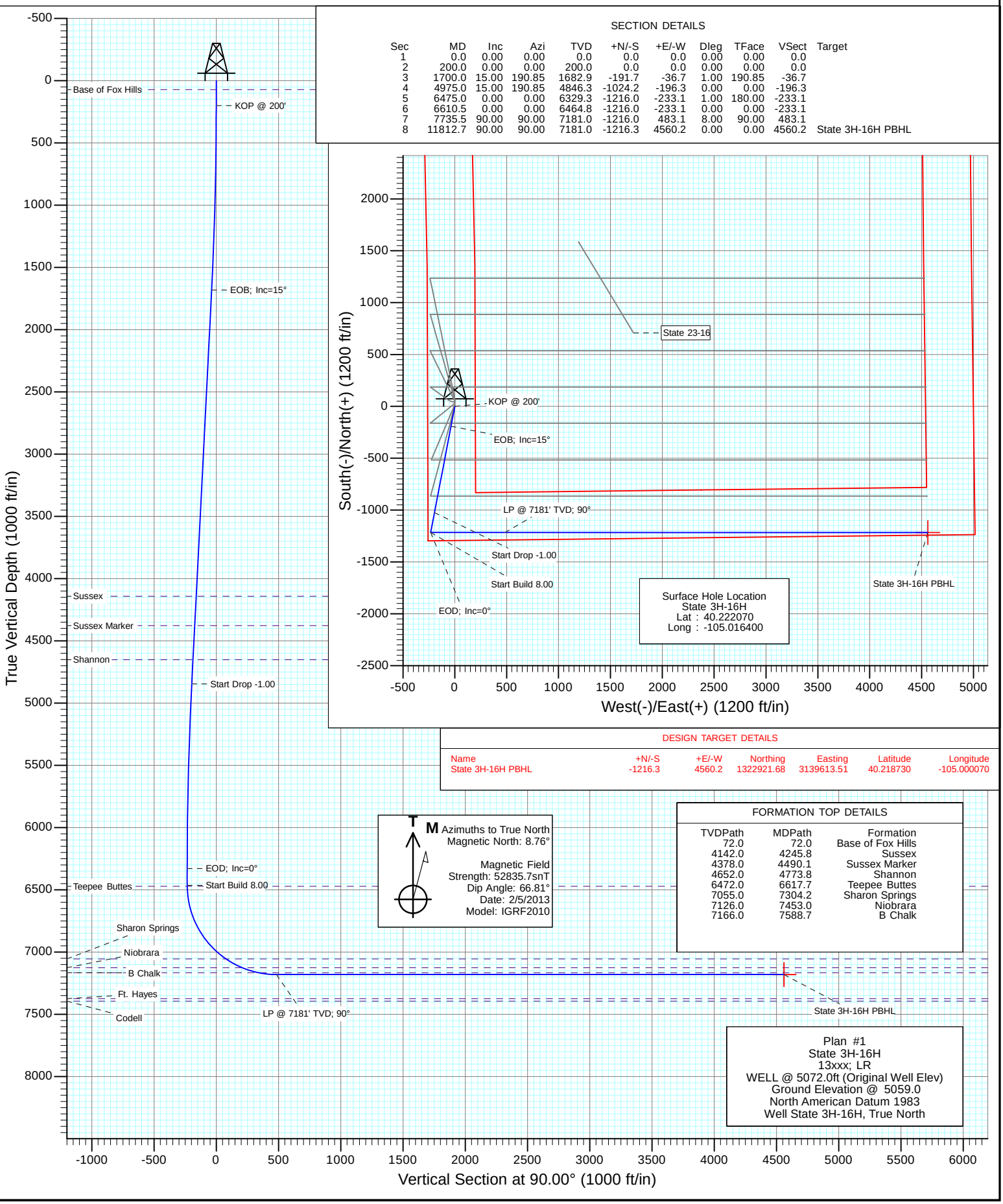
encana

Project: DJ Wattenberg
Site: S16-T3N-R68W (State)
Well: State 3H-16H
Wellbore: Hz
Design: Plan #1

CATHEDRAL

SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	DLeg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0	
3	1700.0	15.00	190.85	1682.9	-191.7	-36.7	1.00	190.85	-36.7	
4	4975.0	15.00	190.85	4846.3	-1024.2	-196.3	0.00	0.00	-196.3	
5	6475.0	0.00	0.00	6329.3	-1216.0	-233.1	1.00	180.00	-233.1	
6	6610.5	0.00	0.00	6464.8	-1216.0	-233.1	0.00	0.00	-233.1	
7	7735.5	90.00	90.00	7181.0	-1216.0	483.1	8.00	90.00	483.1	
8	11812.7	90.00	90.00	7181.0	-1216.3	4560.2	0.00	0.00	4560.2	State 3H-16H PBHL



DESIGN TARGET DETAILS

Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
State 3H-16H PBHL	-1216.3	4560.2	1322921.68	3139613.51	40.218730	-105.000070

T M Azimuths to True North
Magnetic North: 8.76°

Magnetic Field
Strength: 52835.7snT
Dip Angle: 66.81°
Date: 2/5/2013
Model: IGRF2010

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
72.0	72.0	Base of Fox Hills
4142.0	4245.8	Sussex
4378.0	4490.1	Sussex Marker
4652.0	4773.8	Shannon
6472.0	6617.7	Teepee Buttes
7055.0	7304.2	Sharon Springs
7126.0	7453.0	Niobrara
7166.0	7588.7	B Chalk

Plan #1
State 3H-16H
13xxx; LR
WELL @ 5072.0ft (Original Well Elev)
Ground Elevation @ 5059.0
North American Datum 1983
Well State 3H-16H, True North

Planning Report

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well State 3H-16H
Company:	EnCana Oil & Gas (USA) Inc	**TVD Reference:**	WELL @ 5072.0ft (Original Well Elev)
Project:	DJ Wattenberg	**MD Reference:**	WELL @ 5072.0ft (Original Well Elev)
Site:	S16-T3N-R68W (State)	**North Reference:**	True
Well:	State 3H-16H	**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 S16-T3N-R68W (State)

Site Position:		**Northing:**	1,326,575.12 ft	**Latitude:**	40.228760
From:	Lat/Long	**Easting:**	3,139,542.66 ft	**Longitude:**	-105.000250
Position Uncertainty:	0.0 ft	**Slot Radius:**	13.200 in	**Grid Convergence:**	0.32 °

Well State 3H-16H

Well Position	**+N/-S**	0.0 ft	**Northing:**	1,324,113.08 ft	**Latitude:**	40.222070
	+E/-W	0.0 ft	**Easting:**	3,135,046.70 ft	**Longitude:**	-105.016400
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	5,059.0 ft

Wellbore Hz

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2/5/2013	8.76	66.81	52,836

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	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,700.0	15.00	190.85	1,682.9	-191.7	-36.7	1.00	1.00	0.00	190.85	
4,975.0	15.00	190.85	4,846.3	-1,024.2	-196.3	0.00	0.00	0.00	0.00	
6,475.0	0.00	0.00	6,329.3	-1,216.0	-233.1	1.00	-1.00	0.00	180.00	
6,610.5	0.00	0.00	6,464.8	-1,216.0	-233.1	0.00	0.00	0.00	0.00	
7,735.5	90.00	90.00	7,181.0	-1,216.0	483.1	8.00	8.00	0.00	90.00	
11,812.7	90.00	90.00	7,181.0	-1,216.3	4,560.2	0.00	0.00	0.00	0.00	State 3H-16H PBHL

