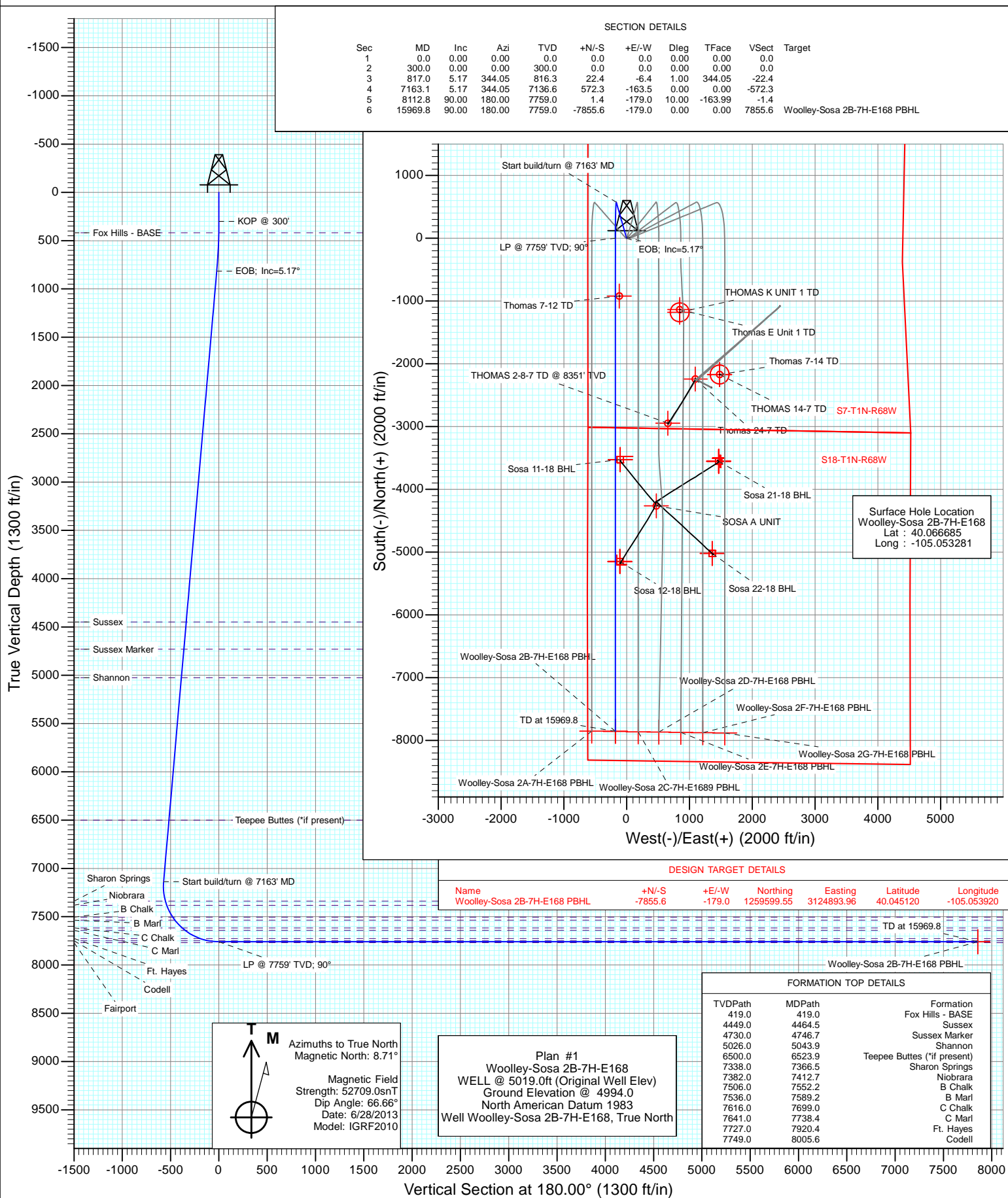




Project: DJ Wattenberg  
Site: S7-T1N-R68W (Woolley-Sosa)  
Well: Woolley-Sosa 2B-7H-E168  
Wellbore: HZ  
Design: Plan #1



## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2B-7H-E168
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	WELL @ 5019.0ft (Original Well Elev)
<b>Project:</b>	DJ Wattenberg	<b>MD Reference:</b>	WELL @ 5019.0ft (Original Well Elev)
<b>Site:</b>	S7-T1N-R68W (Woolley-Sosa)	<b>North Reference:</b>	True
<b>Well:</b>	Woolley-Sosa 2B-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HZ		
<b>Design:</b>	Plan #1		

<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)			
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 2B-7H-E168					
Well Position	+N/-S	0.0 ft	Northing:	1,267,455.90 ft	Latitude:	40.066685
	+E/-W	0.0 ft	Easting:	3,125,033.39 ft	Longitude:	-105.053281
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</b>
			(°)	(°)	(nT)
	IGRF2010	6/28/2013	8.71	66.66	52,709

<b>Design</b>	Plan #1			
<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)</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Direction</b>
	(ft)	(ft)	(ft)	(°)
	0.0	0.0	0.0	180.00

<b>Plan Sections</b>										
<b>Measured Depth</b>	<b>Inclination</b>	<b>Azimuth</b>	<b>Vertical Depth</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Dogleg Rate</b>	<b>Build Rate</b>	<b>Turn Rate</b>	<b>TFO</b>	<b>Target</b>
(ft)	(°)	(°)	(ft)	(ft)	(ft)	(°/100ft)	(°/100ft)	(°/100ft)	(°)	
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.00	0.00	0.00	0.00	
817.0	5.17	344.05	816.3	22.4	-6.4	1.00	1.00	0.00	344.05	
7,163.1	5.17	344.05	7,136.6	572.3	-163.5	0.00	0.00	0.00	0.00	
8,112.8	90.00	180.00	7,759.0	1.4	-179.0	10.00	8.93	-17.27	-163.99	
15,969.8	90.00	180.00	7,759.0	-7,855.6	-179.0	0.00	0.00	0.00	0.00	Woolley-Sosa 2B-7H-

# Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2B-7H-E168
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	WELL @ 5019.0ft (Original Well Elev)
<b>Project:</b>	DJ Wattenberg	<b>MD Reference:</b>	WELL @ 5019.0ft (Original Well Elev)
<b>Site:</b>	S7-T1N-R68W (Woolley-Sosa)	<b>North Reference:</b>	True
<b>Well:</b>	Woolley-Sosa 2B-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HZ		
<b>Design:</b>	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	KOP @ 300'
400.0	1.00	344.05	400.0	0.8	-0.2	-0.8	1.00	1.00	
419.0	1.19	344.05	419.0	1.2	-0.3	-1.2	1.00	1.00	Fox Hills - BASE
500.0	2.00	344.05	500.0	3.4	-1.0	-3.4	1.00	1.00	
600.0	3.00	344.05	599.9	7.5	-2.2	-7.5	1.00	1.00	
700.0	4.00	344.05	699.7	13.4	-3.8	-13.4	1.00	1.00	
800.0	5.00	344.05	799.4	21.0	-6.0	-21.0	1.00	1.00	
817.0	5.17	344.05	816.3	22.4	-6.4	-22.4	1.00	1.00	EOB; Inc=5.17°
900.0	5.17	344.05	899.0	29.6	-8.5	-29.6	0.00	0.00	
1,000.0	5.17	344.05	998.6	38.3	-10.9	-38.3	0.00	0.00	
1,100.0	5.17	344.05	1,098.1	46.9	-13.4	-46.9	0.00	0.00	
1,200.0	5.17	344.05	1,197.7	55.6	-15.9	-55.6	0.00	0.00	
1,300.0	5.17	344.05	1,297.3	64.3	-18.4	-64.3	0.00	0.00	
1,400.0	5.17	344.05	1,396.9	72.9	-20.8	-72.9	0.00	0.00	
1,500.0	5.17	344.05	1,496.5	81.6	-23.3	-81.6	0.00	0.00	
1,600.0	5.17	344.05	1,596.1	90.3	-25.8	-90.3	0.00	0.00	
1,700.0	5.17	344.05	1,695.7	98.9	-28.3	-98.9	0.00	0.00	
1,800.0	5.17	344.05	1,795.3	107.6	-30.7	-107.6	0.00	0.00	
1,900.0	5.17	344.05	1,894.9	116.2	-33.2	-116.2	0.00	0.00	
2,000.0	5.17	344.05	1,994.5	124.9	-35.7	-124.9	0.00	0.00	
2,100.0	5.17	344.05	2,094.1	133.6	-38.2	-133.6	0.00	0.00	
2,200.0	5.17	344.05	2,193.7	142.2	-40.6	-142.2	0.00	0.00	
2,300.0	5.17	344.05	2,293.3	150.9	-43.1	-150.9	0.00	0.00	
2,400.0	5.17	344.05	2,392.9	159.6	-45.6	-159.6	0.00	0.00	
2,500.0	5.17	344.05	2,492.5	168.2	-48.1	-168.2	0.00	0.00	
2,600.0	5.17	344.05	2,592.0	176.9	-50.6	-176.9	0.00	0.00	
2,700.0	5.17	344.05	2,691.6	185.6	-53.0	-185.6	0.00	0.00	
2,800.0	5.17	344.05	2,791.2	194.2	-55.5	-194.2	0.00	0.00	
2,900.0	5.17	344.05	2,890.8	202.9	-58.0	-202.9	0.00	0.00	
3,000.0	5.17	344.05	2,990.4	211.6	-60.5	-211.6	0.00	0.00	
3,100.0	5.17	344.05	3,090.0	220.2	-62.9	-220.2	0.00	0.00	
3,200.0	5.17	344.05	3,189.6	228.9	-65.4	-228.9	0.00	0.00	
3,300.0	5.17	344.05	3,289.2	237.5	-67.9	-237.5	0.00	0.00	
3,400.0	5.17	344.05	3,388.8	246.2	-70.4	-246.2	0.00	0.00	
3,500.0	5.17	344.05	3,488.4	254.9	-72.8	-254.9	0.00	0.00	
3,600.0	5.17	344.05	3,588.0	263.5	-75.3	-263.5	0.00	0.00	
3,700.0	5.17	344.05	3,687.6	272.2	-77.8	-272.2	0.00	0.00	
3,800.0	5.17	344.05	3,787.2	280.9	-80.3	-280.9	0.00	0.00	
3,900.0	5.17	344.05	3,886.8	289.5	-82.7	-289.5	0.00	0.00	
4,000.0	5.17	344.05	3,986.3	298.2	-85.2	-298.2	0.00	0.00	
4,100.0	5.17	344.05	4,085.9	306.9	-87.7	-306.9	0.00	0.00	
4,200.0	5.17	344.05	4,185.5	315.5	-90.2	-315.5	0.00	0.00	
4,300.0	5.17	344.05	4,285.1	324.2	-92.6	-324.2	0.00	0.00	
4,400.0	5.17	344.05	4,384.7	332.9	-95.1	-332.9	0.00	0.00	
4,464.5	5.17	344.05	4,449.0	338.4	-96.7	-338.4	0.00	0.00	Sussex
4,500.0	5.17	344.05	4,484.3	341.5	-97.6	-341.5	0.00	0.00	
4,600.0	5.17	344.05	4,583.9	350.2	-100.1	-350.2	0.00	0.00	
4,700.0	5.17	344.05	4,683.5	358.8	-102.5	-358.8	0.00	0.00	
4,746.7	5.17	344.05	4,730.0	362.9	-103.7	-362.9	0.00	0.00	Sussex Marker

# Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2B-7H-E168
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	WELL @ 5019.0ft (Original Well Elev)
<b>Project:</b>	DJ Wattenberg	<b>MD Reference:</b>	WELL @ 5019.0ft (Original Well Elev)
<b>Site:</b>	S7-T1N-R68W (Woolley-Sosa)	<b>North Reference:</b>	True
<b>Well:</b>	Woolley-Sosa 2B-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HZ		
<b>Design:</b>	Plan #1		

## Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
4,800.0	5.17	344.05	4,783.1	367.5	-105.0	-367.5	0.00	0.00	
4,900.0	5.17	344.05	4,882.7	376.2	-107.5	-376.2	0.00	0.00	
5,000.0	5.17	344.05	4,982.3	384.8	-110.0	-384.8	0.00	0.00	
5,043.9	5.17	344.05	5,026.0	388.6	-111.1	-388.6	0.00	0.00	Shannon
5,100.0	5.17	344.05	5,081.9	393.5	-112.5	-393.5	0.00	0.00	
5,200.0	5.17	344.05	5,181.5	402.2	-114.9	-402.2	0.00	0.00	
5,300.0	5.17	344.05	5,281.1	410.8	-117.4	-410.8	0.00	0.00	
5,400.0	5.17	344.05	5,380.7	419.5	-119.9	-419.5	0.00	0.00	
5,500.0	5.17	344.05	5,480.2	428.2	-122.4	-428.2	0.00	0.00	
5,600.0	5.17	344.05	5,579.8	436.8	-124.8	-436.8	0.00	0.00	
5,700.0	5.17	344.05	5,679.4	445.5	-127.3	-445.5	0.00	0.00	
5,800.0	5.17	344.05	5,779.0	454.2	-129.8	-454.2	0.00	0.00	
5,900.0	5.17	344.05	5,878.6	462.8	-132.3	-462.8	0.00	0.00	
6,000.0	5.17	344.05	5,978.2	471.5	-134.7	-471.5	0.00	0.00	
6,100.0	5.17	344.05	6,077.8	480.1	-137.2	-480.1	0.00	0.00	
6,200.0	5.17	344.05	6,177.4	488.8	-139.7	-488.8	0.00	0.00	
6,300.0	5.17	344.05	6,277.0	497.5	-142.2	-497.5	0.00	0.00	
6,400.0	5.17	344.05	6,376.6	506.1	-144.6	-506.1	0.00	0.00	
6,500.0	5.17	344.05	6,476.2	514.8	-147.1	-514.8	0.00	0.00	
6,523.9	5.17	344.05	6,500.0	516.9	-147.7	-516.9	0.00	0.00	Teepee Buttes (*if present)
6,600.0	5.17	344.05	6,575.8	523.5	-149.6	-523.5	0.00	0.00	
6,700.0	5.17	344.05	6,675.4	532.1	-152.1	-532.1	0.00	0.00	
6,800.0	5.17	344.05	6,775.0	540.8	-154.5	-540.8	0.00	0.00	
6,900.0	5.17	344.05	6,874.6	549.5	-157.0	-549.5	0.00	0.00	
7,000.0	5.17	344.05	6,974.1	558.1	-159.5	-558.1	0.00	0.00	
7,100.0	5.17	344.05	7,073.7	566.8	-162.0	-566.8	0.00	0.00	
7,163.1	5.17	344.05	7,136.6	572.3	-163.5	-572.3	0.00	0.00	Start build/turn @ 7163' MD
7,200.0	1.92	311.99	7,173.4	574.3	-164.5	-574.3	10.00	-8.82	
7,300.0	8.83	189.21	7,273.0	567.8	-166.9	-567.8	10.00	6.92	
7,366.5	15.43	185.17	7,338.0	553.9	-168.5	-553.9	10.00	9.92	Sharon Springs
7,400.0	18.77	184.20	7,370.0	544.1	-169.3	-544.1	10.00	9.96	
7,412.7	20.04	183.91	7,382.0	539.9	-169.6	-539.9	10.00	9.97	Niobrara
7,500.0	28.75	182.60	7,461.4	503.9	-171.6	-503.9	10.00	9.98	
7,552.2	33.96	182.12	7,506.0	476.8	-172.7	-476.8	10.00	9.99	B Chalk
7,589.2	37.66	181.85	7,536.0	455.2	-173.5	-455.2	10.00	9.99	B Marl
7,600.0	38.74	181.78	7,544.5	448.5	-173.7	-448.5	10.00	9.99	
7,699.0	48.64	181.25	7,616.0	380.2	-175.5	-380.2	10.00	9.99	C Chalk
7,700.0	48.73	181.25	7,616.7	379.5	-175.5	-379.5	10.00	9.99	
7,738.4	52.57	181.09	7,641.0	349.8	-176.1	-349.8	10.00	9.99	C Marl
7,800.0	58.73	180.87	7,675.7	299.0	-176.9	-299.0	10.00	10.00	
7,900.0	68.73	180.55	7,719.9	209.4	-178.0	-209.4	10.00	10.00	
7,920.4	70.76	180.50	7,727.0	190.3	-178.2	-190.3	10.00	10.00	Ft. Hayes
8,000.0	78.72	180.28	7,747.9	113.5	-178.7	-113.5	10.00	10.00	
8,005.6	79.28	180.27	7,749.0	108.0	-178.8	-108.0	10.00	10.00	Codell
8,100.0	88.72	180.03	7,758.9	14.3	-179.0	-14.3	10.00	10.00	
8,112.8	90.00	180.00	7,759.0	1.5	-179.0	-1.5	10.00	10.00	LP @ 7759' TVD; 90°
8,200.0	90.00	180.00	7,759.0	-85.7	-179.0	85.7	0.00	0.00	
8,300.0	90.00	180.00	7,759.0	-185.7	-179.0	185.7	0.00	0.00	
8,400.0	90.00	180.00	7,759.0	-285.7	-179.0	285.7	0.00	0.00	
8,500.0	90.00	180.00	7,759.0	-385.7	-179.0	385.7	0.00	0.00	
8,600.0	90.00	180.00	7,759.0	-485.7	-179.0	485.7	0.00	0.00	
8,700.0	90.00	180.00	7,759.0	-585.7	-179.0	585.7	0.00	0.00	

# Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2B-7H-E168
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	WELL @ 5019.0ft (Original Well Elev)
<b>Project:</b>	DJ Wattenberg	<b>MD Reference:</b>	WELL @ 5019.0ft (Original Well Elev)
<b>Site:</b>	S7-T1N-R68W (Woolley-Sosa)	<b>North Reference:</b>	True
<b>Well:</b>	Woolley-Sosa 2B-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HZ		
<b>Design:</b>	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
8,800.0	90.00	180.00	7,759.0	-685.7	-179.0	685.7	0.00	0.00	
8,900.0	90.00	180.00	7,759.0	-785.7	-179.0	785.7	0.00	0.00	
9,000.0	90.00	180.00	7,759.0	-885.7	-179.0	885.7	0.00	0.00	
9,100.0	90.00	180.00	7,759.0	-985.7	-179.0	985.7	0.00	0.00	
9,200.0	90.00	180.00	7,759.0	-1,085.7	-179.0	1,085.7	0.00	0.00	
9,300.0	90.00	180.00	7,759.0	-1,185.7	-179.0	1,185.7	0.00	0.00	
9,400.0	90.00	180.00	7,759.0	-1,285.7	-179.0	1,285.7	0.00	0.00	
9,500.0	90.00	180.00	7,759.0	-1,385.7	-179.0	1,385.7	0.00	0.00	
9,600.0	90.00	180.00	7,759.0	-1,485.7	-179.0	1,485.7	0.00	0.00	
9,700.0	90.00	180.00	7,759.0	-1,585.7	-179.0	1,585.7	0.00	0.00	
9,800.0	90.00	180.00	7,759.0	-1,685.7	-179.0	1,685.7	0.00	0.00	
9,900.0	90.00	180.00	7,759.0	-1,785.7	-179.0	1,785.7	0.00	0.00	
10,000.0	90.00	180.00	7,759.0	-1,885.7	-179.0	1,885.7	0.00	0.00	
10,100.0	90.00	180.00	7,759.0	-1,985.7	-179.0	1,985.7	0.00	0.00	
10,200.0	90.00	180.00	7,759.0	-2,085.7	-179.0	2,085.7	0.00	0.00	
10,300.0	90.00	180.00	7,759.0	-2,185.7	-179.0	2,185.7	0.00	0.00	
10,400.0	90.00	180.00	7,759.0	-2,285.7	-179.0	2,285.7	0.00	0.00	
10,500.0	90.00	180.00	7,759.0	-2,385.7	-179.0	2,385.7	0.00	0.00	
10,600.0	90.00	180.00	7,759.0	-2,485.7	-179.0	2,485.7	0.00	0.00	
10,700.0	90.00	180.00	7,759.0	-2,585.7	-179.0	2,585.7	0.00	0.00	
10,800.0	90.00	180.00	7,759.0	-2,685.7	-179.0	2,685.7	0.00	0.00	
10,900.0	90.00	180.00	7,759.0	-2,785.7	-179.0	2,785.7	0.00	0.00	
11,000.0	90.00	180.00	7,759.0	-2,885.7	-179.0	2,885.7	0.00	0.00	
11,100.0	90.00	180.00	7,759.0	-2,985.7	-179.0	2,985.7	0.00	0.00	
11,200.0	90.00	180.00	7,759.0	-3,085.7	-179.0	3,085.7	0.00	0.00	
11,300.0	90.00	180.00	7,759.0	-3,185.7	-179.0	3,185.7	0.00	0.00	
11,400.0	90.00	180.00	7,759.0	-3,285.7	-179.0	3,285.7	0.00	0.00	
11,500.0	90.00	180.00	7,759.0	-3,385.7	-179.0	3,385.7	0.00	0.00	
11,600.0	90.00	180.00	7,759.0	-3,485.7	-179.0	3,485.7	0.00	0.00	
11,700.0	90.00	180.00	7,759.0	-3,585.7	-179.0	3,585.7	0.00	0.00	
11,800.0	90.00	180.00	7,759.0	-3,685.7	-179.0	3,685.7	0.00	0.00	
11,900.0	90.00	180.00	7,759.0	-3,785.7	-179.0	3,785.7	0.00	0.00	
12,000.0	90.00	180.00	7,759.0	-3,885.7	-179.0	3,885.7	0.00	0.00	
12,100.0	90.00	180.00	7,759.0	-3,985.7	-179.0	3,985.7	0.00	0.00	
12,200.0	90.00	180.00	7,759.0	-4,085.7	-179.0	4,085.7	0.00	0.00	
12,300.0	90.00	180.00	7,759.0	-4,185.7	-179.0	4,185.7	0.00	0.00	
12,400.0	90.00	180.00	7,759.0	-4,285.7	-179.0	4,285.7	0.00	0.00	
12,500.0	90.00	180.00	7,759.0	-4,385.7	-179.0	4,385.7	0.00	0.00	
12,600.0	90.00	180.00	7,759.0	-4,485.7	-179.0	4,485.7	0.00	0.00	
12,700.0	90.00	180.00	7,759.0	-4,585.7	-179.0	4,585.7	0.00	0.00	
12,800.0	90.00	180.00	7,759.0	-4,685.7	-179.0	4,685.7	0.00	0.00	
12,900.0	90.00	180.00	7,759.0	-4,785.7	-179.0	4,785.7	0.00	0.00	
13,000.0	90.00	180.00	7,759.0	-4,885.7	-179.0	4,885.7	0.00	0.00	
13,100.0	90.00	180.00	7,759.0	-4,985.7	-179.0	4,985.7	0.00	0.00	
13,200.0	90.00	180.00	7,759.0	-5,085.7	-179.0	5,085.7	0.00	0.00	
13,300.0	90.00	180.00	7,759.0	-5,185.7	-179.0	5,185.7	0.00	0.00	
13,400.0	90.00	180.00	7,759.0	-5,285.7	-179.0	5,285.7	0.00	0.00	
13,500.0	90.00	180.00	7,759.0	-5,385.7	-179.0	5,385.7	0.00	0.00	
13,600.0	90.00	180.00	7,759.0	-5,485.7	-179.0	5,485.7	0.00	0.00	
13,700.0	90.00	180.00	7,759.0	-5,585.7	-179.0	5,585.7	0.00	0.00	
13,800.0	90.00	180.00	7,759.0	-5,685.7	-179.0	5,685.7	0.00	0.00	
13,900.0	90.00	180.00	7,759.0	-5,785.7	-179.0	5,785.7	0.00	0.00	

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2B-7H-E168
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	WELL @ 5019.0ft (Original Well Elev)
<b>Project:</b>	DJ Wattenberg	<b>MD Reference:</b>	WELL @ 5019.0ft (Original Well Elev)
<b>Site:</b>	S7-T1N-R68W (Woolley-Sosa)	<b>North Reference:</b>	True
<b>Well:</b>	Woolley-Sosa 2B-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HZ		
<b>Design:</b>	Plan #1		

### Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
14,000.0	90.00	180.00	7,759.0	-5,885.7	-179.0	5,885.7	0.00	0.00	
14,100.0	90.00	180.00	7,759.0	-5,985.7	-179.0	5,985.7	0.00	0.00	
14,200.0	90.00	180.00	7,759.0	-6,085.7	-179.0	6,085.7	0.00	0.00	
14,300.0	90.00	180.00	7,759.0	-6,185.7	-179.0	6,185.7	0.00	0.00	
14,400.0	90.00	180.00	7,759.0	-6,285.7	-179.0	6,285.7	0.00	0.00	
14,500.0	90.00	180.00	7,759.0	-6,385.7	-179.0	6,385.7	0.00	0.00	
14,600.0	90.00	180.00	7,759.0	-6,485.7	-179.0	6,485.7	0.00	0.00	
14,700.0	90.00	180.00	7,759.0	-6,585.7	-179.0	6,585.7	0.00	0.00	
14,800.0	90.00	180.00	7,759.0	-6,685.7	-179.0	6,685.7	0.00	0.00	
14,900.0	90.00	180.00	7,759.0	-6,785.7	-179.0	6,785.7	0.00	0.00	
15,000.0	90.00	180.00	7,759.0	-6,885.7	-179.0	6,885.7	0.00	0.00	
15,100.0	90.00	180.00	7,759.0	-6,985.7	-179.0	6,985.7	0.00	0.00	
15,200.0	90.00	180.00	7,759.0	-7,085.7	-179.0	7,085.7	0.00	0.00	
15,300.0	90.00	180.00	7,759.0	-7,185.7	-179.0	7,185.7	0.00	0.00	
15,400.0	90.00	180.00	7,759.0	-7,285.7	-179.0	7,285.7	0.00	0.00	
15,500.0	90.00	180.00	7,759.0	-7,385.7	-179.0	7,385.7	0.00	0.00	
15,600.0	90.00	180.00	7,759.0	-7,485.7	-179.0	7,485.7	0.00	0.00	
15,700.0	90.00	180.00	7,759.0	-7,585.7	-179.0	7,585.7	0.00	0.00	
15,800.0	90.00	180.00	7,759.0	-7,685.7	-179.0	7,685.7	0.00	0.00	
15,900.0	90.00	180.00	7,759.0	-7,785.7	-179.0	7,785.7	0.00	0.00	
15,969.8	90.00	180.00	7,759.0	-7,855.5	-179.0	7,855.5	0.00	0.00	TD at 15969.8

### 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									
Woolle-Sosa 2B-7H-E16 - plan hits target center - Point	0.00	0.00	7,759.0	-7,855.6	-179.0	1,259,599.55	3,124,893.96	40.045120	-105.053920
Woolley-Sosa 2B-7H-E1 - plan hits target center - Point	0.00	0.00	7,759.0	-7,855.6	-179.0	1,259,599.55	3,124,893.96	40.045120	-105.053920

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2B-7H-E168
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	WELL @ 5019.0ft (Original Well Elev)
<b>Project:</b>	DJ Wattenberg	<b>MD Reference:</b>	WELL @ 5019.0ft (Original Well Elev)
<b>Site:</b>	S7-T1N-R68W (Woolley-Sosa)	<b>North Reference:</b>	True
<b>Well:</b>	Woolley-Sosa 2B-7H-E168	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HZ		
<b>Design:</b>	Plan #1		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
419.0	419.0	Fox Hills - BASE				
4,464.5	4,449.0	Sussex				
4,746.7	4,730.0	Sussex Marker				
5,043.9	5,026.0	Shannon				
6,523.9	6,500.0	Teepee Buttes (*if present)				
7,366.5	7,338.0	Sharon Springs				
7,412.7	7,382.0	Niobrara				
7,552.2	7,506.0	B Chalk				
7,589.2	7,536.0	B Marl				
7,699.0	7,616.0	C Chalk				
7,738.4	7,641.0	C Marl				
7,920.4	7,727.0	Ft. Hayes				
8,005.6	7,749.0	Codell				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
300.0	300.0	0.0	0.0	KOP @ 300'	
817.0	816.3	22.4	-6.4	EOB; Inc=5.17°	
7,163.1	7,136.6	572.3	-163.5	Start build/turn @ 7163' MD	
8,112.8	7,759.0	1.5	-179.0	LP @ 7759' TVD; 90°	
15,969.8	7,759.0	-7,855.5	-179.0	TD at 15969.8	



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

**DJ Wattenberg**

**S7-T1N-R68W (Woolley-Sosa)**

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

**HZ**

**Plan #1**

## **Anticollision Report**

**28 June, 2013**







# Cathedral Energy Services

## Anticollision Report



<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2B-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	WELL @ 5019.0ft (Original Well Elev)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa)	<b>MD Reference:</b>	WELL @ 5019.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2B-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 #1	<b>Offset TVD Reference:</b>	Offset Datum

Reference	Plan #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	Systematic Ellipse
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 500.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program		Date	6/28/2013		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	15,969.8	Plan #1 (HZ)	Geolink MWD	Geolink MWD	

