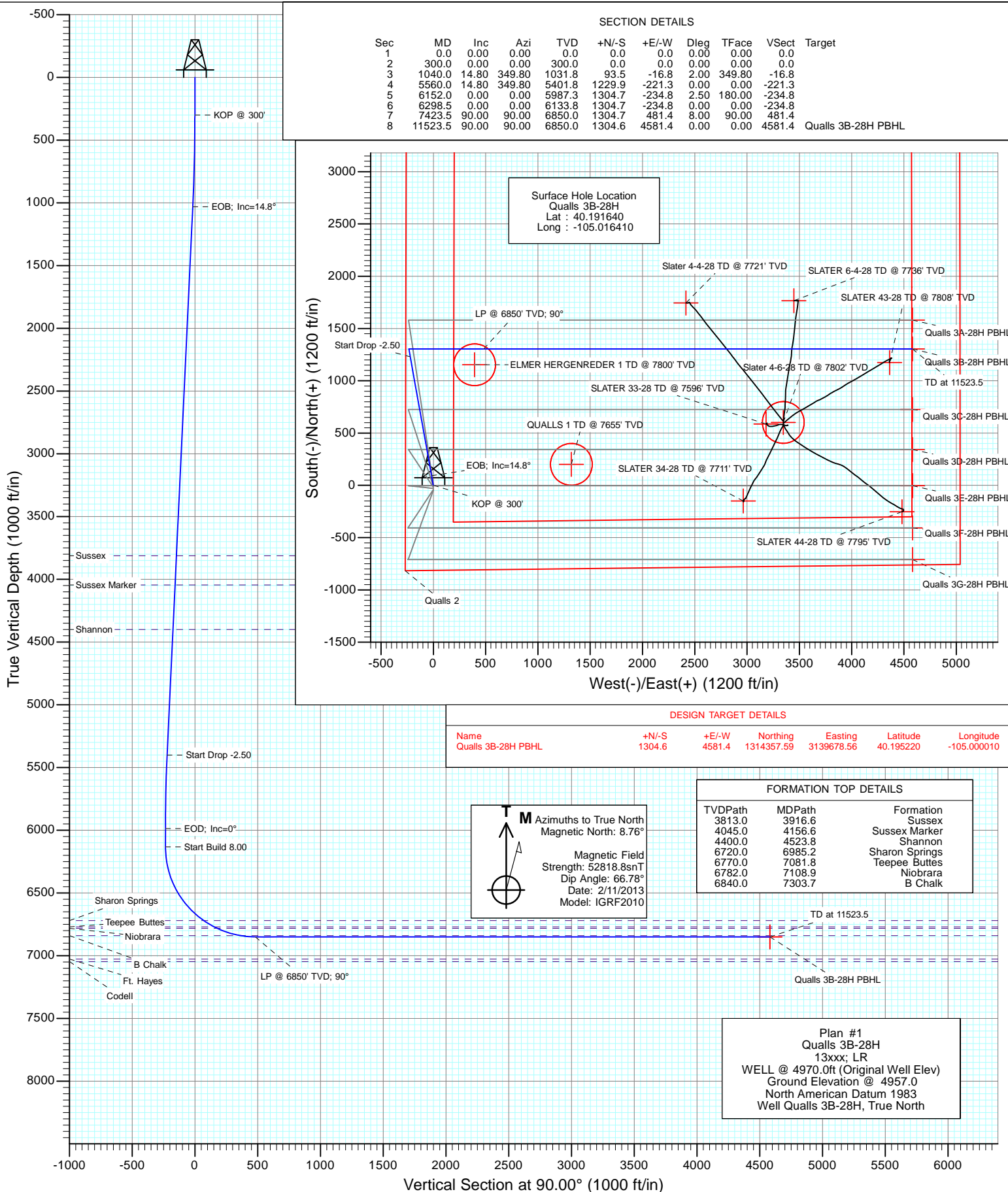




Project: DJ Wattenberg
Site: S28-T3N-R68W (Qualls)
Well: Qualls 3B-28H
Wellbore: Hz
Design: Plan #1



Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Qualls 3B-28H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 4970.0ft (Original Well Elev)
Project:	DJ Wattenberg	MD Reference:	WELL @ 4970.0ft (Original Well Elev)
Site:	S28-T3N-R68W (Qualls)	North Reference:	True
Well:	Qualls 3B-28H	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		S28-T3N-R68W (Qualls)			
Site Position:		Northing:	1,313,038.99 ft	Latitude:	40.191670
From:	Lat/Long	Easting:	3,135,104.30 ft	Longitude:	-105.016410
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	0.31 °

Well	Qualls 3B-28H					
Well Position	+N/-S	0.0 ft	Northing:	1,313,028.05 ft	Latitude:	40.191640
	+E/-W	0.0 ft	Easting:	3,135,104.36 ft	Longitude:	-105.016410
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,957.0 ft

Wellbore	Hz				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2/11/2013	8.76	66.78	52,819

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	90.00

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	
300.0	0.00	0.00	300.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,040.0	14.80	349.80	1,031.8	93.5	-16.8	2.00	2.00	0.00	349.80	
5,560.0	14.80	349.80	5,401.8	1,229.9	-221.3	0.00	0.00	0.00	0.00	
6,152.0	0.00	0.00	5,987.3	1,304.7	-234.8	2.50	-2.50	0.00	180.00	
6,298.5	0.00	0.00	6,133.8	1,304.7	-234.8	0.00	0.00	0.00	0.00	
7,423.5	90.00	90.00	6,850.0	1,304.7	481.4	8.00	8.00	0.00	90.00	
11,523.5	90.00	90.00	6,850.0	1,304.6	4,581.4	0.00	0.00	0.00	0.00	Qualls 3B-28H PBHL

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Qualls 3B-28H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 4970.0ft (Original Well Elev)
Project:	DJ Wattenberg	MD Reference:	WELL @ 4970.0ft (Original Well Elev)
Site:	S28-T3N-R68W (Qualls)	North Reference:	True
Well:	Qualls 3B-28H	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	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	KOP @ 300'
400.0	2.00	349.80	400.0	1.7	-0.3	-0.3	2.00	2.00	
500.0	4.00	349.80	499.8	6.9	-1.2	-1.2	2.00	2.00	
600.0	6.00	349.80	599.5	15.4	-2.8	-2.8	2.00	2.00	
700.0	8.00	349.80	698.7	27.4	-4.9	-4.9	2.00	2.00	
800.0	10.00	349.80	797.5	42.8	-7.7	-7.7	2.00	2.00	
900.0	12.00	349.80	895.6	61.6	-11.1	-11.1	2.00	2.00	
1,000.0	14.00	349.80	993.1	83.8	-15.1	-15.1	2.00	2.00	
1,040.0	14.80	349.80	1,031.8	93.5	-16.8	-16.8	2.00	2.00	EOB; Inc=14.8°
1,100.0	14.80	349.80	1,089.8	108.6	-19.5	-19.5	0.00	0.00	
1,200.0	14.80	349.80	1,186.5	133.8	-24.1	-24.1	0.00	0.00	
1,300.0	14.80	349.80	1,283.2	158.9	-28.6	-28.6	0.00	0.00	
1,400.0	14.80	349.80	1,379.9	184.0	-33.1	-33.1	0.00	0.00	
1,500.0	14.80	349.80	1,476.5	209.2	-37.6	-37.6	0.00	0.00	
1,600.0	14.80	349.80	1,573.2	234.3	-42.2	-42.2	0.00	0.00	
1,700.0	14.80	349.80	1,669.9	259.5	-46.7	-46.7	0.00	0.00	
1,800.0	14.80	349.80	1,766.6	284.6	-51.2	-51.2	0.00	0.00	
1,900.0	14.80	349.80	1,863.3	309.8	-55.7	-55.7	0.00	0.00	
2,000.0	14.80	349.80	1,959.9	334.9	-60.3	-60.3	0.00	0.00	
2,100.0	14.80	349.80	2,056.6	360.0	-64.8	-64.8	0.00	0.00	
2,200.0	14.80	349.80	2,153.3	385.2	-69.3	-69.3	0.00	0.00	
2,300.0	14.80	349.80	2,250.0	410.3	-73.8	-73.8	0.00	0.00	
2,400.0	14.80	349.80	2,346.7	435.5	-78.4	-78.4	0.00	0.00	
2,500.0	14.80	349.80	2,443.4	460.6	-82.9	-82.9	0.00	0.00	
2,600.0	14.80	349.80	2,540.0	485.7	-87.4	-87.4	0.00	0.00	
2,700.0	14.80	349.80	2,636.7	510.9	-91.9	-91.9	0.00	0.00	
2,800.0	14.80	349.80	2,733.4	536.0	-96.4	-96.4	0.00	0.00	
2,900.0	14.80	349.80	2,830.1	561.2	-101.0	-101.0	0.00	0.00	
3,000.0	14.80	349.80	2,926.8	586.3	-105.5	-105.5	0.00	0.00	
3,100.0	14.80	349.80	3,023.5	611.4	-110.0	-110.0	0.00	0.00	
3,200.0	14.80	349.80	3,120.1	636.6	-114.5	-114.5	0.00	0.00	
3,300.0	14.80	349.80	3,216.8	661.7	-119.1	-119.1	0.00	0.00	
3,400.0	14.80	349.80	3,313.5	686.9	-123.6	-123.6	0.00	0.00	
3,500.0	14.80	349.80	3,410.2	712.0	-128.1	-128.1	0.00	0.00	
3,600.0	14.80	349.80	3,506.9	737.1	-132.6	-132.6	0.00	0.00	
3,700.0	14.80	349.80	3,603.5	762.3	-137.2	-137.2	0.00	0.00	
3,800.0	14.80	349.80	3,700.2	787.4	-141.7	-141.7	0.00	0.00	
3,900.0	14.80	349.80	3,796.9	812.6	-146.2	-146.2	0.00	0.00	
3,916.6	14.80	349.80	3,813.0	816.8	-147.0	-147.0	0.00	0.00	Sussex
4,000.0	14.80	349.80	3,893.6	837.7	-150.7	-150.7	0.00	0.00	
4,100.0	14.80	349.80	3,990.3	862.9	-155.3	-155.3	0.00	0.00	
4,156.6	14.80	349.80	4,045.0	877.1	-157.8	-157.8	0.00	0.00	Sussex Marker
4,200.0	14.80	349.80	4,087.0	888.0	-159.8	-159.8	0.00	0.00	
4,300.0	14.80	349.80	4,183.6	913.1	-164.3	-164.3	0.00	0.00	
4,400.0	14.80	349.80	4,280.3	938.3	-168.8	-168.8	0.00	0.00	
4,500.0	14.80	349.80	4,377.0	963.4	-173.3	-173.3	0.00	0.00	
4,523.8	14.80	349.80	4,400.0	969.4	-174.4	-174.4	0.00	0.00	Shannon
4,600.0	14.80	349.80	4,473.7	988.6	-177.9	-177.9	0.00	0.00	
4,700.0	14.80	349.80	4,570.4	1,013.7	-182.4	-182.4	0.00	0.00	

