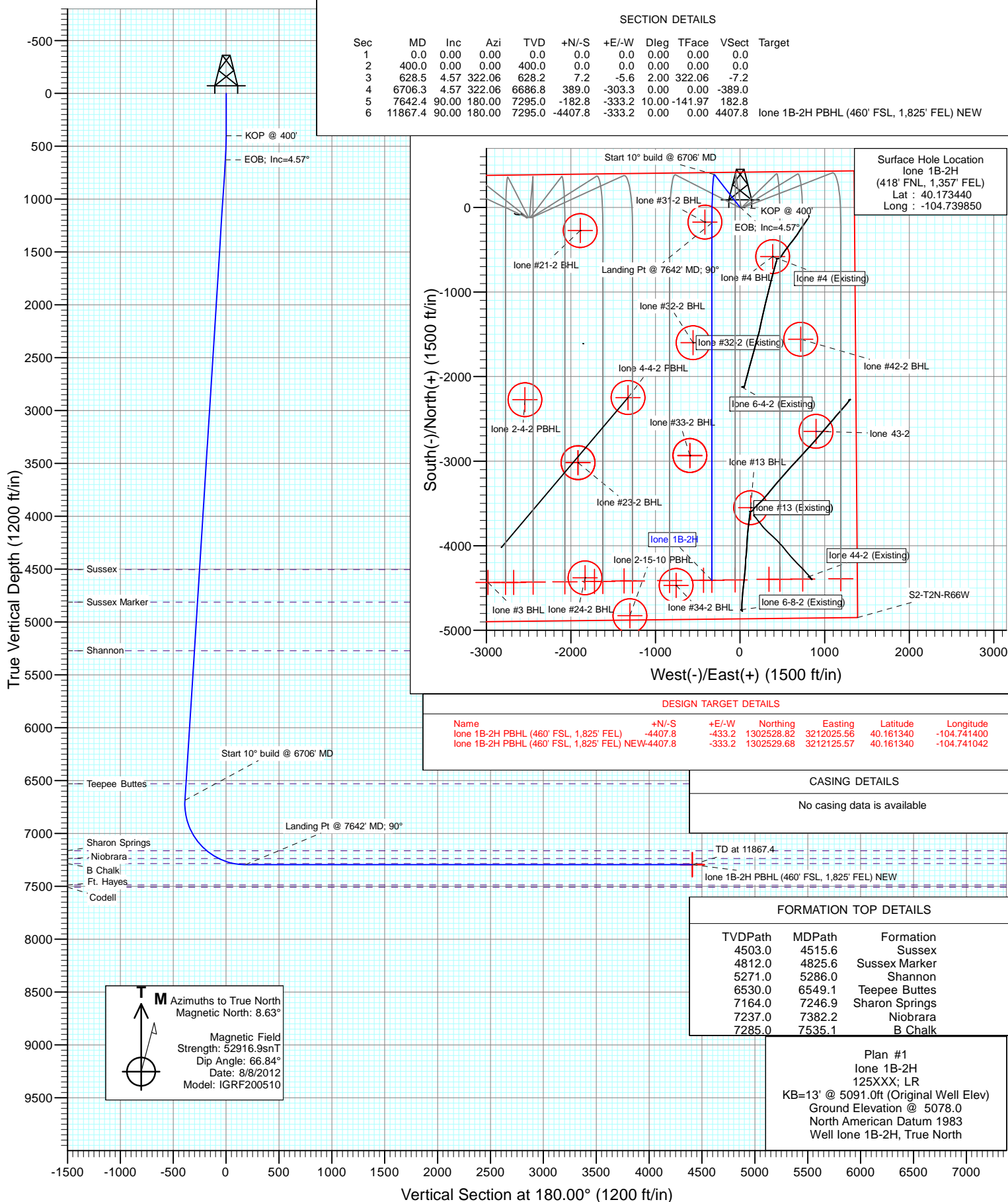




Project: DJ Wattenberg  
Site: NWNE S2-T2N-R66W (lone)  
Well: lone 1B-2H  
Wellbore: HZ  
Design: Plan #1



# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well lone 1B-2H
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Project:</b>	DJ Wattenberg	<b>MD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Site:</b>	NWNE S2-T2N-R66W (lone)	<b>North Reference:</b>	True
<b>Well:</b>	lone 1B-2H	<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		NWNE S2-T2N-R66W (lone)			
Site Position:		Northing:	1,306,798.50 ft	Latitude:	40.173110
From:	Lat/Long	Easting:	3,209,901.52 ft	Longitude:	-104.748870
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	0.49 °

Well	lone 1B-2H					
Well Position	+N/-S	0.0 ft	Northing:	1,306,940.17 ft	Latitude:	40.173440
	+E/-W	0.0 ft	Easting:	3,212,420.97 ft	Longitude:	-104.739850
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	5,078.0 ft

<b>Wellbore</b>	HZ				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF200510	8/8/2012	8.63	66.84	52,917

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

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.00	0.00	
628.5	4.57	322.06	628.2	7.2	-5.6	2.00	2.00	0.00	322.06	
6,706.3	4.57	322.06	6,686.8	389.0	-303.3	0.00	0.00	0.00	0.00	
7,642.4	90.00	180.00	7,295.0	-182.8	-333.2	10.00	9.13	-15.18	-141.97	
11,867.4	90.00	180.00	7,295.0	-4,407.8	-333.2	0.00	0.00	0.00	0.00	lone 1B-2H PBHL (46

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well lone 1B-2H
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Project:</b>	DJ Wattenberg	<b>MD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Site:</b>	NWNE S2-T2N-R66W (lone)	<b>North Reference:</b>	True
<b>Well:</b>	lone 1B-2H	<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	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	KOP @ 400'
500.0	2.00	322.06	500.0	1.4	-1.1	-1.4	2.00	2.00	
600.0	4.00	322.06	599.8	5.5	-4.3	-5.5	2.00	2.00	
628.5	4.57	322.06	628.2	7.2	-5.6	-7.2	2.00	2.00	EOB; Inc=4.57°
700.0	4.57	322.06	699.5	11.7	-9.1	-11.7	0.00	0.00	
800.0	4.57	322.06	799.2	18.0	-14.0	-18.0	0.00	0.00	
900.0	4.57	322.06	898.9	24.2	-18.9	-24.2	0.00	0.00	
1,000.0	4.57	322.06	998.6	30.5	-23.8	-30.5	0.00	0.00	
1,100.0	4.57	322.06	1,098.3	36.8	-28.7	-36.8	0.00	0.00	
1,200.0	4.57	322.06	1,197.9	43.1	-33.6	-43.1	0.00	0.00	
1,300.0	4.57	322.06	1,297.6	49.4	-38.5	-49.4	0.00	0.00	
1,400.0	4.57	322.06	1,397.3	55.7	-43.4	-55.7	0.00	0.00	
1,500.0	4.57	322.06	1,497.0	61.9	-48.3	-61.9	0.00	0.00	
1,600.0	4.57	322.06	1,596.7	68.2	-53.2	-68.2	0.00	0.00	
1,700.0	4.57	322.06	1,696.4	74.5	-58.1	-74.5	0.00	0.00	
1,800.0	4.57	322.06	1,796.0	80.8	-63.0	-80.8	0.00	0.00	
1,900.0	4.57	322.06	1,895.7	87.1	-67.9	-87.1	0.00	0.00	
2,000.0	4.57	322.06	1,995.4	93.3	-72.8	-93.3	0.00	0.00	
2,100.0	4.57	322.06	2,095.1	99.6	-77.7	-99.6	0.00	0.00	
2,200.0	4.57	322.06	2,194.8	105.9	-82.6	-105.9	0.00	0.00	
2,300.0	4.57	322.06	2,294.4	112.2	-87.5	-112.2	0.00	0.00	
2,400.0	4.57	322.06	2,394.1	118.5	-92.4	-118.5	0.00	0.00	
2,500.0	4.57	322.06	2,493.8	124.8	-97.3	-124.8	0.00	0.00	
2,600.0	4.57	322.06	2,593.5	131.0	-102.2	-131.0	0.00	0.00	
2,700.0	4.57	322.06	2,693.2	137.3	-107.1	-137.3	0.00	0.00	
2,800.0	4.57	322.06	2,792.9	143.6	-112.0	-143.6	0.00	0.00	
2,900.0	4.57	322.06	2,892.5	149.9	-116.9	-149.9	0.00	0.00	
3,000.0	4.57	322.06	2,992.2	156.2	-121.8	-156.2	0.00	0.00	
3,100.0	4.57	322.06	3,091.9	162.5	-126.7	-162.5	0.00	0.00	
3,200.0	4.57	322.06	3,191.6	168.7	-131.6	-168.7	0.00	0.00	
3,300.0	4.57	322.06	3,291.3	175.0	-136.5	-175.0	0.00	0.00	
3,400.0	4.57	322.06	3,390.9	181.3	-141.4	-181.3	0.00	0.00	
3,500.0	4.57	322.06	3,490.6	187.6	-146.3	-187.6	0.00	0.00	
3,600.0	4.57	322.06	3,590.3	193.9	-151.2	-193.9	0.00	0.00	
3,700.0	4.57	322.06	3,690.0	200.2	-156.1	-200.2	0.00	0.00	
3,800.0	4.57	322.06	3,789.7	206.4	-161.0	-206.4	0.00	0.00	
3,900.0	4.57	322.06	3,889.4	212.7	-165.8	-212.7	0.00	0.00	
4,000.0	4.57	322.06	3,989.0	219.0	-170.7	-219.0	0.00	0.00	
4,100.0	4.57	322.06	4,088.7	225.3	-175.6	-225.3	0.00	0.00	
4,200.0	4.57	322.06	4,188.4	231.6	-180.5	-231.6	0.00	0.00	
4,300.0	4.57	322.06	4,288.1	237.9	-185.4	-237.9	0.00	0.00	
4,400.0	4.57	322.06	4,387.8	244.1	-190.3	-244.1	0.00	0.00	
4,500.0	4.57	322.06	4,487.5	250.4	-195.2	-250.4	0.00	0.00	
4,515.6	4.57	322.06	4,503.0	251.4	-196.0	-251.4	0.00	0.00	Sussex
4,600.0	4.57	322.06	4,587.1	256.7	-200.1	-256.7	0.00	0.00	
4,700.0	4.57	322.06	4,686.8	263.0	-205.0	-263.0	0.00	0.00	
4,800.0	4.57	322.06	4,786.5	269.3	-209.9	-269.3	0.00	0.00	
4,825.6	4.57	322.06	4,812.0	270.9	-211.2	-270.9	0.00	0.00	Sussex Marker

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well lone 1B-2H
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Project:</b>	DJ Wattenberg	<b>MD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Site:</b>	NWNE S2-T2N-R66W (lone)	<b>North Reference:</b>	True
<b>Well:</b>	lone 1B-2H	<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
4,900.0	4.57	322.06	4,886.2	275.5	-214.8	-275.5	0.00	0.00	
5,000.0	4.57	322.06	4,985.9	281.8	-219.7	-281.8	0.00	0.00	
5,100.0	4.57	322.06	5,085.5	288.1	-224.6	-288.1	0.00	0.00	
5,200.0	4.57	322.06	5,185.2	294.4	-229.5	-294.4	0.00	0.00	
5,286.0	4.57	322.06	5,271.0	299.8	-233.7	-299.8	0.00	0.00	Shannon
5,300.0	4.57	322.06	5,284.9	300.7	-234.4	-300.7	0.00	0.00	
5,400.0	4.57	322.06	5,384.6	307.0	-239.3	-307.0	0.00	0.00	
5,500.0	4.57	322.06	5,484.3	313.2	-244.2	-313.2	0.00	0.00	
5,600.0	4.57	322.06	5,584.0	319.5	-249.1	-319.5	0.00	0.00	
5,700.0	4.57	322.06	5,683.6	325.8	-254.0	-325.8	0.00	0.00	
5,800.0	4.57	322.06	5,783.3	332.1	-258.9	-332.1	0.00	0.00	
5,900.0	4.57	322.06	5,883.0	338.4	-263.8	-338.4	0.00	0.00	
6,000.0	4.57	322.06	5,982.7	344.7	-268.7	-344.7	0.00	0.00	
6,100.0	4.57	322.06	6,082.4	350.9	-273.6	-350.9	0.00	0.00	
6,200.0	4.57	322.06	6,182.0	357.2	-278.5	-357.2	0.00	0.00	
6,300.0	4.57	322.06	6,281.7	363.5	-283.4	-363.5	0.00	0.00	
6,400.0	4.57	322.06	6,381.4	369.8	-288.3	-369.8	0.00	0.00	
6,500.0	4.57	322.06	6,481.1	376.1	-293.2	-376.1	0.00	0.00	
6,549.1	4.57	322.06	6,530.0	379.2	-295.6	-379.2	0.00	0.00	Teepee Buttes
6,600.0	4.57	322.06	6,580.8	382.4	-298.1	-382.4	0.00	0.00	
6,700.0	4.57	322.06	6,680.5	388.6	-303.0	-388.6	0.00	0.00	
6,706.3	4.57	322.06	6,686.8	389.0	-303.3	-389.0	0.00	0.00	Start 10° build @ 6706' MD
6,800.0	6.41	205.93	6,780.2	387.3	-307.9	-387.3	10.00	1.97	
6,900.0	16.01	189.86	6,878.2	368.6	-312.7	-368.6	10.00	9.59	
7,000.0	25.91	185.81	6,971.5	333.2	-317.3	-333.2	10.00	9.90	
7,100.0	35.86	183.90	7,057.2	282.1	-321.5	-282.1	10.00	9.95	
7,200.0	45.83	182.74	7,132.7	216.9	-325.2	-216.9	10.00	9.97	
7,246.9	50.51	182.32	7,164.0	182.0	-326.8	-182.0	10.00	9.98	Sharon Springs
7,300.0	55.81	181.91	7,195.8	139.6	-328.3	-139.6	10.00	9.98	
7,382.2	64.01	181.37	7,237.0	68.5	-330.3	-68.5	10.00	9.98	Niobrara
7,400.0	65.80	181.27	7,244.6	52.4	-330.7	-52.4	10.00	9.99	
7,500.0	75.78	180.71	7,277.4	-41.9	-332.3	41.9	10.00	9.99	
7,535.1	79.29	180.53	7,285.0	-76.1	-332.7	76.1	10.00	9.99	B Chalk
7,600.0	85.77	180.21	7,293.4	-140.5	-333.1	140.5	10.00	9.99	
7,642.4	90.00	180.00	7,295.0	-182.8	-333.2	182.8	10.00	9.99	Landing Pt @ 7642' MD; 90°
7,700.0	90.00	180.00	7,295.0	-240.4	-333.2	240.4	0.00	0.00	
7,800.0	90.00	180.00	7,295.0	-340.4	-333.2	340.4	0.00	0.00	
7,900.0	90.00	180.00	7,295.0	-440.4	-333.2	440.4	0.00	0.00	
8,000.0	90.00	180.00	7,295.0	-540.4	-333.2	540.4	0.00	0.00	
8,100.0	90.00	180.00	7,295.0	-640.4	-333.2	640.4	0.00	0.00	
8,200.0	90.00	180.00	7,295.0	-740.4	-333.2	740.4	0.00	0.00	
8,300.0	90.00	180.00	7,295.0	-840.4	-333.2	840.4	0.00	0.00	
8,400.0	90.00	180.00	7,295.0	-940.4	-333.2	940.4	0.00	0.00	
8,500.0	90.00	180.00	7,295.0	-1,040.4	-333.2	1,040.4	0.00	0.00	
8,600.0	90.00	180.00	7,295.0	-1,140.4	-333.2	1,140.4	0.00	0.00	
8,700.0	90.00	180.00	7,295.0	-1,240.4	-333.2	1,240.4	0.00	0.00	
8,800.0	90.00	180.00	7,295.0	-1,340.4	-333.2	1,340.4	0.00	0.00	
8,900.0	90.00	180.00	7,295.0	-1,440.4	-333.2	1,440.4	0.00	0.00	
9,000.0	90.00	180.00	7,295.0	-1,540.4	-333.2	1,540.4	0.00	0.00	
9,100.0	90.00	180.00	7,295.0	-1,640.4	-333.2	1,640.4	0.00	0.00	
9,200.0	90.00	180.00	7,295.0	-1,740.4	-333.2	1,740.4	0.00	0.00	
9,300.0	90.00	180.00	7,295.0	-1,840.4	-333.2	1,840.4	0.00	0.00	

