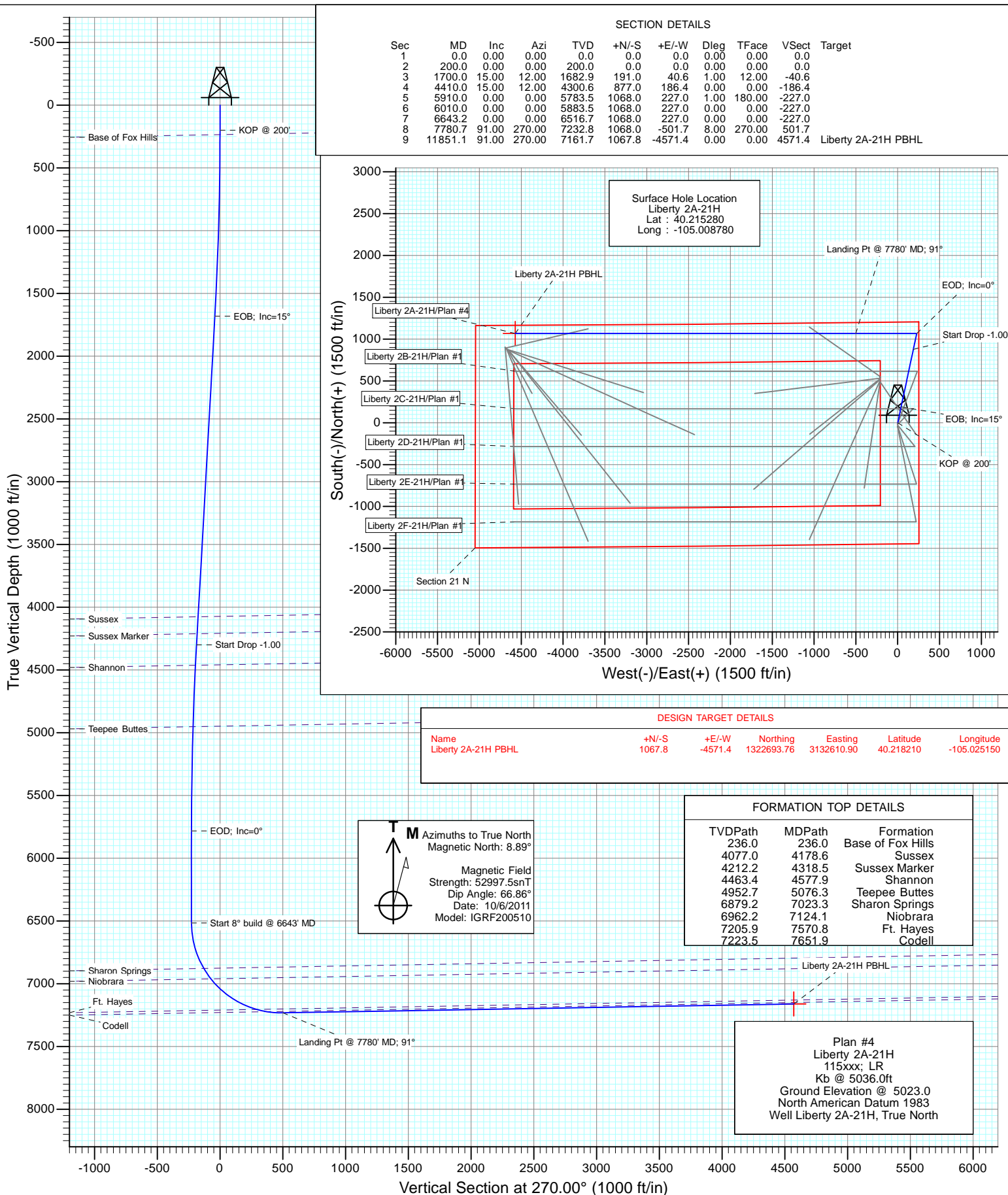




Project: DJ Wattenberg  
Site: NENE S20-T3N-R68W (Liberty 2A-21H)  
Well: Liberty 2A-21H  
Design: Plan #4



## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Liberty 2A-21H
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	Kb @ 5036.0ft
<b>Project:</b>	DJ Wattenberg	<b>MD Reference:</b>	Kb @ 5036.0ft
<b>Site:</b>	NENE S20-T3N-R68W (Liberty 2A-21H)	<b>North Reference:</b>	True
<b>Well:</b>	Liberty 2A-21H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HZ		
<b>Design:</b>	Plan #4		

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

Site	NENE S20-T3N-R68W (Liberty 2A-21H)				
Site Position:		Northing:	1,322,254.59 ft	Latitude:	40.216940
From:	Lat/Long	Easting:	3,136,925.14 ft	Longitude:	-105.009710
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	0.32 °

Well	Liberty 2A-21H					
Well Position	+N/-S	0.0 ft	Northing:	1,321,651.31 ft	Latitude:	40.215280
	+E/-W	0.0 ft	Easting:	3,137,188.20 ft	Longitude:	-105.008780
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	5,023.0 ft

<b>Wellbore</b>	HZ				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF200510	10/6/2011	8.89	66.86	52,997

<b>Design</b>	Plan #4			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	270.00

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,700.0	15.00	12.00	1,682.9	191.0	40.6	1.00	1.00	0.00	12.00	
4,410.0	15.00	12.00	4,300.6	877.0	186.4	0.00	0.00	0.00	0.00	
5,910.0	0.00	0.00	5,783.5	1,068.0	227.0	1.00	-1.00	0.00	180.00	
6,010.0	0.00	0.00	5,883.5	1,068.0	227.0	0.00	0.00	0.00	0.00	
6,643.2	0.00	0.00	6,516.7	1,068.0	227.0	0.00	0.00	0.00	0.00	
7,780.7	91.00	270.00	7,232.8	1,068.0	-501.7	8.00	8.00	0.00	270.00	
11,851.1	91.00	270.00	7,161.7	1,067.8	-4,571.4	0.00	0.00	0.00	0.00	Liberty 2A-21H PBHL

# Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Liberty 2A-21H
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	Kb @ 5036.0ft
<b>Project:</b>	DJ Wattenberg	<b>MD Reference:</b>	Kb @ 5036.0ft
<b>Site:</b>	NENE S20-T3N-R68W (Liberty 2A-21H)	<b>North Reference:</b>	True
<b>Well:</b>	Liberty 2A-21H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HZ		
<b>Design:</b>	Plan #4		

## Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	KOP @ 200'
236.0	0.36	12.00	236.0	0.1	0.0	0.0	1.00	1.00	Base of Fox Hills
300.0	1.00	12.00	300.0	0.9	0.2	-0.2	1.00	1.00	
400.0	2.00	12.00	400.0	3.4	0.7	-0.7	1.00	1.00	
500.0	3.00	12.00	499.9	7.7	1.6	-1.6	1.00	1.00	
600.0	4.00	12.00	599.7	13.7	2.9	-2.9	1.00	1.00	
700.0	5.00	12.00	699.4	21.3	4.5	-4.5	1.00	1.00	
800.0	6.00	12.00	798.9	30.7	6.5	-6.5	1.00	1.00	
900.0	7.00	12.00	898.3	41.8	8.9	-8.9	1.00	1.00	
1,000.0	8.00	12.00	997.4	54.5	11.6	-11.6	1.00	1.00	
1,100.0	9.00	12.00	1,096.3	69.0	14.7	-14.7	1.00	1.00	
1,200.0	10.00	12.00	1,194.9	85.1	18.1	-18.1	1.00	1.00	
1,300.0	11.00	12.00	1,293.3	103.0	21.9	-21.9	1.00	1.00	
1,400.0	12.00	12.00	1,391.2	122.5	26.0	-26.0	1.00	1.00	
1,500.0	13.00	12.00	1,488.9	143.6	30.5	-30.5	1.00	1.00	
1,600.0	14.00	12.00	1,586.1	166.5	35.4	-35.4	1.00	1.00	
1,700.0	15.00	12.00	1,682.9	191.0	40.6	-40.6	1.00	1.00	EOB; Inc=15°
1,800.0	15.00	12.00	1,779.5	216.3	46.0	-46.0	0.00	0.00	
1,900.0	15.00	12.00	1,876.1	241.6	51.4	-51.4	0.00	0.00	
2,000.0	15.00	12.00	1,972.7	266.9	56.7	-56.7	0.00	0.00	
2,100.0	15.00	12.00	2,069.3	292.2	62.1	-62.1	0.00	0.00	
2,200.0	15.00	12.00	2,165.9	317.5	67.5	-67.5	0.00	0.00	
2,300.0	15.00	12.00	2,262.5	342.9	72.9	-72.9	0.00	0.00	
2,400.0	15.00	12.00	2,359.1	368.2	78.3	-78.3	0.00	0.00	
2,500.0	15.00	12.00	2,455.7	393.5	83.6	-83.6	0.00	0.00	
2,600.0	15.00	12.00	2,552.3	418.8	89.0	-89.0	0.00	0.00	
2,700.0	15.00	12.00	2,648.8	444.1	94.4	-94.4	0.00	0.00	
2,800.0	15.00	12.00	2,745.4	469.4	99.8	-99.8	0.00	0.00	
2,900.0	15.00	12.00	2,842.0	494.8	105.2	-105.2	0.00	0.00	
3,000.0	15.00	12.00	2,938.6	520.1	110.5	-110.5	0.00	0.00	
3,100.0	15.00	12.00	3,035.2	545.4	115.9	-115.9	0.00	0.00	
3,200.0	15.00	12.00	3,131.8	570.7	121.3	-121.3	0.00	0.00	
3,300.0	15.00	12.00	3,228.4	596.0	126.7	-126.7	0.00	0.00	
3,400.0	15.00	12.00	3,325.0	621.3	132.1	-132.1	0.00	0.00	
3,500.0	15.00	12.00	3,421.6	646.7	137.5	-137.5	0.00	0.00	
3,600.0	15.00	12.00	3,518.2	672.0	142.8	-142.8	0.00	0.00	
3,700.0	15.00	12.00	3,614.8	697.3	148.2	-148.2	0.00	0.00	
3,800.0	15.00	12.00	3,711.4	722.6	153.6	-153.6	0.00	0.00	
3,900.0	15.00	12.00	3,808.0	747.9	159.0	-159.0	0.00	0.00	
4,000.0	15.00	12.00	3,904.6	773.2	164.4	-164.4	0.00	0.00	
4,100.0	15.00	12.00	4,001.1	798.6	169.7	-169.7	0.00	0.00	
4,178.6	15.00	12.00	4,077.0	818.4	174.0	-174.0	0.00	0.00	Sussex
4,200.0	15.00	12.00	4,097.7	823.9	175.1	-175.1	0.00	0.00	
4,300.0	15.00	12.00	4,194.3	849.2	180.5	-180.5	0.00	0.00	
4,318.5	15.00	12.00	4,212.2	853.9	181.5	-181.5	0.00	0.00	Sussex Marker
4,400.0	15.00	12.00	4,290.9	874.5	185.9	-185.9	0.00	0.00	
4,410.0	15.00	12.00	4,300.6	877.0	186.4	-186.4	0.00	0.00	Start Drop -1.00
4,500.0	14.10	12.00	4,387.7	899.2	191.1	-191.1	1.00	-1.00	
4,577.9	13.32	12.00	4,463.4	917.2	195.0	-195.0	1.00	-1.00	Shannon
4,600.0	13.10	12.00	4,484.9	922.2	196.0	-196.0	1.00	-1.00	

# Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Liberty 2A-21H
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	Kb @ 5036.0ft
<b>Project:</b>	DJ Wattenberg	<b>MD Reference:</b>	Kb @ 5036.0ft
<b>Site:</b>	NENE S20-T3N-R68W (Liberty 2A-21H)	<b>North Reference:</b>	True
<b>Well:</b>	Liberty 2A-21H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HZ		
<b>Design:</b>	Plan #4		

## 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
4,700.0	12.10	12.00	4,582.5	943.5	200.5	-200.5	1.00	-1.00	
4,800.0	11.10	12.00	4,680.4	963.2	204.7	-204.7	1.00	-1.00	
4,900.0	10.10	12.00	4,778.7	981.2	208.6	-208.6	1.00	-1.00	
5,000.0	9.10	12.00	4,877.3	997.5	212.0	-212.0	1.00	-1.00	
5,076.3	8.34	12.00	4,952.7	1,008.8	214.4	-214.4	1.00	-1.00	Teepee Buttes
5,100.0	8.10	12.00	4,976.2	1,012.1	215.1	-215.1	1.00	-1.00	
5,200.0	7.10	12.00	5,075.3	1,025.0	217.9	-217.9	1.00	-1.00	
5,300.0	6.10	12.00	5,174.7	1,036.3	220.3	-220.3	1.00	-1.00	
5,400.0	5.10	12.00	5,274.2	1,045.8	222.3	-222.3	1.00	-1.00	
5,500.0	4.10	12.00	5,373.9	1,053.7	224.0	-224.0	1.00	-1.00	
5,600.0	3.10	12.00	5,473.7	1,059.8	225.3	-225.3	1.00	-1.00	
5,700.0	2.10	12.00	5,573.6	1,064.2	226.2	-226.2	1.00	-1.00	
5,800.0	1.10	12.00	5,673.5	1,067.0	226.8	-226.8	1.00	-1.00	
5,900.0	0.10	12.00	5,773.5	1,068.0	227.0	-227.0	1.00	-1.00	
5,910.0	0.00	0.00	5,783.5	1,068.0	227.0	-227.0	1.00	-1.00	EOD; Inc=0°
6,000.0	0.00	0.00	5,873.5	1,068.0	227.0	-227.0	0.00	0.00	
6,010.0	0.00	0.00	5,883.5	1,068.0	227.0	-227.0	0.00	0.00	
6,100.0	0.00	0.00	5,973.5	1,068.0	227.0	-227.0	0.00	0.00	
6,200.0	0.00	0.00	6,073.5	1,068.0	227.0	-227.0	0.00	0.00	
6,300.0	0.00	0.00	6,173.5	1,068.0	227.0	-227.0	0.00	0.00	
6,400.0	0.00	0.00	6,273.5	1,068.0	227.0	-227.0	0.00	0.00	
6,500.0	0.00	0.00	6,373.5	1,068.0	227.0	-227.0	0.00	0.00	
6,600.0	0.00	0.00	6,473.5	1,068.0	227.0	-227.0	0.00	0.00	
6,643.2	0.00	0.00	6,516.7	1,068.0	227.0	-227.0	0.00	0.00	Start 8° build @ 6643' MD
6,700.0	4.54	270.00	6,573.4	1,068.0	224.8	-224.8	8.00	8.00	
6,800.0	12.54	270.00	6,672.3	1,068.0	209.9	-209.9	8.00	8.00	
6,900.0	20.54	270.00	6,768.0	1,068.0	181.5	-181.5	8.00	8.00	
7,000.0	28.54	270.00	6,858.9	1,068.0	140.0	-140.0	8.00	8.00	
7,023.3	30.41	270.00	6,879.2	1,068.0	128.5	-128.5	8.00	8.00	Sharon Springs
7,100.0	36.54	270.00	6,943.2	1,068.0	86.2	-86.2	8.00	8.00	
7,124.1	38.47	270.00	6,962.2	1,068.0	71.5	-71.5	8.00	8.00	Niobrara
7,200.0	44.54	270.00	7,019.1	1,068.0	21.3	-21.3	8.00	8.00	
7,300.0	52.54	270.00	7,085.2	1,068.0	-53.6	53.6	8.00	8.00	
7,400.0	60.54	270.00	7,140.3	1,068.0	-137.0	137.0	8.00	8.00	
7,500.0	68.54	270.00	7,183.3	1,068.0	-227.2	227.2	8.00	8.00	
7,570.8	74.21	270.00	7,205.9	1,068.0	-294.3	294.3	8.00	8.00	Ft. Hayes
7,600.0	76.54	270.00	7,213.2	1,068.0	-322.5	322.5	8.00	8.00	
7,651.9	80.70	270.00	7,223.5	1,068.0	-373.4	373.4	8.00	8.00	Codell
7,700.0	84.54	270.00	7,229.7	1,068.0	-421.1	421.1	8.00	8.00	
7,780.7	91.00	270.00	7,232.8	1,068.0	-501.7	501.7	8.00	8.00	Landing Pt @ 7780' MD; 91°
7,800.0	91.00	270.00	7,232.5	1,068.0	-521.0	521.0	0.00	0.00	
7,900.0	91.00	270.00	7,230.7	1,068.0	-621.0	621.0	0.00	0.00	
8,000.0	91.00	270.00	7,229.0	1,068.0	-721.0	721.0	0.00	0.00	
8,100.0	91.00	270.00	7,227.2	1,068.0	-820.9	820.9	0.00	0.00	
8,200.0	91.00	270.00	7,225.5	1,067.9	-920.9	920.9	0.00	0.00	
8,300.0	91.00	270.00	7,223.7	1,067.9	-1,020.9	1,020.9	0.00	0.00	
8,400.0	91.00	270.00	7,222.0	1,067.9	-1,120.9	1,120.9	0.00	0.00	
8,500.0	91.00	270.00	7,220.2	1,067.9	-1,220.9	1,220.9	0.00	0.00	
8,600.0	91.00	270.00	7,218.5	1,067.9	-1,320.9	1,320.9	0.00	0.00	
8,700.0	91.00	270.00	7,216.7	1,067.9	-1,420.9	1,420.9	0.00	0.00	
8,800.0	91.00	270.00	7,215.0	1,067.9	-1,520.8	1,520.8	0.00	0.00	
8,900.0	91.00	270.00	7,213.3	1,067.9	-1,620.8	1,620.8	0.00	0.00	

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Liberty 2A-21H
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	Kb @ 5036.0ft
<b>Project:</b>	DJ Wattenberg	<b>MD Reference:</b>	Kb @ 5036.0ft
<b>Site:</b>	NENE S20-T3N-R68W (Liberty 2A-21H)	<b>North Reference:</b>	True
<b>Well:</b>	Liberty 2A-21H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HZ		
<b>Design:</b>	Plan #4		