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Project:	DJ Wattenberg	**MD Reference:**	WELL @ 5072.0ft (Original Well Elev)
Site:	S16-T3N-R68W (State)	**North Reference:**	True
Well:	State 3H-16H	**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	
72.0	0.00	0.00	72.0	0.0	0.0	0.0	0.00	0.00	Base of Fox Hills
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	KOP @ 200'
300.0	1.00	190.85	300.0	-0.9	-0.2	-0.2	1.00	1.00	
400.0	2.00	190.85	400.0	-3.4	-0.7	-0.7	1.00	1.00	
500.0	3.00	190.85	499.9	-7.7	-1.5	-1.5	1.00	1.00	
600.0	4.00	190.85	599.7	-13.7	-2.6	-2.6	1.00	1.00	
700.0	5.00	190.85	699.4	-21.4	-4.1	-4.1	1.00	1.00	
800.0	6.00	190.85	798.9	-30.8	-5.9	-5.9	1.00	1.00	
900.0	7.00	190.85	898.3	-41.9	-8.0	-8.0	1.00	1.00	
1,000.0	8.00	190.85	997.4	-54.8	-10.5	-10.5	1.00	1.00	
1,100.0	9.00	190.85	1,096.3	-69.3	-13.3	-13.3	1.00	1.00	
1,200.0	10.00	190.85	1,194.9	-85.5	-16.4	-16.4	1.00	1.00	
1,300.0	11.00	190.85	1,293.3	-103.4	-19.8	-19.8	1.00	1.00	
1,400.0	12.00	190.85	1,391.2	-123.0	-23.6	-23.6	1.00	1.00	
1,500.0	13.00	190.85	1,488.9	-144.2	-27.6	-27.6	1.00	1.00	
1,600.0	14.00	190.85	1,586.1	-167.2	-32.0	-32.0	1.00	1.00	
1,700.0	15.00	190.85	1,682.9	-191.7	-36.7	-36.7	1.00	1.00	EOB; Inc=15°
1,800.0	15.00	190.85	1,779.5	-217.2	-41.6	-41.6	0.00	0.00	
1,900.0	15.00	190.85	1,876.1	-242.6	-46.5	-46.5	0.00	0.00	
2,000.0	15.00	190.85	1,972.7	-268.0	-51.4	-51.4	0.00	0.00	
2,100.0	15.00	190.85	2,069.3	-293.4	-56.2	-56.2	0.00	0.00	
2,200.0	15.00	190.85	2,165.9	-318.8	-61.1	-61.1	0.00	0.00	
2,300.0	15.00	190.85	2,262.5	-344.3	-66.0	-66.0	0.00	0.00	
2,400.0	15.00	190.85	2,359.1	-369.7	-70.9	-70.9	0.00	0.00	
2,500.0	15.00	190.85	2,455.7	-395.1	-75.7	-75.7	0.00	0.00	
2,600.0	15.00	190.85	2,552.3	-420.5	-80.6	-80.6	0.00	0.00	
2,700.0	15.00	190.85	2,648.8	-445.9	-85.5	-85.5	0.00	0.00	
2,800.0	15.00	190.85	2,745.4	-471.4	-90.3	-90.3	0.00	0.00	
2,900.0	15.00	190.85	2,842.0	-496.8	-95.2	-95.2	0.00	0.00	
3,000.0	15.00	190.85	2,938.6	-522.2	-100.1	-100.1	0.00	0.00	
3,100.0	15.00	190.85	3,035.2	-547.6	-105.0	-105.0	0.00	0.00	
3,200.0	15.00	190.85	3,131.8	-573.0	-109.8	-109.8	0.00	0.00	
3,300.0	15.00	190.85	3,228.4	-598.4	-114.7	-114.7	0.00	0.00	
3,400.0	15.00	190.85	3,325.0	-623.9	-119.6	-119.6	0.00	0.00	
3,500.0	15.00	190.85	3,421.6	-649.3	-124.4	-124.4	0.00	0.00	
3,600.0	15.00	190.85	3,518.2	-674.7	-129.3	-129.3	0.00	0.00	
3,700.0	15.00	190.85	3,614.8	-700.1	-134.2	-134.2	0.00	0.00	
3,800.0	15.00	190.85	3,711.4	-725.5	-139.1	-139.1	0.00	0.00	
3,900.0	15.00	190.85	3,808.0	-751.0	-143.9	-143.9	0.00	0.00	
4,000.0	15.00	190.85	3,904.6	-776.4	-148.8	-148.8	0.00	0.00	
4,100.0	15.00	190.85	4,001.1	-801.8	-153.7	-153.7	0.00	0.00	
4,200.0	15.00	190.85	4,097.7	-827.2	-158.5	-158.5	0.00	0.00	
4,245.8	15.00	190.85	4,142.0	-838.9	-160.8	-160.8	0.00	0.00	Sussex
4,300.0	15.00	190.85	4,194.3	-852.6	-163.4	-163.4	0.00	0.00	
4,400.0	15.00	190.85	4,290.9	-878.1	-168.3	-168.3	0.00	0.00	
4,490.1	15.00	190.85	4,378.0	-901.0	-172.7	-172.7	0.00	0.00	Sussex Marker
4,500.0	15.00	190.85	4,387.5	-903.5	-173.2	-173.2	0.00	0.00	
4,600.0	15.00	190.85	4,484.1	-928.9	-178.0	-178.0	0.00	0.00	
4,700.0	15.00	190.85	4,580.7	-954.3	-182.9	-182.9	0.00	0.00	
4,773.8	15.00	190.85	4,652.0	-973.1	-186.5	-186.5	0.00	0.00	Shannon

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Well:	State 3H-16H	**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	15.00	190.85	4,677.3	-979.7	-187.8	-187.8	0.00	0.00	
4,900.0	15.00	190.85	4,773.9	-1,005.2	-192.7	-192.7	0.00	0.00	
4,975.0	15.00	190.85	4,846.3	-1,024.2	-196.3	-196.3	0.00	0.00	Start Drop -1.00
5,000.0	14.75	190.85	4,870.5	-1,030.5	-197.5	-197.5	1.00	-1.00	
5,100.0	13.75	190.85	4,967.4	-1,054.7	-202.1	-202.1	1.00	-1.00	
5,200.0	12.75	190.85	5,064.8	-1,077.2	-206.5	-206.5	1.00	-1.00	
5,300.0	11.75	190.85	5,162.5	-1,098.0	-210.5	-210.5	1.00	-1.00	
5,400.0	10.75	190.85	5,260.6	-1,117.2	-214.1	-214.1	1.00	-1.00	
5,500.0	9.75	190.85	5,359.0	-1,134.7	-217.5	-217.5	1.00	-1.00	
5,600.0	8.75	190.85	5,457.7	-1,150.5	-220.5	-220.5	1.00	-1.00	
5,700.0	7.75	190.85	5,556.6	-1,164.6	-223.2	-223.2	1.00	-1.00	
5,800.0	6.75	190.85	5,655.8	-1,177.0	-225.6	-225.6	1.00	-1.00	
5,900.0	5.75	190.85	5,755.2	-1,187.6	-227.6	-227.6	1.00	-1.00	
6,000.0	4.75	190.85	5,854.8	-1,196.6	-229.4	-229.4	1.00	-1.00	
6,100.0	3.75	190.85	5,954.5	-1,203.9	-230.7	-230.7	1.00	-1.00	
6,200.0	2.75	190.85	6,054.4	-1,209.5	-231.8	-231.8	1.00	-1.00	
6,300.0	1.75	190.85	6,154.3	-1,213.3	-232.6	-232.6	1.00	-1.00	
6,400.0	0.75	190.85	6,254.3	-1,215.5	-233.0	-233.0	1.00	-1.00	
6,475.0	0.00	0.00	6,329.3	-1,216.0	-233.1	-233.1	1.00	-1.00	EOD; Inc=0°
6,500.0	0.00	0.00	6,354.3	-1,216.0	-233.1	-233.1	0.00	0.00	
6,600.0	0.00	0.00	6,454.3	-1,216.0	-233.1	-233.1	0.00	0.00	
6,610.5	0.00	0.00	6,464.8	-1,216.0	-233.1	-233.1	0.00	0.00	Start Build 8.00
6,617.7	0.58	90.00	6,472.0	-1,216.0	-233.0	-233.0	8.00	8.00	Teepee Buttes
6,700.0	7.16	90.00	6,554.0	-1,216.0	-227.5	-227.5	8.00	8.00	
6,800.0	15.16	90.00	6,652.1	-1,216.0	-208.1	-208.1	8.00	8.00	
6,900.0	23.16	90.00	6,746.4	-1,216.0	-175.4	-175.4	8.00	8.00	
7,000.0	31.16	90.00	6,835.3	-1,216.0	-129.8	-129.8	8.00	8.00	
7,100.0	39.16	90.00	6,917.0	-1,216.0	-72.2	-72.2	8.00	8.00	
7,200.0	47.16	90.00	6,989.9	-1,216.0	-3.9	-3.9	8.00	8.00	
7,300.0	55.16	90.00	7,052.6	-1,216.0	73.9	73.9	8.00	8.00	
7,304.2	55.49	90.00	7,055.0	-1,216.0	77.4	77.4	8.00	8.00	Sharon Springs
7,400.0	63.16	90.00	7,103.8	-1,216.0	159.7	159.7	8.00	8.00	
7,453.0	67.40	90.00	7,126.0	-1,216.0	207.9	207.9	8.00	8.00	Niobrara
7,500.0	71.16	90.00	7,142.6	-1,216.0	251.8	251.8	8.00	8.00	
7,588.7	78.25	90.00	7,166.0	-1,216.0	337.3	337.3	8.00	8.00	B Chalk
7,600.0	79.16	90.00	7,168.2	-1,216.0	348.4	348.4	8.00	8.00	
7,700.0	87.16	90.00	7,180.1	-1,216.0	447.6	447.6	8.00	8.00	
7,735.5	90.00	90.00	7,181.0	-1,216.0	483.1	483.1	8.00	8.00	LP @ 7181' TVD; 90°
7,800.0	90.00	90.00	7,181.0	-1,216.0	547.6	547.6	0.00	0.00	
7,900.0	90.00	90.00	7,181.0	-1,216.0	647.6	647.6	0.00	0.00	
8,000.0	90.00	90.00	7,181.0	-1,216.0	747.6	747.6	0.00	0.00	
8,100.0	90.00	90.00	7,181.0	-1,216.0	847.6	847.6	0.00	0.00	
8,200.0	90.00	90.00	7,181.0	-1,216.0	947.6	947.6	0.00	0.00	
8,300.0	90.00	90.00	7,181.0	-1,216.0	1,047.6	1,047.6	0.00	0.00	
8,400.0	90.00	90.00	7,181.0	-1,216.1	1,147.6	1,147.6	0.00	0.00	
8,500.0	90.00	90.00	7,181.0	-1,216.1	1,247.6	1,247.6	0.00	0.00	
8,600.0	90.00	90.00	7,181.0	-1,216.1	1,347.6	1,347.6	0.00	0.00	
8,700.0	90.00	90.00	7,181.0	-1,216.1	1,447.6	1,447.6	0.00	0.00	
8,800.0	90.00	90.00	7,181.0	-1,216.1	1,547.6	1,547.6	0.00	0.00	
8,900.0	90.00	90.00	7,181.0	-1,216.1	1,647.6	1,647.6	0.00	0.00	
9,000.0	90.00	90.00	7,181.0	-1,216.1	1,747.6	1,747.6	0.00	0.00	
9,100.0	90.00	90.00	7,181.0	-1,216.1	1,847.6	1,847.6	0.00	0.00	

