.5	4,867.7	85.86	57.691		
12,100.0	7,500.0	7,700.0	7,697.9	77.7	13.5	-106.74	824.1	752.7	5,052.9	4,965.4	87.52	57.736		
12,194.1	7,500.0	7,700.0	7,697.9	79.3	13.5	-106.74	824.1	752.7	5,146.5	5,057.4	89.08	57.776		
12,200.0	7,500.0	7,700.0	7,697.9	79.4	13.5	-107.06	824.1	752.7	5,152.3	5,063.3	89.03	57.872		
12,300.0	7,500.0	7,700.0	7,697.9	81.1	13.5	-115.17	824.1	752.7	5,251.9	5,165.8	86.15	60.964		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Woolley-Becky 2A-7H-E168 - Hz - Plan #2													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	90.52	-0.4	40.0	40.0					
100.0	100.0	100.0	100.0	0.2	0.2	90.52	-0.4	40.0	40.0	39.7	0.30	131.795		
200.0	200.0	200.0	200.0	0.3	0.3	90.52	-0.4	40.0	40.0	39.4	0.65	61.316		
300.0	300.0	300.6	300.6	0.5	0.5	91.18	-0.8	39.3	39.3	38.3	1.00	39.158		
400.0	400.0	401.1	401.1	0.7	0.7	93.30	-2.1	37.0	37.0	35.7	1.35	27.380		
500.0	500.0	501.5	501.4	0.8	0.9	97.44	-4.3	33.2	33.5	31.8	1.70	19.653		
600.0	600.0	601.7	601.4	1.0	1.1	67.06	-7.4	27.8	28.5	26.4	2.08	13.719		
700.0	700.0	701.5	700.9	1.2	1.3	83.57	-10.0	21.8	23.3	20.9	2.46	9.497		
800.0	799.9	801.0	800.3	1.4	1.5	109.04	-11.4	15.7	20.4	17.6	2.85	7.166		
805.4	805.3	806.4	805.7	1.4	1.5	110.69	-11.4	15.3	20.4	17.6	2.87	7.109 CC, ES, SF		
900.0	899.7	900.3	899.4	1.6	1.7	138.65	-12.7	9.6	23.5	20.3	3.22	7.304		
1,000.0	999.4	999.4	998.3	1.8	1.9	158.89	-14.0	3.5	32.6	29.0	3.54	9.207		
1,100.0	1,098.9	1,098.3	1,097.0	2.0	2.1	170.00	-15.4	-2.5	45.6	41.7	3.86	11.806		
1,201.3	1,199.5	1,198.2	1,196.7	2.2	2.3	176.25	-16.7	-8.6	61.5	57.3	4.20	14.648		
1,300.0	1,297.5	1,295.4	1,293.7	2.5	2.5	179.85	-18.0	-14.6	78.2	73.7	4.53	17.249		
1,400.0	1,396.8	1,393.8	1,391.9	2.7	2.7	-177.80	-19.4	-20.6	95.4	90.5	4.88	19.540		
1,500.0	1,496.0	1,492.3	1,490.2	3.0	2.9	-176.17	-20.7	-26.6	112.6	107.4	5.23	21.537		
1,600.0	1,595.3	1,590.7	1,588.4	3.3	3.1	-174.97	-22.0	-32.7	130.0	124.4	5.58	23.290		
1,700.0	1,694.5	1,689.2	1,686.7	3.5	3.3	-174.06	-23.3	-38.7	147.3	141.4	5.93	24.838		
1,800.0	1,793.8	1,787.6	1,785.0	3.8	3.5	-173.33	-24.7	-44.7	164.8	158.5	6.28	26.213		
1,900.0	1,893.0	1,886.1	1,883.2	4.0	3.7	-172.75	-26.0	-50.7	182.2	175.5	6.64	27.443		
2,000.0	1,992.3	1,984.6	1,981.5	4.3	3.9	-172.27	-27.3	-56.8	199.6	192.6	6.99	28.549		
2,100.0	2,091.5	2,083.0	2,079.7	4.6	4.1	-171.86	-28.6	-62.8	217.1	209.7	7.35	29.548		
2,200.0	2,190.8	2,181.5	2,178.0	4.8	4.3	-171.52	-30.0	-68.8	234.5	226.8	7.70	30.456		
2,300.0	2,290.0	2,279.9	2,276.3	5.1	4.5	-171.22	-31.3	-74.9	252.0	243.9	8.06	31.283		
2,400.0	2,389.3	2,378.4	2,374.5	5.4	4.7	-170.96	-32.6	-80.9	269.5	261.1	8.41	32.040		
2,500.0	2,488.5	2,476.8	2,472.8	5.7	4.9	-170.73	-34.0	-86.9	287.0	278.2	8.77	32.735		
2,600.0	2,587.8	2,575.3	2,571.1	5.9	5.1	-170.53	-35.3	-92.9	304.4	295.3	9.12	33.376		
2,700.0	2,687.0	2,673.7	2,669.3	6.2	5.3	-170.35	-36.6	-99.0	321.9	312.5	9.48	33.969		
2,800.0	2,786.3	2,772.2	2,767.6	6.5	5.5	-170.19	-37.9	-105.0	339.4	329.6	9.83	34.519		
2,900.0	2,885.5	2,870.6	2,865.8	6.7	5.7	-170.05	-39.3	-111.0	356.9	346.7	10.19	35.030		
3,000.0	2,984.8	2,969.1	2,964.1	7.0	5.9	-169.92	-40.6	-117.0	374.4	363.9	10.54	35.507		
3,100.0	3,084.0	3,067.6	3,062.4	7.3	6.1	-169.80	-41.9	-123.1	391.9	381.0	10.90	35.952		
3,200.0	3,183.3	3,166.0	3,160.6	7.6	6.3	-169.69	-43.2	-129.1	409.4	398.1	11.26	36.369		
3,300.0	3,282.5	3,264.5	3,258.9	7.8	6.5	-169.59	-44.6	-135.1	426.9	415.3	11.61	36.760		
3,400.0	3,381.8	3,362.9	3,357.1	8.1	6.7	-169.50	-45.9	-141.1	444.4	432.4	11.97	37.128		
3,500.0	3,481.1	3,461.4	3,455.4	8.4	6.9	-169.41	-47.2	-147.2	461.9	449.6	12.33	37.474		
3,600.0	3,580.3	3,559.8	3,553.7	8.7	7.1	-169.33	-48.6	-153.2	479.4	466.7	12.68	37.801		
3,700.0	3,679.6	3,658.3	3,651.9	8.9	7.3	-169.26	-49.9	-159.2	496.9	483.9	13.04	38.110		
3,800.0	3,778.8	3,756.7	3,750.2	9.2	7.5	-169.19	-51.2	-165.3	514.4	501.0	13.39	38.403		
3,900.0	3,878.1	3,855.2	3,848.4	9.5	7.7	-169.12	-52.5	-171.3	531.9	518.2	13.75	38.680		
4,000.0	3,977.3	3,953.6	3,946.7	9.8	7.9	-169.06	-53.9	-177.3	549.4	535.3	14.11	38.943		
4,100.0	4,076.6	4,052.1	4,045.0	10.0	8.1	-169.01	-55.2	-183.3	566.9	552.5	14.46	39.193		
4,200.0	4,175.8	4,150.6	4,143.2	10.3	8.3	-168.95	-56.5	-189.4	584.4	569.6	14.82	39.431		
4,300.0	4,275.1	4,249.0	4,241.5	10.6	8.5	-168.91	-57.8	-195.4	601.9	586.8	15.18	39.658		
4,400.0	4,374.3	4,347.5	4,339.7	10.9	8.8	-168.86	-59.2	-201.4	619.4	603.9	15.53	39.874		
4,500.0	4,473.6	4,445.9	4,438.0	11.1	9.0	-168.81	-60.5	-207.4	636.9	621.1	15.89	40.081		
4,600.0	4,572.8	4,544.4	4,536.3	11.4	9.2	-168.77	-61.8	-213.5	654.4	638.2	16.25	40.278		
4,700.0	4,672.1	4,642.8	4,634.5	11.7	9.4	-168.73	-63.2	-219.5	672.0	655.4	16.60	40.467		
4,800.0	4,771.3	4,741.3	4,732.8	12.0	9.6	-168.69	-64.5	-225.5	689.5	672.5	16.96	40.648		
4,900.0	4,870.6	4,839.7	4,831.1	12.2	9.8	-168.66	-65.8	-231.6	707.0	689.7	17.32	40.822		
5,000.0	4,969.8	4,938.2	4,929.3	12.5	10.0	-168.62	-67.1	-237.6	724.5	706.8	17.68	40.988		

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Woolley-Becky 2A-7H-E168 - Hz - Plan #2												Offset Site Error:	0.0 ft
Survey Program: O-Geolink MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
5,100.0	5,069.1	5,036.6	5,027.6	12.8	10.2	-168.59	-68.5	-243.6	742.0	724.0	18.03	41.148	
5,200.0	5,168.3	5,135.1	5,125.8	13.1	10.4	-168.56	-69.8	-249.6	759.5	741.1	18.39	41.302	
5,300.0	5,267.6	5,233.6	5,224.1	13.3	10.6	-168.53	-71.1	-255.7	777.0	758.3	18.75	41.449	
5,400.0	5,366.8	5,332.0	5,322.4	13.6	10.8	-168.50	-72.4	-261.7	794.5	775.4	19.10	41.592	
5,500.0	5,466.1	5,430.5	5,420.6	13.9	11.0	-168.47	-73.8	-267.7	812.0	792.6	19.46	41.729	
5,600.0	5,565.3	5,528.9	5,518.9	14.2	11.2	-168.45	-75.1	-273.7	829.5	809.7	19.82	41.861	
5,700.0	5,664.6	5,627.4	5,617.1	14.4	11.4	-168.42	-76.4	-279.8	847.0	826.9	20.17	41.988	
5,800.0	5,763.8	5,725.8	5,715.4	14.7	11.6	-168.40	-77.8	-285.8	864.6	844.0	20.53	42.111	
5,900.0	5,863.1	5,824.3	5,813.7	15.0	11.8	-168.38	-79.1	-291.8	882.1	861.2	20.89	42.229	
6,000.0	5,962.3	5,922.7	5,911.9	15.3	12.0	-168.35	-80.4	-297.8	899.6	878.3	21.24	42.344	
6,100.0	6,061.6	6,021.2	6,010.2	15.5	12.2	-168.33	-81.7	-303.9	917.1	895.5	21.60	42.455	
6,200.0	6,160.9	6,119.6	6,108.4	15.8	12.4	-168.31	-83.1	-309.9	934.6	912.6	21.96	42.562	
6,300.0	6,260.1	6,218.1	6,206.7	16.1	12.6	-168.29	-84.4	-315.9	952.1	929.8	22.32	42.666	
6,400.0	6,359.4	6,316.6	6,305.0	16.4	12.8	-168.27	-85.7	-322.0	969.6	946.9	22.67	42.766	
6,500.0	6,458.6	6,415.0	6,403.2	16.6	13.0	-168.26	-87.0	-328.0	987.1	964.1	23.03	42.864	
6,600.0	6,557.9	6,513.5	6,501.5	16.9	13.2	-168.24	-88.4	-334.0	1,004.6	981.3	23.39	42.958	
6,700.0	6,657.1	6,611.9	6,599.7	17.2	13.4	-168.22	-89.7	-340.0	1,022.1	998.4	23.74	43.050	
6,800.0	6,756.4	6,710.4	6,698.0	17.5	13.6	-168.20	-91.0	-346.1	1,039.7	1,015.6	24.10	43.139	
6,900.0	6,855.6	6,808.8	6,796.3	17.7	13.8	-168.19	-92.4	-352.1	1,057.2	1,032.7	24.46	43.225	
6,919.5	6,875.0	6,828.0	6,815.4	17.8	13.9	-168.18	-92.6	-353.3	1,060.6	1,036.1	24.53	43.241	
6,950.0	6,905.3	6,858.1	6,845.5	17.9	13.9	168.89	-93.0	-355.1	1,065.4	1,040.8	24.67	43.189	
7,000.0	6,955.1	6,907.6	6,894.9	17.9	14.0	110.39	-93.7	-358.1	1,071.2	1,046.3	24.86	43.091	
7,050.0	7,004.8	6,957.0	6,944.1	17.9	14.1	81.52	-94.3	-361.2	1,074.2	1,049.2	25.00	42.975	
7,100.0	7,053.8	7,005.8	6,992.9	17.9	14.2	71.25	-95.0	-364.2	1,074.6	1,049.5	25.09	42.836	
7,150.0	7,101.9	7,053.8	7,040.7	17.9	14.3	66.94	-95.7	-367.1	1,072.5	1,047.3	25.14	42.661	
7,200.0	7,148.7	7,100.5	7,087.3	17.8	14.4	65.20	-96.3	-369.9	1,067.9	1,042.7	25.17	42.427	
7,250.0	7,193.8	7,144.9	7,130.0	17.7	14.5	112.65	509.1	-410.0	1,057.9	1,026.0	31.90	33.166	
7,300.0	7,236.9	7,186.9	7,172.0	17.5	14.4	112.05	484.0	-410.0	1,039.3	1,007.9	31.34	33.160	
7,350.0	7,277.7	7,227.7	7,212.8	17.4	14.3	101.97	278.5	-407.8	1,021.2	991.6	29.60	34.503	
7,400.0	7,315.7	7,265.7	7,250.8	17.2	14.1	97.85	194.6	-405.5	1,002.6	973.8	28.76	34.857	
7,450.0	7,350.9	7,300.9	7,286.0	17.1	13.9	96.12	151.6	-403.8	985.5	957.2	28.26	34.873	
7,500.0	7,382.8	7,332.8	7,317.9	16.9	13.7	95.01	120.6	-402.4	970.1	942.3	27.86	34.822	
7,550.0	7,411.3	7,361.3	7,346.4	16.7	13.5	94.11	95.0	-401.1	956.6	929.1	27.53	34.746	
7,600.0	7,436.1	7,386.1	7,371.2	16.6	13.4	93.23	72.6	-399.8	945.0	917.8	27.26	34.672	
7,650.0	7,457.1	7,407.1	7,392.2	16.5	13.3	92.32	52.5	-398.5	935.3	908.3	27.03	34.600	
7,700.0	7,474.0	7,424.0	7,409.1	16.4	13.2	91.33	34.1	-397.3	927.5	900.6	26.87	34.518	
7,750.0	7,486.8	7,436.8	7,421.9	16.4	13.1	90.26	17.1	-395.9	921.5	894.7	26.76	34.436	
7,800.0	7,495.3	7,445.3	7,430.4	16.4	13.0	89.10	1.5	-394.6	917.2	890.5	26.71	34.340	
7,850.0	7,499.5	7,449.5	7,434.6	16.5	13.1	87.86	-12.9	-393.2	914.6	887.9	26.71	34.244	
7,873.6	7,500.0	7,450.0	7,435.1	16.5	13.1	87.25	-19.3	-392.6	913.9	887.1	26.72	34.195	
7,900.0	7,500.0	7,450.0	7,435.1	16.5	13.1	86.53	-25.9	-391.9	913.5	886.8	26.76	34.143	
7,901.3	7,500.0	7,450.0	7,435.1	16.5	13.1	86.49	-26.2	-391.8	913.5	886.8	26.76	34.139	
8,000.0	7,500.0	7,450.0	7,435.1	16.9	15.0	84.18	-44.8	-389.6	917.8	890.8	27.02	33.969	
8,100.0	7,500.0	7,450.0	7,435.1	17.4	15.0	82.54	-56.1	-388.0	931.1	903.6	27.50	33.857	
8,200.0	7,500.0	7,450.0	7,435.1	18.0	14.9	80.90	-65.9	-386.4	953.7	925.6	28.15	33.882	
8,300.0	7,500.0	7,450.0	7,435.1	18.8	14.9	79.61	-72.7	-385.1	985.3	956.3	28.95	34.028	
8,400.0	7,500.0	7,450.0	7,435.1	19.7	14.9	78.77	-76.6	-384.2	1,025.1	995.2	29.91	34.271	
8,500.0	7,500.0	7,450.0	7,435.1	20.7	14.8	77.97	-80.1	-383.4	1,072.4	1,041.5	30.97	34.632	
8,600.0	7,500.0	7,450.0	7,435.1	21.9	14.8	76.63	-85.1	-382.1	1,126.5	1,094.5	32.04	35.161	
8,700.0	7,500.0	7,450.0	7,435.1	23.1	14.8	76.63	-85.1	-382.1	1,186.2	1,152.9	33.32	35.602	
8,800.0	7,500.0	7,450.0	7,435.1	24.3	14.8	76.63	-85.1	-382.1	1,251.0	1,216.3	34.66	36.098	
8,900.0	7,500.0	7,450.0	7,435.1	25.6	14.8	76.63	-85.1	-382.1	1,320.2	1,284.2	36.04	36.631	

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Woolley-Becky 2A-7H-E168 - Hz - Plan #2											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		
9,000.0	7,500.0	7,279.4	7,265.5	27.0	14.8	75.41	-89.0	-380.9	1,392.7	1,355.4	37.29	37.344		
9,100.0	7,500.0	7,273.8	7,259.9	28.4	14.8	75.07	-89.9	-380.5	1,468.6	1,429.9	38.69	37.954		
9,200.0	7,500.0	7,268.7	7,254.9	29.9	14.7	74.77	-90.7	-380.2	1,547.1	1,507.0	40.12	38.560		
9,300.0	7,500.0	7,250.0	7,236.4	31.4	14.7	73.66	-93.2	-379.1	1,628.2	1,586.8	41.43	39.305		
9,400.0	7,500.0	7,250.0	7,236.4	32.9	14.7	73.66	-93.2	-379.1	1,711.0	1,668.0	42.94	39.849		
9,500.0	7,500.0	7,250.0	7,236.4	34.4	14.7	73.66	-93.2	-379.1	1,795.5	1,751.0	44.46	40.380		
9,600.0	7,500.0	7,250.0	7,236.4	36.0	14.7	73.66	-93.2	-379.1	1,881.5	1,835.5	46.01	40.896		
9,700.0	7,500.0	7,250.0	7,236.4	37.5	14.7	73.66	-93.2	-379.1	1,968.9	1,921.3	47.56	41.394		
9,800.0	7,500.0	7,250.0	7,236.4	39.1	14.7	73.66	-93.2	-379.1	2,057.4	2,008.2	49.13	41.875		
9,900.0	7,500.0	7,250.0	7,236.4	40.7	14.7	73.66	-93.2	-379.1	2,146.9	2,096.2	50.71	42.337		
10,000.0	7,500.0	7,250.0	7,236.4	42.3	14.7	73.66	-93.2	-379.1	2,237.3	2,185.0	52.29	42.782		
10,100.0	7,500.0	7,250.0	7,236.4	43.9	14.7	73.66	-93.2	-379.1	2,328.5	2,274.6	53.89	43.209		
10,200.0	7,500.0	7,250.0	7,236.4	45.6	14.7	73.66	-93.2	-379.1	2,420.3	2,364.9	55.49	43.618		
10,300.0	7,500.0	7,250.0	7,236.4	47.2	14.7	73.66	-93.2	-379.1	2,512.8	2,455.7	57.10	44.010		
10,400.0	7,500.0	7,250.0	7,236.4	48.9	14.7	73.66	-93.2	-379.1	2,605.9	2,547.2	58.71	44.387		
10,500.0	7,500.0	7,250.0	7,236.4	50.5	14.7	73.66	-93.2	-379.1	2,699.5	2,639.1	60.33	44.748		
10,600.0	7,500.0	7,250.0	7,236.4	52.2	14.7	73.66	-93.2	-379.1	2,793.5	2,731.5	61.95	45.093		
10,700.0	7,500.0	7,229.3	7,215.9	53.8	14.7	72.44	-95.3	-377.8	2,887.4	2,824.2	63.20	45.689		
10,800.0	7,500.0	7,227.9	7,214.5	55.5	14.7	72.36	-95.4	-377.7	2,982.1	2,917.3	64.79	46.029		
10,900.0	7,500.0	7,226.6	7,213.1	57.2	14.7	72.28	-95.5	-377.7	3,077.2	3,010.8	66.38	46.354		
11,000.0	7,500.0	7,225.3	7,211.9	58.9	14.7	72.20	-95.6	-377.6	3,172.5	3,104.5	67.98	46.667		
11,100.0	7,500.0	7,224.1	7,210.7	60.6	14.7	72.14	-95.7	-377.5	3,268.1	3,198.5	69.58	46.967		
11,200.0	7,500.0	7,223.0	7,209.6	62.3	14.7	72.07	-95.8	-377.4	3,364.0	3,292.8	71.19	47.256		
11,244.1	7,500.0	7,222.5	7,209.1	63.0	14.7	72.04	-95.8	-377.4	3,406.4	3,334.5	71.90	47.380		
11,300.0	7,500.0	7,221.9	7,208.5	64.0	14.7	70.71	-95.9	-377.4	3,460.2	3,387.8	72.45	47.757		
11,400.0	7,500.0	7,200.0	7,186.7	65.7	14.6	66.26	-97.0	-376.0	3,557.8	3,485.5	72.31	49.205		
11,444.1	7,500.0	7,200.0	7,186.7	66.4	14.6	64.56	-97.0	-376.0	3,601.0	3,528.8	72.22	49.864		
11,500.0	7,500.0	7,200.0	7,186.7	67.4	14.6	64.56	-97.0	-376.0	3,655.7	3,582.6	73.08	50.021		
11,600.0	7,500.0	7,200.0	7,186.7	69.1	14.6	64.56	-97.0	-376.0	3,753.8	3,679.1	74.64	50.294		
11,700.0	7,500.0	7,200.0	7,186.7	70.8	14.6	64.56	-97.0	-376.0	3,851.9	3,775.7	76.19	50.556		
11,800.0	7,500.0	7,200.0	7,186.7	72.5	14.6	64.56	-97.0	-376.0	3,950.1	3,872.4	77.75	50.808		
11,900.0	7,500.0	7,200.0	7,186.7	74.2	14.6	64.56	-97.0	-376.0	4,048.5	3,969.2	79.30	51.050		
12,000.0	7,500.0	7,200.0	7,186.7	76.0	14.6	64.56	-97.0	-376.0	4,146.9	4,066.0	80.86	51.282		
12,100.0	7,500.0	7,200.0	7,186.7	77.7	14.6	64.56	-97.0	-376.0	4,245.3	4,162.9	82.42	51.506		
12,194.1	7,500.0	7,200.0	7,186.7	79.3	14.6	64.56	-97.0	-376.0	4,338.1	4,254.2	83.89	51.709		
12,200.0	7,500.0	7,200.0	7,186.7	79.4	14.6	64.85	-97.0	-376.0	4,343.9	4,259.7	84.16	51.617		
12,300.0	7,500.0	7,200.0	7,186.7	81.1	14.6	69.04	-97.0	-376.0	4,442.2	4,354.3	87.93	50.522		
12,393.7	7,500.0	7,200.0	7,186.7	82.7	14.6	71.95	-97.0	-376.0	4,533.8	4,443.1	90.63	50.026		
12,400.0	7,500.0	7,200.0	7,186.7	82.9	14.6	71.95	-97.0	-376.0	4,539.9	4,449.2	90.73	50.037		
12,500.0	7,500.0	7,200.0	7,186.7	84.6	14.6	71.95	-97.0	-376.0	4,637.5	4,545.1	92.38	50.201		
12,600.0	7,500.0	7,200.0	7,186.7	86.3	14.6	71.95	-97.0	-376.0	4,735.1	4,641.1	94.03	50.360		
12,700.0	7,500.0	7,200.0	7,186.7	88.0	14.6	71.95	-97.0	-376.0	4,832.9	4,737.2	95.67	50.514		
12,800.0	7,500.0	7,200.0	7,186.7	89.7	14.6	71.95	-97.0	-376.0	4,930.7	4,833.4	97.32	50.664		
12,900.0	7,500.0	7,200.0	7,186.7	91.5	14.6	71.95	-97.0	-376.0	5,028.6	4,929.6	98.97	50.809		
13,000.0	7,500.0	7,200.0	7,186.7	93.2	14.6	71.95	-97.0	-376.0	5,126.6	5,026.0	100.62	50.949		
13,100.0	7,500.0	7,200.0	7,186.7	94.9	14.6	71.95	-97.0	-376.0	5,224.7	5,122.4	102.27	51.086		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Woolley-Becky 2B-7H-E168 - Hz - Plan #2											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	90.42	-0.4	50.1	50.1				
100.0	100.0	100.0	100.0	0.2	0.2	90.42	-0.4	50.1	50.1	49.8	0.30	164.971	
200.0	200.0	200.0	200.0	0.3	0.3	90.42	-0.4	50.1	50.1	49.4	0.65	76.751	
300.0	300.0	300.0	300.0	0.5	0.5	90.42	-0.4	50.1	50.1	49.1	1.00	50.009	
400.0	400.0	400.5	400.5	0.7	0.7	91.20	-1.0	49.5	49.5	48.2	1.35	36.649	
500.0	500.0	501.0	501.0	0.8	0.9	93.67	-3.1	47.8	47.9	46.2	1.70	28.166	
600.0	600.0	601.3	601.2	1.0	1.0	59.63	-6.4	45.0	45.0	43.0	2.06	21.822	
700.0	700.0	700.6	700.4	1.2	1.2	67.93	-9.9	42.4	42.1	39.6	2.42	17.355	
800.0	799.9	800.0	799.7	1.4	1.4	77.42	-12.2	41.1	40.4	37.7	2.79	14.517	
854.7	854.4	854.4	854.1	1.5	1.5	82.91	-13.1	40.9	40.2	37.2	2.99	13.463 CC	
900.0	899.7	899.6	899.3	1.6	1.6	87.64	-13.6	41.0	40.3	37.2	3.15	12.797 ES	
1,000.0	999.4	999.2	998.9	1.8	1.7	99.43	-14.7	41.3	41.8	38.3	3.53	11.855	
1,100.0	1,098.9	1,098.7	1,098.4	2.0	1.9	112.02	-15.8	41.6	45.5	41.6	3.90	11.671 SF	
1,201.3	1,199.5	1,199.2	1,198.9	2.2	2.1	124.03	-17.0	41.8	52.1	47.9	4.27	12.212	
1,300.0	1,297.5	1,297.1	1,296.8	2.5	2.3	133.49	-18.1	42.1	60.9	56.3	4.62	13.191	
1,400.0	1,396.8	1,396.3	1,396.0	2.7	2.4	140.54	-19.2	42.3	71.0	66.0	4.96	14.313	
1,500.0	1,496.0	1,495.4	1,495.1	3.0	2.6	145.77	-20.3	42.6	81.9	76.6	5.30	15.446	
1,600.0	1,595.3	1,594.6	1,594.3	3.3	2.8	149.76	-21.4	42.9	93.4	87.7	5.65	16.533	
1,700.0	1,694.5	1,693.8	1,693.4	3.5	3.0	152.86	-22.5	43.1	105.1	99.2	5.99	17.554	
1,800.0	1,793.8	1,792.9	1,792.6	3.8	3.1	155.34	-23.7	43.4	117.2	110.8	6.33	18.502	
1,900.0	1,893.0	1,892.1	1,891.7	4.0	3.3	157.35	-24.8	43.6	129.4	122.7	6.68	19.377	
2,000.0	1,992.3	1,991.2	1,990.9	4.3	3.5	159.02	-25.9	43.9	141.7	134.7	7.02	20.183	
2,100.0	2,091.5	2,090.4	2,090.0	4.6	3.7	160.41	-27.0	44.2	154.1	146.8	7.37	20.927	
2,200.0	2,190.8	2,189.6	2,189.2	4.8	3.8	161.60	-28.1	44.4	166.6	158.9	7.71	21.613	
2,300.0	2,290.0	2,288.7	2,288.3	5.1	4.0	162.62	-29.2	44.7	179.2	171.2	8.06	22.246	
2,400.0	2,389.3	2,387.9	2,387.5	5.4	4.2	163.51	-30.4	45.0	191.8	183.4	8.40	22.833	
2,500.0	2,488.5	2,487.0	2,486.6	5.7	4.4	164.29	-31.5	45.2	204.5	195.7	8.75	23.377	
2,600.0	2,587.8	2,586.2	2,585.8	5.9	4.5	164.98	-32.6	45.5	217.2	208.1	9.09	23.883	
2,700.0	2,687.0	2,685.4	2,685.0	6.2	4.7	165.59	-33.7	45.7	229.9	220.5	9.44	24.354	
2,800.0	2,786.3	2,784.5	2,784.1	6.5	4.9	166.14	-34.8	46.0	242.7	232.9	9.79	24.794	
2,900.0	2,885.5	2,883.7	2,883.3	6.7	5.1	166.63	-35.9	46.3	255.4	245.3	10.13	25.205	
3,000.0	2,984.8	2,982.8	2,982.4	7.0	5.2	167.08	-37.1	46.5	268.2	257.7	10.48	25.591	
3,100.0	3,084.0	3,082.0	3,081.6	7.3	5.4	167.48	-38.2	46.8	281.0	270.2	10.83	25.952	
3,200.0	3,183.3	3,181.2	3,180.7	7.6	5.6	167.85	-39.3	47.1	293.8	282.6	11.17	26.293	
3,300.0	3,282.5	3,280.3	3,279.9	7.8	5.7	168.19	-40.4	47.3	306.6	295.1	11.52	26.613	
3,400.0	3,381.8	3,379.5	3,379.0	8.1	5.9	168.50	-41.5	47.6	319.4	307.6	11.87	26.915	
3,500.0	3,481.1	3,478.6	3,478.2	8.4	6.1	168.79	-42.7	47.8	332.3	320.1	12.22	27.201	
3,600.0	3,580.3	3,577.8	3,577.3	8.7	6.3	169.06	-43.8	48.1	345.1	332.6	12.56	27.472	
3,700.0	3,679.6	3,676.9	3,676.5	8.9	6.4	169.31	-44.9	48.4	358.0	345.1	12.91	27.728	
3,800.0	3,778.8	3,776.1	3,775.6	9.2	6.6	169.54	-46.0	48.6	370.8	357.6	13.26	27.971	
3,900.0	3,878.1	3,875.3	3,874.8	9.5	6.8	169.75	-47.1	48.9	383.7	370.1	13.60	28.202	
4,000.0	3,977.3	3,974.4	3,973.9	9.8	7.0	169.95	-48.2	49.2	396.6	382.6	13.95	28.422	
4,100.0	4,076.6	4,073.6	4,073.1	10.0	7.1	170.14	-49.4	49.4	409.4	395.1	14.30	28.631	
4,200.0	4,175.8	4,172.7	4,172.2	10.3	7.3	170.32	-50.5	49.7	422.3	407.7	14.65	28.831	
4,300.0	4,275.1	4,271.9	4,271.4	10.6	7.5	170.48	-51.6	49.9	435.2	420.2	15.00	29.021	
4,400.0	4,374.3	4,371.1	4,370.6	10.9	7.7	170.64	-52.7	50.2	448.1	432.7	15.34	29.203	
4,500.0	4,473.6	4,470.2	4,469.7	11.1	7.8	170.79	-53.8	50.5	460.9	445.3	15.69	29.377	
4,600.0	4,572.8	4,569.4	4,568.9	11.4	8.0	170.93	-54.9	50.7	473.8	457.8	16.04	29.544	
4,700.0	4,672.1	4,668.5	4,668.0	11.7	8.2	171.06	-56.1	51.0	486.7	470.3	16.39	29.704	
4,800.0	4,771.3	4,767.7	4,767.2	12.0	8.4	171.19	-57.2	51.3	499.6	482.9	16.73	29.857	
4,900.0	4,870.6	4,866.9	4,866.3	12.2	8.5	171.30	-58.3	51.5	512.5	495.4	17.08	30.004	
5,000.0	4,969.8	4,966.0	4,965.5	12.5	8.7	171.42	-59.4	51.8	525.4	508.0	17.43	30.145	

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Woolley-Becky 2B-7H-E168 - Hz - Plan #2											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	
5,100.0	5,069.1	5,065.2	5,064.6	12.8	8.9	171.53	-60.5	52.0	538.3	520.5	17.78	30.281	
5,200.0	5,168.3	5,164.3	5,163.8	13.1	9.1	171.63	-61.7	52.3	551.2	533.1	18.12	30.412	
5,300.0	5,267.6	5,263.5	5,262.9	13.3	9.2	171.73	-62.8	52.6	564.1	545.6	18.47	30.538	
5,400.0	5,366.8	5,362.7	5,362.1	13.6	9.4	171.82	-63.9	52.8	577.0	558.2	18.82	30.659	
5,500.0	5,466.1	5,461.8	5,461.2	13.9	9.6	171.91	-65.0	53.1	589.9	570.8	19.17	30.776	
5,600.0	5,565.3	5,561.0	5,560.4	14.2	9.8	172.00	-66.1	53.4	602.8	583.3	19.52	30.889	
5,700.0	5,664.6	5,660.1	5,659.5	14.4	9.9	172.08	-67.2	53.6	615.7	595.9	19.86	30.998	
5,800.0	5,763.8	5,759.3	5,758.7	14.7	10.1	172.16	-68.4	53.9	628.7	608.4	20.21	31.103	
5,900.0	5,863.1	5,858.5	5,857.8	15.0	10.3	172.23	-69.5	54.1	641.6	621.0	20.56	31.204	
6,000.0	5,962.3	5,957.6	5,957.0	15.3	10.4	172.31	-70.6	54.4	654.5	633.6	20.91	31.303	
6,100.0	6,061.6	6,056.8	6,056.1	15.5	10.6	172.38	-71.7	54.7	667.4	646.1	21.26	31.398	
6,200.0	6,160.9	6,155.9	6,155.3	15.8	10.8	172.44	-72.8	54.9	680.3	658.7	21.60	31.490	
6,300.0	6,260.1	6,255.1	6,254.5	16.1	11.0	172.51	-74.0	55.2	693.2	671.3	21.95	31.579	
6,400.0	6,359.4	6,354.3	6,353.6	16.4	11.1	172.57	-75.1	55.5	706.1	683.8	22.30	31.665	
6,500.0	6,458.6	6,453.4	6,452.8	16.6	11.3	172.63	-76.2	55.7	719.1	696.4	22.65	31.749	
6,600.0	6,557.9	6,552.6	6,551.9	16.9	11.5	172.69	-77.3	56.0	732.0	709.0	23.00	31.830	
6,700.0	6,657.1	6,651.7	6,651.1	17.2	11.7	172.75	-78.4	56.2	744.9	721.5	23.34	31.909	
6,800.0	6,756.4	6,750.9	6,750.2	17.5	11.8	172.80	-79.5	56.5	757.8	734.1	23.69	31.986	
6,900.0	6,855.6	7,899.1	7,500.0	17.7	17.2	-137.51	562.8	47.1	770.6	738.6	31.97	24.105	
6,919.5	6,875.0	7,900.9	7,500.0	17.8	17.2	-137.30	564.6	47.1	755.3	723.3	32.06	23.563	
6,950.0	6,905.3	7,902.9	7,500.0	17.9	17.2	-155.97	566.6	47.1	731.8	699.3	32.57	22.472	
7,000.0	6,955.1	7,902.8	7,500.0	17.9	17.2	151.41	566.4	47.1	694.3	661.2	33.14	20.954	
7,050.0	7,004.8	7,898.2	7,500.0	17.9	17.1	126.95	561.9	47.1	658.6	625.2	33.40	19.717	
7,100.0	7,053.8	7,889.3	7,500.0	17.9	17.0	119.58	553.0	47.3	625.1	591.7	33.41	18.712	
7,150.0	7,101.9	7,876.2	7,500.0	17.9	16.9	116.75	539.9	47.5	594.4	561.2	33.20	17.904	
7,200.0	7,148.7	7,858.9	7,500.0	17.8	16.7	115.13	522.6	47.8	566.8	533.9	32.82	17.268	
7,250.0	7,193.8	7,837.6	7,500.0	17.7	16.5	113.71	501.3	48.2	542.6	510.3	32.32	16.788	
7,300.0	7,236.9	7,799.7	7,499.3	17.5	16.0	110.82	463.4	48.9	521.8	490.2	31.59	16.517	
7,350.0	7,277.7	7,756.3	7,495.6	17.4	15.6	107.38	420.2	49.6	503.9	473.1	30.82	16.352	
7,400.0	7,315.7	7,716.9	7,489.3	17.2	15.2	104.20	381.3	50.3	489.1	459.0	30.11	16.245	
7,450.0	7,350.9	7,680.3	7,481.1	17.1	14.9	101.11	345.6	50.9	477.5	448.0	29.46	16.209	
7,500.0	7,382.8	7,645.7	7,471.3	16.9	14.6	98.00	312.5	51.4	469.3	440.4	28.87	16.254	
7,550.0	7,411.3	7,612.7	7,460.1	16.7	14.3	94.84	281.4	51.9	464.5	436.1	28.36	16.380	
7,600.0	7,436.1	7,580.8	7,447.6	16.6	14.1	91.59	252.0	52.4	462.9	435.0	27.90	16.592	
7,600.1	7,436.2	7,580.7	7,447.6	16.6	14.1	91.58	252.0	52.4	462.9	435.0	27.90	16.593	
7,650.0	7,457.1	7,550.0	7,434.0	16.5	13.8	88.29	224.5	52.9	464.4	436.9	27.49	16.895	
7,700.0	7,474.0	7,519.5	7,419.1	16.4	13.7	84.88	197.8	53.3	468.6	441.5	27.12	17.281	
7,750.0	7,486.8	7,489.8	7,403.2	16.4	13.5	81.48	172.8	53.7	475.2	448.4	26.77	17.754	
7,800.0	7,495.3	7,460.6	7,386.3	16.4	13.3	78.09	148.9	54.1	483.8	457.4	26.43	18.305	
7,850.0	7,499.5	7,431.8	7,368.6	16.5	13.2	74.77	126.3	54.4	494.1	468.0	26.11	18.924	
7,873.6	7,500.0	7,418.3	7,359.9	16.5	13.1	73.24	116.0	54.6	499.3	473.4	25.96	19.236	
7,900.0	7,500.0	7,400.0	7,347.6	16.5	13.1	71.86	102.4	54.8	505.8	480.0	25.82	19.592	
8,000.0	7,500.0	7,350.0	7,312.1	16.9	12.9	67.98	67.2	55.3	536.8	511.2	25.60	20.965	
8,100.0	7,500.0	7,311.7	7,282.9	17.4	12.8	64.94	42.4	55.7	578.1	552.4	25.67	22.516	
8,200.0	7,500.0	7,276.3	7,254.5	18.0	12.7	62.12	21.3	56.0	628.8	602.9	25.89	24.286	
8,300.0	7,500.0	7,250.0	7,232.6	18.8	12.6	60.03	6.8	56.2	687.7	661.4	26.32	26.125	
8,400.0	7,500.0	7,220.4	7,207.2	19.7	12.6	57.72	-8.4	56.4	753.3	726.5	26.77	28.136	
8,500.0	7,500.0	7,200.0	7,189.2	20.7	12.5	56.15	-18.0	56.5	824.4	797.0	27.41	30.080	
8,600.0	7,500.0	7,178.9	7,170.3	21.9	12.5	54.57	-27.3	56.6	900.0	872.0	28.07	32.069	
8,700.0	7,500.0	7,150.0	7,143.8	23.1	12.5	52.44	-38.9	56.8	979.4	950.8	28.59	34.259	
8,800.0	7,500.0	7,150.0	7,143.8	24.3	12.5	52.44	-38.9	56.8	1,061.3	1,031.6	29.67	35.770	
8,900.0	7,500.0	7,150.0	7,143.8	25.6	12.5	52.44	-38.9	56.8	1,146.1	1,115.3	30.79	37.221	

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Woolley-Becky 2B-7H-E168 - Hz - Plan #2													Offset Site Error:	0.0 ft
Survey Program: 0-Geolink 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)				
9,000.0	7,500.0	7,122.4	7,118.0	27.0	12.4	50.48	-48.7	56.9	1,232.3	1,200.9	31.34	39.323		
9,100.0	7,500.0	7,100.0	7,096.7	28.4	12.4	48.95	-55.8	56.9	1,320.5	1,288.6	31.97	41.306		
9,200.0	7,500.0	7,100.0	7,096.7	29.9	12.4	48.95	-55.8	56.9	1,409.8	1,376.7	33.11	42.575		
9,300.0	7,500.0	7,100.0	7,096.7	31.4	12.4	48.95	-55.8	56.9	1,500.5	1,466.2	34.28	43.775		
9,400.0	7,500.0	7,100.0	7,096.7	32.9	12.4	48.95	-55.8	56.9	1,592.2	1,556.8	35.46	44.906		
9,500.0	7,500.0	7,079.0	7,076.5	34.4	12.4	47.55	-61.7	57.0	1,684.4	1,648.4	36.07	46.702		
9,600.0	7,500.0	7,072.4	7,070.2	36.0	12.4	47.13	-63.3	57.0	1,777.6	1,740.5	37.06	47.963		
9,700.0	7,500.0	7,050.0	7,048.4	37.5	12.3	45.71	-68.5	57.0	1,871.7	1,834.1	37.58	49.807		
9,800.0	7,500.0	7,050.0	7,048.4	39.1	12.3	45.71	-68.5	57.0	1,965.8	1,927.1	38.74	50.741		
9,900.0	7,500.0	7,050.0	7,048.4	40.7	12.3	45.71	-68.5	57.0	2,060.5	2,020.6	39.91	51.625		
10,000.0	7,500.0	7,050.0	7,048.4	42.3	12.3	45.71	-68.5	57.0	2,155.7	2,114.6	41.09	52.460		
10,100.0	7,500.0	7,050.0	7,048.4	43.9	12.3	45.71	-68.5	57.0	2,251.3	2,209.0	42.28	53.251		
10,200.0	7,500.0	7,050.0	7,048.4	45.6	12.3	45.71	-68.5	57.0	2,347.2	2,303.8	43.47	54.000		
10,300.0	7,500.0	7,050.0	7,048.4	47.2	12.3	45.71	-68.5	57.0	2,443.5	2,398.8	44.66	54.710		
10,400.0	7,500.0	7,050.0	7,048.4	48.9	12.3	45.71	-68.5	57.0	2,540.1	2,494.2	45.86	55.384		
10,500.0	7,500.0	7,050.0	7,048.4	50.5	12.3	45.71	-68.5	57.0	2,636.9	2,589.8	47.07	56.023		
10,600.0	7,500.0	7,028.7	7,027.5	52.2	12.3	44.41	-72.6	57.1	2,733.5	2,686.1	47.41	57.651		
10,700.0	7,500.0	7,025.7	7,024.5	53.8	12.3	44.24	-73.1	57.1	2,830.6	2,782.1	48.48	58.391		
10,800.0	7,500.0	7,022.9	7,021.8	55.5	12.3	44.07	-73.6	57.1	2,927.9	2,878.4	49.54	59.100		
10,900.0	7,500.0	7,000.0	6,999.1	57.2	12.3	42.75	-76.9	57.1	3,025.8	2,976.1	49.74	60.830		
11,000.0	7,500.0	7,000.0	6,999.1	58.9	12.3	42.75	-76.9	57.1	3,123.3	3,072.4	50.90	61.363		
11,100.0	7,500.0	7,000.0	6,999.1	60.6	12.3	42.75	-76.9	57.1	3,221.0	3,168.9	52.06	61.872		
11,200.0	7,500.0	7,000.0	6,999.1	62.3	12.3	42.75	-76.9	57.1	3,318.8	3,265.5	53.22	62.359		
11,244.1	7,500.0	7,000.0	6,999.1	63.0	12.3	42.75	-76.9	57.1	3,362.0	3,308.2	53.73	62.568		
11,300.0	7,500.0	7,000.0	6,999.1	64.0	12.3	38.48	-76.9	57.1	3,416.8	3,365.8	50.92	67.096		
11,400.0	7,500.0	7,000.0	6,999.1	65.7	12.3	29.12	-76.9	57.1	3,515.2	3,471.6	43.61	80.599		
11,444.1	7,500.0	7,000.0	6,999.1	66.4	12.3	24.21	-76.9	57.1	3,558.8	3,519.4	39.41	90.290		
11,500.0	7,500.0	7,000.0	6,999.1	67.4	12.3	24.21	-76.9	57.1	3,614.0	3,574.2	39.81	90.775		
11,600.0	7,500.0	7,000.0	6,999.1	69.1	12.3	24.21	-76.9	57.1	3,712.9	3,672.3	40.53	91.619		
11,700.0	7,500.0	7,000.0	6,999.1	70.8	12.3	24.21	-76.9	57.1	3,811.8	3,770.6	41.24	92.431		
11,800.0	7,500.0	7,000.0	6,999.1	72.5	12.3	24.21	-76.9	57.1	3,910.8	3,868.8	41.95	93.215		
11,900.0	7,500.0	7,000.0	6,999.1	74.2	12.3	24.21	-76.9	57.1	4,009.8	3,967.1	42.67	93.970		
12,000.0	7,500.0	7,000.0	6,999.1	76.0	12.3	24.21	-76.9	57.1	4,108.9	4,065.5	43.39	94.700		
12,100.0	7,500.0	7,000.0	6,999.1	77.7	12.3	24.21	-76.9	57.1	4,208.0	4,163.9	44.11	95.405		
12,194.1	7,500.0	7,000.0	6,999.1	79.3	12.3	24.21	-76.9	57.1	4,301.4	4,256.6	44.78	96.046		
12,200.0	7,500.0	7,000.0	6,999.1	79.4	12.3	25.03	-76.9	57.1	4,307.2	4,261.4	45.76	94.129		
12,300.0	7,500.0	7,000.0	6,999.1	81.1	12.3	37.52	-76.9	57.1	4,406.3	4,345.6	60.68	72.617		
12,393.7	7,500.0	7,000.0	6,999.1	82.7	12.3	46.54	-76.9	57.1	4,498.9	4,427.8	71.07	63.301		
12,400.0	7,500.0	7,000.0	6,999.1	82.9	12.3	46.54	-76.9	57.1	4,505.1	4,433.9	71.15	63.318		
12,500.0	7,500.0	7,000.0	6,999.1	84.6	12.3	46.54	-76.9	57.1	4,603.8	4,531.4	72.41	63.580		
12,600.0	7,500.0	7,000.0	6,999.1	86.3	12.3	46.54	-76.9	57.1	4,702.6	4,628.9	73.67	63.832		
12,700.0	7,500.0	7,000.0	6,999.1	88.0	12.3	46.54	-76.9	57.1	4,801.4	4,726.5	74.93	64.077		
12,800.0	7,500.0	7,000.0	6,999.1	89.7	12.3	46.54	-76.9	57.1	4,900.3	4,824.1	76.19	64.313		
12,900.0	7,500.0	7,000.0	6,999.1	91.5	12.3	46.54	-76.9	57.1	4,999.2	4,921.7	77.46	64.541		
13,000.0	7,500.0	7,000.0	6,999.1	93.2	12.3	46.54	-76.9	57.1	5,098.1	5,019.4	78.72	64.763		
13,100.0	7,500.0	7,000.0	6,999.1	94.9	12.3	46.54	-76.9	57.1	5,197.1	5,117.1	79.98	64.977		



