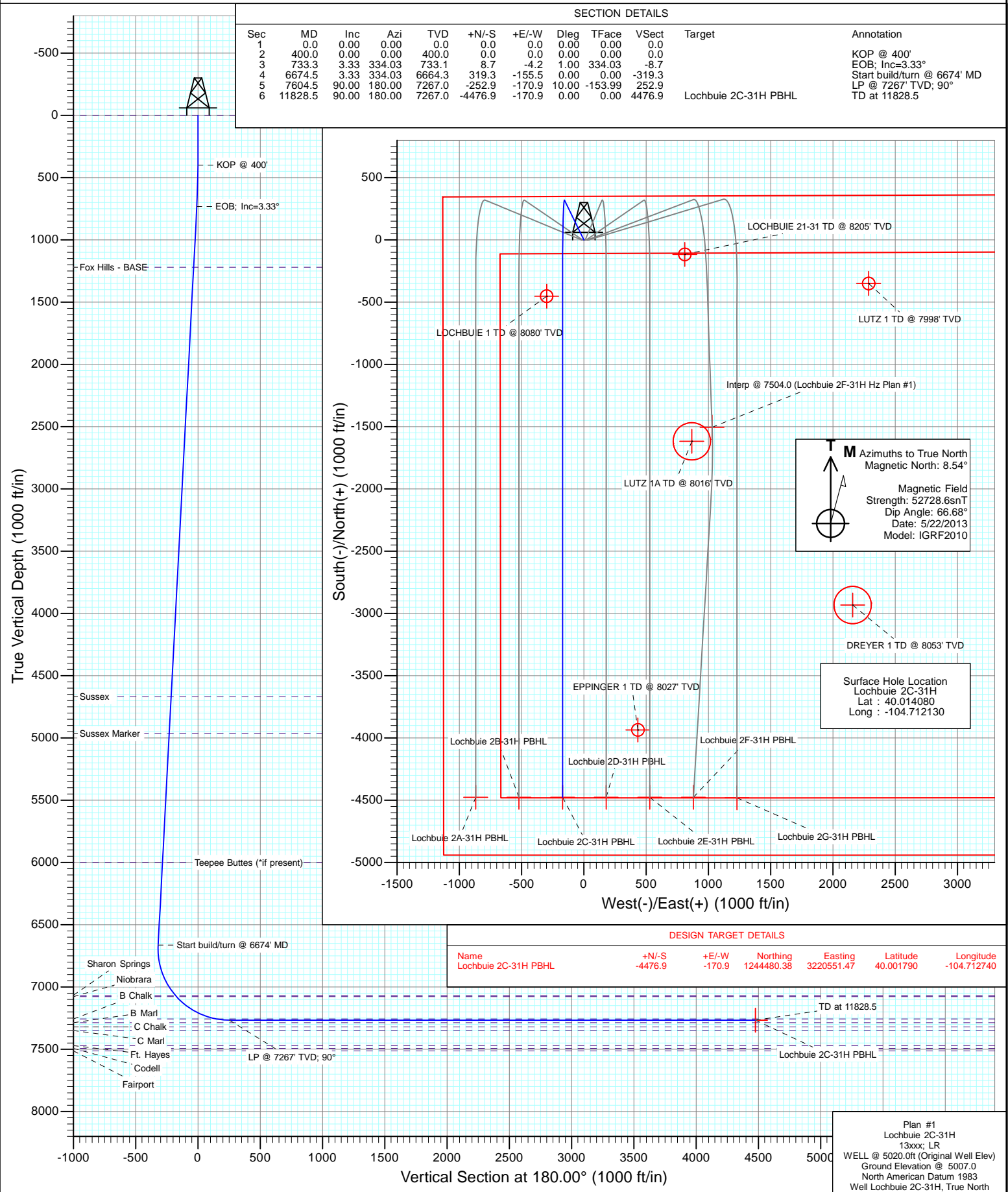




Project: DJ Wattenberg
Site: S31-T1N-R65W (Lochbuie)
Well: Lochbuie 2C-31H
Wellbore: Hz
Design: Plan #1



Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Lochbuie 2C-31H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 5020.0ft (Original Well Elev)
Project:	DJ Wattenberg	MD Reference:	WELL @ 5020.0ft (Original Well Elev)
Site:	S31-T1N-R65W (Lochbuie)	North Reference:	True
Well:	Lochbuie 2C-31H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

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		S31-T1N-R65W (Lochbuie)			
Site Position:		Northing:	1,248,958.49 ft	Latitude:	40.014080
From:	Lat/Long	Easting:	3,220,662.97 ft	Longitude:	-104.712200
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	0.51 °

Well	Lochbuie 2C-31H					
Well Position	+N/-S	0.0 ft	Northing:	1,248,958.64 ft	Latitude:	40.014080
	+E/-W	0.0 ft	Easting:	3,220,682.58 ft	Longitude:	-104.712130
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	5,007.0 ft

Wellbore	Hz				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/22/2013	8.54	66.68	52,729

Design	Plan #1			
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	
400.0	0.00	0.00	400.0	0.0	0.0	0.00	0.00	0.00	0.00	
733.3	3.33	334.03	733.1	8.7	-4.2	1.00	1.00	0.00	334.03	
6,674.5	3.33	334.03	6,664.3	319.3	-155.5	0.00	0.00	0.00	0.00	
7,604.5	90.00	180.00	7,267.0	-252.9	-170.9	10.00	9.32	-16.56	-153.99	
11,828.5	90.00	180.00	7,267.0	-4,476.9	-170.9	0.00	0.00	0.00	0.00	Lochbuie 2C-31H PBI

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Lochbuie 2C-31H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 5020.0ft (Original Well Elev)
Project:	DJ Wattenberg	MD Reference:	WELL @ 5020.0ft (Original Well Elev)
Site:	S31-T1N-R65W (Lochbuie)	North Reference:	True
Well:	Lochbuie 2C-31H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	Shannon
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	KOP @ 400'
500.0	1.00	334.03	500.0	0.8	-0.4	-0.8	1.00	1.00	
600.0	2.00	334.03	600.0	3.1	-1.5	-3.1	1.00	1.00	
700.0	3.00	334.03	699.9	7.1	-3.4	-7.1	1.00	1.00	
733.3	3.33	334.03	733.1	8.7	-4.2	-8.7	1.00	1.00	EOB; Inc=3.33°
800.0	3.33	334.03	799.7	12.2	-5.9	-12.2	0.00	0.00	
900.0	3.33	334.03	899.5	17.4	-8.5	-17.4	0.00	0.00	
1,000.0	3.33	334.03	999.4	22.7	-11.0	-22.7	0.00	0.00	
1,100.0	3.33	334.03	1,099.2	27.9	-13.6	-27.9	0.00	0.00	
1,200.0	3.33	334.03	1,199.0	33.1	-16.1	-33.1	0.00	0.00	
1,221.0	3.33	334.03	1,220.0	34.2	-16.7	-34.2	0.00	0.00	Fox Hills - BASE
1,300.0	3.33	334.03	1,298.9	38.3	-18.7	-38.3	0.00	0.00	
1,400.0	3.33	334.03	1,398.7	43.6	-21.2	-43.6	0.00	0.00	
1,500.0	3.33	334.03	1,498.5	48.8	-23.8	-48.8	0.00	0.00	
1,600.0	3.33	334.03	1,598.3	54.0	-26.3	-54.0	0.00	0.00	
1,700.0	3.33	334.03	1,698.2	59.2	-28.9	-59.2	0.00	0.00	
1,800.0	3.33	334.03	1,798.0	64.5	-31.4	-64.5	0.00	0.00	
1,900.0	3.33	334.03	1,897.8	69.7	-34.0	-69.7	0.00	0.00	
2,000.0	3.33	334.03	1,997.7	74.9	-36.5	-74.9	0.00	0.00	
2,100.0	3.33	334.03	2,097.5	80.1	-39.0	-80.1	0.00	0.00	
2,200.0	3.33	334.03	2,197.3	85.4	-41.6	-85.4	0.00	0.00	
2,300.0	3.33	334.03	2,297.2	90.6	-44.1	-90.6	0.00	0.00	
2,400.0	3.33	334.03	2,397.0	95.8	-46.7	-95.8	0.00	0.00	
2,500.0	3.33	334.03	2,496.8	101.1	-49.2	-101.1	0.00	0.00	
2,600.0	3.33	334.03	2,596.7	106.3	-51.8	-106.3	0.00	0.00	
2,700.0	3.33	334.03	2,696.5	111.5	-54.3	-111.5	0.00	0.00	
2,800.0	3.33	334.03	2,796.3	116.7	-56.9	-116.7	0.00	0.00	
2,900.0	3.33	334.03	2,896.1	122.0	-59.4	-122.0	0.00	0.00	
3,000.0	3.33	334.03	2,996.0	127.2	-62.0	-127.2	0.00	0.00	
3,100.0	3.33	334.03	3,095.8	132.4	-64.5	-132.4	0.00	0.00	
3,200.0	3.33	334.03	3,195.6	137.6	-67.1	-137.6	0.00	0.00	
3,300.0	3.33	334.03	3,295.5	142.9	-69.6	-142.9	0.00	0.00	
3,400.0	3.33	334.03	3,395.3	148.1	-72.1	-148.1	0.00	0.00	
3,500.0	3.33	334.03	3,495.1	153.3	-74.7	-153.3	0.00	0.00	
3,600.0	3.33	334.03	3,595.0	158.6	-77.2	-158.6	0.00	0.00	
3,700.0	3.33	334.03	3,694.8	163.8	-79.8	-163.8	0.00	0.00	
3,800.0	3.33	334.03	3,794.6	169.0	-82.3	-169.0	0.00	0.00	
3,900.0	3.33	334.03	3,894.5	174.2	-84.9	-174.2	0.00	0.00	
4,000.0	3.33	334.03	3,994.3	179.5	-87.4	-179.5	0.00	0.00	
4,100.0	3.33	334.03	4,094.1	184.7	-90.0	-184.7	0.00	0.00	
4,200.0	3.33	334.03	4,193.9	189.9	-92.5	-189.9	0.00	0.00	
4,300.0	3.33	334.03	4,293.8	195.1	-95.1	-195.1	0.00	0.00	
4,400.0	3.33	334.03	4,393.6	200.4	-97.6	-200.4	0.00	0.00	
4,500.0	3.33	334.03	4,493.4	205.6	-100.2	-205.6	0.00	0.00	
4,600.0	3.33	334.03	4,593.3	210.8	-102.7	-210.8	0.00	0.00	
4,676.9	3.33	334.03	4,670.0	214.8	-104.7	-214.8	0.00	0.00	Sussex
4,700.0	3.33	334.03	4,693.1	216.1	-105.2	-216.1	0.00	0.00	
4,800.0	3.33	334.03	4,792.9	221.3	-107.8	-221.3	0.00	0.00	

