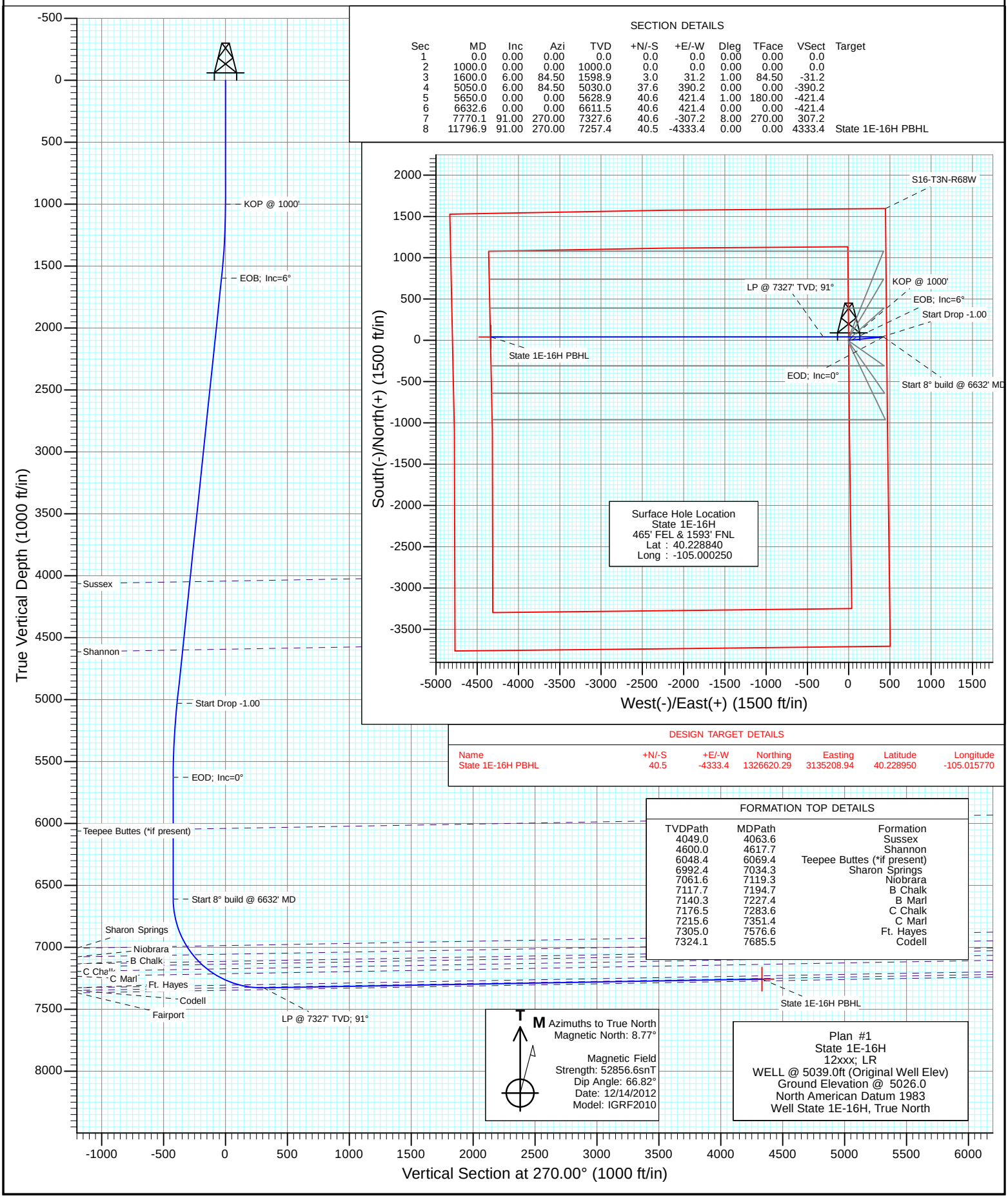
Project: DJ Wattenberg
Site: S16-T3N-R68W (State)
Well: State 1E-16H
Wellbore: Hz
Design: Plan #1

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	1000.0	0.00	0.00	1000.0	0.0	0.0	0.00	0.00	0.0	
3	1600.0	6.00	84.50	1598.9	3.0	31.2	1.00	84.50	-31.2	
4	5050.0	6.00	84.50	5030.0	37.6	390.2	0.00	0.00	-390.2	
5	5650.0	0.00	0.00	5628.9	40.6	421.4	1.00	180.00	-421.4	
6	6632.6	0.00	0.00	6611.5	40.6	421.4	0.00	0.00	-421.4	
7	7770.1	91.00	270.00	7327.6	40.6	-307.2	8.00	270.00	307.2	
8	11796.9	91.00	270.00	7257.4	40.5	-4333.4	0.00	0.00	4333.4	State 1E-16H PBHL



DESIGN TARGET DETAILS

Name	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
State 1E-16H PBHL	40.5	-4333.4	1326620.29	3135208.94	40.228950	-105.015770

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
4049.0	4063.6	Sussex
4600.0	4617.7	Shannon
6048.4	6069.4	Teepee Buttes (*if present)
6992.4	7034.3	Sharon Springs
7061.6	7119.3	Niobrara
7117.7	7194.7	B Chalk
7140.3	7227.4	B Marl
7176.5	7283.6	C Chalk
7215.6	7351.4	C Marl
7305.0	7576.6	Ft. Hayes
7324.1	7685.5	Codell

T M Azimuths to True North
Magnetic North: 8.77°

Magnetic Field
Strength: 52856.6snT
Dip Angle: 66.82°
Date: 12/14/2012
Model: IGRF2010

Plan #1
State 1E-16H
12xxx; LR
WELL @ 5039.0ft (Original Well Elev)
Ground Elevation @ 5026.0
North American Datum 1983
Well State 1E-16H, True North

Planning Report

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well State 1E-16H
Company:	EnCana Oil & Gas (USA) Inc	**TVD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Project:	DJ Wattenberg	**MD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Site:	S16-T3N-R68W (State)	**North Reference:**	True
Well:	State 1E-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 1E-16H

Well Position	**+N/-S**	0.0 ft	**Northing:**	1,326,604.25 ft	**Latitude:**	40.228840
	+E/-W	0.0 ft	**Easting:**	3,139,542.49 ft	**Longitude:**	-105.000250
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	5,026.0 ft

Wellbore Hz

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/14/2012	8.77	66.82	52,857

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	270.00

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	
1,000.0	0.00	0.00	1,000.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,600.0	6.00	84.50	1,598.9	3.0	31.2	1.00	1.00	0.00	84.50	
5,050.0	6.00	84.50	5,030.0	37.6	390.2	0.00	0.00	0.00	0.00	
5,650.0	0.00	0.00	5,628.9	40.6	421.4	1.00	-1.00	0.00	180.00	
6,632.6	0.00	0.00	6,611.5	40.6	421.4	0.00	0.00	0.00	0.00	
7,770.1	91.00	270.00	7,327.6	40.6	-307.2	8.00	8.00	0.00	270.00	
11,796.9	91.00	270.00	7,257.4	40.5	-4,333.4	0.00	0.00	0.00	0.00	State 1E-16H PBHL

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well State 1E-16H
Company:	EnCana Oil & Gas (USA) Inc	**TVD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Project:	DJ Wattenberg	**MD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Site:	S16-T3N-R68W (State)	**North Reference:**	True
Well:	State 1E-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	
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	KOP @ 1000'
1,100.0	1.00	84.50	1,100.0	0.1	0.9	-0.9	1.00	1.00	
1,200.0	2.00	84.50	1,200.0	0.3	3.5	-3.5	1.00	1.00	
1,300.0	3.00	84.50	1,299.9	0.8	7.8	-7.8	1.00	1.00	
1,400.0	4.00	84.50	1,399.7	1.3	13.9	-13.9	1.00	1.00	
1,500.0	5.00	84.50	1,499.4	2.1	21.7	-21.7	1.00	1.00	
1,600.0	6.00	84.50	1,598.9	3.0	31.2	-31.2	1.00	1.00	EOB; Inc=6°
1,700.0	6.00	84.50	1,698.4	4.0	41.6	-41.6	0.00	0.00	
1,800.0	6.00	84.50	1,797.8	5.0	52.1	-52.1	0.00	0.00	
1,900.0	6.00	84.50	1,897.3	6.0	62.5	-62.5	0.00	0.00	
2,000.0	6.00	84.50	1,996.7	7.0	72.9	-72.9	0.00	0.00	
2,100.0	6.00	84.50	2,096.2	8.0	83.3	-83.3	0.00	0.00	
2,200.0	6.00	84.50	2,195.6	9.0	93.7	-93.7	0.00	0.00	
2,300.0	6.00	84.50	2,295.1	10.0	104.1	-104.1	0.00	0.00	
2,400.0	6.00	84.50	2,394.5	11.0	114.5	-114.5	0.00	0.00	
2,500.0	6.00	84.50	2,494.0	12.0	124.9	-124.9	0.00	0.00	
2,600.0	6.00	84.50	2,593.4	13.0	135.3	-135.3	0.00	0.00	
2,700.0	6.00	84.50	2,692.9	14.0	145.7	-145.7	0.00	0.00	
2,800.0	6.00	84.50	2,792.3	15.0	156.1	-156.1	0.00	0.00	
2,900.0	6.00	84.50	2,891.8	16.0	166.5	-166.5	0.00	0.00	
3,000.0	6.00	84.50	2,991.2	17.0	176.9	-176.9	0.00	0.00	
3,100.0	6.00	84.50	3,090.7	18.0	187.3	-187.3	0.00	0.00	
3,200.0	6.00	84.50	3,190.1	19.0	197.7	-197.7	0.00	0.00	
3,300.0	6.00	84.50	3,289.6	20.0	208.1	-208.1	0.00	0.00	
3,400.0	6.00	84.50	3,389.0	21.0	218.5	-218.5	0.00	0.00	
3,500.0	6.00	84.50	3,488.5	22.0	228.9	-228.9	0.00	0.00	
3,600.0	6.00	84.50	3,587.9	23.0	239.3	-239.3	0.00	0.00	
3,700.0	6.00	84.50	3,687.4	24.0	249.7	-249.7	0.00	0.00	
3,800.0	6.00	84.50	3,786.9	25.0	260.1	-260.1	0.00	0.00	
3,900.0	6.00	84.50	3,886.3	26.1	270.6	-270.6	0.00	0.00	
4,000.0	6.00	84.50	3,985.8	27.1	281.0	-281.0	0.00	0.00	
4,063.6	6.00	84.50	4,049.0	27.7	287.6	-287.6	0.00	0.00	Sussex
4,100.0	6.00	84.50	4,085.2	28.1	291.4	-291.4	0.00	0.00	
4,200.0	6.00	84.50	4,184.7	29.1	301.8	-301.8	0.00	0.00	
4,300.0	6.00	84.50	4,284.1	30.1	312.2	-312.2	0.00	0.00	
4,400.0	6.00	84.50	4,383.6	31.1	322.6	-322.6	0.00	0.00	
4,500.0	6.00	84.50	4,483.0	32.1	333.0	-333.0	0.00	0.00	
4,600.0	6.00	84.50	4,582.5	33.1	343.4	-343.4	0.00	0.00	
4,617.7	6.00	84.50	4,600.0	33.2	345.2	-345.2	0.00	0.00	Shannon
4,700.0	6.00	84.50	4,681.9	34.1	353.8	-353.8	0.00	0.00	
4,800.0	6.00	84.50	4,781.4	35.1	364.2	-364.2	0.00	0.00	
4,900.0	6.00	84.50	4,880.8	36.1	374.6	-374.6	0.00	0.00	

