

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Chavez 4B-4H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KBE @ 4929.0ft (Original Well Elev)
Project:	DJ Wattenberg	MD Reference:	KBE @ 4929.0ft (Original Well Elev)
Site:	SWSE S4-T1N-R65W (Chavez)	North Reference:	True
Well:	Chavez 4B-4H	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		SWSE S4-T1N-R65W (Chavez)			
Site Position:		Northing:	1,270,891.54 ft	Latitude:	40.073960
From:	Lat/Long	Easting:	3,233,697.16 ft	Longitude:	-104.664930
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	0.54 °

Well	Chavez 4B-4H					
Well Position	+N/-S	0.0 ft	Northing:	1,270,891.79 ft	Latitude:	40.073960
	+E/-W	0.0 ft	Easting:	3,233,725.14 ft	Longitude:	-104.664830
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,916.0 ft

Wellbore	HZ				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	3/27/2012	8.63	66.79	52,911

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	0.00

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	
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,466.7	8.00	114.00	1,465.8	-7.6	17.0	3.00	3.00	0.00	114.00	
5,006.7	8.00	114.00	4,971.4	-207.9	467.1	0.00	0.00	0.00	0.00	
5,273.3	0.00	0.00	5,237.2	-215.5	484.0	3.00	-3.00	0.00	180.00	
6,614.3	0.00	0.00	6,578.1	-215.5	484.0	0.00	0.00	0.00	0.00	
7,432.5	90.00	0.00	7,099.0	305.4	484.0	11.00	11.00	0.00	0.00	
11,738.9	90.00	0.00	7,099.0	4,611.8	484.1	0.00	0.00	0.00	0.00	Chavez 4B-4H PBHL

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Project:	DJ Wattenberg	MD Reference:	KBE @ 4929.0ft (Original Well Elev)
Site:	SWSE S4-T1N-R65W (Chavez)	North Reference:	True
Well:	Chavez 4B-4H	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	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	KOP @ 1200'
1,300.0	3.00	114.00	1,300.0	-1.1	2.4	-1.1	3.00	3.00	
1,400.0	6.00	114.00	1,399.6	-4.3	9.6	-4.3	3.00	3.00	
1,466.7	8.00	114.00	1,465.8	-7.6	17.0	-7.6	3.00	3.00	EOB; Inc=8°
1,500.0	8.00	114.00	1,498.8	-9.4	21.2	-9.4	0.00	0.00	
1,600.0	8.00	114.00	1,597.8	-15.1	33.9	-15.1	0.00	0.00	
1,700.0	8.00	114.00	1,696.9	-20.8	46.6	-20.8	0.00	0.00	
1,800.0	8.00	114.00	1,795.9	-26.4	59.4	-26.4	0.00	0.00	
1,900.0	8.00	114.00	1,894.9	-32.1	72.1	-32.1	0.00	0.00	
2,000.0	8.00	114.00	1,993.9	-37.8	84.8	-37.8	0.00	0.00	
2,100.0	8.00	114.00	2,093.0	-43.4	97.5	-43.4	0.00	0.00	
2,200.0	8.00	114.00	2,192.0	-49.1	110.2	-49.1	0.00	0.00	
2,300.0	8.00	114.00	2,291.0	-54.7	122.9	-54.7	0.00	0.00	
2,400.0	8.00	114.00	2,390.1	-60.4	135.6	-60.4	0.00	0.00	
2,500.0	8.00	114.00	2,489.1	-66.1	148.4	-66.1	0.00	0.00	
2,600.0	8.00	114.00	2,588.1	-71.7	161.1	-71.7	0.00	0.00	
2,700.0	8.00	114.00	2,687.1	-77.4	173.8	-77.4	0.00	0.00	
2,800.0	8.00	114.00	2,786.2	-83.0	186.5	-83.0	0.00	0.00	
2,900.0	8.00	114.00	2,885.2	-88.7	199.2	-88.7	0.00	0.00	
3,000.0	8.00	114.00	2,984.2	-94.4	211.9	-94.4	0.00	0.00	
3,100.0	8.00	114.00	3,083.2	-100.0	224.6	-100.0	0.00	0.00	
3,200.0	8.00	114.00	3,182.3	-105.7	237.4	-105.7	0.00	0.00	
3,300.0	8.00	114.00	3,281.3	-111.3	250.1	-111.3	0.00	0.00	
3,400.0	8.00	114.00	3,380.3	-117.0	262.8	-117.0	0.00	0.00	
3,500.0	8.00	114.00	3,479.3	-122.7	275.5	-122.7	0.00	0.00	
3,600.0	8.00	114.00	3,578.4	-128.3	288.2	-128.3	0.00	0.00	
3,700.0	8.00	114.00	3,677.4	-134.0	300.9	-134.0	0.00	0.00	
3,800.0	8.00	114.00	3,776.4	-139.6	313.6	-139.6	0.00	0.00	
3,900.0	8.00	114.00	3,875.5	-145.3	326.4	-145.3	0.00	0.00	
4,000.0	8.00	114.00	3,974.5	-151.0	339.1	-151.0	0.00	0.00	
4,100.0	8.00	114.00	4,073.5	-156.6	351.8	-156.6	0.00	0.00	
4,200.0	8.00	114.00	4,172.5	-162.3	364.5	-162.3	0.00	0.00	
4,300.0	8.00	114.00	4,271.6	-167.9	377.2	-167.9	0.00	0.00	
4,400.0	8.00	114.00	4,370.6	-173.6	389.9	-173.6	0.00	0.00	
4,459.0	8.00	114.00	4,429.0	-176.9	397.4	-176.9	0.00	0.00	Sussex
4,500.0	8.00	114.00	4,469.6	-179.3	402.6	-179.3	0.00	0.00	
4,600.0	8.00	114.00	4,568.6	-184.9	415.4	-184.9	0.00	0.00	
4,609.5	8.00	114.00	4,578.0	-185.5	416.6	-185.5	0.00	0.00	Sussex Marker
4,700.0	8.00	114.00	4,667.7	-190.6	428.1	-190.6	0.00	0.00	
4,800.0	8.00	114.00	4,766.7	-196.2	440.8	-196.2	0.00	0.00	

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Well:	Chavez 4B-4H	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
4,900.0	8.00	114.00	4,865.7	-201.9	453.5	-201.9	0.00	0.00	
4,912.4	8.00	114.00	4,878.0	-202.6	455.1	-202.6	0.00	0.00	Shannon
5,000.0	8.00	114.00	4,964.7	-207.6	466.2	-207.6	0.00	0.00	
5,006.7	8.00	114.00	4,971.4	-207.9	467.1	-207.9	0.00	0.00	Start Drop -3.00
5,100.0	5.20	114.00	5,064.1	-212.3	476.9	-212.3	3.00	-3.00	
5,200.0	2.20	114.00	5,163.8	-214.9	482.8	-214.9	3.00	-3.00	
5,273.3	0.00	0.00	5,237.2	-215.5	484.0	-215.5	3.00	-3.00	EOD; Inc=0°
5,300.0	0.00	0.00	5,263.8	-215.5	484.0	-215.5	0.00	0.00	
5,400.0	0.00	0.00	5,363.8	-215.5	484.0	-215.5	0.00	0.00	
5,500.0	0.00	0.00	5,463.8	-215.5	484.0	-215.5	0.00	0.00	
5,600.0	0.00	0.00	5,563.8	-215.5	484.0	-215.5	0.00	0.00	
5,700.0	0.00	0.00	5,663.8	-215.5	484.0	-215.5	0.00	0.00	
5,800.0	0.00	0.00	5,763.8	-215.5	484.0	-215.5	0.00	0.00	
5,900.0	0.00	0.00	5,863.8	-215.5	484.0	-215.5	0.00	0.00	
6,000.0	0.00	0.00	5,963.8	-215.5	484.0	-215.5	0.00	0.00	
6,100.0	0.00	0.00	6,063.8	-215.5	484.0	-215.5	0.00	0.00	
6,185.2	0.00	0.00	6,149.0	-215.5	484.0	-215.5	0.00	0.00	Teepee Buttes
6,200.0	0.00	0.00	6,163.8	-215.5	484.0	-215.5	0.00	0.00	
6,300.0	0.00	0.00	6,263.8	-215.5	484.0	-215.5	0.00	0.00	
6,400.0	0.00	0.00	6,363.8	-215.5	484.0	-215.5	0.00	0.00	
6,500.0	0.00	0.00	6,463.8	-215.5	484.0	-215.5	0.00	0.00	
6,600.0	0.00	0.00	6,563.8	-215.5	484.0	-215.5	0.00	0.00	
6,614.3	0.00	0.00	6,578.1	-215.5	484.0	-215.5	0.00	0.00	Start 11° build @ 6614' MD
6,700.0	9.43	0.00	6,663.4	-208.5	484.0	-208.5	11.00	11.00	
6,800.0	20.43	0.00	6,759.9	-182.8	484.0	-182.8	11.00	11.00	
6,900.0	31.43	0.00	6,849.7	-139.1	484.0	-139.1	11.00	11.00	
6,930.2	34.75	0.00	6,875.0	-122.6	484.0	-122.6	11.00	11.00	Sharon Springs
6,958.7	37.89	0.00	6,898.0	-105.7	484.0	-105.7	11.00	11.00	Niobrara
7,000.0	42.43	0.00	6,929.5	-79.1	484.0	-79.1	11.00	11.00	
7,100.0	53.43	0.00	6,996.4	-5.0	484.0	-5.0	11.00	11.00	
7,111.2	54.66	0.00	7,003.0	4.0	484.0	4.0	11.00	11.00	B Chalk
7,200.0	64.43	0.00	7,048.0	80.5	484.0	80.5	11.00	11.00	
7,254.9	70.46	0.00	7,069.0	131.1	484.0	131.1	11.00	11.00	C Chalk
7,300.0	75.43	0.00	7,082.2	174.3	484.0	174.3	11.00	11.00	
7,400.0	86.43	0.00	7,098.0	272.9	484.0	272.9	11.00	11.00	
7,432.5	90.00	0.00	7,099.0	305.4	484.0	305.4	11.00	11.00	Landing Pt @ 7099' TVD; 90° - ICP
7,500.0	90.00	0.00	7,099.0	372.9	484.0	372.9	0.00	0.00	
7,600.0	90.00	0.00	7,099.0	472.9	484.0	472.9	0.00	0.00	
7,700.0	90.00	0.00	7,099.0	572.9	484.0	572.9	0.00	0.00	
7,800.0	90.00	0.00	7,099.0	672.9	484.0	672.9	0.00	0.00	
7,900.0	90.00	0.00	7,099.0	772.9	484.0	772.9	0.00	0.00	
8,000.0	90.00	0.00	7,099.0	872.9	484.0	872.9	0.00	0.00	
8,100.0	90.00	0.00	7,099.0	972.9	484.0	972.9	0.00	0.00	
8,200.0	90.00	0.00	7,099.0	1,072.9	484.0	1,072.9	0.00	0.00	
8,300.0	90.00	0.00	7,099.0	1,172.9	484.0	1,172.9	0.00	0.00	
8,400.0	90.00	0.00	7,099.0	1,272.9	484.0	1,272.9	0.00	0.00	
8,500.0	90.00	0.00	7,099.0	1,372.9	484.0	1,372.9	0.00	0.00	
8,600.0	90.00	0.00	7,099.0	1,472.9	484.0	1,472.9	0.00	0.00	
8,700.0	90.00	0.00	7,099.0	1,572.9	484.0	1,572.9	0.00	0.00	
8,800.0	90.00	0.00	7,099.0	1,672.9	484.0	1,672.9	0.00	0.00	
8,900.0	90.00	0.00	7,099.0	1,772.9	484.0	1,772.9	0.00	0.00	
9,000.0	90.00	0.00	7,099.0	1,872.9	484.0	1,872.9	0.00	0.00	