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well lone 1B-2H
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<b>Well:</b>	lone 1B-2H	<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
9,400.0	90.00	180.00	7,295.0	-1,940.4	-333.2	1,940.4	0.00	0.00	
9,500.0	90.00	180.00	7,295.0	-2,040.4	-333.2	2,040.4	0.00	0.00	
9,600.0	90.00	180.00	7,295.0	-2,140.4	-333.2	2,140.4	0.00	0.00	
9,700.0	90.00	180.00	7,295.0	-2,240.4	-333.2	2,240.4	0.00	0.00	
9,800.0	90.00	180.00	7,295.0	-2,340.4	-333.2	2,340.4	0.00	0.00	
9,900.0	90.00	180.00	7,295.0	-2,440.4	-333.2	2,440.4	0.00	0.00	
10,000.0	90.00	180.00	7,295.0	-2,540.4	-333.2	2,540.4	0.00	0.00	
10,100.0	90.00	180.00	7,295.0	-2,640.4	-333.2	2,640.4	0.00	0.00	
10,200.0	90.00	180.00	7,295.0	-2,740.4	-333.2	2,740.4	0.00	0.00	
10,300.0	90.00	180.00	7,295.0	-2,840.4	-333.2	2,840.4	0.00	0.00	
10,400.0	90.00	180.00	7,295.0	-2,940.4	-333.2	2,940.4	0.00	0.00	
10,500.0	90.00	180.00	7,295.0	-3,040.4	-333.2	3,040.4	0.00	0.00	
10,600.0	90.00	180.00	7,295.0	-3,140.4	-333.2	3,140.4	0.00	0.00	
10,700.0	90.00	180.00	7,295.0	-3,240.4	-333.2	3,240.4	0.00	0.00	
10,800.0	90.00	180.00	7,295.0	-3,340.4	-333.2	3,340.4	0.00	0.00	
10,900.0	90.00	180.00	7,295.0	-3,440.4	-333.2	3,440.4	0.00	0.00	
11,000.0	90.00	180.00	7,295.0	-3,540.4	-333.2	3,540.4	0.00	0.00	
11,100.0	90.00	180.00	7,295.0	-3,640.4	-333.2	3,640.4	0.00	0.00	
11,200.0	90.00	180.00	7,295.0	-3,740.4	-333.2	3,740.4	0.00	0.00	
11,300.0	90.00	180.00	7,295.0	-3,840.4	-333.2	3,840.4	0.00	0.00	
11,400.0	90.00	180.00	7,295.0	-3,940.4	-333.2	3,940.4	0.00	0.00	
11,500.0	90.00	180.00	7,295.0	-4,040.4	-333.2	4,040.4	0.00	0.00	
11,600.0	90.00	180.00	7,295.0	-4,140.4	-333.2	4,140.4	0.00	0.00	
11,700.0	90.00	180.00	7,295.0	-4,240.4	-333.2	4,240.4	0.00	0.00	
11,800.0	90.00	180.00	7,295.0	-4,340.4	-333.2	4,340.4	0.00	0.00	
11,867.4	90.00	180.00	7,295.0	-4,407.8	-333.2	4,407.8	0.00	0.00	TD at 11867.4 - lone 1B-2H PBHL (460' FSL, 1,

### 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									
lone 1B-2H PBHL (460'	0.00	0.00	7,295.0	-4,407.8	-433.2	1,302,528.82	3,212,025.56	40.161340	-104.741400
- plan misses target center by 100.0ft at 11867.4ft MD (7295.0 TVD, -4407.8 N, -333.2 E)									
- Point									
lone 1B-2H PBHL (460'	0.00	0.00	7,295.0	-4,407.8	-333.2	1,302,529.68	3,212,125.57	40.161340	-104.741042
- plan hits target center									
- Point									

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well lone 1B-2H
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Project:</b>	DJ Wattenberg	<b>MD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Site:</b>	NWNE S2-T2N-R66W (lone)	<b>North Reference:</b>	True
<b>Well:</b>	lone 1B-2H	<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 (°)	
4,515.6	4,503.0	Sussex				
4,825.6	4,812.0	Sussex Marker				
5,286.0	5,271.0	Shannon				
6,549.1	6,530.0	Teepee Buttes				
7,246.9	7,164.0	Sharon Springs				
7,382.2	7,237.0	Niobrara				
7,535.1	7,285.0	B Chalk				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
400.0	400.0	0.0	0.0	KOP @ 400'	
628.5	628.2	7.2	-5.6	EOB; Inc=4.57°	
6,706.3	6,686.8	389.0	-303.3	Start 10° build @ 6706' MD	
7,642.4	7,295.0	-182.8	-333.2	Landing Pt @ 7642' MD; 90°	
11,867.4	7,295.0	-4,407.8	-333.2	TD at 11867.4	

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

**DJ Wattenberg**

**NWNE S2-T2N-R66W (lone)**

**lone 1B-2H**

**HZ**

**Plan #1**

## **Anticollision Report**

**15 August, 2012**

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well lone 1B-2H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Reference Site:</b>	NWNE S2-T2N-R66W (lone)	<b>MD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	lone 1B-2H	<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:	MD Interval 100.0ft	Error Model:	Systematic Ellipse
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 500.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

<b>Survey Tool Program</b>	<b>Date</b>	8/15/2012		
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>
0.0	11,867.4	Plan #1 (HZ)	MWD	Geolink MWD



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well lone 1B-2H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Reference Site:</b>	NWNE S2-T2N-R66W (lone)	<b>MD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	lone 1B-2H	<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

### Summary

Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
<b>Offset Well - Wellbore - Design</b>						
NWNE S2-T2N-R66W (lone)						
lone #11-2 (Existing) - DD - Plan #1						Out of range
lone #12-2B (Existing) - DD - Plan #1						Out of range
lone #13 (Existing) - HZ - Plan #1	11,009.1	7,272.0	457.8	379.9	5.877	CC, ES
lone #13 (Existing) - HZ - Plan #1	11,100.0	7,272.0	466.8	387.3	5.874	SF
lone #13-2 (Existing) - DD - Plan #1						Out of range
lone #21-2 (Existing) - DD - Plan #1						Out of range
lone #22-2 (Existing) - DD - Plan #1						Out of range
lone #23-2 (Existing) - DD - Plan #1						Out of range
lone #24-2 (Existing) - DD - Plan #1						Out of range
lone #3 (Existing) - DD - DD						Out of range
lone #3 (Existing) - DD - Plan #1						Out of range
lone #31-2 (Existing) - DD - Plan #1	7,633.6	7,300.5	82.6	56.1	3.120	CC, ES, SF
lone #32-2 (Existing) - DD - Plan #1	9,058.8	7,300.0	223.2	178.1	4.945	CC, ES, SF
lone #33-2 (Existing) - DD - Plan #1	10,392.7	7,280.0	260.7	193.3	3.870	CC
lone #33-2 (Existing) - DD - Plan #1	10,400.0	7,280.0	260.8	193.3	3.864	ES, SF
lone #34-2 (Existing) - DD - Plan #1	11,867.4	7,271.0	427.2	334.5	4.608	CC, ES, SF
lone #4 (Existing) - DD - Plan #1						Out of range
lone #42-2 - DD - Plan #1						Out of range
lone 1A-2H - HZ - Plan #1	200.0	200.0	8.4	7.7	12.843	CC, ES
lone 1A-2H - HZ - Plan #1	300.0	299.7	10.0	9.0	9.950	SF
lone 1C-2H - HZ - Plan #1	400.0	400.0	11.2	9.8	8.274	CC, ES
lone 1C-2H - HZ - Plan #1	11,867.4	12,079.9	350.6	223.0	2.749	SF
lone 1D-2H - HZ - Plan #1	400.0	400.0	19.6	18.2	14.480	CC, ES
lone 1D-2H - HZ - Plan #1	600.0	599.8	24.5	22.4	11.922	SF
lone 1E-2H - HZ - Plan #1	400.0	400.0	30.7	29.4	22.754	CC, ES
lone 1E-2H - HZ - Plan #1	500.0	499.0	33.3	31.6	19.584	SF
lone 1F-2H - HZ - Plan #1	200.0	200.0	39.1	38.5	59.934	CC, ES
lone 1F-2H - HZ - Plan #1	500.0	495.1	54.8	53.1	32.243	SF
lone 2A-2H - HZ - Plan #1						Out of range
lone 2B-2H - HZ - Plan #1						Out of range
lone 2C-2H - HZ - Plan #1						Out of range
lone 2D-2H - HZ - Plan #1						Out of range
lone 2E-2H - HZ - Plan #1						Out of range
lone 2F-2H - HZ - Plan #1						Out of range
lone 2G-2H - HZ - Plan #1						Out of range
lone 41-2 - DD - DD						Out of range
lone 43-2 - Wellbore #1 - Wellbore #1						Out of range
lone 4-4-2 - Wellbore #1 - Plan #1						Out of range
lone 6-4-2 (Existing) - Existing - Existing	9,580.1	7,601.0	373.0	302.5	5.293	CC, ES
lone 6-4-2 (Existing) - Existing - Existing	9,600.0	7,600.9	373.5	302.7	5.276	SF
lone 6-8-2 (Existing) - Existing - Existing	11,867.4	7,436.1	495.2	391.1	4.755	CC, ES, SF
lone 8-4-2 (Existing) - Existing - Existing						Out of range

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well lone 1B-2H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Reference Site:</b>	NWNE S2-T2N-R66W (lone)	<b>MD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	lone 1B-2H	<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

### Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth	Offset Measured Depth	Distance		Separation Factor	Warning
	(ft)	(ft)	Between Centres (ft)	Between Ellipses (ft)		
NWSW S2-T2N-R66W (lone)						
lone #13 (Existing) - HZ - Plan #1	11,009.1	7,272.0	457.8	379.9	5.877	CC, ES
lone #13 (Existing) - HZ - Plan #1	11,100.0	7,272.0	466.8	387.3	5.874	SF
lone #31-2 (Existing) - DD - Plan #1	7,633.5	7,300.5	82.6	56.1	3.120	CC, ES, SF
lone #32-2 (Existing) - DD - Plan #1	9,058.8	7,300.0	223.2	178.1	4.945	CC, ES, SF
lone #33-2 (Existing) - DD - Plan #1	10,392.7	7,280.0	260.7	193.3	3.870	CC
lone #33-2 (Existing) - DD - Plan #1	10,400.0	7,280.0	260.8	193.3	3.864	ES, SF
lone #34-2 (Existing) - DD - Plan #1	11,867.4	7,271.0	427.2	334.5	4.608	CC, ES, SF
lone #4 (Existing) - DD - Plan #1						Out of range
lone 33-2 - Wellbore #1 - Wellbore #1	10,392.7	7,250.0	260.6	199.6	4.271	CC
lone 33-2 - Wellbore #1 - Wellbore #1	10,400.0	7,250.0	260.7	199.5	4.264	ES, SF
lone 41-2 - DD - DD						Out of range
lone 6-4-2 (Existing) - Existing - Existing	9,580.0	7,601.0	373.0	302.5	5.293	CC, ES
lone 6-4-2 (Existing) - Existing - Existing	9,600.0	7,600.9	373.5	302.7	5.276	SF
lone 6-8-2 (Existing) - Existing - Existing	11,867.4	7,436.1	495.2	391.0	4.755	CC, ES, SF
lone 8-4-2 (Existing) - Existing - Existing						Out of range
S2-T2N-R67W (Echevarria)						
lone 44-2 (Existing) - DD - DD						Out of range

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well lone 1B-2H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Reference Site:</b>	NWNE S2-T2N-R66W (lone)	<b>MD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	lone 1B-2H	<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													Offset Site Error:		0.0 ft
Survey Program: 0-MWD													Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth	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)					
10,900.0	7,295.0	7,272.0	7,272.0	63.6	12.7	-90.00	-3,549.6	124.6	470.7	394.6	76.03	6.191			
11,000.0	7,295.0	7,272.0	7,272.0	65.3	12.7	-90.00	-3,549.6	124.6	457.9	380.2	77.75	5.890			
11,009.1	7,295.0	7,272.0	7,272.0	65.5	12.7	-90.00	-3,549.6	124.6	457.8	379.9	77.91	5.877 CC, ES			
11,100.0	7,295.0	7,272.0	7,272.0	67.1	12.7	-90.00	-3,549.6	124.6	466.8	387.3	79.47	5.874 SF			
11,200.0	7,295.0	7,272.0	7,272.0	68.8	12.7	-90.00	-3,549.6	124.6	496.0	414.8	81.19	6.110			

