



Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Stelling 3B-4H
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KB=13' @ 4930.0ft (Original Well Elev)
Project:	DJ Wattenberg	MD Reference:	KB=13' @ 4930.0ft (Original Well Elev)
Site:	SESW S4-T1N-R65W (Stelling)	North Reference:	True
Well:	Stelling 3B-4H	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		SESW S4-T1N-R65W (Stelling)			
Site Position:		Northing:	1,271,326.71 ft	Latitude:	40.075200
From:	Lat/Long	Easting:	3,231,932.75 ft	Longitude:	-104.671220
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	0.54 °

Well	Stelling 3B-4H					
Well Position	+N/-S	0.0 ft	Northing:	1,271,326.95 ft	Latitude:	40.075200
	+E/-W	0.0 ft	Easting:	3,231,960.74 ft	Longitude:	-104.671120
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,917.0 ft

Wellbore	Hz				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	3/20/2012	8.68	66.78	52,889

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	
6,498.1	0.00	0.00	6,498.1	0.0	0.0	0.00	0.00	0.00	0.00	
7,316.2	89.99	21.99	7,019.0	482.9	195.0	11.00	11.00	0.00	21.99	
7,482.8	89.99	21.99	7,019.0	637.4	257.3	0.00	0.00	0.00	0.00	
7,999.9	90.00	0.00	7,019.0	1,141.9	355.3	4.25	0.00	-4.25	-89.98	
10,999.9	90.00	0.00	7,019.0	4,141.9	355.3	0.00	0.00	0.00	0.00	Stelling 3B-4H PBHL

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Project:	DJ Wattenberg	MD Reference:	KB=13' @ 4930.0ft (Original Well Elev)
Site:	SESW S4-T1N-R65W (Stelling)	North Reference:	True
Well:	Stelling 3B-4H	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	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	
700.0	0.00	0.00	700.0	0.0	0.0	0.0	0.00	0.00	
800.0	0.00	0.00	800.0	0.0	0.0	0.0	0.00	0.00	
900.0	0.00	0.00	900.0	0.0	0.0	0.0	0.00	0.00	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.0	0.00	0.00	
1,100.0	0.00	0.00	1,100.0	0.0	0.0	0.0	0.00	0.00	
1,200.0	0.00	0.00	1,200.0	0.0	0.0	0.0	0.00	0.00	
1,300.0	0.00	0.00	1,300.0	0.0	0.0	0.0	0.00	0.00	
1,400.0	0.00	0.00	1,400.0	0.0	0.0	0.0	0.00	0.00	
1,500.0	0.00	0.00	1,500.0	0.0	0.0	0.0	0.00	0.00	
1,600.0	0.00	0.00	1,600.0	0.0	0.0	0.0	0.00	0.00	
1,700.0	0.00	0.00	1,700.0	0.0	0.0	0.0	0.00	0.00	
1,800.0	0.00	0.00	1,800.0	0.0	0.0	0.0	0.00	0.00	
1,900.0	0.00	0.00	1,900.0	0.0	0.0	0.0	0.00	0.00	
2,000.0	0.00	0.00	2,000.0	0.0	0.0	0.0	0.00	0.00	
2,100.0	0.00	0.00	2,100.0	0.0	0.0	0.0	0.00	0.00	
2,200.0	0.00	0.00	2,200.0	0.0	0.0	0.0	0.00	0.00	
2,300.0	0.00	0.00	2,300.0	0.0	0.0	0.0	0.00	0.00	
2,400.0	0.00	0.00	2,400.0	0.0	0.0	0.0	0.00	0.00	
2,500.0	0.00	0.00	2,500.0	0.0	0.0	0.0	0.00	0.00	
2,600.0	0.00	0.00	2,600.0	0.0	0.0	0.0	0.00	0.00	
2,700.0	0.00	0.00	2,700.0	0.0	0.0	0.0	0.00	0.00	
2,800.0	0.00	0.00	2,800.0	0.0	0.0	0.0	0.00	0.00	
2,900.0	0.00	0.00	2,900.0	0.0	0.0	0.0	0.00	0.00	
3,000.0	0.00	0.00	3,000.0	0.0	0.0	0.0	0.00	0.00	
3,100.0	0.00	0.00	3,100.0	0.0	0.0	0.0	0.00	0.00	
3,200.0	0.00	0.00	3,200.0	0.0	0.0	0.0	0.00	0.00	
3,300.0	0.00	0.00	3,300.0	0.0	0.0	0.0	0.00	0.00	
3,400.0	0.00	0.00	3,400.0	0.0	0.0	0.0	0.00	0.00	
3,500.0	0.00	0.00	3,500.0	0.0	0.0	0.0	0.00	0.00	
3,600.0	0.00	0.00	3,600.0	0.0	0.0	0.0	0.00	0.00	
3,700.0	0.00	0.00	3,700.0	0.0	0.0	0.0	0.00	0.00	
3,800.0	0.00	0.00	3,800.0	0.0	0.0	0.0	0.00	0.00	
3,900.0	0.00	0.00	3,900.0	0.0	0.0	0.0	0.00	0.00	
4,000.0	0.00	0.00	4,000.0	0.0	0.0	0.0	0.00	0.00	
4,100.0	0.00	0.00	4,100.0	0.0	0.0	0.0	0.00	0.00	
4,200.0	0.00	0.00	4,200.0	0.0	0.0	0.0	0.00	0.00	
4,300.0	0.00	0.00	4,300.0	0.0	0.0	0.0	0.00	0.00	
4,385.0	0.00	0.00	4,385.0	0.0	0.0	0.0	0.00	0.00	Sussex
4,400.0	0.00	0.00	4,400.0	0.0	0.0	0.0	0.00	0.00	
4,500.0	0.00	0.00	4,500.0	0.0	0.0	0.0	0.00	0.00	
4,505.0	0.00	0.00	4,505.0	0.0	0.0	0.0	0.00	0.00	Sussex Marker
4,600.0	0.00	0.00	4,600.0	0.0	0.0	0.0	0.00	0.00	
4,688.0	0.00	0.00	4,688.0	0.0	0.0	0.0	0.00	0.00	Shannon
4,700.0	0.00	0.00	4,700.0	0.0	0.0	0.0	0.00	0.00	
4,800.0	0.00	0.00	4,800.0	0.0	0.0	0.0	0.00	0.00	