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Project:	DJ Wattenberg	MD Reference:	KBE @ 4929.0ft (Original Well Elev)
Site:	SWSE S4-T1N-R65W (Chavez)	North Reference:	True
Well:	Chavez 4B-4H	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
9,100.0	90.00	0.00	7,099.0	1,972.9	484.0	1,972.9	0.00	0.00	
9,200.0	90.00	0.00	7,099.0	2,072.9	484.0	2,072.9	0.00	0.00	
9,300.0	90.00	0.00	7,099.0	2,172.9	484.0	2,172.9	0.00	0.00	
9,400.0	90.00	0.00	7,099.0	2,272.9	484.0	2,272.9	0.00	0.00	
9,500.0	90.00	0.00	7,099.0	2,372.9	484.0	2,372.9	0.00	0.00	
9,600.0	90.00	0.00	7,099.0	2,472.9	484.0	2,472.9	0.00	0.00	
9,700.0	90.00	0.00	7,099.0	2,572.9	484.0	2,572.9	0.00	0.00	
9,800.0	90.00	0.00	7,099.0	2,672.9	484.0	2,672.9	0.00	0.00	
9,900.0	90.00	0.00	7,099.0	2,772.9	484.0	2,772.9	0.00	0.00	
10,000.0	90.00	0.00	7,099.0	2,872.9	484.0	2,872.9	0.00	0.00	
10,100.0	90.00	0.00	7,099.0	2,972.9	484.0	2,972.9	0.00	0.00	
10,200.0	90.00	0.00	7,099.0	3,072.9	484.0	3,072.9	0.00	0.00	
10,300.0	90.00	0.00	7,099.0	3,172.9	484.0	3,172.9	0.00	0.00	
10,400.0	90.00	0.00	7,099.0	3,272.9	484.0	3,272.9	0.00	0.00	
10,500.0	90.00	0.00	7,099.0	3,372.9	484.0	3,372.9	0.00	0.00	
10,600.0	90.00	0.00	7,099.0	3,472.9	484.0	3,472.9	0.00	0.00	
10,700.0	90.00	0.00	7,099.0	3,572.9	484.0	3,572.9	0.00	0.00	
10,800.0	90.00	0.00	7,099.0	3,672.9	484.0	3,672.9	0.00	0.00	
10,900.0	90.00	0.00	7,099.0	3,772.9	484.0	3,772.9	0.00	0.00	
11,000.0	90.00	0.00	7,099.0	3,872.9	484.0	3,872.9	0.00	0.00	
11,100.0	90.00	0.00	7,099.0	3,972.9	484.0	3,972.9	0.00	0.00	
11,200.0	90.00	0.00	7,099.0	4,072.9	484.0	4,072.9	0.00	0.00	
11,300.0	90.00	0.00	7,099.0	4,172.9	484.0	4,172.9	0.00	0.00	
11,400.0	90.00	0.00	7,099.0	4,272.9	484.1	4,272.9	0.00	0.00	
11,500.0	90.00	0.00	7,099.0	4,372.9	484.1	4,372.9	0.00	0.00	
11,600.0	90.00	0.00	7,099.0	4,472.9	484.1	4,472.9	0.00	0.00	
11,700.0	90.00	0.00	7,099.0	4,572.9	484.1	4,572.9	0.00	0.00	
11,738.9	90.00	0.00	7,099.0	4,611.8	484.1	4,611.8	0.00	0.00	TD at 11738.9 - Chavez 4B-4H PBHL

Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
Chavez 4B-4H PBHL	0.00	0.00	7,099.0	4,611.8	484.1	1,275,507.92	3,234,165.73	40.086620	-104.663100
- plan hits target center									
- Point									

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
7,432.5	7,099.0	ICP	0.000	0.000

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Project:	DJ Wattenberg	MD Reference:	KBE @ 4929.0ft (Original Well Elev)
Site:	SWSE S4-T1N-R65W (Chavez)	North Reference:	True
Well:	Chavez 4B-4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	HZ		
Design:	Plan #2		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
4,459.0	4,429.0	Sussex				
4,609.5	4,578.0	Sussex Marker				
4,912.4	4,878.0	Shannon				
6,185.2	6,149.0	Teepee Buttes				
6,930.2	6,875.0	Sharon Springs				
6,958.7	6,898.0	Niobrara				
7,111.2	7,003.0	B Chalk				
7,254.9	7,069.0	C Chalk				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
1,200.0	1,200.0	0.0	0.0	KOP @ 1200'	
1,466.7	1,465.8	-7.6	17.0	EOB; Inc=8°	
5,006.7	4,971.4	-207.9	467.1	Start Drop -3.00	
5,273.3	5,237.2	-215.5	484.0	EOD; Inc=0°	
6,614.3	6,578.1	-215.5	484.0	Start 11° build @ 6614' MD	
7,432.5	7,099.0	305.4	484.0	Landing Pt @ 7099' TVD; 90°	
11,738.9	7,099.0	4,611.8	484.1	TD at 11738.9	

EnCana Oil & Gas (USA) Inc

DJ Wattenberg

SWSE S4-T1N-R65W (Chavez)

Chavez 4B-4H

HZ

Plan #1

Anticollision Report

29 March, 2012

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Chavez 4B-4H
Project:	DJ Wattenberg	TVD Reference:	KBE @ 4929.0ft (Original Well Elev)
Reference Site:	SWSE S4-T1N-R65W (Chavez)	MD Reference:	KBE @ 4929.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chavez 4B-4H	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 #1	Offset TVD Reference:	Offset Datum

Reference	Plan #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0ft	Error Model:	Systematic Ellipse
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 1,000.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program		Date	3/29/2012		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	11,804.2	Plan #1 (HZ)	MWD	Geolink MWD	

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
SWSE S4-T1N-R65W (Chavez)						
Chapin 33-4 (Existing) - Existing - Existing	8,598.2	7,080.0	614.0	572.5	14.811	CC
Chapin 33-4 (Existing) - Existing - Existing	8,600.0	7,080.0	614.0	572.5	14.801	ES
Chapin 33-4 (Existing) - Existing - Existing	8,700.0	7,080.0	622.4	579.3	14.447	SF
Chapin 34-4 (Existing) - Existing - Existing	1,200.0	1,179.0	665.0	660.9	161.035	CC, ES
Chapin 34-4 (Existing) - Existing - Existing	8,100.0	7,078.0	909.5	875.7	26.850	SF
Chapin 43-4 (Existing) - Existing - Existing	8,808.8	7,111.0	568.9	524.0	12.674	CC, ES
Chapin 43-4 (Existing) - Existing - Existing	8,900.0	7,111.0	576.2	529.8	12.425	SF
Chapin 44-4 (Existing) - Existing - Existing	7,593.2	7,111.0	361.0	333.4	13.091	CC, ES
Chapin 44-4 (Existing) - Existing - Existing	7,600.0	7,111.0	361.0	333.4	13.063	SF
Chavez 4A-4H - HZ - Plan #1	1,200.0	1,199.0	28.0	23.8	6.757	CC, ES
Chavez 4A-4H - HZ - Plan #1	11,805.0	11,823.2	900.0	733.5	5.404	SF
Olin 1 (Existing) - Existing - Existing	11,262.6	7,072.0	566.3	479.9	6.552	CC, ES
Olin 1 (Existing) - Existing - Existing	11,300.0	7,072.0	567.6	480.5	6.518	SF
Olin 31-4 (Existing) - Existing - Existing						Out of range
Olin 32-4 (Existing) - Existing - Existing	10,322.0	7,077.0	951.1	880.9	13.540	CC, ES
Olin 32-4 (Existing) - Existing - Existing	10,500.0	7,077.0	967.6	894.3	13.201	SF
Olin 41-4 (Existing) - Existing - Existing	11,259.3	7,079.0	514.3	427.9	5.953	CC, ES
Olin 41-4 (Existing) - Existing - Existing	11,300.0	7,079.0	515.9	428.8	5.923	SF
Olin 42-4A (Existing) - Existing - Existing	11,259.3	7,089.0	488.8	402.4	5.657	CC, ES
Olin 42-4A (Existing) - Existing - Existing	11,300.0	7,089.0	490.5	403.4	5.631	SF

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Chavez 4B-4H
Project:	DJ Wattenberg	TVD Reference:	KBE @ 4929.0ft (Original Well Elev)
Reference Site:	SWSE S4-T1N-R65W (Chavez)	MD Reference:	KBE @ 4929.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chavez 4B-4H	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 #1	Offset TVD Reference:	Offset Datum