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Site:	S16-T3N-R68W (State)	**North Reference:**	True
Well:	State 3H-16H	**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	7,181.0	-1,216.1	1,947.6	1,947.6	0.00	0.00	
9,300.0	90.00	90.00	7,181.0	-1,216.1	2,047.6	2,047.6	0.00	0.00	
9,400.0	90.00	90.00	7,181.0	-1,216.1	2,147.6	2,147.6	0.00	0.00	
9,500.0	90.00	90.00	7,181.0	-1,216.1	2,247.6	2,247.6	0.00	0.00	
9,600.0	90.00	90.00	7,181.0	-1,216.1	2,347.6	2,347.6	0.00	0.00	
9,700.0	90.00	90.00	7,181.0	-1,216.1	2,447.6	2,447.6	0.00	0.00	
9,800.0	90.00	90.00	7,181.0	-1,216.1	2,547.6	2,547.6	0.00	0.00	
9,900.0	90.00	90.00	7,181.0	-1,216.2	2,647.6	2,647.6	0.00	0.00	
10,000.0	90.00	90.00	7,181.0	-1,216.2	2,747.6	2,747.6	0.00	0.00	
10,100.0	90.00	90.00	7,181.0	-1,216.2	2,847.6	2,847.6	0.00	0.00	
10,200.0	90.00	90.00	7,181.0	-1,216.2	2,947.6	2,947.6	0.00	0.00	
10,300.0	90.00	90.00	7,181.0	-1,216.2	3,047.6	3,047.6	0.00	0.00	
10,400.0	90.00	90.00	7,181.0	-1,216.2	3,147.6	3,147.6	0.00	0.00	
10,500.0	90.00	90.00	7,181.0	-1,216.2	3,247.6	3,247.6	0.00	0.00	
10,600.0	90.00	90.00	7,181.0	-1,216.2	3,347.6	3,347.6	0.00	0.00	
10,700.0	90.00	90.00	7,181.0	-1,216.2	3,447.6	3,447.6	0.00	0.00	
10,800.0	90.00	90.00	7,181.0	-1,216.2	3,547.6	3,547.6	0.00	0.00	
10,900.0	90.00	90.00	7,181.0	-1,216.2	3,647.6	3,647.6	0.00	0.00	
11,000.0	90.00	90.00	7,181.0	-1,216.2	3,747.6	3,747.6	0.00	0.00	
11,100.0	90.00	90.00	7,181.0	-1,216.2	3,847.6	3,847.6	0.00	0.00	
11,200.0	90.00	90.00	7,181.0	-1,216.2	3,947.6	3,947.6	0.00	0.00	
11,300.0	90.00	90.00	7,181.0	-1,216.2	4,047.6	4,047.6	0.00	0.00	
11,400.0	90.00	90.00	7,181.0	-1,216.3	4,147.6	4,147.6	0.00	0.00	
11,500.0	90.00	90.00	7,181.0	-1,216.3	4,247.6	4,247.6	0.00	0.00	
11,600.0	90.00	90.00	7,181.0	-1,216.3	4,347.6	4,347.6	0.00	0.00	
11,700.0	90.00	90.00	7,181.0	-1,216.3	4,447.6	4,447.6	0.00	0.00	
11,800.0	90.00	90.00	7,181.0	-1,216.3	4,547.6	4,547.6	0.00	0.00	
11,812.7	90.00	90.00	7,181.0	-1,216.3	4,560.2	4,560.2	0.00	0.00	TD at 11812.7 - State 3H-16H 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
State 3H-16H PBHL - plan hits target center - Point	0.00	0.00	7,181.0	-1,216.3	4,560.2	1,322,921.68	3,139,613.51	40.218730	-105.000070

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well State 3H-16H
Company:	EnCana Oil & Gas (USA) Inc	**TVD Reference:**	WELL @ 5072.0ft (Original Well Elev)
Project:	DJ Wattenberg	**MD Reference:**	WELL @ 5072.0ft (Original Well Elev)
Site:	S16-T3N-R68W (State)	**North Reference:**	True
Well:	State 3H-16H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
72.0	72.0	Base of Fox Hills			
4,245.8	4,142.0	Sussex			
4,490.1	4,378.0	Sussex Marker			
4,773.8	4,652.0	Shannon			
6,617.7	6,472.0	Teepee Buttes			
7,304.2	7,055.0	Sharon Springs			
7,453.0	7,126.0	Niobrara			
7,588.7	7,166.0	B Chalk			

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
200.0	200.0	0.0	0.0	KOP @ 200'
1,700.0	1,682.9	-191.7	-36.7	EOB; Inc=15°
4,975.0	4,846.3	-1,024.2	-196.3	Start Drop -1.00
6,475.0	6,329.3	-1,216.0	-233.1	EOD; Inc=0°
6,610.5	6,464.8	-1,216.0	-233.1	Start Build 8.00
7,735.5	7,181.0	-1,216.0	483.1	LP @ 7181' TVD; 90°
11,812.7	7,181.0	-1,216.3	4,560.2	TD at 11812.7

EnCana Oil & Gas (USA) Inc

DJ Wattenberg
S16-T3N-R68W (State)
State 3H-16H
Hz
Plan #1

Anticollision Report

05 February, 2013

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well State 3H-16H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 5072.0ft (Original Well Elev)
Reference Site:	S16-T3N-R68W (State)	**MD Reference:**	WELL @ 5072.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	State 3H-16H	**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** 2/5/2013

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	11,812.2	Plan #1 (Hz)	MWD	Geolink MWD

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
S16-T3N-R68W (State)						
State 23-16 - Existing - Existing						Out of range
State 3A-16H - Hz - Plan #1	200.0	200.0	69.2	68.6	106.034	CC, ES
State 3A-16H - Hz - Plan #1	700.0	690.6	111.6	109.2	46.842	SF
State 3B-16H - Hz - Plan #1	200.0	200.0	58.3	57.6	89.292	CC, ES
State 3B-16H - Hz - Plan #1	700.0	695.2	87.1	84.7	36.480	SF
State 3C-16H - Hz - Plan #1	200.0	200.0	47.4	46.7	72.550	CC, ES
State 3C-16H - Hz - Plan #1	700.0	698.3	69.6	67.2	29.104	SF
State 3D-16H - Hz - Plan #1	200.0	200.0	40.1	39.4	61.388	CC, ES
State 3D-16H - Hz - Plan #1	700.0	697.5	67.5	65.0	27.276	SF
State 3E-16H - Hz - Plan #1	200.0	200.0	29.1	28.5	44.646	CC, ES
State 3E-16H - Hz - Plan #1	1,000.0	1,001.4	61.4	57.6	16.490	SF
State 3F-16H - Hz - Plan #1	200.0	200.0	18.2	17.6	27.904	CC, ES
State 3F-16H - Hz - Plan #1	3,200.0	3,202.7	184.9	169.0	11.615	SF
State 3G-16H - Hz - Plan #1	200.0	200.0	7.3	6.6	11.161	CC, ES
State 3G-16H - Hz - Plan #1	11,812.7	11,971.5	414.8	218.3	2.111	SF

