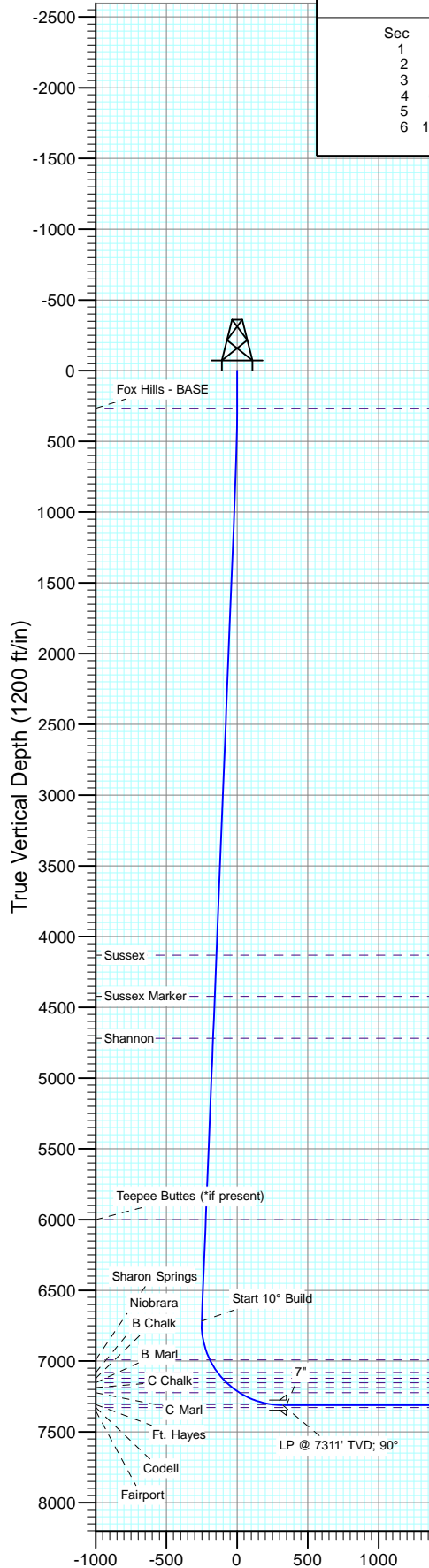
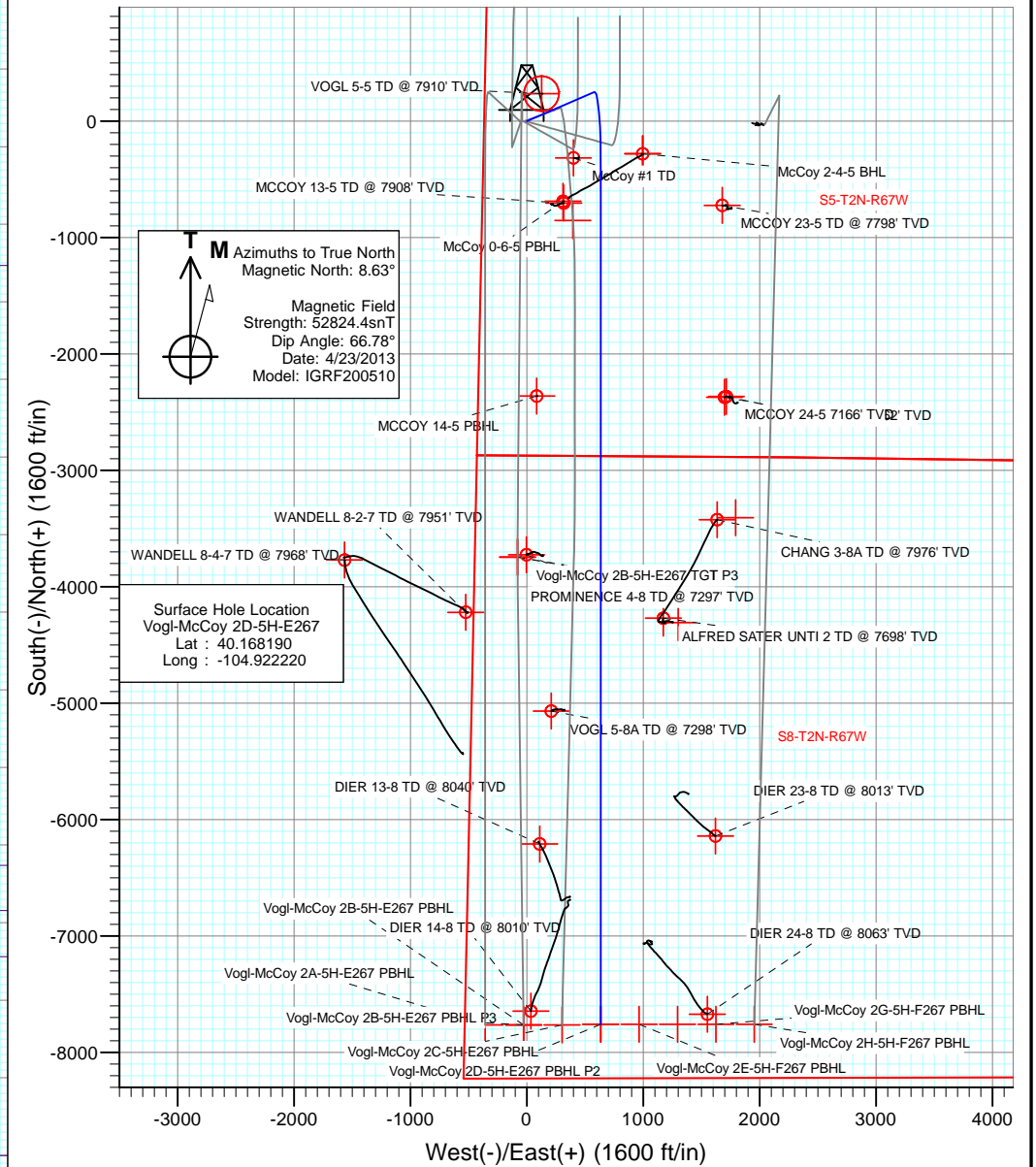




Project: DJ Wattenberg
Site: S5-T2N-R67W (Vogl-McCoy)
Well: Vogl-McCoy 2D-5H-E267
Wellbore: Hz
Design: Plan #2



SECTION DETAILS											
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target	Annotation
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0		KOP @ 200' MD
2	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0		EOB; 5.79°
3	778.7	5.79	66.63	777.7	11.6	26.8	1.00	66.63	-11.6		Start 10° Build
4	6749.1	5.79	66.63	6717.7	250.4	579.4	0.00	0.00	-250.4		LP @ 7311' TVD; 90°
5	7672.0	90.00	180.00	7311.0	-322.1	634.6	10.00	113.26	322.1		
6	15109.0	90.00	180.00	7311.0	-7759.1	634.6	0.00	0.00	7759.1	Vogl-McCoy 2D-5H-E267 PBHL	PBHL @ 15109' MD



DESIGN TARGET DETAILS					
Name	+N/-S	+E/-W	Northing	Easting	Latitude
Vogl-McCoy 2D-5H-E267 PBHL P2	-7759.1	634.6	1296888.40	3162158.24	40.146890

Vertical Section at 180.00° (1200 ft/in)

Plan #2
Vogl-McCoy 2D-5H-E267
13xxx; LR
KB @ 4866.0ft (Ensign)
Ground Elevation @ 4836.0
North American Datum 1983
Well Vogl-McCoy 2D-5H-E267, True North



Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KB @ 4866.0ft (Ensign)
Project:	DJ Wattenberg	MD Reference:	KB @ 4866.0ft (Ensign)
Site:	S5-T2N-R67W (Vogl-McCoy)	North Reference:	True
Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #2		

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

Site	S5-T2N-R67W (Vogl-McCoy)				
Site Position:		Northing:	1,303,967.76 ft	Latitude:	40.166330
From:	Lat/Long	Easting:	3,161,787.74 ft	Longitude:	-104.921110
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	0.37 °

Well	Vogl-McCoy 2D-5H-E267					
Well Position	+N/-S	0.0 ft	Northing:	1,304,643.23 ft	Latitude:	40.168190
	+E/-W	0.0 ft	Easting:	3,161,473.12 ft	Longitude:	-104.922220
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,836.0 ft

Wellbore	Hz				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	4/23/2013	8.63	66.78	52,824

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

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
778.7	5.79	66.63	777.7	11.6	26.8	1.00	1.00	0.00	66.63	
6,749.1	5.79	66.63	6,717.7	250.4	579.4	0.00	0.00	0.00	0.00	
7,672.0	90.00	180.00	7,311.0	-322.1	634.6	10.00	9.12	12.28	113.26	
15,109.0	90.00	180.00	7,311.0	-7,759.1	634.6	0.00	0.00	0.00	0.00	Vogl-McCoy 2D-5H-E



Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KB @ 4866.0ft (Ensign)
Project:	DJ Wattenberg	MD Reference:	KB @ 4866.0ft (Ensign)
Site:	S5-T2N-R67W (Vogl-McCoy)	North Reference:	True
Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #2		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	KOP @ 200' MD
266.0	0.66	66.63	266.0	0.2	0.3	-0.2	1.00	1.00	Fox Hills - BASE
300.0	1.00	66.63	300.0	0.3	0.8	-0.3	1.00	1.00	
400.0	2.00	66.63	400.0	1.4	3.2	-1.4	1.00	1.00	
500.0	3.00	66.63	499.9	3.1	7.2	-3.1	1.00	1.00	
600.0	4.00	66.63	599.7	5.5	12.8	-5.5	1.00	1.00	
700.0	5.00	66.63	699.4	8.6	20.0	-8.6	1.00	1.00	
778.7	5.79	66.63	777.7	11.6	26.8	-11.6	1.00	1.00	EOB; 5.79°
800.0	5.79	66.63	798.9	12.4	28.8	-12.4	0.00	0.00	
900.0	5.79	66.63	898.4	16.4	38.0	-16.4	0.00	0.00	
1,000.0	5.79	66.63	997.9	20.4	47.3	-20.4	0.00	0.00	
1,100.0	5.79	66.63	1,097.4	24.4	56.5	-24.4	0.00	0.00	
1,200.0	5.79	66.63	1,196.9	28.4	65.8	-28.4	0.00	0.00	
1,300.0	5.79	66.63	1,296.4	32.4	75.1	-32.4	0.00	0.00	
1,400.0	5.79	66.63	1,395.9	36.4	84.3	-36.4	0.00	0.00	
1,500.0	5.79	66.63	1,495.3	40.4	93.6	-40.4	0.00	0.00	
1,600.0	5.79	66.63	1,594.8	44.4	102.8	-44.4	0.00	0.00	
1,700.0	5.79	66.63	1,694.3	48.4	112.1	-48.4	0.00	0.00	
1,800.0	5.79	66.63	1,793.8	52.4	121.3	-52.4	0.00	0.00	
1,900.0	5.79	66.63	1,893.3	56.4	130.6	-56.4	0.00	0.00	
2,000.0	5.79	66.63	1,992.8	60.4	139.8	-60.4	0.00	0.00	
2,100.0	5.79	66.63	2,092.3	64.4	149.1	-64.4	0.00	0.00	
2,200.0	5.79	66.63	2,191.8	68.4	158.4	-68.4	0.00	0.00	
2,300.0	5.79	66.63	2,291.3	72.4	167.6	-72.4	0.00	0.00	
2,400.0	5.79	66.63	2,390.8	76.4	176.9	-76.4	0.00	0.00	
2,500.0	5.79	66.63	2,490.2	80.4	186.1	-80.4	0.00	0.00	
2,600.0	5.79	66.63	2,589.7	84.4	195.4	-84.4	0.00	0.00	
2,700.0	5.79	66.63	2,689.2	88.4	204.6	-88.4	0.00	0.00	
2,800.0	5.79	66.63	2,788.7	92.4	213.9	-92.4	0.00	0.00	
2,900.0	5.79	66.63	2,888.2	96.4	223.1	-96.4	0.00	0.00	
3,000.0	5.79	66.63	2,987.7	100.4	232.4	-100.4	0.00	0.00	
3,100.0	5.79	66.63	3,087.2	104.4	241.6	-104.4	0.00	0.00	
3,200.0	5.79	66.63	3,186.7	108.4	250.9	-108.4	0.00	0.00	
3,300.0	5.79	66.63	3,286.2	112.4	260.2	-112.4	0.00	0.00	
3,400.0	5.79	66.63	3,385.7	116.4	269.4	-116.4	0.00	0.00	
3,500.0	5.79	66.63	3,485.1	120.4	278.7	-120.4	0.00	0.00	
3,600.0	5.79	66.63	3,584.6	124.4	287.9	-124.4	0.00	0.00	
3,700.0	5.79	66.63	3,684.1	128.4	297.2	-128.4	0.00	0.00	
3,800.0	5.79	66.63	3,783.6	132.4	306.4	-132.4	0.00	0.00	
3,900.0	5.79	66.63	3,883.1	136.4	315.7	-136.4	0.00	0.00	
4,000.0	5.79	66.63	3,982.6	140.4	324.9	-140.4	0.00	0.00	
4,100.0	5.79	66.63	4,082.1	144.4	334.2	-144.4	0.00	0.00	
4,149.2	5.79	66.63	4,131.0	146.4	338.8	-146.4	0.00	0.00	Sussex
4,200.0	5.79	66.63	4,181.6	148.4	343.5	-148.4	0.00	0.00	
4,300.0	5.79	66.63	4,281.1	152.4	352.7	-152.4	0.00	0.00	
4,400.0	5.79	66.63	4,380.6	156.4	362.0	-156.4	0.00	0.00	
4,441.6	5.79	66.63	4,422.0	158.1	365.8	-158.1	0.00	0.00	Sussex Marker
4,500.0	5.79	66.63	4,480.1	160.4	371.2	-160.4	0.00	0.00	
4,600.0	5.79	66.63	4,579.5	164.4	380.5	-164.4	0.00	0.00	
4,700.0	5.79	66.63	4,679.0	168.4	389.7	-168.4	0.00	0.00	



Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KB @ 4866.0ft (Ensign)
Project:	DJ Wattenberg	MD Reference:	KB @ 4866.0ft (Ensign)
Site:	S5-T2N-R67W (Vogl-McCoy)	North Reference:	True
Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #2		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
4,740.2	5.79	66.63	4,719.0	170.0	393.5	-170.0	0.00	0.00	Shannon
4,800.0	5.79	66.63	4,778.5	172.4	399.0	-172.4	0.00	0.00	
4,900.0	5.79	66.63	4,878.0	176.4	408.2	-176.4	0.00	0.00	
5,000.0	5.79	66.63	4,977.5	180.4	417.5	-180.4	0.00	0.00	
5,100.0	5.79	66.63	5,077.0	184.4	426.8	-184.4	0.00	0.00	
5,200.0	5.79	66.63	5,176.5	188.4	436.0	-188.4	0.00	0.00	
5,300.0	5.79	66.63	5,276.0	192.4	445.3	-192.4	0.00	0.00	
5,400.0	5.79	66.63	5,375.5	196.4	454.5	-196.4	0.00	0.00	
5,500.0	5.79	66.63	5,475.0	200.4	463.8	-200.4	0.00	0.00	
5,600.0	5.79	66.63	5,574.4	204.4	473.0	-204.4	0.00	0.00	
5,700.0	5.79	66.63	5,673.9	208.4	482.3	-208.4	0.00	0.00	
5,800.0	5.79	66.63	5,773.4	212.4	491.5	-212.4	0.00	0.00	
5,900.0	5.79	66.63	5,872.9	216.4	500.8	-216.4	0.00	0.00	
6,000.0	5.79	66.63	5,972.4	220.4	510.1	-220.4	0.00	0.00	
6,027.7	5.79	66.63	6,000.0	221.5	512.6	-221.5	0.00	0.00	Teepee Buttes (*if present)
6,100.0	5.79	66.63	6,071.9	224.4	519.3	-224.4	0.00	0.00	
6,200.0	5.79	66.63	6,171.4	228.4	528.6	-228.4	0.00	0.00	
6,300.0	5.79	66.63	6,270.9	232.4	537.8	-232.4	0.00	0.00	
6,400.0	5.79	66.63	6,370.4	236.4	547.1	-236.4	0.00	0.00	
6,500.0	5.79	66.63	6,469.9	240.4	556.3	-240.4	0.00	0.00	
6,600.0	5.79	66.63	6,569.4	244.4	565.6	-244.4	0.00	0.00	
6,700.0	5.79	66.63	6,668.8	248.4	574.8	-248.4	0.00	0.00	
6,749.1	5.79	66.63	6,717.7	250.4	579.4	-250.4	0.00	0.00	Start 10° Build
6,800.0	6.00	117.82	6,768.4	250.1	584.1	-250.1	10.00	0.43	
6,850.0	9.43	145.93	6,817.9	245.5	588.7	-245.5	10.00	6.85	
6,900.0	13.84	157.82	6,866.9	236.6	593.3	-236.6	10.00	8.83	
6,950.0	18.55	163.91	6,914.9	223.4	597.7	-223.4	10.00	9.42	
7,000.0	23.38	167.57	6,961.6	206.1	602.1	-206.1	10.00	9.65	
7,032.5	26.54	169.27	6,991.0	192.6	604.8	-192.6	10.00	9.76	Sharon Springs
7,050.0	28.26	170.03	7,006.6	184.7	606.3	-184.7	10.00	9.80	
7,100.0	33.18	171.82	7,049.5	159.5	610.3	-159.5	10.00	9.83	
7,137.2	36.85	172.87	7,080.0	138.3	613.1	-138.3	10.00	9.87	Niobrara
7,150.0	38.11	173.19	7,090.2	130.6	614.0	-130.6	10.00	9.88	
7,189.0	41.97	174.06	7,120.0	105.7	616.8	-105.7	10.00	9.90	B Chalk
7,200.0	43.06	174.29	7,128.1	98.3	617.6	-98.3	10.00	9.91	
7,235.1	46.54	174.94	7,153.0	73.7	619.9	-73.7	10.00	9.91	B Marl
7,250.0	48.02	175.20	7,163.1	62.8	620.8	-62.8	10.00	9.92	
7,285.4	51.54	175.76	7,186.0	35.8	623.0	-35.8	10.00	9.93	C Chalk
7,300.0	52.98	175.98	7,194.9	24.3	623.8	-24.3	10.00	9.93	
7,349.5	57.91	176.66	7,223.0	-16.4	626.4	16.4	10.00	9.94	C Marl
7,350.0	57.95	176.66	7,223.2	-16.8	626.4	16.8	10.00	9.94	
7,400.0	62.92	177.27	7,247.9	-60.2	628.7	60.2	10.00	9.94	
7,450.0	67.90	177.84	7,268.7	-105.6	630.6	105.6	10.00	9.95	
7,500.0	72.87	178.36	7,285.5	-152.7	632.2	152.7	10.00	9.95	
7,550.0	77.85	178.85	7,298.1	-201.0	633.4	201.0	10.00	9.95	
7,596.1	82.44	179.29	7,306.0	-246.4	634.1	246.4	10.00	9.96	Ft. Hayes
7,600.0	82.83	179.33	7,306.5	-250.3	634.2	250.3	10.00	9.96	
7,650.0	87.81	179.80	7,310.6	-300.1	634.5	300.1	10.00	9.96	
7,672.0	90.00	180.00	7,311.0	-322.1	634.6	322.1	10.00	9.96	LP @ 7311' TVD; 90°
7,698.1	90.00	180.00	7,311.0	-348.2	634.6	348.2	0.00	0.00	7"
7,700.0	90.00	180.00	7,311.0	-350.1	634.6	350.1	0.00	0.00	
7,800.0	90.00	180.00	7,311.0	-450.1	634.6	450.1	0.00	0.00	



Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KB @ 4866.0ft (Ensign)
Project:	DJ Wattenberg	MD Reference:	KB @ 4866.0ft (Ensign)
Site:	S5-T2N-R67W (Vogl-McCoy)	North Reference:	True
Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #2		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
7,900.0	90.00	180.00	7,311.0	-550.1	634.6	550.1	0.00	0.00	
8,000.0	90.00	180.00	7,311.0	-650.1	634.6	650.1	0.00	0.00	
8,100.0	90.00	180.00	7,311.0	-750.1	634.6	750.1	0.00	0.00	
8,200.0	90.00	180.00	7,311.0	-850.1	634.6	850.1	0.00	0.00	
8,300.0	90.00	180.00	7,311.0	-950.1	634.6	950.1	0.00	0.00	
8,400.0	90.00	180.00	7,311.0	-1,050.1	634.6	1,050.1	0.00	0.00	
8,500.0	90.00	180.00	7,311.0	-1,150.1	634.6	1,150.1	0.00	0.00	
8,600.0	90.00	180.00	7,311.0	-1,250.1	634.6	1,250.1	0.00	0.00	
8,700.0	90.00	180.00	7,311.0	-1,350.1	634.6	1,350.1	0.00	0.00	
8,800.0	90.00	180.00	7,311.0	-1,450.1	634.6	1,450.1	0.00	0.00	
8,900.0	90.00	180.00	7,311.0	-1,550.1	634.6	1,550.1	0.00	0.00	
9,000.0	90.00	180.00	7,311.0	-1,650.1	634.6	1,650.1	0.00	0.00	
9,100.0	90.00	180.00	7,311.0	-1,750.1	634.6	1,750.1	0.00	0.00	
9,200.0	90.00	180.00	7,311.0	-1,850.1	634.6	1,850.1	0.00	0.00	
9,300.0	90.00	180.00	7,311.0	-1,950.1	634.6	1,950.1	0.00	0.00	
9,400.0	90.00	180.00	7,311.0	-2,050.1	634.6	2,050.1	0.00	0.00	
9,500.0	90.00	180.00	7,311.0	-2,150.1	634.6	2,150.1	0.00	0.00	
9,600.0	90.00	180.00	7,311.0	-2,250.1	634.6	2,250.1	0.00	0.00	
9,700.0	90.00	180.00	7,311.0	-2,350.1	634.6	2,350.1	0.00	0.00	
9,800.0	90.00	180.00	7,311.0	-2,450.1	634.6	2,450.1	0.00	0.00	
9,900.0	90.00	180.00	7,311.0	-2,550.1	634.6	2,550.1	0.00	0.00	
10,000.0	90.00	180.00	7,311.0	-2,650.1	634.6	2,650.1	0.00	0.00	
10,100.0	90.00	180.00	7,311.0	-2,750.1	634.6	2,750.1	0.00	0.00	
10,200.0	90.00	180.00	7,311.0	-2,850.1	634.6	2,850.1	0.00	0.00	
10,300.0	90.00	180.00	7,311.0	-2,950.1	634.6	2,950.1	0.00	0.00	
10,400.0	90.00	180.00	7,311.0	-3,050.1	634.6	3,050.1	0.00	0.00	
10,500.0	90.00	180.00	7,311.0	-3,150.1	634.6	3,150.1	0.00	0.00	
10,600.0	90.00	180.00	7,311.0	-3,250.1	634.6	3,250.1	0.00	0.00	
10,700.0	90.00	180.00	7,311.0	-3,350.1	634.6	3,350.1	0.00	0.00	
10,800.0	90.00	180.00	7,311.0	-3,450.1	634.6	3,450.1	0.00	0.00	
10,900.0	90.00	180.00	7,311.0	-3,550.1	634.6	3,550.1	0.00	0.00	
11,000.0	90.00	180.00	7,311.0	-3,650.1	634.6	3,650.1	0.00	0.00	
11,100.0	90.00	180.00	7,311.0	-3,750.1	634.6	3,750.1	0.00	0.00	
11,200.0	90.00	180.00	7,311.0	-3,850.1	634.6	3,850.1	0.00	0.00	
11,300.0	90.00	180.00	7,311.0	-3,950.1	634.6	3,950.1	0.00	0.00	
11,400.0	90.00	180.00	7,311.0	-4,050.1	634.6	4,050.1	0.00	0.00	
11,500.0	90.00	180.00	7,311.0	-4,150.1	634.6	4,150.1	0.00	0.00	
11,600.0	90.00	180.00	7,311.0	-4,250.1	634.6	4,250.1	0.00	0.00	
11,700.0	90.00	180.00	7,311.0	-4,350.1	634.6	4,350.1	0.00	0.00	
11,800.0	90.00	180.00	7,311.0	-4,450.1	634.6	4,450.1	0.00	0.00	
11,900.0	90.00	180.00	7,311.0	-4,550.1	634.6	4,550.1	0.00	0.00	
12,000.0	90.00	180.00	7,311.0	-4,650.1	634.6	4,650.1	0.00	0.00	
12,100.0	90.00	180.00	7,311.0	-4,750.1	634.6	4,750.1	0.00	0.00	
12,200.0	90.00	180.00	7,311.0	-4,850.1	634.6	4,850.1	0.00	0.00	
12,300.0	90.00	180.00	7,311.0	-4,950.1	634.6	4,950.1	0.00	0.00	
12,400.0	90.00	180.00	7,311.0	-5,050.1	634.6	5,050.1	0.00	0.00	
12,500.0	90.00	180.00	7,311.0	-5,150.1	634.6	5,150.1	0.00	0.00	
12,600.0	90.00	180.00	7,311.0	-5,250.1	634.6	5,250.1	0.00	0.00	
12,700.0	90.00	180.00	7,311.0	-5,350.1	634.6	5,350.1	0.00	0.00	
12,800.0	90.00	180.00	7,311.0	-5,450.1	634.6	5,450.1	0.00	0.00	
12,900.0	90.00	180.00	7,311.0	-5,550.1	634.6	5,550.1	0.00	0.00	
13,000.0	90.00	180.00	7,311.0	-5,650.1	634.6	5,650.1	0.00	0.00	



Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KB @ 4866.0ft (Ensign)
Project:	DJ Wattenberg	MD Reference:	KB @ 4866.0ft (Ensign)
Site:	S5-T2N-R67W (Vogl-McCoy)	North Reference:	True
Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #2		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
13,100.0	90.00	180.00	7,311.0	-5,750.1	634.6	5,750.1	0.00	0.00	
13,200.0	90.00	180.00	7,311.0	-5,850.1	634.6	5,850.1	0.00	0.00	
13,300.0	90.00	180.00	7,311.0	-5,950.1	634.6	5,950.1	0.00	0.00	
13,400.0	90.00	180.00	7,311.0	-6,050.1	634.6	6,050.1	0.00	0.00	
13,500.0	90.00	180.00	7,311.0	-6,150.1	634.6	6,150.1	0.00	0.00	
13,600.0	90.00	180.00	7,311.0	-6,250.1	634.6	6,250.1	0.00	0.00	
13,700.0	90.00	180.00	7,311.0	-6,350.1	634.6	6,350.1	0.00	0.00	
13,800.0	90.00	180.00	7,311.0	-6,450.1	634.6	6,450.1	0.00	0.00	
13,900.0	90.00	180.00	7,311.0	-6,550.1	634.6	6,550.1	0.00	0.00	
14,000.0	90.00	180.00	7,311.0	-6,650.1	634.6	6,650.1	0.00	0.00	
14,100.0	90.00	180.00	7,311.0	-6,750.1	634.6	6,750.1	0.00	0.00	
14,200.0	90.00	180.00	7,311.0	-6,850.1	634.6	6,850.1	0.00	0.00	
14,300.0	90.00	180.00	7,311.0	-6,950.1	634.6	6,950.1	0.00	0.00	
14,400.0	90.00	180.00	7,311.0	-7,050.1	634.6	7,050.1	0.00	0.00	
14,500.0	90.00	180.00	7,311.0	-7,150.1	634.6	7,150.1	0.00	0.00	
14,600.0	90.00	180.00	7,311.0	-7,250.1	634.6	7,250.1	0.00	0.00	
14,700.0	90.00	180.00	7,311.0	-7,350.1	634.6	7,350.1	0.00	0.00	
14,800.0	90.00	180.00	7,311.0	-7,450.1	634.6	7,450.1	0.00	0.00	
14,900.0	90.00	180.00	7,311.0	-7,550.1	634.6	7,550.1	0.00	0.00	
15,000.0	90.00	180.00	7,311.0	-7,650.1	634.6	7,650.1	0.00	0.00	
15,109.0	90.00	180.00	7,311.0	-7,759.1	634.6	7,759.1	0.00	0.00	PBHL @ 15109' MD

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Vogl-McCoy 2D-5H-E26' - plan hits target center - Point	0.00	0.00	7,311.0	-7,759.1	634.6	1,296,888.40	3,162,158.24	40.146890	-104.919950
Vogl-McCoy 2D-5H-E26' - plan misses target center by 27.0ft at 15109.0ft MD (7311.0 TVD, -7759.1 N, 634.6 E) - Point	0.00	0.00	7,338.0	-7,759.1	634.6	1,296,888.40	3,162,158.24	40.146890	-104.919950

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
7,698.1	7,311.0	7"	0.000	0.000



Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KB @ 4866.0ft (Ensign)
Project:	DJ Wattenberg	MD Reference:	KB @ 4866.0ft (Ensign)
Site:	S5-T2N-R67W (Vogl-McCoy)	North Reference:	True
Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #2		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
266.0	266.0	Fox Hills - BASE				
4,149.2	4,131.0	Sussex				
4,441.6	4,422.0	Sussex Marker				
4,740.2	4,719.0	Shannon				
6,027.7	6,000.0	Teepee Buttes (*if present)				
7,032.5	6,991.0	Sharon Springs				
7,137.2	7,080.0	Niobrara				
7,189.0	7,120.0	B Chalk				
7,235.1	7,153.0	B Marl				
7,285.4	7,186.0	C Chalk				
7,349.5	7,223.0	C Marl				
7,596.1	7,306.0	Ft. Hayes				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
200.0	200.0	0.0	0.0	KOP @ 200' MD	
778.7	777.7	11.6	26.8	EOB; 5.79°	
6,749.1	6,717.7	250.4	579.4	Start 10° Build	
7,672.0	7,311.0	-322.1	634.6	LP @ 7311' TVD; 90°	
15,109.0	7,311.0	-7,759.1	634.6	PBHL @ 15109' MD	



EnCana Oil & Gas (USA) Inc

DJ Wattenberg

S5-T2N-R67W (Vogl-McCoy)

Vogl-McCoy 2D-5H-E267

Hz

Plan #2

Anticollision Report

12 February, 2014



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Reference	Plan #2		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	Stations	Error Model:	Systematic Ellipse
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,550.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program		Date	2/12/2014		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	15,109.0	Plan #2 (Hz)	MWD	Geolink MWD	



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference	Offset	Distance		Separation Factor	Warning
	Measured Depth (ft)	Measured Depth (ft)	Between Centres (ft)	Between Ellipses (ft)		
S5-T2N-R67W (Vogl-McCoy)						
ALFRED SATER UNIT 2 (EXISTING) - KMG WELL - KMG	11,627.8	7,310.7	534.6	450.5	6.355	CC, ES
ALFRED SATER UNIT 2 (EXISTING) - KMG WELL - KMG	11,700.0	7,309.0	539.5	454.1	6.319	SF
CHENG 3-8A (EXISTING) - KMG WELL - SURVEYS	10,775.0	7,528.2	1,001.7	918.4	12.022	CC
CHENG 3-8A (EXISTING) - KMG WELL - SURVEYS	10,800.0	7,528.0	1,002.0	918.3	11.965	ES
CHENG 3-8A (EXISTING) - KMG WELL - SURVEYS	11,000.0	7,526.3	1,026.7	939.5	11.775	SF
DIER 13-8 (EXISTING) - ENCANA WELL - SURVEYS	13,764.0	7,347.9	434.5	307.6	3.423	CC, ES, SF
DIER 14-8 (EXISTING) - ENCANA WELL - SURVEYS	14,960.3	7,520.7	594.5	438.0	3.799	CC, ES
DIER 14-8 (EXISTING) - ENCANA WELL - SURVEYS	15,000.0	7,523.8	595.8	438.6	3.790	SF
DIER 23-8 (EXISTING) - ENCANA WELL - SURVEYS	13,436.3	7,250.2	932.7	811.7	7.711	CC, ES
DIER 23-8 (EXISTING) - ENCANA WELL - SURVEYS	13,600.0	7,278.3	946.6	822.2	7.608	SF
DIER 24-8 (EXISTING) - ENCANA WELL - SURVEYS	14,965.8	7,356.4	867.1	717.0	5.779	CC
DIER 24-8 (EXISTING) - ENCANA WELL - SURVEYS	15,000.0	7,365.5	867.7	716.8	5.750	ES
DIER 24-8 (EXISTING) - ENCANA WELL - SURVEYS	15,109.0	7,394.7	878.2	724.6	5.717	SF
DIER 4-8 (EXISTING) - ENCANA WELL - SURVEYS	14,415.0	7,381.5	371.4	232.3	2.670	CC, ES, SF
GEIST 0-2-32 (EXISTING) - ENCANA WELL - NO SURV						Out of range
GEIST 11-32 (EXISTING) - ENCANA WELL - NO SURVE						Out of range
GEIST 12-32 (EXISTING) - ENCANA WELL - SURVEYS						Out of range
GEIST 2-0-32 (EXISTING) - ENCANA WELL - Plan #1						Out of range
GEIST 2-0-32 (EXISTING) - ENCANA WELL - SURVEYS						Out of range
GEIST 21-32 (EXISTING) - ENCANA WELL - NO SURVE						Out of range
GEIST 22-32 (EXISTING) - ENCANA WELL - NO SURVE						Out of range
GEIST 2-4-32 (EXISTING) - ENCANA WELL - SURVEYS						Out of range
GEIST 4-2-32 (EXISTING) - ENCANA WELL - Plan #2						Out of range
GEIST 4-2-32 (EXISTING) - ENCANA WELL - SURVEYS						Out of range
GEIST A UNIT #1 (EXISTING) - ENCANA WELL - SURVE						Out of range
MCCOY #1 (EXISTING) - ENCANA WELL - SURVEYS	3,351.6	3,353.6	460.4	446.8	33.874	CC
MCCOY #1 (EXISTING) - ENCANA WELL - SURVEYS	3,500.0	3,500.7	460.8	446.6	32.440	ES
MCCOY #1 (EXISTING) - ENCANA WELL - SURVEYS	5,400.0	5,350.0	516.1	494.6	24.055	SF
MCCOY 0-6-5 (EXISTING) - ENCANA WELL - NO SURV	8,038.3	7,403.0	324.4	292.8	10.264	CC, ES
MCCOY 0-6-5 (EXISTING) - ENCANA WELL - NO SURV	8,100.0	7,403.0	330.2	297.8	10.189	SF
MCCOY 13-5 (EXISTING) - ENCANA WELL - SURVEYS	8,062.4	7,326.1	417.0	385.2	13.126	CC, ES
MCCOY 13-5 (EXISTING) - ENCANA WELL - SURVEYS	8,100.0	7,325.8	418.7	386.4	12.980	SF
MCCOY 14-5 (EXISTING) - ENCANA WELL - NO SURVE	9,711.1	7,314.0	549.9	492.2	9.536	CC, ES
MCCOY 14-5 (EXISTING) - ENCANA WELL - NO SURVE	9,800.0	7,314.0	557.0	497.9	9.415	SF
MCCOY 23-5 (EXISTING) - ENCANA WELL - SURVEYS	8,077.6	7,335.1	1,049.6	1,017.6	32.793	CC
MCCOY 23-5 (EXISTING) - ENCANA WELL - SURVEYS	8,100.0	7,334.9	1,049.8	1,017.5	32.506	ES
MCCOY 23-5 (EXISTING) - ENCANA WELL - SURVEYS	8,600.0	7,330.8	1,172.4	1,132.8	29.622	SF
MCCOY 24-5 (EXISTING) - ENCANA WELL - GYRO	9,718.2	7,372.2	1,073.9	1,016.0	18.545	CC, ES
MCCOY 24-5 (EXISTING) - ENCANA WELL - GYRO	10,100.0	7,377.2	1,139.8	1,075.4	17.707	SF
MCCOY 2-4-5 (EXISTING) - ENCANA WELL - SURVEYS	7,634.1	7,362.0	358.9	330.1	12.469	CC, ES
MCCOY 2-4-5 (EXISTING) - ENCANA WELL - SURVEYS	7,672.0	7,363.1	361.0	331.9	12.402	SF
NELSON 23-32 (EXISTING) - ENCANA WELL - SURVEY						Out of range
NELSON 4-32 (EXISTING) - ENCANA WELL - NO SURV						Out of range
NELSON 4-6-32 (EXISTING) - ENCANA WELL - PLAN O						Out of range
OWENS BROTHERS 13-32 (EXISTING) - ENCANA WEL						Out of range
PROMINENCE 4-8 (EXISTING) - KMG WELL - GYRO	11,074.4	7,300.0	638.7	564.3	8.580	CC, ES
PROMINENCE 4-8 (EXISTING) - KMG WELL - GYRO	11,200.0	7,300.0	650.9	574.3	8.497	SF
ROBERT NELSON 14-32 (EXISTING) - ENCANA WELL						Out of range
ROBERT NELSON 24-32 (EXISTING) - ENCANA WELL						Out of range
ROBERT NELSON 2-8-32 (EXISTING) - ENCANA WELL						Out of range
ROBERT NELSON 2-8-32 (EXISTING) - ENCANA WELL						Out of range
VOGL 21-5X (EXISTING) - KMG WELL - NO SURVEYS						Out of range
VOGL 31-5 (EXISTING) - KMG WELL - NO SURVEYS	4,433.6	4,600.0	1,170.0	1,139.9	38.897	CC, ES

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



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Summary

Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
S5-T2N-R67W (Vogl-McCoy)						
VOGL 31-5 (EXISTING) - KMG WELL - NO SURVEYS	6,749.1	6,880.8	1,236.2	1,196.7	31.336	SF
VOGL 4-5A (EXISTING) - KMG WELL - GYRO						Out of range
VOGL 5-5 (EXISTING) - KMG WELL - NO SURVEYS	2,565.8	2,529.7	167.5	157.3	16.393	CC
VOGL 5-5 (EXISTING) - KMG WELL - NO SURVEYS	2,600.0	2,563.7	167.6	157.2	16.169	ES
VOGL 5-5 (EXISTING) - KMG WELL - NO SURVEYS	3,400.0	3,359.7	187.4	174.1	14.014	SF
VOGL 5-8A (EXISTING) - KMG WELL - GYRO	12,417.5	7,300.0	427.6	324.0	4.128	CC, ES, SF
Vogl-Geist 2A-5H-E267 - Hz - Plan #2	200.0	200.0	50.3	49.7	84.770	CC, ES
Vogl-Geist 2A-5H-E267 - Hz - Plan #2	7,235.8	7,301.8	748.9	723.6	29.551	SF
Vogl-Geist 2B-5H-E267 - Hz - Plan #2	200.0	200.0	30.7	30.1	51.804	CC, ES
Vogl-Geist 2B-5H-E267 - Hz - Plan #2	7,100.0	7,266.6	174.2	148.6	6.799	SF
Vogl-Geist 2C-5H-E267 - Hz - Plan #2	200.0	200.0	11.2	10.6	18.838	CC, ES
Vogl-Geist 2C-5H-E267 - Hz - Plan #2	7,294.5	7,300.2	162.9	137.5	6.405	SF
Vogl-Geist 2D-5H-F267 - Hz - SURVEYS						Out of range
Vogl-Geist 2E-5H-F267 - Hz - SURVEYS						Out of range
Vogl-Geist 2F-5H-F267 - Hz - SURVEYS						Out of range
Vogl-McCoy 2A-5H-E267 - Hz - Plan #1	200.0	199.0	58.7	58.1	99.190	CC, ES
Vogl-McCoy 2A-5H-E267 - Hz - Plan #1	15,109.0	14,905.0	1,008.6	736.2	3.703	SF
Vogl-McCoy 2B-5H-E267 - Hz - Plan #3	200.0	199.0	39.1	38.5	66.126	CC, ES
Vogl-McCoy 2B-5H-E267 - Hz - Plan #3	15,109.0	15,087.3	662.5	385.8	2.394	SF
Vogl-McCoy 2C-5H-E267 - Hz - Plan #2	200.0	200.0	19.6	19.0	32.966	CC, ES
Vogl-McCoy 2C-5H-E267 - Hz - Plan #2	15,109.0	14,767.0	378.5	134.6	1.552	SF
Vogl-McCoy 2E-5H-F267 - Hz - SURVEYS						Out of range
Vogl-McCoy 2F-5H-F267 - Hz - SURVEYS						Out of range
Vogl-McCoy 2G-5H-F267 - Hz - SURVEYS						Out of range
Vogl-McCoy 2H-5H-F267 - Hz - Plan #2	15,108.9	15,129.0	1,320.4	1,044.2	4.782	CC
Vogl-McCoy 2H-5H-F267 - Hz - Plan #2	15,109.0	15,129.0	1,320.4	1,044.2	4.782	ES, SF
WANDELL 8-2-7 (EXISTING) - ENCANA WELL - SURVE	11,570.4	7,492.7	1,153.2	1,061.0	12.501	CC
WANDELL 8-2-7 (EXISTING) - ENCANA WELL - SURVE	11,600.0	7,492.6	1,153.6	1,060.8	12.436	ES
WANDELL 8-2-7 (EXISTING) - ENCANA WELL - SURVE	11,800.0	7,491.9	1,175.9	1,079.6	12.220	SF
WANDELL 8-4-7 (EXISTING) - ENCANA WELL - SURVE	12,780.3	7,743.8	1,185.8	1,055.5	9.105	CC
WANDELL 8-4-7 (EXISTING) - ENCANA WELL - SURVE	12,800.0	7,743.8	1,185.9	1,055.3	9.083	ES
WANDELL 8-4-7 (EXISTING) - ENCANA WELL - SURVE	13,000.0	7,742.9	1,205.9	1,071.9	8.996	SF



