



Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Edith Ann-Duckworth 4D-21H-O268
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 4951.0ft (Original Well Elev)
Project:	DJ Wattenberg	MD Reference:	WELL @ 4951.0ft (Original Well Elev)
Site:	S21-T2N-R68W (Edith Ann-Duckworth)	North Reference:	True
Well:	Edith Ann-Duckworth 4D-21H-O268	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		S21-T2N-R68W (Edith Ann-Duckworth)			
Site Position:		Northing:	1,290,455.50 ft	Latitude:	40.129630
From:	Lat/Long	Easting:	3,138,171.93 ft	Longitude:	-105.005880
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	0.32 °

Well	Edith Ann-Duckworth 4D-21H-O268					
Well Position	+N/-S	0.0 ft	Northing:	1,286,080.54 ft	Latitude:	40.117610
	+E/-W	0.0 ft	Easting:	3,138,845.15 ft	Longitude:	-105.003560
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,926.0 ft

Wellbore	Hz				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	6/25/2013	8.69	66.71	52,743

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	0.00

Plan Sections										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.00	0.00	0.00	0.00	
648.3	1.48	270.16	648.3	0.0	-1.9	1.00	1.00	0.00	270.16	
6,995.4	1.48	270.16	6,993.3	0.5	-166.2	0.00	0.00	0.00	0.00	
7,895.4	90.00	0.00	7,566.0	573.4	-181.0	10.00	9.84	9.98	89.84	
13,000.4	90.00	0.00	7,566.0	5,678.4	-181.0	0.00	0.00	0.00	0.00	Edith Ann-Duckworth
13,041.2	90.00	0.41	7,566.0	5,719.3	-180.9	1.00	0.00	1.00	90.00	
17,234.1	90.00	0.41	7,566.0	9,912.1	-151.0	0.00	0.00	0.00	0.00	Edith Ann-Duckworth

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Project:	DJ Wattenberg	MD Reference:	WELL @ 4951.0ft (Original Well Elev)
Site:	S21-T2N-R68W (Edith Ann-Duckworth)	North Reference:	True
Well:	Edith Ann-Duckworth 4D-21H-O268	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	
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	
251.0	0.00	0.00	251.0	0.0	0.0	0.0	0.00	0.00	Fox Hills - BASE
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	KOP @ 500'
600.0	1.00	270.16	600.0	0.0	-0.9	0.0	1.00	1.00	
648.3	1.48	270.16	648.3	0.0	-1.9	0.0	1.00	1.00	EOB; Inc=1.5°
700.0	1.48	270.16	700.0	0.0	-3.3	0.0	0.00	0.00	
800.0	1.48	270.16	799.9	0.0	-5.8	0.0	0.00	0.00	
900.0	1.48	270.16	899.9	0.0	-8.4	0.0	0.00	0.00	
1,000.0	1.48	270.16	999.9	0.0	-11.0	0.0	0.00	0.00	
1,100.0	1.48	270.16	1,099.8	0.0	-13.6	0.0	0.00	0.00	
1,200.0	1.48	270.16	1,199.8	0.0	-16.2	0.0	0.00	0.00	
1,300.0	1.48	270.16	1,299.8	0.1	-18.8	0.1	0.00	0.00	
1,400.0	1.48	270.16	1,399.7	0.1	-21.4	0.1	0.00	0.00	
1,500.0	1.48	270.16	1,499.7	0.1	-24.0	0.1	0.00	0.00	
1,600.0	1.48	270.16	1,599.7	0.1	-26.5	0.1	0.00	0.00	
1,700.0	1.48	270.16	1,699.6	0.1	-29.1	0.1	0.00	0.00	
1,800.0	1.48	270.16	1,799.6	0.1	-31.7	0.1	0.00	0.00	
1,900.0	1.48	270.16	1,899.6	0.1	-34.3	0.1	0.00	0.00	
2,000.0	1.48	270.16	1,999.5	0.1	-36.9	0.1	0.00	0.00	
2,100.0	1.48	270.16	2,099.5	0.1	-39.5	0.1	0.00	0.00	
2,200.0	1.48	270.16	2,199.5	0.1	-42.1	0.1	0.00	0.00	
2,300.0	1.48	270.16	2,299.4	0.1	-44.7	0.1	0.00	0.00	
2,400.0	1.48	270.16	2,399.4	0.1	-47.3	0.1	0.00	0.00	
2,500.0	1.48	270.16	2,499.4	0.1	-49.8	0.1	0.00	0.00	
2,600.0	1.48	270.16	2,599.3	0.2	-52.4	0.2	0.00	0.00	
2,700.0	1.48	270.16	2,699.3	0.2	-55.0	0.2	0.00	0.00	
2,800.0	1.48	270.16	2,799.3	0.2	-57.6	0.2	0.00	0.00	
2,900.0	1.48	270.16	2,899.2	0.2	-60.2	0.2	0.00	0.00	
3,000.0	1.48	270.16	2,999.2	0.2	-62.8	0.2	0.00	0.00	
3,100.0	1.48	270.16	3,099.2	0.2	-65.4	0.2	0.00	0.00	
3,200.0	1.48	270.16	3,199.1	0.2	-68.0	0.2	0.00	0.00	
3,300.0	1.48	270.16	3,299.1	0.2	-70.5	0.2	0.00	0.00	
3,400.0	1.48	270.16	3,399.1	0.2	-73.1	0.2	0.00	0.00	
3,500.0	1.48	270.16	3,499.0	0.2	-75.7	0.2	0.00	0.00	
3,600.0	1.48	270.16	3,599.0	0.2	-78.3	0.2	0.00	0.00	
3,700.0	1.48	270.16	3,699.0	0.2	-80.9	0.2	0.00	0.00	
3,800.0	1.48	270.16	3,798.9	0.2	-83.5	0.2	0.00	0.00	
3,900.0	1.48	270.16	3,898.9	0.2	-86.1	0.2	0.00	0.00	
4,000.0	1.48	270.16	3,998.9	0.3	-88.7	0.3	0.00	0.00	
4,100.0	1.48	270.16	4,098.8	0.3	-91.2	0.3	0.00	0.00	
4,200.0	1.48	270.16	4,198.8	0.3	-93.8	0.3	0.00	0.00	
4,300.0	1.48	270.16	4,298.8	0.3	-96.4	0.3	0.00	0.00	
4,326.2	1.48	270.16	4,325.0	0.3	-97.1	0.3	0.00	0.00	Sussex
4,400.0	1.48	270.16	4,398.7	0.3	-99.0	0.3	0.00	0.00	
4,500.0	1.48	270.16	4,498.7	0.3	-101.6	0.3	0.00	0.00	
4,583.3	1.48	270.16	4,582.0	0.3	-103.8	0.3	0.00	0.00	Sussex Marker
4,600.0	1.48	270.16	4,598.7	0.3	-104.2	0.3	0.00	0.00	
4,700.0	1.48	270.16	4,698.6	0.3	-106.8	0.3	0.00	0.00	

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Well:	Edith Ann-Duckworth 4D-21H-O268	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
4,800.0	1.48	270.16	4,798.6	0.3	-109.4	0.3	0.00	0.00	
4,868.4	1.48	270.16	4,867.0	0.3	-111.1	0.3	0.00	0.00	Shannon
4,900.0	1.48	270.16	4,898.6	0.3	-111.9	0.3	0.00	0.00	
5,000.0	1.48	270.16	4,998.5	0.3	-114.5	0.3	0.00	0.00	
5,100.0	1.48	270.16	5,098.5	0.3	-117.1	0.3	0.00	0.00	
5,200.0	1.48	270.16	5,198.5	0.3	-119.7	0.3	0.00	0.00	
5,300.0	1.48	270.16	5,298.4	0.4	-122.3	0.4	0.00	0.00	
5,400.0	1.48	270.16	5,398.4	0.4	-124.9	0.4	0.00	0.00	
5,500.0	1.48	270.16	5,498.4	0.4	-127.5	0.4	0.00	0.00	
5,600.0	1.48	270.16	5,598.3	0.4	-130.1	0.4	0.00	0.00	
5,700.0	1.48	270.16	5,698.3	0.4	-132.7	0.4	0.00	0.00	
5,800.0	1.48	270.16	5,798.3	0.4	-135.2	0.4	0.00	0.00	
5,900.0	1.48	270.16	5,898.2	0.4	-137.8	0.4	0.00	0.00	
6,000.0	1.48	270.16	5,998.2	0.4	-140.4	0.4	0.00	0.00	
6,100.0	1.48	270.16	6,098.2	0.4	-143.0	0.4	0.00	0.00	
6,200.0	1.48	270.16	6,198.1	0.4	-145.6	0.4	0.00	0.00	
6,201.9	1.48	270.16	6,200.0	0.4	-145.6	0.4	0.00	0.00	Teepee Buttes (*if present)
6,300.0	1.48	270.16	6,298.1	0.4	-148.2	0.4	0.00	0.00	
6,400.0	1.48	270.16	6,398.1	0.4	-150.8	0.4	0.00	0.00	
6,500.0	1.48	270.16	6,498.0	0.4	-153.4	0.4	0.00	0.00	
6,600.0	1.48	270.16	6,598.0	0.4	-155.9	0.4	0.00	0.00	
6,700.0	1.48	270.16	6,698.0	0.5	-158.5	0.5	0.00	0.00	
6,800.0	1.48	270.16	6,797.9	0.5	-161.1	0.5	0.00	0.00	
6,900.0	1.48	270.16	6,897.9	0.5	-163.7	0.5	0.00	0.00	
6,995.4	1.48	270.16	6,993.3	0.5	-166.2	0.5	0.00	0.00	Start build/turn @ 6995' MD
7,000.0	1.55	287.32	6,997.9	0.5	-166.3	0.5	10.00	1.54	
7,100.0	10.57	352.02	7,097.2	10.0	-168.9	10.0	10.00	9.01	
7,180.4	18.56	355.58	7,175.0	30.1	-170.9	30.1	10.00	9.94	Sharon Springs
7,200.0	20.51	356.03	7,193.5	36.6	-171.4	36.6	10.00	9.97	
7,282.0	28.70	357.29	7,268.0	70.7	-173.3	70.7	10.00	9.98	Niobrara
7,300.0	30.49	357.48	7,283.6	79.6	-173.7	79.6	10.00	9.99	
7,360.5	36.53	358.00	7,334.0	112.9	-175.0	112.9	10.00	9.99	B Chalk
7,389.7	39.45	358.20	7,357.0	130.9	-175.6	130.9	10.00	9.99	B Marl
7,400.0	40.48	358.26	7,364.9	137.5	-175.8	137.5	10.00	9.99	
7,477.1	48.18	358.67	7,420.0	191.3	-177.2	191.3	10.00	9.99	C Chalk
7,500.0	50.48	358.78	7,435.0	208.7	-177.6	208.7	10.00	9.99	
7,511.2	51.60	358.82	7,442.0	217.4	-177.8	217.4	10.00	9.99	C Marl
7,600.0	60.47	359.16	7,491.6	291.0	-179.1	291.0	10.00	10.00	
7,700.0	70.47	359.47	7,533.0	381.8	-180.1	381.8	10.00	10.00	
7,709.1	71.38	359.50	7,536.0	390.4	-180.2	390.4	10.00	10.00	Ft. Hayes
7,788.2	79.28	359.72	7,556.0	466.8	-180.7	466.8	10.00	10.00	Codell
7,800.0	80.47	359.75	7,558.1	478.5	-180.8	478.5	10.00	10.00	
7,895.4	90.00	0.00	7,566.0	573.4	-181.0	573.4	10.00	10.00	LP @ 7566' TVD; 90°
7,900.0	90.00	0.00	7,566.0	578.1	-181.0	578.1	0.00	0.00	
8,000.0	90.00	0.00	7,566.0	678.1	-181.0	678.1	0.00	0.00	
8,100.0	90.00	0.00	7,566.0	778.1	-181.0	778.1	0.00	0.00	
8,200.0	90.00	0.00	7,566.0	878.1	-181.0	878.1	0.00	0.00	
8,300.0	90.00	0.00	7,566.0	978.1	-181.0	978.1	0.00	0.00	
8,400.0	90.00	0.00	7,566.0	1,078.1	-181.0	1,078.1	0.00	0.00	
8,500.0	90.00	0.00	7,566.0	1,178.1	-181.0	1,178.1	0.00	0.00	
8,600.0	90.00	0.00	7,566.0	1,278.1	-181.0	1,278.1	0.00	0.00	
8,700.0	90.00	0.00	7,566.0	1,378.1	-181.0	1,378.1	0.00	0.00	

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Project:	DJ Wattenberg	MD Reference:	WELL @ 4951.0ft (Original Well Elev)
Site:	S21-T2N-R68W (Edith Ann-Duckworth)	North Reference:	True
Well:	Edith Ann-Duckworth 4D-21H-O268	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
8,800.0	90.00	0.00	7,566.0	1,478.1	-181.0	1,478.1	0.00	0.00	
8,900.0	90.00	0.00	7,566.0	1,578.1	-181.0	1,578.1	0.00	0.00	
9,000.0	90.00	0.00	7,566.0	1,678.1	-181.0	1,678.1	0.00	0.00	
9,100.0	90.00	0.00	7,566.0	1,778.1	-181.0	1,778.1	0.00	0.00	
9,200.0	90.00	0.00	7,566.0	1,878.1	-181.0	1,878.1	0.00	0.00	
9,300.0	90.00	0.00	7,566.0	1,978.1	-181.0	1,978.1	0.00	0.00	
9,400.0	90.00	0.00	7,566.0	2,078.1	-181.0	2,078.1	0.00	0.00	
9,500.0	90.00	0.00	7,566.0	2,178.1	-181.0	2,178.1	0.00	0.00	
9,600.0	90.00	0.00	7,566.0	2,278.1	-181.0	2,278.1	0.00	0.00	
9,700.0	90.00	0.00	7,566.0	2,378.1	-181.0	2,378.1	0.00	0.00	
9,800.0	90.00	0.00	7,566.0	2,478.1	-181.0	2,478.1	0.00	0.00	
9,900.0	90.00	0.00	7,566.0	2,578.1	-181.0	2,578.1	0.00	0.00	
10,000.0	90.00	0.00	7,566.0	2,678.1	-181.0	2,678.1	0.00	0.00	
10,100.0	90.00	0.00	7,566.0	2,778.1	-181.0	2,778.1	0.00	0.00	
10,200.0	90.00	0.00	7,566.0	2,878.1	-181.0	2,878.1	0.00	0.00	
10,300.0	90.00	0.00	7,566.0	2,978.1	-181.0	2,978.1	0.00	0.00	
10,400.0	90.00	0.00	7,566.0	3,078.1	-181.0	3,078.1	0.00	0.00	
10,500.0	90.00	0.00	7,566.0	3,178.1	-181.0	3,178.1	0.00	0.00	
10,600.0	90.00	0.00	7,566.0	3,278.1	-181.0	3,278.1	0.00	0.00	
10,700.0	90.00	0.00	7,566.0	3,378.1	-181.0	3,378.1	0.00	0.00	
10,800.0	90.00	0.00	7,566.0	3,478.1	-181.0	3,478.1	0.00	0.00	
10,900.0	90.00	0.00	7,566.0	3,578.1	-181.0	3,578.1	0.00	0.00	
11,000.0	90.00	0.00	7,566.0	3,678.1	-181.0	3,678.1	0.00	0.00	
11,100.0	90.00	0.00	7,566.0	3,778.1	-181.0	3,778.1	0.00	0.00	
11,200.0	90.00	0.00	7,566.0	3,878.1	-181.0	3,878.1	0.00	0.00	
11,300.0	90.00	0.00	7,566.0	3,978.1	-181.0	3,978.1	0.00	0.00	
11,400.0	90.00	0.00	7,566.0	4,078.1	-181.0	4,078.1	0.00	0.00	
11,500.0	90.00	0.00	7,566.0	4,178.1	-181.0	4,178.1	0.00	0.00	
11,600.0	90.00	0.00	7,566.0	4,278.1	-181.0	4,278.1	0.00	0.00	
11,700.0	90.00	0.00	7,566.0	4,378.1	-181.0	4,378.1	0.00	0.00	
11,800.0	90.00	0.00	7,566.0	4,478.1	-181.0	4,478.1	0.00	0.00	
11,900.0	90.00	0.00	7,566.0	4,578.1	-181.0	4,578.1	0.00	0.00	
12,000.0	90.00	0.00	7,566.0	4,678.1	-181.0	4,678.1	0.00	0.00	
12,100.0	90.00	0.00	7,566.0	4,778.1	-181.0	4,778.1	0.00	0.00	
12,200.0	90.00	0.00	7,566.0	4,878.1	-181.0	4,878.1	0.00	0.00	
12,300.0	90.00	0.00	7,566.0	4,978.1	-181.0	4,978.1	0.00	0.00	
12,400.0	90.00	0.00	7,566.0	5,078.1	-181.0	5,078.1	0.00	0.00	
12,500.0	90.00	0.00	7,566.0	5,178.1	-181.0	5,178.1	0.00	0.00	
12,600.0	90.00	0.00	7,566.0	5,278.1	-181.0	5,278.1	0.00	0.00	
12,700.0	90.00	0.00	7,566.0	5,378.1	-181.0	5,378.1	0.00	0.00	
12,800.0	90.00	0.00	7,566.0	5,478.1	-181.0	5,478.1	0.00	0.00	
12,900.0	90.00	0.00	7,566.0	5,578.1	-181.0	5,578.1	0.00	0.00	
13,000.0	90.00	0.00	7,566.0	5,678.1	-181.0	5,678.1	0.00	0.00	
13,000.4	90.00	0.00	7,566.0	5,678.4	-181.0	5,678.4	0.00	0.00	Start turn @ 13000' MD
13,041.2	90.00	0.41	7,566.0	5,719.3	-180.9	5,719.3	1.00	0.00	End of turn @ 13041' MD
13,100.0	90.00	0.41	7,566.0	5,778.1	-180.4	5,778.1	0.00	0.00	
13,200.0	90.00	0.41	7,566.0	5,878.1	-179.7	5,878.1	0.00	0.00	
13,300.0	90.00	0.41	7,566.0	5,978.1	-179.0	5,978.1	0.00	0.00	
13,400.0	90.00	0.41	7,566.0	6,078.0	-178.3	6,078.0	0.00	0.00	
13,500.0	90.00	0.41	7,566.0	6,178.0	-177.6	6,178.0	0.00	0.00	
13,600.0	90.00	0.41	7,566.0	6,278.0	-176.9	6,278.0	0.00	0.00	
13,700.0	90.00	0.41	7,566.0	6,378.0	-176.2	6,378.0	0.00	0.00	