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Well:	Stelling 3B-4H	Survey Calculation Method:	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
4,900.0	0.00	0.00	4,900.0	0.0	0.0	0.0	0.00	0.00	
5,000.0	0.00	0.00	5,000.0	0.0	0.0	0.0	0.00	0.00	
5,100.0	0.00	0.00	5,100.0	0.0	0.0	0.0	0.00	0.00	
5,200.0	0.00	0.00	5,200.0	0.0	0.0	0.0	0.00	0.00	
5,300.0	0.00	0.00	5,300.0	0.0	0.0	0.0	0.00	0.00	
5,400.0	0.00	0.00	5,400.0	0.0	0.0	0.0	0.00	0.00	
5,500.0	0.00	0.00	5,500.0	0.0	0.0	0.0	0.00	0.00	
5,600.0	0.00	0.00	5,600.0	0.0	0.0	0.0	0.00	0.00	
5,700.0	0.00	0.00	5,700.0	0.0	0.0	0.0	0.00	0.00	
5,800.0	0.00	0.00	5,800.0	0.0	0.0	0.0	0.00	0.00	
5,900.0	0.00	0.00	5,900.0	0.0	0.0	0.0	0.00	0.00	
6,000.0	0.00	0.00	6,000.0	0.0	0.0	0.0	0.00	0.00	
6,100.0	0.00	0.00	6,100.0	0.0	0.0	0.0	0.00	0.00	
6,200.0	0.00	0.00	6,200.0	0.0	0.0	0.0	0.00	0.00	
6,300.0	0.00	0.00	6,300.0	0.0	0.0	0.0	0.00	0.00	
6,400.0	0.00	0.00	6,400.0	0.0	0.0	0.0	0.00	0.00	
6,498.1	0.00	0.00	6,498.1	0.0	0.0	0.0	0.00	0.00	KOP @ 6498'
6,500.0	0.21	21.99	6,500.0	0.0	0.0	0.0	11.00	11.00	
6,600.0	11.21	21.99	6,599.4	9.2	3.7	9.2	11.00	11.00	
6,700.0	22.21	21.99	6,695.0	35.8	14.5	35.8	11.00	11.00	
6,734.0	25.95	21.99	6,726.0	48.7	19.7	48.7	11.00	11.00	Teepee Buttes
6,800.0	33.21	21.99	6,783.4	78.9	31.8	78.9	11.00	11.00	
6,900.0	44.21	21.99	6,861.3	136.8	55.2	136.8	11.00	11.00	
7,000.0	55.21	21.99	6,925.9	207.4	83.7	207.4	11.00	11.00	
7,033.4	58.88	21.99	6,944.0	233.3	94.2	233.3	11.00	11.00	Niobrara
7,100.0	66.21	21.99	6,974.7	288.2	116.3	288.2	11.00	11.00	
7,113.5	67.70	21.99	6,980.0	299.7	121.0	299.7	11.00	11.00	Sharon Springs
7,171.6	74.08	21.99	6,999.0	350.5	141.5	350.5	11.00	11.00	B Bench
7,200.0	77.21	21.99	7,006.0	376.1	151.8	376.1	11.00	11.00	
7,300.0	88.21	21.99	7,018.7	467.9	188.9	467.9	11.00	11.00	
7,316.2	89.99	21.99	7,019.0	482.9	195.0	482.9	11.01	11.01	Landing Pt @ 7316' MD; 90° - ICP
7,400.0	89.99	21.99	7,019.0	560.6	226.3	560.6	0.00	0.00	
7,482.8	89.99	21.99	7,019.0	637.4	257.3	637.4	0.00	0.00	Start turn @ 7482' MD
7,500.0	89.99	21.26	7,019.0	653.4	263.7	653.4	4.25	0.00	
7,600.0	90.00	17.00	7,019.0	747.8	296.4	747.8	4.25	0.00	
7,700.0	90.00	12.75	7,019.0	844.5	322.1	844.5	4.25	0.00	
7,800.0	90.00	8.50	7,019.0	942.7	340.5	942.7	4.25	0.00	
7,900.0	90.00	4.25	7,019.0	1,042.1	351.6	1,042.1	4.25	0.00	
7,999.9	90.00	0.00	7,019.0	1,141.9	355.3	1,141.9	4.25	0.00	End of turn @ 7999' MD
8,000.0	90.00	0.00	7,019.0	1,142.0	355.3	1,142.0	0.00	0.00	
8,100.0	90.00	0.00	7,019.0	1,242.0	355.3	1,242.0	0.00	0.00	
8,200.0	90.00	0.00	7,019.0	1,342.0	355.3	1,342.0	0.00	0.00	
8,300.0	90.00	0.00	7,019.0	1,442.0	355.3	1,442.0	0.00	0.00	
8,400.0	90.00	0.00	7,019.0	1,542.0	355.3	1,542.0	0.00	0.00	
8,500.0	90.00	0.00	7,019.0	1,642.0	355.3	1,642.0	0.00	0.00	
8,600.0	90.00	0.00	7,019.0	1,742.0	355.3	1,742.0	0.00	0.00	
8,700.0	90.00	0.00	7,019.0	1,842.0	355.3	1,842.0	0.00	0.00	
8,800.0	90.00	0.00	7,019.0	1,942.0	355.3	1,942.0	0.00	0.00	
8,900.0	90.00	0.00	7,019.0	2,042.0	355.3	2,042.0	0.00	0.00	
9,000.0	90.00	0.00	7,019.0	2,142.0	355.3	2,142.0	0.00	0.00	
9,100.0	90.00	0.00	7,019.0	2,242.0	355.3	2,242.0	0.00	0.00	
9,200.0	90.00	0.00	7,019.0	2,342.0	355.3	2,342.0	0.00	0.00	