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Qualls 3B-28H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 4970.0ft (Original Well Elev)
Project:	DJ Wattenberg	MD Reference:	WELL @ 4970.0ft (Original Well Elev)
Site:	S28-T3N-R68W (Qualls)	North Reference:	True
Well:	Qualls 3B-28H	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	14.80	349.80	4,667.1	1,038.8	-186.9	-186.9	0.00	0.00	
4,900.0	14.80	349.80	4,763.7	1,064.0	-191.4	-191.4	0.00	0.00	
5,000.0	14.80	349.80	4,860.4	1,089.1	-196.0	-196.0	0.00	0.00	
5,100.0	14.80	349.80	4,957.1	1,114.3	-200.5	-200.5	0.00	0.00	
5,200.0	14.80	349.80	5,053.8	1,139.4	-205.0	-205.0	0.00	0.00	
5,300.0	14.80	349.80	5,150.5	1,164.5	-209.5	-209.5	0.00	0.00	
5,400.0	14.80	349.80	5,247.1	1,189.7	-214.1	-214.1	0.00	0.00	
5,500.0	14.80	349.80	5,343.8	1,214.8	-218.6	-218.6	0.00	0.00	
5,560.0	14.80	349.80	5,401.8	1,229.9	-221.3	-221.3	0.00	0.00	Start Drop -2.50
5,600.0	13.80	349.80	5,440.6	1,239.6	-223.0	-223.0	2.50	-2.50	
5,700.0	11.30	349.80	5,538.2	1,261.0	-226.9	-226.9	2.50	-2.50	
5,800.0	8.80	349.80	5,636.7	1,278.2	-230.0	-230.0	2.50	-2.50	
5,900.0	6.30	349.80	5,735.8	1,291.1	-232.3	-232.3	2.50	-2.50	
6,000.0	3.80	349.80	5,835.4	1,299.8	-233.9	-233.9	2.50	-2.50	
6,100.0	1.30	349.80	5,935.3	1,304.2	-234.7	-234.7	2.50	-2.50	
6,152.0	0.00	0.00	5,987.3	1,304.7	-234.8	-234.8	2.50	-2.50	EOD; Inc=0°
6,200.0	0.00	0.00	6,035.3	1,304.7	-234.8	-234.8	0.00	0.00	
6,298.5	0.00	0.00	6,133.8	1,304.7	-234.8	-234.8	0.00	0.00	Start Build 8.00
6,300.0	0.12	90.00	6,135.3	1,304.7	-234.8	-234.8	8.00	8.00	
6,400.0	8.12	90.00	6,234.9	1,304.7	-227.6	-227.6	8.00	8.00	
6,500.0	16.12	90.00	6,332.6	1,304.7	-206.6	-206.6	8.00	8.00	
6,600.0	24.12	90.00	6,426.5	1,304.7	-172.2	-172.2	8.00	8.00	
6,700.0	32.12	90.00	6,514.6	1,304.7	-125.1	-125.1	8.00	8.00	
6,800.0	40.12	90.00	6,595.3	1,304.7	-66.3	-66.3	8.00	8.00	
6,900.0	48.12	90.00	6,667.0	1,304.7	3.3	3.3	8.00	8.00	
6,985.2	54.93	90.00	6,720.0	1,304.7	70.0	70.0	8.00	8.00	Sharon Springs
7,000.0	56.12	90.00	6,728.4	1,304.7	82.2	82.2	8.00	8.00	
7,081.8	62.66	90.00	6,770.0	1,304.7	152.5	152.5	8.00	8.00	Teepee Buttes
7,100.0	64.12	90.00	6,778.2	1,304.7	168.8	168.8	8.00	8.00	
7,108.9	64.83	90.00	6,782.0	1,304.7	176.8	176.8	8.00	8.00	Niobrara
7,200.0	72.12	90.00	6,815.4	1,304.7	261.5	261.5	8.00	8.00	
7,300.0	80.12	90.00	6,839.4	1,304.7	358.5	358.5	8.00	8.00	
7,303.7	80.41	90.00	6,840.0	1,304.7	362.2	362.2	8.00	8.00	B Chalk
7,400.0	88.12	90.00	6,849.6	1,304.7	457.9	457.9	8.00	8.00	
7,423.5	90.00	90.00	6,850.0	1,304.7	481.4	481.4	8.00	8.00	LP @ 6850' TVD; 90°
7,500.0	90.00	90.00	6,850.0	1,304.7	557.9	557.9	0.00	0.00	
7,600.0	90.00	90.00	6,850.0	1,304.7	657.9	657.9	0.00	0.00	
7,700.0	90.00	90.00	6,850.0	1,304.7	757.9	757.9	0.00	0.00	
7,800.0	90.00	90.00	6,850.0	1,304.7	857.9	857.9	0.00	0.00	
7,900.0	90.00	90.00	6,850.0	1,304.7	957.9	957.9	0.00	0.00	
8,000.0	90.00	90.00	6,850.0	1,304.7	1,057.9	1,057.9	0.00	0.00	
8,100.0	90.00	90.00	6,850.0	1,304.7	1,157.9	1,157.9	0.00	0.00	
8,200.0	90.00	90.00	6,850.0	1,304.7	1,257.9	1,257.9	0.00	0.00	
8,300.0	90.00	90.00	6,850.0	1,304.7	1,357.9	1,357.9	0.00	0.00	
8,400.0	90.00	90.00	6,850.0	1,304.7	1,457.9	1,457.9	0.00	0.00	
8,500.0	90.00	90.00	6,850.0	1,304.7	1,557.9	1,557.9	0.00	0.00	
8,600.0	90.00	90.00	6,850.0	1,304.7	1,657.9	1,657.9	0.00	0.00	
8,700.0	90.00	90.00	6,850.0	1,304.7	1,757.9	1,757.9	0.00	0.00	
8,800.0	90.00	90.00	6,850.0	1,304.7	1,857.9	1,857.9	0.00	0.00	
8,900.0	90.00	90.00	6,850.0	1,304.7	1,957.9	1,957.9	0.00	0.00	
9,000.0	90.00	90.00	6,850.0	1,304.7	2,057.9	2,057.9	0.00	0.00	
9,100.0	90.00	90.00	6,850.0	1,304.7	2,157.9	2,157.9	0.00	0.00	

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Qualls 3B-28H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 4970.0ft (Original Well Elev)
Project:	DJ Wattenberg	MD Reference:	WELL @ 4970.0ft (Original Well Elev)
Site:	S28-T3N-R68W (Qualls)	North Reference:	True
Well:	Qualls 3B-28H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
9,200.0	90.00	90.00	6,850.0	1,304.7	2,257.9	2,257.9	0.00	0.00	
9,300.0	90.00	90.00	6,850.0	1,304.6	2,357.9	2,357.9	0.00	0.00	
9,400.0	90.00	90.00	6,850.0	1,304.6	2,457.9	2,457.9	0.00	0.00	
9,500.0	90.00	90.00	6,850.0	1,304.6	2,557.9	2,557.9	0.00	0.00	
9,600.0	90.00	90.00	6,850.0	1,304.6	2,657.9	2,657.9	0.00	0.00	
9,700.0	90.00	90.00	6,850.0	1,304.6	2,757.9	2,757.9	0.00	0.00	
9,800.0	90.00	90.00	6,850.0	1,304.6	2,857.9	2,857.9	0.00	0.00	
9,900.0	90.00	90.00	6,850.0	1,304.6	2,957.9	2,957.9	0.00	0.00	
10,000.0	90.00	90.00	6,850.0	1,304.6	3,057.9	3,057.9	0.00	0.00	
10,100.0	90.00	90.00	6,850.0	1,304.6	3,157.9	3,157.9	0.00	0.00	
10,200.0	90.00	90.00	6,850.0	1,304.6	3,257.9	3,257.9	0.00	0.00	
10,300.0	90.00	90.00	6,850.0	1,304.6	3,357.9	3,357.9	0.00	0.00	
10,400.0	90.00	90.00	6,850.0	1,304.6	3,457.9	3,457.9	0.00	0.00	
10,500.0	90.00	90.00	6,850.0	1,304.6	3,557.9	3,557.9	0.00	0.00	
10,600.0	90.00	90.00	6,850.0	1,304.6	3,657.9	3,657.9	0.00	0.00	
10,700.0	90.00	90.00	6,850.0	1,304.6	3,757.9	3,757.9	0.00	0.00	
10,800.0	90.00	90.00	6,850.0	1,304.6	3,857.9	3,857.9	0.00	0.00	
10,900.0	90.00	90.00	6,850.0	1,304.6	3,957.9	3,957.9	0.00	0.00	
11,000.0	90.00	90.00	6,850.0	1,304.6	4,057.9	4,057.9	0.00	0.00	
11,100.0	90.00	90.00	6,850.0	1,304.6	4,157.9	4,157.9	0.00	0.00	
11,200.0	90.00	90.00	6,850.0	1,304.6	4,257.9	4,257.9	0.00	0.00	
11,300.0	90.00	90.00	6,850.0	1,304.6	4,357.9	4,357.9	0.00	0.00	
11,400.0	90.00	90.00	6,850.0	1,304.6	4,457.9	4,457.9	0.00	0.00	
11,500.0	90.00	90.00	6,850.0	1,304.6	4,557.9	4,557.9	0.00	0.00	
11,523.5	90.00	90.00	6,850.0	1,304.6	4,581.4	4,581.4	0.00	0.00	TD at 11523.5 - Qualls 3B-28H PBHL

Targets

Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
Qualls 3B-28H PBHL	0.00	0.00	6,850.0	1,304.6	4,581.4	1,314,357.59	3,139,678.56	40.195220	-105.000010
- plan hits target center									
- Point									