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - ALFRED SATER UNIT 2 (EXISTING) - KMG WELL - KMG WELL												Offset Site Error:	0.0 ft
Survey Program: 100-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	
10,200.0	7,311.0	7,344.1	7,342.8	54.4	6.4	-92.87	-4,277.1	1,169.6	1,524.2	1,464.7	59.54	25.601	
10,300.0	7,311.0	7,341.8	7,340.5	56.0	6.4	-92.62	-4,277.1	1,169.6	1,431.0	1,369.8	61.25	23.364	
10,400.0	7,311.0	7,339.4	7,338.1	57.7	6.4	-92.36	-4,277.2	1,169.5	1,338.8	1,275.8	62.96	21.263	
10,500.0	7,311.0	7,337.0	7,335.7	59.4	6.4	-92.11	-4,277.2	1,169.5	1,247.8	1,183.1	64.68	19.291	
10,600.0	7,311.0	7,334.7	7,333.4	61.1	6.4	-91.86	-4,277.3	1,169.5	1,158.2	1,091.8	66.40	17.443	
10,700.0	7,311.0	7,332.3	7,331.0	62.8	6.4	-91.61	-4,277.3	1,169.4	1,070.5	1,002.4	68.12	15.715	
10,800.0	7,311.0	7,330.0	7,328.7	64.4	6.4	-91.36	-4,277.4	1,169.4	985.2	915.4	69.85	14.105	
10,900.0	7,311.0	7,327.6	7,326.3	66.1	6.4	-91.10	-4,277.5	1,169.4	902.9	831.3	71.57	12.615	
11,000.0	7,311.0	7,325.3	7,324.0	67.8	6.4	-90.85	-4,277.5	1,169.3	824.4	751.1	73.29	11.248	
11,100.0	7,311.0	7,322.9	7,321.6	69.5	6.4	-90.60	-4,277.6	1,169.3	751.1	676.1	75.02	10.012	
11,200.0	7,311.0	7,320.6	7,319.3	71.2	6.4	-90.35	-4,277.6	1,169.3	684.6	607.9	76.75	8.921	
11,300.0	7,311.0	7,318.3	7,317.0	72.9	6.4	-90.10	-4,277.7	1,169.3	627.0	548.6	78.47	7.991	
11,400.0	7,311.0	7,315.9	7,314.6	74.7	6.4	-89.85	-4,277.7	1,169.2	581.1	500.9	80.20	7.246	
11,500.0	7,311.0	7,313.6	7,312.3	76.4	6.4	-89.61	-4,277.8	1,169.2	549.7	467.7	81.92	6.710	
11,600.0	7,311.0	7,311.3	7,310.0	78.1	6.4	-89.36	-4,277.8	1,169.2	535.3	451.7	83.65	6.400	
11,627.8	7,311.0	7,310.7	7,309.4	78.6	6.4	-89.29	-4,277.9	1,169.2	534.6	450.5	84.13	6.355 CC, ES	
11,700.0	7,311.0	7,309.0	7,307.7	79.8	6.4	-89.11	-4,277.9	1,169.1	539.5	454.1	85.37	6.319 SF	
11,800.0	7,311.0	7,306.7	7,305.4	81.5	6.4	-88.86	-4,277.9	1,169.1	561.7	474.6	87.10	6.449	
11,900.0	7,311.0	7,304.4	7,303.1	83.2	6.4	-88.62	-4,278.0	1,169.1	599.9	511.1	88.82	6.754	
12,000.0	7,311.0	7,302.1	7,300.8	84.9	6.4	-88.37	-4,278.1	1,169.1	651.4	560.9	90.55	7.194	
12,100.0	7,311.0	7,300.0	7,298.7	86.7	6.4	-88.15	-4,278.1	1,169.0	713.3	621.0	92.27	7.730	
12,200.0	7,311.0	7,297.5	7,296.2	88.4	6.4	-87.87	-4,278.2	1,169.0	783.0	689.0	93.99	8.331	
12,300.0	7,311.0	7,295.1	7,293.8	90.1	6.4	-87.62	-4,278.2	1,169.0	858.8	763.1	95.71	8.973	
12,400.0	7,311.0	7,292.8	7,291.5	91.8	6.4	-87.38	-4,278.3	1,168.9	939.1	841.7	97.42	9.639	
12,500.0	7,311.0	7,290.5	7,289.2	93.6	6.4	-87.12	-4,278.3	1,168.9	1,022.9	923.7	99.14	10.317	
12,600.0	7,311.0	7,288.1	7,286.8	95.3	6.4	-86.87	-4,278.4	1,168.9	1,109.3	1,008.5	100.85	10.999	
12,700.0	7,311.0	7,285.8	7,284.5	97.0	6.4	-86.62	-4,278.4	1,168.9	1,197.9	1,095.3	102.57	11.679	
12,800.0	7,311.0	7,283.4	7,282.1	98.7	6.4	-86.37	-4,278.5	1,168.8	1,288.1	1,183.8	104.28	12.353	
12,900.0	7,311.0	7,281.1	7,279.8	100.5	6.4	-86.12	-4,278.5	1,168.8	1,379.7	1,273.7	105.98	13.018	
13,000.0	7,311.0	7,278.7	7,277.4	102.2	6.4	-85.87	-4,278.6	1,168.8	1,472.4	1,364.7	107.69	13.672	



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - CHENG 3-8A (EXISTING) - KMG WELL - SURVEYS													Offset Site Error:	0.0 ft
Survey Program: 783-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		
9,600.0	7,311.0	7,538.1	7,339.0	44.5	21.7	-89.94	-3,425.1	1,636.4	1,544.0	1,480.7	63.34	24.377		
9,700.0	7,311.0	7,537.3	7,338.2	46.1	21.7	-89.90	-3,425.1	1,636.3	1,469.4	1,404.4	65.02	22.599		
9,800.0	7,311.0	7,536.5	7,337.4	47.7	21.7	-89.85	-3,425.1	1,636.3	1,397.9	1,331.2	66.70	20.957		
9,900.0	7,311.0	7,535.6	7,336.6	49.4	21.7	-89.80	-3,425.1	1,636.3	1,330.1	1,261.7	68.39	19.448		
10,000.0	7,311.0	7,534.8	7,335.7	51.0	21.7	-89.76	-3,425.1	1,636.3	1,266.5	1,196.4	70.09	18.071		
10,100.0	7,311.0	7,534.0	7,334.9	52.7	21.7	-89.71	-3,425.1	1,636.3	1,207.9	1,136.1	71.78	16.827		
10,200.0	7,311.0	7,533.1	7,334.0	54.4	21.7	-89.66	-3,425.1	1,636.3	1,155.0	1,081.5	73.49	15.718		
10,300.0	7,311.0	7,532.3	7,333.2	56.0	21.7	-89.61	-3,425.1	1,636.3	1,108.6	1,033.5	75.19	14.745		
10,400.0	7,311.0	7,531.4	7,332.4	57.7	21.7	-89.56	-3,425.1	1,636.3	1,069.6	992.7	76.90	13.910		
10,500.0	7,311.0	7,530.6	7,331.5	59.4	21.7	-89.51	-3,425.1	1,636.3	1,038.8	960.2	78.61	13.215		
10,600.0	7,311.0	7,529.7	7,330.6	61.1	21.7	-89.46	-3,425.1	1,636.3	1,016.9	936.6	80.32	12.661		
10,700.0	7,311.0	7,528.9	7,329.8	62.8	21.7	-89.42	-3,425.1	1,636.3	1,004.5	922.5	82.03	12.245		
10,775.0	7,311.0	7,528.2	7,329.1	64.0	21.7	-89.38	-3,425.1	1,636.2	1,001.7	918.4	83.32	12.022 CC		
10,800.0	7,311.0	7,528.0	7,328.9	64.4	21.7	-89.37	-3,425.1	1,636.2	1,002.0	918.3	83.75	11.965 ES		
10,900.0	7,311.0	7,527.1	7,328.1	66.1	21.7	-89.32	-3,425.2	1,636.2	1,009.5	924.0	85.47	11.811		
11,000.0	7,311.0	7,526.3	7,327.2	67.8	21.7	-89.27	-3,425.2	1,636.2	1,026.7	939.5	87.19	11.775 SF		
11,100.0	7,311.0	7,525.4	7,326.3	69.5	21.7	-89.22	-3,425.2	1,636.2	1,053.1	964.2	88.91	11.845		
11,200.0	7,311.0	7,524.5	7,325.4	71.2	21.7	-89.17	-3,425.2	1,636.2	1,088.1	997.5	90.63	12.006		
11,300.0	7,311.0	7,523.6	7,324.6	72.9	21.7	-89.12	-3,425.2	1,636.2	1,130.9	1,038.6	92.36	12.245		
11,400.0	7,311.0	7,522.7	7,323.7	74.7	21.7	-89.07	-3,425.2	1,636.2	1,180.7	1,086.6	94.08	12.549		
11,500.0	7,311.0	7,521.9	7,322.8	76.4	21.7	-89.02	-3,425.2	1,636.2	1,236.5	1,140.7	95.81	12.906		
11,600.0	7,311.0	7,521.0	7,321.9	78.1	21.7	-88.96	-3,425.2	1,636.2	1,297.7	1,200.1	97.54	13.305		
11,700.0	7,311.0	7,520.1	7,321.0	79.8	21.7	-88.91	-3,425.2	1,636.2	1,363.4	1,264.2	99.26	13.735		
11,800.0	7,311.0	7,519.2	7,320.1	81.5	21.7	-88.86	-3,425.2	1,636.1	1,433.2	1,332.2	100.99	14.191		
11,900.0	7,311.0	7,518.3	7,319.2	83.2	21.7	-88.81	-3,425.2	1,636.1	1,506.3	1,403.6	102.72	14.663		

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



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design		S5-T2N-R67W (Vogl-McCoy) - DIER 13-8 (EXISTING) - ENCANA WELL - SURVEYS											Offset Site Error: 0.0 ft	
Survey Program: 690-MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
12,200.0	7,311.0	7,749.6	7,675.8	88.4	15.6	122.20	-6,280.4	149.7	1,540.8	1,452.5	88.28	17.454	CC, ES, SF	
12,300.0	7,311.0	7,728.5	7,655.6	90.1	15.5	120.58	-6,285.6	152.2	1,448.3	1,357.2	91.08	15.901		
12,400.0	7,311.0	7,717.1	7,644.6	91.8	15.5	119.68	-6,288.6	153.5	1,356.6	1,263.3	93.31	14.539		
12,500.0	7,311.0	7,697.3	7,625.6	93.6	15.4	118.06	-6,293.8	155.9	1,265.8	1,169.7	96.11	13.170		
12,600.0	7,311.0	7,683.4	7,612.4	95.3	15.4	116.89	-6,297.5	157.6	1,176.1	1,077.5	98.54	11.935		
12,700.0	7,311.0	7,667.3	7,597.0	97.0	15.3	115.50	-6,302.1	159.6	1,087.7	986.6	101.14	10.755		
12,800.0	7,311.0	7,644.6	7,575.5	98.7	15.2	113.47	-6,308.7	162.4	1,001.1	896.9	104.16	9.611		
12,900.0	7,311.0	7,617.0	7,549.4	100.5	15.1	110.90	-6,317.0	166.0	916.3	808.9	107.45	8.528		
13,000.0	7,311.0	7,589.9	7,523.8	102.2	15.0	108.25	-6,325.2	169.6	833.9	723.3	110.65	7.537		
13,100.0	7,311.0	7,566.5	7,501.8	103.9	14.9	105.87	-6,332.4	172.7	754.7	641.2	113.55	6.647		
13,200.0	7,311.0	7,542.4	7,479.3	105.7	14.8	103.35	-6,340.4	176.1	680.1	563.7	116.37	5.844		
13,300.0	7,311.0	7,518.8	7,457.5	107.4	14.7	100.83	-6,348.9	179.5	611.3	492.3	119.01	5.137		
13,400.0	7,311.0	7,484.0	7,425.8	109.1	14.5	97.01	-6,362.1	184.8	550.2	428.4	121.77	4.518		
13,500.0	7,311.0	7,444.0	7,389.4	110.8	14.3	92.44	-6,377.3	191.0	498.8	374.7	124.10	4.019		
13,600.0	7,311.0	7,407.3	7,355.8	112.6	14.1	88.08	-6,391.2	196.7	460.3	334.6	125.74	3.661		
13,700.0	7,311.0	7,371.9	7,323.7	114.3	14.0	83.82	-6,404.9	202.0	438.6	311.9	126.73	3.461		
13,764.0	7,311.0	7,347.9	7,301.8	115.4	13.9	80.91	-6,414.1	205.5	434.5	307.6	126.93			
13,800.0	7,311.0	7,336.1	7,291.0	116.1	13.8	79.47	-6,418.6	207.2	435.8	308.8	126.99	3.432		
13,900.0	7,311.0	7,303.1	7,260.7	117.8	13.7	75.45	-6,430.9	211.8	452.8	326.1	126.73	3.573		
14,000.0	7,311.0	7,272.3	7,232.2	119.5	13.6	71.72	-6,441.9	216.0	487.6	361.5	126.04	3.868		
14,100.0	7,311.0	7,241.1	7,203.2	121.3	13.4	68.02	-6,452.6	220.0	537.0	412.1	124.83	4.302		
14,200.0	7,311.0	7,210.1	7,174.4	123.0	13.3	64.46	-6,463.0	224.1	597.3	474.1	123.19	4.849		
14,300.0	7,311.0	7,176.3	7,142.8	124.7	13.2	60.72	-6,474.4	228.5	665.7	544.9	120.82	5.510		
14,400.0	7,311.0	7,122.1	7,092.5	126.5	13.0	55.14	-6,493.3	235.4	739.3	623.8	115.53	6.399		
14,500.0	7,311.0	7,071.1	7,045.8	128.2	12.8	50.41	-6,512.7	242.0	816.0	705.6	110.34	7.395		
14,600.0	7,311.0	7,046.2	7,023.0	130.0	12.7	48.25	-6,522.2	245.1	895.7	787.3	108.41	8.263		
14,700.0	7,311.0	7,024.6	7,003.1	131.7	12.7	46.47	-6,530.1	247.7	978.3	871.4	106.88	9.154		
14,800.0	7,311.0	7,008.1	6,987.7	133.4	12.6	45.17	-6,536.0	249.6	1,063.2	957.2	105.98	10.032		
14,900.0	7,311.0	6,984.0	6,965.3	135.2	12.5	43.34	-6,544.2	252.2	1,149.9	1,045.8	104.09	11.048		
15,000.0	7,311.0	6,962.2	6,944.7	136.9	12.5	41.76	-6,551.5	254.5	1,238.0	1,135.6	102.47	12.082		
15,109.0	7,311.0	6,937.8	6,921.9	138.8	12.4	40.09	-6,559.4	256.9	1,335.4	1,234.7	100.67	13.265		



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - DIER 14-8 (EXISTING) - ENCANA WELL - SURVEYS													Offset Site Error: 0.0 ft
Survey Program: 735-MWD													Offset Well Error: 0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	
13,600.0	7,311.0	7,370.6	7,210.6	112.6	21.2	74.92	-7,597.0	43.2	1,479.6	1,351.4	128.17	11.545	
13,700.0	7,311.0	7,388.1	7,228.0	114.3	21.3	76.51	-7,598.9	42.8	1,389.1	1,258.4	130.76	10.624	
13,800.0	7,311.0	7,401.1	7,240.9	116.1	21.3	77.70	-7,600.2	42.6	1,299.9	1,166.8	133.08	9.768	
13,900.0	7,311.0	7,412.9	7,252.7	117.8	21.3	78.79	-7,601.3	42.3	1,212.3	1,077.0	135.32	8.959	
14,000.0	7,311.0	7,424.9	7,264.6	119.5	21.4	79.92	-7,602.5	42.0	1,126.6	989.1	137.53	8.192	
14,100.0	7,311.0	7,439.0	7,278.7	121.3	21.4	81.24	-7,603.8	41.7	1,043.4	903.6	139.78	7.464	
14,200.0	7,311.0	7,451.8	7,291.4	123.0	21.4	82.46	-7,605.0	41.4	963.2	821.3	141.94	6.786	
14,300.0	7,311.0	7,462.7	7,302.3	124.7	21.5	83.49	-7,605.9	41.2	887.0	743.0	144.00	6.160	
14,400.0	7,311.0	7,472.8	7,312.4	126.5	21.5	84.46	-7,606.8	41.0	815.8	669.8	146.00	5.588	
14,500.0	7,311.0	7,482.5	7,322.0	128.2	21.5	85.38	-7,607.5	40.8	751.1	603.1	147.95	5.076	
14,600.0	7,311.0	7,491.7	7,331.1	130.0	21.5	86.26	-7,608.3	40.7	694.7	544.8	149.87	4.635	
14,700.0	7,311.0	7,500.2	7,339.7	131.7	21.5	87.08	-7,608.9	40.5	648.7	497.0	151.75	4.275	
14,800.0	7,311.0	7,508.3	7,347.7	133.4	21.6	87.86	-7,609.5	40.4	615.6	462.0	153.60	4.008	
14,900.0	7,311.0	7,515.9	7,355.3	135.2	21.6	88.59	-7,610.1	40.2	597.6	442.1	155.41	3.845	
14,960.3	7,311.0	7,520.7	7,360.1	136.2	21.6	89.04	-7,610.4	40.1	594.5	438.0	156.50	3.799 CC, ES	
15,000.0	7,311.0	7,523.8	7,363.2	136.9	21.6	89.34	-7,610.6	40.1	595.8	438.6	157.21	3.790 SF	
15,109.0	7,311.0	7,532.2	7,371.6	138.8	21.6	90.15	-7,611.2	40.0	612.7	453.6	159.14	3.850	



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - DIER 23-8 (EXISTING) - ENCANA WELL - SURVEYS													Offset Site Error: 0.0 ft
Survey Program: 738-MWD													Offset Well Error: 0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	
12,200.0	7,311.0	6,854.1	6,809.2	88.4	12.7	-56.16	-6,002.4	1,453.9	1,516.9	1,432.0	84.84	17.878	
12,300.0	7,311.0	6,878.5	6,831.8	90.1	12.7	-57.48	-6,008.5	1,460.5	1,442.1	1,354.6	87.52	16.479	
12,400.0	7,311.0	6,908.7	6,859.9	91.8	12.9	-59.13	-6,016.1	1,468.6	1,370.2	1,279.7	90.50	15.140	
12,500.0	7,311.0	6,960.7	6,908.5	93.6	13.0	-62.03	-6,028.7	1,482.1	1,301.0	1,206.5	94.54	13.762	
12,600.0	7,311.0	6,984.7	6,931.1	95.3	13.1	-63.40	-6,034.3	1,488.2	1,235.4	1,138.2	97.22	12.708	
12,700.0	7,311.0	7,005.1	6,950.2	97.0	13.2	-64.57	-6,039.2	1,493.4	1,174.3	1,074.6	99.73	11.775	
12,800.0	7,311.0	7,029.4	6,973.0	98.7	13.3	-65.98	-6,044.9	1,499.6	1,118.4	1,015.9	102.42	10.919	
12,900.0	7,311.0	7,053.9	6,996.0	100.5	13.4	-67.41	-6,050.6	1,505.9	1,068.3	963.1	105.11	10.163	
13,000.0	7,311.0	7,097.5	7,037.0	102.2	13.6	-69.98	-6,060.3	1,517.0	1,024.9	916.3	108.57	9.440	
13,100.0	7,311.0	7,138.9	7,076.3	103.9	13.7	-72.45	-6,068.5	1,527.0	988.6	876.8	111.82	8.841	
13,200.0	7,311.0	7,166.8	7,103.0	105.7	13.8	-74.13	-6,073.6	1,533.4	960.8	846.4	114.47	8.393	
13,300.0	7,311.0	7,209.5	7,144.1	107.4	14.0	-76.71	-6,080.6	1,542.7	942.2	824.7	117.52	8.017	
13,400.0	7,311.0	7,240.7	7,174.3	109.1	14.1	-78.61	-6,085.1	1,548.9	933.4	813.3	120.09	7.772	
13,436.3	7,311.0	7,250.2	7,183.5	109.7	14.1	-79.19	-6,086.4	1,550.7	932.7	811.7	120.95	7.711 CC, ES	
13,500.0	7,311.0	7,262.5	7,195.5	110.8	14.1	-79.94	-6,088.0	1,553.0	934.8	812.4	122.35	7.641	
13,600.0	7,311.0	7,278.3	7,210.9	112.6	14.2	-80.90	-6,089.9	1,555.8	946.6	822.2	124.42	7.608 SF	
13,700.0	7,311.0	7,294.3	7,226.6	114.3	14.2	-81.88	-6,091.9	1,558.6	968.5	842.0	126.49	7.657	
13,800.0	7,311.0	7,312.8	7,244.7	116.1	14.3	-83.00	-6,094.3	1,561.8	999.6	871.1	128.57	7.775	
13,900.0	7,311.0	7,332.9	7,264.3	117.8	14.3	-84.22	-6,097.0	1,565.2	1,039.3	908.7	130.63	7.956	
14,000.0	7,311.0	7,351.5	7,282.5	119.5	14.4	-85.35	-6,099.4	1,568.1	1,086.5	953.9	132.63	8.192	
14,100.0	7,311.0	7,363.5	7,294.3	121.3	14.4	-86.07	-6,100.8	1,569.9	1,140.4	1,005.9	134.51	8.478	
14,200.0	7,311.0	7,374.2	7,304.8	123.0	14.5	-86.72	-6,102.1	1,571.5	1,200.1	1,063.8	136.37	8.801	
14,300.0	7,311.0	7,384.2	7,314.6	124.7	14.5	-87.32	-6,103.2	1,573.0	1,264.8	1,126.6	138.20	9.152	
14,400.0	7,311.0	7,395.0	7,325.2	126.5	14.5	-87.97	-6,104.3	1,574.5	1,333.8	1,193.8	140.02	9.526	
14,500.0	7,311.0	7,404.9	7,335.0	128.2	14.6	-88.57	-6,105.3	1,575.8	1,406.5	1,264.6	141.83	9.916	
14,600.0	7,311.0	7,414.4	7,344.3	130.0	14.6	-89.14	-6,106.2	1,577.1	1,482.2	1,338.6	143.62	10.320	



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - DIER 24-8 (EXISTING) - ENCANA WELL - SURVEYS													Offset Site Error: 0.0 ft
Survey Program: 740-MWD													Offset Well Error: 0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	
13,700.0	7,311.0	6,966.3	6,862.7	114.3	15.9	-56.30	-7,499.3	1,411.7	1,480.9	1,372.4	108.50	13.649	
13,800.0	7,311.0	6,986.5	6,881.6	116.1	16.0	-57.39	-7,505.5	1,415.2	1,404.5	1,293.3	111.28	12.621	
13,900.0	7,311.0	7,009.8	6,903.3	117.8	16.1	-58.67	-7,512.8	1,419.4	1,330.7	1,216.4	114.29	11.643	
14,000.0	7,311.0	7,028.7	6,920.9	119.5	16.2	-59.73	-7,518.8	1,422.8	1,260.0	1,143.0	117.03	10.766	
14,100.0	7,311.0	7,049.0	6,939.7	121.3	16.3	-60.87	-7,525.5	1,426.7	1,193.0	1,073.2	119.88	9.952	
14,200.0	7,311.0	7,075.0	6,963.6	123.0	16.5	-62.36	-7,534.2	1,431.6	1,130.2	1,007.1	123.10	9.182	
14,300.0	7,311.0	7,103.7	6,990.1	124.7	16.7	-64.03	-7,543.9	1,437.2	1,072.2	945.7	126.48	8.477	
14,400.0	7,311.0	7,128.2	7,012.6	126.5	16.8	-65.48	-7,552.1	1,442.1	1,019.7	890.1	129.58	7.870	
14,500.0	7,311.0	7,160.2	7,042.0	128.2	17.0	-67.40	-7,562.8	1,449.0	973.9	840.8	133.10	7.317	
14,600.0	7,311.0	7,225.2	7,102.2	130.0	17.4	-71.39	-7,583.1	1,462.5	934.9	796.6	138.32	6.759	
14,700.0	7,311.0	7,259.9	7,134.9	131.7	17.6	-73.57	-7,592.7	1,469.4	903.6	761.9	141.69	6.377	
14,800.0	7,311.0	7,290.9	7,164.2	133.4	17.7	-75.54	-7,600.7	1,475.6	881.5	736.8	144.77	6.089	
14,900.0	7,311.0	7,334.7	7,205.9	135.2	17.9	-78.35	-7,611.2	1,484.0	869.4	721.2	148.18	5.867	
14,965.8	7,311.0	7,356.4	7,226.7	136.3	18.0	-79.75	-7,615.9	1,487.8	867.1	717.0	150.04	5.779 CC	
15,000.0	7,311.0	7,365.5	7,235.5	136.9	18.1	-80.34	-7,617.8	1,489.4	867.7	716.8	150.91	5.750 ES	
15,109.0	7,311.0	7,394.7	7,263.7	138.8	18.2	-82.23	-7,623.5	1,494.3	878.2	724.6	153.61	5.717 SF	



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - DIER 4-8 (EXISTING) - ENCANA WELL - SURVEYS													Offset Site Error: 0.0 ft
Survey Program: 100-MWD													Offset Well Error: 0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	
13,000.0	7,311.0	7,383.4	7,382.5	102.2	12.9	-90.23	-7,065.1	1,006.0	1,462.9	1,348.5	114.46	12.781	
13,100.0	7,311.0	7,383.3	7,382.4	103.9	12.9	-90.21	-7,065.1	1,006.0	1,366.5	1,250.2	116.20	11.759	
13,200.0	7,311.0	7,383.1	7,382.2	105.7	12.9	-90.19	-7,065.1	1,006.0	1,270.5	1,152.6	117.95	10.772	
13,300.0	7,311.0	7,383.0	7,382.1	107.4	12.9	-90.17	-7,065.1	1,006.0	1,175.2	1,055.6	119.69	9.819	
13,400.0	7,311.0	7,382.9	7,382.0	109.1	12.9	-90.15	-7,065.1	1,006.0	1,080.8	959.4	121.43	8.901	
13,500.0	7,311.0	7,382.7	7,381.8	110.8	12.9	-90.13	-7,065.1	1,006.0	987.5	864.3	123.17	8.017	
13,600.0	7,311.0	7,382.6	7,381.7	112.6	12.9	-90.11	-7,065.1	1,006.0	895.6	770.7	124.91	7.170	
13,700.0	7,311.0	7,382.5	7,381.6	114.3	12.9	-90.09	-7,065.1	1,006.0	805.7	679.1	126.66	6.361	
13,800.0	7,311.0	7,382.3	7,381.4	116.1	12.9	-90.07	-7,065.1	1,006.0	718.5	590.1	128.40	5.595	
13,900.0	7,311.0	7,382.2	7,381.3	117.8	12.9	-90.05	-7,065.1	1,006.0	635.0	504.8	130.14	4.879	
14,000.0	7,311.0	7,382.1	7,381.2	119.5	12.9	-90.03	-7,065.1	1,006.0	556.9	425.1	131.89	4.223	
14,100.0	7,311.0	7,381.9	7,381.0	121.3	12.9	-90.00	-7,065.1	1,006.0	487.0	353.4	133.63	3.644	
14,200.0	7,311.0	7,381.8	7,380.9	123.0	12.9	-89.98	-7,065.1	1,006.0	429.2	293.8	135.38	3.170	
14,300.0	7,311.0	7,381.7	7,380.8	124.7	12.9	-89.96	-7,065.1	1,006.0	388.8	251.7	137.12	2.836	
14,400.0	7,311.0	7,381.5	7,380.6	126.5	12.9	-89.94	-7,065.1	1,006.0	371.7	232.9	138.86	2.677	
14,415.0	7,311.0	7,381.5	7,380.6	126.7	12.9	-89.94	-7,065.1	1,006.0	371.4	232.3	139.13	2.670 CC, ES, SF	
14,500.0	7,311.0	7,381.4	7,380.5	128.2	12.9	-89.92	-7,065.1	1,006.0	381.0	240.4	140.61	2.710	
14,600.0	7,311.0	7,381.3	7,380.4	130.0	12.9	-89.90	-7,065.1	1,006.0	414.9	272.6	142.35	2.915	
14,700.0	7,311.0	7,381.1	7,380.2	131.7	12.9	-89.88	-7,065.1	1,006.0	468.2	324.1	144.10	3.249	
14,800.0	7,311.0	7,381.0	7,380.1	133.4	12.9	-89.86	-7,065.1	1,006.0	534.9	389.1	145.85	3.668	
14,900.0	7,311.0	7,380.8	7,379.9	135.2	12.9	-89.84	-7,065.1	1,006.0	610.9	463.3	147.59	4.139	
15,000.0	7,311.0	7,380.7	7,379.8	136.9	12.9	-89.82	-7,065.1	1,006.0	692.9	543.6	149.34	4.640	
15,109.0	7,311.0	7,380.6	7,379.7	138.8	12.9	-89.79	-7,065.1	1,006.0	787.1	635.9	151.24	5.205	

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



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - MCCOY #1 (EXISTING) - ENCANA WELL - SURVEYS													Offset Site Error: 0.0 ft	
Survey Program: 100-Geolink MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	12.8	12.8	0.0	0.0	125.35	-314.0	442.7	542.7					
100.0	100.0	111.2	111.2	0.1	0.2	125.32	-313.9	443.0	542.9	542.6	0.30	1,817.265		
200.0	200.0	211.2	211.1	0.3	0.4	125.29	-313.9	443.4	543.3	542.6	0.65	838.584		
300.0	300.0	312.6	312.6	0.5	0.5	58.73	-313.9	443.7	543.0	542.0	1.00	542.862		
400.0	400.0	412.8	412.8	0.7	0.7	58.96	-313.7	443.8	541.7	540.4	1.35	400.193		
500.0	499.9	512.7	512.7	0.8	0.9	59.33	-313.4	444.1	539.5	537.8	1.71	314.985		
600.0	599.7	612.2	612.2	1.0	1.1	59.87	-313.1	444.4	536.4	534.4	2.08	257.887		
700.0	699.4	709.6	709.6	1.3	1.2	60.56	-312.9	444.9	532.9	530.4	2.46	216.945		
778.7	777.7	788.4	788.4	1.4	1.4	61.24	-312.8	445.5	529.6	526.9	2.77	191.512		
800.0	798.9	809.7	809.7	1.5	1.4	61.44	-312.8	445.6	528.7	525.8	2.85	185.495		
900.0	898.4	909.7	909.6	1.7	1.6	62.35	-312.6	446.2	524.3	521.0	3.25	161.333		
1,000.0	997.9	1,009.3	1,009.3	2.0	1.7	63.31	-312.7	446.6	520.0	516.3	3.65	142.345		
1,100.0	1,097.4	1,109.6	1,109.6	2.2	1.9	64.32	-312.8	446.7	515.8	511.7	4.06	127.004		
1,200.0	1,196.9	1,211.6	1,211.6	2.4	2.1	65.38	-312.9	446.5	511.3	506.8	4.47	114.265		
1,300.0	1,296.4	1,310.4	1,310.4	2.7	2.3	66.45	-313.1	446.0	506.9	502.0	4.89	103.752		
1,400.0	1,395.9	1,410.7	1,410.7	2.9	2.4	67.55	-313.1	445.6	502.7	497.4	5.30	94.812		
1,500.0	1,495.3	1,511.4	1,511.4	3.2	2.6	68.68	-313.1	444.9	498.4	492.7	5.72	87.116		
1,600.0	1,594.8	1,609.5	1,609.5	3.4	2.8	69.85	-313.4	443.9	494.4	488.2	6.14	80.541		
1,700.0	1,694.3	1,707.7	1,707.7	3.7	3.0	71.04	-313.8	443.1	490.8	484.2	6.56	74.850		
1,800.0	1,793.8	1,807.2	1,807.1	3.9	3.1	72.30	-314.6	442.2	487.5	480.5	6.98	69.843		
1,900.0	1,893.3	1,904.3	1,904.2	4.2	3.3	73.57	-315.7	441.2	484.7	477.3	7.40	65.498		
2,000.0	1,992.8	2,003.7	2,003.6	4.4	3.5	74.90	-317.0	440.3	482.4	474.6	7.83	61.635		
2,100.0	2,092.3	2,105.1	2,105.0	4.7	3.7	76.29	-318.3	439.0	480.1	471.9	8.26	58.141		
2,200.0	2,191.8	2,206.7	2,206.6	4.9	3.8	77.70	-319.2	437.4	477.7	469.0	8.69	54.963		
2,300.0	2,291.3	2,305.0	2,304.9	5.1	4.0	79.08	-320.0	435.9	475.4	466.3	9.12	52.139		
2,400.0	2,390.8	2,407.5	2,407.4	5.4	4.2	80.53	-320.6	434.1	473.1	463.6	9.55	49.526		
2,500.0	2,490.2	2,505.6	2,505.4	5.6	4.4	81.91	-321.0	432.4	471.0	461.0	9.98	47.194		
2,600.0	2,589.7	2,607.4	2,607.2	5.9	4.5	83.36	-321.2	430.5	468.9	458.5	10.41	45.035		
2,700.0	2,689.2	2,707.0	2,706.8	6.1	4.7	84.79	-321.2	428.6	466.9	456.1	10.84	43.067		
2,800.0	2,788.7	2,805.4	2,805.2	6.4	4.9	86.18	-321.2	426.9	465.2	454.0	11.27	41.295		
2,900.0	2,888.2	2,904.2	2,904.0	6.6	5.1	87.56	-321.1	425.5	464.0	452.3	11.69	39.691		
3,000.0	2,987.7	3,005.9	3,005.7	6.9	5.2	88.97	-320.8	424.1	462.9	450.7	12.12	38.192		
3,100.0	3,087.2	3,104.8	3,104.6	7.1	5.4	90.33	-320.3	422.8	461.8	449.2	12.54	36.822		
3,200.0	3,186.7	3,204.3	3,204.1	7.4	5.6	91.65	-319.7	421.9	461.0	448.0	12.96	35.567		
3,300.0	3,286.2	3,303.2	3,303.0	7.6	5.8	92.91	-318.9	421.3	460.5	447.1	13.38	34.421		
3,351.6	3,337.5	3,353.6	3,353.4	7.7	5.8	93.55	-318.6	421.2	460.4	446.8	13.59	33.874 CC		
3,400.0	3,385.7	3,400.9	3,400.7	7.9	5.9	94.15	-318.4	421.1	460.5	446.7	13.79	33.388		
3,500.0	3,485.1	3,500.7	3,500.5	8.1	6.1	95.40	-317.9	420.8	460.8	446.6	14.21	32.440 ES		
3,600.0	3,584.6	3,599.0	3,598.8	8.4	6.3	96.64	-317.6	420.6	461.5	446.9	14.62	31.576		
3,700.0	3,684.1	3,700.5	3,700.3	8.6	6.5	97.94	-317.2	420.2	462.4	447.3	15.03	30.762		
3,800.0	3,783.6	3,799.3	3,799.1	8.9	6.6	99.23	-316.8	419.5	463.3	447.8	15.44	30.011		
3,900.0	3,883.1	3,897.7	3,897.4	9.1	6.8	100.54	-316.6	418.6	464.6	448.7	15.84	29.332		
4,000.0	3,982.6	3,996.7	3,996.4	9.4	7.0	101.85	-316.6	417.7	466.3	450.1	16.24	28.715		
4,100.0	4,082.1	4,096.8	4,096.5	9.6	7.1	103.19	-316.5	416.6	468.3	451.6	16.64	28.144		
4,200.0	4,181.6	4,194.8	4,194.5	9.9	7.3	104.52	-316.6	415.2	470.5	453.5	17.03	27.628		
4,300.0	4,281.1	4,294.0	4,293.7	10.1	7.5	105.87	-316.9	413.8	473.2	455.8	17.42	27.165		
4,400.0	4,380.6	4,393.8	4,393.5	10.3	7.7	107.22	-317.1	412.3	476.2	458.4	17.81	26.738		
4,500.0	4,480.1	4,494.4	4,494.1	10.6	7.8	108.57	-317.1	410.7	479.2	461.0	18.19	26.337		
4,600.0	4,579.5	4,593.2	4,592.9	10.8	8.0	109.85	-317.1	409.3	482.4	463.8	18.57	25.970		
4,700.0	4,679.0	4,692.5	4,692.2	11.1	8.2	111.13	-317.1	407.9	485.9	466.9	18.95	25.639		
4,800.0	4,778.5	4,790.9	4,790.6	11.3	8.4	112.38	-317.2	406.5	489.7	470.4	19.32	25.344		
4,900.0	4,878.0	4,892.7	4,892.3	11.6	8.5	113.63	-317.2	405.2	493.6	473.9	19.70	25.063		

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



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - MCCOY #1 (EXISTING) - ENCANA WELL - SURVEYS													Offset Site Error:	0.0 ft
Survey Program: 100-Geolink MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
5,000.0	4,977.5	4,992.4	4,992.0	11.8	8.7	114.85	-316.9	403.8	497.5	477.4	20.06	24.797		
5,100.0	5,077.0	5,093.5	5,093.2	12.1	8.9	116.05	-316.4	402.6	501.4	481.0	20.43	24.543		
5,200.0	5,176.5	5,190.9	5,190.5	12.3	9.1	117.17	-315.9	401.6	505.5	484.7	20.79	24.316		
5,300.0	5,276.0	5,290.8	5,290.4	12.6	9.2	118.29	-315.6	400.6	510.0	488.8	21.15	24.115		
5,400.0	5,375.5	5,350.0	5,349.6	12.8	9.4	118.94	-315.3	400.1	516.1	494.6	21.45	24.055 SF		
5,500.0	5,475.0	5,350.0	5,349.6	13.1	9.4	118.94	-315.3	400.1	537.7	516.1	21.69	24.795		
5,600.0	5,574.4	5,350.0	5,349.6	13.3	9.4	118.94	-315.3	400.1	576.2	554.3	21.92	26.286		
5,700.0	5,673.9	5,350.0	5,349.6	13.6	9.4	118.94	-315.3	400.1	628.3	606.2	22.15	28.364		
5,800.0	5,773.4	5,350.0	5,349.6	13.8	9.4	118.94	-315.3	400.1	691.1	668.7	22.39	30.872		
5,900.0	5,872.9	5,350.0	5,349.6	14.1	9.4	118.94	-315.3	400.1	761.9	739.3	22.62	33.683		
6,000.0	5,972.4	5,350.0	5,349.6	14.3	9.4	118.94	-315.3	400.1	838.6	815.8	22.85	36.698		
6,100.0	6,071.9	5,350.0	5,349.6	14.6	9.4	118.94	-315.3	400.1	919.9	896.8	23.09	39.845		
6,200.0	6,171.4	5,350.0	5,349.6	14.8	9.4	118.94	-315.3	400.1	1,004.5	981.2	23.32	43.076		
6,300.0	6,270.9	5,350.0	5,349.6	15.1	9.4	118.94	-315.3	400.1	1,091.7	1,068.1	23.55	46.353		
6,400.0	6,370.4	5,350.0	5,349.6	15.3	9.4	118.94	-315.3	400.1	1,180.9	1,157.2	23.78	49.651		
6,500.0	6,469.9	5,350.0	5,349.6	15.6	9.4	118.94	-315.3	400.1	1,271.8	1,247.8	24.02	52.951		
6,600.0	6,569.4	5,350.0	5,349.6	15.8	9.4	118.94	-315.3	400.1	1,363.9	1,339.7	24.25	56.241		
6,700.0	6,668.8	5,350.0	5,349.6	16.1	9.4	118.94	-315.3	400.1	1,457.1	1,432.6	24.48	59.511		
6,749.1	6,717.7	5,350.0	5,349.6	16.2	9.4	118.94	-315.3	400.1	1,503.2	1,478.6	24.60	61.107		