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Woolley-Becky 2C-7H-E168 - Hz - Plan #4												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	90.35	-0.4	60.2	60.2				
100.0	100.0	100.0	100.0	0.2	0.2	90.35	-0.4	60.2	60.2	59.9	0.30	198.148	
200.0	200.0	200.0	200.0	0.3	0.3	90.35	-0.4	60.2	60.2	59.5	0.65	92.187	
300.0	300.0	300.0	300.0	0.5	0.5	90.35	-0.4	60.2	60.2	59.2	1.00	60.066	
400.0	400.0	400.0	400.0	0.7	0.7	90.35	-0.4	60.2	60.2	58.8	1.35	44.545	
500.0	500.0	500.0	500.0	0.8	0.8	90.35	-0.4	60.2	60.2	58.5	1.70	35.398	
600.0	600.0	600.0	600.0	1.0	1.0	51.52	-0.4	60.2	59.6	57.6	2.05	29.098	
700.0	700.0	698.9	698.9	1.2	1.2	53.59	-0.5	61.0	58.9	56.5	2.40	24.559	
739.7	739.6	738.2	738.2	1.3	1.3	54.82	-0.6	61.8	58.8	56.3	2.54	23.177 CC	
800.0	799.9	797.9	797.8	1.4	1.4	57.12	-0.8	63.6	59.0	56.3	2.75	21.446 ES	
900.0	899.7	896.7	896.6	1.6	1.6	61.94	-1.3	67.8	60.2	57.1	3.11	19.346	
1,000.0	999.4	996.5	996.2	1.8	1.7	67.92	-1.9	72.9	62.1	58.6	3.49	17.778	
1,100.0	1,098.9	1,096.1	1,095.7	2.0	1.9	74.99	-2.5	78.1	64.0	60.2	3.89	16.471	
1,201.3	1,199.5	1,197.0	1,196.4	2.2	2.1	83.09	-3.1	83.3	66.8	62.5	4.32	15.466	
1,300.0	1,297.5	1,295.1	1,294.5	2.5	2.3	90.98	-3.7	88.3	70.6	65.9	4.74	14.885	
1,400.0	1,396.8	1,394.6	1,393.8	2.7	2.5	98.03	-4.3	93.5	75.7	70.6	5.18	14.627	
1,500.0	1,496.0	1,494.1	1,493.1	3.0	2.7	104.11	-4.9	98.6	81.9	76.3	5.61	14.597	
1,600.0	1,595.3	1,593.5	1,592.5	3.3	2.9	109.30	-5.5	103.7	88.8	82.7	6.03	14.715	
1,700.0	1,694.5	1,693.0	1,691.8	3.5	3.1	113.72	-6.1	108.9	96.3	89.9	6.45	14.927	
1,800.0	1,793.8	1,792.4	1,791.1	3.8	3.3	117.48	-6.7	114.0	104.3	97.5	6.87	15.196	
1,900.0	1,893.0	1,891.9	1,890.4	4.0	3.5	120.69	-7.3	119.1	112.7	105.5	7.28	15.496	
2,000.0	1,992.3	1,991.4	1,989.8	4.3	3.6	123.45	-7.9	124.3	121.5	113.8	7.68	15.811	
2,100.0	2,091.5	2,090.8	2,089.1	4.6	3.8	125.84	-8.5	129.4	130.4	122.3	8.08	16.130	
2,200.0	2,190.8	2,190.3	2,188.4	4.8	4.0	127.92	-9.1	134.5	139.6	131.1	8.49	16.446	
2,300.0	2,290.0	2,289.8	2,287.7	5.1	4.2	129.74	-9.7	139.6	148.9	140.0	8.88	16.755	
2,400.0	2,389.3	2,389.2	2,387.1	5.4	4.4	131.34	-10.3	144.8	158.3	149.0	9.28	17.055	
2,500.0	2,488.5	2,488.7	2,486.4	5.7	4.6	132.77	-10.9	149.9	167.9	158.2	9.68	17.343	
2,600.0	2,587.8	2,588.1	2,585.7	5.9	4.8	134.04	-11.5	155.0	177.5	167.4	10.07	17.619	
2,700.0	2,687.0	2,687.6	2,685.0	6.2	5.0	135.18	-12.1	160.2	187.2	176.7	10.47	17.883	
2,800.0	2,786.3	2,787.1	2,784.4	6.5	5.2	136.20	-12.7	165.3	197.0	186.1	10.86	18.135	
2,900.0	2,885.5	2,886.5	2,883.7	6.7	5.4	137.13	-13.4	170.4	206.8	195.6	11.26	18.375	
3,000.0	2,984.8	2,986.0	2,983.0	7.0	5.6	137.98	-14.0	175.5	216.7	205.1	11.65	18.604	
3,100.0	3,084.0	3,085.4	3,082.4	7.3	5.8	138.75	-14.6	180.7	226.7	214.6	12.04	18.821	
3,200.0	3,183.3	3,184.9	3,181.7	7.6	6.0	139.45	-15.2	185.8	236.6	224.2	12.44	19.029	
3,300.0	3,282.5	3,284.4	3,281.0	7.8	6.2	140.10	-15.8	190.9	246.7	233.8	12.83	19.227	
3,400.0	3,381.8	3,383.8	3,380.3	8.1	6.4	140.70	-16.4	196.1	256.7	243.5	13.22	19.415	
3,500.0	3,481.1	3,483.3	3,479.7	8.4	6.6	141.26	-17.0	201.2	266.7	253.1	13.61	19.595	
3,600.0	3,580.3	3,582.7	3,579.0	8.7	6.8	141.77	-17.6	206.3	276.8	262.8	14.00	19.766	
3,700.0	3,679.6	3,682.2	3,678.3	8.9	7.0	142.25	-18.2	211.5	286.9	272.5	14.40	19.930	
3,800.0	3,778.8	3,781.7	3,777.6	9.2	7.1	142.69	-18.8	216.6	297.0	282.3	14.79	20.086	
3,900.0	3,878.1	3,881.1	3,877.0	9.5	7.3	143.11	-19.4	221.7	307.2	292.0	15.18	20.236	
4,000.0	3,977.3	3,980.6	3,976.3	9.8	7.5	143.49	-20.0	226.8	317.3	301.8	15.57	20.379	
4,100.0	4,076.6	4,080.1	4,075.6	10.0	7.7	143.86	-20.6	232.0	327.5	311.5	15.96	20.516	
4,200.0	4,175.8	4,179.5	4,174.9	10.3	7.9	144.20	-21.2	237.1	337.7	321.3	16.35	20.647	
4,300.0	4,275.1	4,279.0	4,274.3	10.6	8.1	144.52	-21.8	242.2	347.9	331.1	16.75	20.773	
4,400.0	4,374.3	4,378.4	4,373.6	10.9	8.3	144.83	-22.4	247.4	358.1	340.9	17.14	20.894	
4,500.0	4,473.6	4,477.9	4,472.9	11.1	8.5	145.12	-23.0	252.5	368.3	350.8	17.53	21.010	
4,600.0	4,572.8	4,577.4	4,572.3	11.4	8.7	145.39	-23.6	257.6	378.5	360.6	17.92	21.121	
4,700.0	4,672.1	4,676.8	4,671.6	11.7	8.9	145.65	-24.2	262.7	388.7	370.4	18.31	21.228	
4,800.0	4,771.3	4,776.3	4,770.9	12.0	9.1	145.89	-24.8	267.9	399.0	380.3	18.70	21.331	
4,900.0	4,870.6	4,875.7	4,870.2	12.2	9.3	146.12	-25.4	273.0	409.2	390.1	19.09	21.431	
5,000.0	4,969.8	4,975.2	4,969.6	12.5	9.5	146.34	-26.0	278.1	419.4	400.0	19.49	21.526	

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Woolley-Becky 2C-7H-E168 - Hz - Plan #4												Offset Site Error:	0.0 ft
Survey Program: O-Geolink MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
5,100.0	5,069.1	5,074.7	5,068.9	12.8	9.7	146.55	-26.6	283.3	429.7	409.8	19.88	21.618	
5,200.0	5,168.3	5,174.1	5,168.2	13.1	9.9	146.75	-27.3	288.4	440.0	419.7	20.27	21.707	
5,300.0	5,267.6	5,273.6	5,267.5	13.3	10.1	146.94	-27.9	293.5	450.2	429.6	20.66	21.793	
5,400.0	5,366.8	5,373.0	5,366.9	13.6	10.3	147.13	-28.5	298.6	460.5	439.4	21.05	21.876	
5,500.0	5,466.1	5,472.5	5,466.2	13.9	10.5	147.30	-29.1	303.8	470.8	449.3	21.44	21.956	
5,600.0	5,565.3	5,572.0	5,565.5	14.2	10.7	147.47	-29.7	308.9	481.0	459.2	21.83	22.033	
5,700.0	5,664.6	5,671.4	5,664.9	14.4	10.9	147.63	-30.3	314.0	491.3	469.1	22.22	22.108	
5,800.0	5,763.8	5,770.9	5,764.2	14.7	11.1	147.78	-30.9	319.2	501.6	479.0	22.61	22.180	
5,900.0	5,863.1	5,870.3	5,863.5	15.0	11.2	147.93	-31.5	324.3	511.9	488.9	23.01	22.251	
6,000.0	5,962.3	5,969.8	5,962.8	15.3	11.4	148.07	-32.1	329.4	522.2	498.8	23.40	22.318	
6,100.0	6,061.6	6,069.3	6,062.2	15.5	11.6	148.21	-32.7	334.6	532.5	508.7	23.79	22.384	
6,200.0	6,160.9	6,168.7	6,161.5	15.8	11.8	148.34	-33.3	339.7	542.8	518.6	24.18	22.448	
6,300.0	6,260.1	6,268.2	6,260.8	16.1	12.0	148.47	-33.9	344.8	553.1	528.5	24.57	22.510	
6,400.0	6,359.4	6,367.7	6,360.1	16.4	12.2	148.59	-34.5	349.9	563.4	538.4	24.96	22.570	
6,500.0	6,458.6	6,467.1	6,459.5	16.6	12.4	148.71	-35.1	355.1	573.7	548.3	25.35	22.628	
6,600.0	6,557.9	6,566.6	6,558.8	16.9	12.6	148.82	-35.7	360.2	584.0	558.2	25.74	22.685	
6,700.0	6,657.1	6,666.0	6,658.1	17.2	12.8	148.93	-36.3	365.3	594.3	568.1	26.13	22.740	
6,800.0	6,756.4	6,765.5	6,757.4	17.5	13.0	149.03	-36.9	370.5	604.6	578.1	26.53	22.793	
6,900.0	6,855.6	6,865.0	6,856.8	17.7	13.2	149.14	-37.5	375.6	614.9	588.0	26.92	22.845	
6,919.5	6,875.0	6,884.3	6,876.1	17.8	13.2	149.16	-37.6	376.6	616.9	589.9	26.99	22.855	
6,950.0	6,905.3	6,914.8	6,906.5	17.9	13.3	126.58	-37.8	378.2	619.3	592.1	27.14	22.813	
7,000.0	6,955.1	6,964.7	6,956.4	17.9	13.4	68.43	-38.1	380.7	619.6	592.4	27.27	22.726	
7,050.0	7,004.8	7,014.5	7,006.1	17.9	13.5	39.66	-38.4	383.3	615.7	588.5	27.23	22.616	
7,100.0	7,053.8	7,063.8	7,055.3	17.9	13.6	29.25	-38.7	385.8	607.5	580.5	27.02	22.481	
7,150.0	7,101.9	7,112.1	7,103.5	17.9	13.7	24.61	-39.0	388.3	595.2	568.5	26.67	22.316	
7,200.0	7,148.7	7,159.1	7,150.5	17.8	13.8	22.37	-39.3	390.8	578.7	552.5	26.17	22.114	
7,250.0	7,193.8	7,204.5	7,195.2	17.7	15.1	55.76	168.8	410.7	543.4	518.2	25.17	21.588	
7,300.0	7,236.9	7,247.6	7,237.6	17.5	15.4	89.61	209.8	411.6	495.1	466.7	28.40	17.434	
7,350.0	7,277.7	7,288.4	7,278.7	17.4	15.3	106.37	207.5	411.6	446.7	417.1	29.62	15.084	
7,400.0	7,315.7	7,326.4	7,316.8	17.2	15.3	115.24	195.8	411.3	398.9	369.4	29.44	13.550	
7,450.0	7,350.9	7,361.6	7,351.5	17.1	15.2	119.94	180.9	411.0	351.8	323.1	28.76	12.233	
7,500.0	7,382.8	7,393.5	7,393.5	16.9	15.1	121.98	164.7	410.6	306.0	278.0	27.97	10.937	
7,550.0	7,411.3	7,422.0	7,422.0	16.7	15.0	122.00	148.1	410.2	261.6	234.4	27.26	9.598	
7,600.0	7,436.1	7,446.8	7,446.8	16.6	14.9	120.23	131.5	409.7	219.6	192.8	26.74	8.210	
7,650.0	7,457.1	7,467.8	7,467.8	16.5	14.8	116.65	115.3	409.1	180.9	154.4	26.49	6.828	
7,700.0	7,474.0	7,484.7	7,484.7	16.4	14.7	111.13	99.5	408.5	147.7	121.1	26.52	5.567	
7,750.0	7,486.8	7,497.5	7,497.5	16.4	14.6	103.50	84.3	407.8	123.4	96.7	26.73	4.618	
7,800.0	7,495.3	7,506.0	7,506.0	16.4	14.5	93.83	69.8	407.0	113.0	86.2	26.85	4.209	
7,806.6	7,496.1	7,532.3	7,500.8	16.4	14.5	92.42	67.9	406.9	112.9	86.0	26.84	4.204 SF	
7,850.0	7,499.5	7,511.4	7,483.6	16.5	14.5	82.65	56.0	406.3	118.9	92.4	26.54	4.480	
7,873.6	7,500.0	7,500.0	7,474.1	16.5	14.5	77.19	49.8	405.9	126.6	100.4	26.18	4.836	
7,900.0	7,500.0	7,487.5	7,463.5	16.5	14.4	72.31	43.3	405.4	138.2	112.4	25.76	5.365	
8,000.0	7,500.0	7,450.0	7,430.8	16.9	14.3	59.15	24.9	404.1	201.7	177.3	24.31	8.296	
8,100.0	7,500.0	7,416.1	7,400.3	17.4	14.3	49.61	10.2	402.8	281.0	257.9	23.11	12.156	
8,200.0	7,500.0	7,400.0	7,385.5	18.0	14.2	45.83	3.9	402.1	367.5	344.6	22.95	16.011	
8,300.0	7,500.0	7,370.3	7,357.7	18.8	14.2	39.94	-6.8	400.9	457.4	435.1	22.34	20.475	
8,400.0	7,500.0	7,350.0	7,338.5	19.7	14.1	36.62	-13.2	400.0	549.8	527.6	22.24	24.719	
8,500.0	7,500.0	7,350.0	7,338.5	20.7	14.1	36.62	-13.2	400.0	643.9	621.0	22.93	28.081	
8,600.0	7,500.0	7,326.4	7,315.9	21.9	14.1	33.33	-19.8	398.9	738.7	715.9	22.79	32.412	
8,700.0	7,500.0	7,315.8	7,305.6	23.1	14.1	32.02	-22.4	398.5	834.6	811.4	23.13	36.074	
8,800.0	7,500.0	7,300.0	7,290.3	24.3	14.0	30.24	-26.0	397.7	931.1	907.7	23.32	39.927	
8,900.0	7,500.0	7,300.0	7,290.3	25.6	14.0	30.24	-26.0	397.7	1,027.9	1,003.9	24.02	42.795	

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Woolley-Becky 2C-7H-E168 - Hz - Plan #4											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	
9,000.0	7,500.0	7,300.0	7,290.3	27.0	14.0	30.24	-26.0	397.7	1,125.3	1,100.6	24.74	45.485	
9,100.0	7,500.0	7,300.0	7,290.3	28.4	14.0	30.24	-26.0	397.7	1,223.2	1,197.7	25.48	48.007	
9,200.0	7,500.0	7,279.1	7,269.8	29.9	14.0	28.17	-30.1	396.7	1,320.8	1,295.4	25.44	51.915	
9,300.0	7,500.0	7,274.0	7,264.8	31.4	14.0	27.70	-31.0	396.5	1,418.9	1,393.0	25.97	54.636	
9,400.0	7,500.0	7,269.3	7,260.2	32.9	14.0	27.29	-31.8	396.3	1,517.2	1,490.7	26.51	57.225	
9,500.0	7,500.0	7,250.0	7,241.1	34.4	14.0	25.71	-34.6	395.3	1,616.0	1,589.5	26.53	60.915	
9,600.0	7,500.0	7,250.0	7,241.1	36.0	14.0	25.71	-34.6	395.3	1,714.5	1,687.3	27.22	62.997	
9,700.0	7,500.0	7,250.0	7,241.1	37.5	14.0	25.71	-34.6	395.3	1,813.2	1,785.2	27.91	64.966	
9,800.0	7,500.0	7,250.0	7,241.1	39.1	14.0	25.71	-34.6	395.3	1,912.0	1,883.4	28.61	66.829	
9,900.0	7,500.0	7,250.0	7,241.1	40.7	14.0	25.71	-34.6	395.3	2,010.9	1,981.6	29.32	68.594	
10,000.0	7,500.0	7,250.0	7,241.1	42.3	14.0	25.71	-34.6	395.3	2,109.9	2,079.9	30.03	70.268	
10,100.0	7,500.0	7,250.0	7,241.1	43.9	14.0	25.71	-34.6	395.3	2,209.0	2,178.3	30.74	71.856	
10,200.0	7,500.0	7,250.0	7,241.1	45.6	14.0	25.71	-34.6	395.3	2,308.2	2,276.7	31.46	73.364	
10,300.0	7,500.0	7,250.0	7,241.1	47.2	14.0	25.71	-34.6	395.3	2,407.5	2,375.3	32.19	74.798	
10,400.0	7,500.0	7,250.0	7,241.1	48.9	14.0	25.71	-34.6	395.3	2,506.8	2,473.9	32.91	76.163	
10,500.0	7,500.0	7,250.0	7,241.1	50.5	14.0	25.71	-34.6	395.3	2,606.1	2,572.5	33.64	77.463	
10,600.0	7,500.0	7,250.0	7,241.1	52.2	14.0	25.71	-34.6	395.3	2,705.5	2,671.2	34.38	78.702	
10,700.0	7,500.0	7,250.0	7,241.1	53.8	14.0	25.71	-34.6	395.3	2,805.0	2,769.9	35.11	79.885	
10,800.0	7,500.0	7,250.0	7,241.1	55.5	14.0	25.71	-34.6	395.3	2,904.5	2,868.6	35.85	81.014	
10,900.0	7,500.0	7,250.0	7,241.1	57.2	14.0	25.71	-34.6	395.3	3,004.0	2,967.4	36.59	82.094	
11,000.0	7,500.0	7,228.8	7,220.0	58.9	13.9	24.18	-37.0	394.3	3,103.1	3,067.0	36.08	86.014	
11,100.0	7,500.0	7,227.4	7,218.7	60.6	13.9	24.09	-37.1	394.2	3,202.6	3,165.9	36.70	87.261	
11,200.0	7,500.0	7,226.1	7,217.3	62.3	13.9	24.00	-37.2	394.2	3,302.2	3,264.9	37.33	88.463	
11,244.1	7,500.0	7,225.5	7,216.8	63.0	13.9	23.96	-37.3	394.1	3,346.1	3,308.5	37.61	88.979	
11,300.0	7,500.0	7,224.8	7,216.1	64.0	13.9	12.00	-37.3	394.1	3,401.8	3,373.3	28.47	119.493	
11,400.0	7,500.0	7,223.6	7,214.9	65.7	13.9	-11.82	-37.4	394.0	3,501.4	3,472.3	29.16	120.060	
11,444.1	7,500.0	7,223.1	7,214.4	66.4	13.9	-21.71	-37.5	394.0	3,545.4	3,507.7	37.70	94.033	
11,500.0	7,500.0	7,222.5	7,213.8	67.4	13.9	-21.66	-37.5	394.0	3,601.1	3,563.0	38.02	94.719	
11,600.0	7,500.0	7,200.0	7,191.4	69.1	13.9	-20.02	-38.9	392.9	3,701.2	3,664.1	37.06	99.865	
11,700.0	7,500.0	7,200.0	7,191.4	70.8	13.9	-20.02	-38.9	392.9	3,800.8	3,763.1	37.66	100.918	
11,800.0	7,500.0	7,200.0	7,191.4	72.5	13.9	-20.02	-38.9	392.9	3,900.4	3,862.2	38.26	101.935	
11,900.0	7,500.0	7,200.0	7,191.4	74.2	13.9	-20.02	-38.9	392.9	4,000.1	3,961.2	38.87	102.918	
12,000.0	7,500.0	7,200.0	7,191.4	76.0	13.9	-20.02	-38.9	392.9	4,099.7	4,060.3	39.47	103.869	
12,100.0	7,500.0	7,200.0	7,191.4	77.7	13.9	-20.02	-38.9	392.9	4,199.4	4,159.4	40.08	104.789	
12,194.1	7,500.0	7,200.0	7,191.4	79.3	13.9	-20.02	-38.9	392.9	4,293.3	4,252.6	40.65	105.628	
12,200.0	7,500.0	7,200.0	7,191.4	79.4	13.9	-18.57	-38.9	392.9	4,299.1	4,260.0	39.09	109.986	
12,300.0	7,500.0	7,200.0	7,191.4	81.1	13.9	8.79	-38.9	392.9	4,398.9	4,369.1	29.75	147.868	
12,393.7	7,500.0	7,200.0	7,191.4	82.7	13.9	31.98	-38.9	392.9	4,492.3	4,437.2	55.14	81.478	
12,400.0	7,500.0	7,200.0	7,191.4	82.9	13.9	31.98	-38.9	392.9	4,498.6	4,443.4	55.19	81.506	
12,500.0	7,500.0	7,200.0	7,191.4	84.6	13.9	31.98	-38.9	392.9	4,598.3	4,542.1	56.12	81.940	
12,600.0	7,500.0	7,200.0	7,191.4	86.3	13.9	31.98	-38.9	392.9	4,698.0	4,640.9	57.04	82.359	
12,700.0	7,500.0	7,200.0	7,191.4	88.0	13.9	31.98	-38.9	392.9	4,797.7	4,739.7	57.97	82.764	
12,800.0	7,500.0	7,200.0	7,191.4	89.7	13.9	31.98	-38.9	392.9	4,897.4	4,838.5	58.89	83.156	
12,900.0	7,500.0	7,200.0	7,191.4	91.5	13.9	31.98	-38.9	392.9	4,997.1	4,937.3	59.82	83.534	
13,000.0	7,500.0	7,200.0	7,191.4	93.2	13.9	31.98	-38.9	392.9	5,096.8	5,036.1	60.75	83.901	
13,100.0	7,500.0	7,200.0	7,191.4	94.9	13.9	31.98	-38.9	392.9	5,196.6	5,134.9	61.68	84.256	

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Woolley-Becky 2D-7H-E168 - Hz - Plan #4													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	90.30	-0.4	70.0	70.0					
100.0	100.0	100.0	100.0	0.2	0.2	90.30	-0.4	70.0	70.0	69.7	0.30	230.404		
200.0	200.0	200.0	200.0	0.3	0.3	90.30	-0.4	70.0	70.0	69.3	0.65	107.193		
300.0	300.0	300.0	300.0	0.5	0.5	90.30	-0.4	70.0	70.0	69.0	1.00	69.844		
400.0	400.0	400.0	400.0	0.7	0.7	90.30	-0.4	70.0	70.0	68.6	1.35	51.796		
500.0	500.0	500.0	500.0	0.8	0.8	90.30	-0.4	70.0	70.0	68.3	1.70	41.160 CC		
600.0	600.0	598.8	598.8	1.0	1.0	51.44	-0.5	70.8	70.3	68.2	2.05	34.332 ES		
700.0	700.0	697.5	697.5	1.2	1.2	53.25	-0.7	73.4	71.3	68.9	2.40	29.744		
800.0	799.9	796.2	796.1	1.4	1.4	56.16	-1.2	77.6	73.0	70.3	2.75	26.577		
900.0	899.7	894.8	894.5	1.6	1.6	59.97	-1.9	83.5	75.9	72.7	3.11	24.398		
1,000.0	999.4	993.2	992.6	1.8	1.8	64.44	-2.7	91.0	79.9	76.4	3.48	22.948		
1,100.0	1,098.9	1,092.3	1,091.3	2.0	2.0	69.37	-3.7	100.0	85.1	81.2	3.88	21.953		
1,201.3	1,199.5	1,193.1	1,191.7	2.2	2.2	74.83	-4.8	109.2	90.6	86.3	4.31	21.040		
1,300.0	1,297.5	1,291.3	1,289.4	2.5	2.4	80.06	-5.8	118.1	96.5	91.7	4.74	20.353		
1,400.0	1,396.8	1,390.7	1,388.4	2.7	2.6	84.72	-6.8	127.2	103.2	98.0	5.19	19.868		
1,500.0	1,496.0	1,490.1	1,487.4	3.0	2.9	88.79	-7.8	136.3	110.5	104.8	5.65	19.537		
1,600.0	1,595.3	1,589.6	1,586.5	3.3	3.1	92.35	-8.8	145.3	118.3	112.1	6.12	19.318		
1,700.0	1,694.5	1,689.0	1,685.5	3.5	3.3	95.45	-9.8	154.4	126.4	119.9	6.59	19.179		
1,800.0	1,793.8	1,788.5	1,784.5	3.8	3.5	98.18	-10.8	163.5	135.0	127.9	7.07	19.099		
1,900.0	1,893.0	1,887.9	1,883.5	4.0	3.8	100.57	-11.9	172.5	143.7	136.2	7.54	19.061		
2,000.0	1,992.3	1,987.4	1,982.6	4.3	4.0	102.69	-12.9	181.6	152.7	144.7	8.02	19.054		
2,100.0	2,091.5	2,086.8	2,081.6	4.6	4.2	104.57	-13.9	190.7	161.9	153.4	8.49	19.069		
2,200.0	2,190.8	2,186.3	2,180.6	4.8	4.5	106.25	-14.9	199.7	171.2	162.3	8.97	19.100		
2,300.0	2,290.0	2,285.7	2,279.6	5.1	4.7	107.76	-15.9	208.8	180.7	171.3	9.44	19.142		
2,400.0	2,389.3	2,385.1	2,378.7	5.4	4.9	109.11	-16.9	217.9	190.3	180.4	9.91	19.192		
2,500.0	2,488.5	2,484.6	2,477.7	5.7	5.2	110.33	-18.0	227.0	199.9	189.6	10.39	19.247		
2,600.0	2,587.8	2,584.0	2,576.7	5.9	5.4	111.44	-19.0	236.0	209.7	198.8	10.86	19.306		
2,700.0	2,687.0	2,683.5	2,675.7	6.2	5.6	112.46	-20.0	245.1	219.5	208.2	11.33	19.367		
2,800.0	2,786.3	2,782.9	2,774.8	6.5	5.9	113.38	-21.0	254.2	229.4	217.6	11.81	19.429		
2,900.0	2,885.5	2,882.4	2,873.8	6.7	6.1	114.23	-22.0	263.2	239.4	227.1	12.28	19.491		
3,000.0	2,984.8	2,981.8	2,972.8	7.0	6.3	115.01	-23.0	272.3	249.3	236.6	12.75	19.553		
3,100.0	3,084.0	3,081.3	3,071.8	7.3	6.6	115.73	-24.1	281.4	259.4	246.1	13.22	19.614		
3,200.0	3,183.3	3,180.7	3,170.9	7.6	6.8	116.40	-25.1	290.4	269.4	255.7	13.69	19.674		
3,300.0	3,282.5	3,280.1	3,269.9	7.8	7.0	117.01	-26.1	299.5	279.5	265.4	14.17	19.733		
3,400.0	3,381.8	3,379.6	3,368.9	8.1	7.3	117.59	-27.1	308.6	289.7	275.0	14.64	19.791		
3,500.0	3,481.1	3,479.0	3,467.9	8.4	7.5	118.13	-28.1	317.6	299.8	284.7	15.11	19.847		
3,600.0	3,580.3	3,578.5	3,567.0	8.7	7.7	118.63	-29.1	326.7	310.0	294.4	15.58	19.902		
3,700.0	3,679.6	3,677.9	3,666.0	8.9	8.0	119.10	-30.2	335.8	320.2	304.2	16.05	19.955		
3,800.0	3,778.8	3,777.4	3,765.0	9.2	8.2	119.54	-31.2	344.8	330.5	313.9	16.52	20.006		
3,900.0	3,878.1	3,876.8	3,864.0	9.5	8.4	119.95	-32.2	353.9	340.7	323.7	16.99	20.056		
4,000.0	3,977.3	3,976.3	3,963.1	9.8	8.7	120.34	-33.2	363.0	351.0	333.5	17.46	20.105		
4,100.0	4,076.6	4,075.7	4,062.1	10.0	8.9	120.71	-34.2	372.0	361.2	343.3	17.93	20.152		
4,200.0	4,175.8	4,175.1	4,161.1	10.3	9.1	121.06	-35.2	381.1	371.5	353.1	18.39	20.197		
4,300.0	4,275.1	4,274.6	4,260.1	10.6	9.4	121.39	-36.3	390.2	381.8	363.0	18.86	20.241		
4,400.0	4,374.3	4,374.0	4,359.2	10.9	9.6	121.70	-37.3	399.3	392.1	372.8	19.33	20.284		
4,500.0	4,473.6	4,473.5	4,458.2	11.1	9.9	121.99	-38.3	408.3	402.5	382.7	19.80	20.325		
4,600.0	4,572.8	4,572.9	4,557.2	11.4	10.1	122.27	-39.3	417.4	412.8	392.5	20.27	20.365		
4,700.0	4,672.1	4,672.4	4,656.3	11.7	10.3	122.54	-40.3	426.5	423.1	402.4	20.74	20.404		
4,800.0	4,771.3	4,771.8	4,755.3	12.0	10.6	122.79	-41.3	435.5	433.5	412.3	21.21	20.441		
4,900.0	4,870.6	4,871.3	4,854.3	12.2	10.8	123.04	-42.3	444.6	443.9	422.2	21.68	20.478		
5,000.0	4,969.8	4,970.7	4,953.3	12.5	11.0	123.27	-43.4	453.7	454.2	432.1	22.14	20.513		
5,100.0	5,069.1	5,070.2	5,052.4	12.8	11.3	123.49	-44.4	462.7	464.6	442.0	22.61	20.547		

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Woolley-Becky 2D-7H-E168 - Hz - Plan #4													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		
5,200.0	5,168.3	5,169.6	5,151.4	13.1	11.5	123.70	-45.4	471.8	475.0	451.9	23.08	20.580		
5,300.0	5,267.6	5,269.0	5,250.4	13.3	11.7	123.90	-46.4	480.9	485.4	461.8	23.55	20.612		
5,400.0	5,366.8	5,368.5	5,349.4	13.6	12.0	124.10	-47.4	489.9	495.8	471.8	24.02	20.643		
5,500.0	5,466.1	5,467.9	5,448.5	13.9	12.2	124.28	-48.4	499.0	506.2	481.7	24.48	20.674		
5,600.0	5,565.3	5,567.4	5,547.5	14.2	12.4	124.46	-49.5	508.1	516.6	491.6	24.95	20.703		
5,700.0	5,664.6	5,666.8	5,646.5	14.4	12.7	124.63	-50.5	517.1	527.0	501.6	25.42	20.732		
5,800.0	5,763.8	5,766.3	5,745.5	14.7	12.9	124.80	-51.5	526.2	537.4	511.5	25.89	20.759		
5,900.0	5,863.1	5,865.7	5,844.6	15.0	13.2	124.95	-52.5	535.3	547.8	521.5	26.35	20.786		
6,000.0	5,962.3	5,965.2	5,943.6	15.3	13.4	125.11	-53.5	544.3	558.2	531.4	26.82	20.813		
6,100.0	6,061.6	6,064.6	6,042.6	15.5	13.6	125.25	-54.5	553.4	568.7	541.4	27.29	20.838		
6,200.0	6,160.9	6,164.0	6,141.6	15.8	13.9	125.39	-55.6	562.5	579.1	551.3	27.76	20.863		
6,300.0	6,260.1	6,263.5	6,240.7	16.1	14.1	125.53	-56.6	571.5	589.5	561.3	28.22	20.887		
6,400.0	6,359.4	6,362.9	6,339.7	16.4	14.3	125.66	-57.6	580.6	600.0	571.3	28.69	20.910		
6,500.0	6,458.6	6,462.4	6,438.7	16.6	14.6	125.79	-58.6	589.7	610.4	581.2	29.16	20.933		
6,600.0	6,557.9	6,561.8	6,537.7	16.9	14.8	125.91	-59.6	598.8	620.8	591.2	29.63	20.956		
6,700.0	6,657.1	6,661.3	6,636.8	17.2	15.0	126.03	-60.6	607.8	631.3	601.2	30.09	20.977		
6,800.0	6,756.4	6,760.7	6,735.8	17.5	15.3	126.15	-61.7	616.9	641.7	611.2	30.56	20.998		
6,900.0	6,855.6	6,860.2	6,834.8	17.7	15.5	126.26	-62.7	626.0	652.2	621.2	31.03	21.019		
6,919.5	6,875.0	6,879.5	6,854.1	17.8	15.6	126.28	-62.9	627.7	654.2	623.1	31.12	21.023		
6,950.0	6,905.3	7,918.2	7,500.0	17.9	20.5	36.72	571.7	693.6	634.1	599.3	34.83	18.207		
7,000.0	6,955.1	7,918.1	7,500.0	17.9	20.5	-38.29	571.7	693.6	586.2	554.7	31.45	18.638		
7,050.0	7,004.8	7,913.7	7,500.0	17.9	20.4	-80.33	567.2	693.5	538.8	510.0	28.78	18.723		
7,100.0	7,053.8	7,904.9	7,500.0	17.9	20.3	-100.08	558.5	693.4	492.4	465.2	27.23	18.085		
7,150.0	7,101.9	7,891.9	7,500.0	17.9	20.2	-111.00	545.4	693.3	447.5	421.1	26.40	16.952		
7,200.0	7,148.7	7,874.7	7,500.0	17.8	20.0	-117.35	528.3	693.1	404.5	378.6	25.90	15.621		
7,250.0	7,193.8	7,851.3	7,500.0	17.7	19.8	-120.50	504.9	692.9	364.0	338.5	25.55	14.246		
7,300.0	7,236.9	7,803.1	7,497.6	17.5	19.4	-117.86	456.7	692.2	325.4	299.7	25.64	12.691		
7,350.0	7,277.7	7,760.9	7,492.3	17.4	19.0	-114.87	414.9	691.2	288.6	262.7	25.83	11.174		
7,400.0	7,315.7	7,722.7	7,484.8	17.2	18.7	-111.31	377.5	690.2	254.4	228.3	26.13	9.737		
7,450.0	7,350.9	7,687.2	7,475.7	17.1	18.4	-106.99	343.2	689.0	224.0	197.4	26.54	8.437		
7,500.0	7,382.8	7,653.6	7,465.1	16.9	18.2	-101.76	311.4	687.7	198.6	171.6	27.04	7.346		
7,550.0	7,411.3	7,621.5	7,453.2	16.7	18.0	-95.54	281.5	686.3	180.2	152.6	27.53	6.546		
7,600.0	7,436.1	7,590.4	7,440.1	16.6	17.8	-88.37	253.4	684.8	170.2	142.4	27.83	6.116		
7,628.2	7,448.4	7,573.2	7,432.3	16.5	17.7	-83.97	238.1	683.9	168.7	140.8	27.86	6.055 SF		
7,650.0	7,457.1	7,560.1	7,426.0	16.5	17.6	-80.45	226.7	683.2	169.6	141.8	27.78	6.104		
7,700.0	7,474.0	7,530.5	7,410.8	16.4	17.4	-72.14	201.3	681.5	177.7	150.4	27.26	6.519		
7,750.0	7,486.8	7,500.0	7,393.8	16.4	17.3	-63.57	176.0	679.7	192.8	166.5	26.23	7.349		
7,800.0	7,495.3	7,472.8	7,377.6	16.4	17.1	-56.13	154.3	678.0	212.7	187.7	25.01	8.504		
7,850.0	7,499.5	7,450.0	7,363.2	16.5	17.0	-49.99	136.7	676.5	235.6	211.8	23.86	9.877		
7,873.6	7,500.0	7,431.3	7,350.9	16.5	17.0	-46.14	122.7	675.2	247.0	223.8	23.15	10.670		
7,900.0	7,500.0	7,416.9	7,341.0	16.5	16.9	-44.13	112.1	674.2	260.4	237.6	22.81	11.415		
8,000.0	7,500.0	7,368.0	7,305.8	16.9	16.7	-37.80	78.4	670.6	318.9	297.0	21.85	14.594		
8,100.0	7,500.0	7,327.0	7,274.3	17.4	16.6	-33.15	52.5	667.5	386.8	365.6	21.27	18.185		
8,200.0	7,500.0	7,300.0	7,252.5	18.0	16.5	-30.41	36.7	665.3	461.7	440.5	21.12	21.860		
8,300.0	7,500.0	7,263.4	7,221.8	18.8	16.4	-27.08	17.0	662.3	541.2	520.4	20.85	25.962		
8,400.0	7,500.0	7,250.0	7,210.2	19.7	16.4	-25.97	10.3	661.1	624.7	603.7	21.06	29.658		
8,500.0	7,500.0	7,217.0	7,181.2	20.7	16.3	-23.45	-5.1	658.3	710.6	689.6	20.95	33.924		
8,600.0	7,500.0	7,200.0	7,165.9	21.9	16.3	-22.27	-12.3	656.8	798.8	777.7	21.13	37.805		
8,700.0	7,500.0	7,182.1	7,149.6	23.1	16.2	-21.11	-19.5	655.3	888.7	867.4	21.30	41.715		
8,800.0	7,500.0	7,167.8	7,136.3	24.3	16.2	-20.23	-24.8	654.0	979.9	958.4	21.54	45.496		
8,900.0	7,500.0	7,150.0	7,119.7	25.6	16.2	-19.20	-31.0	652.4	1,072.3	1,050.6	21.71	49.383		
9,000.0	7,500.0	7,150.0	7,119.7	27.0	16.2	-19.20	-31.0	652.4	1,165.6	1,143.4	22.19	52.538		