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Lochbuie 2C-31H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 5020.0ft (Original Well Elev)
Project:	DJ Wattenberg	MD Reference:	WELL @ 5020.0ft (Original Well Elev)
Site:	S31-T1N-R65W (Lochbuie)	North Reference:	True
Well:	Lochbuie 2C-31H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
4,900.0	3.33	334.03	4,892.8	226.5	-110.3	-226.5	0.00	0.00	
4,973.4	3.33	334.03	4,966.0	230.3	-112.2	-230.3	0.00	0.00	Sussex Marker
5,000.0	3.33	334.03	4,992.6	231.7	-112.9	-231.7	0.00	0.00	
5,100.0	3.33	334.03	5,092.4	237.0	-115.4	-237.0	0.00	0.00	
5,200.0	3.33	334.03	5,192.3	242.2	-118.0	-242.2	0.00	0.00	
5,300.0	3.33	334.03	5,292.1	247.4	-120.5	-247.4	0.00	0.00	
5,400.0	3.33	334.03	5,391.9	252.6	-123.1	-252.6	0.00	0.00	
5,500.0	3.33	334.03	5,491.7	257.9	-125.6	-257.9	0.00	0.00	
5,600.0	3.33	334.03	5,591.6	263.1	-128.2	-263.1	0.00	0.00	
5,700.0	3.33	334.03	5,691.4	268.3	-130.7	-268.3	0.00	0.00	
5,800.0	3.33	334.03	5,791.2	273.5	-133.3	-273.5	0.00	0.00	
5,900.0	3.33	334.03	5,891.1	278.8	-135.8	-278.8	0.00	0.00	
6,000.0	3.33	334.03	5,990.9	284.0	-138.3	-284.0	0.00	0.00	
6,009.1	3.33	334.03	6,000.0	284.5	-138.6	-284.5	0.00	0.00	Teepee Buttes (*if present)
6,100.0	3.33	334.03	6,090.7	289.2	-140.9	-289.2	0.00	0.00	
6,200.0	3.33	334.03	6,190.6	294.5	-143.4	-294.5	0.00	0.00	
6,300.0	3.33	334.03	6,290.4	299.7	-146.0	-299.7	0.00	0.00	
6,400.0	3.33	334.03	6,390.2	304.9	-148.5	-304.9	0.00	0.00	
6,500.0	3.33	334.03	6,490.1	310.1	-151.1	-310.1	0.00	0.00	
6,600.0	3.33	334.03	6,589.9	315.4	-153.6	-315.4	0.00	0.00	
6,674.5	3.33	334.03	6,664.3	319.3	-155.5	-319.3	0.00	0.00	Start build/turn @ 6674' MD
6,700.0	1.53	287.09	6,689.7	320.0	-156.2	-320.0	10.00	-7.09	
6,800.0	9.66	188.62	6,789.3	312.1	-158.7	-312.1	10.00	8.13	
6,900.0	19.60	184.11	6,885.9	287.0	-161.2	-287.0	10.00	9.94	
7,000.0	29.58	182.57	6,976.7	245.5	-163.5	-245.5	10.00	9.98	
7,100.0	39.57	181.77	7,058.9	188.9	-165.6	-188.9	10.00	9.99	
7,109.2	40.49	181.71	7,066.0	182.9	-165.8	-182.9	10.00	9.99	Sharon Springs
7,125.2	42.09	181.62	7,078.0	172.4	-166.1	-172.4	10.00	9.99	Niobrara
7,200.0	49.57	181.25	7,130.1	118.8	-167.4	-118.8	10.00	9.99	
7,300.0	59.56	180.86	7,188.0	37.4	-168.9	-37.4	10.00	10.00	
7,400.0	69.56	180.54	7,230.9	-52.7	-170.0	52.7	10.00	10.00	
7,497.3	79.28	180.28	7,257.0	-146.3	-170.6	146.3	10.00	10.00	B Chalk
7,500.0	79.55	180.27	7,257.5	-149.0	-170.6	149.0	10.00	10.00	
7,600.0	89.55	180.01	7,267.0	-248.4	-170.9	248.4	10.00	10.00	
7,604.5	90.00	180.00	7,267.0	-252.9	-170.9	252.9	10.00	10.00	LP @ 7267' TVD; 90°
7,700.0	90.00	180.00	7,267.0	-348.4	-170.9	348.4	0.00	0.00	
7,800.0	90.00	180.00	7,267.0	-448.4	-170.9	448.4	0.00	0.00	
7,900.0	90.00	180.00	7,267.0	-548.4	-170.9	548.4	0.00	0.00	
8,000.0	90.00	180.00	7,267.0	-648.4	-170.9	648.4	0.00	0.00	
8,100.0	90.00	180.00	7,267.0	-748.4	-170.9	748.4	0.00	0.00	
8,200.0	90.00	180.00	7,267.0	-848.4	-170.9	848.4	0.00	0.00	
8,300.0	90.00	180.00	7,267.0	-948.4	-170.9	948.4	0.00	0.00	
8,400.0	90.00	180.00	7,267.0	-1,048.4	-170.9	1,048.4	0.00	0.00	
8,500.0	90.00	180.00	7,267.0	-1,148.4	-170.9	1,148.4	0.00	0.00	
8,600.0	90.00	180.00	7,267.0	-1,248.4	-170.9	1,248.4	0.00	0.00	
8,700.0	90.00	180.00	7,267.0	-1,348.4	-170.9	1,348.4	0.00	0.00	
8,800.0	90.00	180.00	7,267.0	-1,448.4	-170.9	1,448.4	0.00	0.00	
8,900.0	90.00	180.00	7,267.0	-1,548.4	-170.9	1,548.4	0.00	0.00	
9,000.0	90.00	180.00	7,267.0	-1,648.4	-170.9	1,648.4	0.00	0.00	
9,100.0	90.00	180.00	7,267.0	-1,748.4	-170.9	1,748.4	0.00	0.00	
9,200.0	90.00	180.00	7,267.0	-1,848.4	-170.9	1,848.4	0.00	0.00	
9,300.0	90.00	180.00	7,267.0	-1,948.4	-170.9	1,948.4	0.00	0.00	

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Lochbuie 2C-31H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 5020.0ft (Original Well Elev)
Project:	DJ Wattenberg	MD Reference:	WELL @ 5020.0ft (Original Well Elev)
Site:	S31-T1N-R65W (Lochbuie)	North Reference:	True
Well:	Lochbuie 2C-31H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
9,400.0	90.00	180.00	7,267.0	-2,048.4	-170.9	2,048.4	0.00	0.00	
9,500.0	90.00	180.00	7,267.0	-2,148.4	-170.9	2,148.4	0.00	0.00	
9,600.0	90.00	180.00	7,267.0	-2,248.4	-170.9	2,248.4	0.00	0.00	
9,700.0	90.00	180.00	7,267.0	-2,348.4	-170.9	2,348.4	0.00	0.00	
9,800.0	90.00	180.00	7,267.0	-2,448.4	-170.9	2,448.4	0.00	0.00	
9,900.0	90.00	180.00	7,267.0	-2,548.4	-170.9	2,548.4	0.00	0.00	
10,000.0	90.00	180.00	7,267.0	-2,648.4	-170.9	2,648.4	0.00	0.00	
10,100.0	90.00	180.00	7,267.0	-2,748.4	-170.9	2,748.4	0.00	0.00	
10,200.0	90.00	180.00	7,267.0	-2,848.4	-170.9	2,848.4	0.00	0.00	
10,300.0	90.00	180.00	7,267.0	-2,948.4	-170.9	2,948.4	0.00	0.00	
10,400.0	90.00	180.00	7,267.0	-3,048.4	-170.9	3,048.4	0.00	0.00	
10,500.0	90.00	180.00	7,267.0	-3,148.4	-170.9	3,148.4	0.00	0.00	
10,600.0	90.00	180.00	7,267.0	-3,248.4	-170.9	3,248.4	0.00	0.00	
10,700.0	90.00	180.00	7,267.0	-3,348.4	-170.9	3,348.4	0.00	0.00	
10,800.0	90.00	180.00	7,267.0	-3,448.4	-170.9	3,448.4	0.00	0.00	
10,900.0	90.00	180.00	7,267.0	-3,548.4	-170.9	3,548.4	0.00	0.00	
11,000.0	90.00	180.00	7,267.0	-3,648.4	-170.9	3,648.4	0.00	0.00	
11,100.0	90.00	180.00	7,267.0	-3,748.4	-170.9	3,748.4	0.00	0.00	
11,200.0	90.00	180.00	7,267.0	-3,848.4	-170.9	3,848.4	0.00	0.00	
11,300.0	90.00	180.00	7,267.0	-3,948.4	-170.9	3,948.4	0.00	0.00	
11,400.0	90.00	180.00	7,267.0	-4,048.4	-170.9	4,048.4	0.00	0.00	
11,500.0	90.00	180.00	7,267.0	-4,148.4	-170.9	4,148.4	0.00	0.00	
11,600.0	90.00	180.00	7,267.0	-4,248.4	-170.9	4,248.4	0.00	0.00	
11,700.0	90.00	180.00	7,267.0	-4,348.4	-170.9	4,348.4	0.00	0.00	
11,800.0	90.00	180.00	7,267.0	-4,448.4	-170.9	4,448.4	0.00	0.00	
11,828.5	90.00	180.00	7,267.0	-4,476.9	-170.9	4,476.9	0.00	0.00	TD at 11828.5 - Lochbuie 2C-31H 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									
Lochbuie 2C-31H PBHL	0.00	0.00	7,267.0	-4,476.9	-170.9	1,244,480.38	3,220,551.47	40.001790	-104.712740
- plan hits target center									
- Point									

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
0.0	0.0	Shannon			
1,221.0	1,220.0	Fox Hills - BASE			
4,676.9	4,670.0	Sussex			
4,973.4	4,966.0	Sussex Marker			
6,009.1	6,000.0	Teepee Buttes (*if present)			
7,109.2	7,066.0	Sharon Springs			
7,125.2	7,078.0	Niobrara			
7,497.3	7,257.0	B Chalk			

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Lochbuie 2C-31H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 5020.0ft (Original Well Elev)
Project:	DJ Wattenberg	MD Reference:	WELL @ 5020.0ft (Original Well Elev)
Site:	S31-T1N-R65W (Lochbuie)	North Reference:	True
Well:	Lochbuie 2C-31H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
400.0	400.0	0.0	0.0	KOP @ 400'
733.3	733.1	8.7	-4.2	EOB; Inc=3.33°
6,674.5	6,664.3	319.3	-155.5	Start build/turn @ 6674' MD
7,604.5	7,267.0	-252.9	-170.9	LP @ 7267' TVD; 90°
11,828.5	7,267.0	-4,476.9	-170.9	TD at 11828.5

EnCana Oil & Gas (USA) Inc

DJ Wattenberg

S31-T1N-R65W (Lochbuie)

Lochbuie 2C-31H

Hz

Plan #1

Anticollision Report

22 May, 2013

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lochbuie 2C-31H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5020.0ft (Original Well Elev)
Reference Site:	S31-T1N-R65W (Lochbuie)	MD Reference:	WELL @ 5020.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lochbuie 2C-31H	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 500.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date	5/22/2013		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	11,828.5	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
S31-T1N-R65W (Lochbuie)						
DREYER 1 (EXISTING) - VESSELS WELL - NO SURVE						Out of range
EPPINGER 1 (EXISTING) - ENCANA WELL - NO SURV						Out of range
LOCHBUIE 1 (EXISTING) - ENCANA WELL - NO SURV	7,803.6	7,253.0	128.0	99.4	4.477	CC, ES, SF
LOCHBUIE 21-31 (EXISTING) - ENCANA WELL - NO SU						Out of range
Lochbuie 2A-31H - Hz - Plan #1	166.3	167.3	19.6	19.1	36.514	CC
Lochbuie 2A-31H - Hz - Plan #1	200.0	201.0	19.6	19.0	29.957	ES
Lochbuie 2A-31H - Hz - Plan #1	700.0	698.5	36.3	33.9	15.038	SF
Lochbuie 2B-31H - Hz - Plan #1	300.0	300.0	11.2	10.2	11.184	CC, ES
Lochbuie 2B-31H - Hz - Plan #1	11,828.5	12,081.4	422.8	286.8	3.107	SF
Lochbuie 2D-31H - Hz - Plan #1	400.0	400.0	11.2	9.9	8.294	CC, ES
Lochbuie 2D-31H - Hz - Plan #1	11,828.5	12,078.6	422.8	286.7	3.106	SF
Lochbuie 2E-31H - Hz - Plan #1	400.0	400.0	19.6	18.3	14.514	CC, ES
Lochbuie 2E-31H - Hz - Plan #1	600.0	599.7	22.0	20.0	10.731	SF
Lochbuie 2F-31H - Hz - Plan #1	400.0	400.0	30.8	29.5	22.808	CC, ES
Lochbuie 2F-31H - Hz - Plan #1	700.0	698.8	37.9	35.5	15.773	SF
Lochbuie 2G-31H - Hz - Plan #1	200.0	200.0	39.2	38.6	60.074	CC, ES
Lochbuie 2G-31H - Hz - Plan #1	700.0	695.3	63.4	60.9	26.315	SF
LUTZ 1 (EXISTING) - ENCANA WELL - NO SURVEYS						Out of range
LUTZ 1A (EXISTING) - VESSELS WELL - NO SURVEYS						Out of range