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Project:	DJ Wattenberg	**MD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Site:	S16-T3N-R68W (State)	**North Reference:**	True
Well:	State 1E-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
5,000.0	6.00	84.50	4,980.3	37.1	385.0	-385.0	0.00	0.00	
5,050.0	6.00	84.50	5,030.0	37.6	390.2	-390.2	0.00	0.00	Start Drop -1.00
5,100.0	5.50	84.50	5,079.8	38.1	395.2	-395.2	1.00	-1.00	
5,200.0	4.50	84.50	5,179.4	38.9	403.9	-403.9	1.00	-1.00	
5,300.0	3.50	84.50	5,279.1	39.6	410.8	-410.8	1.00	-1.00	
5,400.0	2.50	84.50	5,379.0	40.1	416.0	-416.0	1.00	-1.00	
5,500.0	1.50	84.50	5,478.9	40.4	419.5	-419.5	1.00	-1.00	
5,600.0	0.50	84.50	5,578.9	40.6	421.2	-421.2	1.00	-1.00	
5,650.0	0.00	0.00	5,628.9	40.6	421.4	-421.4	1.00	-1.00	EOD; Inc=0°
5,700.0	0.00	0.00	5,678.9	40.6	421.4	-421.4	0.00	0.00	
5,800.0	0.00	0.00	5,778.9	40.6	421.4	-421.4	0.00	0.00	
5,900.0	0.00	0.00	5,878.9	40.6	421.4	-421.4	0.00	0.00	
6,000.0	0.00	0.00	5,978.9	40.6	421.4	-421.4	0.00	0.00	
6,069.4	0.00	0.00	6,048.4	40.6	421.4	-421.4	0.00	0.00	Teepee Buttes (*if present)
6,100.0	0.00	0.00	6,078.9	40.6	421.4	-421.4	0.00	0.00	
6,200.0	0.00	0.00	6,178.9	40.6	421.4	-421.4	0.00	0.00	
6,300.0	0.00	0.00	6,278.9	40.6	421.4	-421.4	0.00	0.00	
6,400.0	0.00	0.00	6,378.9	40.6	421.4	-421.4	0.00	0.00	
6,500.0	0.00	0.00	6,478.9	40.6	421.4	-421.4	0.00	0.00	
6,600.0	0.00	0.00	6,578.9	40.6	421.4	-421.4	0.00	0.00	
6,632.6	0.00	0.00	6,611.5	40.6	421.4	-421.4	0.00	0.00	Start 8° build @ 6632' MD
6,700.0	5.39	270.00	6,678.8	40.6	418.3	-418.3	8.00	8.00	
6,800.0	13.39	270.00	6,777.4	40.6	402.0	-402.0	8.00	8.00	
6,900.0	21.39	270.00	6,872.7	40.6	372.1	-372.1	8.00	8.00	
7,000.0	29.39	270.00	6,963.0	40.6	329.3	-329.3	8.00	8.00	
7,034.3	32.13	270.00	6,992.4	40.6	311.8	-311.8	8.00	8.00	Sharon Springs
7,100.0	37.39	270.00	7,046.4	40.6	274.3	-274.3	8.00	8.00	
7,119.3	38.93	270.00	7,061.6	40.6	262.4	-262.4	8.00	8.00	Niobrara
7,194.7	44.97	270.00	7,117.7	40.6	212.0	-212.0	8.00	8.00	B Chalk
7,200.0	45.39	270.00	7,121.4	40.6	208.2	-208.2	8.00	8.00	
7,227.4	47.58	270.00	7,140.3	40.6	188.3	-188.3	8.00	8.00	B Marl
7,283.6	52.08	270.00	7,176.5	40.6	145.4	-145.4	8.00	8.00	C Chalk
7,300.0	53.39	270.00	7,186.4	40.6	132.4	-132.4	8.00	8.00	
7,351.4	57.50	270.00	7,215.6	40.6	90.1	-90.1	8.00	8.00	C Marl
7,400.0	61.39	270.00	7,240.3	40.6	48.2	-48.2	8.00	8.00	
7,500.0	69.39	270.00	7,281.9	40.6	-42.6	42.6	8.00	8.00	
7,576.6	75.52	270.00	7,305.0	40.6	-115.6	115.6	8.00	8.00	Ft. Hayes
7,600.0	77.39	270.00	7,310.5	40.6	-138.4	138.4	8.00	8.00	
7,685.5	84.23	270.00	7,324.1	40.6	-222.7	222.7	8.00	8.00	Codell
7,700.0	85.39	270.00	7,325.4	40.6	-237.2	237.2	8.00	8.00	
7,770.1	91.00	270.00	7,327.6	40.6	-307.2	307.2	8.00	8.00	LP @ 7327' TVD; 91°
7,800.0	91.00	270.00	7,327.1	40.6	-337.1	337.1	0.00	0.00	
7,900.0	91.00	270.00	7,325.4	40.6	-437.1	437.1	0.00	0.00	
8,000.0	91.00	270.00	7,323.6	40.6	-537.1	537.1	0.00	0.00	
8,100.0	91.00	270.00	7,321.9	40.6	-637.1	637.1	0.00	0.00	
8,200.0	91.00	270.00	7,320.1	40.6	-737.0	737.0	0.00	0.00	
8,300.0	91.00	270.00	7,318.4	40.5	-837.0	837.0	0.00	0.00	
8,400.0	91.00	270.00	7,316.6	40.5	-937.0	937.0	0.00	0.00	
8,500.0	91.00	270.00	7,314.9	40.5	-1,037.0	1,037.0	0.00	0.00	
8,600.0	91.00	270.00	7,313.2	40.5	-1,137.0	1,137.0	0.00	0.00	
8,700.0	91.00	270.00	7,311.4	40.5	-1,237.0	1,237.0	0.00	0.00	
8,800.0	91.00	270.00	7,309.7	40.5	-1,337.0	1,337.0	0.00	0.00	

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Site:	S16-T3N-R68W (State)	**North Reference:**	True
Well:	State 1E-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
8,900.0	91.00	270.00	7,307.9	40.5	-1,436.9	1,436.9	0.00	0.00	
9,000.0	91.00	270.00	7,306.2	40.5	-1,536.9	1,536.9	0.00	0.00	
9,100.0	91.00	270.00	7,304.4	40.5	-1,636.9	1,636.9	0.00	0.00	
9,200.0	91.00	270.00	7,302.7	40.5	-1,736.9	1,736.9	0.00	0.00	
9,300.0	91.00	270.00	7,300.9	40.5	-1,836.9	1,836.9	0.00	0.00	
9,400.0	91.00	270.00	7,299.2	40.5	-1,936.9	1,936.9	0.00	0.00	
9,500.0	91.00	270.00	7,297.4	40.5	-2,036.8	2,036.8	0.00	0.00	
9,600.0	91.00	270.00	7,295.7	40.5	-2,136.8	2,136.8	0.00	0.00	
9,700.0	91.00	270.00	7,294.0	40.5	-2,236.8	2,236.8	0.00	0.00	
9,800.0	91.00	270.00	7,292.2	40.5	-2,336.8	2,336.8	0.00	0.00	
9,900.0	91.00	270.00	7,290.5	40.5	-2,436.8	2,436.8	0.00	0.00	
10,000.0	91.00	270.00	7,288.7	40.5	-2,536.8	2,536.8	0.00	0.00	
10,100.0	91.00	270.00	7,287.0	40.5	-2,636.8	2,636.8	0.00	0.00	
10,200.0	91.00	270.00	7,285.2	40.5	-2,736.7	2,736.7	0.00	0.00	
10,300.0	91.00	270.00	7,283.5	40.5	-2,836.7	2,836.7	0.00	0.00	
10,400.0	91.00	270.00	7,281.7	40.5	-2,936.7	2,936.7	0.00	0.00	
10,500.0	91.00	270.00	7,280.0	40.5	-3,036.7	3,036.7	0.00	0.00	
10,600.0	91.00	270.00	7,278.2	40.5	-3,136.7	3,136.7	0.00	0.00	
10,700.0	91.00	270.00	7,276.5	40.5	-3,236.7	3,236.7	0.00	0.00	
10,800.0	91.00	270.00	7,274.8	40.5	-3,336.6	3,336.6	0.00	0.00	
10,900.0	91.00	270.00	7,273.0	40.5	-3,436.6	3,436.6	0.00	0.00	
11,000.0	91.00	270.00	7,271.3	40.5	-3,536.6	3,536.6	0.00	0.00	
11,100.0	91.00	270.00	7,269.5	40.5	-3,636.6	3,636.6	0.00	0.00	
11,200.0	91.00	270.00	7,267.8	40.5	-3,736.6	3,736.6	0.00	0.00	
11,300.0	91.00	270.00	7,266.0	40.5	-3,836.6	3,836.6	0.00	0.00	
11,400.0	91.00	270.00	7,264.3	40.5	-3,936.6	3,936.6	0.00	0.00	
11,500.0	91.00	270.00	7,262.5	40.5	-4,036.5	4,036.5	0.00	0.00	
11,600.0	91.00	270.00	7,260.8	40.5	-4,136.5	4,136.5	0.00	0.00	
11,700.0	91.00	270.00	7,259.1	40.5	-4,236.5	4,236.5	0.00	0.00	
11,796.9	91.00	270.00	7,257.4	40.5	-4,333.4	4,333.4	0.00	0.00	TD at 11796.9 - State 1E-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 1E-16H PBHL - plan hits target center - Point	0.00	0.00	7,257.4	40.5	-4,333.4	1,326,620.29	3,135,208.94	40.228950	-105.015770