Offset Design SWSE S4-T1N-R65W (Chavez) - Chapin 33-4 (Existing) - Existing - Existing													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
7,900.0	7,099.0	7,080.0	7,080.0	20.6	12.4	-90.00	1,405.0	-129.8	929.8	898.7	31.12	29.873		
8,000.0	7,099.0	7,080.0	7,080.0	21.8	12.4	-90.00	1,405.0	-129.8	857.2	824.8	32.47	26.399		
8,100.0	7,099.0	7,080.0	7,080.0	23.1	12.4	-90.00	1,405.0	-129.8	790.7	756.8	33.88	23.339		
8,200.0	7,099.0	7,080.0	7,080.0	24.5	12.4	-90.00	1,405.0	-129.8	731.8	696.5	35.33	20.712		
8,300.0	7,099.0	7,080.0	7,080.0	25.9	12.4	-90.00	1,405.0	-129.8	682.6	645.7	36.83	18.535		
8,400.0	7,099.0	7,080.0	7,080.0	27.3	12.4	-90.00	1,405.0	-129.8	645.2	606.8	38.35	16.823		
8,500.0	7,099.0	7,080.0	7,080.0	28.8	12.4	-90.00	1,405.0	-129.8	621.8	581.9	39.91	15.581		
8,598.2	7,099.0	7,080.0	7,080.0	30.3	12.4	-90.00	1,405.0	-129.8	614.0	572.5	41.45	14.811 CC		
8,600.0	7,099.0	7,080.0	7,080.0	30.3	12.4	-90.00	1,405.0	-129.8	614.0	572.5	41.48	14.801 ES		
8,700.0	7,099.0	7,080.0	7,080.0	31.9	12.4	-90.00	1,405.0	-129.8	622.4	579.3	43.08	14.447 SF		
8,800.0	7,099.0	7,080.0	7,080.0	33.4	12.4	-90.00	1,405.0	-129.8	646.3	601.6	44.69	14.462		
8,900.0	7,099.0	7,080.0	7,080.0	35.0	12.4	-90.00	1,405.0	-129.8	684.1	637.8	46.31	14.771		
9,000.0	7,099.0	7,080.0	7,080.0	36.6	12.4	-90.00	1,405.0	-129.8	733.7	685.8	47.95	15.301		
9,100.0	7,099.0	7,080.0	7,080.0	38.2	12.4	-90.00	1,405.0	-129.8	792.9	743.3	49.60	15.986		
9,200.0	7,099.0	7,080.0	7,080.0	39.8	12.4	-90.00	1,405.0	-129.8	859.7	808.4	51.26	16.772		
9,300.0	7,099.0	7,080.0	7,080.0	41.4	12.4	-90.00	1,405.0	-129.8	932.4	879.5	52.93	17.618		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Chavez 4B-4H
Project:	DJ Wattenberg	TVD Reference:	KBE @ 4929.0ft (Original Well Elev)
Reference Site:	SWSE S4-T1N-R65W (Chavez)	MD Reference:	KBE @ 4929.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chavez 4B-4H	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 #1	Offset TVD Reference:	Offset Datum

Offset Design SWSE S4-T1N-R65W (Chavez) - Chapin 34-4 (Existing) - Existing - Existing													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total		Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-32.48	561.0	-357.1	665.3					
100.0	100.0	79.0	79.0	0.2	0.1	-32.48	561.0	-357.1	665.0	664.7	0.29	2,294.902		
200.0	200.0	179.0	179.0	0.3	0.3	-32.48	561.0	-357.1	665.0	664.3	0.64	1,041.009		
300.0	300.0	279.0	279.0	0.5	0.5	-32.48	561.0	-357.1	665.0	664.0	0.99	673.161		
400.0	400.0	379.0	379.0	0.7	0.7	-32.48	561.0	-357.1	665.0	663.6	1.34	497.401		
500.0	500.0	479.0	479.0	0.8	0.8	-32.48	561.0	-357.1	665.0	663.3	1.69	394.419		
600.0	600.0	579.0	579.0	1.0	1.0	-32.48	561.0	-357.1	665.0	663.0	2.04	326.766		
700.0	700.0	679.0	679.0	1.2	1.2	-32.48	561.0	-357.1	665.0	662.6	2.38	278.923		
800.0	800.0	779.0	779.0	1.4	1.4	-32.48	561.0	-357.1	665.0	662.3	2.73	243.301		
900.0	900.0	879.0	879.0	1.5	1.5	-32.48	561.0	-357.1	665.0	661.9	3.08	215.747		
1,000.0	1,000.0	979.0	979.0	1.7	1.7	-32.48	561.0	-357.1	665.0	661.6	3.43	193.799		
1,100.0	1,100.0	1,079.0	1,079.0	1.9	1.9	-32.48	561.0	-357.1	665.0	661.2	3.78	175.905		
1,200.0	1,200.0	1,179.0	1,179.0	2.1	2.1	-32.48	561.0	-357.1	665.0	660.9	4.13	161.035 CC, ES		
1,300.0	1,300.0	1,279.0	1,279.0	2.2	2.2	-152.55	561.0	-357.1	667.3	662.8	4.48	149.097		
1,400.0	1,399.6	1,378.6	1,378.6	2.4	2.4	-152.76	561.0	-357.1	674.3	669.5	4.82	139.981		
1,500.0	1,498.8	1,477.8	1,477.8	2.6	2.6	-153.15	561.0	-357.1	685.7	680.5	5.16	132.858		
1,600.0	1,597.8	1,576.8	1,576.8	2.9	2.8	-153.66	561.0	-357.1	698.1	692.6	5.52	126.518		
1,700.0	1,696.9	1,675.9	1,675.9	3.1	2.9	-154.16	561.0	-357.1	710.7	704.8	5.88	120.921		
1,800.0	1,795.9	1,774.9	1,774.9	3.4	3.1	-154.64	561.0	-357.1	723.2	717.0	6.24	115.954		
1,900.0	1,894.9	1,873.9	1,873.9	3.6	3.3	-155.10	561.0	-357.1	735.9	729.3	6.60	111.524		
2,000.0	1,993.9	1,972.9	1,972.9	3.9	3.4	-155.55	561.0	-357.1	748.5	741.6	6.96	107.555		
2,100.0	2,093.0	2,072.0	2,072.0	4.1	3.6	-155.98	561.0	-357.1	761.2	753.9	7.32	103.982		
2,200.0	2,192.0	2,171.0	2,171.0	4.4	3.8	-156.40	561.0	-357.1	774.0	766.3	7.68	100.751		
2,300.0	2,291.0	2,270.0	2,270.0	4.7	4.0	-156.81	561.0	-357.1	786.8	778.7	8.04	97.819		
2,400.0	2,390.1	2,369.1	2,369.1	5.0	4.1	-157.20	561.0	-357.1	799.6	791.2	8.40	95.146		
2,500.0	2,489.1	2,468.1	2,468.1	5.3	4.3	-157.58	561.0	-357.1	812.5	803.7	8.76	92.702		
2,600.0	2,588.1	2,567.1	2,567.1	5.5	4.5	-157.95	561.0	-357.1	825.4	816.3	9.12	90.459		
2,700.0	2,687.1	2,666.1	2,666.1	5.8	4.7	-158.31	561.0	-357.1	838.3	828.8	9.48	88.394		
2,800.0	2,786.2	2,765.2	2,765.2	6.1	4.8	-158.65	561.0	-357.1	851.3	841.4	9.84	86.487		
2,900.0	2,885.2	2,864.2	2,864.2	6.4	5.0	-158.99	561.0	-357.1	864.3	854.1	10.20	84.722		
3,000.0	2,984.2	2,963.2	2,963.2	6.7	5.2	-159.31	561.0	-357.1	877.3	866.7	10.56	83.083		
3,100.0	3,083.2	3,062.2	3,062.2	7.0	5.3	-159.63	561.0	-357.1	890.3	879.4	10.92	81.558		
3,200.0	3,182.3	3,161.3	3,161.3	7.3	5.5	-159.93	561.0	-357.1	903.4	892.1	11.27	80.135		
3,300.0	3,281.3	3,260.3	3,260.3	7.6	5.7	-160.23	561.0	-357.1	916.5	904.9	11.63	78.805		
3,400.0	3,380.3	3,359.3	3,359.3	7.9	5.9	-160.52	561.0	-357.1	929.6	917.7	11.99	77.560		
3,500.0	3,479.3	3,458.3	3,458.3	8.1	6.0	-160.80	561.0	-357.1	942.8	930.4	12.34	76.391		
3,600.0	3,578.4	3,557.4	3,557.4	8.4	6.2	-161.08	561.0	-357.1	956.0	943.3	12.70	75.291		
3,700.0	3,677.4	3,656.4	3,656.4	8.7	6.4	-161.35	561.0	-357.1	969.1	956.1	13.05	74.256		
3,800.0	3,776.4	3,755.4	3,755.4	9.0	6.6	-161.60	561.0	-357.1	982.4	968.9	13.41	73.279		
3,900.0	3,875.5	3,854.5	3,854.5	9.3	6.7	-161.86	561.0	-357.1	995.6	981.8	13.76	72.356		
7,300.0	7,081.7	7,060.7	7,060.7	15.5	12.3	-82.17	561.0	-357.1	955.3	930.2	25.09	38.082		
7,400.0	7,097.9	7,076.9	7,076.9	15.9	12.4	-88.40	561.0	-357.1	912.8	886.9	25.84	35.319		
7,500.0	7,099.0	7,078.0	7,078.0	16.6	12.4	-90.00	561.0	-357.1	878.8	852.2	26.64	32.988		
7,600.0	7,099.0	7,078.0	7,078.0	17.4	12.4	-90.00	561.0	-357.1	855.2	827.7	27.58	31.008		
7,700.0	7,099.0	7,078.0	7,078.0	18.4	12.4	-90.00	561.0	-357.1	843.0	814.3	28.66	29.415		
7,754.2	7,099.0	7,078.0	7,078.0	18.9	12.4	-90.00	561.0	-357.1	841.2	811.9	29.30	28.710		
7,800.0	7,099.0	7,078.0	7,078.0	19.4	12.4	-90.00	561.0	-357.1	842.5	812.6	29.84	28.229		
7,900.0	7,099.0	7,078.0	7,078.0	20.6	12.4	-90.00	561.0	-357.1	853.8	822.7	31.12	27.435		
8,000.0	7,099.0	7,078.0	7,078.0	21.8	12.4	-90.00	561.0	-357.1	876.4	843.9	32.47	26.993		
8,100.0	7,099.0	7,078.0	7,078.0	23.1	12.4	-90.00	561.0	-357.1	909.5	875.7	33.87	26.850 SF		
8,200.0	7,099.0	7,078.0	7,078.0	24.5	12.4	-90.00	561.0	-357.1	952.1	916.7	35.33	26.948		

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 Chavez 4B-4H
Project:	DJ Wattenberg	TVD Reference:	KBE @ 4929.0ft (Original Well Elev)
Reference Site:	SWSE S4-T1N-R65W (Chavez)	MD Reference:	KBE @ 4929.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chavez 4B-4H	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 #1	Offset TVD Reference:	Offset Datum