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Reference Site:	S31-T1N-R65W (Lochbuie)	MD Reference:	WELL @ 5020.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lochbuie 2C-31H	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 S31-T1N-R65W (Lochbuie) - LOCHBUIE 1 (EXISTING) - ENCANA WELL - NO SURVEYS													Offset Site Error:	0.0 ft
Survey Program: 8080-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		
7,400.0	7,230.9	7,216.9	7,216.9	13.3	12.6	41.81	-452.1	-298.9	419.6	398.5	21.13	19.857		
7,500.0	7,257.5	7,243.5	7,243.5	13.7	12.6	66.53	-452.1	-298.9	329.1	304.3	24.73	13.308		
7,600.0	7,267.0	7,253.0	7,253.0	14.4	12.7	89.29	-452.1	-298.9	240.5	213.8	26.72	8.999		
7,700.0	7,267.0	7,253.0	7,253.0	15.2	12.7	90.00	-452.1	-298.9	164.7	137.1	27.56	5.975		
7,800.0	7,267.0	7,253.0	7,253.0	16.2	12.7	90.00	-452.1	-298.9	128.0	99.5	28.54	4.485		
7,803.6	7,267.0	7,253.0	7,253.0	16.2	12.7	90.00	-452.1	-298.9	128.0	99.4	28.58	4.477	CC, ES, SF	
7,900.0	7,267.0	7,253.0	7,253.0	17.3	12.7	90.00	-452.1	-298.9	160.2	130.6	29.66	5.402		
8,000.0	7,267.0	7,253.0	7,253.0	18.5	12.7	90.00	-452.1	-298.9	234.4	203.5	30.87	7.593		
8,100.0	7,267.0	7,253.0	7,253.0	19.7	12.7	90.00	-452.1	-298.9	322.8	290.7	32.16	10.037		
8,200.0	7,267.0	7,253.0	7,253.0	21.1	12.7	90.00	-452.1	-298.9	416.5	383.0	33.53	12.424		

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Reference Site:	S31-T1N-R65W (Lochbuie)	MD Reference:	WELL @ 5020.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lochbuie 2C-31H	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 S31-T1N-R65W (Lochbuie) - Lochbuie 2A-31H - 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	1.0	1.0	0.0	0.0	-89.95	0.0	-19.6	19.6					
100.0	100.0	101.0	101.0	0.2	0.2	-89.95	0.0	-19.6	19.6	19.3	0.31	64.193		
166.3	166.3	167.3	167.3	0.3	0.3	-89.95	0.0	-19.6	19.6	19.1	0.54	36.514 CC		
200.0	200.0	201.0	201.0	0.3	0.3	-89.95	0.0	-19.6	19.6	19.0	0.65	29.957 ES		
300.0	300.0	300.7	300.7	0.5	0.5	-89.01	0.4	-20.4	20.4	19.4	1.00	20.369		
400.0	400.0	400.3	400.2	0.7	0.7	-86.61	1.4	-22.8	22.9	21.5	1.35	16.940		
500.0	500.0	500.0	499.9	0.9	0.9	-59.18	3.0	-26.9	26.6	24.9	1.70	15.627		
600.0	600.0	599.2	598.9	1.0	1.1	-59.88	5.3	-32.5	31.1	29.0	2.06	15.119		
700.0	699.9	698.5	697.9	1.2	1.3	-61.89	8.3	-39.6	36.3	33.9	2.42	15.038 SF		
800.0	799.7	797.7	796.6	1.4	1.5	-64.17	11.9	-48.4	42.6	39.9	2.79	15.294		
900.0	899.5	896.6	894.9	1.6	1.8	-65.16	16.2	-58.7	50.5	47.4	3.17	15.960		
1,000.0	999.4	995.4	992.9	1.8	2.0	-65.22	21.1	-70.5	60.0	56.5	3.55	16.912		
1,100.0	1,099.2	1,094.9	1,091.4	2.0	2.3	-65.04	26.2	-83.1	70.1	66.1	3.93	17.822		
1,200.0	1,199.0	1,194.4	1,190.0	2.2	2.6	-64.90	31.4	-95.6	80.1	75.8	4.32	18.563		
1,300.0	1,298.9	1,293.9	1,288.6	2.4	2.9	-64.80	36.6	-108.1	90.2	85.5	4.70	19.177		
1,400.0	1,398.7	1,393.4	1,387.1	2.6	3.2	-64.71	41.8	-120.7	100.3	95.2	5.09	19.695		
1,500.0	1,498.5	1,492.9	1,485.7	2.8	3.4	-64.65	47.0	-133.2	110.3	104.9	5.48	20.137		
1,600.0	1,598.3	1,592.4	1,584.3	3.0	3.7	-64.59	52.1	-145.8	120.4	114.5	5.87	20.518		
1,700.0	1,698.2	1,691.9	1,682.8	3.2	4.0	-64.54	57.3	-158.3	130.5	124.2	6.26	20.850		
1,800.0	1,798.0	1,791.4	1,781.4	3.4	4.3	-64.50	62.5	-170.8	140.5	133.9	6.65	21.142		
1,900.0	1,897.8	1,890.9	1,879.9	3.6	4.6	-64.46	67.7	-183.4	150.6	143.6	7.04	21.401		
2,000.0	1,997.7	1,990.3	1,978.5	3.8	4.9	-64.43	72.8	-195.9	160.7	153.3	7.43	21.632		
2,100.0	2,097.5	2,089.8	2,077.1	4.0	5.2	-64.40	78.0	-208.4	170.7	162.9	7.82	21.839		
2,200.0	2,197.3	2,189.3	2,175.6	4.2	5.5	-64.38	83.2	-221.0	180.8	172.6	8.21	22.026		
2,300.0	2,297.2	2,288.8	2,274.2	4.4	5.8	-64.36	88.4	-233.5	190.9	182.3	8.60	22.195		
2,400.0	2,397.0	2,388.3	2,372.8	4.6	6.1	-64.34	93.6	-246.0	201.0	192.0	8.99	22.349		
2,500.0	2,496.8	2,487.8	2,471.3	4.8	6.4	-64.32	98.7	-258.6	211.0	201.6	9.38	22.490		
2,600.0	2,596.7	2,587.3	2,569.9	5.0	6.6	-64.30	103.9	-271.1	221.1	211.3	9.77	22.620		
2,700.0	2,696.5	2,686.8	2,668.4	5.2	6.9	-64.29	109.1	-283.6	231.2	221.0	10.17	22.739		
2,800.0	2,796.3	2,786.3	2,767.0	5.4	7.2	-64.28	114.3	-296.2	241.2	230.7	10.56	22.849		
2,900.0	2,896.1	2,885.8	2,865.6	5.6	7.5	-64.26	119.4	-308.7	251.3	240.3	10.95	22.951		
3,000.0	2,996.0	2,985.3	2,964.1	5.8	7.8	-64.25	124.6	-321.2	261.4	250.0	11.34	23.046		
3,100.0	3,095.8	3,084.8	3,062.7	6.0	8.1	-64.24	129.8	-333.8	271.4	259.7	11.73	23.135		
3,200.0	3,195.6	3,184.2	3,161.3	6.2	8.4	-64.23	135.0	-346.3	281.5	269.4	12.12	23.218		
3,300.0	3,295.5	3,283.7	3,259.8	6.4	8.7	-64.22	140.2	-358.8	291.6	279.1	12.52	23.295		
3,400.0	3,395.3	3,383.2	3,358.4	6.6	9.0	-64.21	145.3	-371.4	301.6	288.7	12.91	23.368		
3,500.0	3,495.1	3,482.7	3,457.0	6.8	9.3	-64.21	150.5	-383.9	311.7	298.4	13.30	23.436		
3,600.0	3,595.0	3,582.2	3,555.5	7.0	9.6	-64.20	155.7	-396.4	321.8	308.1	13.69	23.500		
3,700.0	3,694.8	3,681.7	3,654.1	7.2	9.9	-64.19	160.9	-409.0	331.8	317.8	14.08	23.561		
3,800.0	3,794.6	3,781.2	3,752.6	7.4	10.2	-64.18	166.1	-421.5	341.9	327.4	14.48	23.618		
3,900.0	3,894.5	3,880.7	3,851.2	7.6	10.5	-64.18	171.2	-434.1	352.0	337.1	14.87	23.672		
4,000.0	3,994.3	3,980.2	3,949.8	7.8	10.8	-64.17	176.4	-446.6	362.1	346.8	15.26	23.724		
4,100.0	4,094.1	4,079.7	4,048.3	8.0	11.1	-64.17	181.6	-459.1	372.1	356.5	15.65	23.772		
4,200.0	4,193.9	4,179.2	4,146.9	8.2	11.4	-64.16	186.8	-471.7	382.2	366.1	16.05	23.819		
4,300.0	4,293.8	4,278.7	4,245.5	8.4	11.6	-64.16	191.9	-484.2	392.3	375.8	16.44	23.863		
4,400.0	4,393.6	4,378.1	4,344.0	8.6	11.9	-64.15	197.1	-496.7	402.3	385.5	16.83	23.905		
4,500.0	4,493.4	4,477.6	4,442.6	8.8	12.2	-64.15	202.3	-509.3	412.4	395.2	17.22	23.945		
4,600.0	4,593.3	4,577.1	4,541.1	9.0	12.5	-64.14	207.5	-521.8	422.5	404.8	17.61	23.983		
4,700.0	4,693.1	4,676.6	4,639.7	9.2	12.8	-64.14	212.7	-534.3	432.5	414.5	18.01	24.020		
4,800.0	4,792.9	4,776.1	4,738.3	9.4	13.1	-64.13	217.8	-546.9	442.6	424.2	18.40	24.055		
4,900.0	4,892.8	4,875.6	4,836.8	9.6	13.4	-64.13	223.0	-559.4	452.7	433.9	18.79	24.088		
5,000.0	4,992.6	4,975.1	4,935.4	9.8	13.7	-64.13	228.2	-571.9	462.7	443.6	19.18	24.120		

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

Anticollision Report

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Reference Site:	S31-T1N-R65W (Lochbuie)	MD Reference:	WELL @ 5020.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lochbuie 2C-31H	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													S31-T1N-R65W (Lochbuie) - Lochbuie 2A-31H - 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					
5,100.0	5,092.4	5,074.6	5,034.0	10.0	14.0	-64.12	233.4	-584.5	472.8	453.2	19.58	24.151					
5,200.0	5,192.3	5,174.1	5,132.5	10.2	14.3	-64.12	238.6	-597.0	482.9	462.9	19.97	24.181					
5,300.0	5,292.1	5,273.6	5,231.1	10.4	14.6	-64.12	243.7	-609.5	492.9	472.6	20.36	24.209					