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well State 1E-16H
Company:	EnCana Oil & Gas (USA) Inc	**TVD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Project:	DJ Wattenberg	**MD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Site:	S16-T3N-R68W (State)	**North Reference:**	True
Well:	State 1E-16H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,063.6	4,044.0	Sussex		-1.00	270.00
4,617.7	4,594.0	Shannon		-1.00	270.00
6,069.4	6,041.0	Teepee Buttes (*if present)		-1.00	270.00
7,034.3	6,987.0	Sharon Springs		-1.00	270.00
7,119.3	7,057.0	Niobrara		-1.00	270.00
7,194.7	7,114.0	B Chalk		-1.00	270.00
7,227.4	7,137.0	B Marl		-1.00	270.00
7,283.6	7,174.0	C Chalk		-1.00	270.00
7,351.4	7,214.0	C Marl		-1.00	270.00
7,576.6	7,307.0	Ft. Hayes		-1.00	270.00
7,685.5	7,328.0	Codell		-1.00	270.00

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
1,000.0	1,000.0	0.0	0.0	KOP @ 1000'
1,600.0	1,598.9	3.0	31.2	EOB; Inc=6°
5,050.0	5,030.0	37.6	390.2	Start Drop -1.00
5,650.0	5,628.9	40.6	421.4	EOD; Inc=0°
6,632.6	6,611.5	40.6	421.4	Start 8° build @ 6632' MD
7,770.1	7,327.6	40.6	-307.2	LP @ 7327' TVD; 91°
11,796.9	7,257.4	40.5	-4,333.4	TD at 11796.9

EnCana Oil & Gas (USA) Inc

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

Anticollision Report

14 December, 2012

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well State 1E-16H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Reference Site:	S16-T3N-R68W (State)	**MD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	State 1E-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** 12/14/2012

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	11,796.7	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 1B-16H - Hz - Plan #1	200.0	200.0	32.8	32.1	50.227	CC, ES
State 1B-16H - Hz - Plan #1	700.0	696.1	53.5	51.0	21.635	SF
State 1C-16H - Hz - Plan #1	300.0	300.0	21.9	20.9	21.817	CC, ES
State 1C-16H - Hz - Plan #1	600.0	598.7	28.9	26.8	14.005	SF
State 1D-16H - Hz - Plan #1	400.0	400.0	10.9	9.6	8.090	CC, ES
State 1D-16H - Hz - Plan #1	11,796.9	11,622.1	407.4	213.9	2.105	SF
State 1F-16H - Hz - Plan #1	400.0	400.0	7.3	5.9	5.393	CC, ES
State 1F-16H - Hz - Plan #1	11,796.9	11,612.3	407.4	213.9	2.105	SF
State 1G-16H - Hz - Plan #1	300.0	300.0	18.2	17.2	18.181	CC, ES
State 1G-16H - Hz - Plan #1	600.0	598.9	25.0	23.0	12.157	SF
State 1H-16H - Hz - Plan #1	200.0	200.0	29.1	28.5	44.640	CC, ES
State 1H-16H - Hz - Plan #1	700.0	696.5	49.6	47.1	20.118	SF