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
S7-T1N-R68W (Woolley-Sosa)						
Sosa 11-18 - DD - DD	11,656.4	7,842.1	82.0	-1.5	0.982	Level 1, CC, ES, SF
Sosa 12-18 - DD - DD	13,290.7	7,889.2	85.0	-30.5	0.736	Level 1, CC, ES, SF
Sosa 21-18 - DD (Gyro) - DD						Out of range
Sosa 21-18 - DD (MWD) - DD						Out of range
Sosa 22-18 - DD - DD						Out of range
Sosa A #1 (Existing) - DD - DD						Out of range
THOMAS 14-7(EXISTING) - EXISTING - NO SURVEY						Out of range
THOMAS 24-7 (EXISTING) - ENCANA WELL - Plan #1						Out of range
THOMAS 24-7 (EXISTING) - ENCANA WELL - Plan #2						Out of range
THOMAS 24-7 (EXISTING) - ENCANA WELL - SURVEY						Out of range
THOMAS 24-7 (Existing) - Existing - NO SURVEYS						Out of range
THOMAS 2-8-7 (EXISTING) - ENCANA WELL - Plan #1						Out of range
THOMAS 2-8-7 (EXISTING) - ENCANA WELL - SURVEY						Out of range
THOMAS 33-7 (EXISTING) - ENCANA WELL - Plan #1						Out of range
THOMAS 33-7 (EXISTING) - ENCANA WELL - Plan #2						Out of range
THOMAS 33-7 (EXISTING) - ENCANA WELL - Plan #3						Out of range
THOMAS 33-7 (EXISTING) - ENCANA WELL - SURVEY						Out of range
Thomas 7-12 (Existing) - Existing - NO SURVEYS	9,035.4	7,735.0	62.7	26.5	1.730	CC, ES, SF
Thomas 7-14 (Existing) - Existing - NO SURVEYS						Out of range
THOMAS E UNIT 1 (EXISTING) - Existing - NO SURVEY						Out of range
THOMAS K UNIT 1 (EXISTING) - EXISTING - NO SURV						Out of range
Woolley-Sosa 2A-7H-E168 - Hz - Plan #1	306.4	306.4	7.7	6.7	7.853	CC, ES
Woolley-Sosa 2A-7H-E168 - Hz - Plan #1	15,969.8	15,981.1	375.2	94.8	1.338	Level 3, SF
Woolley-Sosa 2C-7H-E168 - HZ - Plan #1	300.0	300.0	7.8	6.9	8.136	CC, ES
Woolley-Sosa 2C-7H-E168 - HZ - Plan #1	15,969.8	15,967.2	364.0	83.5	1.298	Level 3, SF
Woolley-Sosa 2D-7H-E168 - HZ - Plan #1	300.0	300.0	10.0	9.0	10.417	CC
Woolley-Sosa 2D-7H-E168 - HZ - Plan #1	400.0	400.0	10.3	9.0	7.848	ES
Woolley-Sosa 2D-7H-E168 - HZ - Plan #1	500.0	500.0	11.5	9.8	6.908	SF
Woolley-Sosa 2E-7H-E168 - HZ - Plan #1	300.0	300.0	25.7	24.7	26.783	CC, ES
Woolley-Sosa 2E-7H-E168 - HZ - Plan #1	700.0	699.5	35.1	32.7	14.804	SF
Woolley-Sosa 2F-7H-E168 - HZ - Plan #1	300.0	300.0	30.0	29.0	31.252	CC
Woolley-Sosa 2F-7H-E168 - HZ - Plan #1	400.0	400.0	30.3	28.9	23.103	ES
Woolley-Sosa 2F-7H-E168 - HZ - Plan #1	700.0	699.7	36.5	34.1	15.324	SF
Woolley-Sosa 2G-7H-E168 - HZ - Plan #1	300.0	300.0	35.5	34.6	36.993	CC, ES
Woolley-Sosa 2G-7H-E168 - HZ - Plan #1	800.0	799.4	49.1	46.4	17.975	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 2B-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	WELL @ 5019.0ft (Original Well Elev)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa)	<b>MD Reference:</b>	WELL @ 5019.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2B-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 #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa) - 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	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)			
11,200.0	7,759.0	7,839.9	7,768.9	57.7	20.3	-88.54	-3,542.1	-97.0	463.7	388.1	75.62	6.131	
11,300.0	7,759.0	7,840.4	7,769.4	59.4	20.3	-88.87	-3,542.1	-97.0	365.7	288.3	77.34	4.728	
11,400.0	7,759.0	7,840.9	7,769.9	61.1	20.3	-89.21	-3,542.1	-97.0	269.2	190.1	79.06	3.405	
11,500.0	7,759.0	7,841.3	7,770.4	62.8	20.3	-89.54	-3,542.1	-97.0	176.6	95.8	80.77	2.186	
11,600.0	7,759.0	7,841.8	7,770.8	64.5	20.3	-89.87	-3,542.1	-97.0	99.5	17.0	82.49	1.206 Level 2	
11,656.4	7,759.0	7,842.1	7,771.1	65.5	20.3	-90.06	-3,542.1	-97.0	82.0	-1.5	83.46	0.982 Level 1, CC, ES, SF	
11,700.0	7,759.0	7,842.3	7,771.3	66.3	20.3	-90.20	-3,542.1	-97.0	92.9	8.7	84.21	1.103 Level 2	
11,800.0	7,759.0	7,842.8	7,771.8	68.0	20.3	-90.53	-3,542.1	-97.0	165.4	79.4	85.92	1.925	
11,900.0	7,759.0	7,843.2	7,772.2	69.7	20.3	-90.86	-3,542.1	-97.0	257.0	169.4	87.64	2.933	
12,000.0	7,759.0	7,843.7	7,772.7	71.4	20.3	-91.19	-3,542.1	-97.0	353.3	263.9	89.35	3.954	
12,100.0	7,759.0	7,844.2	7,773.2	73.1	20.3	-91.51	-3,542.1	-97.0	451.1	360.1	91.06	4.954	

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 2B-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	WELL @ 5019.0ft (Original Well Elev)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa)	<b>MD Reference:</b>	WELL @ 5019.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2B-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 #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa) - 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	
12,800.0	7,759.0	7,889.0	7,770.2	85.2	24.0	-89.44	-5,176.4	-94.0	498.0	391.0	107.01	4.654	
12,900.0	7,759.0	7,889.0	7,770.2	86.9	24.0	-89.47	-5,176.4	-94.0	399.8	291.1	108.74	3.677	
13,000.0	7,759.0	7,889.1	7,770.3	88.7	24.0	-89.50	-5,176.4	-94.0	302.9	192.4	110.47	2.741	
13,100.0	7,759.0	7,889.1	7,770.3	90.4	24.0	-89.54	-5,176.4	-94.0	208.8	96.6	112.20	1.861	
13,200.0	7,759.0	7,889.2	7,770.4	92.1	24.0	-89.57	-5,176.4	-94.0	124.3	10.4	113.94	1.091 Level 2	
13,290.7	7,759.0	7,889.2	7,770.4	93.7	24.0	-89.60	-5,176.4	-94.0	85.0	-30.5	115.51	0.736 Level 1, CC, ES, SF	
13,300.0	7,759.0	7,889.2	7,770.4	93.9	24.0	-89.60	-5,176.4	-94.0	85.5	-30.1	115.67	0.739 Level 1	
13,400.0	7,759.0	7,889.3	7,770.5	95.6	24.0	-89.64	-5,176.4	-94.0	138.5	21.1	117.41	1.180 Level 2	
13,500.0	7,759.0	7,889.3	7,770.5	97.3	24.0	-89.67	-5,176.4	-94.0	225.9	106.8	119.14	1.896	
13,600.0	7,759.0	7,889.4	7,770.6	99.1	24.0	-89.71	-5,176.4	-94.0	320.8	199.9	120.88	2.654	
13,700.0	7,759.0	7,889.4	7,770.6	100.8	24.0	-89.74	-5,176.4	-94.0	418.1	295.4	122.62	3.409	



# Cathedral Energy Services

## Anticollision Report



<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2B-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	WELL @ 5019.0ft (Original Well Elev)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa)	<b>MD Reference:</b>	WELL @ 5019.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2B-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 #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa) - 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	
8,600.0	7,759.0	7,735.0	7,735.0	17.7	13.5	-90.00	-921.2	-116.3	440.0	409.1	30.89	14.241	
8,700.0	7,759.0	7,735.0	7,735.0	18.8	13.5	-90.00	-921.2	-116.3	341.3	309.3	31.99	10.669	
8,800.0	7,759.0	7,735.0	7,735.0	19.9	13.5	-90.00	-921.2	-116.3	243.7	210.5	33.18	7.345	
8,900.0	7,759.0	7,735.0	7,735.0	21.2	13.5	-90.00	-921.2	-116.3	149.3	114.8	34.45	4.334	
9,000.0	7,759.0	7,735.0	7,735.0	22.5	13.5	-90.00	-921.2	-116.3	72.1	36.3	35.78	2.014	
9,035.4	7,759.0	7,735.0	7,735.0	23.0	13.5	-90.00	-921.2	-116.3	62.7	26.5	36.27	1.730 CC, ES, SF	
9,100.0	7,759.0	7,735.0	7,735.0	23.9	13.5	-90.00	-921.2	-116.3	90.0	52.8	37.17	2.422	
9,200.0	7,759.0	7,735.0	7,735.0	25.3	13.5	-90.00	-921.2	-116.3	176.1	137.5	38.61	4.562	
9,300.0	7,759.0	7,735.0	7,735.0	26.8	13.5	-90.00	-921.2	-116.3	271.9	231.8	40.08	6.784	
9,400.0	7,759.0	7,735.0	7,735.0	28.3	13.5	-90.00	-921.2	-116.3	369.9	328.3	41.59	8.895	
9,500.0	7,759.0	7,735.0	7,735.0	29.8	13.5	-90.00	-921.2	-116.3	468.8	425.6	43.12	10.872	



# Cathedral Energy Services

## Anticollision Report



<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2B-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	WELL @ 5019.0ft (Original Well Elev)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa)	<b>MD Reference:</b>	WELL @ 5019.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2B-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 #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa) - Woolley-Sosa 2A-7H-E168 - Hz - Plan #1													Offset Site Error:	0.0 ft
Survey Program:		0-Geolink MWD											Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-139.91	-6.0	-5.0	7.8					
100.0	100.0	100.0	100.0	0.1	0.1	-139.91	-6.0	-5.0	7.8	7.5	0.26	29.833		
200.0	200.0	200.0	200.0	0.3	0.3	-139.91	-6.0	-5.0	7.8	7.2	0.61	12.786		
300.0	300.0	300.0	300.0	0.5	0.5	-133.49	-5.3	-5.6	7.7	6.8	0.96	8.040		
306.4	306.4	306.4	306.4	0.5	0.5	-116.72	-5.2	-5.7	7.7	6.7	0.98	7.853	CC, ES	
400.0	400.0	400.0	399.9	0.7	0.7	-104.61	-3.3	-7.3	8.2	6.9	1.32	6.255		
500.0	500.0	499.9	499.8	0.8	0.8	-94.33	-0.1	-10.2	9.8	8.2	1.68	5.860		
600.0	599.9	599.8	599.5	1.0	1.0	-88.05	4.5	-14.2	12.4	10.4	2.06	6.033		
700.0	699.7	699.6	699.0	1.2	1.3	-84.82	10.4	-19.3	15.8	13.4	2.46	6.434		
800.0	799.4	799.4	798.3	1.4	1.5	-83.47	17.6	-25.6	20.0	17.1	2.88	6.920		
817.0	816.3	816.3	815.1	1.5	1.5	-83.36	19.0	-26.8	20.7	17.8	2.96	7.007		
900.0	899.0	899.1	897.4	1.6	1.7	-82.11	26.0	-33.0	24.8	21.5	3.32	7.464		
1,000.0	998.6	999.0	996.6	1.9	2.0	-80.76	34.6	-40.5	29.8	26.1	3.77	7.919		
1,100.0	1,098.1	1,098.9	1,095.8	2.1	2.2	-79.79	43.3	-48.0	34.9	30.7	4.22	8.274		
1,200.0	1,197.7	1,198.7	1,195.0	2.3	2.5	-79.07	51.9	-55.6	39.9	35.3	4.67	8.557		
1,300.0	1,297.3	1,298.6	1,294.3	2.5	2.8	-78.51	60.5	-63.1	45.0	39.9	5.12	8.787		
1,400.0	1,396.9	1,398.5	1,393.5	2.8	3.0	-78.07	69.2	-70.6	50.1	44.5	5.58	8.979		
1,500.0	1,496.5	1,498.4	1,492.7	3.0	3.3	-77.71	77.8	-78.2	55.1	49.1	6.03	9.140		
1,600.0	1,596.1	1,598.2	1,591.9	3.2	3.5	-77.40	86.4	-85.7	60.2	53.7	6.49	9.278		
1,700.0	1,695.7	1,698.1	1,691.1	3.5	3.8	-77.15	95.1	-93.2	65.3	58.3	6.94	9.397		
1,800.0	1,795.3	1,798.0	1,790.3	3.7	4.1	-76.93	103.7	-100.8	70.3	62.9	7.40	9.500		
1,900.0	1,894.9	1,897.8	1,889.5	3.9	4.3	-76.74	112.3	-108.3	75.4	67.5	7.86	9.591		
2,000.0	1,994.5	1,997.7	1,988.7	4.2	4.6	-76.58	120.9	-115.9	80.5	72.1	8.32	9.672		
2,100.0	2,094.1	2,097.6	2,088.0	4.4	4.9	-76.43	129.6	-123.4	85.5	76.8	8.78	9.744		
2,200.0	2,193.7	2,197.5	2,187.2	4.6	5.1	-76.30	138.2	-130.9	90.6	81.4	9.24	9.808		
2,300.0	2,293.3	2,297.3	2,286.4	4.9	5.4	-76.18	146.8	-138.5	95.7	86.0	9.70	9.867		
2,400.0	2,392.9	2,397.2	2,385.6	5.1	5.7	-76.08	155.5	-146.0	100.7	90.6	10.16	9.919		
2,500.0	2,492.5	2,497.1	2,484.8	5.3	5.9	-75.99	164.1	-153.5	105.8	95.2	10.62	9.967		
2,600.0	2,592.0	2,596.9	2,584.0	5.6	6.2	-75.90	172.7	-161.1	110.9	99.8	11.08	10.011		
2,700.0	2,691.6	2,696.8	2,683.2	5.8	6.4	-75.82	181.4	-168.6	116.0	104.4	11.54	10.052		
2,800.0	2,791.2	2,796.7	2,782.4	6.0	6.7	-75.75	190.0	-176.1	121.0	109.0	12.00	10.089		
2,900.0	2,890.8	2,896.6	2,881.6	6.3	7.0	-75.69	198.6	-183.7	126.1	113.6	12.46	10.123		
3,000.0	2,990.4	2,996.4	2,980.9	6.5	7.2	-75.63	207.3	-191.2	131.2	118.3	12.92	10.155		
3,100.0	3,090.0	3,096.3	3,080.1	6.7	7.5	-75.57	215.9	-198.8	136.3	122.9	13.38	10.184		
3,200.0	3,189.6	3,196.2	3,179.3	7.0	7.8	-75.52	224.5	-206.3	141.3	127.5	13.84	10.212		
3,300.0	3,289.2	3,296.0	3,278.5	7.2	8.0	-75.47	233.1	-213.8	146.4	132.1	14.30	10.238		
3,400.0	3,388.8	3,395.9	3,377.7	7.4	8.3	-75.42	241.8	-221.4	151.5	136.7	14.76	10.262		
3,500.0	3,488.4	3,495.8	3,476.9	7.7	8.6	-75.38	250.4	-228.9	156.5	141.3	15.22	10.284		
3,600.0	3,588.0	3,595.7	3,576.1	7.9	8.8	-75.34	259.0	-236.4	161.6	145.9	15.68	10.306		
3,700.0	3,687.6	3,695.5	3,675.3	8.1	9.1	-75.30	267.7	-244.0	166.7	150.5	16.14	10.326		
3,800.0	3,787.2	3,795.4	3,774.6	8.4	9.4	-75.27	276.3	-251.5	171.8	155.2	16.60	10.344		
3,900.0	3,886.8	3,895.3	3,873.8	8.6	9.6	-75.24	284.9	-259.0	176.8	159.8	17.07	10.362		
4,000.0	3,986.3	3,995.1	3,973.0	8.8	9.9	-75.20	293.6	-266.6	181.9	164.4	17.53	10.379		
4,100.0	4,085.9	4,095.0	4,072.2	9.1	10.2	-75.18	302.2	-274.1	187.0	169.0	17.99	10.395		
4,200.0	4,185.5	4,194.9	4,171.4	9.3	10.4	-75.15	310.8	-281.7	192.1	173.6	18.45	10.410		
4,300.0	4,285.1	4,294.7	4,270.6	9.6	10.7	-75.12	319.4	-289.2	197.1	178.2	18.91	10.425		
4,400.0	4,384.7	4,394.6	4,369.8	9.8	11.0	-75.10	328.1	-296.7	202.2	182.8	19.37	10.438		
4,500.0	4,484.3	4,494.5	4,469.0	10.0	11.2	-75.07	336.7	-304.3	207.3	187.4	19.83	10.451		
4,600.0	4,583.9	4,594.4	4,568.2	10.3	11.5	-75.05	345.3	-311.8	212.4	192.1	20.29	10.464		
4,700.0	4,683.5	4,694.2	4,667.5	10.5	11.7	-75.03	354.0	-319.3	217.4	196.7	20.76	10.476		
4,800.0	4,783.1	4,794.1	4,766.7	10.7	12.0	-75.01	362.6	-326.9	222.5	201.3	21.22	10.487		
4,900.0	4,882.7	4,894.0	4,865.9	11.0	12.3	-74.99	371.2	-334.4	227.6	205.9	21.68	10.498		