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well lone 1B-2H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Reference Site:</b>	NWNE S2-T2N-R66W (lone)	<b>MD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	lone 1B-2H	<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 NWNE S2-T2N-R66W (lone) - lone #31-2 (Existing) - DD - Plan #1													Offset Site Error: 0.0 ft	
Survey Program: O-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	5.0	5.0	0.0	0.0	-112.68	-173.8	-415.8	450.7					
100.0	100.0	105.0	105.0	0.2	0.2	-112.68	-173.8	-415.8	450.7	450.3	0.31	1,458.803		
200.0	200.0	205.0	205.0	0.3	0.3	-112.68	-173.8	-415.8	450.7	450.0	0.66	684.903		
300.0	300.0	305.0	305.0	0.5	0.5	-112.68	-173.8	-415.8	450.7	449.7	1.01	447.502		
400.0	400.0	405.0	405.0	0.7	0.7	-112.68	-173.8	-415.8	450.7	449.3	1.36	332.315		
500.0	500.0	505.0	505.0	0.9	0.9	-74.96	-173.8	-415.8	450.2	448.5	1.71	263.717		
600.0	599.8	604.8	604.8	1.0	1.0	-75.63	-173.8	-415.8	448.9	446.8	2.07	216.954		
700.0	699.5	704.5	704.5	1.2	1.2	-76.61	-173.8	-415.8	447.0	444.5	2.44	183.003		
800.0	799.2	804.2	804.2	1.4	1.4	-77.60	-173.8	-415.8	445.2	442.4	2.82	157.718		
900.0	898.9	903.9	903.9	1.7	1.6	-78.61	-173.8	-415.8	443.6	440.4	3.21	138.290		
1,000.0	998.6	1,003.6	1,003.6	1.9	1.7	-79.62	-173.8	-415.8	442.1	438.5	3.60	122.955		
1,100.0	1,098.3	1,103.3	1,103.3	2.1	1.9	-80.63	-173.8	-415.8	440.7	436.7	3.99	110.579		
1,200.0	1,197.9	1,202.9	1,202.9	2.3	2.1	-81.65	-173.8	-415.8	439.4	435.1	4.38	100.403		
1,300.0	1,297.6	1,302.6	1,302.6	2.5	2.2	-82.68	-173.8	-415.8	438.4	433.6	4.77	91.904		
1,400.0	1,397.3	1,402.3	1,402.3	2.7	2.4	-83.71	-173.8	-415.8	437.4	432.2	5.16	84.710		
1,500.0	1,497.0	1,502.0	1,502.0	3.0	2.6	-84.75	-173.8	-415.8	436.6	431.1	5.56	78.552		
1,600.0	1,596.7	1,601.7	1,601.7	3.2	2.8	-85.79	-173.8	-415.8	435.9	430.0	5.95	73.227		
1,700.0	1,696.4	1,701.4	1,701.4	3.4	2.9	-86.83	-173.8	-415.8	435.4	429.1	6.35	68.585		
1,800.0	1,796.0	1,801.0	1,801.0	3.6	3.1	-87.87	-173.8	-415.8	435.1	428.3	6.74	64.506		
1,900.0	1,895.7	1,900.7	1,900.7	3.8	3.3	-88.92	-173.8	-415.8	434.8	427.7	7.14	60.900		
2,000.0	1,995.4	2,000.4	2,000.4	4.1	3.5	-89.97	-173.8	-415.8	434.8	427.2	7.54	57.692		
2,003.3	1,998.7	2,003.7	2,003.7	4.1	3.5	-90.00	-173.8	-415.8	434.8	427.2	7.55	57.592		
2,100.0	2,095.1	2,100.1	2,100.1	4.3	3.6	-91.01	-173.8	-415.8	434.8	426.9	7.93	54.824		
2,200.0	2,194.8	2,199.8	2,199.8	4.5	3.8	-92.06	-173.8	-415.8	435.0	426.7	8.33	52.248		
2,300.0	2,294.4	2,299.4	2,299.4	4.7	4.0	-93.10	-173.8	-415.8	435.4	426.7	8.72	49.925		
2,400.0	2,394.1	2,399.1	2,399.1	5.0	4.2	-94.14	-173.8	-415.8	435.9	426.8	9.12	47.821		
2,500.0	2,493.8	2,498.8	2,498.8	5.2	4.3	-95.18	-173.8	-415.8	436.6	427.1	9.51	45.910		
2,600.0	2,593.5	2,598.5	2,598.5	5.4	4.5	-96.22	-173.8	-415.8	437.4	427.5	9.90	44.168		
2,700.0	2,693.2	2,698.2	2,698.2	5.6	4.7	-97.25	-173.8	-415.8	438.3	428.0	10.29	42.576		
2,800.0	2,792.9	2,797.9	2,797.9	5.8	4.9	-98.28	-173.8	-415.8	439.4	428.7	10.69	41.118		
2,900.0	2,892.5	2,897.5	2,897.5	6.1	5.0	-99.30	-173.8	-415.8	440.6	429.5	11.08	39.779		
3,000.0	2,992.2	2,997.2	2,997.2	6.3	5.2	-100.32	-173.8	-415.8	442.0	430.5	11.47	38.547		
3,100.0	3,091.9	3,096.9	3,096.9	6.5	5.4	-101.33	-173.8	-415.8	443.5	431.6	11.85	37.410		
3,200.0	3,191.6	3,196.6	3,196.6	6.7	5.6	-102.33	-173.8	-415.8	445.1	432.9	12.24	36.361		
3,300.0	3,291.3	3,296.3	3,296.3	7.0	5.7	-103.32	-173.8	-415.8	446.9	434.2	12.63	35.389		
3,400.0	3,390.9	3,395.9	3,395.9	7.2	5.9	-104.31	-173.8	-415.8	448.8	435.8	13.01	34.489		
3,500.0	3,490.6	3,495.6	3,495.6	7.4	6.1	-105.29	-173.8	-415.8	450.8	437.4	13.40	33.654		
3,600.0	3,590.3	3,595.3	3,595.3	7.6	6.2	-106.26	-173.8	-415.8	453.0	439.2	13.78	32.877		
3,700.0	3,690.0	3,695.0	3,695.0	7.9	6.4	-107.22	-173.8	-415.8	455.3	441.1	14.16	32.155		
3,800.0	3,789.7	3,794.7	3,794.7	8.1	6.6	-108.17	-173.8	-415.8	457.7	443.2	14.54	31.481		
3,900.0	3,889.4	3,894.4	3,894.4	8.3	6.8	-109.11	-173.8	-415.8	460.3	445.4	14.92	30.854		
4,000.0	3,989.0	3,994.0	3,994.0	8.5	6.9	-110.04	-173.8	-415.8	462.9	447.7	15.30	30.268		
4,100.0	4,088.7	4,093.7	4,093.7	8.7	7.1	-110.96	-173.8	-415.8	465.7	450.1	15.67	29.720		
4,200.0	4,188.4	4,193.4	4,193.4	9.0	7.3	-111.86	-173.8	-415.8	468.7	452.6	16.05	29.208		
4,300.0	4,288.1	4,293.1	4,293.1	9.2	7.5	-112.76	-173.8	-415.8	471.7	455.3	16.42	28.729		
4,400.0	4,387.8	4,392.8	4,392.8	9.4	7.6	-113.64	-173.8	-415.8	474.8	458.1	16.79	28.280		
4,500.0	4,487.5	4,492.5	4,492.5	9.6	7.8	-114.51	-173.8	-415.8	478.1	460.9	17.16	27.859		
4,600.0	4,587.1	4,592.1	4,592.1	9.9	8.0	-115.38	-173.8	-415.8	481.5	463.9	17.53	27.465		
4,700.0	4,686.8	4,691.8	4,691.8	10.1	8.2	-116.22	-173.8	-415.8	484.9	467.0	17.90	27.094		
4,800.0	4,786.5	4,791.5	4,791.5	10.3	8.3	-117.06	-173.8	-415.8	488.5	470.3	18.27	26.746		
4,900.0	4,886.2	4,891.2	4,891.2	10.5	8.5	-117.88	-173.8	-415.8	492.2	473.6	18.63	26.419		
5,000.0	4,985.9	4,990.9	4,990.9	10.7	8.7	-118.69	-173.8	-415.8	496.0	477.0	19.00	26.112		

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 lone 1B-2H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Reference Site:</b>	NWNE S2-T2N-R66W (lone)	<b>MD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	lone 1B-2H	<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													NWNE S2-T2N-R66W (lone) - lone #31-2 (Existing) - DD - Plan #1		Offset Site Error:		0.0 ft
Survey Program:													0-MWD		Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor					
5,100.0	5,085.5	5,090.5	5,090.5	11.0	8.9	-119.49	-173.8	-415.8	499.9	480.5	19.36	25.822					
7,100.0	7,057.2	7,062.2	7,062.2	14.4	12.3	9.58	-173.8	-415.8	465.5	442.6	22.94	20.297					
7,200.0	7,132.7	7,137.7	7,137.7	14.2	12.4	14.64	-173.8	-415.8	401.0	379.5	21.58	18.581					
7,300.0	7,195.8	7,200.8	7,200.8	14.1	12.5	23.43	-173.8	-415.8	325.3	304.7	20.61	15.783					
7,400.0	7,244.6	7,249.6	7,249.6	14.2	12.6	40.58	-173.8	-415.8	241.6	220.1	21.50	11.242					
7,500.0	7,277.4	7,282.4	7,282.4	14.4	12.7	68.25	-173.8	-415.8	156.1	131.3	24.79	6.296					
7,600.0	7,293.4	7,298.4	7,298.4	14.8	12.7	88.28	-173.8	-415.8	89.1	62.9	26.26	3.395					
7,633.6	7,295.5	7,300.5	7,300.5	14.9	12.7	90.00	-173.8	-415.8	82.6	56.1	26.47	3.120 CC, ES, SF					
7,700.0	7,295.0	7,300.0	7,300.0	15.3	12.7	90.00	-173.8	-415.8	106.2	79.3	26.89	3.947					
7,800.0	7,295.0	7,300.0	7,300.0	16.1	12.7	90.00	-173.8	-415.8	186.0	158.3	27.71	6.713					
7,900.0	7,295.0	7,300.0	7,300.0	17.0	12.7	90.00	-173.8	-415.8	279.2	250.5	28.68	9.735					
8,000.0	7,295.0	7,300.0	7,300.0	18.0	12.7	90.00	-173.8	-415.8	375.9	346.1	29.77	12.625					
8,100.0	7,295.0	7,300.0	7,300.0	19.2	12.7	90.00	-173.8	-415.8	473.9	443.0	30.97	15.304					

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well lone 1B-2H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Reference Site:</b>	NWNE S2-T2N-R66W (lone)	<b>MD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	lone 1B-2H	<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

<b>Offset Design</b> NWNE S2-T2N-R66W (lone) - lone #32-2 (Existing) - DD - Plan #1													<b>Offset Site Error:</b>	0.0 ft
Survey Program: 0-MWD													<b>Offset Well Error:</b>	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		
8,700.0	7,295.0	7,300.0	7,300.0	27.4	12.7	90.00	-1,599.2	-556.4	422.5	383.1	39.47	10.704		
8,800.0	7,295.0	7,300.0	7,300.0	28.9	12.7	90.00	-1,599.2	-556.4	341.7	300.7	41.02	8.330		
8,900.0	7,295.0	7,300.0	7,300.0	30.4	12.7	90.00	-1,599.2	-556.4	273.9	231.3	42.60	6.430		
9,000.0	7,295.0	7,300.0	7,300.0	32.0	12.7	90.00	-1,599.2	-556.4	230.8	186.6	44.19	5.223		
9,058.8	7,295.0	7,300.0	7,300.0	32.9	12.7	90.00	-1,599.2	-556.4	223.2	178.1	45.13	4.945 CC, ES, SF		
9,100.0	7,295.0	7,300.0	7,300.0	33.6	12.7	90.00	-1,599.2	-556.4	227.0	181.2	45.80	4.956		
9,200.0	7,295.0	7,300.0	7,300.0	35.2	12.7	90.00	-1,599.2	-556.4	264.1	216.7	47.42	5.570		
9,300.0	7,295.0	7,300.0	7,300.0	36.8	12.7	90.00	-1,599.2	-556.4	328.7	279.6	49.05	6.700		
9,400.0	7,295.0	7,300.0	7,300.0	38.4	12.7	90.00	-1,599.2	-556.4	407.8	357.1	50.70	8.043		
9,500.0	7,295.0	7,300.0	7,300.0	40.1	12.7	90.00	-1,599.2	-556.4	494.5	442.1	52.35	9.445		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well lone 1B-2H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Reference Site:</b>	NWNE S2-T2N-R66W (lone)	<b>MD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	lone 1B-2H	<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

<b>Offset Design</b> NWNE S2-T2N-R66W (lone) - lone #33-2 (Existing) - DD - Plan #1												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 0-MWD												<b>Offset Well Error:</b>	0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
10,000.0	7,295.0	7,280.0	7,280.0	48.4	12.7	90.00	-2,933.2	-593.9	471.4	410.7	60.70	7.767	
10,100.0	7,295.0	7,280.0	7,280.0	50.1	12.7	90.00	-2,933.2	-593.9	392.0	329.6	62.39	6.283	
10,200.0	7,295.0	7,280.0	7,280.0	51.7	12.7	90.00	-2,933.2	-593.9	324.2	260.1	64.08	5.059	
10,300.0	7,295.0	7,280.0	7,280.0	53.4	12.7	90.00	-2,933.2	-593.9	276.7	210.9	65.78	4.206	
10,392.7	7,295.0	7,280.0	7,280.0	55.0	12.7	90.00	-2,933.2	-593.9	260.7	193.3	67.36	3.870 CC	
10,400.0	7,295.0	7,280.0	7,280.0	55.1	12.7	90.00	-2,933.2	-593.9	260.8	193.3	67.49	3.864 ES, SF	
10,500.0	7,295.0	7,280.0	7,280.0	56.8	12.7	90.00	-2,933.2	-593.9	281.9	212.7	69.19	4.074	
10,600.0	7,295.0	7,280.0	7,280.0	58.5	12.7	90.00	-2,933.2	-593.9	333.0	262.1	70.90	4.697	
10,700.0	7,295.0	7,280.0	7,280.0	60.2	12.7	90.00	-2,933.2	-593.9	402.9	330.3	72.61	5.549	
10,800.0	7,295.0	7,280.0	7,280.0	61.9	12.7	90.00	-2,933.2	-593.9	483.5	409.2	74.33	6.505	

