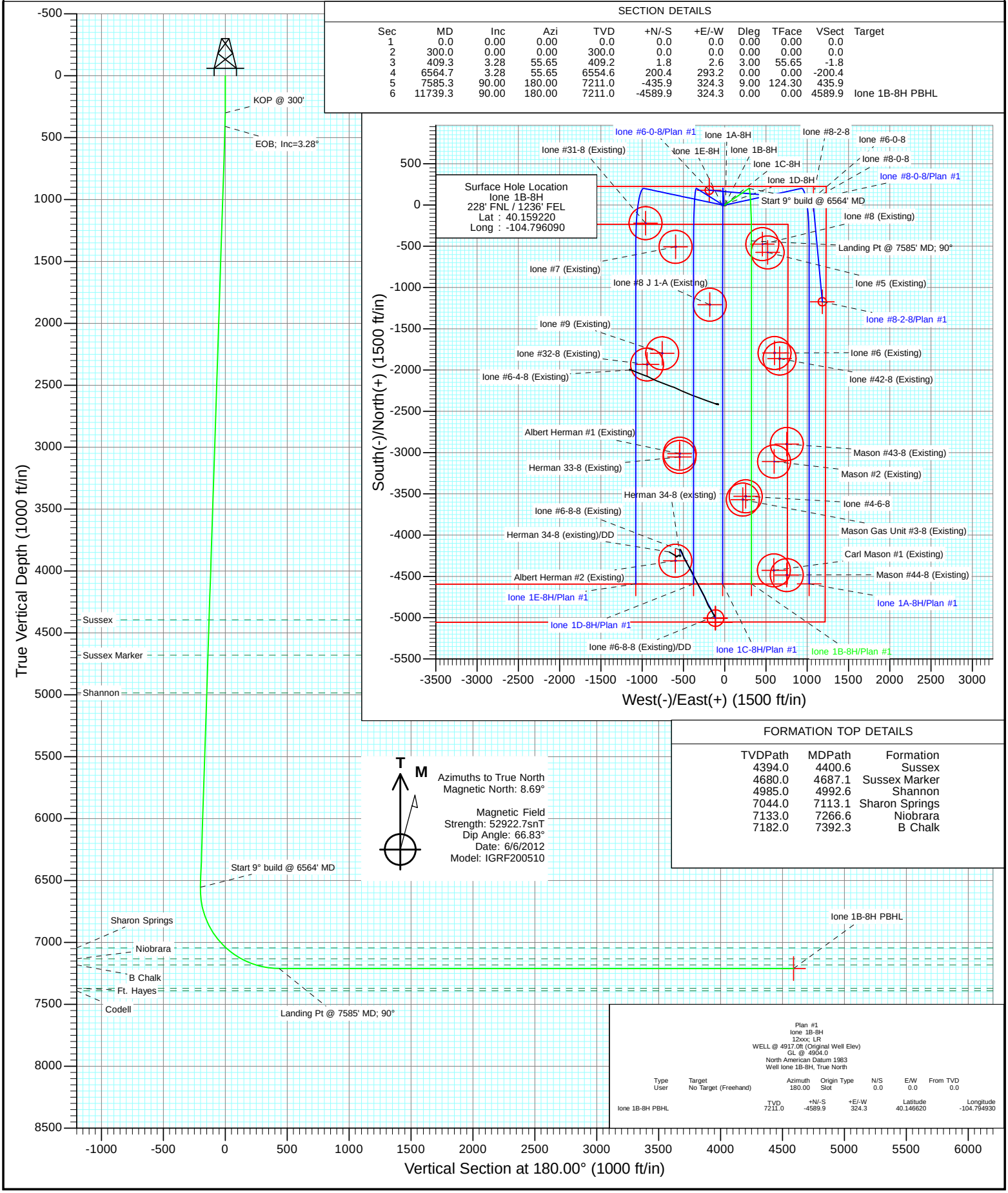
encana natural gas

Project: DJ Wattenberg
Site: S8-T2N-R66W (Ione)
Well: Ione 1B-8H
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	300.0	0.00	0.00	300.0	0.0	0.0	0.00	0.00	0.0	
3	409.3	3.28	55.65	409.2	1.8	2.6	3.00	55.65	-1.8	
4	6564.7	3.28	55.65	6554.6	200.4	293.2	0.00	0.00	-200.4	
5	7585.3	90.00	180.00	7211.0	-435.9	324.3	9.00	124.30	435.9	
6	11739.3	90.00	180.00	7211.0	-4589.9	324.3	0.00	0.00	4589.9	Ione 1B-8H PBHL



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
4394.0	4400.6	Sussex
4680.0	4687.1	Sussex Marker
4985.0	4992.6	Shannon
7044.0	7113.1	Sharon Springs
7133.0	7266.6	Niobrara
7182.0	7392.3	B Chalk

Azimuths to True North
Magnetic North: 8.69°

Magnetic Field
Strength: 52922.7snT
Dip Angle: 66.83°
Date: 6/6/2012
Model: IGRF200510

Plan #1
Ione 1B-8H
12xxx; LR
WELL @ 4917.0ft (Original Well Elev)
GL @ 4904.0
North American Datum 1983
Well Ione 1B-8H, True North

Type	Target	Azimuth	Origin Type	N/S	E/W	From TVD
User	No Target (Freehand)	180.00	Slot	0.0	0.0	0.0

	TVD	+N/-S	+E/-W	Latitude	Longitude
Ione 1B-8H PBHL	7211.0	-4589.9	324.3	40.146620	-104.794930