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 2B-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	WELL @ 5019.0ft (Original Well Elev)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa)	<b>MD Reference:</b>	WELL @ 5019.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2B-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 #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa) - Woolley-Sosa 2A-7H-E168 - Hz - Plan #1													Offset Site Error: 0.0 ft			
Survey Program: 0-Geolink MWD															Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor				
5,000.0	4,982.3	4,993.8	4,965.1	11.2	12.5	-74.97	379.9	-341.9	232.7	210.5	22.14	10.508				
5,100.0	5,081.9	5,093.7	5,064.3	11.4	12.8	-74.95	388.5	-349.5	237.7	215.1	22.60	10.518				
5,200.0	5,181.5	5,193.6	5,163.5	11.7	13.1	-74.93	397.1	-357.0	242.8	219.7	23.06	10.528				
5,300.0	5,281.1	5,293.5	5,262.7	11.9	13.3	-74.92	405.8	-364.5	247.9	224.4	23.52	10.537				
5,400.0	5,380.7	5,393.3	5,361.9	12.1	13.6	-74.90	414.4	-372.1	252.9	229.0	23.99	10.546				
5,500.0	5,480.2	5,493.2	5,461.2	12.4	13.9	-74.88	423.0	-379.6	258.0	233.6	24.45	10.554				
5,600.0	5,579.8	5,593.1	5,560.4	12.6	14.1	-74.87	431.6	-387.2	263.1	238.2	24.91	10.563				
5,700.0	5,679.4	5,692.9	5,659.6	12.8	14.4	-74.86	440.3	-394.7	268.2	242.8	25.37	10.570				
5,800.0	5,779.0	5,792.8	5,758.8	13.1	14.7	-74.84	448.9	-402.2	273.2	247.4	25.83	10.578				
5,900.0	5,878.6	5,892.7	5,858.0	13.3	14.9	-74.83	457.5	-409.8	278.3	252.0	26.29	10.585				
6,000.0	5,978.2	5,992.6	5,957.2	13.5	15.2	-74.82	466.2	-417.3	283.4	256.6	26.75	10.592				
6,100.0	6,077.8	6,092.4	6,056.4	13.8	15.5	-74.80	474.8	-424.8	288.5	261.3	27.22	10.599				
6,200.0	6,177.4	6,192.3	6,155.6	14.0	15.7	-74.79	483.4	-432.4	293.5	265.9	27.68	10.606				
6,300.0	6,277.0	6,292.2	6,254.8	14.2	16.0	-74.78	492.1	-439.9	298.6	270.5	28.14	10.612				
6,400.0	6,376.6	6,392.0	6,354.1	14.5	16.3	-74.77	500.7	-447.4	303.7	275.1	28.60	10.618				
6,500.0	6,476.2	6,491.9	6,453.3	14.7	16.5	-74.76	509.3	-455.0	308.8	279.7	29.06	10.624				
6,600.0	6,575.8	6,591.8	6,552.5	14.9	16.8	-74.75	517.9	-462.5	313.8	284.3	29.52	10.630				
6,700.0	6,675.4	6,691.7	6,651.7	15.2	17.1	-74.74	526.6	-470.1	318.9	288.9	29.99	10.636				
6,800.0	6,775.0	6,791.5	6,750.9	15.4	17.3	-74.73	535.2	-477.6	324.0	293.5	30.45	10.641				
6,900.0	6,874.6	6,891.4	6,850.1	15.7	17.6	-74.72	543.8	-485.1	329.1	298.2	30.91	10.646				
7,000.0	6,974.1	6,991.3	6,949.3	15.9	17.9	-74.71	552.5	-492.7	334.1	302.8	31.37	10.652				
7,100.0	7,073.7	7,091.1	7,048.5	16.1	18.1	-74.70	561.1	-500.2	339.2	307.4	31.83	10.656				
7,163.1	7,136.6	7,154.2	7,111.2	16.3	18.3	-74.70	566.5	-505.0	342.4	310.3	32.12	10.660				
7,200.0	7,173.4	7,190.9	7,147.7	16.3	18.4	-42.68	569.6	-507.7	344.3	312.0	32.26	10.670				
7,250.0	7,223.4	7,240.5	7,197.1	16.4	18.5	68.47	571.0	-511.5	346.8	314.5	32.34	10.725				
7,300.0	7,273.0	7,290.3	7,246.6	16.4	18.5	80.28	568.0	-515.2	349.3	317.0	32.31	10.810				
7,350.0	7,322.1	7,340.3	7,295.9	16.3	18.5	83.76	560.7	-519.0	351.8	319.6	32.21	10.924				
7,400.0	7,370.0	7,390.5	7,344.6	16.2	18.5	85.46	549.0	-522.7	354.3	322.3	32.01	11.067				
7,450.0	7,416.6	7,440.9	7,392.3	16.1	18.4	86.50	533.1	-526.3	356.7	325.0	31.75	11.236				
7,500.0	7,461.4	7,491.6	7,438.6	15.9	18.3	87.22	512.8	-529.8	359.1	327.6	31.42	11.428				
7,550.0	7,504.2	7,542.5	7,483.1	15.8	18.2	87.75	488.5	-533.2	361.3	330.3	31.04	11.640				
7,600.0	7,544.5	7,593.6	7,525.5	15.6	18.0	88.18	460.2	-536.4	363.4	332.8	30.62	11.869				
7,650.0	7,582.1	7,644.9	7,565.4	15.3	17.9	88.52	428.0	-539.5	365.4	335.3	30.18	12.107				
7,700.0	7,616.7	7,696.4	7,602.3	15.1	17.7	88.81	392.3	-542.3	367.3	337.6	29.74	12.349				
7,750.0	7,647.9	7,748.1	7,636.1	14.9	17.5	89.06	353.2	-544.8	369.0	339.7	29.32	12.586				
7,800.0	7,675.7	7,800.0	7,666.2	14.8	17.4	89.27	311.1	-547.1	370.5	341.6	28.93	12.809				
7,850.0	7,699.8	7,852.0	7,692.6	14.6	17.3	89.45	266.2	-549.1	371.8	343.2	28.59	13.007				
7,900.0	7,719.9	7,904.2	7,714.8	14.5	17.1	89.60	219.1	-550.8	372.9	344.6	28.32	13.169				
7,950.0	7,736.0	7,956.6	7,732.7	14.4	17.1	89.73	169.9	-552.2	373.8	345.7	28.14	13.286				
8,000.0	7,747.9	8,009.0	7,746.1	14.4	17.0	89.84	119.3	-553.2	374.5	346.4	28.05	13.350				
8,050.0	7,755.6	8,061.5	7,754.8	14.4	17.0	89.92	67.5	-553.8	374.9	346.9	28.07	13.355				
8,100.0	7,758.9	8,114.1	7,758.7	14.4	17.1	89.99	15.1	-554.1	375.1	346.9	28.21	13.300				
8,112.8	7,759.0	8,127.6	7,759.0	14.5	17.1	90.00	1.6	-554.2	375.2	346.9	28.26	13.277				
8,200.0	7,759.0	8,214.9	7,759.0	14.7	17.3	90.00	-85.7	-554.2	375.2	346.4	28.80	13.027				
8,300.0	7,759.0	8,314.9	7,759.0	15.2	17.7	90.00	-185.7	-554.2	375.2	345.4	29.78	12.596				
8,400.0	7,759.0	8,414.9	7,759.0	15.9	18.3	90.00	-285.7	-554.2	375.2	344.0	31.14	12.049				
8,500.0	7,759.0	8,514.9	7,759.0	16.7	19.0	90.00	-385.7	-554.2	375.2	342.3	32.81	11.434				
8,600.0	7,759.0	8,614.9	7,759.0	17.7	19.9	90.00	-485.7	-554.2	375.2	340.4	34.76	10.794				
8,700.0	7,759.0	8,714.9	7,759.0	18.8	20.8	90.00	-585.7	-554.2	375.2	338.2	36.94	10.157				
8,800.0	7,759.0	8,814.9	7,759.0	19.9	21.9	90.00	-685.7	-554.2	375.2	335.8	39.31	9.544				
8,900.0	7,759.0	8,914.9	7,759.0	21.2	23.0	90.00	-785.7	-554.2	375.2	333.3	41.84	8.967				
9,000.0	7,759.0	9,014.9	7,759.0	22.5	24.2	90.00	-885.7	-554.2	375.2	330.7	44.50	8.430				

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 2B-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	WELL @ 5019.0ft (Original Well Elev)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa)	<b>MD Reference:</b>	WELL @ 5019.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2B-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 #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa) - Woolley-Sosa 2A-7H-E168 - Hz - Plan #1												Offset Site Error:	0.0 ft
Survey Program: 0-Geolink MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							
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	7,759.0	9,114.9	7,759.0	23.9	25.5	90.00	-985.7	-554.2	375.2	327.9	47.28	7.935	
9,200.0	7,759.0	9,214.9	7,759.0	25.3	26.8	90.00	-1,085.7	-554.2	375.2	325.0	50.15	7.481	
9,300.0	7,759.0	9,314.9	7,759.0	26.8	28.2	90.00	-1,185.7	-554.2	375.2	322.1	53.09	7.067	
9,400.0	7,759.0	9,414.9	7,759.0	28.3	29.6	90.00	-1,285.7	-554.2	375.2	319.1	56.10	6.687	
9,500.0	7,759.0	9,514.9	7,759.0	29.8	31.1	90.00	-1,385.7	-554.2	375.2	316.0	59.16	6.341	
9,600.0	7,759.0	9,614.9	7,759.0	31.3	32.6	90.00	-1,485.7	-554.2	375.2	312.9	62.27	6.024	
9,700.0	7,759.0	9,714.9	7,759.0	32.9	34.1	90.00	-1,585.7	-554.2	375.2	309.7	65.42	5.734	
9,800.0	7,759.0	9,814.9	7,759.0	34.5	35.6	90.00	-1,685.7	-554.2	375.2	306.5	68.61	5.468	
9,900.0	7,759.0	9,914.9	7,759.0	36.1	37.1	90.00	-1,785.7	-554.2	375.2	303.3	71.83	5.223	
10,000.0	7,759.0	10,014.9	7,759.0	37.7	38.7	90.00	-1,885.7	-554.2	375.2	300.1	75.07	4.998	
10,100.0	7,759.0	10,114.9	7,759.0	39.3	40.3	90.00	-1,985.7	-554.2	375.2	296.8	78.33	4.789	
10,200.0	7,759.0	10,214.9	7,759.0	41.0	41.9	90.00	-2,085.7	-554.2	375.2	293.5	81.62	4.597	
10,300.0	7,759.0	10,314.9	7,759.0	42.6	43.5	90.00	-2,185.7	-554.2	375.2	290.2	84.92	4.418	
10,400.0	7,759.0	10,414.9	7,759.0	44.3	45.1	90.00	-2,285.7	-554.2	375.2	286.9	88.24	4.252	
10,500.0	7,759.0	10,514.9	7,759.0	45.9	46.7	90.00	-2,385.7	-554.2	375.2	283.6	91.57	4.097	
10,600.0	7,759.0	10,614.9	7,759.0	47.6	48.4	90.00	-2,485.7	-554.2	375.2	280.2	94.92	3.952	
10,700.0	7,759.0	10,714.9	7,759.0	49.3	50.0	90.00	-2,585.7	-554.2	375.2	276.9	98.27	3.817	
10,800.0	7,759.0	10,814.9	7,759.0	51.0	51.7	90.00	-2,685.7	-554.2	375.2	273.5	101.64	3.691	
10,900.0	7,759.0	10,914.9	7,759.0	52.6	53.3	90.00	-2,785.7	-554.2	375.2	270.1	105.02	3.572	
11,000.0	7,759.0	11,014.9	7,759.0	54.3	55.0	90.00	-2,885.7	-554.2	375.2	266.8	108.40	3.461	
11,100.0	7,759.0	11,114.9	7,759.0	56.0	56.7	90.00	-2,985.7	-554.2	375.2	263.4	111.79	3.356	
11,200.0	7,759.0	11,214.9	7,759.0	57.7	58.4	90.00	-3,085.7	-554.2	375.2	260.0	115.19	3.257	
11,300.0	7,759.0	11,314.9	7,759.0	59.4	60.0	90.00	-3,185.7	-554.2	375.2	256.6	118.60	3.163	
11,400.0	7,759.0	11,414.9	7,759.0	61.1	61.7	90.00	-3,285.7	-554.2	375.2	253.1	122.01	3.075	
11,500.0	7,759.0	11,514.9	7,759.0	62.8	63.4	90.00	-3,385.7	-554.2	375.2	249.7	125.43	2.991	
11,600.0	7,759.0	11,614.9	7,759.0	64.5	65.1	90.00	-3,485.7	-554.2	375.2	246.3	128.85	2.912	
11,700.0	7,759.0	11,714.9	7,759.0	66.3	66.8	90.00	-3,585.7	-554.2	375.2	242.9	132.28	2.836	
11,800.0	7,759.0	11,814.9	7,759.0	68.0	68.5	90.00	-3,685.7	-554.2	375.2	239.5	135.71	2.764	
11,900.0	7,759.0	11,914.9	7,759.0	69.7	70.2	90.00	-3,785.7	-554.2	375.2	236.0	139.14	2.696	
12,000.0	7,759.0	12,014.9	7,759.0	71.4	71.9	90.00	-3,885.7	-554.2	375.2	232.6	142.58	2.631	
12,100.0	7,759.0	12,114.9	7,759.0	73.1	73.6	90.00	-3,985.7	-554.2	375.2	229.1	146.02	2.569	
12,200.0	7,759.0	12,214.9	7,759.0	74.8	75.3	90.00	-4,085.7	-554.2	375.2	225.7	149.46	2.510	
12,300.0	7,759.0	12,314.9	7,759.0	76.6	77.0	90.00	-4,185.7	-554.2	375.2	222.2	152.91	2.453	
12,400.0	7,759.0	12,414.9	7,759.0	78.3	78.7	90.00	-4,285.7	-554.2	375.2	218.8	156.36	2.399	
12,500.0	7,759.0	12,514.9	7,759.0	80.0	80.4	90.00	-4,385.7	-554.2	375.2	215.3	159.81	2.347	
12,600.0	7,759.0	12,614.9	7,759.0	81.7	82.2	90.00	-4,485.7	-554.2	375.2	211.9	163.27	2.298	
12,700.0	7,759.0	12,714.9	7,759.0	83.5	83.9	90.00	-4,585.7	-554.2	375.2	208.4	166.72	2.250	
12,800.0	7,759.0	12,814.9	7,759.0	85.2	85.6	90.00	-4,685.7	-554.2	375.2	205.0	170.18	2.204	
12,900.0	7,759.0	12,914.9	7,759.0	86.9	87.3	90.00	-4,785.7	-554.2	375.2	201.5	173.64	2.160	
13,000.0	7,759.0	13,014.9	7,759.0	88.7	89.0	90.00	-4,885.7	-554.2	375.2	198.1	177.11	2.118	
13,100.0	7,759.0	13,114.9	7,759.0	90.4	90.8	90.00	-4,985.7	-554.2	375.2	194.6	180.57	2.078	
13,200.0	7,759.0	13,214.9	7,759.0	92.1	92.5	90.00	-5,085.7	-554.2	375.2	191.1	184.04	2.038	
13,300.0	7,759.0	13,314.9	7,759.0	93.9	94.2	90.00	-5,185.7	-554.2	375.2	187.7	187.51	2.001	
13,400.0	7,759.0	13,414.9	7,759.0	95.6	95.9	90.00	-5,285.7	-554.2	375.2	184.2	190.98	1.964	
13,500.0	7,759.0	13,514.9	7,759.0	97.3	97.7	90.00	-5,385.7	-554.2	375.2	180.7	194.45	1.929	
13,600.0	7,759.0	13,614.9	7,759.0	99.1	99.4	90.00	-5,485.7	-554.2	375.2	177.2	197.92	1.896	
13,700.0	7,759.0	13,714.9	7,759.0	100.8	101.1	90.00	-5,585.7	-554.2	375.2	173.8	201.39	1.863	
13,800.0	7,759.0	13,814.9	7,759.0	102.5	102.8	90.00	-5,685.7	-554.2	375.2	170.3	204.87	1.831	
13,900.0	7,759.0	13,914.9	7,759.0	104.3	104.6	90.00	-5,785.7	-554.2	375.2	166.8	208.34	1.801	
14,000.0	7,759.0	14,014.9	7,759.0	106.0	106.3	90.00	-5,885.7	-554.2	375.2	163.3	211.82	1.771	
14,100.0	7,759.0	14,114.9	7,759.0	107.7	108.0	90.00	-5,985.7	-554.2	375.2	159.9	215.30	1.743	
14,200.0	7,759.0	14,214.9	7,759.0	109.5	109.8	90.00	-6,085.7	-554.2	375.2	156.4	218.77	1.715	