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well lone 1B-2H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Reference Site:</b>	NWNE S2-T2N-R66W (lone)	<b>MD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	lone 1B-2H	<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													NWNE S2-T2N-R66W (lone) - lone #34-2 (Existing) - DD - Plan #1		Offset Site Error:		0.0 ft
Survey Program:													0-MWD		Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning			
Measured Depth	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)							
11,700.0	7,295.0	7,271.0	7,271.0	77.4	12.7	90.00	-4,469.0	-756.0	480.7	390.8	89.82	5.351					
11,800.0	7,295.0	7,271.0	7,271.0	79.1	12.7	90.00	-4,469.0	-756.0	441.9	350.4	91.55	4.827					
11,867.4	7,295.0	7,271.0	7,271.0	80.3	12.7	90.00	-4,469.0	-756.0	427.2	334.5	92.72	4.608	CC, ES, SF				



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well lone 1B-2H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Reference Site:</b>	NWNE S2-T2N-R66W (lone)	<b>MD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	lone 1B-2H	<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 NWNE S2-T2N-R66W (lone) - lone 1A-2H - HZ - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-89.94	0.0	-8.4	8.4					
100.0	100.0	100.0	100.0	0.2	0.2	-89.94	0.0	-8.4	8.4	8.1	0.30	27.605		
200.0	200.0	200.0	200.0	0.3	0.3	-89.94	0.0	-8.4	8.4	7.7	0.65	12.843 CC, ES		
300.0	300.0	299.7	299.7	0.5	0.5	-85.41	0.8	-9.9	10.0	9.0	1.00	9.950 SF		
400.0	400.0	399.2	399.0	0.7	0.7	-77.76	3.2	-14.5	14.9	13.6	1.35	11.024		
500.0	500.0	498.3	497.7	0.9	0.9	-36.89	7.1	-22.2	22.0	20.3	1.70	12.929		
600.0	599.8	597.4	596.2	1.0	1.2	-38.10	12.5	-32.8	29.5	27.5	2.06	14.346		
700.0	699.5	697.2	695.1	1.2	1.4	-41.12	18.3	-44.1	35.9	33.5	2.43	14.772		
800.0	799.2	797.0	794.1	1.4	1.7	-43.38	24.1	-55.5	42.3	39.5	2.82	15.017		
900.0	898.9	896.8	893.0	1.7	2.0	-45.04	29.9	-66.9	48.7	45.5	3.21	15.185		
1,000.0	998.6	996.5	992.0	1.9	2.3	-46.32	35.7	-78.3	55.2	51.6	3.60	15.303		
1,100.0	1,098.3	1,096.3	1,091.0	2.1	2.5	-47.32	41.5	-89.7	61.6	57.6	4.00	15.388		
1,200.0	1,197.9	1,196.1	1,189.9	2.3	2.8	-48.14	47.3	-101.1	68.1	63.7	4.41	15.450		
1,300.0	1,297.6	1,295.9	1,288.9	2.5	3.1	-48.82	53.2	-112.5	74.6	69.8	4.81	15.497		
1,400.0	1,397.3	1,395.7	1,387.8	2.7	3.4	-49.38	59.0	-123.9	81.1	75.9	5.22	15.533		
1,500.0	1,497.0	1,495.5	1,486.8	3.0	3.7	-49.86	64.8	-135.3	87.6	82.0	5.63	15.560		
1,600.0	1,596.7	1,595.3	1,585.8	3.2	4.0	-50.28	70.6	-146.6	94.1	88.1	6.04	15.582		
1,700.0	1,696.4	1,695.0	1,684.7	3.4	4.2	-50.64	76.4	-158.0	100.6	94.2	6.45	15.600		
1,800.0	1,796.0	1,794.8	1,783.7	3.6	4.5	-50.96	82.2	-169.4	107.2	100.3	6.86	15.614		
1,900.0	1,895.7	1,894.6	1,882.7	3.8	4.8	-51.24	88.0	-180.8	113.7	106.4	7.28	15.625		
2,000.0	1,995.4	1,994.4	1,981.6	4.1	5.1	-51.49	93.9	-192.2	120.2	112.5	7.69	15.634		
2,100.0	2,095.1	2,094.2	2,080.6	4.3	5.4	-51.72	99.7	-203.6	126.7	118.6	8.10	15.642		
2,200.0	2,194.8	2,194.0	2,179.6	4.5	5.7	-51.92	105.5	-215.0	133.3	124.8	8.52	15.648		
2,300.0	2,294.4	2,293.8	2,278.5	4.7	5.9	-52.10	111.3	-226.4	139.8	130.9	8.93	15.653		
2,400.0	2,394.1	2,393.5	2,377.5	5.0	6.2	-52.27	117.1	-237.8	146.3	137.0	9.35	15.658		
2,500.0	2,493.8	2,493.3	2,476.4	5.2	6.5	-52.42	122.9	-249.1	152.9	143.1	9.76	15.662		
2,600.0	2,593.5	2,593.1	2,575.4	5.4	6.8	-52.57	128.7	-260.5	159.4	149.2	10.18	15.665		
2,700.0	2,693.2	2,692.9	2,674.4	5.6	7.1	-52.70	134.6	-271.9	165.9	155.4	10.59	15.667		
2,800.0	2,792.9	2,792.7	2,773.3	5.8	7.4	-52.81	140.4	-283.3	172.5	161.5	11.01	15.670		
2,900.0	2,892.5	2,892.5	2,872.3	6.1	7.6	-52.93	146.2	-294.7	179.0	167.6	11.42	15.672		
3,000.0	2,992.2	2,992.3	2,971.3	6.3	7.9	-53.03	152.0	-306.1	185.6	173.7	11.84	15.673		
3,100.0	3,091.9	3,092.0	3,070.2	6.5	8.2	-53.13	157.8	-317.5	192.1	179.8	12.26	15.675		
3,200.0	3,191.6	3,191.8	3,169.2	6.7	8.5	-53.22	163.6	-328.9	198.6	186.0	12.67	15.676		
3,300.0	3,291.3	3,291.6	3,268.1	7.0	8.8	-53.30	169.4	-340.2	205.2	192.1	13.09	15.677		
3,400.0	3,390.9	3,391.4	3,367.1	7.2	9.1	-53.38	175.3	-351.6	211.7	198.2	13.50	15.678		
3,500.0	3,490.6	3,491.2	3,466.1	7.4	9.3	-53.45	181.1	-363.0	218.3	204.3	13.92	15.678		
3,600.0	3,590.3	3,591.0	3,565.0	7.6	9.6	-53.52	186.9	-374.4	224.8	210.5	14.34	15.679		
3,700.0	3,690.0	3,690.8	3,664.0	7.9	9.9	-53.59	192.7	-385.8	231.3	216.6	14.75	15.680		
3,800.0	3,789.7	3,790.5	3,763.0	8.1	10.2	-53.65	198.5	-397.2	237.9	222.7	15.17	15.680		
3,900.0	3,889.4	3,890.3	3,861.9	8.3	10.5	-53.71	204.3	-408.6	244.4	228.8	15.59	15.680		
4,000.0	3,989.0	3,990.1	3,960.9	8.5	10.8	-53.77	210.1	-420.0	251.0	235.0	16.00	15.681		
4,100.0	4,088.7	4,089.9	4,059.8	8.7	11.0	-53.82	216.0	-431.4	257.5	241.1	16.42	15.681		
4,200.0	4,188.4	4,189.7	4,158.8	9.0	11.3	-53.87	221.8	-442.7	264.0	247.2	16.84	15.681		
4,300.0	4,288.1	4,289.5	4,257.8	9.2	11.6	-53.92	227.6	-454.1	270.6	253.3	17.26	15.681		
4,400.0	4,387.8	4,389.2	4,356.7	9.4	11.9	-53.96	233.4	-465.5	277.1	259.5	17.67	15.681		
4,500.0	4,487.5	4,489.0	4,455.7	9.6	12.2	-54.01	239.2	-476.9	283.7	265.6	18.09	15.681		
4,600.0	4,587.1	4,588.8	4,554.7	9.9	12.5	-54.05	245.0	-488.3	290.2	271.7	18.51	15.682		
4,700.0	4,686.8	4,688.6	4,653.6	10.1	12.7	-54.09	250.8	-499.7	296.8	277.8	18.92	15.682		
4,800.0	4,786.5	4,788.4	4,752.6	10.3	13.0	-54.13	256.7	-511.1	303.3	284.0	19.34	15.682		
4,900.0	4,886.2	4,888.2	4,851.5	10.5	13.3	-54.16	262.5	-522.5	309.9	290.1	19.76	15.682		
5,000.0	4,985.9	4,988.0	4,950.5	10.7	13.6	-54.20	268.3	-533.9	316.4	296.2	20.18	15.682		
5,100.0	5,085.5	5,087.7	5,049.5	11.0	13.9	-54.23	274.1	-545.2	322.9	302.3	20.59	15.681		

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 lone 1B-2H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Reference Site:</b>	NWNE S2-T2N-R66W (lone)	<b>MD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	lone 1B-2H	<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 NWNE S2-T2N-R66W (lone) - lone 1A-2H - HZ - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total		Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Separation Factor		
5,200.0	5,185.2	5,187.5	5,148.4	11.2	14.2	-54.26	279.9	-556.6	329.5	308.5	21.01	15.681		
5,300.0	5,284.9	5,287.3	5,247.4	11.4	14.5	-54.29	285.7	-568.0	336.0	314.6	21.43	15.681		
5,400.0	5,384.6	5,387.1	5,346.4	11.6	14.7	-54.32	291.5	-579.4	342.6	320.7	21.85	15.681		
5,500.0	5,484.3	5,486.9	5,445.3	11.9	15.0	-54.35	297.4	-590.8	349.1	326.9	22.26	15.681		
5,600.0	5,584.0	5,586.7	5,544.3	12.1	15.3	-54.38	303.2	-602.2	355.7	333.0	22.68	15.681		
5,700.0	5,683.6	5,686.5	5,643.3	12.3	15.6	-54.41	309.0	-613.6	362.2	339.1	23.10	15.681		
5,800.0	5,783.3	5,786.2	5,742.2	12.5	15.9	-54.43	314.8	-625.0	368.8	345.2	23.52	15.681		
5,900.0	5,883.0	5,886.0	5,841.2	12.8	16.2	-54.46	320.6	-636.3	375.3	351.4	23.93	15.681		
6,000.0	5,982.7	5,985.8	5,940.1	13.0	16.4	-54.48	326.4	-647.7	381.8	357.5	24.35	15.681		
6,100.0	6,082.4	6,085.6	6,039.1	13.2	16.7	-54.50	332.2	-659.1	388.4	363.6	24.77	15.681		
6,200.0	6,182.0	6,185.4	6,138.1	13.4	17.0	-54.53	338.1	-670.5	394.9	369.7	25.19	15.680		
6,300.0	6,281.7	6,285.2	6,237.0	13.6	17.3	-54.55	343.9	-681.9	401.5	375.9	25.60	15.680		
6,400.0	6,381.4	6,385.0	6,336.0	13.9	17.6	-54.57	349.7	-693.3	408.0	382.0	26.02	15.680		
6,500.0	6,481.1	6,484.7	6,435.0	14.1	17.9	-54.59	355.5	-704.7	414.6	388.1	26.44	15.680		
6,600.0	6,580.8	6,584.5	6,533.9	14.3	18.1	-54.61	361.3	-716.1	421.1	394.3	26.86	15.680		
6,700.0	6,680.5	6,684.3	6,632.9	14.5	18.4	-54.63	367.1	-727.5	427.7	400.4	27.27	15.680		
6,800.0	6,780.2	6,783.7	6,731.5	14.7	18.7	61.67	372.9	-738.8	433.9	406.4	27.52	15.766		
6,900.0	6,878.2	6,880.4	6,827.3	14.7	19.0	79.95	378.5	-749.8	440.2	412.9	27.29	16.129		
7,000.0	6,971.5	6,971.3	6,917.5	14.6	19.2	87.62	383.8	-760.2	449.1	422.3	26.79	16.761		
7,100.0	7,057.2	7,065.7	7,011.2	14.4	19.5	94.02	385.7	-771.0	463.5	437.4	26.18	17.705		
7,200.0	7,132.7	7,175.2	7,118.6	14.2	19.6	99.84	369.2	-783.4	483.0	457.4	25.58	18.879		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well lone 1B-2H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Reference Site:</b>	NWNE S2-T2N-R66W (lone)	<b>MD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	lone 1B-2H	<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 NWNE S2-T2N-R66W (lone) - lone 1C-2H - HZ - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis			
0.0	0.0	0.0	0.0	0.0	0.0	90.04	0.0	11.2	11.2					
100.0	100.0	100.0	100.0	0.2	0.2	90.04	0.0	11.2	11.2	10.9	0.30	36.806		
200.0	200.0	200.0	200.0	0.3	0.3	90.04	0.0	11.2	11.2	10.5	0.65	17.124		
300.0	300.0	300.0	300.0	0.5	0.5	90.04	0.0	11.2	11.2	10.2	1.00	11.157		
400.0	400.0	400.0	400.0	0.7	0.7	90.04	0.0	11.2	11.2	9.8	1.35	8.274 CC, ES		
500.0	500.0	500.0	500.0	0.9	0.8	134.37	0.0	11.2	12.3	10.6	1.70	7.249		
600.0	599.8	599.8	599.8	1.0	1.0	147.49	0.0	11.2	16.4	14.4	2.05	8.005		
700.0	699.5	699.5	699.5	1.2	1.2	157.82	0.0	11.2	23.4	21.0	2.40	9.752		
800.0	799.2	799.2	799.2	1.4	1.4	163.40	0.0	11.2	30.9	28.2	2.75	11.254		
900.0	898.9	898.9	898.9	1.7	1.5	166.78	0.0	11.2	38.6	35.5	3.10	12.477		
1,000.0	998.6	998.6	998.6	1.9	1.7	169.03	0.0	11.2	46.4	43.0	3.44	13.479		
1,100.0	1,098.3	1,098.3	1,098.3	2.1	1.9	170.63	0.0	11.2	54.3	50.5	3.79	14.310		
1,200.0	1,197.9	1,199.6	1,199.6	2.3	2.1	170.86	1.7	10.9	60.8	56.6	4.14	14.666		
1,300.0	1,297.6	1,301.3	1,301.1	2.5	2.3	169.09	7.0	10.1	64.6	60.0	4.50	14.332		
1,400.0	1,397.3	1,401.2	1,400.8	2.7	2.4	166.57	13.8	9.0	67.1	62.2	4.87	13.783		
1,500.0	1,497.0	1,501.1	1,500.5	3.0	2.6	164.23	20.7	7.9	69.7	64.5	5.24	13.319		
1,600.0	1,596.7	1,601.0	1,600.1	3.2	2.8	162.08	27.6	6.7	72.5	66.9	5.61	12.923		
1,700.0	1,696.4	1,701.0	1,699.8	3.4	3.0	160.08	34.5	5.6	75.3	69.3	5.99	12.582		
1,800.0	1,796.0	1,800.9	1,799.5	3.6	3.2	158.23	41.4	4.5	78.3	71.9	6.37	12.285		
1,900.0	1,895.7	1,900.8	1,899.2	3.8	3.4	156.51	48.2	3.4	81.3	74.5	6.76	12.026		
2,000.0	1,995.4	2,000.7	1,998.9	4.1	3.6	154.92	55.1	2.3	84.4	77.2	7.15	11.798		
2,100.0	2,095.1	2,100.7	2,098.6	4.3	3.8	153.44	62.0	1.2	87.5	79.9	7.54	11.596		
2,200.0	2,194.8	2,200.6	2,198.2	4.5	4.0	152.07	68.9	0.1	90.7	82.7	7.94	11.417		
2,300.0	2,294.4	2,300.5	2,297.9	4.7	4.2	150.78	75.8	-1.0	93.9	85.6	8.34	11.257		
2,400.0	2,394.1	2,400.4	2,397.6	5.0	4.4	149.59	82.6	-2.1	97.2	88.5	8.75	11.113		
2,500.0	2,493.8	2,500.4	2,497.3	5.2	4.6	148.47	89.5	-3.2	100.5	91.4	9.15	10.983		
2,600.0	2,593.5	2,600.3	2,597.0	5.4	4.8	147.43	96.4	-4.3	103.9	94.3	9.56	10.866		
2,700.0	2,693.2	2,700.2	2,696.6	5.6	5.1	146.45	103.3	-5.4	107.3	97.3	9.97	10.760		
2,800.0	2,792.9	2,800.1	2,796.3	5.8	5.3	145.53	110.2	-6.5	110.7	100.3	10.38	10.664		
2,900.0	2,892.5	2,900.1	2,896.0	6.1	5.5	144.67	117.0	-7.6	114.2	103.4	10.79	10.576		
3,000.0	2,992.2	3,000.0	2,995.7	6.3	5.7	143.85	123.9	-8.7	117.6	106.4	11.21	10.495		
3,100.0	3,091.9	3,099.9	3,095.4	6.5	5.9	143.09	130.8	-9.8	121.1	109.5	11.62	10.421		
3,200.0	3,191.6	3,199.9	3,195.1	6.7	6.1	142.36	137.7	-10.9	124.6	112.6	12.04	10.353		
3,300.0	3,291.3	3,299.8	3,294.7	7.0	6.3	141.68	144.6	-12.0	128.2	115.7	12.46	10.290		
3,400.0	3,390.9	3,399.7	3,394.4	7.2	6.5	141.03	151.4	-13.1	131.7	118.8	12.87	10.232		
3,500.0	3,490.6	3,499.6	3,494.1	7.4	6.7	140.42	158.3	-14.2	135.3	122.0	13.29	10.179		
3,600.0	3,590.3	3,599.6	3,593.8	7.6	6.9	139.84	165.2	-15.3	138.9	125.2	13.71	10.129		
3,700.0	3,690.0	3,699.5	3,693.5	7.9	7.1	139.29	172.1	-16.4	142.5	128.3	14.13	10.083		
3,800.0	3,789.7	3,799.4	3,793.2	8.1	7.4	138.77	179.0	-17.5	146.1	131.5	14.55	10.040		
3,900.0	3,889.4	3,899.3	3,892.8	8.3	7.6	138.27	185.8	-18.6	149.7	134.7	14.97	10.000		
4,000.0	3,989.0	3,999.3	3,992.5	8.5	7.8	137.79	192.7	-19.7	153.3	137.9	15.39	9.962		
4,100.0	4,088.7	4,099.2	4,092.2	8.7	8.0	137.34	199.6	-20.8	157.0	141.2	15.81	9.927		
4,200.0	4,188.4	4,199.1	4,191.9	9.0	8.2	136.90	206.5	-21.9	160.6	144.4	16.23	9.894		
4,300.0	4,288.1	4,299.0	4,291.6	9.2	8.4	136.49	213.4	-23.0	164.3	147.6	16.66	9.863		
4,400.0	4,387.8	4,399.0	4,391.3	9.4	8.6	136.09	220.2	-24.1	167.9	150.9	17.08	9.834		
4,500.0	4,487.5	4,498.9	4,490.9	9.6	8.8	135.72	227.1	-25.2	171.6	154.1	17.50	9.807		
4,600.0	4,587.1	4,598.8	4,590.6	9.9	9.0	135.35	234.0	-26.4	175.3	157.4	17.92	9.781		
4,700.0	4,686.8	4,698.7	4,690.3	10.1	9.2	135.01	240.9	-27.5	179.0	160.6	18.35	9.756		
4,800.0	4,786.5	4,798.7	4,790.0	10.3	9.5	134.67	247.8	-28.6	182.7	163.9	18.77	9.733		
4,900.0	4,886.2	4,898.6	4,889.7	10.5	9.7	134.35	254.6	-29.7	186.4	167.2	19.19	9.711		
5,000.0	4,985.9	4,998.5	4,989.4	10.7	9.9	134.04	261.5	-30.8	190.1	170.5	19.62	9.691		
5,100.0	5,085.5	5,098.4	5,089.0	11.0	10.1	133.75	268.4	-31.9	193.8	173.8	20.04	9.671		