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,916.6	3,813.0	Sussex			
4,156.6	4,045.0	Sussex Marker			
4,523.8	4,400.0	Shannon			
6,985.2	6,720.0	Sharon Springs			
7,081.8	6,770.0	Teepee Buttes			
7,108.9	6,782.0	Niobrara			
7,303.7	6,840.0	B Chalk			

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Qualls 3B-28H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 4970.0ft (Original Well Elev)
Project:	DJ Wattenberg	MD Reference:	WELL @ 4970.0ft (Original Well Elev)
Site:	S28-T3N-R68W (Qualls)	North Reference:	True
Well:	Qualls 3B-28H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
300.0	300.0	0.0	0.0	KOP @ 300'
1,040.0	1,031.8	93.5	-16.8	EOB; Inc=14.8°
5,560.0	5,401.8	1,229.9	-221.3	Start Drop -2.50
6,152.0	5,987.3	1,304.7	-234.8	EOD; Inc=0°
6,298.5	6,133.8	1,304.7	-234.8	Start Build 8.00
7,423.5	6,850.0	1,304.7	481.4	LP @ 6850' TVD; 90°
11,523.5	6,850.0	1,304.6	4,581.4	TD at 11523.5

EnCana Oil & Gas (USA) Inc

DJ Wattenberg

S28-T3N-R68W (Qualls)

Qualls 3B-28H

Hz

Plan #1

Anticollision Report

12 February, 2013

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Qualls 3B-28H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 4970.0ft (Original Well Elev)
Reference Site:	S28-T3N-R68W (Qualls)	MD Reference:	WELL @ 4970.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Qualls 3B-28H	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	2/12/2013		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	11,523.5	Plan #1 (Hz)	MWD	Geolink MWD

Summary						
Site Name	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
S28-T3N-R68W (Qualls)						
ANDERSON FAMILY TRUST 1 (EXISTING) - EXISTING						Out of range
ELMER HERGENREDER 1 (EXISTING) - EXISTING - N	7,336.3	6,823.7	151.4	122.5	5.240	CC, ES, SF
QUALLS 1 (EXISTING) - EXISTING - NO SURVEYS						Out of range
Qualls 3A-28H - Hz - Plan #1	200.0	200.0	10.9	10.3	16.749	CC, ES
Qualls 3A-28H - Hz - Plan #1	11,524.2	11,787.6	345.7	158.3	1.844	SF
Qualls 3C-28H - Hz - Plan #1	300.0	300.0	10.9	9.9	10.909	CC, ES
Qualls 3C-28H - Hz - Plan #1	400.0	400.0	12.6	11.3	9.367	SF
Qualls 3D-28H - Hz - Plan #1	300.0	300.0	18.2	17.2	18.181	CC, ES
Qualls 3D-28H - Hz - Plan #1	400.0	400.0	19.9	18.6	14.761	SF
Qualls 3E-28H - Hz - Plan #1	300.0	300.0	29.1	28.1	29.090	CC, ES
Qualls 3E-28H - Hz - Plan #1	500.0	499.9	35.9	34.2	21.146	SF
Qualls 3F-28H - Hz - Plan #1	300.0	300.0	40.1	39.1	39.998	CC, ES
Qualls 3F-28H - Hz - Plan #1	500.0	498.4	49.8	48.1	29.365	SF
Qualls 3G-28H - Hz - Plan #1	200.0	200.0	47.4	46.7	72.549	CC, ES
Qualls 3G-28H - Hz - Plan #1	500.0	497.0	61.5	59.8	36.317	SF
SLATER 33-28 (EXISTING) - EXISTING - GYRO						Out of range
SLATER 34-28 (EXISTING) - EXISTING - SURVEYS						Out of range
SLATER 43-28 (EXISTING) - EXISTING - SURVEYS	11,311.0	7,007.6	101.6	-31.4	0.764	Level 1, CC, ES, SF
SLATER 44-28 (EXISTING) - EXISTING - SURVEYS						Out of range
SLATER 4-4-28 (EXISTING) - Existing - SURVEYS	9,386.1	7,074.2	444.9	360.9	5.291	CC
SLATER 4-4-28 (EXISTING) - Existing - SURVEYS	9,400.0	7,074.0	445.2	360.7	5.273	ES, SF
SLATER 4-6-28 (EXISTING) - Existing - NO SURVEYS						Out of range
SLATER 6-4-28 (EXISTING) - EXISTING - SURVEYS	10,409.1	6,992.0	462.9	361.7	4.573	CC, ES
SLATER 6-4-28 (EXISTING) - EXISTING - SURVEYS	10,500.0	6,989.2	471.8	368.3	4.560	SF
WATERFRONT 11-27 (EXISTING) - EXISTING - NO SU						Out of range
WATERFRONT 12-27 (EXISTING) - EXISTING - NO SU						Out of range
WATERFRONT 13-27 (EXISTING) - EXISTING - NO SU						Out of range
WATERFRONT 14-27 (EXISTING) - EXISTING - NO SU						Out of range
WATERFRONT 33-27 (EXISTING) - EXISTING - NO SU						Out of range

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Qualls 3B-28H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 4970.0ft (Original Well Elev)
Reference Site:	S28-T3N-R68W (Qualls)	MD Reference:	WELL @ 4970.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Qualls 3B-28H	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		S28-T3N-R68W (Qualls) - ELMER HERGENREDER 1 (EXISTING) - EXISTING - NO SURVEYS										Offset Site Error:		0.0 ft			
Survey Program:		0-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 Axis	Separation Factor	Warning				
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)							
6,800.0	6,595.3	6,574.3	6,574.3	25.7	11.5	23.26	1,153.3	394.4	484.9	456.3	28.64	16.932					
6,900.0	6,667.0	6,646.0	6,646.0	25.8	11.6	30.11	1,153.3	394.4	419.4	393.0	26.45	15.858					
7,000.0	6,728.4	6,707.4	6,707.4	25.9	11.7	41.01	1,153.3	394.4	347.1	322.2	24.86	13.958					
7,100.0	6,778.2	6,757.2	6,757.2	26.2	11.8	56.95	1,153.3	394.4	271.7	246.8	24.91	10.907					
7,200.0	6,815.4	6,794.4	6,794.4	26.6	11.9	74.91	1,153.3	394.4	201.5	175.0	26.51	7.600					
7,300.0	6,839.4	6,818.4	6,818.4	27.1	11.9	87.67	1,153.3	394.4	155.6	127.4	28.25	5.509					
7,336.3	6,844.7	6,823.7	6,823.7	27.4	11.9	90.00	1,153.3	394.4	151.4	122.5	28.90	5.240	CC, ES, SF				
7,400.0	6,849.6	6,828.6	6,828.6	27.9	11.9	90.79	1,153.3	394.4	164.2	134.1	30.04	5.464					
7,500.0	6,850.0	6,829.0	6,829.0	28.8	11.9	90.00	1,153.3	394.4	222.8	190.8	31.97	6.969					
7,600.0	6,850.0	6,829.0	6,829.0	29.9	11.9	90.00	1,153.3	394.4	303.9	269.9	34.01	8.935					
7,700.0	6,850.0	6,829.0	6,829.0	31.2	11.9	90.00	1,153.3	394.4	393.7	357.6	36.13	10.897					
7,800.0	6,850.0	6,829.0	6,829.0	32.7	11.9	90.00	1,153.3	394.4	487.6	449.2	38.32	12.725					