Planning Report

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Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KB=13' @ 4930.0ft (Original Well Elev)
Project:	DJ Wattenberg	MD Reference:	KB=13' @ 4930.0ft (Original Well Elev)
Site:	SESW S4-T1N-R65W (Stelling)	North Reference:	True
Well:	Stelling 3B-4H	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
9,300.0	90.00	0.00	7,019.0	2,442.0	355.3	2,442.0	0.00	0.00	
9,400.0	90.00	0.00	7,019.0	2,542.0	355.3	2,542.0	0.00	0.00	
9,500.0	90.00	0.00	7,019.0	2,642.0	355.3	2,642.0	0.00	0.00	
9,600.0	90.00	0.00	7,019.0	2,742.0	355.3	2,742.0	0.00	0.00	
9,700.0	90.00	0.00	7,019.0	2,842.0	355.3	2,842.0	0.00	0.00	
9,800.0	90.00	0.00	7,019.0	2,942.0	355.3	2,942.0	0.00	0.00	
9,900.0	90.00	0.00	7,019.0	3,042.0	355.3	3,042.0	0.00	0.00	
10,000.0	90.00	0.00	7,019.0	3,142.0	355.3	3,142.0	0.00	0.00	
10,100.0	90.00	0.00	7,019.0	3,242.0	355.3	3,242.0	0.00	0.00	
10,200.0	90.00	0.00	7,019.0	3,342.0	355.3	3,342.0	0.00	0.00	
10,300.0	90.00	0.00	7,019.0	3,442.0	355.3	3,442.0	0.00	0.00	
10,400.0	90.00	0.00	7,019.0	3,542.0	355.3	3,542.0	0.00	0.00	
10,500.0	90.00	0.00	7,019.0	3,642.0	355.3	3,642.0	0.00	0.00	
10,600.0	90.00	0.00	7,019.0	3,742.0	355.3	3,742.0	0.00	0.00	
10,700.0	90.00	0.00	7,019.0	3,842.0	355.3	3,842.0	0.00	0.00	
10,800.0	90.00	0.00	7,019.0	3,942.0	355.3	3,942.0	0.00	0.00	
10,900.0	90.00	0.00	7,019.0	4,042.0	355.3	4,042.0	0.00	0.00	
10,999.9	90.00	0.00	7,019.0	4,141.9	355.3	4,141.9	0.00	0.00	TD at 10999.9 - Stelling 3B-4H PBHL

Targets

Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
Stelling 3B-4H PBHL - plan hits target center - Point	0.00	0.00	7,019.0	4,141.9	355.3	1,275,471.95	3,232,277.35	40.086570	-104.669850

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
7,316.2	7,019.0	ICP	0.000	0.000