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 2B-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	WELL @ 5019.0ft (Original Well Elev)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa)	<b>MD Reference:</b>	WELL @ 5019.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2B-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 #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa) - Woolley-Sosa 2A-7H-E168 - Hz - Plan #1												Offset Site Error: 0.0 ft		
Survey Program: 0-Geolink MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N-/S (ft)	+E-/W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
14,300.0	7,759.0	14,314.9	7,759.0	111.2	111.5	90.00	-6,185.7	-554.2	375.2	152.9	222.25	1.688		
14,400.0	7,759.0	14,414.9	7,759.0	113.0	113.2	90.00	-6,285.7	-554.2	375.2	149.4	225.73	1.662		
14,500.0	7,759.0	14,514.9	7,759.0	114.7	115.0	90.00	-6,385.7	-554.2	375.2	145.9	229.22	1.637		
14,600.0	7,759.0	14,614.9	7,759.0	116.4	116.7	90.00	-6,485.7	-554.2	375.2	142.5	232.70	1.612		
14,700.0	7,759.0	14,714.9	7,759.0	118.2	118.4	90.00	-6,585.7	-554.2	375.2	139.0	236.18	1.588		
14,800.0	7,759.0	14,814.9	7,759.0	119.9	120.2	90.00	-6,685.7	-554.2	375.2	135.5	239.66	1.565		
14,900.0	7,759.0	14,914.9	7,759.0	121.7	121.9	90.00	-6,785.7	-554.2	375.2	132.0	243.15	1.543		
15,000.0	7,759.0	15,014.9	7,759.0	123.4	123.6	90.00	-6,885.7	-554.2	375.2	128.5	246.63	1.521		
15,100.0	7,759.0	15,114.9	7,759.0	125.1	125.4	90.00	-6,985.7	-554.2	375.2	125.0	250.12	1.500	Level 3	
15,200.0	7,759.0	15,214.9	7,759.0	126.9	127.1	90.00	-7,085.7	-554.2	375.2	121.6	253.61	1.479	Level 3	
15,300.0	7,759.0	15,314.9	7,759.0	128.6	128.9	90.00	-7,185.7	-554.2	375.2	118.1	257.09	1.459	Level 3	
15,400.0	7,759.0	15,414.9	7,759.0	130.4	130.6	90.00	-7,285.7	-554.2	375.2	114.6	260.58	1.440	Level 3	
15,500.0	7,759.0	15,514.9	7,759.0	132.1	132.3	90.00	-7,385.7	-554.2	375.2	111.1	264.07	1.421	Level 3	
15,600.0	7,759.0	15,614.9	7,759.0	133.9	134.1	90.00	-7,485.7	-554.2	375.2	107.6	267.56	1.402	Level 3	
15,700.0	7,759.0	15,714.9	7,759.0	135.6	135.8	90.00	-7,585.7	-554.2	375.2	104.1	271.05	1.384	Level 3	
15,800.0	7,759.0	15,814.9	7,759.0	137.4	137.6	90.00	-7,685.7	-554.2	375.2	100.6	274.53	1.367	Level 3	
15,900.0	7,759.0	15,914.9	7,759.0	139.1	139.3	90.00	-7,785.7	-554.2	375.2	97.1	278.02	1.349	Level 3	
15,939.7	7,759.0	15,954.6	7,759.0	139.8	140.0	90.00	-7,825.4	-554.2	375.2	95.7	279.41	1.343	Level 3	
15,969.8	7,759.0	15,981.1	7,759.0	140.3	140.4	90.00	-7,851.9	-554.2	375.2	94.8	280.40	1.338	Level 3, SF	





# Cathedral Energy Services

## Anticollision Report



<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2B-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	WELL @ 5019.0ft (Original Well Elev)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa)	<b>MD Reference:</b>	WELL @ 5019.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2B-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 #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa) - Woolley-Sosa 2C-7H-E168 - HZ - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-Geolink MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	140.48	-6.0	5.0	7.8					
100.0	100.0	100.0	100.0	0.1	0.1	140.48	-6.0	5.0	7.8	7.5	0.26	29.833		
200.0	200.0	200.0	200.0	0.3	0.3	140.48	-6.0	5.0	7.8	7.2	0.61	12.786		
300.0	300.0	300.0	300.0	0.5	0.5	140.48	-6.0	5.0	7.8	6.9	0.96	8.136 CC, ES		
400.0	400.0	400.0	400.0	0.7	0.7	158.75	-6.0	5.0	8.6	7.3	1.31	6.583		
500.0	500.0	500.1	500.1	0.8	0.8	160.11	-5.2	5.2	10.5	8.9	1.66	6.352		
600.0	599.9	600.2	600.1	1.0	1.0	157.57	-2.7	5.9	13.0	11.0	2.01	6.478		
700.0	699.7	700.3	700.1	1.2	1.2	153.24	1.5	7.1	16.2	13.8	2.37	6.816		
800.0	799.4	800.3	800.0	1.4	1.4	148.40	7.4	8.8	20.1	17.3	2.75	7.297		
817.0	816.3	817.3	817.0	1.5	1.4	147.59	8.6	9.1	20.8	18.0	2.82	7.388		
900.0	899.0	900.4	899.7	1.6	1.6	142.93	15.0	11.0	24.3	21.2	3.15	7.713		
1,000.0	998.6	1,000.3	999.2	1.9	1.8	136.67	23.7	13.5	28.4	24.8	3.58	7.928		
1,100.0	1,098.1	1,100.2	1,098.7	2.1	2.0	131.91	32.6	16.0	32.7	28.7	4.02	8.133		
1,200.0	1,197.7	1,200.0	1,198.1	2.3	2.3	128.28	41.4	18.5	37.2	32.7	4.47	8.323		
1,300.0	1,297.3	1,299.9	1,297.6	2.5	2.5	125.44	50.3	21.0	41.8	36.9	4.92	8.494		
1,400.0	1,396.9	1,399.8	1,397.0	2.8	2.7	123.16	59.1	23.6	46.5	41.1	5.38	8.648		
1,500.0	1,496.5	1,499.7	1,496.5	3.0	2.9	121.31	67.9	26.1	51.3	45.4	5.84	8.784		
1,600.0	1,596.1	1,599.5	1,595.9	3.2	3.2	119.77	76.8	28.6	56.0	49.8	6.29	8.906		
1,700.0	1,695.7	1,699.4	1,695.4	3.5	3.4	118.47	85.6	31.1	60.9	54.1	6.75	9.016		
1,800.0	1,795.3	1,799.3	1,794.8	3.7	3.6	117.37	94.4	33.7	65.7	58.5	7.21	9.114		
1,900.0	1,894.9	1,899.2	1,894.3	3.9	3.9	116.41	103.3	36.2	70.6	62.9	7.67	9.202		
2,000.0	1,994.5	1,999.0	1,993.7	4.2	4.1	115.59	112.1	38.7	75.5	67.4	8.13	9.282		
2,100.0	2,094.1	2,098.9	2,093.2	4.4	4.3	114.86	120.9	41.2	80.4	71.8	8.59	9.355		
2,200.0	2,193.7	2,198.8	2,192.6	4.6	4.6	114.21	129.8	43.7	85.3	76.3	9.06	9.421		
2,300.0	2,293.3	2,298.7	2,292.1	4.9	4.8	113.64	138.6	46.3	90.2	80.7	9.52	9.481		
2,400.0	2,392.9	2,398.5	2,391.5	5.1	5.0	113.12	147.4	48.8	95.2	85.2	9.98	9.537		
2,500.0	2,492.5	2,498.4	2,491.0	5.3	5.3	112.66	156.3	51.3	100.1	89.7	10.44	9.588		
2,600.0	2,592.0	2,598.3	2,590.4	5.6	5.5	112.24	165.1	53.8	105.1	94.2	10.90	9.635		
2,700.0	2,691.6	2,698.1	2,689.9	5.8	5.7	111.86	173.9	56.4	110.0	98.7	11.37	9.679		
2,800.0	2,791.2	2,798.0	2,789.3	6.0	6.0	111.51	182.8	58.9	115.0	103.1	11.83	9.720		
2,900.0	2,890.8	2,897.9	2,888.8	6.3	6.2	111.19	191.6	61.4	119.9	107.6	12.29	9.758		
3,000.0	2,990.4	2,997.8	2,988.2	6.5	6.4	110.89	200.4	63.9	124.9	112.1	12.75	9.793		
3,100.0	3,090.0	3,097.6	3,087.7	6.7	6.7	110.62	209.3	66.4	129.9	116.6	13.22	9.826		
3,200.0	3,189.6	3,197.5	3,187.2	7.0	6.9	110.37	218.1	69.0	134.8	121.2	13.68	9.857		
3,300.0	3,289.2	3,297.4	3,286.6	7.2	7.2	110.13	226.9	71.5	139.8	125.7	14.14	9.886		
3,400.0	3,388.8	3,397.3	3,386.1	7.4	7.4	109.91	235.8	74.0	144.8	130.2	14.60	9.913		
3,500.0	3,488.4	3,497.1	3,485.5	7.7	7.6	109.71	244.6	76.5	149.8	134.7	15.07	9.939		
3,600.0	3,588.0	3,597.0	3,585.0	7.9	7.9	109.52	253.5	79.1	154.7	139.2	15.53	9.963		
3,700.0	3,687.6	3,696.9	3,684.4	8.1	8.1	109.34	262.3	81.6	159.7	143.7	15.99	9.986		
3,800.0	3,787.2	3,796.8	3,783.9	8.4	8.3	109.17	271.1	84.1	164.7	148.2	16.46	10.008		
3,900.0	3,886.8	3,896.6	3,883.3	8.6	8.6	109.01	280.0	86.6	169.7	152.8	16.92	10.029		
4,000.0	3,986.3	3,996.5	3,982.8	8.8	8.8	108.86	288.8	89.2	174.7	157.3	17.38	10.048		
4,100.0	4,085.9	4,096.4	4,082.2	9.1	9.0	108.72	297.6	91.7	179.6	161.8	17.84	10.067		
4,200.0	4,185.5	4,196.3	4,181.7	9.3	9.3	108.59	306.5	94.2	184.6	166.3	18.31	10.085		
4,300.0	4,285.1	4,296.1	4,281.1	9.6	9.5	108.46	315.3	96.7	189.6	170.8	18.77	10.102		
4,400.0	4,384.7	4,396.0	4,380.6	9.8	9.8	108.34	324.1	99.2	194.6	175.4	19.23	10.118		
4,500.0	4,484.3	4,495.9	4,480.0	10.0	10.0	108.23	333.0	101.8	199.6	179.9	19.70	10.133		
4,600.0	4,583.9	4,595.8	4,579.5	10.3	10.2	108.12	341.8	104.3	204.6	184.4	20.16	10.148		
4,700.0	4,683.5	4,695.6	4,678.9	10.5	10.5	108.02	350.6	106.8	209.6	189.0	20.62	10.162		
4,800.0	4,783.1	4,795.5	4,778.4	10.7	10.7	107.92	359.5	109.3	214.6	193.5	21.09	10.175		
4,900.0	4,882.7	4,895.4	4,877.8	11.0	10.9	107.82	368.3	111.9	219.6	198.0	21.55	10.188		
5,000.0	4,982.3	4,995.3	4,977.3	11.2	11.2	107.74	377.1	114.4	224.5	202.5	22.01	10.201		