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Qualls 3B-28H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 4970.0ft (Original Well Elev)
Reference Site:	S28-T3N-R68W (Qualls)	MD Reference:	WELL @ 4970.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Qualls 3B-28H	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 S28-T3N-R68W (Qualls) - Qualls 3A-28H - Hz - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)						
0.0	0.0	0.0	0.0	0.0	0.0	0.00	10.9	0.0	10.9					
100.0	100.0	100.0	100.0	0.2	0.2	0.00	10.9	0.0	10.9	10.6	0.30	36.000		
200.0	200.0	200.0	200.0	0.3	0.3	0.00	10.9	0.0	10.9	10.3	0.65	16.749 CC, ES		
300.0	300.0	299.5	299.4	0.5	0.5	-1.41	13.1	-0.3	13.1	12.1	1.00	13.064		
400.0	400.0	398.7	398.4	0.7	0.7	7.02	19.4	-1.3	17.8	16.5	1.35	13.211		
500.0	499.8	497.7	496.8	0.9	1.0	6.08	30.0	-2.9	23.4	21.7	1.70	13.801		
600.0	599.5	596.3	594.3	1.1	1.3	5.58	44.7	-5.1	29.8	27.8	2.04	14.601		
700.0	698.7	694.6	690.8	1.3	1.6	5.31	63.5	-8.0	37.0	34.7	2.39	15.513		
800.0	797.5	792.5	786.0	1.6	2.1	5.19	86.3	-11.4	45.1	42.3	2.73	16.489		
900.0	895.6	890.9	880.6	2.0	2.5	5.17	112.8	-15.4	53.6	50.5	3.08	17.398		
1,000.0	993.1	990.7	976.4	2.4	3.0	5.41	140.6	-19.6	59.5	56.0	3.43	17.337		
1,100.0	1,089.8	1,090.7	1,072.3	2.9	3.6	5.87	168.4	-23.8	62.5	58.7	3.79	16.491		
1,200.0	1,186.5	1,190.6	1,168.2	3.3	4.1	6.31	196.3	-28.0	65.3	61.1	4.16	15.697		
1,300.0	1,283.2	1,290.6	1,264.1	3.8	4.6	6.72	224.1	-32.2	68.0	63.5	4.53	15.024		
1,400.0	1,379.9	1,390.6	1,360.0	4.2	5.1	7.10	251.9	-36.4	70.8	65.9	4.90	14.445		
1,500.0	1,476.5	1,490.5	1,455.9	4.7	5.6	7.44	279.7	-40.7	73.6	68.3	5.28	13.941		
1,600.0	1,573.2	1,590.5	1,551.9	5.2	6.1	7.77	307.6	-44.9	76.3	70.7	5.66	13.498		
1,700.0	1,669.9	1,690.4	1,647.8	5.6	6.6	8.07	335.4	-49.1	79.1	73.1	6.04	13.105		
1,800.0	1,766.6	1,790.4	1,743.7	6.1	7.2	8.35	363.2	-53.3	81.9	75.5	6.42	12.755		
1,900.0	1,863.3	1,890.4	1,839.6	6.6	7.7	8.61	391.0	-57.5	84.7	77.9	6.81	12.440		
2,000.0	1,959.9	1,990.3	1,935.5	7.1	8.2	8.85	418.9	-61.7	87.5	80.3	7.19	12.155		
2,100.0	2,056.6	2,090.3	2,031.4	7.5	8.7	9.08	446.7	-65.9	90.2	82.7	7.58	11.897		
2,200.0	2,153.3	2,190.2	2,127.4	8.0	9.2	9.30	474.5	-70.1	93.0	85.0	7.98	11.661		
2,300.0	2,250.0	2,290.2	2,223.3	8.5	9.8	9.50	502.3	-74.3	95.8	87.4	8.37	11.445		
2,400.0	2,346.7	2,390.2	2,319.2	9.0	10.3	9.70	530.1	-78.5	98.6	89.8	8.77	11.246		
2,500.0	2,443.4	2,490.1	2,415.1	9.4	10.8	9.88	558.0	-82.7	101.4	92.2	9.16	11.062		
2,600.0	2,540.0	2,590.1	2,511.0	9.9	11.3	10.05	585.8	-86.9	104.2	94.6	9.56	10.892		
2,700.0	2,636.7	2,690.0	2,607.0	10.4	11.8	10.21	613.6	-91.1	107.0	97.0	9.96	10.735		
2,800.0	2,733.4	2,790.0	2,702.9	10.9	12.4	10.37	641.4	-95.4	109.8	99.4	10.37	10.588		
2,900.0	2,830.1	2,890.0	2,798.8	11.4	12.9	10.51	669.3	-99.6	112.5	101.8	10.77	10.451		
3,000.0	2,926.8	2,989.9	2,894.7	11.8	13.4	10.65	697.1	-103.8	115.3	104.2	11.17	10.322		
3,100.0	3,023.5	3,089.9	2,990.6	12.3	13.9	10.79	724.9	-108.0	118.1	106.6	11.58	10.202		
3,200.0	3,120.1	3,189.9	3,086.5	12.8	14.4	10.91	752.7	-112.2	120.9	108.9	11.99	10.089		
3,300.0	3,216.8	3,289.8	3,182.5	13.3	15.0	11.03	780.6	-116.4	123.7	111.3	12.39	9.983		
3,400.0	3,313.5	3,389.8	3,278.4	13.7	15.5	11.15	808.4	-120.6	126.5	113.7	12.80	9.883		
3,500.0	3,410.2	3,489.7	3,374.3	14.2	16.0	11.26	836.2	-124.8	129.3	116.1	13.21	9.788		
3,600.0	3,506.9	3,589.7	3,470.2	14.7	16.5	11.37	864.0	-129.0	132.1	118.5	13.62	9.699		
3,700.0	3,603.5	3,689.7	3,566.1	15.2	17.1	11.47	891.8	-133.2	134.9	120.9	14.03	9.614		
3,800.0	3,700.2	3,789.6	3,662.1	15.7	17.6	11.57	919.7	-137.4	137.7	123.3	14.44	9.533		
3,900.0	3,796.9	3,889.6	3,758.0	16.1	18.1	11.66	947.5	-141.6	140.5	125.6	14.86	9.457		
4,000.0	3,893.6	3,989.5	3,853.9	16.6	18.6	11.75	975.3	-145.8	143.3	128.0	15.27	9.384		
4,100.0	3,990.3	4,089.5	3,949.8	17.1	19.1	11.84	1,003.1	-150.1	146.1	130.4	15.68	9.315		
4,200.0	4,087.0	4,189.5	4,045.7	17.6	19.7	11.92	1,031.0	-154.3	148.9	132.8	16.10	9.249		
4,300.0	4,183.6	4,289.4	4,141.6	18.0	20.2	12.00	1,058.8	-158.5	151.7	135.2	16.51	9.186		
4,400.0	4,280.3	4,389.4	4,237.6	18.5	20.7	12.08	1,086.6	-162.7	154.5	137.6	16.93	9.126		
4,500.0	4,377.0	4,489.3	4,333.5	19.0	21.2	12.15	1,114.4	-166.9	157.3	139.9	17.35	9.068		
4,600.0	4,473.7	4,589.3	4,429.4	19.5	21.7	12.22	1,142.3	-171.1	160.1	142.3	17.76	9.013		
4,700.0	4,570.4	4,689.3	4,525.3	20.0	22.3	12.29	1,170.1	-175.3	162.9	144.7	18.18	8.960		
4,800.0	4,667.1	4,789.2	4,621.2	20.4	22.8	12.36	1,197.9	-179.5	165.7	147.1	18.60	8.910		
4,900.0	4,763.7	4,889.2	4,717.2	20.9	23.3	12.43	1,225.7	-183.7	168.5	149.5	19.01	8.861		
5,000.0	4,860.4	4,989.1	4,813.1	21.4	23.8	12.49	1,253.5	-187.9	171.3	151.9	19.43	8.814		
5,100.0	4,957.1	5,089.1	4,909.0	21.9	24.3	12.55	1,281.4	-192.1	174.1	154.2	19.85	8.769		

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 Qualls 3B-28H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 4970.0ft (Original Well Elev)
Reference Site:	S28-T3N-R68W (Qualls)	MD Reference:	WELL @ 4970.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Qualls 3B-28H	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 S28-T3N-R68W (Qualls) - Qualls 3A-28H - Hz - Plan #1														Offset Site Error: 0.0 ft	
Survey Program: 0-MWD														Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor			
5,200.0	5,053.8	5,189.1	5,004.9	22.4	24.9	12.61	1,309.2	-196.3	176.9	156.6	20.27	8.726			
5,300.0	5,150.5	5,289.0	5,100.8	22.8	25.4	12.67	1,337.0	-200.6	179.7	159.0	20.69	8.685			
5,400.0	5,247.1	5,389.0	5,196.7	23.3	25.9	12.72	1,364.8	-204.8	182.5	161.4	21.11	8.645			
5,500.0	5,343.8	5,488.9	5,292.7	23.8	26.4	12.77	1,392.7	-209.0	185.3	163.8	21.53	8.606			
5,600.0	5,440.6	5,588.9	5,388.6	24.3	27.0	12.81	1,420.5	-213.2	188.4	166.5	21.94	8.587			
5,700.0	5,538.2	5,688.7	5,484.3	24.6	27.5	12.64	1,448.2	-217.4	195.1	172.8	22.26	8.764			
5,800.0	5,636.7	5,788.1	5,579.7	25.0	28.0	12.24	1,475.9	-221.6	205.9	183.5	22.46	9.170			
5,900.0	5,735.8	5,892.1	5,679.7	25.2	28.5	11.67	1,504.2	-225.8	220.5	197.9	22.57	9.768			
6,000.0	5,835.4	6,001.7	5,786.2	25.4	29.0	11.11	1,529.7	-229.7	235.2	212.5	22.66	10.377			
6,100.0	5,935.3	6,112.2	5,894.7	25.5	29.3	10.59	1,550.3	-232.8	249.5	226.7	22.75	10.967			
6,200.0	6,035.3	6,223.6	6,005.0	25.6	29.6	-0.08	1,565.8	-235.1	262.8	208.2	54.57	4.815			
6,300.0	6,135.3	6,336.2	6,117.1	25.6	29.8	-90.40	1,576.0	-236.7	271.9	248.7	23.14	11.748			
6,400.0	6,234.9	6,449.1	6,229.9	25.7	29.9	-91.88	1,580.8	-237.4	276.3	253.2	23.03	11.996			
6,500.0	6,332.6	6,551.8	6,332.6	25.7	30.0	-96.13	1,581.2	-237.5	278.2	255.6	22.51	12.357			
6,600.0	6,426.5	6,653.7	6,434.2	25.7	30.0	-101.68	1,581.2	-231.4	282.8	260.1	22.66	12.477			
6,700.0	6,514.6	6,760.7	6,538.9	25.7	30.1	-106.98	1,581.2	-209.5	290.1	266.4	23.66	12.262			
6,800.0	6,595.3	6,872.9	6,643.8	25.7	30.1	-111.84	1,581.2	-170.2	299.3	274.3	24.98	11.982			
6,900.0	6,667.0	6,990.7	6,746.0	25.8	30.1	-116.14	1,581.2	-111.8	309.7	283.5	26.19	11.827			
7,000.0	6,728.4	7,114.3	6,841.4	25.9	30.1	-119.80	1,581.2	-33.5	320.3	293.1	27.13	11.807			
7,100.0	6,778.2	7,243.5	6,925.2	26.2	30.2	-122.74	1,581.2	64.6	330.0	302.3	27.65	11.936			
7,200.0	6,815.4	7,377.6	6,992.0	26.6	30.5	-124.91	1,581.2	180.7	337.9	309.7	28.16	12.001			
7,300.0	6,839.4	7,515.5	7,037.0	27.1	31.0	-126.28	1,581.2	310.8	343.2	314.3	28.87	11.889			
7,400.0	6,849.6	7,655.7	7,056.4	27.9	31.8	-126.81	1,581.2	449.4	345.4	315.3	30.05	11.493			
7,500.0	6,850.0	7,764.2	7,057.0	28.8	32.7	-126.82	1,581.2	557.9	345.4	312.6	32.82	10.523			
7,600.0	6,850.0	7,864.2	7,057.0	29.9	33.6	-126.82	1,581.2	657.9	345.4	309.3	36.12	9.562			
7,700.0	6,850.0	7,964.2	7,057.0	31.2	34.7	-126.82	1,581.2	757.9	345.4	305.9	39.54	8.735			
7,800.0	6,850.0	8,064.2	7,057.0	32.7	35.9	-126.82	1,581.2	857.9	345.4	302.4	43.06	8.022			
7,900.0	6,850.0	8,164.2	7,057.0	34.3	37.3	-126.82	1,581.2	957.9	345.4	298.8	46.65	7.405			
8,000.0	6,850.0	8,264.2	7,057.0	36.1	38.8	-126.82	1,581.2	1,057.9	345.4	295.1	50.29	6.868			
8,100.0	6,850.0	8,364.2	7,057.0	37.9	40.5	-126.81	1,581.2	1,157.9	345.4	291.5	53.99	6.399			
8,200.0	6,850.0	8,464.2	7,057.0	39.9	42.2	-126.81	1,581.3	1,257.9	345.5	287.7	57.72	5.985			
8,300.0	6,850.0	8,564.2	7,057.0	41.9	44.1	-126.81	1,581.3	1,357.9	345.5	284.0	61.47	5.620			
8,400.0	6,850.0	8,664.2	7,057.0	44.0	46.0	-126.81	1,581.3	1,457.9	345.5	280.2	65.26	5.294			
8,500.0	6,850.0	8,764.2	7,057.0	46.1	48.0	-126.81	1,581.3	1,557.9	345.5	276.4	69.06	5.002			
8,600.0	6,850.0	8,864.2	7,057.0	48.3	50.1	-126.81	1,581.3	1,657.9	345.5	272.6	72.89	4.740			
8,700.0	6,850.0	8,964.2	7,057.0	50.5	52.2	-126.81	1,581.3	1,757.9	345.5	268.8	76.72	4.503			
8,800.0	6,850.0	9,064.2	7,057.0	52.7	54.3	-126.81	1,581.3	1,857.9	345.5	264.9	80.57	4.288			
8,900.0	6,850.0	9,164.2	7,057.0	55.0	56.5	-126.81	1,581.3	1,957.9	345.5	261.1	84.44	4.092			
9,000.0	6,850.0	9,264.2	7,057.0	57.3	58.7	-126.81	1,581.3	2,057.9	345.5	257.2	88.31	3.913			
9,100.0	6,850.0	9,364.2	7,057.0	59.6	60.9	-126.81	1,581.3	2,157.9	345.5	253.3	92.19	3.748			
9,200.0	6,850.0	9,464.2	7,057.0	61.9	63.2	-126.81	1,581.3	2,257.9	345.5	249.4	96.08	3.596			
9,300.0	6,850.0	9,564.2	7,057.0	64.2	65.4	-126.80	1,581.3	2,357.9	345.5	245.6	99.97	3.456			
9,400.0	6,850.0	9,664.2	7,057.0	66.5	67.7	-126.80	1,581.3	2,457.9	345.5	241.7	103.87	3.327			
9,500.0	6,850.0	9,764.2	7,057.0	68.9	70.0	-126.80	1,581.3	2,557.9	345.5	237.8	107.78	3.206			
9,600.0	6,850.0	9,864.2	7,057.0	71.2	72.3	-126.80	1,581.3	2,657.9	345.5	233.9	111.68	3.094			
9,700.0	6,850.0	9,964.2	7,057.0	73.6	74.6	-126.80	1,581.3	2,757.9	345.6	230.0	115.60	2.989			
9,800.0	6,850.0	10,064.2	7,057.0	76.0	77.0	-126.80	1,581.3	2,857.9	345.6	226.0	119.52	2.891			
9,900.0	6,850.0	10,164.2	7,057.0	78.3	79.3	-126.80	1,581.3	2,957.9	345.6	222.1	123.44	2.800			
10,000.0	6,850.0	10,264.2	7,057.0	80.7	81.7	-126.80	1,581.3	3,057.9	345.6	218.2	127.36	2.713			
10,100.0	6,850.0	10,364.2	7,057.0	83.1	84.0	-126.80	1,581.3	3,157.9	345.6	214.3	131.29	2.632			
10,200.0	6,850.0	10,464.2	7,057.0	85.5	86.4	-126.80	1,581.4	3,257.9	345.6	210.4	135.22	2.556			
10,300.0	6,850.0	10,564.2	7,057.0	87.9	88.8	-126.80	1,581.4	3,357.9	345.6	206.4	139.15	2.484			