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Woolley-Becky 2D-7H-E168 - Hz - Plan #4													Offset Site Error:	0.0 ft
Survey Program: 0-Geolink 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)				
9,100.0	7,500.0	7,150.0	7,119.7	28.4	16.2	-19.20	-31.0	652.4	1,259.9	1,237.3	22.67	55.583		
9,200.0	7,500.0	7,124.6	7,095.7	29.9	16.1	-17.84	-38.9	650.1	1,354.3	1,331.6	22.69	59.696		
9,300.0	7,500.0	7,100.0	7,072.1	31.4	16.0	-16.64	-45.6	647.9	1,449.8	1,427.1	22.73	63.794		
9,400.0	7,500.0	7,100.0	7,072.1	32.9	16.0	-16.64	-45.6	647.9	1,545.2	1,522.1	23.18	66.672		
9,500.0	7,500.0	7,100.0	7,072.1	34.4	16.0	-16.64	-45.6	647.9	1,641.2	1,617.6	23.63	69.448		
9,600.0	7,500.0	7,100.0	7,072.1	36.0	16.0	-16.64	-45.6	647.9	1,737.7	1,713.6	24.09	72.122		
9,700.0	7,500.0	7,100.0	7,072.1	37.5	16.0	-16.64	-45.6	647.9	1,834.5	1,809.9	24.56	74.698		
9,800.0	7,500.0	7,100.0	7,072.1	39.1	16.0	-16.64	-45.6	647.9	1,931.6	1,906.6	25.03	77.178		
9,900.0	7,500.0	7,079.7	7,052.4	40.7	16.0	-15.73	-50.3	646.0	2,028.6	2,003.5	25.06	80.945		
10,000.0	7,500.0	7,075.1	7,048.0	42.3	16.0	-15.53	-51.2	645.6	2,126.0	2,100.6	25.42	83.639		
10,100.0	7,500.0	7,070.8	7,043.8	43.9	16.0	-15.35	-52.1	645.2	2,223.7	2,197.9	25.78	86.255		
10,200.0	7,500.0	7,050.0	7,023.4	45.6	15.9	-14.51	-55.9	643.3	2,321.8	2,296.0	25.78	90.054		
10,300.0	7,500.0	7,050.0	7,023.4	47.2	15.9	-14.51	-55.9	643.3	2,419.6	2,393.4	26.22	92.292		
10,400.0	7,500.0	7,050.0	7,023.4	48.9	15.9	-14.51	-55.9	643.3	2,517.6	2,490.9	26.65	94.456		
10,500.0	7,500.0	7,050.0	7,023.4	50.5	15.9	-14.51	-55.9	643.3	2,615.7	2,588.6	27.09	96.548		
10,600.0	7,500.0	7,050.0	7,023.4	52.2	15.9	-14.51	-55.9	643.3	2,714.0	2,686.5	27.53	98.572		
10,700.0	7,500.0	7,050.0	7,023.4	53.8	15.9	-14.51	-55.9	643.3	2,812.4	2,784.4	27.98	100.531		
10,800.0	7,500.0	7,050.0	7,023.4	55.5	15.9	-14.51	-55.9	643.3	2,910.9	2,882.5	28.42	102.427		
10,900.0	7,500.0	7,050.0	7,023.4	57.2	15.9	-14.51	-55.9	643.3	3,009.5	2,980.6	28.86	104.262		
11,000.0	7,500.0	7,050.0	7,023.4	58.9	15.9	-14.51	-55.9	643.3	3,108.2	3,078.9	29.31	106.040		
11,100.0	7,500.0	7,050.0	7,023.4	60.6	15.9	-14.51	-55.9	643.3	3,207.0	3,177.2	29.76	107.762		
11,200.0	7,500.0	7,050.0	7,023.4	62.3	15.9	-14.51	-55.9	643.3	3,305.8	3,275.6	30.21	109.430		
11,244.1	7,500.0	7,050.0	7,023.4	63.0	15.9	-14.51	-55.9	643.3	3,349.5	3,319.1	30.41	110.151		
11,300.0	7,500.0	7,050.0	7,023.4	64.0	15.9	-21.57	-55.9	643.3	3,404.7	3,368.2	36.57	93.101		
11,400.0	7,500.0	7,050.0	7,023.4	65.7	15.9	-32.83	-55.9	643.3	3,503.5	3,455.8	47.71	73.430		
11,444.1	7,500.0	7,050.0	7,023.4	66.4	15.9	-37.15	-55.9	643.3	3,547.0	3,494.9	52.13	68.040		
11,500.0	7,500.0	7,050.0	7,023.4	67.4	15.9	-37.15	-55.9	643.3	3,602.1	3,549.4	52.71	68.337		
11,600.0	7,500.0	7,050.0	7,023.4	69.1	15.9	-37.15	-55.9	643.3	3,700.8	3,647.0	53.75	68.853		
11,700.0	7,500.0	7,050.0	7,023.4	70.8	15.9	-37.15	-55.9	643.3	3,799.5	3,744.7	54.79	69.347		
11,800.0	7,500.0	7,027.7	7,001.5	72.5	15.9	-35.75	-59.1	641.3	3,897.8	3,843.4	54.41	71.643		
11,900.0	7,500.0	7,026.2	7,000.0	74.2	15.9	-35.66	-59.3	641.1	3,996.6	3,941.2	55.32	72.245		
12,000.0	7,500.0	7,024.8	6,998.6	76.0	15.9	-35.57	-59.5	641.0	4,095.4	4,039.2	56.23	72.827		
12,100.0	7,500.0	7,023.4	6,997.2	77.7	15.9	-35.49	-59.6	640.9	4,194.3	4,137.1	57.15	73.390		
12,194.1	7,500.0	7,022.2	6,996.0	79.3	15.9	-35.41	-59.8	640.8	4,287.4	4,229.4	58.01	73.902		
12,200.0	7,500.0	7,022.1	6,996.0	79.4	15.9	-34.74	-59.8	640.8	4,293.2	4,235.9	57.33	74.882		
12,300.0	7,500.0	7,000.0	6,974.0	81.1	15.8	-20.56	-61.9	638.7	4,392.8	4,351.0	41.80	105.088		
12,393.7	7,500.0	7,000.0	6,974.0	82.7	15.8	-5.77	-61.9	638.7	4,485.7	4,457.6	28.16	159.317		
12,400.0	7,500.0	7,000.0	6,974.0	82.9	15.8	-5.77	-61.9	638.7	4,492.0	4,463.8	28.17	159.445		
12,500.0	7,500.0	7,000.0	6,974.0	84.6	15.8	-5.77	-61.9	638.7	4,591.3	4,562.9	28.44	161.450		
12,600.0	7,500.0	7,000.0	6,974.0	86.3	15.8	-5.77	-61.9	638.7	4,690.7	4,662.0	28.70	163.418		
12,700.0	7,500.0	7,000.0	6,974.0	88.0	15.8	-5.77	-61.9	638.7	4,790.1	4,761.1	28.97	165.353		
12,800.0	7,500.0	7,000.0	6,974.0	89.7	15.8	-5.77	-61.9	638.7	4,889.5	4,860.2	29.23	167.253		
12,900.0	7,500.0	7,000.0	6,974.0	91.5	15.8	-5.77	-61.9	638.7	4,988.9	4,959.4	29.50	169.120		
13,000.0	7,500.0	7,000.0	6,974.0	93.2	15.8	-5.77	-61.9	638.7	5,088.3	5,058.6	29.76	170.955		
13,100.0	7,500.0	7,000.0	6,974.0	94.9	15.8	-5.77	-61.9	638.7	5,187.8	5,157.8	30.03	172.759		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Woolley-Becky 2E-7H-E168 - Hz - Plan #2											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	90.26	-0.4	80.0	80.0				
100.0	100.0	100.0	100.0	0.2	0.2	90.26	-0.4	80.0	80.0	79.7	0.30	263.581	
200.0	200.0	200.0	200.0	0.3	0.3	90.26	-0.4	80.0	80.0	79.4	0.65	122.629	
300.0	300.0	300.0	300.0	0.5	0.5	90.26	-0.4	80.0	80.0	79.0	1.00	79.901	
400.0	400.0	400.0	400.0	0.7	0.7	90.26	-0.4	80.0	80.0	78.7	1.35	59.255 CC, ES	
500.0	500.0	498.6	498.6	0.8	0.8	90.30	-0.4	80.9	80.9	79.2	1.70	47.653	
600.0	600.0	597.2	597.1	1.0	1.0	51.38	-0.6	83.4	82.9	80.9	2.04	40.567	
700.0	700.0	695.7	695.5	1.2	1.2	52.87	-0.9	87.7	85.6	83.2	2.39	35.787	
800.0	799.9	794.1	793.7	1.4	1.4	55.15	-1.3	93.6	89.1	86.3	2.74	32.457	
900.0	899.7	892.3	891.7	1.6	1.6	58.08	-1.8	101.1	93.5	90.4	3.10	30.108	
1,000.0	999.4	990.3	989.3	1.8	1.8	61.49	-2.5	110.4	98.9	95.4	3.48	28.460	
1,100.0	1,098.9	1,088.3	1,086.7	2.0	2.0	65.19	-3.3	121.2	105.6	101.8	3.87	27.320	
1,201.3	1,199.5	1,189.1	1,186.7	2.2	2.3	69.27	-4.1	133.1	112.9	108.6	4.29	26.297	
1,300.0	1,297.5	1,287.2	1,284.1	2.5	2.5	73.21	-4.9	144.6	120.2	115.5	4.73	25.426	
1,400.0	1,396.8	1,386.6	1,382.8	2.7	2.8	76.73	-5.7	156.3	128.1	122.9	5.18	24.720	
1,500.0	1,496.0	1,486.0	1,481.5	3.0	3.1	79.83	-6.5	168.0	136.4	130.8	5.65	24.152	
1,600.0	1,595.3	1,585.4	1,580.2	3.3	3.3	82.57	-7.4	179.6	145.1	139.0	6.13	23.690	
1,700.0	1,694.5	1,684.8	1,678.9	3.5	3.6	84.99	-8.2	191.3	154.1	147.5	6.61	23.312	
1,800.0	1,793.8	1,784.2	1,777.7	3.8	3.8	87.15	-9.0	203.0	163.3	156.2	7.10	23.001	
1,900.0	1,893.0	1,883.5	1,876.4	4.0	4.1	89.07	-9.8	214.7	172.8	165.2	7.60	22.744	
2,000.0	1,992.3	1,982.9	1,975.1	4.3	4.4	90.80	-10.6	226.4	182.4	174.3	8.09	22.530	
2,100.0	2,091.5	2,082.3	2,073.8	4.6	4.6	92.35	-11.5	238.1	192.1	183.5	8.60	22.350	
2,200.0	2,190.8	2,181.7	2,172.5	4.8	4.9	93.75	-12.3	249.7	202.0	192.9	9.10	22.199	
2,300.0	2,290.0	2,281.1	2,271.2	5.1	5.1	95.02	-13.1	261.4	212.0	202.4	9.61	22.071	
2,400.0	2,389.3	2,380.5	2,369.9	5.4	5.4	96.17	-13.9	273.1	222.1	212.0	10.11	21.962	
2,500.0	2,488.5	2,479.9	2,468.6	5.7	5.7	97.23	-14.7	284.8	232.2	221.6	10.62	21.870	
2,600.0	2,587.8	2,579.3	2,567.3	5.9	5.9	98.19	-15.6	296.5	242.5	231.3	11.13	21.790	
2,700.0	2,687.0	2,678.7	2,666.0	6.2	6.2	99.08	-16.4	308.2	252.8	241.1	11.64	21.722	
2,800.0	2,786.3	2,778.1	2,764.7	6.5	6.5	99.90	-17.2	319.8	263.1	251.0	12.15	21.664	
2,900.0	2,885.5	2,877.5	2,863.4	6.7	6.7	100.65	-18.0	331.5	273.5	260.9	12.66	21.613	
3,000.0	2,984.8	2,976.9	2,962.1	7.0	7.0	101.35	-18.8	343.2	284.0	270.8	13.17	21.569	
3,100.0	3,084.0	3,076.3	3,060.8	7.3	7.3	102.01	-19.6	354.9	294.5	280.8	13.68	21.531	
3,200.0	3,183.3	3,175.7	3,159.5	7.6	7.5	102.61	-20.5	366.6	305.0	290.8	14.19	21.498	
3,300.0	3,282.5	3,275.1	3,258.2	7.8	7.8	103.18	-21.3	378.2	315.5	300.8	14.70	21.469	
3,400.0	3,381.8	3,374.5	3,356.9	8.1	8.1	103.71	-22.1	389.9	326.1	310.9	15.21	21.443	
3,500.0	3,481.1	3,473.9	3,455.6	8.4	8.3	104.20	-22.9	401.6	336.7	321.0	15.72	21.421	
3,600.0	3,580.3	3,573.3	3,554.3	8.7	8.6	104.67	-23.7	413.3	347.3	331.1	16.23	21.402	
3,700.0	3,679.6	3,672.7	3,653.0	8.9	8.9	105.10	-24.6	425.0	358.0	341.3	16.74	21.385	
3,800.0	3,778.8	3,772.1	3,751.7	9.2	9.2	105.52	-25.4	436.7	368.7	351.4	17.25	21.371	
3,900.0	3,878.1	3,871.4	3,850.4	9.5	9.4	105.91	-26.2	448.3	379.3	361.6	17.76	21.358	
4,000.0	3,977.3	3,970.8	3,949.1	9.8	9.7	106.27	-27.0	460.0	390.1	371.8	18.27	21.347	
4,100.0	4,076.6	4,070.2	4,047.8	10.0	10.0	106.62	-27.8	471.7	400.8	382.0	18.78	21.337	
4,200.0	4,175.8	4,169.6	4,146.5	10.3	10.2	106.95	-28.7	483.4	411.5	392.2	19.29	21.328	
4,300.0	4,275.1	4,269.0	4,245.2	10.6	10.5	107.27	-29.5	495.1	422.2	402.4	19.80	21.321	
4,400.0	4,374.3	4,368.4	4,343.9	10.9	10.8	107.56	-30.3	506.8	433.0	412.7	20.32	21.315	
4,500.0	4,473.6	4,467.8	4,442.6	11.1	11.0	107.85	-31.1	518.4	443.8	423.0	20.83	21.309	
4,600.0	4,572.8	4,567.2	4,541.3	11.4	11.3	108.12	-31.9	530.1	454.6	433.2	21.34	21.304	
4,700.0	4,672.1	4,666.6	4,640.0	11.7	11.6	108.37	-32.8	541.8	465.3	443.5	21.85	21.300	
4,800.0	4,771.3	4,766.0	4,738.7	12.0	11.8	108.62	-33.6	553.5	476.1	453.8	22.36	21.297	
4,900.0	4,870.6	4,865.4	4,837.4	12.2	12.1	108.85	-34.4	565.2	486.9	464.1	22.87	21.294	
5,000.0	4,969.8	4,964.8	4,936.1	12.5	12.4	109.08	-35.2	576.9	497.8	474.4	23.38	21.291	
5,100.0	5,069.1	5,064.2	5,034.8	12.8	12.6	109.29	-36.0	588.5	508.6	484.7	23.89	21.289	

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



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Woolley-Becky 2E-7H-E168 - Hz - Plan #2											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	
5,200.0	5,168.3	5,163.6	5,133.5	13.1	12.9	109.50	-36.9	600.2	519.4	495.0	24.40	21.288	
5,300.0	5,267.6	5,263.0	5,232.2	13.3	13.2	109.70	-37.7	611.9	530.2	505.3	24.91	21.287	
5,400.0	5,366.8	5,362.4	5,331.0	13.6	13.4	109.89	-38.5	623.6	541.1	515.7	25.42	21.286	
5,500.0	5,466.1	5,461.8	5,429.7	13.9	13.7	110.07	-39.3	635.3	551.9	526.0	25.93	21.285	
5,600.0	5,565.3	5,561.2	5,528.4	14.2	14.0	110.25	-40.1	646.9	562.8	536.3	26.44	21.285	
5,700.0	5,664.6	5,660.6	5,627.1	14.4	14.2	110.41	-41.0	658.6	573.6	546.7	26.95	21.284	
5,800.0	5,763.8	5,760.0	5,725.8	14.7	14.5	110.58	-41.8	670.3	584.5	557.0	27.46	21.284	
5,900.0	5,863.1	5,859.4	5,824.5	15.0	14.8	110.73	-42.6	682.0	595.4	567.4	27.97	21.285	
6,000.0	5,962.3	5,958.7	5,923.2	15.3	15.1	110.88	-43.4	693.7	606.2	577.7	28.48	21.285	
6,100.0	6,061.6	6,058.1	6,021.9	15.5	15.3	111.03	-44.2	705.4	617.1	588.1	28.99	21.285	
6,200.0	6,160.9	6,157.5	6,120.6	15.8	15.6	111.17	-45.1	717.0	628.0	598.5	29.50	21.286	
6,300.0	6,260.1	6,256.9	6,219.3	16.1	15.9	111.31	-45.9	728.7	638.9	608.8	30.01	21.287	
6,400.0	6,359.4	6,356.3	6,318.0	16.4	16.1	111.44	-46.7	740.4	649.7	619.2	30.52	21.288	
6,500.0	6,458.6	6,455.7	6,416.7	16.6	16.4	111.56	-47.5	752.1	660.6	629.6	31.03	21.289	
6,600.0	6,557.9	6,555.1	6,515.4	16.9	16.7	111.69	-48.3	763.8	671.5	640.0	31.54	21.290	
6,700.0	6,657.1	6,654.5	6,614.1	17.2	16.9	111.81	-49.2	775.5	682.4	650.4	32.05	21.291	
6,800.0	6,756.4	6,753.9	6,712.8	17.5	17.2	111.92	-50.0	787.1	693.3	660.7	32.56	21.292	
6,900.0	6,855.6	6,853.3	6,811.5	17.7	17.5	112.03	-50.8	798.8	704.2	671.1	33.07	21.293	
6,919.5	6,875.0	6,872.7	6,830.7	17.8	17.5	112.05	-51.0	801.1	706.3	673.2	33.17	21.294	
6,950.0	6,905.3	6,903.1	6,860.9	17.9	17.6	89.60	-51.2	804.7	708.9	675.6	33.36	21.252	
7,000.0	6,955.1	6,953.0	6,910.5	17.9	17.7	31.26	-51.6	810.5	710.1	676.6	33.50	21.197	
7,050.0	7,004.8	7,002.8	6,959.9	17.9	17.9	1.82	-52.0	816.4	707.5	674.0	33.45	21.153	
7,100.0	7,053.8	7,052.0	7,008.8	17.9	18.0	-9.75	-52.4	822.2	701.1	667.9	33.19	21.122	
7,150.0	7,101.9	7,100.3	7,056.8	17.9	18.1	-16.11	-52.8	827.9	691.0	658.2	32.75	21.101	
7,200.0	7,148.7	7,147.4	7,103.5	17.8	18.3	-20.69	-53.2	833.4	677.4	645.2	32.12	21.087	
7,250.0	7,193.8	7,192.8	7,148.6	17.7	18.4	-24.68	-53.6	838.7	660.4	629.1	31.34	21.070	
7,300.0	7,236.9	7,602.7	7,527.0	17.5	19.5	-55.86	72.6	882.4	632.5	601.6	30.89	20.478	
7,350.0	7,277.7	7,690.6	7,590.7	17.4	19.8	-75.39	132.8	889.4	593.0	563.6	29.36	20.199	
7,400.0	7,315.7	7,698.7	7,596.1	17.2	19.8	-83.49	138.7	890.0	554.2	525.8	28.44	19.484	
7,450.0	7,350.9	7,689.4	7,589.9	17.1	19.8	-88.02	131.8	889.3	517.4	489.5	27.86	18.567	
7,500.0	7,382.8	7,673.5	7,579.1	16.9	19.7	-90.70	120.3	888.1	483.0	455.5	27.46	17.587	
7,550.0	7,411.3	7,654.6	7,565.7	16.7	19.6	-92.12	106.9	886.7	451.6	424.4	27.18	16.617	
7,600.0	7,436.1	7,633.8	7,550.6	16.6	19.6	-92.56	92.8	885.0	423.8	396.8	26.99	15.702	
7,650.0	7,457.1	7,612.1	7,534.2	16.5	19.5	-92.14	78.6	883.2	400.2	373.3	26.88	14.891	
7,700.0	7,474.0	7,589.6	7,516.8	16.4	19.4	-90.97	64.5	881.2	381.4	354.6	26.82	14.219	
7,750.0	7,486.8	7,566.6	7,498.4	16.4	19.4	-89.10	50.9	879.2	367.8	341.0	26.81	13.718	
7,800.0	7,495.3	7,543.2	7,479.1	16.4	19.3	-86.60	37.8	877.0	359.7	332.9	26.81	13.413	
7,848.9	7,499.5	7,520.2	7,459.6	16.4	19.2	-83.59	25.7	874.8	357.1	330.3	26.82	13.312 SF	
7,850.0	7,499.5	7,519.6	7,459.2	16.5	19.2	-83.52	25.5	874.8	357.1	330.3	26.82	13.312	
7,873.6	7,500.0	7,508.4	7,449.6	16.5	19.2	-81.88	19.9	873.7	357.7	330.9	26.82	13.336	
7,900.0	7,500.0	7,496.3	7,439.0	16.5	19.2	-80.18	14.0	872.5	359.8	333.0	26.83	13.412	
8,000.0	7,500.0	7,457.9	7,404.7	16.9	19.1	-74.71	-3.0	868.6	381.4	354.5	26.92	14.168	
8,100.0	7,500.0	7,428.2	7,377.6	17.4	19.0	-70.49	-14.5	865.5	422.6	395.5	27.14	15.569	
8,200.0	7,500.0	7,400.0	7,351.2	18.0	18.9	-66.52	-24.1	862.4	479.4	452.0	27.44	17.471	
8,300.0	7,500.0	7,385.8	7,337.8	18.8	18.9	-64.55	-28.4	860.9	547.4	519.4	28.02	19.534	
8,400.0	7,500.0	7,370.2	7,322.9	19.7	18.8	-62.43	-32.8	859.2	623.3	594.7	28.64	21.760	
8,500.0	7,500.0	7,350.0	7,303.5	20.7	18.8	-59.75	-37.9	856.9	704.7	675.6	29.20	24.137	
8,600.0	7,500.0	7,350.0	7,303.5	21.9	18.8	-59.75	-37.9	856.9	790.0	759.7	30.25	26.119	
8,700.0	7,500.0	7,350.0	7,303.5	23.1	18.8	-59.75	-37.9	856.9	878.3	847.0	31.36	28.012	
8,800.0	7,500.0	7,328.4	7,282.5	24.3	18.7	-56.97	-42.5	854.5	968.3	936.4	31.91	30.347	
8,900.0	7,500.0	7,321.2	7,275.5	25.6	18.7	-56.07	-43.9	853.6	1,060.2	1,027.3	32.86	32.268	
9,000.0	7,500.0	7,300.0	7,254.8	27.0	18.7	-53.49	-47.4	851.2	1,153.6	1,120.2	33.35	34.593	

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Woolley-Becky 2E-7H-E168 - Hz - Plan #2												Offset Site Error:	0.0 ft
Survey Program: 0-Geolink 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)			
9,100.0	7,500.0	7,300.0	7,254.8	28.4	18.7	-53.49	-47.4	851.2	1,247.5	1,212.9	34.53	36.130	
9,200.0	7,500.0	7,300.0	7,254.8	29.9	18.7	-53.49	-47.4	851.2	1,342.3	1,306.5	35.73	37.564	
9,300.0	7,500.0	7,300.0	7,254.8	31.4	18.7	-53.49	-47.4	851.2	1,437.8	1,400.8	36.96	38.900	
9,400.0	7,500.0	7,300.0	7,254.8	32.9	18.7	-53.49	-47.4	851.2	1,533.8	1,495.6	38.21	40.147	
9,500.0	7,500.0	7,300.0	7,254.8	34.4	18.7	-53.49	-47.4	851.2	1,630.4	1,590.9	39.47	41.309	
9,600.0	7,500.0	7,300.0	7,254.8	36.0	18.7	-53.49	-47.4	851.2	1,727.3	1,686.6	40.74	42.395	
9,700.0	7,500.0	7,300.0	7,254.8	37.5	18.7	-53.49	-47.4	851.2	1,824.6	1,782.6	42.03	43.410	
9,800.0	7,500.0	7,300.0	7,254.8	39.1	18.7	-53.49	-47.4	851.2	1,922.1	1,878.8	43.33	44.360	
9,900.0	7,500.0	7,279.8	7,234.9	40.7	18.6	-51.12	-50.1	848.9	2,019.5	1,975.9	43.59	46.328	
10,000.0	7,500.0	7,277.3	7,232.4	42.3	18.6	-50.85	-50.3	848.6	2,117.4	2,072.6	44.73	47.333	
10,100.0	7,500.0	7,275.1	7,230.2	43.9	18.6	-50.59	-50.6	848.3	2,215.4	2,169.5	45.88	48.285	
10,200.0	7,500.0	7,272.9	7,228.1	45.6	18.6	-50.35	-50.8	848.1	2,313.6	2,266.6	47.04	49.187	
10,300.0	7,500.0	7,271.0	7,226.2	47.2	18.6	-50.13	-51.0	847.9	2,412.0	2,363.8	48.20	50.042	
10,400.0	7,500.0	7,250.0	7,205.4	48.9	18.5	-47.85	-52.7	845.4	2,510.9	2,462.7	48.18	52.119	
10,500.0	7,500.0	7,250.0	7,205.4	50.5	18.5	-47.85	-52.7	845.4	2,609.4	2,560.0	49.42	52.804	
10,600.0	7,500.0	7,250.0	7,205.4	52.2	18.5	-47.85	-52.7	845.4	2,708.0	2,657.3	50.66	53.453	
10,700.0	7,500.0	7,250.0	7,205.4	53.8	18.5	-47.85	-52.7	845.4	2,806.7	2,754.8	51.91	54.069	
10,800.0	7,500.0	7,250.0	7,205.4	55.5	18.5	-47.85	-52.7	845.4	2,905.5	2,852.4	53.16	54.653	
10,900.0	7,500.0	7,250.0	7,205.4	57.2	18.5	-47.85	-52.7	845.4	3,004.4	2,950.0	54.42	55.209	
11,000.0	7,500.0	7,250.0	7,205.4	58.9	18.5	-47.85	-52.7	845.4	3,103.4	3,047.7	55.68	55.739	
11,100.0	7,500.0	7,250.0	7,205.4	60.6	18.5	-47.85	-52.7	845.4	3,202.4	3,145.5	56.94	56.243	
11,200.0	7,500.0	7,250.0	7,205.4	62.3	18.5	-47.85	-52.7	845.4	3,301.5	3,243.3	58.20	56.724	
11,244.1	7,500.0	7,250.0	7,205.4	63.0	18.5	-47.85	-52.7	845.4	3,345.3	3,286.5	58.76	56.930	
11,300.0	7,500.0	7,250.0	7,205.4	64.0	18.5	-52.97	-52.7	845.4	3,400.6	3,337.3	63.26	53.759	
11,400.0	7,500.0	7,250.0	7,205.4	65.7	18.5	-59.96	-52.7	845.4	3,499.4	3,430.0	69.32	50.480	
11,444.1	7,500.0	7,250.0	7,205.4	66.4	18.5	-62.38	-52.7	845.4	3,542.8	3,471.4	71.44	49.594	
11,500.0	7,500.0	7,250.0	7,205.4	67.4	18.5	-62.38	-52.7	845.4	3,597.8	3,525.5	72.29	49.772	
11,600.0	7,500.0	7,250.0	7,205.4	69.1	18.5	-62.38	-52.7	845.4	3,696.3	3,622.5	73.81	50.079	
11,700.0	7,500.0	7,250.0	7,205.4	70.8	18.5	-62.38	-52.7	845.4	3,794.8	3,719.5	75.33	50.374	
11,800.0	7,500.0	7,250.0	7,205.4	72.5	18.5	-62.38	-52.7	845.4	3,893.4	3,816.6	76.86	50.658	
11,900.0	7,500.0	7,250.0	7,205.4	74.2	18.5	-62.38	-52.7	845.4	3,992.1	3,913.7	78.39	50.930	
12,000.0	7,500.0	7,250.0	7,205.4	76.0	18.5	-62.38	-52.7	845.4	4,090.9	4,011.0	79.91	51.191	
12,100.0	7,500.0	7,250.0	7,205.4	77.7	18.5	-62.38	-52.7	845.4	4,189.7	4,108.3	81.44	51.442	
12,194.1	7,500.0	7,250.0	7,205.4	79.3	18.5	-62.38	-52.7	845.4	4,282.8	4,199.9	82.89	51.670	
12,200.0	7,500.0	7,250.0	7,205.4	79.4	18.5	-62.01	-52.7	845.4	4,288.6	4,205.8	82.72	51.842	
12,300.0	7,500.0	7,250.0	7,205.4	81.1	18.5	-53.91	-52.7	845.4	4,387.7	4,309.8	77.88	56.343	
12,393.7	7,500.0	7,250.0	7,205.4	82.7	18.5	-41.42	-52.7	845.4	4,480.9	4,414.1	66.85	67.034	
12,400.0	7,500.0	7,250.0	7,205.4	82.9	18.5	-41.42	-52.7	845.4	4,487.2	4,420.3	66.92	67.055	
12,500.0	7,500.0	7,250.0	7,205.4	84.6	18.5	-41.42	-52.7	845.4	4,586.8	4,518.8	68.06	67.389	
12,600.0	7,500.0	7,250.0	7,205.4	86.3	18.5	-41.42	-52.7	845.4	4,686.5	4,617.3	69.21	67.712	
12,700.0	7,500.0	7,250.0	7,205.4	88.0	18.5	-41.42	-52.7	845.4	4,786.1	4,715.8	70.36	68.024	
12,800.0	7,500.0	7,250.0	7,205.4	89.7	18.5	-41.42	-52.7	845.4	4,885.8	4,814.3	71.51	68.325	
12,900.0	7,500.0	7,250.0	7,205.4	91.5	18.5	-41.42	-52.7	845.4	4,985.5	4,912.8	72.66	68.615	
13,000.0	7,500.0	7,250.0	7,205.4	93.2	18.5	-41.42	-52.7	845.4	5,085.2	5,011.4	73.81	68.897	
13,100.0	7,500.0	7,250.0	7,205.4	94.9	18.5	-41.42	-52.7	845.4	5,184.9	5,109.9	74.96	69.169	

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Woolley-Becky 2F-7H-E168 - Hz - Plan #3												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	90.46	-0.7	90.1	90.1					
100.0	100.0	100.0	100.0	0.2	0.2	90.46	-0.7	90.1	90.1	89.8	0.30	296.766		
200.0	200.0	200.0	200.0	0.3	0.3	90.46	-0.7	90.1	90.1	89.5	0.65	138.068		
300.0	300.0	300.0	300.0	0.5	0.5	90.46	-0.7	90.1	90.1	89.1	1.00	89.960 CC, ES		
400.0	400.0	398.5	398.5	0.7	0.7	90.39	-0.6	91.0	91.0	89.6	1.35	67.470		
500.0	500.0	496.9	496.8	0.8	0.8	90.16	-0.3	93.5	93.5	91.8	1.70	55.152		
600.0	600.0	595.2	595.0	1.0	1.0	50.70	0.3	97.7	97.2	95.2	2.04	47.631		
700.0	700.0	693.4	693.1	1.2	1.2	51.32	1.1	103.5	101.5	99.1	2.39	42.487		
800.0	799.9	791.5	790.9	1.4	1.4	52.47	2.2	111.0	106.4	103.7	2.74	38.823		
900.0	899.7	889.4	888.4	1.6	1.7	54.04	3.4	120.1	112.1	109.0	3.10	36.127		
1,000.0	999.4	987.2	985.6	1.8	1.9	55.95	4.9	130.9	118.4	115.0	3.47	34.090		
1,100.0	1,098.9	1,084.8	1,082.4	2.0	2.2	58.11	6.6	143.3	125.7	121.8	3.87	32.511		
1,201.3	1,199.5	1,183.5	1,180.0	2.2	2.4	60.46	8.6	157.5	133.9	129.6	4.29	31.240		
1,300.0	1,297.5	1,279.4	1,274.7	2.5	2.7	62.63	10.7	172.8	143.4	138.6	4.72	30.385		
1,400.0	1,396.8	1,376.4	1,370.0	2.7	3.1	64.31	13.1	190.0	154.6	149.5	5.17	29.916		
1,500.0	1,496.0	1,474.4	1,466.2	3.0	3.4	65.60	15.7	208.7	167.3	161.7	5.63	29.701		
1,600.0	1,595.3	1,573.5	1,563.5	3.3	3.8	66.69	18.3	227.7	180.3	174.1	6.11	29.494		
1,700.0	1,694.5	1,672.6	1,660.7	3.5	4.1	67.63	20.9	246.8	193.2	186.6	6.60	29.287		
1,800.0	1,793.8	1,771.7	1,757.9	3.8	4.5	68.46	23.6	265.8	206.2	199.2	7.09	29.085		
1,900.0	1,893.0	1,870.8	1,855.1	4.0	4.9	69.19	26.2	284.9	219.3	211.7	7.59	28.890		
2,000.0	1,992.3	1,969.9	1,952.4	4.3	5.2	69.84	28.8	303.9	232.4	224.3	8.10	28.706		
2,100.0	2,091.5	2,069.0	2,049.6	4.6	5.6	70.42	31.5	323.0	245.5	236.9	8.60	28.531		
2,200.0	2,190.8	2,168.2	2,146.8	4.8	6.0	70.94	34.1	342.0	258.6	249.5	9.12	28.366		
2,300.0	2,290.0	2,267.3	2,244.0	5.1	6.4	71.40	36.7	361.1	271.8	262.2	9.63	28.212		
2,400.0	2,389.3	2,366.4	2,341.3	5.4	6.7	71.83	39.4	380.1	285.0	274.8	10.15	28.067		
2,500.0	2,488.5	2,465.5	2,438.5	5.7	7.1	72.22	42.0	399.2	298.1	287.5	10.67	27.931		
2,600.0	2,587.8	2,564.6	2,535.7	5.9	7.5	72.57	44.6	418.2	311.3	300.1	11.20	27.804		
2,700.0	2,687.0	2,663.7	2,632.9	6.2	7.9	72.90	47.3	437.3	324.6	312.8	11.72	27.684		
2,800.0	2,786.3	2,762.8	2,730.2	6.5	8.3	73.20	49.9	456.3	337.8	325.5	12.25	27.572		
2,900.0	2,885.5	2,861.9	2,827.4	6.7	8.6	73.48	52.5	475.4	351.0	338.2	12.78	27.467		
3,000.0	2,984.8	2,961.0	2,924.6	7.0	9.0	73.74	55.2	494.4	364.2	350.9	13.31	27.368		
3,100.0	3,084.0	3,060.1	3,021.8	7.3	9.4	73.98	57.8	513.5	377.5	363.6	13.84	27.274		
3,200.0	3,183.3	3,159.2	3,119.0	7.6	9.8	74.20	60.4	532.5	390.7	376.3	14.37	27.186		
3,300.0	3,282.5	3,258.3	3,216.3	7.8	10.2	74.41	63.1	551.6	404.0	389.1	14.90	27.103		
3,400.0	3,381.8	3,357.4	3,313.5	8.1	10.5	74.61	65.7	570.6	417.2	401.8	15.44	27.025		
3,500.0	3,481.1	3,456.6	3,410.7	8.4	10.9	74.79	68.3	589.7	430.5	414.5	15.97	26.951		
3,600.0	3,580.3	3,555.7	3,507.9	8.7	11.3	74.96	71.0	608.8	443.7	427.2	16.51	26.880		
3,700.0	3,679.6	3,654.8	3,605.2	8.9	11.7	75.13	73.6	627.8	457.0	440.0	17.04	26.814		
3,800.0	3,778.8	3,753.9	3,702.4	9.2	12.1	75.28	76.2	646.9	470.3	452.7	17.58	26.750		
3,900.0	3,878.1	3,853.0	3,799.6	9.5	12.4	75.42	78.9	665.9	483.6	465.4	18.12	26.690		
4,000.0	3,977.3	3,952.1	3,896.8	9.8	12.8	75.56	81.5	685.0	496.8	478.2	18.66	26.633		
4,100.0	4,076.6	4,051.2	3,994.1	10.0	13.2	75.69	84.1	704.0	510.1	490.9	19.19	26.579		
4,200.0	4,175.8	4,150.3	4,091.3	10.3	13.6	75.81	86.8	723.1	523.4	503.7	19.73	26.527		
4,300.0	4,275.1	4,249.4	4,188.5	10.6	14.0	75.93	89.4	742.1	536.7	516.4	20.27	26.477		
4,400.0	4,374.3	4,348.5	4,285.7	10.9	14.3	76.04	92.0	761.2	550.0	529.2	20.81	26.430		
4,500.0	4,473.6	4,447.6	4,383.0	11.1	14.7	76.15	94.7	780.2	563.3	541.9	21.35	26.385		
4,600.0	4,572.8	4,546.7	4,480.2	11.4	15.1	76.25	97.3	799.3	576.6	554.7	21.89	26.341		
4,700.0	4,672.1	4,645.8	4,577.4	11.7	15.5	76.35	99.9	818.3	589.9	567.4	22.43	26.300		
4,800.0	4,771.3	4,745.0	4,674.6	12.0	15.9	76.44	102.6	837.4	603.2	580.2	22.97	26.260		
4,900.0	4,870.6	4,844.1	4,771.8	12.2	16.3	76.53	105.2	856.4	616.4	592.9	23.51	26.222		
5,000.0	4,969.8	4,943.2	4,869.1	12.5	16.6	76.62	107.8	875.5	629.7	605.7	24.05	26.185		
5,100.0	5,069.1	5,042.3	4,966.3	12.8	17.0	76.70	110.5	894.5	643.0	618.5	24.59	26.150		

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Woolley-Becky 2F-7H-E168 - Hz - Plan #3												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	
5,200.0	5,168.3	5,141.4	5,063.5	13.1	17.4	76.78	113.1	913.6	656.3	631.2	25.13	26.117	
5,300.0	5,267.6	5,240.5	5,160.7	13.3	17.8	76.85	115.7	932.6	669.6	644.0	25.67	26.084	
5,400.0	5,366.8	5,339.6	5,258.0	13.6	18.2	76.92	118.4	951.7	682.9	656.7	26.21	26.053	
5,500.0	5,466.1	5,438.7	5,355.2	13.9	18.5	76.99	121.0	970.7	696.3	669.5	26.76	26.023	
5,600.0	5,565.3	5,537.8	5,452.4	14.2	18.9	77.06	123.7	989.8	709.6	682.3	27.30	25.993	
5,700.0	5,664.6	5,636.9	5,549.6	14.4	19.3	77.12	126.3	1,008.8	722.9	695.0	27.84	25.965	
5,800.0	5,763.8	5,736.0	5,646.9	14.7	19.7	77.18	128.9	1,027.9	736.2	707.8	28.38	25.938	
5,900.0	5,863.1	5,835.1	5,744.1	15.0	20.1	77.24	131.6	1,046.9	749.5	720.6	28.92	25.912	
6,000.0	5,962.3	5,934.2	5,841.3	15.3	20.5	77.30	134.2	1,066.0	762.8	733.3	29.47	25.887	
6,100.0	6,061.6	6,033.3	5,938.5	15.5	20.8	77.36	136.8	1,085.0	776.1	746.1	30.01	25.862	
6,200.0	6,160.9	6,132.5	6,035.8	15.8	21.2	77.41	139.5	1,104.1	789.4	758.9	30.55	25.839	
6,300.0	6,260.1	6,231.6	6,133.0	16.1	21.6	77.46	142.1	1,123.1	802.7	771.6	31.09	25.816	
6,400.0	6,359.4	6,330.7	6,230.2	16.4	22.0	77.51	144.7	1,142.2	816.0	784.4	31.64	25.794	
6,500.0	6,458.6	6,429.8	6,327.4	16.6	22.4	77.56	147.4	1,161.3	829.3	797.2	32.18	25.772	
6,600.0	6,557.9	6,528.9	6,424.6	16.9	22.8	77.61	150.0	1,180.3	842.6	809.9	32.72	25.751	
6,700.0	6,657.1	6,628.0	6,521.9	17.2	23.1	77.66	152.6	1,199.4	856.0	822.7	33.27	25.731	
6,800.0	6,756.4	6,727.1	6,619.1	17.5	23.5	77.70	155.3	1,218.4	869.3	835.5	33.81	25.712	
6,900.0	6,855.6	6,826.2	6,716.3	17.7	23.9	77.74	157.9	1,237.5	882.6	848.2	34.35	25.693	
6,919.5	6,875.0	6,845.5	6,735.3	17.8	24.0	77.75	158.4	1,241.2	885.2	850.7	34.46	25.689	
6,950.0	6,905.3	6,875.8	6,765.0	17.9	24.1	55.46	159.2	1,247.0	888.9	854.2	34.70	25.614	
7,000.0	6,955.1	6,925.4	6,813.7	17.9	24.3	-2.66	160.5	1,256.5	893.3	858.4	34.90	25.596 SF	
7,050.0	7,004.8	6,974.8	6,862.0	17.9	24.5	-31.95	161.8	1,266.0	895.7	860.9	34.85	25.701	
7,100.0	7,053.8	7,023.4	6,909.7	17.9	24.7	-43.41	163.1	1,275.4	896.3	861.7	34.57	25.922	
7,150.0	7,101.9	7,076.4	6,961.7	17.9	24.9	-49.77	164.6	1,285.6	895.0	860.9	34.08	26.262	
7,200.0	7,148.7	7,196.4	7,078.0	17.8	25.4	-56.92	182.0	1,308.5	890.0	856.8	33.18	26.827	
7,250.0	7,193.8	7,282.6	7,158.1	17.7	25.8	-63.52	209.6	1,324.4	881.5	849.4	32.16	27.414	
7,300.0	7,236.9	7,340.1	7,208.8	17.5	26.0	-68.93	234.6	1,334.5	872.0	840.8	31.21	27.936	
7,350.0	7,277.7	7,376.6	7,239.6	17.4	26.2	-73.01	253.2	1,340.7	863.0	832.5	30.43	28.355	
7,400.0	7,315.7	7,398.3	7,257.3	17.2	26.3	-75.87	265.1	1,344.3	855.4	825.6	29.81	28.696	
7,450.0	7,350.9	7,409.7	7,266.5	17.1	26.4	-77.72	271.7	1,346.1	850.0	820.6	29.32	28.985	
7,500.0	7,382.8	7,413.8	7,269.7	16.9	26.4	-78.72	274.1	1,346.8	846.9	818.0	28.94	29.267	
7,536.1	7,403.7	7,413.3	7,269.3	16.8	26.4	-79.00	273.8	1,346.7	846.2	817.5	28.70	29.485	
7,550.0	7,411.3	7,412.4	7,268.6	16.7	26.4	-79.02	273.3	1,346.6	846.3	817.7	28.61	29.577	
7,600.0	7,436.1	7,407.1	7,264.4	16.6	26.4	-78.72	270.2	1,345.7	848.3	820.0	28.33	29.943	
7,650.0	7,457.1	7,400.0	7,258.7	16.5	26.3	-78.02	266.1	1,344.6	852.6	824.6	28.06	30.384	
7,700.0	7,474.0	7,388.1	7,249.0	16.4	26.3	-76.73	259.4	1,342.6	859.2	831.4	27.79	30.917	
7,750.0	7,486.8	7,375.5	7,238.7	16.4	26.2	-75.18	252.6	1,340.5	867.7	840.2	27.51	31.546	
7,800.0	7,495.3	7,361.5	7,226.9	16.4	26.1	-73.34	245.2	1,338.2	878.1	850.9	27.21	32.270	
7,850.0	7,499.5	7,350.0	7,217.2	16.5	26.1	-71.50	239.5	1,336.2	889.9	862.9	26.94	33.028	
7,873.6	7,500.0	7,338.7	7,207.6	16.5	26.0	-70.24	233.9	1,334.3	895.9	869.1	26.78	33.449	
7,900.0	7,500.0	7,330.4	7,200.4	16.5	26.0	-69.76	230.0	1,332.8	903.0	876.2	26.78	33.722	
8,000.0	7,500.0	7,300.0	7,173.7	16.9	25.8	-67.99	216.6	1,327.5	935.5	908.6	26.88	34.801	
8,100.0	7,500.0	7,279.5	7,155.2	17.4	25.7	-66.79	208.4	1,323.8	976.0	948.8	27.24	35.827	
8,200.0	7,500.0	7,250.0	7,128.3	18.0	25.6	-65.03	197.7	1,318.4	1,024.1	996.4	27.66	37.029	
8,300.0	7,500.0	7,250.0	7,128.3	18.8	25.6	-65.03	197.7	1,318.4	1,078.5	1,050.1	28.47	37.878	
8,400.0	7,500.0	7,229.7	7,109.4	19.7	25.5	-63.83	191.2	1,314.7	1,138.8	1,109.6	29.19	39.008	
8,500.0	7,500.0	7,217.5	7,098.0	20.7	25.5	-63.10	187.6	1,312.4	1,204.0	1,173.9	30.07	40.040	
8,600.0	7,500.0	7,200.0	7,081.4	21.9	25.4	-62.06	182.9	1,309.1	1,273.6	1,242.6	30.94	41.159	
8,700.0	7,500.0	7,200.0	7,081.4	23.1	25.4	-62.06	182.9	1,309.1	1,346.7	1,314.6	32.08	41.977	
8,800.0	7,500.0	7,200.0	7,081.4	24.3	25.4	-62.06	182.9	1,309.1	1,423.1	1,389.8	33.27	42.768	
8,900.0	7,500.0	7,181.7	7,064.0	25.6	25.3	-60.97	178.5	1,305.7	1,501.9	1,467.6	34.25	43.850	
9,000.0	7,500.0	7,175.0	7,057.6	27.0	25.3	-60.58	177.1	1,304.4	1,583.1	1,547.7	35.41	44.709	