Anticollision Report

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well State 3H-16H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 5072.0ft (Original Well Elev)
Reference Site:	S16-T3N-R68W (State)	**MD Reference:**	WELL @ 5072.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	State 3H-16H	**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 S16-T3N-R68W (State) - State 3A-16H - Hz - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	0.00	69.2	0.0	69.2				
100.0	100.0	100.0	100.0	0.2	0.2	0.00	69.2	0.0	69.2	68.9	0.30	227.912	
200.0	200.0	200.0	200.0	0.3	0.3	0.00	69.2	0.0	69.2	68.6	0.65	106.034	CC, ES
300.0	300.0	298.8	298.8	0.5	0.5	169.14	70.0	-0.2	70.9	69.9	1.00	70.937	
400.0	400.0	397.4	397.4	0.7	0.7	169.11	72.5	-0.7	76.0	74.7	1.35	56.462	
500.0	499.9	495.7	495.6	0.9	0.9	169.07	76.7	-1.5	84.5	82.8	1.69	49.932	
600.0	599.7	593.5	593.2	1.1	1.1	169.02	82.4	-2.7	96.4	94.3	2.04	47.292	
700.0	699.4	690.6	690.0	1.3	1.3	168.97	89.8	-4.2	111.6	109.2	2.38	46.842	SF
800.0	798.9	786.9	785.9	1.5	1.5	168.92	98.6	-6.0	130.1	127.4	2.73	47.744	
900.0	898.3	882.2	880.6	1.8	1.7	168.87	108.9	-8.2	151.9	148.9	3.07	49.538	
1,000.0	997.4	976.3	974.0	2.0	2.0	168.82	120.7	-10.6	177.0	173.6	3.41	51.949	
1,100.0	1,096.3	1,069.2	1,065.9	2.3	2.2	168.77	133.7	-13.2	205.2	201.5	3.74	54.802	
1,200.0	1,194.9	1,160.7	1,156.2	2.7	2.5	168.72	147.9	-16.2	236.6	232.5	4.08	57.982	
1,300.0	1,293.3	1,250.7	1,244.8	3.0	2.8	168.66	163.3	-19.3	271.1	266.7	4.41	61.408	
1,400.0	1,391.2	1,339.0	1,331.5	3.4	3.2	168.61	179.8	-22.7	308.6	303.8	4.75	65.022	
1,500.0	1,488.9	1,425.6	1,416.3	3.8	3.5	168.55	197.1	-26.3	349.0	343.9	5.07	68.783	
1,600.0	1,586.1	1,510.4	1,499.0	4.2	3.8	168.49	215.4	-30.0	392.3	386.9	5.40	72.658	
1,700.0	1,682.9	1,593.2	1,579.5	4.7	4.2	168.43	234.3	-33.9	438.4	432.7	5.72	76.622	
1,800.0	1,779.5	1,674.5	1,658.2	5.1	4.6	168.45	254.0	-37.9	486.6	480.5	6.06	80.312	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well State 3H-16H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 5072.0ft (Original Well Elev)
Reference Site:	S16-T3N-R68W (State)	**MD Reference:**	WELL @ 5072.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	State 3H-16H	**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 S16-T3N-R68W (State) - State 3B-16H - Hz - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	0.00	58.3	0.0	58.3				
100.0	100.0	100.0	100.0	0.2	0.2	0.00	58.3	0.0	58.3	58.0	0.30	191.926	
200.0	200.0	200.0	200.0	0.3	0.3	0.00	58.3	0.0	58.3	57.6	0.65	89.292	CC, ES
300.0	300.0	300.0	300.0	0.5	0.5	169.31	58.3	0.0	59.1	58.1	1.00	59.039	
400.0	400.0	400.0	400.0	0.7	0.7	169.75	58.3	0.0	61.7	60.4	1.35	45.696	
500.0	499.9	498.8	498.8	0.9	0.8	170.19	59.1	-0.2	66.8	65.1	1.70	39.379	
600.0	599.7	597.2	597.2	1.1	1.0	170.39	61.5	-0.9	75.3	73.3	2.04	36.860	
700.0	699.4	695.2	695.1	1.3	1.2	170.40	65.6	-2.1	87.1	84.7	2.39	36.480	SF
800.0	798.9	792.5	792.2	1.5	1.4	170.27	71.2	-3.7	102.3	99.5	2.73	37.420	
900.0	898.3	889.0	888.4	1.8	1.6	170.07	78.3	-5.7	120.7	117.6	3.08	39.228	
1,000.0	997.4	984.5	983.5	2.0	1.8	169.84	86.9	-8.2	142.4	139.0	3.42	41.637	
1,100.0	1,096.3	1,078.9	1,077.4	2.3	2.0	169.60	96.9	-11.1	167.3	163.5	3.76	44.473	
1,200.0	1,194.9	1,172.1	1,169.8	2.7	2.3	169.36	108.2	-14.3	195.3	191.2	4.10	47.623	
1,300.0	1,293.3	1,263.9	1,260.6	3.0	2.5	169.14	120.8	-17.9	226.5	222.1	4.44	51.006	
1,400.0	1,391.2	1,354.1	1,349.7	3.4	2.8	168.93	134.5	-21.8	260.8	256.0	4.78	54.566	
1,500.0	1,488.9	1,442.8	1,437.0	3.8	3.1	168.73	149.3	-26.1	298.0	292.9	5.12	58.260	
1,600.0	1,586.1	1,529.7	1,522.4	4.2	3.4	168.54	165.0	-30.6	338.2	332.8	5.45	62.056	
1,700.0	1,682.9	1,615.8	1,606.7	4.7	3.7	168.36	181.8	-35.4	381.2	375.5	5.78	65.909	
1,800.0	1,779.5	1,705.5	1,694.4	5.1	4.0	168.29	199.7	-40.6	425.5	419.3	6.14	69.295	
1,900.0	1,876.1	1,795.1	1,782.1	5.6	4.4	168.24	217.6	-45.7	469.7	463.2	6.50	72.296	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well State 3H-16H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 5072.0ft (Original Well Elev)
Reference Site:	S16-T3N-R68W (State)	**MD Reference:**	WELL @ 5072.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	State 3H-16H	**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 S16-T3N-R68W (State) - State 3C-16H - Hz - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	0.00	47.4	0.0	47.4				
100.0	100.0	100.0	100.0	0.2	0.2	0.00	47.4	0.0	47.4	47.1	0.30	155.940	
200.0	200.0	200.0	200.0	0.3	0.3	0.00	47.4	0.0	47.4	46.7	0.65	72.550	CC, ES
300.0	300.0	300.0	300.0	0.5	0.5	169.34	47.4	0.0	48.2	47.2	1.00	48.130	
400.0	400.0	400.0	400.0	0.7	0.7	169.89	47.4	0.0	50.8	49.4	1.35	37.605	
500.0	499.9	499.9	499.9	0.9	0.8	170.67	47.4	0.0	55.1	53.4	1.70	32.422	
600.0	599.7	599.7	599.7	1.1	1.0	171.59	47.4	0.0	61.1	59.1	2.05	29.857	
700.0	699.4	698.3	698.3	1.3	1.2	172.18	48.1	-0.4	69.6	67.2	2.39	29.104	SF
800.0	798.9	796.5	796.5	1.5	1.4	172.21	50.4	-1.5	81.4	78.6	2.74	29.723	
900.0	898.3	894.1	893.9	1.8	1.5	171.87	54.1	-3.3	96.3	93.2	3.08	31.243	
1,000.0	997.4	990.8	990.5	2.0	1.7	171.33	59.3	-5.8	114.4	111.0	3.43	33.383	
1,100.0	1,096.3	1,086.7	1,086.1	2.3	1.9	170.72	65.9	-9.1	135.7	131.9	3.77	35.962	
1,200.0	1,194.9	1,181.5	1,180.5	2.7	2.1	170.09	73.9	-12.9	160.0	155.9	4.12	38.860	
1,300.0	1,293.3	1,275.1	1,273.5	3.0	2.3	169.49	83.1	-17.4	187.5	183.0	4.47	41.990	
1,400.0	1,391.2	1,367.4	1,365.1	3.4	2.6	168.92	93.5	-22.5	218.0	213.2	4.81	45.289	
1,500.0	1,488.9	1,458.2	1,455.0	3.8	2.8	168.40	105.0	-28.1	251.5	246.4	5.16	48.712	
1,600.0	1,586.1	1,547.5	1,543.2	4.2	3.1	167.91	117.6	-34.3	288.0	282.5	5.51	52.222	
1,700.0	1,682.9	1,637.0	1,631.4	4.7	3.4	167.47	131.4	-41.0	327.2	321.4	5.87	55.750	
1,800.0	1,779.5	1,728.6	1,721.5	5.1	3.6	167.20	145.7	-47.9	367.5	361.2	6.24	58.857	
1,900.0	1,876.1	1,820.1	1,811.7	5.6	3.9	166.99	159.9	-54.9	407.7	401.1	6.62	61.595	
2,000.0	1,972.7	1,911.6	1,901.8	6.1	4.2	166.81	174.2	-61.9	448.0	441.0	7.00	64.023	
2,100.0	2,069.3	2,003.1	1,991.9	6.6	4.5	166.66	188.5	-68.8	488.3	480.9	7.38	66.191	