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 lone 1B-2H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Reference Site:</b>	NWNE S2-T2N-R66W (lone)	<b>MD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	lone 1B-2H	<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 NWNE S2-T2N-R66W (lone) - lone 1C-2H - HZ - Plan #1												Offset Site Error:	0.0 ft
Survey Program: O-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
5,200.0	5,185.2	5,198.4	5,188.7	11.2	10.3	133.46	275.3	-33.0	197.5	177.1	20.46	9.652	
5,300.0	5,284.9	5,298.3	5,288.4	11.4	10.5	133.19	282.2	-34.1	201.2	180.3	20.89	9.635	
5,400.0	5,384.6	5,398.2	5,388.1	11.6	10.7	132.92	289.1	-35.2	205.0	183.7	21.31	9.618	
5,500.0	5,484.3	5,498.2	5,487.8	11.9	10.9	132.67	295.9	-36.3	208.7	187.0	21.73	9.602	
5,600.0	5,584.0	5,598.1	5,587.5	12.1	11.2	132.42	302.8	-37.4	212.4	190.3	22.16	9.587	
5,700.0	5,683.6	5,698.0	5,687.1	12.3	11.4	132.18	309.7	-38.5	216.2	193.6	22.58	9.572	
5,800.0	5,783.3	5,797.9	5,786.8	12.5	11.6	131.95	316.6	-39.6	219.9	196.9	23.01	9.558	
5,900.0	5,883.0	5,897.9	5,886.5	12.8	11.8	131.73	323.5	-40.7	223.6	200.2	23.43	9.545	
6,000.0	5,982.7	5,997.8	5,986.2	13.0	12.0	131.52	330.3	-41.8	227.4	203.5	23.86	9.532	
6,100.0	6,082.4	6,097.7	6,085.9	13.2	12.2	131.31	337.2	-42.9	231.1	206.9	24.28	9.520	
6,200.0	6,182.0	6,197.6	6,185.6	13.4	12.4	131.11	344.1	-44.0	234.9	210.2	24.70	9.508	
6,300.0	6,281.7	6,297.6	6,285.2	13.6	12.6	130.91	351.0	-45.1	238.7	213.5	25.13	9.497	
6,400.0	6,381.4	6,397.5	6,384.9	13.9	12.8	130.72	357.9	-46.2	242.4	216.9	25.55	9.486	
6,500.0	6,481.1	6,497.4	6,484.6	14.1	13.1	130.54	364.7	-47.3	246.2	220.2	25.98	9.476	
6,600.0	6,580.8	6,597.3	6,584.3	14.3	13.3	130.36	371.6	-48.4	249.9	223.5	26.40	9.466	
6,700.0	6,680.5	6,697.3	6,684.0	14.5	13.5	130.19	378.5	-49.5	253.7	226.9	26.83	9.457	
6,800.0	6,780.2	6,796.7	6,783.2	14.7	13.7	-115.43	385.3	-50.6	257.3	230.1	27.23	9.448	
6,900.0	6,878.2	6,893.3	6,879.5	14.7	13.9	-104.50	392.0	-51.7	262.1	234.5	27.62	9.487	
7,000.0	6,971.5	6,992.3	6,978.5	14.6	14.0	-107.51	393.5	-52.8	271.4	243.7	27.72	9.790	
7,100.0	7,057.2	7,100.2	7,084.7	14.4	14.0	-112.32	376.2	-54.0	285.0	257.7	27.28	10.446	
7,200.0	7,132.7	7,217.4	7,194.4	14.2	13.9	-117.17	335.3	-55.2	301.2	274.9	26.35	11.431	
7,300.0	7,195.8	7,345.6	7,301.9	14.1	13.6	-121.49	266.1	-56.4	318.2	293.0	25.16	12.646	
7,400.0	7,244.6	7,485.4	7,398.5	14.2	13.4	-124.95	165.5	-57.4	333.4	309.4	24.06	13.857	
7,500.0	7,277.4	7,635.8	7,472.0	14.4	13.4	-127.33	34.8	-58.2	344.8	321.2	23.53	14.653	
7,600.0	7,293.4	7,793.6	7,509.8	14.8	13.9	-128.41	-117.9	-58.7	350.2	326.3	23.97	14.608	
7,700.0	7,295.0	7,916.2	7,513.0	15.3	14.6	-128.46	-240.4	-58.7	350.5	325.4	25.13	13.950	
7,800.0	7,295.0	8,016.2	7,513.0	16.1	15.4	-128.46	-340.4	-58.7	350.5	324.1	26.41	13.272	
7,900.0	7,295.0	8,116.2	7,513.0	17.0	16.3	-128.46	-440.4	-58.7	350.5	322.6	27.91	12.561	
8,000.0	7,295.0	8,216.2	7,513.0	18.0	17.4	-128.46	-540.4	-58.7	350.5	321.0	29.59	11.848	
8,100.0	7,295.0	8,316.2	7,513.0	19.2	18.6	-128.46	-640.4	-58.7	350.5	319.1	31.42	11.157	
8,200.0	7,295.0	8,416.2	7,513.0	20.4	19.9	-128.46	-740.4	-58.7	350.5	317.2	33.38	10.502	
8,300.0	7,295.0	8,516.2	7,513.0	21.7	21.2	-128.46	-840.4	-58.7	350.5	315.1	35.44	9.890	
8,400.0	7,295.0	8,616.2	7,513.0	23.0	22.6	-128.46	-940.4	-58.7	350.5	312.9	37.60	9.323	
8,500.0	7,295.0	8,716.2	7,513.0	24.5	24.0	-128.46	-1,040.4	-58.7	350.5	310.7	39.83	8.802	
8,600.0	7,295.0	8,816.2	7,513.0	25.9	25.5	-128.46	-1,140.4	-58.7	350.5	308.4	42.12	8.323	
8,700.0	7,295.0	8,916.2	7,513.0	27.4	27.0	-128.46	-1,240.4	-58.7	350.5	306.1	44.46	7.884	
8,800.0	7,295.0	9,016.2	7,513.0	28.9	28.5	-128.46	-1,340.4	-58.7	350.5	303.7	46.85	7.482	
8,900.0	7,295.0	9,116.2	7,513.0	30.4	30.1	-128.46	-1,440.4	-58.7	350.5	301.3	49.28	7.113	
9,000.0	7,295.0	9,216.2	7,513.0	32.0	31.7	-128.46	-1,540.4	-58.7	350.5	298.8	51.74	6.775	
9,100.0	7,295.0	9,316.2	7,513.0	33.6	33.3	-128.46	-1,640.4	-58.7	350.5	296.3	54.23	6.464	
9,200.0	7,295.0	9,416.2	7,513.0	35.2	34.9	-128.46	-1,740.4	-58.7	350.5	293.8	56.75	6.177	
9,300.0	7,295.0	9,516.2	7,513.0	36.8	36.5	-128.46	-1,840.4	-58.7	350.5	291.3	59.28	5.913	
9,400.0	7,295.0	9,616.2	7,513.0	38.4	38.2	-128.46	-1,940.4	-58.7	350.5	288.7	61.84	5.669	
9,500.0	7,295.0	9,716.2	7,513.0	40.1	39.8	-128.46	-2,040.4	-58.7	350.5	286.1	64.41	5.442	
9,600.0	7,295.0	9,816.2	7,513.0	41.7	41.5	-128.46	-2,140.4	-58.7	350.5	283.5	67.00	5.232	
9,700.0	7,295.0	9,916.2	7,513.0	43.4	43.1	-128.45	-2,240.4	-58.7	350.5	280.9	69.60	5.037	
9,800.0	7,295.0	10,016.2	7,513.0	45.0	44.8	-128.45	-2,340.4	-58.7	350.5	278.3	72.21	4.854	
9,900.0	7,295.0	10,116.2	7,513.0	46.7	46.5	-128.45	-2,440.4	-58.7	350.5	275.7	74.83	4.684	
10,000.0	7,295.0	10,216.2	7,513.0	48.4	48.2	-128.45	-2,540.4	-58.7	350.5	273.1	77.46	4.525	
10,100.0	7,295.0	10,316.2	7,513.0	50.1	49.8	-128.45	-2,640.4	-58.7	350.5	270.4	80.10	4.376	
10,200.0	7,295.0	10,416.2	7,513.0	51.7	51.5	-128.45	-2,740.4	-58.7	350.5	267.8	82.75	4.236	
10,300.0	7,295.0	10,516.2	7,513.0	53.4	53.2	-128.45	-2,840.4	-58.7	350.5	265.1	85.41	4.104	