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Reference Site:	S31-T1N-R65W (Lochbuie)	MD Reference:	WELL @ 5020.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lochbuie 2C-31H	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 S31-T1N-R65W (Lochbuie) - Lochbuie 2B-31H - Hz - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis			
0.0	0.0	0.0	0.0	0.0	0.0	-89.96	0.0	-11.2	11.2					
100.0	100.0	100.0	100.0	0.2	0.2	-89.96	0.0	-11.2	11.2	10.9	0.30	36.893		
200.0	200.0	200.0	200.0	0.3	0.3	-89.96	0.0	-11.2	11.2	10.6	0.65	17.164		
300.0	300.0	300.0	300.0	0.5	0.5	-89.96	0.0	-11.2	11.2	10.2	1.00	11.184 CC, ES		
400.0	400.0	399.8	399.8	0.7	0.7	-87.60	0.5	-11.9	11.9	10.6	1.35	8.835		
500.0	500.0	499.6	499.6	0.9	0.9	-59.04	2.0	-14.1	13.7	12.0	1.70	8.083		
600.0	600.0	599.4	599.2	1.0	1.0	-59.39	4.4	-17.7	16.2	14.1	2.05	7.880		
700.0	699.9	699.0	698.7	1.2	1.2	-61.51	7.9	-22.7	19.3	16.9	2.42	7.971		
800.0	799.7	798.7	798.0	1.4	1.4	-63.68	12.3	-29.1	23.2	20.4	2.79	8.312		
900.0	899.5	898.5	897.5	1.6	1.7	-64.17	17.3	-36.4	28.0	24.8	3.17	8.820		
1,000.0	999.4	998.4	997.0	1.8	1.9	-64.52	22.3	-43.7	32.7	29.2	3.55	9.213		
1,100.0	1,099.2	1,098.3	1,096.5	2.0	2.1	-64.78	27.3	-51.0	37.5	33.6	3.94	9.523		
1,200.0	1,199.0	1,198.2	1,196.0	2.2	2.3	-64.97	32.3	-58.3	42.3	37.9	4.32	9.774		
1,300.0	1,298.9	1,298.1	1,295.5	2.4	2.6	-65.13	37.3	-65.6	47.0	42.3	4.71	9.981		
1,400.0	1,398.7	1,397.9	1,395.0	2.6	2.8	-65.26	42.3	-72.9	51.8	46.7	5.10	10.154		
1,500.0	1,498.5	1,497.8	1,494.5	2.8	3.0	-65.37	47.3	-80.2	56.6	51.1	5.49	10.301		
1,600.0	1,598.3	1,597.7	1,593.9	3.0	3.2	-65.46	52.3	-87.5	61.3	55.5	5.88	10.427		
1,700.0	1,698.2	1,697.6	1,693.4	3.2	3.5	-65.54	57.3	-94.8	66.1	59.8	6.27	10.537		
1,800.0	1,798.0	1,797.5	1,792.9	3.4	3.7	-65.61	62.3	-102.1	70.9	64.2	6.67	10.633		
1,900.0	1,897.8	1,897.4	1,892.4	3.6	3.9	-65.67	67.3	-109.4	75.7	68.6	7.06	10.718		
2,000.0	1,997.7	1,997.3	1,991.9	3.8	4.2	-65.72	72.3	-116.7	80.4	73.0	7.45	10.793		
2,100.0	2,097.5	2,097.1	2,091.4	4.0	4.4	-65.76	77.3	-124.0	85.2	77.4	7.84	10.860		
2,200.0	2,197.3	2,197.0	2,190.9	4.2	4.6	-65.80	82.3	-131.3	90.0	81.7	8.24	10.921		
2,300.0	2,297.2	2,296.9	2,290.4	4.4	4.9	-65.84	87.3	-138.6	94.7	86.1	8.63	10.976		
2,400.0	2,397.0	2,396.8	2,389.9	4.6	5.1	-65.87	92.3	-145.9	99.5	90.5	9.02	11.026		
2,500.0	2,496.8	2,496.7	2,489.4	4.8	5.3	-65.90	97.3	-153.2	104.3	94.9	9.42	11.071		
2,600.0	2,596.7	2,596.6	2,588.9	5.0	5.6	-65.93	102.3	-160.5	109.0	99.2	9.81	11.113		
2,700.0	2,696.5	2,696.5	2,688.4	5.2	5.8	-65.96	107.3	-167.8	113.8	103.6	10.21	11.152		
2,800.0	2,796.3	2,796.3	2,787.9	5.4	6.0	-65.98	112.3	-175.1	118.6	108.0	10.60	11.187		
2,900.0	2,896.1	2,896.2	2,887.4	5.6	6.3	-66.00	117.3	-182.4	123.4	112.4	10.99	11.220		
3,000.0	2,996.0	2,996.1	2,986.9	5.8	6.5	-66.02	122.3	-189.7	128.1	116.7	11.39	11.250		
3,100.0	3,095.8	3,096.0	3,086.3	6.0	6.7	-66.04	127.3	-197.0	132.9	121.1	11.78	11.279		
3,200.0	3,195.6	3,195.9	3,185.8	6.2	6.9	-66.06	132.3	-204.3	137.7	125.5	12.18	11.305		
3,300.0	3,295.5	3,295.8	3,285.3	6.4	7.2	-66.07	137.3	-211.6	142.4	129.9	12.57	11.330		
3,400.0	3,395.3	3,395.7	3,384.8	6.6	7.4	-66.09	142.4	-218.9	147.2	134.2	12.97	11.353		
3,500.0	3,495.1	3,495.6	3,484.3	6.8	7.6	-66.10	147.4	-226.2	152.0	138.6	13.36	11.375		
3,600.0	3,595.0	3,595.4	3,583.8	7.0	7.9	-66.12	152.4	-233.5	156.7	143.0	13.76	11.395		
3,700.0	3,694.8	3,695.3	3,683.3	7.2	8.1	-66.13	157.4	-240.8	161.5	147.4	14.15	11.414		
3,800.0	3,794.6	3,795.2	3,782.8	7.4	8.3	-66.14	162.4	-248.1	166.3	151.7	14.55	11.432		
3,900.0	3,894.5	3,895.1	3,882.3	7.6	8.6	-66.15	167.4	-255.4	171.1	156.1	14.94	11.450		
4,000.0	3,994.3	3,995.0	3,981.8	7.8	8.8	-66.16	172.4	-262.7	175.8	160.5	15.33	11.466		
4,100.0	4,094.1	4,094.9	4,081.3	8.0	9.0	-66.17	177.4	-270.0	180.6	164.9	15.73	11.481		
4,200.0	4,193.9	4,194.8	4,180.8	8.2	9.3	-66.18	182.4	-277.3	185.4	169.2	16.12	11.496		
4,300.0	4,293.8	4,294.6	4,280.3	8.4	9.5	-66.19	187.4	-284.6	190.1	173.6	16.52	11.510		
4,400.0	4,393.6	4,394.5	4,379.8	8.6	9.7	-66.20	192.4	-291.9	194.9	178.0	16.91	11.523		
4,500.0	4,493.4	4,494.4	4,479.3	8.8	10.0	-66.21	197.4	-299.2	199.7	182.4	17.31	11.536		
4,600.0	4,593.3	4,594.3	4,578.7	9.0	10.2	-66.22	202.4	-306.5	204.5	186.7	17.70	11.548		
4,700.0	4,693.1	4,694.2	4,678.2	9.2	10.4	-66.22	207.4	-313.8	209.2	191.1	18.10	11.560		
4,800.0	4,792.9	4,794.1	4,777.7	9.4	10.7	-66.23	212.4	-321.1	214.0	195.5	18.49	11.571		
4,900.0	4,892.8	4,894.0	4,877.2	9.6	10.9	-66.24	217.4	-328.4	218.8	199.9	18.89	11.581		
5,000.0	4,992.6	4,993.8	4,976.7	9.8	11.1	-66.24	222.4	-335.7	223.5	204.2	19.28	11.591		
5,100.0	5,092.4	5,093.7	5,076.2	10.0	11.4	-66.25	227.4	-343.0	228.3	208.6	19.68	11.601		