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,385.0	4,385.0	Sussex			
4,505.0	4,505.0	Sussex Marker			
4,688.0	4,688.0	Shannon			
6,734.0	6,726.0	Teepee Buttes			
7,033.4	6,944.0	Niobrara			
7,113.5	6,980.0	Sharon Springs			
7,171.6	6,999.0	B Bench			

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Well:	Stelling 3B-4H	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)	
6,498.1	6,498.1	0.0	0.0	KOP @ 6498'
7,316.2	7,019.0	482.9	195.0	Landing Pt @ 7316' MD; 90°
7,482.8	7,019.0	637.4	257.3	Start turn @ 7482' MD
7,999.9	7,019.0	1,141.9	355.3	End of turn @ 7999' MD
10,999.9	7,019.0	4,141.9	355.3	TD at 10999.9

EnCana Oil & Gas (USA) Inc

DJ Wattenberg

SESW S4-T1N-R65W (Stelling)

Stelling 3B-4H

Hz

Plan #1

Anticollision Report

20 March, 2012

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Stelling 3B-4H
Project:	DJ Wattenberg	TVD Reference:	KB=13' @ 4930.0ft (Original Well Elev)
Reference Site:	SESW S4-T1N-R65W (Stelling)	MD Reference:	KB=13' @ 4930.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Stelling 3B-4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference	Plan #1		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD Interval 100.0ft	Error Model:	Systematic Ellipse
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum center-center distance of 500.0ft	Error Surface:	Elliptical Conic
Warning Levels Evaluated at:	2.00 Sigma		

Survey Tool Program	Date	3/20/2012		
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	10,999.9	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						
SESW S4-T1N-R65W (Stelling)						
Gittlein 11-4 (Existing) - Existing - Existing						Out of range
Gittlein 12-4J (Existing) - Existing - Existing						Out of range
Gittlein 21-4J (Existing) - Existing - Existing						Out of range
Gittlein 22-4J (Existing) - Existing - Existing						Out of range
Olin 1-4 (Existing) - Existing - Existing						Out of range
Stelling #1 (Existing) - Existing - Existing						Out of range
Stelling 13-4 (Existing) - Existing - Existing						Out of range
Stelling 14-4 (Existing) - Existing - Existing						Out of range
Stelling 23-4 (Existing) - Existing - Existing	8,340.2	7,019.0	203.7	161.0	4.769	CC, ES, SF
Stelling 24-4 (Existing) - Existing - Existing	6,400.0	6,396.0	68.3	46.0	3.062	CC
Stelling 24-4 (Existing) - Existing - Existing	6,500.0	6,496.0	68.3	45.6	3.015	ES, SF
Stelling 3A-4H - HZ - Plan #1	1,200.0	1,200.0	28.0	23.8	6.754	CC, ES
Stelling 3A-4H - HZ - Plan #1	1,300.0	1,299.3	29.2	24.7	6.495	SF

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Stelling 3B-4H
Project:	DJ Wattenberg	TVD Reference:	KB=13' @ 4930.0ft (Original Well Elev)
Reference Site:	SESW S4-T1N-R65W (Stelling)	MD Reference:	KB=13' @ 4930.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Stelling 3B-4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SESW S4-T1N-R65W (Stelling) - Stelling 23-4 (Existing) - Existing - Existing													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance						Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor		
7,900.0	7,019.0	7,019.0	7,019.0	24.5	12.2	-90.00	1,482.3	151.7	483.5	447.2	36.26	13.331		
8,000.0	7,019.0	7,019.0	7,019.0	26.0	12.2	-90.00	1,482.3	151.7	396.6	359.1	37.42	10.598		
8,100.0	7,019.0	7,019.0	7,019.0	27.4	12.2	-90.00	1,482.3	151.7	315.0	276.0	38.94	8.088		
8,200.0	7,019.0	7,019.0	7,019.0	29.0	12.2	-90.00	1,482.3	151.7	247.3	206.8	40.49	6.107		
8,300.0	7,019.0	7,019.0	7,019.0	30.5	12.2	-90.00	1,482.3	151.7	207.6	165.6	42.06	4.936		
8,340.2	7,019.0	7,019.0	7,019.0	31.1	12.2	-90.00	1,482.3	151.7	203.7	161.0	42.70	4.769	CC, ES, SF	
8,400.0	7,019.0	7,019.0	7,019.0	32.1	12.2	-90.00	1,482.3	151.7	212.3	168.6	43.66	4.862		
8,500.0	7,019.0	7,019.0	7,019.0	33.6	12.2	-90.00	1,482.3	151.7	258.9	213.6	45.27	5.719		
8,600.0	7,019.0	7,019.0	7,019.0	35.2	12.2	-90.00	1,482.3	151.7	330.1	283.2	46.89	7.040		
8,700.0	7,019.0	7,019.0	7,019.0	36.8	12.2	-90.00	1,482.3	151.7	413.4	364.9	48.52	8.520		