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

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well State 3H-16H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 5072.0ft (Original Well Elev)
Reference Site:	S16-T3N-R68W (State)	**MD Reference:**	WELL @ 5072.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	State 3H-16H	**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 S16-T3N-R68W (State) - State 3D-16H - Hz - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	0.00	40.1	0.0	40.1				
100.0	100.0	100.0	100.0	0.2	0.2	0.00	40.1	0.0	40.1	39.8	0.30	131.949	
200.0	200.0	200.0	200.0	0.3	0.3	0.00	40.1	0.0	40.1	39.4	0.65	61.388	CC, ES
300.0	300.0	299.9	299.9	0.5	0.5	168.18	40.2	-0.9	41.1	40.1	1.00	40.986	
400.0	400.0	399.6	399.6	0.7	0.7	165.55	40.7	-3.4	44.2	42.8	1.36	32.590	
500.0	499.9	499.2	499.1	0.9	0.9	161.90	41.4	-7.7	49.5	47.8	1.72	28.851	
600.0	599.7	598.6	598.2	1.1	1.1	157.97	42.5	-13.6	57.3	55.2	2.09	27.420	
700.0	699.4	697.5	696.9	1.3	1.3	154.25	43.8	-21.3	67.5	65.0	2.47	27.276	SF
800.0	798.9	795.4	794.4	1.5	1.5	151.38	46.0	-30.1	80.6	77.8	2.87	28.110	
900.0	898.3	892.5	891.0	1.8	1.7	149.59	49.5	-39.7	97.1	93.8	3.27	29.663	
1,000.0	997.4	988.8	986.6	2.0	2.0	148.55	54.4	-50.1	116.6	112.9	3.68	31.658	
1,100.0	1,096.3	1,084.2	1,081.0	2.3	2.3	148.00	60.5	-61.3	139.2	135.1	4.10	33.931	
1,200.0	1,194.9	1,178.4	1,174.2	2.7	2.5	147.78	67.9	-73.1	164.9	160.4	4.53	36.382	
1,300.0	1,293.3	1,271.3	1,265.9	3.0	2.8	147.74	76.5	-85.6	193.5	188.5	4.97	38.945	
1,400.0	1,391.2	1,365.7	1,358.8	3.4	3.1	147.84	86.1	-98.9	224.6	219.1	5.42	41.457	
1,500.0	1,488.9	1,460.2	1,451.9	3.8	3.4	148.09	95.7	-112.1	257.1	251.2	5.87	43.768	
1,600.0	1,586.1	1,554.3	1,544.6	4.2	3.8	148.42	105.3	-125.4	291.0	284.7	6.34	45.921	
1,700.0	1,682.9	1,647.8	1,636.6	4.7	4.1	148.81	114.9	-138.5	326.4	319.6	6.81	47.947	
1,800.0	1,779.5	1,741.0	1,728.4	5.1	4.4	149.35	124.4	-151.6	362.4	355.2	7.29	49.718	
1,900.0	1,876.1	1,834.2	1,820.2	5.6	4.7	149.80	133.9	-164.7	398.5	390.8	7.77	51.263	
2,000.0	1,972.7	1,932.9	1,917.6	6.1	5.0	150.25	143.6	-178.0	434.1	425.9	8.26	52.533	
2,100.0	2,069.3	2,033.1	2,016.7	6.6	5.3	150.77	152.4	-190.1	468.4	459.7	8.74	53.570	