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

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lochbuie 2C-31H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5020.0ft (Original Well Elev)
Reference Site:	S31-T1N-R65W (Lochbuie)	MD Reference:	WELL @ 5020.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lochbuie 2C-31H	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 S31-T1N-R65W (Lochbuie) - Lochbuie 2B-31H - 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		Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Separation Factor		
5,200.0	5,192.3	5,193.6	5,175.7	10.2	11.6	-66.26	232.4	-350.3	233.1	213.0	20.07	11.610		
5,300.0	5,292.1	5,293.5	5,275.2	10.4	11.8	-66.26	237.4	-357.6	237.8	217.4	20.47	11.619		
5,400.0	5,391.9	5,393.4	5,374.7	10.6	12.1	-66.27	242.4	-364.9	242.6	221.8	20.86	11.628		
5,500.0	5,491.7	5,493.3	5,474.2	10.8	12.3	-66.27	247.4	-372.2	247.4	226.1	21.26	11.636		
5,600.0	5,591.6	5,593.2	5,573.7	11.0	12.5	-66.28	252.4	-379.5	252.2	230.5	21.66	11.644		
5,700.0	5,691.4	5,693.0	5,673.2	11.2	12.8	-66.28	257.4	-386.8	256.9	234.9	22.05	11.652		
5,800.0	5,791.2	5,792.9	5,772.7	11.4	13.0	-66.29	262.4	-394.1	261.7	239.3	22.45	11.659		
5,900.0	5,891.1	5,892.8	5,872.2	11.6	13.2	-66.29	267.4	-401.4	266.5	243.6	22.84	11.666		
6,000.0	5,990.9	5,992.7	5,971.7	11.8	13.5	-66.30	272.4	-408.6	271.2	248.0	23.24	11.673		
6,100.0	6,090.7	6,092.6	6,071.1	12.0	13.7	-66.30	277.4	-415.9	276.0	252.4	23.63	11.680		
6,200.0	6,190.6	6,192.5	6,170.6	12.2	13.9	-66.30	282.4	-423.2	280.8	256.8	24.03	11.686		
6,300.0	6,290.4	6,292.4	6,270.1	12.4	14.2	-66.31	287.5	-430.5	285.5	261.1	24.42	11.693		
6,400.0	6,390.2	6,392.3	6,369.6	12.6	14.4	-66.31	292.5	-437.8	290.3	265.5	24.82	11.699		
6,500.0	6,490.1	6,492.1	6,469.1	12.8	14.6	-66.31	297.5	-445.1	295.1	269.9	25.21	11.704		
6,600.0	6,589.9	6,592.0	6,568.6	13.0	14.9	-66.32	302.5	-452.4	299.9	274.3	25.61	11.710		
6,700.0	6,689.7	6,691.9	6,668.1	13.2	15.1	-19.43	307.5	-459.7	304.6	278.6	25.99	11.718		
6,800.0	6,789.3	6,790.8	6,766.6	13.3	15.3	80.87	312.4	-467.0	309.1	283.0	26.10	11.842		
6,900.0	6,885.9	6,886.0	6,861.4	13.3	15.6	89.83	317.2	-473.9	315.2	289.3	25.89	12.172		
7,000.0	6,976.7	6,981.4	6,956.5	13.2	15.7	97.46	319.5	-480.9	326.6	301.1	25.49	12.814		
7,100.0	7,058.9	7,068.8	7,062.4	13.1	15.8	104.43	305.1	-488.7	343.4	318.4	24.98	13.744		
7,200.0	7,130.1	7,208.5	7,175.0	13.0	15.8	110.59	265.9	-496.9	363.7	339.2	24.47	14.864		
7,300.0	7,188.0	7,343.7	7,289.3	13.1	15.8	115.89	194.7	-505.3	384.9	360.9	24.01	16.031		
7,400.0	7,230.9	7,496.8	7,394.5	13.3	15.8	120.15	84.4	-513.0	404.1	380.3	23.79	16.985		
7,500.0	7,257.5	7,667.2	7,472.8	13.7	16.1	123.01	-66.2	-518.8	417.6	393.6	24.05	17.367		
7,600.0	7,267.0	7,849.1	7,503.9	14.4	17.0	124.09	-244.6	-521.1	422.8	397.8	25.03	16.896		
7,700.0	7,267.0	7,952.9	7,504.0	15.2	17.7	124.09	-348.4	-521.1	422.8	396.4	26.45	15.984		
7,800.0	7,267.0	8,052.9	7,504.0	16.2	18.6	124.09	-448.4	-521.1	422.8	394.7	28.10	15.050		
7,900.0	7,267.0	8,152.9	7,504.0	17.3	19.5	124.09	-548.4	-521.1	422.8	392.9	29.93	14.127		
8,000.0	7,267.0	8,252.9	7,504.0	18.5	20.6	124.09	-648.4	-521.1	422.8	390.9	31.93	13.244		
8,100.0	7,267.0	8,352.9	7,504.0	19.7	21.8	124.09	-748.4	-521.1	422.8	388.8	34.06	12.416		
8,200.0	7,267.0	8,452.9	7,504.0	21.1	23.0	124.09	-848.4	-521.1	422.8	386.5	36.29	11.650		
8,300.0	7,267.0	8,552.9	7,504.0	22.5	24.3	124.09	-948.4	-521.1	422.8	384.2	38.62	10.948		
8,400.0	7,267.0	8,652.9	7,504.0	23.9	25.6	124.09	-1,048.4	-521.1	422.8	381.8	41.03	10.307		
8,500.0	7,267.0	8,752.9	7,504.0	25.4	27.0	124.09	-1,148.4	-521.1	422.8	379.4	43.49	9.722		
8,600.0	7,267.0	8,852.9	7,504.0	26.9	28.5	124.09	-1,248.4	-521.1	422.8	376.8	46.01	9.190		
8,700.0	7,267.0	8,952.9	7,504.0	28.5	29.9	124.09	-1,348.4	-521.1	422.8	374.3	48.57	8.705		
8,800.0	7,267.0	9,052.9	7,504.0	30.1	31.4	124.09	-1,448.4	-521.1	422.8	371.7	51.17	8.263		
8,900.0	7,267.0	9,152.9	7,504.0	31.7	33.0	124.09	-1,548.4	-521.1	422.8	369.0	53.81	7.859		
9,000.0	7,267.0	9,252.9	7,504.0	33.3	34.5	124.09	-1,648.4	-521.1	422.8	366.4	56.47	7.489		
9,100.0	7,267.0	9,352.9	7,504.0	34.9	36.1	124.09	-1,748.4	-521.1	422.8	363.7	59.15	7.149		
9,200.0	7,267.0	9,452.9	7,504.0	36.5	37.7	124.09	-1,848.4	-521.1	422.8	361.0	61.85	6.836		
9,300.0	7,267.0	9,552.9	7,504.0	38.2	39.3	124.09	-1,948.4	-521.1	422.8	358.3	64.58	6.548		
9,400.0	7,267.0	9,652.9	7,504.0	39.8	40.9	124.09	-2,048.4	-521.1	422.8	355.5	67.32	6.282		
9,500.0	7,267.0	9,752.9	7,504.0	41.5	42.5	124.09	-2,148.4	-521.1	422.8	352.8	70.07	6.035		
9,600.0	7,267.0	9,852.9	7,504.0	43.1	44.1	124.09	-2,248.4	-521.1	422.8	350.0	72.83	5.806		
9,700.0	7,267.0	9,952.9	7,504.0	44.8	45.8	124.09	-2,348.4	-521.1	422.8	347.2	75.61	5.592		
9,800.0	7,267.0	10,052.9	7,504.0	46.5	47.4	124.09	-2,448.4	-521.1	422.8	344.4	78.40	5.394		
9,900.0	7,267.0	10,152.9	7,504.0	48.2	49.1	124.09	-2,548.4	-521.1	422.8	341.7	81.19	5.208		
10,000.0	7,267.0	10,252.9	7,504.0	49.9	50.7	124.09	-2,648.4	-521.1	422.8	338.8	84.00	5.034		
10,100.0	7,267.0	10,352.9	7,504.0	51.6	52.4	124.09	-2,748.4	-521.1	422.8	336.0	86.81	4.871		
10,200.0	7,267.0	10,452.9	7,504.0	53.3	54.1	124.09	-2,848.4	-521.1	422.8	333.2	89.62	4.718		
10,300.0	7,267.0	10,552.9	7,504.0	55.0	55.7	124.09	-2,948.4	-521.1	422.8	330.4	92.45	4.574		

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

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lochbuie 2C-31H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5020.0ft (Original Well Elev)
Reference Site:	S31-T1N-R65W (Lochbuie)	MD Reference:	WELL @ 5020.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lochbuie 2C-31H	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 S31-T1N-R65W (Lochbuie) - Lochbuie 2B-31H - Hz - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Total Uncertainty Axis	Separation Factor		
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)				
10,400.0	7,267.0	10,652.9	7,504.0	56.7	57.4	124.09	-3,048.4	-521.1	422.8	327.6	95.28	4.438		
10,500.0	7,267.0	10,752.9	7,504.0	58.4	59.1	124.09	-3,148.4	-521.1	422.8	324.7	98.11	4.310		
10,600.0	7,267.0	10,852.9	7,504.0	60.1	60.8	124.09	-3,248.4	-521.1	422.8	321.9	100.95	4.189		
10,700.0	7,267.0	10,952.9	7,504.0	61.8	62.5	124.09	-3,348.4	-521.1	422.8	319.1	103.79	4.074		
10,800.0	7,267.0	11,052.9	7,504.0	63.5	64.2	124.09	-3,448.4	-521.1	422.8	316.2	106.64	3.965		
10,900.0	7,267.0	11,152.9	7,504.0	65.2	65.9	124.09	-3,548.4	-521.1	422.8	313.4	109.49	3.862		
11,000.0	7,267.0	11,252.9	7,504.0	67.0	67.6	124.09	-3,648.4	-521.1	422.8	310.5	112.34	3.764		
11,100.0	7,267.0	11,352.9	7,504.0	68.7	69.3	124.09	-3,748.4	-521.1	422.8	307.6	115.19	3.671		
11,200.0	7,267.0	11,452.9	7,504.0	70.4	71.0	124.09	-3,848.4	-521.1	422.8	304.8	118.05	3.582		
11,300.0	7,267.0	11,552.9	7,504.0	72.1	72.7	124.09	-3,948.4	-521.1	422.8	301.9	120.91	3.497		
11,400.0	7,267.0	11,652.9	7,504.0	73.8	74.4	124.09	-4,048.4	-521.1	422.8	299.1	123.78	3.416		
11,500.0	7,267.0	11,752.9	7,504.0	75.6	76.2	124.09	-4,148.4	-521.1	422.8	296.2	126.64	3.339		
11,600.0	7,267.0	11,852.9	7,504.0	77.3	77.9	124.09	-4,248.4	-521.1	422.8	293.3	129.51	3.265		
11,700.0	7,267.0	11,952.9	7,504.0	79.0	79.6	124.09	-4,348.4	-521.1	422.8	290.5	132.38	3.194		
11,800.0	7,267.0	12,052.9	7,504.0	80.8	81.3	124.09	-4,448.4	-521.1	422.8	287.6	135.26	3.126		
11,813.0	7,267.0	12,065.9	7,504.0	81.0	81.5	124.09	-4,461.4	-521.1	422.8	287.2	135.63	3.118		
11,828.5	7,267.0	12,081.4	7,504.0	81.3	81.8	124.09	-4,476.9	-521.1	422.8	286.8	136.07	3.107 SF		