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Edith Ann-Duckworth 4D-21H-O268
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 4951.0ft (Original Well Elev)
Project:	DJ Wattenberg	MD Reference:	WELL @ 4951.0ft (Original Well Elev)
Site:	S21-T2N-R68W (Edith Ann-Duckworth)	North Reference:	True
Well:	Edith Ann-Duckworth 4D-21H-O268	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
13,800.0	90.00	0.41	7,566.0	6,478.0	-175.4	6,478.0	0.00	0.00	
13,900.0	90.00	0.41	7,566.0	6,578.0	-174.7	6,578.0	0.00	0.00	
14,000.0	90.00	0.41	7,566.0	6,678.0	-174.0	6,678.0	0.00	0.00	
14,100.0	90.00	0.41	7,566.0	6,778.0	-173.3	6,778.0	0.00	0.00	
14,200.0	90.00	0.41	7,566.0	6,878.0	-172.6	6,878.0	0.00	0.00	
14,300.0	90.00	0.41	7,566.0	6,978.0	-171.9	6,978.0	0.00	0.00	
14,400.0	90.00	0.41	7,566.0	7,078.0	-171.2	7,078.0	0.00	0.00	
14,500.0	90.00	0.41	7,566.0	7,178.0	-170.5	7,178.0	0.00	0.00	
14,600.0	90.00	0.41	7,566.0	7,278.0	-169.7	7,278.0	0.00	0.00	
14,700.0	90.00	0.41	7,566.0	7,378.0	-169.0	7,378.0	0.00	0.00	
14,800.0	90.00	0.41	7,566.0	7,478.0	-168.3	7,478.0	0.00	0.00	
14,900.0	90.00	0.41	7,566.0	7,578.0	-167.6	7,578.0	0.00	0.00	
15,000.0	90.00	0.41	7,566.0	7,678.0	-166.9	7,678.0	0.00	0.00	
15,100.0	90.00	0.41	7,566.0	7,778.0	-166.2	7,778.0	0.00	0.00	
15,200.0	90.00	0.41	7,566.0	7,878.0	-165.5	7,878.0	0.00	0.00	
15,300.0	90.00	0.41	7,566.0	7,978.0	-164.8	7,978.0	0.00	0.00	
15,400.0	90.00	0.41	7,566.0	8,078.0	-164.0	8,078.0	0.00	0.00	
15,500.0	90.00	0.41	7,566.0	8,178.0	-163.3	8,178.0	0.00	0.00	
15,600.0	90.00	0.41	7,566.0	8,278.0	-162.6	8,278.0	0.00	0.00	
15,700.0	90.00	0.41	7,566.0	8,378.0	-161.9	8,378.0	0.00	0.00	
15,800.0	90.00	0.41	7,566.0	8,478.0	-161.2	8,478.0	0.00	0.00	
15,900.0	90.00	0.41	7,566.0	8,578.0	-160.5	8,578.0	0.00	0.00	
16,000.0	90.00	0.41	7,566.0	8,678.0	-159.8	8,678.0	0.00	0.00	
16,100.0	90.00	0.41	7,566.0	8,778.0	-159.0	8,778.0	0.00	0.00	
16,200.0	90.00	0.41	7,566.0	8,878.0	-158.3	8,878.0	0.00	0.00	
16,300.0	90.00	0.41	7,566.0	8,978.0	-157.6	8,978.0	0.00	0.00	
16,400.0	90.00	0.41	7,566.0	9,078.0	-156.9	9,078.0	0.00	0.00	
16,500.0	90.00	0.41	7,566.0	9,178.0	-156.2	9,178.0	0.00	0.00	
16,600.0	90.00	0.41	7,566.0	9,278.0	-155.5	9,278.0	0.00	0.00	
16,700.0	90.00	0.41	7,566.0	9,378.0	-154.8	9,378.0	0.00	0.00	
16,800.0	90.00	0.41	7,566.0	9,478.0	-154.1	9,478.0	0.00	0.00	
16,900.0	90.00	0.41	7,566.0	9,578.0	-153.3	9,578.0	0.00	0.00	
17,000.0	90.00	0.41	7,566.0	9,678.0	-152.6	9,678.0	0.00	0.00	
17,100.0	90.00	0.41	7,566.0	9,778.0	-151.9	9,778.0	0.00	0.00	
17,200.0	90.00	0.41	7,566.0	9,878.0	-151.2	9,878.0	0.00	0.00	
17,234.1	90.00	0.41	7,566.0	9,912.1	-151.0	9,912.1	0.00	0.00	TD at 17234.1

Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
Edith Ann-Duckworth 4D - plan hits target center - Point	0.00	0.00	7,566.0	9,912.1	-151.0	1,295,991.63	3,138,638.70	40.144820	-105.004100
Edith Ann-Duckworth 4D - plan hits target center - Point	0.00	0.00	7,566.0	5,678.4	-181.0	1,291,757.87	3,138,632.36	40.133198	-105.004207

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Edith Ann-Duckworth 4D-21H-O268
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 4951.0ft (Original Well Elev)
Project:	DJ Wattenberg	MD Reference:	WELL @ 4951.0ft (Original Well Elev)
Site:	S21-T2N-R68W (Edith Ann-Duckworth)	North Reference:	True
Well:	Edith Ann-Duckworth 4D-21H-O268	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
251.0	251.0	Fox Hills - BASE				
4,326.2	4,325.0	Sussex				
4,583.3	4,582.0	Sussex Marker				
4,868.4	4,867.0	Shannon				
6,201.9	6,200.0	Teepee Buttes (*if present)				
7,180.4	7,175.0	Sharon Springs				
7,282.0	7,268.0	Niobrara				
7,360.5	7,334.0	B Chalk				
7,389.7	7,357.0	B Marl				
7,477.1	7,420.0	C Chalk				
7,511.2	7,442.0	C Marl				
7,709.1	7,536.0	Ft. Hayes				
7,788.2	7,556.0	Codell				

Plan Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
500.0	500.0	0.0	0.0	KOP @ 500'	
648.3	648.3	0.0	-1.9	EOB; Inc=1.5°	
6,995.4	6,993.3	0.5	-166.2	Start build/turn @ 6995' MD	
7,895.4	7,566.0	573.4	-181.0	LP @ 7566' TVD; 90°	
13,000.4	7,566.0	5,678.4	-181.0	Start turn @ 13000' MD	
13,041.2	7,566.0	5,719.3	-180.9	End of turn @ 13041' MD	
17,234.1	7,566.0	9,912.1	-151.0	TD at 17234.1	

EnCana Oil & Gas (USA) Inc

DJ Wattenberg

S21-T2N-R68W (Edith Ann-Duckworth)

Edith Ann-Duckworth 4D-21H-O268

Hz

Plan #1

Anticollision Report

26 June, 2013

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Edith Ann-Duckworth 4D-21H-O268
Project:	DJ Wattenberg	TVD Reference:	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	MD Reference:	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Edith Ann-Duckworth 4D-21H-O268	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	6/26/2013		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
0.0	17,233.8	Plan #1 (Hz)	Geolink MWD	Geolink MWD	

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Edith Ann-Duckworth 4D-21H-O268
Project:	DJ Wattenberg	TVD Reference:	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	MD Reference:	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Edith Ann-Duckworth 4D-21H-O268	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

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						
S21-T2N-R68W (Edith Ann-Duckworth)						
BLISS 41-21 (EXISTING) - KPK WELL - SURVEYS						Out of range
COLCLASURE 42-21 (EXISTING) - KPK WELL - NO SU						Out of range
DUCKWORTH 31-16 (EXISTING) - ENCANA WELL - SU	17,044.9	7,719.8	471.8	276.7	2.418	CC, ES, SF
DUCKWORTH 32-16 (EXISTING) - ENCANA WELL - SU	15,552.3	7,634.2	466.9	304.5	2.876	CC, ES, SF
DUCKWORTH 33-16 (EXISTING) - ENCANA WELL - SU	14,491.4	7,693.5	452.7	297.6	2.918	CC
DUCKWORTH 33-16 (EXISTING) - ENCANA WELL - SU	14,500.0	7,693.5	452.8	297.5	2.916	ES, SF
DUCKWORTH 41-16 (EXISTING) - ENCANA WELL - SUR						Out of range
DUCKWORTH 43-16 (EXISTING) - ENCANA WELL - NO						Out of range
DUCKWORTH 44-16 (EXISTING) - ENCANA WELL - SU						Out of range
DUCKWORTH 6-0-16 (EXISTING) - ENCANA WELL - S	17,234.1	7,724.2	406.1	199.6	1.966	CC, ES, SF
DUCKWORTH B UNIT 1 (EXISTING) - ENCANA WELL -						Out of range
DUCKWORTH B UNIT 2 (EXISTING) - ENCANA WELL -	13,122.8	7,494.0	58.9	-58.3	0.503	Level 1, CC, ES, SF
EDITH ANN 1 (EXISTING) - ENCANA WELL - NO SURV						Out of range
EDITH ANN 33-21 (EXISTING) - ENCANA WELL - NO S						Out of range
EDITH ANN 34-21 (EXISTING) - ENCANA WELL - NO S						Out of range
EDITH ANN 4-21 (EXISTING) - ENCANA WELL - SURVE	8,320.3	7,684.1	177.3	135.2	4.210	CC, ES, SF
EDITH ANN 43-21 (EXISTING) - ENCANA WELL - NO S						Out of range
EDITH ANN 44-21 (EXISTING) - ENCANA WELL - NO S						Out of range
EDITH ANN 6-8-21 (EXISTING) - ENCANA WELL - SUR	4,266.2	4,384.2	126.1	101.1	5.035	CC, ES
EDITH ANN 6-8-21 (EXISTING) - ENCANA WELL - SUR	7,000.0	7,128.4	161.4	128.1	4.848	SF
EDITH ANN 8-8-21 (EXISTING) - ENCANA WELL - SUR						Out of range
Edith Ann-Duckworth 4A-21H-O268 - Hz - Plan #1	200.0	199.0	30.8	30.2	50.505	CC, ES
Edith Ann-Duckworth 4A-21H-O268 - Hz - Plan #1	800.0	794.2	56.0	53.3	20.778	SF
Edith Ann-Duckworth 4B-21H-O268 - Hz - Plan #1	300.0	300.0	19.6	18.6	20.394	CC, ES
Edith Ann-Duckworth 4B-21H-O268 - Hz - Plan #1	700.0	698.2	30.2	27.9	12.845	SF
Edith Ann-Duckworth 4C-21H-O268 - Hz - Plan #1	400.0	400.0	11.2	9.9	8.546	CC, ES
Edith Ann-Duckworth 4C-21H-O268 - Hz - Plan #1	17,234.1	17,010.9	414.0	115.4	1.387	Level 3, SF
Edith Ann-Duckworth 4E-21H-O268 - Hz - Plan #1	500.0	500.0	8.4	6.7	5.060	CC, ES
Edith Ann-Duckworth 4E-21H-O268 - Hz - Plan #1	17,234.1	17,017.3	416.4	117.0	1.391	Level 3, SF
Edith Ann-Duckworth 4F-21H-O268 - Hz - Plan #1	366.3	367.3	19.6	18.4	16.407	CC
Edith Ann-Duckworth 4F-21H-O268 - Hz - Plan #1	400.0	401.0	19.6	18.3	14.936	ES
Edith Ann-Duckworth 4F-21H-O268 - Hz - Plan #1	600.0	600.0	24.0	22.0	11.940	SF
Edith Ann-Duckworth 4G-21H-O268 - Hz - Plan #1	266.3	267.3	30.8	29.9	36.444	CC
Edith Ann-Duckworth 4G-21H-O268 - Hz - Plan #1	300.0	301.0	30.8	29.8	31.990	ES
Edith Ann-Duckworth 4G-21H-O268 - Hz - Plan #1	600.0	599.1	39.5	37.5	19.696	SF
Edith Ann-Duckworth 4H-21H-O268 - Hz - Plan #1	166.3	167.3	39.2	38.7	79.086	CC
Edith Ann-Duckworth 4H-21H-O268 - Hz - Plan #1	200.0	201.0	39.2	38.5	63.914	ES
Edith Ann-Duckworth 4H-21H-O268 - Hz - Plan #1	600.0	597.6	53.9	51.9	26.940	SF
JILLSON A 1 (EXISTING) - FOUNDATION WELL - NO S						Out of range
JILLSON A 2 (EXISTING) - FOUNDATION WELL - NO S						Out of range
JILLSON A 3 (EXISTING) - FOUNDATION WELL - NO S						Out of range
JILLSON A 4 (EXISTING) - FOUNDATION WELL - NO S						Out of range
KENNEDY 1 (EXISTING) - MACEY & MERSHON WELL						Out of range
KENNEDY 31-21 (EXISTING) - ENCANA WELL - NO SU						Out of range
KENNEDY 31-21 (EXISTING) - ENCANA WELL - NO SU						Out of range
KENNEDY 32-21 (EXISTING) - ENCANA WELL - NO SU	10,213.3	7,507.0	263.1	196.1	3.926	CC, ES, SF
KENNEDY 41-21 (EXISTING) - ENCANA WELL - NO SU						Out of range
KENNEDY 4-2-21 (EXISTING) - ENCANA WELL - SURV						Out of range
KENNEDY 6-0-21 (EXISTING) - ENCANA WELL - SURV	12,313.2	7,610.5	156.8	50.2	1.471	Level 3, CC, ES, SF
KENNEDY 6-4-21 (EXISTING) - ENCANA WELL - SURV	9,860.5	7,642.1	217.1	148.2	3.151	CC, ES, SF
KENNEDY 8-0-21 (EXISTING) - ENCANA WELL - SURV						Out of range
KENNEDY 8-4-21 (EXISTING) - ENCANA WELL - SURV						Out of range
KENNEDY GAS UNIT 1 (EXISTING) - ENCANA WELL -						Out of range

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 Edith Ann-Duckworth 4D-21H-O268
Project:	DJ Wattenberg	TVD Reference:	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	MD Reference:	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Edith Ann-Duckworth 4D-21H-O268	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

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						
S21-T2N-R68W (Edith Ann-Duckworth)						
NORTH RINN 33-9 (EXISTING) - ENCANA WELL - PLA						Out of range
NORTH RINN 34-9 (EXISTING) - ENCANA WELL - PLA						Out of range
NORTH RINN 43-9 (EXISTING) - ENCANA WELL - PLA						Out of range
NORTH RINN 44-9 (EXISTING) - ENCANA WELL - PLA						Out of range
NORTH RINN 4-4-9 (EXISTING) - ENCANA WELL - PLA						Out of range
NORTH RINN 4-6-9 (EXISTING) - ENCANA WELL - PLA						Out of range
NORTH RINN 4-8-9 (EXISTING) - ENCANA WELL - PLA						Out of range
NORTH RINN 6-6-9 (EXISTING) - ENCANA WELL - PLA						Out of range

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Edith Ann-Duckworth 4D-21H-O268
Project:	DJ Wattenberg	TVD Reference:	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	MD Reference:	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Edith Ann-Duckworth 4D-21H-O268	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										S21-T2N-R68W (Edith Ann-Duckworth) - DUCKWORTH 31-16 (EXISTING) - ENCANA WELL - SURVE				Offset Site Error:		0.0 ft
Survey Program: 716-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)						
16,900.0	7,566.0	7,721.1	7,503.9	170.2	28.4	-90.10	9,726.2	-624.1	493.5	300.9	192.55	2.563				
17,000.0	7,566.0	7,720.2	7,502.9	171.9	28.4	-89.99	9,726.2	-624.1	473.9	279.6	194.30	2.439				
17,044.9	7,566.0	7,719.8	7,502.5	172.7	28.4	-89.94	9,726.2	-624.1	471.8	276.7	195.09	2.418	CC, ES, SF			
17,100.0	7,566.0	7,719.3	7,502.0	173.7	28.4	-89.88	9,726.2	-624.0	475.0	278.9	196.05	2.423				
17,200.0	7,566.0	7,718.3	7,501.0	175.4	28.4	-89.76	9,726.2	-624.0	496.6	298.8	197.80	2.511				

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Edith Ann-Duckworth 4D-21H-O268
Project:	DJ Wattenberg	TVD Reference:	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	MD Reference:	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Edith Ann-Duckworth 4D-21H-O268	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											S21-T2N-R68W (Edith Ann-Duckworth) - DUCKWORTH 32-16 (EXISTING) - ENCANA WELL - SURVE			Offset Site Error:		0.0 ft
Survey Program: 717-MWD													Offset Well Error:		0.0 ft	
Reference		Offset		Semi Major Axis			Distance									
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Total Uncertainty	Separation	Warning			
Depth (ft)	Depth (ft)	Depth (ft)	Depth (ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	Axis	Factor				
15,400.0	7,566.0	7,633.1	7,502.0	144.0	23.3	-89.87	8,233.6	-629.8	491.1	331.4	159.67	3.076				
15,500.0	7,566.0	7,633.8	7,502.7	145.7	23.3	-89.96	8,233.6	-629.8	469.8	308.4	161.42	2.910				
15,552.3	7,566.0	7,634.2	7,503.0	146.6	23.3	-90.00	8,233.6	-629.8	466.9	304.5	162.34	2.876	CC, ES, SF			
15,600.0	7,566.0	7,634.5	7,503.4	147.5	23.3	-90.04	8,233.6	-629.8	469.3	306.1	163.17	2.876				
15,700.0	7,566.0	7,635.2	7,504.1	149.2	23.3	-90.13	8,233.6	-629.8	489.7	324.8	164.92	2.969				

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Edith Ann-Duckworth 4D-21H-O268
Project:	DJ Wattenberg	TVD Reference:	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	MD Reference:	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Edith Ann-Duckworth 4D-21H-O268	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 S21-T2N-R68W (Edith Ann-Duckworth) - DUCKWORTH 33-16 (EXISTING) - ENCANA WELL - SURVE												Offset Site Error:	0.0 ft
Survey Program: 60-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)			
14,300.0	7,566.0	7,693.6	7,513.6	124.8	28.6	-90.20	7,172.6	-623.2	491.5	339.7	151.81	3.238	
14,400.0	7,566.0	7,693.5	7,513.5	126.5	28.6	-90.19	7,172.6	-623.2	461.8	308.3	153.56	3.008	
14,491.4	7,566.0	7,693.5	7,513.5	128.1	28.6	-90.19	7,172.6	-623.2	452.7	297.6	155.15	2.918 CC	
14,500.0	7,566.0	7,693.5	7,513.5	128.3	28.6	-90.19	7,172.6	-623.2	452.8	297.5	155.30	2.916 ES, SF	
14,600.0	7,566.0	7,693.4	7,513.4	130.0	28.6	-90.18	7,172.6	-623.2	465.6	308.5	157.05	2.964	
14,700.0	7,566.0	7,693.3	7,513.4	131.7	28.6	-90.17	7,172.6	-623.2	498.5	339.7	158.79	3.139	