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - MCCOY 0-6-5 (EXISTING) - ENCANA WELL - NO SURVEYS													Offset Site Error:	0.0 ft
Survey Program: O-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
0.0	0.0	92.0	92.0	0.0	0.1	155.74	-688.4	310.2	755.1					
100.0	100.0	192.0	192.0	0.1	0.3	155.74	-688.4	310.2	755.1	754.7	0.44	1,716.854		
200.0	200.0	292.0	292.0	0.3	0.5	155.74	-688.4	310.2	755.1	754.3	0.79	957.184		
300.0	300.0	392.0	392.0	0.5	0.7	89.18	-688.4	310.2	755.1	754.0	1.14	662.990		
400.0	400.0	492.0	492.0	0.7	0.8	89.38	-688.4	310.2	755.1	753.6	1.49	505.607		
500.0	499.9	591.9	591.9	0.8	1.0	89.71	-688.4	310.2	755.0	753.2	1.86	406.811		
565.7	565.5	657.5	657.5	1.0	1.1	90.00	-688.4	310.2	755.0	752.9	2.10	359.238		
600.0	599.7	691.7	691.7	1.0	1.2	90.17	-688.4	310.2	755.0	752.8	2.23	338.541		
700.0	699.4	791.4	791.4	1.3	1.4	90.77	-688.4	310.2	755.1	752.5	2.62	288.273		
778.7	777.7	869.7	869.7	1.4	1.5	91.32	-688.4	310.2	755.2	752.3	2.94	257.169		
800.0	798.9	890.9	890.9	1.5	1.5	91.49	-688.4	310.2	755.3	752.3	3.02	249.817		
900.0	898.4	990.4	990.4	1.7	1.7	92.25	-688.4	310.2	755.6	752.2	3.43	220.158		
1,000.0	997.9	1,089.9	1,089.9	2.0	1.9	93.01	-688.4	310.2	756.1	752.2	3.84	196.693		
1,100.0	1,097.4	1,189.4	1,189.4	2.2	2.1	93.76	-688.4	310.2	756.7	752.4	4.26	177.720		
1,200.0	1,196.9	1,288.9	1,288.9	2.4	2.2	94.52	-688.4	310.2	757.4	752.7	4.67	162.095		
1,300.0	1,296.4	1,388.4	1,388.4	2.7	2.4	95.28	-688.4	310.2	758.3	753.2	5.09	149.023		
1,400.0	1,395.9	1,487.9	1,487.9	2.9	2.6	96.03	-688.4	310.2	759.3	753.8	5.50	137.940		
1,500.0	1,495.3	1,587.3	1,587.3	3.2	2.8	96.78	-688.4	310.2	760.4	754.5	5.92	128.434		
1,600.0	1,594.8	1,686.8	1,686.8	3.4	2.9	97.53	-688.4	310.2	761.7	755.3	6.34	120.199		
1,700.0	1,694.3	1,786.3	1,786.3	3.7	3.1	98.28	-688.4	310.2	763.1	756.3	6.75	113.002		
1,800.0	1,793.8	1,885.8	1,885.8	3.9	3.3	99.02	-688.4	310.2	764.6	757.4	7.17	106.663		
1,900.0	1,893.3	1,985.3	1,985.3	4.2	3.4	99.76	-688.4	310.2	766.2	758.6	7.58	101.043		
2,000.0	1,992.8	2,084.8	2,084.8	4.4	3.6	100.50	-688.4	310.2	768.0	760.0	8.00	96.029		
2,100.0	2,092.3	2,184.3	2,184.3	4.7	3.8	101.24	-688.4	310.2	769.9	761.5	8.41	91.531		
2,200.0	2,191.8	2,283.8	2,283.8	4.9	4.0	101.97	-688.4	310.2	772.0	763.1	8.82	87.476		
2,300.0	2,291.3	2,383.3	2,383.3	5.1	4.1	102.69	-688.4	310.2	774.1	764.9	9.24	83.806		
2,400.0	2,390.8	2,482.8	2,482.8	5.4	4.3	103.41	-688.4	310.2	776.4	766.8	9.65	80.469		
2,500.0	2,490.2	2,582.2	2,582.2	5.6	4.5	104.13	-688.4	310.2	778.8	768.8	10.06	77.424		
2,600.0	2,589.7	2,681.7	2,681.7	5.9	4.7	104.85	-688.4	310.2	781.4	770.9	10.47	74.637		
2,700.0	2,689.2	2,781.2	2,781.2	6.1	4.8	105.56	-688.4	310.2	784.0	773.1	10.88	72.077		
2,800.0	2,788.7	2,880.7	2,880.7	6.4	5.0	106.26	-688.4	310.2	786.8	775.5	11.29	69.720		
2,900.0	2,888.2	2,980.2	2,980.2	6.6	5.2	106.96	-688.4	310.2	789.7	778.0	11.69	67.544		
3,000.0	2,987.7	3,079.7	3,079.7	6.9	5.4	107.65	-688.4	310.2	792.7	780.6	12.10	65.529		
3,100.0	3,087.2	3,179.2	3,179.2	7.1	5.5	108.34	-688.4	310.2	795.8	783.3	12.50	63.661		
3,200.0	3,186.7	3,278.7	3,278.7	7.4	5.7	109.02	-688.4	310.2	799.1	786.2	12.90	61.924		
3,300.0	3,286.2	3,378.2	3,378.2	7.6	5.9	109.70	-688.4	310.2	802.4	789.1	13.31	60.306		
3,400.0	3,385.7	3,477.7	3,477.7	7.9	6.1	110.37	-688.4	310.2	805.9	792.2	13.71	58.797		
3,500.0	3,485.1	3,577.1	3,577.1	8.1	6.2	111.04	-688.4	310.2	809.5	795.4	14.11	57.386		
3,600.0	3,584.6	3,676.6	3,676.6	8.4	6.4	111.70	-688.4	310.2	813.2	798.7	14.50	56.065		
3,700.0	3,684.1	3,776.1	3,776.1	8.6	6.6	112.35	-688.4	310.2	817.0	802.1	14.90	54.827		
3,800.0	3,783.6	3,875.6	3,875.6	8.9	6.7	113.00	-688.4	310.2	820.9	805.6	15.30	53.664		
3,900.0	3,883.1	3,975.1	3,975.1	9.1	6.9	113.64	-688.4	310.2	824.9	809.2	15.69	52.571		
4,000.0	3,982.6	4,074.6	4,074.6	9.4	7.1	114.28	-688.4	310.2	829.0	812.9	16.08	51.542		
4,100.0	4,082.1	4,174.1	4,174.1	9.6	7.3	114.91	-688.4	310.2	833.2	816.7	16.48	50.572		
4,200.0	4,181.6	4,273.6	4,273.6	9.9	7.4	115.53	-688.4	310.2	837.5	820.7	16.87	49.657		
4,300.0	4,281.1	4,373.1	4,373.1	10.1	7.6	116.15	-688.4	310.2	841.9	824.7	17.26	48.793		
4,400.0	4,380.6	4,472.6	4,472.6	10.3	7.8	116.76	-688.4	310.2	846.5	828.8	17.64	47.976		
4,500.0	4,480.1	4,572.1	4,572.1	10.6	8.0	117.36	-688.4	310.2	851.1	833.0	18.03	47.203		
4,600.0	4,579.5	4,671.5	4,671.5	10.8	8.1	117.96	-688.4	310.2	855.8	837.3	18.42	46.470		
4,700.0	4,679.0	4,771.0	4,771.0	11.1	8.3	118.55	-688.4	310.2	860.5	841.8	18.80	45.776		
4,800.0	4,778.5	4,870.5	4,870.5	11.3	8.5	119.13	-688.4	310.2	865.4	846.3	19.18	45.117		
4,900.0	4,878.0	4,970.0	4,970.0	11.6	8.7	119.71	-688.4	310.2	870.4	850.8	19.56	44.491		

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



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - MCCOY 0-6-5 (EXISTING) - ENCANA WELL - NO SURVEYS												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		
5,000.0	4,977.5	5,069.5	5,069.5	11.8	8.8	120.28	-688.4	310.2	875.5	855.5	19.94	43.896	
5,100.0	5,077.0	5,169.0	5,169.0	12.1	9.0	120.85	-688.4	310.2	880.6	860.3	20.32	43.330	
5,200.0	5,176.5	5,268.5	5,268.5	12.3	9.2	121.40	-688.4	310.2	885.8	865.1	20.70	42.792	
5,300.0	5,276.0	5,368.0	5,368.0	12.6	9.4	121.96	-688.4	310.2	891.2	870.1	21.08	42.279	
5,400.0	5,375.5	5,467.5	5,467.5	12.8	9.5	122.50	-688.4	310.2	896.6	875.1	21.45	41.790	
5,500.0	5,475.0	5,567.0	5,567.0	13.1	9.7	123.04	-688.4	310.2	902.0	880.2	21.83	41.324	
5,600.0	5,574.4	5,666.4	5,666.4	13.3	9.9	123.57	-688.4	310.2	907.6	885.4	22.20	40.879	
5,700.0	5,673.9	5,765.9	5,765.9	13.6	10.0	124.10	-688.4	310.2	913.2	890.6	22.57	40.454	
5,800.0	5,773.4	5,865.4	5,865.4	13.8	10.2	124.61	-688.4	310.2	918.9	896.0	22.95	40.049	
5,900.0	5,872.9	5,964.9	5,964.9	14.1	10.4	125.13	-688.4	310.2	924.7	901.4	23.32	39.661	
6,000.0	5,972.4	6,064.4	6,064.4	14.3	10.6	125.63	-688.4	310.2	930.6	906.9	23.68	39.290	
6,100.0	6,071.9	6,163.9	6,163.9	14.6	10.7	126.13	-688.4	310.2	936.5	912.4	24.05	38.935	
6,200.0	6,171.4	6,263.4	6,263.4	14.8	10.9	126.63	-688.4	310.2	942.5	918.1	24.42	38.596	
6,300.0	6,270.9	6,362.9	6,362.9	15.1	11.1	127.11	-688.4	310.2	948.6	923.8	24.79	38.270	
6,400.0	6,370.4	6,462.4	6,462.4	15.3	11.3	127.59	-688.4	310.2	954.7	929.6	25.15	37.959	
6,500.0	6,469.9	6,561.9	6,561.9	15.6	11.4	128.07	-688.4	310.2	960.9	935.4	25.52	37.660	
6,600.0	6,569.4	6,661.4	6,661.4	15.8	11.6	128.54	-688.4	310.2	967.2	941.3	25.88	37.373	
6,700.0	6,668.8	6,760.8	6,760.8	16.1	11.8	129.00	-688.4	310.2	973.5	947.3	26.24	37.098	
6,749.1	6,717.7	6,809.7	6,809.7	16.2	11.9	129.23	-688.4	310.2	976.6	950.2	26.42	36.967	
6,800.0	6,768.4	6,860.4	6,860.4	16.3	12.0	78.51	-688.4	310.2	977.7	951.2	26.59	36.776	
6,850.0	6,817.9	6,909.9	6,909.9	16.4	12.0	51.06	-688.4	310.2	974.6	948.0	26.61	36.632	
6,900.0	6,866.9	6,958.9	6,958.9	16.4	12.1	40.03	-688.4	310.2	967.4	940.9	26.48	36.526	
6,950.0	6,914.9	7,006.9	7,006.9	16.5	12.2	35.02	-688.4	310.2	956.1	929.9	26.23	36.448	
7,000.0	6,961.6	7,053.6	7,053.6	16.5	12.3	32.69	-688.4	310.2	940.9	915.1	25.86	36.383	
7,050.0	7,006.6	7,098.6	7,098.6	16.5	12.4	31.86	-688.4	310.2	922.0	896.6	25.39	36.306	
7,100.0	7,049.5	7,141.5	7,141.5	16.6	12.4	32.06	-688.4	310.2	899.5	874.6	24.86	36.180	
7,150.0	7,090.2	7,182.2	7,182.2	16.6	12.5	33.11	-688.4	310.2	873.6	849.3	24.30	35.950	
7,200.0	7,128.1	7,220.1	7,220.1	16.7	12.6	34.95	-688.4	310.2	844.6	820.9	23.77	35.536	
7,250.0	7,163.1	7,255.1	7,255.1	16.7	12.6	37.62	-688.4	310.2	812.9	789.6	23.34	34.833	
7,300.0	7,194.9	7,286.9	7,286.9	16.8	12.7	41.17	-688.4	310.2	778.7	755.6	23.09	33.724	
7,350.0	7,223.2	7,315.2	7,315.2	16.9	12.8	45.72	-688.4	310.2	742.4	719.3	23.11	32.120	
7,400.0	7,247.9	7,339.9	7,339.9	17.0	12.8	51.31	-688.4	310.2	704.4	680.9	23.46	30.019	
7,450.0	7,268.7	7,360.7	7,360.7	17.2	12.8	57.91	-688.4	310.2	665.1	641.0	24.13	27.561	
7,500.0	7,285.5	7,377.5	7,377.5	17.4	12.9	65.32	-688.4	310.2	625.1	600.1	25.01	24.993	
7,550.0	7,298.1	7,390.1	7,390.1	17.7	12.9	73.09	-688.4	310.2	584.8	558.9	25.92	22.561	
7,600.0	7,306.5	7,398.5	7,398.5	17.9	12.9	80.64	-688.4	310.2	544.9	518.2	26.71	20.403	
7,650.0	7,310.6	7,402.6	7,402.6	18.3	12.9	87.40	-688.4	310.2	506.0	478.6	27.31	18.527	
7,672.0	7,311.0	7,403.0	7,403.0	18.4	12.9	90.00	-688.4	310.2	489.3	461.8	27.53	17.776	
7,700.0	7,311.0	7,403.0	7,403.0	18.6	12.9	90.00	-688.4	310.2	468.7	440.9	27.78	16.874	
7,800.0	7,311.0	7,403.0	7,403.0	19.4	12.9	90.00	-688.4	310.2	402.5	373.7	28.77	13.991	
7,900.0	7,311.0	7,403.0	7,403.0	20.3	12.9	90.00	-688.4	310.2	352.6	322.7	29.89	11.799	
8,000.0	7,311.0	7,403.0	7,403.0	21.4	12.9	90.00	-688.4	310.2	326.6	295.5	31.10	10.501	
8,038.3	7,311.0	7,403.0	7,403.0	21.8	12.9	90.00	-688.4	310.2	324.4	292.8	31.60	10.264 CC, ES	
8,100.0	7,311.0	7,403.0	7,403.0	22.5	12.9	90.00	-688.4	310.2	330.2	297.8	32.40	10.189 SF	
8,200.0	7,311.0	7,403.0	7,403.0	23.7	12.9	90.00	-688.4	310.2	362.4	328.6	33.77	10.732	
8,300.0	7,311.0	7,403.0	7,403.0	24.9	12.9	90.00	-688.4	310.2	416.7	381.6	35.19	11.843	
8,400.0	7,311.0	7,403.0	7,403.0	26.2	12.9	90.00	-688.4	310.2	485.8	449.2	36.66	13.254	
8,500.0	7,311.0	7,403.0	7,403.0	27.6	12.9	90.00	-688.4	310.2	564.2	526.1	38.16	14.787	
8,600.0	7,311.0	7,403.0	7,403.0	29.0	12.9	90.00	-688.4	310.2	648.6	608.9	39.69	16.342	
8,700.0	7,311.0	7,403.0	7,403.0	30.5	12.9	90.00	-688.4	310.2	736.9	695.6	41.25	17.865	
8,800.0	7,311.0	7,403.0	7,403.0	31.9	12.9	90.00	-688.4	310.2	827.9	785.0	42.83	19.330	
8,900.0	7,311.0	7,403.0	7,403.0	33.4	12.9	90.00	-688.4	310.2	920.7	876.3	44.43	20.724	

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



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - MCCOY 0-6-5 (EXISTING) - ENCANA WELL - NO SURVEYS													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	
9,000.0	7,311.0	7,403.0	7,403.0	35.0	12.9	90.00	-688.4	310.2	1,014.9	968.9	46.04	22.044	
9,100.0	7,311.0	7,403.0	7,403.0	36.5	12.9	90.00	-688.4	310.2	1,110.1	1,062.4	47.67	23.289	
9,200.0	7,311.0	7,403.0	7,403.0	38.1	12.9	90.00	-688.4	310.2	1,206.1	1,156.8	49.31	24.461	
9,300.0	7,311.0	7,403.0	7,403.0	39.7	12.9	90.00	-688.4	310.2	1,302.7	1,251.7	50.96	25.565	
9,400.0	7,311.0	7,403.0	7,403.0	41.2	12.9	90.00	-688.4	310.2	1,399.8	1,347.1	52.62	26.604	
9,500.0	7,311.0	7,403.0	7,403.0	42.9	12.9	90.00	-688.4	310.2	1,497.2	1,442.9	54.28	27.582	



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - MCCOY 13-5 (EXISTING) - ENCANA WELL - SURVEYS													Offset Site Error: 0.0 ft			
Survey Program: 100-MWD															Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance									
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning			
0.0	0.0	0.0	0.0	0.0	0.0	155.79	-703.7	316.4	771.6							
100.0	100.0	100.0	100.0	0.1	0.2	155.81	-703.2	315.9	771.0	770.7	0.28	2,751.821				
200.0	200.0	194.2	194.2	0.3	0.3	155.84	-702.6	315.2	770.1	769.5	0.62	1,244.477				
300.0	300.0	297.5	297.5	0.5	0.5	89.33	-702.3	314.3	769.5	768.5	0.97	789.318				
400.0	400.0	391.8	391.8	0.7	0.7	89.59	-702.3	313.3	769.0	767.7	1.32	582.479				
500.0	499.9	493.6	493.6	0.8	0.8	90.02	-702.6	312.0	768.8	767.1	1.69	455.504				
600.0	599.7	596.1	596.1	1.0	1.0	90.59	-702.6	310.6	768.3	766.2	2.07	371.602				
691.4	690.8	683.2	683.2	1.2	1.2	91.17	-702.7	309.5	768.0	765.6	2.42	317.623				
700.0	699.4	691.3	691.3	1.3	1.2	91.23	-702.7	309.4	768.0	765.5	2.45	313.377				
778.7	777.7	770.9	770.9	1.4	1.3	91.89	-703.1	308.1	768.0	765.3	2.77	277.065				
800.0	798.9	792.6	792.6	1.5	1.4	92.08	-703.2	307.8	768.1	765.2	2.86	268.538				
900.0	898.4	893.7	893.6	1.7	1.6	92.98	-703.4	305.9	768.0	764.8	3.27	234.596				
909.9	908.2	903.5	903.4	1.7	1.6	93.06	-703.4	305.7	768.0	764.7	3.31	231.708				
1,000.0	997.9	989.4	989.3	2.0	1.7	93.82	-703.7	304.2	768.3	764.6	3.68	208.689				
1,100.0	1,097.4	1,082.5	1,082.3	2.2	1.9	94.64	-704.5	302.7	769.4	765.3	4.09	188.306				
1,200.0	1,196.9	1,185.7	1,185.5	2.4	2.1	95.55	-705.8	301.1	771.0	766.5	4.51	170.920				
1,300.0	1,296.4	1,289.5	1,289.3	2.7	2.3	96.50	-706.5	298.9	772.1	767.1	4.94	156.383				
1,400.0	1,395.9	1,382.5	1,382.3	2.9	2.4	97.31	-707.0	297.3	773.4	768.0	5.34	144.754				
1,500.0	1,495.3	1,487.3	1,487.1	3.2	2.6	98.21	-707.9	295.8	775.1	769.4	5.77	134.321				
1,600.0	1,594.8	1,581.5	1,581.3	3.4	2.8	99.04	-708.5	294.1	776.8	770.6	6.18	125.731				
1,700.0	1,694.3	1,685.9	1,685.7	3.7	3.0	99.94	-709.3	292.3	778.9	772.3	6.61	117.911				
1,800.0	1,793.8	1,787.0	1,786.8	3.9	3.1	100.87	-709.7	289.7	780.5	773.5	7.03	111.070				
1,900.0	1,893.3	1,885.9	1,885.6	4.2	3.3	101.77	-710.0	287.2	782.3	774.9	7.44	105.097				
2,000.0	1,992.8	1,982.9	1,982.6	4.4	3.5	102.65	-710.5	284.8	784.4	776.6	7.86	99.843				
2,100.0	2,092.3	2,081.5	2,081.1	4.7	3.7	103.53	-711.1	282.5	786.9	778.7	8.27	95.167				
2,200.0	2,191.8	2,177.1	2,176.7	4.9	3.8	104.36	-711.9	280.5	789.9	781.2	8.68	91.022				
2,300.0	2,291.3	2,274.7	2,274.3	5.1	4.0	105.25	-713.2	277.9	793.4	784.3	9.09	87.296				
2,400.0	2,390.8	2,372.7	2,372.3	5.4	4.2	106.13	-714.6	275.4	797.2	787.7	9.50	83.929				
2,500.0	2,490.2	2,471.1	2,470.6	5.6	4.4	107.01	-716.2	272.7	801.4	791.5	9.91	80.878				
2,600.0	2,589.7	2,568.6	2,568.1	5.9	4.5	107.88	-717.9	270.1	805.9	795.5	10.32	78.125				
2,700.0	2,689.2	2,666.2	2,665.6	6.1	4.7	108.73	-719.7	267.6	810.7	800.0	10.72	75.632				
2,800.0	2,788.7	2,770.3	2,769.6	6.4	4.9	109.62	-721.6	265.0	815.7	804.6	11.13	73.265				
2,900.0	2,888.2	2,871.2	2,870.5	6.6	5.1	110.47	-722.8	262.5	820.3	808.7	11.54	71.083				
3,000.0	2,987.7	2,973.5	2,972.7	6.9	5.3	111.28	-723.9	260.5	824.8	812.9	11.95	69.040				
3,100.0	3,087.2	3,075.9	3,075.1	7.1	5.5	112.10	-724.5	258.3	829.1	816.8	12.35	67.133				
3,200.0	3,186.7	3,177.9	3,177.1	7.4	5.6	112.84	-724.7	257.1	833.2	820.4	12.75	65.342				
3,300.0	3,286.2	3,279.7	3,279.0	7.6	5.8	113.58	-724.7	255.7	837.1	823.9	13.15	63.646				
3,400.0	3,385.7	3,380.4	3,379.6	7.9	6.0	114.33	-724.3	253.9	840.9	827.4	13.55	62.067				
3,500.0	3,485.1	3,483.1	3,482.3	8.1	6.2	115.06	-723.8	252.7	844.6	830.7	13.95	60.564				
3,600.0	3,584.6	3,578.6	3,577.8	8.4	6.3	115.71	-723.2	251.8	848.4	834.1	14.33	59.198				
3,700.0	3,684.1	3,671.6	3,670.8	8.6	6.5	116.37	-723.2	250.5	853.0	838.2	14.71	57.973				
3,800.0	3,783.6	3,763.7	3,762.8	8.9	6.7	117.03	-724.0	248.8	858.4	843.3	15.09	56.888				
3,900.0	3,883.1	3,861.6	3,860.8	9.1	6.8	117.72	-725.4	247.1	864.7	849.2	15.48	55.869				
4,000.0	3,982.6	3,960.9	3,960.0	9.4	7.0	118.48	-726.7	244.4	871.0	855.1	15.86	54.902				
4,100.0	4,082.1	4,068.9	4,067.9	9.6	7.2	119.30	-727.8	241.2	877.2	860.9	16.26	53.938				
4,200.0	4,181.6	4,175.0	4,174.0	9.9	7.4	120.10	-727.6	238.3	882.3	865.6	16.66	52.972				
4,300.0	4,281.1	4,283.4	4,282.4	10.1	7.6	120.87	-726.6	235.9	886.8	869.8	17.05	52.010				
4,400.0	4,380.6	4,382.6	4,381.6	10.3	7.8	121.59	-725.0	233.5	890.8	873.4	17.43	51.106				
4,500.0	4,480.1	4,482.2	4,481.1	10.6	8.0	122.29	-723.6	231.3	895.1	877.3	17.81	50.262				
4,600.0	4,579.5	4,579.6	4,578.5	10.8	8.1	122.93	-722.3	229.7	899.5	881.3	18.18	49.475				
4,700.0	4,679.0	4,674.6	4,673.5	11.1	8.3	123.53	-721.5	228.4	904.4	885.8	18.55	48.755				
4,800.0	4,778.5	4,771.9	4,770.7	11.3	8.5	124.14	-721.0	227.0	909.8	890.9	18.92	48.086				

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



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - MCCOY 13-5 (EXISTING) - ENCANA WELL - SURVEYS													Offset Site Error: 0.0 ft			
Survey Program: 100-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			
4,900.0	4,878.0	4,877.5	4,876.4	11.6	8.6	124.80	-720.3	225.3	915.2	895.9	19.30	47.415				
5,000.0	4,977.5	4,978.4	4,977.2	11.8	8.8	125.41	-719.0	224.1	920.0	900.4	19.67	46.764				
5,100.0	5,077.0	5,077.5	5,076.4	12.1	9.0	125.99	-717.9	223.2	925.0	905.0	20.04	46.149				
5,200.0	5,176.5	5,177.9	5,176.7	12.3	9.2	126.57	-716.7	222.1	930.1	909.6	20.41	45.562				
5,300.0	5,276.0	5,275.6	5,274.4	12.6	9.3	127.12	-715.6	221.4	935.2	914.4	20.78	45.008				
5,400.0	5,375.5	5,373.7	5,372.5	12.8	9.5	127.66	-714.7	220.6	940.6	919.5	21.14	44.491				
5,500.0	5,475.0	5,471.3	5,470.0	13.1	9.7	128.17	-714.0	220.2	946.3	924.8	21.51	44.003				
5,600.0	5,574.4	5,563.4	5,562.2	13.3	9.8	128.65	-713.7	219.5	952.5	930.6	21.86	43.573				
5,700.0	5,673.9	5,657.1	5,655.9	13.6	10.0	129.13	-714.2	218.7	959.5	937.3	22.22	43.193				
5,800.0	5,773.4	5,755.8	5,754.5	13.8	10.2	129.64	-714.9	217.6	967.0	944.4	22.58	42.832				
5,900.0	5,872.9	5,862.3	5,861.1	14.1	10.4	130.18	-715.5	216.5	974.3	951.3	22.95	42.457				
6,000.0	5,972.4	5,968.1	5,966.8	14.3	10.5	130.70	-715.1	215.9	980.7	957.4	23.32	42.058				
6,100.0	6,071.9	6,070.5	6,069.3	14.6	10.7	131.23	-714.3	214.8	986.8	963.2	23.68	41.672				
6,200.0	6,171.4	6,167.3	6,166.1	14.8	10.9	131.70	-713.5	214.2	992.9	968.9	24.04	41.312				
6,300.0	6,270.9	6,268.0	6,266.7	15.1	11.1	132.15	-713.0	214.0	999.4	975.0	24.40	40.964				
6,400.0	6,370.4	6,362.6	6,361.4	15.3	11.2	132.61	-712.4	213.2	1,005.8	981.1	24.75	40.645				
6,500.0	6,469.9	6,456.8	6,455.5	15.6	11.4	133.04	-712.5	212.6	1,013.0	987.9	25.09	40.368				
6,600.0	6,569.4	6,557.5	6,556.2	15.8	11.6	133.47	-712.9	212.1	1,020.5	995.1	25.45	40.092				
6,700.0	6,668.8	6,660.8	6,659.6	16.1	11.8	133.95	-712.8	211.2	1,027.7	1,001.9	25.81	39.812				
6,749.1	6,717.7	6,710.4	6,709.1	16.2	11.8	134.16	-712.7	210.9	1,031.1	1,005.1	25.99	39.676				
6,800.0	6,768.4	6,758.1	6,756.8	16.3	11.9	83.40	-712.7	210.8	1,032.7	1,006.5	26.16	39.469				
6,850.0	6,817.9	6,805.3	6,804.0	16.4	12.0	55.93	-712.8	210.6	1,030.2	1,004.0	26.20	39.325				
6,900.0	6,866.9	6,855.9	6,854.7	16.4	12.1	44.95	-713.0	210.5	1,023.8	997.7	26.10	39.219				
6,950.0	6,914.9	6,905.6	6,904.3	16.5	12.2	40.05	-713.0	210.3	1,013.4	987.5	25.89	39.145				
7,000.0	6,961.6	6,954.0	6,952.7	16.5	12.3	37.88	-712.9	210.1	999.1	973.6	25.57	39.080				
7,050.0	7,006.6	7,000.0	6,998.7	16.5	12.3	37.25	-712.8	209.8	981.2	956.0	25.16	38.994				
7,100.0	7,049.5	7,041.9	7,040.7	16.6	12.4	37.65	-712.7	209.7	959.8	935.1	24.71	38.847				
7,150.0	7,090.2	7,081.3	7,080.1	16.6	12.5	38.87	-712.8	209.9	935.3	911.0	24.25	38.572				
7,200.0	7,128.1	7,122.0	7,120.7	16.7	12.5	41.00	-713.0	210.3	907.8	884.0	23.85	38.069				
7,250.0	7,163.1	7,162.9	7,161.6	16.7	12.6	44.08	-713.2	211.1	877.5	854.0	23.58	37.216				
7,300.0	7,194.9	7,199.9	7,198.6	16.8	12.7	48.06	-713.3	212.1	844.8	821.3	23.51	35.929				
7,350.0	7,223.2	7,235.3	7,234.0	16.9	12.7	53.15	-713.2	213.4	809.9	786.2	23.72	34.145				
7,400.0	7,247.9	7,265.8	7,264.4	17.0	12.8	59.18	-713.1	214.8	773.4	749.2	24.20	31.960				
7,450.0	7,268.7	7,291.0	7,289.6	17.2	12.8	65.99	-712.8	216.2	735.8	710.9	24.88	29.572				
7,500.0	7,285.5	7,308.0	7,306.5	17.4	12.8	72.90	-712.7	217.2	697.7	672.1	25.60	27.252				
7,550.0	7,298.1	7,318.8	7,317.3	17.7	12.9	79.58	-712.6	217.8	659.7	633.4	26.25	25.128				
7,600.0	7,306.5	7,325.8	7,324.4	17.9	12.9	85.87	-712.5	218.2	622.4	595.6	26.79	23.229				
7,650.0	7,310.6	7,329.1	7,327.6	18.3	12.9	91.41	-712.5	218.3	586.4	559.2	27.23	21.539				
7,672.0	7,311.0	7,329.3	7,327.8	18.4	12.9	93.55	-712.5	218.4	571.2	543.8	27.40	20.850				
7,700.0	7,311.0	7,329.1	7,327.6	18.6	12.9	93.52	-712.5	218.3	552.5	524.8	27.65	19.982				
7,800.0	7,311.0	7,328.3	7,326.8	19.4	12.9	93.41	-712.5	218.3	492.7	464.0	28.64	17.205				
7,900.0	7,311.0	7,327.5	7,326.0	20.3	12.9	93.30	-712.5	218.3	447.5	417.8	29.75	15.043				
8,000.0	7,311.0	7,326.6	7,325.2	21.4	12.9	93.18	-712.5	218.2	421.6	390.7	30.96	13.619				
8,062.4	7,311.0	7,326.1	7,324.6	22.0	12.9	93.11	-712.5	218.2	417.0	385.2	31.77	13.126 CC, ES				
8,100.0	7,311.0	7,325.8	7,324.3	22.5	12.9	93.07	-712.5	218.2	418.7	386.4	32.26	12.980 SF				
8,200.0	7,311.0	7,324.9	7,323.5	23.7	12.9	92.95	-712.5	218.1	439.1	405.5	33.62	13.062				
8,300.0	7,311.0	7,324.1	7,322.6	24.9	12.9	92.83	-712.5	218.1	480.0	444.9	35.04	13.699				
8,400.0	7,311.0	7,323.2	7,321.7	26.2	12.9	92.71	-712.5	218.0	536.5	500.0	36.50	14.700				
8,500.0	7,311.0	7,322.3	7,320.8	27.6	12.9	92.59	-712.5	218.0	604.5	566.5	38.00	15.908				
8,600.0	7,311.0	7,321.4	7,319.9	29.0	12.9	92.46	-712.5	217.9	680.4	640.9	39.53	17.212				
8,700.0	7,311.0	7,320.5	7,319.0	30.5	12.9	92.34	-712.5	217.9	761.9	720.8	41.09	18.543				
8,800.0	7,311.0	7,319.5	7,318.1	31.9	12.9	92.21	-712.5	217.8	847.3	804.7	42.67	19.860				

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



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - MCCOY 13-5 (EXISTING) - ENCANA WELL - SURVEYS													Offset Site Error: 0.0 ft
Survey Program: 100-MWD													Offset Well Error: 0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	
8,900.0	7,311.0	7,318.5	7,317.1	33.4	12.9	92.07	-712.6	217.8	935.7	891.4	44.26	21.139	
9,000.0	7,311.0	7,317.6	7,316.1	35.0	12.9	91.94	-712.6	217.7	1,026.1	980.3	45.88	22.368	
9,100.0	7,311.0	7,316.6	7,315.1	36.5	12.9	91.80	-712.6	217.7	1,118.2	1,070.7	47.50	23.540	
9,200.0	7,311.0	7,315.6	7,314.1	38.1	12.9	91.66	-712.6	217.6	1,211.6	1,162.5	49.14	24.655	
9,300.0	7,311.0	7,314.5	7,313.1	39.7	12.9	91.52	-712.6	217.5	1,305.9	1,255.2	50.79	25.712	
9,400.0	7,311.0	7,313.5	7,312.0	41.2	12.9	91.38	-712.6	217.5	1,401.1	1,348.6	52.45	26.712	
9,500.0	7,311.0	7,312.4	7,311.0	42.9	12.9	91.23	-712.6	217.4	1,496.8	1,442.7	54.12	27.660	



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design		S5-T2N-R67W (Vogl-McCoy) - MCCOY 14-5 (EXISTING) - ENCANA WELL - NO SURVEYS										Offset Site Error: 0.0 ft	
Survey Program: 7950-MWD												Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	
8,300.0	7,311.0	7,314.0	7,314.0	24.9	12.7	90.00	-2,361.2	84.7	1,514.5	1,479.4	35.04	43.226	
8,400.0	7,311.0	7,314.0	7,314.0	26.2	12.7	90.00	-2,361.2	84.7	1,421.8	1,385.3	36.50	38.951	
8,500.0	7,311.0	7,314.0	7,314.0	27.6	12.7	90.00	-2,361.2	84.7	1,330.1	1,292.1	38.00	35.000	
8,600.0	7,311.0	7,314.0	7,314.0	29.0	12.7	90.00	-2,361.2	84.7	1,239.8	1,200.2	39.54	31.358	
8,700.0	7,311.0	7,314.0	7,314.0	30.5	12.7	90.00	-2,361.2	84.7	1,151.0	1,109.9	41.09	28.009	
8,800.0	7,311.0	7,314.0	7,314.0	31.9	12.7	90.00	-2,361.2	84.7	1,064.2	1,021.5	42.67	24.938	
8,900.0	7,311.0	7,314.0	7,314.0	33.4	12.7	90.00	-2,361.2	84.7	980.0	935.7	44.27	22.135	
9,000.0	7,311.0	7,314.0	7,314.0	35.0	12.7	90.00	-2,361.2	84.7	898.9	853.0	45.89	19.591	
9,100.0	7,311.0	7,314.0	7,314.0	36.5	12.7	90.00	-2,361.2	84.7	822.1	774.6	47.51	17.303	
9,200.0	7,311.0	7,314.0	7,314.0	38.1	12.7	90.00	-2,361.2	84.7	750.8	701.6	49.15	15.274	
9,300.0	7,311.0	7,314.0	7,314.0	39.7	12.7	90.00	-2,361.2	84.7	686.6	635.8	50.80	13.515	
9,400.0	7,311.0	7,314.0	7,314.0	41.2	12.7	90.00	-2,361.2	84.7	631.8	579.3	52.46	12.043	
9,500.0	7,311.0	7,314.0	7,314.0	42.9	12.7	90.00	-2,361.2	84.7	589.0	534.9	54.13	10.882	
9,600.0	7,311.0	7,314.0	7,314.0	44.5	12.7	90.00	-2,361.2	84.7	561.0	505.2	55.80	10.054	
9,700.0	7,311.0	7,314.0	7,314.0	46.1	12.7	90.00	-2,361.2	84.7	550.0	492.5	57.48	9.569	
9,711.1	7,311.0	7,314.0	7,314.0	46.3	12.7	90.00	-2,361.2	84.7	549.9	492.2	57.67	9.536 CC, ES	
9,800.0	7,311.0	7,314.0	7,314.0	47.7	12.7	90.00	-2,361.2	84.7	557.0	497.9	59.17	9.415 SF	
9,900.0	7,311.0	7,314.0	7,314.0	49.4	12.7	90.00	-2,361.2	84.7	581.4	520.6	60.86	9.554	
10,000.0	7,311.0	7,314.0	7,314.0	51.0	12.7	90.00	-2,361.2	84.7	621.2	558.6	62.55	9.931	
10,100.0	7,311.0	7,314.0	7,314.0	52.7	12.7	90.00	-2,361.2	84.7	673.5	609.3	64.25	10.483	
10,200.0	7,311.0	7,314.0	7,314.0	54.4	12.7	90.00	-2,361.2	84.7	735.8	669.8	65.95	11.157	
10,300.0	7,311.0	7,314.0	7,314.0	56.0	12.7	90.00	-2,361.2	84.7	805.7	738.0	67.66	11.909	
10,400.0	7,311.0	7,314.0	7,314.0	57.7	12.7	90.00	-2,361.2	84.7	881.4	812.1	69.36	12.707	
10,500.0	7,311.0	7,314.0	7,314.0	59.4	12.7	90.00	-2,361.2	84.7	961.6	890.5	71.08	13.530	
10,600.0	7,311.0	7,314.0	7,314.0	61.1	12.7	90.00	-2,361.2	84.7	1,045.2	972.4	72.79	14.360	
10,700.0	7,311.0	7,314.0	7,314.0	62.8	12.7	90.00	-2,361.2	84.7	1,131.5	1,057.0	74.50	15.187	
10,800.0	7,311.0	7,314.0	7,314.0	64.4	12.7	90.00	-2,361.2	84.7	1,219.8	1,143.6	76.22	16.004	
10,900.0	7,311.0	7,314.0	7,314.0	66.1	12.7	90.00	-2,361.2	84.7	1,309.9	1,231.9	77.94	16.806	
11,000.0	7,311.0	7,314.0	7,314.0	67.8	12.7	90.00	-2,361.2	84.7	1,401.3	1,321.6	79.66	17.590	
11,100.0	7,311.0	7,314.0	7,314.0	69.5	12.7	90.00	-2,361.2	84.7	1,493.8	1,412.4	81.39	18.354	

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



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - MCCOY 23-5 (EXISTING) - ENCANA WELL - SURVEYS												Offset Site Error:	0.0 ft
Survey Program: 100-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis		
5,500.0	5,475.0	5,510.5	5,509.6	13.1	9.7	60.04	-720.1	1,709.9	1,549.5	1,527.6	21.90	70.742	
5,600.0	5,574.4	5,606.7	5,605.8	13.3	9.8	60.39	-719.8	1,708.0	1,542.7	1,520.4	22.32	69.114	
5,700.0	5,673.9	5,693.4	5,692.5	13.6	10.0	60.73	-720.4	1,706.2	1,536.5	1,513.7	22.72	67.618	
5,800.0	5,773.4	5,800.0	5,799.0	13.8	10.2	61.17	-721.5	1,703.8	1,530.4	1,507.2	23.17	66.065	
5,900.0	5,872.9	5,885.5	5,884.5	14.1	10.3	61.52	-722.4	1,702.1	1,524.6	1,501.0	23.57	64.695	
6,000.0	5,972.4	5,992.7	5,991.7	14.3	10.5	61.94	-723.4	1,700.6	1,519.3	1,495.3	24.01	63.279	
6,100.0	6,071.9	6,096.1	6,095.1	14.6	10.7	62.36	-724.3	1,698.6	1,513.6	1,489.1	24.45	61.911	
6,200.0	6,171.4	6,194.2	6,193.2	14.8	10.9	62.76	-724.8	1,696.8	1,507.8	1,482.9	24.87	60.616	
6,300.0	6,270.9	6,290.9	6,289.9	15.1	11.0	63.13	-725.1	1,695.3	1,502.2	1,476.9	25.30	59.379	
6,400.0	6,370.4	6,389.2	6,388.1	15.3	11.2	63.52	-725.5	1,693.9	1,496.9	1,471.2	25.73	58.182	
6,500.0	6,469.9	6,490.5	6,489.5	15.6	11.4	63.90	-725.6	1,692.7	1,491.6	1,465.4	26.16	57.014	
6,600.0	6,569.4	6,581.3	6,580.3	15.8	11.5	64.24	-725.7	1,691.9	1,486.5	1,459.9	26.57	55.936	
6,700.0	6,668.8	6,683.4	6,682.4	16.1	11.7	64.63	-726.1	1,691.1	1,481.8	1,454.8	27.01	54.859	
6,749.1	6,717.7	6,733.7	6,732.6	16.2	11.8	64.82	-726.1	1,690.7	1,479.4	1,452.1	27.23	54.338	
6,800.0	6,768.4	6,785.1	6,784.0	16.3	11.9	13.70	-726.2	1,690.1	1,475.4	1,448.0	27.32	54.000	
6,850.0	6,817.9	6,838.8	6,837.7	16.4	12.0	-14.69	-726.5	1,689.4	1,468.5	1,441.2	27.29	53.819	
6,900.0	6,866.9	6,893.2	6,892.1	16.4	12.1	-27.25	-726.5	1,688.5	1,458.6	1,431.5	27.12	53.780	
6,950.0	6,914.9	6,939.3	6,938.2	16.5	12.2	-34.37	-726.5	1,687.7	1,445.9	1,419.1	26.83	53.888	
7,000.0	6,961.6	6,983.2	6,982.1	16.5	12.3	-39.43	-726.5	1,687.1	1,430.8	1,404.3	26.45	54.090	
7,050.0	7,006.6	7,023.7	7,022.6	16.5	12.3	-43.64	-726.6	1,686.5	1,413.3	1,387.3	26.01	54.333	
7,100.0	7,049.5	7,061.3	7,060.2	16.6	12.4	-47.52	-726.6	1,686.2	1,393.9	1,368.3	25.56	54.541	
7,150.0	7,090.2	7,100.0	7,098.9	16.6	12.5	-51.42	-726.7	1,686.1	1,372.7	1,347.6	25.14	54.602	
7,200.0	7,128.1	7,134.6	7,133.5	16.7	12.5	-55.35	-726.9	1,686.0	1,350.0	1,325.2	24.81	54.415	
7,250.0	7,163.1	7,170.0	7,168.9	16.7	12.6	-59.50	-727.2	1,685.8	1,325.9	1,301.3	24.62	53.855	
7,300.0	7,194.9	7,202.8	7,201.7	16.8	12.6	-63.78	-727.5	1,685.5	1,301.0	1,276.4	24.60	52.876	
7,350.0	7,223.2	7,236.4	7,235.3	16.9	12.7	-68.30	-727.8	1,685.2	1,275.4	1,250.6	24.78	51.466	
7,400.0	7,247.9	7,265.3	7,264.2	17.0	12.7	-72.77	-728.0	1,684.9	1,249.6	1,224.5	25.11	49.772	
7,450.0	7,268.7	7,289.2	7,288.1	17.2	12.8	-77.06	-728.0	1,684.6	1,224.1	1,198.5	25.53	47.949	
7,500.0	7,285.5	7,308.9	7,307.8	17.4	12.8	-81.07	-727.9	1,684.4	1,199.3	1,173.3	25.99	46.141	
7,550.0	7,298.1	7,324.3	7,323.1	17.7	12.9	-84.69	-727.8	1,684.2	1,175.6	1,149.1	26.45	44.448	
7,600.0	7,306.5	7,334.1	7,333.0	17.9	12.9	-87.76	-727.7	1,684.0	1,153.5	1,126.6	26.87	42.927	
7,650.0	7,310.6	7,338.6	7,337.5	18.3	12.9	-90.24	-727.7	1,684.0	1,133.4	1,106.1	27.26	41.579	
7,672.0	7,311.0	7,338.9	7,337.8	18.4	12.9	-91.14	-727.7	1,683.9	1,125.2	1,097.8	27.42	41.037	
7,700.0	7,311.0	7,338.7	7,337.5	18.6	12.9	-91.12	-727.7	1,684.0	1,115.4	1,087.8	27.67	40.309	
7,800.0	7,311.0	7,337.7	7,336.6	19.4	12.9	-91.07	-727.7	1,684.0	1,085.7	1,057.0	28.66	37.875	
7,900.0	7,311.0	7,336.7	7,335.6	20.3	12.9	-91.02	-727.7	1,684.0	1,064.5	1,034.7	29.78	35.745	
8,000.0	7,311.0	7,335.8	7,334.7	21.4	12.9	-90.97	-727.7	1,684.0	1,052.4	1,021.4	31.00	33.952	
8,077.6	7,311.0	7,335.1	7,334.0	22.2	12.9	-90.93	-727.7	1,684.0	1,049.6	1,017.6	32.01	32.793 CC	
8,100.0	7,311.0	7,334.9	7,333.8	22.5	12.9	-90.92	-727.7	1,684.0	1,049.8	1,017.5	32.30	32.506 ES	
8,200.0	7,311.0	7,334.0	7,332.9	23.7	12.9	-90.87	-727.7	1,684.0	1,056.7	1,023.0	33.66	31.391	
8,300.0	7,311.0	7,333.2	7,332.1	24.9	12.9	-90.82	-727.7	1,684.0	1,072.9	1,037.8	35.08	30.582	
8,400.0	7,311.0	7,332.4	7,331.2	26.2	12.9	-90.78	-727.8	1,684.1	1,098.0	1,061.4	36.55	30.044	
8,500.0	7,311.0	7,331.5	7,330.4	27.6	12.9	-90.73	-727.8	1,684.1	1,131.4	1,093.3	38.05	29.736	
8,600.0	7,311.0	7,330.8	7,329.6	29.0	12.9	-90.69	-727.8	1,684.1	1,172.4	1,132.8	39.58	29.622 SF	
8,700.0	7,311.0	7,330.0	7,328.9	30.5	12.9	-90.65	-727.8	1,684.1	1,220.2	1,179.1	41.14	29.663	
8,800.0	7,311.0	7,329.2	7,328.1	31.9	12.9	-90.61	-727.8	1,684.1	1,274.1	1,231.4	42.71	29.829	
8,900.0	7,311.0	7,328.5	7,327.4	33.4	12.9	-90.57	-727.8	1,684.1	1,333.4	1,289.0	44.31	30.090	
9,000.0	7,311.0	7,327.8	7,326.7	35.0	12.9	-90.53	-727.8	1,684.1	1,397.3	1,351.3	45.93	30.424	
9,100.0	7,311.0	7,327.1	7,326.0	36.5	12.9	-90.49	-727.8	1,684.1	1,465.2	1,417.6	47.55	30.812	
9,200.0	7,311.0	7,326.4	7,325.3	38.1	12.9	-90.45	-727.8	1,684.1	1,536.6	1,487.4	49.19	31.238	