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 Qualls 3B-28H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 4970.0ft (Original Well Elev)
Reference Site:	S28-T3N-R68W (Qualls)	MD Reference:	WELL @ 4970.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Qualls 3B-28H	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 S28-T3N-R68W (Qualls) - Qualls 3A-28H - Hz - Plan #1												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)			
10,400.0	6,850.0	10,664.2	7,057.0	90.3	91.2	-126.79	1,581.4	3,457.9	345.6	202.5	143.09	2.415	
10,500.0	6,850.0	10,764.2	7,057.0	92.7	93.6	-126.79	1,581.4	3,557.9	345.6	198.6	147.02	2.351	
10,600.0	6,850.0	10,864.2	7,057.0	95.1	95.9	-126.79	1,581.4	3,657.9	345.6	194.7	150.96	2.289	
10,700.0	6,850.0	10,964.2	7,057.0	97.5	98.3	-126.79	1,581.4	3,757.9	345.6	190.7	154.90	2.231	
10,800.0	6,850.0	11,064.2	7,057.0	100.0	100.7	-126.79	1,581.4	3,857.9	345.6	186.8	158.85	2.176	
10,900.0	6,850.0	11,164.2	7,057.0	102.4	103.1	-126.79	1,581.4	3,957.9	345.6	182.9	162.79	2.123	
11,000.0	6,850.0	11,264.2	7,057.0	104.8	105.5	-126.79	1,581.4	4,057.9	345.6	178.9	166.73	2.073	
11,100.0	6,850.0	11,364.2	7,057.0	107.2	108.0	-126.79	1,581.4	4,157.9	345.7	175.0	170.68	2.025	
11,200.0	6,850.0	11,464.2	7,057.0	109.7	110.4	-126.79	1,581.4	4,257.9	345.7	171.0	174.63	1.979	
11,300.0	6,850.0	11,564.2	7,057.0	112.1	112.8	-126.79	1,581.4	4,357.9	345.7	167.1	178.58	1.936	
11,400.0	6,850.0	11,664.2	7,057.0	114.5	115.2	-126.79	1,581.4	4,457.9	345.7	163.1	182.53	1.894	
11,500.0	6,850.0	11,764.2	7,057.0	117.0	117.6	-126.79	1,581.4	4,557.9	345.7	159.2	186.48	1.854	
11,509.9	6,850.0	11,774.1	7,057.0	117.2	117.9	-126.78	1,581.4	4,567.8	345.7	158.8	186.87	1.850	
11,524.2	6,850.0	11,787.6	7,057.0	117.6	118.2	-126.78	1,581.4	4,581.3	345.7	158.3	187.42	1.844 SF	

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Qualls 3B-28H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 4970.0ft (Original Well Elev)
Reference Site:	S28-T3N-R68W (Qualls)	MD Reference:	WELL @ 4970.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Qualls 3B-28H	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 S28-T3N-R68W (Qualls) - Qualls 3C-28H - Hz - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis			
0.0	0.0	0.0	0.0	0.0	0.0	180.00	-10.9	0.0	10.9					
100.0	100.0	100.0	100.0	0.2	0.2	180.00	-10.9	0.0	10.9	10.6	0.30	35.986		
200.0	200.0	200.0	200.0	0.3	0.3	180.00	-10.9	0.0	10.9	10.3	0.65	16.742		
300.0	300.0	300.0	300.0	0.5	0.5	180.00	-10.9	0.0	10.9	9.9	1.00	10.909 CC, ES		
400.0	400.0	400.0	400.0	0.7	0.7	-171.19	-10.9	0.0	12.6	11.3	1.35	9.367 SF		
500.0	499.8	500.1	500.1	0.9	0.9	-173.05	-10.1	-0.3	17.0	15.3	1.70	10.007		
600.0	599.5	600.3	600.2	1.1	1.0	-174.00	-7.6	-1.1	23.1	21.1	2.04	11.307		
700.0	698.7	700.4	700.3	1.3	1.2	-174.42	-3.4	-2.4	31.0	28.6	2.39	12.977		
800.0	797.5	800.6	800.2	1.6	1.4	-174.56	2.4	-4.3	40.7	38.0	2.73	14.877		
900.0	895.6	900.7	900.1	2.0	1.6	-174.56	9.9	-6.8	52.1	49.0	3.08	16.930		
1,000.0	993.1	1,000.8	999.7	2.4	1.8	-174.49	19.0	-9.7	65.3	61.9	3.42	19.088		
1,100.0	1,089.8	1,101.0	1,099.3	2.9	2.1	-174.36	29.8	-13.2	79.6	75.9	3.77	21.100		
1,200.0	1,186.5	1,201.6	1,199.0	3.3	2.3	-174.04	42.3	-17.3	92.6	88.4	4.14	22.366		
1,300.0	1,283.2	1,302.7	1,299.0	3.8	2.6	-173.57	56.6	-21.9	103.8	99.3	4.51	23.019		
1,400.0	1,379.9	1,404.1	1,399.0	4.2	3.0	-172.95	72.5	-27.1	113.3	108.4	4.89	23.186		
1,500.0	1,476.5	1,505.8	1,498.9	4.7	3.3	-172.21	90.2	-32.9	121.1	115.9	5.28	22.959		
1,600.0	1,573.2	1,607.5	1,598.6	5.2	3.7	-171.34	109.6	-39.2	127.3	121.6	5.68	22.412		
1,700.0	1,669.9	1,707.4	1,696.3	5.6	4.0	-170.46	129.4	-45.6	132.7	126.7	6.09	21.795		
1,800.0	1,766.6	1,807.2	1,793.9	6.1	4.4	-169.66	149.1	-52.0	138.2	131.7	6.51	21.231		
1,900.0	1,863.3	1,907.0	1,891.6	6.6	4.8	-168.92	168.9	-58.4	143.7	136.8	6.94	20.713		
2,000.0	1,959.9	2,006.9	1,989.2	7.1	5.2	-168.23	188.6	-64.8	149.3	141.9	7.38	20.236		
2,100.0	2,056.6	2,106.7	2,086.9	7.5	5.6	-167.59	208.3	-71.2	154.8	147.0	7.82	19.795		
2,200.0	2,153.3	2,206.5	2,184.5	8.0	6.0	-166.99	228.1	-77.7	160.4	152.1	8.27	19.387		
2,300.0	2,250.0	2,306.4	2,282.2	8.5	6.4	-166.44	247.8	-84.1	166.0	157.2	8.73	19.009		
2,400.0	2,346.7	2,406.2	2,379.8	9.0	6.7	-165.92	267.6	-90.5	171.6	162.4	9.20	18.658		
2,500.0	2,443.4	2,506.0	2,477.5	9.4	7.1	-165.43	287.3	-96.9	177.2	167.5	9.67	18.331		
2,600.0	2,540.0	2,605.9	2,575.1	9.9	7.5	-164.98	307.0	-103.3	182.8	172.7	10.14	18.026		
2,700.0	2,636.7	2,705.7	2,672.8	10.4	7.9	-164.55	326.8	-109.7	188.4	177.8	10.62	17.741		
2,800.0	2,733.4	2,805.5	2,770.4	10.9	8.3	-164.14	346.5	-116.1	194.1	183.0	11.11	17.475		
2,900.0	2,830.1	2,905.3	2,868.1	11.4	8.7	-163.76	366.3	-122.6	199.7	188.1	11.59	17.226		
3,000.0	2,926.8	3,005.2	2,965.7	11.8	9.1	-163.40	386.0	-129.0	205.4	193.3	12.09	16.993		
3,100.0	3,023.5	3,105.0	3,063.4	12.3	9.5	-163.06	405.7	-135.4	211.1	198.5	12.58	16.773		
3,200.0	3,120.1	3,204.8	3,161.0	12.8	9.9	-162.74	425.5	-141.8	216.7	203.7	13.08	16.567		
3,300.0	3,216.8	3,304.7	3,258.7	13.3	10.3	-162.43	445.2	-148.2	222.4	208.8	13.59	16.372		
3,400.0	3,313.5	3,404.5	3,356.3	13.7	10.7	-162.14	465.0	-154.6	228.1	214.0	14.09	16.189		
3,500.0	3,410.2	3,504.3	3,454.0	14.2	11.1	-161.86	484.7	-161.0	233.8	219.2	14.60	16.016		
3,600.0	3,506.9	3,604.2	3,551.6	14.7	11.5	-161.60	504.4	-167.5	239.5	224.4	15.11	15.852		
3,700.0	3,603.5	3,704.0	3,649.3	15.2	11.9	-161.35	524.2	-173.9	245.2	229.6	15.62	15.697		
3,800.0	3,700.2	3,803.8	3,746.9	15.7	12.3	-161.11	543.9	-180.3	250.9	234.8	16.14	15.550		
3,900.0	3,796.9	3,903.7	3,844.6	16.1	12.7	-160.88	563.7	-186.7	256.6	240.0	16.65	15.411		
4,000.0	3,893.6	4,003.5	3,942.2	16.6	13.1	-160.66	583.4	-193.1	262.4	245.2	17.17	15.279		
4,100.0	3,990.3	4,103.3	4,039.9	17.1	13.5	-160.45	603.1	-199.5	268.1	250.4	17.69	15.153		
4,200.0	4,087.0	4,200.0	4,134.5	17.6	13.9	-160.31	621.7	-205.6	274.3	256.1	18.19	15.085		
4,300.0	4,183.6	4,295.3	4,228.2	18.0	14.2	-160.32	638.6	-211.0	282.0	263.4	18.63	15.141		
4,400.0	4,280.3	4,390.7	4,322.2	18.5	14.5	-160.48	654.0	-216.0	291.2	272.2	19.02	15.310		
4,500.0	4,377.0	4,485.7	4,416.1	19.0	14.8	-160.76	667.9	-220.6	301.8	282.5	19.37	15.585		
4,600.0	4,473.7	4,580.4	4,509.9	19.5	15.1	-161.16	680.2	-224.6	314.0	294.3	19.67	15.961		
4,700.0	4,570.4	4,674.7	4,603.5	20.0	15.3	-161.64	691.0	-228.1	327.6	307.7	19.94	16.430		
4,800.0	4,667.1	4,768.5	4,696.8	20.4	15.6	-162.20	700.3	-231.1	342.7	322.5	20.17	16.988		
4,900.0	4,763.7	4,861.9	4,789.8	20.9	15.8	-162.82	708.1	-233.6	359.3	338.9	20.38	17.630		
5,000.0	4,860.4	4,954.7	4,882.4	21.4	15.9	-163.47	714.4	-235.7	377.4	356.8	20.57	18.351		
5,100.0	4,957.1	5,046.9	4,974.5	21.9	16.1	-164.15	719.3	-237.3	397.0	376.3	20.74	19.146		