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 lone 1B-2H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Reference Site:</b>	NWNE S2-T2N-R66W (lone)	<b>MD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	lone 1B-2H	<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 NWNE S2-T2N-R66W (lone) - lone 1C-2H - HZ - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
10,400.0	7,295.0	10,616.2	7,513.0	55.1	54.9	-128.45	-2,940.4	-58.7	350.5	262.5	88.07	3.980		
10,500.0	7,295.0	10,716.2	7,513.0	56.8	56.6	-128.45	-3,040.4	-58.7	350.5	259.8	90.73	3.863		
10,600.0	7,295.0	10,816.2	7,513.0	58.5	58.3	-128.45	-3,140.4	-58.7	350.5	257.1	93.41	3.753		
10,700.0	7,295.0	10,916.2	7,513.0	60.2	60.1	-128.45	-3,240.4	-58.7	350.5	254.5	96.08	3.648		
10,800.0	7,295.0	11,016.2	7,513.0	61.9	61.8	-128.45	-3,340.4	-58.7	350.5	251.8	98.76	3.549		
10,900.0	7,295.0	11,116.2	7,513.0	63.6	63.5	-128.45	-3,440.4	-58.7	350.5	249.1	101.45	3.455		
11,000.0	7,295.0	11,216.2	7,513.0	65.3	65.2	-128.45	-3,540.4	-58.7	350.5	246.4	104.14	3.366		
11,100.0	7,295.0	11,316.2	7,513.0	67.1	66.9	-128.45	-3,640.4	-58.7	350.5	243.7	106.83	3.281		
11,200.0	7,295.0	11,416.2	7,513.0	68.8	68.6	-128.45	-3,740.4	-58.7	350.5	241.0	109.53	3.200		
11,300.0	7,295.0	11,516.2	7,513.0	70.5	70.4	-128.45	-3,840.4	-58.7	350.5	238.3	112.23	3.123		
11,400.0	7,295.0	11,616.2	7,513.0	72.2	72.1	-128.45	-3,940.4	-58.7	350.5	235.6	114.93	3.050		
11,500.0	7,295.0	11,716.2	7,513.0	73.9	73.8	-128.45	-4,040.4	-58.7	350.5	232.9	117.63	2.980		
11,600.0	7,295.0	11,816.2	7,513.0	75.7	75.5	-128.45	-4,140.4	-58.7	350.5	230.2	120.34	2.913		
11,700.0	7,295.0	11,916.2	7,513.0	77.4	77.3	-128.45	-4,240.4	-58.7	350.5	227.5	123.05	2.849		
11,800.0	7,295.0	12,016.2	7,513.0	79.1	79.0	-128.45	-4,340.4	-58.7	350.5	224.8	125.76	2.787		
11,838.1	7,295.0	12,054.3	7,513.0	79.8	79.6	-128.45	-4,378.5	-58.7	350.5	223.7	126.79	2.765		
11,867.4	7,295.0	12,079.9	7,513.0	80.3	80.1	-128.45	-4,404.2	-58.7	350.6	223.0	127.54	2.749 SF		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well lone 1B-2H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Reference Site:</b>	NWNE S2-T2N-R66W (lone)	<b>MD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	lone 1B-2H	<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 NWNE S2-T2N-R66W (lone) - lone 1D-2H - HZ - Plan #1													Offset Site Error: 0.0 ft			
Survey Program: 0-MWD															Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor				
0.0	0.0	0.0	0.0	0.0	0.0	90.05	0.0	19.6	19.6							
100.0	100.0	100.0	100.0	0.2	0.2	90.05	0.0	19.6	19.6	19.3	0.30	64.411				
200.0	200.0	200.0	200.0	0.3	0.3	90.05	0.0	19.6	19.6	18.9	0.65	29.967				
300.0	300.0	300.0	300.0	0.5	0.5	90.05	0.0	19.6	19.6	18.6	1.00	19.525				
400.0	400.0	400.0	400.0	0.7	0.7	90.05	0.0	19.6	19.6	18.2	1.35	14.480	CC, ES			
500.0	500.0	500.0	500.0	0.9	0.8	131.79	0.0	19.6	20.7	19.0	1.70	12.159				
600.0	599.8	599.8	599.8	1.0	1.0	140.90	0.0	19.6	24.5	22.4	2.05	11.922	SF			
700.0	699.5	699.1	699.0	1.2	1.2	147.17	1.2	20.8	31.7	29.3	2.41	13.160				
800.0	799.2	798.1	797.9	1.4	1.4	146.72	4.8	24.5	40.7	37.9	2.77	14.671				
900.0	898.9	896.9	896.4	1.7	1.6	143.11	10.6	30.5	51.3	48.1	3.16	16.249				
1,000.0	998.6	996.3	995.3	1.9	1.8	139.97	17.2	37.3	62.6	59.0	3.55	17.626				
1,100.0	1,098.3	1,095.6	1,094.1	2.1	2.0	137.79	23.8	44.1	74.0	70.1	3.95	18.739				
1,200.0	1,197.9	1,194.9	1,193.0	2.3	2.2	136.20	30.4	50.8	85.5	81.2	4.35	19.651				
1,300.0	1,297.6	1,294.2	1,291.9	2.5	2.5	134.98	37.0	57.6	97.1	92.3	4.76	20.410				
1,400.0	1,397.3	1,393.5	1,390.7	2.7	2.7	134.02	43.6	64.4	108.6	103.5	5.16	21.051				
1,500.0	1,497.0	1,492.8	1,489.6	3.0	2.9	133.25	50.2	71.2	120.2	114.7	5.57	21.598				
1,600.0	1,596.7	1,592.1	1,588.4	3.2	3.1	132.61	56.8	77.9	131.9	125.9	5.98	22.070				
1,700.0	1,696.4	1,691.4	1,687.3	3.4	3.4	132.08	63.4	84.7	143.5	137.1	6.38	22.481				
1,800.0	1,796.0	1,790.8	1,786.2	3.6	3.6	131.63	70.0	91.5	155.2	148.4	6.79	22.842				
1,900.0	1,895.7	1,890.1	1,885.0	3.8	3.8	131.23	76.6	98.3	166.8	159.6	7.20	23.162				
2,000.0	1,995.4	1,989.4	1,983.9	4.1	4.1	130.90	83.2	105.0	178.5	170.9	7.61	23.447				
2,100.0	2,095.1	2,088.7	2,082.8	4.3	4.3	130.60	89.8	111.8	190.1	182.1	8.02	23.703				
2,200.0	2,194.8	2,188.0	2,181.6	4.5	4.5	130.34	96.4	118.6	201.8	193.4	8.43	23.933				
2,300.0	2,294.4	2,287.3	2,280.5	4.7	4.8	130.10	103.0	125.4	213.5	204.6	8.84	24.142				
2,400.0	2,394.1	2,386.6	2,379.3	5.0	5.0	129.89	109.6	132.1	225.2	215.9	9.25	24.332				
2,500.0	2,493.8	2,485.9	2,478.2	5.2	5.3	129.70	116.2	138.9	236.8	227.2	9.66	24.506				
2,600.0	2,593.5	2,585.3	2,577.1	5.4	5.5	129.53	122.8	145.7	248.5	238.4	10.08	24.665				
2,700.0	2,693.2	2,684.6	2,675.9	5.6	5.7	129.37	129.4	152.4	260.2	249.7	10.49	24.812				
2,800.0	2,792.9	2,783.9	2,774.8	5.8	6.0	129.23	136.0	159.2	271.9	261.0	10.90	24.947				
2,900.0	2,892.5	2,883.2	2,873.6	6.1	6.2	129.10	142.6	166.0	283.6	272.3	11.31	25.073				
3,000.0	2,992.2	2,982.5	2,972.5	6.3	6.4	128.98	149.2	172.8	295.3	283.6	11.72	25.190				
3,100.0	3,091.9	3,081.8	3,071.4	6.5	6.7	128.87	155.8	179.5	307.0	294.8	12.13	25.298				
3,200.0	3,191.6	3,181.1	3,170.2	6.7	6.9	128.76	162.4	186.3	318.7	306.1	12.55	25.400				
3,300.0	3,291.3	3,280.4	3,269.1	7.0	7.2	128.67	168.9	193.1	330.4	317.4	12.96	25.494				
3,400.0	3,390.9	3,379.8	3,368.0	7.2	7.4	128.58	175.5	199.9	342.0	328.7	13.37	25.583				
3,500.0	3,490.6	3,479.1	3,466.8	7.4	7.6	128.50	182.1	206.6	353.7	340.0	13.78	25.667				
3,600.0	3,590.3	3,578.4	3,565.7	7.6	7.9	128.42	188.7	213.4	365.4	351.2	14.19	25.746				
3,700.0	3,690.0	3,677.7	3,664.5	7.9	8.1	128.34	195.3	220.2	377.1	362.5	14.61	25.820				
3,800.0	3,789.7	3,777.0	3,763.4	8.1	8.3	128.28	201.9	227.0	388.8	373.8	15.02	25.890				
3,900.0	3,889.4	3,876.3	3,862.3	8.3	8.6	128.21	208.5	233.7	400.5	385.1	15.43	25.956				
4,000.0	3,989.0	3,975.6	3,961.1	8.5	8.8	128.15	215.1	240.5	412.2	396.4	15.84	26.019				
4,100.0	4,088.7	4,074.9	4,060.0	8.7	9.1	128.09	221.7	247.3	423.9	407.7	16.26	26.079				
4,200.0	4,188.4	4,174.3	4,158.8	9.0	9.3	128.04	228.3	254.1	435.6	419.0	16.67	26.135				
4,300.0	4,288.1	4,273.6	4,257.7	9.2	9.5	127.99	234.9	260.8	447.3	430.2	17.08	26.189				
4,400.0	4,387.8	4,372.9	4,356.6	9.4	9.8	127.94	241.5	267.6	459.0	441.5	17.49	26.241				
4,500.0	4,487.5	4,472.2	4,455.4	9.6	10.0	127.89	248.1	274.4	470.7	452.8	17.91	26.290				
4,600.0	4,587.1	4,571.5	4,554.3	9.9	10.3	127.85	254.7	281.2	482.4	464.1	18.32	26.336				
4,700.0	4,686.8	4,670.8	4,653.1	10.1	10.5	127.80	261.3	287.9	494.1	475.4	18.73	26.381				

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 lone 1B-2H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Reference Site:</b>	NWNE S2-T2N-R66W (lone)	<b>MD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	lone 1B-2H	<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 NWNE S2-T2N-R66W (lone) - lone 1E-2H - HZ - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis			
0.0	0.0	0.0	0.0	0.0	0.0	90.05	0.0	30.7	30.7					
100.0	100.0	100.0	100.0	0.2	0.2	90.05	0.0	30.7	30.7	30.4	0.30	101.218		
200.0	200.0	200.0	200.0	0.3	0.3	90.05	0.0	30.7	30.7	30.1	0.65	47.091		
300.0	300.0	300.0	300.0	0.5	0.5	90.05	0.0	30.7	30.7	29.7	1.00	30.683		
400.0	400.0	400.0	400.0	0.7	0.7	90.05	0.0	30.7	30.7	29.4	1.35	22.754 CC, ES		
500.0	500.0	499.0	499.0	0.9	0.9	128.76	0.9	32.2	33.3	31.6	1.70	19.584 SF		
600.0	599.8	597.7	597.5	1.0	1.0	130.47	3.5	36.6	41.0	38.9	2.06	19.906		
700.0	699.5	695.6	695.1	1.2	1.2	131.64	7.9	43.7	53.2	50.7	2.43	21.885		
800.0	799.2	793.8	792.7	1.4	1.5	131.08	13.8	53.3	67.8	65.0	2.81	24.101		
900.0	898.9	892.7	890.9	1.7	1.7	130.59	19.8	63.3	82.7	79.5	3.20	25.809		
1,000.0	998.6	991.6	989.1	1.9	2.0	130.25	25.9	73.2	97.6	94.0	3.60	27.118		
1,100.0	1,098.3	1,090.5	1,087.3	2.1	2.2	130.01	31.9	83.1	112.5	108.5	4.00	28.149		
1,200.0	1,197.9	1,189.4	1,185.5	2.3	2.5	129.82	38.0	93.1	127.4	123.0	4.39	28.980		
1,300.0	1,297.6	1,288.3	1,283.7	2.5	2.7	129.67	44.0	103.0	142.3	137.5	4.80	29.665		
1,400.0	1,397.3	1,387.1	1,381.9	2.7	3.0	129.54	50.1	112.9	157.2	152.0	5.20	30.237		
1,500.0	1,497.0	1,486.0	1,480.0	3.0	3.2	129.44	56.1	122.8	172.1	166.5	5.60	30.722		
1,600.0	1,596.7	1,584.9	1,578.2	3.2	3.5	129.36	62.2	132.8	187.0	180.9	6.00	31.138		
1,700.0	1,696.4	1,683.8	1,676.4	3.4	3.8	129.28	68.3	142.7	201.8	195.4	6.41	31.499		
1,800.0	1,796.0	1,782.7	1,774.6	3.6	4.0	129.22	74.3	152.6	216.7	209.9	6.81	31.816		
1,900.0	1,895.7	1,881.6	1,872.8	3.8	4.3	129.17	80.4	162.5	231.6	224.4	7.22	32.095		
2,000.0	1,995.4	1,980.4	1,971.0	4.1	4.6	129.12	86.4	172.5	246.5	238.9	7.62	32.343		
2,100.0	2,095.1	2,079.3	2,069.2	4.3	4.8	129.08	92.5	182.4	261.4	253.4	8.03	32.564		
2,200.0	2,194.8	2,178.2	2,167.4	4.5	5.1	129.04	98.5	192.3	276.3	267.9	8.43	32.764		
2,300.0	2,294.4	2,277.1	2,265.6	4.7	5.4	129.01	104.6	202.2	291.2	282.4	8.84	32.944		
2,400.0	2,394.1	2,376.0	2,363.8	5.0	5.6	128.98	110.6	212.2	306.1	296.9	9.25	33.108		
2,500.0	2,493.8	2,474.9	2,462.0	5.2	5.9	128.95	116.7	222.1	321.0	311.4	9.65	33.258		
2,600.0	2,593.5	2,573.7	2,560.2	5.4	6.2	128.92	122.7	232.0	335.9	325.9	10.06	33.395		
2,700.0	2,693.2	2,672.6	2,658.4	5.6	6.4	128.90	128.8	241.9	350.8	340.4	10.47	33.521		
2,800.0	2,792.9	2,771.5	2,756.6	5.8	6.7	128.88	134.8	251.9	365.7	354.9	10.87	33.637		
2,900.0	2,892.5	2,870.4	2,854.8	6.1	7.0	128.86	140.9	261.8	380.6	369.4	11.28	33.745		
3,000.0	2,992.2	2,969.3	2,953.0	6.3	7.2	128.84	147.0	271.7	395.5	383.9	11.69	33.845		
3,100.0	3,091.9	3,068.2	3,051.2	6.5	7.5	128.82	153.0	281.6	410.4	398.3	12.09	33.938		
3,200.0	3,191.6	3,167.0	3,149.4	6.7	7.7	128.81	159.1	291.6	425.3	412.8	12.50	34.025		
3,300.0	3,291.3	3,265.9	3,247.6	7.0	8.0	128.79	165.1	301.5	440.2	427.3	12.91	34.106		
3,400.0	3,390.9	3,364.8	3,345.8	7.2	8.3	128.78	171.2	311.4	455.1	441.8	13.32	34.182		
3,500.0	3,490.6	3,463.7	3,444.0	7.4	8.5	128.77	177.2	321.4	470.0	456.3	13.72	34.253		
3,600.0	3,590.3	3,562.6	3,542.2	7.6	8.8	128.76	183.3	331.3	484.9	470.8	14.13	34.320		
3,700.0	3,690.0	3,661.5	3,640.4	7.9	9.1	128.74	189.3	341.2	499.8	485.3	14.54	34.383		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well lone 1B-2H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Reference Site:</b>	NWNE S2-T2N-R66W (lone)	<b>MD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	lone 1B-2H	<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 NWNE S2-T2N-R66W (lone) - lone 1F-2H - HZ - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	89.99	0.0	39.1	39.1					
100.0	100.0	100.0	100.0	0.2	0.2	89.99	0.0	39.1	39.1	38.8	0.30	128.823		
200.0	200.0	200.0	200.0	0.3	0.3	89.99	0.0	39.1	39.1	38.5	0.65	59.934	CC, ES	
300.0	300.0	298.7	298.7	0.5	0.5	89.12	0.6	40.7	40.7	39.7	1.00	40.644		
400.0	400.0	397.2	397.0	0.7	0.7	86.90	2.5	45.4	45.6	44.2	1.36	33.478		
500.0	500.0	495.1	494.6	0.9	0.9	123.41	5.5	53.3	54.8	53.1	1.70	32.243	SF	
600.0	599.8	592.1	590.8	1.0	1.2	123.92	9.7	64.1	69.1	67.0	2.06	33.553		
700.0	699.5	687.8	685.4	1.2	1.5	125.05	15.0	77.7	88.0	85.6	2.43	36.173		
800.0	799.2	784.8	780.9	1.4	1.8	125.50	21.2	93.7	109.3	106.5	2.82	38.767		
900.0	898.9	882.5	877.1	1.7	2.1	125.79	27.5	109.8	130.6	127.4	3.21	40.687		
1,000.0	998.6	980.2	973.2	1.9	2.5	126.00	33.7	126.0	151.9	148.3	3.60	42.151		
1,100.0	1,098.3	1,077.9	1,069.4	2.1	2.8	126.15	40.0	142.1	173.2	169.2	4.00	43.301		
1,200.0	1,197.9	1,175.6	1,165.5	2.3	3.1	126.28	46.3	158.2	194.6	190.2	4.40	44.226		
1,300.0	1,297.6	1,273.3	1,261.7	2.5	3.5	126.38	52.6	174.4	215.9	211.1	4.80	44.986		
1,400.0	1,397.3	1,371.0	1,357.8	2.7	3.8	126.46	58.8	190.5	237.2	232.0	5.20	45.620		
1,500.0	1,497.0	1,468.7	1,454.0	3.0	4.2	126.52	65.1	206.6	258.5	252.9	5.60	46.156		
1,600.0	1,596.7	1,566.4	1,550.1	3.2	4.5	126.58	71.4	222.8	279.9	273.9	6.00	46.616		
1,700.0	1,696.4	1,664.1	1,646.3	3.4	4.9	126.63	77.6	238.9	301.2	294.8	6.41	47.015		
1,800.0	1,796.0	1,761.8	1,742.5	3.6	5.2	126.67	83.9	255.1	322.5	315.7	6.81	47.363		
1,900.0	1,895.7	1,859.5	1,838.6	3.8	5.6	126.71	90.2	271.2	343.9	336.6	7.21	47.670		
2,000.0	1,995.4	1,957.2	1,934.8	4.1	5.9	126.74	96.5	287.3	365.2	357.6	7.62	47.943		
2,100.0	2,095.1	2,054.9	2,030.9	4.3	6.3	126.77	102.7	303.5	386.5	378.5	8.02	48.187		
2,200.0	2,194.8	2,152.6	2,127.1	4.5	6.6	126.80	109.0	319.6	407.8	399.4	8.43	48.406		
2,300.0	2,294.4	2,250.3	2,223.2	4.7	7.0	126.82	115.3	335.7	429.2	420.3	8.83	48.604		
2,400.0	2,394.1	2,348.0	2,319.4	5.0	7.3	126.84	121.5	351.9	450.5	441.3	9.23	48.784		
2,500.0	2,493.8	2,445.7	2,415.5	5.2	7.7	126.86	127.8	368.0	471.8	462.2	9.64	48.948		
2,600.0	2,593.5	2,543.4	2,511.7	5.4	8.0	126.88	134.1	384.1	493.2	483.1	10.04	49.098		