Planning Report

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Ione 1B-8H
Company:	EnCana Oil & Gas (USA) Inc	**TVD Reference:**	WELL @ 4917.0ft (Original Well Elev)
Project:	DJ Wattenberg	**MD Reference:**	WELL @ 4917.0ft (Original Well Elev)
Site:	S8-T2N-R66W (Ione)	**North Reference:**	True
Well:	Ione 1B-8H	**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 S8-T2N-R66W (Ione)

Site Position:		**Northing:**	1,297,444.41 ft	**Latitude:**	40.147740
From:	Lat/Long	**Easting:**	3,196,240.52 ft	**Longitude:**	-104.798020
Position Uncertainty:	0.0 ft	**Slot Radius:**	13.200 in	**Grid Convergence:**	0.45 °

Well Ione 1B-8H

Well Position	**+N/-S**	0.0 ft	**Northing:**	1,301,630.50 ft	**Latitude:**	40.159220
	+E/-W	0.0 ft	**Easting:**	3,196,746.83 ft	**Longitude:**	-104.796090
Position Uncertainty		0.0 ft	**Wellhead Elevation:**	ft	**Ground Level:**	4,904.0 ft

Wellbore Hz

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	6/6/2012	8.68	66.83	52,923

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	180.00

Plan Sections

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.00	0.00	0.00	0.00	
409.3	3.28	55.65	409.2	1.8	2.6	3.00	3.00	0.00	55.65	
6,564.7	3.28	55.65	6,554.6	200.4	293.2	0.00	0.00	0.00	0.00	
7,585.3	90.00	180.00	7,211.0	-435.9	324.3	9.00	8.50	12.18	124.30	
11,739.3	90.00	180.00	7,211.0	-4,589.9	324.3	0.00	0.00	0.00	0.00	Ione 1B-8H PBHL

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Ione 1B-8H
Company:	EnCana Oil & Gas (USA) Inc	**TVD Reference:**	WELL @ 4917.0ft (Original Well Elev)
Project:	DJ Wattenberg	**MD Reference:**	WELL @ 4917.0ft (Original Well Elev)
Site:	S8-T2N-R66W (Ione)	**North Reference:**	True
Well:	Ione 1B-8H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	KOP @ 300'
400.0	3.00	55.65	400.0	1.5	2.2	-1.5	3.00	3.00	
409.3	3.28	55.65	409.2	1.8	2.6	-1.8	3.00	3.00	EOB; Inc=3.28°
500.0	3.28	55.65	499.8	4.7	6.9	-4.7	0.00	0.00	
600.0	3.28	55.65	599.6	7.9	11.6	-7.9	0.00	0.00	
700.0	3.28	55.65	699.5	11.1	16.3	-11.1	0.00	0.00	
800.0	3.28	55.65	799.3	14.4	21.0	-14.4	0.00	0.00	
900.0	3.28	55.65	899.1	17.6	25.8	-17.6	0.00	0.00	
1,000.0	3.28	55.65	999.0	20.8	30.5	-20.8	0.00	0.00	
1,100.0	3.28	55.65	1,098.8	24.0	35.2	-24.0	0.00	0.00	
1,200.0	3.28	55.65	1,198.6	27.3	39.9	-27.3	0.00	0.00	
1,300.0	3.28	55.65	1,298.5	30.5	44.6	-30.5	0.00	0.00	
1,400.0	3.28	55.65	1,398.3	33.7	49.4	-33.7	0.00	0.00	
1,500.0	3.28	55.65	1,498.2	37.0	54.1	-37.0	0.00	0.00	
1,600.0	3.28	55.65	1,598.0	40.2	58.8	-40.2	0.00	0.00	
1,700.0	3.28	55.65	1,697.8	43.4	63.5	-43.4	0.00	0.00	
1,800.0	3.28	55.65	1,797.7	46.6	68.2	-46.6	0.00	0.00	
1,900.0	3.28	55.65	1,897.5	49.9	73.0	-49.9	0.00	0.00	
2,000.0	3.28	55.65	1,997.3	53.1	77.7	-53.1	0.00	0.00	
2,100.0	3.28	55.65	2,097.2	56.3	82.4	-56.3	0.00	0.00	
2,200.0	3.28	55.65	2,197.0	59.5	87.1	-59.5	0.00	0.00	
2,300.0	3.28	55.65	2,296.8	62.8	91.9	-62.8	0.00	0.00	
2,400.0	3.28	55.65	2,396.7	66.0	96.6	-66.0	0.00	0.00	
2,500.0	3.28	55.65	2,496.5	69.2	101.3	-69.2	0.00	0.00	
2,600.0	3.28	55.65	2,596.4	72.4	106.0	-72.4	0.00	0.00	
2,700.0	3.28	55.65	2,696.2	75.7	110.7	-75.7	0.00	0.00	
2,800.0	3.28	55.65	2,796.0	78.9	115.5	-78.9	0.00	0.00	
2,900.0	3.28	55.65	2,895.9	82.1	120.2	-82.1	0.00	0.00	
3,000.0	3.28	55.65	2,995.7	85.4	124.9	-85.4	0.00	0.00	
3,100.0	3.28	55.65	3,095.5	88.6	129.6	-88.6	0.00	0.00	
3,200.0	3.28	55.65	3,195.4	91.8	134.4	-91.8	0.00	0.00	
3,300.0	3.28	55.65	3,295.2	95.0	139.1	-95.0	0.00	0.00	
3,400.0	3.28	55.65	3,395.0	98.3	143.8	-98.3	0.00	0.00	
3,500.0	3.28	55.65	3,494.9	101.5	148.5	-101.5	0.00	0.00	
3,600.0	3.28	55.65	3,594.7	104.7	153.2	-104.7	0.00	0.00	
3,700.0	3.28	55.65	3,694.6	107.9	158.0	-107.9	0.00	0.00	
3,800.0	3.28	55.65	3,794.4	111.2	162.7	-111.2	0.00	0.00	
3,900.0	3.28	55.65	3,894.2	114.4	167.4	-114.4	0.00	0.00	
4,000.0	3.28	55.65	3,994.1	117.6	172.1	-117.6	0.00	0.00	
4,100.0	3.28	55.65	4,093.9	120.8	176.9	-120.8	0.00	0.00	
4,200.0	3.28	55.65	4,193.7	124.1	181.6	-124.1	0.00	0.00	
4,300.0	3.28	55.65	4,293.6	127.3	186.3	-127.3	0.00	0.00	
4,400.0	3.28	55.65	4,393.4	130.5	191.0	-130.5	0.00	0.00	
4,400.6	3.28	55.65	4,394.0	130.5	191.0	-130.5	0.00	0.00	Sussex
4,500.0	3.28	55.65	4,493.2	133.8	195.7	-133.8	0.00	0.00	
4,600.0	3.28	55.65	4,593.1	137.0	200.5	-137.0	0.00	0.00	
4,687.1	3.28	55.65	4,680.0	139.8	204.6	-139.8	0.00	0.00	Sussex Marker
4,700.0	3.28	55.65	4,692.9	140.2	205.2	-140.2	0.00	0.00	
4,800.0	3.28	55.65	4,792.8	143.4	209.9	-143.4	0.00	0.00	