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design										S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Woolley-Becky 2F-7H-E168 - Hz - Plan #3				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				
9,100.0	7,500.0	7,169.0	7,051.8	28.4	25.3	-60.22	175.8	1,303.3	1,666.2	1,629.6	36.60	45.528				
9,200.0	7,500.0	7,150.0	7,033.5	29.9	25.2	-59.11	172.3	1,299.7	1,751.3	1,713.7	37.58	46.604				
9,300.0	7,500.0	7,150.0	7,033.5	31.4	25.2	-59.11	172.3	1,299.7	1,837.5	1,798.6	38.89	47.244				
9,400.0	7,500.0	7,150.0	7,033.5	32.9	25.2	-59.11	172.3	1,299.7	1,925.1	1,884.9	40.23	47.853				
9,500.0	7,500.0	7,150.0	7,033.5	34.4	25.2	-59.11	172.3	1,299.7	2,013.8	1,972.2	41.58	48.430				
9,600.0	7,500.0	7,150.0	7,033.5	36.0	25.2	-59.11	172.3	1,299.7	2,103.5	2,060.6	42.95	48.978				
9,700.0	7,500.0	7,150.0	7,033.5	37.5	25.2	-59.11	172.3	1,299.7	2,194.1	2,149.8	44.33	49.499				
9,800.0	7,500.0	7,150.0	7,033.5	39.1	25.2	-59.11	172.3	1,299.7	2,285.5	2,239.8	45.72	49.992				
9,900.0	7,500.0	7,150.0	7,033.5	40.7	25.2	-59.11	172.3	1,299.7	2,377.6	2,330.5	47.12	50.461				
10,000.0	7,500.0	7,150.0	7,033.5	42.3	25.2	-59.11	172.3	1,299.7	2,470.3	2,421.8	48.53	50.906				
10,100.0	7,500.0	7,150.0	7,033.5	43.9	25.2	-59.11	172.3	1,299.7	2,563.6	2,513.7	49.94	51.330				
10,200.0	7,500.0	7,128.0	7,012.2	45.6	25.1	-57.83	169.0	1,295.5	2,656.8	2,606.1	50.79	52.311				
10,300.0	7,500.0	7,125.6	7,009.9	47.2	25.1	-57.69	168.7	1,295.0	2,750.9	2,698.8	52.13	52.766				
10,400.0	7,500.0	7,123.4	7,007.7	48.9	25.1	-57.56	168.5	1,294.6	2,845.4	2,791.9	53.49	53.200				
10,500.0	7,500.0	7,121.4	7,005.7	50.5	25.1	-57.44	168.2	1,294.2	2,940.2	2,885.4	54.84	53.615				
10,600.0	7,500.0	7,100.0	6,984.9	52.2	25.0	-56.22	166.1	1,290.1	3,035.8	2,980.2	55.60	54.596				
10,700.0	7,500.0	7,100.0	6,984.9	53.8	25.0	-56.22	166.1	1,290.1	3,131.1	3,074.1	57.01	54.926				
10,800.0	7,500.0	7,100.0	6,984.9	55.5	25.0	-56.22	166.1	1,290.1	3,226.8	3,168.4	58.41	55.241				
10,900.0	7,500.0	7,100.0	6,984.9	57.2	25.0	-56.22	166.1	1,290.1	3,322.7	3,262.9	59.82	55.543				
11,000.0	7,500.0	7,100.0	6,984.9	58.9	25.0	-56.22	166.1	1,290.1	3,418.9	3,357.6	61.24	55.832				
11,100.0	7,500.0	7,100.0	6,984.9	60.6	25.0	-56.22	166.1	1,290.1	3,515.2	3,452.6	62.65	56.108				
11,200.0	7,500.0	7,100.0	6,984.9	62.3	25.0	-56.22	166.1	1,290.1	3,611.8	3,547.7	64.07	56.374				
11,244.1	7,500.0	7,100.0	6,984.9	63.0	25.0	-56.22	166.1	1,290.1	3,654.5	3,589.8	64.70	56.487				
11,300.0	7,500.0	7,100.0	6,984.9	64.0	25.0	-58.46	166.1	1,290.1	3,708.4	3,641.5	66.90	55.433				
11,400.0	7,500.0	7,100.0	6,984.9	65.7	25.0	-61.92	166.1	1,290.1	3,804.5	3,734.1	70.41	54.032				
11,444.1	7,500.0	7,100.0	6,984.9	66.4	25.0	-63.24	166.1	1,290.1	3,846.7	3,774.9	71.82	53.561				
11,500.0	7,500.0	7,100.0	6,984.9	67.4	25.0	-63.24	166.1	1,290.1	3,900.1	3,827.4	72.68	53.664				
11,600.0	7,500.0	7,100.0	6,984.9	69.1	25.0	-63.24	166.1	1,290.1	3,995.8	3,921.6	74.21	53.845				
11,700.0	7,500.0	7,100.0	6,984.9	70.8	25.0	-63.24	166.1	1,290.1	4,091.7	4,015.9	75.75	54.019				
11,800.0	7,500.0	7,100.0	6,984.9	72.5	25.0	-63.24	166.1	1,290.1	4,187.8	4,110.5	77.28	54.188				
11,900.0	7,500.0	7,100.0	6,984.9	74.2	25.0	-63.24	166.1	1,290.1	4,284.1	4,205.3	78.82	54.351				
12,000.0	7,500.0	7,100.0	6,984.9	76.0	25.0	-63.24	166.1	1,290.1	4,380.5	4,300.2	80.36	54.509				
12,100.0	7,500.0	7,100.0	6,984.9	77.7	25.0	-63.24	166.1	1,290.1	4,477.1	4,395.2	81.91	54.662				
12,194.1	7,500.0	7,100.0	6,984.9	79.3	25.0	-63.24	166.1	1,290.1	4,568.2	4,484.8	83.36	54.802				
12,200.0	7,500.0	7,100.0	6,984.9	79.4	25.0	-63.04	166.1	1,290.1	4,573.9	4,490.6	83.32	54.898				
12,300.0	7,500.0	7,100.0	6,984.9	81.1	25.0	-58.95	166.1	1,290.1	4,671.2	4,589.2	81.96	56.992				
12,393.7	7,500.0	7,100.0	6,984.9	82.7	25.0	-53.83	166.1	1,290.1	4,763.0	4,683.9	79.13	60.190				
12,400.0	7,500.0	7,100.0	6,984.9	82.9	25.0	-53.83	166.1	1,290.1	4,769.2	4,690.0	79.22	60.201				
12,500.0	7,500.0	7,100.0	6,984.9	84.6	25.0	-53.83	166.1	1,290.1	4,867.5	4,786.9	80.62	60.378				
12,600.0	7,500.0	7,100.0	6,984.9	86.3	25.0	-53.83	166.1	1,290.1	4,966.0	4,883.9	82.02	60.549				
12,700.0	7,500.0	7,100.0	6,984.9	88.0	25.0	-53.83	166.1	1,290.1	5,064.4	4,981.0	83.41	60.714				
12,800.0	7,500.0	7,100.0	6,984.9	89.7	25.0	-53.83	166.1	1,290.1	5,163.0	5,078.1	84.81	60.874				
12,900.0	7,500.0	7,100.0	6,984.9	91.5	25.0	-53.83	166.1	1,290.1	5,261.5	5,175.3	86.21	61.029				

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Woolley-Becky 2G-7H-E168 - Hz - Plan #2												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	90.42	-0.7	99.9	99.9				
100.0	100.0	100.0	100.0	0.2	0.2	90.42	-0.7	99.9	99.9	99.6	0.30	329.021	
200.0	200.0	200.0	200.0	0.3	0.3	90.42	-0.7	99.9	99.9	99.3	0.65	153.074	
233.3	233.3	233.3	233.3	0.4	0.4	90.42	-0.7	99.9	99.9	99.2	0.77	129.915 CC	
300.0	300.0	299.2	299.2	0.5	0.5	90.44	-0.8	100.1	100.1	99.1	1.00	100.094 ES	
400.0	400.0	397.4	397.4	0.7	0.7	90.60	-1.1	101.8	101.8	100.5	1.35	75.561	
500.0	500.0	495.6	495.5	0.8	0.9	90.90	-1.6	105.1	105.2	103.5	1.70	61.973	
600.0	600.0	593.7	593.5	1.0	1.0	52.15	-2.5	110.1	109.8	107.7	2.04	53.829	
700.0	700.0	691.6	691.2	1.2	1.2	53.61	-3.7	116.7	115.0	112.6	2.39	48.172	
800.0	799.9	789.3	788.5	1.4	1.5	55.66	-5.1	124.9	121.0	118.2	2.74	44.186	
900.0	899.7	886.8	885.5	1.6	1.7	58.19	-6.9	134.7	127.9	124.8	3.09	41.318	
1,000.0	999.4	984.0	982.0	1.8	1.9	61.05	-8.9	146.2	135.9	132.4	3.46	39.235	
1,100.0	1,098.9	1,080.9	1,078.0	2.0	2.2	64.13	-11.2	159.1	145.1	141.3	3.85	37.715	
1,201.3	1,199.5	1,178.7	1,174.6	2.2	2.5	67.35	-13.8	173.9	155.9	151.7	4.26	36.586	
1,300.0	1,297.5	1,273.6	1,268.1	2.5	2.8	70.33	-16.6	189.7	168.2	163.6	4.68	35.928	
1,400.0	1,396.8	1,369.3	1,362.2	2.7	3.2	72.82	-19.7	207.3	182.7	177.6	5.12	35.668	
1,500.0	1,496.0	1,464.7	1,455.6	3.0	3.5	74.83	-23.0	226.2	199.1	193.5	5.58	35.708	
1,600.0	1,595.3	1,559.5	1,548.2	3.3	3.9	76.40	-26.6	246.7	217.2	211.2	6.04	35.974	
1,700.0	1,694.5	1,653.9	1,639.9	3.5	4.3	77.61	-30.4	268.4	237.1	230.6	6.51	36.412	
1,800.0	1,793.8	1,747.6	1,730.6	3.8	4.8	78.52	-34.5	291.6	258.5	251.5	6.99	36.988	
1,900.0	1,893.0	1,846.9	1,826.5	4.0	5.2	79.13	-38.2	317.0	280.5	273.0	7.49	37.432	
2,000.0	1,992.3	1,946.6	1,922.9	4.3	5.7	79.33	-40.1	342.6	301.8	293.8	8.00	37.698	
2,100.0	2,091.5	2,048.5	2,021.4	4.6	6.2	79.32	-40.7	368.6	322.2	313.7	8.52	37.808	
2,200.0	2,190.8	2,152.0	2,121.9	4.8	6.6	79.44	-41.2	393.3	341.1	332.0	9.04	37.713	
2,300.0	2,290.0	2,252.0	2,219.3	5.1	7.0	79.64	-41.6	415.9	358.8	349.3	9.56	37.518	
2,400.0	2,389.3	2,350.4	2,315.2	5.4	7.5	79.83	-42.0	438.0	376.5	366.4	10.08	37.340	
2,500.0	2,488.5	2,448.8	2,411.1	5.7	7.9	80.00	-42.4	460.1	394.2	383.6	10.61	37.171	
2,600.0	2,587.8	2,547.2	2,507.0	5.9	8.3	80.15	-42.8	482.2	411.9	400.8	11.13	37.010	
2,700.0	2,687.0	2,645.6	2,602.9	6.2	8.7	80.30	-43.2	504.4	429.6	418.0	11.66	36.858	
2,800.0	2,786.3	2,744.0	2,698.7	6.5	9.2	80.43	-43.6	526.5	447.3	435.1	12.18	36.715	
2,900.0	2,885.5	2,842.5	2,794.6	6.7	9.6	80.55	-44.0	548.6	465.0	452.3	12.71	36.579	
3,000.0	2,984.8	2,940.9	2,890.5	7.0	10.0	80.66	-44.4	570.8	482.7	469.5	13.24	36.450	
3,100.0	3,084.0	3,039.3	2,986.4	7.3	10.5	80.77	-44.9	592.9	500.4	486.7	13.78	36.329	
3,200.0	3,183.3	3,137.7	3,082.3	7.6	10.9	80.86	-45.3	615.0	518.2	503.8	14.31	36.214	
3,300.0	3,282.5	3,236.1	3,178.2	7.8	11.3	80.95	-45.7	637.1	535.9	521.0	14.84	36.105	
3,400.0	3,381.8	3,334.5	3,274.1	8.1	11.7	81.04	-46.1	659.3	553.6	538.2	15.38	36.002	
3,500.0	3,481.1	3,432.9	3,370.0	8.4	12.2	81.12	-46.5	681.4	571.3	555.4	15.91	35.905	
3,600.0	3,580.3	3,531.4	3,465.9	8.7	12.6	81.19	-46.9	703.5	589.0	572.6	16.45	35.812	
3,700.0	3,679.6	3,629.8	3,561.8	8.9	13.0	81.26	-47.3	725.7	606.7	589.7	16.98	35.724	
3,800.0	3,778.8	3,728.2	3,657.7	9.2	13.5	81.33	-47.7	747.8	624.4	606.9	17.52	35.640	
3,900.0	3,878.1	3,826.6	3,753.6	9.5	13.9	81.39	-48.1	769.9	642.2	624.1	18.06	35.560	
4,000.0	3,977.3	3,925.0	3,849.5	9.8	14.3	81.45	-48.5	792.0	659.9	641.3	18.60	35.484	
4,100.0	4,076.6	4,023.4	3,945.4	10.0	14.7	81.51	-48.9	814.2	677.6	658.5	19.13	35.411	
4,200.0	4,175.8	4,121.9	4,041.3	10.3	15.2	81.56	-49.4	836.3	695.3	675.6	19.67	35.342	
4,300.0	4,275.1	4,220.3	4,137.2	10.6	15.6	81.61	-49.8	858.4	713.0	692.8	20.21	35.276	
4,400.0	4,374.3	4,318.7	4,233.1	10.9	16.0	81.66	-50.2	880.6	730.8	710.0	20.75	35.213	
4,500.0	4,473.6	4,417.1	4,329.0	11.1	16.5	81.71	-50.6	902.7	748.5	727.2	21.29	35.152	
4,600.0	4,572.8	4,515.5	4,424.9	11.4	16.9	81.75	-51.0	924.8	766.2	744.4	21.83	35.094	
4,700.0	4,672.1	4,613.9	4,520.7	11.7	17.3	81.80	-51.4	946.9	783.9	761.5	22.37	35.038	
4,800.0	4,771.3	4,712.4	4,616.6	12.0	17.8	81.84	-51.8	969.1	801.6	778.7	22.91	34.985	
4,900.0	4,870.6	4,810.8	4,712.5	12.2	18.2	81.87	-52.2	991.2	819.4	795.9	23.45	34.934	
5,000.0	4,969.8	4,909.2	4,808.4	12.5	18.6	81.91	-52.6	1,013.3	837.1	813.1	24.00	34.885	

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

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<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Woolley-Becky 2G-7H-E168 - Hz - Plan #2												Offset Site Error:	0.0 ft
Survey Program: O-Geolink MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
5,100.0	5,069.1	5,007.6	4,904.3	12.8	19.0	81.95	-53.0	1,035.5	854.8	830.3	24.54	34.837	
5,200.0	5,168.3	5,106.0	5,000.2	13.1	19.5	81.98	-53.5	1,057.6	872.5	847.5	25.08	34.792	
5,300.0	5,267.6	5,204.4	5,096.1	13.3	19.9	82.01	-53.9	1,079.7	890.3	864.6	25.62	34.748	
5,400.0	5,366.8	5,302.8	5,192.0	13.6	20.3	82.04	-54.3	1,101.8	908.0	881.8	26.16	34.706	
5,500.0	5,466.1	5,401.3	5,287.9	13.9	20.8	82.07	-54.7	1,124.0	925.7	899.0	26.70	34.665	
5,600.0	5,565.3	5,499.7	5,383.8	14.2	21.2	82.10	-55.1	1,146.1	943.4	916.2	27.25	34.626	
5,700.0	5,664.6	5,598.1	5,479.7	14.4	21.6	82.13	-55.5	1,168.2	961.2	933.4	27.79	34.588	
5,800.0	5,763.8	5,696.5	5,575.6	14.7	22.1	82.16	-55.9	1,190.4	978.9	950.5	28.33	34.551	
5,900.0	5,863.1	5,794.9	5,671.5	15.0	22.5	82.18	-56.3	1,212.5	996.6	967.7	28.87	34.516	
6,000.0	5,962.3	5,893.3	5,767.4	15.3	22.9	82.21	-56.7	1,234.6	1,014.3	984.9	29.42	34.482	
6,100.0	6,061.6	5,991.8	5,863.3	15.5	23.3	82.23	-57.1	1,256.7	1,032.1	1,002.1	29.96	34.449	
6,200.0	6,160.9	6,090.2	5,959.2	15.8	23.8	82.26	-57.6	1,278.9	1,049.8	1,019.3	30.50	34.417	
6,300.0	6,260.1	6,188.6	6,055.1	16.1	24.2	82.28	-58.0	1,301.0	1,067.5	1,036.5	31.04	34.386	
6,400.0	6,359.4	6,287.0	6,151.0	16.4	24.6	82.30	-58.4	1,323.1	1,085.2	1,053.6	31.59	34.356	
6,500.0	6,458.6	6,385.4	6,246.9	16.6	25.1	82.32	-58.8	1,345.3	1,103.0	1,070.8	32.13	34.327	
6,600.0	6,557.9	6,483.8	6,342.7	16.9	25.5	82.34	-59.2	1,367.4	1,120.7	1,088.0	32.67	34.299	
6,700.0	6,657.1	6,582.2	6,438.6	17.2	25.9	82.36	-59.6	1,389.5	1,138.4	1,105.2	33.22	34.271	
6,800.0	6,756.4	6,680.7	6,534.5	17.5	26.4	82.38	-60.0	1,411.6	1,156.1	1,122.4	33.76	34.245	
6,900.0	6,855.6	6,779.1	6,630.4	17.7	26.8	82.40	-60.4	1,433.8	1,173.9	1,139.6	34.30	34.219	
6,919.5	6,875.0	6,798.3	6,649.1	17.8	26.9	82.40	-60.5	1,438.1	1,177.3	1,142.9	34.41	34.214	
6,950.0	6,905.3	6,828.4	6,678.4	17.9	27.0	82.22	-60.6	1,444.9	1,182.3	1,147.6	34.72	34.052	
7,000.0	6,955.1	6,877.8	6,726.6	17.9	27.2	2.30	-60.8	1,456.0	1,188.6	1,153.6	35.00	33.959 SF	
7,050.0	7,004.8	6,927.0	6,774.6	17.9	27.4	-26.74	-61.0	1,467.0	1,192.6	1,157.6	35.01	34.065	
7,100.0	7,053.8	6,975.7	6,822.0	17.9	27.7	-37.91	-61.2	1,478.0	1,194.3	1,159.5	34.75	34.364	
7,150.0	7,101.9	7,023.5	6,868.6	17.9	27.9	-43.82	-61.4	1,488.7	1,193.8	1,159.5	34.25	34.850	
7,200.0	7,148.7	7,070.0	6,913.9	17.8	28.1	-47.84	-61.6	1,499.2	1,191.2	1,157.7	33.55	35.510	
7,250.0	7,193.8	7,114.8	6,957.6	17.7	28.3	-51.08	-61.8	1,509.3	1,186.8	1,154.1	32.67	36.322	
7,300.0	7,236.9	7,157.7	6,999.3	17.5	28.5	-53.99	-62.0	1,518.9	1,180.6	1,149.0	31.69	37.253	
7,350.0	7,277.7	7,198.2	7,038.8	17.4	28.6	-56.76	-62.2	1,528.0	1,173.1	1,142.5	30.67	38.248	
7,400.0	7,315.7	7,236.1	7,075.8	17.2	28.8	-59.47	-62.3	1,536.5	1,164.5	1,134.8	29.68	39.237	
7,450.0	7,350.9	7,271.1	7,109.9	17.1	29.0	-62.14	-62.5	1,544.4	1,155.0	1,126.3	28.77	40.140	
7,500.0	7,382.8	7,303.0	7,140.9	16.9	29.1	-64.74	-62.6	1,551.6	1,145.1	1,117.1	28.01	40.881	
7,550.0	7,411.3	7,331.4	7,168.6	16.7	29.2	-67.23	-62.7	1,558.0	1,135.0	1,107.6	27.41	41.409	
7,600.0	7,436.1	7,376.2	7,212.2	16.6	29.4	-70.49	-61.9	1,568.0	1,125.0	1,098.0	27.02	41.645	
7,650.0	7,457.1	7,412.5	7,247.5	16.5	29.6	-73.44	-58.7	1,576.1	1,115.3	1,088.5	26.79	41.628	
7,700.0	7,474.0	7,431.4	7,265.7	16.4	29.6	-75.43	-56.1	1,580.3	1,106.5	1,079.8	26.66	41.506	
7,750.0	7,486.8	7,439.1	7,273.2	16.4	29.7	-76.69	-54.9	1,582.0	1,099.0	1,072.4	26.59	41.330	
7,800.0	7,495.3	7,439.4	7,273.5	16.4	29.7	-77.36	-54.9	1,582.1	1,093.1	1,066.5	26.59	41.117	
7,850.0	7,499.5	7,434.6	7,268.8	16.5	29.7	-77.56	-55.7	1,581.0	1,088.9	1,062.2	26.64	40.873	
7,873.6	7,500.0	7,430.9	7,265.3	16.5	29.6	-77.52	-56.2	1,580.2	1,087.4	1,060.8	26.69	40.746	
7,900.0	7,500.0	7,426.7	7,261.2	16.5	29.6	-77.29	-56.8	1,579.3	1,086.4	1,059.6	26.74	40.624	
7,932.6	7,500.0	7,421.9	7,256.6	16.6	29.6	-77.05	-57.5	1,578.2	1,085.9	1,059.0	26.85	40.441	
8,000.0	7,500.0	7,413.7	7,248.6	16.9	29.6	-76.62	-58.6	1,576.4	1,087.9	1,060.8	27.08	40.176	
8,100.0	7,500.0	7,400.0	7,235.4	17.4	29.5	-75.90	-60.1	1,573.4	1,098.5	1,070.9	27.60	39.801	
8,200.0	7,500.0	7,400.0	7,235.4	18.0	29.5	-75.90	-60.1	1,573.4	1,117.9	1,089.6	28.33	39.455	
8,300.0	7,500.0	7,400.0	7,235.4	18.8	29.5	-75.90	-60.1	1,573.4	1,145.7	1,116.5	29.21	39.219	
8,400.0	7,500.0	7,386.8	7,222.6	19.7	29.5	-75.21	-61.2	1,570.4	1,181.2	1,151.1	30.16	39.165	
8,500.0	7,500.0	7,383.1	7,218.9	20.7	29.4	-75.01	-61.5	1,569.6	1,223.9	1,192.7	31.25	39.172	
8,600.0	7,500.0	7,379.9	7,215.8	21.9	29.4	-74.84	-61.7	1,568.9	1,273.1	1,240.6	32.42	39.273	
8,700.0	7,500.0	7,377.2	7,213.2	23.1	29.4	-74.70	-61.8	1,568.3	1,327.9	1,294.2	33.66	39.453	
8,800.0	7,500.0	7,374.9	7,211.0	24.3	29.4	-74.58	-61.9	1,567.7	1,387.8	1,352.8	34.96	39.698	
8,900.0	7,500.0	7,372.9	7,209.0	25.6	29.4	-74.47	-62.1	1,567.3	1,452.1	1,415.8	36.31	39.994	

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



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<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Woolley-Becky 2G-7H-E168 - Hz - Plan #2													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		
9,000.0	7,500.0	7,371.2	7,207.3	27.0	29.4	-74.38	-62.1	1,566.9	1,520.2	1,482.5	37.70	40.327		
9,100.0	7,500.0	7,369.6	7,205.8	28.4	29.4	-74.30	-62.2	1,566.5	1,591.7	1,552.6	39.12	40.688		
9,200.0	7,500.0	7,368.2	7,204.5	29.9	29.4	-74.23	-62.3	1,566.2	1,666.2	1,625.6	40.57	41.066		
9,300.0	7,500.0	7,350.0	7,186.7	31.4	29.3	-73.27	-62.7	1,562.1	1,743.4	1,701.5	41.91	41.602		
9,400.0	7,500.0	7,350.0	7,186.7	32.9	29.3	-73.27	-62.7	1,562.1	1,822.6	1,779.2	43.41	41.989		
9,500.0	7,500.0	7,350.0	7,186.7	34.4	29.3	-73.27	-62.7	1,562.1	1,903.8	1,858.9	44.93	42.376		
9,600.0	7,500.0	7,350.0	7,186.7	36.0	29.3	-73.27	-62.7	1,562.1	1,986.7	1,940.2	46.46	42.761		
9,700.0	7,500.0	7,350.0	7,186.7	37.5	29.3	-73.27	-62.7	1,562.1	2,071.1	2,023.0	48.01	43.141		
9,800.0	7,500.0	7,350.0	7,186.7	39.1	29.3	-73.27	-62.7	1,562.1	2,156.8	2,107.2	49.57	43.514		
9,900.0	7,500.0	7,350.0	7,186.7	40.7	29.3	-73.27	-62.7	1,562.1	2,243.7	2,192.5	51.13	43.878		
10,000.0	7,500.0	7,350.0	7,186.7	42.3	29.3	-73.27	-62.7	1,562.1	2,331.6	2,278.9	52.71	44.233		
10,100.0	7,500.0	7,350.0	7,186.7	43.9	29.3	-73.27	-62.7	1,562.1	2,420.5	2,366.2	54.30	44.577		
10,200.0	7,500.0	7,350.0	7,186.7	45.6	29.3	-73.27	-62.7	1,562.1	2,510.3	2,454.4	55.89	44.912		
10,300.0	7,500.0	7,350.0	7,186.7	47.2	29.3	-73.27	-62.7	1,562.1	2,600.7	2,543.2	57.49	45.236		
10,400.0	7,500.0	7,350.0	7,186.7	48.9	29.3	-73.27	-62.7	1,562.1	2,691.9	2,632.8	59.10	45.549		
10,500.0	7,500.0	7,350.0	7,186.7	50.5	29.3	-73.27	-62.7	1,562.1	2,783.6	2,722.9	60.71	45.852		
10,600.0	7,500.0	7,350.0	7,186.7	52.2	29.3	-73.27	-62.7	1,562.1	2,875.9	2,813.6	62.33	46.144		
10,700.0	7,500.0	7,350.0	7,186.7	53.8	29.3	-73.27	-62.7	1,562.1	2,968.8	2,904.8	63.94	46.427		
10,800.0	7,500.0	7,350.0	7,186.7	55.5	29.3	-73.27	-62.7	1,562.1	3,062.0	2,996.4	65.57	46.700		
10,900.0	7,500.0	7,350.0	7,186.7	57.2	29.3	-73.27	-62.7	1,562.1	3,155.7	3,088.5	67.20	46.963		
11,000.0	7,500.0	7,350.0	7,186.7	58.9	29.3	-73.27	-62.7	1,562.1	3,249.7	3,180.9	68.83	47.217		
11,100.0	7,500.0	7,350.0	7,186.7	60.6	29.3	-73.27	-62.7	1,562.1	3,344.1	3,273.7	70.46	47.462		
11,200.0	7,500.0	7,350.0	7,186.7	62.3	29.3	-73.27	-62.7	1,562.1	3,438.8	3,366.7	72.09	47.699		
11,244.1	7,500.0	7,350.0	7,186.7	63.0	29.3	-73.27	-62.7	1,562.1	3,480.7	3,407.9	72.82	47.801		
11,300.0	7,500.0	7,350.0	7,186.7	64.0	29.3	-74.20	-62.7	1,562.1	3,533.7	3,459.5	74.21	47.619		
11,400.0	7,500.0	7,350.0	7,186.7	65.7	29.3	-75.65	-62.7	1,562.1	3,627.8	3,551.2	76.62	47.349		
11,444.1	7,500.0	7,350.0	7,186.7	66.4	29.3	-76.22	-62.7	1,562.1	3,669.1	3,591.5	77.66	47.247		
11,500.0	7,500.0	7,350.0	7,186.7	67.4	29.3	-76.22	-62.7	1,562.1	3,721.3	3,642.7	78.59	47.351		
11,600.0	7,500.0	7,350.0	7,186.7	69.1	29.3	-76.22	-62.7	1,562.1	3,815.0	3,734.8	80.26	47.534		
11,700.0	7,500.0	7,350.0	7,186.7	70.8	29.3	-76.22	-62.7	1,562.1	3,909.1	3,827.1	81.93	47.713		
11,800.0	7,500.0	7,350.0	7,186.7	72.5	29.3	-76.22	-62.7	1,562.1	4,003.4	3,919.8	83.60	47.886		
11,900.0	7,500.0	7,350.0	7,186.7	74.2	29.3	-76.22	-62.7	1,562.1	4,097.9	4,012.7	85.28	48.055		
12,000.0	7,500.0	7,350.0	7,186.7	76.0	29.3	-76.22	-62.7	1,562.1	4,192.8	4,105.8	86.95	48.220		
12,100.0	7,500.0	7,350.0	7,186.7	77.7	29.3	-76.22	-62.7	1,562.1	4,287.9	4,199.2	88.63	48.380		
12,194.1	7,500.0	7,350.0	7,186.7	79.3	29.3	-76.22	-62.7	1,562.1	4,377.6	4,287.3	90.21	48.527		
12,200.0	7,500.0	7,350.0	7,186.7	79.4	29.3	-76.13	-62.7	1,562.1	4,383.1	4,292.9	90.26	48.562		
12,300.0	7,500.0	7,350.0	7,186.7	81.1	29.3	-74.37	-62.7	1,562.1	4,479.2	4,388.2	90.97	49.239		
12,393.7	7,500.0	7,350.0	7,186.7	82.7	29.3	-72.21	-62.7	1,562.1	4,570.1	4,478.8	91.30	50.054		
12,400.0	7,500.0	7,350.0	7,186.7	82.9	29.3	-72.21	-62.7	1,562.1	4,576.2	4,484.8	91.41	50.065		
12,500.0	7,500.0	7,350.0	7,186.7	84.6	29.3	-72.21	-62.7	1,562.1	4,673.7	4,580.7	93.05	50.226		
12,600.0	7,500.0	7,350.0	7,186.7	86.3	29.3	-72.21	-62.7	1,562.1	4,771.3	4,676.6	94.70	50.383		
12,700.0	7,500.0	7,350.0	7,186.7	88.0	29.3	-72.21	-62.7	1,562.1	4,869.1	4,772.7	96.35	50.535		
12,800.0	7,500.0	7,350.0	7,186.7	89.7	29.3	-72.21	-62.7	1,562.1	4,966.9	4,868.9	98.00	50.682		
12,900.0	7,500.0	7,350.0	7,186.7	91.5	29.3	-72.21	-62.7	1,562.1	5,064.7	4,965.1	99.65	50.825		
13,000.0	7,500.0	7,350.0	7,186.7	93.2	29.3	-72.21	-62.7	1,562.1	5,162.7	5,061.4	101.30	50.963		
13,100.0	7,500.0	7,350.0	7,186.7	94.9	29.3	-72.21	-62.7	1,562.1	5,260.8	5,157.8	102.96	51.098		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Woolley-Becky 2H-7H-E168 - Hz - Plan #3												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	90.38	-0.7	110.0	110.0				
100.0	100.0	100.0	100.0	0.2	0.2	90.38	-0.7	110.0	110.0	109.7	0.30	362.198	
200.0	200.0	200.0	200.0	0.3	0.3	90.38	-0.7	110.0	110.0	109.3	0.65	168.509	CC, ES
300.0	300.0	298.1	298.1	0.5	0.5	90.39	-0.8	110.8	110.9	109.9	1.00	110.972	
400.0	400.0	396.2	396.1	0.7	0.7	90.42	-0.8	113.3	113.4	112.1	1.35	84.217	
500.0	500.0	494.1	494.0	0.8	0.9	90.47	-1.0	117.5	117.7	116.0	1.70	69.327	
600.0	600.0	591.9	591.6	1.0	1.1	51.32	-1.1	123.4	123.1	121.1	2.04	60.500	
700.0	700.0	689.5	688.9	1.2	1.3	52.22	-1.4	130.9	129.2	126.8	2.38	54.239	
800.0	799.9	787.0	786.0	1.4	1.5	53.59	-1.7	140.0	136.0	133.2	2.73	49.759	
900.0	899.7	884.2	882.6	1.6	1.7	55.34	-2.0	150.8	143.5	140.4	3.09	46.447	
1,000.0	999.4	981.2	978.8	1.8	2.0	57.39	-2.4	163.1	151.9	148.5	3.46	43.934	
1,100.0	1,098.9	1,077.9	1,074.5	2.0	2.3	59.64	-2.8	177.1	161.3	157.5	3.84	41.978	
1,201.3	1,199.5	1,175.6	1,170.9	2.2	2.6	62.06	-3.3	192.8	171.9	167.7	4.26	40.396	
1,300.0	1,297.5	1,270.4	1,264.2	2.5	2.9	64.35	-3.9	209.6	183.8	179.1	4.68	39.303	
1,400.0	1,396.8	1,366.2	1,358.1	2.7	3.3	66.27	-4.4	228.2	197.7	192.6	5.12	38.638	
1,500.0	1,496.0	1,461.5	1,451.3	3.0	3.7	67.81	-5.1	248.2	213.3	207.8	5.57	38.315	
1,600.0	1,595.3	1,556.3	1,543.7	3.3	4.1	69.02	-5.7	269.7	230.7	224.7	6.03	38.257	SF
1,700.0	1,694.5	1,650.7	1,635.2	3.5	4.5	69.95	-6.5	292.6	249.7	243.2	6.50	38.409	
1,800.0	1,793.8	1,744.4	1,725.8	3.8	4.9	70.63	-7.2	316.8	270.3	263.3	6.98	38.731	
1,900.0	1,893.0	1,837.6	1,815.4	4.0	5.4	71.12	-8.0	342.3	292.4	284.9	7.46	39.190	
2,000.0	1,992.3	1,930.2	1,904.0	4.3	5.9	71.44	-8.9	369.1	316.0	308.1	7.95	39.765	
2,100.0	2,091.5	2,022.0	1,991.5	4.6	6.4	71.62	-9.7	397.1	341.1	332.7	8.43	40.441	
2,200.0	2,190.8	2,118.6	2,083.2	4.8	7.0	71.75	-10.7	427.3	366.9	358.0	8.94	41.063	
2,300.0	2,290.0	2,215.2	2,174.9	5.1	7.6	71.86	-11.6	457.5	392.7	383.3	9.44	41.605	
2,400.0	2,389.3	2,311.8	2,266.7	5.4	8.1	71.95	-12.6	487.7	418.6	408.6	9.95	42.082	
2,500.0	2,488.5	2,408.4	2,358.5	5.7	8.7	72.04	-13.5	517.9	444.4	433.9	10.46	42.503	
2,600.0	2,587.8	2,505.0	2,450.2	5.9	9.2	72.11	-14.5	548.1	470.2	459.2	10.97	42.878	
2,700.0	2,687.0	2,601.6	2,542.0	6.2	9.8	72.18	-15.4	578.3	496.0	484.6	11.48	43.214	
2,800.0	2,786.3	2,698.2	2,633.7	6.5	10.4	72.24	-16.4	608.5	521.9	509.9	11.99	43.515	
2,900.0	2,885.5	2,794.8	2,725.5	6.7	11.0	72.29	-17.3	638.7	547.7	535.2	12.51	43.788	
3,000.0	2,984.8	2,891.4	2,817.3	7.0	11.5	72.34	-18.3	668.9	573.5	560.5	13.02	44.035	
3,100.0	3,084.0	2,988.0	2,909.0	7.3	12.1	72.39	-19.2	699.1	599.3	585.8	13.54	44.260	
3,200.0	3,183.3	3,084.6	3,000.8	7.6	12.7	72.43	-20.2	729.3	625.2	611.1	14.06	44.466	
3,300.0	3,282.5	3,181.3	3,092.5	7.8	13.2	72.47	-21.1	759.5	651.0	636.4	14.58	44.655	
3,400.0	3,381.8	3,277.9	3,184.3	8.1	13.8	72.51	-22.1	789.7	676.8	661.7	15.10	44.829	
3,500.0	3,481.1	3,374.5	3,276.0	8.4	14.4	72.54	-23.0	819.9	702.7	687.0	15.62	44.989	
3,600.0	3,580.3	3,471.1	3,367.8	8.7	15.0	72.57	-24.0	850.2	728.5	712.4	16.14	45.138	
3,700.0	3,679.6	3,567.7	3,459.6	8.9	15.5	72.60	-24.9	880.4	754.3	737.7	16.66	45.276	
3,800.0	3,778.8	3,664.3	3,551.3	9.2	16.1	72.62	-25.9	910.6	780.1	763.0	17.18	45.404	
3,900.0	3,878.1	3,760.9	3,643.1	9.5	16.7	72.65	-26.8	940.8	806.0	788.3	17.70	45.524	
4,000.0	3,977.3	3,857.5	3,734.8	9.8	17.2	72.67	-27.8	971.0	831.8	813.6	18.23	45.635	
4,100.0	4,076.6	3,954.1	3,826.6	10.0	17.8	72.69	-28.7	1,001.2	857.6	838.9	18.75	45.740	
4,200.0	4,175.8	4,050.7	3,918.4	10.3	18.4	72.72	-29.6	1,031.4	883.5	864.2	19.27	45.838	
4,300.0	4,275.1	4,147.3	4,010.1	10.6	19.0	72.73	-30.6	1,061.6	909.3	889.5	19.80	45.930	
4,400.0	4,374.3	4,243.9	4,101.9	10.9	19.5	72.75	-31.5	1,091.8	935.1	914.8	20.32	46.017	
4,500.0	4,473.6	4,340.5	4,193.6	11.1	20.1	72.77	-32.5	1,122.0	961.0	940.1	20.85	46.099	
4,600.0	4,572.8	4,437.1	4,285.4	11.4	20.7	72.79	-33.4	1,152.2	986.8	965.4	21.37	46.176	
4,700.0	4,672.1	4,533.7	4,377.1	11.7	21.3	72.80	-34.4	1,182.4	1,012.6	990.7	21.89	46.250	
4,800.0	4,771.3	4,630.3	4,468.9	12.0	21.8	72.82	-35.3	1,212.6	1,038.5	1,016.0	22.42	46.319	
4,900.0	4,870.6	4,726.9	4,560.7	12.2	22.4	72.83	-36.3	1,242.8	1,064.3	1,041.3	22.94	46.385	
5,000.0	4,969.8	4,823.6	4,652.4	12.5	23.0	72.85	-37.2	1,273.0	1,090.1	1,066.6	23.47	46.447	
5,100.0	5,069.1	4,920.2	4,744.2	12.8	23.6	72.86	-38.2	1,303.2	1,115.9	1,092.0	24.00	46.507	

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Woolley-Becky 2H-7H-E168 - Hz - Plan #3											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	
5,200.0	5,168.3	5,016.8	4,835.9	13.1	24.2	72.87	-39.1	1,333.4	1,141.8	1,117.3	24.52	46.563	
5,300.0	5,267.6	5,113.4	4,927.7	13.3	24.7	72.88	-40.1	1,363.6	1,167.6	1,142.6	25.05	46.617	
5,400.0	5,366.8	5,210.0	5,019.5	13.6	25.3	72.89	-41.0	1,393.8	1,193.4	1,167.9	25.57	46.669	
5,500.0	5,466.1	5,306.6	5,111.2	13.9	25.9	72.90	-42.0	1,424.0	1,219.3	1,193.2	26.10	46.718	
5,600.0	5,565.3	5,403.2	5,203.0	14.2	26.5	72.91	-42.9	1,454.2	1,245.1	1,218.5	26.62	46.765	
5,700.0	5,664.6	5,499.8	5,294.7	14.4	27.0	72.92	-43.9	1,484.4	1,270.9	1,243.8	27.15	46.810	
5,800.0	5,763.8	5,596.4	5,386.5	14.7	27.6	72.93	-44.8	1,514.6	1,296.8	1,269.1	27.68	46.853	
5,900.0	5,863.1	5,693.0	5,478.2	15.0	28.2	72.94	-45.8	1,544.8	1,322.6	1,294.4	28.20	46.894	
6,000.0	5,962.3	5,789.6	5,570.0	15.3	28.8	72.95	-46.7	1,575.0	1,348.4	1,319.7	28.73	46.934	
6,100.0	6,061.6	5,886.2	5,661.8	15.5	29.3	72.96	-47.7	1,605.2	1,374.3	1,345.0	29.26	46.972	
6,200.0	6,160.9	5,982.8	5,753.5	15.8	29.9	72.97	-48.6	1,635.4	1,400.1	1,370.3	29.78	47.009	
6,300.0	6,260.1	6,079.4	5,845.3	16.1	30.5	72.98	-49.6	1,665.6	1,425.9	1,395.6	30.31	47.044	
6,400.0	6,359.4	6,176.0	5,937.0	16.4	31.1	72.98	-50.5	1,695.8	1,451.8	1,420.9	30.84	47.078	
6,500.0	6,458.6	6,272.6	6,028.8	16.6	31.6	72.99	-51.5	1,726.0	1,477.6	1,446.2	31.36	47.111	
6,600.0	6,557.9	6,369.2	6,120.6	16.9	32.2	73.00	-52.4	1,756.2	1,503.4	1,471.5	31.89	47.142	
6,700.0	6,657.1	6,465.9	6,212.3	17.2	32.8	73.01	-53.3	1,786.4	1,529.3	1,496.8	32.42	47.172	
6,800.0	6,756.4	6,562.5	6,304.1	17.5	33.4	73.01	-54.3	1,816.6	1,555.1	1,522.1	32.95	47.202	
6,900.0	6,855.6	6,659.1	6,395.8	17.7	34.0	73.02	-55.2	1,846.8	1,580.9	1,547.4	33.47	47.230	
6,919.5	6,875.0	6,677.9	6,413.7	17.8	34.1	73.02	-55.4	1,852.7	1,586.0	1,552.4	33.58	47.235	
6,950.0	6,905.3	6,707.4	6,441.8	17.9	34.2	51.13	-55.7	1,862.0	1,593.5	1,559.5	34.06	46.790	
7,000.0	6,955.1	6,756.0	6,487.9	17.9	34.5	-6.25	-56.2	1,877.1	1,604.6	1,570.0	34.62	46.351	
7,050.0	7,004.8	6,804.4	6,533.9	17.9	34.8	-34.70	-56.7	1,892.3	1,613.9	1,579.0	34.90	46.250	
7,100.0	7,053.8	6,852.3	6,579.3	17.9	35.1	-45.22	-57.1	1,907.2	1,621.5	1,586.6	34.89	46.479	
7,150.0	7,101.9	6,899.3	6,624.0	17.9	35.4	-50.41	-57.6	1,921.9	1,627.4	1,592.8	34.61	47.024	
7,200.0	7,148.7	6,945.0	6,667.4	17.8	35.7	-53.65	-58.1	1,936.2	1,631.6	1,597.5	34.08	47.870	
7,250.0	7,193.8	6,989.2	6,709.4	17.7	35.9	-56.04	-58.5	1,950.0	1,634.3	1,600.9	33.36	48.993	
7,300.0	7,236.9	7,031.4	6,749.5	17.5	36.2	-58.04	-58.9	1,963.2	1,635.6	1,603.1	32.48	50.359	
7,350.0	7,277.7	7,071.4	6,787.5	17.4	36.4	-59.83	-59.3	1,975.7	1,635.6	1,604.1	31.50	51.919	
7,400.0	7,315.7	7,108.8	6,823.0	17.2	36.6	-61.51	-59.7	1,987.4	1,634.5	1,604.0	30.49	53.605	
7,450.0	7,350.9	7,143.4	6,855.9	17.1	36.8	-63.11	-60.0	1,998.3	1,632.6	1,603.1	29.51	55.327	
7,500.0	7,382.8	7,174.9	6,885.8	16.9	37.0	-64.64	-60.3	2,008.1	1,629.9	1,601.3	28.60	56.986	
7,550.0	7,411.3	7,203.0	6,912.5	16.7	37.2	-66.09	-60.6	2,016.9	1,626.8	1,598.9	27.82	58.478	
7,600.0	7,436.1	7,237.8	6,945.6	16.6	37.4	-67.75	-60.8	2,027.8	1,623.3	1,596.1	27.19	59.707	
7,650.0	7,457.1	7,314.0	7,017.8	16.5	37.8	-70.86	-54.9	2,050.9	1,619.3	1,592.5	26.82	60.367	
7,700.0	7,474.0	7,341.8	7,044.0	16.4	38.0	-72.37	-50.2	2,059.0	1,615.4	1,588.8	26.59	60.761	
7,750.0	7,486.8	7,348.8	7,050.5	16.4	38.0	-73.06	-48.8	2,061.1	1,611.9	1,585.5	26.43	60.987	
7,800.0	7,495.3	7,345.2	7,047.2	16.4	38.0	-73.28	-49.5	2,060.0	1,609.1	1,582.7	26.36	61.038	
7,850.0	7,499.5	7,335.7	7,038.3	16.5	38.0	-73.20	-51.3	2,057.3	1,606.8	1,580.5	26.39	60.894	
7,873.6	7,500.0	7,329.8	7,032.7	16.5	37.9	-73.08	-52.4	2,055.6	1,606.0	1,579.6	26.43	60.753	
7,900.0	7,500.0	7,323.3	7,026.6	16.5	37.9	-72.85	-53.4	2,053.7	1,605.3	1,578.8	26.48	60.620	
7,929.6	7,500.0	7,316.9	7,020.6	16.6	37.9	-72.62	-54.4	2,051.8	1,605.1	1,578.5	26.57	60.402	
8,000.0	7,500.0	7,304.8	7,009.1	16.9	37.8	-72.19	-56.1	2,048.2	1,606.6	1,579.8	26.80	59.949	
8,100.0	7,500.0	7,292.4	6,997.4	17.4	37.7	-71.75	-57.6	2,044.5	1,613.9	1,586.6	27.31	59.085	
8,200.0	7,500.0	7,283.6	6,989.1	18.0	37.7	-71.44	-58.4	2,041.8	1,627.3	1,599.3	28.00	58.113	
8,300.0	7,500.0	7,277.0	6,982.8	18.8	37.6	-71.21	-59.0	2,039.8	1,646.6	1,617.7	28.84	57.103	
8,400.0	7,500.0	7,271.9	6,977.9	19.7	37.6	-71.02	-59.4	2,038.3	1,671.6	1,641.8	29.79	56.112	
8,500.0	7,500.0	7,267.8	6,974.0	20.7	37.6	-70.88	-59.7	2,037.0	1,702.2	1,671.3	30.85	55.179	
8,600.0	7,500.0	7,264.4	6,970.8	21.9	37.6	-70.76	-59.9	2,036.0	1,737.9	1,705.9	31.99	54.327	
8,700.0	7,500.0	7,250.0	6,957.1	23.1	37.5	-70.24	-60.5	2,031.5	1,778.7	1,745.5	33.14	53.664	
8,800.0	7,500.0	7,250.0	6,957.1	24.3	37.5	-70.24	-60.5	2,031.5	1,823.9	1,789.5	34.42	52.985	
8,900.0	7,500.0	7,250.0	6,957.1	25.6	37.5	-70.24	-60.5	2,031.5	1,873.3	1,837.6	35.75	52.403	
9,000.0	7,500.0	7,250.0	6,957.1	27.0	37.5	-70.24	-60.5	2,031.5	1,926.7	1,889.6	37.12	51.912	