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



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - MCCOY 24-5 (EXISTING) - ENCANA WELL - GYRO													Offset Site Error:	0.0 ft
Survey Program: 100-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			
8,700.0	7,311.0	7,358.5	7,356.9	30.5	13.0	-90.90	-2,368.1	1,708.5	1,479.8	1,438.6	41.21	35.911		
8,800.0	7,311.0	7,359.9	7,358.2	31.9	13.0	-90.97	-2,368.1	1,708.4	1,412.9	1,370.1	42.79	33.020		
8,900.0	7,311.0	7,361.2	7,359.6	33.4	13.0	-91.04	-2,368.1	1,708.4	1,350.1	1,305.7	44.39	30.415		
9,000.0	7,311.0	7,362.6	7,360.9	35.0	13.0	-91.12	-2,368.2	1,708.4	1,291.9	1,245.9	46.00	28.083		
9,100.0	7,311.0	7,363.9	7,362.3	36.5	13.0	-91.19	-2,368.2	1,708.3	1,239.1	1,191.5	47.63	26.014		
9,200.0	7,311.0	7,365.3	7,363.6	38.1	13.0	-91.26	-2,368.2	1,708.3	1,192.4	1,143.1	49.27	24.200		
9,300.0	7,311.0	7,366.6	7,365.0	39.7	13.0	-91.33	-2,368.2	1,708.2	1,152.5	1,101.5	50.92	22.632		
9,400.0	7,311.0	7,368.0	7,366.3	41.2	13.0	-91.40	-2,368.2	1,708.2	1,120.1	1,067.5	52.58	21.301		
9,500.0	7,311.0	7,369.3	7,367.7	42.9	13.0	-91.48	-2,368.2	1,708.2	1,095.9	1,041.6	54.25	20.201		
9,600.0	7,311.0	7,370.6	7,369.0	44.5	13.0	-91.55	-2,368.3	1,708.1	1,080.4	1,024.5	55.92	19.320		
9,700.0	7,311.0	7,372.0	7,370.3	46.1	13.0	-91.62	-2,368.3	1,708.1	1,074.1	1,016.5	57.60	18.647		
9,718.2	7,311.0	7,372.2	7,370.6	46.4	13.0	-91.63	-2,368.3	1,708.1	1,073.9	1,016.0	57.91	18.545 CC, ES		
9,800.0	7,311.0	7,373.3	7,371.6	47.7	13.0	-91.69	-2,368.3	1,708.1	1,077.1	1,017.8	59.29	18.167		
9,900.0	7,311.0	7,374.6	7,373.0	49.4	13.0	-91.76	-2,368.3	1,708.0	1,089.2	1,028.2	60.98	17.863		
10,000.0	7,311.0	7,375.9	7,374.3	51.0	13.0	-91.83	-2,368.3	1,708.0	1,110.3	1,047.6	62.67	17.716		
10,100.0	7,311.0	7,377.2	7,375.6	52.7	13.0	-91.90	-2,368.4	1,707.9	1,139.8	1,075.4	64.37	17.707 SF		
10,200.0	7,311.0	7,378.5	7,376.9	54.4	13.0	-91.97	-2,368.4	1,707.9	1,177.1	1,111.0	66.07	17.815		
10,300.0	7,311.0	7,379.9	7,378.2	56.0	13.0	-92.04	-2,368.4	1,707.9	1,221.4	1,153.6	67.77	18.022		
10,400.0	7,311.0	7,381.2	7,379.5	57.7	13.0	-92.11	-2,368.4	1,707.8	1,272.1	1,202.6	69.48	18.308		
10,500.0	7,311.0	7,382.5	7,380.8	59.4	13.0	-92.18	-2,368.4	1,707.8	1,328.3	1,257.1	71.19	18.659		
10,600.0	7,311.0	7,383.8	7,382.1	61.1	13.0	-92.25	-2,368.4	1,707.8	1,389.5	1,316.6	72.90	19.061		
10,700.0	7,311.0	7,385.0	7,383.4	62.8	13.0	-92.32	-2,368.5	1,707.7	1,455.0	1,380.4	74.61	19.501		
10,800.0	7,311.0	7,386.3	7,384.7	64.4	13.0	-92.38	-2,368.5	1,707.7	1,524.3	1,448.0	76.33	19.970		

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



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - MCCOY 2-4-5 (EXISTING) - ENCANA WELL - SURVEYS													Offset Site Error:	0.0 ft
Survey Program: 718-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	151.28	-662.9	363.3	756.0					
100.0	100.0	99.8	99.8	0.1	0.2	151.27	-662.8	363.3	755.9	755.6	0.30		2,560.416	
200.0	200.0	201.6	201.6	0.3	0.3	151.27	-662.5	363.2	755.5	754.9	0.65		1,168.982	
300.0	300.0	303.4	303.4	0.5	0.5	84.70	-661.9	363.0	754.8	753.8	0.99		761.530	
400.0	400.0	405.2	405.2	0.7	0.7	84.90	-661.0	362.8	753.7	752.4	1.35		560.319	
500.0	499.9	506.9	506.9	0.8	0.9	85.23	-659.9	362.5	752.3	750.6	1.71		440.632	
600.0	599.7	608.6	608.5	1.0	1.1	85.70	-658.6	362.1	750.5	748.4	2.08		360.635	
700.0	699.4	710.1	710.0	1.3	1.2	86.30	-657.0	361.7	748.4	745.9	2.47		303.032	
778.7	777.7	783.5	783.5	1.4	1.4	86.79	-655.8	361.8	746.8	744.0	2.78		268.760	
800.0	798.9	804.9	804.9	1.5	1.4	86.93	-655.4	362.0	746.5	743.6	2.87		260.445	
900.0	898.4	904.5	904.4	1.7	1.6	87.49	-653.2	364.1	744.9	741.6	3.28		227.164	
1,000.0	997.9	1,002.6	1,002.4	2.0	1.8	87.84	-650.1	368.4	743.5	739.8	3.70		200.888	
1,100.0	1,097.4	1,098.3	1,097.8	2.2	1.9	88.02	-646.3	374.8	742.5	738.3	4.13		179.672	
1,200.0	1,196.9	1,201.6	1,200.6	2.4	2.2	88.01	-641.5	384.2	741.7	737.1	4.60		161.285	
1,300.0	1,296.4	1,300.6	1,298.7	2.7	2.4	87.82	-635.4	395.0	740.6	735.5	5.08		145.787	
1,400.0	1,395.9	1,401.5	1,398.6	2.9	2.7	87.49	-628.7	407.7	739.6	734.0	5.59		132.356	
1,500.0	1,495.3	1,504.0	1,499.8	3.2	3.0	87.04	-620.9	421.8	738.3	732.2	6.12		120.569	
1,600.0	1,594.8	1,608.3	1,602.6	3.4	3.3	86.49	-612.1	436.9	736.7	730.0	6.68		110.215	
1,700.0	1,694.3	1,710.5	1,703.4	3.7	3.6	85.96	-602.9	451.5	734.5	727.3	7.24		101.456	
1,800.0	1,793.8	1,805.7	1,797.4	3.9	3.9	85.51	-594.9	464.4	732.6	724.9	7.77		94.273	
1,900.0	1,893.3	1,900.0	1,890.6	4.2	4.2	85.12	-587.8	477.1	731.5	723.2	8.30		88.122	
1,997.7	1,990.5	1,992.3	1,981.7	4.4	4.4	84.71	-581.3	489.9	731.1	722.3	8.83		82.782	
2,000.0	1,992.8	1,994.5	1,983.9	4.4	4.5	84.70	-581.2	490.2	731.1	722.3	8.84		82.663	
2,100.0	2,092.3	2,092.4	2,080.5	4.7	4.8	84.21	-574.5	504.9	731.3	721.9	9.40		77.805	
2,200.0	2,191.8	2,196.0	2,182.7	4.9	5.1	83.75	-567.6	519.6	731.5	721.5	9.96		73.413	
2,300.0	2,291.3	2,301.6	2,287.1	5.1	5.4	83.33	-560.1	533.6	730.8	720.3	10.54		69.365	
2,400.0	2,390.8	2,401.3	2,385.6	5.4	5.7	82.87	-552.5	547.5	730.1	719.0	11.10		65.774	
2,500.0	2,490.2	2,509.8	2,492.7	5.6	6.1	82.34	-543.5	562.5	728.6	716.9	11.69		62.311	
2,600.0	2,589.7	2,611.4	2,593.0	5.9	6.4	81.86	-534.3	576.0	726.5	714.2	12.26		59.245	
2,700.0	2,689.2	2,706.0	2,686.5	6.1	6.7	81.45	-526.4	588.2	724.7	711.9	12.80		56.620	
2,800.0	2,788.7	2,803.8	2,783.2	6.4	7.0	81.09	-519.1	600.5	723.5	710.2	13.34		54.241	
2,900.0	2,888.2	2,900.6	2,878.9	6.6	7.3	80.69	-511.8	613.2	722.6	708.7	13.90		51.983	
3,000.0	2,987.7	3,002.3	2,979.2	6.9	7.6	80.15	-503.5	627.9	722.0	707.5	14.48		49.871	
3,100.0	3,087.2	3,102.8	3,078.4	7.1	8.0	79.67	-495.4	641.7	721.0	706.0	15.04		47.939	
3,200.0	3,186.7	3,200.7	3,175.0	7.4	8.3	79.20	-487.7	655.2	720.4	704.8	15.60		46.183	
3,300.0	3,286.2	3,303.1	3,276.1	7.6	8.6	78.71	-479.6	669.4	719.8	703.6	16.17		44.516	
3,400.0	3,385.7	3,404.1	3,375.8	7.9	8.9	78.23	-471.2	683.0	718.7	701.9	16.73		42.950	
3,500.0	3,485.1	3,504.2	3,474.8	8.1	9.3	77.76	-463.2	696.5	717.8	700.6	17.29		41.524	
3,600.0	3,584.6	3,604.4	3,573.7	8.4	9.6	77.34	-455.2	709.4	716.8	698.9	17.84		40.173	
3,700.0	3,684.1	3,705.9	3,674.0	8.6	9.9	76.86	-446.9	723.1	715.8	697.4	18.41		38.884	
3,800.0	3,783.6	3,804.8	3,771.6	8.9	10.3	76.34	-438.1	736.7	714.6	695.7	18.97		37.666	
3,900.0	3,883.1	3,903.0	3,868.3	9.1	10.6	75.79	-429.4	750.7	713.9	694.3	19.53		36.544	
4,000.0	3,982.6	3,999.8	3,963.8	9.4	10.9	75.24	-421.0	764.6	713.3	693.2	20.09		35.510	
4,019.9	4,002.4	4,018.2	3,982.0	9.4	11.0	75.15	-419.5	767.3	713.3	693.1	20.19		35.323	
4,100.0	4,082.1	4,096.9	4,059.6	9.6	11.2	74.76	-413.5	778.4	713.5	692.9	20.62		34.600	
4,200.0	4,181.6	4,200.3	4,162.0	9.9	11.5	74.40	-406.6	791.4	713.4	692.3	21.16		33.721	
4,300.0	4,281.1	4,305.6	4,266.3	10.1	11.8	74.08	-399.4	803.9	712.9	691.2	21.70		32.860	
4,400.0	4,380.6	4,404.7	4,364.4	10.3	12.1	73.79	-392.5	815.3	712.0	689.8	22.22		32.044	
4,500.0	4,480.1	4,506.2	4,465.1	10.6	12.4	73.53	-385.6	826.5	711.1	688.3	22.73		31.278	
4,600.0	4,579.5	4,607.7	4,565.8	10.8	12.7	73.33	-379.1	837.0	709.9	686.7	23.25		30.538	
4,700.0	4,679.0	4,706.3	4,663.6	11.1	13.0	73.11	-372.5	847.5	708.8	685.0	23.76		29.834	
4,800.0	4,778.5	4,806.8	4,763.4	11.3	13.2	72.91	-366.1	858.0	707.7	683.5	24.26		29.167	

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



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - MCCOY 2-4-5 (EXISTING) - ENCANA WELL - SURVEYS													Offset Site Error: 0.0 ft			
Survey Program: 718-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			
4,900.0	4,878.0	4,906.8	4,862.7	11.6	13.5	72.71	-359.6	868.3	706.5	681.7	24.77	28.520				
5,000.0	4,977.5	5,007.4	4,962.5	11.8	13.8	72.51	-353.2	878.8	705.5	680.2	25.28	27.905				
5,100.0	5,077.0	5,103.9	5,058.2	12.1	14.1	72.29	-346.9	889.1	704.5	678.7	25.78	27.325				
5,200.0	5,176.5	5,202.7	5,156.2	12.3	14.4	72.07	-340.8	900.0	704.0	677.7	26.29	26.785				
5,300.0	5,276.0	5,306.1	5,258.9	12.6	14.6	71.88	-334.3	910.6	703.0	676.2	26.80	26.234				
5,400.0	5,375.5	5,405.4	5,357.5	12.8	14.9	71.69	-328.2	920.9	702.1	674.8	27.30	25.722				
5,500.0	5,475.0	5,505.5	5,456.9	13.1	15.2	71.52	-322.1	931.2	701.2	673.4	27.80	25.225				
5,600.0	5,574.4	5,609.1	5,559.8	13.3	15.4	71.37	-315.9	941.3	700.1	671.8	28.29	24.743				
5,700.0	5,673.9	5,701.3	5,651.4	13.6	15.7	71.30	-311.0	949.9	699.2	670.4	28.77	24.306				
5,724.1	5,697.9	5,723.4	5,673.4	13.6	15.7	71.28	-309.9	952.1	699.2	670.3	28.88	24.209				
5,800.0	5,773.4	5,796.1	5,745.7	13.8	15.9	71.21	-306.7	959.6	699.4	670.2	29.24	23.918				
5,900.0	5,872.9	5,904.4	5,853.4	14.1	16.2	71.20	-302.2	969.8	699.4	669.7	29.73	23.525				
6,000.0	5,972.4	6,018.4	5,967.0	14.3	16.4	71.35	-297.5	977.7	697.8	667.5	30.23	23.085				
6,100.0	6,071.9	6,115.5	6,063.8	14.6	16.6	71.52	-293.0	983.5	695.2	664.5	30.68	22.657				
6,200.0	6,171.4	6,217.1	6,165.2	14.8	16.8	71.80	-289.5	988.8	692.9	661.7	31.13	22.255				
6,300.0	6,270.9	6,320.4	6,268.5	15.1	17.0	72.26	-286.8	992.3	690.1	658.5	31.57	21.857				
6,400.0	6,370.4	6,421.6	6,369.6	15.3	17.1	72.84	-284.9	994.3	686.9	654.9	32.00	21.468				
6,500.0	6,469.9	6,521.2	6,469.2	15.6	17.3	73.51	-283.8	995.5	683.8	651.4	32.41	21.098				
6,600.0	6,569.4	6,621.4	6,569.4	15.8	17.4	74.25	-283.0	996.0	680.7	647.9	32.82	20.740				
6,700.0	6,668.8	6,721.2	6,669.2	16.1	17.5	75.04	-282.5	996.0	677.7	644.5	33.23	20.396				
6,749.1	6,717.7	6,770.2	6,718.1	16.2	17.6	75.44	-282.4	995.9	676.3	642.9	33.43	20.232				
6,800.0	6,768.4	6,821.2	6,769.2	16.3	17.6	24.60	-282.3	995.7	673.0	639.5	33.49	20.095				
6,850.0	6,817.9	6,871.1	6,819.0	16.4	17.7	-3.59	-282.3	995.4	666.3	633.0	33.36	19.974				
6,900.0	6,866.9	6,920.3	6,868.3	16.4	17.7	-16.03	-282.2	995.1	656.2	623.2	33.04	19.864				
6,950.0	6,914.9	6,968.3	6,916.3	16.5	17.8	-23.17	-282.2	994.7	642.8	610.3	32.54	19.758				
7,000.0	6,961.6	7,014.8	6,962.7	16.5	17.8	-28.42	-282.1	994.4	626.3	594.4	31.88	19.648				
7,050.0	7,006.6	7,059.3	7,007.2	16.5	17.9	-33.06	-282.1	994.1	606.9	575.8	31.09	19.519				
7,100.0	7,049.5	7,101.2	7,049.2	16.6	17.9	-37.66	-282.1	993.9	584.9	554.7	30.23	19.350				
7,150.0	7,090.2	7,140.9	7,088.9	16.6	18.0	-42.56	-282.1	993.8	560.8	531.5	29.35	19.107				
7,200.0	7,128.1	7,178.2	7,126.2	16.7	18.0	-47.92	-282.1	993.8	535.0	506.4	28.54	18.744				
7,250.0	7,163.1	7,213.4	7,161.4	16.7	18.1	-53.84	-282.1	993.7	507.9	480.0	27.89	18.211				
7,300.0	7,194.9	7,245.4	7,193.4	16.8	18.1	-60.17	-282.1	993.7	480.3	452.8	27.48	17.479				
7,350.0	7,223.2	7,274.0	7,222.0	16.9	18.1	-66.70	-282.1	993.7	453.0	425.7	27.33	16.576				
7,400.0	7,247.9	7,299.3	7,247.3	17.0	18.2	-73.10	-282.1	993.6	427.0	399.6	27.40	15.584				
7,450.0	7,268.7	7,320.6	7,268.5	17.2	18.2	-78.91	-282.0	993.5	403.5	375.9	27.61	14.616				
7,500.0	7,285.5	7,337.6	7,285.6	17.4	18.2	-83.75	-282.0	993.4	383.7	355.8	27.87	13.767				
7,550.0	7,298.1	7,350.4	7,298.4	17.7	18.2	-87.39	-282.0	993.4	369.0	340.8	28.17	13.099				
7,600.0	7,306.5	7,358.8	7,306.8	17.9	18.2	-89.64	-281.9	993.3	360.6	332.1	28.51	12.647				
7,634.1	7,309.8	7,362.0	7,310.0	18.1	18.2	-90.35	-281.9	993.3	358.9	330.1	28.78	12.469 CC, ES				
7,650.0	7,310.6	7,362.8	7,310.7	18.3	18.2	-90.45	-281.9	993.3	359.2	330.3	28.91	12.426				
7,672.0	7,311.0	7,363.1	7,311.1	18.4	18.2	-90.33	-281.9	993.3	361.0	331.9	29.11	12.402 SF				
7,700.0	7,311.0	7,363.0	7,311.0	18.6	18.2	-90.32	-281.9	993.3	365.1	335.8	29.36	12.437				
7,800.0	7,311.0	7,362.7	7,310.7	19.4	18.2	-90.26	-281.9	993.3	396.2	365.8	30.35	13.053				
7,900.0	7,311.0	7,362.4	7,310.3	20.3	18.2	-90.21	-281.9	993.3	447.9	416.4	31.47	14.232				
8,000.0	7,311.0	7,362.1	7,310.0	21.4	18.2	-90.16	-281.9	993.3	514.0	481.4	32.69	15.726				
8,100.0	7,311.0	7,361.7	7,309.7	22.5	18.2	-90.11	-281.9	993.3	589.8	555.8	33.99	17.353				
8,200.0	7,311.0	7,361.4	7,309.4	23.7	18.2	-90.06	-281.9	993.3	671.9	636.6	35.35	19.006				
8,300.0	7,311.0	7,361.1	7,309.0	24.9	18.2	-90.01	-281.9	993.3	758.4	721.6	36.78	20.622				
8,400.0	7,311.0	7,360.8	7,308.7	26.2	18.2	-89.96	-281.9	993.3	847.8	809.6	38.24	22.170				
8,500.0	7,311.0	7,360.5	7,308.4	27.6	18.2	-89.90	-281.9	993.3	939.4	899.6	39.74	23.636				
8,600.0	7,311.0	7,360.1	7,308.1	29.0	18.2	-89.85	-281.9	993.3	1,032.5	991.2	41.28	25.014				
8,700.0	7,311.0	7,359.8	7,307.8	30.5	18.2	-89.81	-281.9	993.3	1,126.8	1,084.0	42.83	26.306				

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



Cathedral Energy Services
Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design													Offset Site Error:		0.0 ft	
Survey Program: 718-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)						
8,800.0	7,311.0	7,359.5	7,307.5	31.9	18.2	-89.76	-281.9	993.3	1,222.0	1,177.6	44.41	27.514				
8,900.0	7,311.0	7,359.2	7,307.2	33.4	18.2	-89.71	-281.9	993.3	1,317.9	1,271.9	46.01	28.643				
9,000.0	7,311.0	7,358.9	7,306.9	35.0	18.2	-89.66	-281.9	993.3	1,414.4	1,366.8	47.63	29.698				
9,100.0	7,311.0	7,358.6	7,306.6	36.5	18.2	-89.61	-281.9	993.3	1,511.4	1,462.1	49.25	30.685				



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - PROMINENCE 4-8 (EXISTING) - KMG WELL - GYRO													Offset Site Error:	0.0 ft
Survey Program: 100-Gyro													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			
9,700.0	7,311.0	7,300.0	7,297.5	46.1	6.5	86.63	-3,724.5	-3.0	1,515.6	1,464.6	51.01	29.710		
9,800.0	7,311.0	7,300.0	7,297.5	47.7	6.5	86.63	-3,724.5	-3.0	1,425.5	1,372.8	52.69	27.052		
9,900.0	7,311.0	7,300.0	7,297.5	49.4	6.5	86.63	-3,724.5	-3.0	1,336.9	1,282.5	54.38	24.583		
10,000.0	7,311.0	7,300.0	7,297.5	51.0	6.5	86.63	-3,724.5	-3.0	1,249.9	1,193.8	56.07	22.291		
10,100.0	7,311.0	7,300.0	7,297.5	52.7	6.5	86.63	-3,724.5	-3.0	1,165.1	1,107.3	57.77	20.168		
10,200.0	7,311.0	7,300.0	7,297.5	54.4	6.5	86.63	-3,724.5	-3.0	1,082.8	1,023.4	59.47	18.208		
10,300.0	7,311.0	7,300.0	7,297.5	56.0	6.5	86.63	-3,724.5	-3.0	1,003.8	942.6	61.17	16.410		
10,400.0	7,311.0	7,300.0	7,297.5	57.7	6.5	86.63	-3,724.5	-3.0	928.8	866.0	62.88	14.772		
10,500.0	7,311.0	7,300.0	7,297.5	59.4	6.5	86.63	-3,724.5	-3.0	859.0	794.4	64.59	13.300		
10,600.0	7,311.0	7,300.0	7,297.5	61.1	6.5	86.63	-3,724.5	-3.0	795.6	729.3	66.30	12.001		
10,700.0	7,311.0	7,300.0	7,297.5	62.8	6.5	86.63	-3,724.5	-3.0	740.3	672.3	68.01	10.886		
10,800.0	7,311.0	7,300.0	7,297.5	64.4	6.5	86.63	-3,724.5	-3.0	695.1	625.4	69.72	9.970		
10,900.0	7,311.0	7,300.0	7,297.5	66.1	6.5	86.63	-3,724.5	-3.0	662.1	590.6	71.44	9.267		
11,000.0	7,311.0	7,300.0	7,297.5	67.8	6.5	86.63	-3,724.5	-3.0	643.0	569.9	73.16	8.789		
11,074.4	7,311.0	7,300.0	7,297.5	69.1	6.5	86.63	-3,724.5	-3.0	638.7	564.3	74.44	8.580 CC, ES		
11,100.0	7,311.0	7,300.0	7,297.5	69.5	6.5	86.63	-3,724.5	-3.0	639.2	564.3	74.88	8.536		
11,200.0	7,311.0	7,300.0	7,297.5	71.2	6.5	86.63	-3,724.5	-3.0	650.9	574.3	76.60	8.497 SF		
11,300.0	7,311.0	7,300.0	7,297.5	72.9	6.5	86.63	-3,724.5	-3.0	677.4	599.0	78.33	8.648		
11,400.0	7,311.0	7,300.0	7,297.5	74.7	6.5	86.63	-3,724.5	-3.0	716.9	636.8	80.05	8.955		
11,500.0	7,311.0	7,300.0	7,297.5	76.4	6.5	86.63	-3,724.5	-3.0	767.5	685.7	81.78	9.385		
11,600.0	7,311.0	7,300.0	7,297.5	78.1	6.5	86.63	-3,724.5	-3.0	827.1	743.6	83.50	9.906		
11,700.0	7,311.0	7,300.0	7,297.5	79.8	6.5	86.63	-3,724.5	-3.0	894.0	808.8	85.23	10.489		
11,800.0	7,311.0	7,300.0	7,297.5	81.5	6.5	86.63	-3,724.5	-3.0	966.6	879.7	86.96	11.116		
11,900.0	7,311.0	7,300.0	7,297.5	83.2	6.5	86.63	-3,724.5	-3.0	1,043.8	955.1	88.69	11.769		
12,000.0	7,311.0	7,300.0	7,297.5	84.9	6.5	86.63	-3,724.5	-3.0	1,124.6	1,034.1	90.42	12.437		
12,100.0	7,311.0	7,300.0	7,297.5	86.7	6.5	86.63	-3,724.5	-3.0	1,208.2	1,116.1	92.15	13.111		
12,200.0	7,311.0	7,300.0	7,297.5	88.4	6.5	86.63	-3,724.5	-3.0	1,294.2	1,200.3	93.89	13.784		
12,300.0	7,311.0	7,300.0	7,297.5	90.1	6.5	86.63	-3,724.5	-3.0	1,382.0	1,286.4	95.62	14.453		
12,400.0	7,311.0	7,300.0	7,297.5	91.8	6.5	86.63	-3,724.5	-3.0	1,471.4	1,374.1	97.35	15.114		

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



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - VOGL 31-5 (EXISTING) - KMG WELL - NO SURVEYS												Offset Site Error:	0.0 ft
Survey Program: 500-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
2,800.0	2,788.7	3,337.5	3,206.5	6.4	18.0	-84.32	1,504.5	-187.6	1,536.5	1,519.1	17.45	88.033	
2,900.0	2,888.2	3,428.8	3,292.3	6.6	18.6	-85.35	1,474.4	-196.2	1,506.1	1,487.9	18.27	82.438	
3,000.0	2,987.7	3,520.1	3,378.1	6.9	19.1	-86.42	1,444.4	-204.8	1,476.2	1,457.1	19.11	77.260	
3,100.0	3,087.2	3,611.4	3,463.9	7.1	19.7	-87.52	1,414.4	-213.4	1,446.9	1,426.9	19.97	72.465	
3,200.0	3,186.7	3,702.7	3,549.7	7.4	20.3	-88.68	1,384.4	-222.0	1,418.1	1,397.2	20.85	68.022	
3,300.0	3,286.2	3,794.0	3,635.4	7.6	20.8	-89.87	1,354.4	-230.6	1,389.9	1,368.1	21.75	63.901	
3,400.0	3,385.7	3,885.3	3,721.2	7.9	21.4	-91.11	1,324.3	-239.2	1,362.3	1,339.6	22.68	60.079	
3,500.0	3,485.1	3,976.6	3,807.0	8.1	22.0	-92.39	1,294.3	-247.8	1,335.4	1,311.8	23.62	56.534	
3,600.0	3,584.6	4,067.9	3,892.8	8.4	22.5	-93.72	1,264.3	-256.5	1,309.3	1,284.7	24.59	53.245	
3,700.0	3,684.1	4,159.2	3,978.6	8.6	23.1	-95.09	1,234.3	-265.1	1,283.9	1,258.3	25.58	50.194	
3,800.0	3,783.6	4,250.5	4,064.4	8.9	23.7	-96.52	1,204.3	-273.7	1,259.3	1,232.7	26.59	47.366	
3,900.0	3,883.1	4,341.8	4,150.2	9.1	24.2	-97.99	1,174.3	-282.3	1,235.5	1,207.9	27.61	44.745	
4,000.0	3,982.6	4,400.0	4,204.9	9.4	24.6	-98.96	1,155.1	-287.8	1,213.2	1,184.8	28.37	42.769	
4,100.0	4,082.1	4,400.0	4,204.9	9.6	24.6	-98.96	1,155.1	-287.8	1,197.3	1,168.7	28.61	41.847	
4,200.0	4,181.6	4,491.5	4,293.0	9.9	24.7	-100.27	1,131.8	-294.5	1,181.4	1,152.1	29.23	40.421	
4,300.0	4,281.1	4,533.0	4,334.0	10.1	24.7	-100.70	1,125.7	-296.2	1,173.1	1,143.5	29.60	39.634	
4,400.0	4,380.6	4,600.0	4,400.9	10.3	24.7	-101.17	1,121.9	-297.3	1,170.4	1,140.5	30.00	39.020	
4,433.6	4,414.0	4,600.0	4,400.9	10.4	24.7	-101.17	1,121.9	-297.3	1,170.0	1,139.9	30.08	38.897 CC, ES	
4,500.0	4,480.1	4,643.2	4,444.1	10.6	24.8	-101.38	1,121.9	-297.3	1,171.1	1,140.7	30.32	38.619	
4,600.0	4,579.5	4,742.7	4,543.5	10.8	24.8	-101.86	1,121.9	-297.3	1,173.1	1,142.3	30.76	38.142	
4,700.0	4,679.0	4,842.1	4,643.0	11.1	24.9	-102.34	1,121.9	-297.3	1,175.2	1,144.0	31.19	37.684	
4,800.0	4,778.5	4,941.6	4,742.5	11.3	25.0	-102.82	1,121.9	-297.3	1,177.4	1,145.8	31.61	37.244	
4,900.0	4,878.0	5,041.1	4,842.0	11.6	25.0	-103.29	1,121.9	-297.3	1,179.7	1,147.7	32.04	36.821	
5,000.0	4,977.5	5,140.6	4,941.5	11.8	25.1	-103.77	1,121.9	-297.3	1,182.1	1,149.6	32.46	36.415	
5,100.0	5,077.0	5,240.1	5,041.0	12.1	25.2	-104.24	1,121.9	-297.3	1,184.5	1,151.7	32.88	36.024	
5,200.0	5,176.5	5,339.6	5,140.5	12.3	25.3	-104.71	1,121.9	-297.3	1,187.1	1,153.8	33.30	35.648	
5,300.0	5,276.0	5,439.1	5,240.0	12.6	25.3	-105.18	1,121.9	-297.3	1,189.7	1,156.0	33.72	35.286	
5,400.0	5,375.5	5,538.6	5,339.5	12.8	25.4	-105.64	1,121.9	-297.3	1,192.4	1,158.2	34.13	34.938	
5,500.0	5,475.0	5,638.1	5,439.0	13.1	25.5	-106.10	1,121.9	-297.3	1,195.1	1,160.6	34.54	34.603	
5,600.0	5,574.4	5,737.6	5,538.4	13.3	25.6	-106.57	1,121.9	-297.3	1,198.0	1,163.0	34.95	34.280	
5,700.0	5,673.9	5,837.1	5,637.9	13.6	25.6	-107.02	1,121.9	-297.3	1,200.9	1,165.6	35.35	33.970	
5,800.0	5,773.4	5,936.5	5,737.4	13.8	25.7	-107.48	1,121.9	-297.3	1,203.9	1,168.2	35.75	33.672	
5,900.0	5,872.9	6,036.0	5,836.9	14.1	25.8	-107.94	1,121.9	-297.3	1,207.0	1,170.8	36.15	33.384	
6,000.0	5,972.4	6,135.5	5,936.4	14.3	25.9	-108.39	1,121.9	-297.3	1,210.2	1,173.6	36.55	33.107	
6,100.0	6,071.9	6,235.0	6,035.9	14.6	25.9	-108.84	1,121.9	-297.3	1,213.4	1,176.4	36.95	32.841	
6,200.0	6,171.4	6,334.5	6,135.4	14.8	26.0	-109.28	1,121.9	-297.3	1,216.7	1,179.4	37.34	32.584	
6,300.0	6,270.9	6,434.0	6,234.9	15.1	26.1	-109.73	1,121.9	-297.3	1,220.1	1,182.4	37.73	32.337	
6,400.0	6,370.4	6,533.5	6,334.4	15.3	26.2	-110.17	1,121.9	-297.3	1,223.5	1,185.4	38.12	32.099	
6,500.0	6,469.9	6,633.0	6,433.9	15.6	26.2	-110.61	1,121.9	-297.3	1,227.1	1,188.6	38.50	31.870	
6,600.0	6,569.4	6,732.5	6,533.4	15.8	26.3	-111.05	1,121.9	-297.3	1,230.7	1,191.8	38.88	31.650	
6,700.0	6,668.8	6,832.0	6,632.8	16.1	26.4	-111.48	1,121.9	-297.3	1,234.3	1,195.1	39.26	31.437	
6,749.1	6,717.7	6,880.8	6,681.7	16.2	26.4	-111.70	1,121.9	-297.3	1,236.2	1,196.7	39.45	31.336 SF	
6,800.0	6,768.4	6,931.5	6,732.4	16.3	26.5	-163.05	1,121.9	-297.3	1,239.7	1,200.2	39.48	31.398	
6,850.0	6,817.9	6,981.0	6,781.9	16.4	26.5	168.61	1,121.9	-297.3	1,246.2	1,206.8	39.39	31.640	
6,900.0	6,866.9	7,030.0	6,830.9	16.4	26.5	156.40	1,121.9	-297.3	1,255.7	1,216.6	39.17	32.059	
6,950.0	6,914.9	7,078.0	6,878.9	16.5	26.6	149.90	1,121.9	-297.3	1,268.2	1,229.4	38.84	32.650	
7,000.0	6,961.6	7,124.7	6,925.6	16.5	26.6	145.70	1,121.9	-297.3	1,283.6	1,245.2	38.42	33.408	
7,050.0	7,006.6	7,169.7	6,970.6	16.5	26.6	142.57	1,121.9	-297.3	1,301.8	1,263.9	37.93	34.323	
7,100.0	7,049.5	7,212.6	7,013.5	16.6	26.7	139.94	1,121.9	-297.3	1,322.8	1,285.4	37.39	35.377	
7,150.0	7,090.2	7,253.3	7,054.2	16.6	26.7	137.51	1,121.9	-297.3	1,346.5	1,309.7	36.85	36.540	
7,200.0	7,128.1	7,291.2	7,092.1	16.7	26.7	135.08	1,121.9	-297.3	1,372.9	1,336.5	36.35	37.766	
7,250.0	7,163.1	7,326.2	7,127.1	16.7	26.8	132.51	1,121.9	-297.3	1,401.7	1,365.7	35.95	38.988	

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



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design													S5-T2N-R67W (Vogl-McCoy) - VOGL 31-5 (EXISTING) - KMG WELL - NO SURVEYS		Offset Site Error:		0.0 ft	
Survey Program: 500-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)								
7,300.0	7,194.9	7,358.0	7,158.9	16.8	26.8	129.67	1,121.9	-297.3	1,432.9	1,397.2	35.72	40.118						
7,350.0	7,223.2	7,386.4	7,187.2	16.9	26.8	126.43	1,121.9	-297.3	1,466.2	1,430.5	35.71	41.056						
7,400.0	7,247.9	7,411.0	7,211.9	17.0	26.8	122.69	1,121.9	-297.3	1,501.6	1,465.6	36.00	41.710						
7,450.0	7,268.7	7,431.8	7,232.7	17.2	26.8	118.32	1,121.9	-297.3	1,538.8	1,502.2	36.61	42.033						



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - VOGL 5-5 (EXISTING) - KMG WELL - NO SURVEYS													Offset Site Error:	0.0 ft
Survey Program: 7910-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	27.97	236.8	125.8	269.4					
100.0	100.0	74.0	74.0	0.1	0.1	27.97	236.8	125.8	268.2	267.9	0.25	1,066.113		
200.0	200.0	174.0	174.0	0.3	0.3	27.97	236.8	125.8	268.2	267.6	0.60	446.486		
300.0	300.0	274.0	274.0	0.5	0.5	-38.78	236.8	125.8	267.5	266.5	0.95	281.558		
400.0	400.0	374.0	374.0	0.7	0.7	-39.15	236.8	125.8	265.4	264.1	1.30	204.031		
500.0	499.9	473.9	473.9	0.8	0.8	-39.77	236.8	125.8	262.1	260.4	1.66	158.332		
600.0	599.7	573.7	573.7	1.0	1.0	-40.67	236.8	125.8	257.4	255.4	2.01	127.769		
700.0	699.4	673.4	673.4	1.3	1.2	-41.87	236.8	125.8	251.5	249.1	2.38	105.594		
778.7	777.7	751.7	751.7	1.4	1.3	-43.06	236.8	125.8	246.0	243.4	2.68	91.886		
800.0	798.9	772.9	772.9	1.5	1.3	-43.40	236.8	125.8	244.5	241.7	2.76	88.613		
900.0	898.4	872.4	872.4	1.7	1.5	-45.07	236.8	125.8	237.2	234.1	3.14	75.475		
1,000.0	997.9	971.9	971.9	2.0	1.7	-46.84	236.8	125.8	230.2	226.7	3.53	65.150		
1,100.0	1,097.4	1,071.4	1,071.4	2.2	1.9	-48.73	236.8	125.8	223.4	219.5	3.93	56.852		
1,200.0	1,196.9	1,170.9	1,170.9	2.4	2.0	-50.72	236.8	125.8	216.9	212.5	4.33	50.065		
1,300.0	1,296.4	1,270.4	1,270.4	2.7	2.2	-52.84	236.8	125.8	210.6	205.9	4.74	44.433		
1,400.0	1,395.9	1,369.9	1,369.9	2.9	2.4	-55.08	236.8	125.8	204.6	199.5	5.15	39.708		
1,500.0	1,495.3	1,469.3	1,469.3	3.2	2.6	-57.45	236.8	125.8	199.0	193.5	5.57	35.707		
1,600.0	1,594.8	1,568.8	1,568.8	3.4	2.7	-59.96	236.8	125.8	193.8	187.8	6.00	32.296		
1,700.0	1,694.3	1,668.3	1,668.3	3.7	2.9	-62.60	236.8	125.8	188.9	182.5	6.43	29.375		
1,800.0	1,793.8	1,767.8	1,767.8	3.9	3.1	-65.36	236.8	125.8	184.5	177.6	6.87	26.864		
1,900.0	1,893.3	1,867.3	1,867.3	4.2	3.3	-68.26	236.8	125.8	180.5	173.2	7.31	24.702		
2,000.0	1,992.8	1,966.8	1,966.8	4.4	3.4	-71.28	236.8	125.8	177.0	169.2	7.75	22.841		
2,100.0	2,092.3	2,066.3	2,066.3	4.7	3.6	-74.41	236.8	125.8	174.0	165.8	8.19	21.240		
2,200.0	2,191.8	2,165.8	2,165.8	4.9	3.8	-77.64	236.8	125.8	171.5	162.9	8.63	19.868		
2,300.0	2,291.3	2,265.3	2,265.3	5.1	4.0	-80.96	236.8	125.8	169.7	160.6	9.07	18.696		
2,400.0	2,390.8	2,364.8	2,364.8	5.4	4.1	-84.33	236.8	125.8	168.4	158.8	9.51	17.703		
2,500.0	2,490.2	2,464.2	2,464.2	5.6	4.3	-87.74	236.8	125.8	167.7	157.7	9.94	16.866		
2,565.8	2,555.7	2,529.7	2,529.7	5.8	4.4	-90.00	236.8	125.8	167.5	157.3	10.22	16.393 CC		
2,600.0	2,589.7	2,563.7	2,563.7	5.9	4.5	-91.17	236.8	125.8	167.6	157.2	10.36	16.169 ES		
2,700.0	2,689.2	2,663.2	2,663.2	6.1	4.6	-94.59	236.8	125.8	168.1	157.3	10.78	15.597		
2,800.0	2,788.7	2,762.7	2,762.7	6.4	4.8	-97.98	236.8	125.8	169.2	158.0	11.18	15.134		
2,900.0	2,888.2	2,862.2	2,862.2	6.6	5.0	-101.32	236.8	125.8	170.9	159.3	11.57	14.767		
3,000.0	2,987.7	2,961.7	2,961.7	6.9	5.2	-104.57	236.8	125.8	173.1	161.2	11.95	14.486		
3,100.0	3,087.2	3,061.2	3,061.2	7.1	5.3	-107.74	236.8	125.8	176.0	163.6	12.32	14.280		
3,200.0	3,186.7	3,160.7	3,160.7	7.4	5.5	-110.79	236.8	125.8	179.3	166.6	12.68	14.138		
3,300.0	3,286.2	3,260.2	3,260.2	7.6	5.7	-113.73	236.8	125.8	183.1	170.1	13.03	14.052		
3,400.0	3,385.7	3,359.7	3,359.7	7.9	5.9	-116.54	236.8	125.8	187.4	174.1	13.38	14.014 SF		
3,500.0	3,485.1	3,459.1	3,459.1	8.1	6.0	-119.22	236.8	125.8	192.2	178.5	13.71	14.017		
3,600.0	3,584.6	3,558.6	3,558.6	8.4	6.2	-121.77	236.8	125.8	197.3	183.3	14.04	14.055		
3,700.0	3,684.1	3,658.1	3,658.1	8.6	6.4	-124.18	236.8	125.8	202.8	188.5	14.36	14.122		
3,800.0	3,783.6	3,757.6	3,757.6	8.9	6.6	-126.47	236.8	125.8	208.7	194.0	14.68	14.214		
3,900.0	3,883.1	3,857.1	3,857.1	9.1	6.7	-128.62	236.8	125.8	214.8	199.8	15.00	14.326		
4,000.0	3,982.6	3,956.6	3,956.6	9.4	6.9	-130.66	236.8	125.8	221.3	206.0	15.31	14.454		
4,100.0	4,082.1	4,056.1	4,056.1	9.6	7.1	-132.57	236.8	125.8	228.0	212.4	15.62	14.595		
4,200.0	4,181.6	4,155.6	4,155.6	9.9	7.3	-134.38	236.8	125.8	235.0	219.0	15.93	14.747		
4,300.0	4,281.1	4,255.1	4,255.1	10.1	7.4	-136.08	236.8	125.8	242.1	225.9	16.24	14.907		
4,400.0	4,380.6	4,354.6	4,354.6	10.3	7.6	-137.68	236.8	125.8	249.5	233.0	16.55	15.074		
4,500.0	4,480.1	4,454.1	4,454.1	10.6	7.8	-139.19	236.8	125.8	257.1	240.2	16.86	15.245		
4,600.0	4,579.5	4,553.5	4,553.5	10.8	7.9	-140.61	236.8	125.8	264.8	247.6	17.17	15.419		
4,700.0	4,679.0	4,653.0	4,653.0	11.1	8.1	-141.96	236.8	125.8	272.7	255.2	17.49	15.595		
4,800.0	4,778.5	4,752.5	4,752.5	11.3	8.3	-143.22	236.8	125.8	280.7	262.9	17.80	15.772		
4,900.0	4,878.0	4,852.0	4,852.0	11.6	8.5	-144.42	236.8	125.8	288.9	270.8	18.11	15.950		