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Ione 1B-2H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Reference Site:</b>	NWNE S2-T2N-R66W (Ione)	<b>MD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Ione 1B-2H	<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 NWNE S2-T2N-R66W (Ione) - Ione 6-4-2 (Existing) - Existing - Existing													Offset Site Error: 0.0 ft	
Survey Program: 963-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		
9,300.0	7,295.0	7,602.9	7,318.8	36.8	30.4	-92.28	-2,120.5	39.5	466.4	400.6	65.83	7.085		
9,400.0	7,295.0	7,602.2	7,318.2	38.4	30.4	-92.18	-2,120.5	39.5	414.2	346.7	67.48	6.138		
9,500.0	7,295.0	7,601.5	7,317.5	40.1	30.4	-92.08	-2,120.5	39.6	381.5	312.4	69.14	5.518		
9,580.1	7,295.0	7,601.0	7,317.0	41.4	30.4	-92.00	-2,120.5	39.6	373.0	302.5	70.47	5.293 CC, ES		
9,600.0	7,295.0	7,600.9	7,316.9	41.7	30.4	-91.97	-2,120.5	39.6	373.5	302.7	70.80	5.276 SF		
9,700.0	7,295.0	7,600.2	7,316.2	43.4	30.4	-91.87	-2,120.5	39.6	391.8	319.3	72.47	5.406		
9,800.0	7,295.0	7,599.5	7,315.5	45.0	30.4	-91.77	-2,120.5	39.6	433.0	358.9	74.15	5.840		
9,900.0	7,295.0	7,598.8	7,314.8	46.7	30.4	-91.66	-2,120.5	39.7	491.4	415.6	75.83	6.480		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Ione 1B-2H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Reference Site:</b>	NWNE S2-T2N-R66W (Ione)	<b>MD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Ione 1B-2H	<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

<b>Offset Design</b> NWNE S2-T2N-R66W (Ione) - Ione 6-8-2 (Existing) - Existing - Existing													<b>Offset Site Error:</b>	0.0 ft
Survey Program: 154-MWD													<b>Offset Well Error:</b>	0.0 ft
Reference		Offset		Semi Major Axis			Distance							
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre +N/-S	+E/-W	Between Centres	Between Ellipses	Total Uncertainty Axis	Separation Factor	Warning	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	(ft)	(ft)	(ft)	(ft)				
11,867.4	7,295.0	7,436.1	7,271.8	80.3	24.2	-90.29	-4,759.8	15.1	495.2	391.1	104.15	4.755 CC, ES, SF		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well lone 1B-2H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Reference Site:</b>	NWNE S2-T2N-R66W (lone)	<b>MD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	lone 1B-2H	<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													NWSW S2-T2N-R66W (lone) - lone #13 (Existing) - HZ - Plan #1		Offset Site Error:		0.0 ft
Survey Program:													0-MWD		Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning			
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre +N/-S	+E/-W	Between Centres	Between Ellipses	Total Uncertainty Axis	Separation Factor					
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	(ft)	(ft)	(ft)	(ft)							
10,900.0	7,295.0	7,272.0	7,272.0		63.6	12.7	-90.00	-3,549.6	124.6	470.7	394.6	76.03	6.191				
11,000.0	7,295.0	7,272.0	7,272.0		65.3	12.7	-90.00	-3,549.6	124.6	457.9	380.2	77.75	5.890				
11,009.1	7,295.0	7,272.0	7,272.0		65.5	12.7	-90.00	-3,549.6	124.6	457.8	379.9	77.91	5.877 CC, ES				
11,100.0	7,295.0	7,272.0	7,272.0		67.1	12.7	-90.00	-3,549.6	124.6	466.8	387.3	79.47	5.874 SF				
11,200.0	7,295.0	7,272.0	7,272.0		68.8	12.7	-90.00	-3,549.6	124.6	496.0	414.9	81.19	6.110				

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well lone 1B-2H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Reference Site:</b>	NWNE S2-T2N-R66W (lone)	<b>MD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	lone 1B-2H	<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 NWSW S2-T2N-R66W (lone) - lone #31-2 (Existing) - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: O-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis			
0.0	0.0	5.0	5.0	0.0	0.0	-112.68	-173.8	-415.8	450.7					
100.0	100.0	105.0	105.0	0.2	0.2	-112.68	-173.8	-415.8	450.7	450.3	0.31	1,458.798		
200.0	200.0	205.0	205.0	0.3	0.3	-112.68	-173.8	-415.8	450.7	450.0	0.66	684.900		
300.0	300.0	305.0	305.0	0.5	0.5	-112.68	-173.8	-415.8	450.7	449.7	1.01	447.500		
400.0	400.0	405.0	405.0	0.7	0.7	-112.68	-173.8	-415.8	450.7	449.3	1.36	332.313		
500.0	500.0	505.0	505.0	0.9	0.9	-74.96	-173.8	-415.8	450.2	448.5	1.71	263.716		
600.0	599.8	604.8	604.8	1.0	1.0	-75.63	-173.8	-415.8	448.9	446.8	2.07	216.953		
700.0	699.5	704.5	704.5	1.2	1.2	-76.61	-173.8	-415.8	447.0	444.5	2.44	183.002		
800.0	799.2	804.2	804.2	1.4	1.4	-77.60	-173.8	-415.8	445.2	442.4	2.82	157.718		
900.0	898.9	903.9	903.9	1.7	1.6	-78.61	-173.8	-415.8	443.6	440.4	3.21	138.289		
1,000.0	998.6	1,003.6	1,003.6	1.9	1.7	-79.61	-173.8	-415.8	442.0	438.5	3.60	122.955		
1,100.0	1,098.3	1,103.3	1,103.3	2.1	1.9	-80.63	-173.8	-415.8	440.7	436.7	3.99	110.579		
1,200.0	1,197.9	1,202.9	1,202.9	2.3	2.1	-81.65	-173.8	-415.8	439.4	435.1	4.38	100.403		
1,300.0	1,297.6	1,302.6	1,302.6	2.5	2.2	-82.68	-173.8	-415.8	438.4	433.6	4.77	91.904		
1,400.0	1,397.3	1,402.3	1,402.3	2.7	2.4	-83.71	-173.8	-415.8	437.4	432.2	5.16	84.710		
1,500.0	1,497.0	1,502.0	1,502.0	3.0	2.6	-84.75	-173.8	-415.8	436.6	431.0	5.56	78.551		
1,600.0	1,596.7	1,601.7	1,601.7	3.2	2.8	-85.79	-173.8	-415.8	435.9	430.0	5.95	73.227		
1,700.0	1,696.4	1,701.4	1,701.4	3.4	2.9	-86.83	-173.8	-415.8	435.4	429.1	6.35	68.584		
1,800.0	1,796.0	1,801.0	1,801.0	3.6	3.1	-87.87	-173.8	-415.8	435.1	428.3	6.74	64.506		
1,900.0	1,895.7	1,900.7	1,900.7	3.8	3.3	-88.92	-173.8	-415.8	434.8	427.7	7.14	60.900		
2,000.0	1,995.4	2,000.4	2,000.4	4.1	3.5	-89.96	-173.8	-415.8	434.8	427.2	7.54	57.692		
2,003.3	1,998.7	2,003.7	2,003.7	4.1	3.5	-90.00	-173.8	-415.8	434.8	427.2	7.55	57.591		
2,100.0	2,095.1	2,100.1	2,100.1	4.3	3.6	-91.01	-173.8	-415.8	434.8	426.9	7.93	54.824		
2,200.0	2,194.8	2,199.8	2,199.8	4.5	3.8	-92.06	-173.8	-415.8	435.0	426.7	8.33	52.248		
2,300.0	2,294.4	2,299.4	2,299.4	4.7	4.0	-93.10	-173.8	-415.8	435.4	426.7	8.72	49.924		
2,400.0	2,394.1	2,399.1	2,399.1	5.0	4.2	-94.14	-173.8	-415.8	435.9	426.8	9.12	47.820		
2,500.0	2,493.8	2,498.8	2,498.8	5.2	4.3	-95.18	-173.8	-415.8	436.6	427.0	9.51	45.909		
2,600.0	2,593.5	2,598.5	2,598.5	5.4	4.5	-96.22	-173.8	-415.8	437.4	427.5	9.90	44.168		
2,700.0	2,693.2	2,698.2	2,698.2	5.6	4.7	-97.25	-173.8	-415.8	438.3	428.0	10.29	42.576		
2,800.0	2,792.9	2,797.9	2,797.9	5.8	4.9	-98.28	-173.8	-415.8	439.4	428.7	10.69	41.118		
2,900.0	2,892.5	2,897.5	2,897.5	6.1	5.0	-99.30	-173.8	-415.8	440.6	429.5	11.08	39.779		
3,000.0	2,992.2	2,997.2	2,997.2	6.3	5.2	-100.32	-173.8	-415.8	442.0	430.5	11.47	38.546		
3,100.0	3,091.9	3,096.9	3,096.9	6.5	5.4	-101.33	-173.8	-415.8	443.5	431.6	11.85	37.410		
3,200.0	3,191.6	3,196.6	3,196.6	6.7	5.6	-102.33	-173.8	-415.8	445.1	432.8	12.24	36.360		
3,300.0	3,291.3	3,296.3	3,296.3	7.0	5.7	-103.32	-173.8	-415.8	446.9	434.2	12.63	35.389		
3,400.0	3,390.9	3,395.9	3,395.9	7.2	5.9	-104.31	-173.8	-415.8	448.8	435.8	13.01	34.489		
3,500.0	3,490.6	3,495.6	3,495.6	7.4	6.1	-105.29	-173.8	-415.8	450.8	437.4	13.40	33.653		
3,600.0	3,590.3	3,595.3	3,595.3	7.6	6.2	-106.26	-173.8	-415.8	453.0	439.2	13.78	32.877		
3,700.0	3,690.0	3,695.0	3,695.0	7.9	6.4	-107.22	-173.8	-415.8	455.3	441.1	14.16	32.154		
3,800.0	3,789.7	3,794.7	3,794.7	8.1	6.6	-108.17	-173.8	-415.8	457.7	443.2	14.54	31.481		
3,900.0	3,889.4	3,894.4	3,894.4	8.3	6.8	-109.11	-173.8	-415.8	460.3	445.4	14.92	30.854		
4,000.0	3,989.0	3,994.0	3,994.0	8.5	6.9	-110.04	-173.8	-415.8	462.9	447.7	15.30	30.268		
4,100.0	4,088.7	4,093.7	4,093.7	8.7	7.1	-110.96	-173.8	-415.8	465.7	450.1	15.67	29.720		
4,200.0	4,188.4	4,193.4	4,193.4	9.0	7.3	-111.86	-173.8	-415.8	468.7	452.6	16.05	29.208		
4,300.0	4,288.1	4,293.1	4,293.1	9.2	7.5	-112.76	-173.8	-415.8	471.7	455.3	16.42	28.729		
4,400.0	4,387.8	4,392.8	4,392.8	9.4	7.6	-113.64	-173.8	-415.8	474.8	458.0	16.79	28.280		
4,500.0	4,487.5	4,492.5	4,492.5	9.6	7.8	-114.51	-173.8	-415.8	478.1	460.9	17.16	27.859		
4,600.0	4,587.1	4,592.1	4,592.1	9.9	8.0	-115.37	-173.8	-415.8	481.5	463.9	17.53	27.464		
4,700.0	4,686.8	4,691.8	4,691.8	10.1	8.2	-116.22	-173.8	-415.8	484.9	467.0	17.90	27.094		
4,800.0	4,786.5	4,791.5	4,791.5	10.3	8.3	-117.06	-173.8	-415.8	488.5	470.3	18.27	26.746		
4,900.0	4,886.2	4,891.2	4,891.2	10.5	8.5	-117.88	-173.8	-415.8	492.2	473.6	18.63	26.419		
5,000.0	4,985.9	4,990.9	4,990.9	10.7	8.7	-118.69	-173.8	-415.8	496.0	477.0	19.00	26.112		