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 2B-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	WELL @ 5019.0ft (Original Well Elev)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa)	<b>MD Reference:</b>	WELL @ 5019.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2B-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 #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa) - Woolley-Sosa 2C-7H-E168 - HZ - Plan #1												Offset Site Error:	0.0 ft
Survey Program: O-Geolink MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							
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	5,081.9	5,095.1	5,076.7	11.4	11.4	107.65	386.0	116.9	229.5	207.1	22.48	10.213	
5,200.0	5,181.5	5,195.0	5,176.2	11.7	11.6	107.57	394.8	119.4	234.5	211.6	22.94	10.224	
5,300.0	5,281.1	5,294.9	5,275.6	11.9	11.9	107.49	403.6	122.0	239.5	216.1	23.40	10.235	
5,400.0	5,380.7	5,394.8	5,375.1	12.1	12.1	107.41	412.5	124.5	244.5	220.7	23.87	10.246	
5,500.0	5,480.2	5,494.6	5,474.5	12.4	12.4	107.34	421.3	127.0	249.5	225.2	24.33	10.256	
5,600.0	5,579.8	5,594.5	5,574.0	12.6	12.6	107.27	430.2	129.5	254.5	229.7	24.79	10.266	
5,700.0	5,679.4	5,694.4	5,673.4	12.8	12.8	107.20	439.0	132.0	259.5	234.2	25.26	10.275	
5,800.0	5,779.0	5,794.3	5,772.9	13.1	13.1	107.14	447.8	134.6	264.5	238.8	25.72	10.284	
5,900.0	5,878.6	5,894.1	5,872.3	13.3	13.3	107.08	456.7	137.1	269.5	243.3	26.18	10.293	
6,000.0	5,978.2	5,994.0	5,971.8	13.5	13.5	107.02	465.5	139.6	274.5	247.8	26.64	10.302	
6,100.0	6,077.8	6,093.9	6,071.2	13.8	13.8	106.96	474.3	142.1	279.5	252.4	27.11	10.310	
6,200.0	6,177.4	6,193.8	6,170.7	14.0	14.0	106.90	483.2	144.7	284.5	256.9	27.57	10.318	
6,300.0	6,277.0	6,293.6	6,270.1	14.2	14.2	106.85	492.0	147.2	289.5	261.4	28.03	10.326	
6,400.0	6,376.6	6,393.5	6,369.6	14.5	14.5	106.80	500.8	149.7	294.5	266.0	28.50	10.333	
6,500.0	6,476.2	6,493.4	6,469.0	14.7	14.7	106.75	509.7	152.2	299.5	270.5	28.96	10.340	
6,600.0	6,575.8	6,593.3	6,568.5	14.9	15.0	106.70	518.5	154.7	304.5	275.0	29.42	10.347	
6,700.0	6,675.4	6,693.1	6,667.9	15.2	15.2	106.65	527.3	157.3	309.5	279.6	29.89	10.354	
6,800.0	6,775.0	6,793.0	6,767.4	15.4	15.4	106.61	536.2	159.8	314.5	284.1	30.35	10.361	
6,900.0	6,874.6	6,892.9	6,866.8	15.7	15.7	106.56	545.0	162.3	319.5	288.6	30.81	10.367	
7,000.0	6,974.1	6,992.8	6,966.3	15.9	15.9	106.52	553.8	164.8	324.5	293.2	31.28	10.374	
7,100.0	7,073.7	7,092.6	7,065.7	16.1	16.1	106.48	562.7	167.4	329.5	297.7	31.74	10.380	
7,163.1	7,136.6	7,155.7	7,128.5	16.3	16.3	106.45	568.2	169.0	332.6	300.6	32.03	10.383	
7,200.0	7,173.4	7,192.3	7,165.1	16.3	16.4	138.57	570.7	169.9	334.5	302.3	32.16	10.401	
7,250.0	7,223.4	7,242.0	7,214.7	16.4	16.4	-110.31	570.4	171.1	337.0	304.7	32.23	10.455	
7,300.0	7,273.0	7,291.7	7,264.2	16.4	16.4	-98.54	565.8	172.4	339.4	307.2	32.21	10.538	
7,350.0	7,322.1	7,341.5	7,313.1	16.3	16.3	-95.10	556.9	173.6	341.9	309.8	32.11	10.649	
7,400.0	7,370.0	7,391.4	7,361.2	16.2	16.3	-93.44	543.7	174.9	344.3	312.4	31.92	10.787	
7,450.0	7,416.6	7,441.3	7,408.0	16.1	16.1	-92.45	526.4	176.0	346.6	315.0	31.66	10.949	
7,500.0	7,461.4	7,491.3	7,453.2	15.9	16.0	-91.79	505.1	177.2	348.9	317.6	31.34	11.133	
7,550.0	7,504.2	7,541.4	7,496.4	15.8	15.8	-91.32	479.8	178.3	351.1	320.1	30.97	11.336	
7,600.0	7,544.5	7,591.6	7,537.4	15.6	15.6	-90.96	450.8	179.3	353.1	322.5	30.56	11.554	
7,650.0	7,582.1	7,641.8	7,575.6	15.3	15.4	-90.68	418.3	180.3	355.0	324.8	30.13	11.781	
7,700.0	7,616.7	7,692.2	7,611.0	15.1	15.2	-90.47	382.5	181.2	356.7	327.0	29.70	12.012	
7,750.0	7,647.9	7,742.6	7,643.1	14.9	15.0	-90.30	343.7	182.0	358.3	329.0	29.28	12.237	
7,800.0	7,675.7	7,793.1	7,671.7	14.8	14.8	-90.17	302.2	182.7	359.7	330.8	28.89	12.449	
7,850.0	7,699.8	7,843.6	7,696.6	14.6	14.6	-90.07	258.2	183.4	360.9	332.4	28.56	12.637	
7,900.0	7,719.9	7,894.2	7,717.6	14.5	14.5	-90.01	212.1	183.9	362.0	333.7	28.30	12.792	
7,950.0	7,736.0	7,944.9	7,734.4	14.4	14.4	-89.97	164.4	184.3	362.8	334.7	28.11	12.903	
8,000.0	7,747.9	7,995.6	7,746.9	14.4	14.4	-89.95	115.2	184.6	363.4	335.4	28.03	12.964	
8,050.0	7,755.6	8,046.3	7,755.1	14.4	14.4	-89.96	65.2	184.8	363.8	335.7	28.05	12.968	
8,100.0	7,758.9	8,097.1	7,758.8	14.4	14.4	-89.99	14.5	184.9	363.9	335.8	28.18	12.914	
8,112.8	7,759.0	8,110.2	7,759.0	14.5	14.5	-90.00	1.5	184.9	364.0	335.7	28.23	12.891	
8,200.0	7,759.0	8,197.4	7,759.0	14.7	14.7	-90.00	-85.7	184.9	364.0	335.2	28.77	12.652	
8,300.0	7,759.0	8,297.4	7,759.0	15.2	15.2	-90.00	-185.7	184.9	364.0	334.2	29.75	12.232	
8,400.0	7,759.0	8,397.4	7,759.0	15.9	15.9	-90.00	-285.7	184.9	364.0	332.9	31.11	11.700	
8,500.0	7,759.0	8,497.4	7,759.0	16.7	16.7	-90.00	-385.7	184.9	364.0	331.2	32.78	11.102	
8,600.0	7,759.0	8,597.4	7,759.0	17.7	17.6	-90.00	-485.7	184.9	364.0	329.2	34.73	10.479	
8,700.0	7,759.0	8,697.4	7,759.0	18.8	18.7	-90.00	-585.7	184.9	364.0	327.0	36.91	9.860	
8,800.0	7,759.0	8,797.4	7,759.0	19.9	19.9	-90.00	-685.7	184.9	364.0	324.7	39.29	9.264	
8,900.0	7,759.0	8,897.4	7,759.0	21.2	21.1	-90.00	-785.7	184.9	364.0	322.1	41.82	8.703	
9,000.0	7,759.0	8,997.4	7,759.0	22.5	22.4	-90.00	-885.7	184.9	364.0	319.5	44.48	8.182	
9,100.0	7,759.0	9,097.4	7,759.0	23.9	23.8	-90.00	-985.7	184.9	364.0	316.7	47.26	7.701	

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 2B-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	WELL @ 5019.0ft (Original Well Elev)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa)	<b>MD Reference:</b>	WELL @ 5019.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2B-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 #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa) - Woolley-Sosa 2C-7H-E168 - HZ - Plan #1													Offset Site Error: 0.0 ft			
Survey Program: 0-Geolink MWD															Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor				
9,200.0	7,759.0	9,197.4	7,759.0	25.3	25.2	-90.00	-1,085.7	184.9	364.0	313.8	50.13	7.260				
9,300.0	7,759.0	9,297.4	7,759.0	26.8	26.7	-90.00	-1,185.7	184.9	364.0	310.9	53.07	6.858				
9,400.0	7,759.0	9,397.4	7,759.0	28.3	28.2	-90.00	-1,285.7	184.9	364.0	307.9	56.08	6.490				
9,500.0	7,759.0	9,497.4	7,759.0	29.8	29.7	-90.00	-1,385.7	184.9	364.0	304.8	59.15	6.153				
9,600.0	7,759.0	9,597.4	7,759.0	31.3	31.2	-90.00	-1,485.7	184.9	364.0	301.7	62.26	5.846				
9,700.0	7,759.0	9,697.4	7,759.0	32.9	32.8	-90.00	-1,585.7	184.9	364.0	298.5	65.41	5.564				
9,800.0	7,759.0	9,797.4	7,759.0	34.5	34.4	-90.00	-1,685.7	184.9	364.0	295.4	68.60	5.306				
9,900.0	7,759.0	9,897.4	7,759.0	36.1	36.0	-90.00	-1,785.7	184.9	364.0	292.1	71.81	5.068				
10,000.0	7,759.0	9,997.4	7,759.0	37.7	37.6	-90.00	-1,885.7	184.9	364.0	288.9	75.06	4.849				
10,100.0	7,759.0	10,097.4	7,759.0	39.3	39.2	-90.00	-1,985.7	184.9	364.0	285.6	78.32	4.647				
10,200.0	7,759.0	10,197.4	7,759.0	41.0	40.9	-90.00	-2,085.7	184.9	364.0	282.4	81.61	4.460				
10,300.0	7,759.0	10,297.4	7,759.0	42.6	42.5	-90.00	-2,185.7	184.9	364.0	279.0	84.91	4.286				
10,400.0	7,759.0	10,397.4	7,759.0	44.3	44.2	-90.00	-2,285.7	184.9	364.0	275.7	88.23	4.125				
10,500.0	7,759.0	10,497.4	7,759.0	45.9	45.8	-90.00	-2,385.7	184.9	364.0	272.4	91.56	3.975				
10,600.0	7,759.0	10,597.4	7,759.0	47.6	47.5	-90.00	-2,485.7	184.9	364.0	269.1	94.91	3.835				
10,700.0	7,759.0	10,697.4	7,759.0	49.3	49.2	-90.00	-2,585.7	184.9	364.0	265.7	98.26	3.704				
10,800.0	7,759.0	10,797.4	7,759.0	51.0	50.9	-90.00	-2,685.7	184.9	364.0	262.3	101.63	3.581				
10,900.0	7,759.0	10,897.4	7,759.0	52.6	52.5	-90.00	-2,785.7	184.9	364.0	258.9	105.01	3.466				
11,000.0	7,759.0	10,997.4	7,759.0	54.3	54.2	-90.00	-2,885.7	184.9	364.0	255.6	108.39	3.358				
11,100.0	7,759.0	11,097.4	7,759.0	56.0	55.9	-90.00	-2,985.7	184.9	364.0	252.2	111.79	3.256				
11,200.0	7,759.0	11,197.4	7,759.0	57.7	57.6	-90.00	-3,085.7	184.9	364.0	248.8	115.19	3.160				
11,300.0	7,759.0	11,297.4	7,759.0	59.4	59.3	-90.00	-3,185.7	184.9	364.0	245.4	118.59	3.069				
11,400.0	7,759.0	11,397.4	7,759.0	61.1	61.0	-90.00	-3,285.7	184.9	364.0	242.0	122.00	2.983				
11,500.0	7,759.0	11,497.4	7,759.0	62.8	62.7	-90.00	-3,385.7	184.9	364.0	238.5	125.42	2.902				
11,600.0	7,759.0	11,597.4	7,759.0	64.5	64.4	-90.00	-3,485.7	184.9	364.0	235.1	128.84	2.825				
11,700.0	7,759.0	11,697.4	7,759.0	66.3	66.2	-90.00	-3,585.7	184.9	364.0	231.7	132.27	2.752				
11,800.0	7,759.0	11,797.4	7,759.0	68.0	67.9	-90.00	-3,685.7	184.9	364.0	228.3	135.70	2.682				
11,900.0	7,759.0	11,897.4	7,759.0	69.7	69.6	-90.00	-3,785.7	184.9	364.0	224.8	139.13	2.616				
12,000.0	7,759.0	11,997.4	7,759.0	71.4	71.3	-90.00	-3,885.7	184.9	364.0	221.4	142.57	2.553				
12,100.0	7,759.0	12,097.4	7,759.0	73.1	73.0	-90.00	-3,985.7	184.9	364.0	217.9	146.01	2.493				
12,200.0	7,759.0	12,197.4	7,759.0	74.8	74.7	-90.00	-4,085.7	184.9	364.0	214.5	149.46	2.435				
12,300.0	7,759.0	12,297.4	7,759.0	76.6	76.5	-90.00	-4,185.7	184.9	364.0	211.1	152.90	2.380				
12,400.0	7,759.0	12,397.4	7,759.0	78.3	78.2	-90.00	-4,285.7	184.9	364.0	207.6	156.35	2.328				
12,500.0	7,759.0	12,497.4	7,759.0	80.0	79.9	-90.00	-4,385.7	184.9	364.0	204.2	159.81	2.278				
12,600.0	7,759.0	12,597.4	7,759.0	81.7	81.6	-90.00	-4,485.7	184.9	364.0	200.7	163.26	2.229				
12,700.0	7,759.0	12,697.4	7,759.0	83.5	83.4	-90.00	-4,585.7	184.9	364.0	197.2	166.72	2.183				
12,800.0	7,759.0	12,797.4	7,759.0	85.2	85.1	-90.00	-4,685.7	184.9	364.0	193.8	170.18	2.139				
12,900.0	7,759.0	12,897.4	7,759.0	86.9	86.8	-90.00	-4,785.7	184.9	364.0	190.3	173.64	2.096				
13,000.0	7,759.0	12,997.4	7,759.0	88.7	88.6	-90.00	-4,885.7	184.9	364.0	186.9	177.10	2.055				
13,100.0	7,759.0	13,097.4	7,759.0	90.4	90.3	-90.00	-4,985.7	184.9	364.0	183.4	180.57	2.016				
13,200.0	7,759.0	13,197.4	7,759.0	92.1	92.0	-90.00	-5,085.7	184.9	364.0	179.9	184.03	1.978				
13,300.0	7,759.0	13,297.4	7,759.0	93.9	93.8	-90.00	-5,185.7	184.9	364.0	176.5	187.50	1.941				
13,400.0	7,759.0	13,397.4	7,759.0	95.6	95.5	-90.00	-5,285.7	184.9	364.0	173.0	190.97	1.906				
13,500.0	7,759.0	13,497.4	7,759.0	97.3	97.2	-90.00	-5,385.7	184.9	364.0	169.5	194.44	1.872				
13,600.0	7,759.0	13,597.4	7,759.0	99.1	99.0	-90.00	-5,485.7	184.9	364.0	166.0	197.91	1.839				
13,700.0	7,759.0	13,697.4	7,759.0	100.8	100.7	-90.00	-5,585.7	184.9	364.0	162.6	201.39	1.807				
13,800.0	7,759.0	13,797.4	7,759.0	102.5	102.4	-90.00	-5,685.7	184.9	364.0	159.1	204.86	1.777				
13,900.0	7,759.0	13,897.4	7,759.0	104.3	104.2	-90.00	-5,785.7	184.9	364.0	155.6	208.34	1.747				
14,000.0	7,759.0	13,997.4	7,759.0	106.0	105.9	-90.00	-5,885.7	184.9	364.0	152.1	211.81	1.718				
14,100.0	7,759.0	14,097.4	7,759.0	107.7	107.6	-90.00	-5,985.7	184.9	364.0	148.7	215.29	1.691				
14,200.0	7,759.0	14,197.4	7,759.0	109.5	109.4	-90.00	-6,085.7	184.9	364.0	145.2	218.77	1.664				
14,300.0	7,759.0	14,297.4	7,759.0	111.2	111.1	-90.00	-6,185.7	184.9	364.0	141.7	222.25	1.638				