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



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - VOGL 5-5 (EXISTING) - KMG WELL - NO SURVEYS												Offset Site Error:	0.0 ft
Survey Program: 7910-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis		
5,000.0	4,977.5	4,951.5	4,951.5	11.8	8.6	-145.55	236.8	125.8	297.1	278.7	18.43	16.126	
5,100.0	5,077.0	5,051.0	5,051.0	12.1	8.8	-146.62	236.8	125.8	305.5	286.8	18.74	16.302	
5,200.0	5,176.5	5,150.5	5,150.5	12.3	9.0	-147.63	236.8	125.8	314.0	295.0	19.06	16.477	
5,300.0	5,276.0	5,250.0	5,250.0	12.6	9.2	-148.58	236.8	125.8	322.6	303.2	19.38	16.649	
5,400.0	5,375.5	5,349.5	5,349.5	12.8	9.3	-149.49	236.8	125.8	331.2	311.5	19.69	16.819	
5,500.0	5,475.0	5,449.0	5,449.0	13.1	9.5	-150.35	236.8	125.8	340.0	320.0	20.01	16.987	
5,600.0	5,574.4	5,548.4	5,548.4	13.3	9.7	-151.17	236.8	125.8	348.8	328.5	20.33	17.152	
5,700.0	5,673.9	5,647.9	5,647.9	13.6	9.9	-151.95	236.8	125.8	357.7	337.0	20.66	17.314	
5,800.0	5,773.4	5,747.4	5,747.4	13.8	10.0	-152.69	236.8	125.8	366.6	345.6	20.98	17.474	
5,900.0	5,872.9	5,846.9	5,846.9	14.1	10.2	-153.39	236.8	125.8	375.6	354.3	21.30	17.631	
6,000.0	5,972.4	5,946.4	5,946.4	14.3	10.4	-154.07	236.8	125.8	384.6	363.0	21.63	17.784	
6,100.0	6,071.9	6,045.9	6,045.9	14.6	10.6	-154.71	236.8	125.8	393.7	371.8	21.95	17.935	
6,200.0	6,171.4	6,145.4	6,145.4	14.8	10.7	-155.32	236.8	125.8	402.9	380.6	22.28	18.082	
6,300.0	6,270.9	6,244.9	6,244.9	15.1	10.9	-155.90	236.8	125.8	412.1	389.5	22.61	18.227	
6,400.0	6,370.4	6,344.4	6,344.4	15.3	11.1	-156.46	236.8	125.8	421.3	398.4	22.94	18.368	
6,500.0	6,469.9	6,443.9	6,443.9	15.6	11.2	-157.00	236.8	125.8	430.6	407.3	23.27	18.507	
6,600.0	6,569.4	6,543.4	6,543.4	15.8	11.4	-157.51	236.8	125.8	439.9	416.3	23.60	18.643	
6,700.0	6,668.8	6,642.8	6,642.8	16.1	11.6	-158.00	236.8	125.8	449.2	425.3	23.93	18.775	
6,749.1	6,717.7	6,691.7	6,691.7	16.2	11.7	-158.24	236.8	125.8	453.8	429.7	24.09	18.839	
6,800.0	6,768.4	6,742.4	6,742.4	16.3	11.8	150.38	236.8	125.8	458.5	434.3	24.22	18.929	
6,850.0	6,817.9	6,791.9	6,791.9	16.4	11.9	122.64	236.8	125.8	463.0	438.7	24.37	19.004	
6,900.0	6,866.9	6,840.9	6,840.9	16.4	11.9	111.63	236.8	125.8	467.5	443.0	24.51	19.074	
6,950.0	6,914.9	6,888.9	6,888.9	16.5	12.0	106.86	236.8	125.8	472.2	447.5	24.65	19.153	
7,000.0	6,961.6	6,935.6	6,935.6	16.5	12.1	104.86	236.8	125.8	477.3	452.5	24.78	19.262	
7,050.0	7,006.6	6,980.6	6,980.6	16.5	12.2	104.31	236.8	125.8	483.3	458.4	24.88	19.423	
7,100.0	7,049.5	7,023.5	7,023.5	16.6	12.3	104.57	236.8	125.8	490.6	465.7	24.95	19.661	
7,150.0	7,090.2	7,064.2	7,064.2	16.6	12.3	105.23	236.8	125.8	499.7	474.7	24.99	19.998	
7,200.0	7,128.1	7,102.1	7,102.1	16.7	12.4	106.01	236.8	125.8	511.0	486.0	24.99	20.450	
7,250.0	7,163.1	7,137.1	7,137.1	16.7	12.5	106.71	236.8	125.8	524.8	499.8	24.96	21.021	
7,300.0	7,194.9	7,168.9	7,168.9	16.8	12.5	107.15	236.8	125.8	541.5	516.5	24.95	21.703	
7,350.0	7,223.2	7,197.2	7,197.2	16.9	12.6	107.17	236.8	125.8	561.2	536.3	24.98	22.469	
7,400.0	7,247.9	7,221.9	7,221.9	17.0	12.6	106.64	236.8	125.8	584.1	559.0	25.09	23.282	
7,450.0	7,268.7	7,242.7	7,242.7	17.2	12.6	105.46	236.8	125.8	610.1	584.8	25.32	24.099	
7,500.0	7,285.5	7,259.5	7,259.5	17.4	12.7	103.51	236.8	125.8	638.9	613.2	25.67	24.887	
7,550.0	7,298.1	7,272.1	7,272.1	17.7	12.7	100.70	236.8	125.8	670.4	644.2	26.15	25.640	
7,600.0	7,306.5	7,280.5	7,280.5	17.9	12.7	96.98	236.8	125.8	704.1	677.4	26.68	26.393	
7,650.0	7,310.6	7,284.6	7,284.6	18.3	12.7	92.33	236.8	125.8	739.7	712.5	27.17	27.228	
7,672.0	7,311.0	7,285.0	7,285.0	18.4	12.7	90.00	236.8	125.8	755.9	728.5	27.34	27.650	
7,700.0	7,311.0	7,285.0	7,285.0	18.6	12.7	90.00	236.8	125.8	776.8	749.2	27.59	28.156	
7,800.0	7,311.0	7,285.0	7,285.0	19.4	12.7	90.00	236.8	125.8	854.9	826.3	28.58	29.909	
7,900.0	7,311.0	7,285.0	7,285.0	20.3	12.7	90.00	236.8	125.8	937.1	907.4	29.70	31.554	
8,000.0	7,311.0	7,285.0	7,285.0	21.4	12.7	90.00	236.8	125.8	1,022.5	991.6	30.92	33.074	
8,100.0	7,311.0	7,285.0	7,285.0	22.5	12.7	90.00	236.8	125.8	1,110.4	1,078.2	32.22	34.468	
8,200.0	7,311.0	7,285.0	7,285.0	23.7	12.7	90.00	236.8	125.8	1,200.1	1,166.6	33.58	35.739	
8,300.0	7,311.0	7,285.0	7,285.0	24.9	12.7	90.00	236.8	125.8	1,291.4	1,256.4	35.00	36.896	
8,400.0	7,311.0	7,285.0	7,285.0	26.2	12.7	90.00	236.8	125.8	1,383.9	1,347.4	36.47	37.949	
8,500.0	7,311.0	7,285.0	7,285.0	27.6	12.7	90.00	236.8	125.8	1,477.3	1,439.4	37.97	38.910	

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



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - VOGL 5-8A (EXISTING) - KMG WELL - GYRO													Offset Site Error: 0.0 ft	
Survey Program: 100-Geolink MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
11,000.0	7,311.0	7,300.0	7,298.2	67.8	12.9	83.72	-5,067.6	209.5	1,480.6	1,401.4	79.21	18.693		
11,100.0	7,311.0	7,300.0	7,298.2	69.5	12.9	83.72	-5,067.6	209.5	1,385.1	1,304.2	80.92	17.118		
11,200.0	7,311.0	7,300.0	7,298.2	71.2	12.9	83.72	-5,067.6	209.5	1,290.4	1,207.8	82.63	15.616		
11,300.0	7,311.0	7,300.0	7,298.2	72.9	12.9	83.72	-5,067.6	209.5	1,196.5	1,112.2	84.35	14.185		
11,400.0	7,311.0	7,300.0	7,298.2	74.7	12.9	83.72	-5,067.6	209.5	1,103.7	1,017.6	86.07	12.823		
11,500.0	7,311.0	7,300.0	7,298.2	76.4	12.9	83.72	-5,067.6	209.5	1,012.2	924.5	87.79	11.531		
11,600.0	7,311.0	7,300.0	7,298.2	78.1	12.9	83.72	-5,067.6	209.5	922.6	833.1	89.51	10.307		
11,700.0	7,311.0	7,300.0	7,298.2	79.8	12.9	83.72	-5,067.6	209.5	835.2	744.0	91.23	9.156		
11,800.0	7,311.0	7,300.0	7,298.2	81.5	12.9	83.72	-5,067.6	209.5	751.1	658.1	92.95	8.081		
11,900.0	7,311.0	7,300.0	7,298.2	83.2	12.9	83.72	-5,067.6	209.5	671.3	576.6	94.67	7.091		
12,000.0	7,311.0	7,300.0	7,298.2	84.9	12.9	83.72	-5,067.6	209.5	597.6	501.2	96.40	6.200		
12,100.0	7,311.0	7,300.0	7,298.2	86.7	12.9	83.72	-5,067.6	209.5	532.6	434.5	98.12	5.428		
12,200.0	7,311.0	7,300.0	7,298.2	88.4	12.9	83.72	-5,067.6	209.5	479.7	379.9	99.84	4.805		
12,300.0	7,311.0	7,300.0	7,298.2	90.1	12.9	83.72	-5,067.6	209.5	443.5	341.9	101.57	4.366		
12,400.0	7,311.0	7,300.0	7,298.2	91.8	12.9	83.72	-5,067.6	209.5	428.0	324.7	103.30	4.143		
12,417.5	7,311.0	7,300.0	7,298.2	92.1	12.9	83.72	-5,067.6	209.5	427.6	324.0	103.60	4.128 CC, ES, SF		
12,500.0	7,311.0	7,300.0	7,298.2	93.6	12.9	83.72	-5,067.6	209.5	435.5	330.5	105.02	4.147		
12,600.0	7,311.0	7,300.0	7,298.2	95.3	12.9	83.72	-5,067.6	209.5	464.9	358.2	106.75	4.355		
12,700.0	7,311.0	7,300.0	7,298.2	97.0	12.9	83.72	-5,067.6	209.5	512.5	404.0	108.48	4.725		
12,800.0	7,311.0	7,300.0	7,298.2	98.7	12.9	83.72	-5,067.6	209.5	573.7	463.5	110.21	5.206		
12,900.0	7,311.0	7,300.0	7,298.2	100.5	12.9	83.72	-5,067.6	209.5	644.7	532.8	111.94	5.760		
13,000.0	7,311.0	7,300.0	7,298.2	102.2	12.9	83.72	-5,067.6	209.5	722.6	609.0	113.67	6.357		
13,100.0	7,311.0	7,300.0	7,298.2	103.9	12.9	83.72	-5,067.6	209.5	805.4	690.0	115.40	6.979		
13,200.0	7,311.0	7,300.0	7,298.2	105.7	12.9	83.72	-5,067.6	209.5	891.7	774.6	117.13	7.613		
13,300.0	7,311.0	7,300.0	7,298.2	107.4	12.9	83.72	-5,067.6	209.5	980.7	861.8	118.86	8.251		
13,400.0	7,311.0	7,300.0	7,298.2	109.1	12.9	83.72	-5,067.6	209.5	1,071.5	951.0	120.59	8.886		
13,500.0	7,311.0	7,300.0	7,298.2	110.8	12.9	83.72	-5,067.6	209.5	1,163.9	1,041.6	122.33	9.515		
13,600.0	7,311.0	7,300.0	7,298.2	112.6	12.9	83.72	-5,067.6	209.5	1,257.5	1,133.4	124.06	10.136		
13,700.0	7,311.0	7,300.0	7,298.2	114.3	12.9	83.72	-5,067.6	209.5	1,351.9	1,226.1	125.79	10.748		
13,800.0	7,311.0	7,300.0	7,298.2	116.1	12.9	83.72	-5,067.6	209.5	1,447.1	1,319.6	127.52	11.348		
13,900.0	7,311.0	7,300.0	7,298.2	117.8	12.9	83.72	-5,067.6	209.5	1,543.0	1,413.7	129.26	11.937		

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



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - Vogl-Geist 2A-5H-E267 - Hz - Plan #2													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-89.95	0.0	-50.3	50.3					
100.0	100.0	100.0	100.0	0.1	0.1	-89.95	0.0	-50.3	50.3	50.1	0.24	205.869		
200.0	200.0	200.0	200.0	0.3	0.3	-89.95	0.0	-50.3	50.3	49.7	0.59	84.770 CC, ES		
300.0	300.0	300.0	300.0	0.5	0.5	-156.97	0.0	-50.3	51.1	50.2	0.94	54.220		
400.0	400.0	400.0	400.0	0.7	0.6	-158.05	0.0	-50.3	53.5	52.2	1.29	41.427		
500.0	499.9	499.1	499.1	0.8	0.8	-161.21	-1.6	-50.9	58.3	56.6	1.64	35.473		
600.0	599.7	598.6	598.5	1.0	1.0	-165.89	-5.1	-52.1	65.8	63.8	1.99	32.970		
700.0	699.4	698.0	697.9	1.3	1.2	-169.84	-8.6	-53.3	75.3	73.0	2.35	32.110		
778.7	777.7	776.1	775.9	1.4	1.3	-172.41	-11.4	-54.2	84.2	81.6	2.62	32.148		
800.0	798.9	797.3	797.0	1.5	1.4	-173.03	-12.2	-54.5	86.8	84.1	2.70	32.216		
900.0	898.4	896.4	896.1	1.7	1.5	-175.51	-15.7	-55.7	99.1	96.0	3.05	32.528		
1,000.0	997.9	995.6	995.2	2.0	1.7	-177.44	-19.2	-56.9	111.5	108.1	3.40	32.817		
1,100.0	1,097.4	1,094.7	1,094.3	2.2	1.9	-178.98	-22.7	-58.1	124.0	120.2	3.75	33.077		
1,200.0	1,196.9	1,193.9	1,193.4	2.4	2.1	179.76	-26.2	-59.3	136.6	132.5	4.10	33.308		
1,300.0	1,296.4	1,293.1	1,292.5	2.7	2.3	178.72	-29.8	-60.5	149.2	144.7	4.45	33.513		
1,400.0	1,395.9	1,392.2	1,391.6	2.9	2.5	177.83	-33.3	-61.7	161.9	157.0	4.80	33.694		
1,500.0	1,495.3	1,491.4	1,490.7	3.2	2.6	177.08	-36.8	-62.9	174.6	169.4	5.16	33.856		
1,600.0	1,594.8	1,590.6	1,589.8	3.4	2.8	176.43	-40.3	-64.1	187.3	181.8	5.51	34.000		
1,700.0	1,694.3	1,689.7	1,688.9	3.7	3.0	175.86	-43.8	-65.3	200.0	194.2	5.86	34.129		
1,800.0	1,793.8	1,788.9	1,788.0	3.9	3.2	175.36	-47.4	-66.5	212.8	206.6	6.21	34.245		
1,900.0	1,893.3	1,888.1	1,887.1	4.2	3.4	174.91	-50.9	-67.7	225.6	219.0	6.57	34.349		
2,000.0	1,992.8	1,987.2	1,986.2	4.4	3.6	174.52	-54.4	-68.9	238.4	231.4	6.92	34.445		
2,100.0	2,092.3	2,086.4	2,085.3	4.7	3.8	174.16	-57.9	-70.1	251.2	243.9	7.27	34.531		
2,200.0	2,191.8	2,185.6	2,184.4	4.9	3.9	173.84	-61.4	-71.3	264.0	256.3	7.63	34.610		
2,300.0	2,291.3	2,284.7	2,283.5	5.1	4.1	173.55	-65.0	-72.5	276.8	268.8	7.98	34.683		
2,400.0	2,390.8	2,383.9	2,382.6	5.4	4.3	173.28	-68.5	-73.7	289.6	281.3	8.33	34.750		
2,500.0	2,490.2	2,483.1	2,481.7	5.6	4.5	173.04	-72.0	-75.0	302.4	293.7	8.69	34.811		
2,600.0	2,589.7	2,582.2	2,580.8	5.9	4.7	172.81	-75.5	-76.2	315.3	306.2	9.04	34.868		
2,700.0	2,689.2	2,681.4	2,679.8	6.1	4.9	172.61	-79.0	-77.4	328.1	318.7	9.40	34.921		
2,800.0	2,788.7	2,780.6	2,778.9	6.4	5.0	172.42	-82.6	-78.6	340.9	331.2	9.75	34.971		
2,900.0	2,888.2	2,879.7	2,878.0	6.6	5.2	172.24	-86.1	-79.8	353.8	343.7	10.10	35.016		
3,000.0	2,987.7	2,978.9	2,977.1	6.9	5.4	172.08	-89.6	-81.0	366.6	356.2	10.46	35.059		
3,100.0	3,087.2	3,078.1	3,076.2	7.1	5.6	171.92	-93.1	-82.2	379.5	368.7	10.81	35.100		
3,200.0	3,186.7	3,177.2	3,175.3	7.4	5.8	171.78	-96.6	-83.4	392.3	381.2	11.17	35.137		
3,300.0	3,286.2	3,276.4	3,274.4	7.6	6.0	171.65	-100.2	-84.6	405.2	393.7	11.52	35.173		
3,400.0	3,385.7	3,375.6	3,373.5	7.9	6.2	171.52	-103.7	-85.8	418.0	406.2	11.87	35.206		
3,500.0	3,485.1	3,474.7	3,472.6	8.1	6.3	171.40	-107.2	-87.0	430.9	418.7	12.23	35.238		
3,600.0	3,584.6	3,573.9	3,571.7	8.4	6.5	171.29	-110.7	-88.2	443.8	431.2	12.58	35.267		
3,700.0	3,684.1	3,673.1	3,670.8	8.6	6.7	171.18	-114.2	-89.4	456.6	443.7	12.94	35.296		
3,800.0	3,783.6	3,772.2	3,769.9	8.9	6.9	171.08	-117.8	-90.6	469.5	456.2	13.29	35.322		
3,900.0	3,883.1	3,871.4	3,869.0	9.1	7.1	170.99	-121.3	-91.8	482.4	468.7	13.65	35.348		
4,000.0	3,982.6	3,970.6	3,968.1	9.4	7.3	170.90	-124.8	-93.0	495.2	481.2	14.00	35.372		
4,100.0	4,082.1	4,069.7	4,067.2	9.6	7.4	170.82	-128.3	-94.2	508.1	493.7	14.35	35.395		
4,200.0	4,181.6	4,168.9	4,166.3	9.9	7.6	170.74	-131.8	-95.4	521.0	506.3	14.71	35.417		
4,300.0	4,281.1	4,268.1	4,265.4	10.1	7.8	170.66	-135.4	-96.6	533.8	518.8	15.06	35.437		
4,400.0	4,380.6	4,367.2	4,364.5	10.3	8.0	170.59	-138.9	-97.8	546.7	531.3	15.42	35.457		
4,500.0	4,480.1	4,466.4	4,463.6	10.6	8.2	170.52	-142.4	-99.0	559.6	543.8	15.77	35.476		
4,600.0	4,579.5	4,565.6	4,562.7	10.8	8.4	170.45	-145.9	-100.2	572.4	556.3	16.13	35.494		
4,700.0	4,679.0	4,664.7	4,661.8	11.1	8.6	170.39	-149.4	-101.4	585.3	568.8	16.48	35.512		
4,800.0	4,778.5	4,763.9	4,760.9	11.3	8.7	170.33	-153.0	-102.7	598.2	581.4	16.84	35.529		
4,900.0	4,878.0	4,863.1	4,860.0	11.6	8.9	170.27	-156.5	-103.9	611.1	593.9	17.19	35.545		
5,000.0	4,977.5	4,962.2	4,959.1	11.8	9.1	170.21	-160.0	-105.1	623.9	606.4	17.55	35.560		

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



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - Vogl-Geist 2A-5H-E267 - Hz - Plan #2												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
5,100.0	5,077.0	5,061.4	5,058.2	12.1	9.3	170.16	-163.5	-106.3	636.8	618.9	17.90	35.575	
5,200.0	5,176.5	5,160.6	5,157.3	12.3	9.5	170.11	-167.0	-107.5	649.7	631.4	18.26	35.589	
5,300.0	5,276.0	5,259.7	5,256.3	12.6	9.7	170.06	-170.6	-108.7	662.6	644.0	18.61	35.603	
5,400.0	5,375.5	5,358.9	5,355.4	12.8	9.9	170.01	-174.1	-109.9	675.4	656.5	18.96	35.616	
5,500.0	5,475.0	5,458.1	5,454.5	13.1	10.0	169.96	-177.6	-111.1	688.3	669.0	19.32	35.628	
5,600.0	5,574.4	5,557.2	5,553.6	13.3	10.2	169.92	-181.1	-112.3	701.2	681.5	19.67	35.641	
5,700.0	5,673.9	5,656.4	5,652.7	13.6	10.4	169.88	-184.6	-113.5	714.1	694.0	20.03	35.652	
5,800.0	5,773.4	5,755.6	5,751.8	13.8	10.6	169.83	-188.2	-114.7	727.0	706.6	20.38	35.664	
5,900.0	5,872.9	5,854.7	5,850.9	14.1	10.8	169.80	-191.7	-115.9	739.8	719.1	20.74	35.675	
6,000.0	5,972.4	5,953.9	5,950.0	14.3	11.0	169.76	-195.2	-117.1	752.7	731.6	21.09	35.685	
6,100.0	6,071.9	6,053.0	6,049.1	14.6	11.1	169.72	-198.7	-118.3	765.6	744.1	21.45	35.696	
6,200.0	6,171.4	6,152.2	6,148.2	14.8	11.3	169.68	-202.2	-119.5	778.5	756.7	21.80	35.706	
6,300.0	6,270.9	6,251.4	6,247.3	15.1	11.5	169.65	-205.8	-120.7	791.3	769.2	22.16	35.715	
6,400.0	6,370.4	6,350.5	6,346.4	15.3	11.7	169.62	-209.3	-121.9	804.2	781.7	22.51	35.724	
6,500.0	6,469.9	6,449.7	6,445.5	15.6	11.9	169.58	-212.8	-123.1	817.1	794.2	22.87	35.734	
6,600.0	6,569.4	6,548.9	6,544.6	15.8	12.1	169.55	-216.3	-124.3	830.0	806.8	23.22	35.742	
6,700.0	6,668.8	6,648.0	6,643.7	16.1	12.3	169.52	-219.8	-125.5	842.9	819.3	23.58	35.751	
6,749.1	6,717.7	6,700.7	6,696.3	16.2	12.4	169.51	-221.7	-126.2	849.2	825.4	23.76	35.745	
6,800.0	6,768.4	7,001.9	6,985.8	16.3	12.5	123.90	-152.2	-128.3	846.6	822.5	24.11	35.114	
6,850.0	6,817.9	7,180.2	7,126.8	16.4	12.6	105.52	-44.2	-128.0	832.5	808.1	24.40	34.122	
6,900.0	6,866.9	7,268.3	7,182.4	16.4	12.7	101.24	23.9	-127.5	815.0	790.2	24.81	32.845	
6,950.0	6,914.9	7,310.4	7,205.2	16.5	12.9	100.20	59.4	-127.1	797.9	772.7	25.14	31.732	
7,000.0	6,961.6	7,328.9	7,214.4	16.5	12.9	99.76	75.5	-127.0	782.6	757.3	25.33	30.891	
7,050.0	7,006.6	7,334.1	7,216.8	16.5	12.9	99.25	80.1	-126.9	769.9	744.5	25.41	30.302	
7,100.0	7,049.5	7,331.3	7,215.5	16.6	12.9	98.50	77.6	-126.9	760.1	734.7	25.41	29.914	
7,150.0	7,090.2	7,323.3	7,211.6	16.6	12.9	97.45	70.5	-127.0	753.3	728.0	25.38	29.684	
7,200.0	7,128.1	7,311.7	7,205.8	16.7	12.9	96.11	60.5	-127.1	749.7	724.3	25.35	29.575	
7,235.8	7,153.5	7,301.8	7,200.7	16.7	12.8	94.98	52.0	-127.2	748.9	723.6	25.34	29.551 SF	
7,250.0	7,163.1	7,297.6	7,198.5	16.7	12.8	94.49	48.4	-127.3	749.1	723.7	25.34	29.556	
7,300.0	7,194.9	7,281.6	7,189.9	16.8	12.8	92.61	35.0	-127.4	751.3	725.9	25.39	29.591	
7,350.0	7,223.2	7,264.3	7,180.1	16.9	12.7	90.50	20.7	-127.5	756.1	730.6	25.47	29.682	
7,400.0	7,247.9	7,245.8	7,169.3	17.0	12.7	88.20	5.8	-127.7	763.3	737.7	25.60	29.822	
7,450.0	7,268.7	7,226.6	7,157.4	17.2	12.6	85.74	-9.4	-127.8	772.6	746.8	25.75	30.006	
7,500.0	7,285.5	7,206.7	7,144.6	17.4	12.6	83.17	-24.6	-127.9	783.6	757.7	25.90	30.255	
7,550.0	7,298.1	7,186.2	7,130.9	17.7	12.6	80.54	-39.9	-128.0	796.0	770.0	26.04	30.570	
7,600.0	7,306.5	7,165.3	7,116.3	17.9	12.5	77.88	-54.9	-128.1	809.6	783.4	26.15	30.964	
7,650.0	7,310.6	7,150.0	7,105.4	18.3	12.5	75.58	-65.5	-128.2	823.9	797.7	26.24	31.401	
7,672.0	7,311.0	7,134.5	7,094.0	18.4	12.5	74.12	-76.0	-128.2	830.4	804.2	26.22	31.665	
7,700.0	7,311.0	7,122.7	7,085.1	18.6	12.5	73.50	-83.8	-128.3	839.0	812.6	26.40	31.777	
7,800.0	7,311.0	7,084.8	7,055.5	19.4	12.5	71.49	-107.5	-128.3	874.5	847.3	27.13	32.237	
7,900.0	7,311.0	7,050.0	7,027.1	20.3	12.5	69.59	-127.5	-128.3	917.2	889.3	27.95	32.820	
8,000.0	7,311.0	7,025.0	7,005.9	21.4	12.5	68.20	-140.8	-128.3	966.7	937.8	28.90	33.453	
8,100.0	7,311.0	7,000.0	6,984.2	22.5	12.5	66.81	-153.1	-128.3	1,022.3	992.5	29.89	34.204	
8,200.0	7,311.0	6,980.6	6,966.9	23.7	12.5	65.72	-162.1	-128.3	1,083.4	1,052.4	30.96	34.992	
8,300.0	7,311.0	6,950.0	6,939.2	24.9	12.5	64.01	-174.9	-128.2	1,149.3	1,117.4	31.93	36.000	
8,400.0	7,311.0	6,950.0	6,939.2	26.2	12.5	64.01	-174.9	-128.2	1,219.0	1,185.7	33.25	36.664	
8,500.0	7,311.0	6,932.8	6,923.3	27.6	12.5	63.05	-181.5	-128.1	1,292.3	1,258.0	34.38	37.588	
8,600.0	7,311.0	6,920.3	6,911.6	29.0	12.5	62.36	-186.0	-128.0	1,368.7	1,333.1	35.58	38.469	
8,700.0	7,311.0	6,900.0	6,892.5	30.5	12.5	61.24	-192.7	-127.9	1,447.8	1,411.1	36.66	39.490	
8,800.0	7,311.0	6,900.0	6,892.5	31.9	12.5	61.24	-192.7	-127.9	1,528.9	1,490.9	38.05	40.181	

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



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - Vogl-Geist 2B-5H-E267 - Hz - Plan #2													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-89.95	0.0	-30.7	30.7					
100.0	100.0	100.0	100.0	0.1	0.1	-89.95	0.0	-30.7	30.7	30.5	0.24	125.809		
200.0	200.0	200.0	200.0	0.3	0.3	-89.95	0.0	-30.7	30.7	30.1	0.59	51.804 CC, ES		
300.0	300.0	300.0	300.0	0.5	0.5	-157.21	0.0	-30.7	31.5	30.6	0.94	33.466		
400.0	400.0	400.0	400.0	0.7	0.6	-158.91	0.0	-30.7	34.0	32.7	1.29	26.295		
500.0	499.9	499.9	499.9	0.8	0.8	-161.26	0.0	-30.7	38.1	36.4	1.64	23.195		
600.0	599.7	599.7	599.7	1.0	1.0	-163.80	0.0	-30.7	43.9	41.9	1.99	22.053		
700.0	699.4	700.1	700.0	1.3	1.2	-166.86	-0.4	-30.0	50.8	48.5	2.34	21.717		
778.7	777.7	779.0	779.0	1.4	1.3	-169.81	-1.4	-28.3	56.6	54.0	2.61	21.664		
800.0	798.9	800.4	800.4	1.5	1.3	-170.66	-1.7	-27.7	58.2	55.5	2.69	21.660		
900.0	898.4	900.8	900.7	1.7	1.5	-174.78	-3.9	-23.9	65.2	62.1	3.04	21.441		
1,000.0	997.9	1,001.3	1,001.0	2.0	1.7	-179.19	-6.9	-18.5	71.3	67.9	3.40	20.981		
1,100.0	1,097.4	1,101.6	1,101.0	2.2	1.9	176.05	-10.8	-11.7	76.8	73.1	3.77	20.369		
1,200.0	1,196.9	1,201.3	1,200.3	2.4	2.1	171.52	-15.0	-4.2	82.5	78.3	4.16	19.829		
1,300.0	1,296.4	1,300.9	1,299.6	2.7	2.3	167.59	-19.3	3.3	88.5	84.0	4.56	19.424		
1,400.0	1,395.9	1,400.6	1,398.8	2.9	2.6	164.18	-23.5	10.7	94.9	90.0	4.97	19.116		
1,500.0	1,495.3	1,500.2	1,498.1	3.2	2.8	161.20	-27.7	18.2	101.7	96.3	5.39	18.878		
1,600.0	1,594.8	1,599.9	1,597.4	3.4	3.0	158.60	-32.0	25.7	108.6	102.8	5.81	18.693		
1,700.0	1,694.3	1,699.5	1,696.6	3.7	3.2	156.32	-36.2	33.1	115.8	109.5	6.24	18.548		
1,800.0	1,793.8	1,799.2	1,795.9	3.9	3.4	154.30	-40.4	40.6	123.1	116.4	6.68	18.435		
1,900.0	1,893.3	1,898.8	1,895.2	4.2	3.7	152.51	-44.7	48.1	130.5	123.4	7.12	18.345		
2,000.0	1,992.8	1,998.4	1,994.5	4.4	3.9	150.92	-48.9	55.5	138.1	130.5	7.56	18.274		
2,100.0	2,092.3	2,098.1	2,093.7	4.7	4.1	149.49	-53.1	63.0	145.7	137.7	8.00	18.218		
2,200.0	2,191.8	2,197.7	2,193.0	4.9	4.3	148.21	-57.4	70.4	153.5	145.0	8.44	18.175		
2,300.0	2,291.3	2,297.4	2,292.3	5.1	4.6	147.05	-61.6	77.9	161.3	152.4	8.89	18.140		
2,400.0	2,390.8	2,397.0	2,391.6	5.4	4.8	145.99	-65.8	85.4	169.2	159.8	9.34	18.114		
2,500.0	2,490.2	2,496.7	2,490.8	5.6	5.0	145.03	-70.1	92.8	177.1	167.3	9.79	18.093		
2,600.0	2,589.7	2,596.3	2,590.1	5.9	5.2	144.16	-74.3	100.3	185.0	174.8	10.24	18.078		
2,700.0	2,689.2	2,695.9	2,689.4	6.1	5.5	143.35	-78.6	107.8	193.0	182.4	10.68	18.067		
2,800.0	2,788.7	2,795.6	2,788.7	6.4	5.7	142.61	-82.8	115.2	201.1	189.9	11.13	18.059		
2,900.0	2,888.2	2,895.2	2,887.9	6.6	5.9	141.93	-87.0	122.7	209.1	197.6	11.58	18.054		
3,000.0	2,987.7	2,994.9	2,987.2	6.9	6.1	141.29	-91.3	130.2	217.2	205.2	12.03	18.051		
3,100.0	3,087.2	3,094.5	3,086.5	7.1	6.4	140.71	-95.5	137.6	225.4	212.9	12.49	18.050		
3,200.0	3,186.7	3,194.2	3,185.8	7.4	6.6	140.16	-99.7	145.1	233.5	220.6	12.94	18.050		
3,300.0	3,286.2	3,293.8	3,285.0	7.6	6.8	139.65	-104.0	152.6	241.7	228.3	13.39	18.052		
3,400.0	3,385.7	3,393.5	3,384.3	7.9	7.1	139.17	-108.2	160.0	249.8	236.0	13.84	18.055		
3,500.0	3,485.1	3,493.1	3,483.6	8.1	7.3	138.73	-112.4	167.5	258.0	243.8	14.29	18.058		
3,600.0	3,584.6	3,592.7	3,582.9	8.4	7.5	138.31	-116.7	174.9	266.3	251.5	14.74	18.062		
3,700.0	3,684.1	3,692.4	3,682.1	8.6	7.7	137.92	-120.9	182.4	274.5	259.3	15.19	18.067		
3,800.0	3,783.6	3,792.0	3,781.4	8.9	8.0	137.55	-125.1	189.9	282.7	267.1	15.64	18.072		
3,900.0	3,883.1	3,891.7	3,880.7	9.1	8.2	137.20	-129.4	197.3	291.0	274.9	16.09	18.078		
4,000.0	3,982.6	3,991.3	3,979.9	9.4	8.4	136.87	-133.6	204.8	299.2	282.7	16.55	18.083		
4,100.0	4,082.1	4,091.0	4,079.2	9.6	8.7	136.55	-137.8	212.3	307.5	290.5	17.00	18.089		
4,200.0	4,181.6	4,190.6	4,178.5	9.9	8.9	136.26	-142.1	219.7	315.8	298.3	17.45	18.096		
4,300.0	4,281.1	4,290.3	4,277.8	10.1	9.1	135.98	-146.3	227.2	324.0	306.1	17.90	18.102		
4,400.0	4,380.6	4,389.9	4,377.0	10.3	9.3	135.71	-150.5	234.7	332.3	314.0	18.35	18.108		
4,500.0	4,480.1	4,489.5	4,476.3	10.6	9.6	135.45	-154.8	242.1	340.6	321.8	18.80	18.115		
4,600.0	4,579.5	4,589.2	4,575.6	10.8	9.8	135.21	-159.0	249.6	348.9	329.7	19.26	18.121		
4,700.0	4,679.0	4,688.8	4,674.9	11.1	10.0	134.98	-163.2	257.0	357.2	337.5	19.71	18.127		
4,800.0	4,778.5	4,788.5	4,774.1	11.3	10.3	134.76	-167.5	264.5	365.6	345.4	20.16	18.134		
4,900.0	4,878.0	4,888.1	4,873.4	11.6	10.5	134.55	-171.7	272.0	373.9	353.3	20.61	18.140		
5,000.0	4,977.5	4,987.8	4,972.7	11.8	10.7	134.35	-175.9	279.4	382.2	361.1	21.06	18.147		