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Woolley-Becky 2H-7H-E168 - Hz - Plan #3													Offset Site Error:	0.0 ft
Survey Program: 0-Geolink 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)				
9,100.0	7,500.0	7,250.0	6,957.1	28.4	37.5	-70.24	-60.5	2,031.5	1,983.7	1,945.2	38.51	51.506		
9,200.0	7,500.0	7,250.0	6,957.1	29.9	37.5	-70.24	-60.5	2,031.5	2,044.0	2,004.1	39.94	51.174		
9,300.0	7,500.0	7,250.0	6,957.1	31.4	37.5	-70.24	-60.5	2,031.5	2,107.3	2,066.0	41.39	50.908		
9,400.0	7,500.0	7,250.0	6,957.1	32.9	37.5	-70.24	-60.5	2,031.5	2,173.4	2,130.6	42.87	50.701		
9,500.0	7,500.0	7,250.0	6,957.1	34.4	37.5	-70.24	-60.5	2,031.5	2,242.0	2,197.7	44.36	50.544		
9,600.0	7,500.0	7,250.0	6,957.1	36.0	37.5	-70.24	-60.5	2,031.5	2,312.9	2,267.0	45.86	50.430		
9,700.0	7,500.0	7,250.0	6,957.1	37.5	37.5	-70.24	-60.5	2,031.5	2,385.9	2,338.5	47.38	50.353		
9,800.0	7,500.0	7,250.0	6,957.1	39.1	37.5	-70.24	-60.5	2,031.5	2,460.7	2,411.8	48.91	50.308		
9,900.0	7,500.0	7,250.0	6,957.1	40.7	37.5	-70.24	-60.5	2,031.5	2,537.3	2,486.9	50.45	50.289		
10,000.0	7,500.0	7,250.0	6,957.1	42.3	37.5	-70.24	-60.5	2,031.5	2,615.5	2,563.5	52.01	50.294		
10,100.0	7,500.0	7,250.0	6,957.1	43.9	37.5	-70.24	-60.5	2,031.5	2,695.2	2,641.6	53.56	50.317		
10,200.0	7,500.0	7,250.0	6,957.1	45.6	37.5	-70.24	-60.5	2,031.5	2,776.1	2,721.0	55.13	50.357		
10,300.0	7,500.0	7,250.0	6,957.1	47.2	37.5	-70.24	-60.5	2,031.5	2,858.3	2,801.6	56.70	50.410		
10,400.0	7,500.0	7,250.0	6,957.1	48.9	37.5	-70.24	-60.5	2,031.5	2,941.5	2,883.2	58.28	50.474		
10,500.0	7,500.0	7,250.0	6,957.1	50.5	37.5	-70.24	-60.5	2,031.5	3,025.8	2,965.9	59.86	50.548		
10,600.0	7,500.0	7,250.0	6,957.1	52.2	37.5	-70.24	-60.5	2,031.5	3,111.0	3,049.5	61.45	50.629		
10,700.0	7,500.0	7,250.0	6,957.1	53.8	37.5	-70.24	-60.5	2,031.5	3,197.0	3,134.0	63.04	50.716		
10,800.0	7,500.0	7,250.0	6,957.1	55.5	37.5	-70.24	-60.5	2,031.5	3,283.9	3,219.3	64.63	50.808		
10,900.0	7,500.0	7,250.0	6,957.1	57.2	37.5	-70.24	-60.5	2,031.5	3,371.5	3,305.2	66.23	50.904		
11,000.0	7,500.0	7,250.0	6,957.1	58.9	37.5	-70.24	-60.5	2,031.5	3,459.7	3,391.9	67.83	51.003		
11,100.0	7,500.0	7,250.0	6,957.1	60.6	37.5	-70.24	-60.5	2,031.5	3,548.6	3,479.2	69.44	51.105		
11,200.0	7,500.0	7,250.0	6,957.1	62.3	37.5	-70.24	-60.5	2,031.5	3,638.1	3,567.0	71.05	51.208		
11,244.1	7,500.0	7,250.0	6,957.1	63.0	37.5	-70.24	-60.5	2,031.5	3,677.7	3,606.0	71.76	51.253		
11,300.0	7,500.0	7,250.0	6,957.1	64.0	37.5	-71.00	-60.5	2,031.5	3,727.8	3,654.7	73.13	50.976		
11,400.0	7,500.0	7,250.0	6,957.1	65.7	37.5	-72.23	-60.5	2,031.5	3,816.8	3,741.2	75.58	50.499		
11,444.1	7,500.0	7,250.0	6,957.1	66.4	37.5	-72.72	-60.5	2,031.5	3,855.7	3,779.1	76.66	50.296		
11,500.0	7,500.0	7,250.0	6,957.1	67.4	37.5	-72.72	-60.5	2,031.5	3,905.0	3,827.4	77.58	50.337		
11,600.0	7,500.0	7,250.0	6,957.1	69.1	37.5	-72.72	-60.5	2,031.5	3,993.7	3,914.4	79.22	50.414		
11,700.0	7,500.0	7,250.0	6,957.1	70.8	37.5	-72.72	-60.5	2,031.5	4,082.8	4,002.0	80.86	50.492		
11,800.0	7,500.0	7,250.0	6,957.1	72.5	37.5	-72.72	-60.5	2,031.5	4,172.5	4,090.0	82.50	50.572		
11,900.0	7,500.0	7,250.0	6,957.1	74.2	37.5	-72.72	-60.5	2,031.5	4,262.6	4,178.4	84.15	50.654		
12,000.0	7,500.0	7,250.0	6,957.1	76.0	37.5	-72.72	-60.5	2,031.5	4,353.1	4,267.3	85.80	50.737		
12,100.0	7,500.0	7,250.0	6,957.1	77.7	37.5	-72.72	-60.5	2,031.5	4,444.1	4,356.6	87.45	50.820		
12,194.1	7,500.0	7,250.0	6,957.1	79.3	37.5	-72.72	-60.5	2,031.5	4,530.1	4,441.1	89.00	50.899		
12,200.0	7,500.0	7,250.0	6,957.1	79.4	37.5	-72.65	-60.5	2,031.5	4,535.4	4,446.4	89.04	50.937		
12,300.0	7,500.0	7,250.0	6,957.1	81.1	37.5	-71.14	-60.5	2,031.5	4,627.8	4,538.2	89.62	51.639		
12,393.7	7,500.0	7,250.0	6,957.1	82.7	37.5	-69.42	-60.5	2,031.5	4,715.8	4,625.8	89.96	52.421		
12,400.0	7,500.0	7,250.0	6,957.1	82.9	37.5	-69.42	-60.5	2,031.5	4,721.7	4,631.7	90.06	52.428		
12,500.0	7,500.0	7,250.0	6,957.1	84.6	37.5	-69.42	-60.5	2,031.5	4,816.3	4,724.7	91.68	52.534		
12,600.0	7,500.0	7,250.0	6,957.1	86.3	37.5	-69.42	-60.5	2,031.5	4,911.2	4,817.9	93.30	52.638		
12,700.0	7,500.0	7,250.0	6,957.1	88.0	37.5	-69.42	-60.5	2,031.5	5,006.2	4,911.3	94.92	52.740		
12,800.0	7,500.0	7,250.0	6,957.1	89.7	37.5	-69.42	-60.5	2,031.5	5,101.4	5,004.9	96.54	52.840		
12,900.0	7,500.0	7,250.0	6,957.1	91.5	37.5	-69.42	-60.5	2,031.5	5,196.8	5,098.6	98.17	52.938		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Woolley-Sosa 2A-7H-E168 - Hz - Plan #2													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	-90.00	0.0	-478.0	478.0					
100.0	100.0	100.0	100.0	0.2	0.2	-90.00	0.0	-478.0	478.0	477.7	0.30	1,574.098		
200.0	200.0	200.0	200.0	0.3	0.3	-90.00	0.0	-478.0	478.0	477.4	0.65	732.335	CC	
228.4	228.4	228.4	228.4	0.4	0.4	-89.99	0.1	-478.0	478.0	477.3	0.75	635.512		
300.0	300.0	300.0	300.0	0.5	0.5	-89.90	0.9	-478.0	478.0	477.0	1.00	476.911		
400.0	400.0	399.9	399.9	0.7	0.7	-89.58	3.5	-478.0	478.0	476.7	1.35	352.943		
500.0	500.0	499.7	499.6	0.8	0.9	-89.06	7.8	-478.0	478.1	476.4	1.71	279.364	ES	
600.0	600.0	599.4	599.1	1.0	1.1	-127.89	13.9	-478.0	478.8	476.7	2.09	228.831		
700.0	700.0	699.1	698.5	1.2	1.3	-127.23	21.3	-478.0	480.6	478.1	2.47	194.196		
800.0	799.9	799.0	798.1	1.4	1.5	-126.73	28.9	-478.0	483.6	480.7	2.86	168.815		
900.0	899.7	898.9	897.7	1.6	1.7	-126.38	36.4	-478.0	487.6	484.3	3.26	149.486		
1,000.0	999.4	998.8	997.3	1.8	1.9	-126.20	43.9	-478.0	492.6	489.0	3.67	134.301		
1,100.0	1,098.9	1,098.6	1,096.8	2.0	2.1	-126.17	51.5	-478.0	498.7	494.7	4.09	122.076		
1,201.3	1,199.5	1,199.6	1,197.6	2.2	2.3	-126.30	59.1	-478.0	506.0	501.4	4.52	111.924		
1,300.0	1,297.5	1,298.0	1,295.7	2.5	2.6	-126.56	66.5	-478.0	513.5	508.6	4.95	103.713		
1,400.0	1,396.8	1,397.7	1,395.1	2.7	2.8	-126.81	74.0	-478.0	521.2	515.8	5.39	96.666		
1,500.0	1,496.0	1,497.4	1,494.5	3.0	3.0	-127.05	81.6	-478.0	528.9	523.0	5.83	90.642		
1,600.0	1,595.3	1,597.0	1,593.9	3.3	3.2	-127.29	89.1	-478.0	536.6	530.3	6.28	85.442		
1,700.0	1,694.5	1,696.7	1,693.3	3.5	3.4	-127.52	96.6	-478.0	544.2	537.5	6.73	80.914		
1,800.0	1,793.8	1,796.4	1,792.7	3.8	3.6	-127.74	104.1	-478.0	552.0	544.8	7.17	76.940		
1,900.0	1,893.0	1,896.1	1,892.1	4.0	3.9	-127.96	111.6	-478.0	559.7	552.0	7.62	73.426		
2,000.0	1,992.3	1,995.8	1,991.5	4.3	4.1	-128.17	119.2	-478.0	567.4	559.3	8.07	70.299		
2,100.0	2,091.5	2,095.4	2,090.9	4.6	4.3	-128.37	126.7	-478.0	575.1	566.6	8.52	67.499		
2,200.0	2,190.8	2,195.1	2,190.3	4.8	4.5	-128.58	134.2	-478.0	582.8	573.9	8.97	64.979		
2,300.0	2,290.0	2,294.8	2,289.6	5.1	4.7	-128.77	141.7	-478.0	590.6	581.2	9.42	62.699		
2,400.0	2,389.3	2,394.5	2,389.0	5.4	4.9	-128.96	149.2	-478.0	598.3	588.5	9.87	60.627		
2,500.0	2,488.5	2,494.2	2,488.4	5.7	5.2	-129.14	156.8	-478.0	606.1	595.8	10.32	58.737		
2,600.0	2,587.8	2,593.8	2,587.8	5.9	5.4	-129.33	164.3	-478.0	613.9	603.1	10.77	57.006		
2,700.0	2,687.0	2,693.5	2,687.2	6.2	5.6	-129.50	171.8	-478.0	621.6	610.4	11.22	55.414		
2,800.0	2,786.3	2,793.2	2,786.6	6.5	5.8	-129.67	179.3	-478.0	629.4	617.7	11.67	53.946		
2,900.0	2,885.5	2,892.9	2,886.0	6.7	6.0	-129.84	186.8	-478.0	637.2	625.1	12.12	52.588		
3,000.0	2,984.8	2,992.6	2,985.4	7.0	6.2	-130.00	194.3	-478.0	645.0	632.4	12.57	51.329		
3,100.0	3,084.0	3,092.2	3,084.8	7.3	6.5	-130.16	201.9	-478.0	652.7	639.7	13.01	50.157		
3,200.0	3,183.3	3,191.9	3,184.2	7.6	6.7	-130.32	209.4	-478.0	660.5	647.1	13.46	49.065		
3,300.0	3,282.5	3,291.6	3,283.6	7.8	6.9	-130.47	216.9	-478.0	668.3	654.4	13.91	48.044		
3,400.0	3,381.8	3,391.3	3,383.0	8.1	7.1	-130.62	224.4	-478.0	676.1	661.8	14.36	47.088		
3,500.0	3,481.1	3,491.0	3,482.4	8.4	7.3	-130.76	231.9	-478.0	683.9	669.1	14.81	46.191		
3,600.0	3,580.3	3,590.6	3,581.8	8.7	7.5	-130.91	239.5	-478.0	691.8	676.5	15.25	45.348		
3,700.0	3,679.6	3,690.3	3,681.2	8.9	7.8	-131.04	247.0	-478.0	699.6	683.9	15.70	44.554		
3,800.0	3,778.8	3,790.0	3,780.6	9.2	8.0	-131.18	254.5	-478.0	707.4	691.2	16.15	43.804		
3,900.0	3,878.1	3,889.7	3,880.0	9.5	8.2	-131.31	262.0	-478.0	715.2	698.6	16.60	43.096		
4,000.0	3,977.3	3,989.4	3,979.4	9.8	8.4	-131.44	269.5	-478.0	723.0	706.0	17.04	42.426		
4,100.0	4,076.6	4,089.0	4,078.8	10.0	8.6	-131.57	277.1	-478.0	730.9	713.4	17.49	41.790		
4,200.0	4,175.8	4,188.7	4,178.2	10.3	8.9	-131.69	284.6	-478.0	738.7	720.8	17.94	41.188		
4,300.0	4,275.1	4,288.4	4,277.6	10.6	9.1	-131.82	292.1	-478.0	746.5	728.2	18.38	40.615		
4,400.0	4,374.3	4,388.1	4,377.0	10.9	9.3	-131.93	299.6	-478.0	754.4	735.6	18.83	40.070		
4,500.0	4,473.6	4,487.8	4,476.4	11.1	9.5	-132.05	307.1	-478.0	762.2	743.0	19.27	39.550		
4,600.0	4,572.8	4,587.4	4,575.8	11.4	9.7	-132.17	314.7	-478.0	770.1	750.4	19.72	39.055		
4,700.0	4,672.1	4,687.1	4,675.2	11.7	9.9	-132.28	322.2	-478.0	777.9	757.8	20.16	38.582		
4,800.0	4,771.3	4,786.8	4,774.5	12.0	10.2	-132.39	329.7	-478.0	785.8	765.2	20.61	38.131		
4,900.0	4,870.6	4,886.5	4,873.9	12.2	10.4	-132.49	337.2	-478.0	793.6	772.6	21.05	37.698		
5,000.0	4,969.8	4,986.2	4,973.3	12.5	10.6	-132.60	344.7	-478.0	801.5	780.0	21.50	37.285		

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Woolley-Sosa 2A-7H-E168 - Hz - Plan #2												Offset Site Error:	0.0 ft
Survey Program: O-Geolink 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)			
5,100.0	5,069.1	5,085.8	5,072.7	12.8	10.8	-132.70	352.3	-478.0	809.4	787.4	21.94	36.888	
5,200.0	5,168.3	5,185.5	5,172.1	13.1	11.0	-132.81	359.8	-478.0	817.2	794.8	22.38	36.508	
5,300.0	5,267.6	5,285.2	5,271.5	13.3	11.3	-132.90	367.3	-478.0	825.1	802.3	22.83	36.142	
5,400.0	5,366.8	5,384.9	5,370.9	13.6	11.5	-133.00	374.8	-478.0	833.0	809.7	23.27	35.792	
5,500.0	5,466.1	5,484.6	5,470.3	13.9	11.7	-133.10	382.3	-478.0	840.8	817.1	23.72	35.454	
5,600.0	5,565.3	5,584.2	5,569.7	14.2	11.9	-133.19	389.9	-478.0	848.7	824.5	24.16	35.130	
5,700.0	5,664.6	5,683.9	5,669.1	14.4	12.1	-133.28	397.4	-478.0	856.6	832.0	24.60	34.817	
5,800.0	5,763.8	5,783.6	5,768.5	14.7	12.3	-133.38	404.9	-478.0	864.5	839.4	25.05	34.516	
5,900.0	5,863.1	5,883.3	5,867.9	15.0	12.6	-133.46	412.4	-478.0	872.3	846.8	25.49	34.225	
6,000.0	5,962.3	5,983.0	5,967.3	15.3	12.8	-133.55	419.9	-478.0	880.2	854.3	25.93	33.945	
6,100.0	6,061.6	6,082.6	6,066.7	15.5	13.0	-133.64	427.4	-478.0	888.1	861.7	26.37	33.675	
6,200.0	6,160.9	6,182.3	6,166.1	15.8	13.2	-133.72	435.0	-478.0	896.0	869.2	26.82	33.414	
6,300.0	6,260.1	6,282.0	6,265.5	16.1	13.4	-133.80	442.5	-478.0	903.9	876.6	27.26	33.161	
6,400.0	6,359.4	6,381.7	6,364.9	16.4	13.6	-133.89	450.0	-478.0	911.8	884.1	27.70	32.917	
6,500.0	6,458.6	6,481.4	6,464.3	16.6	13.9	-133.97	457.5	-478.0	919.7	891.5	28.14	32.681	
6,600.0	6,557.9	6,581.0	6,563.7	16.9	14.1	-134.04	465.0	-478.0	927.5	899.0	28.58	32.452	
6,700.0	6,657.1	6,680.7	6,663.1	17.2	14.3	-134.12	472.6	-478.0	935.4	906.4	29.02	32.230	
6,800.0	6,756.4	6,780.4	6,762.5	17.5	14.5	-134.20	480.1	-478.0	943.3	913.9	29.47	32.016	
6,900.0	6,855.6	6,880.1	6,861.9	17.7	14.7	-134.27	487.6	-478.0	951.2	921.3	29.91	31.807	
6,919.5	6,875.0	6,899.5	6,881.2	17.8	14.8	-134.29	489.1	-478.0	952.8	922.8	29.99	31.768	
6,950.0	6,905.3	6,929.9	6,911.6	17.9	14.8	-157.08	491.4	-478.0	955.1	925.0	30.09	31.737	
7,000.0	6,955.1	6,979.6	6,961.1	17.9	15.0	144.56	495.1	-478.0	958.7	928.4	30.24	31.699	
7,050.0	7,004.8	7,028.7	7,010.1	17.9	15.1	115.72	498.8	-478.0	961.9	931.5	30.38	31.665	
7,100.0	7,053.8	7,077.0	7,058.2	17.9	15.2	105.36	502.5	-478.0	964.9	934.4	30.49	31.643	
7,150.0	7,101.9	7,124.0	7,105.1	17.9	15.3	100.82	506.0	-478.0	967.8	937.2	30.58	31.645	
7,200.0	7,148.7	7,168.4	7,149.4	17.8	15.3	98.60	508.8	-478.0	970.8	940.2	30.61	31.711	
7,250.0	7,193.8	7,212.8	7,193.8	17.7	15.4	97.45	508.4	-478.0	974.1	943.5	30.57	31.866	
7,300.0	7,236.9	7,258.7	7,239.5	17.5	15.4	96.93	504.5	-478.0	977.7	947.2	30.45	32.105	
7,350.0	7,277.7	7,306.3	7,286.4	17.4	15.4	96.79	496.5	-478.0	981.5	951.3	30.27	32.428	
7,400.0	7,315.7	7,355.9	7,334.4	17.2	15.3	96.91	484.1	-478.0	985.7	955.7	30.02	32.835	
7,450.0	7,350.9	7,407.6	7,383.1	17.1	15.2	97.22	466.7	-478.0	990.1	960.3	29.71	33.322	
7,500.0	7,382.8	7,461.8	7,432.3	16.9	15.0	97.67	444.0	-478.0	994.6	965.3	29.36	33.882	
7,550.0	7,411.3	7,518.9	7,481.4	16.7	14.9	98.23	415.1	-478.0	999.3	970.3	28.96	34.502	
7,600.0	7,436.1	7,579.0	7,529.9	16.6	14.7	98.87	379.5	-478.0	1,004.0	975.5	28.55	35.164	
7,650.0	7,457.1	7,642.6	7,576.8	16.5	14.4	99.59	336.6	-478.0	1,008.7	980.5	28.14	35.840	
7,700.0	7,474.0	7,710.0	7,621.0	16.4	14.2	100.34	285.7	-478.0	1,013.1	985.4	27.77	36.483	
7,750.0	7,486.8	7,781.3	7,660.9	16.4	14.0	101.12	226.6	-478.0	1,017.3	989.8	27.47	37.034	
7,800.0	7,495.3	7,856.8	7,694.7	16.4	13.9	101.89	159.3	-478.0	1,020.9	993.6	27.28	37.422	
7,850.0	7,499.5	7,936.1	7,720.5	16.5	13.9	102.62	84.3	-478.0	1,023.9	996.6	27.26	37.557	
7,873.6	7,500.0	7,974.8	7,729.2	16.5	13.9	102.94	46.7	-478.0	1,025.0	997.7	27.32	37.514	
7,900.0	7,500.0	8,019.1	7,736.1	16.5	14.0	103.31	2.9	-478.0	1,026.0	998.5	27.44	37.385	
8,000.0	7,500.0	8,147.0	7,740.0	16.9	14.5	103.52	-124.8	-478.0	1,026.5	998.2	28.27	36.312	
8,100.0	7,500.0	8,247.0	7,740.0	17.4	15.0	103.52	-224.8	-478.0	1,026.5	997.1	29.40	34.917	
8,200.0	7,500.0	8,347.0	7,740.0	18.0	15.8	103.52	-324.8	-478.0	1,026.5	995.6	30.86	33.258	
8,300.0	7,500.0	8,447.0	7,740.0	18.8	16.7	103.52	-424.8	-478.0	1,026.5	993.9	32.62	31.465	
8,400.0	7,500.0	8,547.0	7,740.0	19.7	17.7	103.52	-524.8	-478.0	1,026.5	991.9	34.63	29.641	
8,500.0	7,500.0	8,647.0	7,740.0	20.7	18.8	103.52	-624.8	-478.0	1,026.5	989.7	36.84	27.860	
8,600.0	7,500.0	8,747.0	7,740.0	21.9	20.1	103.52	-724.8	-478.0	1,026.5	987.3	39.23	26.165	
8,700.0	7,500.0	8,847.0	7,740.0	23.1	21.4	103.52	-824.8	-478.1	1,026.5	984.7	41.76	24.581	
8,800.0	7,500.0	8,947.0	7,740.0	24.3	22.7	103.52	-924.8	-478.1	1,026.5	982.1	44.41	23.115	
8,900.0	7,500.0	9,047.0	7,740.0	25.6	24.1	103.52	-1,024.8	-478.1	1,026.5	979.4	47.15	21.769	
9,000.0	7,500.0	9,147.0	7,740.0	27.0	25.6	103.52	-1,124.8	-478.1	1,026.5	976.5	49.98	20.537	

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Woolley-Sosa 2A-7H-E168 - Hz - Plan #2												Offset Site Error:	0.0 ft
Survey Program: O-Geolink 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)			
9,100.0	7,500.0	9,247.0	7,740.0	28.4	27.1	103.52	-1,224.8	-478.1	1,026.5	973.6	52.88	19.412	
9,200.0	7,500.0	9,347.0	7,740.0	29.9	28.6	103.52	-1,324.8	-478.1	1,026.5	970.7	55.84	18.385	
9,300.0	7,500.0	9,447.0	7,740.0	31.4	30.2	103.52	-1,424.8	-478.1	1,026.5	967.7	58.84	17.446	
9,400.0	7,500.0	9,547.0	7,740.0	32.9	31.7	103.52	-1,524.8	-478.1	1,026.5	964.6	61.89	16.587	
9,500.0	7,500.0	9,647.0	7,740.0	34.4	33.3	103.52	-1,624.8	-478.1	1,026.5	961.5	64.97	15.800	
9,600.0	7,500.0	9,747.0	7,740.0	36.0	34.9	103.52	-1,724.8	-478.1	1,026.5	958.4	68.09	15.077	
9,700.0	7,500.0	9,847.0	7,740.0	37.5	36.5	103.52	-1,824.8	-478.1	1,026.5	955.3	71.23	14.412	
9,800.0	7,500.0	9,947.0	7,740.0	39.1	38.2	103.52	-1,924.8	-478.1	1,026.5	952.1	74.39	13.798	
9,900.0	7,500.0	10,047.0	7,740.0	40.7	39.8	103.52	-2,024.8	-478.1	1,026.5	948.9	77.58	13.232	
10,000.0	7,500.0	10,147.0	7,740.0	42.3	41.4	103.52	-2,124.8	-478.1	1,026.5	945.7	80.79	12.707	
10,100.0	7,500.0	10,247.0	7,740.0	43.9	43.1	103.52	-2,224.8	-478.1	1,026.5	942.5	84.01	12.219	
10,200.0	7,500.0	10,347.0	7,740.0	45.6	44.8	103.52	-2,324.8	-478.1	1,026.5	939.3	87.24	11.766	
10,300.0	7,500.0	10,447.0	7,740.0	47.2	46.4	103.52	-2,424.8	-478.1	1,026.5	936.0	90.49	11.344	
10,400.0	7,500.0	10,547.0	7,740.0	48.9	48.1	103.52	-2,524.8	-478.1	1,026.5	932.8	93.75	10.949	
10,500.0	7,500.0	10,647.0	7,740.0	50.5	49.8	103.52	-2,624.8	-478.1	1,026.5	929.5	97.02	10.580	
10,600.0	7,500.0	10,747.0	7,740.0	52.2	51.5	103.52	-2,724.8	-478.1	1,026.5	926.2	100.31	10.234	
10,700.0	7,500.0	10,847.0	7,740.0	53.8	53.2	103.52	-2,824.8	-478.1	1,026.5	922.9	103.59	9.909	
10,800.0	7,500.0	10,947.0	7,740.0	55.5	54.9	103.52	-2,924.8	-478.1	1,026.5	919.6	106.89	9.604	
10,900.0	7,500.0	11,047.0	7,740.0	57.2	56.6	103.52	-3,024.8	-478.1	1,026.5	916.3	110.19	9.316	
11,000.0	7,500.0	11,147.0	7,740.0	58.9	58.3	103.52	-3,124.8	-478.1	1,026.5	913.0	113.50	9.044	
11,100.0	7,500.0	11,247.0	7,740.0	60.6	60.0	103.52	-3,224.8	-478.1	1,026.5	909.7	116.82	8.787	
11,200.0	7,500.0	11,347.0	7,740.0	62.3	61.7	103.52	-3,324.8	-478.1	1,026.5	906.4	120.14	8.544	
11,244.1	7,500.0	11,391.1	7,740.0	63.0	62.4	103.52	-3,369.0	-478.1	1,026.5	904.9	121.61	8.441	
11,300.0	7,500.0	11,447.0	7,740.0	64.0	63.4	103.52	-3,424.8	-478.1	1,027.1	903.5	123.61	8.309	
11,400.0	7,500.0	11,546.9	7,740.0	65.7	65.1	103.48	-3,524.8	-478.1	1,030.7	903.6	127.09	8.110	
11,444.1	7,500.0	11,591.0	7,740.0	66.4	65.9	103.46	-3,568.8	-478.1	1,033.3	904.8	128.58	8.036	
11,500.0	7,500.0	11,646.7	7,740.0	67.4	66.8	103.41	-3,624.5	-478.1	1,037.1	906.7	130.47	7.949	
11,600.0	7,500.0	11,746.4	7,740.0	69.1	68.5	103.32	-3,724.3	-478.1	1,043.9	910.1	133.85	7.799	
11,700.0	7,500.0	11,846.2	7,740.0	70.8	70.2	103.23	-3,824.1	-478.1	1,050.7	913.5	137.23	7.656	
11,800.0	7,500.0	11,946.0	7,740.0	72.5	72.0	103.15	-3,923.8	-478.1	1,057.5	916.9	140.62	7.520	
11,900.0	7,500.0	12,045.7	7,740.0	74.2	73.7	103.06	-4,023.6	-478.1	1,064.3	920.3	144.02	7.390	
12,000.0	7,500.0	12,145.5	7,740.0	76.0	75.4	102.98	-4,123.3	-478.1	1,071.1	923.7	147.41	7.266	
12,100.0	7,500.0	12,245.2	7,740.0	77.7	77.1	102.90	-4,223.1	-478.1	1,077.9	927.1	150.82	7.147	
12,194.1	7,500.0	12,339.1	7,740.0	79.3	78.7	102.82	-4,317.0	-478.1	1,084.3	930.3	154.02	7.040	
12,200.0	7,500.0	12,345.0	7,740.0	79.4	78.8	102.81	-4,322.8	-478.1	1,084.7	930.5	154.23	7.033	
12,300.0	7,500.0	12,444.8	7,740.0	81.1	80.6	102.73	-4,422.7	-478.1	1,089.6	932.0	157.57	6.915	
12,393.7	7,500.0	12,538.5	7,740.0	82.7	82.2	102.71	-4,516.4	-478.1	1,091.1	930.6	160.52	6.798	
12,400.0	7,500.0	12,544.8	7,740.0	82.9	82.3	102.71	-4,522.7	-478.1	1,091.1	930.4	160.73	6.789	
12,500.0	7,500.0	12,644.8	7,740.0	84.6	84.0	102.71	-4,622.7	-478.1	1,091.1	927.0	164.10	6.649	
12,600.0	7,500.0	12,744.8	7,740.0	86.3	85.8	102.71	-4,722.7	-478.1	1,091.2	923.7	167.48	6.515	
12,700.0	7,500.0	12,844.8	7,740.0	88.0	87.5	102.71	-4,822.7	-478.1	1,091.2	920.3	170.86	6.386	
12,800.0	7,500.0	12,944.8	7,740.0	89.7	89.2	102.71	-4,922.7	-478.1	1,091.2	916.9	174.24	6.263	
12,900.0	7,500.0	13,044.8	7,740.0	91.5	90.9	102.71	-5,022.7	-478.1	1,091.2	913.6	177.62	6.143	
13,000.0	7,500.0	13,144.8	7,740.0	93.2	92.7	102.71	-5,122.7	-478.1	1,091.2	910.2	181.01	6.029	
13,100.0	7,500.0	13,244.8	7,740.0	94.9	94.4	102.71	-5,222.7	-478.1	1,091.2	906.8	184.39	5.918	
13,200.0	7,500.0	13,344.8	7,740.0	96.6	96.2	102.70	-5,322.7	-478.1	1,091.3	903.5	187.78	5.811	
13,300.0	7,500.0	13,444.8	7,740.0	98.4	97.9	102.70	-5,422.7	-478.1	1,091.3	900.1	191.17	5.709	
13,400.0	7,500.0	13,544.8	7,740.0	100.1	99.6	102.70	-5,522.7	-478.1	1,091.3	896.7	194.55	5.609	
13,500.0	7,500.0	13,644.8	7,740.0	101.8	101.4	102.70	-5,622.7	-478.1	1,091.3	893.4	197.94	5.513	
13,600.0	7,500.0	13,744.8	7,740.0	103.5	103.1	102.70	-5,722.7	-478.1	1,091.3	890.0	201.34	5.420	
13,700.0	7,500.0	13,844.8	7,740.0	105.3	104.8	102.70	-5,822.7	-478.1	1,091.3	886.6	204.73	5.331	
13,800.0	7,500.0	13,944.8	7,740.0	107.0	106.6	102.70	-5,922.7	-478.1	1,091.4	883.2	208.12	5.244	

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



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Woolley-Sosa 2A-7H-E168 - Hz - Plan #2												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 0-Geolink MWD												<b>Offset Well Error:</b>	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
13,900.0	7,500.0	14,044.8	7,740.0	108.7	108.3	102.70	-6,022.7	-478.2	1,091.4	879.9	211.52	5.160	
14,000.0	7,500.0	14,144.8	7,740.0	110.5	110.1	102.70	-6,122.7	-478.2	1,091.4	876.5	214.91	5.078	
14,100.0	7,500.0	14,244.8	7,740.0	112.2	111.8	102.70	-6,222.7	-478.2	1,091.4	873.1	218.31	4.999	
14,200.0	7,500.0	14,344.8	7,740.0	113.9	113.5	102.70	-6,322.7	-478.2	1,091.4	869.7	221.71	4.923	
14,300.0	7,500.0	14,444.8	7,740.0	115.7	115.3	102.70	-6,422.7	-478.2	1,091.4	866.3	225.10	4.849	
14,400.0	7,500.0	14,544.8	7,740.0	117.4	117.0	102.70	-6,522.7	-478.2	1,091.5	863.0	228.50	4.777	
14,500.0	7,500.0	14,644.8	7,740.0	119.1	118.8	102.70	-6,622.7	-478.2	1,091.5	859.6	231.90	4.707	
14,600.0	7,500.0	14,744.8	7,740.0	120.9	120.5	102.70	-6,722.7	-478.2	1,091.5	856.2	235.30	4.639	
14,700.0	7,500.0	14,844.8	7,740.0	122.6	122.2	102.70	-6,822.7	-478.2	1,091.5	852.8	238.70	4.573	
14,800.0	7,500.0	14,944.8	7,740.0	124.3	124.0	102.70	-6,922.7	-478.2	1,091.5	849.4	242.10	4.509	
14,900.0	7,500.0	15,044.8	7,740.0	126.1	125.7	102.70	-7,022.7	-478.2	1,091.6	846.0	245.51	4.446	
15,000.0	7,500.0	15,144.8	7,740.0	127.8	127.5	102.70	-7,122.7	-478.2	1,091.6	842.7	248.91	4.385	
15,100.0	7,500.0	15,244.8	7,740.0	129.6	129.2	102.70	-7,222.7	-478.2	1,091.6	839.3	252.31	4.326	
15,200.0	7,500.0	15,344.8	7,740.0	131.3	131.0	102.70	-7,322.7	-478.2	1,091.6	835.9	255.72	4.269	
15,300.0	7,500.0	15,444.8	7,740.0	133.0	132.7	102.70	-7,422.7	-478.2	1,091.6	832.5	259.12	4.213	
15,400.0	7,500.0	15,544.8	7,740.0	134.8	134.5	102.70	-7,522.7	-478.2	1,091.6	829.1	262.53	4.158	
15,500.0	7,500.0	15,644.8	7,740.0	136.5	136.2	102.70	-7,622.7	-478.2	1,091.7	825.7	265.93	4.105	
15,600.0	7,500.0	15,744.8	7,740.0	138.3	137.9	102.70	-7,722.7	-478.2	1,091.7	822.3	269.34	4.053	
15,700.0	7,500.0	15,844.8	7,740.0	140.0	139.7	102.70	-7,822.7	-478.2	1,091.7	818.9	272.74	4.003	
15,758.5	7,500.0	15,903.3	7,740.0	141.0	140.7	102.70	-7,881.1	-478.2	1,091.7	817.0	274.73	3.974	
15,805.8	7,500.0	15,936.0	7,740.0	141.8	141.3	102.70	-7,913.9	-478.2	1,091.8	815.7	276.10	3.954 SF	

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Woolley-Sosa 2B-7H-E168 - HZ - Plan #2													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	-90.00	0.0	-19.9	19.9					
100.0	100.0	100.0	100.0	0.2	0.2	-90.00	0.0	-19.9	19.9	19.6	0.30	65.434		
200.0	200.0	200.0	200.0	0.3	0.3	-90.00	0.0	-19.9	19.9	19.2	0.65	30.442		
300.0	300.0	300.0	300.0	0.5	0.5	-90.00	0.0	-19.9	19.9	18.9	1.00	19.835	CC, ES	
400.0	400.0	399.8	399.8	0.7	0.7	-88.13	0.7	-20.4	20.4	19.1	1.35	15.129		
500.0	500.0	499.5	499.4	0.8	0.9	-83.14	2.7	-22.1	22.3	20.6	1.70	13.070		
600.0	600.0	599.1	598.9	1.0	1.0	-117.66	6.0	-24.9	26.0	24.0	2.05	12.665		
700.0	700.0	698.5	698.1	1.2	1.2	-115.03	10.6	-28.8	32.0	29.6	2.41	13.290		
800.0	799.9	798.2	797.6	1.4	1.4	-114.81	15.9	-33.2	39.6	36.8	2.77	14.255		
900.0	899.7	897.8	897.0	1.6	1.6	-116.53	21.3	-37.7	47.8	44.7	3.15	15.187		
1,000.0	999.4	997.4	996.3	1.8	1.8	-119.28	26.6	-42.2	57.0	53.4	3.54	16.113		
1,100.0	1,098.9	1,096.8	1,095.5	2.0	2.0	-122.51	31.9	-46.6	67.1	63.2	3.93	17.063		
1,201.3	1,199.5	1,197.3	1,195.8	2.2	2.3	-125.95	37.3	-51.1	78.6	74.2	4.35	18.078		
1,300.0	1,297.5	1,296.3	1,294.5	2.5	2.5	-128.62	43.1	-55.0	90.0	85.2	4.76	18.883		
1,400.0	1,396.8	1,397.0	1,394.9	2.7	2.7	-130.06	50.3	-57.6	100.3	95.1	5.20	19.308		
1,500.0	1,496.0	1,497.3	1,494.8	3.0	2.9	-130.67	58.4	-59.1	109.6	103.9	5.64	19.443		
1,600.0	1,595.3	1,596.8	1,594.1	3.3	3.1	-131.10	66.7	-60.4	118.7	112.6	6.08	19.524		
1,700.0	1,694.5	1,696.4	1,693.3	3.5	3.3	-131.47	75.0	-61.7	127.7	121.2	6.52	19.589		
1,800.0	1,793.8	1,796.0	1,792.5	3.8	3.5	-131.80	83.3	-63.0	136.8	129.9	6.97	19.641		
1,900.0	1,893.0	1,895.6	1,891.7	4.0	3.8	-132.08	91.6	-64.2	145.9	138.5	7.41	19.683		
2,000.0	1,992.3	1,995.2	1,991.0	4.3	4.0	-132.33	100.0	-65.5	155.0	147.2	7.86	19.718		
2,100.0	2,091.5	2,094.8	2,090.2	4.6	4.2	-132.55	108.3	-66.8	164.1	155.8	8.31	19.748		
2,200.0	2,190.8	2,194.3	2,189.4	4.8	4.4	-132.75	116.6	-68.1	173.2	164.4	8.76	19.773		
2,300.0	2,290.0	2,293.9	2,288.7	5.1	4.7	-132.93	124.9	-69.4	182.3	173.1	9.21	19.794		
2,400.0	2,389.3	2,393.5	2,387.9	5.4	4.9	-133.09	133.2	-70.7	191.4	181.7	9.66	19.813		
2,500.0	2,488.5	2,493.1	2,487.1	5.7	5.1	-133.23	141.5	-72.0	200.5	190.4	10.11	19.829		
2,600.0	2,587.8	2,592.7	2,586.3	5.9	5.3	-133.37	149.8	-73.2	209.6	199.1	10.56	19.843		
2,700.0	2,687.0	2,692.3	2,685.6	6.2	5.6	-133.49	158.1	-74.5	218.7	207.7	11.02	19.855		
2,800.0	2,786.3	2,791.8	2,784.8	6.5	5.8	-133.60	166.4	-75.8	227.8	216.4	11.47	19.866		
2,900.0	2,885.5	2,891.4	2,884.0	6.7	6.0	-133.71	174.7	-77.1	236.9	225.0	11.92	19.876		
3,000.0	2,984.8	2,991.0	2,983.3	7.0	6.2	-133.80	183.0	-78.4	246.0	233.7	12.37	19.885		
3,100.0	3,084.0	3,090.6	3,082.5	7.3	6.4	-133.89	191.3	-79.7	255.2	242.3	12.83	19.893		
3,200.0	3,183.3	3,190.2	3,181.7	7.6	6.7	-133.98	199.6	-80.9	264.3	251.0	13.28	19.900		
3,300.0	3,282.5	3,289.8	3,280.9	7.8	6.9	-134.06	207.9	-82.2	273.4	259.6	13.73	19.907		
3,400.0	3,381.8	3,389.3	3,380.2	8.1	7.1	-134.13	216.2	-83.5	282.5	268.3	14.19	19.912		
3,500.0	3,481.1	3,488.9	3,479.4	8.4	7.4	-134.20	224.5	-84.8	291.6	276.9	14.64	19.918		
3,600.0	3,580.3	3,588.5	3,578.6	8.7	7.6	-134.26	232.8	-86.1	300.7	285.6	15.09	19.923		
3,700.0	3,679.6	3,688.1	3,677.9	8.9	7.8	-134.32	241.1	-87.4	309.8	294.3	15.55	19.927		
3,800.0	3,778.8	3,787.7	3,777.1	9.2	8.0	-134.38	249.4	-88.7	318.9	302.9	16.00	19.932		
3,900.0	3,878.1	3,887.3	3,876.3	9.5	8.3	-134.43	257.7	-89.9	328.0	311.6	16.45	19.935		
4,000.0	3,977.3	3,986.8	3,975.5	9.8	8.5	-134.48	266.0	-91.2	337.1	320.2	16.91	19.939		
4,100.0	4,076.6	4,086.4	4,074.8	10.0	8.7	-134.53	274.3	-92.5	346.3	328.9	17.36	19.942		
4,200.0	4,175.8	4,186.0	4,174.0	10.3	8.9	-134.58	282.6	-93.8	355.4	337.6	17.82	19.945		
4,300.0	4,275.1	4,285.6	4,273.2	10.6	9.2	-134.62	290.9	-95.1	364.5	346.2	18.27	19.948		
4,400.0	4,374.3	4,385.2	4,372.5	10.9	9.4	-134.66	299.2	-96.4	373.6	354.9	18.73	19.951		
4,500.0	4,473.6	4,484.8	4,471.7	11.1	9.6	-134.70	307.5	-97.7	382.7	363.5	19.18	19.954		
4,600.0	4,572.8	4,584.3	4,570.9	11.4	9.8	-134.74	315.8	-98.9	391.8	372.2	19.63	19.956		
4,700.0	4,672.1	4,683.9	4,670.1	11.7	10.1	-134.78	324.1	-100.2	400.9	380.8	20.09	19.958		
4,800.0	4,771.3	4,783.5	4,769.4	12.0	10.3	-134.81	332.4	-101.5	410.0	389.5	20.54	19.960		
4,900.0	4,870.6	4,883.1	4,868.6	12.2	10.5	-134.84	340.7	-102.8	419.2	398.2	21.00	19.962		
5,000.0	4,969.8	4,982.7	4,967.8	12.5	10.7	-134.87	349.0	-104.1	428.3	406.8	21.45	19.964		
5,100.0	5,069.1	5,082.3	5,067.1	12.8	11.0	-134.90	357.3	-105.4	437.4	415.5	21.91	19.966		