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 2B-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	WELL @ 5019.0ft (Original Well Elev)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa)	<b>MD Reference:</b>	WELL @ 5019.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2B-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 #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa) - Woolley-Sosa 2C-7H-E168 - HZ - Plan #1													Offset Site Error: 0.0 ft
Survey Program: 0-Geolink MWD													Offset Well Error: 0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	
14,400.0	7,759.0	14,397.4	7,759.0	113.0	112.9	-90.00	-6,285.7	184.9	364.0	138.2	225.73	1.612	
14,500.0	7,759.0	14,497.4	7,759.0	114.7	114.6	-90.00	-6,385.7	184.9	364.0	134.7	229.21	1.588	
14,600.0	7,759.0	14,597.4	7,759.0	116.4	116.3	-90.00	-6,485.7	184.9	364.0	131.3	232.69	1.564	
14,700.0	7,759.0	14,697.4	7,759.0	118.2	118.1	-90.00	-6,585.7	184.9	364.0	127.8	236.18	1.541	
14,800.0	7,759.0	14,797.4	7,759.0	119.9	119.8	-90.00	-6,685.7	184.9	364.0	124.3	239.66	1.519	
14,900.0	7,759.0	14,897.4	7,759.0	121.7	121.6	-90.00	-6,785.7	184.9	364.0	120.8	243.14	1.497 Level 3	
15,000.0	7,759.0	14,997.4	7,759.0	123.4	123.3	-90.00	-6,885.7	184.9	364.0	117.3	246.63	1.476 Level 3	
15,100.0	7,759.0	15,097.4	7,759.0	125.1	125.0	-90.00	-6,985.7	184.9	364.0	113.8	250.11	1.455 Level 3	
15,200.0	7,759.0	15,197.4	7,759.0	126.9	126.8	-90.00	-7,085.7	184.9	364.0	110.4	253.60	1.435 Level 3	
15,300.0	7,759.0	15,297.4	7,759.0	128.6	128.5	-90.00	-7,185.7	184.9	364.0	106.9	257.09	1.416 Level 3	
15,400.0	7,759.0	15,397.4	7,759.0	130.4	130.3	-90.00	-7,285.7	184.9	364.0	103.4	260.57	1.397 Level 3	
15,500.0	7,759.0	15,497.4	7,759.0	132.1	132.0	-90.00	-7,385.7	184.9	364.0	99.9	264.06	1.378 Level 3	
15,600.0	7,759.0	15,597.4	7,759.0	133.9	133.8	-90.00	-7,485.7	184.9	364.0	96.4	267.55	1.360 Level 3	
15,700.0	7,759.0	15,697.4	7,759.0	135.6	135.5	-90.00	-7,585.7	184.9	364.0	92.9	271.04	1.343 Level 3	
15,800.0	7,759.0	15,797.4	7,759.0	137.4	137.2	-90.00	-7,685.7	184.9	364.0	89.4	274.53	1.326 Level 3	
15,900.0	7,759.0	15,897.4	7,759.0	139.1	139.0	-90.00	-7,785.7	184.9	364.0	85.9	278.02	1.309 Level 3	
15,969.8	7,759.0	15,967.2	7,759.0	140.3	140.2	-90.00	-7,855.6	184.9	364.0	83.5	280.46	1.298 Level 3, SF	



# Cathedral Energy Services

## Anticollision Report



<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2B-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	WELL @ 5019.0ft (Original Well Elev)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa)	<b>MD Reference:</b>	WELL @ 5019.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2B-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 #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa) - Woolley-Sosa 2D-7H-E168 - HZ - Plan #1													Offset Site Error:	0.0 ft
Survey Program:		0-Geolink MWD										Offset Well Error:	0.0 ft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	90.29	-0.1	10.0	10.0					
100.0	100.0	100.0	100.0	0.1	0.1	90.29	-0.1	10.0	10.0	9.7	0.26	38.197		
200.0	200.0	200.0	200.0	0.3	0.3	90.29	-0.1	10.0	10.0	9.4	0.61	16.370		
300.0	300.0	300.0	300.0	0.5	0.5	90.29	-0.1	10.0	10.0	9.0	0.96	10.417 CC		
400.0	400.0	400.0	400.0	0.7	0.7	110.91	-0.1	10.0	10.3	9.0	1.31	7.848 ES		
500.0	500.0	500.0	500.0	0.8	0.8	123.20	-0.1	10.0	11.5	9.8	1.66	6.908 SF		
600.0	599.9	599.8	599.8	1.0	1.0	134.49	0.6	10.5	14.5	12.4	2.01	7.178		
700.0	699.7	699.7	699.6	1.2	1.2	139.76	2.7	12.2	19.3	16.9	2.37	8.124		
800.0	799.4	799.4	799.3	1.4	1.4	141.36	6.1	14.9	25.6	22.9	2.74	9.350		
817.0	816.3	816.4	816.2	1.5	1.4	141.41	6.8	15.5	26.9	24.1	2.81	9.573		
900.0	899.0	899.1	898.8	1.6	1.6	140.53	10.8	18.7	33.0	29.9	3.13	10.553		
1,000.0	998.6	998.8	998.1	1.9	1.8	137.59	16.9	23.5	40.6	37.0	3.53	11.478		
1,100.0	1,098.1	1,098.3	1,097.2	2.1	2.0	133.55	24.3	29.5	48.5	44.5	3.96	12.233		
1,200.0	1,197.7	1,197.7	1,196.0	2.3	2.2	129.06	33.0	36.4	57.0	52.6	4.41	12.916		
1,300.0	1,297.3	1,297.2	1,294.9	2.5	2.5	125.46	42.0	43.6	65.9	61.0	4.87	13.533		
1,400.0	1,396.9	1,396.8	1,393.7	2.8	2.7	122.71	51.0	50.8	75.0	69.6	5.33	14.077		
1,500.0	1,496.5	1,496.3	1,492.6	3.0	2.9	120.56	59.9	57.9	84.2	78.4	5.78	14.555		
1,600.0	1,596.1	1,595.8	1,591.5	3.2	3.2	118.84	68.9	65.1	93.5	87.2	6.24	14.976		
1,700.0	1,695.7	1,695.4	1,690.3	3.5	3.4	117.43	77.9	72.3	102.9	96.2	6.70	15.348		
1,800.0	1,795.3	1,794.9	1,789.2	3.7	3.7	116.26	86.9	79.5	112.3	105.1	7.16	15.679		
1,900.0	1,894.9	1,894.4	1,888.1	3.9	4.0	115.27	95.8	86.6	121.8	114.1	7.62	15.974		
2,000.0	1,994.5	1,993.9	1,986.9	4.2	4.2	114.42	104.8	93.8	131.3	123.2	8.08	16.239		
2,100.0	2,094.1	2,093.5	2,085.8	4.4	4.5	113.68	113.8	101.0	140.8	132.2	8.54	16.478		
2,200.0	2,193.7	2,193.0	2,184.6	4.6	4.7	113.04	122.7	108.1	150.3	141.3	9.00	16.695		
2,300.0	2,293.3	2,292.5	2,283.5	4.9	5.0	112.48	131.7	115.3	159.9	150.4	9.47	16.892		
2,400.0	2,392.9	2,392.1	2,382.4	5.1	5.3	111.98	140.7	122.5	169.5	159.5	9.93	17.072		
2,500.0	2,492.5	2,491.6	2,481.2	5.3	5.5	111.53	149.7	129.7	179.1	168.7	10.39	17.236		
2,600.0	2,592.0	2,591.1	2,580.1	5.6	5.8	111.13	158.6	136.8	188.6	177.8	10.85	17.388		
2,700.0	2,691.6	2,690.7	2,679.0	5.8	6.0	110.77	167.6	144.0	198.2	186.9	11.31	17.527		
2,800.0	2,791.2	2,790.2	2,777.8	6.0	6.3	110.44	176.6	151.2	207.9	196.1	11.77	17.657		
2,900.0	2,890.8	2,889.7	2,876.7	6.3	6.6	110.14	185.6	158.3	217.5	205.2	12.23	17.777		
3,000.0	2,990.4	2,989.3	2,975.6	6.5	6.8	109.86	194.5	165.5	227.1	214.4	12.70	17.888		
3,100.0	3,090.0	3,088.8	3,074.4	6.7	7.1	109.61	203.5	172.7	236.7	223.6	13.16	17.992		
3,200.0	3,189.6	3,188.3	3,173.3	7.0	7.4	109.38	212.5	179.9	246.4	232.7	13.62	18.090		
3,300.0	3,289.2	3,287.8	3,272.2	7.2	7.6	109.16	221.5	187.0	256.0	241.9	14.08	18.181		
3,400.0	3,388.8	3,387.4	3,371.0	7.4	7.9	108.96	230.4	194.2	265.6	251.1	14.54	18.266		
3,500.0	3,488.4	3,486.9	3,469.9	7.7	8.1	108.78	239.4	201.4	275.3	260.3	15.00	18.346		
3,600.0	3,588.0	3,586.4	3,568.8	7.9	8.4	108.60	248.4	208.5	284.9	269.4	15.47	18.422		
3,700.0	3,687.6	3,686.0	3,667.6	8.1	8.7	108.44	257.3	215.7	294.6	278.6	15.93	18.494		
3,800.0	3,787.2	3,785.5	3,766.5	8.4	8.9	108.29	266.3	222.9	304.2	287.8	16.39	18.561		
3,900.0	3,886.8	3,885.0	3,865.4	8.6	9.2	108.15	275.3	230.1	313.9	297.0	16.85	18.625		
4,000.0	3,986.3	3,984.6	3,964.2	8.8	9.5	108.02	284.3	237.2	323.5	306.2	17.31	18.685		
4,100.0	4,085.9	4,084.1	4,063.1	9.1	9.7	107.89	293.2	244.4	333.2	315.4	17.78	18.743		
4,200.0	4,185.5	4,183.6	4,162.0	9.3	10.0	107.77	302.2	251.6	342.8	324.6	18.24	18.798		
4,300.0	4,285.1	4,283.1	4,260.8	9.6	10.3	107.66	311.2	258.7	352.5	333.8	18.70	18.850		
4,400.0	4,384.7	4,382.7	4,359.7	9.8	10.5	107.55	320.2	265.9	362.1	343.0	19.16	18.899		
4,500.0	4,484.3	4,482.2	4,458.5	10.0	10.8	107.45	329.1	273.1	371.8	352.2	19.62	18.946		
4,600.0	4,583.9	4,581.7	4,557.4	10.3	11.0	107.36	338.1	280.3	381.4	361.4	20.09	18.991		
4,700.0	4,683.5	4,681.3	4,656.3	10.5	11.3	107.27	347.1	287.4	391.1	370.6	20.55	19.035		
4,800.0	4,783.1	4,780.8	4,755.1	10.7	11.6	107.18	356.1	294.6	400.8	379.8	21.01	19.076		
4,900.0	4,882.7	4,880.3	4,854.0	11.0	11.8	107.10	365.0	301.8	410.4	389.0	21.47	19.115		
5,000.0	4,982.3	4,979.9	4,952.9	11.2	12.1	107.02	374.0	309.0	420.1	398.2	21.93	19.153		

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 2B-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	WELL @ 5019.0ft (Original Well Elev)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa)	<b>MD Reference:</b>	WELL @ 5019.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2B-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 #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa) - Woolley-Sosa 2D-7H-E168 - HZ - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-Geolink MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
5,100.0	5,081.9	5,079.4	5,051.7	11.4	12.4	106.94	383.0	316.1	429.8	407.4	22.40	19.190		
5,200.0	5,181.5	5,178.9	5,150.6	11.7	12.6	106.87	391.9	323.3	439.4	416.6	22.86	19.224		
5,300.0	5,281.1	5,278.5	5,249.5	11.9	12.9	106.80	400.9	330.5	449.1	425.8	23.32	19.258		
5,400.0	5,380.7	5,378.0	5,348.3	12.1	13.2	106.74	409.9	337.6	458.8	435.0	23.78	19.290		
5,500.0	5,480.2	5,477.5	5,447.2	12.4	13.4	106.67	418.9	344.8	468.4	444.2	24.24	19.321		
5,600.0	5,579.8	5,577.0	5,546.1	12.6	13.7	106.61	427.8	352.0	478.1	453.4	24.71	19.351		
5,700.0	5,679.4	5,676.6	5,644.9	12.8	14.0	106.55	436.8	359.2	487.8	462.6	25.17	19.380		
5,800.0	5,779.0	5,776.1	5,743.8	13.1	14.2	106.50	445.8	366.3	497.4	471.8	25.63	19.408		