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Ione 1B-8H
Company:	EnCana Oil & Gas (USA) Inc	**TVD Reference:**	WELL @ 4917.0ft (Original Well Elev)
Project:	DJ Wattenberg	**MD Reference:**	WELL @ 4917.0ft (Original Well Elev)
Site:	S8-T2N-R66W (Ione)	**North Reference:**	True
Well:	Ione 1B-8H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
4,900.0	3.28	55.65	4,892.6	146.7	214.6	-146.7	0.00	0.00	
4,992.6	3.28	55.65	4,985.0	149.6	219.0	-149.6	0.00	0.00	Shannon
5,000.0	3.28	55.65	4,992.4	149.9	219.3	-149.9	0.00	0.00	
5,100.0	3.28	55.65	5,092.3	153.1	224.1	-153.1	0.00	0.00	
5,200.0	3.28	55.65	5,192.1	156.3	228.8	-156.3	0.00	0.00	
5,300.0	3.28	55.65	5,291.9	159.6	233.5	-159.6	0.00	0.00	
5,400.0	3.28	55.65	5,391.8	162.8	238.2	-162.8	0.00	0.00	
5,500.0	3.28	55.65	5,491.6	166.0	243.0	-166.0	0.00	0.00	
5,600.0	3.28	55.65	5,591.4	169.2	247.7	-169.2	0.00	0.00	
5,700.0	3.28	55.65	5,691.3	172.5	252.4	-172.5	0.00	0.00	
5,800.0	3.28	55.65	5,791.1	175.7	257.1	-175.7	0.00	0.00	
5,900.0	3.28	55.65	5,891.0	178.9	261.8	-178.9	0.00	0.00	
6,000.0	3.28	55.65	5,990.8	182.2	266.6	-182.2	0.00	0.00	
6,100.0	3.28	55.65	6,090.6	185.4	271.3	-185.4	0.00	0.00	
6,200.0	3.28	55.65	6,190.5	188.6	276.0	-188.6	0.00	0.00	
6,300.0	3.28	55.65	6,290.3	191.8	280.7	-191.8	0.00	0.00	
6,400.0	3.28	55.65	6,390.1	195.1	285.5	-195.1	0.00	0.00	
6,500.0	3.28	55.65	6,490.0	198.3	290.2	-198.3	0.00	0.00	
6,564.7	3.28	55.65	6,554.6	200.4	293.2	-200.4	0.00	0.00	Start 9° build @ 6564' MD
6,600.0	3.02	116.13	6,589.8	200.5	294.9	-200.5	9.00	-0.75	
6,700.0	10.67	165.47	6,689.1	190.4	299.6	-190.4	9.00	7.66	
6,800.0	19.51	172.33	6,785.6	164.8	304.2	-164.8	9.00	8.84	
6,900.0	28.45	174.99	6,876.8	124.5	308.5	-124.5	9.00	8.94	
7,000.0	37.41	176.45	6,960.7	70.3	312.4	-70.3	9.00	8.97	
7,100.0	46.39	177.42	7,035.0	3.7	316.0	-3.7	9.00	8.98	
7,113.1	47.57	177.52	7,044.0	-5.9	316.4	5.9	9.00	8.98	Sharon Springs
7,200.0	55.37	178.13	7,098.1	-73.8	318.9	73.8	9.00	8.98	
7,266.6	61.36	178.52	7,133.0	-130.4	320.6	130.4	9.00	8.99	Niobrara
7,300.0	64.36	178.70	7,148.2	-160.1	321.3	160.1	9.00	8.99	
7,392.3	72.65	179.15	7,182.0	-245.9	322.9	245.9	9.00	8.99	B Chalk
7,400.0	73.35	179.19	7,184.3	-253.3	323.0	253.3	9.00	8.99	
7,500.0	82.34	179.64	7,205.3	-350.9	324.0	350.9	9.00	8.99	
7,585.3	90.00	180.00	7,211.0	-435.9	324.3	435.9	9.00	8.99	Landing Pt @ 7585' MD; 90°
7,600.0	90.00	180.00	7,211.0	-450.7	324.3	450.7	0.00	0.00	
7,700.0	90.00	180.00	7,211.0	-550.7	324.3	550.7	0.00	0.00	
7,800.0	90.00	180.00	7,211.0	-650.7	324.3	650.7	0.00	0.00	
7,900.0	90.00	180.00	7,211.0	-750.7	324.3	750.7	0.00	0.00	
8,000.0	90.00	180.00	7,211.0	-850.7	324.3	850.7	0.00	0.00	
8,100.0	90.00	180.00	7,211.0	-950.7	324.3	950.7	0.00	0.00	
8,200.0	90.00	180.00	7,211.0	-1,050.7	324.3	1,050.7	0.00	0.00	
8,300.0	90.00	180.00	7,211.0	-1,150.7	324.3	1,150.7	0.00	0.00	
8,400.0	90.00	180.00	7,211.0	-1,250.7	324.3	1,250.7	0.00	0.00	
8,500.0	90.00	180.00	7,211.0	-1,350.7	324.3	1,350.7	0.00	0.00	
8,600.0	90.00	180.00	7,211.0	-1,450.7	324.3	1,450.7	0.00	0.00	
8,700.0	90.00	180.00	7,211.0	-1,550.7	324.3	1,550.7	0.00	0.00	
8,800.0	90.00	180.00	7,211.0	-1,650.7	324.3	1,650.7	0.00	0.00	
8,900.0	90.00	180.00	7,211.0	-1,750.7	324.3	1,750.7	0.00	0.00	
9,000.0	90.00	180.00	7,211.0	-1,850.7	324.3	1,850.7	0.00	0.00	
9,100.0	90.00	180.00	7,211.0	-1,950.7	324.3	1,950.7	0.00	0.00	
9,200.0	90.00	180.00	7,211.0	-2,050.7	324.3	2,050.7	0.00	0.00	
9,300.0	90.00	180.00	7,211.0	-2,150.7	324.3	2,150.7	0.00	0.00	
9,400.0	90.00	180.00	7,211.0	-2,250.7	324.3	2,250.7	0.00	0.00	