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lochbuie 2C-31H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5020.0ft (Original Well Elev)
Reference Site:	S31-T1N-R65W (Lochbuie)	MD Reference:	WELL @ 5020.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lochbuie 2C-31H	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 S31-T1N-R65W (Lochbuie) - Lochbuie 2D-31H - 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		
0.0	0.0	0.0	0.0	0.0	0.0	90.04	0.0	11.2	11.2						
100.0	100.0	100.0	100.0	0.2	0.2	90.04	0.0	11.2	11.2	10.9	0.30	36.893			
200.0	200.0	200.0	200.0	0.3	0.3	90.04	0.0	11.2	11.2	10.6	0.65	17.164			
300.0	300.0	300.0	300.0	0.5	0.5	90.04	0.0	11.2	11.2	10.2	1.00	11.184			
400.0	400.0	400.0	400.0	0.7	0.7	90.04	0.0	11.2	11.2	9.9	1.35	8.294 CC, ES			
500.0	500.0	500.0	500.0	0.9	0.8	119.88	0.0	11.2	11.6	9.9	1.70	6.830			
600.0	600.0	600.0	600.0	1.0	1.0	129.83	0.0	11.2	13.1	11.1	2.05	6.394			
700.0	699.9	699.9	699.9	1.2	1.2	141.70	0.0	11.2	16.3	13.9	2.40	6.769			
800.0	799.7	799.7	799.7	1.4	1.4	151.38	0.0	11.2	21.0	18.3	2.75	7.650			
900.0	899.5	899.5	899.5	1.6	1.5	157.46	0.0	11.2	26.3	23.2	3.10	8.483			
1,000.0	999.4	999.4	999.4	1.8	1.7	161.48	0.0	11.2	31.8	28.3	3.45	9.206			
1,100.0	1,099.2	1,099.2	1,099.2	2.0	1.9	164.32	0.0	11.2	37.3	33.5	3.80	9.826			
1,200.0	1,199.0	1,199.0	1,199.0	2.2	2.1	166.42	0.0	11.2	42.9	38.8	4.15	10.357			
1,300.0	1,298.9	1,298.9	1,298.9	2.4	2.2	168.03	0.0	11.2	48.6	44.1	4.49	10.817			
1,400.0	1,398.7	1,398.7	1,398.7	2.6	2.4	169.30	0.0	11.2	54.3	49.5	4.84	11.216			
1,500.0	1,498.5	1,498.5	1,498.5	2.8	2.6	170.33	0.0	11.2	60.0	54.8	5.19	11.566			
1,600.0	1,598.3	1,598.3	1,598.3	3.0	2.8	171.18	0.0	11.2	65.8	60.2	5.54	11.874			
1,700.0	1,698.2	1,698.2	1,698.2	3.2	2.9	171.89	0.0	11.2	71.5	65.6	5.89	12.149			
1,800.0	1,798.0	1,798.0	1,798.0	3.4	3.1	172.50	0.0	11.2	77.3	71.0	6.24	12.394			
1,900.0	1,897.8	1,897.8	1,897.8	3.6	3.3	173.02	0.0	11.2	83.1	76.5	6.58	12.614			
2,000.0	1,997.7	1,997.7	1,997.7	3.8	3.5	173.48	0.0	11.2	88.8	81.9	6.93	12.813			
2,100.0	2,097.5	2,097.5	2,097.5	4.0	3.6	173.88	0.0	11.2	94.6	87.3	7.28	12.993			
2,200.0	2,197.3	2,197.3	2,197.3	4.2	3.8	174.23	0.0	11.2	100.4	92.8	7.63	13.158			
2,300.0	2,297.2	2,297.2	2,297.2	4.4	4.0	174.55	0.0	11.2	106.2	98.2	7.98	13.308			
2,400.0	2,397.0	2,397.0	2,397.0	4.6	4.2	174.83	0.0	11.2	112.0	103.6	8.33	13.446			
2,500.0	2,496.8	2,496.8	2,496.8	4.8	4.3	175.09	0.0	11.2	117.8	109.1	8.68	13.574			
2,600.0	2,596.7	2,596.7	2,596.7	5.0	4.5	175.32	0.0	11.2	123.5	114.5	9.02	13.692			
2,700.0	2,696.5	2,696.5	2,696.5	5.2	4.7	175.53	0.0	11.2	129.3	120.0	9.37	13.801			
2,800.0	2,796.3	2,796.3	2,796.3	5.4	4.9	175.72	0.0	11.2	135.1	125.4	9.72	13.902			
2,900.0	2,896.1	2,896.1	2,896.1	5.6	5.0	175.90	0.0	11.2	140.9	130.9	10.07	13.997			
3,000.0	2,996.0	2,996.0	2,996.0	5.8	5.2	176.06	0.0	11.2	146.7	136.3	10.42	14.085			
3,100.0	3,095.8	3,095.8	3,095.8	6.0	5.4	176.21	0.0	11.2	152.5	141.8	10.77	14.168			
3,200.0	3,195.6	3,195.6	3,195.6	6.2	5.6	176.35	0.0	11.2	158.3	147.2	11.11	14.246			
3,300.0	3,295.5	3,295.5	3,295.5	6.4	5.7	176.48	0.0	11.2	164.1	152.7	11.46	14.319			
3,400.0	3,395.3	3,395.3	3,395.3	6.6	5.9	176.60	0.0	11.2	169.9	158.1	11.81	14.388			
3,500.0	3,495.1	3,495.1	3,495.1	6.8	6.1	176.71	0.0	11.2	175.8	163.6	12.16	14.453			
3,600.0	3,595.0	3,595.0	3,595.0	7.0	6.3	176.82	0.0	11.2	181.6	169.0	12.51	14.514			
3,700.0	3,694.8	3,694.8	3,694.8	7.2	6.4	176.91	0.0	11.2	187.4	174.5	12.86	14.572			
3,800.0	3,794.6	3,794.6	3,794.6	7.4	6.6	177.01	0.0	11.2	193.2	180.0	13.21	14.627			
3,900.0	3,894.5	3,894.5	3,894.5	7.6	6.8	177.09	0.0	11.2	199.0	185.4	13.56	14.679			
4,000.0	3,994.3	3,994.3	3,994.3	7.8	6.9	177.18	0.0	11.2	204.8	190.9	13.90	14.729			
4,100.0	4,094.1	4,096.3	4,096.3	8.0	7.1	177.08	0.7	11.5	210.1	195.8	14.26	14.737			
4,200.0	4,193.9	4,198.5	4,198.5	8.2	7.3	176.61	3.2	12.5	214.3	199.7	14.61	14.669			
4,300.0	4,293.8	4,300.8	4,300.6	8.4	7.5	175.78	7.3	14.3	217.5	202.5	14.97	14.531			
4,400.0	4,393.6	4,403.0	4,402.6	8.6	7.7	174.58	13.0	16.7	219.6	204.3	15.33	14.331			
4,500.0	4,493.4	4,505.0	4,504.4	8.8	7.9	173.02	20.5	19.9	220.9	205.2	15.69	14.077			
4,600.0	4,593.3	4,606.9	4,605.8	9.0	8.0	171.10	29.6	23.7	221.3	205.3	16.06	13.778			
4,700.0	4,693.1	4,708.6	4,706.8	9.2	8.2	168.78	40.3	28.2	221.1	204.7	16.45	13.444			
4,800.0	4,792.9	4,809.6	4,806.9	9.4	8.4	166.07	52.6	33.4	220.4	203.6	16.85	13.086			
4,900.0	4,892.8	4,909.0	4,905.4	9.6	8.7	163.26	65.2	38.7	220.0	202.8	17.25	12.751			
4,929.4	4,922.1	4,938.2	4,934.3	9.7	8.7	162.43	68.9	40.3	220.0	202.6	17.38	12.660			
5,000.0	4,992.6	5,008.4	5,003.8	9.8	8.9	160.45	77.8	44.1	220.1	202.5	17.68	12.454			

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

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lochbuie 2C-31H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5020.0ft (Original Well Elev)
Reference Site:	S31-T1N-R65W (Lochbuie)	MD Reference:	WELL @ 5020.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lochbuie 2C-31H	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 S31-T1N-R65W (Lochbuie) - Lochbuie 2D-31H - 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		
5,100.0	5,092.4	5,107.8	5,102.3	10.0	9.1	157.64	90.4	49.4	220.8	202.7	18.11	12.192		
5,200.0	5,192.3	5,207.2	5,200.7	10.2	9.3	154.86	103.0	54.7	222.0	203.4	18.55	11.963		
5,300.0	5,292.1	5,306.6	5,299.2	10.4	9.5	152.11	115.6	60.0	223.7	204.6	19.01	11.767		
5,400.0	5,391.9	5,406.0	5,397.7	10.6	9.8	149.41	128.2	65.4	225.9	206.4	19.47	11.601		
5,500.0	5,491.7	5,505.4	5,496.1	10.8	10.0	146.77	140.8	70.7	228.6	208.6	19.94	11.463		
5,600.0	5,591.6	5,604.8	5,594.6	11.0	10.2	144.19	153.4	76.0	231.8	211.4	20.42	11.352		
5,700.0	5,691.4	5,704.2	5,693.0	11.2	10.5	141.69	166.1	81.3	235.4	214.5	20.90	11.265		
5,800.0	5,791.2	5,803.7	5,791.5	11.4	10.7	139.26	178.7	86.7	239.5	218.1	21.38	11.202		
5,900.0	5,891.1	5,903.1	5,890.0	11.6	10.9	136.93	191.3	92.0	244.0	222.2	21.87	11.160		
6,000.0	5,990.9	6,002.5	5,988.4	11.8	11.2	134.68	203.9	97.3	248.9	226.6	22.35	11.137		
6,100.0	6,090.7	6,101.9	6,086.9	12.0	11.4	132.52	216.5	102.6	254.2	231.4	22.84	11.131		
6,200.0	6,190.6	6,201.3	6,185.3	12.2	11.7	130.44	229.1	108.0	259.8	236.5	23.32	11.142		
6,300.0	6,290.4	6,300.7	6,283.8	12.4	11.9	128.46	241.7	113.3	265.8	242.0	23.80	11.167		
6,400.0	6,390.2	6,400.1	6,382.3	12.6	12.2	126.57	254.3	118.6	272.0	247.7	24.28	11.205		
6,500.0	6,490.1	6,499.5	6,480.7	12.8	12.5	124.76	266.9	123.9	278.5	253.8	24.75	11.254		
6,600.0	6,589.9	6,598.9	6,579.2	13.0	12.7	123.04	279.5	129.3	285.3	260.1	25.22	11.313		
6,700.0	6,689.7	6,698.3	6,677.6	13.2	13.0	168.37	292.1	134.6	292.3	266.7	25.68	11.383		
6,800.0	6,789.3	6,795.7	6,774.1	13.3	13.2	-96.57	304.5	139.8	299.0	273.0	26.03	11.486		
6,900.0	6,885.9	6,888.4	6,866.0	13.3	13.5	-97.78	316.2	144.8	308.0	281.8	26.21	11.750		
7,000.0	6,976.7	6,986.7	6,963.9	13.2	13.6	-102.71	319.1	150.1	322.3	296.2	26.10	12.350		
7,100.0	7,058.9	7,094.3	7,070.0	13.1	13.7	-107.91	303.1	155.8	341.3	315.6	25.69	13.283		
7,200.0	7,130.1	7,214.1	7,182.2	13.0	13.6	-112.84	262.3	161.9	362.9	337.9	25.06	14.482		
7,300.0	7,188.0	7,348.7	7,295.1	13.1	13.5	-117.22	189.7	168.0	384.9	360.5	24.39	15.784		
7,400.0	7,230.9	7,500.3	7,398.1	13.3	13.4	-120.78	79.2	173.6	404.2	380.2	23.97	16.864		
7,500.0	7,257.5	7,668.1	7,474.0	13.7	13.8	-123.18	-69.7	177.7	417.7	393.5	24.20	17.259		
7,600.0	7,267.0	7,846.5	7,503.9	14.4	14.7	-124.09	-244.8	179.3	422.8	397.4	25.40	16.650		
7,700.0	7,267.0	7,950.1	7,504.0	15.2	15.6	-124.09	-348.4	179.3	422.8	396.0	26.82	15.768		
7,800.0	7,267.0	8,050.1	7,504.0	16.2	16.5	-124.09	-448.4	179.3	422.8	394.4	28.44	14.870		
7,900.0	7,267.0	8,150.1	7,504.0	17.3	17.6	-124.09	-548.4	179.3	422.8	392.6	30.25	13.978		
8,000.0	7,267.0	8,250.1	7,504.0	18.5	18.8	-124.09	-648.4	179.3	422.8	390.6	32.23	13.121		
8,100.0	7,267.0	8,350.1	7,504.0	19.7	20.0	-124.09	-748.4	179.3	422.8	388.5	34.34	12.315		
8,200.0	7,267.0	8,450.1	7,504.0	21.1	21.4	-124.09	-848.4	179.3	422.8	386.3	36.56	11.567		
8,300.0	7,267.0	8,550.1	7,504.0	22.5	22.7	-124.09	-948.4	179.3	422.8	384.0	38.87	10.879		
8,400.0	7,267.0	8,650.1	7,504.0	23.9	24.2	-124.09	-1,048.4	179.3	422.8	381.6	41.26	10.249		
8,500.0	7,267.0	8,750.1	7,504.0	25.4	25.7	-124.09	-1,148.4	179.3	422.8	379.1	43.71	9.674		
8,600.0	7,267.0	8,850.1	7,504.0	26.9	27.2	-124.09	-1,248.4	179.3	422.8	376.6	46.21	9.150		
8,700.0	7,267.0	8,950.1	7,504.0	28.5	28.7	-124.09	-1,348.4	179.3	422.8	374.1	48.77	8.671		
8,800.0	7,267.0	9,050.1	7,504.0	30.1	30.3	-124.09	-1,448.4	179.3	422.8	371.5	51.36	8.234		
8,900.0	7,267.0	9,150.1	7,504.0	31.7	31.8	-124.09	-1,548.4	179.3	422.8	368.9	53.98	7.834		
9,000.0	7,267.0	9,250.1	7,504.0	33.3	33.4	-124.09	-1,648.4	179.3	422.8	366.2	56.63	7.467		
9,100.0	7,267.0	9,350.1	7,504.0	34.9	35.0	-124.09	-1,748.4	179.3	422.8	363.5	59.31	7.130		
9,200.0	7,267.0	9,450.1	7,504.0	36.5	36.7	-124.09	-1,848.4	179.3	422.8	360.8	62.00	6.820		
9,300.0	7,267.0	9,550.1	7,504.0	38.2	38.3	-124.09	-1,948.4	179.3	422.8	358.1	64.72	6.534		
9,400.0	7,267.0	9,650.1	7,504.0	39.8	40.0	-124.09	-2,048.4	179.3	422.8	355.4	67.45	6.269		
9,500.0	7,267.0	9,750.1	7,504.0	41.5	41.6	-124.09	-2,148.4	179.3	422.8	352.6	70.20	6.024		
9,600.0	7,267.0	9,850.1	7,504.0	43.1	43.3	-124.09	-2,248.4	179.3	422.8	349.9	72.96	5.796		
9,700.0	7,267.0	9,950.1	7,504.0	44.8	44.9	-124.09	-2,348.4	179.3	422.8	347.1	75.73	5.584		
9,800.0	7,267.0	10,050.1	7,504.0	46.5	46.6	-124.09	-2,448.4	179.3	422.8	344.3	78.51	5.386		
9,900.0	7,267.0	10,150.1	7,504.0	48.2	48.3	-124.09	-2,548.4	179.3	422.8	341.5	81.30	5.201		
10,000.0	7,267.0	10,250.1	7,504.0	49.9	50.0	-124.09	-2,648.4	179.3	422.8	338.7	84.10	5.028		
10,100.0	7,267.0	10,350.1	7,504.0	51.6	51.7	-124.09	-2,748.4	179.3	422.8	335.9	86.91	4.865		
10,200.0	7,267.0	10,450.1	7,504.0	53.3	53.4	-124.09	-2,848.4	179.3	422.8	333.1	89.72	4.713		