# Cathedral Energy Services

## Anticollision Report



<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2B-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	WELL @ 5019.0ft (Original Well Elev)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa)	<b>MD Reference:</b>	WELL @ 5019.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2B-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 #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa) - Woolley-Sosa 2E-7H-E168 - HZ - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-Geolink MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	103.78	-6.1	25.0	25.7					
100.0	100.0	100.0	100.0	0.1	0.1	103.78	-6.1	25.0	25.7	25.4	0.26	98.205		
200.0	200.0	200.0	200.0	0.3	0.3	103.78	-6.1	25.0	25.7	25.1	0.61	42.088		
300.0	300.0	300.0	300.0	0.5	0.5	103.78	-6.1	25.0	25.7	24.7	0.96	26.783 CC, ES		
400.0	400.0	400.0	400.0	0.7	0.7	121.39	-6.1	25.0	26.2	24.8	1.31	19.973		
500.0	500.0	500.0	500.0	0.8	0.8	126.02	-6.1	25.0	27.6	25.9	1.66	16.620		
600.0	599.9	599.9	599.9	1.0	1.0	132.66	-6.1	25.0	30.4	28.4	2.02	15.075		
700.0	699.7	699.5	699.5	1.2	1.2	138.69	-5.6	25.7	35.1	32.7	2.37	14.804 SF		
800.0	799.4	799.0	799.0	1.4	1.4	142.38	-4.0	27.7	42.0	39.3	2.73	15.371		
817.0	816.3	815.9	815.8	1.5	1.4	142.81	-3.7	28.2	43.4	40.6	2.79	15.521		
900.0	899.0	898.4	898.3	1.6	1.5	143.88	-1.5	31.2	50.4	47.3	3.10	16.246		
1,000.0	998.6	997.8	997.5	1.9	1.7	143.34	2.2	36.0	59.2	55.7	3.48	17.011		
1,100.0	1,098.1	1,097.0	1,096.4	2.1	1.9	141.56	6.8	42.2	68.6	64.7	3.88	17.680		
1,200.0	1,197.7	1,196.0	1,195.0	2.3	2.1	139.02	12.5	49.7	78.6	74.3	4.30	18.290		
1,300.0	1,297.3	1,294.8	1,293.1	2.5	2.4	136.03	19.2	58.6	89.3	84.6	4.73	18.880		
1,400.0	1,396.9	1,393.3	1,390.8	2.8	2.6	132.81	26.8	68.8	101.0	95.8	5.18	19.482		
1,500.0	1,496.5	1,491.5	1,487.9	3.0	2.9	129.52	35.5	80.3	113.7	108.1	5.65	20.130		
1,600.0	1,596.1	1,590.4	1,585.6	3.2	3.2	126.58	44.6	92.5	127.2	121.1	6.12	20.779		
1,700.0	1,695.7	1,689.3	1,683.4	3.5	3.5	124.21	53.8	104.7	140.9	134.3	6.59	21.380		
1,800.0	1,795.3	1,788.2	1,781.1	3.7	3.8	122.26	63.0	116.9	154.8	147.8	7.06	21.931		
1,900.0	1,894.9	1,887.1	1,878.8	3.9	4.1	120.63	72.1	129.0	168.9	161.4	7.53	22.436		
2,000.0	1,994.5	1,986.0	1,976.5	4.2	4.4	119.25	81.3	141.2	183.1	175.1	8.00	22.899		
2,100.0	2,094.1	2,084.9	2,074.2	4.4	4.7	118.07	90.5	153.4	197.4	188.9	8.46	23.323		
2,200.0	2,193.7	2,183.8	2,171.9	4.6	5.0	117.05	99.6	165.6	211.7	202.8	8.93	23.713		
2,300.0	2,293.3	2,282.7	2,269.7	4.9	5.3	116.16	108.8	177.8	226.1	216.7	9.39	24.072		
2,400.0	2,392.9	2,381.6	2,367.4	5.1	5.6	115.38	118.0	190.0	240.6	230.7	9.86	24.403		
2,500.0	2,492.5	2,480.5	2,465.1	5.3	5.9	114.68	127.1	202.2	255.1	244.7	10.32	24.709		
2,600.0	2,592.0	2,579.4	2,562.8	5.6	6.2	114.06	136.3	214.4	269.6	258.8	10.79	24.992		
2,700.0	2,691.6	2,678.3	2,660.5	5.8	6.5	113.50	145.5	226.5	284.1	272.9	11.25	25.256		
2,800.0	2,791.2	2,777.2	2,758.2	6.0	6.8	113.00	154.6	238.7	298.7	287.0	11.71	25.501		
2,900.0	2,890.8	2,876.1	2,856.0	6.3	7.1	112.54	163.8	250.9	313.3	301.1	12.18	25.729		
3,000.0	2,990.4	2,975.0	2,953.7	6.5	7.4	112.13	173.0	263.1	327.9	315.3	12.64	25.943		
3,100.0	3,090.0	3,073.9	3,051.4	6.7	7.8	111.75	182.1	275.3	342.6	329.5	13.10	26.143		
3,200.0	3,189.6	3,172.8	3,149.1	7.0	8.1	111.40	191.3	287.5	357.2	343.6	13.57	26.331		
3,300.0	3,289.2	3,271.7	3,246.8	7.2	8.4	111.08	200.4	299.7	371.8	357.8	14.03	26.508		
3,400.0	3,388.8	3,370.6	3,344.5	7.4	8.7	110.78	209.6	311.9	386.5	372.0	14.49	26.674		
3,500.0	3,488.4	3,469.5	3,442.3	7.7	9.0	110.51	218.8	324.1	401.2	386.2	14.95	26.831		
3,600.0	3,588.0	3,568.4	3,540.0	7.9	9.3	110.25	227.9	336.2	415.9	400.5	15.41	26.979		
3,700.0	3,687.6	3,667.3	3,637.7	8.1	9.6	110.01	237.1	348.4	430.6	414.7	15.88	27.120		
3,800.0	3,787.2	3,766.2	3,735.4	8.4	10.0	109.79	246.3	360.6	445.3	428.9	16.34	27.252		
3,900.0	3,886.8	3,865.1	3,833.1	8.6	10.3	109.58	255.4	372.8	460.0	443.2	16.80	27.379		
4,000.0	3,986.3	3,964.0	3,930.9	8.8	10.6	109.39	264.6	385.0	474.7	457.4	17.26	27.498		
4,100.0	4,085.9	4,062.9	4,028.6	9.1	10.9	109.20	273.8	397.2	489.4	471.7	17.72	27.612		

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 2B-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	WELL @ 5019.0ft (Original Well Elev)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa)	<b>MD Reference:</b>	WELL @ 5019.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2B-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 #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design S7-T1N-R68W (Woolley-Sosa) - Woolley-Sosa 2F-7H-E168 - HZ - Plan #1													Offset Site Error: 0.0 ft		
Survey Program: 0-Geolink MWD														Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor			
0.0	0.0	0.0	0.0	0.0	0.0	90.29	-0.2	30.0	30.0						
100.0	100.0	100.0	100.0	0.1	0.1	90.29	-0.2	30.0	30.0	29.7	0.26	114.591			
200.0	200.0	200.0	200.0	0.3	0.3	90.29	-0.2	30.0	30.0	29.4	0.61	49.111			
300.0	300.0	300.0	300.0	0.5	0.5	90.29	-0.2	30.0	30.0	29.0	0.96	31.252 CC			
400.0	400.0	400.0	400.0	0.7	0.7	107.82	-0.2	30.0	30.3	28.9	1.31	23.103 ES			
500.0	500.0	500.0	500.0	0.8	0.8	112.40	-0.2	30.0	31.2	29.5	1.66	18.744			
600.0	599.9	599.9	599.9	1.0	1.0	119.38	-0.2	30.0	33.1	31.0	2.02	16.377			
700.0	699.7	699.7	699.7	1.2	1.2	127.74	-0.2	30.0	36.5	34.1	2.38	15.324 SF			
800.0	799.4	799.0	799.0	1.4	1.4	135.22	0.3	30.8	42.2	39.4	2.74	15.401			
817.0	816.3	815.8	815.8	1.5	1.4	136.25	0.4	31.0	43.4	40.6	2.80	15.511			
900.0	899.0	898.2	898.2	1.6	1.5	139.93	1.5	33.0	50.1	47.0	3.10	16.170			
1,000.0	998.6	997.4	997.2	1.9	1.7	141.84	3.5	36.8	59.1	55.6	3.47	17.035			
1,100.0	1,098.1	1,096.4	1,096.1	2.1	1.9	141.94	6.3	42.1	68.8	65.0	3.85	17.886			
1,200.0	1,197.7	1,195.3	1,194.7	2.3	2.1	140.90	9.9	48.9	79.3	75.1	4.24	18.704			
1,300.0	1,297.3	1,293.9	1,292.9	2.5	2.3	139.14	14.4	57.1	90.6	86.0	4.65	19.497			
1,400.0	1,396.9	1,392.3	1,390.6	2.8	2.5	136.95	19.6	66.8	102.8	97.8	5.07	20.283			
1,500.0	1,496.5	1,490.3	1,487.8	3.0	2.8	134.52	25.5	78.0	116.1	110.6	5.51	21.079			
1,600.0	1,596.1	1,587.9	1,584.4	3.2	3.0	131.99	32.2	90.5	130.5	124.6	5.96	21.902			
1,700.0	1,695.7	1,685.1	1,680.2	3.5	3.3	129.45	39.7	104.5	146.2	139.8	6.42	22.763			
1,800.0	1,795.3	1,781.7	1,775.3	3.7	3.6	126.96	47.9	119.8	163.2	156.3	6.89	23.671			
1,900.0	1,894.9	1,878.0	1,869.7	3.9	4.0	124.57	56.8	136.4	181.5	174.1	7.37	24.637			
2,000.0	1,994.5	1,975.9	1,965.6	4.2	4.3	122.43	66.1	153.9	200.6	192.8	7.84	25.573			
2,100.0	2,094.1	2,073.8	2,061.5	4.4	4.7	120.66	75.5	171.4	219.9	211.6	8.32	26.440			
2,200.0	2,193.7	2,171.7	2,157.3	4.6	5.0	119.18	84.9	189.0	239.4	230.6	8.79	27.239			
2,300.0	2,293.3	2,269.6	2,253.2	4.9	5.4	117.93	94.2	206.5	259.1	249.8	9.26	27.978			
2,400.0	2,392.9	2,367.5	2,349.1	5.1	5.8	116.85	103.6	224.0	278.8	269.1	9.73	28.660			
2,500.0	2,492.5	2,465.4	2,444.9	5.3	6.1	115.91	113.0	241.5	298.6	288.4	10.19	29.292			
2,600.0	2,592.0	2,563.4	2,540.8	5.6	6.5	115.09	122.3	259.0	318.5	307.8	10.66	29.878			
2,700.0	2,691.6	2,661.3	2,636.7	5.8	6.9	114.36	131.7	276.5	338.4	327.3	11.12	30.422			
2,800.0	2,791.2	2,759.2	2,732.6	6.0	7.3	113.72	141.1	294.1	358.4	346.8	11.59	30.929			
2,900.0	2,890.8	2,857.1	2,828.4	6.3	7.6	113.14	150.5	311.6	378.4	366.4	12.05	31.401			
3,000.0	2,990.4	2,955.0	2,924.3	6.5	8.0	112.63	159.8	329.1	398.5	386.0	12.51	31.843			
3,100.0	3,090.0	3,052.9	3,020.2	6.7	8.4	112.16	169.2	346.6	418.6	405.6	12.98	32.257			
3,200.0	3,189.6	3,150.8	3,116.0	7.0	8.8	111.73	178.6	364.1	438.7	425.2	13.44	32.645			
3,300.0	3,289.2	3,248.7	3,211.9	7.2	9.2	111.34	187.9	381.6	458.8	444.9	13.90	33.009			
3,400.0	3,388.8	3,346.6	3,307.8	7.4	9.5	110.99	197.3	399.1	479.0	464.6	14.36	33.352			
3,500.0	3,488.4	3,444.5	3,403.7	7.7	9.9	110.66	206.7	416.7	499.1	484.3	14.82	33.676			

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 2B-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	WELL @ 5019.0ft (Original Well Elev)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa)	<b>MD Reference:</b>	WELL @ 5019.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2B-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 #1	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design		S7-T1N-R68W (Woolley-Sosa) - Woolley-Sosa 2G-7H-E168 - HZ - Plan #1											Offset Site Error: 0.0 ft	
Survey Program: 0-Geolink MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	100.02	-6.2	35.0	35.5					
100.0	100.0	100.0	100.0	0.1	0.1	100.02	-6.2	35.0	35.5	35.2	0.26	135.640		
200.0	200.0	200.0	200.0	0.3	0.3	100.02	-6.2	35.0	35.5	34.9	0.61	58.132		
300.0	300.0	300.0	300.0	0.5	0.5	100.02	-6.2	35.0	35.5	34.6	0.96	36.993 CC, ES		
400.0	400.0	400.0	400.0	0.7	0.7	117.21	-6.2	35.0	35.9	34.6	1.31	27.415		
500.0	500.0	500.0	500.0	0.8	0.8	120.79	-6.2	35.0	37.2	35.5	1.66	22.371		
600.0	599.9	599.9	599.9	1.0	1.0	126.20	-6.2	35.0	39.6	37.6	2.02	19.623		
700.0	699.7	699.7	699.7	1.2	1.2	132.67	-6.2	35.0	43.5	41.1	2.38	18.301		
800.0	799.4	799.4	799.4	1.4	1.4	139.37	-6.2	35.0	49.1	46.4	2.73	17.975 SF		
817.0	816.3	816.2	816.2	1.5	1.4	140.45	-6.2	35.0	50.3	47.5	2.79	18.004		
900.0	899.0	898.5	898.5	1.6	1.5	144.54	-5.9	35.8	56.7	53.6	3.09	18.346		
1,000.0	998.6	997.6	997.6	1.9	1.7	147.13	-4.9	38.1	65.3	61.9	3.45	18.949		
1,100.0	1,098.1	1,096.6	1,096.5	2.1	1.9	147.91	-3.2	42.1	74.8	71.0	3.81	19.620		
1,200.0	1,197.7	1,195.5	1,195.2	2.3	2.1	147.46	-0.9	47.6	85.0	80.8	4.19	20.304		
1,300.0	1,297.3	1,294.2	1,293.6	2.5	2.3	146.19	2.0	54.6	96.0	91.5	4.58	20.987		
1,400.0	1,396.9	1,392.6	1,391.5	2.8	2.5	144.39	5.6	63.3	107.9	102.9	4.98	21.672		
1,500.0	1,496.5	1,490.7	1,489.0	3.0	2.7	142.25	9.8	73.4	120.7	115.3	5.39	22.370		
1,600.0	1,596.1	1,588.4	1,586.0	3.2	2.9	139.92	14.6	85.0	134.6	128.7	5.83	23.093		
1,700.0	1,695.7	1,685.8	1,682.2	3.5	3.2	137.50	20.0	98.1	149.6	143.3	6.27	23.851		
1,800.0	1,795.3	1,782.6	1,777.8	3.7	3.5	135.08	26.0	112.6	165.8	159.1	6.73	24.652		
1,900.0	1,894.9	1,878.9	1,872.5	3.9	3.8	132.70	32.6	128.5	183.4	176.2	7.19	25.504		
2,000.0	1,994.5	1,974.6	1,966.4	4.2	4.1	130.40	39.8	145.8	202.4	194.7	7.66	26.408		
2,100.0	2,094.1	2,069.7	2,059.4	4.4	4.5	128.21	47.5	164.4	222.8	214.7	8.14	27.367		
2,200.0	2,193.7	2,164.2	2,151.3	4.6	4.8	126.13	55.8	184.3	244.7	236.0	8.62	28.379		
2,300.0	2,293.3	2,257.9	2,242.2	4.9	5.2	124.18	64.5	205.4	268.0	258.9	9.10	29.444		
2,400.0	2,392.9	2,353.2	2,334.3	5.1	5.7	122.34	73.9	227.9	292.6	283.0	9.58	30.527		
2,500.0	2,492.5	2,449.7	2,427.6	5.3	6.1	120.76	83.4	250.9	317.5	307.4	10.06	31.544		
2,600.0	2,592.0	2,546.2	2,520.8	5.6	6.5	119.40	92.9	273.8	342.5	332.0	10.54	32.498		
2,700.0	2,691.6	2,642.7	2,614.1	5.8	7.0	118.23	102.4	296.8	367.8	356.8	11.01	33.394		
2,800.0	2,791.2	2,739.2	2,707.3	6.0	7.4	117.21	112.0	319.7	393.2	381.7	11.48	34.234		
2,900.0	2,890.8	2,835.7	2,800.6	6.3	7.9	116.32	121.5	342.6	418.6	406.7	11.95	35.022		
3,000.0	2,990.4	2,932.2	2,893.8	6.5	8.3	115.52	131.0	365.6	444.2	431.8	12.42	35.763		
3,100.0	3,090.0	3,028.7	2,987.1	6.7	8.8	114.82	140.5	388.5	469.8	457.0	12.89	36.461		
3,200.0	3,189.6	3,125.2	3,080.3	7.0	9.2	114.18	150.0	411.5	495.5	482.2	13.35	37.117		

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

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Woolley-Sosa 2B-7H-E168
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	WELL @ 5019.0ft (Original Well Elev)
<b>Reference Site:</b>	S7-T1N-R68W (Woolley-Sosa)	<b>MD Reference:</b>	WELL @ 5019.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Woolley-Sosa 2B-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 #1	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to WELL @ 5019.0ft (Original Well Elev)  
Offset Depths are relative to Offset Datum  
Central Meridian is -105.500000 °

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