### 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
9,000.0	91.00	270.00	7,211.5	1,067.9	-1,720.8	1,720.8	0.00	0.00	
9,100.0	91.00	270.00	7,209.8	1,067.9	-1,820.8	1,820.8	0.00	0.00	
9,200.0	91.00	270.00	7,208.0	1,067.9	-1,920.8	1,920.8	0.00	0.00	
9,300.0	91.00	270.00	7,206.3	1,067.9	-2,020.8	2,020.8	0.00	0.00	
9,400.0	91.00	270.00	7,204.5	1,067.9	-2,120.7	2,120.7	0.00	0.00	
9,500.0	91.00	270.00	7,202.8	1,067.9	-2,220.7	2,220.7	0.00	0.00	
9,600.0	91.00	270.00	7,201.0	1,067.9	-2,320.7	2,320.7	0.00	0.00	
9,700.0	91.00	270.00	7,199.3	1,067.9	-2,420.7	2,420.7	0.00	0.00	
9,800.0	91.00	270.00	7,197.5	1,067.9	-2,520.7	2,520.7	0.00	0.00	
9,900.0	91.00	270.00	7,195.8	1,067.9	-2,620.7	2,620.7	0.00	0.00	
10,000.0	91.00	270.00	7,194.1	1,067.9	-2,720.7	2,720.7	0.00	0.00	
10,100.0	91.00	270.00	7,192.3	1,067.9	-2,820.6	2,820.6	0.00	0.00	
10,200.0	91.00	270.00	7,190.6	1,067.9	-2,920.6	2,920.6	0.00	0.00	
10,300.0	91.00	270.00	7,188.8	1,067.9	-3,020.6	3,020.6	0.00	0.00	
10,400.0	91.00	270.00	7,187.1	1,067.9	-3,120.6	3,120.6	0.00	0.00	
10,500.0	91.00	270.00	7,185.3	1,067.8	-3,220.6	3,220.6	0.00	0.00	
10,600.0	91.00	270.00	7,183.6	1,067.8	-3,320.6	3,320.6	0.00	0.00	
10,700.0	91.00	270.00	7,181.8	1,067.8	-3,420.5	3,420.5	0.00	0.00	
10,800.0	91.00	270.00	7,180.1	1,067.8	-3,520.5	3,520.5	0.00	0.00	
10,900.0	91.00	270.00	7,178.3	1,067.8	-3,620.5	3,620.5	0.00	0.00	
11,000.0	91.00	270.00	7,176.6	1,067.8	-3,720.5	3,720.5	0.00	0.00	
11,100.0	91.00	270.00	7,174.9	1,067.8	-3,820.5	3,820.5	0.00	0.00	
11,200.0	91.00	270.00	7,173.1	1,067.8	-3,920.5	3,920.5	0.00	0.00	
11,300.0	91.00	270.00	7,171.4	1,067.8	-4,020.5	4,020.5	0.00	0.00	
11,400.0	91.00	270.00	7,169.6	1,067.8	-4,120.4	4,120.4	0.00	0.00	
11,500.0	91.00	270.00	7,167.9	1,067.8	-4,220.4	4,220.4	0.00	0.00	
11,600.0	91.00	270.00	7,166.1	1,067.8	-4,320.4	4,320.4	0.00	0.00	
11,700.0	91.00	270.00	7,164.4	1,067.8	-4,420.4	4,420.4	0.00	0.00	
11,800.0	91.00	270.00	7,162.6	1,067.8	-4,520.4	4,520.4	0.00	0.00	
11,851.1	91.00	270.00	7,161.7	1,067.8	-4,571.4	4,571.4	0.00	0.00	TD at 11851.1 - Liberty 2A-21H 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									
Liberty 2A-21H PBHL	0.00	0.00	7,161.7	1,067.8	-4,571.4	1,322,693.76	3,132,610.90	40.218210	-105.025150
- plan hits target center									
- Polygon									
Point 1			7,161.7	460.0	-400.0	1,323,151.54	3,132,208.36		
Point 2			7,161.7	460.0	400.0	1,323,155.97	3,133,008.35		

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Liberty 2A-21H
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	Kb @ 5036.0ft
<b>Project:</b>	DJ Wattenberg	<b>MD Reference:</b>	Kb @ 5036.0ft
<b>Site:</b>	NENE S20-T3N-R68W (Liberty 2A-21H)	<b>North Reference:</b>	True
<b>Well:</b>	Liberty 2A-21H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	HZ		
<b>Design:</b>	Plan #4		

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
236.0	236.0	Base of Fox Hills		-1.00	270.00
4,178.6	4,074.0	Sussex		-1.00	270.00
4,318.5	4,209.0	Sussex Marker		-1.00	270.00
4,577.9	4,460.0	Shannon		-1.00	270.00
5,076.3	4,949.0	Teepee Buttes		-1.00	270.00
7,023.3	6,877.0	Sharon Springs		-1.00	270.00
7,124.1	6,961.0	Niobrara		-1.00	270.00
7,570.8	7,211.0	Ft. Hayes		-1.00	270.00
7,651.9	7,230.0	Codell		-1.00	270.00

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
200.0	200.0	0.0	0.0	KOP @ 200'
1,700.0	1,682.9	191.0	40.6	EOB; Inc=15°
4,410.0	4,300.6	877.0	186.4	Start Drop -1.00
5,910.0	5,783.5	1,068.0	227.0	EOD; Inc=0°
6,643.2	6,516.7	1,068.0	227.0	Start 8° build @ 6643' MD
7,780.7	7,232.8	1,068.0	227.0	Landing Pt @ 7780' MD; 91°
11,851.1	7,161.7	1,068.0	-501.7	TD at 11851.1

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

**DJ Wattenberg**

**NENE S20-T3N-R68W (Liberty 2A-21H)**

**Liberty 2A-21H**

**HZ**

**Plan #4**

## **Anticollision Report**

**19 September, 2012**

# Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Liberty 2A-21H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	Kb @ 5036.0ft
<b>Reference Site:</b>	NENE S20-T3N-R68W (Liberty 2A-21H)	<b>MD Reference:</b>	Kb @ 5036.0ft
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Liberty 2A-21H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #4	<b>Offset TVD Reference:</b>	Offset Datum

Reference	Plan #4		
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	9/19/2012		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	11,850.2	Plan #4 (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						
NENE S20-T3N-R68W (Liberty 2A-21H)						
Haley 1-20 (Proposed) - DD - Plan #1						Out of range
Haley 31-20 (Proposed) - DD - Plan #1						Out of range
Haley 32-20 (Proposed) - DD - Plan #1						Out of range
Haley 41-20 (Proposed) - DD - Plan #1						Out of range
Haley 42-20 (Proposed) - DD - Plan #1						Out of range
Haley 6-0-20 (Proposed) - DD - Plan #1						Out of range
Haley 6-4-20 (Proposed) - DD - Plan #1						Out of range
Haley 8-2-20 (Proposed) - DD - Plan #1						Out of range
Liberty 11-21 (Proposed) - DD - Plan #1						Out of range
Liberty 12-21 (Proposed) - DD - Plan #1	1,281.6	1,260.8	477.8	470.7	67.250	CC
Liberty 12-21 (Proposed) - DD - Plan #1	1,300.0	1,276.0	477.8	470.6	65.811	ES
Liberty 12-21 (Proposed) - DD - Plan #1	1,500.0	1,433.6	492.0	483.0	54.718	SF
Liberty 2-0-21 (Proposed) - DD - Plan #1						Out of range
Liberty 21-21 (Proposed) - DD - Plan #1	2,826.5	2,771.1	320.5	305.6	21.606	CC, ES
Liberty 21-21 (Proposed) - DD - Plan #1	3,200.0	3,131.8	334.7	317.8	19.827	SF
Liberty 2-21 (Proposed) - DD - Plan #1	1,410.5	1,385.3	486.8	479.0	63.108	CC, ES
Liberty 2-21 (Proposed) - DD - Plan #1	1,600.0	1,555.5	492.7	483.5	54.012	SF
Liberty 22-21 (Proposed) - DD - Plan #1	1,536.7	1,565.2	290.7	280.8	29.483	CC, ES
Liberty 22-21 (Proposed) - DD - Plan #1	1,700.0	1,703.1	303.7	292.5	27.300	SF
Liberty 2-4-21 (Proposed) - DD - Plan #1	1,432.4	1,450.7	371.7	362.6	40.533	CC, ES
Liberty 2-4-21 (Proposed) - DD - Plan #1	1,700.0	1,646.7	410.0	398.5	35.663	SF
Liberty 2B-21H - Hz - Plan #1	200.0	200.0	10.9	10.3	16.742	CC, ES
Liberty 2B-21H - Hz - Plan #1	1,300.0	1,303.1	33.3	28.4	6.852	SF
Liberty 2C-21H - Hz - Plan #1	200.0	200.0	18.2	17.6	27.904	CC, ES
Liberty 2C-21H - Hz - Plan #1	800.0	801.0	39.2	36.4	14.115	SF
Liberty 2D-21H - Hz - Plan #1	200.0	200.0	29.1	28.5	44.652	CC, ES
Liberty 2D-21H - Hz - Plan #1	500.0	499.4	37.5	35.8	22.087	SF
Liberty 2E-21H - HZ - Plan #1	200.0	200.0	40.1	39.4	61.388	CC, ES
Liberty 2E-21H - HZ - Plan #1	600.0	597.9	57.0	55.0	27.893	SF
Liberty 2F-21H - HZ - Plan #1	200.0	200.0	51.0	50.3	78.130	CC, ES
Liberty 2F-21H - HZ - Plan #1	600.0	595.5	75.0	73.0	36.752	SF
Liberty 4-2-21 (Proposed) - DD - Plan #1	2,029.5	2,034.2	114.6	103.0	9.835	CC, ES
Liberty 4-2-21 (Proposed) - DD - Plan #1	2,100.0	2,099.0	118.0	105.9	9.767	SF