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well State 1E-16H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Reference Site:	S16-T3N-R68W (State)	**MD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	State 1E-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 1B-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	32.8	0.0	32.8				
100.0	100.0	100.0	100.0	0.2	0.2	0.00	32.8	0.0	32.8	32.5	0.30	107.959	
200.0	200.0	200.0	200.0	0.3	0.3	0.00	32.8	0.0	32.8	32.1	0.65	50.227	CC, ES
300.0	300.0	299.5	299.5	0.5	0.5	0.55	33.6	0.3	33.6	32.6	1.00	33.534	
400.0	400.0	398.9	398.8	0.7	0.7	2.06	36.0	1.3	36.0	34.7	1.35	26.596	
500.0	500.0	498.1	498.0	0.8	0.9	4.16	40.0	2.9	40.1	38.4	1.72	23.400	
600.0	600.0	597.3	596.9	1.0	1.1	6.46	45.5	5.2	45.9	43.9	2.09	22.019	
700.0	700.0	696.1	695.5	1.2	1.3	8.68	52.7	8.0	53.5	51.0	2.47	21.635	SF
800.0	800.0	794.7	793.6	1.4	1.5	10.66	61.4	11.6	62.8	59.9	2.87	21.836	
900.0	900.0	892.9	891.2	1.5	1.7	12.35	71.6	15.7	73.8	70.5	3.30	22.391	
1,000.0	1,000.0	990.7	988.2	1.7	2.0	13.77	83.3	20.4	86.6	82.8	3.74	23.159	
1,100.0	1,100.0	1,088.1	1,084.6	1.9	2.3	-69.89	96.5	25.7	100.7	97.0	3.78	26.642	
1,200.0	1,200.0	1,185.1	1,180.3	2.1	2.6	-69.92	111.1	31.6	116.0	111.9	4.13	28.088	
1,300.0	1,299.9	1,281.7	1,275.3	2.3	2.9	-70.50	127.2	38.1	132.3	127.8	4.48	29.513	
1,400.0	1,399.7	1,377.8	1,369.5	2.4	3.3	-71.44	144.6	45.2	149.7	144.9	4.85	30.899	
1,500.0	1,499.4	1,473.4	1,462.9	2.6	3.7	-72.60	163.4	52.8	168.3	163.1	5.22	32.227	
1,600.0	1,598.9	1,568.4	1,555.4	2.8	4.1	-73.88	183.6	60.9	188.1	182.5	5.62	33.477	
1,700.0	1,698.4	1,662.8	1,647.0	3.1	4.5	-75.19	205.0	69.6	209.3	203.3	6.03	34.718	
1,800.0	1,797.8	1,758.8	1,739.7	3.3	5.0	-76.21	227.9	78.8	231.9	225.4	6.45	35.939	
1,900.0	1,897.3	1,856.1	1,833.7	3.5	5.4	-77.05	251.3	88.3	254.7	247.8	6.89	36.974	
2,000.0	1,996.7	1,953.4	1,927.7	3.7	5.9	-77.75	274.6	97.7	277.5	270.1	7.33	37.855	
2,100.0	2,096.2	2,050.8	2,021.7	4.0	6.3	-78.35	298.0	107.1	300.3	292.5	7.78	38.609	
2,200.0	2,195.6	2,148.1	2,115.7	4.2	6.8	-78.86	321.3	116.6	323.2	314.9	8.23	39.260	
2,300.0	2,295.1	2,245.4	2,209.7	4.4	7.3	-79.30	344.7	126.0	346.1	337.4	8.69	39.826	
2,400.0	2,394.5	2,342.7	2,303.7	4.7	7.7	-79.69	368.0	135.4	369.0	359.8	9.15	40.320	
2,500.0	2,494.0	2,440.0	2,397.7	4.9	8.2	-80.03	391.4	144.9	391.9	382.3	9.62	40.755	
2,600.0	2,593.4	2,537.3	2,491.7	5.1	8.6	-80.34	414.7	154.3	414.8	404.7	10.08	41.140	
2,700.0	2,692.9	2,634.6	2,585.7	5.4	9.1	-80.61	438.1	163.8	437.8	427.2	10.55	41.482	
2,800.0	2,792.3	2,731.9	2,679.7	5.6	9.6	-80.86	461.4	173.2	460.7	449.7	11.03	41.788	
2,900.0	2,891.8	2,829.3	2,773.7	5.9	10.0	-81.08	484.8	182.6	483.7	472.2	11.50	42.062	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well State 1E-16H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Reference Site:	S16-T3N-R68W (State)	**MD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	State 1E-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 1C-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	21.9	0.0	21.9				
100.0	100.0	100.0	100.0	0.2	0.2	0.00	21.9	0.0	21.9	21.6	0.30	71.972	
200.0	200.0	200.0	200.0	0.3	0.3	0.00	21.9	0.0	21.9	21.2	0.65	33.485	
300.0	300.0	300.0	300.0	0.5	0.5	0.00	21.9	0.0	21.9	20.9	1.00	21.817	CC, ES
400.0	400.0	399.7	399.7	0.7	0.7	1.11	22.6	0.4	22.6	21.3	1.35	16.738	
500.0	500.0	499.3	499.2	0.8	0.9	4.05	24.8	1.8	24.9	23.2	1.70	14.632	
600.0	600.0	598.7	598.6	1.0	1.0	7.88	28.6	4.0	28.9	26.8	2.06	14.005	SF
700.0	700.0	698.0	697.7	1.2	1.2	11.74	33.8	7.0	34.6	32.1	2.43	14.221	
800.0	800.0	797.1	796.5	1.4	1.4	15.14	40.4	10.9	42.0	39.2	2.81	14.941	
900.0	900.0	895.9	894.8	1.5	1.7	17.94	48.5	15.7	51.3	48.1	3.21	15.964	
1,000.0	1,000.0	994.3	992.6	1.7	1.9	20.17	58.1	21.3	62.3	58.7	3.63	17.164	
1,100.0	1,100.0	1,092.4	1,089.8	1.9	2.2	-63.06	69.0	27.8	74.7	70.9	3.79	19.707	
1,200.0	1,200.0	1,190.1	1,186.5	2.1	2.5	-62.95	81.3	35.0	87.9	83.8	4.14	21.249	
1,300.0	1,299.9	1,287.5	1,282.6	2.3	2.8	-63.55	95.0	43.1	102.1	97.6	4.49	22.721	
1,400.0	1,399.7	1,384.5	1,378.0	2.4	3.1	-64.58	110.0	51.9	117.2	112.3	4.86	24.122	
1,500.0	1,499.4	1,481.1	1,472.7	2.6	3.4	-65.87	126.4	61.6	133.2	128.0	5.24	25.444	
1,600.0	1,598.9	1,579.2	1,568.7	2.8	3.8	-67.37	143.9	71.9	149.7	144.1	5.64	26.570	
1,700.0	1,698.4	1,677.8	1,665.1	3.1	4.2	-68.99	161.6	82.3	166.1	160.0	6.05	27.437	
1,800.0	1,797.8	1,776.3	1,761.5	3.3	4.6	-70.32	179.2	92.7	182.5	176.1	6.48	28.162	
1,900.0	1,897.3	1,874.9	1,857.9	3.5	5.0	-71.42	196.9	103.1	199.1	192.2	6.92	28.770	
2,000.0	1,996.7	1,973.4	1,954.3	3.7	5.3	-72.36	214.5	113.5	215.7	208.3	7.37	29.284	
2,100.0	2,096.2	2,072.0	2,050.7	4.0	5.7	-73.16	232.2	123.9	232.3	224.5	7.82	29.722	
2,200.0	2,195.6	2,170.5	2,147.1	4.2	6.1	-73.86	249.9	134.3	249.0	240.7	8.27	30.097	
2,300.0	2,295.1	2,269.1	2,243.5	4.4	6.5	-74.47	267.5	144.7	265.7	257.0	8.73	30.421	
2,400.0	2,394.5	2,367.6	2,339.9	4.7	6.9	-75.00	285.2	155.1	282.5	273.3	9.20	30.702	
2,500.0	2,494.0	2,466.2	2,436.3	4.9	7.3	-75.48	302.8	165.5	299.2	289.6	9.67	30.948	
2,600.0	2,593.4	2,564.8	2,532.7	5.1	7.7	-75.91	320.5	175.9	316.0	305.9	10.14	31.164	
2,700.0	2,692.9	2,663.3	2,629.1	5.4	8.1	-76.29	338.1	186.3	332.8	322.2	10.61	31.355	
2,800.0	2,792.3	2,761.9	2,725.5	5.6	8.5	-76.64	355.8	196.7	349.6	338.5	11.09	31.524	
2,900.0	2,891.8	2,860.4	2,821.9	5.9	8.9	-76.95	373.4	207.1	366.4	354.9	11.57	31.676	
3,000.0	2,991.2	2,959.0	2,918.3	6.1	9.3	-77.24	391.1	217.5	383.3	371.2	12.05	31.812	
3,100.0	3,090.7	3,057.5	3,014.7	6.4	9.7	-77.50	408.8	227.9	400.1	387.6	12.53	31.934	
3,200.0	3,190.1	3,156.1	3,111.2	6.6	10.0	-77.74	426.4	238.3	416.9	403.9	13.01	32.045	
3,300.0	3,289.6	3,254.7	3,207.6	6.9	10.4	-77.96	444.1	248.7	433.8	420.3	13.49	32.145	
3,400.0	3,389.0	3,353.2	3,304.0	7.1	10.8	-78.17	461.7	259.1	450.7	436.7	13.98	32.237	
3,500.0	3,488.5	3,451.8	3,400.4	7.4	11.2	-78.36	479.4	269.5	467.5	453.1	14.47	32.320	
3,600.0	3,587.9	3,550.3	3,496.8	7.6	11.6	-78.54	497.0	279.9	484.4	469.4	14.95	32.397	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well State 1E-16H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Reference Site:	S16-T3N-R68W (State)	**MD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	State 1E-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 1D-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	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	35.986	
200.0	200.0	200.0	200.0	0.3	0.3	0.00	10.9	0.0	10.9	10.3	0.65	16.742	
300.0	300.0	300.0	300.0	0.5	0.5	0.00	10.9	0.0	10.9	9.9	1.00	10.909	
400.0	400.0	400.0	400.0	0.7	0.7	0.00	10.9	0.0	10.9	9.6	1.35	8.090	CC, ES
500.0	500.0	499.9	499.9	0.8	0.9	3.24	11.5	0.7	11.5	9.8	1.70	6.779	
600.0	600.0	599.7	599.6	1.0	1.0	11.14	13.2	2.6	13.5	11.4	2.05	6.577	
700.0	700.0	699.3	699.2	1.2	1.2	19.98	16.1	5.9	17.2	14.7	2.41	7.124	
800.0	800.0	798.8	798.5	1.4	1.4	27.31	20.1	10.4	22.7	19.9	2.78	8.176	
900.0	900.0	898.1	897.5	1.5	1.6	32.68	25.3	16.2	30.1	27.0	3.16	9.544	
1,000.0	1,000.0	997.1	996.0	1.7	1.8	36.44	31.5	23.3	39.4	35.8	3.55	11.089	
1,100.0	1,100.0	1,095.8	1,094.0	1.9	2.1	-46.04	38.9	31.6	49.9	46.1	3.79	13.144	
1,200.0	1,200.0	1,194.2	1,191.7	2.1	2.3	-45.60	47.3	41.2	60.8	56.7	4.14	14.681	
1,300.0	1,299.9	1,292.4	1,288.8	2.3	2.6	-46.03	56.9	51.9	72.3	67.8	4.50	16.072	
1,400.0	1,399.7	1,390.4	1,385.5	2.4	2.9	-46.96	67.5	64.0	84.2	79.3	4.86	17.336	
1,500.0	1,499.4	1,488.1	1,481.6	2.6	3.2	-48.19	79.2	77.1	96.6	91.4	5.23	18.487	
1,600.0	1,598.9	1,585.5	1,577.1	2.8	3.6	-49.58	91.9	91.5	109.6	104.0	5.61	19.532	
1,700.0	1,698.4	1,684.3	1,673.7	3.1	4.0	-50.96	105.5	106.9	123.2	117.1	6.01	20.480	
1,800.0	1,797.8	1,783.3	1,770.5	3.3	4.3	-52.07	119.1	122.3	136.8	130.3	6.42	21.289	
1,900.0	1,897.3	1,882.3	1,867.4	3.5	4.7	-52.98	132.8	137.7	150.4	143.6	6.84	21.983	
2,000.0	1,996.7	1,981.4	1,964.3	3.7	5.1	-53.73	146.4	153.2	164.1	156.9	7.27	22.582	
2,100.0	2,096.2	2,080.4	2,061.2	4.0	5.5	-54.37	160.1	168.6	177.8	170.1	7.70	23.101	
2,200.0	2,195.6	2,179.5	2,158.0	4.2	5.9	-54.92	173.7	184.0	191.6	183.4	8.13	23.554	
2,300.0	2,295.1	2,278.5	2,254.9	4.4	6.3	-55.40	187.4	199.4	205.3	196.7	8.57	23.952	
2,400.0	2,394.5	2,377.5	2,351.8	4.7	6.7	-55.81	201.0	214.8	219.1	210.1	9.01	24.304	
2,500.0	2,494.0	2,476.6	2,448.7	4.9	7.1	-56.18	214.7	230.3	232.8	223.4	9.46	24.616	
2,600.0	2,593.4	2,575.6	2,545.5	5.1	7.5	-56.50	228.3	245.7	246.6	236.7	9.91	24.894	
2,700.0	2,692.9	2,674.6	2,642.4	5.4	7.8	-56.79	241.9	261.1	260.4	250.1	10.36	25.144	
2,800.0	2,792.3	2,773.7	2,739.3	5.6	8.2	-57.05	255.6	276.5	274.2	263.4	10.81	25.368	
2,900.0	2,891.8	2,872.7	2,836.1	5.9	8.6	-57.29	269.2	292.0	288.0	276.7	11.26	25.572	
3,000.0	2,991.2	2,971.8	2,933.0	6.1	9.0	-57.50	282.9	307.4	301.8	290.1	11.72	25.756	
3,100.0	3,090.7	3,070.8	3,029.9	6.4	9.4	-57.70	296.5	322.8	315.6	303.4	12.17	25.924	
3,200.0	3,190.1	3,170.9	3,127.9	6.6	9.8	-57.88	310.3	338.4	329.4	316.7	12.63	26.071	
3,300.0	3,289.6	3,275.8	3,230.7	6.9	10.2	-58.15	323.9	353.7	342.0	328.9	13.11	26.096	
3,400.0	3,389.0	3,381.1	3,334.3	7.1	10.6	-58.51	336.2	367.7	353.0	339.4	13.58	25.983	
3,500.0	3,488.5	3,486.7	3,438.6	7.4	10.9	-58.97	347.4	380.3	362.3	348.2	14.07	25.748	
3,600.0	3,587.9	3,592.5	3,543.3	7.6	11.2	-59.53	357.3	391.5	369.9	355.3	14.56	25.403	
3,700.0	3,687.4	3,698.6	3,648.6	7.8	11.5	-60.20	365.9	401.2	375.9	360.8	15.06	24.960	
3,800.0	3,786.9	3,804.7	3,754.2	8.1	11.8	-60.96	373.2	409.5	380.2	364.7	15.57	24.429	
3,900.0	3,886.3	3,910.9	3,860.0	8.3	12.0	-61.84	379.2	416.3	383.0	366.9	16.08	23.821	
4,000.0	3,985.8	4,017.1	3,965.9	8.6	12.2	-62.84	384.0	421.7	384.2	367.6	16.60	23.145	
4,100.0	4,085.2	4,123.1	4,071.8	8.8	12.3	-63.96	387.4	425.5	383.8	366.7	17.13	22.410	
4,200.0	4,184.7	4,229.0	4,177.6	9.1	12.5	-65.23	389.5	427.9	382.0	364.3	17.66	21.625	
4,300.0	4,284.1	4,334.6	4,283.2	9.3	12.6	-66.65	390.4	428.9	378.8	360.5	18.21	20.798	
4,400.0	4,383.6	4,434.9	4,383.6	9.6	12.7	-68.12	390.4	428.9	374.7	356.0	18.75	19.983	
4,500.0	4,483.0	4,534.4	4,483.0	9.8	12.8	-69.62	390.4	428.9	370.9	351.7	19.29	19.226	
4,600.0	4,582.5	4,633.8	4,582.5	10.1	12.9	-71.14	390.4	428.9	367.4	347.6	19.84	18.522	
4,700.0	4,681.9	4,733.3	4,681.9	10.3	13.0	-72.69	390.4	428.9	364.2	343.8	20.38	17.867	
4,800.0	4,781.4	4,832.8	4,781.4	10.6	13.1	-74.26	390.4	428.9	361.2	340.2	20.93	17.260	
4,900.0	4,880.8	4,932.2	4,880.8	10.8	13.2	-75.86	390.4	428.9	358.5	337.0	21.47	16.696	
5,000.0	4,980.3	5,031.7	4,980.3	11.1	13.4	-77.48	390.4	428.9	356.0	334.0	22.01	16.175	
5,100.0	5,079.8	5,131.1	5,079.8	11.3	13.5	-79.08	390.4	428.9	354.0	331.4	22.54	15.702	