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Woolley-Sosa 2B-7H-E168 - HZ - Plan #2											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	
5,200.0	5,168.3	5,181.8	5,166.3	13.1	11.2	-134.93	365.6	-106.6	446.5	424.1	22.36	19.967	
5,300.0	5,267.6	5,281.4	5,265.5	13.3	11.4	-134.96	373.9	-107.9	455.6	432.8	22.82	19.969	
5,400.0	5,366.8	5,381.0	5,364.7	13.6	11.6	-134.99	382.2	-109.2	464.7	441.5	23.27	19.971	
5,500.0	5,466.1	5,480.6	5,464.0	13.9	11.9	-135.01	390.5	-110.5	473.8	450.1	23.73	19.972	
5,600.0	5,565.3	5,580.2	5,563.2	14.2	12.1	-135.04	398.8	-111.8	483.0	458.8	24.18	19.973	
5,700.0	5,664.6	5,679.8	5,662.4	14.4	12.3	-135.06	407.1	-113.1	492.1	467.4	24.64	19.975	
5,800.0	5,763.8	5,779.3	5,761.7	14.7	12.6	-135.08	415.4	-114.4	501.2	476.1	25.09	19.976	
5,900.0	5,863.1	5,878.9	5,860.9	15.0	12.8	-135.11	423.7	-115.6	510.3	484.8	25.54	19.977	
6,000.0	5,962.3	5,978.5	5,960.1	15.3	13.0	-135.13	432.1	-116.9	519.4	493.4	26.00	19.978	
6,100.0	6,061.6	6,078.1	6,059.3	15.5	13.2	-135.15	440.4	-118.2	528.5	502.1	26.45	19.979	
6,200.0	6,160.9	6,177.7	6,158.6	15.8	13.5	-135.17	448.7	-119.5	537.6	510.7	26.91	19.980	
6,300.0	6,260.1	6,277.3	6,257.8	16.1	13.7	-135.19	457.0	-120.8	546.8	519.4	27.36	19.981	
6,400.0	6,359.4	6,376.8	6,357.0	16.4	13.9	-135.21	465.3	-122.1	555.9	528.1	27.82	19.982	
6,500.0	6,458.6	6,476.4	6,456.3	16.6	14.1	-135.22	473.6	-123.4	565.0	536.7	28.27	19.983	
6,600.0	6,557.9	6,576.0	6,555.5	16.9	14.4	-135.24	481.9	-124.6	574.1	545.4	28.73	19.984	
6,700.0	6,657.1	6,675.6	6,654.7	17.2	14.6	-135.26	490.2	-125.9	583.2	554.0	29.18	19.985	
6,800.0	6,756.4	6,775.2	6,753.9	17.5	14.8	-135.27	498.5	-127.2	592.3	562.7	29.64	19.985	
6,900.0	6,855.6	6,874.8	6,853.2	17.7	15.1	-135.29	506.8	-128.5	601.5	571.4	30.09	19.986	
6,919.5	6,875.0	6,894.2	6,872.5	17.8	15.1	-135.29	508.4	-128.7	603.2	573.0	30.18	19.986	
6,950.0	6,905.3	6,922.2	6,900.5	17.9	15.1	-158.12	510.3	-129.1	606.0	575.7	30.27	20.022	
7,000.0	6,955.1	6,967.0	6,945.3	17.9	15.2	143.25	510.7	-129.7	610.4	580.1	30.33	20.123	
7,050.0	7,004.8	7,011.9	6,990.0	17.9	15.2	113.92	507.5	-130.3	614.8	584.5	30.33	20.270	
7,100.0	7,053.8	7,056.8	7,034.4	17.9	15.2	102.85	500.8	-130.8	619.1	588.9	30.26	20.460	
7,150.0	7,101.9	7,100.0	7,076.5	17.9	15.1	97.43	491.1	-131.4	623.3	593.2	30.13	20.688	
7,200.0	7,148.7	7,147.1	7,121.4	17.8	15.0	94.27	477.0	-132.0	627.4	597.4	29.93	20.959	
7,250.0	7,193.8	7,192.4	7,163.4	17.7	14.9	92.23	459.9	-132.5	631.2	601.5	29.69	21.262	
7,300.0	7,236.9	7,238.0	7,204.1	17.5	14.8	90.84	439.5	-133.0	634.9	605.5	29.40	21.593	
7,350.0	7,277.7	7,283.8	7,243.3	17.4	14.7	89.86	415.8	-133.5	638.3	609.2	29.09	21.946	
7,400.0	7,315.7	7,329.9	7,280.6	17.2	14.5	89.17	388.8	-134.0	641.5	612.7	28.75	22.312	
7,450.0	7,350.9	7,376.3	7,315.9	17.1	14.3	88.70	358.8	-134.5	644.4	616.0	28.41	22.683	
7,500.0	7,382.8	7,423.0	7,348.9	16.9	14.2	88.40	325.7	-134.9	647.1	619.0	28.08	23.047	
7,550.0	7,411.3	7,470.0	7,379.3	16.7	14.0	88.25	289.8	-135.3	649.4	621.7	27.77	23.390	
7,600.0	7,436.1	7,517.4	7,406.8	16.6	13.9	88.21	251.2	-135.7	651.5	624.0	27.49	23.697	
7,650.0	7,457.1	7,565.3	7,431.3	16.5	13.7	88.29	210.1	-136.0	653.2	625.9	27.27	23.951	
7,700.0	7,474.0	7,613.5	7,452.4	16.4	13.7	88.46	166.8	-136.3	654.6	627.5	27.12	24.137	
7,750.0	7,486.8	7,662.2	7,469.9	16.4	13.6	88.71	121.3	-136.5	655.7	628.6	27.05	24.240	
7,800.0	7,495.3	7,711.4	7,483.6	16.4	13.6	89.05	74.2	-136.7	656.4	629.3	27.07	24.247	
7,850.0	7,499.5	7,761.0	7,493.3	16.5	13.7	89.47	25.5	-136.8	656.8	629.6	27.19	24.153	
7,873.6	7,500.0	7,784.6	7,496.4	16.5	13.7	89.69	2.1	-136.8	656.8	629.5	27.29	24.071	
7,900.0	7,500.0	7,811.2	7,498.8	16.5	13.8	89.89	-24.4	-136.9	656.9	629.4	27.42	23.955	
8,000.0	7,500.0	7,911.7	7,500.0	16.9	14.2	90.00	-124.9	-136.9	656.9	628.7	28.20	23.294	
8,100.0	7,500.0	8,011.7	7,500.0	17.4	14.8	90.00	-224.9	-136.9	656.9	627.5	29.37	22.365	
8,200.0	7,500.0	8,111.7	7,500.0	18.0	15.5	90.00	-324.9	-136.9	656.9	626.0	30.90	21.259	
8,300.0	7,500.0	8,211.7	7,500.0	18.8	16.4	90.00	-424.9	-136.9	656.9	624.1	32.73	20.068	
8,400.0	7,500.0	8,311.7	7,500.0	19.7	17.5	90.00	-524.9	-136.9	656.9	622.0	34.82	18.863	
8,500.0	7,500.0	8,411.7	7,500.0	20.7	18.6	90.00	-624.9	-136.9	656.9	619.7	37.13	17.691	
8,600.0	7,500.0	8,511.7	7,500.0	21.9	19.9	90.00	-724.9	-136.9	656.9	617.3	39.61	16.583	
8,700.0	7,500.0	8,611.7	7,500.0	23.1	21.2	90.00	-824.9	-136.9	656.9	614.6	42.24	15.551	
8,800.0	7,500.0	8,711.7	7,500.0	24.3	22.5	90.00	-924.9	-136.9	656.9	611.9	44.99	14.601	
8,900.0	7,500.0	8,811.7	7,500.0	25.6	24.0	90.00	-1,024.9	-136.9	656.9	609.0	47.84	13.731	
9,000.0	7,500.0	8,911.7	7,500.0	27.0	25.4	90.00	-1,124.9	-136.9	656.9	606.1	50.77	12.939	
9,100.0	7,500.0	9,011.7	7,500.0	28.4	26.9	90.00	-1,224.9	-136.9	656.9	603.1	53.77	12.217	

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Woolley-Sosa 2B-7H-E168 - HZ - Plan #2												Offset Site Error:	0.0 ft
Survey Program: O-Geolink 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
9,200.0	7,500.0	9,111.7	7,500.0	29.9	28.5	90.00	-1,324.9	-136.9	656.9	600.0	56.83	11.559	
9,300.0	7,500.0	9,211.7	7,500.0	31.4	30.0	90.00	-1,424.9	-136.9	656.9	596.9	59.93	10.960	
9,400.0	7,500.0	9,311.7	7,500.0	32.9	31.6	90.00	-1,524.9	-136.9	656.9	593.8	63.08	10.413	
9,500.0	7,500.0	9,411.7	7,500.0	34.4	33.2	90.00	-1,624.9	-136.9	656.9	590.6	66.27	9.912	
9,600.0	7,500.0	9,511.7	7,500.0	36.0	34.8	90.00	-1,724.9	-136.9	656.9	587.4	69.49	9.453	
9,700.0	7,500.0	9,611.7	7,500.0	37.5	36.4	90.00	-1,824.9	-136.9	656.9	584.1	72.73	9.032	
9,800.0	7,500.0	9,711.7	7,500.0	39.1	38.0	90.00	-1,924.9	-136.9	656.9	580.9	76.00	8.643	
9,900.0	7,500.0	9,811.7	7,500.0	40.7	39.7	90.00	-2,024.9	-136.9	656.9	577.6	79.28	8.285	
10,000.0	7,500.0	9,911.7	7,500.0	42.3	41.3	90.00	-2,124.9	-136.9	656.9	574.3	82.59	7.953	
10,100.0	7,500.0	10,011.7	7,500.0	43.9	43.0	90.00	-2,224.9	-136.9	656.9	571.0	85.91	7.646	
10,200.0	7,500.0	10,111.7	7,500.0	45.6	44.6	90.00	-2,324.9	-136.9	656.9	567.6	89.25	7.360	
10,300.0	7,500.0	10,211.7	7,500.0	47.2	46.3	90.00	-2,424.9	-136.9	656.9	564.3	92.60	7.094	
10,400.0	7,500.0	10,311.7	7,500.0	48.9	48.0	90.00	-2,524.9	-136.9	656.9	560.9	95.96	6.845	
10,500.0	7,500.0	10,411.7	7,500.0	50.5	49.7	90.00	-2,624.9	-136.9	656.9	557.5	99.33	6.613	
10,600.0	7,500.0	10,511.7	7,500.0	52.2	51.4	90.00	-2,724.9	-136.9	656.9	554.2	102.71	6.396	
10,700.0	7,500.0	10,611.7	7,500.0	53.8	53.1	90.00	-2,824.9	-136.9	656.9	550.8	106.10	6.191	
10,800.0	7,500.0	10,711.7	7,500.0	55.5	54.8	90.00	-2,924.9	-136.9	656.9	547.4	109.49	5.999	
10,900.0	7,500.0	10,811.7	7,500.0	57.2	56.5	90.00	-3,024.9	-136.9	656.9	544.0	112.89	5.818	
11,000.0	7,500.0	10,911.7	7,500.0	58.9	58.2	90.00	-3,124.9	-136.9	656.9	540.6	116.30	5.648	
11,100.0	7,500.0	11,011.7	7,500.0	60.6	59.9	90.00	-3,224.9	-136.9	656.9	537.2	119.72	5.487	
11,200.0	7,500.0	11,111.7	7,500.0	62.3	61.6	90.00	-3,324.9	-136.9	656.9	533.7	123.14	5.334	
11,244.1	7,500.0	11,155.8	7,500.0	63.0	62.3	90.00	-3,369.0	-136.9	656.9	532.2	124.65	5.270	
11,300.0	7,500.0	11,211.7	7,500.0	64.0	63.3	90.00	-3,424.9	-136.9	657.4	530.7	126.67	5.190	
11,400.0	7,500.0	11,311.6	7,500.0	65.7	65.0	90.00	-3,524.8	-136.9	661.1	530.9	130.18	5.078	
11,444.1	7,500.0	11,355.7	7,500.0	66.4	65.8	90.00	-3,568.8	-136.9	663.9	532.2	131.69	5.041	
11,500.0	7,500.0	11,411.4	7,500.0	67.4	66.7	90.00	-3,624.6	-136.9	667.7	534.1	133.60	4.998	
11,600.0	7,500.0	11,511.2	7,500.0	69.1	68.4	90.00	-3,724.3	-136.9	674.7	537.7	137.03	4.924	
11,700.0	7,500.0	11,610.9	7,500.0	70.8	70.2	90.00	-3,824.1	-136.9	681.7	541.2	140.46	4.853	
11,800.0	7,500.0	11,710.7	7,500.0	72.5	71.9	90.00	-3,923.8	-136.9	688.7	544.8	143.90	4.786	
11,900.0	7,500.0	11,810.4	7,500.0	74.2	73.6	90.00	-4,023.6	-136.9	695.7	548.3	147.34	4.721	
12,000.0	7,500.0	11,910.2	7,500.0	76.0	75.3	90.00	-4,123.3	-136.9	702.6	551.8	150.78	4.660	
12,100.0	7,500.0	12,009.9	7,500.0	77.7	77.0	90.00	-4,223.1	-136.9	709.6	555.4	154.23	4.601	
12,194.1	7,500.0	12,103.8	7,500.0	79.3	78.7	90.00	-4,317.0	-136.9	716.2	558.7	157.47	4.548	
12,200.0	7,500.0	12,109.7	7,500.0	79.4	78.8	90.00	-4,322.9	-136.9	716.6	558.9	157.68	4.545	
12,300.0	7,500.0	12,209.6	7,500.0	81.1	80.5	90.00	-4,422.7	-136.9	721.6	560.5	161.11	4.479	
12,393.7	7,500.0	12,303.2	7,500.0	82.7	82.1	90.00	-4,516.4	-136.9	723.1	559.0	164.18	4.405	
12,400.0	7,500.0	12,309.5	7,500.0	82.9	82.2	90.00	-4,522.7	-136.9	723.2	558.8	164.39	4.399	
12,500.0	7,500.0	12,409.5	7,500.0	84.6	83.9	90.00	-4,622.7	-136.9	723.2	555.3	167.86	4.308	
12,600.0	7,500.0	12,509.5	7,500.0	86.3	85.7	90.00	-4,722.7	-136.9	723.2	551.9	171.32	4.221	
12,700.0	7,500.0	12,609.5	7,500.0	88.0	87.4	90.00	-4,822.7	-136.9	723.2	548.4	174.78	4.138	
12,800.0	7,500.0	12,709.5	7,500.0	89.7	89.1	90.00	-4,922.7	-136.9	723.2	545.0	178.25	4.057	
12,900.0	7,500.0	12,809.5	7,500.0	91.5	90.9	90.00	-5,022.7	-136.9	723.2	541.5	181.72	3.980	
13,000.0	7,500.0	12,909.5	7,500.0	93.2	92.6	90.00	-5,122.7	-136.9	723.2	538.1	185.19	3.905	
13,100.0	7,500.0	13,012.8	7,500.0	94.9	94.4	90.00	-5,226.0	-136.8	723.2	534.5	188.72	3.832	
13,200.0	7,500.0	13,118.6	7,500.0	96.6	96.2	90.00	-5,331.7	-135.7	722.1	529.8	192.29	3.755	
13,300.0	7,500.0	13,218.6	7,500.0	98.4	98.0	90.00	-5,431.7	-134.4	720.9	525.1	195.76	3.683	
13,400.0	7,500.0	13,318.6	7,500.0	100.1	99.7	90.00	-5,531.7	-133.2	719.7	520.4	199.24	3.612	
13,500.0	7,500.0	13,418.6	7,500.0	101.8	101.4	90.00	-5,631.7	-131.9	718.4	515.7	202.71	3.544	
13,600.0	7,500.0	13,518.6	7,500.0	103.5	103.2	90.00	-5,731.7	-130.7	717.2	511.0	206.19	3.478	
13,700.0	7,500.0	13,618.5	7,500.0	105.3	104.9	90.00	-5,831.7	-129.4	716.0	506.3	209.67	3.415	
13,800.0	7,500.0	13,718.5	7,500.0	107.0	106.7	90.00	-5,931.7	-128.2	714.7	501.6	213.15	3.353	
13,900.0	7,500.0	13,818.5	7,500.0	108.7	108.4	90.00	-6,031.6	-126.9	713.5	496.9	216.63	3.294	

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Woolley-Sosa 2B-7H-E168 - HZ - Plan #2												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)			
14,000.0	7,500.0	13,918.5	7,500.0	110.5	110.1	90.00	-6,131.6	-125.7	712.3	492.1	220.11	3.236	
14,100.0	7,500.0	14,018.5	7,500.0	112.2	111.9	90.00	-6,231.6	-124.4	711.0	487.4	223.59	3.180	
14,200.0	7,500.0	14,118.5	7,500.0	113.9	113.6	90.00	-6,331.6	-123.2	709.8	482.7	227.07	3.126	
14,300.0	7,500.0	14,218.5	7,500.0	115.7	115.4	90.00	-6,431.6	-121.9	708.5	478.0	230.55	3.073	
14,400.0	7,500.0	14,318.5	7,500.0	117.4	117.1	90.00	-6,531.6	-120.7	707.3	473.3	234.04	3.022	
14,500.0	7,500.0	14,418.5	7,500.0	119.1	118.8	90.00	-6,631.5	-119.4	706.1	468.6	237.52	2.973	
14,600.0	7,500.0	14,518.5	7,500.0	120.9	120.6	90.00	-6,731.5	-118.2	704.8	463.8	241.01	2.925	
14,700.0	7,500.0	14,618.5	7,500.0	122.6	122.3	90.00	-6,831.5	-116.9	703.6	459.1	244.49	2.878	
14,800.0	7,500.0	14,718.5	7,500.0	124.3	124.1	90.00	-6,931.5	-115.7	702.4	454.4	247.98	2.832	
14,900.0	7,500.0	14,818.5	7,500.0	126.1	125.8	90.00	-7,031.5	-114.4	701.1	449.7	251.47	2.788	
15,000.0	7,500.0	14,918.4	7,500.0	127.8	127.6	90.00	-7,131.5	-113.2	699.9	444.9	254.95	2.745	
15,100.0	7,500.0	15,018.4	7,500.0	129.6	129.3	90.00	-7,231.5	-111.9	698.7	440.2	258.44	2.703	
15,200.0	7,500.0	15,118.4	7,500.0	131.3	131.0	90.00	-7,331.4	-110.7	697.4	435.5	261.93	2.663	
15,300.0	7,500.0	15,218.4	7,500.0	133.0	132.8	90.00	-7,431.4	-109.4	696.2	430.8	265.42	2.623	
15,400.0	7,500.0	15,318.4	7,500.0	134.8	134.5	90.00	-7,531.4	-108.2	695.0	426.1	268.91	2.584	
15,500.0	7,500.0	15,418.4	7,500.0	136.5	136.3	90.00	-7,631.4	-106.9	693.7	421.3	272.40	2.547	
15,600.0	7,500.0	15,518.4	7,500.0	138.3	138.0	90.00	-7,731.4	-105.7	692.5	416.6	275.89	2.510	
15,700.0	7,500.0	15,618.4	7,500.0	140.0	139.8	90.00	-7,831.4	-104.4	691.3	411.9	279.38	2.474	
15,792.5	7,500.0	15,706.0	7,500.0	141.6	141.3	90.00	-7,919.0	-103.3	690.1	407.6	282.53	2.443	
15,805.8	7,500.0	15,706.0	7,500.0	141.8	141.3	90.00	-7,919.0	-103.3	690.2	407.4	282.76	2.441 SF	

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Woolley-Sosa 2C-7H-E168 - HZ - Plan #2													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	-90.00	0.0	-10.1	10.1					
100.0	100.0	100.0	100.0	0.2	0.2	-90.00	0.0	-10.1	10.1	9.8	0.30	33.178		
200.0	200.0	200.0	200.0	0.3	0.3	-90.00	0.0	-10.1	10.1	9.4	0.65	15.436		
300.0	300.0	300.0	300.0	0.5	0.5	-90.00	0.0	-10.1	10.1	9.1	1.00	10.057		
400.0	400.0	400.0	400.0	0.7	0.7	-90.00	0.0	-10.1	10.1	8.7	1.35	7.459		
500.0	500.0	500.1	500.1	0.8	0.9	-85.37	0.8	-9.7	9.7	8.0	1.70	5.720		
591.3	591.3	591.4	591.4	1.0	1.0	-115.28	2.9	-8.7	9.4	7.4	2.02	4.661 CC		
600.0	600.0	600.1	600.1	1.0	1.0	-114.31	3.1	-8.5	9.4	7.4	2.05	4.593 ES		
700.0	700.0	700.1	700.0	1.2	1.2	-103.20	7.1	-6.6	9.9	7.5	2.42	4.089		
800.0	799.9	800.1	799.7	1.4	1.4	-93.51	12.6	-4.0	11.1	8.3	2.79	3.964		
900.0	899.7	900.0	899.3	1.6	1.6	-86.21	19.6	-0.5	12.9	9.7	3.19	4.052		
1,000.0	999.4	1,000.0	998.9	1.8	1.8	-84.41	27.4	3.3	15.0	11.4	3.60	4.165		
1,100.0	1,098.9	1,099.9	1,098.5	2.0	2.0	-88.92	35.2	7.1	16.9	12.9	4.04	4.198		
1,201.3	1,199.5	1,201.2	1,199.4	2.2	2.3	-97.82	43.1	10.9	19.2	14.7	4.50	4.258		
1,300.0	1,297.5	1,299.8	1,297.6	2.5	2.5	-106.80	50.8	14.7	21.9	17.0	4.95	4.433		
1,400.0	1,396.8	1,399.7	1,397.2	2.7	2.7	-113.72	58.6	18.5	25.2	19.8	5.39	4.672		
1,500.0	1,496.0	1,499.6	1,496.7	3.0	2.9	-119.02	66.4	22.2	28.7	22.9	5.81	4.933		
1,600.0	1,595.3	1,599.5	1,596.2	3.3	3.2	-123.14	74.2	26.0	32.4	26.1	6.23	5.195		
1,700.0	1,694.5	1,699.4	1,695.7	3.5	3.4	-126.39	82.0	29.8	36.2	29.6	6.64	5.449		
1,800.0	1,793.8	1,799.3	1,795.3	3.8	3.6	-129.02	89.8	33.6	40.1	33.1	7.05	5.688		
1,900.0	1,893.0	1,899.2	1,894.8	4.0	3.8	-131.18	97.6	37.4	44.1	36.7	7.46	5.913		
2,000.0	1,992.3	1,999.1	1,994.3	4.3	4.1	-132.98	105.4	41.2	48.2	40.3	7.87	6.121		
2,100.0	2,091.5	2,099.0	2,093.9	4.6	4.3	-134.50	113.2	45.0	52.2	44.0	8.27	6.315		
2,200.0	2,190.8	2,198.9	2,193.4	4.8	4.5	-135.79	121.0	48.8	56.4	47.7	8.68	6.495		
2,300.0	2,290.0	2,298.8	2,292.9	5.1	4.7	-136.91	128.8	52.6	60.5	51.4	9.08	6.662		
2,400.0	2,389.3	2,398.8	2,392.5	5.4	5.0	-137.89	136.6	56.4	64.7	55.2	9.48	6.817		
2,500.0	2,488.5	2,498.7	2,492.0	5.7	5.2	-138.75	144.4	60.2	68.8	58.9	9.89	6.961		
2,600.0	2,587.8	2,598.6	2,591.5	5.9	5.4	-139.51	152.2	64.0	73.0	62.7	10.29	7.095		
2,700.0	2,687.0	2,698.5	2,691.0	6.2	5.7	-140.18	160.0	67.8	77.2	66.5	10.70	7.220		
2,800.0	2,786.3	2,798.4	2,790.6	6.5	5.9	-140.79	167.8	71.6	81.4	70.3	11.10	7.338		
2,900.0	2,885.5	2,898.3	2,890.1	6.7	6.1	-141.34	175.6	75.4	85.7	74.2	11.50	7.447		
3,000.0	2,984.8	2,998.2	2,989.6	7.0	6.4	-141.83	183.4	79.2	89.9	78.0	11.90	7.550		
3,100.0	3,084.0	3,098.1	3,089.2	7.3	6.6	-142.28	191.2	83.0	94.1	81.8	12.31	7.647		
3,200.0	3,183.3	3,198.0	3,188.7	7.6	6.8	-142.70	199.0	86.8	98.4	85.6	12.71	7.738		
3,300.0	3,282.5	3,297.9	3,288.2	7.8	7.0	-143.07	206.8	90.6	102.6	89.5	13.11	7.824		
3,400.0	3,381.8	3,397.8	3,387.8	8.1	7.3	-143.42	214.6	94.4	106.8	93.3	13.52	7.904		
3,500.0	3,481.1	3,497.7	3,487.3	8.4	7.5	-143.74	222.4	98.2	111.1	97.2	13.92	7.981		
3,600.0	3,580.3	3,597.6	3,586.8	8.7	7.7	-144.04	230.2	102.0	115.4	101.0	14.32	8.053		
3,700.0	3,679.6	3,697.6	3,686.4	8.9	8.0	-144.32	238.0	105.8	119.6	104.9	14.73	8.122		
3,800.0	3,778.8	3,797.5	3,785.9	9.2	8.2	-144.58	245.8	109.6	123.9	108.7	15.13	8.187		
3,900.0	3,878.1	3,897.4	3,885.4	9.5	8.4	-144.82	253.6	113.4	128.1	112.6	15.53	8.249		
4,000.0	3,977.3	3,997.3	3,984.9	9.8	8.7	-145.04	261.4	117.2	132.4	116.5	15.94	8.308		
4,100.0	4,076.6	4,097.2	4,084.5	10.0	8.9	-145.25	269.2	120.9	136.7	120.3	16.34	8.364		
4,200.0	4,175.8	4,197.1	4,184.0	10.3	9.1	-145.45	277.0	124.7	140.9	124.2	16.74	8.418		
4,300.0	4,275.1	4,297.0	4,283.5	10.6	9.3	-145.64	284.8	128.5	145.2	128.1	17.14	8.469		
4,400.0	4,374.3	4,396.9	4,383.1	10.9	9.6	-145.81	292.6	132.3	149.5	131.9	17.55	8.518		
4,500.0	4,473.6	4,496.8	4,482.6	11.1	9.8	-145.98	300.4	136.1	153.7	135.8	17.95	8.565		
4,600.0	4,572.8	4,596.7	4,582.1	11.4	10.0	-146.14	308.2	139.9	158.0	139.7	18.35	8.609		
4,700.0	4,672.1	4,696.6	4,681.7	11.7	10.3	-146.29	316.1	143.7	162.3	143.5	18.76	8.652		
4,800.0	4,771.3	4,796.5	4,781.2	12.0	10.5	-146.43	323.9	147.5	166.6	147.4	19.16	8.693		
4,900.0	4,870.6	4,896.4	4,880.7	12.2	10.7	-146.56	331.7	151.3	170.8	151.3	19.56	8.733		
5,000.0	4,969.8	4,996.4	4,980.2	12.5	11.0	-146.69	339.5	155.1	175.1	155.1	19.97	8.771		

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Woolley-Sosa 2C-7H-E168 - HZ - Plan #2													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		
5,100.0	5,069.1	5,096.3	5,079.8	12.8	11.2	-146.81	347.3	158.9	179.4	159.0	20.37	8.807		
5,200.0	5,168.3	5,196.2	5,179.3	13.1	11.4	-146.93	355.1	162.7	183.7	162.9	20.77	8.842		
5,300.0	5,267.6	5,296.1	5,278.8	13.3	11.7	-147.04	362.9	166.5	188.0	166.8	21.17	8.876		
5,400.0	5,366.8	5,396.0	5,378.4	13.6	11.9	-147.14	370.7	170.3	192.2	170.7	21.58	8.909		
5,500.0	5,466.1	5,495.9	5,477.9	13.9	12.1	-147.24	378.5	174.1	196.5	174.5	21.98	8.940		
5,600.0	5,565.3	5,595.8	5,577.4	14.2	12.3	-147.34	386.3	177.9	200.8	178.4	22.38	8.970		
5,700.0	5,664.6	5,695.7	5,677.0	14.4	12.6	-147.43	394.1	181.7	205.1	182.3	22.79	9.000		
5,800.0	5,763.8	5,795.6	5,776.5	14.7	12.8	-147.52	401.9	185.5	209.4	186.2	23.19	9.028		
5,900.0	5,863.1	5,895.5	5,876.0	15.0	13.0	-147.61	409.7	189.3	213.6	190.0	23.59	9.055		
6,000.0	5,962.3	5,995.4	5,975.6	15.3	13.3	-147.69	417.5	193.1	217.9	193.9	24.00	9.081		
6,100.0	6,061.6	6,095.3	6,075.1	15.5	13.5	-147.77	425.3	196.9	222.2	197.8	24.40	9.107		
6,200.0	6,160.9	6,195.2	6,174.6	15.8	13.7	-147.84	433.1	200.7	226.5	201.7	24.80	9.132		
6,300.0	6,260.1	6,295.2	6,274.1	16.1	14.0	-147.92	440.9	204.5	230.8	205.6	25.21	9.156		
6,400.0	6,359.4	6,395.1	6,373.7	16.4	14.2	-147.99	448.7	208.3	235.1	209.5	25.61	9.179		
6,500.0	6,458.6	6,495.0	6,473.2	16.6	14.4	-148.06	456.5	212.1	239.3	213.3	26.01	9.201		
6,600.0	6,557.9	6,594.9	6,572.7	16.9	14.7	-148.12	464.3	215.9	243.6	217.2	26.42	9.223		
6,700.0	6,657.1	6,694.8	6,672.3	17.2	14.9	-148.18	472.1	219.6	247.9	221.1	26.82	9.244		
6,800.0	6,756.4	6,794.7	6,771.8	17.5	15.1	-148.25	479.9	223.4	252.2	225.0	27.22	9.265		
6,900.0	6,855.6	6,894.6	6,871.3	17.7	15.3	-148.30	487.7	227.2	256.5	228.9	27.62	9.285		
6,919.5	6,875.0	6,914.1	6,890.7	17.8	15.4	-148.32	489.2	228.0	257.3	229.6	27.70	9.289		
6,950.0	6,905.3	6,944.6	6,921.1	17.9	15.5	-170.84	491.6	229.1	258.4	230.5	27.83	9.283		
7,000.0	6,955.1	6,994.3	6,970.7	17.9	15.6	131.81	495.5	231.0	259.0	230.9	28.14	9.203		
7,050.0	7,004.8	7,043.6	7,019.7	17.9	15.7	104.72	499.3	232.9	258.5	229.9	28.58	9.047		
7,100.0	7,053.8	7,091.9	7,067.9	17.9	15.8	96.77	503.1	234.7	257.3	228.2	29.11	8.838		
7,150.0	7,101.9	7,138.9	7,114.7	17.9	15.9	95.25	506.7	236.5	255.9	226.2	29.71	8.614		
7,194.1	7,143.3	7,177.9	7,153.6	17.8	16.0	96.03	509.0	238.0	255.4	225.2	30.18	8.464		
7,200.0	7,148.7	7,183.0	7,158.7	17.8	16.0	96.21	509.1	238.2	255.4	225.2	30.23	8.448		
7,250.0	7,193.8	7,227.9	7,203.5	17.7	16.0	98.27	508.0	239.9	256.3	225.7	30.61	8.375		
7,300.0	7,236.9	7,274.2	7,249.5	17.5	16.0	100.93	503.2	241.7	258.8	228.0	30.80	8.402		
7,350.0	7,277.7	7,322.1	7,296.6	17.4	16.0	103.92	494.4	243.5	262.8	232.0	30.79	8.534		
7,400.0	7,315.7	7,371.9	7,344.6	17.2	15.9	107.05	481.0	245.3	268.2	237.7	30.56	8.776		
7,450.0	7,350.9	7,423.9	7,393.1	17.1	15.8	110.23	462.8	247.1	275.1	244.9	30.12	9.132		
7,500.0	7,382.8	7,478.2	7,441.9	16.9	15.7	113.37	439.0	249.0	283.0	253.6	29.48	9.601		
7,550.0	7,411.3	7,535.1	7,490.4	16.7	15.5	116.42	409.3	250.9	291.9	263.3	28.68	10.179		
7,600.0	7,436.1	7,595.0	7,538.0	16.6	15.4	119.34	373.0	252.7	301.5	273.7	27.77	10.857		
7,650.0	7,457.1	7,658.1	7,583.7	16.5	15.2	122.08	329.6	254.4	311.3	284.5	26.81	11.613		
7,700.0	7,474.0	7,724.7	7,626.5	16.4	15.0	124.63	278.6	256.0	321.1	295.2	25.88	12.409		
7,750.0	7,486.8	7,794.9	7,664.8	16.4	14.8	126.94	220.0	257.5	330.5	305.5	25.06	13.187		
7,800.0	7,495.3	7,868.7	7,697.2	16.4	14.7	129.00	153.6	258.7	339.1	314.7	24.46	13.867		
7,850.0	7,499.5	7,946.2	7,721.6	16.5	14.7	130.76	80.2	259.7	346.6	322.4	24.13	14.362		
7,873.6	7,500.0	7,983.8	7,729.9	16.5	14.7	131.48	43.5	260.0	349.6	325.5	24.10	14.506		
7,900.0	7,500.0	8,027.0	7,736.3	16.5	14.8	132.30	0.8	260.2	352.1	328.0	24.11	14.605		
8,000.0	7,500.0	8,152.8	7,740.0	16.9	15.2	132.75	-124.9	260.4	353.6	328.8	24.77	14.272		
8,100.0	7,500.0	8,252.8	7,740.0	17.4	15.8	132.75	-224.9	260.4	353.6	327.9	25.68	13.766		
8,200.0	7,500.0	8,352.8	7,740.0	18.0	16.5	132.75	-324.9	260.4	353.6	326.7	26.81	13.186		
8,300.0	7,500.0	8,452.8	7,740.0	18.8	17.3	132.75	-424.9	260.4	353.6	325.4	28.14	12.566		
8,400.0	7,500.0	8,552.8	7,740.0	19.7	18.3	132.75	-524.9	260.4	353.6	323.9	29.63	11.933		
8,500.0	7,500.0	8,652.8	7,740.0	20.7	19.4	132.75	-624.9	260.4	353.6	322.3	31.26	11.309		
8,600.0	7,500.0	8,752.8	7,740.0	21.9	20.6	132.75	-724.9	260.4	353.6	320.5	33.02	10.707		
8,700.0	7,500.0	8,852.8	7,740.0	23.1	21.9	132.75	-824.9	260.4	353.6	318.7	34.88	10.136		
8,800.0	7,500.0	8,952.8	7,740.0	24.3	23.2	132.75	-924.9	260.4	353.6	316.7	36.83	9.599		
8,900.0	7,500.0	9,052.8	7,740.0	25.6	24.6	132.75	-1,024.9	260.4	353.6	314.7	38.86	9.099		

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



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Woolley-Sosa 2C-7H-E168 - HZ - Plan #2												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	
9,000.0	7,500.0	9,152.8	7,740.0	27.0	26.0	132.75	-1,124.9	260.4	353.6	312.6	40.94	8.635	
9,100.0	7,500.0	9,252.8	7,740.0	28.4	27.5	132.75	-1,224.9	260.4	353.6	310.5	43.09	8.206	
9,200.0	7,500.0	9,352.8	7,740.0	29.9	29.0	132.75	-1,324.9	260.4	353.6	308.3	45.28	7.809	
9,300.0	7,500.0	9,452.8	7,740.0	31.4	30.5	132.75	-1,424.9	260.4	353.6	306.1	47.51	7.442	
9,400.0	7,500.0	9,552.8	7,740.0	32.9	32.1	132.75	-1,524.9	260.4	353.6	303.8	49.77	7.104	
9,500.0	7,500.0	9,652.8	7,740.0	34.4	33.7	132.75	-1,624.9	260.4	353.6	301.5	52.07	6.790	
9,600.0	7,500.0	9,752.8	7,740.0	36.0	35.2	132.75	-1,724.9	260.4	353.6	299.2	54.39	6.501	
9,700.0	7,500.0	9,852.8	7,740.0	37.5	36.8	132.75	-1,824.9	260.4	353.6	296.8	56.73	6.232	
9,800.0	7,500.0	9,952.8	7,740.0	39.1	38.5	132.75	-1,924.9	260.4	353.6	294.5	59.10	5.983	
9,900.0	7,500.0	10,052.8	7,740.0	40.7	40.1	132.75	-2,024.9	260.4	353.6	292.1	61.48	5.751	
10,000.0	7,500.0	10,152.8	7,740.0	42.3	41.7	132.75	-2,124.9	260.4	353.6	289.7	63.88	5.535	
10,100.0	7,500.0	10,252.8	7,740.0	43.9	43.4	132.75	-2,224.9	260.4	353.6	287.3	66.30	5.333	
10,200.0	7,500.0	10,352.8	7,740.0	45.6	45.0	132.75	-2,324.9	260.4	353.6	284.8	68.72	5.145	
10,300.0	7,500.0	10,452.8	7,740.0	47.2	46.7	132.75	-2,424.9	260.4	353.6	282.4	71.16	4.969	
10,400.0	7,500.0	10,552.8	7,740.0	48.9	48.4	132.75	-2,524.9	260.4	353.6	280.0	73.61	4.803	
10,500.0	7,500.0	10,652.8	7,740.0	50.5	50.0	132.75	-2,624.9	260.4	353.6	277.5	76.07	4.648	
10,600.0	7,500.0	10,752.8	7,740.0	52.2	51.7	132.75	-2,724.9	260.4	353.6	275.0	78.53	4.502	
10,700.0	7,500.0	10,852.8	7,740.0	53.8	53.4	132.75	-2,824.9	260.4	353.6	272.6	81.01	4.365	
10,800.0	7,500.0	10,952.8	7,740.0	55.5	55.1	132.75	-2,924.9	260.4	353.6	270.1	83.49	4.235	
10,900.0	7,500.0	11,052.8	7,740.0	57.2	56.8	132.75	-3,024.9	260.4	353.6	267.6	85.97	4.112	
11,000.0	7,500.0	11,152.8	7,740.0	58.9	58.5	132.75	-3,124.9	260.4	353.6	265.1	88.47	3.997	
11,100.0	7,500.0	11,252.8	7,740.0	60.6	60.2	132.75	-3,224.9	260.4	353.6	262.6	90.97	3.887	
11,200.0	7,500.0	11,352.8	7,740.0	62.3	61.9	132.75	-3,324.9	260.4	353.6	260.1	93.47	3.783	
11,244.1	7,500.0	11,396.9	7,740.0	63.0	62.6	132.75	-3,369.0	260.4	353.6	259.0	94.58	3.738	
11,300.0	7,500.0	11,452.8	7,740.0	64.0	63.6	132.70	-3,424.9	260.4	354.0	257.8	96.20	3.679	
11,400.0	7,500.0	11,552.7	7,740.0	65.7	65.3	132.33	-3,524.8	260.4	356.7	257.3	99.41	3.588	
11,444.1	7,500.0	11,596.8	7,740.0	66.4	66.0	132.06	-3,568.8	260.4	358.7	257.8	100.95	3.553	
11,500.0	7,500.0	11,652.5	7,740.0	67.4	67.0	131.65	-3,624.6	260.4	361.6	258.7	102.95	3.512	
11,600.0	7,500.0	11,752.3	7,740.0	69.1	68.7	130.93	-3,724.3	260.4	366.9	260.3	106.56	3.443	
11,700.0	7,500.0	11,852.0	7,740.0	70.8	70.4	130.22	-3,824.1	260.4	372.2	262.0	110.18	3.378	
11,800.0	7,500.0	11,951.8	7,740.0	72.5	72.1	129.54	-3,923.8	260.4	377.5	263.7	113.81	3.317	
11,900.0	7,500.0	12,051.5	7,740.0	74.2	73.8	128.88	-4,023.6	260.4	382.9	265.5	117.46	3.260	
12,000.0	7,500.0	12,151.3	7,740.0	76.0	75.5	128.23	-4,123.3	260.4	388.4	267.3	121.12	3.207	
12,100.0	7,500.0	12,251.0	7,740.0	77.7	77.3	127.60	-4,223.1	260.4	393.9	269.1	124.79	3.157	
12,194.1	7,500.0	12,344.9	7,740.0	79.3	78.9	127.03	-4,317.0	260.4	399.1	270.9	128.25	3.112	
12,200.0	7,500.0	12,350.8	7,740.0	79.4	79.0	126.99	-4,322.9	260.4	399.5	271.0	128.47	3.109	
12,300.0	7,500.0	12,450.7	7,740.0	81.1	80.7	126.51	-4,422.7	260.4	403.5	271.7	131.82	3.061	
12,393.7	7,500.0	12,544.3	7,740.0	82.7	82.3	126.37	-4,516.4	260.4	404.7	270.4	134.37	3.012	
12,400.0	7,500.0	12,550.6	7,740.0	82.9	82.4	126.37	-4,522.7	260.4	404.7	270.2	134.55	3.008	
12,500.0	7,500.0	12,650.6	7,740.0	84.6	84.2	126.37	-4,622.7	260.4	404.8	267.4	137.34	2.947	
12,600.0	7,500.0	12,750.6	7,740.0	86.3	85.9	126.37	-4,722.7	260.4	404.8	264.6	140.13	2.889	
12,700.0	7,500.0	12,850.6	7,740.0	88.0	87.6	126.36	-4,822.7	260.4	404.8	261.9	142.92	2.832	
12,800.0	7,500.0	12,950.6	7,740.0	89.7	89.3	126.36	-4,922.7	260.4	404.8	259.1	145.71	2.778	
12,900.0	7,500.0	13,050.6	7,740.0	91.5	91.1	126.36	-5,022.7	260.4	404.8	256.3	148.51	2.726	
13,000.0	7,500.0	13,150.6	7,740.0	93.2	92.8	126.36	-5,122.7	260.4	404.8	253.5	151.31	2.675	
13,100.0	7,500.0	13,250.6	7,740.0	94.9	94.5	126.36	-5,222.7	260.4	404.8	250.7	154.11	2.627	
13,200.0	7,500.0	13,350.6	7,740.0	96.6	96.3	126.36	-5,322.7	260.4	404.8	247.9	156.91	2.580	
13,300.0	7,500.0	13,450.6	7,740.0	98.4	98.0	126.36	-5,422.7	260.4	404.9	245.1	159.71	2.535	
13,400.0	7,500.0	13,550.6	7,740.0	100.1	99.7	126.36	-5,522.7	260.4	404.9	242.3	162.52	2.491	
13,500.0	7,500.0	13,650.6	7,740.0	101.8	101.5	126.35	-5,622.7	260.4	404.9	239.6	165.32	2.449	
13,600.0	7,500.0	13,750.6	7,740.0	103.5	103.2	126.35	-5,722.7	260.4	404.9	236.8	168.13	2.408	
13,700.0	7,500.0	13,850.6	7,740.0	105.3	104.9	126.35	-5,822.7	260.4	404.9	234.0	170.93	2.369	

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Woolley-Sosa 2C-7H-E168 - HZ - Plan #2										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)					
13,800.0	7,500.0	13,950.6	7,740.0	107.0	106.7	126.35	-5,922.7	260.4	404.9	231.2	173.74	2.331			
13,900.0	7,500.0	14,050.6	7,740.0	108.7	108.4	126.35	-6,022.7	260.4	404.9	228.4	176.55	2.294			
14,000.0	7,500.0	14,150.6	7,740.0	110.5	110.2	126.35	-6,122.7	260.4	404.9	225.6	179.36	2.258			
14,100.0	7,500.0	14,250.6	7,740.0	112.2	111.9	126.35	-6,222.7	260.4	405.0	222.8	182.17	2.223			
14,200.0	7,500.0	14,350.6	7,740.0	113.9	113.6	126.34	-6,322.7	260.4	405.0	220.0	184.99	2.189			
14,300.0	7,500.0	14,450.6	7,740.0	115.7	115.4	126.34	-6,422.7	260.4	405.0	217.2	187.80	2.156			
14,400.0	7,500.0	14,550.6	7,740.0	117.4	117.1	126.34	-6,522.7	260.4	405.0	214.4	190.61	2.125			
14,500.0	7,500.0	14,650.6	7,740.0	119.1	118.9	126.34	-6,622.7	260.4	405.0	211.6	193.43	2.094			
14,600.0	7,500.0	14,750.6	7,740.0	120.9	120.6	126.34	-6,722.7	260.4	405.0	208.8	196.24	2.064			
14,700.0	7,500.0	14,850.6	7,740.0	122.6	122.3	126.34	-6,822.7	260.4	405.0	206.0	199.06	2.035			
14,800.0	7,500.0	14,950.6	7,740.0	124.3	124.1	126.34	-6,922.7	260.4	405.0	203.2	201.88	2.006			
14,900.0	7,500.0	15,050.6	7,740.0	126.1	125.8	126.34	-7,022.7	260.4	405.1	200.4	204.69	1.979			
15,000.0	7,500.0	15,150.6	7,740.0	127.8	127.6	126.33	-7,122.7	260.4	405.1	197.6	207.51	1.952			
15,100.0	7,500.0	15,250.6	7,740.0	129.6	129.3	126.33	-7,222.7	260.4	405.1	194.8	210.33	1.926			
15,200.0	7,500.0	15,350.6	7,740.0	131.3	131.1	126.33	-7,322.7	260.4	405.1	191.9	213.15	1.901			
15,300.0	7,500.0	15,450.6	7,740.0	133.0	132.8	126.33	-7,422.7	260.4	405.1	189.1	215.97	1.876			
15,400.0	7,500.0	15,550.6	7,740.0	134.8	134.5	126.33	-7,522.7	260.4	405.1	186.3	218.79	1.852			
15,500.0	7,500.0	15,650.6	7,740.0	136.5	136.3	126.33	-7,622.7	260.4	405.1	183.5	221.61	1.828			
15,600.0	7,500.0	15,750.6	7,740.0	138.3	138.0	126.33	-7,722.7	260.4	405.1	180.7	224.43	1.805			
15,700.0	7,500.0	15,850.6	7,740.0	140.0	139.8	126.32	-7,822.7	260.4	405.2	177.9	227.26	1.783			
15,762.9	7,500.0	15,913.5	7,740.0	141.1	140.9	126.32	-7,885.6	260.4	405.2	176.1	229.03	1.769			
15,805.8	7,500.0	15,952.8	7,740.0	141.8	141.6	126.32	-7,924.8	260.4	405.2	175.0	230.19	1.760 SF			