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Ione 1B-8H
Company:	EnCana Oil & Gas (USA) Inc	**TVD Reference:**	WELL @ 4917.0ft (Original Well Elev)
Project:	DJ Wattenberg	**MD Reference:**	WELL @ 4917.0ft (Original Well Elev)
Site:	S8-T2N-R66W (Ione)	**North Reference:**	True
Well:	Ione 1B-8H	**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
9,500.0	90.00	180.00	7,211.0	-2,350.7	324.3	2,350.7	0.00	0.00	
9,600.0	90.00	180.00	7,211.0	-2,450.7	324.3	2,450.7	0.00	0.00	
9,700.0	90.00	180.00	7,211.0	-2,550.7	324.3	2,550.7	0.00	0.00	
9,800.0	90.00	180.00	7,211.0	-2,650.7	324.3	2,650.7	0.00	0.00	
9,900.0	90.00	180.00	7,211.0	-2,750.7	324.3	2,750.7	0.00	0.00	
10,000.0	90.00	180.00	7,211.0	-2,850.7	324.3	2,850.7	0.00	0.00	
10,100.0	90.00	180.00	7,211.0	-2,950.7	324.3	2,950.7	0.00	0.00	
10,200.0	90.00	180.00	7,211.0	-3,050.7	324.3	3,050.7	0.00	0.00	
10,300.0	90.00	180.00	7,211.0	-3,150.7	324.3	3,150.7	0.00	0.00	
10,400.0	90.00	180.00	7,211.0	-3,250.7	324.3	3,250.7	0.00	0.00	
10,500.0	90.00	180.00	7,211.0	-3,350.7	324.3	3,350.7	0.00	0.00	
10,600.0	90.00	180.00	7,211.0	-3,450.7	324.3	3,450.7	0.00	0.00	
10,700.0	90.00	180.00	7,211.0	-3,550.7	324.3	3,550.7	0.00	0.00	
10,800.0	90.00	180.00	7,211.0	-3,650.7	324.3	3,650.7	0.00	0.00	
10,900.0	90.00	180.00	7,211.0	-3,750.7	324.3	3,750.7	0.00	0.00	
11,000.0	90.00	180.00	7,211.0	-3,850.7	324.3	3,850.7	0.00	0.00	
11,100.0	90.00	180.00	7,211.0	-3,950.7	324.3	3,950.7	0.00	0.00	
11,200.0	90.00	180.00	7,211.0	-4,050.7	324.3	4,050.7	0.00	0.00	
11,300.0	90.00	180.00	7,211.0	-4,150.7	324.3	4,150.7	0.00	0.00	
11,400.0	90.00	180.00	7,211.0	-4,250.7	324.3	4,250.7	0.00	0.00	
11,500.0	90.00	180.00	7,211.0	-4,350.7	324.3	4,350.7	0.00	0.00	
11,600.0	90.00	180.00	7,211.0	-4,450.7	324.3	4,450.7	0.00	0.00	
11,700.0	90.00	180.00	7,211.0	-4,550.7	324.3	4,550.7	0.00	0.00	
11,739.3	90.00	180.00	7,211.0	-4,589.9	324.3	4,589.9	0.00	0.00	TD at 11739.3 - Ione 1B-8H 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
Ione 1B-8H PBHL - plan hits target center - Point	0.00	0.00	7,211.0	-4,589.9	324.3	1,297,043.30	3,197,107.54	40.146620	-104.794930