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 1E-16H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Reference Site:	S16-T3N-R68W (State)	**MD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	State 1E-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 1D-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	5,179.4	5,230.7	5,179.4	11.6	13.6	-80.45	390.4	428.9	352.4	329.4	23.02	15.306	
5,300.0	5,279.1	5,330.5	5,279.1	11.8	13.7	-81.56	390.4	428.9	351.3	327.8	23.46	14.975	
5,400.0	5,379.0	5,430.4	5,379.0	11.9	13.8	-82.40	390.4	428.9	350.6	326.7	23.85	14.698	
5,500.0	5,478.9	5,530.3	5,478.9	12.1	13.9	-82.96	390.4	428.9	350.1	325.9	24.20	14.467	
5,600.0	5,578.9	5,630.3	5,578.9	12.3	14.1	-83.24	390.4	428.9	349.9	325.4	24.51	14.276	
5,671.5	5,650.4	5,701.8	5,650.4	12.4	14.2	-83.31	390.4	428.9	349.9	325.2	24.72	14.156	
5,700.0	5,678.9	5,730.3	5,678.9	12.4	14.2	1.22	390.4	428.9	349.9	327.8	22.04	15.872	
5,800.0	5,778.9	5,830.3	5,778.9	12.5	14.3	1.22	390.4	428.9	349.9	327.5	22.36	15.646	
5,900.0	5,878.9	5,930.3	5,878.9	12.7	14.4	1.22	390.4	428.9	349.9	327.2	22.68	15.426	
6,000.0	5,978.9	6,030.3	5,978.9	12.8	14.6	1.22	390.4	428.9	349.9	326.9	23.00	15.211	
6,100.0	6,078.9	6,130.3	6,078.9	13.0	14.7	1.22	390.4	428.9	349.9	326.6	23.32	15.002	
6,200.0	6,178.9	6,230.3	6,178.9	13.1	14.8	1.22	390.4	428.9	349.9	326.2	23.64	14.798	
6,300.0	6,278.9	6,330.3	6,278.9	13.3	14.9	1.22	390.4	428.9	349.9	325.9	23.97	14.599	
6,400.0	6,378.9	6,430.3	6,378.9	13.4	15.1	1.22	390.4	428.9	349.9	325.6	24.29	14.405	
6,500.0	6,478.9	6,530.8	6,479.3	13.5	15.1	0.55	390.4	424.8	349.8	325.3	24.56	14.243	
6,527.0	6,505.9	6,557.6	6,505.9	13.6	15.1	0.00	390.4	421.4	349.8	325.2	24.61	14.215	
6,600.0	6,578.9	6,628.6	6,575.5	13.7	15.1	-2.24	390.4	407.7	350.1	325.4	24.69	14.180	
6,700.0	6,678.8	6,721.2	6,663.7	13.8	15.0	83.50	390.4	379.6	352.3	324.7	27.54	12.790	
6,800.0	6,777.4	6,810.7	6,744.8	13.8	14.8	79.32	390.4	341.9	356.4	329.0	27.45	12.982	
6,900.0	6,872.7	6,900.0	6,820.4	13.6	14.6	75.36	390.4	294.5	362.1	335.0	27.11	13.356	
7,000.0	6,963.0	6,982.4	6,884.4	13.4	14.4	71.95	390.4	242.7	368.8	342.2	26.61	13.863	
7,100.0	7,046.4	7,065.3	6,942.4	13.2	14.3	68.85	390.4	183.5	376.1	350.0	26.03	14.449	
7,200.0	7,121.4	7,150.0	6,994.2	13.1	14.2	66.11	390.4	116.6	383.4	357.8	25.52	15.022	
7,300.0	7,186.4	7,227.0	7,034.1	13.1	14.3	63.95	390.4	50.8	390.2	364.9	25.28	15.434	
7,400.0	7,240.3	7,306.2	7,067.5	13.4	14.5	62.15	390.4	-21.0	396.2	370.8	25.47	15.558	
7,500.0	7,281.9	7,384.7	7,092.7	14.1	15.1	60.78	390.4	-95.3	401.2	374.9	26.23	15.293	
7,600.0	7,310.5	7,462.6	7,109.4	15.2	15.9	59.82	390.4	-171.4	404.8	377.2	27.64	14.646	
7,700.0	7,325.4	7,540.2	7,117.8	16.5	17.0	59.28	390.4	-248.5	406.9	377.2	29.68	13.712	
7,800.0	7,327.1	7,625.2	7,118.2	18.2	18.4	59.15	390.4	-333.5	407.5	375.1	32.32	12.609	
7,900.0	7,325.4	7,725.2	7,116.4	20.0	20.2	59.15	390.4	-433.5	407.5	372.1	35.36	11.522	
8,000.0	7,323.6	7,825.2	7,114.7	21.9	22.1	59.15	390.3	-533.4	407.5	368.8	38.64	10.544	
8,100.0	7,321.9	7,925.2	7,112.9	23.9	24.1	59.15	390.3	-633.4	407.5	365.4	42.09	9.680	
8,200.0	7,320.1	8,025.2	7,111.2	26.0	26.2	59.15	390.3	-733.4	407.5	361.8	45.68	8.919	
8,300.0	7,318.4	8,125.2	7,109.5	28.2	28.3	59.15	390.3	-833.4	407.5	358.1	49.38	8.252	
8,400.0	7,316.6	8,225.2	7,107.7	30.4	30.5	59.15	390.3	-933.4	407.5	354.3	53.15	7.666	
8,500.0	7,314.9	8,325.2	7,106.0	32.7	32.7	59.14	390.3	-1,033.4	407.5	350.5	57.00	7.149	
8,600.0	7,313.2	8,425.2	7,104.2	35.0	35.0	59.14	390.3	-1,133.4	407.4	346.6	60.90	6.691	
8,700.0	7,311.4	8,525.2	7,102.5	37.3	37.3	59.14	390.3	-1,233.3	407.4	342.6	64.84	6.284	
8,800.0	7,309.7	8,625.2	7,100.7	39.6	39.6	59.14	390.3	-1,333.3	407.4	338.6	68.82	5.921	
8,900.0	7,307.9	8,725.2	7,099.0	41.9	41.9	59.14	390.3	-1,433.3	407.4	334.6	72.83	5.594	
9,000.0	7,306.2	8,825.2	7,097.2	44.3	44.3	59.14	390.3	-1,533.3	407.4	330.6	76.87	5.301	
9,100.0	7,304.4	8,925.2	7,095.5	46.7	46.7	59.14	390.3	-1,633.3	407.4	326.5	80.92	5.035	
9,200.0	7,302.7	9,025.2	7,093.7	49.0	49.0	59.14	390.3	-1,733.3	407.4	322.4	85.00	4.793	
9,300.0	7,300.9	9,125.2	7,092.0	51.4	51.4	59.14	390.3	-1,833.2	407.4	318.3	89.10	4.573	
9,400.0	7,299.2	9,225.2	7,090.3	53.8	53.8	59.14	390.3	-1,933.2	407.4	314.2	93.20	4.371	
9,500.0	7,297.4	9,325.2	7,088.5	56.2	56.2	59.14	390.3	-2,033.2	407.4	310.1	97.32	4.186	
9,600.0	7,295.7	9,425.2	7,086.8	58.6	58.6	59.14	390.3	-2,133.2	407.4	306.0	101.46	4.016	
9,700.0	7,294.0	9,525.2	7,085.0	61.1	61.0	59.14	390.3	-2,233.2	407.4	301.8	105.60	3.858	
9,800.0	7,292.2	9,625.2	7,083.3	63.5	63.4	59.14	390.3	-2,333.2	407.4	297.7	109.75	3.712	
9,900.0	7,290.5	9,725.2	7,081.5	65.9	65.8	59.14	390.3	-2,433.2	407.4	293.5	113.90	3.577	
10,000.0	7,288.7	9,825.2	7,079.8	68.3	68.3	59.14	390.3	-2,533.1	407.4	289.4	118.07	3.451	
10,100.0	7,287.0	9,925.2	7,078.0	70.8	70.7	59.14	390.3	-2,633.1	407.4	285.2	122.24	3.333	