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Woolley-Sosa 2E-7H-E168 - HZ - Plan #3												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	92.09	-0.4	10.1	10.1						
100.0	100.0	100.0	100.0	0.2	0.2	92.09	-0.4	10.1	10.1	9.8	0.30	33.200			
200.0	200.0	200.0	200.0	0.3	0.3	92.09	-0.4	10.1	10.1	9.4	0.65	15.446			
300.0	300.0	300.0	300.0	0.5	0.5	92.09	-0.4	10.1	10.1	9.1	1.00	10.064			
400.0	400.0	400.0	400.0	0.7	0.7	92.09	-0.4	10.1	10.1	8.7	1.35	7.464			
500.0	500.0	500.0	500.0	0.8	0.8	92.09	-0.4	10.1	10.1	8.4	1.70	5.931			
600.0	600.0	600.0	600.0	1.0	1.0	56.77	-0.4	10.1	9.6	7.5	2.05	4.674			
700.0	700.0	700.0	700.0	1.2	1.2	71.83	-0.4	10.1	8.4	6.0	2.40	3.512			
764.9	764.8	764.8	764.8	1.3	1.3	90.00	-0.4	10.1	8.0	5.4	2.63	3.042 CC, ES			
800.0	799.9	799.9	799.9	1.4	1.4	102.18	-0.4	10.1	8.2	5.4	2.76	2.971			
900.0	899.7	899.7	899.7	1.6	1.5	134.29	-0.4	10.1	11.2	8.1	3.11	3.605			
1,000.0	999.4	999.4	999.4	1.8	1.7	152.85	-0.4	10.1	17.6	14.2	3.45	5.102			
1,100.0	1,098.9	1,099.3	1,099.3	2.0	1.9	161.41	0.2	10.7	25.8	22.0	3.79	6.789			
1,201.3	1,199.5	1,200.7	1,200.6	2.2	2.1	165.29	1.8	12.8	34.4	30.3	4.14	8.310			
1,300.0	1,297.5	1,299.7	1,299.5	2.5	2.3	166.87	4.6	16.2	42.3	37.8	4.49	9.409			
1,400.0	1,396.8	1,400.2	1,399.9	2.7	2.4	167.14	8.4	20.9	48.6	43.8	4.85	10.031			
1,500.0	1,496.0	1,500.9	1,500.2	3.0	2.6	166.57	13.4	27.1	53.4	48.2	5.21	10.252			
1,600.0	1,595.3	1,601.7	1,600.6	3.3	2.8	165.33	19.5	34.6	56.6	51.0	5.58	10.146			
1,700.0	1,694.5	1,702.6	1,700.8	3.5	3.1	163.42	26.7	43.5	58.3	52.3	5.96	9.774			
1,800.0	1,793.8	1,803.4	1,800.8	3.8	3.3	160.76	35.0	53.8	58.5	52.1	6.36	9.186			
1,900.0	1,893.0	1,904.2	1,900.5	4.0	3.6	157.14	44.4	65.4	57.3	50.5	6.80	8.427			
2,000.0	1,992.3	2,004.1	1,999.1	4.3	3.9	152.83	54.3	77.7	55.7	48.4	7.28	7.645			
2,100.0	2,091.5	2,104.0	2,097.8	4.6	4.1	148.27	64.3	90.0	54.3	46.5	7.80	6.964			
2,200.0	2,190.8	2,203.9	2,196.4	4.8	4.4	143.53	74.2	102.2	53.4	45.0	8.37	6.377			
2,300.0	2,290.0	2,303.8	2,295.1	5.1	4.7	138.64	84.1	114.5	52.8	43.8	8.98	5.879			
2,398.2	2,387.5	2,402.0	2,392.0	5.4	5.0	133.77	93.9	126.5	52.6	43.0	9.62	5.470			
2,400.0	2,389.3	2,403.7	2,393.7	5.4	5.0	133.68	94.0	126.7	52.6	43.0	9.63	5.464			
2,500.0	2,488.5	2,503.6	2,492.4	5.7	5.3	128.73	104.0	139.0	52.8	42.5	10.30	5.125			
2,600.0	2,587.8	2,603.5	2,591.0	5.9	5.6	123.84	113.9	151.3	53.4	42.4	11.00	4.856			
2,700.0	2,687.0	2,703.4	2,689.6	6.2	5.9	119.10	123.8	163.5	54.4	42.7	11.70	4.649			
2,800.0	2,786.3	2,803.3	2,788.3	6.5	6.2	114.56	133.7	175.8	55.7	43.3	12.39	4.497			
2,900.0	2,885.5	2,903.2	2,886.9	6.7	6.5	110.25	143.6	188.0	57.4	44.3	13.07	4.390			
3,000.0	2,984.8	3,003.1	2,985.6	7.0	6.9	106.21	153.6	200.3	59.4	45.6	13.73	4.322			
3,100.0	3,084.0	3,103.0	3,084.2	7.3	7.2	102.44	163.5	212.6	61.6	47.2	14.38	4.285			
3,200.0	3,183.3	3,202.9	3,182.9	7.6	7.5	98.95	173.4	224.8	64.1	49.1	15.00	4.274			
3,300.0	3,282.5	3,302.8	3,281.5	7.8	7.8	95.74	183.3	237.1	66.8	51.2	15.59	4.284			
3,400.0	3,381.8	3,402.7	3,380.1	8.1	8.1	92.78	193.3	249.4	69.7	53.5	16.17	4.311			
3,500.0	3,481.1	3,502.6	3,478.8	8.4	8.4	90.07	203.2	261.6	72.8	56.1	16.73	4.351			
3,600.0	3,580.3	3,602.5	3,577.4	8.7	8.7	87.58	213.1	273.9	76.0	58.8	17.28	4.401			
3,700.0	3,679.6	3,702.4	3,676.1	8.9	9.1	85.30	223.0	286.1	79.4	61.6	17.81	4.459			
3,800.0	3,778.8	3,802.3	3,774.7	9.2	9.4	83.21	232.9	298.4	82.9	64.5	18.32	4.522			
3,900.0	3,878.1	3,902.2	3,873.4	9.5	9.7	81.28	242.9	310.7	86.4	67.6	18.83	4.591			
4,000.0	3,977.3	4,002.1	3,972.0	9.8	10.0	79.51	252.8	322.9	90.1	70.8	19.33	4.662			
4,100.0	4,076.6	4,102.0	4,070.6	10.0	10.3	77.89	262.7	335.2	93.9	74.0	19.82	4.735			
4,200.0	4,175.8	4,201.9	4,169.3	10.3	10.7	76.38	272.6	347.5	97.7	77.4	20.31	4.810			
4,300.0	4,275.1	4,301.7	4,267.9	10.6	11.0	74.99	282.6	359.7	101.6	80.8	20.79	4.886			
4,400.0	4,374.3	4,401.6	4,366.6	10.9	11.3	73.71	292.5	372.0	105.5	84.2	21.26	4.961			
4,500.0	4,473.6	4,501.5	4,465.2	11.1	11.6	72.52	302.4	384.2	109.5	87.7	21.73	5.037			
4,600.0	4,572.8	4,601.4	4,563.8	11.4	12.0	71.41	312.3	396.5	113.5	91.3	22.20	5.112			
4,700.0	4,672.1	4,701.3	4,662.5	11.7	12.3	70.37	322.2	408.8	117.6	94.9	22.67	5.186			
4,800.0	4,771.3	4,801.2	4,761.1	12.0	12.6	69.41	332.2	421.0	121.7	98.5	23.13	5.259			
4,900.0	4,870.6	4,901.1	4,859.8	12.2	12.9	68.51	342.1	433.3	125.8	102.2	23.60	5.331			

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Woolley-Sosa 2E-7H-E168 - HZ - Plan #3													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)	Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
5,000.0	4,969.8	5,001.0	4,958.4	12.5	13.2	67.67	352.0	445.5	130.0	105.9	24.06	5.402		
5,100.0	5,069.1	5,100.9	5,057.1	12.8	13.6	66.88	361.9	457.8	134.2	109.6	24.52	5.472		
5,200.0	5,168.3	5,200.8	5,155.7	13.1	13.9	66.14	371.9	470.1	138.4	113.4	24.98	5.540		
5,300.0	5,267.6	5,300.7	5,254.3	13.3	14.2	65.44	381.8	482.3	142.6	117.2	25.43	5.607		
5,400.0	5,366.8	5,400.6	5,353.0	13.6	14.5	64.78	391.7	494.6	146.9	121.0	25.89	5.672		
5,500.0	5,466.1	5,500.5	5,451.6	13.9	14.9	64.16	401.6	506.9	151.1	124.8	26.35	5.736		
5,600.0	5,565.3	5,600.4	5,550.3	14.2	15.2	63.57	411.5	519.1	155.4	128.6	26.80	5.799		
5,700.0	5,664.6	5,700.3	5,648.9	14.4	15.5	63.02	421.5	531.4	159.7	132.5	27.26	5.860		
5,800.0	5,763.8	5,800.2	5,747.6	14.7	15.8	62.49	431.4	543.6	164.0	136.3	27.71	5.920		
5,900.0	5,863.1	5,900.1	5,846.2	15.0	16.2	61.99	441.3	555.9	168.4	140.2	28.17	5.978		
6,000.0	5,962.3	6,000.0	5,944.8	15.3	16.5	61.52	451.2	568.2	172.7	144.1	28.62	6.035		
6,100.0	6,061.6	6,099.9	6,043.5	15.5	16.8	61.07	461.2	580.4	177.1	148.0	29.08	6.090		
6,200.0	6,160.9	6,199.8	6,142.1	15.8	17.1	60.64	471.1	592.7	181.4	151.9	29.53	6.144		
6,300.0	6,260.1	6,299.7	6,240.8	16.1	17.5	60.23	481.0	604.9	185.8	155.8	29.98	6.197		
6,400.0	6,359.4	6,399.6	6,339.4	16.4	17.8	59.84	490.9	617.2	190.2	159.8	30.44	6.249		
6,500.0	6,458.6	6,499.4	6,438.1	16.6	18.1	59.47	500.8	629.5	194.6	163.7	30.89	6.299		
6,600.0	6,557.9	6,599.3	6,536.7	16.9	18.4	59.11	510.8	641.7	199.0	167.7	31.35	6.349		
6,700.0	6,657.1	6,699.2	6,635.3	17.2	18.8	58.77	520.7	654.0	203.4	171.6	31.80	6.397		
6,800.0	6,756.4	6,799.1	6,734.0	17.5	19.1	58.45	530.6	666.3	207.8	175.6	32.25	6.443		
6,900.0	6,855.6	6,899.0	6,832.6	17.7	19.4	58.13	540.5	678.5	212.3	179.5	32.71	6.489		
6,919.5	6,875.0	6,918.5	6,851.8	17.8	19.5	58.07	542.5	680.9	213.1	180.3	32.80	6.498		
6,950.0	6,905.3	6,949.0	6,881.9	17.9	19.6	35.31	545.5	684.6	214.4	181.5	32.90	6.516		
7,000.0	6,955.1	6,998.6	6,931.0	17.9	19.7	-24.20	550.4	690.7	216.0	183.2	32.80	6.586		
7,050.0	7,004.8	7,047.7	6,979.4	17.9	19.9	-55.55	555.3	696.8	217.4	185.0	32.41	6.710		
7,100.0	7,053.8	7,095.7	7,026.8	17.9	20.1	-69.62	560.1	702.7	219.2	187.5	31.76	6.903		
7,150.0	7,101.9	7,142.4	7,072.9	17.9	20.2	-78.83	564.7	708.4	222.1	191.2	30.92	7.183		
7,200.0	7,148.7	7,187.3	7,117.3	17.8	20.4	-86.27	569.2	713.9	226.9	197.0	29.99	7.568		
7,250.0	7,193.8	7,233.8	7,163.3	17.7	20.5	-92.89	572.2	719.7	234.4	205.4	29.00	8.082		
7,300.0	7,236.9	7,282.4	7,211.5	17.5	20.6	-98.66	571.3	726.1	244.2	216.2	28.08	8.697		
7,350.0	7,277.7	7,333.5	7,261.8	17.4	20.6	-103.76	565.9	733.1	256.2	228.9	27.25	9.400		
7,400.0	7,315.7	7,387.3	7,313.9	17.2	20.7	-108.26	555.4	740.7	269.8	243.3	26.51	10.180		
7,450.0	7,350.9	7,444.2	7,367.8	17.1	20.7	-112.24	539.0	748.9	284.8	258.9	25.83	11.024		
7,500.0	7,382.8	7,504.8	7,423.0	16.9	20.7	-115.75	515.7	757.8	300.5	275.3	25.22	11.917		
7,550.0	7,411.3	7,569.5	7,478.9	16.7	20.6	-118.80	484.5	767.3	316.7	292.0	24.67	12.836		
7,600.0	7,436.1	7,638.9	7,534.4	16.6	20.5	-121.41	444.2	777.4	332.7	308.5	24.19	13.753		
7,650.0	7,457.1	7,713.4	7,588.0	16.5	20.4	-123.59	393.7	788.0	348.0	324.2	23.79	14.630		
7,700.0	7,474.0	7,793.2	7,637.7	16.4	20.3	-125.32	332.2	798.8	362.2	338.7	23.49	15.420		
7,750.0	7,486.8	7,878.4	7,680.7	16.4	20.2	-126.58	259.6	809.6	374.7	351.4	23.32	16.065		
7,800.0	7,495.3	7,968.6	7,714.0	16.4	20.1	-127.32	176.5	819.7	385.0	361.7	23.31	16.513		
7,850.0	7,499.5	8,062.8	7,734.5	16.5	20.2	-127.51	85.1	828.8	392.7	369.2	23.48	16.722		
7,873.6	7,500.0	8,108.2	7,739.0	16.5	20.3	-127.40	40.1	832.6	395.3	371.7	23.63	16.733		
7,900.0	7,500.0	8,151.2	7,740.0	16.5	20.4	-127.24	-2.8	835.7	397.2	373.4	23.81	16.681		
8,000.0	7,500.0	8,251.0	7,740.0	16.9	20.7	-126.64	-102.3	842.6	402.8	378.1	24.61	16.368		
8,100.0	7,500.0	8,350.7	7,740.0	17.4	21.1	-126.06	-201.8	849.6	408.4	382.7	25.68	15.902		
8,200.0	7,500.0	8,451.0	7,740.0	18.0	21.7	-125.49	-301.8	856.6	414.0	387.0	27.02	15.322		
8,300.0	7,500.0	8,557.1	7,740.0	18.8	22.5	-124.99	-407.8	862.9	418.9	390.2	28.67	14.610		
8,400.0	7,500.0	8,663.4	7,740.0	19.7	23.3	-124.66	-514.0	867.2	422.2	391.7	30.50	13.842		
8,500.0	7,500.0	8,769.9	7,740.0	20.7	24.3	-124.48	-620.4	869.5	424.0	391.5	32.49	13.050		
8,600.0	7,500.0	8,874.3	7,740.0	21.9	25.3	-124.44	-724.9	870.0	424.3	389.8	34.57	12.274		
8,700.0	7,500.0	8,974.3	7,740.0	23.1	26.3	-124.44	-824.9	870.0	424.3	387.6	36.73	11.554		
8,800.0	7,500.0	9,074.3	7,740.0	24.3	27.4	-124.44	-924.9	870.0	424.3	385.4	38.98	10.887		
8,900.0	7,500.0	9,174.3	7,740.0	25.6	28.6	-124.44	-1,024.9	870.0	424.3	383.0	41.31	10.273		

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Woolley-Sosa 2E-7H-E168 - HZ - Plan #3												Offset Site Error:	0.0 ft
Survey Program: 0-Geolink 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)			
9,000.0	7,500.0	9,274.3	7,740.0	27.0	29.8	-124.44	-1,124.9	870.0	424.3	380.6	43.71	9.709	
9,045.5	7,500.0	9,319.8	7,740.0	27.7	30.4	-124.44	-1,170.4	870.0	424.3	379.5	44.82	9.468	
9,100.0	7,500.0	9,372.5	7,740.0	28.4	31.1	-124.44	-1,223.0	870.0	424.4	378.3	46.14	9.198	
9,200.0	7,500.0	9,470.8	7,740.0	29.9	32.4	-124.37	-1,321.4	871.0	425.2	376.5	48.66	8.738	
9,300.0	7,500.0	9,570.8	7,740.0	31.4	33.8	-124.29	-1,421.4	871.9	426.0	374.8	51.25	8.313	
9,400.0	7,500.0	9,670.8	7,740.0	32.9	35.2	-124.22	-1,521.3	872.9	426.8	373.0	53.87	7.923	
9,500.0	7,500.0	9,770.8	7,740.0	34.4	36.6	-124.14	-1,621.3	873.9	427.7	371.1	56.53	7.565	
9,600.0	7,500.0	9,870.8	7,740.0	36.0	38.1	-124.07	-1,721.3	874.9	428.5	369.2	59.23	7.234	
9,700.0	7,500.0	9,970.8	7,740.0	37.5	39.6	-123.99	-1,821.3	875.9	429.3	367.4	61.95	6.930	
9,800.0	7,500.0	10,070.8	7,740.0	39.1	41.1	-123.92	-1,921.3	876.9	430.1	365.4	64.69	6.649	
9,900.0	7,500.0	10,170.8	7,740.0	40.7	42.6	-123.84	-2,021.3	877.9	431.0	363.5	67.46	6.388	
10,000.0	7,500.0	10,270.8	7,740.0	42.3	44.2	-123.77	-2,121.3	878.9	431.8	361.5	70.25	6.146	
10,100.0	7,500.0	10,370.8	7,740.0	43.9	45.7	-123.70	-2,221.3	879.9	432.6	359.5	73.06	5.921	
10,200.0	7,500.0	10,470.8	7,740.0	45.6	47.3	-123.62	-2,321.3	880.9	433.4	357.5	75.89	5.712	
10,300.0	7,500.0	10,570.8	7,740.0	47.2	48.9	-123.55	-2,421.3	881.9	434.3	355.5	78.73	5.516	
10,400.0	7,500.0	10,670.8	7,740.0	48.9	50.5	-123.48	-2,521.2	882.9	435.1	353.5	81.59	5.333	
10,500.0	7,500.0	10,770.8	7,740.0	50.5	52.1	-123.41	-2,621.2	883.9	435.9	351.5	84.46	5.162	
10,600.0	7,500.0	10,870.8	7,740.0	52.2	53.7	-123.33	-2,721.2	884.9	436.8	349.4	87.34	5.001	
10,700.0	7,500.0	10,970.8	7,740.0	53.8	55.4	-123.26	-2,821.2	885.9	437.6	347.4	90.23	4.850	
10,800.0	7,500.0	11,070.8	7,740.0	55.5	57.0	-123.19	-2,921.2	886.9	438.4	345.3	93.14	4.707	
10,900.0	7,500.0	11,170.7	7,740.0	57.2	58.6	-123.12	-3,021.2	887.9	439.3	343.2	96.05	4.573	
11,000.0	7,500.0	11,270.7	7,740.0	58.9	60.3	-123.05	-3,121.2	888.9	440.1	341.1	98.98	4.446	
11,100.0	7,500.0	11,370.7	7,740.0	60.6	61.9	-122.98	-3,221.2	889.9	440.9	339.0	101.91	4.326	
11,200.0	7,500.0	11,470.7	7,740.0	62.3	63.6	-122.91	-3,321.2	890.9	441.8	336.9	104.86	4.213	
11,244.1	7,500.0	11,514.9	7,740.0	63.0	64.3	-122.88	-3,365.3	891.3	442.1	336.0	106.16	4.165	
11,300.0	7,500.0	11,570.7	7,740.0	64.0	65.2	-122.88	-3,421.2	891.9	442.1	334.0	108.15	4.088	
11,400.0	7,500.0	11,670.7	7,740.0	65.7	66.9	-123.09	-3,521.1	892.9	439.9	328.5	111.37	3.950	
11,444.1	7,500.0	11,714.8	7,740.0	66.4	67.7	-123.28	-3,565.2	893.3	437.9	325.3	112.64	3.888	
11,500.0	7,500.0	11,770.5	7,740.0	67.4	68.6	-123.52	-3,621.0	893.8	435.2	321.2	113.95	3.819	
11,600.0	7,500.0	11,870.3	7,740.0	69.1	70.3	-123.96	-3,720.8	894.8	430.2	313.9	116.27	3.700	
11,700.0	7,500.0	11,970.2	7,740.0	70.8	71.9	-124.41	-3,820.6	895.8	425.2	306.7	118.55	3.587	
11,800.0	7,500.0	12,070.0	7,740.0	72.5	73.6	-124.87	-3,920.4	896.8	420.3	299.5	120.77	3.480	
11,900.0	7,500.0	12,169.8	7,740.0	74.2	75.3	-125.34	-4,020.2	897.8	415.4	292.5	122.95	3.379	
12,000.0	7,500.0	12,269.6	7,740.0	76.0	77.0	-125.82	-4,120.0	898.8	410.5	285.5	125.07	3.283	
12,100.0	7,500.0	12,369.5	7,740.0	77.7	78.7	-126.32	-4,219.8	899.8	405.7	278.6	127.13	3.191	
12,194.1	7,500.0	12,463.4	7,740.0	79.3	80.3	-126.79	-4,313.8	900.7	401.2	272.1	129.02	3.109	
12,200.0	7,500.0	12,469.3	7,740.0	79.4	80.4	-126.82	-4,319.7	900.8	400.9	271.8	129.12	3.105	
12,300.0	7,500.0	12,569.2	7,740.0	81.1	82.1	-127.13	-4,419.6	901.8	397.7	266.8	130.88	3.038	
12,365.6	7,500.0	12,634.8	7,740.0	82.3	83.2	-127.19	-4,485.2	902.5	397.1	264.9	132.18	3.004	
12,393.7	7,500.0	12,662.9	7,740.0	82.7	83.7	-127.18	-4,513.2	902.7	397.2	264.4	132.78	2.991	
12,400.0	7,500.0	12,669.2	7,740.0	82.9	83.8	-127.17	-4,519.6	902.8	397.2	264.3	132.96	2.988	
12,500.0	7,500.0	12,769.2	7,740.0	84.6	85.5	-127.09	-4,619.5	903.8	398.0	262.1	135.86	2.929	
12,600.0	7,500.0	12,869.2	7,740.0	86.3	87.2	-127.00	-4,719.5	904.8	398.8	260.0	138.78	2.874	
12,700.0	7,500.0	12,969.2	7,740.0	88.0	88.9	-126.92	-4,819.5	905.8	399.6	257.9	141.69	2.820	
12,800.0	7,500.0	13,069.2	7,740.0	89.7	90.6	-126.83	-4,919.5	906.8	400.4	255.7	144.62	2.768	
12,900.0	7,500.0	13,169.2	7,740.0	91.5	92.3	-126.75	-5,019.5	907.8	401.1	253.6	147.55	2.719	
13,000.0	7,500.0	13,269.2	7,740.0	93.2	94.0	-126.67	-5,119.5	908.8	401.9	251.4	150.48	2.671	
13,100.0	7,500.0	13,369.1	7,740.0	94.9	95.7	-126.58	-5,219.5	909.8	402.7	249.3	153.43	2.625	
13,200.0	7,500.0	13,469.1	7,740.0	96.6	97.4	-126.50	-5,319.5	910.8	403.5	247.1	156.38	2.580	
13,300.0	7,500.0	13,569.1	7,740.0	98.4	99.1	-126.42	-5,419.5	911.8	404.3	245.0	159.33	2.537	
13,400.0	7,500.0	13,669.1	7,740.0	100.1	100.9	-126.33	-5,519.5	912.7	405.1	242.8	162.29	2.496	
13,500.0	7,500.0	13,769.1	7,740.0	101.8	102.6	-126.25	-5,619.5	913.7	405.9	240.6	165.26	2.456	

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Woolley-Sosa 2E-7H-E168 - HZ - Plan #3													Offset Site Error:	0.0 ft
Survey Program: 0-Geolink 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	
13,600.0	7,500.0	13,869.1	7,740.0	103.5	104.3	-126.17	-5,719.4	914.7	406.7	238.4	168.24	2.417		
13,700.0	7,500.0	13,969.1	7,740.0	105.3	106.0	-126.09	-5,819.4	915.7	407.5	236.2	171.22	2.380		
13,800.0	7,500.0	14,069.1	7,740.0	107.0	107.7	-126.01	-5,919.4	916.7	408.2	234.0	174.20	2.344		
13,900.0	7,500.0	14,169.1	7,740.0	108.7	109.5	-125.93	-6,019.4	917.7	409.0	231.8	177.19	2.308		
14,000.0	7,500.0	14,269.1	7,740.0	110.5	111.2	-125.85	-6,119.4	918.7	409.8	229.6	180.19	2.274		
14,100.0	7,500.0	14,369.1	7,740.0	112.2	112.9	-125.77	-6,219.4	919.7	410.6	227.4	183.19	2.242		
14,200.0	7,500.0	14,469.1	7,740.0	113.9	114.6	-125.69	-6,319.4	920.7	411.4	225.2	186.20	2.210		
14,300.0	7,500.0	14,569.1	7,740.0	115.7	116.4	-125.61	-6,419.4	921.7	412.2	223.0	189.21	2.179		
14,400.0	7,500.0	14,669.1	7,740.0	117.4	118.1	-125.53	-6,519.4	922.7	413.0	220.8	192.23	2.149		
14,500.0	7,500.0	14,769.1	7,740.0	119.1	119.8	-125.45	-6,619.4	923.7	413.8	218.6	195.25	2.119		
14,600.0	7,500.0	14,869.1	7,740.0	120.9	121.5	-125.37	-6,719.3	924.7	414.6	216.3	198.28	2.091		
14,700.0	7,500.0	14,969.1	7,740.0	122.6	123.3	-125.29	-6,819.3	925.7	415.4	214.1	201.31	2.064		
14,800.0	7,500.0	15,069.1	7,740.0	124.3	125.0	-125.22	-6,919.3	926.7	416.2	211.9	204.35	2.037		
14,900.0	7,500.0	15,169.1	7,740.0	126.1	126.7	-125.14	-7,019.3	927.7	417.0	209.6	207.39	2.011		
15,000.0	7,500.0	15,269.1	7,740.0	127.8	128.5	-125.06	-7,119.3	928.7	417.8	207.4	210.44	1.985		
15,100.0	7,500.0	15,369.1	7,740.0	129.6	130.2	-124.98	-7,219.3	929.7	418.6	205.1	213.49	1.961		
15,200.0	7,500.0	15,469.0	7,740.0	131.3	131.9	-124.91	-7,319.3	930.7	419.4	202.9	216.55	1.937		
15,300.0	7,500.0	15,569.0	7,740.0	133.0	133.7	-124.83	-7,419.3	931.7	420.2	200.6	219.61	1.913		
15,400.0	7,500.0	15,669.0	7,740.0	134.8	135.4	-124.75	-7,519.3	932.7	421.0	198.3	222.68	1.891		
15,500.0	7,500.0	15,769.0	7,740.0	136.5	137.1	-124.68	-7,619.3	933.7	421.8	196.1	225.75	1.869		
15,600.0	7,500.0	15,869.0	7,740.0	138.3	138.9	-124.60	-7,719.2	934.6	422.6	193.8	228.82	1.847		
15,700.0	7,500.0	15,969.0	7,740.0	140.0	140.6	-124.53	-7,819.2	935.6	423.4	191.5	231.90	1.826		
15,805.8	7,500.0	16,074.8	7,740.0	141.8	142.4	-124.45	-7,925.0	936.7	424.3	189.1	235.16	1.804 SF		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Woolley-Sosa 2F-7H-E168 - HZ - Plan #2												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	91.04	-0.4	20.2	20.2					
100.0	100.0	100.0	100.0	0.2	0.2	91.04	-0.4	20.2	20.2	19.9	0.30	66.366		
200.0	200.0	200.0	200.0	0.3	0.3	91.04	-0.4	20.2	20.2	19.5	0.65	30.876		
300.0	300.0	300.0	300.0	0.5	0.5	91.04	-0.4	20.2	20.2	19.2	1.00	20.118	CC, ES	
400.0	400.0	399.7	399.7	0.7	0.7	90.04	0.0	20.9	20.9	19.6	1.35	15.512		
500.0	500.0	499.3	499.2	0.8	0.9	87.45	1.0	23.3	23.4	21.7	1.70	13.745		
600.0	600.0	598.8	598.7	1.0	1.0	45.97	2.8	27.3	26.8	24.8	2.05	13.098		
700.0	700.0	698.3	697.9	1.2	1.2	45.70	5.2	32.8	30.8	28.4	2.40	12.811		
800.0	799.9	797.6	797.0	1.4	1.4	46.60	8.4	39.9	35.1	32.3	2.76	12.729		
900.0	899.7	896.9	895.8	1.6	1.7	48.25	12.2	48.6	39.9	36.8	3.12	12.770		
1,000.0	999.4	996.1	994.4	1.8	1.9	50.35	16.7	58.8	45.2	41.7	3.51	12.887		
1,100.0	1,098.9	1,095.1	1,092.6	2.0	2.2	52.70	21.9	70.5	51.0	47.1	3.91	13.043		
1,201.3	1,199.5	1,195.3	1,191.7	2.2	2.5	55.18	27.9	84.0	57.5	53.2	4.35	13.214		
1,300.0	1,297.5	1,292.8	1,287.9	2.5	2.8	57.04	34.3	98.6	64.9	60.1	4.81	13.515		
1,400.0	1,396.8	1,391.4	1,384.8	2.7	3.1	57.83	41.5	114.9	74.0	68.7	5.27	14.030		
1,500.0	1,496.0	1,489.8	1,481.2	3.0	3.5	57.84	49.4	132.7	84.4	78.7	5.74	14.712		
1,600.0	1,595.3	1,589.2	1,578.5	3.3	3.9	57.60	57.7	151.4	95.6	89.3	6.21	15.389		
1,700.0	1,694.5	1,688.5	1,675.8	3.5	4.2	57.42	65.9	170.0	106.7	100.0	6.68	15.961		
1,800.0	1,793.8	1,787.9	1,773.0	3.8	4.6	57.27	74.2	188.7	117.8	110.6	7.16	16.451		
1,900.0	1,893.0	1,887.3	1,870.3	4.0	5.0	57.15	82.4	207.3	128.9	121.3	7.64	16.875		
2,000.0	1,992.3	1,986.7	1,967.6	4.3	5.4	57.04	90.7	226.0	140.1	131.9	8.12	17.244		
2,100.0	2,091.5	2,086.0	2,064.8	4.6	5.8	56.95	98.9	244.6	151.2	142.6	8.61	17.568		
2,200.0	2,190.8	2,185.4	2,162.1	4.8	6.2	56.88	107.1	263.3	162.3	153.2	9.09	17.855		
2,300.0	2,290.0	2,284.8	2,259.4	5.1	6.6	56.81	115.4	281.9	173.4	163.9	9.58	18.111		
2,400.0	2,389.3	2,384.2	2,356.6	5.4	7.0	56.75	123.6	300.6	184.6	174.5	10.06	18.340		
2,500.0	2,488.5	2,483.6	2,453.9	5.7	7.4	56.70	131.9	319.2	195.7	185.1	10.55	18.547		
2,600.0	2,587.8	2,582.9	2,551.1	5.9	7.8	56.65	140.1	337.9	206.8	195.8	11.04	18.734		
2,700.0	2,687.0	2,682.3	2,648.4	6.2	8.2	56.61	148.4	356.5	217.9	206.4	11.53	18.904		
2,800.0	2,786.3	2,781.7	2,745.7	6.5	8.5	56.58	156.6	375.2	229.1	217.1	12.02	19.059		
2,900.0	2,885.5	2,881.1	2,842.9	6.7	8.9	56.54	164.9	393.8	240.2	227.7	12.51	19.202		
3,000.0	2,984.8	2,980.5	2,940.2	7.0	9.3	56.51	173.1	412.5	251.3	238.3	13.00	19.333		
3,100.0	3,084.0	3,079.8	3,037.5	7.3	9.7	56.48	181.4	431.1	262.5	249.0	13.49	19.453		
3,200.0	3,183.3	3,179.2	3,134.7	7.6	10.1	56.46	189.6	449.8	273.6	259.6	13.98	19.565		
3,300.0	3,282.5	3,278.6	3,232.0	7.8	10.5	56.43	197.9	468.4	284.7	270.2	14.48	19.669		
3,400.0	3,381.8	3,378.0	3,329.3	8.1	10.9	56.41	206.1	487.1	295.8	280.9	14.97	19.766		
3,500.0	3,481.1	3,477.3	3,426.5	8.4	11.3	56.39	214.4	505.7	307.0	291.5	15.46	19.856		
3,600.0	3,580.3	3,576.7	3,523.8	8.7	11.7	56.37	222.6	524.4	318.1	302.2	15.95	19.940		
3,700.0	3,679.6	3,676.1	3,621.1	8.9	12.1	56.35	230.8	543.0	329.2	312.8	16.45	20.019		
3,800.0	3,778.8	3,775.5	3,718.3	9.2	12.5	56.33	239.1	561.6	340.4	323.4	16.94	20.093		
3,900.0	3,878.1	3,874.9	3,815.6	9.5	12.9	56.32	247.3	580.3	351.5	334.1	17.43	20.162		
4,000.0	3,977.3	3,974.2	3,912.8	9.8	13.3	56.30	255.6	598.9	362.6	344.7	17.93	20.228		
4,100.0	4,076.6	4,073.6	4,010.1	10.0	13.7	56.29	263.8	617.6	373.7	355.3	18.42	20.290		
4,200.0	4,175.8	4,173.0	4,107.4	10.3	14.1	56.28	272.1	636.2	384.9	366.0	18.91	20.349		
4,300.0	4,275.1	4,272.4	4,204.6	10.6	14.5	56.27	280.3	654.9	396.0	376.6	19.41	20.404		
4,400.0	4,374.3	4,371.8	4,301.9	10.9	14.9	56.25	288.6	673.5	407.1	387.2	19.90	20.457		
4,500.0	4,473.6	4,471.1	4,399.2	11.1	15.3	56.24	296.8	692.2	418.3	397.9	20.40	20.507		
4,600.0	4,572.8	4,570.5	4,496.4	11.4	15.7	56.23	305.1	710.8	429.4	408.5	20.89	20.554		
4,700.0	4,672.1	4,669.9	4,593.7	11.7	16.1	56.22	313.3	729.5	440.5	419.1	21.39	20.599		
4,800.0	4,771.3	4,769.3	4,691.0	12.0	16.5	56.21	321.6	748.1	451.6	429.8	21.88	20.642		
4,900.0	4,870.6	4,868.7	4,788.2	12.2	16.9	56.20	329.8	766.8	462.8	440.4	22.37	20.683		
5,000.0	4,969.8	4,968.0	4,885.5	12.5	17.3	56.20	338.1	785.4	473.9	451.0	22.87	20.723		
5,100.0	5,069.1	5,067.4	4,982.8	12.8	17.7	56.19	346.3	804.1	485.0	461.7	23.36	20.760		

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



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Woolley-Sosa 2F-7H-E168 - HZ - Plan #2												Offset Site Error:	0.0 ft
Survey Program: O-Geolink 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	5,168.3	5,166.8	5,080.0	13.1	18.1	56.18	354.6	822.7	496.2	472.3	23.86	20.796	
5,300.0	5,267.6	5,266.2	5,177.3	13.3	18.5	56.17	362.8	841.4	507.3	482.9	24.35	20.830	
5,400.0	5,366.8	5,365.5	5,274.5	13.6	18.9	56.16	371.0	860.0	518.4	493.6	24.85	20.863	
5,500.0	5,466.1	5,464.9	5,371.8	13.9	19.3	56.16	379.3	878.7	529.6	504.2	25.34	20.895	
5,600.0	5,565.3	5,564.3	5,469.1	14.2	19.7	56.15	387.5	897.3	540.7	514.8	25.84	20.925	
5,700.0	5,664.6	5,663.7	5,566.3	14.4	20.1	56.14	395.8	916.0	551.8	525.5	26.33	20.954	
5,800.0	5,763.8	5,763.1	5,663.6	14.7	20.5	56.14	404.0	934.6	562.9	536.1	26.83	20.982	
5,900.0	5,863.1	5,862.4	5,760.9	15.0	20.9	56.13	412.3	953.3	574.1	546.7	27.32	21.009	
6,000.0	5,962.3	5,961.8	5,858.1	15.3	21.3	56.13	420.5	971.9	585.2	557.4	27.82	21.035	
6,100.0	6,061.6	6,061.2	5,955.4	15.5	21.7	56.12	428.8	990.6	596.3	568.0	28.32	21.060	
6,200.0	6,160.9	6,160.6	6,052.7	15.8	22.1	56.12	437.0	1,009.2	607.5	578.6	28.81	21.085	
6,300.0	6,260.1	6,260.0	6,149.9	16.1	22.5	56.11	445.3	1,027.9	618.6	589.3	29.31	21.108	
6,400.0	6,359.4	6,359.3	6,247.2	16.4	22.9	56.11	453.5	1,046.5	629.7	599.9	29.80	21.130	
6,500.0	6,458.6	6,458.7	6,344.5	16.6	23.3	56.10	461.8	1,065.2	640.8	610.5	30.30	21.152	
6,600.0	6,557.9	6,558.1	6,441.7	16.9	23.7	56.10	470.0	1,083.8	652.0	621.2	30.79	21.173	
6,700.0	6,657.1	6,657.5	6,539.0	17.2	24.1	56.09	478.3	1,102.5	663.1	631.8	31.29	21.194	
6,800.0	6,756.4	6,756.8	6,636.2	17.5	24.5	56.09	486.5	1,121.1	674.2	642.4	31.78	21.213	
6,900.0	6,855.6	6,856.2	6,733.5	17.7	24.9	56.09	494.7	1,139.8	685.4	653.1	32.28	21.232	
6,919.5	6,875.0	6,875.6	6,752.5	17.8	25.0	56.08	496.4	1,143.4	687.5	655.1	32.38	21.236	
6,950.0	6,905.3	6,905.9	6,782.1	17.9	25.1	33.76	498.9	1,149.1	690.8	658.2	32.59	21.195	
7,000.0	6,955.1	6,955.4	6,830.6	17.9	25.3	-24.39	503.0	1,158.4	695.9	663.1	32.79	21.224	
7,050.0	7,004.8	7,004.3	6,878.5	17.9	25.5	-53.67	507.0	1,167.6	700.6	667.8	32.80	21.359	
7,100.0	7,053.8	7,050.0	6,923.2	17.9	25.7	-64.93	509.9	1,176.1	705.1	672.4	32.66	21.589	
7,150.0	7,101.9	7,094.1	6,966.5	17.9	25.8	-70.58	509.3	1,184.4	709.7	677.3	32.41	21.893	
7,200.0	7,148.7	7,139.6	7,011.0	17.8	26.0	-74.07	505.1	1,193.0	714.3	682.2	32.08	22.267	
7,250.0	7,193.8	7,186.0	7,055.9	17.7	26.1	-76.52	497.2	1,201.6	719.0	687.3	31.67	22.703	
7,300.0	7,236.9	7,233.5	7,101.0	17.5	26.2	-78.40	485.3	1,210.2	723.7	692.5	31.20	23.196	
7,350.0	7,277.7	7,282.0	7,146.0	17.4	26.2	-79.93	469.2	1,218.9	728.4	697.7	30.68	23.739	
7,400.0	7,315.7	7,331.8	7,190.5	17.2	26.3	-81.25	448.7	1,227.4	733.0	702.9	30.14	24.320	
7,450.0	7,350.9	7,382.9	7,234.3	17.1	26.3	-82.43	423.7	1,235.8	737.6	708.0	29.59	24.926	
7,500.0	7,382.8	7,435.4	7,276.8	16.9	26.3	-83.49	394.0	1,243.9	742.1	713.0	29.06	25.539	
7,550.0	7,411.3	7,489.4	7,317.5	16.7	26.3	-84.49	359.5	1,251.7	746.4	717.8	28.56	26.137	
7,600.0	7,436.1	7,545.0	7,355.9	16.6	26.3	-85.41	320.0	1,259.1	750.4	722.3	28.11	26.697	
7,650.0	7,457.1	7,602.3	7,391.3	16.5	26.3	-86.29	275.5	1,265.9	754.2	726.5	27.74	27.191	
7,700.0	7,474.0	7,661.2	7,423.1	16.4	26.3	-87.11	226.3	1,272.0	757.6	730.2	27.46	27.589	
7,750.0	7,486.8	7,721.9	7,450.4	16.4	26.3	-87.88	172.4	1,277.2	760.7	733.4	27.30	27.867	
7,800.0	7,495.3	7,784.2	7,472.4	16.4	26.3	-88.60	114.3	1,281.4	763.2	735.9	27.25	28.009	
7,850.0	7,499.5	7,848.1	7,488.5	16.5	26.4	-89.25	52.5	1,284.5	765.1	737.8	27.32	28.005	
7,873.6	7,500.0	7,878.8	7,493.7	16.5	26.4	-89.53	22.3	1,285.5	765.8	738.4	27.41	27.942	
7,900.0	7,500.0	7,913.6	7,497.8	16.5	26.4	-89.84	-12.2	1,286.3	766.4	738.9	27.53	27.834	
8,000.0	7,500.0	8,026.3	7,500.0	16.9	26.6	-90.00	-124.9	1,286.7	766.7	738.4	28.34	27.051	
8,100.0	7,500.0	8,126.3	7,500.0	17.4	26.9	-90.00	-224.9	1,286.7	766.7	737.2	29.51	25.982	
8,200.0	7,500.0	8,226.3	7,500.0	18.0	27.3	-90.00	-324.9	1,286.7	766.7	735.7	31.03	24.709	
8,300.0	7,500.0	8,326.3	7,500.0	18.8	27.9	-90.00	-424.9	1,286.7	766.7	733.9	32.86	23.336	
8,400.0	7,500.0	8,426.3	7,500.0	19.7	28.5	-90.00	-524.9	1,286.7	766.7	731.8	34.94	21.944	
8,500.0	7,500.0	8,526.3	7,500.0	20.7	29.2	-90.00	-624.9	1,286.7	766.7	729.5	37.24	20.590	
8,600.0	7,500.0	8,626.3	7,500.0	21.9	30.0	-90.00	-724.9	1,286.7	766.7	727.0	39.71	19.306	
8,700.0	7,500.0	8,726.3	7,500.0	23.1	30.8	-90.00	-824.9	1,286.7	766.7	724.4	42.34	18.110	
8,800.0	7,500.0	8,826.3	7,500.0	24.3	31.8	-90.00	-924.9	1,286.7	766.7	721.7	45.08	17.008	
8,900.0	7,500.0	8,926.3	7,500.0	25.6	32.8	-90.00	-1,024.9	1,286.7	766.7	718.8	47.92	15.999	
9,000.0	7,500.0	9,026.3	7,500.0	27.0	33.9	-90.00	-1,124.9	1,286.7	766.7	715.9	50.85	15.079	
9,100.0	7,500.0	9,126.3	7,500.0	28.4	35.0	-90.00	-1,224.9	1,286.7	766.7	712.9	53.84	14.240	