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
4,400.6	4,394.0	Sussex			
4,687.1	4,680.0	Sussex Marker			
4,992.6	4,985.0	Shannon			
7,113.1	7,044.0	Sharon Springs			
7,266.6	7,133.0	Niobrara			
7,392.3	7,182.0	B Chalk			

Database:	USA EDM 5000 Multi Users DB	**Local Co-ordinate Reference:**	Well Ione 1B-8H
Company:	EnCana Oil & Gas (USA) Inc	**TVD Reference:**	WELL @ 4917.0ft (Original Well Elev)
Project:	DJ Wattenberg	**MD Reference:**	WELL @ 4917.0ft (Original Well Elev)
Site:	S8-T2N-R66W (Ione)	**North Reference:**	True
Well:	Ione 1B-8H	**Survey Calculation Method:**	Minimum Curvature
Wellbore:	Hz		
Design:	Plan #1		

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	Local Coordinates +E/-W (ft)	Comment
300.0	300.0	0.0	0.0	KOP @ 300'
409.3	409.2	1.8	2.6	EOB; Inc=3.28°
6,564.7	6,554.6	200.4	293.2	Start 9° build @ 6564' MD
7,585.3	7,211.0	-435.9	324.3	Landing Pt @ 7585' MD; 90°
11,739.3	7,211.0	-4,589.9	324.3	TD at 11739.3

EnCana Oil & Gas (USA) Inc

DJ Wattenberg
S8-T2N-R66W (Ione)
Ione 1B-8H
Hz
Plan #1

Anticollision Report

12 June, 2012

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Ione 1B-8H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4917.0ft (Original Well Elev)
Reference Site:	S8-T2N-R66W (Ione)	**MD Reference:**	WELL @ 4917.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ione 1B-8H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Reference	Plan #1

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

Survey Tool Program **Date** 6/12/2012

From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description
0.0	11,739.1	Plan #1 (Hz)	MWD	Geolink MWD

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Ione 1B-8H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4917.0ft (Original Well Elev)
Reference Site:	S8-T2N-R66W (Ione)	**MD Reference:**	WELL @ 4917.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ione 1B-8H	**Survey Calculation Method:**	Minimum Curvature
Well Error:	0.0ft	**Output errors are at**	2.00 sigma
Reference Wellbore	Hz	**Database:**	USA EDM 5000 Multi Users DB
Reference Design:	Plan #1	**Offset TVD Reference:**	Offset Datum

Summary

Site Name Offset Well - Wellbore - Design	Reference Measured Depth (ft)	Offset Measured Depth (ft)	Distance Between Centres (ft)	Distance Between Ellipses (ft)	Separation Factor	Warning
S8-T2N-R66W (Ione)						
Albert Herman #1 (Existing) - Existing - Existing						Out of range
Albert Herman #2 (Existing) - Existing - Existing						Out of range
Carl Mason #1 (Existing) - Existing - Existing						Out of range
Herman 33-8 (Existing) - Existing - Existing						Out of range
Herman 34-8 (existing) - DD - DD						Out of range
Ione #31-8 (Existing) - Existing - Existing						Out of range
Ione #32-8 (Existing) - Existing - Existing						Out of range
Ione #42-8 (Existing) - Existing - Existing	9,010.8	7,176.0	341.0	292.0	6.962	CC, ES, SF
Ione #4-6-8 - DD - Plan #1	10,679.2	7,176.0	69.9	-7.4	0.905	Level 1, CC, ES, SF
Ione #5 (Existing) - Existing - Existing	7,724.5	7,185.0	195.9	166.3	6.622	CC, ES, SF
Ione #6 (Existing) - Existing - Existing						Out of range
Ione #6-0-8 - DD - Plan #1	3,228.9	3,377.4	57.4	33.2	2.365	CC, ES, SF
Ione #6-4-8 (Existing) - Existing - Existing	9,557.3	7,300.9	415.3	362.4	7.847	CC, ES
Ione #6-4-8 (Existing) - Existing - Existing	9,600.0	7,301.3	417.5	363.8	7.782	SF
Ione #6-8-8 (Existing) - DD - DD						Out of range
Ione #6-8-8 (Existing) - DD - Plan #1						Out of range
Ione #7 (Existing) - Existing - Existing						Out of range
Ione #8 (Existing) - Existing - Existing						Out of range
Ione #8 J 1-A (Existing) - Existing - Existing						Out of range
Ione #8-0-8 - DD - Plan #1						Out of range
Ione #8-2-8 - DD - Plan #1						Out of range
Ione #9 (Existing) - Existing - Existing						Out of range
Ione 1A-8H - Hz - Plan #1	200.0	200.0	11.2	10.5	17.127	CC, ES
Ione 1A-8H - Hz - Plan #1	300.0	299.3	13.7	12.7	13.666	SF
Ione 1C-8H - Hz - Plan #1	300.0	300.0	8.4	7.4	8.370	CC, ES
Ione 1C-8H - Hz - Plan #1	11,739.3	11,920.9	395.4	247.5	2.673	SF
Ione 1D-8H - Hz - Plan #1	300.0	300.0	19.6	18.6	19.529	CC, ES
Ione 1D-8H - Hz - Plan #1	400.0	398.9	23.9	22.6	17.693	SF
Ione 1E-8H - Hz - Plan #1	200.0	200.0	30.7	30.1	47.100	CC, ES
Ione 1E-8H - Hz - Plan #1	400.0	396.0	43.0	41.6	31.881	SF
Mason #2 (Existing) - Existing - Existing						Out of range
Mason #43-8 (Existing) - Existing - Existing	10,045.4	7,163.0	427.9	361.6	6.447	CC, ES
Mason #43-8 (Existing) - Existing - Existing	10,100.0	7,163.0	431.4	364.1	6.409	SF
Mason #44-8 (Existing) - Existing - Existing	11,633.6	7,173.0	427.4	333.7	4.559	CC, ES
Mason #44-8 (Existing) - Existing - Existing	11,700.0	7,173.0	432.6	337.6	4.557	SF
Mason Gas Unit #3-8 (Existing) - Existing - Existing	10,718.9	7,176.0	105.1	27.2	1.348	Level 3, CC, ES, SF