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

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well State 3H-16H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 5072.0ft (Original Well Elev)
Reference Site:	S16-T3N-R68W (State)	**MD Reference:**	WELL @ 5072.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	State 3H-16H	**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 S16-T3N-R68W (State) - State 3E-16H - Hz - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	0.00	29.1	0.0	29.1				
100.0	100.0	100.0	100.0	0.2	0.2	0.00	29.1	0.0	29.1	28.8	0.30	95.963	
200.0	200.0	200.0	200.0	0.3	0.3	0.00	29.1	0.0	29.1	28.5	0.65	44.646	CC, ES
300.0	300.0	300.0	300.0	0.5	0.5	169.46	29.1	0.0	30.0	29.0	1.00	29.948	
400.0	400.0	400.3	400.3	0.7	0.7	169.10	28.6	-0.7	32.0	30.7	1.35	23.689	
500.0	499.9	500.6	500.6	0.9	0.9	167.08	26.9	-2.7	34.7	33.0	1.70	20.346	
600.0	599.7	600.9	600.8	1.1	1.0	163.85	24.2	-6.1	38.1	36.0	2.06	18.442	
700.0	699.4	701.2	700.8	1.3	1.2	159.87	20.3	-10.9	42.3	39.9	2.44	17.362	
800.0	798.9	801.3	800.7	1.5	1.5	155.58	15.3	-17.0	47.5	44.7	2.83	16.789	
900.0	898.3	901.4	900.3	1.8	1.7	151.28	9.3	-24.5	53.9	50.6	3.26	16.539	
1,000.0	997.4	1,001.4	999.6	2.0	1.9	147.20	2.2	-33.3	61.4	57.6	3.72	16.490	SF
1,100.0	1,096.3	1,101.2	1,098.6	2.3	2.2	143.47	-6.1	-43.5	70.1	65.9	4.23	16.565	
1,200.0	1,194.9	1,200.9	1,197.2	2.7	2.5	140.11	-15.3	-54.9	80.1	75.3	4.79	16.712	
1,300.0	1,293.3	1,300.4	1,295.3	3.0	2.8	137.15	-25.7	-67.7	91.3	85.9	5.40	16.899	
1,400.0	1,391.2	1,399.5	1,393.0	3.4	3.1	135.02	-36.5	-81.1	103.8	97.8	6.04	17.200	
1,500.0	1,488.9	1,498.6	1,490.5	3.8	3.5	133.95	-47.3	-94.4	117.7	111.0	6.68	17.606	
1,600.0	1,586.1	1,597.4	1,587.8	4.2	3.8	133.63	-58.1	-107.8	132.8	125.4	7.34	18.086	
1,700.0	1,682.9	1,696.1	1,685.0	4.7	4.1	133.83	-68.9	-121.1	149.0	141.0	8.00	18.624	
1,800.0	1,779.5	1,794.6	1,782.1	5.1	4.5	134.31	-79.7	-134.4	165.9	157.2	8.66	19.147	
1,900.0	1,876.1	1,893.2	1,879.1	5.6	4.8	134.70	-90.5	-147.7	182.7	173.4	9.33	19.590	
2,000.0	1,972.7	1,991.8	1,976.2	6.1	5.1	135.02	-101.2	-161.0	199.6	189.6	10.00	19.968	
2,100.0	2,069.3	2,090.2	2,073.1	6.6	5.5	135.32	-111.9	-174.2	216.5	205.8	10.66	20.304	
2,200.0	2,165.9	2,188.3	2,170.0	7.0	5.8	135.88	-121.8	-186.4	233.5	222.2	11.28	20.696	
2,300.0	2,262.5	2,286.2	2,266.9	7.5	6.1	136.76	-130.6	-197.3	250.8	238.9	11.86	21.151	
2,400.0	2,359.1	2,383.9	2,363.8	8.0	6.3	137.88	-138.4	-206.9	268.4	256.0	12.38	21.675	
2,500.0	2,455.7	2,481.3	2,460.6	8.5	6.6	139.19	-145.1	-215.2	286.3	273.4	12.85	22.273	
2,600.0	2,552.3	2,578.4	2,557.3	8.9	6.8	140.65	-150.7	-222.1	304.7	291.4	13.28	22.952	
2,700.0	2,648.8	2,675.1	2,653.7	9.4	7.0	142.23	-155.3	-227.8	323.6	310.0	13.65	23.715	
2,800.0	2,745.4	2,771.4	2,749.8	9.9	7.2	143.90	-158.9	-232.2	343.2	329.2	13.97	24.571	
2,900.0	2,842.0	2,867.1	2,845.5	10.4	7.3	145.63	-161.4	-235.3	363.5	349.2	14.24	25.521	
3,000.0	2,938.6	2,962.3	2,940.7	10.8	7.4	147.41	-162.9	-237.2	384.5	370.1	14.47	26.572	
3,100.0	3,035.2	3,057.0	3,035.3	11.3	7.6	149.20	-163.5	-237.9	406.5	391.8	14.67	27.717	
3,200.0	3,131.8	3,153.5	3,131.8	11.8	7.7	150.96	-163.5	-237.9	429.1	414.3	14.85	28.905	
3,300.0	3,228.4	3,250.1	3,228.4	12.3	7.8	152.54	-163.5	-237.9	452.1	437.0	15.03	30.072	
3,400.0	3,325.0	3,346.7	3,325.0	12.8	7.9	153.97	-163.5	-237.9	475.3	460.1	15.23	31.213	
3,500.0	3,421.6	3,443.3	3,421.6	13.3	8.0	155.26	-163.5	-237.9	498.9	483.4	15.43	32.326	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well State 3H-16H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 5072.0ft (Original Well Elev)
Reference Site:	S16-T3N-R68W (State)	**MD Reference:**	WELL @ 5072.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	State 3H-16H	**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 S16-T3N-R68W (State) - State 3F-16H - Hz - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	0.00	18.2	0.0	18.2				
100.0	100.0	100.0	100.0	0.2	0.2	0.00	18.2	0.0	18.2	17.9	0.30	59.977	
200.0	200.0	200.0	200.0	0.3	0.3	0.00	18.2	0.0	18.2	17.6	0.65	27.904	CC, ES
300.0	300.0	300.0	300.0	0.5	0.5	169.64	18.2	0.0	19.1	18.1	1.00	19.039	
400.0	400.0	400.0	400.0	0.7	0.7	170.88	18.2	0.0	21.7	20.3	1.35	16.032	
500.0	499.9	500.3	500.3	0.9	0.9	171.73	17.4	-0.3	25.1	23.4	1.70	14.794	
600.0	599.7	600.7	600.6	1.1	1.0	171.65	15.0	-1.4	28.7	26.7	2.05	14.018	
700.0	699.4	701.1	701.0	1.3	1.2	170.95	10.9	-3.1	32.4	30.0	2.40	13.498	
800.0	798.9	801.6	801.2	1.5	1.4	169.82	5.3	-5.5	36.2	33.4	2.75	13.132	
900.0	898.3	902.1	901.5	1.8	1.6	168.39	-2.0	-8.6	40.1	36.9	3.11	12.866	
1,000.0	997.4	1,002.7	1,001.6	2.0	1.8	166.75	-10.9	-12.4	44.1	40.6	3.48	12.661	
1,100.0	1,096.3	1,103.3	1,101.6	2.3	2.1	164.96	-21.5	-16.8	48.2	44.4	3.86	12.493	
1,200.0	1,194.9	1,204.0	1,201.4	2.7	2.4	163.08	-33.6	-22.0	52.6	48.3	4.26	12.342	
1,300.0	1,293.3	1,304.7	1,301.0	3.0	2.6	161.14	-47.4	-27.9	57.1	52.4	4.68	12.193	
1,400.0	1,391.2	1,405.5	1,400.3	3.4	3.0	159.17	-62.8	-34.4	61.8	56.7	5.14	12.034	
1,500.0	1,488.9	1,506.3	1,499.4	3.8	3.3	157.20	-79.8	-41.6	66.8	61.1	5.63	11.857	
1,600.0	1,586.1	1,607.0	1,598.1	4.2	3.7	155.24	-98.4	-49.5	72.0	65.8	6.17	11.663	
1,700.0	1,682.9	1,706.8	1,695.7	4.7	4.0	153.78	-117.5	-57.6	78.2	71.5	6.73	11.622	
1,800.0	1,779.5	1,806.6	1,793.3	5.1	4.4	152.83	-136.6	-65.7	85.2	77.9	7.30	11.681	
1,900.0	1,876.1	1,906.3	1,890.8	5.6	4.8	152.03	-155.7	-73.8	92.3	84.4	7.88	11.717	
2,000.0	1,972.7	2,006.0	1,988.4	6.1	5.2	151.34	-174.7	-81.9	99.4	90.9	8.47	11.736	
2,100.0	2,069.3	2,105.8	2,086.0	6.6	5.6	150.74	-193.8	-90.0	106.5	97.4	9.07	11.743	
2,200.0	2,165.9	2,205.5	2,183.5	7.0	6.0	150.21	-212.9	-98.1	113.6	103.9	9.67	11.743	
2,300.0	2,262.5	2,305.3	2,281.1	7.5	6.4	149.75	-232.0	-106.2	120.7	110.4	10.28	11.738	
2,400.0	2,359.1	2,405.0	2,378.7	8.0	6.7	149.34	-251.1	-114.3	127.8	116.9	10.90	11.728	
2,500.0	2,455.7	2,504.7	2,476.2	8.5	7.1	148.97	-270.2	-122.4	134.9	123.4	11.52	11.716	
2,600.0	2,552.3	2,604.5	2,573.8	8.9	7.5	148.64	-289.3	-130.5	142.0	129.9	12.14	11.703	
2,700.0	2,648.8	2,704.2	2,671.4	9.4	7.9	148.34	-308.4	-138.6	149.2	136.4	12.76	11.688	
2,800.0	2,745.4	2,804.0	2,768.9	9.9	8.3	148.07	-327.5	-146.7	156.3	142.9	13.39	11.673	
2,900.0	2,842.0	2,903.7	2,866.5	10.4	8.7	147.82	-346.5	-154.8	163.5	149.4	14.02	11.658	
3,000.0	2,938.6	3,003.5	2,964.0	10.8	9.1	147.59	-365.6	-162.9	170.6	155.9	14.65	11.643	
3,100.0	3,035.2	3,103.2	3,061.6	11.3	9.5	147.38	-384.7	-171.0	177.7	162.5	15.29	11.628	