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



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - Vogl-Geist 2B-5H-E267 - Hz - Plan #2													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
5,100.0	5,077.0	5,087.4	5,072.0	12.1	10.9	134.16	-180.2	286.9	390.5	369.0	21.51	18.153		
5,200.0	5,176.5	5,187.1	5,171.2	12.3	11.2	133.97	-184.4	294.4	398.9	376.9	21.96	18.159		
5,300.0	5,276.0	5,286.7	5,270.5	12.6	11.4	133.80	-188.6	301.8	407.2	384.8	22.42	18.165		
5,400.0	5,375.5	5,386.3	5,369.8	12.8	11.6	133.63	-192.9	309.3	415.5	392.7	22.87	18.171		
5,500.0	5,475.0	5,486.0	5,469.1	13.1	11.9	133.46	-197.1	316.8	423.9	400.6	23.32	18.177		
5,600.0	5,574.4	5,585.6	5,568.3	13.3	12.1	133.30	-201.3	324.2	432.2	408.5	23.77	18.183		
5,700.0	5,673.9	5,685.3	5,667.6	13.6	12.3	133.15	-205.6	331.7	440.6	416.4	24.22	18.189		
5,800.0	5,773.4	5,784.9	5,766.9	13.8	12.5	133.01	-209.8	339.2	448.9	424.3	24.67	18.195		
5,900.0	5,872.9	5,884.6	5,866.2	14.1	12.8	132.87	-214.1	346.6	457.3	432.2	25.13	18.200		
6,000.0	5,972.4	5,984.2	5,965.4	14.3	13.0	132.73	-218.3	354.1	465.7	440.1	25.58	18.206		
6,100.0	6,071.9	6,083.8	6,064.7	14.6	13.2	132.60	-222.5	361.5	474.0	448.0	26.03	18.211		
6,200.0	6,171.4	6,183.5	6,164.0	14.8	13.5	132.48	-226.8	369.0	482.4	455.9	26.48	18.217		
6,300.0	6,270.9	6,283.1	6,263.2	15.1	13.7	132.36	-231.0	376.5	490.7	463.8	26.93	18.222		
6,400.0	6,370.4	6,382.8	6,362.5	15.3	13.9	132.24	-235.2	383.9	499.1	471.7	27.38	18.227		
6,500.0	6,469.9	6,482.4	6,461.8	15.6	14.2	132.12	-239.5	391.4	507.5	479.6	27.83	18.232		
6,600.0	6,569.4	6,581.9	6,560.9	15.8	14.5	132.00	-243.7	399.0	515.7	487.7	28.27	18.237		
6,700.0	6,668.8	6,681.4	6,660.9	16.1	15.0	131.88	-247.9	406.5	523.9	495.8	28.70	18.242		
6,749.1	6,717.7	6,730.7	6,705.4	16.2	15.2	131.76	-252.1	414.0	532.1	503.9	29.13	18.247		
6,800.0	6,768.4	6,781.0	6,760.0	16.3	15.4	131.64	-256.3	421.5	540.3	512.0	29.56	18.252		
6,850.0	6,817.9	6,830.5	6,812.2	16.4	15.5	131.52	-260.5	429.0	548.5	520.1	30.00	18.257		
6,900.0	6,866.9	6,879.5	6,862.0	16.4	15.5	131.40	-264.7	436.5	556.7	528.2	30.43	18.262		
6,950.0	6,914.9	6,927.5	6,907.9	16.5	15.5	131.28	-268.9	444.0	564.9	536.3	30.87	18.267		
7,000.0	6,961.6	6,974.2	6,952.4	16.5	15.5	131.16	-273.1	451.5	573.1	544.4	31.30	18.272		
7,050.0	7,006.6	7,019.2	7,006.8	16.5	15.5	131.04	-277.3	459.0	581.3	552.5	31.74	18.277		
7,100.0	7,049.5	7,062.1	7,066.3	16.6	15.4	130.92	-281.5	466.5	589.5	560.6	32.17	18.282		
7,101.2	7,050.6	7,063.3	7,066.2	16.6	15.4	130.80	-285.7	474.0	597.7	568.7	32.60	18.287		
7,150.0	7,090.2	7,102.8	7,061.9	16.6	15.3	130.68	-289.9	481.5	605.9	576.8	33.04	18.292		
7,200.0	7,128.1	7,140.7	7,056.6	16.7	15.3	130.56	-294.1	489.0	614.1	584.9	33.47	18.297		
7,250.0	7,163.1	7,175.7	7,050.4	16.7	15.2	130.44	-298.3	496.5	622.3	593.0	33.90	18.302		
7,300.0	7,194.9	7,207.0	7,042.6	16.8	15.1	130.32	-302.5	504.0	630.5	601.1	34.34	18.307		
7,350.0	7,223.2	7,183.4	7,035.6	16.9	15.0	130.20	-306.7	511.5	638.7	609.2	34.77	18.312		
7,400.0	7,247.9	7,164.1	7,026.9	17.0	15.0	130.08	-310.9	519.0	646.9	617.3	35.20	18.317		
7,450.0	7,268.7	7,150.0	7,020.2	17.2	14.9	129.96	-315.1	526.5	655.1	625.4	35.63	18.322		
7,500.0	7,285.5	7,124.0	7,007.0	17.4	14.8	129.84	-319.3	534.0	663.3	633.5	36.06	18.327		
7,550.0	7,298.1	7,100.0	6,993.9	17.7	14.8	129.72	-323.5	541.5	671.5	641.6	36.49	18.332		
7,600.0	7,306.5	7,082.4	6,983.8	17.9	14.7	129.60	-327.7	549.0	679.7	649.7	36.92	18.337		
7,650.0	7,310.6	7,061.2	6,971.1	18.3	14.7	129.48	-331.9	556.5	687.9	657.8	37.35	18.342		
7,672.0	7,311.0	7,050.0	6,964.1	18.4	14.7	129.36	-336.1	564.0	696.1	665.9	37.78	18.347		
7,700.0	7,311.0	7,050.0	6,964.1	18.6	14.7	129.24	-340.3	571.5	704.3	674.0	38.21	18.352		
7,800.0	7,311.0	7,000.0	6,930.9	19.4	14.6	129.12	-344.5	579.0	712.5	682.1	38.64	18.357		
7,900.0	7,311.0	6,966.5	6,906.9	20.3	14.6	129.00	-348.7	586.5	720.7	690.2	39.07	18.362		
8,000.0	7,311.0	6,936.1	6,884.0	21.4	14.6	128.88	-352.9	594.0	728.9	698.3	39.50	18.367		
8,100.0	7,311.0	6,900.0	6,855.5	22.5	14.5	128.76	-357.1	601.5	737.1	706.4	40.00	18.372		
8,200.0	7,311.0	6,900.0	6,855.5	23.7	14.5	128.64	-361.3	609.0	745.3	714.5	40.43	18.377		
8,300.0	7,311.0	6,850.0	6,813.8	24.9	14.5	128.52	-365.5	616.5	753.5	722.6	40.87	18.382		
8,400.0	7,311.0	6,850.0	6,813.8	26.2	14.5	128.40	-369.7	624.0	761.7	730.7	41.30	18.387		
8,500.0	7,311.0	6,827.7	6,794.4	27.6	14.5	128.28	-373.9	631.5	769.9	738.8	41.74	18.392		
8,600.0	7,311.0	6,800.0	6,769.9	29.0	14.5	128.16	-378.1	639.0	778.1	746.9	42.17	18.397		
8,700.0	7,311.0	6,800.0	6,769.9	30.5	14.5	128.04	-382.3	646.5	786.3	755.0	42.60	18.402		
8,800.0	7,311.0	6,800.0	6,769.9	31.9	14.5	127.92	-386.5	654.0	794.5	763.1	43.03	18.407		
8,900.0	7,311.0	6,774.1	6,746.4	33.4	14.5	127.80	-390.7	661.5	802.7	771.2	43.47	18.412		

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



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - Vogl-Geist 2C-5H-E267 - Hz - Plan #2													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-89.96	0.0	-11.2	11.2					
100.0	100.0	100.0	100.0	0.1	0.1	-89.96	0.0	-11.2	11.2	10.9	0.24	45.749		
200.0	200.0	200.0	200.0	0.3	0.3	-89.96	0.0	-11.2	11.2	10.6	0.59	18.838 CC, ES		
300.0	300.0	300.0	300.0	0.5	0.5	-158.24	0.0	-11.2	12.0	11.0	0.94	12.715		
400.0	400.0	400.2	400.2	0.7	0.6	-163.42	-0.2	-10.3	13.6	12.3	1.29	10.553		
500.0	499.9	500.4	500.3	0.8	0.8	-171.72	-0.9	-7.8	15.6	13.9	1.64	9.473		
600.0	599.7	600.5	600.4	1.0	1.0	178.38	-2.1	-3.6	18.1	16.1	2.00	9.073		
700.0	699.4	700.7	700.3	1.3	1.2	168.36	-3.8	2.3	21.6	19.3	2.36	9.153		
778.7	777.7	779.4	778.8	1.4	1.4	161.12	-5.4	8.1	25.3	22.6	2.67	9.446		
800.0	798.9	800.7	800.1	1.5	1.4	159.28	-5.9	9.9	26.3	23.6	2.76	9.539		
900.0	898.4	900.7	899.6	1.7	1.6	150.59	-8.4	19.1	31.3	28.1	3.20	9.777		
1,000.0	997.9	1,000.6	998.9	2.0	1.9	141.72	-11.5	30.0	36.3	32.6	3.68	9.851		
1,100.0	1,097.4	1,100.3	1,097.8	2.2	2.2	133.47	-14.8	42.1	41.9	37.7	4.20	9.965		
1,200.0	1,196.9	1,200.0	1,196.7	2.4	2.4	127.19	-18.2	54.2	48.1	43.4	4.72	10.186		
1,300.0	1,296.4	1,299.7	1,295.6	2.7	2.7	122.39	-21.6	66.3	54.7	49.5	5.24	10.452		
1,400.0	1,395.9	1,399.4	1,394.5	2.9	3.0	118.65	-25.0	78.4	61.7	56.0	5.75	10.729		
1,500.0	1,495.3	1,499.1	1,493.4	3.2	3.2	115.67	-28.3	90.5	68.9	62.6	6.26	10.999		
1,600.0	1,594.8	1,598.8	1,592.3	3.4	3.5	113.26	-31.7	102.6	76.2	69.4	6.77	11.255		
1,700.0	1,694.3	1,698.5	1,691.2	3.7	3.8	111.28	-35.1	114.7	83.6	76.4	7.28	11.494		
1,800.0	1,793.8	1,798.1	1,790.0	3.9	4.0	109.62	-38.5	126.8	91.1	83.4	7.78	11.715		
1,900.0	1,893.3	1,897.8	1,888.9	4.2	4.3	108.22	-41.8	138.9	98.7	90.4	8.28	11.919		
2,000.0	1,992.8	1,997.5	1,987.8	4.4	4.6	107.01	-45.2	151.0	106.3	97.6	8.78	12.107		
2,100.0	2,092.3	2,097.2	2,086.7	4.7	4.9	105.97	-48.6	163.1	114.0	104.7	9.28	12.280		
2,200.0	2,191.8	2,196.9	2,185.6	4.9	5.2	105.06	-52.0	175.2	121.7	111.9	9.78	12.440		
2,300.0	2,291.3	2,296.6	2,284.5	5.1	5.4	104.26	-55.3	187.3	129.4	119.2	10.28	12.587		
2,400.0	2,390.8	2,396.3	2,383.4	5.4	5.7	103.55	-58.7	199.4	137.2	126.4	10.78	12.724		
2,500.0	2,490.2	2,495.9	2,482.3	5.6	6.0	102.91	-62.1	211.5	145.0	133.7	11.28	12.850		
2,600.0	2,589.7	2,595.6	2,581.2	5.9	6.3	102.34	-65.5	223.6	152.8	141.0	11.78	12.968		
2,700.0	2,689.2	2,695.3	2,680.1	6.1	6.5	101.82	-68.8	235.7	160.6	148.3	12.28	13.077		
2,800.0	2,788.7	2,795.0	2,779.0	6.4	6.8	101.36	-72.2	247.8	168.4	155.6	12.78	13.179		
2,900.0	2,888.2	2,894.7	2,877.8	6.6	7.1	100.93	-75.6	259.9	176.2	162.9	13.27	13.275		
3,000.0	2,987.7	2,994.4	2,976.7	6.9	7.4	100.54	-79.0	272.0	184.0	170.3	13.77	13.364		
3,100.0	3,087.2	3,094.0	3,075.6	7.1	7.7	100.18	-82.3	284.1	191.9	177.6	14.27	13.448		
3,200.0	3,186.7	3,193.7	3,174.5	7.4	7.9	99.85	-85.7	296.2	199.7	184.9	14.76	13.526		
3,300.0	3,286.2	3,293.4	3,273.4	7.6	8.2	99.55	-89.1	308.2	207.6	192.3	15.26	13.601		
3,400.0	3,385.7	3,393.1	3,372.3	7.9	8.5	99.26	-92.5	320.3	215.4	199.7	15.76	13.670		
3,500.0	3,485.1	3,492.8	3,471.2	8.1	8.8	99.00	-95.8	332.4	223.3	207.0	16.25	13.736		
3,600.0	3,584.6	3,592.5	3,570.1	8.4	9.1	98.76	-99.2	344.5	231.1	214.4	16.75	13.799		
3,700.0	3,684.1	3,692.2	3,669.0	8.6	9.3	98.53	-102.6	356.6	239.0	221.8	17.25	13.858		
3,800.0	3,783.6	3,791.8	3,767.9	8.9	9.6	98.31	-106.0	368.7	246.9	229.1	17.74	13.914		
3,900.0	3,883.1	3,891.5	3,866.8	9.1	9.9	98.11	-109.3	380.8	254.8	236.5	18.24	13.967		
4,000.0	3,982.6	3,991.2	3,965.6	9.4	10.2	97.92	-112.7	392.9	262.6	243.9	18.74	14.017		
4,100.0	4,082.1	4,090.9	4,064.5	9.6	10.5	97.75	-116.1	405.0	270.5	251.3	19.23	14.066		
4,200.0	4,181.6	4,190.6	4,163.4	9.9	10.7	97.58	-119.5	417.1	278.4	258.7	19.73	14.111		
4,300.0	4,281.1	4,290.3	4,262.3	10.1	11.0	97.42	-122.8	429.2	286.3	266.1	20.23	14.155		
4,400.0	4,380.6	4,390.0	4,361.2	10.3	11.3	97.27	-126.2	441.3	294.2	273.5	20.72	14.197		
4,500.0	4,480.1	4,489.6	4,460.1	10.6	11.6	97.13	-129.6	453.4	302.1	280.9	21.22	14.237		
4,600.0	4,579.5	4,589.3	4,559.0	10.8	11.9	96.99	-132.9	465.5	310.0	288.3	21.71	14.275		
4,700.0	4,679.0	4,689.0	4,657.9	11.1	12.1	96.86	-136.3	477.6	317.9	295.7	22.21	14.312		
4,800.0	4,778.5	4,788.7	4,756.8	11.3	12.4	96.74	-139.7	489.7	325.8	303.1	22.71	14.347		
4,900.0	4,878.0	4,888.4	4,855.7	11.6	12.7	96.63	-143.1	501.8	333.7	310.5	23.20	14.380		
5,000.0	4,977.5	4,988.1	4,954.6	11.8	13.0	96.51	-146.4	513.9	341.6	317.9	23.70	14.413		

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



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - Vogl-Geist 2C-5H-E267 - Hz - Plan #2												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
5,100.0	5,077.0	5,087.8	5,053.4	12.1	13.3	96.41	-149.8	526.0	349.5	325.3	24.19	14.444	
5,200.0	5,176.5	5,187.4	5,152.3	12.3	13.6	96.31	-153.2	538.1	357.4	332.7	24.69	14.474	
5,300.0	5,276.0	5,287.1	5,251.2	12.6	13.8	96.21	-156.6	550.2	365.3	340.1	25.19	14.502	
5,400.0	5,375.5	5,386.8	5,350.1	12.8	14.1	96.12	-159.9	562.3	373.2	347.5	25.68	14.530	
5,500.0	5,475.0	5,486.5	5,449.0	13.1	14.4	96.03	-163.3	574.4	381.1	354.9	26.18	14.557	
5,600.0	5,574.4	5,586.2	5,547.9	13.3	14.7	95.94	-166.7	586.5	389.0	362.3	26.67	14.582	
5,700.0	5,673.9	5,685.9	5,646.8	13.6	15.0	95.86	-170.1	598.6	396.9	369.7	27.17	14.607	
5,800.0	5,773.4	5,785.6	5,745.7	13.8	15.2	95.78	-173.4	610.7	404.8	377.1	27.67	14.631	
5,900.0	5,872.9	5,885.2	5,844.6	14.1	15.5	95.71	-176.8	622.8	412.7	384.5	28.16	14.654	
6,000.0	5,972.4	5,984.9	5,943.5	14.3	15.8	95.63	-180.2	634.9	420.6	391.9	28.66	14.677	
6,100.0	6,071.9	6,084.6	6,042.4	14.6	16.1	95.56	-183.6	647.0	428.5	399.4	29.15	14.698	
6,200.0	6,171.4	6,184.3	6,141.2	14.8	16.4	95.50	-186.9	659.1	436.4	406.8	29.65	14.719	
6,300.0	6,270.9	6,284.0	6,240.1	15.1	16.6	95.43	-190.3	671.2	444.3	414.2	30.15	14.739	
6,400.0	6,370.4	6,383.7	6,339.0	15.3	16.9	95.37	-193.7	683.3	452.2	421.6	30.64	14.759	
6,500.0	6,469.9	6,483.4	6,437.9	15.6	17.2	95.31	-197.1	695.4	460.2	429.0	31.14	14.778	
6,600.0	6,569.4	6,583.0	6,536.8	15.8	17.5	95.25	-200.4	707.5	468.1	436.4	31.63	14.797	
6,700.0	6,668.8	6,682.7	6,635.7	16.1	17.8	95.19	-203.8	719.6	476.0	443.8	32.13	14.814	
6,749.1	6,717.7	6,731.7	6,684.3	16.2	17.9	95.16	-205.5	725.5	479.9	447.5	32.37	14.823	
6,800.0	6,768.4	6,926.7	6,875.7	16.3	18.3	42.45	-183.3	748.9	476.0	443.0	32.95	14.443	
6,850.0	6,817.9	7,110.5	7,039.7	16.4	18.6	7.63	-104.6	769.0	452.0	418.9	33.04	13.680	
6,900.0	6,866.9	7,220.1	7,122.7	16.4	18.8	-15.61	-34.1	779.2	416.2	384.1	32.15	12.947	
6,950.0	6,914.9	7,280.4	7,162.3	16.5	18.9	-36.31	11.2	784.0	375.4	345.4	29.99	12.518	
7,000.0	6,961.6	7,312.2	7,181.2	16.5	19.0	-54.84	36.7	786.3	333.0	305.2	27.71	12.015	
7,050.0	7,006.6	7,327.2	7,189.6	16.5	19.0	-69.26	49.0	787.3	291.0	264.8	26.19	11.114	
7,100.0	7,049.5	7,331.6	7,192.0	16.6	19.1	-78.85	52.7	787.6	251.3	225.8	25.52	9.848	
7,150.0	7,090.2	7,329.2	7,190.7	16.6	19.1	-84.19	50.7	787.5	215.8	190.5	25.31	8.525	
7,200.0	7,128.1	7,322.1	7,186.7	16.7	19.0	-86.08	44.8	787.0	187.1	161.8	25.29	7.397	
7,250.0	7,163.1	7,311.6	7,180.8	16.7	19.0	-85.14	36.2	786.3	168.5	143.1	25.36	6.645	
7,294.5	7,191.6	7,300.2	7,174.2	16.8	19.0	-82.27	26.9	785.5	162.9	137.5	25.44	6.405 SF	
7,300.0	7,194.9	7,298.6	7,173.3	16.8	19.0	-81.79	25.7	785.4	163.0	137.6	25.45	6.406	
7,350.0	7,223.2	7,283.8	7,164.4	16.9	18.9	-76.41	13.9	784.3	171.2	145.8	25.47	6.723	
7,400.0	7,247.9	7,267.6	7,154.3	17.0	18.9	-69.49	1.2	783.0	190.7	165.4	25.27	7.545	
7,450.0	7,268.7	7,250.0	7,142.9	17.2	18.9	-61.59	-12.1	781.6	217.6	192.9	24.73	8.800	
7,500.0	7,285.5	7,232.0	7,130.9	17.4	18.8	-53.64	-25.5	780.2	249.0	225.1	23.85	10.440	
7,550.0	7,298.1	7,213.0	7,117.8	17.7	18.8	-46.09	-39.1	778.6	282.5	259.8	22.70	12.446	
7,600.0	7,306.5	7,200.0	7,108.5	17.9	18.7	-40.35	-48.2	777.4	317.2	295.4	21.73	14.593	
7,650.0	7,310.6	7,173.3	7,088.9	18.3	18.7	-33.62	-66.1	775.0	351.6	331.0	20.64	17.035	
7,672.0	7,311.0	7,164.3	7,082.1	18.4	18.7	-31.39	-71.9	774.2	366.7	346.3	20.36	18.007	
7,700.0	7,311.0	7,150.0	7,071.1	18.6	18.7	-29.96	-81.0	772.9	386.1	365.9	20.19	19.122	
7,800.0	7,311.0	7,117.2	7,045.1	19.4	18.6	-26.93	-100.8	769.7	459.3	439.3	20.01	22.960	
7,900.0	7,311.0	7,086.6	7,019.9	20.3	18.6	-24.39	-117.8	766.6	537.7	517.8	19.91	27.010	
8,000.0	7,311.0	7,050.0	6,988.6	21.4	18.5	-21.68	-136.3	762.8	620.0	600.3	19.73	31.421	
8,100.0	7,311.0	7,050.0	6,988.6	22.5	18.5	-21.68	-136.3	762.8	705.1	684.9	20.21	34.880	
8,200.0	7,311.0	7,018.3	6,960.6	23.7	18.5	-19.60	-150.7	759.3	792.2	772.1	20.14	39.339	
8,300.0	7,311.0	7,000.0	6,944.0	24.9	18.4	-18.49	-158.3	757.3	881.3	861.0	20.30	43.424	
8,400.0	7,311.0	7,000.0	6,944.0	26.2	18.4	-18.49	-158.3	757.3	972.2	951.4	20.76	46.821	
8,500.0	7,311.0	6,972.8	6,919.0	27.6	18.4	-16.98	-168.6	754.3	1,063.7	1,042.9	20.76	51.247	
8,600.0	7,311.0	6,950.0	6,897.7	29.0	18.4	-15.82	-176.3	751.6	1,156.5	1,135.7	20.83	55.536	
8,700.0	7,311.0	6,950.0	6,897.7	30.5	18.4	-15.82	-176.3	751.6	1,249.9	1,228.7	21.26	58.786	
8,800.0	7,311.0	6,950.0	6,897.7	31.9	18.4	-15.82	-176.3	751.6	1,344.3	1,322.6	21.71	61.934	
8,900.0	7,311.0	6,932.0	6,880.7	33.4	18.3	-14.96	-181.8	749.6	1,439.0	1,417.2	21.82	65.939	
9,000.0	7,311.0	6,924.1	6,873.2	35.0	18.3	-14.60	-184.0	748.6	1,534.3	1,512.2	22.11	69.384	

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



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - Vogl-McCoy 2A-5H-E267 - Hz - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
0.0	0.0	0.0	0.0	0.0	0.0	-89.95	0.1	-58.7	58.7					
100.0	100.0	99.0	99.0	0.1	0.1	-89.95	0.1	-58.7	58.7	58.4	0.24	241.388		
200.0	200.0	199.0	199.0	0.3	0.3	-89.95	0.1	-58.7	58.7	58.1	0.59	99.190 CC, ES		
300.0	300.0	298.2	298.2	0.5	0.5	-156.36	0.6	-59.3	60.1	59.2	0.94	63.958		
400.0	400.0	397.3	397.3	0.7	0.6	-155.74	2.3	-61.2	64.4	63.1	1.29	49.929		
500.0	499.9	496.2	496.1	0.8	0.8	-154.87	5.2	-64.3	71.6	70.0	1.64	43.547		
600.0	599.7	595.2	594.9	1.0	1.0	-153.99	9.1	-68.6	81.5	79.5	2.00	40.686		
700.0	699.4	694.5	694.1	1.3	1.2	-153.69	13.1	-73.0	93.2	90.8	2.37	39.352		
778.7	777.7	772.5	771.9	1.4	1.4	-153.80	16.3	-76.4	103.4	100.8	2.66	38.938		
800.0	798.9	793.7	793.0	1.5	1.4	-153.87	17.1	-77.3	106.3	103.6	2.73	38.881		
900.0	898.4	892.7	891.9	1.7	1.6	-154.16	21.1	-81.7	120.0	116.9	3.10	38.642		
1,000.0	997.9	991.8	990.8	2.0	1.8	-154.38	25.1	-86.1	133.6	130.1	3.48	38.443		
1,100.0	1,097.4	1,090.9	1,089.7	2.2	2.0	-154.57	29.1	-90.5	147.2	143.4	3.85	38.277		
1,200.0	1,196.9	1,189.9	1,188.6	2.4	2.2	-154.73	33.1	-94.8	160.9	156.7	4.22	38.136		
1,300.0	1,296.4	1,289.0	1,287.5	2.7	2.4	-154.86	37.1	-99.2	174.5	169.9	4.59	38.016		
1,400.0	1,395.9	1,388.1	1,386.3	2.9	2.6	-154.97	41.2	-103.6	188.2	183.2	4.96	37.911		
1,500.0	1,495.3	1,487.1	1,485.2	3.2	2.8	-155.06	45.2	-108.0	201.8	196.5	5.34	37.820		
1,600.0	1,594.8	1,586.2	1,584.1	3.4	3.0	-155.15	49.2	-112.3	215.4	209.7	5.71	37.740		
1,700.0	1,694.3	1,685.3	1,683.0	3.7	3.2	-155.22	53.2	-116.7	229.1	223.0	6.08	37.669		
1,800.0	1,793.8	1,784.3	1,781.9	3.9	3.4	-155.29	57.2	-121.1	242.7	236.3	6.45	37.606		
1,900.0	1,893.3	1,883.4	1,880.8	4.2	3.6	-155.35	61.2	-125.5	256.4	249.5	6.83	37.549		
2,000.0	1,992.8	1,982.5	1,979.7	4.4	3.8	-155.40	65.2	-129.9	270.0	262.8	7.20	37.497		
2,100.0	2,092.3	2,081.5	2,078.6	4.7	4.0	-155.45	69.2	-134.2	283.7	276.1	7.57	37.451		
2,200.0	2,191.8	2,180.6	2,177.4	4.9	4.2	-155.49	73.2	-138.6	297.3	289.3	7.95	37.408		
2,300.0	2,291.3	2,279.6	2,276.3	5.1	4.4	-155.53	77.2	-143.0	310.9	302.6	8.32	37.370		
2,400.0	2,390.8	2,378.7	2,375.2	5.4	4.6	-155.57	81.2	-147.4	324.6	315.9	8.69	37.334		
2,500.0	2,490.2	2,477.8	2,474.1	5.6	4.8	-155.60	85.2	-151.7	338.2	329.2	9.07	37.301		
2,600.0	2,589.7	2,576.8	2,573.0	5.9	5.0	-155.63	89.2	-156.1	351.9	342.4	9.44	37.271		
2,700.0	2,689.2	2,675.9	2,671.9	6.1	5.2	-155.66	93.2	-160.5	365.5	355.7	9.81	37.243		
2,800.0	2,788.7	2,775.0	2,770.8	6.4	5.4	-155.68	97.2	-164.9	379.2	369.0	10.19	37.217		
2,900.0	2,888.2	2,874.0	2,869.6	6.6	5.6	-155.71	101.2	-169.2	392.8	382.2	10.56	37.192		
3,000.0	2,987.7	2,973.1	2,968.5	6.9	5.8	-155.73	105.3	-173.6	406.4	395.5	10.94	37.170		
3,100.0	3,087.2	3,072.2	3,067.4	7.1	6.0	-155.75	109.3	-178.0	420.1	408.8	11.31	37.148		
3,200.0	3,186.7	3,171.2	3,166.3	7.4	6.2	-155.77	113.3	-182.4	433.7	422.1	11.68	37.128		
3,300.0	3,286.2	3,270.3	3,265.2	7.6	6.4	-155.79	117.3	-186.8	447.4	435.3	12.06	37.110		
3,400.0	3,385.7	3,369.4	3,364.1	7.9	6.6	-155.81	121.3	-191.1	461.0	448.6	12.43	37.092		
3,500.0	3,485.1	3,468.4	3,463.0	8.1	6.8	-155.83	125.3	-195.5	474.7	461.9	12.80	37.075		
3,600.0	3,584.6	3,567.5	3,561.9	8.4	7.0	-155.84	129.3	-199.9	488.3	475.1	13.18	37.059		
3,700.0	3,684.1	3,666.6	3,660.7	8.6	7.2	-155.86	133.3	-204.3	502.0	488.4	13.55	37.045		
3,800.0	3,783.6	3,765.6	3,759.6	8.9	7.4	-155.87	137.3	-208.6	515.6	501.7	13.92	37.030		
3,900.0	3,883.1	3,864.7	3,858.5	9.1	7.6	-155.89	141.3	-213.0	529.3	515.0	14.30	37.017		
4,000.0	3,982.6	3,963.7	3,957.4	9.4	7.9	-155.90	145.3	-217.4	542.9	528.2	14.67	37.004		
4,100.0	4,082.1	4,062.8	4,056.3	9.6	8.1	-155.91	149.3	-221.8	556.5	541.5	15.04	36.992		
4,200.0	4,181.6	4,161.9	4,155.2	9.9	8.3	-155.92	153.3	-226.1	570.2	554.8	15.42	36.981		
4,300.0	4,281.1	4,260.9	4,254.1	10.1	8.5	-155.93	157.3	-230.5	583.8	568.0	15.79	36.970		
4,400.0	4,380.6	4,360.0	4,352.9	10.3	8.7	-155.94	161.3	-234.9	597.5	581.3	16.17	36.959		
4,500.0	4,480.1	4,459.1	4,451.8	10.6	8.9	-155.95	165.3	-239.3	611.1	594.6	16.54	36.949		
4,600.0	4,579.5	4,558.1	4,550.7	10.8	9.1	-155.96	169.3	-243.6	624.8	607.9	16.91	36.940		
4,700.0	4,679.0	4,657.2	4,649.6	11.1	9.3	-155.97	173.4	-248.0	638.4	621.1	17.29	36.930		
4,800.0	4,778.5	4,756.3	4,748.5	11.3	9.5	-155.98	177.4	-252.4	652.1	634.4	17.66	36.920		
4,900.0	4,878.0	4,855.3	4,847.4	11.6	9.7	-155.99	181.4	-256.8	665.7	647.7	18.03	36.913		
5,000.0	4,977.5	4,954.4	4,946.3	11.8	9.9	-156.00	185.4	-261.2	679.3	660.9	18.41	36.905		

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



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - Vogl-McCoy 2A-5H-E267 - 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	Factor	
5,100.0	5,077.0	5,053.5	5,045.2	12.1	10.1	-156.01	189.4	-265.5	693.0	674.2	18.78	36.897	
5,200.0	5,176.5	5,152.5	5,144.0	12.3	10.3	-156.01	193.4	-269.9	706.6	687.5	19.16	36.890	
5,300.0	5,276.0	5,251.6	5,242.9	12.6	10.5	-156.02	197.4	-274.3	720.3	700.8	19.53	36.882	
5,400.0	5,375.5	5,350.7	5,341.8	12.8	10.7	-156.03	201.4	-278.7	733.9	714.0	19.90	36.875	
5,500.0	5,475.0	5,449.7	5,440.7	13.1	10.9	-156.03	205.4	-283.0	747.6	727.3	20.28	36.869	
5,600.0	5,574.4	5,548.8	5,539.6	13.3	11.1	-156.04	209.4	-287.4	761.2	740.6	20.65	36.862	
5,700.0	5,673.9	5,647.8	5,638.5	13.6	11.3	-156.05	213.4	-291.8	774.9	753.8	21.02	36.856	
5,800.0	5,773.4	5,746.9	5,737.4	13.8	11.5	-156.05	217.4	-296.2	788.5	767.1	21.40	36.850	
5,900.0	5,872.9	5,846.0	5,836.2	14.1	11.7	-156.06	221.4	-300.5	802.2	780.4	21.77	36.844	
6,000.0	5,972.4	5,945.0	5,935.1	14.3	11.9	-156.06	225.4	-304.9	815.8	793.7	22.15	36.839	
6,100.0	6,071.9	6,044.1	6,034.0	14.6	12.1	-156.07	229.4	-309.3	829.4	806.9	22.52	36.833	
6,200.0	6,171.4	6,143.2	6,132.9	14.8	12.3	-156.07	233.4	-313.7	843.1	820.2	22.89	36.828	
6,300.0	6,270.9	6,242.2	6,231.8	15.1	12.5	-156.08	237.5	-318.1	856.7	833.5	23.27	36.823	
6,400.0	6,370.4	6,341.3	6,330.7	15.3	12.7	-156.08	241.5	-322.4	870.4	846.7	23.64	36.818	
6,500.0	6,469.9	6,440.4	6,429.6	15.6	12.9	-156.09	245.5	-326.8	884.0	860.0	24.01	36.813	
6,600.0	6,569.4	6,539.4	6,528.5	15.8	13.1	-156.09	249.5	-331.2	897.7	873.3	24.39	36.808	
6,700.0	6,668.8	6,638.5	6,627.2	16.1	13.2	-156.58	245.9	-335.6	911.3	886.6	24.67	36.934	
6,749.1	6,717.7	6,685.5	6,673.6	16.2	13.3	-157.17	238.3	-337.6	918.1	893.3	24.77	37.071	
6,800.0	6,768.4	6,733.0	6,719.6	16.3	13.3	150.44	226.8	-339.6	925.3	900.5	24.79	37.321	
6,850.0	6,817.9	6,778.8	6,762.9	16.4	13.3	121.20	212.1	-341.6	932.4	907.6	24.79	37.613	
6,900.0	6,866.9	6,823.8	6,804.2	16.4	13.3	108.21	194.3	-343.4	939.6	914.9	24.77	37.934	
6,950.0	6,914.9	6,868.2	6,843.4	16.5	13.3	101.08	173.6	-345.1	946.8	922.0	24.74	38.266	
7,000.0	6,961.6	6,912.0	6,880.5	16.5	13.3	96.43	150.3	-346.8	953.8	929.1	24.72	38.591	
7,050.0	7,006.6	6,955.2	6,915.2	16.5	13.3	93.05	124.6	-348.3	960.7	936.0	24.70	38.894	
7,100.0	7,049.5	7,000.0	6,949.0	16.6	13.3	90.40	95.3	-349.8	967.3	942.6	24.70	39.156	
7,150.0	7,090.2	7,040.4	6,977.4	16.6	13.3	88.29	66.7	-351.1	973.6	948.9	24.74	39.354	
7,200.0	7,128.1	7,082.3	7,004.8	16.7	13.3	86.52	34.9	-352.3	979.6	954.8	24.81	39.484	
7,250.0	7,163.1	7,124.0	7,029.6	16.7	13.4	85.03	1.4	-353.4	985.1	960.1	24.95	39.485	
7,300.0	7,194.9	7,165.4	7,051.7	16.8	13.5	83.77	-33.5	-354.3	990.1	965.0	25.11	39.433	
7,350.0	7,223.2	7,206.5	7,071.2	16.9	13.7	82.71	-69.7	-355.2	994.6	969.3	25.34	39.253	
7,400.0	7,247.9	7,250.0	7,088.8	17.0	13.8	81.82	-109.4	-356.0	998.5	972.9	25.64	38.938	
7,450.0	7,268.7	7,288.2	7,101.9	17.2	14.0	81.11	-145.4	-356.6	1,001.8	975.8	26.01	38.515	
7,500.0	7,285.5	7,328.9	7,113.1	17.4	14.2	80.55	-184.4	-357.1	1,004.5	978.0	26.46	37.964	
7,550.0	7,298.1	7,369.4	7,121.4	17.7	14.5	80.13	-224.1	-357.4	1,006.5	979.5	26.98	37.304	
7,600.0	7,306.5	7,409.9	7,127.0	17.9	14.8	79.86	-264.1	-357.7	1,007.9	980.3	27.58	36.548	
7,650.0	7,310.6	7,450.0	7,129.7	18.3	15.1	79.73	-304.2	-357.8	1,008.5	980.3	28.24	35.713	
7,672.0	7,311.0	7,468.6	7,130.0	18.4	15.3	79.72	-322.8	-357.8	1,008.6	980.0	28.56	35.312	
7,676.0	7,311.0	7,471.9	7,130.0	18.4	15.3	79.72	-326.1	-357.8	1,008.6	980.0	28.63	35.231	
7,700.0	7,311.0	7,495.9	7,130.0	18.6	15.5	79.72	-350.1	-357.8	1,008.6	979.5	29.06	34.708	
7,800.0	7,311.0	7,595.9	7,130.0	19.4	16.4	79.72	-450.1	-357.8	1,008.6	977.5	31.03	32.500	
7,900.0	7,311.0	7,695.9	7,130.0	20.3	17.5	79.72	-550.1	-357.8	1,008.6	975.3	33.25	30.335	
8,000.0	7,311.0	7,795.9	7,130.0	21.4	18.7	79.72	-650.1	-357.8	1,008.6	972.9	35.66	28.283	
8,100.0	7,311.0	7,895.9	7,130.0	22.5	20.0	79.72	-750.1	-357.8	1,008.6	970.3	38.23	26.380	
8,200.0	7,311.0	7,995.9	7,130.0	23.7	21.3	79.72	-850.1	-357.8	1,008.6	967.6	40.93	24.639	
8,300.0	7,311.0	8,095.9	7,130.0	24.9	22.7	79.72	-950.1	-357.8	1,008.6	964.8	43.74	23.058	
8,400.0	7,311.0	8,195.9	7,130.0	26.2	24.1	79.72	-1,050.1	-357.8	1,008.6	961.9	46.64	21.627	
8,500.0	7,311.0	8,295.9	7,130.0	27.6	25.6	79.72	-1,150.1	-357.8	1,008.6	959.0	49.60	20.334	
8,600.0	7,311.0	8,395.9	7,130.0	29.0	27.1	79.72	-1,250.1	-357.8	1,008.6	956.0	52.63	19.165	
8,700.0	7,311.0	8,495.9	7,130.0	30.5	28.6	79.72	-1,350.1	-357.8	1,008.6	952.9	55.70	18.107	
8,800.0	7,311.0	8,595.9	7,130.0	31.9	30.2	79.72	-1,450.1	-357.8	1,008.6	949.8	58.82	17.147	
8,900.0	7,311.0	8,695.9	7,130.0	33.4	31.8	79.72	-1,550.1	-357.8	1,008.6	946.6	61.97	16.275	
9,000.0	7,311.0	8,795.9	7,130.0	35.0	33.4	79.72	-1,650.1	-357.8	1,008.6	943.4	65.15	15.480	

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



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - Vogl-McCoy 2A-5H-E267 - 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							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
9,100.0	7,311.0	8,895.9	7,130.0	36.5	35.0	79.72	-1,750.1	-357.8	1,008.6	940.2	68.36	14.754	
9,200.0	7,311.0	8,995.9	7,130.0	38.1	36.6	79.72	-1,850.1	-357.8	1,008.6	937.0	71.59	14.088	
9,300.0	7,311.0	9,095.9	7,130.0	39.7	38.3	79.72	-1,950.1	-357.8	1,008.6	933.7	74.85	13.476	
9,400.0	7,311.0	9,195.9	7,130.0	41.2	39.9	79.72	-2,050.1	-357.8	1,008.6	930.5	78.11	12.912	
9,500.0	7,311.0	9,295.9	7,130.0	42.9	41.6	79.72	-2,150.1	-357.8	1,008.6	927.2	81.40	12.391	
9,600.0	7,311.0	9,395.9	7,130.0	44.5	43.2	79.72	-2,250.1	-357.8	1,008.6	923.9	84.69	11.908	
9,700.0	7,311.0	9,495.9	7,130.0	46.1	44.9	79.72	-2,350.1	-357.8	1,008.6	920.6	88.00	11.461	
9,800.0	7,311.0	9,595.9	7,130.0	47.7	46.6	79.72	-2,450.1	-357.8	1,008.6	917.3	91.32	11.044	
9,900.0	7,311.0	9,695.9	7,130.0	49.4	48.3	79.72	-2,550.1	-357.8	1,008.6	913.9	94.65	10.656	
10,000.0	7,311.0	9,795.9	7,130.0	51.0	50.0	79.72	-2,650.1	-357.8	1,008.6	910.6	97.99	10.293	
10,100.0	7,311.0	9,895.9	7,130.0	52.7	51.6	79.72	-2,750.1	-357.8	1,008.6	907.2	101.34	9.953	
10,200.0	7,311.0	9,995.9	7,130.0	54.4	53.3	79.72	-2,850.1	-357.8	1,008.6	903.9	104.69	9.634	
10,300.0	7,311.0	10,095.9	7,130.0	56.0	55.0	79.72	-2,950.1	-357.8	1,008.6	900.5	108.05	9.335	
10,400.0	7,311.0	10,195.9	7,130.0	57.7	56.7	79.72	-3,050.1	-357.8	1,008.6	897.2	111.41	9.053	
10,500.0	7,311.0	10,295.9	7,130.0	59.4	58.5	79.72	-3,150.1	-357.8	1,008.6	893.8	114.78	8.787	
10,600.0	7,311.0	10,395.9	7,130.0	61.1	60.2	79.72	-3,250.1	-357.8	1,008.6	890.4	118.16	8.536	
10,700.0	7,311.0	10,495.9	7,130.0	62.8	61.9	79.72	-3,350.1	-357.8	1,008.6	887.1	121.53	8.299	
10,800.0	7,311.0	10,595.9	7,130.0	64.4	63.6	79.72	-3,450.1	-357.8	1,008.6	883.7	124.92	8.074	
10,900.0	7,311.0	10,695.9	7,130.0	66.1	65.3	79.72	-3,550.1	-357.8	1,008.6	880.3	128.30	7.861	
11,000.0	7,311.0	10,795.9	7,130.0	67.8	67.0	79.72	-3,650.1	-357.8	1,008.6	876.9	131.69	7.659	
11,100.0	7,311.0	10,895.9	7,130.0	69.5	68.7	79.72	-3,750.1	-357.8	1,008.6	873.5	135.09	7.466	
11,200.0	7,311.0	10,995.9	7,130.0	71.2	70.5	79.72	-3,850.1	-357.8	1,008.6	870.1	138.48	7.283	
11,300.0	7,311.0	11,095.9	7,130.0	72.9	72.2	79.72	-3,950.1	-357.8	1,008.6	866.7	141.88	7.109	
11,400.0	7,311.0	11,195.9	7,130.0	74.7	73.9	79.72	-4,050.1	-357.8	1,008.6	863.3	145.28	6.942	
11,500.0	7,311.0	11,295.9	7,130.0	76.4	75.6	79.72	-4,150.1	-357.8	1,008.6	859.9	148.69	6.783	
11,600.0	7,311.0	11,395.9	7,130.0	78.1	77.4	79.72	-4,250.1	-357.8	1,008.6	856.5	152.09	6.631	
11,700.0	7,311.0	11,495.9	7,130.0	79.8	79.1	79.72	-4,350.1	-357.8	1,008.6	853.1	155.50	6.486	
11,800.0	7,311.0	11,595.9	7,130.0	81.5	80.8	79.72	-4,450.1	-357.8	1,008.6	849.7	158.91	6.347	
11,900.0	7,311.0	11,695.9	7,130.0	83.2	82.5	79.72	-4,550.1	-357.8	1,008.6	846.3	162.32	6.213	
12,000.0	7,311.0	11,795.9	7,130.0	84.9	84.3	79.72	-4,650.1	-357.8	1,008.6	842.9	165.74	6.086	
12,100.0	7,311.0	11,895.9	7,130.0	86.7	86.0	79.72	-4,750.1	-357.8	1,008.6	839.4	169.15	5.963	
12,200.0	7,311.0	11,995.9	7,130.0	88.4	87.7	79.72	-4,850.1	-357.8	1,008.6	836.0	172.57	5.845	
12,300.0	7,311.0	12,095.9	7,130.0	90.1	89.5	79.72	-4,950.1	-357.8	1,008.6	832.6	175.98	5.731	
12,400.0	7,311.0	12,195.9	7,130.0	91.8	91.2	79.72	-5,050.1	-357.8	1,008.6	829.2	179.40	5.622	
12,500.0	7,311.0	12,295.9	7,130.0	93.6	93.0	79.72	-5,150.1	-357.8	1,008.6	825.8	182.82	5.517	
12,600.0	7,311.0	12,395.9	7,130.0	95.3	94.7	79.72	-5,250.1	-357.8	1,008.6	822.3	186.25	5.415	
12,700.0	7,311.0	12,495.9	7,130.0	97.0	96.4	79.72	-5,350.1	-357.8	1,008.6	818.9	189.67	5.318	
12,800.0	7,311.0	12,595.9	7,130.0	98.7	98.2	79.72	-5,450.1	-357.8	1,008.6	815.5	193.09	5.223	
12,900.0	7,311.0	12,695.9	7,130.0	100.5	99.9	79.72	-5,550.1	-357.8	1,008.6	812.1	196.52	5.132	
13,000.0	7,311.0	12,795.9	7,130.0	102.2	101.6	79.72	-5,650.1	-357.8	1,008.6	808.6	199.94	5.044	
13,100.0	7,311.0	12,895.9	7,130.0	103.9	103.4	79.72	-5,750.1	-357.8	1,008.6	805.2	203.37	4.959	
13,200.0	7,311.0	12,995.9	7,130.0	105.7	105.1	79.72	-5,850.1	-357.8	1,008.6	801.8	206.80	4.877	
13,300.0	7,311.0	13,095.9	7,130.0	107.4	106.9	79.72	-5,950.1	-357.8	1,008.6	798.4	210.23	4.798	
13,400.0	7,311.0	13,195.9	7,130.0	109.1	108.6	79.72	-6,050.1	-357.8	1,008.6	794.9	213.65	4.721	
13,500.0	7,311.0	13,295.9	7,130.0	110.8	110.3	79.72	-6,150.1	-357.8	1,008.6	791.5	217.08	4.646	
13,600.0	7,311.0	13,395.9	7,130.0	112.6	112.1	79.72	-6,250.1	-357.8	1,008.6	788.1	220.52	4.574	
13,700.0	7,311.0	13,495.9	7,130.0	114.3	113.8	79.72	-6,350.1	-357.8	1,008.6	784.6	223.95	4.504	
13,800.0	7,311.0	13,595.9	7,130.0	116.1	115.6	79.72	-6,450.1	-357.8	1,008.6	781.2	227.38	4.436	
13,900.0	7,311.0	13,695.9	7,130.0	117.8	117.3	79.72	-6,550.1	-357.8	1,008.6	777.8	230.81	4.370	
14,000.0	7,311.0	13,795.9	7,130.0	119.5	119.0	79.72	-6,650.1	-357.8	1,008.6	774.4	234.24	4.306	
14,100.0	7,311.0	13,895.9	7,130.0	121.3	120.8	79.72	-6,750.1	-357.8	1,008.6	770.9	237.68	4.244	
14,200.0	7,311.0	13,995.9	7,130.0	123.0	122.5	79.72	-6,850.1	-357.8	1,008.6	767.5	241.11	4.183	