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Edith Ann-Duckworth 4D-21H-O268
Project:	DJ Wattenberg	TVD Reference:	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	MD Reference:	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Edith Ann-Duckworth 4D-21H-O268	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 S21-T2N-R68W (Edith Ann-Duckworth) - DUCKWORTH 6-0-16 (EXISTING) - ENCANA WELL - SURVE												Offset Site Error:	0.0 ft
Survey Program: 59-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
17,200.0	7,566.0	7,723.8	7,492.9	175.4	31.5	86.64	10,293.1	-10.4	438.4	232.5	205.94	2.129	
17,234.1	7,566.0	7,724.2	7,493.3	176.0	31.5	86.80	10,293.1	-10.4	406.1	199.6	206.57	1.966 CC, ES, SF	

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Edith Ann-Duckworth 4D-21H-O268
Project:	DJ Wattenberg	TVD Reference:	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	MD Reference:	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Edith Ann-Duckworth 4D-21H-O268	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 S21-T2N-R68W (Edith Ann-Duckworth) - DUCKWORTH B UNIT 2 (EXISTING) - ENCANA WELL - NO S													Offset Site Error: 0.0 ft
Survey Program: 8024-Geolink 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
12,700.0	7,566.0	7,494.0	7,494.0	96.9	13.1	90.00	5,800.5	-121.3	426.6	316.7	109.93	3.880	
12,800.0	7,566.0	7,494.0	7,494.0	98.6	13.1	90.00	5,800.5	-121.3	327.9	216.2	111.67	2.936	
12,900.0	7,566.0	7,494.0	7,494.0	100.4	13.1	90.00	5,800.5	-121.3	230.3	116.8	113.41	2.030	
13,000.0	7,566.0	7,494.0	7,494.0	102.1	13.1	90.00	5,800.5	-121.3	136.2	21.0	115.15	1.182 Level 2	
13,100.0	7,566.0	7,494.0	7,494.0	103.9	13.1	90.00	5,800.5	-121.3	63.2	-53.7	116.87	0.541 Level 1	
13,122.8	7,566.0	7,494.0	7,494.0	104.3	13.1	90.00	5,800.5	-121.3	58.9	-58.3	117.26	0.503 Level 1, CC, ES, SF	
13,200.0	7,566.0	7,494.0	7,494.0	105.6	13.1	90.00	5,800.5	-121.3	97.1	-21.5	118.61	0.819 Level 1	
13,300.0	7,566.0	7,494.0	7,494.0	107.3	13.1	90.00	5,800.5	-121.3	186.7	66.4	120.35	1.551	
13,400.0	7,566.0	7,494.0	7,494.0	109.1	13.1	90.00	5,800.5	-121.3	283.4	161.3	122.09	2.321	
13,500.0	7,566.0	7,494.0	7,494.0	110.8	13.1	90.00	5,800.5	-121.3	381.8	257.9	123.83	3.083	
13,600.0	7,566.0	7,494.0	7,494.0	112.6	13.1	90.00	5,800.5	-121.3	480.8	355.2	125.58	3.829	

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Edith Ann-Duckworth 4D-21H-O268
Project:	DJ Wattenberg	TVD Reference:	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	MD Reference:	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Edith Ann-Duckworth 4D-21H-O268	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 S21-T2N-R68W (Edith Ann-Duckworth) - EDITH ANN 4-21 (EXISTING) - ENCANA WELL - SURVEYS													Offset Site Error:	0.0 ft
Survey Program: 140-Geolink MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
7,900.0	7,566.0	7,681.1	7,559.2	17.6	23.5	90.01	998.3	-3.7	456.1	419.7	36.42	12.523		
8,000.0	7,566.0	7,681.8	7,560.0	18.8	23.5	90.24	998.3	-3.7	366.1	328.4	37.67	9.717		
8,100.0	7,566.0	7,682.5	7,560.7	20.1	23.5	90.47	998.3	-3.7	282.8	243.8	38.99	7.251		
8,200.0	7,566.0	7,683.2	7,561.4	21.5	23.5	90.70	998.3	-3.7	214.2	173.9	40.38	5.306		
8,300.0	7,566.0	7,684.0	7,562.1	22.9	23.5	90.93	998.3	-3.7	178.5	136.7	41.82	4.268		
8,320.3	7,566.0	7,684.1	7,562.2	23.2	23.5	90.98	998.3	-3.7	177.3	135.2	42.12	4.210	CC, ES, SF	
8,400.0	7,566.0	7,684.7	7,562.8	24.4	23.5	91.16	998.3	-3.7	194.4	151.1	43.30	4.491		
8,500.0	7,566.0	7,685.4	7,563.5	25.9	23.5	91.39	998.3	-3.7	252.5	207.7	44.81	5.635		
8,600.0	7,566.0	7,686.1	7,564.2	27.4	23.5	91.62	998.3	-3.7	331.2	284.8	46.35	7.146		
8,700.0	7,566.0	7,686.8	7,564.9	29.0	23.5	91.86	998.3	-3.8	419.1	371.2	47.91	8.747		

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Edith Ann-Duckworth 4D-21H-O268
Project:	DJ Wattenberg	TVD Reference:	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	MD Reference:	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Edith Ann-Duckworth 4D-21H-O268	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 S21-T2N-R68W (Edith Ann-Duckworth) - EDITH ANN 6-8-21 (EXISTING) - ENCANA WELL - SURVEYS													Offset Site Error:	0.0 ft
Survey Program: 80-Geolink MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
2,700.0	2,699.3	2,888.9	2,840.8	4.8	8.9	172.49	59.5	401.6	483.7	473.6	10.17	47.561		
2,800.0	2,799.3	2,979.3	2,926.6	5.0	9.4	173.67	47.4	375.8	456.2	445.5	10.62	42.950		
2,900.0	2,899.2	3,075.2	3,017.9	5.1	9.9	174.90	35.8	348.9	429.4	418.3	11.08	38.739		
3,000.0	2,999.2	3,172.6	3,110.6	5.3	10.5	176.24	24.5	321.1	402.4	390.9	11.58	34.748		
3,100.0	3,099.2	3,265.7	3,199.2	5.5	11.0	177.67	13.9	294.9	376.0	363.9	12.09	31.099		
3,200.0	3,199.1	3,361.6	3,290.8	5.7	11.5	179.34	3.1	268.4	350.5	337.8	12.65	27.713		
3,300.0	3,299.1	3,460.4	3,385.0	5.9	12.1	-178.80	-7.3	240.3	324.5	311.2	13.24	24.511		
3,400.0	3,399.1	3,559.8	3,479.7	6.0	12.6	-177.02	-15.5	211.5	298.2	284.4	13.84	21.545		
3,500.0	3,499.0	3,656.2	3,571.3	6.2	13.2	-174.78	-24.3	182.6	271.2	256.7	14.52	18.674		
3,600.0	3,599.0	3,751.6	3,661.8	6.4	13.7	-171.97	-33.5	154.1	244.9	229.6	15.32	15.981		
3,700.0	3,699.0	3,845.5	3,750.9	6.6	14.3	-168.18	-44.0	126.1	219.7	203.4	16.32	13.465		
3,800.0	3,798.9	3,944.2	3,844.3	6.8	14.9	-163.03	-55.6	96.3	195.4	177.8	17.56	11.123		
3,900.0	3,898.9	4,038.0	3,932.9	6.9	15.5	-156.71	-66.9	67.6	172.6	153.5	19.02	9.071		
4,000.0	3,998.9	4,134.2	4,023.3	7.1	16.1	-148.01	-79.6	37.6	152.6	131.8	20.84	7.323		
4,100.0	4,098.8	4,228.9	4,111.9	7.3	16.7	-136.84	-92.8	6.9	136.7	113.9	22.79	5.999		
4,200.0	4,198.8	4,322.2	4,200.3	7.5	17.2	-125.18	-104.2	-20.8	127.7	103.4	24.35	5.246		
4,266.2	4,265.0	4,384.2	4,259.7	7.6	17.5	-117.91	-111.4	-36.8	126.1	101.1	25.05	5.035 CC, ES		
4,300.0	4,298.8	4,416.3	4,290.7	7.7	17.7	-114.47	-115.0	-44.3	126.5	101.2	25.31	4.999		
4,400.0	4,398.7	4,513.4	4,385.2	7.8	18.1	-105.60	-125.5	-64.1	130.7	105.0	25.78	5.071		
4,500.0	4,498.7	4,612.3	4,481.8	8.0	18.5	-97.94	-135.6	-82.8	137.6	111.6	25.96	5.301		
4,600.0	4,598.7	4,712.1	4,579.6	8.2	18.9	-91.52	-144.9	-100.4	145.8	119.8	25.95	5.619		
4,700.0	4,698.6	4,816.1	4,682.1	8.4	19.2	-86.53	-152.4	-116.2	153.3	127.4	25.88	5.922		
4,800.0	4,798.6	4,917.6	4,782.7	8.6	19.5	-82.96	-157.2	-129.0	159.0	133.1	25.86	6.147		
4,900.0	4,898.6	5,018.4	4,882.8	8.7	19.7	-80.26	-161.4	-140.0	164.4	138.5	25.88	6.353		
5,000.0	4,998.5	5,121.7	4,985.7	8.9	19.9	-78.46	-164.5	-148.6	168.5	142.5	25.98	6.483		
5,100.0	5,098.5	5,224.6	5,088.4	9.1	20.1	-77.49	-166.1	-154.5	170.6	144.5	26.18	6.519		
5,200.0	5,198.5	5,325.3	5,189.1	9.3	20.2	-77.07	-166.8	-158.6	171.6	145.2	26.43	6.495		
5,300.0	5,298.4	5,428.2	5,291.9	9.5	20.3	-77.10	-167.0	-161.2	171.8	145.0	26.74	6.424		
5,400.0	5,398.4	5,529.2	5,392.8	9.6	20.4	-77.35	-166.1	-162.8	170.8	143.7	27.08	6.306		
5,500.0	5,498.4	5,630.0	5,493.6	9.8	20.5	-77.92	-165.0	-163.4	169.2	141.8	27.45	6.164		
5,600.0	5,598.3	5,730.7	5,594.3	10.0	20.6	-78.61	-163.4	-163.6	167.2	139.4	27.84	6.006		
5,700.0	5,698.3	5,829.8	5,693.5	10.2	20.7	-79.35	-161.8	-163.7	165.1	136.9	28.23	5.849		
5,800.0	5,798.3	5,927.9	5,791.5	10.4	20.7	-80.23	-161.2	-163.6	164.0	135.4	28.63	5.730		
5,885.8	5,884.0	6,012.9	5,876.6	10.5	20.8	-81.06	-161.4	-163.4	163.9	134.9	28.98	5.654		
5,900.0	5,898.2	6,027.1	5,890.7	10.5	20.8	-81.19	-161.5	-163.4	163.9	134.8	29.04	5.643		
6,000.0	5,998.2	6,126.7	5,990.3	10.7	20.9	-82.10	-162.1	-163.4	164.1	134.6	29.45	5.572		
6,100.0	6,098.2	6,227.4	6,091.0	10.9	21.0	-82.98	-162.5	-163.5	164.2	134.3	29.85	5.501		
6,200.0	6,198.1	6,327.8	6,191.5	11.1	21.1	-83.85	-162.5	-163.6	163.9	133.6	30.24	5.419		
6,300.0	6,298.1	6,427.6	6,291.2	11.3	21.2	-84.67	-162.4	-163.8	163.6	133.0	30.63	5.341		
6,400.0	6,398.1	6,527.4	6,391.0	11.4	21.3	-85.46	-162.5	-164.2	163.5	132.5	31.01	5.271		
6,443.6	6,441.6	6,570.9	6,434.5	11.5	21.3	-85.81	-162.6	-164.3	163.5	132.3	31.18	5.243		
6,500.0	6,498.0	6,627.2	6,490.8	11.6	21.4	-86.27	-162.7	-164.5	163.5	132.1	31.39	5.208		
6,600.0	6,598.0	6,727.8	6,591.5	11.8	21.5	-87.15	-162.7	-164.5	163.4	131.6	31.77	5.143		
6,700.0	6,698.0	6,828.5	6,692.1	12.0	21.6	-88.21	-162.3	-164.1	162.9	130.7	32.16	5.065		
6,800.0	6,797.9	6,928.3	6,791.9	12.2	21.7	-89.20	-161.8	-163.9	162.3	129.8	32.56	4.985		
6,900.0	6,897.9	7,028.2	6,891.8	12.3	21.8	-89.96	-161.4	-164.3	161.9	128.9	32.93	4.916		
6,991.9	6,989.8	7,120.4	6,984.0	12.5	21.9	-106.52	-160.9	-164.7	161.7	128.5	33.26	4.863		
7,000.0	6,997.9	7,128.4	6,992.0	12.5	21.9	-107.89	-160.9	-164.7	161.4	128.1	33.29	4.848 SF		
7,100.0	7,097.2	7,228.1	7,091.7	12.7	22.0	-173.24	-160.2	-164.9	170.2	137.1	33.13	5.138		
7,200.0	7,193.5	7,324.8	7,188.4	12.9	22.1	-177.65	-159.4	-165.3	196.1	164.0	32.16	6.099		
7,300.0	7,283.6	7,415.0	7,278.6	13.2	22.2	-179.31	-158.7	-165.7	238.4	207.9	30.42	7.835		
7,400.0	7,364.9	7,496.2	7,359.8	13.5	22.2	179.74	-158.1	-165.8	295.8	267.8	28.05	10.544		

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 Edith Ann-Duckworth 4D-21H-O268
Project:	DJ Wattenberg	TVD Reference:	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	MD Reference:	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Edith Ann-Duckworth 4D-21H-O268	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

S21-T2N-R68W (Edith Ann-Duckworth) - EDITH ANN 6-8-21 (EXISTING) - ENCANA WELL - SURVEYS												Offset Site Error:	0.0 ft	
Survey Program: 80-Geolink MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance					Warning		
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Total Uncertainty Axis		Separation Factor	
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)				
7,500.0	7,435.0	7,567.0	7,430.6	14.0	22.3	179.00	-157.7	-165.7	366.6	341.4	25.23		14.531	
7,600.0	7,491.6	7,625.0	7,488.6	14.6	22.4	178.21	-157.3	-165.5	448.5	426.2	22.22	20.180		

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Edith Ann-Duckworth 4D-21H-O268
Project:	DJ Wattenberg	TVD Reference:	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	MD Reference:	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Edith Ann-Duckworth 4D-21H-O268	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 S21-T2N-R68W (Edith Ann-Duckworth) - Edith Ann-Duckworth 4A-21H-O268 - Hz - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-Geolink 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	-89.95	0.0	-30.8	30.8					
100.0	100.0	99.0	99.0	0.1	0.1	-89.95	0.0	-30.8	30.8	0.26	118.099			
200.0	200.0	199.0	199.0	0.3	0.3	-89.95	0.0	-30.8	30.8	0.61	50.505 CC, ES			
300.0	300.0	298.5	298.5	0.5	0.5	-89.95	0.0	-31.6	31.6	0.96	32.994			
400.0	400.0	397.9	397.8	0.7	0.7	-89.95	0.0	-34.2	34.2	1.31	26.077			
500.0	500.0	497.1	497.0	0.8	0.8	-89.94	0.0	-38.5	38.5	1.67	23.029			
600.0	600.0	596.3	596.0	1.0	1.0	-0.09	0.1	-44.5	43.7	2.00	21.840			
700.0	700.0	695.3	694.7	1.2	1.3	-0.09	0.1	-52.2	49.1	2.35	20.906			
800.0	799.9	794.2	793.1	1.4	1.5	-0.09	0.1	-61.5	56.0	2.70	20.778 SF			
900.0	899.9	892.8	891.1	1.5	1.7	-0.08	0.1	-72.6	64.6	3.04	21.248			
1,000.0	999.9	991.1	988.5	1.7	2.0	-0.08	0.1	-85.3	75.0	3.39	22.130			
1,100.0	1,099.8	1,088.9	1,085.4	1.9	2.3	-0.07	0.2	-99.6	87.0	3.73	23.308			
1,200.0	1,199.8	1,186.4	1,181.5	2.1	2.6	-0.07	0.2	-115.5	100.8	4.08	24.707			
1,300.0	1,299.8	1,283.4	1,276.9	2.3	2.9	-0.06	0.3	-132.9	116.2	4.42	26.273			
1,400.0	1,399.7	1,380.4	1,372.1	2.4	3.3	-0.06	0.3	-151.9	133.2	4.77	27.951			
1,500.0	1,499.7	1,478.8	1,468.5	2.6	3.7	-0.06	0.3	-171.6	150.7	5.11	29.478			
1,600.0	1,599.7	1,577.3	1,565.0	2.8	4.0	-0.06	0.4	-191.3	168.1	5.46	30.812			
1,700.0	1,699.6	1,675.8	1,661.5	3.0	4.4	-0.06	0.4	-211.0	185.6	5.80	31.987			
1,800.0	1,799.6	1,774.2	1,757.9	3.2	4.8	-0.06	0.5	-230.7	203.1	6.15	33.031			
1,900.0	1,899.6	1,872.7	1,854.4	3.3	5.2	-0.05	0.5	-250.4	220.6	6.49	33.963			
2,000.0	1,999.5	1,971.2	1,950.9	3.5	5.6	-0.05	0.6	-270.1	238.1	6.84	34.801			
2,100.0	2,099.5	2,069.6	2,047.3	3.7	6.0	-0.05	0.6	-289.8	255.5	7.19	35.559			
2,200.0	2,199.5	2,168.1	2,143.8	3.9	6.3	-0.05	0.6	-309.6	273.0	7.53	36.248			
2,300.0	2,299.4	2,266.5	2,240.3	4.1	6.7	-0.05	0.7	-329.3	290.5	7.88	36.876			
2,400.0	2,399.4	2,365.0	2,336.7	4.2	7.1	-0.05	0.7	-349.0	308.0	8.22	37.451			
2,500.0	2,499.4	2,463.5	2,433.2	4.4	7.5	-0.05	0.8	-368.7	325.4	8.57	37.980			
2,600.0	2,599.3	2,561.9	2,529.7	4.6	7.9	-0.05	0.8	-388.4	342.9	8.91	38.468			
2,700.0	2,699.3	2,660.4	2,626.1	4.8	8.3	-0.05	0.9	-408.1	360.4	9.26	38.919			
2,800.0	2,799.3	2,758.8	2,722.6	5.0	8.7	-0.05	0.9	-427.8	377.9	9.61	39.339			
2,900.0	2,899.2	2,857.3	2,819.1	5.1	9.0	-0.05	0.9	-447.5	395.3	9.95	39.729			
3,000.0	2,999.2	2,955.8	2,915.6	5.3	9.4	-0.05	1.0	-467.2	412.8	10.30	40.093			
3,100.0	3,099.2	3,054.2	3,012.0	5.5	9.8	-0.05	1.0	-487.0	430.3	10.64	40.433			
3,200.0	3,199.1	3,152.7	3,108.5	5.7	10.2	-0.05	1.1	-506.7	447.8	10.99	40.752			
3,300.0	3,299.1	3,251.1	3,205.0	5.9	10.6	-0.05	1.1	-526.4	465.3	11.33	41.051			
3,400.0	3,399.1	3,349.6	3,301.4	6.0	11.0	-0.05	1.2	-546.1	482.7	11.68	41.333			