3,200.0	3,131.8	3,202.7	3,158.9	11.8	9.9	147.20	-403.7	-179.1	184.9	169.0	15.92	11.615	SF
3,300.0	3,228.4	3,300.0	3,254.3	12.3	10.3	147.24	-421.4	-186.6	192.8	176.3	16.49	11.693	
3,400.0	3,325.0	3,397.2	3,349.9	12.8	10.6	147.61	-437.6	-193.5	201.9	184.9	16.98	11.893	
3,500.0	3,421.6	3,494.2	3,445.5	13.3	10.9	148.26	-452.3	-199.7	212.3	194.9	17.39	12.207	
3,600.0	3,518.2	3,590.7	3,541.1	13.7	11.2	149.13	-465.4	-205.3	223.9	206.1	17.73	12.628	
3,700.0	3,614.8	3,686.9	3,636.5	14.2	11.5	150.18	-476.9	-210.2	236.8	218.8	18.00	13.154	
3,800.0	3,711.4	3,782.7	3,731.6	14.7	11.7	151.36	-487.0	-214.4	251.0	232.8	18.21	13.780	
3,900.0	3,808.0	3,878.0	3,826.4	15.2	11.9	152.64	-495.5	-218.1	266.6	248.2	18.38	14.505	
4,000.0	3,904.6	3,972.8	3,920.9	15.7	12.1	153.96	-502.6	-221.1	283.6	265.1	18.51	15.325	
4,100.0	4,001.1	4,066.9	4,014.9	16.1	12.3	155.32	-508.2	-223.5	302.1	283.5	18.60	16.238	
4,200.0	4,097.7	4,160.5	4,108.3	16.6	12.4	156.68	-512.4	-225.2	322.0	303.3	18.68	17.239	
4,300.0	4,194.3	4,253.4	4,201.2	17.1	12.6	158.02	-515.1	-226.4	343.4	324.7	18.74	18.325	
4,400.0	4,290.9	4,345.6	4,293.3	17.6	12.7	159.32	-516.4	-226.9	366.4	347.6	18.80	19.490	
4,500.0	4,387.5	4,439.8	4,387.5	18.1	12.8	160.61	-516.6	-227.0	390.6	371.8	18.86	20.716	
4,600.0	4,484.1	4,536.4	4,484.1	18.6	12.9	161.79	-516.6	-227.0	415.2	396.3	18.94	21.920	
4,700.0	4,580.7	4,633.0	4,580.7	19.0	13.0	162.84	-516.6	-227.0	439.9	420.9	19.06	23.082	
4,800.0	4,677.3	4,729.5	4,677.3	19.5	13.1	163.78	-516.6	-227.0	464.8	445.6	19.20	24.204	
4,900.0	4,773.9	4,826.1	4,773.9	20.0	13.2	164.63	-516.6	-227.0	489.8	470.4	19.37	25.284	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well State 3H-16H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 5072.0ft (Original Well Elev)
Reference Site:	S16-T3N-R68W (State)	**MD Reference:**	WELL @ 5072.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	State 3H-16H	**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 S16-T3N-R68W (State) - State 3G-16H - Hz - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
0.0	0.0	0.0	0.0	0.0	0.0	0.00	7.3	0.0	7.3				
100.0	100.0	100.0	100.0	0.2	0.2	0.00	7.3	0.0	7.3	7.0	0.30	23.991	
200.0	200.0	200.0	200.0	0.3	0.3	0.00	7.3	0.0	7.3	6.6	0.65	11.161	CC, ES
300.0	300.0	300.0	300.0	0.5	0.5	170.30	7.3	0.0	8.1	7.1	1.00	8.130	
400.0	400.0	400.1	400.1	0.7	0.7	171.65	6.4	-0.2	9.9	8.5	1.35	7.313	
500.0	499.9	500.3	500.3	0.9	0.9	171.97	3.9	-0.9	11.6	9.9	1.70	6.845	
600.0	599.7	600.5	600.4	1.1	1.0	171.68	-0.3	-2.0	13.4	11.4	2.05	6.544	
700.0	699.4	700.7	700.4	1.3	1.2	170.98	-6.2	-3.6	15.2	12.8	2.40	6.336	
800.0	798.9	801.0	800.3	1.5	1.4	170.01	-13.9	-5.7	17.0	14.3	2.75	6.185	
900.0	898.3	901.3	900.2	1.8	1.7	168.84	-23.2	-8.2	18.9	15.8	3.11	6.070	
1,000.0	997.4	1,001.6	999.8	2.0	1.9	167.55	-34.2	-11.1	20.8	17.3	3.47	5.978	
1,100.0	1,096.3	1,101.9	1,099.3	2.3	2.2	166.16	-46.8	-14.5	22.7	18.8	3.85	5.898	
1,200.0	1,194.9	1,202.3	1,198.6	2.7	2.5	164.70	-61.2	-18.4	24.6	20.4	4.23	5.825	
1,300.0	1,293.3	1,302.7	1,297.6	3.0	2.8	163.19	-77.2	-22.7	26.6	22.0	4.63	5.752	
1,400.0	1,391.2	1,403.1	1,396.3	3.4	3.2	161.66	-95.0	-27.4	28.7	23.6	5.06	5.675	
1,500.0	1,488.9	1,503.6	1,494.7	3.8	3.5	160.11	-114.4	-32.6	30.8	25.3	5.51	5.592	
1,600.0	1,586.1	1,603.5	1,592.5	4.2	3.9	159.24	-134.4	-38.0	33.9	27.9	5.97	5.671	
1,700.0	1,682.9	1,703.4	1,690.2	4.7	4.3	159.46	-154.5	-43.4	38.5	32.1	6.40	6.021	
1,800.0	1,779.5	1,803.3	1,787.9	5.1	4.7	160.04	-174.6	-48.7	44.0	37.2	6.82	6.455	
1,900.0	1,876.1	1,903.1	1,885.5	5.6	5.1	160.49	-194.6	-54.1	49.5	42.2	7.23	6.839	
2,000.0	1,972.7	2,003.0	1,983.2	6.1	5.4	160.85	-214.7	-59.5	55.0	47.3	7.66	7.179	
2,100.0	2,069.3	2,102.8	2,080.9	6.6	5.8	161.15	-234.7	-64.8	60.5	52.4	8.08	7.484	
2,200.0	2,165.9	2,202.6	2,178.5	7.0	6.2	161.40	-254.8	-70.2	65.9	57.4	8.50	7.757	
2,300.0	2,262.5	2,302.5	2,276.2	7.5	6.6	161.61	-274.8	-75.6	71.4	62.5	8.92	8.005	
2,400.0	2,359.1	2,402.3	2,373.9	8.0	7.0	161.78	-294.9	-81.0	76.9	67.6	9.35	8.229	
2,500.0	2,455.7	2,502.2	2,471.5	8.5	7.4	161.94	-314.9	-86.3	82.4	72.6	9.77	8.434	
2,600.0	2,552.3	2,602.0	2,569.2	8.9	7.8	162.08	-335.0	-91.7	87.9	77.7	10.20	8.621	
2,700.0	2,648.8	2,701.9	2,666.9	9.4	8.2	162.20	-355.0	-97.1	93.4	82.8	10.62	8.793	
2,800.0	2,745.4	2,801.7	2,764.5	9.9	8.6	162.30	-375.1	-102.5	98.9	87.8	11.05	8.951	
2,900.0	2,842.0	2,901.6	2,862.2	10.4	9.0	162.40	-395.1	-107.8	104.4	92.9	11.47	9.098	
3,000.0	2,938.6	3,001.4	2,959.9	10.8	9.4	162.48	-415.2	-113.2	109.9	98.0	11.90	9.234	
3,100.0	3,035.2	3,101.3	3,057.5	11.3	9.8	162.56	-435.2	-118.6	115.4	103.0	12.33	9.360	
3,200.0	3,131.8	3,201.1	3,155.2	11.8	10.2	162.63	-455.3	-123.9	120.9	108.1	12.75	9.478	
3,300.0	3,228.4	3,301.0	3,252.9	12.3	10.6	162.70	-475.3	-129.3	126.4	113.2	13.18	9.588	
3,400.0	3,325.0	3,400.8	3,350.5	12.8	11.0	162.75	-495.4	-134.7	131.9	118.3	13.61	9.691	
3,500.0	3,421.6	3,500.7	3,448.2	13.3	11.4	162.81	-515.4	-140.1	137.4	123.3	14.03	9.787	
3,600.0	3,518.2	3,600.5	3,545.9	13.7	11.8	162.86	-535.5	-145.4	142.8	128.4	14.46	9.878	
3,700.0	3,614.8	3,700.4	3,643.5	14.2	12.2	162.91	-555.5	-150.8	148.3	133.5	14.89	9.964	
3,800.0	3,711.4	3,800.2	3,741.2	14.7	12.6	162.95	-575.6	-156.2	153.8	138.5	15.32	10.045	
3,900.0	3,808.0	3,900.1	3,838.9	15.2	13.0	162.99	-595.7	-161.6	159.3	143.6	15.74	10.121	
4,000.0	3,904.6	3,999.9	3,936.5	15.7	13.4	163.03	-615.7	-166.9	164.8	148.7	16.17	10.193	
4,100.0	4,001.1	4,099.8	4,034.2	16.1	13.8	163.06	-635.8	-172.3	170.3	153.7	16.60	10.262	
4,200.0	4,097.7	4,199.6	4,131.9	16.6	14.2	163.09	-655.8	-177.7	175.8	158.8	17.03	10.327	
4,300.0	4,194.3	4,299.5	4,229.5	17.1	14.6	163.13	-675.9	-183.0	181.3	163.9	17.45	10.388	
4,400.0	4,290.9	4,399.3	4,327.2	17.6	15.0	163.15	-695.9	-188.4	186.8	168.9	17.88	10.447	
4,500.0	4,387.5	4,499.2	4,424.9	18.1	15.4	163.18	-716.0	-193.8	192.3	174.0	18.31	10.503	
4,600.0	4,484.1	4,599.0	4,522.5	18.6	15.8	163.21	-736.0	-199.2	197.8	179.1	18.74	10.556	
4,700.0	4,580.7	4,697.1	4,618.6	19.0	16.2	163.26	-755.5	-204.4	203.5	184.4	19.15	10.626	
4,800.0	4,677.3	4,793.6	4,713.3	19.5	16.5	163.44	-773.3	-209.2	210.7	191.1	19.52	10.791	
4,900.0	4,773.9	4,889.9	4,808.0	20.0	16.9	163.76	-789.5	-213.5	219.4	199.5	19.84	11.054	
5,000.0	4,870.5	4,985.8	4,902.8	20.5	17.2	164.20	-804.1	-217.4	229.6	209.5	20.13	11.406	
5,100.0	4,967.4	5,081.5	4,997.5	20.9	17.4	164.67	-817.1	-220.9	240.2	219.8	20.40	11.775	