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 Qualls 3B-28H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 4970.0ft (Original Well Elev)
Reference Site:	S28-T3N-R68W (Qualls)	MD Reference:	WELL @ 4970.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Qualls 3B-28H	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												S28-T3N-R68W (Qualls) - Qualls 3C-28H - Hz - Plan #1		Offset Site Error:		0.0 ft	
Survey Program:												0-MWD		Offset Well Error:		0.0 ft	
Reference		Offset		Semi Major Axis			Distance							Warning			
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Total Uncertainty Axis	Separation Factor					
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)							
5,200.0	5,053.8	5,138.6	5,066.0	22.4	16.2	-164.85	722.8	-238.4	418.1	397.2	20.90	20.011					
5,300.0	5,150.5	5,229.5	5,156.9	22.8	16.3	-165.55	724.8	-239.1	440.7	419.7	21.05	20.940					
5,400.0	5,247.1	5,320.0	5,247.4	23.3	16.4	-166.25	725.5	-239.3	464.8	443.7	21.20	21.929					
5,500.0	5,343.8	5,416.4	5,343.8	23.8	16.5	-166.96	725.5	-239.3	489.7	468.4	21.36	22.931					

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Qualls 3B-28H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 4970.0ft (Original Well Elev)
Reference Site:	S28-T3N-R68W (Qualls)	MD Reference:	WELL @ 4970.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Qualls 3B-28H	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 S28-T3N-R68W (Qualls) - Qualls 3D-28H - Hz - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Distance		Total Uncertainty Axis	Separation Factor	Warning			
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)						
0.0	0.0	0.0	0.0	0.0	0.0	180.00	-18.2	0.0	18.2					
100.0	100.0	100.0	100.0	0.2	0.2	180.00	-18.2	0.0	18.2	17.9	0.30	59.977		
200.0	200.0	200.0	200.0	0.3	0.3	180.00	-18.2	0.0	18.2	17.6	0.65	27.904		
300.0	300.0	300.0	300.0	0.5	0.5	180.00	-18.2	0.0	18.2	17.2	1.00	18.181 CC, ES		
400.0	400.0	400.0	400.0	0.7	0.7	-170.68	-18.2	0.0	19.9	18.6	1.35	14.761 SF		
500.0	499.8	499.8	499.8	0.9	0.8	-172.60	-18.2	0.0	25.1	23.4	1.70	14.792		
600.0	599.5	600.0	600.0	1.1	1.0	-173.77	-17.5	-0.5	33.0	31.0	2.04	16.153		
700.0	698.7	700.0	700.0	1.3	1.2	-173.79	-15.3	-1.9	42.9	40.5	2.39	17.939		
800.0	797.5	800.1	799.9	1.6	1.4	-173.29	-11.7	-4.3	54.7	51.9	2.74	19.981		
900.0	895.6	900.1	899.7	2.0	1.6	-172.57	-6.6	-7.7	68.4	65.3	3.08	22.178		
1,000.0	993.1	999.9	999.3	2.4	1.8	-171.78	0.0	-12.0	84.1	80.6	3.44	24.466		
1,100.0	1,089.8	1,099.9	1,098.8	2.9	2.0	-170.98	7.9	-17.3	101.1	97.3	3.81	26.561		
1,200.0	1,186.5	1,200.2	1,198.4	3.3	2.2	-169.97	17.4	-23.6	117.0	112.8	4.20	27.864		
1,300.0	1,283.2	1,300.9	1,298.3	3.8	2.5	-168.78	28.4	-30.8	131.4	126.8	4.61	28.513		
1,400.0	1,379.9	1,402.0	1,398.3	4.2	2.8	-167.41	40.9	-39.1	144.5	139.4	5.05	28.631		
1,500.0	1,476.5	1,503.3	1,498.2	4.7	3.1	-165.88	54.9	-48.4	156.2	150.7	5.52	28.317		
1,600.0	1,573.2	1,602.6	1,596.0	5.2	3.4	-164.41	69.2	-57.9	167.4	161.4	6.01	27.873		
1,700.0	1,669.9	1,701.9	1,693.7	5.6	3.7	-163.13	83.6	-67.4	178.7	172.2	6.51	27.440		
1,800.0	1,766.6	1,801.2	1,791.5	6.1	4.1	-162.00	98.0	-76.9	190.0	183.0	7.03	27.027		
1,900.0	1,863.3	1,900.5	1,889.3	6.6	4.4	-161.00	112.4	-86.4	201.5	193.9	7.56	26.638		
2,000.0	1,959.9	1,999.7	1,987.1	7.1	4.7	-160.10	126.7	-95.9	212.9	204.8	8.10	26.273		
2,100.0	2,056.6	2,099.0	2,084.9	7.5	5.0	-159.30	141.1	-105.5	224.5	215.8	8.65	25.933		
2,200.0	2,153.3	2,198.3	2,182.6	8.0	5.4	-158.58	155.5	-115.0	236.0	226.8	9.21	25.618		
2,300.0	2,250.0	2,297.6	2,280.4	8.5	5.7	-157.92	169.9	-124.5	247.6	237.8	9.78	25.325		
2,400.0	2,346.7	2,396.9	2,378.2	9.0	6.1	-157.32	184.2	-134.0	259.2	248.9	10.35	25.055		
2,500.0	2,443.4	2,496.2	2,476.0	9.4	6.4	-156.78	198.6	-143.5	270.9	260.0	10.92	24.803		
2,600.0	2,540.0	2,595.5	2,573.8	9.9	6.7	-156.28	213.0	-153.0	282.5	271.0	11.50	24.571		
2,700.0	2,636.7	2,694.8	2,671.5	10.4	7.1	-155.81	227.4	-162.6	294.2	282.2	12.08	24.354		
2,800.0	2,733.4	2,794.0	2,769.3	10.9	7.4	-155.39	241.8	-172.1	305.9	293.3	12.67	24.153		
2,900.0	2,830.1	2,893.3	2,867.1	11.4	7.8	-154.99	256.1	-181.6	317.7	304.4	13.25	23.966		
3,000.0	2,926.8	2,992.5	2,964.8	11.8	8.1	-154.63	270.5	-191.1	329.4	315.6	13.84	23.793		
3,100.0	3,023.5	3,088.0	3,059.0	12.3	8.4	-154.40	283.6	-199.8	341.7	327.3	14.39	23.744		
3,200.0	3,120.1	3,183.3	3,153.2	12.8	8.7	-154.39	295.4	-207.6	355.2	340.3	14.89	23.848		
3,300.0	3,216.8	3,278.2	3,247.3	13.3	9.0	-154.56	305.9	-214.5	369.7	354.3	15.35	24.090		
3,400.0	3,313.5	3,372.8	3,341.2	13.7	9.2	-154.90	315.0	-220.6	385.3	369.5	15.75	24.461		
3,500.0	3,410.2	3,467.0	3,435.0	14.2	9.4	-155.37	322.8	-225.7	402.0	385.9	16.11	24.950		
3,600.0	3,506.9	3,560.7	3,528.4	14.7	9.6	-155.97	329.3	-230.0	419.9	403.4	16.43	25.553		
3,700.0	3,603.5	3,654.0	3,621.4	15.2	9.8	-156.66	334.5	-233.5	438.9	422.1	16.71	26.262		
3,800.0	3,700.2	3,746.6	3,713.9	15.7	10.0	-157.42	338.4	-236.0	459.0	442.1	16.96	27.072		
3,900.0	3,796.9	3,838.7	3,806.0	16.1	10.1	-158.25	341.0	-237.8	480.4	463.2	17.17	27.980		