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Ione 1B-8H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4917.0ft (Original Well Elev)
Reference Site:	S8-T2N-R66W (Ione)	**MD Reference:**	WELL @ 4917.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ione 1B-8H	**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 S8-T2N-R66W (Ione) - Ione #42-8 (Existing) - Existing - Existing

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
8,700.0	7,211.0	7,176.0	7,176.0	31.9	12.5	-90.00	-1,861.5	665.3	461.4	417.5	43.90	10.510	
8,800.0	7,211.0	7,176.0	7,176.0	33.5	12.5	-90.00	-1,861.5	665.3	400.9	355.4	45.52	8.807	
8,900.0	7,211.0	7,176.0	7,176.0	35.1	12.5	-90.00	-1,861.5	665.3	358.5	311.4	47.15	7.604	
9,000.0	7,211.0	7,176.0	7,176.0	36.7	12.5	-90.00	-1,861.5	665.3	341.2	292.4	48.80	6.991	
9,010.8	7,211.0	7,176.0	7,176.0	36.9	12.5	-90.00	-1,861.5	665.3	341.0	292.0	48.97	6.962	CC, ES, SF
9,100.0	7,211.0	7,176.0	7,176.0	38.4	12.5	-90.00	-1,861.5	665.3	352.5	302.0	50.45	6.986	
9,200.0	7,211.0	7,176.0	7,176.0	40.0	12.5	-90.00	-1,861.5	665.3	390.0	337.8	52.11	7.483	
9,300.0	7,211.0	7,176.0	7,176.0	41.7	12.5	-90.00	-1,861.5	665.3	447.1	393.3	53.78	8.313	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Ione 1B-8H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4917.0ft (Original Well Elev)
Reference Site:	S8-T2N-R66W (Ione)	**MD Reference:**	WELL @ 4917.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ione 1B-8H	**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 S8-T2N-R66W (Ione) - Ione #4-6-8 - DD - 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	7,211.0	7,176.0	7,176.0	56.8	12.5	90.00	-3,529.9	254.4	484.3	415.2	69.04	7.014	
10,300.0	7,211.0	7,176.0	7,176.0	58.5	12.5	90.00	-3,529.9	254.4	385.6	314.8	70.76	5.450	
10,400.0	7,211.0	7,176.0	7,176.0	60.2	12.5	90.00	-3,529.9	254.4	287.8	215.4	72.47	3.972	
10,500.0	7,211.0	7,176.0	7,176.0	61.9	12.5	90.00	-3,529.9	254.4	192.4	118.2	74.19	2.593	
10,600.0	7,211.0	7,176.0	7,176.0	63.6	12.5	90.00	-3,529.9	254.4	105.6	29.7	75.91	1.392	Level 3
10,679.2	7,211.0	7,176.0	7,176.0	65.0	12.5	90.00	-3,529.9	254.4	69.9	-7.4	77.27	0.905	Level 1, CC, ES, SF
10,700.0	7,211.0	7,176.0	7,176.0	65.4	12.5	90.00	-3,529.9	254.4	72.9	-4.7	77.63	0.939	Level 1
10,800.0	7,211.0	7,176.0	7,176.0	67.1	12.5	90.00	-3,529.9	254.4	139.6	60.2	79.35	1.759	
10,900.0	7,211.0	7,176.0	7,176.0	68.8	12.5	90.00	-3,529.9	254.4	231.6	150.5	81.08	2.856	
11,000.0	7,211.0	7,176.0	7,176.0	70.5	12.5	90.00	-3,529.9	254.4	328.3	245.5	82.80	3.965	
11,100.0	7,211.0	7,176.0	7,176.0	72.2	12.5	90.00	-3,529.9	254.4	426.6	342.0	84.53	5.046	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Ione 1B-8H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4917.0ft (Original Well Elev)
Reference Site:	S8-T2N-R66W (Ione)	**MD Reference:**	WELL @ 4917.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ione 1B-8H	**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 S8-T2N-R66W (Ione) - Ione #5 (Existing) - Existing - Existing