Offset Design SWSE S4-T1N-R65W (Chavez) - Chapin 43-4 (Existing) - Existing - Existing													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		
8,000.0	7,099.0	7,111.0	7,111.0	21.8	12.4	90.00	1,615.6	1,053.0	988.8	956.3	32.53	30.401		
8,100.0	7,099.0	7,111.0	7,111.0	23.1	12.4	90.00	1,615.6	1,053.0	908.8	874.9	33.93	26.784		
8,200.0	7,099.0	7,111.0	7,111.0	24.5	12.4	90.00	1,615.6	1,053.0	833.2	797.8	35.39	23.546		
8,300.0	7,099.0	7,111.0	7,111.0	25.9	12.4	90.00	1,615.6	1,053.0	763.2	726.3	36.88	20.694		
8,400.0	7,099.0	7,111.0	7,111.0	27.3	12.4	90.00	1,615.6	1,053.0	700.5	662.1	38.41	18.240		
8,500.0	7,099.0	7,111.0	7,111.0	28.8	12.4	90.00	1,615.6	1,053.0	647.3	607.3	39.96	16.198		
8,600.0	7,099.0	7,111.0	7,111.0	30.3	12.4	90.00	1,615.6	1,053.0	606.0	564.4	41.54	14.589		
8,700.0	7,099.0	7,111.0	7,111.0	31.9	12.4	90.00	1,615.6	1,053.0	579.2	536.1	43.13	13.429		
8,800.0	7,099.0	7,111.0	7,111.0	33.4	12.4	90.00	1,615.6	1,053.0	569.0	524.2	44.74	12.716		
8,808.8	7,099.0	7,111.0	7,111.0	33.6	12.4	90.00	1,615.6	1,053.0	568.9	524.0	44.89	12.674 CC, ES		
8,900.0	7,099.0	7,111.0	7,111.0	35.0	12.4	90.00	1,615.6	1,053.0	576.2	529.8	46.37	12.425 SF		
9,000.0	7,099.0	7,111.0	7,111.0	36.6	12.4	90.00	1,615.6	1,053.0	600.2	552.2	48.01	12.502		
9,100.0	7,099.0	7,111.0	7,111.0	38.2	12.4	90.00	1,615.6	1,053.0	639.1	589.4	49.66	12.871		
9,200.0	7,099.0	7,111.0	7,111.0	39.8	12.4	90.00	1,615.6	1,053.0	690.4	639.1	51.31	13.455		
9,300.0	7,099.0	7,111.0	7,111.0	41.4	12.4	90.00	1,615.6	1,053.0	751.6	698.6	52.98	14.187		
9,400.0	7,099.0	7,111.0	7,111.0	43.1	12.4	90.00	1,615.6	1,053.0	820.5	765.8	54.65	15.013		
9,500.0	7,099.0	7,111.0	7,111.0	44.7	12.4	90.00	1,615.6	1,053.0	895.2	838.9	56.33	15.892		
9,600.0	7,099.0	7,111.0	7,111.0	46.4	12.4	90.00	1,615.6	1,053.0	974.5	916.5	58.02	16.797		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Chavez 4B-4H
Project:	DJ Wattenberg	TVD Reference:	KBE @ 4929.0ft (Original Well Elev)
Reference Site:	SWSE S4-T1N-R65W (Chavez)	MD Reference:	KBE @ 4929.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chavez 4B-4H	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 #1	Offset TVD Reference:	Offset Datum

Offset Design SWSE S4-T1N-R65W (Chavez) - Chapin 44-4 (Existing) - Existing - Existing													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)						
0.0	0.0	12.0	12.0	0.0	0.0	64.67	400.0	845.1	935.0					
100.0	100.0	112.0	112.0	0.2	0.2	64.67	400.0	845.1	935.0	934.7	0.35	2,692.062		
200.0	200.0	212.0	212.0	0.3	0.4	64.67	400.0	845.1	935.0	934.3	0.70	1,342.658		
300.0	300.0	312.0	312.0	0.5	0.5	64.67	400.0	845.1	935.0	934.0	1.05	894.358		
400.0	400.0	412.0	412.0	0.7	0.7	64.67	400.0	845.1	935.0	933.6	1.39	670.489		
500.0	500.0	512.0	512.0	0.8	0.9	64.67	400.0	845.1	935.0	933.3	1.74	536.257		
600.0	600.0	612.0	612.0	1.0	1.1	64.67	400.0	845.1	935.0	932.9	2.09	446.806		
700.0	700.0	712.0	712.0	1.2	1.2	64.67	400.0	845.1	935.0	932.6	2.44	382.931		
800.0	800.0	812.0	812.0	1.4	1.4	64.67	400.0	845.1	935.0	932.2	2.79	335.035		
900.0	900.0	912.0	912.0	1.5	1.6	64.67	400.0	845.1	935.0	931.9	3.14	297.788		
1,000.0	1,000.0	1,012.0	1,012.0	1.7	1.8	64.67	400.0	845.1	935.0	931.5	3.49	267.994		
1,100.0	1,100.0	1,112.0	1,112.0	1.9	1.9	64.67	400.0	845.1	935.0	931.2	3.84	243.620		
1,200.0	1,200.0	1,212.0	1,212.0	2.1	2.1	64.67	400.0	845.1	935.0	930.8	4.19	223.310		
1,300.0	1,300.0	1,312.0	1,312.0	2.2	2.3	-55.50	400.0	845.1	933.5	929.0	4.54	205.804		
1,400.0	1,399.6	1,411.6	1,411.6	2.4	2.5	-56.00	400.0	845.1	929.1	924.2	4.89	190.002		
1,500.0	1,498.8	1,510.8	1,510.8	2.6	2.6	-56.77	400.0	845.1	922.0	916.7	5.26	175.316		
1,600.0	1,597.8	1,609.8	1,609.8	2.9	2.8	-57.50	400.0	845.1	914.4	908.7	5.64	161.994		
1,700.0	1,696.9	1,708.9	1,708.9	3.1	3.0	-58.23	400.0	845.1	906.9	900.9	6.04	150.138		
1,800.0	1,795.9	1,807.9	1,807.9	3.4	3.2	-58.98	400.0	845.1	899.6	893.2	6.45	139.570		
1,900.0	1,894.9	1,906.9	1,906.9	3.6	3.3	-59.74	400.0	845.1	892.5	885.6	6.86	130.125		
2,000.0	1,993.9	2,005.9	2,005.9	3.9	3.5	-60.51	400.0	845.1	885.5	878.2	7.28	121.659		
2,100.0	2,093.0	2,105.0	2,105.0	4.1	3.7	-61.30	400.0	845.1	878.7	871.0	7.70	114.048		
2,200.0	2,192.0	2,204.0	2,204.0	4.4	3.8	-62.09	400.0	845.1	872.0	863.9	8.14	107.181		
2,300.0	2,291.0	2,303.0	2,303.0	4.7	4.0	-62.90	400.0	845.1	865.6	857.0	8.57	100.968		
2,400.0	2,390.1	2,402.1	2,402.1	5.0	4.2	-63.72	400.0	845.1	859.3	850.2	9.01	95.327		
2,500.0	2,489.1	2,501.1	2,501.1	5.3	4.4	-64.55	400.0	845.1	853.1	843.7	9.46	90.191		
2,600.0	2,588.1	2,600.1	2,600.1	5.5	4.5	-65.40	400.0	845.1	847.2	837.3	9.91	85.502		
2,700.0	2,687.1	2,699.1	2,699.1	5.8	4.7	-66.25	400.0	845.1	841.5	831.1	10.36	81.210		
2,800.0	2,786.2	2,798.2	2,798.2	6.1	4.9	-67.12	400.0	845.1	835.9	825.1	10.82	77.270		
2,900.0	2,885.2	2,897.2	2,897.2	6.4	5.1	-67.99	400.0	845.1	830.5	819.3	11.28	73.647		
3,000.0	2,984.2	2,996.2	2,996.2	6.7	5.2	-68.88	400.0	845.1	825.4	813.6	11.74	70.307		
3,100.0	3,083.2	3,095.2	3,095.2	7.0	5.4	-69.78	400.0	845.1	820.4	808.2	12.20	67.221		
3,200.0	3,182.3	3,194.3	3,194.3	7.3	5.6	-70.69	400.0	845.1	815.7	803.0	12.67	64.367		
3,300.0	3,281.3	3,293.3	3,293.3	7.6	5.7	-71.61	400.0	845.1	811.1	798.0	13.14	61.720		
3,400.0	3,380.3	3,392.3	3,392.3	7.9	5.9	-72.54	400.0	845.1	806.8	793.2	13.61	59.264		
3,500.0	3,479.3	3,491.3	3,491.3	8.1	6.1	-73.48	400.0	845.1	802.7	788.6	14.09	56.980		
3,600.0	3,578.4	3,590.4	3,590.4	8.4	6.3	-74.43	400.0	845.1	798.8	784.3	14.56	54.853		
3,700.0	3,677.4	3,689.4	3,689.4	8.7	6.4	-75.38	400.0	845.1	795.2	780.1	15.04	52.871		
3,800.0	3,776.4	3,788.4	3,788.4	9.0	6.6	-76.35	400.0	845.1	791.8	776.2	15.52	51.022		
3,900.0	3,875.5	3,887.5	3,887.5	9.3	6.8	-77.32	400.0	845.1	788.6	772.6	16.00	49.294		
4,000.0	3,974.5	3,986.5	3,986.5	9.6	7.0	-78.30	400.0	845.1	785.6	769.1	16.48	47.679		
4,100.0	4,073.5	4,085.5	4,085.5	9.9	7.1	-79.29	400.0	845.1	782.9	765.9	16.96	46.168		
4,200.0	4,172.5	4,184.5	4,184.5	10.2	7.3	-80.29	400.0	845.1	780.4	762.9	17.44	44.753		
4,300.0	4,271.6	4,283.6	4,283.6	10.5	7.5	-81.29	400.0	845.1	778.1	760.2	17.92	43.427		
4,400.0	4,370.6	4,382.6	4,382.6	10.8	7.6	-82.29	400.0	845.1	776.1	757.7	18.40	42.185		
4,500.0	4,469.6	4,481.6	4,481.6	11.1	7.8	-83.30	400.0	845.1	774.4	755.5	18.88	41.019		
4,600.0	4,568.6	4,580.6	4,580.6	11.4	8.0	-84.32	400.0	845.1	772.8	753.5	19.36	39.925		
4,700.0	4,667.7	4,679.7	4,679.7	11.7	8.2	-85.34	400.0	845.1	771.6	751.7	19.84	38.898		
4,800.0	4,766.7	4,778.7	4,778.7	12.0	8.3	-86.36	400.0	845.1	770.6	750.2	20.31	37.934		
4,900.0	4,865.7	4,877.7	4,877.7	12.3	8.5	-87.38	400.0	845.1	769.8	749.0	20.79	37.029		
5,000.0	4,964.7	4,976.7	4,976.7	12.6	8.7	-88.41	400.0	845.1	769.3	748.0	21.26	36.179		
5,100.0	5,063.8	5,075.8	5,075.8	12.9	8.9	-89.43	400.0	845.1	769.0	747.3	21.74	35.380		