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Qualls 3B-28H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 4970.0ft (Original Well Elev)
Reference Site:	S28-T3N-R68W (Qualls)	MD Reference:	WELL @ 4970.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Qualls 3B-28H	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 S28-T3N-R68W (Qualls) - Qualls 3E-28H - Hz - Plan #1													Offset Site Error: 0.0 ft	
Survey Program: 0-MWD													Offset Well Error: 0.0 ft	
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
0.0	0.0	0.0	0.0	0.0	0.0	180.00	-29.1	0.0	29.1					
100.0	100.0	100.0	100.0	0.2	0.2	180.00	-29.1	0.0	29.1	28.8	0.30	95.963		
200.0	200.0	200.0	200.0	0.3	0.3	180.00	-29.1	0.0	29.1	28.5	0.65	44.646		
300.0	300.0	300.0	300.0	0.5	0.5	180.00	-29.1	0.0	29.1	28.1	1.00	29.090	CC, ES	
400.0	400.0	400.0	400.0	0.7	0.7	-170.37	-29.1	0.0	30.9	29.5	1.35	22.853		
500.0	499.8	499.9	499.9	0.9	0.9	-170.37	-29.0	-0.9	35.9	34.2	1.70	21.146	SF	
600.0	599.5	599.6	599.6	1.1	1.0	-168.87	-28.8	-3.5	44.2	42.2	2.05	21.579		
700.0	698.7	699.0	698.9	1.3	1.2	-166.79	-28.3	-7.8	55.8	53.4	2.41	23.188		
800.0	797.5	797.9	797.6	1.6	1.4	-164.70	-27.7	-13.7	70.7	68.0	2.78	25.465		
900.0	895.6	896.2	895.6	2.0	1.6	-162.83	-26.8	-21.3	89.0	85.9	3.17	28.095		
1,000.0	993.1	993.7	992.7	2.4	1.8	-161.22	-25.8	-30.6	110.7	107.1	3.58	30.869		
1,100.0	1,089.8	1,090.6	1,088.9	2.9	2.1	-159.87	-24.7	-41.3	135.1	131.0	4.04	33.449		
1,200.0	1,186.5	1,187.2	1,184.8	3.3	2.3	-158.41	-23.3	-53.7	159.9	155.3	4.53	35.281		
1,300.0	1,283.2	1,284.0	1,280.5	3.8	2.6	-157.02	-21.9	-67.0	184.8	179.8	5.05	36.628		
1,400.0	1,379.9	1,380.7	1,376.3	4.2	2.8	-155.96	-20.4	-80.4	209.9	204.3	5.57	37.664		
1,500.0	1,476.5	1,477.4	1,472.2	4.7	3.1	-155.12	-19.0	-93.8	235.0	228.9	6.11	38.480		
1,600.0	1,573.2	1,574.2	1,568.0	5.2	3.4	-154.44	-17.5	-107.2	260.1	253.5	6.65	39.133		
1,700.0	1,669.9	1,670.9	1,663.8	5.6	3.7	-153.89	-16.0	-120.6	285.3	278.1	7.19	39.667		
1,800.0	1,766.6	1,767.7	1,759.6	6.1	3.9	-153.42	-14.6	-134.0	310.5	302.8	7.74	40.109		
1,900.0	1,863.3	1,864.4	1,855.4	6.6	4.2	-153.03	-13.1	-147.4	335.7	327.4	8.29	40.480		
2,000.0	1,959.9	1,961.2	1,951.2	7.1	4.5	-152.69	-11.7	-160.7	361.0	352.1	8.85	40.795		
2,100.0	2,056.6	2,057.9	2,047.0	7.5	4.8	-152.39	-10.2	-174.1	386.2	376.8	9.40	41.065		
2,200.0	2,153.3	2,155.0	2,143.1	8.0	5.1	-152.14	-8.8	-187.5	411.4	401.5	9.96	41.311		
2,300.0	2,250.0	2,253.2	2,240.5	8.5	5.3	-152.07	-7.4	-199.8	436.4	426.0	10.49	41.617		
2,400.0	2,346.7	2,351.5	2,338.2	9.0	5.6	-152.23	-6.3	-210.5	461.2	450.2	10.98	41.995		
2,500.0	2,443.4	2,449.9	2,436.2	9.4	5.8	-152.57	-5.3	-219.6	485.6	474.1	11.44	42.442		

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Qualls 3B-28H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 4970.0ft (Original Well Elev)
Reference Site:	S28-T3N-R68W (Qualls)	MD Reference:	WELL @ 4970.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Qualls 3B-28H	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 S28-T3N-R68W (Qualls) - Qualls 3F-28H - Hz - Plan #1												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)			
0.0	0.0	0.0	0.0	0.0	0.0	180.00	-40.1	0.0	40.1				
100.0	100.0	100.0	100.0	0.2	0.2	180.00	-40.1	0.0	40.1	39.8	0.30	131.949	
200.0	200.0	200.0	200.0	0.3	0.3	180.00	-40.1	0.0	40.1	39.4	0.65	61.388	
300.0	300.0	300.0	300.0	0.5	0.5	180.00	-40.1	0.0	40.1	39.1	1.00	39.998 CC, ES	
400.0	400.0	399.4	399.4	0.7	0.7	-169.56	-40.8	-0.5	42.5	41.2	1.35	31.500	
500.0	499.8	498.4	498.4	0.9	0.9	-168.99	-42.9	-1.9	49.8	48.1	1.70	29.365 SF	
600.0	599.5	596.9	596.7	1.1	1.0	-168.33	-46.5	-4.2	62.0	60.0	2.04	30.330	
700.0	698.7	694.4	694.1	1.3	1.2	-167.73	-51.4	-7.5	79.0	76.6	2.39	33.022	
800.0	797.5	790.7	790.1	1.6	1.4	-167.24	-57.6	-11.6	100.8	98.0	2.74	36.751	
900.0	895.6	885.5	884.5	2.0	1.6	-166.84	-65.0	-16.5	127.2	124.1	3.09	41.133	
1,000.0	993.1	978.6	977.0	2.4	1.9	-166.50	-73.5	-22.2	158.3	154.8	3.45	45.931	
1,100.0	1,089.8	1,069.8	1,067.5	2.9	2.1	-166.28	-83.1	-28.5	193.3	189.4	3.81	50.711	
1,200.0	1,186.5	1,160.1	1,156.8	3.3	2.4	-166.00	-93.8	-35.6	229.8	225.6	4.19	54.855	
1,300.0	1,283.2	1,249.3	1,244.9	3.8	2.6	-165.63	-105.5	-43.3	267.6	263.0	4.57	58.512	
1,400.0	1,379.9	1,339.2	1,333.6	4.2	2.9	-165.22	-118.3	-51.8	306.5	301.5	4.96	61.739	
1,500.0	1,476.5	1,431.2	1,424.2	4.7	3.2	-164.88	-131.7	-60.6	345.6	340.3	5.36	64.447	
1,600.0	1,573.2	1,523.3	1,514.8	5.2	3.5	-164.60	-145.0	-69.4	384.8	379.0	5.76	66.756	
1,700.0	1,669.9	1,615.3	1,605.4	5.6	3.8	-164.38	-158.3	-78.3	423.9	417.7	6.17	68.746	
1,800.0	1,766.6	1,707.3	1,696.0	6.1	4.2	-164.19	-171.6	-87.1	463.1	456.5	6.57	70.477	

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Qualls 3B-28H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 4970.0ft (Original Well Elev)
Reference Site:	S28-T3N-R68W (Qualls)	MD Reference:	WELL @ 4970.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Qualls 3B-28H	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 S28-T3N-R68W (Qualls) - Qualls 3G-28H - Hz - Plan #1												Offset Site Error:	0.0 ft
Survey Program: 0-MWD												Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Total Uncertainty Axis	Separation Factor	Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)		+N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)			
0.0	0.0	0.0	0.0	0.0	0.0	180.00	-47.4	0.0	47.4				
100.0	100.0	100.0	100.0	0.2	0.2	180.00	-47.4	0.0	47.4	47.1	0.30	155.939	
200.0	200.0	200.0	200.0	0.3	0.3	180.00	-47.4	0.0	47.4	46.7	0.65	72.549 CC, ES	
300.0	300.0	299.2	299.2	0.5	0.5	-179.65	-48.2	-0.3	48.2	47.2	1.00	48.148	
400.0	400.0	398.3	398.3	0.7	0.7	-168.83	-50.6	-1.2	52.3	51.0	1.35	38.821	
500.0	499.8	497.0	496.8	0.9	0.9	-168.43	-54.6	-2.6	61.5	59.8	1.69	36.317 SF	
600.0	599.5	594.8	594.5	1.1	1.1	-168.24	-60.1	-4.7	75.8	73.7	2.04	37.140	
700.0	698.7	691.6	691.0	1.3	1.3	-168.18	-67.2	-7.2	94.9	92.6	2.38	39.827	
800.0	797.5	787.0	785.9	1.6	1.5	-168.19	-75.6	-10.3	119.0	116.3	2.73	43.657	
900.0	895.6	880.6	879.0	2.0	1.7	-168.21	-85.3	-13.8	147.9	144.8	3.07	48.232	
1,000.0	993.1	972.3	970.0	2.4	2.0	-168.24	-96.2	-17.8	181.4	178.0	3.40	53.314	
1,100.0	1,089.8	1,062.0	1,058.8	2.9	2.2	-168.31	-108.2	-22.1	219.0	215.3	3.75	58.428	
1,200.0	1,186.5	1,150.6	1,146.2	3.3	2.5	-168.32	-121.3	-26.9	258.2	254.1	4.10	62.944	
1,300.0	1,283.2	1,239.8	1,234.2	3.8	2.8	-168.23	-135.7	-32.1	298.6	294.2	4.46	66.953	
1,400.0	1,379.9	1,331.2	1,324.1	4.2	3.1	-168.16	-150.6	-37.6	339.2	334.4	4.82	70.335	
1,500.0	1,476.5	1,422.6	1,414.1	4.7	3.4	-168.09	-165.5	-43.0	379.9	374.7	5.19	73.227	
1,600.0	1,573.2	1,514.0	1,504.1	5.2	3.7	-168.04	-180.4	-48.4	420.5	414.9	5.55	75.726	
1,700.0	1,669.9	1,605.3	1,594.1	5.6	4.0	-168.00	-195.3	-53.8	461.1	455.2	5.92	77.908	