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

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lochbuie 2C-31H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5020.0ft (Original Well Elev)
Reference Site:	S31-T1N-R65W (Lochbuie)	MD Reference:	WELL @ 5020.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lochbuie 2C-31H	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 S31-T1N-R65W (Lochbuie) - Lochbuie 2D-31H - 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	7,267.0	10,550.1	7,504.0	55.0	55.1	-124.09	-2,948.4	179.3	422.8	330.3	92.54	4.569		
10,400.0	7,267.0	10,650.1	7,504.0	56.7	56.8	-124.09	-3,048.4	179.3	422.8	327.5	95.37	4.434		
10,500.0	7,267.0	10,750.1	7,504.0	58.4	58.5	-124.09	-3,148.4	179.3	422.8	324.6	98.20	4.306		
10,600.0	7,267.0	10,850.1	7,504.0	60.1	60.2	-124.09	-3,248.4	179.3	422.8	321.8	101.03	4.185		
10,700.0	7,267.0	10,950.1	7,504.0	61.8	61.9	-124.09	-3,348.4	179.3	422.8	319.0	103.87	4.071		
10,800.0	7,267.0	11,050.1	7,504.0	63.5	63.6	-124.09	-3,448.4	179.3	422.8	316.1	106.72	3.962		
10,900.0	7,267.0	11,150.1	7,504.0	65.2	65.3	-124.09	-3,548.4	179.3	422.8	313.3	109.57	3.859		
11,000.0	7,267.0	11,250.1	7,504.0	67.0	67.0	-124.09	-3,648.4	179.3	422.8	310.4	112.42	3.761		
11,100.0	7,267.0	11,350.1	7,504.0	68.7	68.8	-124.09	-3,748.4	179.3	422.8	307.6	115.27	3.668		
11,200.0	7,267.0	11,450.1	7,504.0	70.4	70.5	-124.09	-3,848.4	179.3	422.8	304.7	118.13	3.580		
11,300.0	7,267.0	11,550.1	7,504.0	72.1	72.2	-124.09	-3,948.4	179.3	422.8	301.9	120.99	3.495		
11,400.0	7,267.0	11,650.1	7,504.0	73.8	73.9	-124.09	-4,048.4	179.3	422.8	299.0	123.85	3.414		
11,500.0	7,267.0	11,750.1	7,504.0	75.6	75.7	-124.09	-4,148.4	179.3	422.8	296.1	126.71	3.337		
11,600.0	7,267.0	11,850.1	7,504.0	77.3	77.4	-124.09	-4,248.4	179.3	422.8	293.3	129.58	3.263		
11,700.0	7,267.0	11,950.1	7,504.0	79.0	79.1	-124.09	-4,348.4	179.3	422.8	290.4	132.45	3.193		
11,800.0	7,267.0	12,050.1	7,504.0	80.8	80.8	-124.09	-4,448.4	179.3	422.8	287.5	135.32	3.125		
11,828.5	7,267.0	12,078.6	7,504.0	81.3	81.3	-124.09	-4,476.9	179.3	422.8	286.7	136.14	3.106 SF		

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lochbuie 2C-31H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5020.0ft (Original Well Elev)
Reference Site:	S31-T1N-R65W (Lochbuie)	MD Reference:	WELL @ 5020.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lochbuie 2C-31H	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 S31-T1N-R65W (Lochbuie) - Lochbuie 2E-31H - 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	90.05	0.0	19.6	19.6					
100.0	100.0	100.0	100.0	0.2	0.2	90.05	0.0	19.6	19.6	19.3	0.30	64.562		
200.0	200.0	200.0	200.0	0.3	0.3	90.05	0.0	19.6	19.6	19.0	0.65	30.037		
300.0	300.0	300.0	300.0	0.5	0.5	90.05	0.0	19.6	19.6	18.6	1.00	19.571		
400.0	400.0	400.0	400.0	0.7	0.7	90.05	0.0	19.6	19.6	18.3	1.35	14.514 CC, ES		
500.0	500.0	500.0	500.0	0.9	0.8	118.26	0.0	19.6	20.0	18.3	1.70	11.765		
600.0	600.0	599.7	599.7	1.0	1.0	122.88	0.5	20.3	22.0	20.0	2.05	10.731 SF		
700.0	699.9	699.3	699.2	1.2	1.2	127.03	2.0	22.5	26.4	24.0	2.41	10.971		
800.0	799.7	798.7	798.6	1.4	1.4	129.54	4.4	26.0	32.9	30.1	2.77	11.891		
900.0	899.5	898.0	897.6	1.6	1.6	129.47	7.8	31.0	40.7	37.5	3.14	12.965		
1,000.0	999.4	997.0	996.4	1.8	1.8	127.94	12.2	37.3	49.6	46.1	3.51	14.115		
1,100.0	1,099.2	1,096.2	1,095.2	2.0	2.0	125.84	17.5	44.9	59.6	55.7	3.89	15.298		
1,200.0	1,199.0	1,195.7	1,194.2	2.2	2.2	124.23	22.8	52.7	69.8	65.5	4.28	16.305		
1,300.0	1,298.9	1,295.1	1,293.2	2.4	2.4	123.04	28.2	60.5	80.0	75.3	4.66	17.150		
1,400.0	1,398.7	1,394.6	1,392.2	2.6	2.7	122.11	33.5	68.2	90.3	85.2	5.05	17.867		
1,500.0	1,498.5	1,494.1	1,491.2	2.8	2.9	121.37	38.9	76.0	100.5	95.1	5.44	18.482		
1,600.0	1,598.3	1,593.5	1,590.2	3.0	3.1	120.77	44.3	83.8	110.8	105.0	5.83	19.015		
1,700.0	1,698.2	1,693.0	1,689.2	3.2	3.3	120.27	49.6	91.6	121.1	114.9	6.22	19.481		
1,800.0	1,798.0	1,792.5	1,788.3	3.4	3.6	119.85	55.0	99.3	131.4	124.8	6.61	19.893		
1,900.0	1,897.8	1,891.9	1,887.3	3.6	3.8	119.50	60.4	107.1	141.8	134.8	7.00	20.258		
2,000.0	1,997.7	1,991.4	1,986.3	3.8	4.0	119.19	65.7	114.9	152.1	144.7	7.39	20.584		
2,100.0	2,097.5	2,090.8	2,085.3	4.0	4.3	118.91	71.1	122.7	162.4	154.6	7.78	20.878		
2,200.0	2,197.3	2,190.3	2,184.3	4.2	4.5	118.68	76.5	130.4	172.7	164.6	8.17	21.143		
2,300.0	2,297.2	2,289.8	2,283.3	4.4	4.7	118.46	81.8	138.2	183.1	174.5	8.56	21.384		
2,400.0	2,397.0	2,389.2	2,382.3	4.6	5.0	118.28	87.2	146.0	193.4	184.5	8.95	21.604		
2,500.0	2,496.8	2,488.7	2,481.3	4.8	5.2	118.11	92.6	153.8	203.7	194.4	9.34	21.805		
2,600.0	2,596.7	2,588.2	2,580.4	5.0	5.5	117.95	97.9	161.5	214.1	204.4	9.74	21.989		
2,700.0	2,696.5	2,687.6	2,679.4	5.2	5.7	117.81	103.3	169.3	224.4	214.3	10.13	22.160		
2,800.0	2,796.3	2,787.1	2,778.4	5.4	5.9	117.69	108.6	177.1	234.8	224.2	10.52	22.317		
2,900.0	2,896.1	2,886.5	2,877.4	5.6	6.2	117.57	114.0	184.8	245.1	234.2	10.91	22.464		
3,000.0	2,996.0	2,986.0	2,976.4	5.8	6.4	117.46	119.4	192.6	255.5	244.1	11.30	22.600		
3,100.0	3,095.8	3,085.5	3,075.4	6.0	6.6	117.36	124.7	200.4	265.8	254.1	11.70	22.726		
3,200.0	3,195.6	3,184.9	3,174.4	6.2	6.9	117.27	130.1	208.2	276.1	264.1	12.09	22.845		
3,300.0	3,295.5	3,284.4	3,273.5	6.4	7.1	117.19	135.5	215.9	286.5	274.0	12.48	22.956		
3,400.0	3,395.3	3,383.9	3,372.5	6.6	7.4	117.11	140.8	223.7	296.8	284.0	12.87	23.060		
3,500.0	3,495.1	3,483.3	3,471.5	6.8	7.6	117.04	146.2	231.5	307.2	293.9	13.26	23.158		
3,600.0	3,595.0	3,582.8	3,570.5	7.0	7.8	116.97	151.6	239.3	317.5	303.9	13.66	23.250		
3,700.0	3,694.8	3,682.2	3,669.5	7.2	8.1	116.90	156.9	247.0	327.9	313.8	14.05	23.337		
3,800.0	3,794.6	3,781.7	3,768.5	7.4	8.3	116.84	162.3	254.8	338.2	323.8	14.44	23.420		
3,900.0	3,894.5	3,881.2	3,867.5	7.6	8.6	116.79	167.7	262.6	348.6	333.7	14.83	23.498		
4,000.0	3,994.3	3,980.6	3,966.5	7.8	8.8	116.73	173.0	270.4	358.9	343.7	15.23	23.572		
4,100.0	4,094.1	4,080.1	4,065.6	8.0	9.0	116.68	178.4	278.1	369.3	353.6	15.62	23.642		
4,200.0	4,193.9	4,179.6	4,164.6	8.2	9.3	116.64	183.7	285.9	379.6	363.6	16.01	23.709		
4,300.0	4,293.8	4,279.0	4,263.6	8.4	9.5	116.59	189.1	293.7	390.0	373.5	16.40	23.772		
4,400.0	4,393.6	4,378.5	4,362.6	8.6	9.7	116.55	194.5	301.5	400.3	383.5	16.80	23.833		
4,500.0	4,493.4	4,477.9	4,461.6	8.8	10.0	116.51	199.8	309.2	410.7	393.5	17.19	23.890		
4,600.0	4,593.3	4,577.4	4,560.6	9.0	10.2	116.47	205.2	317.0	421.0	403.4	17.58	23.946		
4,700.0	4,693.1	4,676.9	4,659.6	9.2	10.5	116.43	210.6	324.8	431.3	413.4	17.97	23.998		
4,800.0	4,792.9	4,776.3	4,758.7	9.4	10.7	116.40	215.9	332.5	441.7	423.3	18.37	24.049		
4,900.0	4,892.8	4,875.8	4,857.7	9.6	10.9	116.36	221.3	340.3	452.0	433.3	18.76	24.097		
5,000.0	4,992.6	4,975.3	4,956.7	9.8	11.2	116.33	226.7	348.1	462.4	443.2	19.15	24.143		
5,100.0	5,092.4	5,074.7	5,055.7	10.0	11.4	116.30	232.0	355.9	472.7	453.2	19.54	24.188		