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 Chavez 4B-4H
Project:	DJ Wattenberg	TVD Reference:	KBE @ 4929.0ft (Original Well Elev)
Reference Site:	SWSE S4-T1N-R65W (Chavez)	MD Reference:	KBE @ 4929.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chavez 4B-4H	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 #1	Offset TVD Reference:	Offset Datum

Offset Design SWSE S4-T1N-R65W (Chavez) - Chapin 44-4 (Existing) - Existing - Existing														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			
5,155.1	5,118.3	5,130.3	5,130.3	13.0	9.0	-90.00	400.0	845.1	769.0	747.0	21.99	34.961			
5,200.0	5,162.8	5,174.8	5,174.8	13.2	9.0	-90.46	400.0	845.1	769.0	746.8	22.21	34.630			
5,300.0	5,262.1	5,274.1	5,274.1	13.4	9.2	-91.36	400.0	845.1	769.2	746.6	22.63	33.992			
5,400.0	5,361.8	5,373.8	5,373.8	13.6	9.4	-91.89	400.0	845.1	769.4	746.4	22.98	33.486			
5,500.0	5,461.8	5,473.8	5,473.8	13.7	9.6	27.98	400.0	845.1	769.4	746.2	23.27	33.064			
5,600.0	5,561.8	5,573.8	5,573.8	13.8	9.7	27.98	400.0	845.1	769.4	745.9	23.57	32.647			
5,700.0	5,661.8	5,673.8	5,673.8	14.0	9.9	27.98	400.0	845.1	769.4	745.6	23.87	32.240			
5,800.0	5,761.8	5,773.8	5,773.8	14.1	10.1	27.98	400.0	845.1	769.4	745.3	24.17	31.841			
5,900.0	5,861.8	5,873.8	5,873.8	14.2	10.3	27.98	400.0	845.1	769.4	745.0	24.47	31.450			
6,000.0	5,961.8	5,973.8	5,973.8	14.3	10.4	27.98	400.0	845.1	769.4	744.7	24.77	31.068			
6,100.0	6,061.8	6,073.8	6,073.8	14.5	10.6	27.98	400.0	845.1	769.4	744.4	25.07	30.693			
6,200.0	6,161.8	6,173.8	6,173.8	14.6	10.8	27.98	400.0	845.1	769.4	744.1	25.37	30.326			
6,300.0	6,261.8	6,273.8	6,273.8	14.7	10.9	27.98	400.0	845.1	769.4	743.8	25.68	29.967			
6,400.0	6,361.8	6,373.8	6,373.8	14.9	11.1	27.98	400.0	845.1	769.4	743.5	25.98	29.615			
6,500.0	6,461.8	6,473.8	6,473.8	15.0	11.3	27.98	400.0	845.1	769.4	743.2	26.29	29.271			
6,600.0	6,561.8	6,573.8	6,573.8	15.1	11.5	27.98	400.0	845.1	769.4	742.9	26.59	28.933			
6,700.0	6,661.4	6,673.4	6,673.4	15.2	11.6	28.52	400.0	845.1	763.5	736.9	26.65	28.650			
6,800.0	6,758.0	6,770.0	6,770.0	15.2	11.8	30.71	400.0	845.1	741.3	715.2	26.09	28.419			
6,900.0	6,848.0	6,860.0	6,860.0	15.1	12.0	34.93	400.0	845.1	703.8	678.7	25.06	28.087			
7,000.0	6,928.0	6,940.0	6,940.0	15.0	12.1	41.83	400.0	845.1	653.3	629.3	23.94	27.284			
7,100.0	6,995.2	7,007.2	7,007.2	15.0	12.2	52.01	400.0	845.1	593.1	569.8	23.39	25.359			
7,200.0	7,047.1	7,059.1	7,059.1	15.2	12.3	65.08	400.0	845.1	528.0	504.1	23.91	22.084			
7,300.0	7,081.7	7,093.7	7,093.7	15.5	12.4	78.34	400.0	845.1	464.1	439.1	25.03	18.545			
7,400.0	7,097.9	7,109.9	7,109.9	15.9	12.4	87.97	400.0	845.1	409.4	383.5	25.92	15.795			
7,500.0	7,099.0	7,111.0	7,111.0	16.6	12.4	90.00	400.0	845.1	372.8	346.1	26.70	13.964			
7,593.2	7,099.0	7,111.0	7,111.0	17.4	12.4	90.00	400.0	845.1	361.0	333.4	27.58	13.091 CC, ES			
7,600.0	7,099.0	7,111.0	7,111.0	17.4	12.4	90.00	400.0	845.1	361.0	333.4	27.64	13.063 SF			
7,700.0	7,099.0	7,111.0	7,111.0	18.4	12.4	90.00	400.0	845.1	376.5	347.7	28.72	13.110			
7,800.0	7,099.0	7,111.0	7,111.0	19.4	12.4	90.00	400.0	845.1	416.0	386.1	29.90	13.913			
7,900.0	7,099.0	7,111.0	7,111.0	20.6	12.4	90.00	400.0	845.1	473.8	442.6	31.18	15.195			
8,000.0	7,099.0	7,111.0	7,111.0	21.8	12.4	90.00	400.0	845.1	543.9	511.4	32.53	16.722			
8,100.0	7,099.0	7,111.0	7,111.0	23.1	12.4	90.00	400.0	845.1	622.2	588.3	33.93	18.338			
8,200.0	7,099.0	7,111.0	7,111.0	24.5	12.4	90.00	400.0	845.1	706.1	670.7	35.39	19.953			
8,300.0	7,099.0	7,111.0	7,111.0	25.9	12.4	90.00	400.0	845.1	793.7	756.8	36.88	21.520			
8,400.0	7,099.0	7,111.0	7,111.0	27.3	12.4	90.00	400.0	845.1	883.9	845.5	38.41	23.014			
8,500.0	7,099.0	7,111.0	7,111.0	28.8	12.4	90.00	400.0	845.1	976.0	936.1	39.96	24.425			

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Chavez 4B-4H
Project:	DJ Wattenberg	TVD Reference:	KBE @ 4929.0ft (Original Well Elev)
Reference Site:	SWSE S4-T1N-R65W (Chavez)	MD Reference:	KBE @ 4929.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chavez 4B-4H	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 #1	Offset TVD Reference:	Offset Datum