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



## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Liberty 2A-21H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	Kb @ 5036.0ft
<b>Reference Site:</b>	NENE S20-T3N-R68W (Liberty 2A-21H)	<b>MD Reference:</b>	Kb @ 5036.0ft
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Liberty 2A-21H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #4	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> NENE S20-T3N-R68W (Liberty 2A-21H) - Liberty 12-21 (Proposed) - DD - Plan #1												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 0-MWD												<b>Offset Well Error:</b>	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	
1,000.0	997.4	1,013.2	1,002.4	2.0	2.9	-51.29	438.5	-298.9	493.8	489.0	4.78	103.332	
1,100.0	1,096.3	1,104.2	1,089.2	2.3	3.4	-55.71	420.9	-319.2	485.1	479.6	5.56	87.228	
1,200.0	1,194.9	1,191.8	1,172.1	2.7	3.9	-60.48	402.3	-340.7	479.4	473.0	6.40	74.958	
1,281.6	1,275.2	1,260.8	1,236.7	2.9	4.4	-64.56	386.4	-358.9	477.8	470.7	7.10	67.250 CC	
1,300.0	1,293.3	1,276.0	1,250.9	3.0	4.5	-65.49	382.8	-363.1	477.8	470.6	7.26	65.811 ES	
1,400.0	1,391.2	1,356.6	1,325.4	3.4	5.0	-70.59	362.8	-386.3	481.7	473.6	8.13	59.227	
1,500.0	1,488.9	1,433.6	1,395.8	3.8	5.6	-75.61	342.3	-409.8	492.0	483.0	8.99	54.718 SF	

# Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Liberty 2A-21H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	Kb @ 5036.0ft
<b>Reference Site:</b>	NENE S20-T3N-R68W (Liberty 2A-21H)	<b>MD Reference:</b>	Kb @ 5036.0ft
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Liberty 2A-21H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #4	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design NENE S20-T3N-R68W (Liberty 2A-21H) - Liberty 21-21 (Proposed) - DD - Plan #1													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)						
1,300.0	1,293.3	1,293.3	1,293.3	3.0	2.2	-40.55	542.8	-212.2	498.3	493.4	4.81	103.547		
1,400.0	1,391.2	1,391.2	1,391.2	3.4	2.4	-42.18	542.8	-212.2	483.2	477.9	5.28	91.539		
1,500.0	1,488.9	1,488.9	1,488.9	3.8	2.6	-44.05	542.8	-212.2	467.2	461.4	5.78	80.875		
1,600.0	1,586.1	1,586.1	1,586.1	4.2	2.7	-46.21	542.8	-212.2	450.5	444.2	6.31	71.350		
1,700.0	1,682.9	1,682.9	1,682.9	4.7	2.9	-48.69	542.8	-212.2	433.2	426.3	6.90	62.820		
1,800.0	1,779.5	1,779.5	1,779.5	5.1	3.1	-51.31	542.8	-212.2	416.3	408.8	7.51	55.398		
1,900.0	1,876.1	1,876.1	1,876.1	5.6	3.3	-54.14	542.8	-212.2	400.2	392.1	8.16	49.036		
2,000.0	1,972.7	1,972.7	1,972.7	6.1	3.4	-57.19	542.8	-212.2	385.3	376.5	8.84	43.588		
2,100.0	2,069.3	2,069.3	2,069.3	6.6	3.6	-60.46	542.8	-212.2	371.5	362.0	9.54	38.931		
2,200.0	2,165.9	2,165.9	2,165.9	7.0	3.8	-63.95	542.8	-212.2	359.1	348.9	10.27	34.968		
2,300.0	2,262.5	2,262.5	2,262.5	7.5	3.9	-67.67	542.8	-212.2	348.2	337.2	11.01	31.615		
2,400.0	2,359.1	2,359.1	2,359.1	8.0	4.1	-71.60	542.8	-212.2	338.9	327.2	11.77	28.803		
2,500.0	2,455.7	2,455.7	2,455.7	8.5	4.3	-75.71	542.8	-212.2	331.4	318.9	12.52	26.472		
2,600.0	2,552.3	2,552.3	2,552.3	8.9	4.4	-79.98	542.8	-212.2	325.8	312.5	13.26	24.569		
2,700.0	2,648.8	2,648.8	2,648.8	9.4	4.6	-84.36	542.8	-212.2	322.1	308.1	13.98	23.048		
2,800.0	2,745.4	2,745.4	2,745.4	9.9	4.8	-88.81	542.8	-212.2	320.5	305.9	14.66	21.867		
2,826.5	2,771.1	2,771.1	2,771.1	10.0	4.8	-90.00	542.8	-212.2	320.5	305.6	14.83	21.606 CC, ES		
2,900.0	2,842.0	2,842.0	2,842.0	10.4	4.9	-93.28	542.8	-212.2	321.0	305.7	15.29	20.989		
3,000.0	2,938.6	2,938.6	2,938.6	10.9	5.1	-97.71	542.8	-212.2	323.6	307.7	15.88	20.377		
3,100.0	3,035.2	3,035.2	3,035.2	11.3	5.3	-102.04	542.8	-212.2	328.2	311.8	16.41	20.000		
3,200.0	3,131.8	3,131.8	3,131.8	11.8	5.4	-106.24	542.8	-212.2	334.7	317.8	16.88	19.827 SF		
3,300.0	3,228.4	3,228.4	3,228.4	12.3	5.6	-110.27	542.8	-212.2	343.1	325.8	17.30	19.831		
3,400.0	3,325.0	3,325.0	3,325.0	12.8	5.8	-114.10	542.8	-212.2	353.2	335.5	17.67	19.987		
3,500.0	3,421.6	3,421.6	3,421.6	13.3	5.9	-117.72	542.8	-212.2	364.8	346.8	17.99	20.272		
3,600.0	3,518.2	3,518.2	3,518.2	13.7	6.1	-121.11	542.8	-212.2	377.8	359.6	18.28	20.665		
3,700.0	3,614.8	3,614.8	3,614.8	14.2	6.3	-124.27	542.8	-212.2	392.2	373.6	18.54	21.149		
3,800.0	3,711.4	3,711.4	3,711.4	14.7	6.5	-127.21	542.8	-212.2	407.6	388.9	18.78	21.706		
3,900.0	3,808.0	3,808.0	3,808.0	15.2	6.6	-129.94	542.8	-212.2	424.1	405.1	19.00	22.324		
4,000.0	3,904.6	3,904.6	3,904.6	15.7	6.8	-132.47	542.8	-212.2	441.5	422.3	19.21	22.989		
4,100.0	4,001.1	4,001.1	4,001.1	16.2	7.0	-134.81	542.8	-212.2	459.7	440.3	19.40	23.692		
4,200.0	4,097.7	4,097.7	4,097.7	16.6	7.1	-136.98	542.8	-212.2	478.6	459.0	19.60	24.422		
4,300.0	4,194.3	4,194.3	4,194.3	17.1	7.3	-138.98	542.8	-212.2	498.1	478.3	19.79	25.173		

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Liberty 2A-21H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	Kb @ 5036.0ft
<b>Reference Site:</b>	NENE S20-T3N-R68W (Liberty 2A-21H)	<b>MD Reference:</b>	Kb @ 5036.0ft
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Liberty 2A-21H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #4	<b>Offset TVD Reference:</b>	Offset Datum

<b>Offset Design</b> NENE S20-T3N-R68W (Liberty 2A-21H) - Liberty 2-21 (Proposed) - DD - Plan #1												<b>Offset Site Error:</b>	0.0 ft
Survey Program: 0-MWD												<b>Offset Well Error:</b>	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	
1,100.0	1,096.3	1,101.2	1,087.8	2.3	3.2	-54.15	440.5	-319.1	499.5	494.1	5.42	92.237	
1,200.0	1,194.9	1,193.4	1,176.9	2.7	3.7	-58.29	426.0	-337.5	492.9	486.8	6.14	80.261	
1,300.0	1,293.3	1,285.0	1,265.4	3.0	4.1	-62.62	411.6	-355.8	488.5	481.6	6.88	70.974	
1,400.0	1,391.2	1,375.8	1,353.4	3.4	4.5	-67.08	397.3	-373.9	486.8	479.1	7.63	63.769	
1,410.5	1,401.5	1,385.3	1,362.5	3.4	4.6	-67.56	395.9	-375.8	486.8	479.0	7.71	63.108	CC, ES
1,500.0	1,488.9	1,466.1	1,440.6	3.8	5.0	-71.65	383.2	-391.9	488.0	479.6	8.38	58.219	
1,600.0	1,586.1	1,555.5	1,527.2	4.2	5.4	-76.26	369.1	-409.8	492.7	483.5	9.12	54.012	SF

# Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Liberty 2A-21H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	Kb @ 5036.0ft
<b>Reference Site:</b>	NENE S20-T3N-R68W (Liberty 2A-21H)	<b>MD Reference:</b>	Kb @ 5036.0ft
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Liberty 2A-21H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #4	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design NENE S20-T3N-R68W (Liberty 2A-21H) - Liberty 22-21 (Proposed) - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Total Uncertainty Axis	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
600.0	599.7	666.9	664.8	1.1	1.4	-39.40	446.9	-217.8	490.6	488.3	2.28	215.569		
700.0	699.4	778.7	774.8	1.3	1.8	-41.70	426.9	-220.8	470.0	467.3	2.76	170.361		
800.0	798.9	887.4	880.8	1.5	2.2	-44.72	403.3	-224.3	445.9	442.6	3.31	134.782		
900.0	898.3	992.6	982.5	1.8	2.7	-48.58	376.7	-228.2	418.9	415.0	3.95	106.067		
1,000.0	997.4	1,093.8	1,079.4	2.0	3.3	-53.44	347.7	-232.5	390.2	385.5	4.71	82.807		
1,100.0	1,096.3	1,184.8	1,165.8	2.3	3.8	-58.91	319.6	-236.7	361.6	356.1	5.54	65.259		
1,200.0	1,194.9	1,273.3	1,249.9	2.7	4.3	-65.19	292.2	-240.7	336.0	329.5	6.46	51.976		
1,300.0	1,293.3	1,361.0	1,333.2	3.0	4.8	-72.37	265.1	-244.7	314.6	307.1	7.47	42.121		
1,400.0	1,391.2	1,447.9	1,415.7	3.4	5.3	-80.35	238.2	-248.7	299.1	290.6	8.51	35.155		
1,500.0	1,488.9	1,533.8	1,497.4	3.8	5.7	-88.92	211.6	-252.6	291.3	281.8	9.51	30.625		
1,536.7	1,524.6	1,565.2	1,527.1	3.9	5.9	-92.14	201.9	-254.1	290.7	280.8	9.86	29.483 CC, ES		
1,600.0	1,586.1	1,618.9	1,578.2	4.2	6.2	-97.70	185.3	-256.5	292.6	282.2	10.40	28.128		
1,700.0	1,682.9	1,703.1	1,658.1	4.7	6.7	-106.27	159.3	-260.4	303.7	292.5	11.12	27.300 SF		
1,800.0	1,779.5	1,786.7	1,737.6	5.1	7.2	-114.39	133.4	-264.2	323.8	312.2	11.63	27.840		
1,900.0	1,876.1	1,870.4	1,817.0	5.6	7.6	-121.67	107.5	-268.1	351.4	339.5	11.96	29.379		
2,000.0	1,972.7	1,954.1	1,896.5	6.1	8.1	-128.04	81.6	-271.9	384.9	372.7	12.16	31.646		
2,100.0	2,069.3	2,037.7	1,976.0	6.6	8.6	-133.52	55.7	-275.7	422.8	410.5	12.28	34.430		
2,200.0	2,165.9	2,121.4	2,055.4	7.0	9.1	-138.22	29.8	-279.5	464.1	451.8	12.35	37.567		

# Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Liberty 2A-21H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	Kb @ 5036.0ft
<b>Reference Site:</b>	NENE S20-T3N-R68W (Liberty 2A-21H)	<b>MD Reference:</b>	Kb @ 5036.0ft
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Liberty 2A-21H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #4	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design NENE S20-T3N-R68W (Liberty 2A-21H) - Liberty 2-4-21 (Proposed) - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
700.0	699.4	762.0	758.4	1.3	1.7	-41.51	452.5	-234.6	496.5	493.7	2.83	175.576		
800.0	798.9	867.9	861.8	1.5	2.2	-44.67	431.9	-243.7	477.0	473.6	3.42	139.380		
900.0	898.3	970.5	961.2	1.8	2.6	-48.58	408.6	-254.1	455.7	451.6	4.11	110.970		
1,000.0	997.4	1,069.5	1,056.2	2.0	3.2	-53.29	383.1	-265.4	433.7	428.8	4.89	88.647		
1,100.0	1,096.3	1,164.6	1,146.5	2.3	3.7	-58.81	355.7	-277.6	412.5	406.7	5.78	71.320		
1,200.0	1,194.9	1,255.6	1,231.9	2.7	4.3	-65.10	327.0	-290.3	393.7	386.9	6.76	58.201		
1,300.0	1,293.3	1,342.4	1,312.4	3.0	4.9	-72.00	297.3	-303.5	379.5	371.7	7.80	48.652		
1,400.0	1,391.2	1,424.9	1,388.0	3.4	5.5	-79.28	267.0	-317.0	372.2	363.4	8.84	42.114		
1,432.4	1,422.9	1,450.7	1,411.4	3.5	5.7	-81.66	257.2	-321.4	371.7	362.6	9.17	40.533 CC, ES		
1,500.0	1,488.9	1,503.1	1,458.7	3.8	6.1	-86.60	236.5	-330.5	374.1	364.2	9.82	38.083		
1,600.0	1,586.1	1,577.0	1,524.6	4.2	6.7	-93.64	206.1	-344.1	386.4	375.7	10.72	36.059		
1,700.0	1,682.9	1,646.7	1,586.0	4.7	7.3	-100.13	175.9	-357.5	410.0	398.5	11.50	35.663 SF		
1,800.0	1,779.5	1,712.7	1,643.4	5.1	7.9	-106.28	146.1	-370.7	443.9	431.8	12.12	36.634		
1,900.0	1,876.1	1,775.9	1,697.6	5.6	8.5	-111.74	116.5	-383.9	486.8	474.1	12.62	38.558		

# Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Liberty 2A-21H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	Kb @ 5036.0ft
<b>Reference Site:</b>	NENE S20-T3N-R68W (Liberty 2A-21H)	<b>MD Reference:</b>	Kb @ 5036.0ft
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Liberty 2A-21H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #4	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design NENE S20-T3N-R68W (Liberty 2A-21H) - Liberty 2B-21H - Hz - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-180.00	-10.9	0.0	10.9					
100.0	100.0	100.0	100.0	0.2	0.2	-180.00	-10.9	0.0	10.9	10.6	0.30	35.986		
200.0	200.0	200.0	200.0	0.3	0.3	-180.00	-10.9	0.0	10.9	10.3	0.65	16.742 CC, ES		
300.0	300.0	300.0	300.0	0.5	0.5	168.88	-10.9	0.0	11.8	10.8	1.00	11.763		
400.0	400.0	400.2	400.2	0.7	0.7	169.78	-10.1	0.3	13.5	12.2	1.35	10.014		
500.0	499.9	500.4	500.4	0.9	0.9	169.54	-7.6	1.2	15.3	13.6	1.70	9.018		
600.0	599.7	600.7	600.5	1.1	1.0	168.52	-3.5	2.7	17.2	15.2	2.05	8.387		
700.0	699.4	700.9	700.6	1.3	1.2	166.96	2.2	4.9	19.2	16.7	2.41	7.960		
800.0	798.9	801.2	800.6	1.5	1.5	165.03	9.6	7.6	21.2	18.4	2.77	7.658		
900.0	898.3	901.6	900.5	1.8	1.7	162.84	18.6	11.0	23.3	20.2	3.14	7.435		
1,000.0	997.4	1,001.9	1,000.2	2.0	1.9	160.49	29.3	15.0	25.6	22.1	3.53	7.261		
1,100.0	1,096.3	1,102.3	1,099.7	2.3	2.2	158.05	41.6	19.5	28.0	24.1	3.94	7.115		
1,200.0	1,194.9	1,202.7	1,199.0	2.7	2.5	155.56	55.6	24.7	30.6	26.2	4.38	6.982		
1,300.0	1,293.3	1,303.1	1,298.0	3.0	2.8	153.08	71.2	30.5	33.3	28.4	4.86	6.852 SF		
1,400.0	1,391.2	1,403.0	1,396.4	3.4	3.1	151.53	87.4	36.6	37.0	31.6	5.35	6.902		
1,500.0	1,488.9	1,502.9	1,494.7	3.8	3.5	151.42	103.7	42.6	42.2	36.3	5.83	7.231		
1,600.0	1,586.1	1,602.7	1,593.0	4.2	3.8	152.30	119.9	48.7	48.9	42.6	6.28	7.790		
1,700.0	1,682.9	1,702.3	1,691.1	4.7	4.1	153.75	136.1	54.7	57.2	50.5	6.69	8.546		
1,800.0	1,779.5	1,801.9	1,789.2	5.1	4.5	155.19	152.3	60.7	66.3	59.2	7.10	9.339		
1,900.0	1,876.1	1,901.4	1,887.2	5.6	4.8	156.27	168.5	66.7	75.5	68.0	7.51	10.044		
2,000.0	1,972.7	2,001.0	1,985.3	6.1	5.1	157.12	184.8	72.8	84.7	76.7	7.93	10.675		
2,100.0	2,069.3	2,100.6	2,083.4	6.6	5.5	157.81	201.0	78.8	93.8	85.5	8.35	11.242		
2,200.0	2,165.9	2,200.2	2,181.4	7.0	5.8	158.37	217.2	84.8	103.0	94.3	8.77	11.754		
2,300.0	2,262.5	2,299.7	2,279.5	7.5	6.2	158.84	233.4	90.9	112.3	103.1	9.19	12.219		
2,400.0	2,359.1	2,399.3	2,377.5	8.0	6.5	159.24	249.6	96.9	121.5	111.9	9.61	12.642		
2,500.0	2,455.7	2,498.9	2,475.6	8.5	6.9	159.58	265.8	102.9	130.7	120.7	10.03	13.029		
2,600.0	2,552.3	2,598.4	2,573.6	8.9	7.2	159.88	282.0	108.9	139.9	129.5	10.45	13.384		
2,700.0	2,648.8	2,698.0	2,671.7	9.4	7.5	160.14	298.2	115.0	149.1	138.3	10.88	13.712		
2,800.0	2,745.4	2,797.6	2,769.8	9.9	7.9	160.37	314.4	121.0	158.4	147.1	11.30	14.014		
2,900.0	2,842.0	2,897.2	2,867.8	10.4	8.2	160.57	330.6	127.0	167.6	155.9	11.72	14.294		
3,000.0	2,938.6	2,996.7	2,965.9	10.9	8.6	160.76	346.8	133.0	176.8	164.7	12.15	14.555		
3,100.0	3,035.2	3,096.3	3,063.9	11.3	8.9	160.92	363.0	139.1	186.1	173.5	12.57	14.797		
3,200.0	3,131.8	3,195.9	3,162.0	11.8	9.3	161.07	379.2	145.1	195.3	182.3	13.00	15.024		
3,300.0	3,228.4	3,295.4	3,260.1	12.3	9.6	161.21	395.4	151.1	204.5	191.1	13.43	15.236		
3,400.0	3,325.0	3,395.0	3,358.1	12.8	10.0	161.33	411.6	157.2	213.8	199.9	13.85	15.435		
3,500.0	3,421.6	3,494.6	3,456.2	13.3	10.3	161.45	427.8	163.2	223.0	208.7	14.28	15.622		
3,600.0	3,518.2	3,594.2	3,554.2	13.7	10.7	161.55	444.0	169.2	232.3	217.6	14.70	15.797		
3,700.0	3,614.8	3,693.7	3,652.3	14.2	11.0	161.65	460.3	175.2	241.5	226.4	15.13	15.963		
3,800.0	3,711.4	3,793.3	3,750.3	14.7	11.4	161.74	476.5	181.3	250.7	235.2	15.55	16.120		
3,900.0	3,808.0	3,892.9	3,848.4	15.2	11.7	161.82	492.7	187.3	260.0	244.0	15.98	16.268		
4,000.0	3,904.6	3,992.4	3,946.5	15.7	12.0	161.90	508.9	193.3	269.2	252.8	16.41	16.409		
4,100.0	4,001.1	4,092.0	4,044.5	16.2	12.4	161.97	525.1	199.3	278.5	261.6	16.83	16.542		
4,200.0	4,097.7	4,189.8	4,140.8	16.6	12.7	162.05	540.9	205.2	287.8	270.6	17.25	16.684		
4,300.0	4,194.3	4,284.8	4,234.7	17.1	13.0	162.23	555.0	210.5	298.5	280.8	17.63	16.926		
4,400.0	4,290.9	4,379.6	4,328.5	17.6	13.3	162.53	567.6	215.2	310.5	292.6	17.98	17.274		
4,500.0	4,387.7	4,474.0	4,422.1	18.1	13.6	162.93	578.8	219.3	323.5	305.2	18.30	17.675		
4,600.0	4,484.9	4,568.2	4,515.8	18.5	13.8	163.33	588.4	222.9	336.2	317.6	18.61	18.069		
4,700.0	4,582.5	4,662.3	4,609.5	18.9	14.0	163.73	596.7	226.0	348.8	329.9	18.90	18.457		
4,800.0	4,680.4	4,756.2	4,703.1	19.3	14.2	164.13	603.4	228.5	361.2	342.1	19.17	18.839		
4,900.0	4,778.7	4,849.9	4,796.6	19.6	14.3	164.53	608.7	230.5	373.5	354.0	19.44	19.215		
5,000.0	4,877.3	4,943.5	4,890.1	20.0	14.5	164.94	612.6	231.9	385.6	365.9	19.69	19.584		
5,100.0	4,976.2	5,036.9	4,983.4	20.3	14.6	165.35	615.1	232.8	397.5	377.6	19.93	19.947		