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Qualls 3B-28H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 4970.0ft (Original Well Elev)
Reference Site:	S28-T3N-R68W (Qualls)	MD Reference:	WELL @ 4970.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Qualls 3B-28H	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 S28-T3N-R68W (Qualls) - SLATER 43-28 (EXISTING) - EXISTING - SURVEYS													Offset Site Error:	0.0 ft
Survey Program: 176-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance							Warning
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
10,900.0	6,850.0	7,010.9	6,854.9	102.4	24.5	89.93	1,202.9	4,368.9	423.4	300.4	122.95	3.444		
11,000.0	6,850.0	7,010.1	6,854.1	104.8	24.5	89.49	1,203.0	4,368.9	327.2	201.8	125.40	2.609		
11,100.0	6,850.0	7,009.3	6,853.3	107.2	24.5	89.04	1,203.0	4,368.9	234.2	106.4	127.84	1.832		
11,200.0	6,850.0	7,008.5	6,852.5	109.7	24.5	88.59	1,203.0	4,368.9	150.5	20.2	130.27	1.155 Level 2		
11,300.0	6,850.0	7,007.7	6,851.7	112.1	24.5	88.13	1,203.0	4,368.9	102.2	-30.5	132.70	0.770 Level 1		
11,311.0	6,850.0	7,007.6	6,851.6	112.4	24.5	88.07	1,203.0	4,369.0	101.6	-31.4	132.96	0.764 Level 1, CC, ES, SF		
11,400.0	6,850.0	7,006.8	6,850.8	114.5	24.5	87.65	1,203.1	4,369.0	135.0	-0.1	135.11	0.999 Level 1		
11,500.0	6,850.0	7,006.0	6,850.0	117.0	24.5	87.17	1,203.1	4,369.0	214.5	77.0	137.51	1.560		
11,524.2	6,850.0	7,005.8	6,849.8	117.6	24.5	87.05	1,203.1	4,369.0	236.2	98.1	138.10	1.710		

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Qualls 3B-28H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 4970.0ft (Original Well Elev)
Reference Site:	S28-T3N-R68W (Qualls)	MD Reference:	WELL @ 4970.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Qualls 3B-28H	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 S28-T3N-R68W (Qualls) - SLATER 4-4-28 (EXISTING) - Existing - SURVEYS													Offset Site Error: 0.0 ft	
Survey Program: 139-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		
9,200.0	6,850.0	7,076.9	6,860.0	61.9	28.5	-90.64	1,749.6	2,444.0	482.3	402.7	79.56	6.061		
9,300.0	6,850.0	7,075.5	6,858.5	64.2	28.5	-90.46	1,749.6	2,444.0	453.2	371.2	82.00	5.527		
9,386.1	6,850.0	7,074.2	6,857.3	66.2	28.5	-90.29	1,749.6	2,444.0	444.9	360.9	84.09	5.291 CC		
9,400.0	6,850.0	7,074.0	6,857.1	66.5	28.5	-90.27	1,749.6	2,444.0	445.2	360.7	84.43	5.273 ES, SF		
9,500.0	6,850.0	7,072.5	6,855.6	68.9	28.5	-90.08	1,749.6	2,444.0	459.3	372.4	86.86	5.287		
9,600.0	6,850.0	7,071.0	6,854.1	71.2	28.5	-89.88	1,749.6	2,444.0	493.7	404.4	89.30	5.528		

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Qualls 3B-28H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 4970.0ft (Original Well Elev)
Reference Site:	S28-T3N-R68W (Qualls)	MD Reference:	WELL @ 4970.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Qualls 3B-28H	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

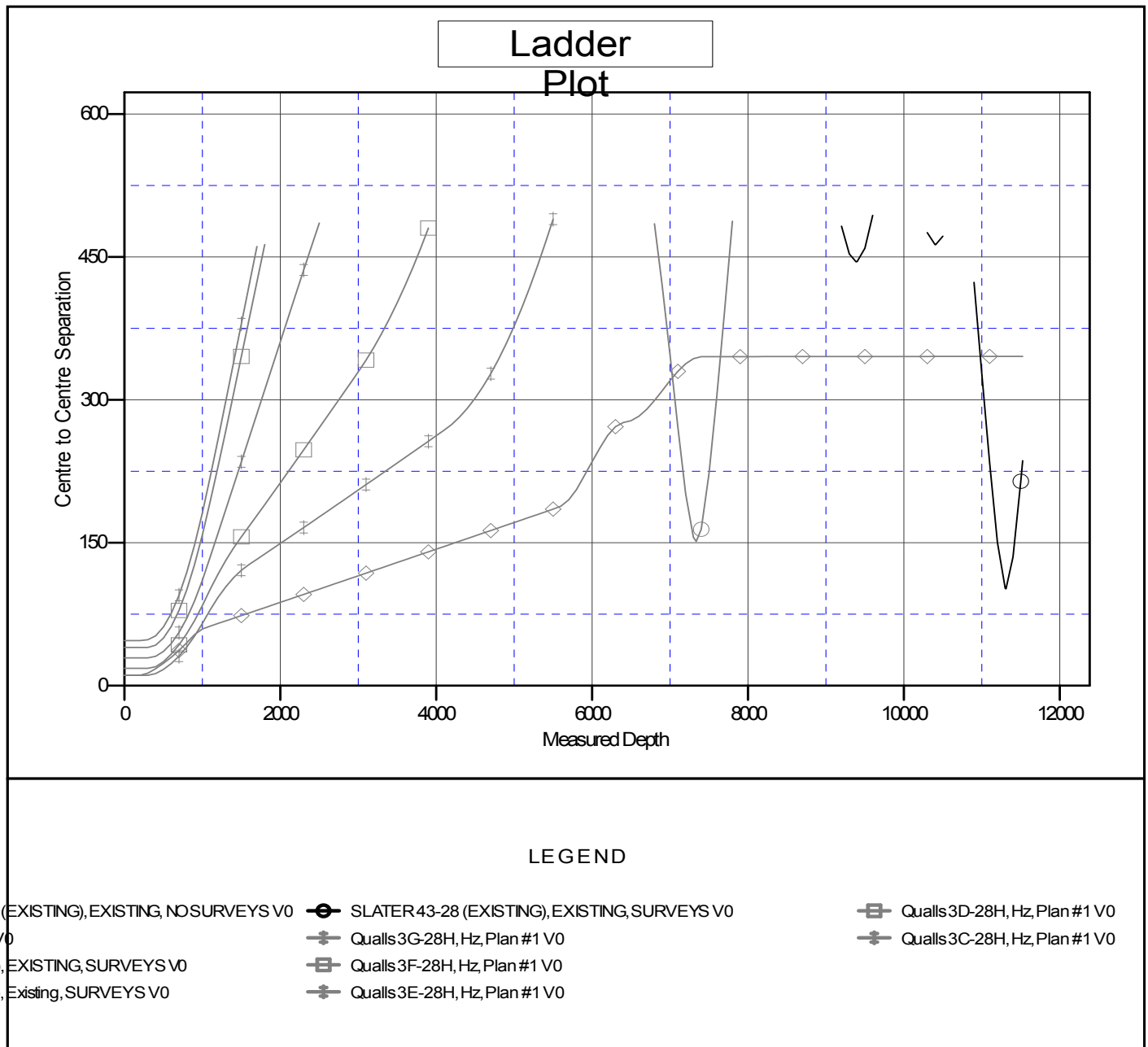
Offset Design											S28-T3N-R68W (Qualls) - SLATER 6-4-28 (EXISTING) - EXISTING - SURVEYS			Offset Site Error:		0.0 ft
Survey Program: 109-MWD													Offset Well Error:		0.0 ft	
Reference		Offset		Semi Major Axis			Distance									
Measured Depth	Vertical Depth	Measured Depth	Vertical Depth	Reference	Offset	Highside Toolface	Offset Wellbore Centre		Between Centres	Between Ellipses	Total Uncertainty	Separation	Warning			
(ft)	(ft)	(ft)	(ft)	(ft)	(ft)	(°)	+N/-S (ft)	+E/-W (ft)	(ft)	(ft)	Axis	Factor				
10,300.0	6,850.0	6,995.4	6,843.8	87.9	23.5	-90.22	1,767.6	3,466.9	475.6	377.1	98.56	4.826				
10,400.0	6,850.0	6,992.3	6,840.7	90.3	23.5	-89.83	1,767.5	3,467.0	463.0	362.0	101.02	4.584				
10,409.1	6,850.0	6,992.0	6,840.4	90.5	23.5	-89.80	1,767.5	3,467.1	462.9	361.7	101.24	4.573 CC, ES				
10,500.0	6,850.0	6,989.2	6,837.5	92.7	23.5	-89.45	1,767.5	3,467.1	471.8	368.3	103.47	4.560 SF				

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Qualls 3B-28H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 4970.0ft (Original Well Elev)
Reference Site:	S28-T3N-R68W (Qualls)	MD Reference:	WELL @ 4970.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Qualls 3B-28H	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 @ 4970.0ft (Original Well Elev)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Qualls 3B-28H
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.31°



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