Offset Design SWSE S4-T1N-R65W (Chavez) - Chavez 4A-4H - HZ - Plan #1													Offset Site Error:	0.0 ft
Survey Program: O-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance		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	-89.98	0.0	-28.0	28.0					
100.0	100.0	99.0	99.0	0.2	0.2	-89.98	0.0	-28.0	28.0	27.7	0.30	92.614		
200.0	200.0	199.0	199.0	0.3	0.3	-89.98	0.0	-28.0	28.0	27.3	0.65	42.987		
300.0	300.0	299.0	299.0	0.5	0.5	-89.98	0.0	-28.0	28.0	27.0	1.00	27.983		
400.0	400.0	399.0	399.0	0.7	0.7	-89.98	0.0	-28.0	28.0	26.6	1.35	20.743		
500.0	500.0	499.0	499.0	0.8	0.8	-89.98	0.0	-28.0	28.0	26.3	1.70	16.479		
600.0	600.0	599.0	599.0	1.0	1.0	-89.98	0.0	-28.0	28.0	25.9	2.05	13.669		
700.0	700.0	699.0	699.0	1.2	1.2	-89.98	0.0	-28.0	28.0	25.6	2.40	11.678		
800.0	800.0	799.0	799.0	1.4	1.4	-89.98	0.0	-28.0	28.0	25.2	2.75	10.193		
900.0	900.0	899.0	899.0	1.5	1.5	-89.98	0.0	-28.0	28.0	24.9	3.09	9.044		
1,000.0	1,000.0	999.0	999.0	1.7	1.7	-89.98	0.0	-28.0	28.0	24.5	3.44	8.127		
1,100.0	1,100.0	1,099.0	1,099.0	1.9	1.9	-89.98	0.0	-28.0	28.0	24.2	3.79	7.379		
1,200.0	1,200.0	1,199.0	1,199.0	2.1	2.1	-89.98	0.0	-28.0	28.0	23.8	4.14	6.757 CC, ES		
1,300.0	1,300.0	1,297.7	1,297.6	2.2	2.2	149.57	-1.5	-30.0	32.3	27.8	4.49	7.194		
1,400.0	1,399.6	1,395.2	1,394.9	2.4	2.4	148.63	-6.0	-35.9	45.2	40.3	4.83	9.353		
1,500.0	1,498.8	1,491.4	1,490.3	2.6	2.6	147.83	-13.2	-45.6	66.1	61.0	5.18	12.764		
1,600.0	1,597.8	1,588.7	1,586.7	2.9	2.8	147.42	-21.4	-56.4	89.2	83.6	5.56	16.053		
1,700.0	1,696.9	1,686.0	1,683.0	3.1	3.1	147.18	-29.5	-67.2	112.2	106.3	5.94	18.903		
1,800.0	1,795.9	1,783.3	1,779.4	3.4	3.3	147.02	-37.7	-78.0	135.3	129.0	6.33	21.387		
1,900.0	1,894.9	1,880.6	1,875.7	3.6	3.6	146.91	-45.8	-88.8	158.3	151.6	6.72	23.565		
2,000.0	1,993.9	1,977.9	1,972.1	3.9	3.8	146.82	-54.0	-99.7	181.4	174.3	7.12	25.486		
2,100.0	2,093.0	2,075.2	2,068.5	4.1	4.1	146.76	-62.1	-110.5	204.4	196.9	7.52	27.189		
2,200.0	2,192.0	2,172.5	2,164.8	4.4	4.3	146.70	-70.3	-121.3	227.5	219.6	7.92	28.709		
2,300.0	2,291.0	2,269.9	2,261.2	4.7	4.6	146.66	-78.4	-132.1	250.6	242.2	8.33	30.070		
2,400.0	2,390.1	2,367.2	2,357.5	5.0	4.9	146.63	-86.6	-142.9	273.6	264.9	8.74	31.296		
2,500.0	2,489.1	2,464.5	2,453.9	5.3	5.2	146.60	-94.7	-153.7	296.7	287.5	9.15	32.406		
2,600.0	2,588.1	2,561.8	2,550.3	5.5	5.4	146.57	-102.9	-164.5	319.7	310.1	9.57	33.413		
2,700.0	2,687.1	2,659.1	2,646.6	5.8	5.7	146.55	-111.0	-175.4	342.8	332.8	9.98	34.331		
2,800.0	2,786.2	2,756.4	2,743.0	6.1	6.0	146.53	-119.2	-186.2	365.8	355.4	10.40	35.172		
2,900.0	2,885.2	2,853.7	2,839.3	6.4	6.3	146.51	-127.3	-197.0	388.9	378.1	10.82	35.944		
3,000.0	2,984.2	2,951.0	2,935.7	6.7	6.5	146.50	-135.5	-207.8	411.9	400.7	11.24	36.654		
3,100.0	3,083.2	3,048.3	3,032.0	7.0	6.8	146.48	-143.6	-218.6	435.0	423.3	11.66	37.311		
3,200.0	3,182.3	3,145.6	3,128.4	7.3	7.1	146.47	-151.8	-229.4	458.0	446.0	12.08	37.919		
3,300.0	3,281.3	3,242.9	3,224.8	7.6	7.4	146.46	-159.9	-240.3	481.1	468.6	12.50	38.484		
3,400.0	3,380.3	3,340.2	3,321.1	7.9	7.7	146.45	-168.1	-251.1	504.1	491.2	12.92	39.010		
3,500.0	3,479.3	3,437.5	3,417.5	8.1	8.0	146.44	-176.2	-261.9	527.2	513.9	13.35	39.501		
3,600.0	3,578.4	3,534.8	3,513.8	8.4	8.2	146.43	-184.4	-272.7	550.3	536.5	13.77	39.960		
3,700.0	3,677.4	3,632.1	3,610.2	8.7	8.5	146.43	-192.5	-283.5	573.3	559.1	14.19	40.390		
3,800.0	3,776.4	3,729.4	3,706.6	9.0	8.8	146.42	-200.7	-294.3	596.4	581.7	14.62	40.793		
3,900.0	3,875.5	3,826.8	3,802.9	9.3	9.1	146.41	-208.8	-305.1	619.4	604.4	15.04	41.173		
4,000.0	3,974.5	3,924.1	3,899.3	9.6	9.4	146.41	-217.0	-316.0	642.5	627.0	15.47	41.531		
4,100.0	4,073.5	4,021.4	3,995.6	9.9	9.7	146.40	-225.1	-326.8	665.5	649.6	15.90	41.869		
4,200.0	4,172.5	4,118.7	4,092.0	10.2	10.0	146.39	-233.3	-337.6	688.6	672.3	16.32	42.188		
4,300.0	4,271.6	4,216.0	4,188.4	10.5	10.2	146.39	-241.4	-348.4	711.6	694.9	16.75	42.490		
4,400.0	4,370.6	4,313.3	4,284.7	10.8	10.5	146.39	-249.6	-359.2	734.7	717.5	17.17	42.777		
4,500.0	4,469.6	4,410.6	4,381.1	11.1	10.8	146.38	-257.7	-370.0	757.7	740.1	17.60	43.049		
4,600.0	4,568.6	4,507.9	4,477.4	11.4	11.1	146.38	-265.9	-380.9	780.8	762.8	18.03	43.307		
4,700.0	4,667.7	4,605.2	4,573.8	11.7	11.4	146.37	-274.0	-391.7	803.8	785.4	18.46	43.553		
4,800.0	4,766.7	4,717.0	4,684.6	12.0	11.7	146.39	-283.2	-403.8	826.7	807.8	18.91	43.718		
4,900.0	4,865.7	4,811.3	4,838.4	12.3	12.0	146.74	-290.4	-413.4	844.7	825.4	19.40	43.555		
5,000.0	4,964.7	4,996.7	4,963.7	12.6	12.2	147.34	-291.2	-414.5	857.2	837.4	19.80	43.285		
5,100.0	5,063.8	5,095.7	5,062.8	12.9	12.3	147.83	-291.2	-414.5	869.0	848.8	20.17	43.089		

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 Chavez 4B-4H
Project:	DJ Wattenberg	TVD Reference:	KBE @ 4929.0ft (Original Well Elev)
Reference Site:	SWSE S4-T1N-R65W (Chavez)	MD Reference:	KBE @ 4929.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chavez 4B-4H	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 #1	Offset TVD Reference:	Offset Datum

Offset Design SWSE S4-T1N-R65W (Chavez) - Chavez 4A-4H - HZ - Plan #1													Offset Site Error: 0.0 ft	
Survey Program: O-MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
5,200.0	5,162.8	5,194.8	5,161.8	13.2	12.4	148.31	-291.2	-414.5	880.8	860.3	20.53	42.906		
5,300.0	5,262.1	5,294.0	5,261.1	13.4	12.5	148.85	-291.2	-414.5	891.2	870.2	20.93	42.587		
5,400.0	5,361.8	5,393.8	5,360.8	13.6	12.7	149.17	-291.2	-414.5	897.1	875.9	21.28	42.151		
5,500.0	5,461.8	5,493.7	5,460.8	13.7	12.8	-90.74	-291.2	-414.5	898.7	877.1	21.60	41.609		
5,600.0	5,561.8	5,593.7	5,560.8	13.8	12.9	-90.74	-291.2	-414.5	898.7	876.8	21.91	41.020		
5,700.0	5,661.8	5,693.7	5,660.8	14.0	13.1	-90.74	-291.2	-414.5	898.7	876.5	22.22	40.446		
5,800.0	5,761.8	5,793.7	5,760.8	14.1	13.2	-90.74	-291.2	-414.5	898.7	876.2	22.53	39.885		
5,900.0	5,861.8	5,893.7	5,860.8	14.2	13.3	-90.74	-291.2	-414.5	898.7	875.9	22.85	39.338		
6,000.0	5,961.8	5,993.7	5,960.8	14.3	13.5	-90.74	-291.2	-414.5	898.7	875.5	23.16	38.805		
6,100.0	6,061.8	6,093.7	6,060.8	14.5	13.6	-90.74	-291.2	-414.5	898.7	875.2	23.48	38.283		
6,200.0	6,161.8	6,193.7	6,160.8	14.6	13.7	-90.74	-291.2	-414.5	898.7	874.9	23.79	37.774		
6,300.0	6,261.8	6,293.7	6,260.8	14.7	13.9	-90.74	-291.2	-414.5	898.7	874.6	24.11	37.278		
6,400.0	6,361.8	6,393.7	6,360.8	14.9	14.0	-90.74	-291.2	-414.5	898.7	874.3	24.43	36.792		
6,500.0	6,461.8	6,493.7	6,460.8	15.0	14.2	-90.74	-291.2	-414.5	898.7	874.0	24.75	36.318		
6,600.0	6,561.8	6,593.7	6,560.8	15.1	14.3	-90.74	-291.2	-414.5	898.7	873.6	25.07	35.855		
6,700.0	6,661.4	6,695.4	6,662.2	15.2	14.4	-90.91	-286.9	-414.5	898.7	873.5	25.27	35.561		
6,800.0	6,758.0	6,798.5	6,762.5	15.2	14.4	-91.09	-263.8	-414.5	898.8	873.6	25.24	35.613		
6,900.0	6,848.0	6,902.1	6,856.8	15.1	14.3	-91.24	-221.0	-414.5	898.8	873.8	25.06	35.870		
7,000.0	6,928.0	7,006.2	6,941.0	15.0	14.2	-91.34	-160.2	-414.5	898.9	874.0	24.87	36.138		
7,100.0	6,995.2	7,110.5	7,011.7	15.0	14.2	-91.39	-83.7	-414.4	898.9	874.0	24.85	36.172		
7,200.0	7,047.1	7,214.9	7,065.7	15.2	14.3	-91.38	5.3	-414.4	898.9	873.7	25.15	35.746		
7,300.0	7,081.7	7,319.1	7,100.9	15.5	14.6	-91.33	103.3	-414.4	898.8	873.0	25.87	34.740		
7,400.0	7,097.9	7,423.1	7,115.9	15.9	15.1	-91.22	206.0	-414.4	898.8	871.7	27.06	33.219		
7,500.0	7,099.0	7,524.3	7,115.2	16.6	15.8	-91.10	307.2	-414.4	898.7	870.1	28.63	31.393		
7,600.0	7,099.0	7,624.3	7,113.5	17.4	16.7	-90.99	407.1	-414.4	898.7	868.2	30.51	29.459		
7,700.0	7,099.0	7,724.3	7,111.7	18.4	17.7	-90.87	507.1	-414.4	898.7	866.0	32.66	27.519		
7,800.0	7,099.0	7,824.2	7,110.0	19.4	18.8	-90.76	607.1	-414.4	898.6	863.6	35.02	25.657		
7,900.0	7,099.0	7,924.2	7,108.2	20.6	20.0	-90.65	707.0	-414.4	898.6	861.0	37.57	23.917		
8,000.0	7,099.0	8,024.2	7,106.5	21.8	21.2	-90.54	807.0	-414.4	898.6	858.3	40.26	22.317		
8,100.0	7,099.0	8,124.2	7,104.7	23.1	22.6	-90.43	907.0	-414.4	898.5	855.5	43.07	20.860		
8,200.0	7,099.0	8,224.2	7,103.0	24.5	24.0	-90.32	1,007.0	-414.4	898.5	852.5	45.98	19.541		
8,300.0	7,099.0	8,324.2	7,101.3	25.9	25.4	-90.21	1,106.9	-414.4	898.5	849.5	48.96	18.350		
8,400.0	7,099.0	8,424.2	7,099.5	27.3	26.9	-90.10	1,206.9	-414.4	898.5	846.5	52.02	17.274		
8,500.0	7,099.0	8,524.1	7,097.8	28.8	28.4	-89.98	1,306.9	-414.3	898.5	843.4	55.12	16.300		
8,600.0	7,099.0	8,624.1	7,096.0	30.3	29.9	-89.87	1,406.8	-414.3	898.5	840.2	58.27	15.419		
8,700.0	7,099.0	8,724.1	7,094.3	31.9	31.5	-89.76	1,506.8	-414.3	898.5	837.0	61.46	14.619		
8,774.5	7,099.0	8,798.6	7,093.0	33.0	32.6	-89.68	1,581.3	-414.3	898.5	834.6	63.86	14.070		
8,800.0	7,099.0	8,824.1	7,092.5	33.4	33.0	-89.65	1,606.8	-414.3	898.5	833.8	64.68	13.891		
8,900.0	7,099.0	8,924.1	7,090.8	35.0	34.6	-89.54	1,706.7	-414.3	898.5	830.5	67.93	13.226		
9,000.0	7,099.0	9,024.1	7,089.0	36.6	36.2	-89.43	1,806.7	-414.3	898.5	827.3	71.20	12.618		
9,100.0	7,099.0	9,124.0	7,087.3	38.2	37.9	-89.32	1,906.7	-414.3	898.5	824.0	74.50	12.061		
9,200.0	7,099.0	9,224.0	7,085.5	39.8	39.5	-89.21	2,006.6	-414.3	898.5	820.7	77.81	11.547		
9,300.0	7,099.0	9,324.0	7,083.8	41.4	41.1	-89.09	2,106.6	-414.3	898.5	817.4	81.14	11.074		
9,400.0	7,099.0	9,424.0	7,082.1	43.1	42.8	-88.98	2,206.6	-414.3	898.5	814.0	84.48	10.636		
9,500.0	7,099.0	9,524.0	7,080.3	44.7	44.4	-88.87	2,306.6	-414.3	898.6	810.7	87.83	10.230		
9,600.0	7,099.0	9,624.0	7,078.6	46.4	46.1	-88.76	2,406.5	-414.3	898.6	807.4	91.20	9.853		
9,700.0	7,099.0	9,724.0	7,076.8	48.0	47.8	-88.65	2,506.5	-414.3	898.6	804.0	94.57	9.502		
9,800.0	7,099.0	9,823.9	7,075.1	49.7	49.5	-88.54	2,606.5	-414.2	898.6	800.7	97.96	9.174		
9,900.0	7,099.0	9,923.9	7,073.3	51.4	51.1	-88.43	2,706.4	-414.2	898.7	797.3	101.35	8.867		
10,000.0	7,099.0	10,023.9	7,071.6	53.1	52.8	-88.32	2,806.4	-414.2	898.7	794.0	104.74	8.580		
10,100.0	7,099.0	10,123.9	7,069.8	54.8	54.5	-88.20	2,906.4	-414.2	898.8	790.6	108.15	8.311		
10,200.0	7,099.0	10,223.9	7,068.1	56.4	56.2	-88.09	3,006.3	-414.2	898.8	787.3	111.55	8.057		