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 1E-16H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Reference Site:	S16-T3N-R68W (State)	**MD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	State 1E-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 1D-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
10,200.0	7,285.2	10,025.2	7,076.3	73.2	73.1	59.14	390.2	-2,733.1	407.4	281.0	126.41	3.223	
10,300.0	7,283.5	10,125.2	7,074.5	75.6	75.5	59.14	390.2	-2,833.1	407.4	276.8	130.59	3.120	
10,400.0	7,281.7	10,225.2	7,072.8	78.1	78.0	59.14	390.2	-2,933.1	407.4	272.6	134.78	3.023	
10,500.0	7,280.0	10,325.2	7,071.1	80.5	80.4	59.14	390.2	-3,033.1	407.4	268.5	138.97	2.932	
10,600.0	7,278.2	10,425.2	7,069.3	82.9	82.9	59.14	390.2	-3,133.0	407.4	264.3	143.16	2.846	
10,700.0	7,276.5	10,525.2	7,067.6	85.4	85.3	59.14	390.2	-3,233.0	407.4	260.1	147.35	2.765	
10,800.0	7,274.8	10,625.2	7,065.8	87.8	87.7	59.14	390.2	-3,333.0	407.4	255.9	151.55	2.688	
10,900.0	7,273.0	10,725.2	7,064.1	90.3	90.2	59.14	390.2	-3,433.0	407.4	251.7	155.75	2.616	
11,000.0	7,271.3	10,825.2	7,062.3	92.7	92.6	59.14	390.2	-3,533.0	407.4	247.4	159.96	2.547	
11,100.0	7,269.5	10,925.2	7,060.6	95.2	95.1	59.14	390.2	-3,633.0	407.4	243.2	164.17	2.482	
11,200.0	7,267.8	11,025.2	7,058.8	97.6	97.5	59.14	390.2	-3,733.0	407.4	239.0	168.37	2.420	
11,300.0	7,266.0	11,125.2	7,057.1	100.1	100.0	59.14	390.2	-3,832.9	407.4	234.8	172.59	2.361	
11,400.0	7,264.3	11,225.2	7,055.4	102.5	102.4	59.14	390.2	-3,932.9	407.4	230.6	176.80	2.304	
11,500.0	7,262.5	11,325.2	7,053.6	105.0	104.9	59.14	390.2	-4,032.9	407.4	226.4	181.01	2.251	
11,600.0	7,260.8	11,425.2	7,051.9	107.4	107.3	59.14	390.2	-4,132.9	407.4	222.2	185.23	2.199	
11,700.0	7,259.1	11,525.2	7,050.1	109.9	109.8	59.14	390.2	-4,232.9	407.4	217.9	189.45	2.150	
11,796.9	7,257.4	11,622.1	7,048.4	112.3	112.2	59.14	390.2	-4,329.8	407.4	213.9	193.54	2.105	SF

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well State 1E-16H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Reference Site:	S16-T3N-R68W (State)	**MD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	State 1E-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 1F-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	-180.00	-7.3	0.0	7.3				
100.0	100.0	100.0	100.0	0.2	0.2	-180.00	-7.3	0.0	7.3	7.0	0.30	23.991	
200.0	200.0	200.0	200.0	0.3	0.3	-180.00	-7.3	0.0	7.3	6.6	0.65	11.162	
300.0	300.0	300.0	300.0	0.5	0.5	-180.00	-7.3	0.0	7.3	6.3	1.00	7.272	
400.0	400.0	400.0	400.0	0.7	0.7	-180.00	-7.3	0.0	7.3	5.9	1.35	5.393	CC, ES
500.0	500.0	499.9	499.9	0.8	0.9	174.76	-7.8	0.7	7.8	6.1	1.70	4.599	
600.0	600.0	599.8	599.7	1.0	1.0	162.92	-9.3	2.9	9.7	7.7	2.05	4.737	
700.0	700.0	699.5	699.4	1.2	1.2	151.43	-11.8	6.4	13.4	11.0	2.41	5.576	
800.0	800.0	799.1	798.7	1.4	1.4	143.28	-15.3	11.4	19.1	16.3	2.77	6.877	
900.0	900.0	898.4	897.7	1.5	1.6	138.01	-19.7	17.7	26.6	23.5	3.15	8.443	
1,000.0	1,000.0	997.4	996.3	1.7	1.8	134.60	-25.1	25.5	36.0	32.4	3.55	10.145	
1,100.0	1,100.0	1,096.1	1,094.4	1.9	2.1	48.54	-31.5	34.6	46.6	42.8	3.79	12.278	
1,200.0	1,200.0	1,194.6	1,192.1	2.1	2.3	48.60	-38.8	45.1	57.7	53.5	4.14	13.928	
1,300.0	1,299.9	1,292.8	1,289.2	2.3	2.6	49.48	-47.1	56.9	69.4	64.9	4.49	15.430	
1,400.0	1,399.7	1,390.8	1,385.9	2.4	2.9	50.81	-56.3	70.0	81.6	76.8	4.86	16.808	
1,500.0	1,499.4	1,489.9	1,483.5	2.6	3.2	52.49	-66.2	84.1	93.8	88.6	5.23	17.939	
1,600.0	1,598.9	1,589.2	1,581.2	2.8	3.6	54.55	-76.1	98.2	105.1	99.5	5.62	18.688	
1,700.0	1,698.4	1,688.5	1,679.0	3.1	3.9	56.64	-85.9	112.3	116.0	110.0	6.04	19.226	
1,800.0	1,797.8	1,787.8	1,776.9	3.3	4.2	58.36	-95.8	126.5	127.1	120.6	6.46	19.680	
1,900.0	1,897.3	1,887.1	1,874.7	3.5	4.6	59.81	-105.7	140.6	138.2	131.3	6.89	20.066	
2,000.0	1,996.7	1,986.5	1,972.5	3.7	4.9	61.05	-115.6	154.7	149.4	142.1	7.33	20.393	
2,100.0	2,096.2	2,085.8	2,070.3	4.0	5.2	62.11	-125.5	168.9	160.7	152.9	7.77	20.674	
2,200.0	2,195.6	2,185.1	2,168.1	4.2	5.6	63.03	-135.4	183.0	172.0	163.8	8.22	20.915	
2,300.0	2,295.1	2,284.4	2,265.9	4.4	5.9	63.84	-145.3	197.1	183.4	174.7	8.68	21.124	
2,400.0	2,394.5	2,383.8	2,363.7	4.7	6.3	64.55	-155.2	211.2	194.8	185.6	9.14	21.306	
2,500.0	2,494.0	2,483.1	2,461.5	4.9	6.6	65.18	-165.1	225.4	206.2	196.6	9.61	21.465	
2,600.0	2,593.4	2,582.4	2,559.4	5.1	6.9	65.75	-175.0	239.5	217.6	207.6	10.07	21.605	
2,700.0	2,692.9	2,681.7	2,657.2	5.4	7.3	66.26	-184.9	253.6	229.1	218.6	10.54	21.729	
2,800.0	2,792.3	2,781.0	2,755.0	5.6	7.6	66.73	-194.8	267.7	240.6	229.6	11.02	21.839	
2,900.0	2,891.8	2,880.4	2,852.8	5.9	8.0	67.15	-204.7	281.9	252.1	240.6	11.49	21.938	
3,000.0	2,991.2	2,979.7	2,950.6	6.1	8.3	67.53	-214.5	296.0	263.6	251.6	11.97	22.026	
3,100.0	3,090.7	3,079.0	3,048.4	6.4	8.7	67.88	-224.4	310.1	275.1	262.6	12.44	22.106	
3,200.0	3,190.1	3,178.3	3,146.2	6.6	9.0	68.20	-234.3	324.3	286.6	273.7	12.92	22.178	
3,300.0	3,289.6	3,277.6	3,244.0	6.9	9.4	68.50	-244.2	338.4	298.1	284.7	13.40	22.243	
3,400.0	3,389.0	3,377.0	3,341.9	7.1	9.7	68.78	-254.1	352.5	309.7	295.8	13.88	22.303	
3,500.0	3,488.5	3,478.7	3,442.1	7.4	10.1	69.06	-264.1	366.8	321.0	306.7	14.37	22.338	
3,600.0	3,587.9	3,583.4	3,545.5	7.6	10.4	69.46	-273.5	380.2	331.1	316.2	14.87	22.266	
3,700.0	3,687.4	3,688.3	3,649.4	7.8	10.7	70.01	-281.8	392.1	339.5	324.1	15.37	22.088	
3,800.0	3,786.9	3,793.4	3,753.7	8.1	11.0	70.69	-289.1	402.4	346.4	330.5	15.88	21.814	
3,900.0	3,886.3	3,898.7	3,858.5	8.3	11.2	71.50	-295.2	411.2	351.8	335.4	16.40	21.457	
4,000.0	3,985.8	4,004.0	3,963.4	8.6	11.4	72.45	-300.2	418.4	355.7	338.8	16.92	21.027	
4,100.0	4,085.2	4,109.3	4,068.4	8.8	11.6	73.55	-304.2	424.0	358.1	340.7	17.44	20.533	
4,200.0	4,184.7	4,214.4	4,173.5	9.1	11.8	74.81	-307.0	428.0	359.2	341.2	17.97	19.985	
4,300.0	4,284.1	4,319.5	4,278.5	9.3	11.9	76.23	-308.7	430.5	358.9	340.4	18.51	19.391	
4,400.0	4,383.6	4,424.3	4,383.3	9.6	12.1	77.84	-309.3	431.4	357.3	338.3	19.05	18.761	
4,500.0	4,483.0	4,524.0	4,483.0	9.8	12.2	79.48	-309.3	431.4	355.3	335.7	19.58	18.147	
4,600.0	4,582.5	4,623.4	4,582.5	10.1	12.3	81.14	-309.3	431.4	353.5	333.4	20.11	17.583	
4,700.0	4,681.9	4,722.9	4,681.9	10.3	12.4	82.81	-309.3	431.4	352.0	331.4	20.63	17.065	
4,800.0	4,781.4	4,822.4	4,781.4	10.6	12.5	84.49	-309.3	431.4	350.9	329.7	21.15	16.591	
4,900.0	4,880.8	4,921.8	4,880.8	10.8	12.6	86.19	-309.3	431.4	350.0	328.4	21.66	16.157	
5,000.0	4,980.3	5,021.3	4,980.3	11.1	12.7	87.89	-309.3	431.4	349.5	327.3	22.17	15.762	
5,100.0	5,079.8	5,120.7	5,079.8	11.3	12.9	89.56	-309.3	431.4	349.3	326.6	22.67	15.407	