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Stelling 3B-4H
Project:	DJ Wattenberg	TVD Reference:	KB=13' @ 4930.0ft (Original Well Elev)
Reference Site:	SESW S4-T1N-R65W (Stelling)	MD Reference:	KB=13' @ 4930.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Stelling 3B-4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SESW S4-T1N-R65W (Stelling) - Stelling 24-4 (Existing) - Existing - Existing													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	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	-120.11	-34.2	-59.0	68.4					
100.0	100.0	96.0	96.0	0.2	0.1	-120.11	-34.2	-59.0	68.3	68.0	0.30	229.343		
200.0	200.0	196.0	196.0	0.3	0.3	-120.11	-34.2	-59.0	68.3	67.6	0.65	105.696		
300.0	300.0	296.0	296.0	0.5	0.5	-120.11	-34.2	-59.0	68.3	67.3	0.99	68.610		
400.0	400.0	396.0	396.0	0.7	0.7	-120.11	-34.2	-59.0	68.3	66.9	1.34	50.789		
500.0	500.0	496.0	496.0	0.8	0.8	-120.11	-34.2	-59.0	68.3	66.6	1.69	40.317		
600.0	600.0	596.0	596.0	1.0	1.0	-120.11	-34.2	-59.0	68.3	66.2	2.04	33.425		
700.0	700.0	696.0	696.0	1.2	1.2	-120.11	-34.2	-59.0	68.3	65.9	2.39	28.546		
800.0	800.0	796.0	796.0	1.4	1.4	-120.11	-34.2	-59.0	68.3	65.5	2.74	24.909		
900.0	900.0	896.0	896.0	1.5	1.5	-120.11	-34.2	-59.0	68.3	65.2	3.09	22.095		
1,000.0	1,000.0	996.0	996.0	1.7	1.7	-120.11	-34.2	-59.0	68.3	64.8	3.44	19.852		
1,100.0	1,100.0	1,096.0	1,096.0	1.9	1.9	-120.11	-34.2	-59.0	68.3	64.5	3.79	18.022		
1,200.0	1,200.0	1,196.0	1,196.0	2.1	2.1	-120.11	-34.2	-59.0	68.3	64.1	4.14	16.501		
1,300.0	1,300.0	1,296.0	1,296.0	2.2	2.2	-120.11	-34.2	-59.0	68.3	63.8	4.49	15.217		
1,400.0	1,400.0	1,396.0	1,396.0	2.4	2.4	-120.11	-34.2	-59.0	68.3	63.4	4.83	14.118		
1,500.0	1,500.0	1,496.0	1,496.0	2.6	2.6	-120.11	-34.2	-59.0	68.3	63.1	5.18	13.168		
1,600.0	1,600.0	1,596.0	1,596.0	2.8	2.8	-120.11	-34.2	-59.0	68.3	62.7	5.53	12.337		
1,700.0	1,700.0	1,696.0	1,696.0	2.9	2.9	-120.11	-34.2	-59.0	68.3	62.4	5.88	11.605		
1,800.0	1,800.0	1,796.0	1,796.0	3.1	3.1	-120.11	-34.2	-59.0	68.3	62.0	6.23	10.955		
1,900.0	1,900.0	1,896.0	1,896.0	3.3	3.3	-120.11	-34.2	-59.0	68.3	61.7	6.58	10.373		
2,000.0	2,000.0	1,996.0	1,996.0	3.5	3.5	-120.11	-34.2	-59.0	68.3	61.3	6.93	9.851		
2,100.0	2,100.0	2,096.0	2,096.0	3.6	3.6	-120.11	-34.2	-59.0	68.3	61.0	7.28	9.378		
2,200.0	2,200.0	2,196.0	2,196.0	3.8	3.8	-120.11	-34.2	-59.0	68.3	60.6	7.63	8.949		
2,300.0	2,300.0	2,296.0	2,296.0	4.0	4.0	-120.11	-34.2	-59.0	68.3	60.3	7.98	8.557		