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
7,300.0	7,148.2	7,122.2	7,122.2	14.3	12.4	-46.21	-575.2	520.2	460.2	438.3	21.94	20.981	
7,400.0	7,184.3	7,158.3	7,158.3	14.9	12.5	-64.21	-575.2	520.2	377.5	352.9	24.61	15.342	
7,500.0	7,205.3	7,179.3	7,179.3	15.7	12.5	-81.22	-575.2	520.2	297.9	271.0	26.93	11.062	
7,600.0	7,211.0	7,185.0	7,185.0	16.6	12.5	-90.00	-575.2	520.2	232.1	204.0	28.15	8.246	
7,700.0	7,211.0	7,185.0	7,185.0	17.7	12.5	-90.00	-575.2	520.2	197.4	168.1	29.28	6.742	
7,724.5	7,211.0	7,185.0	7,185.0	18.0	12.5	-90.00	-575.2	520.2	195.9	166.3	29.58	6.622	CC, ES, SF
7,800.0	7,211.0	7,185.0	7,185.0	18.9	12.5	-90.00	-575.2	520.2	209.9	179.4	30.51	6.880	
7,900.0	7,211.0	7,185.0	7,185.0	20.1	12.5	-90.00	-575.2	520.2	263.0	231.2	31.82	8.264	
8,000.0	7,211.0	7,185.0	7,185.0	21.4	12.5	-90.00	-575.2	520.2	338.0	304.8	33.20	10.181	
8,100.0	7,211.0	7,185.0	7,185.0	22.8	12.5	-90.00	-575.2	520.2	423.5	388.9	34.63	12.229	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Ione 1B-8H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4917.0ft (Original Well Elev)
Reference Site:	S8-T2N-R66W (Ione)	**MD Reference:**	WELL @ 4917.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ione 1B-8H	**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 S8-T2N-R66W (Ione) - Ione #6-0-8 - DD - 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
2,000.0	1,997.3	2,244.7	2,160.3	3.9	10.8	26.92	115.9	525.2	480.0	472.1	7.94	60.470	
2,100.0	2,097.2	2,336.8	2,246.8	4.1	11.4	26.27	118.7	493.5	441.6	433.2	8.37	52.743	
2,200.0	2,197.0	2,429.0	2,333.3	4.3	12.0	25.50	121.5	461.8	403.1	394.3	8.83	45.668	
2,300.0	2,296.8	2,521.2	2,419.8	4.5	12.6	24.56	124.3	430.1	364.8	355.5	9.31	39.169	
2,400.0	2,396.7	2,613.4	2,506.3	4.7	13.2	23.40	127.1	398.4	326.6	316.7	9.84	33.180	
2,500.0	2,496.5	2,705.5	2,592.8	4.9	13.8	21.94	129.9	366.7	288.5	278.0	10.43	27.650	
2,600.0	2,596.4	2,797.7	2,679.3	5.1	14.4	20.04	132.6	335.0	250.6	239.5	11.12	22.541	
2,700.0	2,696.2	2,889.9	2,765.8	5.3	15.0	17.47	135.4	303.3	213.0	201.1	11.95	17.829	
2,800.0	2,796.0	2,982.1	2,852.3	5.5	15.6	13.83	138.2	271.6	176.0	163.0	13.02	13.512	
2,900.0	2,895.9	3,074.2	2,938.8	5.7	16.2	8.33	141.0	239.9	139.9	125.4	14.52	9.631	
3,000.0	2,995.7	3,166.4	3,025.4	5.9	16.9	-0.70	143.8	208.3	105.7	88.9	16.79	6.297	
3,100.0	3,095.5	3,258.6	3,111.9	6.1	17.5	-16.89	146.6	176.6	76.1	55.9	20.27	3.757	
3,200.0	3,195.4	3,350.7	3,198.4	6.3	18.1	-45.43	149.3	144.9	58.5	34.6	23.92	2.446	
3,228.9	3,224.2	3,377.4	3,223.4	6.3	18.2	-55.63	150.1	135.7	57.4	33.2	24.28	2.365	CC, ES, SF
3,300.0	3,295.2	3,442.9	3,284.9	6.5	18.7	-79.50	152.1	113.2	63.7	40.7	23.05	2.764	
3,400.0	3,395.0	3,535.1	3,371.4	6.7	19.3	-102.43	154.9	81.5	87.8	68.3	19.48	4.506	
3,500.0	3,494.9	3,627.3	3,457.9	6.9	19.9	-114.97	157.7	49.8	119.8	102.8	17.00	7.047	
3,600.0	3,594.7	3,719.4	3,544.4	7.1	20.5	-122.22	160.5	18.1	155.0	139.3	15.69	9.879	
3,700.0	3,694.6	3,812.0	3,631.2	7.3	21.1	-126.81	163.3	-13.7	191.5	176.5	15.05	12.726	
3,800.0	3,794.4	3,912.1	3,725.8	7.5	21.7	-130.06	166.1	-46.3	227.0	212.3	14.78	15.363	
3,900.0	3,894.2	4,014.9	3,824.1	7.7	22.2	-132.34	168.8	-76.4	259.7	244.9	14.75	17.602	
4,000.0	3,994.1	4,120.2	3,925.9	7.9	22.7	-134.03	171.2	-103.5	289.2	274.3	14.87	19.448	
4,100.0	4,093.9	4,227.9	4,030.8	8.1	23.2	-135.35	173.3	-127.3	315.2	300.1	15.07	20.918	
4,200.0	4,193.7	4,337.6	4,138.7	8.3	23.5	-136.43	175.0	-147.5	337.7	322.4	15.33	22.037	