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 Chavez 4B-4H
Project:	DJ Wattenberg	TVD Reference:	KBE @ 4929.0ft (Original Well Elev)
Reference Site:	SWSE S4-T1N-R65W (Chavez)	MD Reference:	KBE @ 4929.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chavez 4B-4H	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 #1	Offset TVD Reference:	Offset Datum

Offset Design SWSE S4-T1N-R65W (Chavez) - Chavez 4A-4H - HZ - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
10,300.0	7,099.0	10,323.9	7,066.4	58.1	57.9	-87.98	3,106.3	-414.2	898.9	783.9	114.97	7.818		
10,400.0	7,099.0	10,423.8	7,064.6	59.8	59.6	-87.87	3,206.3	-414.2	898.9	780.5	118.38	7.593		
10,500.0	7,099.0	10,523.8	7,062.9	61.5	61.3	-87.76	3,306.2	-414.2	899.0	777.2	121.80	7.380		
10,600.0	7,099.0	10,623.8	7,061.1	63.2	63.0	-87.65	3,406.2	-414.2	899.0	773.8	125.23	7.179		
10,700.0	7,099.0	10,723.8	7,059.4	64.9	64.7	-87.54	3,506.2	-414.2	899.1	770.4	128.66	6.988		
10,800.0	7,099.0	10,823.8	7,057.6	66.6	66.4	-87.43	3,606.2	-414.2	899.2	767.1	132.08	6.807		
10,900.0	7,099.0	10,923.8	7,055.9	68.4	68.2	-87.32	3,706.1	-414.2	899.2	763.7	135.52	6.636		
11,000.0	7,099.0	11,023.8	7,054.1	70.1	69.9	-87.20	3,806.1	-414.2	899.3	760.4	138.95	6.472		
11,100.0	7,099.0	11,123.7	7,052.4	71.8	71.6	-87.09	3,906.1	-414.2	899.4	757.0	142.38	6.317		
11,200.0	7,099.0	11,223.7	7,050.6	73.5	73.3	-86.98	4,006.0	-414.1	899.5	753.6	145.82	6.168		
11,300.0	7,099.0	11,323.7	7,048.9	75.2	75.0	-86.87	4,106.0	-414.1	899.5	750.3	149.26	6.027		
11,400.0	7,099.0	11,423.7	7,047.2	76.9	76.8	-86.76	4,206.0	-414.1	899.6	746.9	152.70	5.892		
11,500.0	7,099.0	11,523.7	7,045.4	78.7	78.5	-86.65	4,305.9	-414.1	899.7	743.6	156.14	5.762		
11,600.0	7,099.0	11,623.7	7,043.7	80.4	80.2	-86.54	4,405.9	-414.1	899.8	740.2	159.58	5.639		
11,700.0	7,099.0	11,723.7	7,041.9	82.1	81.9	-86.43	4,505.9	-414.1	899.9	736.9	163.02	5.520		
11,800.0	7,099.0	11,823.2	7,040.2	83.8	83.7	-86.32	4,605.4	-414.1	900.0	733.6	166.45	5.407		
11,805.0	7,099.0	11,823.2	7,040.2	83.9	83.7	-86.32	4,605.4	-414.1	900.0	733.5	166.54	5.404 SF		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Chavez 4B-4H
Project:	DJ Wattenberg	TVD Reference:	KBE @ 4929.0ft (Original Well Elev)
Reference Site:	SWSE S4-T1N-R65W (Chavez)	MD Reference:	KBE @ 4929.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chavez 4B-4H	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 #1	Offset TVD Reference:	Offset Datum

Offset Design SWSE S4-T1N-R65W (Chavez) - Olin 1 (Existing) - Existing - Existing												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	
10,500.0	7,099.0	7,072.0	7,072.0	61.5	12.3	-90.00	4,069.3	-82.3	949.9	876.6	73.29	12.960	
10,600.0	7,099.0	7,072.0	7,072.0	63.2	12.3	-90.00	4,069.3	-82.3	871.6	796.6	75.01	11.620	
10,700.0	7,099.0	7,072.0	7,072.0	64.9	12.3	-90.00	4,069.3	-82.3	798.3	721.5	76.73	10.404	
10,800.0	7,099.0	7,072.0	7,072.0	66.6	12.3	-90.00	4,069.3	-82.3	731.2	652.8	78.45	9.321	
10,900.0	7,099.0	7,072.0	7,072.0	68.4	12.3	-90.00	4,069.3	-82.3	672.4	592.3	80.17	8.387	
11,000.0	7,099.0	7,072.0	7,072.0	70.1	12.3	-90.00	4,069.3	-82.3	624.2	542.3	81.90	7.622	
11,100.0	7,099.0	7,072.0	7,072.0	71.8	12.3	-90.00	4,069.3	-82.3	589.2	505.6	83.63	7.046	
11,200.0	7,099.0	7,072.0	7,072.0	73.5	12.3	-90.00	4,069.3	-82.3	569.8	484.4	85.35	6.675	
11,262.6	7,099.0	7,072.0	7,072.0	74.6	12.3	-90.00	4,069.3	-82.3	566.3	479.9	86.43	6.552 CC, ES	
11,300.0	7,099.0	7,072.0	7,072.0	75.2	12.3	-90.00	4,069.3	-82.3	567.6	480.5	87.08	6.518 SF	
11,400.0	7,099.0	7,072.0	7,072.0	76.9	12.3	-90.00	4,069.3	-82.3	582.8	494.0	88.81	6.562	
11,500.0	7,099.0	7,072.0	7,072.0	78.7	12.3	-90.00	4,069.3	-82.3	614.1	523.5	90.54	6.782	
11,600.0	7,099.0	7,072.0	7,072.0	80.4	12.3	-90.00	4,069.3	-82.3	659.2	567.0	92.28	7.144	
11,700.0	7,099.0	7,072.0	7,072.0	82.1	12.3	-90.00	4,069.3	-82.3	715.6	621.6	94.01	7.612	
11,800.0	7,099.0	7,072.0	7,072.0	83.8	12.3	-90.00	4,069.3	-82.3	780.7	685.0	95.74	8.155	
11,805.0	7,099.0	7,072.0	7,072.0	83.9	12.3	-90.00	4,069.3	-82.3	784.2	688.4	95.83	8.183	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Chavez 4B-4H
Project:	DJ Wattenberg	TVD Reference:	KBE @ 4929.0ft (Original Well Elev)
Reference Site:	SWSE S4-T1N-R65W (Chavez)	MD Reference:	KBE @ 4929.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chavez 4B-4H	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 #1	Offset TVD Reference:	Offset Datum

Offset Design SWSE S4-T1N-R65W (Chavez) - Olin 32-4 (Existing) - Existing - Existing												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	
10,100.0	7,099.0	7,077.0	7,077.0	54.8	12.4	-90.00	3,128.8	-467.0	976.7	910.2	66.45	14.698	
10,200.0	7,099.0	7,077.0	7,077.0	56.4	12.4	-90.00	3,128.8	-467.0	958.9	890.7	68.16	14.069	
10,300.0	7,099.0	7,077.0	7,077.0	58.1	12.4	-90.00	3,128.8	-467.0	951.4	881.5	69.87	13.616	
10,322.0	7,099.0	7,077.0	7,077.0	58.5	12.4	-90.00	3,128.8	-467.0	951.1	880.9	70.25	13.540	CC, ES
10,400.0	7,099.0	7,077.0	7,077.0	59.8	12.4	-90.00	3,128.8	-467.0	954.3	882.7	71.58	13.331	
10,500.0	7,099.0	7,077.0	7,077.0	61.5	12.4	-90.00	3,128.8	-467.0	967.6	894.3	73.30	13.201	SF
10,600.0	7,099.0	7,077.0	7,077.0	63.2	12.4	-90.00	3,128.8	-467.0	990.9	915.9	75.02	13.209	

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Chavez 4B-4H
Project:	DJ Wattenberg	TVD Reference:	KBE @ 4929.0ft (Original Well Elev)
Reference Site:	SWSE S4-T1N-R65W (Chavez)	MD Reference:	KBE @ 4929.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chavez 4B-4H	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 #1	Offset TVD Reference:	Offset Datum