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Edith Ann-Duckworth 4D-21H-O268
Project:	DJ Wattenberg	TVD Reference:	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	MD Reference:	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Edith Ann-Duckworth 4D-21H-O268	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 S21-T2N-R68W (Edith Ann-Duckworth) - Edith Ann-Duckworth 4B-21H-O268 - Hz - Plan #1													Offset Site Error:	0.0 ft
Survey Program: O-Geolink 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)	Between Centres (ft)				Between Ellipses (ft)	
0.0	0.0	0.0	0.0	0.0	0.0	-89.95	0.0	-19.6	19.6					
100.0	100.0	100.0	100.0	0.1	0.1	-89.95	0.0	-19.6	19.6	19.3	0.26	74.778		
200.0	200.0	200.0	200.0	0.3	0.3	-89.95	0.0	-19.6	19.6	19.0	0.61	32.048		
300.0	300.0	300.0	300.0	0.5	0.5	-89.95	0.0	-19.6	19.6	18.6	0.96	20.394 CC, ES		
400.0	400.0	399.6	399.6	0.7	0.7	-89.95	0.0	-20.4	20.4	19.1	1.31	15.619		
500.0	500.0	499.2	499.2	0.8	0.8	-89.94	0.0	-23.0	23.1	21.4	1.66	13.874		
600.0	600.0	598.7	598.6	1.0	1.0	-0.10	0.0	-27.4	26.5	24.5	2.00	13.231		
700.0	700.0	698.2	697.9	1.2	1.2	-0.10	0.0	-33.4	30.2	27.9	2.35	12.845 SF		
800.0	799.9	797.5	796.9	1.4	1.4	-0.10	0.1	-41.2	35.4	32.7	2.70	13.125		
900.0	899.9	896.6	895.5	1.5	1.6	-0.10	0.1	-50.6	42.4	39.4	3.05	13.909		
1,000.0	999.9	995.4	993.7	1.7	1.9	-0.09	0.1	-61.7	51.1	47.7	3.40	15.042		
1,100.0	1,099.8	1,094.3	1,091.7	1.9	2.2	-0.09	0.1	-74.4	61.4	57.6	3.74	16.393		
1,200.0	1,199.8	1,193.7	1,190.3	2.1	2.4	-0.09	0.1	-87.5	72.0	67.9	4.09	17.596		
1,300.0	1,299.8	1,293.1	1,288.9	2.3	2.7	-0.08	0.2	-100.7	82.6	78.2	4.44	18.610		
1,400.0	1,399.7	1,392.6	1,387.4	2.4	3.0	-0.08	0.2	-113.8	93.2	88.4	4.79	19.477		
1,500.0	1,499.7	1,492.0	1,486.0	2.6	3.2	-0.08	0.2	-126.9	103.9	98.7	5.13	20.226		
1,600.0	1,599.7	1,591.4	1,584.6	2.8	3.5	-0.08	0.2	-140.0	114.5	109.0	5.48	20.881		
1,700.0	1,699.6	1,690.9	1,683.1	3.0	3.8	-0.08	0.3	-153.2	125.1	119.3	5.83	21.457		
1,800.0	1,799.6	1,790.3	1,781.7	3.2	4.1	-0.08	0.3	-166.3	135.7	129.6	6.18	21.969		
1,900.0	1,899.6	1,889.7	1,880.3	3.3	4.4	-0.08	0.3	-179.4	146.4	139.8	6.53	22.426		
2,000.0	1,999.5	1,989.2	1,978.8	3.5	4.7	-0.08	0.3	-192.5	157.0	150.1	6.87	22.837		
2,100.0	2,099.5	2,088.6	2,077.4	3.7	4.9	-0.08	0.4	-205.6	167.6	160.4	7.22	23.208		
2,200.0	2,199.5	2,188.0	2,175.9	3.9	5.2	-0.08	0.4	-218.8	178.2	170.7	7.57	23.545		
2,300.0	2,299.4	2,287.5	2,274.5	4.1	5.5	-0.08	0.4	-231.9	188.9	181.0	7.92	23.853		
2,400.0	2,399.4	2,386.9	2,373.1	4.2	5.8	-0.08	0.4	-245.0	199.5	191.2	8.27	24.134		
2,500.0	2,499.4	2,486.3	2,471.6	4.4	6.1	-0.08	0.5	-258.1	210.1	201.5	8.61	24.393		
2,600.0	2,599.3	2,585.8	2,570.2	4.6	6.4	-0.08	0.5	-271.2	220.7	211.8	8.96	24.632		
2,700.0	2,699.3	2,685.2	2,668.8	4.8	6.7	-0.08	0.5	-284.4	231.4	222.1	9.31	24.853		
2,800.0	2,799.3	2,784.6	2,767.3	5.0	6.9	-0.08	0.5	-297.5	242.0	232.3	9.66	25.058		
2,900.0	2,899.2	2,884.1	2,865.9	5.1	7.2	-0.08	0.6	-310.6	252.6	242.6	10.01	25.249		
3,000.0	2,999.2	2,983.5	2,964.5	5.3	7.5	-0.08	0.6	-323.7	263.3	252.9	10.35	25.427		
3,100.0	3,099.2	3,082.9	3,063.0	5.5	7.8	-0.08	0.6	-336.8	273.9	263.2	10.70	25.594		
3,200.0	3,199.1	3,182.4	3,161.6	5.7	8.1	-0.08	0.6	-350.0	284.5	273.5	11.05	25.750		
3,300.0	3,299.1	3,281.8	3,260.2	5.9	8.4	-0.07	0.7	-363.1	295.1	283.7	11.40	25.896		
3,400.0	3,399.1	3,381.2	3,358.7	6.0	8.7	-0.07	0.7	-376.2	305.8	294.0	11.74	26.034		
3,500.0	3,499.0	3,480.7	3,457.3	6.2	9.0	-0.07	0.7	-389.3	316.4	304.3	12.09	26.164		
3,600.0	3,599.0	3,580.1	3,555.8	6.4	9.2	-0.07	0.7	-402.5	327.0	314.6	12.44	26.286		
3,700.0	3,699.0	3,679.5	3,654.4	6.6	9.5	-0.07	0.8	-415.6	337.6	324.8	12.79	26.402		
3,800.0	3,798.9	3,779.0	3,753.0	6.8	9.8	-0.07	0.8	-428.7	348.3	335.1	13.14	26.512		
3,900.0	3,898.9	3,878.4	3,851.5	6.9	10.1	-0.07	0.8	-441.8	358.9	345.4	13.48	26.616		
4,000.0	3,998.9	3,977.8	3,950.1	7.1	10.4	-0.07	0.8	-454.9	369.5	355.7	13.83	26.715		
4,100.0	4,098.8	4,077.3	4,048.7	7.3	10.7	-0.07	0.9	-468.1	380.1	366.0	14.18	26.809		
4,200.0	4,198.8	4,176.7	4,147.2	7.5	11.0	-0.07	0.9	-481.2	390.8	376.2	14.53	26.899		
4,300.0	4,298.8	4,276.1	4,245.8	7.7	11.3	-0.07	0.9	-494.3	401.4	386.5	14.88	26.984		
4,400.0	4,398.7	4,375.6	4,344.4	7.8	11.5	-0.07	0.9	-507.4	412.0	396.8	15.22	27.066		
4,500.0	4,498.7	4,475.0	4,442.9	8.0	11.8	-0.07	1.0	-520.5	422.6	407.1	15.57	27.144		
4,600.0	4,598.7	4,574.4	4,541.5	8.2	12.1	-0.07	1.0	-533.7	433.3	417.4	15.92	27.218		
4,700.0	4,698.6	4,673.9	4,640.1	8.4	12.4	-0.07	1.0	-546.8	443.9	427.6	16.27	27.289		
4,800.0	4,798.6	4,773.3	4,738.6	8.6	12.7	-0.07	1.0	-559.9	454.5	437.9	16.61	27.357		
4,900.0	4,898.6	4,872.7	4,837.2	8.7	13.0	-0.07	1.0	-573.0	465.1	448.2	16.96	27.423		
5,000.0	4,998.5	4,972.2	4,935.7	8.9	13.3	-0.07	1.1	-586.1	475.8	458.5	17.31	27.486		
5,100.0	5,098.5	5,071.6	5,034.3	9.1	13.6	-0.07	1.1	-599.3	486.4	468.7	17.66	27.546		

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 Edith Ann-Duckworth 4D-21H-O268
Project:	DJ Wattenberg	TVD Reference:	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	MD Reference:	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Edith Ann-Duckworth 4D-21H-O268	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 S21-T2N-R68W (Edith Ann-Duckworth) - Edith Ann-Duckworth 4B-21H-O268 - Hz - Plan #1													Offset Site Error: 0.0 ft
Survey Program: 0-Geolink MWD													Offset Well Error: 0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	
5,200.0	5,198.5	5,171.0	5,132.9	9.3	13.9	-0.07	1.1	-612.4	497.0	479.0	18.01	27.604	

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Edith Ann-Duckworth 4D-21H-O268
Project:	DJ Wattenberg	TVD Reference:	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	MD Reference:	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Edith Ann-Duckworth 4D-21H-O268	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 S21-T2N-R68W (Edith Ann-Duckworth) - Edith Ann-Duckworth 4C-21H-O268 - Hz - Plan #1													Offset Site Error:	0.0 ft
Survey Program: O-Geolink MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	-89.96	0.0	-11.2	11.2					
100.0	100.0	100.0	100.0	0.1	0.1	-89.96	0.0	-11.2	11.2	10.9	0.26	42.731		
200.0	200.0	200.0	200.0	0.3	0.3	-89.96	0.0	-11.2	11.2	10.6	0.61	18.313		
300.0	300.0	300.0	300.0	0.5	0.5	-89.96	0.0	-11.2	11.2	10.2	0.96	11.654		
400.0	400.0	400.0	400.0	0.7	0.7	-89.96	0.0	-11.2	11.2	9.9	1.31	8.546 CC, ES		
500.0	500.0	499.8	499.8	0.8	0.8	-89.93	0.0	-12.1	12.1	10.4	1.66	7.271		
600.0	600.0	599.6	599.5	1.0	1.0	-0.02	0.0	-14.7	13.8	11.8	2.01	6.877		
700.0	700.0	699.4	699.2	1.2	1.2	0.07	0.1	-18.9	15.7	13.3	2.35	6.654		
800.0	799.9	799.3	799.1	1.4	1.4	0.15	0.1	-23.5	17.7	15.0	2.70	6.554		
900.0	899.9	899.3	899.0	1.5	1.6	0.21	0.2	-28.2	19.8	16.7	3.05	6.477		
1,000.0	999.9	999.3	998.9	1.7	1.8	0.26	0.2	-32.8	21.8	18.4	3.40	6.415		
1,100.0	1,099.8	1,099.3	1,098.7	1.9	1.9	0.30	0.2	-37.5	23.9	20.1	3.75	6.366		
1,200.0	1,199.8	1,199.3	1,198.6	2.1	2.1	0.33	0.3	-42.1	25.9	21.8	4.10	6.324		
1,300.0	1,299.8	1,299.2	1,298.5	2.3	2.3	0.36	0.3	-46.7	28.0	23.5	4.45	6.290		
1,400.0	1,399.7	1,399.2	1,398.3	2.4	2.5	0.39	0.4	-51.4	30.0	25.2	4.80	6.260		
1,500.0	1,499.7	1,499.2	1,498.2	2.6	2.7	0.41	0.4	-56.0	32.1	26.9	5.15	6.234		
1,600.0	1,599.7	1,599.2	1,598.1	2.8	2.9	0.43	0.4	-60.7	34.1	28.6	5.50	6.212		
1,700.0	1,699.6	1,699.2	1,698.0	3.0	3.1	0.45	0.5	-65.3	36.2	30.4	5.85	6.192		
1,800.0	1,799.6	1,799.1	1,797.8	3.2	3.3	0.46	0.5	-69.9	38.2	32.1	6.19	6.174		
1,900.0	1,899.6	1,899.1	1,897.7	3.3	3.5	0.47	0.5	-74.6	40.3	33.8	6.54	6.159		
2,000.0	1,999.5	1,999.1	1,997.6	3.5	3.7	0.49	0.6	-79.2	42.4	35.5	6.89	6.145		
2,100.0	2,099.5	2,099.1	2,097.4	3.7	3.8	0.50	0.6	-83.8	44.4	37.2	7.24	6.132		
2,200.0	2,199.5	2,199.1	2,197.3	3.9	4.0	0.51	0.7	-88.5	46.5	38.9	7.59	6.120		
2,300.0	2,299.4	2,299.0	2,297.2	4.1	4.2	0.52	0.7	-93.1	48.5	40.6	7.94	6.110		
2,400.0	2,399.4	2,399.0	2,397.1	4.2	4.4	0.53	0.7	-97.8	50.6	42.3	8.29	6.100		
2,500.0	2,499.4	2,499.0	2,496.9	4.4	4.6	0.53	0.8	-102.4	52.6	44.0	8.64	6.091		
2,600.0	2,599.3	2,599.0	2,596.8	4.6	4.8	0.54	0.8	-107.0	54.7	45.7	8.99	6.083		
2,700.0	2,699.3	2,698.9	2,696.7	4.8	5.0	0.55	0.9	-111.7	56.7	47.4	9.34	6.076		
2,800.0	2,799.3	2,798.9	2,796.5	5.0	5.2	0.56	0.9	-116.3	58.8	49.1	9.69	6.069		
2,900.0	2,899.2	2,898.9	2,896.4	5.1	5.4	0.56	0.9	-121.0	60.8	50.8	10.03	6.062		
3,000.0	2,999.2	2,998.9	2,996.3	5.3	5.6	0.57	1.0	-125.6	62.9	52.5	10.38	6.056		
3,100.0	3,099.2	3,098.9	3,096.1	5.5	5.8	0.57	1.0	-130.2	64.9	54.2	10.73	6.050		
3,200.0	3,199.1	3,198.8	3,196.0	5.7	6.0	0.58	1.1	-134.9	67.0	55.9	11.08	6.045		
3,300.0	3,299.1	3,298.8	3,295.9	5.9	6.2	0.58	1.1	-139.5	69.0	57.6	11.43	6.040		
3,400.0	3,399.1	3,398.8	3,395.8	6.0	6.3	0.59	1.1	-144.1	71.1	59.3	11.78	6.035		
3,500.0	3,499.0	3,498.8	3,495.6	6.2	6.5	0.59	1.2	-148.8	73.1	61.0	12.13	6.031		
3,600.0	3,599.0	3,598.8	3,595.5	6.4	6.7	0.59	1.2	-153.4	75.2	62.7	12.48	6.027		
3,700.0	3,699.0	3,698.7	3,695.4	6.6	6.9	0.60	1.3	-158.1	77.3	64.4	12.83	6.023		
3,800.0	3,798.9	3,798.7	3,795.2	6.8	7.1	0.60	1.3	-162.7	79.3	66.1	13.18	6.019		
3,900.0	3,898.9	3,898.7	3,895.1	6.9	7.3	0.60	1.3	-167.3	81.4	67.8	13.53	6.015		
4,000.0	3,998.9	3,998.7	3,995.0	7.1	7.5	0.61	1.4	-172.0	83.4	69.5	13.87	6.012		
4,100.0	4,098.8	4,098.7	4,094.9	7.3	7.7	0.61	1.4	-176.6	85.5	71.2	14.22	6.009		
4,200.0	4,198.8	4,198.6	4,194.7	7.5	7.9	0.61	1.5	-181.2	87.5	72.9	14.57	6.006		
4,300.0	4,298.8	4,298.6	4,294.6	7.7	8.1	0.62	1.5	-185.9	89.6	74.7	14.92	6.003		
4,400.0	4,398.7	4,398.6	4,394.5	7.8	8.3	0.62	1.5	-190.5	91.6	76.4	15.27	6.000		
4,500.0	4,498.7	4,498.6	4,494.3	8.0	8.5	0.62	1.6	-195.2	93.7	78.1	15.62	5.997		
4,600.0	4,598.7	4,598.5	4,594.2	8.2	8.7	0.62	1.6	-199.8	95.7	79.8	15.97	5.995		
4,700.0	4,698.6	4,698.5	4,694.1	8.4	8.8	0.63	1.7	-204.4	97.8	81.5	16.32	5.992		
4,800.0	4,798.6	4,798.5	4,794.0	8.6	9.0	0.63	1.7	-209.1	99.8	83.2	16.67	5.990		
4,900.0	4,898.6	4,898.5	4,893.8	8.7	9.2	0.63	1.7	-213.7	101.9	84.9	17.02	5.988		
5,000.0	4,998.5	4,998.5	4,993.7	8.9	9.4	0.63	1.8	-218.4	103.9	86.6	17.37	5.986		
5,100.0	5,098.5	5,098.4	5,093.6	9.1	9.6	0.63	1.8	-223.0	106.0	88.3	17.71	5.984		