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



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - Vogl-McCoy 2A-5H-E267 - 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		
14,300.0	7,311.0	14,095.9	7,130.0	124.7	124.3	79.72	-6,950.1	-357.8	1,008.6	764.0	244.55	4.124		
14,400.0	7,311.0	14,195.9	7,130.0	126.5	126.0	79.72	-7,050.1	-357.8	1,008.6	760.6	247.98	4.067		
14,500.0	7,311.0	14,295.9	7,130.0	128.2	127.8	79.72	-7,150.1	-357.8	1,008.6	757.2	251.42	4.012		
14,600.0	7,311.0	14,395.9	7,130.0	130.0	129.5	79.72	-7,250.1	-357.8	1,008.6	753.7	254.85	3.958		
14,700.0	7,311.0	14,495.9	7,130.0	131.7	131.3	79.72	-7,350.1	-357.8	1,008.6	750.3	258.29	3.905		
14,800.0	7,311.0	14,595.9	7,130.0	133.4	133.0	79.72	-7,450.1	-357.8	1,008.6	746.9	261.73	3.854		
14,900.0	7,311.0	14,695.9	7,130.0	135.2	134.7	79.72	-7,550.1	-357.8	1,008.6	743.4	265.16	3.804		
15,000.0	7,311.0	14,795.9	7,130.0	136.9	136.5	79.72	-7,650.1	-357.8	1,008.6	740.0	268.60	3.755		
15,109.0	7,311.0	14,905.0	7,130.0	138.8	138.4	79.72	-7,759.1	-357.8	1,008.6	736.2	272.35	3.703 SF		



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - Vogl-McCoy 2B-5H-E267 - Hz - Plan #3														Offset Site Error:	0.0 ft
Survey Program: 0-MWD														Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Factor			
0.0	0.0	0.0	0.0	0.0	0.0	-89.95	0.0	-39.1	39.1						
100.0	100.0	99.0	99.0	0.1	0.1	-89.95	0.0	-39.1	39.1	38.9	0.24	160.925			
200.0	200.0	199.0	199.0	0.3	0.3	-89.95	0.0	-39.1	39.1	38.5	0.59	66.126 CC, ES			
300.0	300.0	299.0	299.0	0.5	0.5	-157.07	0.0	-39.1	39.9	39.0	0.94	42.439			
400.0	400.0	399.0	399.0	0.7	0.6	-158.45	0.0	-39.1	42.4	41.1	1.29	32.824			
500.0	499.9	498.9	498.9	0.8	0.8	-160.41	0.0	-39.1	46.4	44.8	1.64	28.315			
600.0	599.7	598.7	598.7	1.0	1.0	-162.64	0.0	-39.1	52.2	50.2	1.99	26.252			
700.0	699.4	698.4	698.4	1.3	1.2	-164.86	0.0	-39.1	59.8	57.4	2.34	25.560			
778.7	777.7	776.7	776.7	1.4	1.3	-166.50	0.0	-39.1	66.9	64.3	2.61	25.628			
800.0	798.9	797.9	797.9	1.5	1.3	-166.92	0.0	-39.1	69.0	66.3	2.69	25.697			
900.0	898.4	897.4	897.4	1.7	1.5	-168.57	0.0	-39.1	78.9	75.8	3.03	25.992			
1,000.0	997.9	996.9	996.9	2.0	1.7	-169.86	0.0	-39.1	88.8	85.4	3.38	26.244			
1,100.0	1,097.4	1,096.4	1,096.4	2.2	1.9	-170.89	0.0	-39.1	98.7	95.0	3.73	26.461			
1,200.0	1,196.9	1,195.9	1,195.9	2.4	2.0	-171.73	0.0	-39.1	108.7	104.6	4.08	26.648			
1,300.0	1,296.4	1,295.4	1,295.4	2.7	2.2	-172.43	0.0	-39.1	118.7	114.3	4.43	26.811			
1,400.0	1,395.9	1,394.9	1,394.9	2.9	2.4	-173.02	0.0	-39.1	128.7	123.9	4.77	26.953			
1,500.0	1,495.3	1,494.3	1,494.3	3.2	2.6	-173.53	0.0	-39.1	138.7	133.6	5.12	27.079			
1,600.0	1,594.8	1,593.8	1,593.8	3.4	2.7	-173.97	0.0	-39.1	148.7	143.3	5.47	27.190			
1,700.0	1,694.3	1,693.3	1,693.3	3.7	2.9	-174.35	0.0	-39.1	158.8	152.9	5.82	27.290			
1,800.0	1,793.8	1,792.8	1,792.8	3.9	3.1	-174.69	0.0	-39.1	168.8	162.6	6.16	27.379			
1,900.0	1,893.3	1,892.3	1,892.3	4.2	3.3	-174.99	0.0	-39.1	178.8	172.3	6.51	27.460			
2,000.0	1,992.8	1,991.8	1,991.8	4.4	3.4	-175.25	0.0	-39.1	188.9	182.0	6.86	27.533			
2,100.0	2,092.3	2,091.3	2,091.3	4.7	3.6	-175.49	0.0	-39.1	198.9	191.7	7.21	27.599			
2,200.0	2,191.8	2,190.8	2,190.8	4.9	3.8	-175.71	0.0	-39.1	209.0	201.4	7.56	27.660			
2,300.0	2,291.3	2,290.3	2,290.3	5.1	3.9	-175.91	0.0	-39.1	219.0	211.1	7.90	27.716			
2,400.0	2,390.8	2,389.8	2,389.8	5.4	4.1	-176.09	0.0	-39.1	229.1	220.8	8.25	27.767			
2,500.0	2,490.2	2,489.2	2,489.2	5.6	4.3	-176.25	0.0	-39.1	239.2	230.6	8.60	27.815			
2,600.0	2,589.7	2,588.7	2,588.7	5.9	4.5	-176.40	0.0	-39.1	249.2	240.3	8.95	27.859			
2,700.0	2,689.2	2,688.2	2,688.2	6.1	4.6	-176.54	0.0	-39.1	259.3	250.0	9.29	27.899			
2,800.0	2,788.7	2,787.7	2,787.7	6.4	4.8	-176.67	0.0	-39.1	269.3	259.7	9.64	27.937			
2,900.0	2,888.2	2,887.2	2,887.2	6.6	5.0	-176.79	0.0	-39.1	279.4	269.4	9.99	27.973			
3,000.0	2,987.7	2,986.7	2,986.7	6.9	5.2	-176.90	0.0	-39.1	289.5	279.1	10.34	28.006			
3,100.0	3,087.2	3,086.2	3,086.2	7.1	5.3	-177.01	0.0	-39.1	299.6	288.9	10.68	28.037			
3,200.0	3,186.7	3,185.7	3,185.7	7.4	5.5	-177.11	0.0	-39.1	309.6	298.6	11.03	28.066			
3,300.0	3,286.2	3,285.2	3,285.2	7.6	5.7	-177.20	0.0	-39.1	319.7	308.3	11.38	28.093			
3,400.0	3,385.7	3,384.7	3,384.7	7.9	5.9	-177.28	0.0	-39.1	329.8	318.0	11.73	28.119			
3,500.0	3,485.1	3,484.1	3,484.1	8.1	6.0	-177.36	0.0	-39.1	339.8	327.8	12.08	28.144			
3,600.0	3,584.6	3,583.6	3,583.6	8.4	6.2	-177.44	0.0	-39.1	349.9	337.5	12.42	28.167			
3,700.0	3,684.1	3,683.1	3,683.1	8.6	6.4	-177.51	0.0	-39.1	360.0	347.2	12.77	28.189			
3,800.0	3,783.6	3,782.6	3,782.6	8.9	6.5	-177.58	0.0	-39.1	370.1	356.9	13.12	28.209			
3,900.0	3,883.1	3,882.1	3,882.1	9.1	6.7	-177.64	0.0	-39.1	380.1	366.7	13.47	28.229			
4,000.0	3,982.6	3,981.6	3,981.6	9.4	6.9	-177.70	0.0	-39.1	390.2	376.4	13.81	28.248			
4,100.0	4,082.1	4,081.6	4,081.6	9.6	7.1	-177.76	1.1	-39.1	399.9	385.8	14.17	28.227			
4,200.0	4,181.6	4,180.4	4,180.4	9.9	7.3	-177.82	5.4	-39.2	408.6	394.1	14.53	28.128			
4,300.0	4,281.1	4,280.2	4,280.2	10.1	7.4	-177.87	12.9	-39.4	416.3	401.5	14.89	27.956			
4,400.0	4,380.6	4,379.6	4,379.6	10.3	7.6	-177.92	22.4	-39.6	423.5	408.2	15.26	27.749			
4,500.0	4,480.1	4,479.0	4,479.0	10.6	7.8	-177.97	32.0	-39.7	430.7	415.1	15.63	27.553			
4,600.0	4,579.5	4,578.4	4,578.4	10.8	8.0	-178.02	41.6	-39.9	438.1	422.1	16.01	27.366			
4,700.0	4,679.0	4,677.8	4,677.8	11.1	8.2	-178.07	51.2	-40.1	445.7	429.3	16.39	27.189			
4,800.0	4,778.5	4,777.2	4,777.2	11.3	8.4	-178.12	60.8	-40.3	453.3	436.6	16.78	27.019			
4,900.0	4,878.0	4,876.6	4,876.6	11.6	8.6	-178.17	70.4	-40.5	461.2	444.0	17.17	26.858			
5,000.0	4,977.5	4,976.0	4,976.0	11.8	8.8	-178.22	80.0	-40.7	469.1	451.5	17.57	26.705			

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



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - Vogl-McCoy 2B-5H-E267 - Hz - Plan #3												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis		
5,100.0	5,077.0	5,088.4	5,084.3	12.1	9.0	-168.05	89.6	-40.8	477.2	459.2	17.97	26.558	
5,200.0	5,176.5	5,187.8	5,183.3	12.3	9.2	-167.18	99.2	-41.0	485.4	467.0	18.37	26.419	
5,300.0	5,276.0	5,287.2	5,282.2	12.6	9.4	-166.34	108.8	-41.2	493.7	474.9	18.78	26.286	
5,400.0	5,375.5	5,386.6	5,381.1	12.8	9.6	-165.52	118.4	-41.4	502.1	482.9	19.19	26.159	
5,500.0	5,475.0	5,486.0	5,480.0	13.1	9.8	-164.73	128.0	-41.6	510.6	490.9	19.61	26.039	
5,600.0	5,574.4	5,585.4	5,579.0	13.3	10.0	-163.97	137.6	-41.8	519.1	499.1	20.03	25.924	
5,700.0	5,673.9	5,684.8	5,677.9	13.6	10.2	-163.23	147.2	-41.9	527.8	507.4	20.45	25.815	
5,800.0	5,773.4	5,784.2	5,776.8	13.8	10.4	-162.51	156.8	-42.1	536.6	515.7	20.87	25.711	
5,900.0	5,872.9	5,883.6	5,875.8	14.1	10.6	-161.82	166.4	-42.3	545.4	524.1	21.30	25.612	
6,000.0	5,972.4	5,983.0	5,974.7	14.3	10.9	-161.15	175.9	-42.5	554.3	532.6	21.72	25.517	
6,100.0	6,071.9	6,082.4	6,073.6	14.6	11.1	-160.50	185.5	-42.7	563.3	541.2	22.15	25.428	
6,200.0	6,171.4	6,181.7	6,172.6	14.8	11.3	-159.88	195.1	-42.9	572.4	549.8	22.59	25.342	
6,300.0	6,270.9	6,281.1	6,271.5	15.1	11.5	-159.27	204.7	-43.0	581.5	558.5	23.02	25.261	
6,400.0	6,370.4	6,380.5	6,370.4	15.3	11.7	-158.68	214.3	-43.2	590.7	567.3	23.46	25.184	
6,500.0	6,469.9	6,479.9	6,469.3	15.6	11.9	-158.10	223.9	-43.4	600.0	576.1	23.89	25.110	
6,600.0	6,569.4	6,579.3	6,568.3	15.8	12.2	-157.55	233.5	-43.6	609.3	584.9	24.33	25.040	
6,700.0	6,668.8	6,678.7	6,667.2	16.1	12.4	-157.01	243.1	-43.8	618.6	593.9	24.77	24.973	
6,749.1	6,717.7	6,727.0	6,715.4	16.2	12.5	-156.84	246.8	-43.9	623.3	598.3	24.97	24.965	
6,800.0	6,768.4	6,776.9	6,765.2	16.3	12.5	-156.72	246.6	-44.0	628.1	603.1	25.07	25.052	
6,850.0	6,817.9	6,825.9	6,814.0	16.4	12.6	-156.60	242.2	-44.2	632.9	607.8	25.13	25.183	
6,900.0	6,866.9	6,874.9	6,862.3	16.4	12.6	-156.50	233.7	-44.4	637.7	612.5	25.15	25.350	
6,950.0	6,914.9	6,924.0	6,909.6	16.5	12.6	-156.40	221.0	-44.6	642.4	617.2	25.15	25.545	
7,000.0	6,961.6	6,973.1	6,955.8	16.5	12.6	-156.30	204.3	-44.9	647.0	621.9	25.12	25.755	
7,050.0	7,006.6	7,022.2	7,000.4	16.5	12.6	-156.20	183.7	-45.2	651.5	626.4	25.09	25.966	
7,100.0	7,049.5	7,071.4	7,043.1	16.6	12.6	-156.10	159.4	-45.5	655.8	630.7	25.07	26.164	
7,150.0	7,090.2	7,120.6	7,083.6	16.6	12.6	-156.00	131.4	-45.9	659.9	634.9	25.06	26.331	
7,200.0	7,128.1	7,170.0	7,121.6	16.7	12.6	-155.90	100.0	-46.3	663.8	638.7	25.10	26.451	
7,250.0	7,163.1	7,219.4	7,156.9	16.7	12.6	-155.80	65.3	-46.7	667.5	642.3	25.18	26.507	
7,300.0	7,194.9	7,268.9	7,189.0	16.8	12.6	-155.70	27.8	-47.1	670.9	645.5	25.33	26.485	
7,350.0	7,223.2	7,318.5	7,217.9	16.9	12.7	-155.60	-12.6	-47.5	673.9	648.4	25.55	26.372	
7,400.0	7,247.9	7,368.2	7,243.2	17.0	12.9	-155.50	-55.3	-47.9	676.7	650.8	25.86	26.163	
7,450.0	7,268.7	7,418.0	7,264.8	17.2	13.1	-155.40	-100.2	-48.4	679.1	652.8	26.26	25.854	
7,500.0	7,285.5	7,467.9	7,282.4	17.4	13.3	-155.30	-146.8	-48.8	681.1	654.3	26.76	25.450	
7,550.0	7,298.1	7,517.8	7,295.9	17.7	13.6	-155.20	-194.9	-49.3	682.7	655.4	27.35	24.960	
7,600.0	7,306.5	7,567.9	7,305.2	17.9	14.0	-155.10	-244.1	-49.8	683.9	655.9	28.03	24.397	
7,650.0	7,310.6	7,618.1	7,310.1	18.3	14.4	-155.00	-294.0	-50.2	684.8	656.0	28.80	23.776	
7,672.0	7,311.0	7,640.2	7,310.9	18.4	14.5	-154.90	-316.1	-50.4	685.0	655.8	29.16	23.489	
7,700.0	7,311.0	7,668.2	7,311.0	18.6	14.8	-154.80	-344.1	-50.6	685.2	655.6	29.67	23.099	
7,800.0	7,311.0	7,768.2	7,311.0	19.4	15.8	-154.70	-444.1	-51.5	686.1	654.5	31.65	21.677	
7,900.0	7,311.0	7,868.2	7,311.0	20.3	16.9	-154.60	-544.1	-52.4	687.0	653.1	33.87	20.280	
8,000.0	7,311.0	7,968.2	7,311.0	21.4	18.1	-154.50	-644.1	-53.3	687.9	651.6	36.30	18.949	
8,100.0	7,311.0	8,068.2	7,311.0	22.5	19.4	-154.40	-744.1	-54.1	688.7	649.8	38.89	17.708	
8,200.0	7,311.0	8,168.2	7,311.0	23.7	20.8	-154.30	-844.1	-55.0	689.6	648.0	41.62	16.569	
8,300.0	7,311.0	8,268.2	7,311.0	24.9	22.2	-154.20	-944.1	-55.9	690.5	646.0	44.46	15.532	
8,400.0	7,311.0	8,368.2	7,311.0	26.2	23.6	-154.10	-1,044.1	-56.8	691.4	644.0	47.38	14.591	
8,500.0	7,311.0	8,468.2	7,311.0	27.6	25.1	-154.00	-1,144.1	-57.6	692.2	641.8	50.38	13.739	
8,600.0	7,311.0	8,568.2	7,311.0	29.0	26.7	-153.90	-1,244.1	-58.5	693.1	639.7	53.45	12.968	
8,700.0	7,311.0	8,668.2	7,311.0	30.5	28.2	-153.80	-1,344.1	-59.4	694.0	637.4	56.56	12.269	
8,800.0	7,311.0	8,768.2	7,311.0	31.9	29.8	-153.70	-1,444.0	-60.2	694.8	635.1	59.72	11.635	
8,900.0	7,311.0	8,868.2	7,311.0	33.4	31.4	-153.60	-1,544.0	-61.1	695.7	632.8	62.92	11.058	
9,000.0	7,311.0	8,968.2	7,311.0	35.0	33.0	-153.50	-1,644.0	-62.0	696.6	630.5	66.14	10.532	
9,100.0	7,311.0	9,068.2	7,311.0	36.5	34.6	-153.40	-1,744.0	-62.9	697.5	628.1	69.40	10.050	

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



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - Vogl-McCoy 2B-5H-E267 - Hz - Plan #3												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance							
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
9,200.0	7,311.0	9,168.2	7,311.0	38.1	36.3	90.08	-1,844.0	-63.7	698.3	625.7	72.67	9.609	
9,300.0	7,311.0	9,268.2	7,311.0	39.7	37.9	90.08	-1,944.0	-64.6	699.2	623.2	75.97	9.203	
9,400.0	7,311.0	9,368.1	7,311.0	41.2	39.6	90.08	-2,044.0	-65.5	700.1	620.8	79.29	8.829	
9,500.0	7,311.0	9,468.1	7,311.0	42.9	41.2	90.08	-2,144.0	-66.4	701.0	618.3	82.62	8.484	
9,600.0	7,311.0	9,568.1	7,311.0	44.5	42.9	90.08	-2,244.0	-67.2	701.8	615.9	85.97	8.164	
9,700.0	7,311.0	9,668.1	7,311.0	46.1	44.6	90.08	-2,344.0	-68.1	702.7	613.4	89.33	7.867	
9,800.0	7,311.0	9,768.1	7,311.0	47.7	46.3	90.08	-2,444.0	-69.0	703.6	610.9	92.70	7.590	
9,900.0	7,311.0	9,868.1	7,311.0	49.4	48.0	90.08	-2,544.0	-69.8	704.5	608.4	96.08	7.332	
10,000.0	7,311.0	9,968.1	7,311.0	51.0	49.7	90.08	-2,644.0	-70.7	705.3	605.9	99.47	7.091	
10,100.0	7,311.0	10,068.1	7,311.0	52.7	51.4	90.08	-2,743.9	-71.6	706.2	603.3	102.86	6.865	
10,200.0	7,311.0	10,168.1	7,311.0	54.4	53.1	90.08	-2,843.9	-72.5	707.1	600.8	106.27	6.654	
10,300.0	7,311.0	10,268.1	7,311.0	56.0	54.8	90.08	-2,943.9	-73.3	707.9	598.3	109.68	6.455	
10,400.0	7,311.0	10,368.1	7,311.0	57.7	56.5	90.08	-3,043.9	-74.2	708.8	595.7	113.09	6.268	
10,500.0	7,311.0	10,468.1	7,311.0	59.4	58.2	90.08	-3,143.9	-75.1	709.7	593.2	116.51	6.091	
10,600.0	7,311.0	10,568.1	7,311.0	61.1	59.9	90.08	-3,243.9	-76.0	710.6	590.6	119.94	5.924	
10,700.0	7,311.0	10,668.1	7,311.0	62.8	61.6	90.08	-3,343.9	-76.8	711.4	588.1	123.37	5.767	
10,800.0	7,311.0	10,768.1	7,311.0	64.4	63.3	90.08	-3,443.9	-77.7	712.3	585.5	126.81	5.617	
10,900.0	7,311.0	10,868.1	7,311.0	66.1	65.1	90.08	-3,543.9	-78.6	713.2	582.9	130.25	5.476	
11,000.0	7,311.0	10,968.1	7,311.0	67.8	66.8	90.08	-3,643.9	-79.4	714.1	580.4	133.69	5.341	
11,100.0	7,311.0	11,068.1	7,311.0	69.5	68.5	90.08	-3,743.9	-80.3	714.9	577.8	137.14	5.213	
11,200.0	7,311.0	11,168.1	7,311.0	71.2	70.5	90.08	-3,843.9	-81.2	715.8	575.0	140.63	5.076	
11,300.0	7,311.0	11,268.1	7,311.0	72.9	72.2	90.08	-3,943.9	-82.1	716.7	572.2	144.17	4.944	
11,400.0	7,311.0	11,368.1	7,311.0	74.7	74.0	90.08	-4,043.9	-83.0	717.6	569.4	147.77	4.820	
11,500.0	7,311.0	11,468.1	7,311.0	76.4	75.7	90.08	-4,143.9	-83.9	718.5	566.6	151.42	4.701	
11,600.0	7,311.0	11,568.1	7,311.0	78.1	77.4	90.08	-4,243.9	-84.8	719.4	563.8	155.12	4.587	
11,700.0	7,311.0	11,668.1	7,311.0	79.8	79.1	90.08	-4,343.9	-85.7	720.3	561.0	158.87	4.478	
11,800.0	7,311.0	11,768.1	7,311.0	81.5	80.9	90.08	-4,443.9	-86.6	721.2	558.2	162.67	4.374	
11,900.0	7,311.0	11,868.1	7,311.0	83.2	82.6	90.08	-4,543.9	-87.5	722.1	555.4	166.52	4.274	
12,000.0	7,311.0	11,968.1	7,311.0	84.9	84.3	90.08	-4,643.9	-88.4	723.0	552.6	170.42	4.178	
12,100.0	7,311.0	12,068.1	7,311.0	86.7	86.1	90.08	-4,743.9	-89.3	723.9	549.8	174.37	4.086	
12,200.0	7,311.0	12,168.1	7,311.0	88.4	87.8	90.08	-4,843.9	-90.2	724.8	547.0	178.37	3.997	
12,300.0	7,311.0	12,268.1	7,311.0	90.1	89.5	90.08	-4,943.9	-91.1	725.7	544.2	182.42	3.912	
12,400.0	7,311.0	12,368.1	7,311.0	91.8	91.3	90.08	-5,043.9	-92.0	726.6	541.4	186.52	3.830	
12,500.0	7,311.0	12,468.1	7,311.0	93.6	93.0	90.08	-5,143.9	-92.9	727.5	538.6	190.67	3.752	
12,600.0	7,311.0	12,568.1	7,311.0	95.3	94.8	90.08	-5,243.9	-93.8	728.4	535.8	194.87	3.676	
12,700.0	7,311.0	12,668.1	7,311.0	97.0	96.5	90.08	-5,343.9	-94.7	729.3	533.0	199.12	3.603	
12,800.0	7,311.0	12,768.1	7,311.0	98.7	98.2	90.08	-5,443.9	-95.6	730.2	530.2	203.42	3.532	
12,900.0	7,311.0	12,868.1	7,311.0	100.5	100.0	90.08	-5,543.9	-96.5	731.1	527.4	207.77	3.464	
13,000.0	7,311.0	12,968.1	7,311.0	102.2	101.7	90.08	-5,643.9	-97.4	732.0	524.6	212.17	3.398	
13,100.0	7,311.0	13,068.1	7,311.0	103.9	103.5	90.08	-5,743.9	-98.3	732.9	521.8	216.62	3.334	
13,200.0	7,311.0	13,168.1	7,311.0	105.7	105.2	90.08	-5,843.9	-99.2	733.8	519.0	221.12	3.273	
13,300.0	7,311.0	13,268.1	7,311.0	107.4	106.9	90.08	-5,943.9	-100.1	734.7	516.2	225.67	3.213	
13,400.0	7,311.0	13,368.1	7,311.0	109.1	108.7	90.08	-6,043.9	-101.0	735.6	513.4	230.27	3.155	
13,500.0	7,311.0	13,468.1	7,311.0	110.8	110.4	90.08	-6,143.9	-101.9	736.5	510.6	234.92	3.099	
13,600.0	7,311.0	13,568.1	7,311.0	112.6	112.2	90.08	-6,243.9	-102.8	737.4	507.8	239.62	3.045	
13,700.0	7,311.0	13,668.1	7,311.0	114.3	113.9	90.08	-6,343.9	-103.7	738.3	505.0	244.37	2.993	
13,800.0	7,311.0	13,768.1	7,311.0	116.1	115.6	90.08	-6,443.9	-104.6	739.2	502.2	249.17	2.942	
13,900.0	7,311.0	13,868.1	7,311.0	117.8	117.4	90.08	-6,543.9	-105.5	740.1	499.4	254.02	2.892	
14,000.0	7,311.0	13,968.1	7,311.0	119.5	119.1	90.08	-6,643.9	-106.4	741.0	496.6	258.92	2.844	
14,100.0	7,311.0	14,068.1	7,311.0	121.3	120.9	90.08	-6,743.9	-107.3	741.9	493.8	263.87	2.798	
14,200.0	7,311.0	14,168.1	7,311.0	123.0	122.6	90.08	-6,843.9	-108.2	742.8	491.0	268.87	2.753	
14,300.0	7,311.0	14,268.1	7,311.0	124.7	124.4	90.09	-6,943.9	-109.1	743.7	488.2	273.92	2.709	

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



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design													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			
14,400.0	7,311.0	14,383.6	7,311.0	126.5	126.1	90.09	-7,059.1	-37.4	672.0	419.9	252.10	2.666			
14,500.0	7,311.0	14,483.6	7,311.0	128.2	127.9	90.09	-7,159.1	-36.0	670.7	415.1	255.59	2.624			
14,600.0	7,311.0	14,583.6	7,311.0	130.0	129.6	90.09	-7,259.1	-34.7	669.3	410.3	259.08	2.584			
14,700.0	7,311.0	14,683.6	7,311.0	131.7	131.4	90.09	-7,359.0	-33.4	668.0	405.4	262.57	2.544			
14,800.0	7,311.0	14,783.6	7,311.0	133.4	133.1	90.09	-7,459.0	-32.0	666.7	400.6	266.06	2.506			
14,900.0	7,311.0	14,883.6	7,311.0	135.2	134.8	90.09	-7,559.0	-30.7	665.3	395.8	269.55	2.468			
15,000.0	7,311.0	14,983.6	7,311.0	136.9	136.6	90.09	-7,659.0	-29.3	664.0	390.9	273.05	2.432			
15,109.0	7,311.0	15,087.3	7,311.0	138.8	138.4	90.09	-7,762.8	-28.0	662.5	385.8	276.76	2.394 SF			



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - Vogl-McCoy 2C-5H-E267 - Hz - Plan #2													Offset Site Error: 0.0 ft			
Survey Program: 0-MWD															Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor				
0.0	0.0	0.0	0.0	0.0	0.0	-89.95	0.0	-19.6	19.6							
100.0	100.0	100.0	100.0	0.1	0.1	-89.95	0.0	-19.6	19.6	19.3	0.24	80.060	CC, ES			
200.0	200.0	200.0	200.0	0.3	0.3	-89.95	0.0	-19.6	19.6	19.0	0.59	32.966				
300.0	300.0	300.0	300.0	0.5	0.5	-157.55	0.0	-19.6	20.4	19.4	0.94	21.608				
400.0	400.0	400.0	400.0	0.7	0.6	-160.06	0.0	-19.6	22.8	21.5	1.29	17.655				
500.0	499.9	499.9	499.9	0.8	0.8	-163.21	0.0	-19.6	26.9	25.3	1.64	16.422				
600.0	599.7	600.2	600.2	1.0	1.0	-166.00	0.3	-18.7	32.0	30.0	1.99	16.067				
700.0	699.4	700.7	700.6	1.3	1.2	-168.15	1.2	-16.3	37.1	34.7	2.34	15.834				
778.7	777.7	779.8	779.7	1.4	1.3	-169.56	2.4	-13.2	41.1	38.4	2.61	15.700				
800.0	798.9	801.2	801.1	1.5	1.4	-169.90	2.8	-12.1	42.1	39.4	2.69	15.652				
900.0	898.4	901.3	901.0	1.7	1.5	-171.23	4.7	-6.9	46.5	43.5	3.04	15.314				
1,000.0	997.9	1,001.2	1,000.7	2.0	1.7	-172.32	6.7	-1.7	51.0	47.6	3.39	15.046				
1,100.0	1,097.4	1,101.1	1,100.5	2.2	1.9	-173.24	8.6	3.5	55.4	51.7	3.74	14.833				
1,200.0	1,196.9	1,201.0	1,200.2	2.4	2.1	-174.02	10.6	8.7	59.9	55.8	4.09	14.660				
1,300.0	1,296.4	1,300.9	1,299.9	2.7	2.3	-174.69	12.5	13.9	64.4	60.0	4.44	14.517				
1,400.0	1,395.9	1,400.8	1,399.7	2.9	2.5	-175.27	14.5	19.1	68.9	64.1	4.78	14.397				
1,500.0	1,495.3	1,500.7	1,499.4	3.2	2.7	-175.78	16.4	24.4	73.4	68.2	5.13	14.294				
1,600.0	1,594.8	1,600.6	1,599.2	3.4	2.9	-176.24	18.3	29.6	77.9	72.4	5.48	14.205				
1,700.0	1,694.3	1,700.4	1,698.9	3.7	3.1	-176.64	20.3	34.8	82.4	76.5	5.83	14.128				
1,800.0	1,793.8	1,800.3	1,798.7	3.9	3.3	-177.00	22.2	40.0	86.9	80.7	6.18	14.060				
1,900.0	1,893.3	1,900.2	1,898.4	4.2	3.5	-177.33	24.2	45.2	91.4	84.9	6.53	13.999				
2,000.0	1,992.8	2,000.1	1,998.1	4.4	3.7	-177.62	26.1	50.4	95.9	89.0	6.88	13.945				
2,100.0	2,092.3	2,100.0	2,097.9	4.7	3.9	-177.89	28.1	55.7	100.4	93.2	7.23	13.896				
2,200.0	2,191.8	2,199.9	2,197.6	4.9	4.1	-178.14	30.0	60.9	104.9	97.4	7.57	13.852				
2,300.0	2,291.3	2,299.8	2,297.4	5.1	4.3	-178.36	32.0	66.1	109.4	101.5	7.92	13.813				
2,400.0	2,390.8	2,399.7	2,397.1	5.4	4.5	-178.57	33.9	71.3	114.0	105.7	8.27	13.776				
2,500.0	2,490.2	2,499.6	2,496.8	5.6	4.7	-178.76	35.9	76.5	118.5	109.9	8.62	13.743				
2,600.0	2,589.7	2,599.5	2,596.6	5.9	4.9	-178.94	37.8	81.8	123.0	114.0	8.97	13.712				
2,700.0	2,689.2	2,699.4	2,696.3	6.1	5.1	-179.11	39.8	87.0	127.5	118.2	9.32	13.684				
2,800.0	2,788.7	2,799.3	2,796.1	6.4	5.3	-179.26	41.7	92.2	132.0	122.4	9.67	13.658				
2,900.0	2,888.2	2,899.2	2,895.8	6.6	5.5	-179.40	43.6	97.4	136.6	126.6	10.02	13.633				
3,000.0	2,987.7	2,999.1	2,995.6	6.9	5.7	-179.54	45.6	102.6	141.1	130.7	10.37	13.611				
3,100.0	3,087.2	3,099.0	3,095.3	7.1	5.9	-179.66	47.5	107.8	145.6	134.9	10.72	13.590				
3,200.0	3,186.7	3,198.9	3,195.0	7.4	6.1	-179.78	49.5	113.1	150.2	139.1	11.07	13.570				
3,300.0	3,286.2	3,298.8	3,294.8	7.6	6.3	-179.89	51.4	118.3	154.7	143.3	11.41	13.551				
3,400.0	3,385.7	3,398.7	3,394.5	7.9	6.5	-180.00	53.4	123.5	159.2	147.4	11.76	13.534				
3,500.0	3,485.1	3,498.6	3,494.3	8.1	6.7	179.90	55.3	128.7	163.7	151.6	12.11	13.517				
3,600.0	3,584.6	3,598.5	3,594.0	8.4	6.9	179.81	57.3	133.9	168.3	155.8	12.46	13.502				
3,700.0	3,684.1	3,698.4	3,693.7	8.6	7.1	179.72	59.2	139.1	172.8	160.0	12.81	13.487				
3,800.0	3,783.6	3,798.3	3,793.5	8.9	7.3	179.64	61.2	144.4	177.3	164.2	13.16	13.474				
3,900.0	3,883.1	3,898.2	3,893.2	9.1	7.5	179.56	63.1	149.6	181.9	168.3	13.51	13.460				
4,000.0	3,982.6	3,998.1	3,993.0	9.4	7.7	179.48	65.0	154.8	186.4	172.5	13.86	13.448				
4,100.0	4,082.1	4,098.0	4,092.7	9.6	7.9	179.41	67.0	160.0	190.9	176.7	14.21	13.436				
4,200.0	4,181.6	4,197.9	4,192.5	9.9	8.1	179.34	68.9	165.2	195.4	180.9	14.56	13.425				
4,300.0	4,281.1	4,297.8	4,292.2	10.1	8.3	179.27	70.9	170.5	200.0	185.1	14.91	13.414				
4,400.0	4,380.6	4,397.7	4,391.9	10.3	8.5	179.21	72.8	175.7	204.5	189.2	15.26	13.404				
4,500.0	4,480.1	4,497.6	4,491.7	10.6	8.7	179.15	74.8	180.9	209.0	193.4	15.61	13.394				
4,600.0	4,579.5	4,597.5	4,591.4	10.8	8.9	179.09	76.7	186.1	213.6	197.6	15.96	13.385				
4,700.0	4,679.0	4,697.4	4,691.2	11.1	9.1	179.03	78.7	191.3	218.1	201.8	16.31	13.376				
4,800.0	4,778.5	4,797.3	4,790.9	11.3	9.3	178.98	80.6	196.5	222.6	206.0	16.65	13.368				
4,900.0	4,878.0	4,897.2	4,890.6	11.6	9.5	178.93	82.6	201.8	227.2	210.2	17.00	13.359				
5,000.0	4,977.5	4,997.1	4,990.4	11.8	9.7	178.88	84.5	207.0	231.7	214.3	17.35	13.352				

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



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - Vogl-McCoy 2C-5H-E267 - Hz - Plan #2													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance					Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis			
5,100.0	5,077.0	5,096.9	5,090.1	12.1	9.9	178.83	86.5	212.2	236.2	218.5	17.70	13.344		
5,200.0	5,176.5	5,196.8	5,189.9	12.3	10.1	178.79	88.4	217.4	240.8	222.7	18.05	13.337		
5,300.0	5,276.0	5,296.7	5,289.6	12.6	10.3	178.74	90.3	222.6	245.3	226.9	18.40	13.330		
5,400.0	5,375.5	5,396.6	5,389.4	12.8	10.5	178.70	92.3	227.8	249.8	231.1	18.75	13.323		
5,500.0	5,475.0	5,496.5	5,489.1	13.1	10.7	178.66	94.2	233.1	254.4	235.3	19.10	13.317		
5,600.0	5,574.4	5,596.4	5,588.8	13.3	10.9	178.62	96.2	238.3	258.9	239.4	19.45	13.310		
5,700.0	5,673.9	5,696.3	5,688.6	13.6	11.1	178.58	98.1	243.5	263.4	243.6	19.80	13.304		
5,800.0	5,773.4	5,796.2	5,788.3	13.8	11.3	178.55	100.1	248.7	268.0	247.8	20.15	13.299		
5,900.0	5,872.9	5,896.1	5,888.1	14.1	11.5	178.51	102.0	253.9	272.5	252.0	20.50	13.293		
6,000.0	5,972.4	5,996.0	5,987.8	14.3	11.7	178.48	104.0	259.2	277.0	256.2	20.85	13.288		
6,100.0	6,071.9	6,095.9	6,087.5	14.6	11.9	178.44	105.9	264.4	281.6	260.4	21.20	13.282		
6,200.0	6,171.4	6,195.8	6,187.3	14.8	12.1	178.41	107.9	269.6	286.1	264.6	21.55	13.277		
6,300.0	6,270.9	6,295.7	6,287.0	15.1	12.3	178.38	109.8	274.8	290.6	268.7	21.90	13.272		
6,400.0	6,370.4	6,395.6	6,386.8	15.3	12.5	178.35	111.8	280.0	295.2	272.9	22.25	13.268		
6,500.0	6,469.9	6,495.5	6,486.5	15.6	12.7	178.32	113.7	285.2	299.7	277.1	22.60	13.263		
6,600.0	6,569.4	6,589.5	6,580.4	15.8	12.8	178.14	114.7	290.2	304.6	281.7	22.94	13.279		
6,700.0	6,668.8	6,671.9	6,662.1	16.1	13.0	176.33	105.9	295.3	313.8	290.5	23.30	13.469		
6,749.1	6,717.7	6,710.8	6,700.0	16.2	13.0	174.84	97.7	298.0	320.6	297.1	23.50	13.641		
6,800.0	6,768.4	6,750.0	6,737.5	16.3	13.1	121.60	86.9	300.9	328.4	304.6	23.77	13.814		
6,850.0	6,817.9	6,788.2	6,773.3	16.4	13.2	91.71	73.9	303.8	335.6	311.6	24.03	13.967		
6,900.0	6,866.9	6,825.9	6,807.7	16.4	13.2	78.26	58.7	306.9	342.3	318.0	24.26	14.111		
6,950.0	6,914.9	6,863.2	6,840.7	16.5	13.3	70.83	41.6	310.0	348.4	323.9	24.45	14.251		
7,000.0	6,961.6	6,900.0	6,872.0	16.5	13.4	66.03	22.5	313.2	353.8	329.2	24.57	14.396		
7,050.0	7,006.6	6,936.9	6,902.2	16.5	13.4	62.62	1.5	316.5	358.4	333.8	24.64	14.545		
7,100.0	7,049.5	6,973.4	6,930.6	16.6	13.5	60.09	-21.2	319.8	362.2	337.5	24.69	14.668		
7,150.0	7,090.2	7,009.7	6,957.3	16.6	13.6	58.14	-45.5	323.1	365.1	340.4	24.69	14.789		
7,200.0	7,128.1	7,050.0	6,985.1	16.7	13.8	56.60	-74.4	326.9	367.1	342.5	24.66	14.886		
7,250.0	7,163.1	7,081.9	7,005.6	16.7	13.9	55.52	-98.6	329.9	368.1	343.5	24.57	14.984		
7,300.0	7,194.9	7,117.8	7,027.0	16.8	14.1	54.68	-127.3	333.3	368.1	343.7	24.48	15.036		
7,350.0	7,223.2	7,150.0	7,044.7	16.9	14.3	54.14	-154.0	336.4	367.2	342.8	24.38	15.060		
7,400.0	7,247.9	7,189.5	7,064.2	17.0	14.5	53.80	-188.1	340.1	365.2	340.9	24.36	14.994		
7,450.0	7,268.7	7,225.4	7,079.9	17.2	14.7	53.71	-220.2	343.5	362.3	337.9	24.36	14.875		
7,500.0	7,285.5	7,261.3	7,093.5	17.4	15.0	53.84	-253.2	346.8	358.3	333.9	24.41	14.678		
7,550.0	7,298.1	7,300.0	7,105.9	17.7	15.3	54.20	-289.7	350.3	353.5	328.9	24.57	14.385		
7,600.0	7,306.5	7,333.3	7,114.5	17.9	15.6	54.76	-321.8	353.3	347.6	322.8	24.78	14.026		
7,650.0	7,310.6	7,369.5	7,121.7	18.3	15.9	55.55	-357.1	356.5	340.9	315.8	25.12	13.571		
7,672.0	7,311.0	7,385.5	7,124.2	18.4	16.0	55.98	-372.8	357.9	337.7	312.4	25.30	13.346		
7,700.0	7,311.0	7,400.0	7,126.1	18.6	16.2	56.13	-387.2	359.1	333.8	308.2	25.67	13.008		
7,800.0	7,311.0	7,484.5	7,130.0	19.4	17.1	56.03	-471.3	365.9	324.6	297.4	27.24	11.916		
7,900.0	7,311.0	7,584.2	7,130.0	20.3	18.2	55.24	-570.6	373.8	318.1	289.2	28.97	10.981		
8,000.0	7,311.0	7,683.9	7,130.0	21.4	19.4	54.42	-670.0	381.6	311.7	280.9	30.80	10.121		
8,100.0	7,311.0	7,783.6	7,130.0	22.5	20.7	53.56	-769.4	389.4	305.4	272.7	32.69	9.340		
8,200.0	7,311.0	7,882.6	7,130.0	23.7	22.0	52.68	-868.1	397.1	299.1	264.5	34.62	8.641		
8,300.0	7,311.0	7,978.5	7,130.0	24.9	23.4	51.92	-963.8	403.6	293.8	257.2	36.57	8.032		
8,400.0	7,311.0	8,074.5	7,130.0	26.2	24.8	51.32	-1,059.7	408.5	289.8	251.2	38.61	7.505		
8,500.0	7,311.0	8,170.7	7,130.0	27.6	26.2	50.92	-1,155.8	411.7	287.1	246.4	40.75	7.047		
8,600.0	7,311.0	8,266.9	7,130.0	29.0	27.6	50.71	-1,252.0	413.4	285.8	242.8	42.99	6.648		
8,663.8	7,311.0	8,328.8	7,130.0	29.9	28.5	50.68	-1,313.9	413.6	285.6	241.1	44.50	6.419		
8,700.0	7,311.0	8,365.0	7,130.0	30.5	29.1	50.68	-1,350.1	413.6	285.6	240.3	45.38	6.295		
8,800.0	7,311.0	8,465.0	7,130.0	31.9	30.6	50.68	-1,450.1	413.6	285.6	237.8	47.83	5.972		
8,900.0	7,311.0	8,565.0	7,130.0	33.4	32.2	50.68	-1,550.1	413.6	285.6	235.3	50.31	5.677		
9,000.0	7,311.0	8,665.0	7,130.0	35.0	33.8	50.68	-1,650.1	413.6	285.6	232.8	52.82	5.408		