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

# Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Liberty 2A-21H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	Kb @ 5036.0ft
<b>Reference Site:</b>	NENE S20-T3N-R68W (Liberty 2A-21H)	<b>MD Reference:</b>	Kb @ 5036.0ft
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Liberty 2A-21H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #4	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design NENE S20-T3N-R68W (Liberty 2A-21H) - Liberty 2B-21H - 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		
5,200.0	5,075.3	5,130.1	5,076.6	20.5	14.7	165.76	616.1	233.2	409.2	389.1	20.16	20.302		
5,300.0	5,174.7	5,228.1	5,174.7	20.8	14.8	166.16	616.1	233.2	420.4	400.0	20.39	20.615		
5,400.0	5,274.2	5,327.6	5,274.2	21.0	14.9	166.50	616.1	233.2	429.9	409.2	20.64	20.827		
5,500.0	5,373.9	5,427.3	5,373.9	21.2	15.0	166.76	616.1	233.2	437.7	416.8	20.90	20.942		
5,600.0	5,473.7	5,527.1	5,473.7	21.3	15.2	166.96	616.1	233.2	443.8	422.6	21.17	20.966		
5,700.0	5,573.6	5,627.0	5,573.6	21.5	15.3	167.10	616.1	233.2	448.2	426.7	21.44	20.902		
5,800.0	5,673.5	5,726.9	5,673.5	21.6	15.4	167.18	616.1	233.2	450.9	429.2	21.73	20.755		
5,900.0	5,773.5	5,826.9	5,773.5	21.7	15.5	167.22	616.1	233.2	451.9	429.9	22.01	20.530		
6,000.0	5,873.5	5,926.9	5,873.5	21.8	15.6	179.22	616.1	233.2	451.9	415.6	36.35	12.432		
6,100.0	5,973.5	6,026.9	5,973.5	21.8	15.7	179.22	616.1	233.2	451.9	415.4	36.56	12.362		
6,200.0	6,073.5	6,126.9	6,073.5	21.9	15.8	179.22	616.1	233.2	451.9	415.2	36.77	12.291		
6,300.0	6,173.5	6,226.9	6,173.5	22.0	16.0	179.22	616.1	233.2	451.9	415.0	36.98	12.221		
6,400.0	6,273.5	6,326.9	6,273.5	22.1	16.1	179.22	616.1	233.2	451.9	414.7	37.19	12.152		
6,500.0	6,373.5	6,427.3	6,373.7	22.2	16.2	179.76	616.1	228.9	451.9	414.4	37.47	12.061		
6,515.6	6,389.1	6,442.8	6,389.1	22.2	16.2	180.00	616.1	227.0	451.9	414.4	37.53	12.041		
6,600.0	6,473.5	6,524.9	6,469.6	22.3	16.2	-178.05	616.1	211.6	452.2	414.3	37.90	11.932		
6,700.0	6,573.4	6,616.9	6,557.2	22.4	16.2	-84.64	616.1	183.6	454.1	430.6	23.46	19.351		
6,800.0	6,672.3	6,705.6	6,637.5	22.4	16.2	-81.21	616.1	146.1	457.7	434.3	23.42	19.547		
6,900.0	6,768.0	6,791.6	6,710.5	22.4	16.2	-78.01	616.1	100.6	462.7	439.0	23.66	19.559		
7,000.0	6,858.9	6,875.4	6,775.8	22.4	16.2	-75.07	616.1	48.1	468.6	444.4	24.19	19.369		
7,100.0	6,943.2	6,957.4	6,833.3	22.4	16.4	-72.44	616.1	-10.3	475.0	450.0	24.93	19.053		
7,200.0	7,019.1	7,037.9	6,882.9	22.5	16.6	-70.15	616.1	-73.6	481.4	455.5	25.86	18.615		
7,300.0	7,085.2	7,117.1	6,924.5	22.6	16.9	-68.20	616.1	-141.0	487.5	460.6	26.93	18.101		
7,400.0	7,140.3	7,200.0	6,959.8	22.9	17.4	-66.55	616.1	-215.9	493.0	464.8	28.19	17.486		
7,500.0	7,183.3	7,272.8	6,983.5	23.3	18.0	-65.39	616.1	-284.8	497.4	467.9	29.51	16.857		

# Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Liberty 2A-21H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	Kb @ 5036.0ft
<b>Reference Site:</b>	NENE S20-T3N-R68W (Liberty 2A-21H)	<b>MD Reference:</b>	Kb @ 5036.0ft
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Liberty 2A-21H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #4	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design NENE S20-T3N-R68W (Liberty 2A-21H) - Liberty 2C-21H - Hz - Plan #1													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	0.0	0.0	0.0	0.0	-180.00	-18.2	0.0	18.2					
100.0	100.0	100.0	100.0	0.2	0.2	-180.00	-18.2	0.0	18.2	17.9	0.30	59.977		
200.0	200.0	200.0	200.0	0.3	0.3	-180.00	-18.2	0.0	18.2	17.6	0.65	27.904 CC, ES		
300.0	300.0	300.0	300.0	0.5	0.5	168.54	-18.2	0.0	19.1	18.1	1.00	19.035		
400.0	400.0	400.0	400.0	0.7	0.7	169.92	-18.2	0.0	21.6	20.3	1.35	16.023		
500.0	499.9	500.2	500.2	0.9	0.9	170.29	-17.6	0.6	25.3	23.6	1.70	14.881		
600.0	599.7	600.5	600.4	1.1	1.0	168.82	-15.7	2.5	29.4	27.3	2.05	14.332		
700.0	699.4	700.7	700.6	1.3	1.2	166.23	-12.6	5.6	34.0	31.6	2.41	14.118		
800.0	798.9	801.0	800.7	1.5	1.4	163.02	-8.3	9.9	39.2	36.4	2.78	14.115 SF		
900.0	898.3	901.2	900.6	1.8	1.6	159.53	-2.7	15.5	45.0	41.9	3.16	14.244		
1,000.0	997.4	1,001.0	999.9	2.0	1.8	156.83	3.4	21.6	52.2	48.6	3.56	14.640		
1,100.0	1,096.3	1,100.6	1,099.2	2.3	2.0	155.47	9.6	27.8	60.9	57.0	3.97	15.347		
1,200.0	1,194.9	1,200.0	1,198.2	2.7	2.3	155.04	15.7	33.9	71.3	66.9	4.38	16.275		
1,300.0	1,293.3	1,299.3	1,297.2	3.0	2.5	155.21	21.8	40.0	83.3	78.5	4.79	17.371		
1,400.0	1,391.2	1,398.4	1,395.9	3.4	2.7	155.76	27.9	46.1	96.8	91.6	5.20	18.605		
1,500.0	1,488.9	1,497.2	1,494.3	3.8	2.9	156.52	34.0	52.2	111.9	106.3	5.61	19.954		
1,600.0	1,586.1	1,595.8	1,592.5	4.2	3.2	157.38	40.1	58.3	128.6	122.6	6.01	21.402		
1,700.0	1,682.9	1,694.1	1,690.4	4.7	3.4	158.29	46.1	64.4	147.0	140.5	6.41	22.937		
1,800.0	1,779.5	1,792.2	1,788.2	5.1	3.6	159.16	52.2	70.4	166.1	159.3	6.81	24.396		
1,900.0	1,876.1	1,890.3	1,885.9	5.6	3.8	159.84	58.2	76.4	185.3	178.1	7.21	25.693		
2,000.0	1,972.7	1,988.4	1,983.6	6.1	4.0	160.40	64.3	82.5	204.6	196.9	7.62	26.854		
2,100.0	2,069.3	2,086.5	2,081.4	6.6	4.3	160.87	70.3	88.5	223.8	215.8	8.02	27.898		
2,200.0	2,165.9	2,184.7	2,179.1	7.0	4.5	161.26	76.4	94.6	243.1	234.6	8.43	28.841		
2,300.0	2,262.5	2,282.8	2,276.9	7.5	4.7	161.59	82.4	100.6	262.3	253.5	8.83	29.698		
2,400.0	2,359.1	2,380.9	2,374.6	8.0	4.9	161.87	88.5	106.7	281.6	272.3	9.24	30.480		
2,500.0	2,455.7	2,479.0	2,472.4	8.5	5.2	162.12	94.5	112.7	300.9	291.2	9.64	31.195		
2,600.0	2,552.3	2,577.1	2,570.1	8.9	5.4	162.34	100.6	118.8	320.1	310.1	10.05	31.853		
2,700.0	2,648.8	2,675.2	2,667.8	9.4	5.6	162.54	106.6	124.8	339.4	329.0	10.46	32.459		
2,800.0	2,745.4	2,773.4	2,765.6	9.9	5.8	162.71	112.7	130.9	358.7	347.8	10.86	33.020		
2,900.0	2,842.0	2,871.5	2,863.3	10.4	6.1	162.87	118.7	136.9	378.0	366.7	11.27	33.540		
3,000.0	2,938.6	2,969.6	2,961.1	10.9	6.3	163.01	124.7	143.0	397.3	385.6	11.68	34.024		
3,100.0	3,035.2	3,067.7	3,058.8	11.3	6.5	163.14	130.8	149.0	416.6	404.5	12.08	34.475		
3,200.0	3,131.8	3,165.8	3,156.6	11.8	6.8	163.26	136.8	155.1	435.9	423.4	12.49	34.896		
3,300.0	3,228.4	3,263.9	3,254.3	12.3	7.0	163.36	142.9	161.1	455.2	442.3	12.90	35.291		
3,400.0	3,325.0	3,362.1	3,352.1	12.8	7.2	163.46	148.9	167.1	474.5	461.2	13.30	35.662		
3,500.0	3,421.6	3,458.0	3,447.7	13.3	7.4	163.56	154.8	173.0	493.9	480.2	13.70	36.040		



# Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Liberty 2A-21H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	Kb @ 5036.0ft
<b>Reference Site:</b>	NENE S20-T3N-R68W (Liberty 2A-21H)	<b>MD Reference:</b>	Kb @ 5036.0ft
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Liberty 2A-21H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #4	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design NENE S20-T3N-R68W (Liberty 2A-21H) - Liberty 2D-21H - Hz - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Total Uncertainty Axis	Separation Factor	Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)				
0.0	0.0	0.0	0.0	0.0	0.0	180.00	-29.1	0.0	29.1					
100.0	100.0	100.0	100.0	0.2	0.2	180.00	-29.1	0.0	29.1	28.8	0.30	95.977		
200.0	200.0	200.0	200.0	0.3	0.3	180.00	-29.1	0.0	29.1	28.5	0.65	44.652 CC, ES		
300.0	300.0	300.0	300.0	0.5	0.5	168.34	-29.1	0.0	30.0	29.0	1.00	29.948		
400.0	400.0	400.0	400.0	0.7	0.7	169.27	-29.1	0.0	32.6	31.2	1.35	24.114		
500.0	499.9	499.4	499.4	0.9	0.8	169.64	-29.8	0.5	37.5	35.8	1.70	22.087 SF		
600.0	599.7	598.5	598.5	1.1	1.0	168.88	-31.8	2.2	45.5	43.4	2.05	22.221		
700.0	699.4	697.2	697.1	1.3	1.2	167.59	-35.1	4.9	56.5	54.1	2.40	23.566		
800.0	798.9	795.3	795.0	1.5	1.4	166.18	-39.7	8.6	70.6	67.8	2.75	25.649		
900.0	898.3	892.8	892.2	1.8	1.6	164.85	-45.6	13.3	87.7	84.6	3.11	28.203		
1,000.0	997.4	990.7	989.8	2.0	1.8	163.89	-52.2	18.7	107.3	103.8	3.47	30.903		
1,100.0	1,096.3	1,088.4	1,087.1	2.3	2.0	163.42	-58.9	24.1	128.5	124.7	3.84	33.508		
1,200.0	1,194.9	1,185.8	1,184.1	2.7	2.2	163.26	-65.4	29.4	151.4	147.2	4.20	36.039		
1,300.0	1,293.3	1,282.7	1,280.7	3.0	2.4	163.29	-72.0	34.7	175.9	171.3	4.57	38.512		
1,400.0	1,391.2	1,379.3	1,376.8	3.4	2.7	163.44	-78.6	40.0	202.0	197.1	4.93	40.942		
1,500.0	1,488.9	1,475.3	1,472.5	3.8	2.9	163.65	-85.1	45.3	229.8	224.5	5.30	43.339		
1,600.0	1,586.1	1,570.9	1,567.7	4.2	3.1	163.92	-91.5	50.5	259.1	253.4	5.67	45.712		
1,700.0	1,682.9	1,666.0	1,662.4	4.7	3.3	164.20	-98.0	55.7	290.1	284.0	6.03	48.067		
1,800.0	1,779.5	1,760.8	1,756.9	5.1	3.5	164.55	-104.4	60.9	321.8	315.4	6.41	50.183		
1,900.0	1,876.1	1,855.6	1,851.3	5.6	3.7	164.83	-110.8	66.1	353.6	346.8	6.79	52.060		
2,000.0	1,972.7	1,950.4	1,945.8	6.1	4.0	165.07	-117.2	71.3	385.4	378.2	7.17	53.738		
2,100.0	2,069.3	2,045.2	2,040.2	6.6	4.2	165.27	-123.7	76.5	417.2	409.6	7.55	55.245		
2,200.0	2,165.9	2,140.0	2,134.7	7.0	4.4	165.44	-130.1	81.7	448.9	441.0	7.93	56.607		
2,300.0	2,262.5	2,234.8	2,229.1	7.5	4.6	165.59	-136.5	86.9	480.7	472.4	8.31	57.843		

# Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Liberty 2A-21H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	Kb @ 5036.0ft
<b>Reference Site:</b>	NENE S20-T3N-R68W (Liberty 2A-21H)	<b>MD Reference:</b>	Kb @ 5036.0ft
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Liberty 2A-21H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #4	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design NENE S20-T3N-R68W (Liberty 2A-21H) - Liberty 2E-21H - HZ - Plan #1													Offset Site Error: 0.0 ft	
Survey Program: 0-MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-180.00	-40.1	0.0	40.1					
100.0	100.0	100.0	100.0	0.2	0.2	-180.00	-40.1	0.0	40.1	39.8	0.30	131.949		
200.0	200.0	200.0	200.0	0.3	0.3	-180.00	-40.1	0.0	40.1	39.4	0.65	61.388 CC, ES		
300.0	300.0	300.0	300.0	0.5	0.5	168.25	-40.1	0.0	40.9	39.9	1.00	40.853		
400.0	400.0	400.0	400.0	0.7	0.7	168.95	-40.1	0.0	43.5	42.1	1.35	32.201		
500.0	499.9	499.1	499.1	0.9	0.8	169.59	-40.9	0.3	48.6	46.9	1.70	28.619		
600.0	599.7	597.9	597.8	1.1	1.0	169.81	-43.3	1.1	57.0	55.0	2.04	27.893 SF		
700.0	699.4	696.2	696.0	1.3	1.2	169.73	-47.3	2.4	68.8	66.4	2.39	28.771		
800.0	798.9	793.8	793.5	1.5	1.4	169.48	-52.9	4.2	83.8	81.1	2.74	30.635		
900.0	898.3	890.6	890.0	1.8	1.6	169.16	-60.0	6.5	102.2	99.1	3.08	33.145		
1,000.0	997.4	986.5	985.4	2.0	1.8	168.83	-68.6	9.3	123.7	120.3	3.43	36.098		
1,100.0	1,096.3	1,081.2	1,079.6	2.3	2.0	168.50	-78.5	12.5	148.5	144.7	3.77	39.361		
1,200.0	1,194.9	1,174.7	1,172.4	2.7	2.3	168.20	-89.8	16.2	176.4	172.3	4.12	42.849		
1,300.0	1,293.3	1,266.9	1,263.6	3.0	2.5	167.92	-102.3	20.2	207.4	203.0	4.46	46.498		
1,400.0	1,391.2	1,357.5	1,353.1	3.4	2.8	167.66	-116.0	24.7	241.5	236.7	4.80	50.266		
1,500.0	1,488.9	1,448.7	1,442.9	3.8	3.1	167.43	-130.9	29.5	278.4	273.2	5.15	54.050		
1,600.0	1,586.1	1,540.9	1,533.7	4.2	3.4	167.29	-146.1	34.5	317.0	311.5	5.50	57.647		
1,700.0	1,682.9	1,632.5	1,623.9	4.7	3.7	167.23	-161.3	39.4	357.1	351.3	5.85	61.091		
1,800.0	1,779.5	1,723.8	1,713.8	5.1	4.0	167.28	-176.3	44.3	398.1	391.9	6.21	64.126		
1,900.0	1,876.1	1,815.0	1,803.6	5.6	4.3	167.33	-191.4	49.2	439.0	432.5	6.57	66.816		
2,000.0	1,972.7	1,906.2	1,893.5	6.1	4.6	167.36	-206.5	54.1	480.0	473.0	6.93	69.217		

# Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Liberty 2A-21H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	Kb @ 5036.0ft
<b>Reference Site:</b>	NENE S20-T3N-R68W (Liberty 2A-21H)	<b>MD Reference:</b>	Kb @ 5036.0ft
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Liberty 2A-21H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #4	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design NENE S20-T3N-R68W (Liberty 2A-21H) - Liberty 2F-21H - 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						Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis			
0.0	0.0	0.0	0.0	0.0	0.0	-180.00	-51.0	0.0	51.0					
100.0	100.0	100.0	100.0	0.2	0.2	-180.00	-51.0	0.0	51.0	50.7	0.30	167.935		
200.0	200.0	200.0	200.0	0.3	0.3	-180.00	-51.0	0.0	51.0	50.3	0.65	78.130 CC, ES		
300.0	300.0	299.6	299.6	0.5	0.5	168.15	-51.2	0.0	52.1	51.1	1.00	52.014		
400.0	400.0	398.5	398.5	0.7	0.7	168.35	-52.9	0.4	56.3	55.0	1.35	41.776		
500.0	499.9	497.2	497.2	0.9	0.9	168.51	-56.2	1.0	64.0	62.3	1.69	37.746		
600.0	599.7	595.5	595.2	1.1	1.0	168.63	-61.2	2.0	75.0	73.0	2.04	36.752 SF		
700.0	699.4	693.0	692.6	1.3	1.2	168.70	-67.8	3.3	89.4	87.0	2.39	37.468		
800.0	798.9	789.8	789.0	1.5	1.5	168.73	-75.9	4.8	107.1	104.4	2.73	39.238		
900.0	898.3	885.7	884.4	1.8	1.7	168.74	-85.6	6.7	128.1	125.1	3.07	41.703		
1,000.0	997.4	980.4	978.4	2.0	1.9	168.73	-96.6	8.9	152.4	149.0	3.41	44.646		
1,100.0	1,096.3	1,073.9	1,071.1	2.3	2.2	168.70	-109.1	11.3	179.9	176.1	3.75	47.931		
1,200.0	1,194.9	1,166.1	1,162.2	2.7	2.5	168.67	-122.7	13.9	210.5	206.4	4.09	51.468		
1,300.0	1,293.3	1,256.7	1,251.5	3.0	2.8	168.63	-137.6	16.8	244.2	239.8	4.42	55.192		
1,400.0	1,391.2	1,345.7	1,339.0	3.4	3.1	168.58	-153.5	19.9	281.0	276.2	4.76	59.060		
1,500.0	1,488.9	1,433.0	1,424.6	3.8	3.4	168.52	-170.5	23.2	320.7	315.6	5.09	63.037		
1,600.0	1,586.1	1,518.4	1,508.1	4.2	3.7	168.46	-188.3	26.7	363.3	357.9	5.41	67.098		
1,700.0	1,682.9	1,600.0	1,587.5	4.7	4.1	168.39	-206.4	30.2	408.8	403.0	5.74	71.268		
1,800.0	1,779.5	1,684.0	1,669.1	5.1	4.4	168.41	-226.2	34.1	456.2	450.2	6.08	75.072		

# Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Liberty 2A-21H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	Kb @ 5036.0ft
<b>Reference Site:</b>	NENE S20-T3N-R68W (Liberty 2A-21H)	<b>MD Reference:</b>	Kb @ 5036.0ft
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Liberty 2A-21H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #4	<b>Offset TVD Reference:</b>	Offset Datum

Offset Design NENE S20-T3N-R68W (Liberty 2A-21H) - Liberty 4-2-21 (Proposed) - DD - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference	Offset		Semi Major Axis		Distance		Total		Separation		Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Factor		
600.0	599.7	682.9	680.6	1.1	1.5	-35.84	458.3	-189.3	491.1	488.9	2.22	221.615		
700.0	699.4	784.1	780.3	1.3	1.8	-36.15	443.6	-179.3	467.6	465.1	2.58	181.076		
800.0	798.9	880.9	875.6	1.5	2.1	-36.62	429.5	-169.7	442.7	439.8	2.95	150.223		
900.0	898.3	977.4	970.5	1.8	2.4	-37.29	415.5	-160.2	416.5	413.2	3.32	125.525		
1,000.0	997.4	1,073.4	1,065.0	2.0	2.8	-38.20	401.6	-150.6	389.0	385.3	3.70	105.203		
1,100.0	1,096.3	1,168.9	1,159.1	2.3	3.1	-39.42	387.7	-141.1	360.2	356.1	4.09	88.103		
1,200.0	1,194.9	1,264.0	1,252.7	2.7	3.4	-41.02	373.9	-131.7	330.3	325.8	4.50	73.444		
1,300.0	1,293.3	1,358.6	1,345.8	3.0	3.8	-43.16	360.1	-122.3	299.4	294.5	4.93	60.684		
1,400.0	1,391.2	1,452.6	1,438.3	3.4	4.1	-46.01	346.4	-113.0	267.8	262.4	5.42	49.441		
1,500.0	1,488.9	1,546.1	1,530.4	3.8	4.4	-49.88	332.8	-103.7	235.7	229.7	5.97	39.458		
1,600.0	1,586.1	1,639.0	1,621.8	4.2	4.8	-55.23	319.3	-94.5	203.7	197.1	6.66	30.603		
1,700.0	1,682.9	1,731.2	1,712.6	4.7	5.1	-62.78	305.9	-85.3	173.1	165.5	7.56	22.905		
1,800.0	1,779.5	1,823.2	1,803.1	5.1	5.4	-72.98	292.6	-76.2	145.9	137.2	8.71	16.754		
1,900.0	1,876.1	1,915.1	1,893.6	5.6	5.7	-86.66	279.2	-67.1	125.5	115.4	10.09	12.435		
2,000.0	1,972.7	2,007.1	1,984.1	6.1	6.1	-103.57	265.8	-57.9	115.2	103.9	11.37	10.133		
2,029.5	2,001.2	2,034.2	2,010.8	6.2	6.1	-108.89	261.9	-55.2	114.6	103.0	11.66	9.835 CC, ES		
2,100.0	2,069.3	2,099.0	2,074.6	6.6	6.4	-121.42	252.5	-48.8	118.0	105.9	12.08	9.767 SF		
2,200.0	2,165.9	2,190.9	2,165.1	7.0	6.7	-137.16	239.1	-39.7	132.8	120.7	12.13	10.950		
2,300.0	2,262.5	2,282.9	2,255.6	7.5	7.0	-149.36	225.7	-30.5	156.4	144.5	11.89	13.151		
2,400.0	2,359.1	2,374.8	2,346.1	8.0	7.4	-158.34	212.4	-21.4	185.4	173.8	11.67	15.885		
2,500.0	2,455.7	2,466.7	2,436.6	8.5	7.7	-164.92	199.0	-12.3	217.7	206.1	11.57	18.809		
2,600.0	2,552.3	2,558.7	2,527.1	8.9	8.0	-169.83	185.6	-3.2	252.0	240.4	11.60	21.721		
2,700.0	2,648.8	2,650.6	2,617.6	9.4	8.3	-173.58	172.3	6.0	287.6	275.9	11.73	24.520		
2,800.0	2,745.4	2,742.6	2,708.1	9.9	8.7	-176.52	158.9	15.1	324.0	312.1	11.93	27.165		
2,900.0	2,842.0	2,834.5	2,798.6	10.4	9.0	-178.88	145.5	24.2	361.1	348.9	12.18	29.643		
3,000.0	2,938.6	2,926.4	2,889.1	10.9	9.3	179.20	132.2	33.4	398.6	386.1	12.47	31.958		
3,100.0	3,035.2	3,018.4	2,979.6	11.3	9.6	177.61	118.8	42.5	436.4	423.6	12.79	34.119		
3,200.0	3,131.8	3,110.3	3,070.1	11.8	10.0	176.27	105.4	51.6	474.5	461.4	13.13	36.137		

## Anticollision Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well Liberty 2A-21H
<b>Project:</b>	DJ Wattenberg	<b>TVD Reference:</b>	Kb @ 5036.0ft
<b>Reference Site:</b>	NENE S20-T3N-R68W (Liberty 2A-21H)	<b>MD Reference:</b>	Kb @ 5036.0ft
<b>Site Error:</b>	0.0ft	<b>North Reference:</b>	True
<b>Reference Well:</b>	Liberty 2A-21H	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Well Error:</b>	0.0ft	<b>Output errors are at</b>	2.00 sigma
<b>Reference Wellbore</b>	HZ	<b>Database:</b>	USA EDM 5000 Multi Users DB
<b>Reference Design:</b>	Plan #4	<b>Offset TVD Reference:</b>	Offset Datum

Reference Depths are relative to Kb @ 5036.0ft

Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: Liberty 2A-21H

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.32°