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 Edith Ann-Duckworth 4D-21H-O268
Project:	DJ Wattenberg	TVD Reference:	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	MD Reference:	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Edith Ann-Duckworth 4D-21H-O268	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 S21-T2N-R68W (Edith Ann-Duckworth) - Edith Ann-Duckworth 4C-21H-O268 - Hz - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-Geolink 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)				
5,200.0	5,198.5	5,198.4	5,193.4	9.3	9.8	0.64	1.9	-227.6	108.0	90.0	18.06	5.982		
5,300.0	5,298.4	5,298.4	5,293.3	9.5	10.0	0.64	1.9	-232.3	110.1	91.7	18.41	5.980		
5,400.0	5,398.4	5,398.4	5,393.2	9.6	10.2	0.64	1.9	-236.9	112.2	93.4	18.76	5.978		
5,500.0	5,498.4	5,498.4	5,493.1	9.8	10.4	0.64	2.0	-241.5	114.2	95.1	19.11	5.976		
5,600.0	5,598.3	5,598.3	5,592.9	10.0	10.6	0.64	2.0	-246.2	116.3	96.8	19.46	5.974		
5,700.0	5,698.3	5,698.3	5,692.8	10.2	10.8	0.64	2.0	-250.8	118.3	98.5	19.81	5.973		
5,800.0	5,798.3	5,798.3	5,792.7	10.4	11.0	0.65	2.1	-255.5	120.4	100.2	20.16	5.971		
5,900.0	5,898.2	5,898.3	5,892.5	10.5	11.1	0.65	2.1	-260.1	122.4	101.9	20.51	5.970		
6,000.0	5,998.2	5,998.3	5,992.4	10.7	11.3	0.65	2.2	-264.7	124.5	103.6	20.86	5.968		
6,100.0	6,098.2	6,098.2	6,092.3	10.9	11.5	0.65	2.2	-269.4	126.5	105.3	21.20	5.967		
6,200.0	6,198.1	6,198.2	6,192.2	11.1	11.7	0.65	2.2	-274.0	128.6	107.0	21.55	5.965		
6,300.0	6,298.1	6,298.2	6,292.0	11.3	11.9	0.65	2.3	-278.7	130.6	108.7	21.90	5.964		
6,400.0	6,398.1	6,398.2	6,391.9	11.4	12.1	0.65	2.3	-283.3	132.7	110.4	22.25	5.963		
6,500.0	6,498.0	6,498.1	6,491.8	11.6	12.3	0.65	2.4	-287.9	134.7	112.1	22.60	5.961		
6,600.0	6,598.0	6,598.1	6,591.6	11.8	12.5	0.66	2.4	-292.6	136.8	113.8	22.95	5.960		
6,700.0	6,698.0	6,698.1	6,691.5	12.0	12.7	0.66	2.4	-297.2	138.8	115.5	23.30	5.959		
6,800.0	6,797.9	6,797.9	6,791.2	12.2	12.9	0.78	2.8	-301.8	140.9	117.3	23.65	5.958		
6,900.0	6,897.9	6,895.5	6,887.9	12.3	13.1	5.37	14.3	-306.5	143.8	119.8	24.00	5.994		
7,000.0	6,997.9	6,986.7	6,975.2	12.5	13.3	-2.13	39.8	-311.0	151.7	127.3	24.36	6.225		
7,100.0	7,097.2	7,071.7	7,052.1	12.7	13.5	-55.82	75.7	-315.2	166.7	142.0	24.69	6.750		
7,200.0	7,193.5	7,150.0	7,117.4	12.9	13.8	-51.47	118.6	-319.0	185.2	160.4	24.75	7.484		
7,300.0	7,283.6	7,232.5	7,179.3	13.2	14.1	-46.20	172.9	-322.8	204.5	180.1	24.45	8.365		
7,400.0	7,364.9	7,309.6	7,229.5	13.5	14.5	-42.20	231.2	-326.2	223.0	199.2	23.86	9.346		
7,500.0	7,435.0	7,385.1	7,270.7	14.0	15.1	-39.24	294.4	-329.2	239.4	216.2	23.17	10.334		
7,600.0	7,491.6	7,459.4	7,302.7	14.6	15.7	-37.18	361.3	-331.9	252.9	230.3	22.61	11.184		
7,700.0	7,533.0	7,532.9	7,325.7	15.5	16.3	-35.87	431.0	-334.1	262.9	240.4	22.48	11.694		
7,800.0	7,558.1	7,600.0	7,338.7	16.5	17.0	-35.23	496.8	-335.9	269.3	246.3	22.99	11.714		
7,900.0	7,566.0	7,678.8	7,344.0	17.6	17.9	-35.18	575.3	-337.5	271.6	247.3	24.36	11.153		
8,000.0	7,566.0	7,778.8	7,344.0	18.8	19.1	-35.48	675.3	-339.2	272.6	246.7	25.90	10.528		
8,100.0	7,566.0	7,878.8	7,344.0	20.1	20.4	-35.78	775.3	-341.0	273.7	246.1	27.53	9.939		
8,200.0	7,566.0	7,978.7	7,344.0	21.5	21.8	-36.08	875.2	-342.7	274.7	245.4	29.26	9.389		
8,300.0	7,566.0	8,078.7	7,344.0	22.9	23.2	-36.37	975.2	-344.5	275.7	244.7	31.06	8.877		
8,400.0	7,566.0	8,178.7	7,344.0	24.4	24.6	-36.66	1,075.2	-346.2	276.8	243.8	32.94	8.403		
8,500.0	7,566.0	8,278.7	7,344.0	25.9	26.1	-36.95	1,175.1	-348.0	277.8	242.9	34.87	7.966		
8,600.0	7,566.0	8,378.7	7,344.0	27.4	27.6	-37.23	1,275.1	-349.7	278.9	242.0	36.87	7.563		
8,700.0	7,566.0	8,478.7	7,344.0	29.0	29.2	-37.52	1,375.1	-351.5	279.9	241.0	38.92	7.191		
8,800.0	7,566.0	8,578.6	7,344.0	30.5	30.7	-37.80	1,475.1	-353.2	281.0	240.0	41.03	6.849		
8,900.0	7,566.0	8,678.6	7,344.0	32.1	32.3	-38.08	1,575.0	-355.0	282.1	238.9	43.17	6.533		
9,000.0	7,566.0	8,778.6	7,344.0	33.7	33.9	-38.36	1,675.0	-356.7	283.1	237.8	45.36	6.241		
9,100.0	7,566.0	8,878.6	7,344.0	35.4	35.5	-38.64	1,775.0	-358.4	284.2	236.6	47.60	5.971		
9,200.0	7,566.0	8,978.6	7,344.0	37.0	37.2	-38.91	1,874.9	-360.2	285.3	235.4	49.87	5.722		
9,300.0	7,566.0	9,078.6	7,344.0	38.6	38.8	-39.18	1,974.9	-361.9	286.4	234.2	52.17	5.490		
9,400.0	7,566.0	9,178.6	7,344.0	40.3	40.5	-39.45	2,074.9	-363.7	287.5	233.0	54.51	5.274		
9,500.0	7,566.0	9,278.5	7,344.0	42.0	42.1	-39.72	2,174.8	-365.4	288.6	231.7	56.88	5.074		
9,600.0	7,566.0	9,378.5	7,344.0	43.6	43.8	-39.98	2,274.8	-367.2	289.7	230.5	59.29	4.887		
9,700.0	7,566.0	9,478.5	7,344.0	45.3	45.4	-40.25	2,374.8	-368.9	290.9	229.2	61.72	4.713		
9,800.0	7,566.0	9,578.5	7,344.0	47.0	47.1	-40.51	2,474.7	-370.7	292.0	227.8	64.18	4.550		
9,900.0	7,566.0	9,678.5	7,344.0	48.7	48.8	-40.77	2,574.7	-372.4	293.1	226.5	66.67	4.397		
10,000.0	7,566.0	9,778.5	7,344.0	50.4	50.5	-41.02	2,674.7	-374.1	294.3	225.1	69.19	4.253		
10,100.0	7,566.0	9,878.4	7,344.0	52.1	52.2	-41.28	2,774.7	-375.9	295.4	223.7	71.73	4.119		
10,200.0	7,566.0	9,978.4	7,344.0	53.8	53.9	-41.53	2,874.6	-377.6	296.6	222.3	74.30	3.992		
10,300.0	7,566.0	10,078.4	7,344.0	55.5	55.6	-41.78	2,974.6	-379.4	297.7	220.9	76.89	3.873		

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 Edith Ann-Duckworth 4D-21H-O268
Project:	DJ Wattenberg	TVD Reference:	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	MD Reference:	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Edith Ann-Duckworth 4D-21H-O268	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 S21-T2N-R68W (Edith Ann-Duckworth) - Edith Ann-Duckworth 4C-21H-O268 - Hz - Plan #1													Offset Site Error:	0.0 ft
Survey Program: O-Geolink 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)				
10,400.0	7,566.0	10,178.4	7,344.0	57.2	57.3	-42.03	3,074.6	-381.1	298.9	219.4	79.50	3.760		
10,500.0	7,566.0	10,278.4	7,344.0	58.9	59.0	-42.28	3,174.5	-382.9	300.1	217.9	82.13	3.654		
10,600.0	7,566.0	10,378.4	7,344.0	60.6	60.7	-42.53	3,274.5	-384.6	301.3	216.5	84.79	3.553		
10,700.0	7,566.0	10,478.4	7,344.0	62.3	62.4	-42.77	3,374.5	-386.4	302.4	215.0	87.47	3.458		
10,800.0	7,566.0	10,578.3	7,344.0	64.0	64.1	-43.01	3,474.4	-388.1	303.6	213.5	90.17	3.367		
10,900.0	7,566.0	10,678.3	7,344.0	65.8	65.8	-43.25	3,574.4	-389.9	304.8	211.9	92.89	3.282		
11,000.0	7,566.0	10,778.3	7,344.0	67.5	67.6	-43.49	3,674.4	-391.6	306.0	210.4	95.63	3.200		
11,100.0	7,566.0	10,878.3	7,344.0	69.2	69.3	-43.73	3,774.4	-393.3	307.2	208.8	98.38	3.123		
11,200.0	7,566.0	10,978.3	7,344.0	70.9	71.0	-43.96	3,874.3	-395.1	308.4	207.3	101.16	3.049		
11,300.0	7,566.0	11,078.3	7,344.0	72.6	72.7	-44.19	3,974.3	-396.8	309.6	205.7	103.95	2.979		
11,400.0	7,566.0	11,178.2	7,344.0	74.4	74.5	-44.42	4,074.3	-398.6	310.9	204.1	106.77	2.912		
11,500.0	7,566.0	11,278.2	7,344.0	76.1	76.2	-44.65	4,174.2	-400.3	312.1	202.5	109.59	2.848		
11,600.0	7,566.0	11,378.2	7,344.0	77.8	77.9	-44.88	4,274.2	-402.1	313.3	200.9	112.44	2.787		
11,700.0	7,566.0	11,478.2	7,344.0	79.6	79.6	-45.10	4,374.2	-403.8	314.6	199.3	115.30	2.728		
11,800.0	7,566.0	11,578.2	7,344.0	81.3	81.4	-45.33	4,474.1	-405.6	315.8	197.6	118.18	2.672		
11,900.0	7,566.0	11,678.2	7,344.0	83.0	83.1	-45.55	4,574.1	-407.3	317.0	196.0	121.07	2.619		
12,000.0	7,566.0	11,778.2	7,344.0	84.8	84.8	-45.77	4,674.1	-409.0	318.3	194.3	123.98	2.567		
12,100.0	7,566.0	11,878.1	7,344.0	86.5	86.6	-45.99	4,774.0	-410.8	319.5	192.6	126.90	2.518		
12,200.0	7,566.0	11,978.1	7,344.0	88.2	88.3	-46.20	4,874.0	-412.5	320.8	191.0	129.84	2.471		
12,300.0	7,566.0	12,078.1	7,344.0	90.0	90.0	-46.42	4,974.0	-414.3	322.1	189.3	132.79	2.425		
12,400.0	7,566.0	12,178.1	7,344.0	91.7	91.8	-46.63	5,074.0	-416.0	323.3	187.6	135.76	2.382		
12,500.0	7,566.0	12,278.1	7,344.0	93.4	93.5	-46.84	5,173.9	-417.8	324.6	185.9	138.74	2.340		
12,600.0	7,566.0	12,378.1	7,344.0	95.2	95.2	-47.05	5,273.9	-419.5	325.9	184.1	141.73	2.299		
12,700.0	7,566.0	12,478.0	7,344.0	96.9	97.0	-47.26	5,373.9	-421.3	327.2	182.4	144.73	2.260		
12,800.0	7,566.0	12,578.0	7,344.0	98.6	98.7	-47.47	5,473.8	-423.0	328.4	180.7	147.75	2.223		
12,900.0	7,566.0	12,678.0	7,344.0	100.4	100.4	-47.67	5,573.8	-424.8	329.7	178.9	150.78	2.187		
13,000.0	7,566.0	12,778.0	7,344.0	102.1	102.2	-47.88	5,673.8	-426.5	331.0	177.2	153.82	2.152		
13,100.0	7,566.0	12,878.0	7,344.0	103.9	103.9	-48.14	5,773.7	-428.2	332.7	175.8	156.97	2.120		
13,200.0	7,566.0	12,977.9	7,344.0	105.6	105.7	-48.42	5,873.7	-430.0	334.6	174.3	160.22	2.088		
13,300.0	7,566.0	13,077.9	7,344.0	107.3	107.4	-48.70	5,973.6	-431.7	336.4	172.9	163.48	2.058		
13,400.0	7,566.0	13,177.9	7,344.0	109.1	109.1	-48.97	6,073.6	-433.5	338.3	171.5	166.76	2.028		
13,500.0	7,566.0	13,277.9	7,344.0	110.8	110.9	-49.24	6,173.5	-435.2	340.1	170.1	170.05	2.000		
13,600.0	7,566.0	13,377.8	7,344.0	112.6	112.6	-49.51	6,273.5	-437.0	342.0	168.6	173.35	1.973		
13,700.0	7,566.0	13,477.8	7,344.0	114.3	114.4	-49.78	6,373.5	-438.7	343.9	167.2	176.67	1.946		
13,800.0	7,566.0	13,577.8	7,344.0	116.0	116.1	-50.04	6,473.4	-440.5	345.7	165.7	179.99	1.921		
13,900.0	7,566.0	13,677.7	7,344.0	117.8	117.9	-50.30	6,573.4	-442.2	347.6	164.3	183.32	1.896		
14,000.0	7,566.0	13,777.7	7,344.0	119.5	119.6	-50.56	6,673.3	-443.9	349.5	162.9	186.66	1.872		
14,100.0	7,566.0	13,877.7	7,344.0	121.3	121.3	-50.81	6,773.3	-445.7	351.4	161.4	190.02	1.849		
14,200.0	7,566.0	13,977.6	7,344.0	123.0	123.1	-51.07	6,873.2	-447.4	353.3	160.0	193.38	1.827		
14,300.0	7,566.0	14,077.6	7,344.0	124.8	124.8	-51.32	6,973.2	-449.2	355.2	158.5	196.75	1.806		
14,400.0	7,566.0	14,177.6	7,344.0	126.5	126.6	-51.56	7,073.1	-450.9	357.2	157.0	200.13	1.785		
14,500.0	7,566.0	14,277.6	7,344.0	128.3	128.3	-51.81	7,173.1	-452.7	359.1	155.6	203.52	1.764		
14,600.0	7,566.0	14,377.5	7,344.0	130.0	130.1	-52.05	7,273.0	-454.4	361.0	154.1	206.92	1.745		
14,700.0	7,566.0	14,477.5	7,344.0	131.7	131.8	-52.29	7,373.0	-456.2	363.0	152.7	210.32	1.726		
14,800.0	7,566.0	14,577.5	7,344.0	133.5	133.5	-52.52	7,473.0	-457.9	364.9	151.2	213.73	1.707		
14,900.0	7,566.0	14,677.4	7,344.0	135.2	135.3	-52.76	7,572.9	-459.6	366.9	149.7	217.15	1.689		
15,000.0	7,566.0	14,777.4	7,344.0	137.0	137.0	-52.99	7,672.9	-461.4	368.8	148.3	220.58	1.672		
15,100.0	7,566.0	14,877.4	7,344.0	138.7	138.8	-53.21	7,772.8	-463.1	370.8	146.8	224.01	1.655		
15,200.0	7,566.0	14,977.3	7,344.0	140.5	140.5	-53.44	7,872.8	-464.9	372.8	145.3	227.45	1.639		
15,300.0	7,566.0	15,077.3	7,344.0	142.2	142.3	-53.66	7,972.7	-466.6	374.8	143.9	230.90	1.623		
15,400.0	7,566.0	15,177.3	7,344.0	144.0	144.0	-53.89	8,072.7	-468.4	376.7	142.4	234.35	1.608		
15,500.0	7,566.0	15,277.3	7,344.0	145.7	145.8	-54.11	8,172.6	-470.1	378.7	140.9	237.81	1.593		

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 Edith Ann-Duckworth 4D-21H-O268
Project:	DJ Wattenberg	TVD Reference:	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	MD Reference:	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Edith Ann-Duckworth 4D-21H-O268	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 S21-T2N-R68W (Edith Ann-Duckworth) - Edith Ann-Duckworth 4C-21H-O268 - Hz - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-Geolink MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
15,600.0	7,566.0	15,377.2	7,344.0	147.5	147.5	-54.32	8,272.6	-471.9	380.7	139.4	241.28	1.578		
15,700.0	7,566.0	15,477.2	7,344.0	149.2	149.3	-54.54	8,372.5	-473.6	382.7	138.0	244.75	1.564		
15,800.0	7,566.0	15,577.2	7,344.0	151.0	151.0	-54.75	8,472.5	-475.3	384.7	136.5	248.23	1.550		
15,900.0	7,566.0	15,677.1	7,344.0	152.7	152.7	-54.96	8,572.5	-477.1	386.7	135.0	251.71	1.536		
16,000.0	7,566.0	15,777.1	7,344.0	154.5	154.5	-55.17	8,672.4	-478.8	388.7	133.6	255.19	1.523		
16,100.0	7,566.0	15,877.1	7,344.0	156.2	156.2	-55.37	8,772.4	-480.6	390.8	132.1	258.69	1.511		
16,200.0	7,566.0	15,977.0	7,344.0	157.9	158.0	-55.58	8,872.3	-482.3	392.8	130.6	262.18	1.498 Level 3		
16,300.0	7,566.0	16,077.0	7,344.0	159.7	159.7	-55.78	8,972.3	-484.1	394.8	129.1	265.69	1.486 Level 3		
16,400.0	7,566.0	16,177.0	7,344.0	161.4	161.5	-55.98	9,072.2	-485.8	396.9	127.7	269.19	1.474 Level 3		
16,500.0	7,566.0	16,276.9	7,344.0	163.2	163.2	-56.18	9,172.2	-487.6	398.9	126.2	272.70	1.463 Level 3		
16,600.0	7,566.0	16,376.9	7,344.0	164.9	165.0	-56.37	9,272.1	-489.3	400.9	124.7	276.22	1.452 Level 3		
16,700.0	7,566.0	16,476.9	7,344.0	166.7	166.7	-56.56	9,372.1	-491.0	403.0	123.3	279.74	1.441 Level 3		
16,800.0	7,566.0	16,576.9	7,344.0	168.4	168.5	-56.76	9,472.0	-492.8	405.0	121.8	283.26	1.430 Level 3		
16,900.0	7,566.0	16,676.8	7,344.0	170.2	170.2	-56.95	9,572.0	-494.5	407.1	120.3	286.78	1.420 Level 3		
17,000.0	7,566.0	16,776.8	7,344.0	171.9	172.0	-57.13	9,672.0	-496.3	409.2	118.9	290.32	1.409 Level 3		
17,100.0	7,566.0	16,876.8	7,344.0	173.7	173.7	-57.32	9,771.9	-498.0	411.2	117.4	293.85	1.399 Level 3		
17,200.0	7,566.0	16,976.7	7,344.0	175.4	175.5	-57.50	9,871.9	-499.8	413.3	115.9	297.39	1.390 Level 3		
17,234.1	7,566.0	17,010.9	7,344.0	176.0	176.1	-57.57	9,906.0	-500.4	414.0	115.4	298.59	1.387 Level 3, SF		