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

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well State 3H-16H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 5072.0ft (Original Well Elev)
Reference Site:	S16-T3N-R68W (State)	**MD Reference:**	WELL @ 5072.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	State 3H-16H	**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 S16-T3N-R68W (State) - State 3G-16H - Hz - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
5,200.0	5,064.8	5,177.1	5,092.3	21.4	17.7	165.13	-828.6	-224.0	250.7	230.1	20.66	12.134	
5,300.0	5,162.5	5,272.5	5,187.2	21.8	17.9	165.57	-838.6	-226.7	261.1	240.2	20.92	12.485	
5,400.0	5,260.6	5,367.7	5,282.0	22.1	18.1	165.99	-847.0	-228.9	271.5	250.3	21.16	12.827	
5,500.0	5,359.0	5,462.8	5,376.8	22.5	18.3	166.40	-853.9	-230.7	281.7	260.3	21.40	13.161	
5,600.0	5,457.7	5,557.7	5,471.6	22.8	18.5	166.80	-859.2	-232.2	291.8	270.2	21.64	13.487	
5,700.0	5,556.6	5,652.5	5,566.3	23.1	18.6	167.19	-863.1	-233.2	301.8	279.9	21.86	13.804	
5,800.0	5,655.8	5,747.1	5,660.9	23.3	18.7	167.57	-865.4	-233.8	311.7	289.6	22.09	14.114	
5,900.0	5,755.2	5,841.6	5,755.4	23.6	18.8	167.95	-866.2	-234.0	321.5	299.2	22.30	14.415	
6,000.0	5,854.8	5,941.0	5,854.8	23.8	18.9	168.30	-866.2	-234.0	330.5	307.9	22.53	14.665	
6,100.0	5,954.5	6,040.8	5,954.5	24.0	19.0	168.57	-866.2	-234.0	337.7	315.0	22.78	14.826	
6,200.0	6,054.4	6,140.6	6,054.4	24.1	19.1	168.76	-866.2	-234.0	343.3	320.3	23.04	14.900	
6,300.0	6,154.3	6,240.5	6,154.3	24.2	19.2	168.90	-866.2	-234.0	347.1	323.8	23.31	14.893	
6,400.0	6,254.3	6,340.5	6,254.3	24.3	19.3	168.97	-866.2	-234.0	349.3	325.7	23.59	14.808	
6,500.0	6,354.3	6,440.5	6,354.3	24.4	19.4	-0.16	-866.2	-234.0	349.8	306.8	43.00	8.134	
6,600.0	6,454.3	6,540.5	6,454.3	24.5	19.5	-0.16	-866.2	-234.0	349.8	306.6	43.19	8.099	
6,625.5	6,479.7	6,565.9	6,479.7	24.5	19.5	-90.23	-866.2	-234.0	349.8	325.5	24.30	14.393	
6,700.0	6,554.0	6,640.3	6,554.0	24.6	19.6	-91.07	-866.2	-234.0	349.8	325.1	24.70	14.165	
6,800.0	6,652.1	6,738.3	6,652.1	24.6	19.7	-94.09	-866.2	-234.0	350.7	325.1	25.59	13.707	
6,900.0	6,746.4	6,837.7	6,751.4	24.6	19.8	-98.67	-866.2	-231.2	354.2	327.5	26.72	13.259	
7,000.0	6,835.3	6,943.5	6,855.7	24.6	19.8	-103.31	-866.2	-214.1	360.4	332.9	27.48	13.116	
7,100.0	6,917.0	7,054.9	6,961.5	24.6	19.8	-107.67	-866.2	-179.7	368.6	340.9	27.66	13.329	
7,200.0	6,989.9	7,172.4	7,065.9	24.7	19.8	-111.65	-866.2	-126.1	378.2	350.9	27.29	13.859	
7,300.0	7,052.6	7,296.4	7,165.1	24.8	19.9	-115.15	-866.2	-51.9	388.4	361.7	26.66	14.566	
7,400.0	7,103.8	7,426.9	7,253.9	25.1	20.1	-118.06	-866.2	43.5	398.0	371.7	26.30	15.131	
7,500.0	7,142.6	7,563.3	7,326.8	25.5	20.5	-120.30	-866.2	158.6	406.1	379.2	26.88	15.111	
7,600.0	7,168.2	7,704.6	7,377.8	26.1	21.3	-121.79	-866.2	290.1	411.9	382.9	28.98	14.215	
7,700.0	7,180.1	7,848.9	7,402.2	26.8	22.6	-122.48	-866.2	432.1	414.6	381.9	32.73	12.668	
7,800.0	7,181.0	7,964.5	7,404.0	27.8	24.1	-122.52	-866.3	547.6	414.8	378.4	36.40	11.395	
7,900.0	7,181.0	8,064.5	7,404.0	29.0	25.7	-122.52	-866.3	647.6	414.8	375.1	39.65	10.461	
8,000.0	7,181.0	8,164.5	7,404.0	30.3	27.4	-122.52	-866.3	747.6	414.8	371.7	43.06	9.633	
8,100.0	7,181.0	8,264.5	7,404.0	31.9	29.2	-122.52	-866.3	847.6	414.8	368.2	46.60	8.902	
8,200.0	7,181.0	8,364.5	7,404.0	33.5	31.2	-122.52	-866.3	947.6	414.8	364.6	50.23	8.257	
8,300.0	7,181.0	8,464.5	7,404.0	35.4	33.2	-122.52	-866.3	1,047.6	414.8	360.8	53.95	7.689	
8,400.0	7,181.0	8,564.5	7,404.0	37.3	35.3	-122.52	-866.3	1,147.6	414.8	357.1	57.72	7.186	
8,500.0	7,181.0	8,664.5	7,404.0	39.3	37.5	-122.52	-866.3	1,247.6	414.8	353.2	61.55	6.739	
8,600.0	7,181.0	8,764.5	7,404.0	41.3	39.7	-122.52	-866.3	1,347.6	414.8	349.4	65.43	6.340	
8,700.0	7,181.0	8,864.5	7,404.0	43.4	41.9	-122.52	-866.3	1,447.6	414.8	345.5	69.33	5.983	
8,800.0	7,181.0	8,964.5	7,404.0	45.6	44.1	-122.52	-866.3	1,547.6	414.8	341.5	73.27	5.661	
8,900.0	7,181.0	9,064.5	7,404.0	47.8	46.4	-122.52	-866.3	1,647.6	414.8	337.6	77.23	5.371	
9,000.0	7,181.0	9,164.5	7,404.0	50.0	48.7	-122.52	-866.3	1,747.6	414.8	333.6	81.22	5.107	
9,100.0	7,181.0	9,264.5	7,404.0	52.2	51.1	-122.52	-866.4	1,847.6	414.8	329.6	85.22	4.867	
9,200.0	7,181.0	9,364.5	7,404.0	54.5	53.4	-122.52	-866.4	1,947.6	414.8	325.5	89.24	4.648	
9,300.0	7,181.0	9,464.5	7,404.0	56.8	55.7	-122.52	-866.4	2,047.6	414.8	321.5	93.27	4.447	
9,400.0	7,181.0	9,564.5	7,404.0	59.1	58.1	-122.52	-866.4	2,147.6	414.8	317.5	97.32	4.262	
9,500.0	7,181.0	9,664.5	7,404.0	61.4	60.5	-122.52	-866.4	2,247.6	414.8	313.4	101.37	4.092	
9,600.0	7,181.0	9,764.5	7,404.0	63.7	62.8	-122.52	-866.4	2,347.6	414.8	309.3	105.44	3.934	
9,700.0	7,181.0	9,864.5	7,404.0	66.1	65.2	-122.52	-866.4	2,447.6	414.8	305.3	109.51	3.787	
9,800.0	7,181.0	9,964.5	7,404.0	68.4	67.6	-122.52	-866.4	2,547.6	414.8	301.2	113.60	3.651	
9,900.0	7,181.0	10,064.5	7,404.0	70.8	70.0	-122.52	-866.4	2,647.6	414.8	297.1	117.68	3.525	
10,000.0	7,181.0	10,164.5	7,404.0	73.2	72.4	-122.52	-866.4	2,747.6	414.8	293.0	121.78	3.406	
10,100.0	7,181.0	10,264.5	7,404.0	75.6	74.8	-122.52	-866.4	2,847.6	414.8	288.9	125.88	3.295	
10,200.0	7,181.0	10,364.5	7,404.0	77.9	77.2	-122.52	-866.4	2,947.6	414.8	284.8	129.98	3.191	

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

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well State 3H-16H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 5072.0ft (Original Well Elev)
Reference Site:	S16-T3N-R68W (State)	**MD Reference:**	WELL @ 5072.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	State 3H-16H	**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 S16-T3N-R68W (State) - State 3G-16H - Hz - Plan #1

Offset Site Error: 0.0 ft

Survey Program: 0-MWD

Offset Well Error: 0.0 ft

Reference Measured Depth (ft)	Reference Vertical Depth (ft)	Offset Measured Depth (ft)	Offset Vertical Depth (ft)	Semi Major Axis Reference (ft)	Semi Major Axis Offset (ft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (ft)	Offset Wellbore Centre +E/-W (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Total Uncertainty Axis	Separation Factor	Warning
10,300.0	7,181.0	10,464.5	7,404.0	80.3	79.6	-122.52	-866.5	3,047.6	414.8	280.7	134.09	3.093	
10,400.0	7,181.0	10,564.5	7,404.0	82.7	82.1	-122.52	-866.5	3,147.6	414.8	276.6	138.21	3.001	
10,500.0	7,181.0	10,664.5	7,404.0	85.1	84.5	-122.52	-866.5	3,247.6	414.8	272.5	142.32	2.914	
10,600.0	7,181.0	10,764.5	7,404.0	87.5	86.9	-122.52	-866.5	3,347.6	414.8	268.3	146.44	2.832	
10,700.0	7,181.0	10,864.5	7,404.0	89.9	89.3	-122.52	-866.5	3,447.6	414.8	264.2	150.57	2.755	
10,800.0	7,181.0	10,964.5	7,404.0	92.4	91.8	-122.52	-866.5	3,547.6	414.8	260.1	154.69	2.681	
10,900.0	7,181.0	11,064.5	7,404.0	94.8	94.2	-122.52	-866.5	3,647.6	414.8	255.9	158.82	2.612	
11,000.0	7,181.0	11,164.5	7,404.0	97.2	96.6	-122.52	-866.5	3,747.6	414.8	251.8	162.96	2.545	
11,100.0	7,181.0	11,264.5	7,404.0	99.6	99.1	-122.52	-866.5	3,847.6	414.8	247.7	167.09	2.482	
11,200.0	7,181.0	11,364.5	7,404.0	102.0	101.5	-122.52	-866.5	3,947.6	414.8	243.5	171.23	2.422	
11,300.0	7,181.0	11,464.5	7,404.0	104.5	103.9	-122.52	-866.5	4,047.6	414.8	239.4	175.36	2.365	
11,400.0	7,181.0	11,564.5	7,404.0	106.9	106.4	-122.52	-866.5	4,147.6	414.8	235.3	179.50	2.311	
11,500.0	7,181.0	11,664.5	7,404.0	109.3	108.8	-122.52	-866.5	4,247.6	414.8	231.1	183.65	2.259	
11,600.0	7,181.0	11,764.5	7,404.0	111.7	111.3	-122.52	-866.6	4,347.6	414.8	227.0	187.79	2.209	
11,700.0	7,181.0	11,864.5	7,404.0	114.2	113.7	-122.52	-866.6	4,447.6	414.8	222.8	191.93	2.161	
11,800.0	7,181.0	11,964.5	7,404.0	116.6	116.2	-122.52	-866.6	4,547.6	414.8	218.7	196.08	2.115	
11,806.9	7,181.0	11,971.4	7,404.0	116.8	116.3	-122.52	-866.6	4,554.5	414.8	218.4	196.37	2.112	
11,812.7	7,181.0	11,971.5	7,404.0	116.9	116.3	-122.52	-866.6	4,554.6	414.8	218.3	196.49	2.111	SF

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well State 3H-16H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 5072.0ft (Original Well Elev)
Reference Site:	S16-T3N-R68W (State)	**MD Reference:**	WELL @ 5072.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	State 3H-16H	**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 @ 5072.0ft (Original Well Elev)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: State 3H-16H
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.31°