2,400.0	2,400.0	2,396.0	2,396.0	4.2	4.2	-120.11	-34.2	-59.0	68.3	59.9	8.33	8.199		
2,500.0	2,500.0	2,496.0	2,496.0	4.3	4.3	-120.11	-34.2	-59.0	68.3	59.6	8.67	7.869		
2,600.0	2,600.0	2,596.0	2,596.0	4.5	4.5	-120.11	-34.2	-59.0	68.3	59.2	9.02	7.564		
2,700.0	2,700.0	2,696.0	2,696.0	4.7	4.7	-120.11	-34.2	-59.0	68.3	58.9	9.37	7.283		
2,800.0	2,800.0	2,796.0	2,796.0	4.9	4.9	-120.11	-34.2	-59.0	68.3	58.5	9.72	7.021		
2,900.0	2,900.0	2,896.0	2,896.0	5.0	5.0	-120.11	-34.2	-59.0	68.3	58.2	10.07	6.778		
3,000.0	3,000.0	2,996.0	2,996.0	5.2	5.2	-120.11	-34.2	-59.0	68.3	57.8	10.42	6.551		
3,100.0	3,100.0	3,096.0	3,096.0	5.4	5.4	-120.11	-34.2	-59.0	68.3	57.5	10.77	6.338		
3,200.0	3,200.0	3,196.0	3,196.0	5.6	5.6	-120.11	-34.2	-59.0	68.3	57.1	11.12	6.139		
3,300.0	3,300.0	3,296.0	3,296.0	5.7	5.7	-120.11	-34.2	-59.0	68.3	56.8	11.47	5.952		
3,400.0	3,400.0	3,396.0	3,396.0	5.9	5.9	-120.11	-34.2	-59.0	68.3	56.4	11.82	5.777		
3,500.0	3,500.0	3,496.0	3,496.0	6.1	6.1	-120.11	-34.2	-59.0	68.3	56.1	12.16	5.611		
3,600.0	3,600.0	3,596.0	3,596.0	6.3	6.3	-120.11	-34.2	-59.0	68.3	55.7	12.51	5.454		
3,700.0	3,700.0	3,696.0	3,696.0	6.4	6.4	-120.11	-34.2	-59.0	68.3	55.4	12.86	5.306		
3,800.0	3,800.0	3,796.0	3,796.0	6.6	6.6	-120.11	-34.2	-59.0	68.3	55.0	13.21	5.166		
3,900.0	3,900.0	3,896.0	3,896.0	6.8	6.8	-120.11	-34.2	-59.0	68.3	54.7	13.56	5.033		
4,000.0	4,000.0	3,996.0	3,996.0	7.0	7.0	-120.11	-34.2	-59.0	68.3	54.3	13.91	4.907		
4,100.0	4,100.0	4,096.0	4,096.0	7.1	7.1	-120.11	-34.2	-59.0	68.3	54.0	14.26	4.787		
4,200.0	4,200.0	4,196.0	4,196.0	7.3	7.3	-120.11	-34.2	-59.0	68.3	53.6	14.61	4.672		
4,300.0	4,300.0	4,296.0	4,296.0	7.5	7.5	-120.11	-34.2	-59.0	68.3	53.3	14.96	4.563		
4,400.0	4,400.0	4,396.0	4,396.0	7.7	7.6	-120.11	-34.2	-59.0	68.3	52.9	15.31	4.459		
4,500.0	4,500.0	4,496.0	4,496.0	7.8	7.8	-120.11	-34.2	-59.0	68.3	52.6	15.66	4.360		
4,600.0	4,600.0	4,596.0	4,596.0	8.0	8.0	-120.11	-34.2	-59.0	68.3	52.3	16.00	4.265		
4,700.0	4,700.0	4,696.0	4,696.0	8.2	8.2	-120.11	-34.2	-59.0	68.3	51.9	16.35	4.174		
4,800.0	4,800.0	4,796.0	4,796.0	8.4	8.3	-120.11	-34.2	-59.0	68.3	51.6	16.70	4.086		
4,900.0	4,900.0	4,896.0	4,896.0	8.5	8.5	-120.11	-34.2	-59.0	68.3	51.2	17.05	4.003		
5,000.0	5,000.0	4,996.0	4,996.0	8.7	8.7	-120.11	-34.2	-59.0	68.3	50.9	17.40	3.923		
5,100.0	5,100.0	5,096.0	5,096.0	8.9	8.9	-120.11	-34.2	-59.0	68.3	50.5	17.75	3.845		