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 1E-16H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Reference Site:	S16-T3N-R68W (State)	**MD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	State 1E-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 1F-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
5,129.0	5,108.6	5,149.6	5,108.6	11.4	12.9	90.00	-309.3	431.4	349.2	326.4	22.80	15.317	
5,200.0	5,179.4	5,220.3	5,179.4	11.6	13.0	90.98	-309.3	431.4	349.3	326.2	23.12	15.109	
5,300.0	5,279.1	5,320.1	5,279.1	11.8	13.1	92.12	-309.3	431.4	349.5	326.0	23.53	14.854	
5,400.0	5,379.0	5,420.0	5,379.0	11.9	13.2	92.98	-309.3	431.4	349.7	325.8	23.90	14.633	
5,500.0	5,478.9	5,519.9	5,478.9	12.1	13.4	93.56	-309.3	431.4	349.9	325.7	24.23	14.439	
5,600.0	5,578.9	5,619.9	5,578.9	12.3	13.5	93.84	-309.3	431.4	350.0	325.5	24.54	14.266	
5,700.0	5,678.9	5,719.9	5,678.9	12.4	13.6	178.38	-309.3	431.4	350.1	328.7	21.31	16.427	
5,800.0	5,778.9	5,819.9	5,778.9	12.5	13.7	178.38	-309.3	431.4	350.1	328.4	21.64	16.178	
5,900.0	5,878.9	5,919.9	5,878.9	12.7	13.9	178.38	-309.3	431.4	350.1	328.1	21.97	15.937	
6,000.0	5,978.9	6,019.9	5,978.9	12.8	14.0	178.38	-309.3	431.4	350.1	327.8	22.29	15.702	
6,100.0	6,078.9	6,119.9	6,078.9	13.0	14.1	178.38	-309.3	431.4	350.1	327.4	22.62	15.473	
6,200.0	6,178.9	6,219.9	6,178.9	13.1	14.3	178.38	-309.3	431.4	350.1	327.1	22.95	15.251	
6,300.0	6,278.9	6,319.9	6,278.9	13.3	14.4	178.38	-309.3	431.4	350.1	326.8	23.28	15.034	
6,400.0	6,378.9	6,419.9	6,378.9	13.4	14.5	178.38	-309.3	431.4	350.1	326.4	23.61	14.824	
6,500.0	6,478.9	6,520.7	6,479.5	13.5	14.6	179.05	-309.3	427.2	350.0	326.0	23.91	14.636	
6,542.6	6,521.5	6,563.0	6,521.5	13.6	14.6	-180.00	-309.3	421.4	349.9	325.9	24.01	14.575	
6,600.0	6,578.9	6,618.8	6,576.1	13.7	14.5	-178.14	-309.3	410.1	350.1	326.0	24.12	14.517	
6,700.0	6,678.8	6,711.7	6,664.5	13.8	14.4	-83.86	-309.3	381.8	352.1	324.7	27.37	12.864	
6,800.0	6,777.4	6,800.0	6,744.5	13.8	14.2	-79.71	-309.3	344.5	356.1	328.9	27.20	13.093	
6,900.0	6,872.7	6,888.5	6,819.5	13.6	14.0	-75.76	-309.3	297.6	361.7	334.9	26.81	13.493	
7,000.0	6,963.0	6,973.4	6,885.4	13.4	13.8	-72.23	-309.3	244.2	368.4	342.1	26.29	14.013	
7,100.0	7,046.4	7,056.5	6,943.4	13.2	13.7	-69.09	-309.3	184.8	375.6	349.8	25.74	14.592	
7,200.0	7,121.4	7,138.0	6,993.3	13.1	13.6	-66.39	-309.3	120.3	382.8	357.5	25.31	15.128	
7,300.0	7,186.4	7,218.3	7,034.9	13.1	13.7	-64.12	-309.3	51.7	389.7	364.6	25.15	15.498	
7,400.0	7,240.3	7,300.0	7,069.1	13.4	14.0	-62.25	-309.3	-22.4	395.9	370.5	25.42	15.572	
7,500.0	7,281.9	7,376.2	7,093.2	14.1	14.7	-60.88	-309.3	-94.6	400.9	374.7	26.24	15.278	
7,600.0	7,310.5	7,450.0	7,109.1	15.2	15.6	-59.92	-309.3	-166.7	404.7	377.1	27.62	14.654	
7,700.0	7,325.4	7,531.7	7,118.0	16.5	16.8	-59.31	-309.3	-247.9	406.9	377.2	29.67	13.715	
7,800.0	7,327.1	7,617.3	7,118.2	18.2	18.2	-59.15	-309.3	-333.5	407.5	375.3	32.27	12.630	
7,900.0	7,325.4	7,717.3	7,116.4	20.0	20.0	-59.15	-309.3	-433.4	407.5	372.2	35.32	11.537	
8,000.0	7,323.6	7,817.3	7,114.7	21.9	21.9	-59.15	-309.3	-533.4	407.5	368.9	38.61	10.555	
8,100.0	7,321.9	7,917.3	7,112.9	23.9	23.9	-59.15	-309.3	-633.4	407.5	365.5	42.07	9.687	
8,200.0	7,320.1	8,017.3	7,111.2	26.0	26.0	-59.15	-309.3	-733.4	407.5	361.9	45.66	8.925	
8,300.0	7,318.4	8,117.3	7,109.4	28.2	28.2	-59.15	-309.3	-833.4	407.5	358.2	49.36	8.256	
8,400.0	7,316.6	8,217.3	7,107.7	30.4	30.4	-59.15	-309.3	-933.4	407.5	354.4	53.14	7.669	
8,500.0	7,314.9	8,317.3	7,106.0	32.7	32.7	-59.15	-309.3	-1,033.4	407.5	350.5	56.99	7.151	
8,600.0	7,313.2	8,417.3	7,104.2	35.0	34.9	-59.15	-309.3	-1,133.3	407.5	346.6	60.89	6.693	
8,700.0	7,311.4	8,517.3	7,102.5	37.3	37.2	-59.15	-309.3	-1,233.3	407.5	342.7	64.83	6.285	
8,800.0	7,309.7	8,617.3	7,100.7	39.6	39.5	-59.15	-309.3	-1,333.3	407.5	338.7	68.82	5.922	
8,900.0	7,307.9	8,717.3	7,099.0	41.9	41.9	-59.15	-309.3	-1,433.3	407.5	334.7	72.83	5.595	
9,000.0	7,306.2	8,817.3	7,097.2	44.3	44.2	-59.15	-309.3	-1,533.3	407.5	330.6	76.87	5.301	
9,100.0	7,304.4	8,917.3	7,095.5	46.7	46.6	-59.15	-309.3	-1,633.3	407.5	326.6	80.93	5.035	
9,200.0	7,302.7	9,017.3	7,093.7	49.0	49.0	-59.15	-309.3	-1,733.2	407.5	322.5	85.01	4.794	
9,300.0	7,300.9	9,117.3	7,092.0	51.4	51.4	-59.15	-309.3	-1,833.2	407.5	318.4	89.10	4.573	
9,400.0	7,299.2	9,217.3	7,090.2	53.8	53.8	-59.15	-309.3	-1,933.2	407.5	314.3	93.21	4.372	
9,500.0	7,297.4	9,317.3	7,088.5	56.2	56.2	-59.15	-309.3	-2,033.2	407.5	310.1	97.33	4.186	
9,600.0	7,295.7	9,417.3	7,086.8	58.6	58.6	-59.15	-309.3	-2,133.2	407.5	306.0	101.47	4.016	
9,700.0	7,294.0	9,517.3	7,085.0	61.1	61.0	-59.15	-309.3	-2,233.2	407.5	301.9	105.61	3.858	
9,800.0	7,292.2	9,617.3	7,083.3	63.5	63.4	-59.15	-309.3	-2,333.2	407.5	297.7	109.76	3.712	
9,900.0	7,290.5	9,717.3	7,081.5	65.9	65.8	-59.14	-309.3	-2,433.1	407.5	293.5	113.91	3.577	
10,000.0	7,288.7	9,817.3	7,079.8	68.3	68.2	-59.14	-309.3	-2,533.1	407.5	289.4	118.08	3.451	
10,100.0	7,287.0	9,917.3	7,078.0	70.8	70.7	-59.14	-309.3	-2,633.1	407.5	285.2	122.25	3.333	

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 1E-16H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Reference Site:	S16-T3N-R68W (State)	**MD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	State 1E-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 1F-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
10,200.0	7,285.2	10,017.3	7,076.3	73.2	73.1	-59.14	-309.3	-2,733.1	407.5	281.0	126.42	3.223	
10,300.0	7,283.5	10,117.3	7,074.5	75.6	75.5	-59.14	-309.3	-2,833.1	407.4	276.8	130.61	3.120	
10,400.0	7,281.7	10,217.3	7,072.8	78.1	78.0	-59.14	-309.3	-2,933.1	407.4	272.7	134.79	3.023	
10,500.0	7,280.0	10,317.3	7,071.1	80.5	80.4	-59.14	-309.3	-3,033.1	407.4	268.5	138.98	2.932	
10,600.0	7,278.2	10,417.3	7,069.3	82.9	82.9	-59.14	-309.3	-3,133.0	407.4	264.3	143.17	2.846	
10,700.0	7,276.5	10,517.3	7,067.6	85.4	85.3	-59.14	-309.3	-3,233.0	407.4	260.1	147.37	2.765	
10,800.0	7,274.8	10,617.3	7,065.8	87.8	87.7	-59.14	-309.3	-3,333.0	407.4	255.9	151.57	2.688	
10,900.0	7,273.0	10,717.3	7,064.1	90.3	90.2	-59.14	-309.3	-3,433.0	407.4	251.7	155.77	2.616	
11,000.0	7,271.3	10,817.3	7,062.3	92.7	92.6	-59.14	-309.3	-3,533.0	407.4	247.4	159.97	2.547	
11,100.0	7,269.5	10,917.3	7,060.6	95.2	95.1	-59.14	-309.3	-3,633.0	407.4	243.2	164.18	2.482	
11,200.0	7,267.8	11,017.3	7,058.8	97.6	97.5	-59.14	-309.3	-3,732.9	407.4	239.0	168.39	2.419	
11,300.0	7,266.0	11,117.3	7,057.1	100.1	100.0	-59.14	-309.3	-3,832.9	407.4	234.8	172.60	2.360	
11,400.0	7,264.3	11,217.3	7,055.3	102.5	102.4	-59.14	-309.3	-3,932.9	407.4	230.6	176.81	2.304	
11,500.0	7,262.5	11,317.3	7,053.6	105.0	104.9	-59.14	-309.3	-4,032.9	407.4	226.4	181.03	2.251	
11,600.0	7,260.8	11,417.3	7,051.9	107.4	107.3	-59.14	-309.3	-4,132.9	407.4	222.2	185.25	2.199	
11,700.0	7,259.1	11,517.3	7,050.1	109.9	109.8	-59.14	-309.3	-4,232.9	407.4	217.9	189.46	2.150	
11,769.3	7,257.8	11,586.7	7,048.9	111.6	111.5	-59.14	-309.3	-4,302.2	407.4	215.0	192.39	2.118	
11,796.9	7,257.4	11,612.3	7,048.5	112.3	112.1	-59.14	-309.3	-4,327.9	407.4	213.9	193.51	2.105	SF