Offset Design SWSE S4-T1N-R65W (Chavez) - Olin 41-4 (Existing) - Existing - Existing													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
10,500.0	7,099.0	7,079.0	7,079.0	61.5	12.4	-90.00	4,066.1	-30.2	917.1	843.8	73.30	12.511		
10,600.0	7,099.0	7,079.0	7,079.0	63.2	12.4	-90.00	4,066.1	-30.2	836.1	761.1	75.02	11.146		
10,700.0	7,099.0	7,079.0	7,079.0	64.9	12.4	-90.00	4,066.1	-30.2	759.8	683.1	76.74	9.901		
10,800.0	7,099.0	7,079.0	7,079.0	66.6	12.4	-90.00	4,066.1	-30.2	689.5	611.1	78.46	8.788		
10,900.0	7,099.0	7,079.0	7,079.0	68.4	12.4	-90.00	4,066.1	-30.2	627.4	547.2	80.19	7.824		
11,000.0	7,099.0	7,079.0	7,079.0	70.1	12.4	-90.00	4,066.1	-30.2	575.9	494.0	81.91	7.031		
11,100.0	7,099.0	7,079.0	7,079.0	71.8	12.4	-90.00	4,066.1	-30.2	538.4	454.7	83.64	6.437		
11,200.0	7,099.0	7,079.0	7,079.0	73.5	12.4	-90.00	4,066.1	-30.2	517.7	432.3	85.37	6.064		
11,259.3	7,099.0	7,079.0	7,079.0	74.5	12.4	-90.00	4,066.1	-30.2	514.3	427.9	86.39	5.953 CC, ES		
11,300.0	7,099.0	7,079.0	7,079.0	75.2	12.4	-90.00	4,066.1	-30.2	515.9	428.8	87.09	5.923 SF		
11,400.0	7,099.0	7,079.0	7,079.0	76.9	12.4	-90.00	4,066.1	-30.2	533.2	444.4	88.82	6.003		
11,500.0	7,099.0	7,079.0	7,079.0	78.7	12.4	-90.00	4,066.1	-30.2	567.8	477.3	90.56	6.271		
11,600.0	7,099.0	7,079.0	7,079.0	80.4	12.4	-90.00	4,066.1	-30.2	616.9	524.6	92.29	6.685		
11,700.0	7,099.0	7,079.0	7,079.0	82.1	12.4	-90.00	4,066.1	-30.2	677.3	583.3	94.02	7.204		
11,800.0	7,099.0	7,079.0	7,079.0	83.8	12.4	-90.00	4,066.1	-30.2	746.2	650.5	95.75	7.793		
11,805.0	7,099.0	7,079.0	7,079.0	83.9	12.4	-90.00	4,066.1	-30.2	749.8	654.0	95.84	7.824		

Cathedral Energy Services

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Chavez 4B-4H
Project:	DJ Wattenberg	TVD Reference:	KBE @ 4929.0ft (Original Well Elev)
Reference Site:	SWSE S4-T1N-R65W (Chavez)	MD Reference:	KBE @ 4929.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chavez 4B-4H	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 #1	Offset TVD Reference:	Offset Datum

Offset Design SWSE S4-T1N-R65W (Chavez) - Olin 42-4A (Existing) - Existing - Existing													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
10,400.0	7,099.0	7,089.0	7,089.0	59.8	12.4	-90.00	4,066.1	-4.8	988.6	917.0	71.60	13.807		
10,500.0	7,099.0	7,089.0	7,089.0	61.5	12.4	-90.00	4,066.1	-4.8	903.0	829.7	73.32	12.316		
10,600.0	7,099.0	7,089.0	7,089.0	63.2	12.4	-90.00	4,066.1	-4.8	820.7	745.7	75.04	10.938		
10,700.0	7,099.0	7,089.0	7,089.0	64.9	12.4	-90.00	4,066.1	-4.8	742.8	666.0	76.76	9.677		
10,800.0	7,099.0	7,089.0	7,089.0	66.6	12.4	-90.00	4,066.1	-4.8	670.7	592.3	78.48	8.547		
10,900.0	7,099.0	7,089.0	7,089.0	68.4	12.4	-90.00	4,066.1	-4.8	606.7	526.5	80.20	7.564		
11,000.0	7,099.0	7,089.0	7,089.0	70.1	12.4	-90.00	4,066.1	-4.8	553.3	471.4	81.93	6.754		
11,100.0	7,099.0	7,089.0	7,089.0	71.8	12.4	-90.00	4,066.1	-4.8	514.1	430.5	83.65	6.146		
11,200.0	7,099.0	7,089.0	7,089.0	73.5	12.4	-90.00	4,066.1	-4.8	492.4	407.0	85.38	5.767		
11,259.3	7,099.0	7,089.0	7,089.0	74.5	12.4	-90.00	4,066.1	-4.8	488.8	402.4	86.41	5.657 CC, ES		
11,300.0	7,099.0	7,089.0	7,089.0	75.2	12.4	-90.00	4,066.1	-4.8	490.5	403.4	87.11	5.631 SF		
11,400.0	7,099.0	7,089.0	7,089.0	76.9	12.4	-90.00	4,066.1	-4.8	508.7	419.8	88.84	5.726		
11,500.0	7,099.0	7,089.0	7,089.0	78.7	12.4	-90.00	4,066.1	-4.8	544.9	454.3	90.57	6.016		
11,600.0	7,099.0	7,089.0	7,089.0	80.4	12.4	-90.00	4,066.1	-4.8	595.8	503.5	92.31	6.455		
11,700.0	7,099.0	7,089.0	7,089.0	82.1	12.4	-90.00	4,066.1	-4.8	658.2	564.1	94.04	6.999		
11,800.0	7,099.0	7,089.0	7,089.0	83.8	12.4	-90.00	4,066.1	-4.8	728.9	633.1	95.77	7.611		
11,805.0	7,099.0	7,089.0	7,089.0	83.9	12.4	-90.00	4,066.1	-4.8	732.6	636.8	95.86	7.643		

Cathedral Energy Services

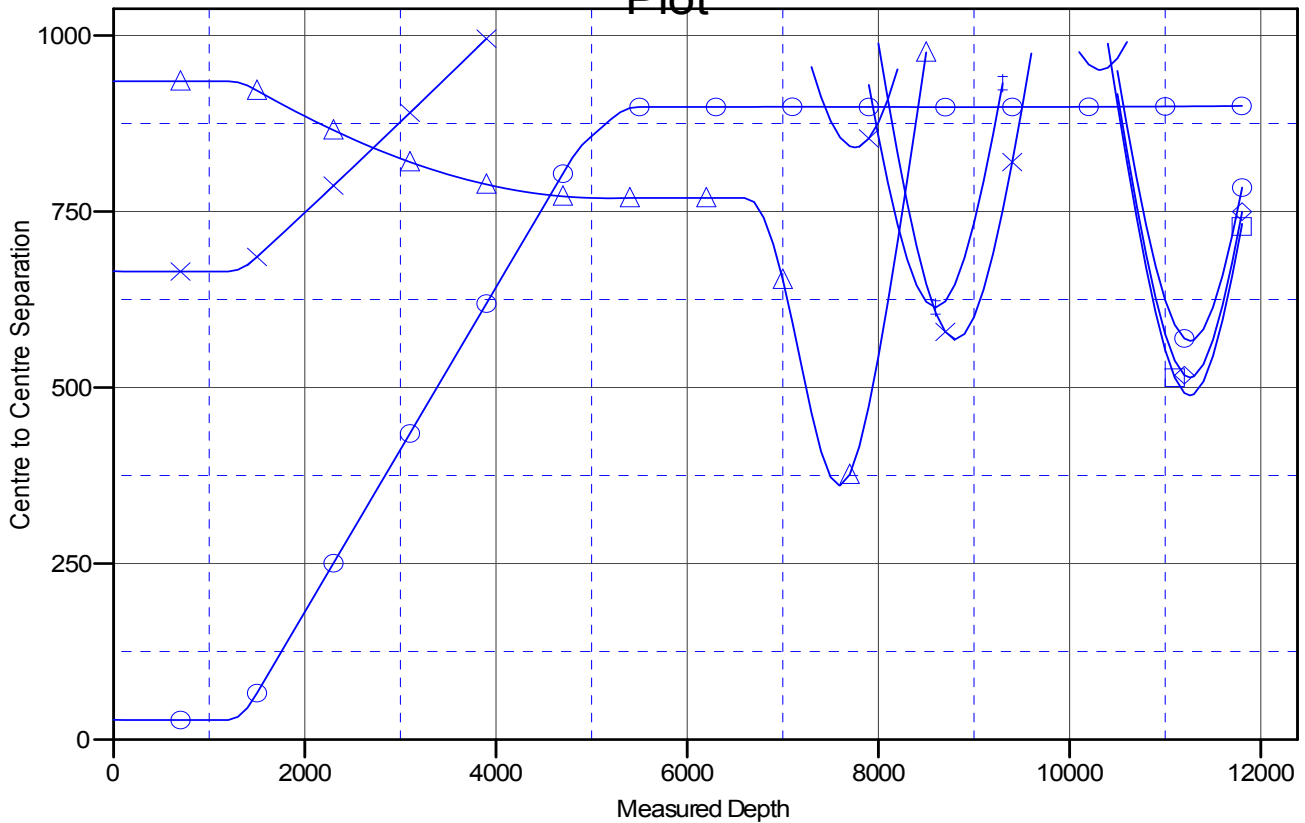
Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Chavez 4B-4H
Project:	DJ Wattenberg	TVD Reference:	KBE @ 4929.0ft (Original Well Elev)
Reference Site:	SWSE S4-T1N-R65W (Chavez)	MD Reference:	KBE @ 4929.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Chavez 4B-4H	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 #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KBE @ 4929.0ft (Original Well Elev)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Chavez 4B-4H
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.54 °

Ladder Plot



LEGEND

- Olin 42-4A (Existing), Existing, Existing V0
- Chavez 4A-4H, HZ, Plan #1 V0
- Olin 32-4 (Existing), Existing, Existing V0
- Chapin 43-4 (Existing), Existing, Existing V0
- Chapin 44-4 (Existing), Existing, Existing V0
- Chapin 33-4 (Existing), Existing, Existing V0
- Olin 1 (Existing), Existing, Existing V0
- Olin 41-4 (Existing), Existing, Existing V0
- Chapin 34-4 (Existing), Existing, Existing V0