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 Stelling 3B-4H
Project:	DJ Wattenberg	TVD Reference:	KB=13' @ 4930.0ft (Original Well Elev)
Reference Site:	SESW S4-T1N-R65W (Stelling)	MD Reference:	KB=13' @ 4930.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Stelling 3B-4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SESW S4-T1N-R65W (Stelling) - Stelling 24-4 (Existing) - Existing - Existing													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis			Distance				Total		Warning	
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis	Separation Factor		
5,200.0	5,200.0	5,196.0	5,196.0	9.1	9.0	-120.11	-34.2	-59.0	68.3	50.2	18.10	3.771		
5,300.0	5,300.0	5,296.0	5,296.0	9.2	9.2	-120.11	-34.2	-59.0	68.3	49.8	18.45	3.700		
5,400.0	5,400.0	5,396.0	5,396.0	9.4	9.4	-120.11	-34.2	-59.0	68.3	49.5	18.80	3.631		
5,500.0	5,500.0	5,496.0	5,496.0	9.6	9.6	-120.11	-34.2	-59.0	68.3	49.1	19.15	3.565		
5,600.0	5,600.0	5,596.0	5,596.0	9.8	9.7	-120.11	-34.2	-59.0	68.3	48.8	19.50	3.501		
5,700.0	5,700.0	5,696.0	5,696.0	9.9	9.9	-120.11	-34.2	-59.0	68.3	48.4	19.84	3.440		
5,800.0	5,800.0	5,796.0	5,796.0	10.1	10.1	-120.11	-34.2	-59.0	68.3	48.1	20.19	3.380		
5,900.0	5,900.0	5,896.0	5,896.0	10.3	10.3	-120.11	-34.2	-59.0	68.3	47.7	20.54	3.323		
6,000.0	6,000.0	5,996.0	5,996.0	10.4	10.4	-120.11	-34.2	-59.0	68.3	47.4	20.89	3.267		
6,100.0	6,100.0	6,096.0	6,096.0	10.6	10.6	-120.11	-34.2	-59.0	68.3	47.0	21.24	3.213		
6,200.0	6,200.0	6,196.0	6,196.0	10.8	10.8	-120.11	-34.2	-59.0	68.3	46.7	21.59	3.161		
6,300.0	6,300.0	6,296.0	6,296.0	11.0	11.0	-120.11	-34.2	-59.0	68.3	46.3	21.94	3.111		
6,400.0	6,400.0	6,396.0	6,396.0	11.1	11.1	-120.11	-34.2	-59.0	68.3	46.0	22.29	3.062 CC		
6,466.0	6,466.0	6,462.0	6,462.0	11.3	11.3	-142.13	-34.2	-59.0	68.3	45.8	22.52	3.034		
6,500.0	6,500.0	6,496.0	6,496.0	11.3	11.3	-142.09	-34.2	-59.0	68.3	45.6	22.64	3.015 ES, SF		
6,600.0	6,599.4	6,595.4	6,595.4	11.5	11.5	-146.17	-34.2	-59.0	76.3	53.6	22.78	3.350		
6,700.0	6,695.0	6,691.0	6,691.0	11.7	11.7	-153.91	-34.2	-59.0	101.6	79.1	22.42	4.529		
6,800.0	6,783.4	6,779.4	6,779.4	12.0	11.8	-160.16	-34.2	-59.0	145.1	123.6	21.50	6.748		
6,900.0	6,861.3	6,857.3	6,857.3	12.4	11.9	-163.80	-34.2	-59.0	205.7	185.5	20.18	10.194		
7,000.0	6,925.9	6,921.9	6,921.9	13.0	12.1	-165.17	-34.2	-59.0	280.7	262.0	18.69	15.017		
7,100.0	6,974.7	6,970.7	6,970.7	13.7	12.1	-164.09	-34.2	-59.0	367.0	349.6	17.45	21.031		
7,200.0	7,006.0	7,002.0	7,002.0	14.8	12.2	-157.59	-34.2	-59.0	461.3	443.8	17.53	26.312		