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well State 1E-16H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Reference Site:	S16-T3N-R68W (State)	**MD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	State 1E-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 1G-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	-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	399.7	399.7	0.7	0.7	178.49	-18.9	0.5	18.9	17.6	1.35	14.016	
500.0	500.0	499.4	499.4	0.8	0.9	174.60	-21.1	2.0	21.2	19.5	1.70	12.431	
600.0	600.0	598.9	598.8	1.0	1.0	169.70	-24.6	4.5	25.0	23.0	2.06	12.157	SF
700.0	700.0	698.3	698.0	1.2	1.2	164.96	-29.6	7.9	30.7	28.2	2.43	12.640	
800.0	800.0	797.4	796.8	1.4	1.4	160.97	-35.9	12.4	38.1	35.3	2.81	13.577	
900.0	900.0	896.3	895.2	1.5	1.7	157.82	-43.6	17.8	47.3	44.1	3.20	14.780	
1,000.0	1,000.0	994.8	993.1	1.7	1.9	155.39	-52.7	24.1	58.4	54.7	3.62	16.130	
1,100.0	1,100.0	1,092.9	1,090.3	1.9	2.2	69.56	-63.1	31.4	70.8	67.0	3.79	18.689	
1,200.0	1,200.0	1,190.6	1,187.1	2.1	2.5	69.53	-74.8	39.6	84.4	80.2	4.14	20.382	
1,300.0	1,299.9	1,288.0	1,283.1	2.3	2.8	70.24	-87.8	48.7	99.0	94.5	4.50	22.022	
1,400.0	1,399.7	1,385.0	1,378.5	2.4	3.1	71.39	-102.1	58.7	114.7	109.9	4.86	23.600	
1,500.0	1,499.4	1,481.5	1,473.1	2.6	3.4	72.78	-117.6	69.6	131.6	126.4	5.24	25.108	
1,600.0	1,598.9	1,579.4	1,568.9	2.8	3.8	74.37	-134.3	81.3	149.2	143.5	5.65	26.424	
1,700.0	1,698.4	1,677.7	1,665.1	3.1	4.2	76.06	-151.0	93.0	166.7	160.6	6.07	27.472	
1,800.0	1,797.8	1,776.1	1,761.3	3.3	4.6	77.42	-167.8	104.7	184.3	177.8	6.50	28.352	
1,900.0	1,897.3	1,874.4	1,857.5	3.5	5.0	78.55	-184.5	116.5	202.0	195.1	6.94	29.098	
2,000.0	1,996.7	1,972.8	1,953.7	3.7	5.3	79.50	-201.3	128.2	219.8	212.4	7.39	29.733	
2,100.0	2,096.2	2,071.1	2,049.9	4.0	5.7	80.30	-218.0	139.9	237.6	229.8	7.85	30.277	
2,200.0	2,195.6	2,169.5	2,146.1	4.2	6.1	81.00	-234.8	151.7	255.5	247.2	8.31	30.748	
2,300.0	2,295.1	2,267.8	2,242.3	4.4	6.5	81.60	-251.5	163.4	273.3	264.6	8.77	31.157	
2,400.0	2,394.5	2,366.2	2,338.5	4.7	6.9	82.13	-268.3	175.1	291.3	282.0	9.24	31.516	
2,500.0	2,494.0	2,464.5	2,434.7	4.9	7.3	82.59	-285.0	186.8	309.2	299.5	9.71	31.832	
2,600.0	2,593.4	2,562.9	2,530.9	5.1	7.7	83.01	-301.8	198.6	327.2	317.0	10.19	32.112	
2,700.0	2,692.9	2,661.2	2,627.1	5.4	8.1	83.38	-318.5	210.3	345.1	334.5	10.66	32.361	
2,800.0	2,792.3	2,759.6	2,723.3	5.6	8.5	83.72	-335.3	222.0	363.1	352.0	11.14	32.584	
2,900.0	2,891.8	2,857.9	2,819.5	5.9	8.9	84.02	-352.0	233.8	381.1	369.5	11.62	32.785	
3,000.0	2,991.2	2,956.3	2,915.7	6.1	9.3	84.30	-368.8	245.5	399.1	387.0	12.11	32.966	
3,100.0	3,090.7	3,054.6	3,011.9	6.4	9.6	84.55	-385.5	257.2	417.1	404.5	12.59	33.131	
3,200.0	3,190.1	3,153.0	3,108.1	6.6	10.0	84.78	-402.3	268.9	435.1	422.0	13.07	33.281	
3,300.0	3,289.6	3,251.3	3,204.3	6.9	10.4	85.00	-419.0	280.7	453.1	439.6	13.56	33.418	
3,400.0	3,389.0	3,349.7	3,300.5	7.1	10.8	85.19	-435.8	292.4	471.2	457.1	14.05	33.543	
3,500.0	3,488.5	3,448.0	3,396.7	7.4	11.2	85.38	-452.5	304.1	489.2	474.7	14.53	33.659	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well State 1E-16H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Reference Site:	S16-T3N-R68W (State)	**MD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	State 1E-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 1H-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	-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	95.950	
200.0	200.0	200.0	200.0	0.3	0.3	-180.00	-29.1	0.0	29.1	28.5	0.65	44.640	CC, ES
300.0	300.0	299.5	299.5	0.5	0.5	179.29	-29.9	0.4	29.9	28.9	1.00	29.874	
400.0	400.0	399.0	399.0	0.7	0.7	177.36	-32.3	1.5	32.3	31.0	1.35	23.864	
500.0	500.0	498.4	498.2	0.8	0.9	174.72	-36.1	3.3	36.3	34.6	1.71	21.222	
600.0	600.0	597.5	597.2	1.0	1.1	171.88	-41.6	5.9	42.1	40.0	2.08	20.219	
700.0	700.0	696.5	695.8	1.2	1.3	169.21	-48.5	9.3	49.6	47.1	2.46	20.118	SF
800.0	800.0	795.1	794.0	1.4	1.5	166.87	-57.0	13.3	58.8	56.0	2.86	20.540	
900.0	900.0	893.4	891.7	1.5	1.8	164.92	-67.0	18.0	69.8	66.6	3.28	21.272	
1,000.0	1,000.0	991.3	988.8	1.7	2.0	163.32	-78.4	23.5	82.6	78.9	3.72	22.186	
1,100.0	1,100.0	1,088.7	1,085.2	1.9	2.3	77.88	-91.2	29.6	96.9	93.1	3.78	25.605	
1,200.0	1,200.0	1,185.8	1,180.9	2.1	2.6	77.88	-105.5	36.4	112.5	108.3	4.13	27.217	
1,300.0	1,299.9	1,282.3	1,275.9	2.3	3.0	78.48	-121.1	43.9	129.3	124.9	4.49	28.831	
1,400.0	1,399.7	1,378.3	1,370.0	2.4	3.3	79.44	-138.1	52.0	147.6	142.7	4.85	30.423	
1,500.0	1,499.4	1,475.8	1,465.4	2.6	3.7	80.68	-156.4	60.7	166.7	161.5	5.23	31.855	
1,600.0	1,598.9	1,573.9	1,561.3	2.8	4.1	82.18	-174.8	69.5	185.7	180.1	5.64	32.943	
1,700.0	1,698.4	1,671.9	1,657.2	3.1	4.4	83.79	-193.2	78.2	204.7	198.7	6.06	33.798	
1,800.0	1,797.8	1,769.9	1,753.1	3.3	4.8	85.13	-211.6	87.0	223.9	217.4	6.49	34.506	
1,900.0	1,897.3	1,867.9	1,848.9	3.5	5.2	86.26	-230.0	95.8	243.2	236.2	6.93	35.096	
2,000.0	1,996.7	1,965.9	1,944.8	3.7	5.6	87.23	-248.4	104.6	262.5	255.1	7.38	35.591	
2,100.0	2,096.2	2,064.0	2,040.7	4.0	6.0	88.06	-266.7	113.3	281.9	274.1	7.83	36.011	
2,200.0	2,195.6	2,162.0	2,136.6	4.2	6.4	88.78	-285.1	122.1	301.4	293.1	8.29	36.370	
2,300.0	2,295.1	2,260.0	2,232.5	4.4	6.8	89.42	-303.5	130.9	320.9	312.1	8.75	36.678	
2,400.0	2,394.5	2,358.0	2,328.3	4.7	7.1	89.98	-321.9	139.7	340.4	331.2	9.21	36.945	
2,500.0	2,494.0	2,456.1	2,424.2	4.9	7.5	90.49	-340.3	148.4	360.0	350.3	9.68	37.178	
2,600.0	2,593.4	2,554.1	2,520.1	5.1	7.9	90.94	-358.7	157.2	379.5	369.4	10.15	37.383	
2,700.0	2,692.9	2,652.1	2,616.0	5.4	8.3	91.34	-377.1	166.0	399.1	388.5	10.63	37.563	
2,800.0	2,792.3	2,750.1	2,711.9	5.6	8.7	91.71	-395.5	174.7	418.8	407.7	11.10	37.724	
2,900.0	2,891.8	2,848.1	2,807.7	5.9	9.1	92.05	-413.9	183.5	438.4	426.8	11.58	37.866	
3,000.0	2,991.2	2,946.2	2,903.6	6.1	9.5	92.35	-432.3	192.3	458.1	446.0	12.06	37.995	
3,100.0	3,090.7	3,044.2	2,999.5	6.4	9.9	92.63	-450.7	201.1	477.7	465.2	12.54	38.110	
3,200.0	3,190.1	3,142.2	3,095.4	6.6	10.3	92.89	-469.1	209.8	497.4	484.4	13.02	38.214	

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 1E-16H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Reference Site:	S16-T3N-R68W (State)	**MD Reference:**	WELL @ 5039.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	State 1E-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 @ 5039.0ft (Original Well Elev)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: State 1E-16H
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.32°