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Edith Ann-Duckworth 4D-21H-O268
Project:	DJ Wattenberg	TVD Reference:	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	MD Reference:	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Edith Ann-Duckworth 4D-21H-O268	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 S21-T2N-R68W (Edith Ann-Duckworth) - Edith Ann-Duckworth 4E-21H-O268 - Hz - Plan #1														Offset Site Error:	0.0 ft
Survey Program: O-Geolink 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	90.06	0.0	8.4	8.4						
100.0	100.0	100.0	100.0	0.1	0.1	90.06	0.0	8.4	8.4	8.1	0.26	32.048			
200.0	200.0	200.0	200.0	0.3	0.3	90.06	0.0	8.4	8.4	7.8	0.61	13.735			
300.0	300.0	300.0	300.0	0.5	0.5	90.06	0.0	8.4	8.4	7.4	0.96	8.740			
400.0	400.0	400.0	400.0	0.7	0.7	90.06	0.0	8.4	8.4	7.1	1.31	6.410			
500.0	500.0	500.0	500.0	0.8	0.8	90.06	0.0	8.4	8.4	6.7	1.66	5.060 CC, ES			
600.0	600.0	600.0	600.0	1.0	1.0	179.90	0.0	8.4	9.3	7.3	2.01	4.615			
700.0	700.0	700.0	700.0	1.2	1.2	179.92	0.0	8.4	11.6	9.3	2.36	4.944			
800.0	799.9	799.9	799.9	1.4	1.4	179.94	0.0	8.4	14.2	11.5	2.70	5.263			
900.0	899.9	899.9	899.9	1.5	1.5	179.95	0.0	8.4	16.8	13.8	3.05	5.509			
1,000.0	999.9	999.9	999.9	1.7	1.7	179.95	0.0	8.4	19.4	16.0	3.40	5.705			
1,100.0	1,099.8	1,099.8	1,099.8	1.9	1.9	179.96	0.0	8.4	22.0	18.2	3.75	5.864			
1,200.0	1,199.8	1,199.8	1,199.8	2.1	2.1	179.96	0.0	8.4	24.6	20.5	4.10	5.996			
1,300.0	1,299.8	1,299.8	1,299.8	2.3	2.2	179.97	0.0	8.4	27.2	22.7	4.45	6.107			
1,400.0	1,399.7	1,399.7	1,399.7	2.4	2.4	179.97	0.0	8.4	29.8	25.0	4.80	6.202			
1,500.0	1,499.7	1,499.7	1,499.7	2.6	2.6	179.97	0.0	8.4	32.4	27.2	5.15	6.284			
1,600.0	1,599.7	1,599.7	1,599.7	2.8	2.7	179.97	0.0	8.4	34.9	29.4	5.50	6.356			
1,700.0	1,699.6	1,699.6	1,699.6	3.0	2.9	179.98	0.0	8.4	37.5	31.7	5.85	6.420			
1,800.0	1,799.6	1,799.6	1,799.6	3.2	3.1	179.98	0.0	8.4	40.1	33.9	6.19	6.476			
1,900.0	1,899.6	1,899.6	1,899.6	3.3	3.3	179.98	0.0	8.4	42.7	36.2	6.54	6.526			
2,000.0	1,999.5	1,999.5	1,999.5	3.5	3.4	179.98	0.0	8.4	45.3	38.4	6.89	6.571			
2,100.0	2,099.5	2,099.5	2,099.5	3.7	3.6	179.98	0.0	8.4	47.9	40.6	7.24	6.611			
2,200.0	2,199.5	2,199.5	2,199.5	3.9	3.8	179.98	0.0	8.4	50.5	42.9	7.59	6.648			
2,300.0	2,299.4	2,299.4	2,299.4	4.1	4.0	179.98	0.0	8.4	53.1	45.1	7.94	6.682			
2,400.0	2,399.4	2,399.4	2,399.4	4.2	4.1	179.98	0.0	8.4	55.6	47.4	8.29	6.713			
2,500.0	2,499.4	2,499.4	2,499.4	4.4	4.3	179.98	0.0	8.4	58.2	49.6	8.64	6.741			
2,600.0	2,599.3	2,599.3	2,599.3	4.6	4.5	179.99	0.0	8.4	60.8	51.8	8.99	6.768			
2,700.0	2,699.3	2,699.3	2,699.3	4.8	4.7	179.99	0.0	8.4	63.4	54.1	9.34	6.792			
2,800.0	2,799.3	2,799.3	2,799.3	5.0	4.8	179.99	0.0	8.4	66.0	56.3	9.68	6.814			
2,900.0	2,899.2	2,899.2	2,899.2	5.1	5.0	179.99	0.0	8.4	68.6	58.5	10.03	6.835			
3,000.0	2,999.2	2,999.2	2,999.2	5.3	5.2	179.99	0.0	8.4	71.2	60.8	10.38	6.855			
3,100.0	3,099.2	3,099.2	3,099.2	5.5	5.4	179.99	0.0	8.4	73.8	63.0	10.73	6.873			
3,200.0	3,199.1	3,199.1	3,199.1	5.7	5.5	179.99	0.0	8.4	76.3	65.3	11.08	6.890			
3,300.0	3,299.1	3,299.1	3,299.1	5.9	5.7	179.99	0.0	8.4	78.9	67.5	11.43	6.906			
3,400.0	3,399.1	3,399.1	3,399.1	6.0	5.9	179.99	0.0	8.4	81.5	69.7	11.78	6.921			
3,500.0	3,499.0	3,499.0	3,499.0	6.2	6.1	179.99	0.0	8.4	84.1	72.0	12.13	6.935			
3,600.0	3,599.0	3,599.0	3,599.0	6.4	6.2	179.99	0.0	8.4	86.7	74.2	12.48	6.949			
3,700.0	3,699.0	3,699.0	3,699.0	6.6	6.4	179.99	0.0	8.4	89.3	76.5	12.83	6.962			
3,800.0	3,798.9	3,798.9	3,798.9	6.8	6.6	179.99	0.0	8.4	91.9	78.7	13.17	6.974			
3,900.0	3,898.9	3,898.9	3,898.9	6.9	6.8	179.99	0.0	8.4	94.5	80.9	13.52	6.985			
4,000.0	3,998.9	3,998.9	3,998.9	7.1	6.9	179.99	0.0	8.4	97.0	83.2	13.87	6.996			
4,100.0	4,098.8	4,098.8	4,098.8	7.3	7.1	179.99	0.0	8.4	99.6	85.4	14.22	7.006			
4,200.0	4,198.8	4,198.8	4,198.8	7.5	7.3	179.99	0.0	8.4	102.2	87.7	14.57	7.016			
4,300.0	4,298.8	4,298.8	4,298.8	7.7	7.5	179.99	0.0	8.4	104.8	89.9	14.92	7.025			
4,400.0	4,398.7	4,398.7	4,398.7	7.8	7.6	179.99	0.0	8.4	107.4	92.1	15.27	7.034			
4,500.0	4,498.7	4,498.7	4,498.7	8.0	7.8	179.99	0.0	8.4	110.0	94.4	15.62	7.043			
4,600.0	4,598.7	4,598.7	4,598.7	8.2	8.0	179.99	0.0	9.2	113.4	97.4	15.96	7.104			
4,700.0	4,698.6	4,698.6	4,698.6	8.4	8.2	179.99	0.0	11.7	118.5	102.2	16.31	7.269			
4,800.0	4,798.6	4,798.6	4,798.6	8.6	8.3	179.99	0.0	15.8	125.4	108.7	16.65	7.528			
4,900.0	4,898.6	4,898.6	4,898.6	8.7	8.5	179.98	0.0	21.6	133.9	116.9	17.00	7.878			
5,000.0	4,998.5	4,998.5	4,998.5	8.9	8.7	179.98	0.0	28.8	143.7	126.4	17.34	8.285			
5,100.0	5,098.5	5,098.5	5,098.5	9.1	8.9	179.98	0.0	36.1	153.6	135.9	17.69	8.681			

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 Edith Ann-Duckworth 4D-21H-O268
Project:	DJ Wattenberg	TVD Reference:	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	MD Reference:	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Edith Ann-Duckworth 4D-21H-O268	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 S21-T2N-R68W (Edith Ann-Duckworth) - Edith Ann-Duckworth 4E-21H-O268 - Hz - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-Geolink 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)				
5,200.0	5,198.5	5,187.6	5,186.5	9.3	9.0	179.98	-0.1	43.3	163.5	145.4	18.04	9.061		
5,300.0	5,298.4	5,287.1	5,285.8	9.5	9.2	179.97	-0.1	50.6	173.3	155.0	18.39	9.427		
5,400.0	5,398.4	5,386.6	5,385.0	9.6	9.4	179.97	-0.1	57.9	183.2	164.5	18.74	9.780		
5,500.0	5,498.4	5,486.1	5,484.3	9.8	9.6	179.97	-0.1	65.1	193.1	174.0	19.08	10.119		
5,600.0	5,598.3	5,585.7	5,583.5	10.0	9.8	179.97	-0.1	72.4	203.0	183.6	19.43	10.446		
5,700.0	5,698.3	5,685.2	5,682.7	10.2	10.0	179.97	-0.1	79.7	212.9	193.1	19.78	10.762		
5,800.0	5,798.3	5,784.7	5,782.0	10.4	10.2	179.97	-0.1	86.9	222.8	202.6	20.13	11.067		
5,900.0	5,898.2	5,884.2	5,881.2	10.5	10.3	179.96	-0.1	94.2	232.6	212.2	20.48	11.362		
6,000.0	5,998.2	5,983.7	5,980.5	10.7	10.5	179.96	-0.1	101.5	242.5	221.7	20.82	11.646		
6,100.0	6,098.2	6,083.2	6,079.7	10.9	10.7	179.96	-0.1	108.7	252.4	231.2	21.17	11.922		
6,200.0	6,198.1	6,182.7	6,179.0	11.1	10.9	179.96	-0.2	116.0	262.3	240.8	21.52	12.188		
6,300.0	6,298.1	6,282.2	6,278.2	11.3	11.1	179.96	-0.2	123.3	272.2	250.3	21.87	12.446		
6,400.0	6,398.1	6,381.7	6,377.5	11.4	11.3	179.96	-0.2	130.5	282.0	259.8	22.21	12.696		
6,500.0	6,498.0	6,481.3	6,476.7	11.6	11.5	179.96	-0.2	137.8	291.9	269.4	22.56	12.938		
6,600.0	6,598.0	6,580.8	6,576.0	11.8	11.7	179.96	-0.2	145.1	301.8	278.9	22.91	13.173		
6,700.0	6,698.0	6,680.3	6,675.2	12.0	11.9	179.96	-0.2	152.3	311.7	288.4	23.26	13.401		
6,800.0	6,797.9	6,779.8	6,774.4	12.2	12.1	179.96	-0.2	159.6	321.6	298.0	23.61	13.622		
6,900.0	6,897.9	6,878.4	6,872.3	12.3	12.3	178.43	8.6	166.7	331.5	307.6	23.95	13.841		
7,000.0	6,997.9	6,971.4	6,961.9	12.5	12.5	157.29	32.1	173.3	343.0	318.7	24.30	14.113		
7,100.0	7,097.2	7,058.4	7,041.3	12.7	12.7	87.02	67.1	179.1	357.0	332.4	24.67	14.472		
7,200.0	7,193.5	7,142.2	7,111.9	12.9	13.0	78.12	111.7	184.3	372.5	347.5	25.07	14.862		
7,300.0	7,283.6	7,223.3	7,173.4	13.2	13.4	72.52	164.4	188.8	388.2	362.8	25.47	15.241		
7,400.0	7,364.9	7,300.0	7,224.1	13.5	13.8	68.39	221.6	192.5	403.2	377.3	25.89	15.574		
7,500.0	7,435.0	7,380.0	7,268.5	14.0	14.3	65.13	288.1	195.8	416.4	390.0	26.40	15.771		
7,600.0	7,491.6	7,456.5	7,301.8	14.6	14.9	62.75	356.8	198.2	427.4	400.3	27.06	15.791		
7,700.0	7,533.0	7,532.0	7,325.6	15.5	15.7	61.11	428.4	199.9	435.5	407.5	27.98	15.563		
7,800.0	7,558.1	7,607.1	7,339.6	16.5	16.5	60.16	502.1	201.0	440.5	411.2	29.23	15.071		
7,900.0	7,566.0	7,683.2	7,344.0	17.6	17.3	59.86	578.1	201.3	442.1	411.2	30.85	14.329		
8,000.0	7,566.0	7,783.2	7,344.0	18.8	18.6	59.86	678.1	201.3	442.1	409.1	33.02	13.389		
8,100.0	7,566.0	7,883.2	7,344.0	20.1	19.9	59.86	778.1	201.3	442.1	406.8	35.31	12.521		
8,200.0	7,566.0	7,983.2	7,344.0	21.5	21.3	59.86	878.1	201.3	442.1	404.4	37.70	11.725		
8,300.0	7,566.0	8,083.2	7,344.0	22.9	22.7	59.86	978.1	201.3	442.1	401.9	40.19	11.001		
8,400.0	7,566.0	8,183.2	7,344.0	24.4	24.2	59.86	1,078.1	201.3	442.1	399.3	42.74	10.343		
8,500.0	7,566.0	8,283.2	7,344.0	25.9	25.7	59.86	1,178.1	201.3	442.1	396.7	45.36	9.746		
8,600.0	7,566.0	8,383.2	7,344.0	27.4	27.2	59.86	1,278.1	201.3	442.1	394.0	48.02	9.206		
8,700.0	7,566.0	8,483.2	7,344.0	29.0	28.8	59.86	1,378.1	201.3	442.1	391.3	50.73	8.714		
8,800.0	7,566.0	8,583.2	7,344.0	30.5	30.4	59.86	1,478.1	201.3	442.1	388.6	53.47	8.267		
8,900.0	7,566.0	8,683.2	7,344.0	32.1	32.0	59.86	1,578.1	201.3	442.1	385.8	56.25	7.859		
9,000.0	7,566.0	8,783.2	7,344.0	33.7	33.6	59.86	1,678.1	201.3	442.1	383.0	59.05	7.487		
9,100.0	7,566.0	8,883.2	7,344.0	35.4	35.2	59.86	1,778.1	201.3	442.1	380.2	61.87	7.145		
9,200.0	7,566.0	8,983.2	7,344.0	37.0	36.9	59.86	1,878.1	201.3	442.1	377.4	64.71	6.831		
9,300.0	7,566.0	9,083.2	7,344.0	38.6	38.5	59.86	1,978.1	201.3	442.1	374.5	67.57	6.542		
9,400.0	7,566.0	9,183.2	7,344.0	40.3	40.2	59.86	2,078.1	201.3	442.1	371.6	70.45	6.275		
9,500.0	7,566.0	9,283.2	7,344.0	42.0	41.8	59.86	2,178.1	201.3	442.1	368.7	73.33	6.028		
9,600.0	7,566.0	9,383.2	7,344.0	43.6	43.5	59.86	2,278.1	201.3	442.1	365.8	76.23	5.799		
9,700.0	7,566.0	9,483.2	7,344.0	45.3	45.2	59.86	2,378.1	201.3	442.1	362.9	79.14	5.586		
9,800.0	7,566.0	9,583.2	7,344.0	47.0	46.9	59.86	2,478.1	201.3	442.1	360.0	82.06	5.387		
9,900.0	7,566.0	9,683.2	7,344.0	48.7	48.6	59.86	2,578.1	201.3	442.1	357.1	84.99	5.201		
10,000.0	7,566.0	9,783.2	7,344.0	50.4	50.3	59.86	2,678.1	201.3	442.1	354.1	87.93	5.028		
10,100.0	7,566.0	9,883.2	7,344.0	52.1	52.0	59.86	2,778.1	201.3	442.1	351.2	90.87	4.865		
10,200.0	7,566.0	9,983.2	7,344.0	53.8	53.7	59.86	2,878.1	201.3	442.1	348.2	93.82	4.712		
10,300.0	7,566.0	10,083.2	7,344.0	55.5	55.4	59.86	2,978.1	201.3	442.1	345.3	96.77	4.568		