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 lone 1B-2H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Reference Site:</b>	NWNE S2-T2N-R66W (lone)	<b>MD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	lone 1B-2H	<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

<b>Offset Design</b> NWSW S2-T2N-R66W (lone) - lone #31-2 (Existing) - DD - Plan #1													<b>Offset Site Error:</b>	0.0 ft
Survey Program: 0-MWD													<b>Offset Well Error:</b>	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	5,085.5	5,090.5	5,090.5	11.0	8.9	-119.49	-173.8	-415.8	499.9	480.5	19.36	25.822		
7,100.0	7,057.2	7,062.2	7,062.2	14.4	12.3	9.58	-173.8	-415.8	465.5	442.6	22.94	20.296		
7,200.0	7,132.7	7,137.7	7,137.7	14.2	12.4	14.64	-173.8	-415.8	401.0	379.5	21.58	18.581		
7,300.0	7,195.8	7,200.8	7,200.8	14.1	12.5	23.43	-173.8	-415.8	325.3	304.7	20.61	15.783		
7,400.0	7,244.6	7,249.6	7,249.6	14.2	12.6	40.58	-173.8	-415.8	241.6	220.1	21.50	11.242		
7,500.0	7,277.4	7,282.4	7,282.4	14.4	12.7	68.25	-173.8	-415.8	156.1	131.3	24.79	6.296		
7,600.0	7,293.4	7,298.4	7,298.4	14.8	12.7	88.28	-173.8	-415.8	89.1	62.9	26.26	3.395		
7,633.5	7,295.5	7,300.5	7,300.5	14.9	12.7	90.00	-173.8	-415.8	82.6	56.1	26.47	3.120 CC, ES, SF		
7,700.0	7,295.0	7,300.0	7,300.0	15.3	12.7	90.00	-173.8	-415.8	106.2	79.3	26.89	3.948		
7,800.0	7,295.0	7,300.0	7,300.0	16.1	12.7	90.00	-173.8	-415.8	186.0	158.3	27.71	6.713		
7,900.0	7,295.0	7,300.0	7,300.0	17.0	12.7	90.00	-173.8	-415.8	279.2	250.5	28.68	9.735		
8,000.0	7,295.0	7,300.0	7,300.0	18.0	12.7	90.00	-173.8	-415.8	375.9	346.1	29.77	12.625		
8,100.0	7,295.0	7,300.0	7,300.0	19.2	12.7	90.00	-173.8	-415.8	473.9	443.0	30.97	15.304		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well lone 1B-2H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Reference Site:</b>	NWNE S2-T2N-R66W (lone)	<b>MD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	lone 1B-2H	<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 NWSW S2-T2N-R66W (lone) - lone #32-2 (Existing) - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
8,700.0	7,295.0	7,300.0	7,300.0	27.4	12.7	90.00	-1,599.2	-556.4	422.5	383.1	39.47	10.704		
8,800.0	7,295.0	7,300.0	7,300.0	28.9	12.7	90.00	-1,599.2	-556.4	341.7	300.7	41.02	8.330		
8,900.0	7,295.0	7,300.0	7,300.0	30.4	12.7	90.00	-1,599.2	-556.4	273.9	231.3	42.60	6.430		
9,000.0	7,295.0	7,300.0	7,300.0	32.0	12.7	90.00	-1,599.2	-556.4	230.8	186.6	44.19	5.223		
9,058.8	7,295.0	7,300.0	7,300.0	32.9	12.7	90.00	-1,599.2	-556.4	223.2	178.1	45.13	4.945 CC, ES, SF		
9,100.0	7,295.0	7,300.0	7,300.0	33.6	12.7	90.00	-1,599.2	-556.4	227.0	181.2	45.80	4.956		
9,200.0	7,295.0	7,300.0	7,300.0	35.2	12.7	90.00	-1,599.2	-556.4	264.1	216.7	47.42	5.570		
9,300.0	7,295.0	7,300.0	7,300.0	36.8	12.7	90.00	-1,599.2	-556.4	328.7	279.6	49.05	6.700		
9,400.0	7,295.0	7,300.0	7,300.0	38.4	12.7	90.00	-1,599.2	-556.4	407.8	357.1	50.70	8.043		
9,500.0	7,295.0	7,300.0	7,300.0	40.1	12.7	90.00	-1,599.2	-556.4	494.5	442.1	52.35	9.445		

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well lone 1B-2H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Reference Site:</b>	NWNE S2-T2N-R66W (lone)	<b>MD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	lone 1B-2H	<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

<b>Offset Design</b> NWSW S2-T2N-R66W (lone) - lone #33-2 (Existing) - DD - Plan #1												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 0-MWD												<b>Offset Well Error:</b>	0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
10,000.0	7,295.0	7,280.0	7,280.0	48.4	12.7	90.00	-2,933.2	-593.9	471.4	410.7	60.70	7.767	
10,100.0	7,295.0	7,280.0	7,280.0	50.1	12.7	90.00	-2,933.2	-593.9	392.0	329.6	62.39	6.283	
10,200.0	7,295.0	7,280.0	7,280.0	51.7	12.7	90.00	-2,933.2	-593.9	324.2	260.1	64.08	5.059	
10,300.0	7,295.0	7,280.0	7,280.0	53.4	12.7	90.00	-2,933.2	-593.9	276.7	210.9	65.78	4.206	
10,392.7	7,295.0	7,280.0	7,280.0	55.0	12.7	90.00	-2,933.2	-593.9	260.7	193.3	67.36	3.870 CC	
10,400.0	7,295.0	7,280.0	7,280.0	55.1	12.7	90.00	-2,933.2	-593.9	260.8	193.3	67.49	3.864 ES, SF	
10,500.0	7,295.0	7,280.0	7,280.0	56.8	12.7	90.00	-2,933.2	-593.9	281.9	212.7	69.19	4.074	
10,600.0	7,295.0	7,280.0	7,280.0	58.5	12.7	90.00	-2,933.2	-593.9	333.0	262.1	70.90	4.697	
10,700.0	7,295.0	7,280.0	7,280.0	60.2	12.7	90.00	-2,933.2	-593.9	402.9	330.3	72.61	5.549	
10,800.0	7,295.0	7,280.0	7,280.0	61.9	12.7	90.00	-2,933.2	-593.9	483.5	409.2	74.33	6.505	

# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well lone 1B-2H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Reference Site:</b>	NWNE S2-T2N-R66W (lone)	<b>MD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	lone 1B-2H	<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													NWSW S2-T2N-R66W (lone) - lone #34-2 (Existing) - DD - Plan #1		Offset Site Error:		0.0 ft	
Survey Program:													0-MWD		Offset Well Error:		0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning				
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor						
11,700.0	7,295.0	7,271.0	7,271.0	77.4	12.7	90.00	-4,469.0	-756.0	480.7	390.8	89.82	5.351						
11,800.0	7,295.0	7,271.0	7,271.0	79.1	12.7	90.00	-4,469.0	-756.0	441.9	350.4	91.55	4.827						
11,867.4	7,295.0	7,271.0	7,271.0	80.3	12.7	90.00	-4,469.0	-756.0	427.2	334.5	92.72	4.608	CC, ES, SF					



# Cathedral Energy Services

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well lone 1B-2H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Reference Site:</b>	NWNE S2-T2N-R66W (lone)	<b>MD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	lone 1B-2H	<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													NWSW S2-T2N-R66W (lone) - lone 33-2 - Wellbore #1 - Wellbore #1		Offset Site Error:		0.0 ft	
Survey Program:													8083-Gyro		Offset Well Error:		0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning				
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft) +E/-W (ft)		Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor						
10,000.0	7,295.0	7,250.0	7,250.0	48.4	6.3	90.00	-2,933.2	-593.8	471.3	417.0	54.33	8.675						
10,100.0	7,295.0	7,250.0	7,250.0	50.1	6.3	90.00	-2,933.2	-593.8	391.9	335.9	56.02	6.995						
10,200.0	7,295.0	7,250.0	7,250.0	51.7	6.3	90.00	-2,933.2	-593.8	324.1	266.4	57.72	5.615						
10,300.0	7,295.0	7,250.0	7,250.0	53.4	6.3	90.00	-2,933.2	-593.8	276.6	217.1	59.42	4.654						
10,392.7	7,295.0	7,250.0	7,250.0	55.0	6.3	90.00	-2,933.2	-593.8	260.6	199.6	61.00	4.271	CC					
10,400.0	7,295.0	7,250.0	7,250.0	55.1	6.3	90.00	-2,933.2	-593.8	260.7	199.5	61.12	4.264	ES, SF					
10,500.0	7,295.0	7,250.0	7,250.0	56.8	6.3	90.00	-2,933.2	-593.8	281.8	218.9	62.83	4.485						
10,600.0	7,295.0	7,250.0	7,250.0	58.5	6.3	90.00	-2,933.2	-593.8	332.9	268.4	64.54	5.159						
10,700.0	7,295.0	7,250.0	7,250.0	60.2	6.3	90.00	-2,933.2	-593.8	402.9	336.6	66.25	6.081						
10,800.0	7,295.0	7,250.0	7,250.0	61.9	6.3	90.00	-2,933.2	-593.8	483.5	415.5	67.96	7.114						

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 lone 1B-2H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Reference Site:</b>	NWNE S2-T2N-R66W (lone)	<b>MD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	lone 1B-2H	<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													NWSW S2-T2N-R66W (lone) - lone 6-4-2 (Existing) - Existing - Existing		Offset Site Error:		0.0 ft
Survey Program: 963-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					
9,300.0	7,295.0	7,602.9	7,318.8	36.8	30.4	-92.28	-2,120.5	39.5	466.4	400.6	65.83	7.085	5.293 CC, ES 5.276 SF				
9,400.0	7,295.0	7,602.2	7,318.2	38.4	30.4	-92.18	-2,120.5	39.5	414.2	346.7	67.48	6.138					
9,500.0	7,295.0	7,601.5	7,317.5	40.1	30.4	-92.08	-2,120.5	39.6	381.5	312.4	69.14	5.518					
9,580.0	7,295.0	7,601.0	7,317.0	41.4	30.4	-92.00	-2,120.5	39.6	373.0	302.5	70.47						
9,600.0	7,295.0	7,600.9	7,316.9	41.7	30.4	-91.97	-2,120.5	39.6	373.5	302.7	70.80						
9,700.0	7,295.0	7,600.2	7,316.2	43.4	30.4	-91.87	-2,120.5	39.6	391.8	319.4	72.47	5.407					
9,800.0	7,295.0	7,599.5	7,315.5	45.0	30.4	-91.77	-2,120.5	39.6	433.0	358.9	74.15	5.840					
9,900.0	7,295.0	7,598.8	7,314.8	46.7	30.4	-91.66	-2,120.5	39.7	491.4	415.6	75.83	6.480					

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<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well lone 1B-2H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Reference Site:</b>	NWNE S2-T2N-R66W (lone)	<b>MD Reference:</b>	KB=13' @ 5091.0ft (Original Well Elev)
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	lone 1B-2H	<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

<b>Offset Design</b> NWSW S2-T2N-R66W (lone) - lone 6-8-2 (Existing) - Existing - Existing												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 154-MWD												<b>Offset Well Error:</b>	0.0 ft
Reference		Offset		Semi Major Axis			Distance						
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
11,867.4	7,295.0	7,436.1	7,271.8	80.3	24.2	-90.29	-4,759.8	15.1	495.2	391.0	104.15	4.755	CC, ES, SF

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## Anticollision Report

**Company:** EnCana Oil & Gas (USA) Inc  
**Project:** DJ Wattenberg  
**Reference Site:** NWNE S2-T2N-R66W (Ione)  
**Site Error:** 0.0ft  
**Reference Well:** Ione 1B-2H  
**Well Error:** 0.0ft  
**Reference Wellbore:** HZ  
**Reference Design:** Plan #1

**Local Co-ordinate Reference:** Well Ione 1B-2H  
**TVD Reference:** KB=13' @ 5091.0ft (Original Well Elev)  
**MD Reference:** KB=13' @ 5091.0ft (Original Well Elev)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature  
**Output errors are at** 2.00 sigma  
**Database:** USA EDM 5000 Multi Users DB  
**Offset TVD Reference:** Offset Datum

Reference Depths are relative to KB=13' @ 5091.0ft (Original Well Elev)  
 Offset Depths are relative to Offset Datum  
 Central Meridian is -105.500000 °

Coordinates are relative to: Ione 1B-2H  
 Coordinate System is US State Plane 1983, Colorado Northern Zone  
 Grid Convergence at Surface is: 0.49°