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



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - Vogl-McCoy 2C-5H-E267 - Hz - Plan #2												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	
9,100.0	7,311.0	8,765.0	7,130.0	36.5	35.4	50.68	-1,750.1	413.6	285.6	230.3	55.35	5.161	
9,200.0	7,311.0	8,865.0	7,130.0	38.1	37.0	50.68	-1,850.1	413.6	285.6	227.8	57.89	4.934	
9,300.0	7,311.0	8,965.0	7,130.0	39.7	38.6	50.68	-1,950.1	413.6	285.6	225.2	60.45	4.725	
9,400.0	7,311.0	9,065.0	7,130.0	41.2	40.2	50.68	-2,050.1	413.6	285.6	222.6	63.03	4.532	
9,500.0	7,311.0	9,165.0	7,130.0	42.9	41.9	50.68	-2,150.1	413.6	285.6	220.0	65.61	4.354	
9,600.0	7,311.0	9,265.0	7,130.0	44.5	43.5	50.68	-2,250.1	413.6	285.6	217.4	68.21	4.188	
9,700.0	7,311.0	9,365.0	7,130.0	46.1	45.2	50.68	-2,350.1	413.6	285.6	214.8	70.82	4.034	
9,800.0	7,311.0	9,465.0	7,130.0	47.7	46.9	50.68	-2,450.1	413.6	285.6	212.2	73.43	3.890	
9,900.0	7,311.0	9,565.0	7,130.0	49.4	48.5	50.68	-2,550.1	413.6	285.6	209.6	76.05	3.756	
10,000.0	7,311.0	9,665.0	7,130.0	51.0	50.2	50.68	-2,650.1	413.6	285.6	207.0	78.69	3.630	
10,100.0	7,311.0	9,765.0	7,130.0	52.7	51.9	50.68	-2,750.1	413.6	285.6	204.3	81.32	3.513	
10,200.0	7,311.0	9,865.0	7,130.0	54.4	53.6	50.68	-2,850.1	413.6	285.6	201.7	83.96	3.402	
10,300.0	7,311.0	9,965.0	7,130.0	56.0	55.3	50.68	-2,950.1	413.6	285.6	199.0	86.61	3.298	
10,400.0	7,311.0	10,065.0	7,130.0	57.7	57.0	50.68	-3,050.1	413.6	285.6	196.4	89.26	3.200	
10,500.0	7,311.0	10,165.0	7,130.0	59.4	58.7	50.68	-3,150.1	413.6	285.6	193.7	91.92	3.108	
10,600.0	7,311.0	10,265.0	7,130.0	61.1	60.4	50.68	-3,250.1	413.6	285.6	191.1	94.58	3.020	
10,630.3	7,311.0	10,295.3	7,130.0	61.6	60.9	50.68	-3,280.4	413.6	285.6	190.3	95.39	2.995	
10,700.0	7,311.0	10,363.2	7,130.0	62.8	62.0	50.70	-3,348.3	413.4	285.8	188.5	97.25	2.939	
10,800.0	7,311.0	10,459.5	7,130.0	64.4	63.7	50.90	-3,444.6	411.8	287.1	186.9	100.13	2.867	
10,900.0	7,311.0	10,559.3	7,130.0	66.1	65.4	51.22	-3,544.4	409.3	289.1	185.8	103.22	2.800	
11,000.0	7,311.0	10,659.3	7,130.0	67.8	67.1	51.54	-3,644.3	406.7	291.0	184.7	106.34	2.737	
11,100.0	7,311.0	10,759.3	7,130.0	69.5	68.8	51.85	-3,744.2	404.2	293.0	183.6	109.47	2.677	
11,200.0	7,311.0	10,859.2	7,130.0	71.2	70.5	52.15	-3,844.2	401.7	295.0	182.4	112.62	2.620	
11,300.0	7,311.0	10,959.2	7,130.0	72.9	72.2	52.45	-3,944.1	399.1	297.1	181.3	115.79	2.565	
11,400.0	7,311.0	11,059.2	7,130.0	74.7	73.9	52.75	-4,044.1	396.6	299.1	180.1	118.97	2.514	
11,500.0	7,311.0	11,159.1	7,130.0	76.4	75.7	53.04	-4,144.0	394.0	301.1	178.9	122.17	2.465	
11,600.0	7,311.0	11,259.1	7,130.0	78.1	77.4	53.33	-4,243.9	391.5	303.1	177.8	125.38	2.418	
11,700.0	7,311.0	11,359.1	7,130.0	79.8	79.1	53.62	-4,343.9	388.9	305.2	176.6	128.60	2.373	
11,800.0	7,311.0	11,459.0	7,130.0	81.5	80.8	53.90	-4,443.8	386.4	307.2	175.4	131.84	2.330	
11,900.0	7,311.0	11,559.0	7,130.0	83.2	82.5	54.17	-4,543.7	383.8	309.3	174.2	135.09	2.290	
12,000.0	7,311.0	11,659.0	7,130.0	84.9	84.3	54.45	-4,643.7	381.3	311.4	173.0	138.35	2.251	
12,100.0	7,311.0	11,758.9	7,130.0	86.7	86.0	54.72	-4,743.6	378.8	313.4	171.8	141.63	2.213	
12,200.0	7,311.0	11,858.9	7,130.0	88.4	87.7	54.99	-4,843.5	376.2	315.5	170.6	144.91	2.177	
12,300.0	7,311.0	11,958.9	7,130.0	90.1	89.5	55.25	-4,943.5	373.7	317.6	169.4	148.21	2.143	
12,400.0	7,311.0	12,058.8	7,130.0	91.8	91.2	55.51	-5,043.4	371.1	319.7	168.2	151.52	2.110	
12,500.0	7,311.0	12,158.8	7,130.0	93.6	92.9	55.77	-5,143.3	368.6	321.8	167.0	154.83	2.078	
12,600.0	7,311.0	12,258.8	7,130.0	95.3	94.6	56.02	-5,243.3	366.0	323.9	165.8	158.16	2.048	
12,700.0	7,311.0	12,358.7	7,130.0	97.0	96.4	56.27	-5,343.2	363.5	326.0	164.5	161.49	2.019	
12,800.0	7,311.0	12,458.7	7,130.0	98.7	98.1	56.52	-5,443.1	361.0	328.1	163.3	164.84	1.991	
12,900.0	7,311.0	12,558.7	7,130.0	100.5	99.8	56.76	-5,543.1	358.4	330.3	162.1	168.19	1.964	
13,000.0	7,311.0	12,658.6	7,130.0	102.2	101.6	57.00	-5,643.0	355.9	332.4	160.8	171.55	1.938	
13,100.0	7,311.0	12,758.6	7,130.0	103.9	103.3	57.24	-5,742.9	353.3	334.5	159.6	174.92	1.912	
13,200.0	7,311.0	12,858.6	7,130.0	105.7	105.0	57.47	-5,842.9	350.8	336.7	158.4	178.30	1.888	
13,300.0	7,311.0	12,958.6	7,130.0	107.4	106.8	57.70	-5,942.8	348.2	338.8	157.1	181.68	1.865	
13,400.0	7,311.0	13,058.5	7,130.0	109.1	108.5	57.93	-6,042.8	345.7	341.0	155.9	185.08	1.842	
13,500.0	7,311.0	13,158.5	7,130.0	110.8	110.3	58.16	-6,142.7	343.2	343.1	154.7	188.48	1.821	
13,600.0	7,311.0	13,258.5	7,130.0	112.6	112.0	58.38	-6,242.6	340.6	345.3	153.4	191.88	1.800	
13,700.0	7,311.0	13,358.4	7,130.0	114.3	113.7	58.60	-6,342.6	338.1	347.5	152.2	195.29	1.779	
13,800.0	7,311.0	13,458.4	7,130.0	116.1	115.5	58.82	-6,442.5	335.5	349.7	150.9	198.71	1.760	
13,900.0	7,311.0	13,558.4	7,130.0	117.8	117.2	59.03	-6,542.4	333.0	351.8	149.7	202.13	1.741	
14,000.0	7,311.0	13,658.3	7,130.0	119.5	119.0	59.24	-6,642.4	330.4	354.0	148.5	205.56	1.722	
14,100.0	7,311.0	13,758.3	7,130.0	121.3	120.7	59.45	-6,742.3	327.9	356.2	147.2	209.00	1.704	

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



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - Vogl-McCoy 2C-5H-E267 - Hz - Plan #2													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
14,200.0	7,311.0	13,858.3	7,130.0	123.0	122.4	59.66	-6,842.2	325.3	358.4	146.0	212.44	1.687		
14,300.0	7,311.0	13,958.2	7,130.0	124.7	124.2	59.86	-6,942.2	322.8	360.6	144.7	215.89	1.670		
14,400.0	7,311.0	14,058.2	7,130.0	126.5	125.9	60.06	-7,042.1	320.3	362.8	143.5	219.34	1.654		
14,500.0	7,311.0	14,158.2	7,130.0	128.2	127.7	60.26	-7,142.0	317.7	365.0	142.2	222.79	1.638		
14,600.0	7,311.0	14,258.1	7,130.0	130.0	129.4	60.46	-7,242.0	315.2	367.2	141.0	226.25	1.623		
14,700.0	7,311.0	14,358.1	7,130.0	131.7	131.1	60.66	-7,341.9	312.6	369.4	139.7	229.72	1.608		
14,800.0	7,311.0	14,458.1	7,130.0	133.4	132.9	60.85	-7,441.8	310.1	371.7	138.5	233.19	1.594		
14,900.0	7,311.0	14,558.0	7,130.0	135.2	134.6	61.04	-7,541.8	307.5	373.9	137.2	236.66	1.580		
15,000.0	7,311.0	14,658.0	7,130.0	136.9	136.4	61.23	-7,641.7	305.0	376.1	136.0	240.14	1.566		
15,109.0	7,311.0	14,767.0	7,130.0	138.8	138.3	61.43	-7,750.7	302.2	378.5	134.6	243.93	1.552 SF		



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - Vogl-McCoy 2H-5H-F267 - Hz - Plan #2													Offset Site Error:	0.0 ft
Survey Program: O-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total	Separation	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Factor		
7,200.0	7,128.1	7,218.4	7,176.8	16.7	12.8	-86.17	87.4	2,165.3	1,547.9	1,522.7	25.20	61.415		
7,250.0	7,163.1	7,272.0	7,216.3	16.7	12.9	-87.33	51.1	2,164.3	1,543.8	1,518.5	25.29	61.055		
7,300.0	7,194.9	7,325.9	7,252.3	16.8	12.9	-88.30	11.1	2,163.2	1,539.9	1,514.4	25.44	60.540		
7,350.0	7,223.2	7,380.0	7,284.6	16.9	13.0	-89.13	-32.3	2,162.0	1,536.2	1,510.5	25.66	59.860		
7,400.0	7,247.9	7,434.3	7,312.7	17.0	13.1	-89.84	-78.8	2,160.8	1,532.8	1,506.8	25.99	58.985		
7,450.0	7,268.7	7,488.8	7,336.4	17.2	13.3	-90.42	-127.8	2,159.5	1,529.6	1,503.2	26.40	57.932		
7,500.0	7,285.5	7,543.4	7,355.3	17.4	13.6	-90.91	-178.9	2,158.1	1,526.8	1,499.9	26.92	56.714		
7,550.0	7,298.1	7,598.0	7,369.3	17.7	13.9	-91.29	-231.7	2,156.7	1,524.4	1,496.8	27.54	55.356		
7,600.0	7,306.5	7,652.6	7,378.2	17.9	14.3	-91.57	-285.6	2,155.2	1,522.2	1,494.0	28.25	53.887		
7,650.0	7,310.6	7,707.2	7,381.9	18.3	14.7	-91.75	-340.0	2,153.8	1,520.5	1,491.5	29.05	52.350		
7,672.0	7,311.0	7,730.2	7,382.0	18.4	15.0	-91.81	-363.0	2,153.1	1,519.9	1,490.5	29.42	51.669		
7,700.0	7,311.0	7,758.2	7,382.0	18.6	15.2	-91.81	-391.0	2,152.4	1,519.1	1,489.2	29.93	50.755		
7,800.0	7,311.0	7,858.2	7,382.0	19.4	16.2	-91.81	-490.9	2,149.7	1,516.4	1,484.5	31.93	47.491		
7,900.0	7,311.0	7,958.1	7,382.0	20.3	17.3	-91.82	-590.8	2,147.0	1,513.7	1,479.6	34.17	44.300		
8,000.0	7,311.0	8,058.1	7,382.0	21.4	18.5	-91.82	-690.7	2,144.3	1,511.0	1,474.4	36.61	41.276		
8,100.0	7,311.0	8,158.1	7,382.0	22.5	19.8	-91.82	-790.7	2,141.6	1,508.4	1,469.1	39.21	38.469		
8,200.0	7,311.0	8,258.0	7,382.0	23.7	21.2	-91.83	-890.6	2,138.9	1,505.7	1,463.7	41.94	35.899		
8,300.0	7,311.0	8,358.0	7,382.0	24.9	22.6	-91.83	-990.5	2,136.2	1,503.0	1,458.2	44.78	33.561		
8,400.0	7,311.0	8,457.9	7,382.0	26.2	24.0	-91.83	-1,090.5	2,133.6	1,500.3	1,452.6	47.71	31.445		
8,500.0	7,311.0	8,557.9	7,382.0	27.6	25.5	-91.84	-1,190.4	2,130.9	1,497.6	1,446.9	50.71	29.530		
8,600.0	7,311.0	8,657.9	7,382.0	29.0	27.1	-91.84	-1,290.3	2,128.2	1,494.9	1,441.1	53.78	27.798		
8,700.0	7,311.0	8,757.8	7,382.0	30.5	28.6	-91.84	-1,390.2	2,125.5	1,492.2	1,435.3	56.89	26.228		
8,800.0	7,311.0	8,857.8	7,382.0	31.9	30.2	-91.85	-1,490.2	2,122.8	1,489.5	1,429.5	60.05	24.804		
8,900.0	7,311.0	8,957.8	7,382.0	33.4	31.8	-91.85	-1,590.1	2,120.1	1,486.8	1,423.6	63.25	23.509		
9,000.0	7,311.0	9,057.7	7,382.0	35.0	33.4	-91.85	-1,690.0	2,117.4	1,484.2	1,417.7	66.47	22.328		
9,100.0	7,311.0	9,157.7	7,382.0	36.5	35.0	-91.86	-1,789.9	2,114.7	1,481.5	1,411.7	69.72	21.247		
9,200.0	7,311.0	9,257.7	7,382.0	38.1	36.7	-91.86	-1,889.9	2,112.0	1,478.8	1,405.8	73.00	20.257		
9,300.0	7,311.0	9,357.6	7,382.0	39.7	38.3	-91.86	-1,989.8	2,109.4	1,476.1	1,399.8	76.30	19.347		
9,400.0	7,311.0	9,457.6	7,382.0	41.2	40.0	-91.87	-2,089.7	2,106.7	1,473.4	1,393.8	79.61	18.507		
9,500.0	7,311.0	9,557.5	7,382.0	42.9	41.6	-91.87	-2,189.7	2,104.0	1,470.7	1,387.8	82.94	17.732		
9,600.0	7,311.0	9,657.5	7,382.0	44.5	43.3	-91.87	-2,289.6	2,101.3	1,468.0	1,381.7	86.29	17.013		
9,700.0	7,311.0	9,757.5	7,382.0	46.1	45.0	-91.88	-2,389.5	2,098.6	1,465.3	1,375.7	89.64	16.346		
9,800.0	7,311.0	9,857.4	7,382.0	47.7	46.7	-91.88	-2,489.4	2,095.9	1,462.6	1,369.6	93.01	15.726		
9,900.0	7,311.0	9,957.4	7,382.0	49.4	48.3	-91.88	-2,589.4	2,093.2	1,459.9	1,363.6	96.39	15.147		
10,000.0	7,311.0	10,057.4	7,382.0	51.0	50.0	-91.89	-2,689.3	2,090.5	1,457.3	1,357.5	99.77	14.606		
10,100.0	7,311.0	10,157.3	7,382.0	52.7	51.7	-91.89	-2,789.2	2,087.8	1,454.6	1,351.4	103.17	14.099		
10,200.0	7,311.0	10,257.3	7,382.0	54.4	53.4	-91.90	-2,889.2	2,085.1	1,451.9	1,345.3	106.57	13.624		
10,300.0	7,311.0	10,357.3	7,382.0	56.0	55.1	-91.90	-2,989.1	2,082.5	1,449.2	1,339.2	109.98	13.177		
10,400.0	7,311.0	10,457.2	7,382.0	57.7	56.8	-91.90	-3,089.0	2,079.8	1,446.5	1,333.1	113.39	12.757		
10,500.0	7,311.0	10,557.2	7,382.0	59.4	58.6	-91.91	-3,188.9	2,077.1	1,443.8	1,327.0	116.81	12.361		
10,600.0	7,311.0	10,657.1	7,382.0	61.1	60.3	-91.91	-3,288.9	2,074.4	1,441.1	1,320.9	120.23	11.986		
10,700.0	7,311.0	10,757.1	7,382.0	62.8	62.0	-91.91	-3,388.8	2,071.7	1,438.4	1,314.8	123.66	11.632		
10,800.0	7,311.0	10,857.1	7,382.0	64.4	63.7	-91.92	-3,488.7	2,069.0	1,435.7	1,308.7	127.09	11.297		
10,900.0	7,311.0	10,957.0	7,382.0	66.1	65.4	-91.92	-3,588.6	2,066.3	1,433.1	1,302.5	130.53	10.979		
11,000.0	7,311.0	11,057.0	7,382.0	67.8	67.1	-91.92	-3,688.6	2,063.6	1,430.4	1,296.4	133.97	10.677		
11,100.0	7,311.0	11,157.0	7,382.0	69.5	68.9	-91.93	-3,788.5	2,060.9	1,427.7	1,290.3	137.41	10.390		
11,200.0	7,311.0	11,256.9	7,382.0	71.2	70.6	-91.93	-3,888.4	2,058.2	1,425.0	1,284.1	140.86	10.116		
11,300.0	7,311.0	11,356.9	7,382.0	72.9	72.3	-91.93	-3,988.4	2,055.6	1,422.3	1,278.0	144.31	9.856		
11,400.0	7,311.0	11,456.9	7,382.0	74.7	74.0	-91.94	-4,088.3	2,052.9	1,419.6	1,271.8	147.76	9.607		
11,500.0	7,311.0	11,556.8	7,382.0	76.4	75.8	-91.94	-4,188.2	2,050.2	1,416.9	1,265.7	151.22	9.370		
11,600.0	7,311.0	11,656.8	7,382.0	78.1	77.5	-91.95	-4,288.1	2,047.5	1,414.2	1,259.6	154.67	9.143		
11,700.0	7,311.0	11,756.8	7,382.0	79.8	79.2	-91.95	-4,388.1	2,044.8	1,411.5	1,253.4	158.13	8.926		

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



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - Vogl-McCoy 2H-5H-F267 - Hz - Plan #2												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)			
11,800.0	7,311.0	11,856.7	7,382.0	81.5	80.9	-91.95	-4,488.0	2,042.1	1,408.9	1,247.3	161.59	8.719	
11,900.0	7,311.0	11,956.7	7,382.0	83.2	82.7	-91.96	-4,587.9	2,039.4	1,406.2	1,241.1	165.05	8.519	
12,000.0	7,311.0	12,056.6	7,382.0	84.9	84.4	-91.96	-4,687.9	2,036.7	1,403.5	1,235.0	168.52	8.328	
12,100.0	7,311.0	12,156.6	7,382.0	86.7	86.1	-91.96	-4,787.8	2,034.0	1,400.8	1,228.8	171.98	8.145	
12,200.0	7,311.0	12,256.6	7,382.0	88.4	87.9	-91.97	-4,887.7	2,031.3	1,398.1	1,222.6	175.45	7.969	
12,300.0	7,311.0	12,356.5	7,382.0	90.1	89.6	-91.97	-4,987.6	2,028.7	1,395.4	1,216.5	178.92	7.799	
12,400.0	7,311.0	12,456.5	7,382.0	91.8	91.4	-91.98	-5,087.6	2,026.0	1,392.7	1,210.3	182.39	7.636	
12,500.0	7,311.0	12,556.5	7,382.0	93.6	93.1	-91.98	-5,187.5	2,023.3	1,390.0	1,204.2	185.86	7.479	
12,600.0	7,311.0	12,656.4	7,382.0	95.3	94.8	-91.98	-5,287.4	2,020.6	1,387.3	1,198.0	189.34	7.327	
12,700.0	7,311.0	12,756.4	7,382.0	97.0	96.6	-91.99	-5,387.3	2,017.9	1,384.7	1,191.8	192.81	7.181	
12,800.0	7,311.0	12,856.4	7,382.0	98.7	98.3	-91.99	-5,487.3	2,015.2	1,382.0	1,185.7	196.28	7.041	
12,900.0	7,311.0	12,956.3	7,382.0	100.5	100.0	-92.00	-5,587.2	2,012.5	1,379.3	1,179.5	199.76	6.905	
13,000.0	7,311.0	13,056.3	7,382.0	102.2	101.8	-92.00	-5,687.1	2,009.8	1,376.6	1,173.3	203.24	6.773	
13,100.0	7,311.0	13,156.2	7,382.0	103.9	103.5	-92.00	-5,787.1	2,007.1	1,373.9	1,167.2	206.72	6.646	
13,200.0	7,311.0	13,256.2	7,382.0	105.7	105.3	-92.01	-5,887.0	2,004.5	1,371.2	1,161.0	210.19	6.524	
13,300.0	7,311.0	13,356.2	7,382.0	107.4	107.0	-92.01	-5,986.9	2,001.8	1,368.5	1,154.8	213.67	6.405	
13,400.0	7,311.0	13,456.1	7,382.0	109.1	108.7	-92.01	-6,086.8	1,999.1	1,365.8	1,148.7	217.15	6.290	
13,500.0	7,311.0	13,556.1	7,382.0	110.8	110.5	-92.02	-6,186.8	1,996.4	1,363.1	1,142.5	220.64	6.178	
13,600.0	7,311.0	13,656.1	7,382.0	112.6	112.2	-92.02	-6,286.7	1,993.7	1,360.5	1,136.3	224.12	6.070	
13,700.0	7,311.0	13,756.0	7,382.0	114.3	114.0	-92.03	-6,386.6	1,991.0	1,357.8	1,130.2	227.60	5.966	
13,800.0	7,311.0	13,856.0	7,382.0	116.1	115.7	-92.03	-6,486.5	1,988.3	1,355.1	1,124.0	231.08	5.864	
13,900.0	7,311.0	13,956.0	7,382.0	117.8	117.5	-92.03	-6,586.5	1,985.6	1,352.4	1,117.8	234.57	5.765	
14,000.0	7,311.0	14,055.9	7,382.0	119.5	119.2	-92.04	-6,686.4	1,982.9	1,349.7	1,111.6	238.05	5.670	
14,100.0	7,311.0	14,155.9	7,382.0	121.3	120.9	-92.04	-6,786.3	1,980.2	1,347.0	1,105.5	241.54	5.577	
14,200.0	7,311.0	14,255.8	7,382.0	123.0	122.7	-92.05	-6,886.3	1,977.6	1,344.3	1,099.3	245.02	5.487	
14,300.0	7,311.0	14,355.8	7,382.0	124.7	124.4	-92.05	-6,986.2	1,974.9	1,341.6	1,093.1	248.51	5.399	
14,400.0	7,311.0	14,455.8	7,382.0	126.5	126.2	-92.06	-7,086.1	1,972.2	1,338.9	1,086.9	251.99	5.313	
14,500.0	7,311.0	14,555.7	7,382.0	128.2	127.9	-92.06	-7,186.0	1,969.5	1,336.2	1,080.8	255.48	5.230	
14,600.0	7,311.0	14,655.7	7,382.0	130.0	129.7	-92.06	-7,286.0	1,966.8	1,333.6	1,074.6	258.97	5.150	
14,700.0	7,311.0	14,755.7	7,382.0	131.7	131.4	-92.07	-7,385.9	1,964.1	1,330.9	1,068.4	262.46	5.071	
14,800.0	7,311.0	14,855.6	7,382.0	133.4	133.2	-92.07	-7,485.8	1,961.4	1,328.2	1,062.2	265.94	4.994	
14,900.0	7,311.0	14,955.6	7,382.0	135.2	134.9	-92.08	-7,585.8	1,958.7	1,325.5	1,056.1	269.43	4.920	
15,000.0	7,311.0	15,055.6	7,382.0	136.9	136.7	-92.08	-7,685.7	1,956.0	1,322.8	1,049.9	272.92	4.847	
15,108.9	7,311.0	15,129.0	7,382.0	138.8	137.9	-92.08	-7,759.1	1,954.1	1,320.4	1,044.2	276.10	4.782 CC	
15,109.0	7,311.0	15,129.0	7,382.0	138.8	137.9	-92.08	-7,759.1	1,954.1	1,320.4	1,044.2	276.11	4.782 ES, SF	

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



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - WANDELL 8-2-7 (EXISTING) - ENCANA WELL - SURVEYS													Offset Site Error:	0.0 ft
Survey Program: 75-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total	Separation	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Factor		
10,600.0	7,311.0	7,496.3	7,337.1	61.1	24.5	89.51	-4,220.5	-518.6	1,507.2	1,431.6	75.54	19.951		
10,700.0	7,311.0	7,495.9	7,336.7	62.8	24.5	89.49	-4,220.5	-518.6	1,444.8	1,367.6	77.26	18.702		
10,800.0	7,311.0	7,495.5	7,336.4	64.4	24.5	89.47	-4,220.5	-518.6	1,386.9	1,307.9	78.97	17.561		
10,900.0	7,311.0	7,495.1	7,336.0	66.1	24.5	89.45	-4,220.5	-518.6	1,333.9	1,253.2	80.69	16.531		
11,000.0	7,311.0	7,494.8	7,335.6	67.8	24.5	89.43	-4,220.5	-518.6	1,286.6	1,204.2	82.41	15.611		
11,100.0	7,311.0	7,494.4	7,335.3	69.5	24.5	89.42	-4,220.5	-518.6	1,245.5	1,161.3	84.13	14.803		
11,200.0	7,311.0	7,494.0	7,334.9	71.2	24.5	89.40	-4,220.5	-518.6	1,211.2	1,125.4	85.86	14.108		
11,300.0	7,311.0	7,493.7	7,334.5	72.9	24.5	89.38	-4,220.5	-518.6	1,184.5	1,096.9	87.58	13.524		
11,400.0	7,311.0	7,493.3	7,334.2	74.7	24.5	89.36	-4,220.5	-518.6	1,165.7	1,076.4	89.31	13.053		
11,500.0	7,311.0	7,492.9	7,333.8	76.4	24.5	89.34	-4,220.5	-518.6	1,155.4	1,064.3	91.04	12.691		
11,570.4	7,311.0	7,492.7	7,333.5	77.6	24.5	89.33	-4,220.5	-518.6	1,153.2	1,061.0	92.25	12.501 CC		
11,600.0	7,311.0	7,492.6	7,333.4	78.1	24.5	89.33	-4,220.5	-518.6	1,153.6	1,060.8	92.76	12.436 ES		
11,700.0	7,311.0	7,492.2	7,333.1	79.8	24.5	89.31	-4,220.5	-518.6	1,160.5	1,066.0	94.49	12.281		
11,800.0	7,311.0	7,491.9	7,332.7	81.5	24.5	89.29	-4,220.5	-518.6	1,175.9	1,079.6	96.22	12.220 SF		
11,900.0	7,311.0	7,491.5	7,332.4	83.2	24.5	89.27	-4,220.5	-518.5	1,199.4	1,101.4	97.96	12.244		
12,000.0	7,311.0	7,491.2	7,332.0	84.9	24.5	89.26	-4,220.5	-518.5	1,230.6	1,131.0	99.69	12.345		
12,100.0	7,311.0	7,491.0	7,331.9	86.7	24.5	89.25	-4,220.5	-518.5	1,269.0	1,167.6	101.42	12.512		
12,200.0	7,311.0	7,491.0	7,331.9	88.4	24.5	89.25	-4,220.5	-518.5	1,313.9	1,210.7	103.16	12.737		
12,300.0	7,311.0	7,491.0	7,331.9	90.1	24.5	89.25	-4,220.5	-518.5	1,364.6	1,259.7	104.89	13.010		
12,400.0	7,311.0	7,491.0	7,331.9	91.8	24.5	89.25	-4,220.5	-518.5	1,420.6	1,314.0	106.63	13.323		
12,500.0	7,311.0	7,489.5	7,330.3	93.6	24.5	89.17	-4,220.5	-518.5	1,481.2	1,372.9	108.36	13.669		
12,600.0	7,311.0	7,489.1	7,330.0	95.3	24.5	89.15	-4,220.5	-518.5	1,546.0	1,435.9	110.10	14.042		

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



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Offset Design S5-T2N-R67W (Vogl-McCoy) - WANDELL 8-4-7 (EXISTING) - ENCANA WELL - SURVEYS													Offset Site Error: 0.0 ft
Survey Program: 106-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	
11,800.0	7,311.0	7,747.9	7,351.2	81.5	37.2	90.15	-5,430.4	-551.2	1,538.5	1,425.3	113.21	13.589	
11,900.0	7,311.0	7,747.5	7,350.8	83.2	37.2	90.13	-5,430.4	-551.2	1,476.8	1,361.8	114.95	12.848	
12,000.0	7,311.0	7,747.1	7,350.4	84.9	37.2	90.11	-5,430.4	-551.2	1,419.5	1,302.8	116.68	12.166	
12,100.0	7,311.0	7,746.7	7,349.9	86.7	37.2	90.09	-5,430.4	-551.2	1,367.0	1,248.6	118.41	11.545	
12,200.0	7,311.0	7,746.3	7,349.5	88.4	37.2	90.07	-5,430.4	-551.2	1,320.1	1,200.0	120.15	10.988	
12,300.0	7,311.0	7,745.8	7,349.1	90.1	37.2	90.05	-5,430.4	-551.2	1,279.3	1,157.4	121.88	10.496	
12,400.0	7,311.0	7,745.4	7,348.7	91.8	37.2	90.03	-5,430.4	-551.2	1,245.2	1,121.6	123.62	10.073	
12,500.0	7,311.0	7,745.0	7,348.3	93.6	37.2	90.01	-5,430.4	-551.2	1,218.4	1,093.1	125.36	9.720	
12,600.0	7,311.0	7,744.6	7,347.9	95.3	37.2	89.99	-5,430.4	-551.2	1,199.4	1,072.3	127.09	9.437	
12,700.0	7,311.0	7,744.2	7,347.5	97.0	37.2	89.97	-5,430.4	-551.2	1,188.5	1,059.6	128.83	9.225	
12,780.3	7,311.0	7,743.8	7,347.1	98.4	37.2	89.96	-5,430.4	-551.2	1,185.8	1,055.5	130.23	9.105 CC	
12,800.0	7,311.0	7,743.8	7,347.0	98.7	37.2	89.95	-5,430.4	-551.2	1,185.9	1,055.3	130.57	9.083 ES	
12,900.0	7,311.0	7,743.3	7,346.6	100.5	37.2	89.93	-5,430.4	-551.2	1,191.8	1,059.5	132.31	9.008	
13,000.0	7,311.0	7,742.9	7,346.2	102.2	37.2	89.91	-5,430.4	-551.2	1,205.9	1,071.9	134.05	8.996 SF	
13,100.0	7,311.0	7,742.5	7,345.8	103.9	37.2	89.89	-5,430.4	-551.2	1,228.1	1,092.3	135.79	9.044	
13,200.0	7,311.0	7,742.1	7,345.4	105.7	37.2	89.87	-5,430.4	-551.2	1,257.8	1,120.3	137.53	9.146	
13,300.0	7,311.0	7,741.6	7,344.9	107.4	37.2	89.85	-5,430.4	-551.2	1,294.6	1,155.4	139.27	9.296	
13,400.0	7,311.0	7,741.2	7,344.5	109.1	37.2	89.83	-5,430.4	-551.2	1,337.9	1,196.9	141.01	9.488	
13,500.0	7,311.0	7,740.8	7,344.1	110.8	37.2	89.81	-5,430.4	-551.2	1,387.1	1,244.3	142.75	9.717	
13,600.0	7,311.0	7,740.4	7,343.6	112.6	37.2	89.79	-5,430.4	-551.2	1,441.5	1,297.0	144.50	9.976	
13,700.0	7,311.0	7,739.9	7,343.2	114.3	37.2	89.77	-5,430.4	-551.2	1,500.6	1,354.4	146.24	10.262	

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



Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Vogl-McCoy 2D-5H-E267
Project:	DJ Wattenberg	TVD Reference:	KB @ 4866.0ft (Ensign)
Reference Site:	S5-T2N-R67W (Vogl-McCoy)	MD Reference:	KB @ 4866.0ft (Ensign)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Vogl-McCoy 2D-5H-E267	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #2	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB @ 4866.0ft (Ensign)

Offset Depths are relative to Offset Datum

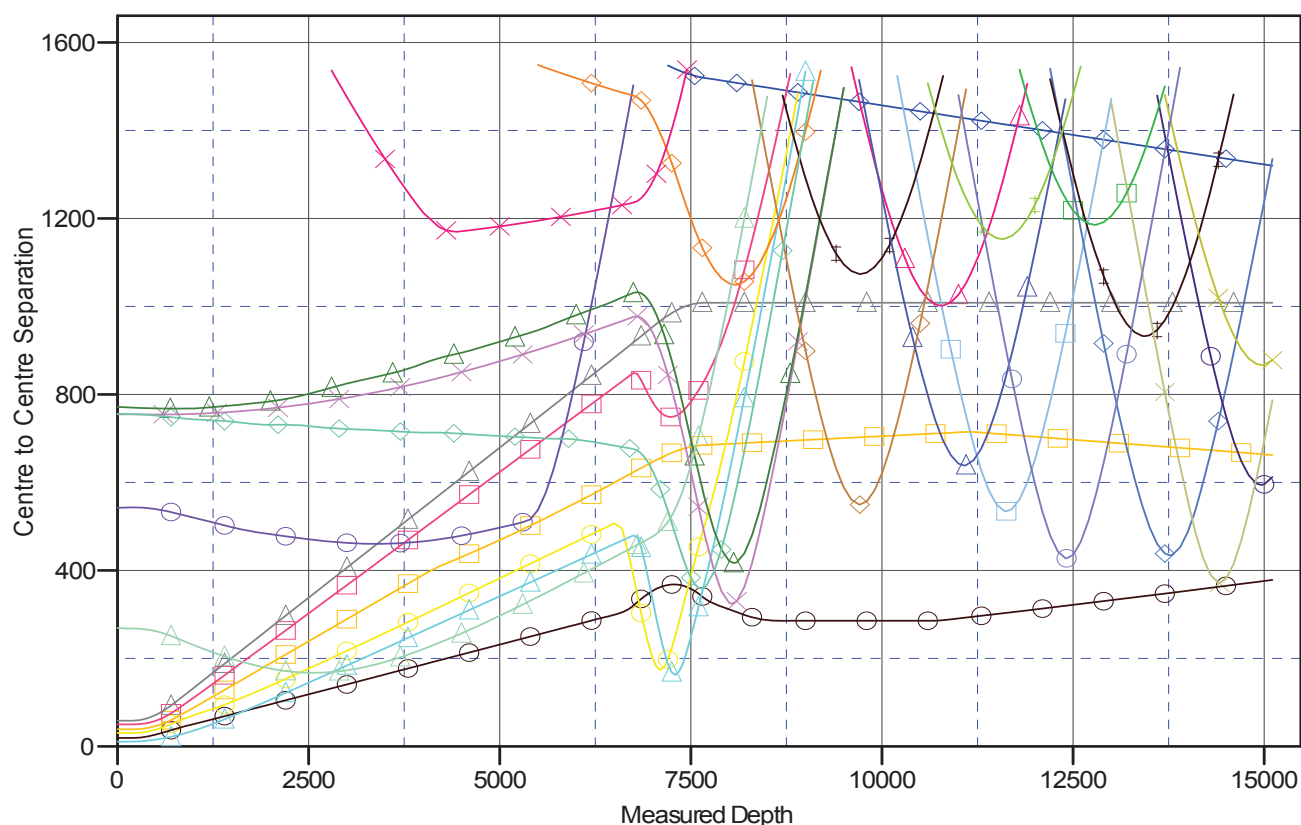
Central Meridian is -105.500000 °

Coordinates are relative to: Vogl-McCoy 2D-5H-E267

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.37°

Ladder Plot



LEGEND

267, Hz, Plan #1 V0	DIER 13-8 (EXISTING), ENCANA WELL, SURVEYS V0	MCCOY 23-5 (EXISTING), ENCANA V
267, Hz, Plan #3 V0	DIER 14-8 (EXISTING), ENCANA WELL, SURVEYS V0	MCCOY 24-5 (EXISTING), ENCANA V
267, Hz, Plan #2 V0	DIER 23-8 (EXISTING), ENCANA WELL, SURVEYS V0	MCCOY 2-4-5 (EXISTING), ENCANA V
267, Hz, Plan #2 V0	DIER 24-8 (EXISTING), ENCANA WELL, SURVEYS V0	PROMINENCE 4-8 (EXISTING), KMG
i7, Hz, Plan #2 V0	DIER 4-8 (EXISTING), ENCANA WELL, SURVEYS V0	VOGL 31-5 (EXISTING), KMG WELL, N
i7, Hz, Plan #2 V0	MCCOY #1 (EXISTING), ENCANA WELL, SURVEYS V0	VOGL 5-5 (EXISTING), KMG WELL, N
i7, Hz, Plan #2 V0	MCCOY 0-6-5 (EXISTING), ENCANA WELL, NO SURVEYS V0	VOGL 5-8A (EXISTING), KMG WELL, C
2 (EXISTING), KMG WELL, KMG WELL V0	MCCOY 13-5 (EXISTING), ENCANA WELL, SURVEYS V0	WANDELL 8-2-7 (EXISTING), ENCANA
NG), KMG WELL, SURVEYS V0	MCCOY 14-5 (EXISTING), ENCANA WELL, NO SURVEYS V0	WANDELL 8-4-7 (EXISTING), ENCANA

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