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 Edith Ann-Duckworth 4D-21H-O268
Project:	DJ Wattenberg	TVD Reference:	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	MD Reference:	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Edith Ann-Duckworth 4D-21H-O268	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 S21-T2N-R68W (Edith Ann-Duckworth) - Edith Ann-Duckworth 4E-21H-O268 - Hz - Plan #1												Offset Site Error:	0.0 ft
Survey Program: 0-Geolink 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
10,400.0	7,566.0	10,183.2	7,344.0	57.2	57.1	59.86	3,078.1	201.3	442.1	342.3	99.73	4.432	
10,500.0	7,566.0	10,283.2	7,344.0	58.9	58.8	59.86	3,178.1	201.3	442.1	339.4	102.70	4.305	
10,600.0	7,566.0	10,383.2	7,344.0	60.6	60.5	59.86	3,278.1	201.3	442.1	336.4	105.67	4.184	
10,700.0	7,566.0	10,483.2	7,344.0	62.3	62.2	59.86	3,378.1	201.3	442.1	333.4	108.64	4.069	
10,800.0	7,566.0	10,583.2	7,344.0	64.0	63.9	59.86	3,478.1	201.3	442.1	330.5	111.62	3.961	
10,900.0	7,566.0	10,683.2	7,344.0	65.8	65.7	59.86	3,578.1	201.3	442.1	327.5	114.60	3.858	
11,000.0	7,566.0	10,783.2	7,344.0	67.5	67.4	59.86	3,678.1	201.3	442.1	324.5	117.58	3.760	
11,100.0	7,566.0	10,883.2	7,344.0	69.2	69.1	59.86	3,778.1	201.3	442.1	321.5	120.56	3.667	
11,200.0	7,566.0	10,983.2	7,344.0	70.9	70.8	59.86	3,878.1	201.3	442.1	318.5	123.55	3.578	
11,300.0	7,566.0	11,083.2	7,344.0	72.6	72.5	59.86	3,978.1	201.3	442.1	315.5	126.54	3.493	
11,400.0	7,566.0	11,183.2	7,344.0	74.4	74.3	59.86	4,078.1	201.3	442.1	312.5	129.54	3.413	
11,500.0	7,566.0	11,283.2	7,344.0	76.1	76.0	59.86	4,178.1	201.3	442.1	309.5	132.53	3.336	
11,600.0	7,566.0	11,383.2	7,344.0	77.8	77.7	59.86	4,278.1	201.3	442.1	306.5	135.53	3.262	
11,700.0	7,566.0	11,483.2	7,344.0	79.6	79.5	59.86	4,378.1	201.3	442.1	303.5	138.53	3.191	
11,800.0	7,566.0	11,583.2	7,344.0	81.3	81.2	59.86	4,478.1	201.3	442.1	300.5	141.53	3.124	
11,900.0	7,566.0	11,683.2	7,344.0	83.0	82.9	59.86	4,578.1	201.3	442.1	297.5	144.53	3.059	
12,000.0	7,566.0	11,783.2	7,344.0	84.8	84.7	59.86	4,678.1	201.3	442.1	294.5	147.53	2.996	
12,100.0	7,566.0	11,883.2	7,344.0	86.5	86.4	59.86	4,778.1	201.3	442.1	291.5	150.54	2.937	
12,200.0	7,566.0	11,983.2	7,344.0	88.2	88.1	59.86	4,878.1	201.3	442.1	288.5	153.55	2.879	
12,300.0	7,566.0	12,083.2	7,344.0	90.0	89.9	59.86	4,978.1	201.3	442.1	285.5	156.55	2.824	
12,400.0	7,566.0	12,183.2	7,344.0	91.7	91.6	59.86	5,078.1	201.3	442.1	282.5	159.56	2.771	
12,500.0	7,566.0	12,283.2	7,344.0	93.4	93.3	59.86	5,178.1	201.3	442.1	279.5	162.57	2.719	
12,600.0	7,566.0	12,383.2	7,344.0	95.2	95.1	59.86	5,278.1	201.3	442.1	276.5	165.58	2.670	
12,700.0	7,566.0	12,483.2	7,344.0	96.9	96.8	59.86	5,378.1	201.3	442.1	273.5	168.60	2.622	
12,800.0	7,566.0	12,583.2	7,344.0	98.6	98.6	59.86	5,478.1	201.3	442.1	270.5	171.61	2.576	
12,900.0	7,566.0	12,683.2	7,344.0	100.4	100.3	59.86	5,578.1	201.3	442.1	267.4	174.62	2.532	
13,000.0	7,566.0	12,783.2	7,344.0	102.1	102.0	59.86	5,678.1	201.3	442.1	264.4	177.64	2.489	
13,100.0	7,566.0	12,883.2	7,344.0	103.9	103.8	59.82	5,778.1	201.3	441.6	261.0	180.58	2.445	
13,200.0	7,566.0	12,983.2	7,344.0	105.6	105.5	59.77	5,878.1	201.3	441.0	257.4	183.52	2.403	
13,300.0	7,566.0	13,083.2	7,344.0	107.3	107.3	59.72	5,978.1	201.3	440.3	253.9	186.45	2.362	
13,400.0	7,566.0	13,183.2	7,344.0	109.1	109.0	59.68	6,078.0	201.3	439.7	250.4	189.37	2.322	
13,500.0	7,566.0	13,283.2	7,344.0	110.8	110.7	59.63	6,178.0	201.3	439.1	246.8	192.30	2.284	
13,600.0	7,566.0	13,383.2	7,344.0	112.6	112.5	59.58	6,278.0	201.3	438.5	243.3	195.22	2.246	
13,700.0	7,566.0	13,483.2	7,344.0	114.3	114.2	59.54	6,378.0	201.3	437.9	239.7	198.14	2.210	
13,800.0	7,566.0	13,583.2	7,344.0	116.0	116.0	59.49	6,478.0	201.3	437.3	236.2	201.06	2.175	
13,900.0	7,566.0	13,683.2	7,344.0	117.8	117.7	59.44	6,578.0	201.3	436.7	232.7	203.98	2.141	
14,000.0	7,566.0	13,783.2	7,344.0	119.5	119.5	59.39	6,678.0	201.3	436.0	229.2	206.89	2.108	
14,100.0	7,566.0	13,883.2	7,344.0	121.3	121.2	59.35	6,778.0	201.3	435.4	225.6	209.80	2.075	
14,200.0	7,566.0	13,983.2	7,344.0	123.0	123.0	59.30	6,878.0	201.3	434.8	222.1	212.71	2.044	
14,300.0	7,566.0	14,083.2	7,344.0	124.8	124.7	59.25	6,978.0	201.3	434.2	218.6	215.61	2.014	
14,400.0	7,566.0	14,183.2	7,344.0	126.5	126.4	59.20	7,078.0	201.3	433.6	215.1	218.51	1.984	
14,500.0	7,566.0	14,283.2	7,344.0	128.3	128.2	59.15	7,178.0	201.3	433.0	211.6	221.41	1.956	
14,600.0	7,566.0	14,383.2	7,344.0	130.0	129.9	59.11	7,278.0	201.3	432.4	208.1	224.30	1.928	
14,700.0	7,566.0	14,483.2	7,344.0	131.7	131.7	59.06	7,378.0	201.3	431.8	204.6	227.20	1.900	
14,800.0	7,566.0	14,583.2	7,344.0	133.5	133.4	59.01	7,478.0	201.3	431.1	201.1	230.08	1.874	
14,900.0	7,566.0	14,683.2	7,344.0	135.2	135.2	58.96	7,578.0	201.3	430.5	197.6	232.97	1.848	
15,000.0	7,566.0	14,783.2	7,344.0	137.0	136.9	58.91	7,678.0	201.3	429.9	194.1	235.85	1.823	
15,100.0	7,566.0	14,883.2	7,344.0	138.7	138.7	58.86	7,778.0	201.3	429.3	190.6	238.73	1.798	
15,200.0	7,566.0	14,983.2	7,344.0	140.5	140.4	58.81	7,878.0	201.3	428.7	187.1	241.61	1.774	
15,300.0	7,566.0	15,083.2	7,344.0	142.2	142.2	58.76	7,978.0	201.3	428.1	183.6	244.48	1.751	
15,400.0	7,566.0	15,183.2	7,344.0	144.0	143.9	58.71	8,078.0	201.3	427.5	180.1	247.35	1.728	
15,500.0	7,566.0	15,283.2	7,344.0	145.7	145.6	58.66	8,178.0	201.3	426.9	176.7	250.22	1.706	

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 Edith Ann-Duckworth 4D-21H-O268
Project:	DJ Wattenberg	TVD Reference:	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	MD Reference:	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Edith Ann-Duckworth 4D-21H-O268	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 S21-T2N-R68W (Edith Ann-Duckworth) - Edith Ann-Duckworth 4E-21H-O268 - Hz - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-Geolink MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
15,600.0	7,566.0	15,383.2	7,344.0	147.5	147.4	58.61	8,278.0	201.3	426.3	173.2	253.08	1.684		
15,700.0	7,566.0	15,483.2	7,344.0	149.2	149.1	58.56	8,378.0	201.3	425.7	169.7	255.94	1.663		
15,800.0	7,566.0	15,583.2	7,344.0	151.0	150.9	58.51	8,478.0	201.3	425.1	166.3	258.80	1.642		
15,900.0	7,566.0	15,683.2	7,344.0	152.7	152.6	58.46	8,578.0	201.3	424.4	162.8	261.65	1.622		
16,000.0	7,566.0	15,783.1	7,344.0	154.5	154.4	58.41	8,678.0	201.3	423.8	159.3	264.50	1.602		
16,100.0	7,566.0	15,883.1	7,344.0	156.2	156.1	58.36	8,778.0	201.3	423.2	155.9	267.34	1.583		
16,200.0	7,566.0	15,983.1	7,344.0	157.9	157.9	58.31	8,878.0	201.3	422.6	152.4	270.18	1.564		
16,300.0	7,566.0	16,083.1	7,344.0	159.7	159.6	58.26	8,978.0	201.3	422.0	149.0	273.02	1.546		
16,400.0	7,566.0	16,183.1	7,344.0	161.4	161.4	58.21	9,078.0	201.3	421.4	145.6	275.86	1.528		
16,500.0	7,566.0	16,283.1	7,344.0	163.2	163.1	58.16	9,178.0	201.3	420.8	142.1	278.69	1.510		
16,600.0	7,566.0	16,383.1	7,344.0	164.9	164.9	58.11	9,278.0	201.3	420.2	138.7	281.52	1.493 Level 3		
16,700.0	7,566.0	16,483.1	7,344.0	166.7	166.6	58.06	9,378.0	201.3	419.6	135.3	284.34	1.476 Level 3		
16,800.0	7,566.0	16,583.1	7,344.0	168.4	168.4	58.00	9,478.0	201.3	419.0	131.8	287.16	1.459 Level 3		
16,900.0	7,566.0	16,683.1	7,344.0	170.2	170.1	57.95	9,578.0	201.3	418.4	128.4	289.97	1.443 Level 3		
17,000.0	7,566.0	16,783.1	7,344.0	171.9	171.9	57.90	9,678.0	201.3	417.8	125.0	292.79	1.427 Level 3		
17,100.0	7,566.0	16,883.1	7,344.0	173.7	173.6	57.85	9,778.0	201.3	417.2	121.6	295.60	1.411 Level 3		
17,200.0	7,566.0	16,983.1	7,344.0	175.4	175.4	57.80	9,878.0	201.3	416.6	118.2	298.40	1.396 Level 3		
17,234.1	7,566.0	17,017.3	7,344.0	176.0	176.0	57.78	9,912.1	201.3	416.4	117.0	299.36	1.391 Level 3, SF		

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Edith Ann-Duckworth 4D-21H-O268
Project:	DJ Wattenberg	TVD Reference:	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	MD Reference:	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Edith Ann-Duckworth 4D-21H-O268	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 S21-T2N-R68W (Edith Ann-Duckworth) - Edith Ann-Duckworth 4F-21H-O268 - Hz - Plan #1													Offset Site Error:	0.0 ft
Survey Program: O-Geolink 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	1.0	1.0	0.0	0.0	90.05	0.0	19.6	19.6					
100.0	100.0	101.0	101.0	0.1	0.1	90.05	0.0	19.6	19.6	19.3	0.26	74.283		
200.0	200.0	201.0	201.0	0.3	0.3	90.05	0.0	19.6	19.6	19.0	0.61	31.957		
300.0	300.0	301.0	301.0	0.5	0.5	90.05	0.0	19.6	19.6	18.6	0.96	20.357		
366.3	366.3	367.3	367.3	0.6	0.6	90.05	0.0	19.6	19.6	18.4	1.19	16.407 CC		
400.0	400.0	401.0	401.0	0.7	0.7	90.05	0.0	19.6	19.6	18.3	1.31	14.936 ES		
500.0	500.0	500.6	500.6	0.8	0.8	90.05	0.0	20.5	20.5	18.8	1.66	12.329		
600.0	600.0	600.0	600.0	1.0	1.0	179.90	0.0	23.1	24.0	22.0	2.01	11.940 SF		
700.0	700.0	699.5	699.4	1.2	1.2	179.91	0.0	27.4	30.7	28.3	2.35	13.039		
800.0	799.9	798.5	798.2	1.4	1.4	179.92	0.0	33.4	39.4	36.7	2.70	14.572		
900.0	899.9	897.7	897.1	1.5	1.6	179.93	-0.1	40.9	49.4	46.4	3.05	16.214		
1,000.0	999.9	997.2	996.3	1.7	1.8	179.93	-0.1	48.4	59.6	56.2	3.40	17.557		
1,100.0	1,099.8	1,096.7	1,095.5	1.9	2.0	179.94	-0.1	56.0	69.8	66.1	3.74	18.651		
1,200.0	1,199.8	1,196.2	1,194.7	2.1	2.2	179.94	-0.1	63.6	80.0	76.0	4.09	19.558		
1,300.0	1,299.8	1,295.6	1,293.9	2.3	2.4	179.94	-0.1	71.2	90.2	85.8	4.44	20.324		
1,400.0	1,399.7	1,395.1	1,393.1	2.4	2.6	179.94	-0.1	78.8	100.4	95.7	4.79	20.978		
1,500.0	1,499.7	1,494.6	1,492.3	2.6	2.8	179.94	-0.1	86.4	110.6	105.5	5.14	21.544		
1,600.0	1,599.7	1,594.1	1,591.5	2.8	3.1	179.95	-0.2	93.9	120.8	115.4	5.48	22.038		
1,700.0	1,699.6	1,693.6	1,690.6	3.0	3.3	179.95	-0.2	101.5	131.0	125.2	5.83	22.474		
1,800.0	1,799.6	1,793.0	1,789.8	3.2	3.5	179.95	-0.2	109.1	141.3	135.1	6.18	22.860		
1,900.0	1,899.6	1,892.5	1,889.0	3.3	3.7	179.95	-0.2	116.7	151.5	144.9	6.53	23.205		
2,000.0	1,999.5	1,992.0	1,988.2	3.5	3.9	179.95	-0.2	124.3	161.7	154.8	6.87	23.515		
2,100.0	2,099.5	2,091.5	2,087.4	3.7	4.1	179.95	-0.2	131.9	171.9	164.6	7.22	23.796		
2,200.0	2,199.5	2,190.9	2,186.6	3.9	4.4	179.95	-0.2	139.5	182.1	174.5	7.57	24.050		
2,300.0	2,299.4	2,290.4	2,285.8	4.1	4.6	179.95	-0.3	147.0	192.3	184.3	7.92	24.282		
2,400.0	2,399.4	2,389.9	2,385.0	4.2	4.8	179.95	-0.3	154.6	202.5	194.2	8.27	24.495		
2,500.0	2,499.4	2,489.4	2,484.2	4.4	5.0	179.95	-0.3	162.2	212.7	204.0	8.61	24.691		
2,600.0	2,599.3	2,588.9	2,583.3	4.6	5.2	179.95	-0.3	169.8	222.9	213.9	8.96	24.871		
2,700.0	2,699.3	2,688.3	2,682.5	4.8	5.4	179.95	-0.3	177.4	233.1	223.8	9.31	25.038		
2,800.0	2,799.3	2,787.8	2,781.7	5.0	5.7	179.95	-0.3	185.0	243.3	233.6	9.66	25.193		
2,900.0	2,899.2	2,887.3	2,880.9	5.1	5.9	179.95	-0.3	192.5	253.5	243.5	10.00	25.337		
3,000.0	2,999.2	2,986.8	2,980.1	5.3	6.1	179.95	-0.4	200.1	263.7	253.3	10.35	25.471		
3,100.0	3,099.2	3,086.3	3,079.3	5.5	6.3	179.95	-0.4	207.7	273.9	263.2	10.70	25.597		
3,200.0	3,199.1	3,185.7	3,178.5	5.7	6.5	179.95	-0.4	215.3	284.1	273.0	11.05	25.715		
3,300.0	3,299.1	3,285.2	3,277.7	5.9	6.7	179.95	-0.4	222.9	294.3	282.9	11.39	25.825		
3,400.0	3,399.1	3,384.7	3,376.9	6.0	7.0	179.95	-0.4	230.5	304.5	292.7	11.74	25.929		
3,500.0	3,499.0	3,484.2	3,476.0	6.2	7.2	179.95	-0.4	238.0	314.7	302.6	12.09	26.027		
3,600.0	3,599.0	3,583.6	3,575.2	6.4	7.4	179.95	-0.4	245.6	324.9	312.4	12.44	26.120		
3,700.0	3,699.0	3,683.1	3,674.4	6.6	7.6	179.95	-0.5	253.2	335.1	322.3	12.79	26.208		
3,800.0	3,798.9	3,782.6	3,773.6	6.8	7.8	179.95	-0.5	260.8	345.3	332.1	13.13	26.291		
3,900.0	3,898.9	3,882.1	3,872.8	6.9	8.1	179.95	-0.5	268.4	355.5	342.0	13.48	26.369		
4,000.0	3,998.9	3,981.6	3,972.0	7.1	8.3	179.95	-0.5	276.0	365.7	351.8	13.83	26.444		
4,100.0	4,098.8	4,081.0	4,071.2	7.3	8.5	179.95	-0.5	283.5	375.9	361.7	14.18	26.515		
4,200.0	4,198.8	4,180.5	4,170.4	7.5	8.7	179.95	-0.5	291.1	386.1	371.6	14.52	26.582		
4,300.0	4,298.8	4,280.0	4,269.6	7.7	8.9	179.95	-0.5	298.7	396.3	381.4	14.87	26.647		
4,400.0	4,398.7	4,379.5	4,368.7	7.8	9.1	179.95	-0.6	306.3	406.5	391.3	15.22	26.708		
4,500.0	4,498.7	4,478.9	4,467.9	8.0	9.4	179.95	-0.6	313.9	416.7	401.1	15.57	26.767		
4,600.0	4,598.7	4,578.4	4,567.1	8.2	9.6	179.95	-0.6	321.5	426.9	411.0	15.91	26.823		
4,700.0	4,698.6	4,677.9	4,666.3	8.4	9.8	179.95	-0.6	329.0	437.1	420.8	16.26	26.877		
4,800.0	4,798.6	4,777.4	4,765.5	8.6	10.0	179.95	-0.6	336.6	447.3	430.7	16.61	26.929		
4,900.0	4,898.6	4,876.9	4,864.7	8.7	10.2	179.95	-0.6	344.2	457.5	440.5	16.96	26.978		
5,000.0	4,998.5	4,976.3	4,963.9	8.9	10.5	179.95	-0.6	351.8	467.7	450.4	17.31	27.026		