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Stelling 3B-4H
Project:	DJ Wattenberg	TVD Reference:	KB=13' @ 4930.0ft (Original Well Elev)
Reference Site:	SESW S4-T1N-R65W (Stelling)	MD Reference:	KB=13' @ 4930.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Stelling 3B-4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Offset Design SESW S4-T1N-R65W (Stelling) - Stelling 3A-4H - HZ - Plan #1													Offset Site Error:	0.0 ft
Survey Program: 0-MWD													Offset Well Error:	0.0 ft
Reference		Offset		Semi Major Axis		Distance		Total		Separation		Warning		
Measured Depth (ft)	Vertical Depth (ft)	Measured Depth (ft)	Vertical Depth (ft)	Reference (ft)	Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	+E/-W (ft)	Between Centres (ft)	Between Ellipses (ft)	Uncertainty Axis			
0.0	0.0	0.0	0.0	0.0	0.0	-89.98	0.0	-28.0	28.0					
100.0	100.0	100.0	100.0	0.2	0.2	-89.98	0.0	-28.0	28.0	27.7	0.30		92.149	
200.0	200.0	200.0	200.0	0.3	0.3	-89.98	0.0	-28.0	28.0	27.3	0.65		42.872	
300.0	300.0	300.0	300.0	0.5	0.5	-89.98	0.0	-28.0	28.0	27.0	1.00		27.934	
400.0	400.0	400.0	400.0	0.7	0.7	-89.98	0.0	-28.0	28.0	26.6	1.35		20.716	
500.0	500.0	500.0	500.0	0.8	0.8	-89.98	0.0	-28.0	28.0	26.3	1.70		16.462	
600.0	600.0	600.0	600.0	1.0	1.0	-89.98	0.0	-28.0	28.0	25.9	2.05		13.658	
700.0	700.0	700.0	700.0	1.2	1.2	-89.98	0.0	-28.0	28.0	25.6	2.40		11.670	
800.0	800.0	800.0	800.0	1.4	1.4	-89.98	0.0	-28.0	28.0	25.2	2.75		10.187	
900.0	900.0	900.0	900.0	1.5	1.5	-89.98	0.0	-28.0	28.0	24.9	3.10		9.038	
1,000.0	1,000.0	1,000.0	1,000.0	1.7	1.7	-89.98	0.0	-28.0	28.0	24.5	3.45		8.123	
1,100.0	1,100.0	1,100.0	1,100.0	1.9	1.9	-89.98	0.0	-28.0	28.0	24.2	3.79		7.375	
1,200.0	1,200.0	1,200.0	1,200.0	2.1	2.1	-89.98	0.0	-28.0	28.0	23.8	4.14		6.754 CC, ES	
1,300.0	1,300.0	1,299.3	1,299.3	2.2	2.2	-92.50	-1.3	-29.1	29.2	24.7	4.49		6.495 SF	
1,400.0	1,400.0	1,398.4	1,398.2	2.4	2.4	-98.89	-5.1	-32.6	33.0	28.2	4.84		6.824	
1,500.0	1,500.0	1,497.0	1,496.5	2.6	2.6	-106.61	-11.4	-38.3	40.1	34.9	5.19		7.732	
1,600.0	1,600.0	1,594.9	1,593.6	2.8	2.8	-113.62	-20.2	-46.2	50.8	45.3	5.53		9.182	
1,700.0	1,700.0	1,691.9	1,689.5	2.9	3.1	-119.12	-31.3	-56.2	65.2	59.3	5.88		11.090	
1,800.0	1,800.0	1,787.7	1,783.6	3.1	3.3	-123.21	-44.6	-68.2	83.1	76.9	6.22		13.363	
1,900.0	1,900.0	1,885.2	1,878.9	3.3	3.6	-126.14	-59.7	-81.7	103.4	96.8	6.57		15.725	
2,000.0	2,000.0	1,983.0	1,974.6	3.5	4.0	-128.11	-74.8	-95.3	123.8	116.9	6.93		17.864	
2,100.0	2,100.0	2,080.8	2,070.3	3.6	4.3	-129.53	-89.9	-108.9	144.3	137.0	7.29		19.798	
2,200.0	2,200.0	2,178.6	2,166.0	3.8	4.6	-130.59	-105.0	-122.5	164.9	157.3	7.65		21.549	
2,300.0	2,300.0	2,276.4	2,261.7	4.0	5.0	-131.42	-120.1	-136.2	185.6	177.6	8.02		23.139	
2,400.0	2,400.0	2,374.3	2,357.3	4.2	5.3	-132.08	-135.2	-149.8	206.3	197.9	8.39		24.587	
2,500.0	2,500.0	2,472.1	2,453.0	4.3	5.7	-132.62	-150.4	-163.4	226.9	218.2	8.76		25.909	
2,600.0	2,600.0	2,569.9	2,548.7	4.5	6.1	-133.07	-165.5	-177.0	247.7	238.5	9.13		27.121	
2,700.0	2,700.0	2,667.7	2,644.4	4.7	6.4	-133.46	-180.6	-190.6	268.4	258.9	9.51		28.234	
2,800.0	2,800.0	2,765.5	2,740.0	4.9	6.8	-133.78	-195.7	-204.2	289.1	279.2	9.88		29.260	
2,900.0	2,900.0	2,863.3	2,835.7	5.0	7.2	-134.06	-210.8	-217.8	309.9	299.6	10.26		30.207	
3,000.0	3,000.0	2,961.2	2,931.4	5.2	7.6	-134.31	-225.9	-231.4	330.6	320.0	10.64		31.086	
3,100.0	3,100.0	3,059.0	3,027.1	5.4	7.9	-134.53	-241.0	-245.0	351.4	340.3	11.01		31.901	
3,200.0	3,200.0	3,156.8	3,122.8	5.6	8.3	-134.72	-256.1	-258.6	372.1	360.7	11.39		32.661	
3,300.0	3,300.0	3,254.6	3,218.4	5.7	8.7	-134.90	-271.3	-272.2	392.9	381.1	11.77		33.369	
3,400.0	3,400.0	3,352.4	3,314.1	5.9	9.1	-135.05	-286.4	-285.8	413.6	401.5	12.15		34.032	
3,500.0	3,500.0	3,450.2	3,409.8	6.1	9.5	-135.19	-301.5	-299.5	434.4	421.9	12.54		34.652	
3,600.0	3,600.0	3,548.0	3,505.5	6.3	9.9	-135.32	-316.6	-313.1	455.2	442.3	12.92		35.235	
3,700.0	3,700.0	3,645.9	3,601.1	6.4	10.2	-135.44	-331.7	-326.7	475.9	462.6	13.30		35.783	
3,800.0	3,800.0	3,743.7	3,696.8	6.6	10.6	-135.55	-346.8	-340.3	496.7	483.0	13.68		36.299	

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Stelling 3B-4H
Project:	DJ Wattenberg	TVD Reference:	KB=13' @ 4930.0ft (Original Well Elev)
Reference Site:	SESW S4-T1N-R65W (Stelling)	MD Reference:	KB=13' @ 4930.0ft (Original Well Elev)
Site Error:	0.0ft	North Reference:	True
Reference Well:	Stelling 3B-4H	Survey Calculation Method:	Minimum Curvature
Well Error:	0.0ft	Output errors are at	2.00 sigma
Reference Wellbore	Hz	Database:	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB=13' @ 4930.0ft (Original Well Elev)

Offset Depths are relative to Offset Datum

Central Meridian is -105.500000 °

Coordinates are relative to: Stelling 3B-4H

Coordinate System is US State Plane 1983, Colorado Northern Zone

Grid Convergence at Surface is: 0.54°