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Woolley-Sosa 2F-7H-E168 - HZ - Plan #2													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		
9,200.0	7,500.0	9,226.3	7,500.0	29.9	36.2	-90.00	-1,324.9	1,286.7	766.7	709.8	56.90	13.475		
9,300.0	7,500.0	9,326.3	7,500.0	31.4	37.4	-90.00	-1,424.9	1,286.7	766.7	706.7	60.00	12.778		
9,400.0	7,500.0	9,426.3	7,500.0	32.9	38.7	-90.00	-1,524.9	1,286.7	766.7	703.6	63.15	12.142		
9,500.0	7,500.0	9,526.3	7,500.0	34.4	40.0	-90.00	-1,624.9	1,286.7	766.7	700.4	66.33	11.559		
9,600.0	7,500.0	9,626.3	7,500.0	36.0	41.3	-90.00	-1,724.9	1,286.7	766.7	697.2	69.55	11.025		
9,700.0	7,500.0	9,726.3	7,500.0	37.5	42.7	-90.00	-1,824.9	1,286.7	766.7	693.9	72.79	10.534		
9,800.0	7,500.0	9,826.3	7,500.0	39.1	44.1	-90.00	-1,924.9	1,286.7	766.7	690.7	76.05	10.082		
9,900.0	7,500.0	9,926.3	7,500.0	40.7	45.5	-90.00	-2,024.9	1,286.7	766.7	687.4	79.34	9.664		
10,000.0	7,500.0	10,026.3	7,500.0	42.3	47.0	-90.00	-2,124.9	1,286.7	766.7	684.1	82.64	9.278		
10,100.0	7,500.0	10,126.3	7,500.0	43.9	48.4	-90.00	-2,224.9	1,286.7	766.7	680.8	85.96	8.920		
10,200.0	7,500.0	10,226.3	7,500.0	45.6	49.9	-90.00	-2,324.9	1,286.7	766.7	677.4	89.30	8.586		
10,300.0	7,500.0	10,326.3	7,500.0	47.2	51.4	-90.00	-2,424.9	1,286.7	766.7	674.1	92.64	8.276		
10,400.0	7,500.0	10,426.3	7,500.0	48.9	52.9	-90.00	-2,524.9	1,286.7	766.7	670.7	96.00	7.987		
10,500.0	7,500.0	10,526.3	7,500.0	50.5	54.5	-90.00	-2,624.9	1,286.7	766.7	667.4	99.37	7.716		
10,600.0	7,500.0	10,626.3	7,500.0	52.2	56.0	-90.00	-2,724.9	1,286.7	766.7	664.0	102.75	7.462		
10,700.0	7,500.0	10,726.3	7,500.0	53.8	57.6	-90.00	-2,824.9	1,286.7	766.7	660.6	106.14	7.224		
10,800.0	7,500.0	10,826.3	7,500.0	55.5	59.1	-90.00	-2,924.9	1,286.7	766.7	657.2	109.53	7.000		
10,900.0	7,500.0	10,926.3	7,500.0	57.2	60.7	-90.00	-3,024.9	1,286.7	766.7	653.8	112.93	6.789		
11,000.0	7,500.0	11,026.3	7,500.0	58.9	62.3	-90.00	-3,124.9	1,286.7	766.7	650.4	116.34	6.590		
11,100.0	7,500.0	11,126.3	7,500.0	60.6	63.9	-90.00	-3,224.9	1,286.7	766.7	647.0	119.75	6.403		
11,200.0	7,500.0	11,226.3	7,500.0	62.3	65.5	-90.00	-3,324.9	1,286.7	766.7	643.6	123.17	6.225		
11,244.1	7,500.0	11,270.4	7,500.0	63.0	66.2	-90.00	-3,369.0	1,286.7	766.7	642.1	124.68	6.149		
11,300.0	7,500.0	11,326.3	7,500.0	64.0	67.1	-90.00	-3,424.9	1,286.7	766.2	639.0	127.16	6.026		
11,400.0	7,500.0	11,426.2	7,500.0	65.7	68.7	-90.00	-3,524.8	1,286.7	762.5	631.0	131.48	5.799		
11,444.1	7,500.0	11,470.3	7,500.0	66.4	69.4	-90.00	-3,568.8	1,286.7	759.8	626.4	133.34	5.698		
11,500.0	7,500.0	11,526.0	7,500.0	67.4	70.3	-90.00	-3,624.6	1,286.7	755.9	620.6	135.26	5.588		
11,600.0	7,500.0	11,625.7	7,500.0	69.1	72.0	-90.00	-3,724.3	1,286.7	748.9	610.2	138.69	5.400		
11,700.0	7,500.0	11,725.5	7,500.0	70.8	73.6	-90.00	-3,824.1	1,286.7	741.9	599.8	142.12	5.220		
11,800.0	7,500.0	11,825.2	7,500.0	72.5	75.2	-90.00	-3,923.8	1,286.7	734.9	589.4	145.56	5.049		
11,900.0	7,500.0	11,925.0	7,500.0	74.2	76.9	-90.00	-4,023.6	1,286.7	728.0	579.0	149.00	4.886		
12,000.0	7,500.0	12,024.8	7,500.0	76.0	78.5	-90.00	-4,123.3	1,286.7	721.0	568.5	152.44	4.729		
12,100.0	7,500.0	12,124.5	7,500.0	77.7	80.2	-90.00	-4,223.1	1,286.7	714.0	558.1	155.89	4.580		
12,194.1	7,500.0	12,218.4	7,500.0	79.3	81.7	-90.00	-4,317.0	1,286.7	707.4	548.3	159.14	4.445		
12,200.0	7,500.0	12,224.3	7,500.0	79.4	81.8	-90.00	-4,322.9	1,286.7	707.0	547.7	159.30	4.438		
12,300.0	7,500.0	12,324.1	7,500.0	81.1	83.5	-90.00	-4,422.7	1,286.7	702.0	540.1	161.91	4.336		
12,393.7	7,500.0	12,417.8	7,500.0	82.7	85.1	-90.00	-4,516.4	1,286.7	700.5	536.3	164.21	4.266		
12,400.0	7,500.0	12,424.1	7,500.0	82.9	85.2	-90.00	-4,522.7	1,286.7	700.5	536.0	164.43	4.260		
12,500.0	7,500.0	12,524.1	7,500.0	84.6	86.8	-90.00	-4,622.7	1,286.7	700.4	532.6	167.89	4.172		
12,600.0	7,500.0	12,624.1	7,500.0	86.3	88.5	-90.00	-4,722.7	1,286.7	700.4	529.1	171.35	4.088		
12,700.0	7,500.0	12,724.1	7,500.0	88.0	90.2	-90.00	-4,822.7	1,286.7	700.4	525.6	174.81	4.007		
12,800.0	7,500.0	12,824.1	7,500.0	89.7	91.9	-90.00	-4,922.7	1,286.7	700.4	522.1	178.28	3.929		
12,900.0	7,500.0	12,924.1	7,500.0	91.5	93.6	-90.00	-5,022.7	1,286.7	700.4	518.6	181.75	3.854		
13,000.0	7,500.0	13,024.1	7,500.0	93.2	95.2	-90.00	-5,122.7	1,286.7	700.4	515.1	185.22	3.781		
13,100.0	7,500.0	13,124.1	7,500.0	94.9	96.9	-90.00	-5,222.7	1,286.7	700.3	511.7	188.69	3.712		
13,200.0	7,500.0	13,224.1	7,500.0	96.6	98.6	-90.00	-5,322.7	1,286.7	700.3	508.2	192.16	3.645		
13,300.0	7,500.0	13,324.1	7,500.0	98.4	100.3	-90.00	-5,422.7	1,286.7	700.3	504.7	195.63	3.580		
13,400.0	7,500.0	13,424.1	7,500.0	100.1	102.0	-90.00	-5,522.7	1,286.7	700.3	501.2	199.11	3.517		
13,500.0	7,500.0	13,524.1	7,500.0	101.8	103.7	-90.00	-5,622.7	1,286.7	700.3	497.7	202.58	3.457		
13,600.0	7,500.0	13,624.1	7,500.0	103.5	105.4	-90.00	-5,722.7	1,286.7	700.3	494.2	206.06	3.398		
13,700.0	7,500.0	13,724.1	7,500.0	105.3	107.1	-90.00	-5,822.7	1,286.7	700.3	490.7	209.54	3.342		
13,800.0	7,500.0	13,824.1	7,500.0	107.0	108.8	-90.00	-5,922.7	1,286.7	700.2	487.2	213.02	3.287		
13,900.0	7,500.0	13,924.1	7,500.0	108.7	110.5	-90.00	-6,022.7	1,286.7	700.2	483.7	216.50	3.234		

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Woolley-Sosa 2F-7H-E168 - HZ - Plan #2													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		
14,000.0	7,500.0	14,024.1	7,500.0	110.5	112.2	-90.00	-6,122.7	1,286.7	700.2	480.2	219.98	3.183		
14,100.0	7,500.0	14,124.1	7,500.0	112.2	113.9	-90.00	-6,222.7	1,286.7	700.2	476.7	223.46	3.133		
14,200.0	7,500.0	14,224.1	7,500.0	113.9	115.6	-90.00	-6,322.7	1,286.7	700.2	473.2	226.94	3.085		
14,300.0	7,500.0	14,324.1	7,500.0	115.7	117.3	-90.00	-6,422.7	1,286.7	700.2	469.7	230.42	3.039		
14,400.0	7,500.0	14,424.1	7,500.0	117.4	119.0	-90.00	-6,522.7	1,286.7	700.1	466.2	233.91	2.993		
14,500.0	7,500.0	14,524.1	7,500.0	119.1	120.8	-90.00	-6,622.7	1,286.7	700.1	462.7	237.39	2.949		
14,600.0	7,500.0	14,624.1	7,500.0	120.9	122.5	-90.00	-6,722.7	1,286.7	700.1	459.2	240.88	2.907		
14,700.0	7,500.0	14,724.1	7,500.0	122.6	124.2	-90.00	-6,822.7	1,286.7	700.1	455.7	244.36	2.865		
14,800.0	7,500.0	14,824.1	7,500.0	124.3	125.9	-90.00	-6,922.7	1,286.7	700.1	452.2	247.85	2.825		
14,900.0	7,500.0	14,924.1	7,500.0	126.1	127.6	-90.00	-7,022.7	1,286.7	700.1	448.7	251.34	2.785		
15,000.0	7,500.0	15,024.1	7,500.0	127.8	129.3	-90.00	-7,122.7	1,286.7	700.0	445.2	254.82	2.747		
15,100.0	7,500.0	15,124.1	7,500.0	129.6	131.1	-90.00	-7,222.7	1,286.7	700.0	441.7	258.31	2.710		
15,200.0	7,500.0	15,224.1	7,500.0	131.3	132.8	-90.00	-7,322.7	1,286.7	700.0	438.2	261.80	2.674		
15,300.0	7,500.0	15,324.1	7,500.0	133.0	134.5	-90.00	-7,422.7	1,286.7	700.0	434.7	265.29	2.639		
15,400.0	7,500.0	15,424.1	7,500.0	134.8	136.2	-90.00	-7,522.7	1,286.7	700.0	431.2	268.78	2.604		
15,500.0	7,500.0	15,524.1	7,500.0	136.5	137.9	-90.00	-7,622.7	1,286.7	700.0	427.7	272.27	2.571		
15,600.0	7,500.0	15,624.1	7,500.0	138.3	139.7	-90.00	-7,722.7	1,286.7	700.0	424.2	275.76	2.538		
15,700.0	7,500.0	15,724.1	7,500.0	140.0	141.4	-90.00	-7,822.7	1,286.7	699.9	420.7	279.25	2.506		
15,805.8	7,500.0	15,829.9	7,500.0	141.8	143.2	-90.00	-7,928.5	1,286.7	699.9	417.0	282.95	2.474 SF		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Woolley-Sosa 2G-7H-E168 - HZ - Plan #2													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	90.69	-0.4	29.9	29.9					
100.0	100.0	100.0	100.0	0.2	0.2	90.69	-0.4	29.9	29.9	29.6	0.30	98.619		
200.0	200.0	200.0	200.0	0.3	0.3	90.69	-0.4	29.9	29.9	29.3	0.65	45.881	CC, ES	
300.0	300.0	299.5	299.5	0.5	0.5	90.15	-0.1	30.8	30.8	29.8	1.00	30.736		
400.0	400.0	398.9	398.9	0.7	0.7	88.68	0.8	33.2	33.2	31.9	1.35	24.624		
500.0	500.0	498.3	498.1	0.8	0.9	86.67	2.2	37.3	37.4	35.7	1.70	21.996		
600.0	600.0	597.4	597.1	1.0	1.1	45.82	4.1	43.0	42.7	40.6	2.05	20.833		
700.0	700.0	696.5	695.9	1.2	1.3	45.72	6.6	50.3	48.4	46.0	2.40	20.170		
800.0	799.9	795.5	794.4	1.4	1.5	46.49	9.7	59.2	54.6	51.8	2.76	19.809		
900.0	899.7	894.3	892.6	1.6	1.8	47.84	13.3	69.7	61.3	58.1	3.12	19.630		
1,000.0	999.4	992.9	990.4	1.8	2.0	49.57	17.5	81.7	68.5	65.0	3.50	19.561		
1,100.0	1,098.9	1,091.4	1,087.8	2.0	2.3	51.54	22.2	95.4	76.3	72.4	3.90	19.550		
1,201.3	1,199.5	1,191.0	1,186.1	2.2	2.6	53.65	27.5	110.8	84.8	80.5	4.33	19.559		
1,300.0	1,297.5	1,287.8	1,281.3	2.5	3.0	55.41	33.2	127.3	94.2	89.5	4.78	19.720		
1,400.0	1,396.8	1,385.6	1,377.2	2.7	3.3	56.46	39.5	145.5	105.4	100.2	5.24	20.120		
1,500.0	1,496.0	1,483.1	1,472.4	3.0	3.7	56.96	46.2	165.2	118.1	112.4	5.71	20.705		
1,600.0	1,595.3	1,580.2	1,566.9	3.3	4.2	57.04	53.5	186.4	132.4	126.2	6.17	21.440		
1,700.0	1,694.5	1,678.7	1,662.5	3.5	4.6	56.92	61.3	208.8	147.6	140.9	6.65	22.208		
1,800.0	1,793.8	1,777.5	1,758.4	3.8	5.0	56.82	69.0	231.3	162.8	155.7	7.12	22.866		
1,900.0	1,893.0	1,876.4	1,854.3	4.0	5.5	56.73	76.8	253.9	178.1	170.5	7.60	23.433		
2,000.0	1,992.3	1,975.2	1,950.2	4.3	5.9	56.66	84.6	276.4	193.3	185.2	8.08	23.927		
2,100.0	2,091.5	2,074.0	2,046.1	4.6	6.4	56.60	92.3	298.9	208.5	200.0	8.56	24.360		
2,200.0	2,190.8	2,172.9	2,142.1	4.8	6.8	56.55	100.1	321.5	223.8	214.7	9.04	24.744		
2,300.0	2,290.0	2,271.7	2,238.0	5.1	7.3	56.50	107.9	344.0	239.0	229.5	9.53	25.085		
2,400.0	2,389.3	2,370.5	2,333.9	5.4	7.7	56.46	115.6	366.5	254.2	244.2	10.01	25.390		
2,500.0	2,488.5	2,469.4	2,429.8	5.7	8.2	56.42	123.4	389.1	269.5	259.0	10.50	25.665		
2,600.0	2,587.8	2,568.2	2,525.7	5.9	8.6	56.39	131.1	411.6	284.7	273.7	10.99	25.914		
2,700.0	2,687.0	2,667.0	2,621.6	6.2	9.1	56.36	138.9	434.1	299.9	288.5	11.47	26.140		
2,800.0	2,786.3	2,765.9	2,717.6	6.5	9.5	56.34	146.7	456.7	315.2	303.2	11.96	26.346		
2,900.0	2,885.5	2,864.7	2,813.5	6.7	10.0	56.31	154.4	479.2	330.4	317.9	12.45	26.535		
3,000.0	2,984.8	2,963.5	2,909.4	7.0	10.5	56.29	162.2	501.8	345.6	332.7	12.94	26.709		
3,100.0	3,084.0	3,062.4	3,005.3	7.3	10.9	56.27	170.0	524.3	360.9	347.4	13.43	26.869		
3,200.0	3,183.3	3,161.2	3,101.2	7.6	11.4	56.26	177.7	546.8	376.1	362.2	13.92	27.018		
3,300.0	3,282.5	3,260.0	3,197.1	7.8	11.8	56.24	185.5	569.4	391.3	376.9	14.41	27.155		
3,400.0	3,381.8	3,358.9	3,293.0	8.1	12.3	56.22	193.3	591.9	406.6	391.7	14.90	27.283		
3,500.0	3,481.1	3,457.7	3,389.0	8.4	12.7	56.21	201.0	614.4	421.8	406.4	15.39	27.402		
3,600.0	3,580.3	3,556.5	3,484.9	8.7	13.2	56.20	208.8	637.0	437.0	421.2	15.88	27.514		
3,700.0	3,679.6	3,655.3	3,580.8	8.9	13.7	56.18	216.6	659.5	452.3	435.9	16.38	27.618		
3,800.0	3,778.8	3,754.2	3,676.7	9.2	14.1	56.17	224.3	682.0	467.5	450.6	16.87	27.716		
3,900.0	3,878.1	3,853.0	3,772.6	9.5	14.6	56.16	232.1	704.6	482.7	465.4	17.36	27.808		
4,000.0	3,977.3	3,951.8	3,868.5	9.8	15.0	56.15	239.9	727.1	498.0	480.1	17.85	27.895		
4,100.0	4,076.6	4,050.7	3,964.5	10.0	15.5	56.14	247.6	749.6	513.2	494.9	18.34	27.976		
4,200.0	4,175.8	4,149.5	4,060.4	10.3	15.9	56.13	255.4	772.2	528.5	509.6	18.84	28.054		
4,300.0	4,275.1	4,248.3	4,156.3	10.6	16.4	56.12	263.1	794.7	543.7	524.4	19.33	28.127		
4,400.0	4,374.3	4,347.2	4,252.2	10.9	16.9	56.12	270.9	817.2	558.9	539.1	19.82	28.196		
4,500.0	4,473.6	4,446.0	4,348.1	11.1	17.3	56.11	278.7	839.8	574.2	553.8	20.32	28.262		
4,600.0	4,572.8	4,544.8	4,444.0	11.4	17.8	56.10	286.4	862.3	589.4	568.6	20.81	28.325		
4,700.0	4,672.1	4,643.7	4,539.9	11.7	18.2	56.09	294.2	884.8	604.6	583.3	21.30	28.384		
4,800.0	4,771.3	4,742.5	4,635.9	12.0	18.7	56.09	302.0	907.4	619.9	598.1	21.79	28.441		
4,900.0	4,870.6	4,841.3	4,731.8	12.2	19.2	56.08	309.7	929.9	635.1	612.8	22.29	28.495		
5,000.0	4,969.8	4,940.2	4,827.7	12.5	19.6	56.08	317.5	952.5	650.3	627.6	22.78	28.547		
5,100.0	5,069.1	5,039.0	4,923.6	12.8	20.1	56.07	325.3	975.0	665.6	642.3	23.27	28.596		

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Woolley-Sosa 2G-7H-E168 - HZ - Plan #2												Offset Site Error:	0.0 ft
Survey Program: O-Geolink MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
5,200.0	5,168.3	5,137.8	5,019.5	13.1	20.5	56.06	333.0	997.5	680.8	657.0	23.77	28.643	
5,300.0	5,267.6	5,236.7	5,115.4	13.3	21.0	56.06	340.8	1,020.1	696.0	671.8	24.26	28.689	
5,400.0	5,366.8	5,335.5	5,211.4	13.6	21.5	56.05	348.6	1,042.6	711.3	686.5	24.76	28.732	
5,500.0	5,466.1	5,434.3	5,307.3	13.9	21.9	56.05	356.3	1,065.1	726.5	701.3	25.25	28.773	
5,600.0	5,565.3	5,533.2	5,403.2	14.2	22.4	56.04	364.1	1,087.7	741.7	716.0	25.74	28.813	
5,700.0	5,664.6	5,632.0	5,499.1	14.4	22.8	56.04	371.8	1,110.2	757.0	730.7	26.24	28.852	
5,800.0	5,763.8	5,730.8	5,595.0	14.7	23.3	56.04	379.6	1,132.7	772.2	745.5	26.73	28.889	
5,900.0	5,863.1	5,829.7	5,690.9	15.0	23.8	56.03	387.4	1,155.3	787.5	760.2	27.22	28.924	
6,000.0	5,962.3	5,928.5	5,786.8	15.3	24.2	56.03	395.1	1,177.8	802.7	775.0	27.72	28.958	
6,100.0	6,061.6	6,027.3	5,882.8	15.5	24.7	56.02	402.9	1,200.3	817.9	789.7	28.21	28.991	
6,200.0	6,160.9	6,126.2	5,978.7	15.8	25.1	56.02	410.7	1,222.9	833.2	804.5	28.71	29.023	
6,300.0	6,260.1	6,225.0	6,074.6	16.1	25.6	56.02	418.4	1,245.4	848.4	819.2	29.20	29.054	
6,400.0	6,359.4	6,323.8	6,170.5	16.4	26.1	56.01	426.2	1,267.9	863.6	833.9	29.69	29.083	
6,500.0	6,458.6	6,422.7	6,266.4	16.6	26.5	56.01	434.0	1,290.5	878.9	848.7	30.19	29.112	
6,600.0	6,557.9	6,521.5	6,362.3	16.9	27.0	56.01	441.7	1,313.0	894.1	863.4	30.68	29.140	
6,700.0	6,657.1	6,620.3	6,458.3	17.2	27.4	56.00	449.5	1,335.5	909.3	878.2	31.18	29.166	
6,800.0	6,756.4	6,719.2	6,554.2	17.5	27.9	56.00	457.3	1,358.1	924.6	892.9	31.67	29.192	
6,900.0	6,855.6	6,818.0	6,650.1	17.7	28.3	56.00	465.0	1,380.6	939.8	907.6	32.17	29.217	
6,919.5	6,875.0	6,837.2	6,668.8	17.8	28.4	56.00	466.5	1,385.0	942.8	910.5	32.26	29.222	
6,950.0	6,905.3	6,867.4	6,698.0	17.9	28.6	33.82	468.9	1,391.9	947.3	914.8	32.55	29.105	
7,000.0	6,955.1	6,916.6	6,745.8	17.9	28.8	-24.01	472.8	1,403.1	954.5	921.6	32.87	29.041	
7,050.0	7,004.8	6,965.3	6,793.1	17.9	29.0	-52.89	476.6	1,414.2	961.2	928.1	33.01	29.120	
7,100.0	7,053.8	7,013.1	6,839.5	17.9	29.3	-63.82	480.4	1,425.1	967.5	934.5	32.98	29.333	
7,150.0	7,101.9	7,059.6	6,884.6	17.9	29.5	-69.36	484.0	1,435.7	973.5	940.7	32.81	29.668	
7,200.0	7,148.7	7,104.5	6,928.2	17.8	29.7	-72.88	487.5	1,446.0	979.5	947.0	32.53	30.108	
7,250.0	7,193.8	7,147.4	6,969.8	17.7	29.9	-75.44	490.9	1,455.7	985.6	953.5	32.18	30.632	
7,300.0	7,236.9	7,188.1	7,009.2	17.5	30.1	-77.47	494.1	1,465.0	992.1	960.3	31.78	31.219	
7,350.0	7,277.7	7,226.1	7,046.1	17.4	30.2	-79.13	497.1	1,473.7	999.2	967.8	31.38	31.844	
7,400.0	7,315.7	7,261.2	7,080.2	17.2	30.4	-80.47	499.8	1,481.7	1,007.0	976.0	31.00	32.488	
7,450.0	7,350.9	7,293.1	7,111.2	17.1	30.6	-81.50	502.4	1,489.0	1,016.0	985.3	30.66	33.133	
7,500.0	7,382.8	7,321.9	7,139.1	16.9	30.7	-82.22	504.6	1,495.5	1,026.2	995.8	30.39	33.769	
7,550.0	7,411.3	7,360.1	7,176.3	16.7	30.9	-83.19	506.3	1,504.2	1,037.7	1,007.7	30.08	34.504	
7,600.0	7,436.1	7,401.8	7,216.8	16.6	31.0	-84.14	505.2	1,513.8	1,050.4	1,020.6	29.79	35.261	
7,650.0	7,457.1	7,448.5	7,262.0	16.5	31.2	-85.15	500.4	1,524.4	1,064.2	1,034.7	29.53	36.044	
7,700.0	7,474.0	7,502.9	7,314.0	16.4	31.3	-86.34	490.1	1,536.6	1,078.9	1,049.7	29.28	36.854	
7,750.0	7,486.8	7,569.8	7,376.2	16.4	31.5	-87.91	470.5	1,551.2	1,094.4	1,065.4	29.02	37.717	
7,800.0	7,495.3	7,658.6	7,454.7	16.4	31.7	-90.22	433.3	1,569.7	1,110.2	1,081.5	28.70	38.684	
7,850.0	7,499.5	7,789.0	7,557.5	16.5	31.8	-93.80	357.3	1,593.8	1,125.5	1,097.3	28.20	39.908	
7,873.6	7,500.0	7,875.2	7,615.0	16.5	31.9	-96.04	294.8	1,607.3	1,132.0	1,104.2	27.87	40.622	
7,900.0	7,500.0	8,001.6	7,681.6	16.5	32.0	-99.35	188.7	1,623.0	1,138.0	1,110.7	27.33	41.640	
8,000.0	7,500.0	8,324.5	7,740.0	16.9	32.3	-102.13	-124.9	1,636.7	1,142.2	1,114.3	27.93	40.889	
8,100.0	7,500.0	8,424.5	7,740.0	17.4	32.6	-102.13	-224.9	1,636.7	1,142.2	1,113.1	29.08	39.271	
8,200.0	7,500.0	8,524.5	7,740.0	18.0	32.9	-102.13	-324.9	1,636.7	1,142.2	1,111.6	30.58	37.353	
8,300.0	7,500.0	8,624.5	7,740.0	18.8	33.3	-102.13	-424.9	1,636.7	1,142.2	1,109.8	32.37	35.287	
8,400.0	7,500.0	8,724.5	7,740.0	19.7	33.8	-102.13	-524.9	1,636.7	1,142.2	1,107.8	34.41	33.195	
8,500.0	7,500.0	8,824.5	7,740.0	20.7	34.4	-102.13	-624.9	1,636.7	1,142.2	1,105.5	36.66	31.159	
8,600.0	7,500.0	8,924.5	7,740.0	21.9	35.1	-102.13	-724.9	1,636.7	1,142.2	1,103.1	39.08	29.229	
8,700.0	7,500.0	9,024.5	7,740.0	23.1	35.8	-102.13	-824.9	1,636.7	1,142.2	1,100.6	41.64	27.430	
8,800.0	7,500.0	9,124.5	7,740.0	24.3	36.6	-102.13	-924.9	1,636.7	1,142.2	1,097.9	44.32	25.771	
8,900.0	7,500.0	9,224.5	7,740.0	25.6	37.5	-102.13	-1,024.9	1,636.7	1,142.2	1,095.1	47.10	24.251	
9,000.0	7,500.0	9,324.5	7,740.0	27.0	38.4	-102.13	-1,124.9	1,636.7	1,142.2	1,092.2	49.96	22.863	
9,100.0	7,500.0	9,424.5	7,740.0	28.4	39.4	-102.13	-1,224.9	1,636.7	1,142.2	1,089.3	52.88	21.598	

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Woolley-Sosa 2G-7H-E168 - HZ - Plan #2												Offset Site Error:	0.0 ft
Survey Program: O-Geolink 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)			
9,200.0	7,500.0	9,524.5	7,740.0	29.9	40.5	-102.13	-1,324.9	1,636.7	1,142.2	1,086.3	55.87	20.444	
9,300.0	7,500.0	9,624.5	7,740.0	31.4	41.6	-102.13	-1,424.9	1,636.7	1,142.2	1,083.3	58.90	19.391	
9,400.0	7,500.0	9,724.5	7,740.0	32.9	42.7	-102.13	-1,524.9	1,636.7	1,142.2	1,080.2	61.98	18.429	
9,500.0	7,500.0	9,824.5	7,740.0	34.4	43.9	-102.13	-1,624.9	1,636.7	1,142.2	1,077.1	65.09	17.548	
9,600.0	7,500.0	9,924.5	7,740.0	36.0	45.1	-102.13	-1,724.9	1,636.7	1,142.2	1,074.0	68.23	16.741	
9,700.0	7,500.0	10,024.5	7,740.0	37.5	46.4	-102.13	-1,824.9	1,636.7	1,142.2	1,070.8	71.40	15.998	
9,800.0	7,500.0	10,124.5	7,740.0	39.1	47.6	-102.13	-1,924.9	1,636.7	1,142.2	1,067.6	74.59	15.313	
9,900.0	7,500.0	10,224.5	7,740.0	40.7	49.0	-102.13	-2,024.9	1,636.7	1,142.2	1,064.4	77.80	14.681	
10,000.0	7,500.0	10,324.5	7,740.0	42.3	50.3	-102.13	-2,124.9	1,636.7	1,142.2	1,061.2	81.03	14.096	
10,100.0	7,500.0	10,424.5	7,740.0	43.9	51.7	-102.13	-2,224.9	1,636.7	1,142.2	1,057.9	84.27	13.553	
10,200.0	7,500.0	10,524.5	7,740.0	45.6	53.1	-102.13	-2,324.9	1,636.7	1,142.2	1,054.7	87.53	13.049	
10,300.0	7,500.0	10,624.5	7,740.0	47.2	54.5	-102.13	-2,424.9	1,636.7	1,142.2	1,051.4	90.81	12.578	
10,400.0	7,500.0	10,724.5	7,740.0	48.9	55.9	-102.13	-2,524.9	1,636.7	1,142.2	1,048.1	94.09	12.139	
10,500.0	7,500.0	10,824.5	7,740.0	50.5	57.4	-102.13	-2,624.9	1,636.7	1,142.2	1,044.8	97.38	11.729	
10,600.0	7,500.0	10,924.5	7,740.0	52.2	58.8	-102.13	-2,724.9	1,636.7	1,142.2	1,041.5	100.69	11.344	
10,700.0	7,500.0	11,024.5	7,740.0	53.8	60.3	-102.13	-2,824.9	1,636.7	1,142.2	1,038.2	104.00	10.983	
10,800.0	7,500.0	11,124.5	7,740.0	55.5	61.8	-102.13	-2,924.9	1,636.7	1,142.2	1,034.9	107.32	10.643	
10,900.0	7,500.0	11,224.5	7,740.0	57.2	63.3	-102.13	-3,024.9	1,636.7	1,142.2	1,031.6	110.64	10.323	
11,000.0	7,500.0	11,324.5	7,740.0	58.9	64.8	-102.13	-3,124.9	1,636.7	1,142.2	1,028.2	113.97	10.022	
11,100.0	7,500.0	11,424.5	7,740.0	60.6	66.4	-102.13	-3,224.9	1,636.7	1,142.2	1,024.9	117.31	9.737	
11,200.0	7,500.0	11,524.5	7,740.0	62.3	67.9	-102.13	-3,324.9	1,636.7	1,142.2	1,021.5	120.65	9.467	
11,244.1	7,500.0	11,568.6	7,740.0	63.0	68.6	-102.13	-3,369.0	1,636.7	1,142.2	1,020.1	122.13	9.352	
11,300.0	7,500.0	11,624.5	7,740.0	64.0	69.5	-102.14	-3,424.9	1,636.7	1,141.7	1,017.0	124.66	9.158	
11,400.0	7,500.0	11,724.4	7,740.0	65.7	71.0	-102.19	-3,524.8	1,636.7	1,138.0	1,009.0	129.06	8.818	
11,444.1	7,500.0	11,768.4	7,740.0	66.4	71.7	-102.23	-3,568.8	1,636.7	1,135.4	1,004.4	130.96	8.670	
11,500.0	7,500.0	11,824.2	7,740.0	67.4	72.6	-102.27	-3,624.6	1,636.7	1,131.6	998.8	132.81	8.520	
11,600.0	7,500.0	11,923.9	7,740.0	69.1	74.2	-102.35	-3,724.3	1,636.7	1,124.7	988.6	136.12	8.263	
11,700.0	7,500.0	12,023.7	7,740.0	70.8	75.8	-102.43	-3,824.1	1,636.7	1,117.9	978.5	139.44	8.017	
11,800.0	7,500.0	12,123.4	7,740.0	72.5	77.4	-102.50	-3,923.8	1,636.7	1,111.1	968.4	142.76	7.783	
11,900.0	7,500.0	12,223.2	7,740.0	74.2	79.0	-102.58	-4,023.6	1,636.7	1,104.3	958.2	146.08	7.560	
12,000.0	7,500.0	12,322.9	7,740.0	76.0	80.6	-102.66	-4,123.3	1,636.7	1,097.5	948.1	149.39	7.346	
12,100.0	7,500.0	12,422.7	7,740.0	77.7	82.2	-102.74	-4,223.1	1,636.7	1,090.7	938.0	152.71	7.142	
12,194.1	7,500.0	12,516.6	7,740.0	79.3	83.7	-102.82	-4,317.0	1,636.7	1,084.3	928.5	155.83	6.958	
12,200.0	7,500.0	12,522.5	7,740.0	79.4	83.8	-102.82	-4,322.9	1,636.7	1,083.9	927.9	155.97	6.949	
12,300.0	7,500.0	12,622.3	7,740.0	81.1	85.4	-102.86	-4,422.7	1,636.7	1,079.0	920.7	158.30	6.816	
12,393.7	7,500.0	12,716.0	7,740.0	82.7	87.0	-102.87	-4,516.4	1,636.7	1,077.5	917.2	160.33	6.720	
12,400.0	7,500.0	12,722.3	7,740.0	82.9	87.1	-102.87	-4,522.7	1,636.7	1,077.5	916.9	160.55	6.711	
12,500.0	7,500.0	12,822.3	7,740.0	84.6	88.7	-102.87	-4,622.7	1,636.7	1,077.5	913.6	163.92	6.573	
12,600.0	7,500.0	12,922.3	7,740.0	86.3	90.3	-102.87	-4,722.7	1,636.7	1,077.5	910.2	167.30	6.440	
12,700.0	7,500.0	13,022.3	7,740.0	88.0	92.0	-102.87	-4,822.7	1,636.7	1,077.4	906.8	170.67	6.313	
12,800.0	7,500.0	13,122.3	7,740.0	89.7	93.6	-102.87	-4,922.7	1,636.7	1,077.4	903.4	174.05	6.190	
12,900.0	7,500.0	13,222.3	7,740.0	91.5	95.3	-102.87	-5,022.7	1,636.7	1,077.4	900.0	177.43	6.072	
13,000.0	7,500.0	13,322.3	7,740.0	93.2	96.9	-102.87	-5,122.7	1,636.7	1,077.4	896.6	180.82	5.958	
13,100.0	7,500.0	13,422.3	7,740.0	94.9	98.6	-102.87	-5,222.7	1,636.7	1,077.4	893.2	184.20	5.849	
13,200.0	7,500.0	13,522.3	7,740.0	96.6	100.3	-102.87	-5,322.7	1,636.7	1,077.4	889.8	187.59	5.743	
13,300.0	7,500.0	13,622.3	7,740.0	98.4	101.9	-102.87	-5,422.7	1,636.7	1,077.4	886.4	190.97	5.641	
13,400.0	7,500.0	13,722.3	7,740.0	100.1	103.6	-102.87	-5,522.7	1,636.7	1,077.3	883.0	194.36	5.543	
13,500.0	7,500.0	13,822.3	7,740.0	101.8	105.3	-102.87	-5,622.7	1,636.7	1,077.3	879.6	197.75	5.448	
13,600.0	7,500.0	13,922.3	7,740.0	103.5	106.9	-102.87	-5,722.7	1,636.7	1,077.3	876.2	201.14	5.356	
13,700.0	7,500.0	14,022.3	7,740.0	105.3	108.6	-102.87	-5,822.7	1,636.7	1,077.3	872.8	204.53	5.267	
13,800.0	7,500.0	14,122.3	7,740.0	107.0	110.3	-102.87	-5,922.7	1,636.7	1,077.3	869.4	207.92	5.181	
13,900.0	7,500.0	14,222.3	7,740.0	108.7	112.0	-102.87	-6,022.7	1,636.7	1,077.3	865.9	211.32	5.098	

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

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills) - Woolley-Sosa 2G-7H-E168 - HZ - Plan #2										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)					
14,000.0	7,500.0	14,322.3	7,740.0	110.5	113.7	-102.87	-6,122.7	1,636.7	1,077.2	862.5	214.71	5.017			
14,100.0	7,500.0	14,422.3	7,740.0	112.2	115.3	-102.87	-6,222.7	1,636.7	1,077.2	859.1	218.10	4.939			
14,200.0	7,500.0	14,522.3	7,740.0	113.9	117.0	-102.87	-6,322.7	1,636.7	1,077.2	855.7	221.50	4.863			
14,300.0	7,500.0	14,622.3	7,740.0	115.7	118.7	-102.87	-6,422.7	1,636.7	1,077.2	852.3	224.90	4.790			
14,400.0	7,500.0	14,722.3	7,740.0	117.4	120.4	-102.87	-6,522.7	1,636.7	1,077.2	848.9	228.29	4.718			
14,500.0	7,500.0	14,822.3	7,740.0	119.1	122.1	-102.87	-6,622.7	1,636.7	1,077.2	845.5	231.69	4.649			
14,600.0	7,500.0	14,922.3	7,740.0	120.9	123.8	-102.87	-6,722.7	1,636.7	1,077.2	842.1	235.09	4.582			
14,700.0	7,500.0	15,022.3	7,740.0	122.6	125.5	-102.87	-6,822.7	1,636.7	1,077.1	838.6	238.49	4.517			
14,800.0	7,500.0	15,122.3	7,740.0	124.3	127.2	-102.87	-6,922.7	1,636.7	1,077.1	835.2	241.89	4.453			
14,900.0	7,500.0	15,222.3	7,740.0	126.1	128.9	-102.87	-7,022.7	1,636.7	1,077.1	831.8	245.29	4.391			
15,000.0	7,500.0	15,322.3	7,740.0	127.8	130.6	-102.87	-7,122.7	1,636.7	1,077.1	828.4	248.69	4.331			
15,100.0	7,500.0	15,422.3	7,740.0	129.6	132.3	-102.88	-7,222.7	1,636.7	1,077.1	825.0	252.09	4.273			
15,200.0	7,500.0	15,522.3	7,740.0	131.3	134.0	-102.88	-7,322.7	1,636.7	1,077.1	821.6	255.49	4.216			
15,300.0	7,500.0	15,622.3	7,740.0	133.0	135.7	-102.88	-7,422.7	1,636.7	1,077.0	818.1	258.89	4.160			
15,400.0	7,500.0	15,722.3	7,740.0	134.8	137.4	-102.88	-7,522.7	1,636.7	1,077.0	814.7	262.30	4.106			
15,500.0	7,500.0	15,822.3	7,740.0	136.5	139.1	-102.88	-7,622.7	1,636.7	1,077.0	811.3	265.70	4.053			
15,600.0	7,500.0	15,922.3	7,740.0	138.3	140.8	-102.88	-7,722.7	1,636.7	1,077.0	807.9	269.10	4.002			
15,700.0	7,500.0	16,022.3	7,740.0	140.0	142.5	-102.88	-7,822.7	1,636.7	1,077.0	804.5	272.51	3.952			
15,805.8	7,500.0	16,128.1	7,740.0	141.8	144.4	-102.88	-7,928.5	1,636.7	1,077.0	800.9	276.11	3.901 SF			



# Cathedral Energy Services

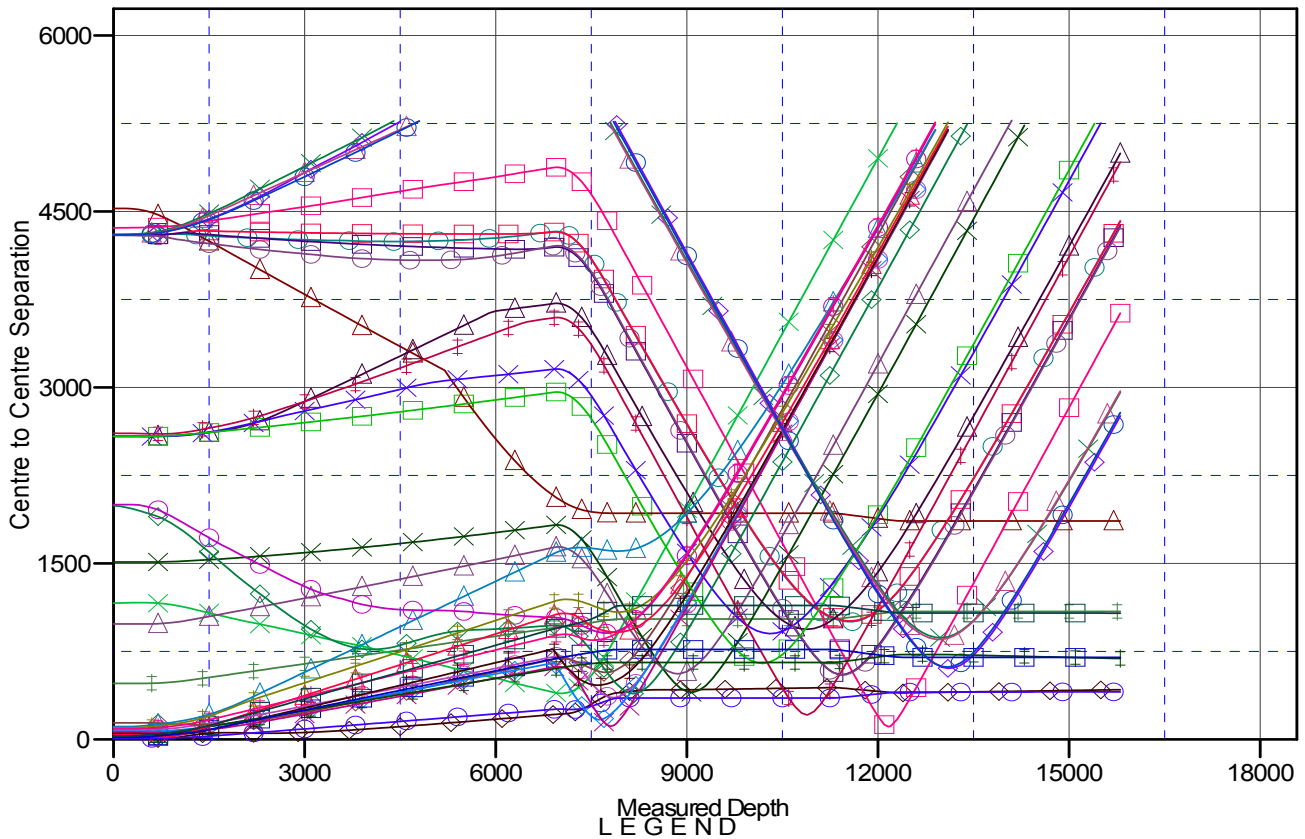
## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2D-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa/Becky/Morgan Hills)	<b>MD Reference:</b>	KB @ 5007.0ft (Unassigned)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2D-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #2	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to KB @ 5007.0ft (Unassigned)  
 Offset Depths are relative to Offset Datum  
 Central Meridian is -105.500000 °

Coordinates are relative to: Woolley-Sosa 2D-7H-E168  
 Coordinate System is US State Plane 1983, Colorado Northern Zone  
 Grid Convergence at Surface is: 0.29°

### Ladder Plot



-A168, HZ, Plan #2 V0	Woolley-Becky2D-7H-E168, HZ, Plan #4 V0	Sosa 22-18, DD, Plan #2 V0
-E168, HZ, Plan #2 V0	THOMAS 24-7 (EXISTING), ENCANA WELL, SURVEYS V0	WOOLLEY 22-7 (EXISTING), ENCANA
WD), DD V0	Thomas 7-12 (Existing), Existing, NO SURVEYS V0	WOOLLEY 2-4-7 (EXISTING), ENCANA
MD), Plan #2 V0	THOMAS 2-8-7 (EXISTING), ENCANA WELL, SURVEYS V0	Woolley-Sosa 2B-7H-E168, HZ, Plan #2
-E168, HZ, Plan #3 V0	Sosa 11-18, DD, Plan #1 V0	Woolley-Becky2A-7H-E168, HZ, Plan #2
1 (EXISTING), ENCANA WELL, GYRO V0	Sosa 11-18, DD, DD V0	Woolley-Becky2G-7H-E168, HZ, Plan #2
(EXISTING), EXISTING, EXISTING V0	Woolley-Becky2C-7H-E168, HZ, Plan #4 V0	Woolley-Sosa 2F-7H-E168, HZ, Plan #2
(EXISTING), Existing, NO SURVEYS V0	Woolley-Becky2H-7H-E168, HZ, Plan #3 V0	Woolley-Becky2F-7H-E168, HZ, Plan #3
(EXISTING), ENCANA WELL, PLAN ONLY V0	Woolley-Becky2B-7H-E168, HZ, Plan #2 V0	Woolley-Sosa 2G-7H-E168, HZ, Plan #2
H-E168, HZ, Plan #2 V0	THOMAS 24-7 (Existing), Existing, NO SURVEYS V0	Sosa 12-18, DD, Plan #3 V0

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