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 Edith Ann-Duckworth 4D-21H-O268
Project:	DJ Wattenberg	TVD Reference:	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	MD Reference:	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Edith Ann-Duckworth 4D-21H-O268	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													S21-T2N-R68W (Edith Ann-Duckworth) - Edith Ann-Duckworth 4F-21H-O268 - Hz - Plan #1		Offset Site Error:		0.0 ft
Survey Program:													0-Geolink MWD		Offset Well Error:		0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor					
5,100.0	5,098.5	5,075.8	5,063.1	9.1	10.7	179.95	-0.7	359.4	477.9	460.2	17.65	27.071					
5,200.0	5,198.5	5,175.3	5,162.3	9.3	10.9	179.95	-0.7	367.0	488.1	470.1	18.00	27.115					
5,300.0	5,298.4	5,274.8	5,261.4	9.5	11.1	179.95	-0.7	374.5	498.3	479.9	18.35	27.157					

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Edith Ann-Duckworth 4D-21H-O268
Project:	DJ Wattenberg	TVD Reference:	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	MD Reference:	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Edith Ann-Duckworth 4D-21H-O268	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 S21-T2N-R68W (Edith Ann-Duckworth) - Edith Ann-Duckworth 4G-21H-O268 - Hz - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-Geolink 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	1.0	1.0	0.0	0.0	90.05	0.0	30.8	30.8					
100.0	100.0	101.0	101.0	0.1	0.1	90.05	0.0	30.8	30.8	30.5	0.26	116.731		
200.0	200.0	201.0	201.0	0.3	0.3	90.05	0.0	30.8	30.8	30.2	0.61	50.218		
266.3	266.3	267.3	267.3	0.4	0.4	90.05	0.0	30.8	30.8	29.9	0.84	36.444 CC		
300.0	300.0	301.0	301.0	0.5	0.5	90.05	0.0	30.8	30.8	29.8	0.96	31.990 ES		
400.0	400.0	400.5	400.4	0.7	0.7	90.05	0.0	31.6	31.6	30.3	1.31	24.150		
500.0	500.0	500.0	500.0	0.8	0.8	90.04	0.0	34.3	34.3	32.6	1.66	20.606		
600.0	600.0	599.1	598.9	1.0	1.0	179.88	0.0	38.6	39.5	37.5	2.01	19.696 SF		
700.0	700.0	698.0	697.6	1.2	1.2	179.88	0.0	44.6	48.0	45.6	2.35	20.389		
800.0	799.9	796.5	795.9	1.4	1.4	179.88	0.0	52.3	58.3	55.6	2.70	21.618		
900.0	899.9	894.7	893.6	1.5	1.6	179.88	0.0	61.6	70.4	67.4	3.04	23.134		
1,000.0	999.9	992.4	990.7	1.7	1.9	179.88	0.0	72.6	84.2	80.8	3.39	24.847		
1,100.0	1,099.8	1,090.5	1,088.0	1.9	2.1	179.88	0.0	85.0	99.4	95.7	3.73	26.639		
1,200.0	1,199.8	1,189.3	1,185.9	2.1	2.4	179.88	0.0	97.8	114.9	110.9	4.08	28.174		
1,300.0	1,299.8	1,288.0	1,283.9	2.3	2.7	179.88	0.0	110.5	130.4	126.0	4.43	29.469		
1,400.0	1,399.7	1,386.8	1,381.9	2.4	2.9	179.88	-0.1	123.3	145.9	141.1	4.77	30.576		
1,500.0	1,499.7	1,485.6	1,479.8	2.6	3.2	179.88	-0.1	136.1	161.4	156.3	5.12	31.534		
1,600.0	1,599.7	1,584.4	1,577.8	2.8	3.5	179.88	-0.1	148.8	176.9	171.4	5.46	32.370		
1,700.0	1,699.6	1,683.2	1,675.8	3.0	3.8	179.88	-0.1	161.6	192.3	186.5	5.81	33.107		
1,800.0	1,799.6	1,782.0	1,773.7	3.2	4.0	179.88	-0.1	174.4	207.8	201.7	6.16	33.761		
1,900.0	1,899.6	1,880.8	1,871.7	3.3	4.3	179.88	-0.1	187.1	223.3	216.8	6.50	34.346		
2,000.0	1,999.5	1,979.6	1,969.7	3.5	4.6	179.88	-0.1	199.9	238.8	231.9	6.85	34.871		
2,100.0	2,099.5	2,078.4	2,067.6	3.7	4.9	179.88	-0.1	212.7	254.3	247.1	7.19	35.346		
2,200.0	2,199.5	2,177.2	2,165.6	3.9	5.2	179.88	-0.1	225.4	269.8	262.2	7.54	35.778		
2,300.0	2,299.4	2,276.0	2,263.6	4.1	5.4	179.88	-0.1	238.2	285.2	277.4	7.89	36.171		
2,400.0	2,399.4	2,374.8	2,361.5	4.2	5.7	179.88	-0.1	251.0	300.7	292.5	8.23	36.532		
2,500.0	2,499.4	2,473.6	2,459.5	4.4	6.0	179.88	-0.1	263.7	316.2	307.6	8.58	36.863		
2,600.0	2,599.3	2,572.4	2,557.5	4.6	6.3	179.88	-0.1	276.5	331.7	322.8	8.92	37.169		
2,700.0	2,699.3	2,671.2	2,655.4	4.8	6.6	179.88	-0.1	289.3	347.2	337.9	9.27	37.452		
2,800.0	2,799.3	2,770.0	2,753.4	5.0	6.8	179.88	-0.1	302.0	362.7	353.0	9.62	37.715		
2,900.0	2,899.2	2,868.8	2,851.4	5.1	7.1	179.88	-0.1	314.8	378.1	368.2	9.96	37.959		
3,000.0	2,999.2	2,967.5	2,949.3	5.3	7.4	179.88	-0.1	327.5	393.6	383.3	10.31	38.187		
3,100.0	3,099.2	3,066.3	3,047.3	5.5	7.7	179.88	-0.1	340.3	409.1	398.5	10.65	38.400		
3,200.0	3,199.1	3,165.1	3,145.3	5.7	8.0	179.88	-0.1	353.1	424.6	413.6	11.00	38.600		
3,300.0	3,299.1	3,263.9	3,243.2	5.9	8.2	179.88	-0.1	365.8	440.1	428.7	11.35	38.788		
3,400.0	3,399.1	3,362.7	3,341.2	6.0	8.5	179.88	-0.1	378.6	455.6	443.9	11.69	38.964		
3,500.0	3,499.0	3,461.5	3,439.2	6.2	8.8	179.88	-0.1	391.4	471.0	459.0	12.04	39.131		
3,600.0	3,599.0	3,560.3	3,537.1	6.4	9.1	179.88	-0.1	404.1	486.5	474.1	12.38	39.288		

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Edith Ann-Duckworth 4D-21H-O268
Project:	DJ Wattenberg	TVD Reference:	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	MD Reference:	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Edith Ann-Duckworth 4D-21H-O268	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 S21-T2N-R68W (Edith Ann-Duckworth) - Edith Ann-Duckworth 4H-21H-O268 - Hz - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-Geolink MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	1.0	1.0	0.0	0.0	90.05	0.0	39.2	39.2					
100.0	100.0	101.0	101.0	0.1	0.1	90.05	0.0	39.2	39.2	38.9	0.26	148.566		
166.3	166.3	167.3	167.3	0.2	0.2	90.05	0.0	39.2	39.2	38.7	0.50	79.086 CC		
200.0	200.0	201.0	201.0	0.3	0.3	90.05	0.0	39.2	39.2	38.5	0.61	63.914 ES		
300.0	300.0	300.0	300.0	0.5	0.5	90.05	0.0	40.0	40.0	39.1	0.96	41.669		
400.0	400.0	399.6	399.5	0.7	0.7	90.05	0.0	42.6	42.7	41.3	1.31	32.448		
500.0	500.0	498.7	498.6	0.8	0.8	90.05	0.0	46.9	47.0	45.3	1.68	28.052		
600.0	600.0	597.6	597.3	1.0	1.0	179.88	0.0	52.9	53.9	51.9	2.00	26.940 SF		
700.0	700.0	696.0	695.4	1.2	1.3	179.88	0.0	60.6	64.1	61.8	2.35	27.302		
800.0	799.9	794.1	793.0	1.4	1.5	179.89	0.0	69.9	76.2	73.5	2.69	28.285		
900.0	899.9	891.7	890.1	1.5	1.7	179.89	-0.1	80.9	89.9	86.9	3.04	29.609		
1,000.0	999.9	988.9	986.4	1.7	2.0	179.89	-0.1	93.4	105.4	102.0	3.38	31.171		
1,100.0	1,099.8	1,085.5	1,082.0	1.9	2.3	179.89	-0.1	107.4	122.5	118.8	3.72	32.902		
1,200.0	1,199.8	1,181.5	1,176.7	2.1	2.6	179.89	-0.1	123.0	141.3	137.2	4.06	34.758		
1,300.0	1,299.8	1,279.0	1,272.8	2.3	2.9	179.89	-0.1	139.9	161.2	156.8	4.41	36.558		
1,400.0	1,399.7	1,377.0	1,369.3	2.4	3.2	179.89	-0.1	156.9	181.1	176.3	4.75	38.099		
1,500.0	1,499.7	1,475.0	1,465.8	2.6	3.6	179.89	-0.1	174.0	201.0	195.9	5.10	39.432		
1,600.0	1,599.7	1,573.0	1,562.3	2.8	3.9	179.88	-0.1	191.0	220.9	215.4	5.44	40.596		
1,700.0	1,699.6	1,671.0	1,658.8	3.0	4.2	179.88	-0.1	208.0	240.8	235.0	5.79	41.622		
1,800.0	1,799.6	1,769.0	1,755.3	3.2	4.6	179.88	-0.1	225.0	260.7	254.6	6.13	42.534		
1,900.0	1,899.6	1,867.0	1,851.8	3.3	4.9	179.88	-0.1	242.0	280.6	274.1	6.47	43.348		
2,000.0	1,999.5	1,965.0	1,948.3	3.5	5.3	179.88	-0.1	259.1	300.5	293.7	6.82	44.080		
2,100.0	2,099.5	2,063.0	2,044.9	3.7	5.6	179.88	-0.2	276.1	320.4	313.3	7.16	44.742		
2,200.0	2,199.5	2,161.0	2,141.4	3.9	6.0	179.88	-0.2	293.1	340.3	332.8	7.51	45.344		
2,300.0	2,299.4	2,259.0	2,237.9	4.1	6.3	179.88	-0.2	310.1	360.2	352.4	7.85	45.893		
2,400.0	2,399.4	2,357.0	2,334.4	4.2	6.6	179.88	-0.2	327.1	380.2	372.0	8.19	46.395		
2,500.0	2,499.4	2,455.0	2,430.9	4.4	7.0	179.88	-0.2	344.1	400.1	391.5	8.54	46.858		
2,600.0	2,599.3	2,553.0	2,527.4	4.6	7.3	179.88	-0.2	361.2	420.0	411.1	8.88	47.284		
2,700.0	2,699.3	2,651.0	2,623.9	4.8	7.7	179.88	-0.2	378.2	439.9	430.7	9.23	47.679		
2,800.0	2,799.3	2,749.0	2,720.4	5.0	8.0	179.88	-0.2	395.2	459.8	450.2	9.57	48.045		
2,900.0	2,899.2	2,847.0	2,816.9	5.1	8.4	179.88	-0.2	412.2	479.7	469.8	9.91	48.386		
3,000.0	2,999.2	2,945.0	2,913.4	5.3	8.7	179.88	-0.2	429.2	499.6	489.3	10.26	48.704		

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Edith Ann-Duckworth 4D-21H-O268
Project:	DJ Wattenberg	TVD Reference:	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	MD Reference:	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Edith Ann-Duckworth 4D-21H-O268	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				S21-T2N-R68W (Edith Ann-Duckworth) - KENNEDY 32-21 (EXISTING) - ENCANA WELL - NO SURVE								Offset Site Error:		0.0 ft			
Survey Program: 8072-Geolink MWD														Offset Well Error:		0.0 ft	
Reference		Offset		Semi Major Axis			Distance										
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning				
9,800.0	7,566.0	7,507.0	7,507.0	47.0	13.1	-90.00	2,891.3	-444.1	489.9	429.9	59.99	8.166					
9,900.0	7,566.0	7,507.0	7,507.0	48.7	13.1	-90.00	2,891.3	-444.1	409.1	347.4	61.68	6.632					
10,000.0	7,566.0	7,507.0	7,507.0	50.4	13.1	-90.00	2,891.3	-444.1	338.6	275.3	63.38	5.343					
10,100.0	7,566.0	7,507.0	7,507.0	52.1	13.1	-90.00	2,891.3	-444.1	286.4	221.3	65.08	4.401					
10,200.0	7,566.0	7,507.0	7,507.0	53.8	13.1	-90.00	2,891.3	-444.1	263.4	196.6	66.78	3.944					
10,213.3	7,566.0	7,507.0	7,507.0	54.0	13.1	-90.00	2,891.3	-444.1	263.1	196.1	67.01	3.926	CC, ES, SF				
10,300.0	7,566.0	7,507.0	7,507.0	55.5	13.1	-90.00	2,891.3	-444.1	277.0	208.5	68.49	4.044					
10,400.0	7,566.0	7,507.0	7,507.0	57.2	13.1	-90.00	2,891.3	-444.1	322.6	252.4	70.20	4.596					
10,500.0	7,566.0	7,507.0	7,507.0	58.9	13.1	-90.00	2,891.3	-444.1	389.1	317.2	71.91	5.411					
10,600.0	7,566.0	7,507.0	7,507.0	60.6	13.1	-90.00	2,891.3	-444.1	467.7	394.1	73.62	6.353					

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Edith Ann-Duckworth 4D-21H-O268
Project:	DJ Wattenberg	TVD Reference:	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	MD Reference:	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Edith Ann-Duckworth 4D-21H-O268	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 S21-T2N-R68W (Edith Ann-Duckworth) - KENNEDY 6-0-21 (EXISTING) - ENCANA WELL - SURVEYS													Offset Site Error:	0.0 ft
Survey Program: 108-Geolink MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
11,900.0	7,566.0	7,602.4	7,504.1	83.0	20.0	86.62	4,991.1	-24.3	441.9	342.6	99.27	4.452		
12,000.0	7,566.0	7,604.4	7,506.1	84.8	20.0	87.37	4,991.2	-24.3	350.2	249.2	101.06	3.466		
12,100.0	7,566.0	7,606.4	7,508.1	86.5	20.0	88.10	4,991.2	-24.3	264.6	161.8	102.83	2.573		
12,200.0	7,566.0	7,608.4	7,510.0	88.2	20.0	88.81	4,991.3	-24.2	193.4	88.8	104.60	1.849		
12,300.0	7,566.0	7,610.3	7,512.0	90.0	20.0	89.51	4,991.3	-24.2	157.3	51.0	106.35	1.479 Level 3		
12,313.2	7,566.0	7,610.5	7,512.2	90.2	20.0	89.60	4,991.3	-24.2	156.8	50.2	106.58	1.471 Level 3, CC, ES, SF		
12,400.0	7,566.0	7,612.2	7,513.8	91.7	20.0	90.19	4,991.3	-24.2	179.2	71.1	108.08	1.658		
12,500.0	7,566.0	7,614.0	7,515.7	93.4	20.0	90.86	4,991.4	-24.2	243.8	134.0	109.81	2.220		
12,600.0	7,566.0	7,615.8	7,517.5	95.2	20.0	91.52	4,991.4	-24.2	326.8	215.3	111.52	2.930		
12,700.0	7,566.0	7,617.6	7,519.2	96.9	20.0	92.16	4,991.4	-24.2	417.3	304.0	113.21	3.686		

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Edith Ann-Duckworth 4D-21H-O268
Project:	DJ Wattenberg	TVD Reference:	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	MD Reference:	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Edith Ann-Duckworth 4D-21H-O268	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 S21-T2N-R68W (Edith Ann-Duckworth) - KENNEDY 6-4-21 (EXISTING) - ENCANA WELL - SURVEYS													Offset Site Error: 0.0 ft	
Survey Program: 71-Geolink MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
9,500.0	7,566.0	7,636.7	7,501.2	42.0	21.9	88.74	2,538.5	36.1	420.8	358.0	62.80	6.701		
9,600.0	7,566.0	7,638.2	7,502.7	43.6	21.9	89.13	2,538.5	36.1	339.1	274.6	64.49	5.259		
9,700.0	7,566.0	7,639.7	7,504.2	45.3	21.9	89.53	2,538.6	36.1	270.0	203.8	66.18	4.080		
9,800.0	7,566.0	7,641.2	7,505.7	47.0	21.9	89.92	2,538.6	36.1	225.4	157.5	67.87	3.321		
9,860.5	7,566.0	7,642.1	7,506.6	48.0	21.9	90.17	2,538.6	36.1	217.1	148.2	68.90	3.151	CC, ES, SF	
9,900.0	7,566.0	7,642.7	7,507.2	48.7	21.9	90.32	2,538.6	36.1	220.7	151.1	69.56	3.172		
10,000.0	7,566.0	7,644.2	7,508.7	50.4	21.9	90.72	2,538.6	36.1	258.0	186.8	71.26	3.621		
10,100.0	7,566.0	7,645.8	7,510.3	52.1	21.9	91.12	2,538.7	36.1	323.2	250.2	72.95	4.430		
10,200.0	7,566.0	7,647.3	7,511.8	53.8	21.9	91.52	2,538.7	36.1	402.9	328.3	74.65	5.397		
10,300.0	7,566.0	7,648.8	7,513.3	55.5	21.9	91.93	2,538.7	36.1	490.1	413.8	76.34	6.420		

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Edith Ann-Duckworth 4D-21H-O268
Project:	DJ Wattenberg	TVD Reference:	WELL @ 4951.0ft (Original Well Elev)
Reference Site:	S21-T2N-R68W (Edith Ann-Duckworth)	MD Reference:	WELL @ 4951.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Edith Ann-Duckworth 4D-21H-O268	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 @ 4951.0ft (Original Well Elev)

Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: Edith Ann-Duckworth 4D-21H-O268

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.32°