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

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lochbuie 2C-31H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5020.0ft (Original Well Elev)
Reference Site:	S31-T1N-R65W (Lochbuie)	MD Reference:	WELL @ 5020.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lochbuie 2C-31H	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 S31-T1N-R65W (Lochbuie) - Lochbuie 2E-31H - 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
5,200.0	5,192.3	5,174.2	5,154.7	10.2	11.7	116.27	237.4	363.6	483.1	463.2	19.94	24.230	
5,300.0	5,292.1	5,273.6	5,253.7	10.4	11.9	116.24	242.8	371.4	493.4	473.1	20.33	24.272	

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lochbuie 2C-31H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5020.0ft (Original Well Elev)
Reference Site:	S31-T1N-R65W (Lochbuie)	MD Reference:	WELL @ 5020.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lochbuie 2C-31H	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 S31-T1N-R65W (Lochbuie) - Lochbuie 2F-31H - Hz - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis			
0.0	0.0	0.0	0.0	0.0	0.0	90.05	0.0	30.8	30.8					
100.0	100.0	100.0	100.0	0.2	0.2	90.05	0.0	30.8	30.8	30.5	0.30	101.455		
200.0	200.0	200.0	200.0	0.3	0.3	90.05	0.0	30.8	30.8	30.2	0.65	47.201		
300.0	300.0	300.0	300.0	0.5	0.5	90.05	0.0	30.8	30.8	29.8	1.00	30.755		
400.0	400.0	400.0	400.0	0.7	0.7	90.05	0.0	30.8	30.8	29.5	1.35	22.808 CC, ES		
500.0	500.0	500.0	500.0	0.9	0.8	117.46	0.0	30.8	31.2	29.5	1.70	18.351		
600.0	600.0	599.4	599.4	1.0	1.0	120.85	0.3	31.6	33.3	31.2	2.05	16.223		
700.0	699.9	698.8	698.7	1.2	1.2	124.74	1.2	34.0	37.9	35.5	2.41	15.773 SF		
800.0	799.7	797.9	797.7	1.4	1.4	127.95	2.7	38.0	45.0	42.3	2.76	16.293		
900.0	899.5	896.8	896.5	1.6	1.6	129.32	4.9	43.6	53.7	50.6	3.13	17.176		
1,000.0	999.4	995.4	994.8	1.8	1.8	129.41	7.6	50.8	63.8	60.3	3.49	18.258		
1,100.0	1,099.2	1,093.8	1,092.7	2.0	2.0	128.75	10.9	59.5	75.3	71.5	3.87	19.474		
1,200.0	1,199.0	1,191.8	1,190.1	2.2	2.2	127.66	14.8	69.8	88.3	84.0	4.25	20.791		
1,300.0	1,298.9	1,289.3	1,286.8	2.4	2.5	126.35	19.3	81.5	102.7	98.1	4.63	22.190		
1,400.0	1,398.7	1,386.8	1,383.2	2.6	2.7	124.96	24.4	94.8	118.6	113.6	5.01	23.653		
1,500.0	1,498.5	1,485.4	1,480.7	2.8	3.0	123.78	29.7	108.6	134.9	129.5	5.40	24.987		
1,600.0	1,598.3	1,584.0	1,578.2	3.0	3.3	122.85	35.0	122.5	151.3	145.6	5.79	26.148		
1,700.0	1,698.2	1,682.6	1,675.7	3.2	3.6	122.11	40.2	136.3	167.8	161.6	6.18	27.167		
1,800.0	1,798.0	1,781.2	1,773.2	3.4	3.9	121.50	45.5	150.2	184.2	177.7	6.56	28.068		
1,900.0	1,897.8	1,879.9	1,870.7	3.6	4.2	120.99	50.8	164.0	200.7	193.8	6.95	28.869		
2,000.0	1,997.7	1,978.5	1,968.2	3.8	4.5	120.55	56.1	177.9	217.2	209.9	7.34	29.587		
2,100.0	2,097.5	2,077.1	2,065.7	4.0	4.8	120.18	61.4	191.8	233.7	226.0	7.73	30.234		
2,200.0	2,197.3	2,175.7	2,163.2	4.2	5.1	119.86	66.7	205.6	250.2	242.1	8.12	30.818		
2,300.0	2,297.2	2,274.3	2,260.7	4.4	5.4	119.57	72.0	219.5	266.8	258.2	8.51	31.350		
2,400.0	2,397.0	2,373.0	2,358.2	4.6	5.7	119.32	77.3	233.3	283.3	274.4	8.90	31.836		
2,500.0	2,496.8	2,471.6	2,455.7	4.8	6.0	119.10	82.5	247.2	299.8	290.5	9.29	32.281		
2,600.0	2,596.7	2,570.2	2,553.2	5.0	6.3	118.90	87.8	261.0	316.3	306.7	9.68	32.690		
2,700.0	2,696.5	2,668.8	2,650.7	5.2	6.6	118.72	93.1	274.9	332.9	322.8	10.07	33.068		
2,800.0	2,796.3	2,767.4	2,748.2	5.4	6.9	118.56	98.4	288.7	349.4	339.0	10.46	33.418		
2,900.0	2,896.1	2,866.0	2,845.7	5.6	7.2	118.41	103.7	302.6	366.0	355.1	10.85	33.742		
3,000.0	2,996.0	2,964.7	2,943.2	5.8	7.5	118.28	109.0	316.5	382.5	371.3	11.24	34.044		
3,100.0	3,095.8	3,063.3	3,040.7	6.0	7.9	118.15	114.3	330.3	399.1	387.4	11.63	34.326		
3,200.0	3,195.6	3,161.9	3,138.2	6.2	8.2	118.04	119.6	344.2	415.6	403.6	12.02	34.590		
3,300.0	3,295.5	3,260.5	3,235.7	6.4	8.5	117.93	124.8	358.0	432.2	419.8	12.41	34.837		
3,400.0	3,395.3	3,359.1	3,333.2	6.6	8.8	117.84	130.1	371.9	448.7	435.9	12.80	35.069		
3,500.0	3,495.1	3,457.7	3,430.7	6.8	9.1	117.75	135.4	385.7	465.3	452.1	13.18	35.287		
3,600.0	3,595.0	3,556.4	3,528.2	7.0	9.4	117.66	140.7	399.6	481.8	468.2	13.57	35.493		
3,700.0	3,694.8	3,655.0	3,625.7	7.2	9.7	117.58	146.0	413.5	498.4	484.4	13.96	35.687		

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lochbuie 2C-31H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5020.0ft (Original Well Elev)
Reference Site:	S31-T1N-R65W (Lochbuie)	MD Reference:	WELL @ 5020.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lochbuie 2C-31H	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 S31-T1N-R65W (Lochbuie) - Lochbuie 2G-31H - 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	90.05	0.0	39.2	39.2					
100.0	100.0	100.0	100.0	0.2	0.2	90.05	0.0	39.2	39.2	38.9	0.30	129.124		
200.0	200.0	200.0	200.0	0.3	0.3	90.05	0.0	39.2	39.2	38.6	0.65	60.074	CC, ES	
300.0	300.0	299.3	299.3	0.5	0.5	89.69	0.2	40.0	40.0	39.0	1.00	40.001		
400.0	400.0	398.6	398.6	0.7	0.7	88.71	1.0	42.5	42.5	41.2	1.35	31.487		
500.0	500.0	497.8	497.6	0.9	0.9	114.20	2.2	46.6	47.1	45.4	1.70	27.732		
600.0	600.0	596.7	596.4	1.0	1.1	114.99	3.9	52.4	54.0	52.0	2.05	26.352		
700.0	699.9	695.3	694.6	1.2	1.3	116.55	6.1	59.7	63.4	60.9	2.41	26.315	SF	
800.0	799.7	793.4	792.4	1.4	1.5	118.22	8.8	68.6	75.0	72.2	2.77	27.050		
900.0	899.5	891.2	889.6	1.6	1.7	119.15	12.0	79.1	88.3	85.2	3.14	28.111		
1,000.0	999.4	988.6	986.1	1.8	2.0	119.49	15.6	91.1	103.2	99.7	3.51	29.372		
1,100.0	1,099.2	1,085.5	1,081.9	2.0	2.3	119.47	19.7	104.6	119.7	115.8	3.89	30.773		
1,200.0	1,199.0	1,181.8	1,177.0	2.2	2.6	119.21	24.2	119.5	137.7	133.5	4.27	32.276		
1,300.0	1,298.9	1,277.5	1,271.2	2.4	2.9	118.81	29.2	135.9	157.3	152.7	4.65	33.861		
1,400.0	1,398.7	1,375.4	1,367.3	2.6	3.3	118.39	34.4	153.5	177.7	172.7	5.03	35.332		
1,500.0	1,498.5	1,473.3	1,463.5	2.8	3.6	118.06	39.7	171.0	198.1	192.7	5.41	36.591		
1,600.0	1,598.3	1,571.2	1,559.6	3.0	4.0	117.79	45.0	188.6	218.5	212.7	5.80	37.680		
1,700.0	1,698.2	1,669.1	1,655.8	3.2	4.3	117.57	50.3	206.1	238.9	232.7	6.18	38.632		
1,800.0	1,798.0	1,767.0	1,752.0	3.4	4.7	117.38	55.6	223.6	259.3	252.8	6.57	39.470		
1,900.0	1,897.8	1,864.8	1,848.1	3.6	5.1	117.22	60.9	241.2	279.7	272.8	6.96	40.214		
2,000.0	1,997.7	1,962.7	1,944.3	3.8	5.4	117.08	66.2	258.7	300.1	292.8	7.34	40.878		
2,100.0	2,097.5	2,060.6	2,040.4	4.0	5.8	116.96	71.5	276.3	320.6	312.8	7.73	41.475		
2,200.0	2,197.3	2,158.5	2,136.6	4.2	6.1	116.86	76.8	293.8	341.0	332.9	8.12	42.014		
2,300.0	2,297.2	2,256.4	2,232.8	4.4	6.5	116.76	82.1	311.4	361.4	352.9	8.50	42.503		
2,400.0	2,397.0	2,354.3	2,328.9	4.6	6.9	116.68	87.4	328.9	381.8	372.9	8.89	42.949		
2,500.0	2,496.8	2,452.2	2,425.1	4.8	7.2	116.60	92.7	346.5	402.2	392.9	9.28	43.357		
2,600.0	2,596.7	2,550.1	2,521.3	5.0	7.6	116.53	98.0	364.0	422.6	413.0	9.66	43.733		
2,700.0	2,696.5	2,648.0	2,617.4	5.2	8.0	116.47	103.3	381.5	443.1	433.0	10.05	44.079		
2,800.0	2,796.3	2,745.9	2,713.6	5.4	8.3	116.42	108.6	399.1	463.5	453.0	10.44	44.399		
2,900.0	2,896.1	2,843.8	2,809.7	5.6	8.7	116.36	113.9	416.6	483.9	473.1	10.83	44.695		

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Lochbuie 2C-31H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5020.0ft (Original Well Elev)
Reference Site:	S31-T1N-R65W (Lochbuie)	MD Reference:	WELL @ 5020.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Lochbuie 2C-31H	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 WELL @ 5020.0ft (Original Well Elev)
 Offset Depths are relative to Offset Datum
 Central Meridian is -105.500000 °

Coordinates are relative to: Lochbuie 2C-31H
 Coordinate System is US State Plane 1983, Colorado Northern Zone
 Grid Convergence at Surface is: 0.51°