4,300.0	4,293.6	4,449.3	4,249.1	8.5	23.8	-137.33	176.5	-163.9	356.5	340.9	15.62	22.826	
4,400.0	4,393.4	4,562.4	4,361.6	8.7	24.1	-138.12	177.5	-176.1	371.5	355.6	15.94	23.307	
4,500.0	4,493.2	4,676.7	4,475.6	8.9	24.2	-138.82	178.2	-183.9	382.7	366.4	16.28	23.502	
4,600.0	4,593.1	4,791.9	4,590.8	9.1	24.3	-139.47	178.5	-187.2	389.9	373.2	16.64	23.431	
4,700.0	4,692.9	4,895.1	4,693.9	9.3	24.4	-140.03	178.5	-187.3	394.3	377.3	16.99	23.214	
4,800.0	4,792.8	4,994.9	4,793.8	9.5	24.4	-140.56	178.5	-187.3	398.7	381.4	17.33	23.002	
4,900.0	4,892.6	5,094.8	4,893.6	9.7	24.5	-141.08	178.5	-187.3	403.2	385.5	17.69	22.794	
5,000.0	4,992.4	5,194.6	4,993.4	9.9	24.6	-141.58	178.5	-187.3	407.6	389.6	18.04	22.591	
5,100.0	5,092.3	5,294.4	5,093.3	10.1	24.6	-142.07	178.5	-187.3	412.1	393.7	18.40	22.393	
5,200.0	5,192.1	5,394.3	5,193.1	10.3	24.7	-142.56	178.5	-187.3	416.6	397.9	18.77	22.200	
5,300.0	5,291.9	5,494.1	5,292.9	10.5	24.8	-143.03	178.5	-187.3	421.2	402.1	19.13	22.012	
5,400.0	5,391.8	5,593.9	5,392.8	10.7	24.8	-143.49	178.5	-187.3	425.8	406.3	19.50	21.831	
5,500.0	5,491.6	5,693.8	5,492.6	10.9	24.9	-143.94	178.5	-187.3	430.4	410.5	19.88	21.655	
5,600.0	5,591.4	5,793.6	5,592.4	11.1	25.0	-144.39	178.5	-187.3	435.0	414.8	20.25	21.486	
5,700.0	5,691.3	5,893.4	5,692.3	11.3	25.0	-144.82	178.5	-187.3	439.7	419.1	20.62	21.322	
5,800.0	5,791.1	5,993.3	5,792.1	11.5	25.1	-145.25	178.5	-187.3	444.4	423.4	21.00	21.164	
5,900.0	5,891.0	6,093.1	5,892.0	11.7	25.2	-145.66	178.5	-187.3	449.1	427.7	21.37	21.012	
6,000.0	5,990.8	6,193.0	5,991.8	11.9	25.3	-146.07	178.5	-187.3	453.8	432.1	21.75	20.866	
6,100.0	6,090.6	6,292.8	6,091.6	12.1	25.3	-146.47	178.5	-187.3	458.6	436.5	22.13	20.725	
6,200.0	6,190.5	6,392.6	6,191.5	12.3	25.4	-146.86	178.5	-187.3	463.4	440.9	22.51	20.589	
6,300.0	6,290.3	6,492.5	6,291.3	12.5	25.5	-147.24	178.5	-187.3	468.2	445.3	22.88	20.459	
6,400.0	6,390.1	6,592.3	6,391.1	12.7	25.6	-147.62	178.5	-187.3	473.0	449.7	23.26	20.333	
6,500.0	6,490.0	6,692.1	6,491.0	12.9	25.6	-147.98	178.5	-187.3	477.9	454.2	23.64	20.213	
6,600.0	6,589.8	6,792.0	6,590.8	13.1	25.7	151.23	178.5	-187.3	482.7	458.6	24.02	20.097	
6,700.0	6,689.1	6,891.3	6,690.1	13.2	25.8	102.92	178.5	-187.3	487.0	462.8	24.24	20.092	
6,800.0	6,785.6	6,987.7	6,786.6	13.3	25.9	98.74	178.5	-187.3	491.6	467.3	24.31	20.224	
6,900.0	6,876.8	7,079.0	6,877.8	13.3	26.0	99.90	178.5	-187.3	498.7	474.3	24.35	20.477	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Ione 1B-8H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4917.0ft (Original Well Elev)
Reference Site:	S8-T2N-R66W (Ione)	**MD Reference:**	WELL @ 4917.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ione 1B-8H	**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 S8-T2N-R66W (Ione) - Ione #6-4-8 (Existing) - Existing - Existing

Offset Site Error: 0.0 ft

Survey Program: 889-Gyro

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
9,300.0	7,211.0	7,298.7	7,145.8	41.7	11.7	88.04	-2,408.0	-90.8	488.5	439.9	48.59	10.055	
9,400.0	7,211.0	7,299.5	7,146.6	43.3	11.7	88.15	-2,408.0	-90.8	444.1	393.8	50.27	8.835	
9,500.0	7,211.0	7,300.4	7,147.5	45.0	11.7	88.27	-2,408.0	-90.8	419.2	367.3	51.95	8.069	
9,557.3	7,211.0	7,300.9	7,148.0	45.9	11.7	88.34	-2,408.0	-90.8	415.3	362.4	52.92	7.847	CC, ES
9,600.0	7,211.0	7,301.3	7,148.3	46.7	11.7	88.39	-2,408.0	-90.8	417.5	363.8	53.64	7.782	SF
9,700.0	7,211.0	7,302.2	7,149.2	48.3	11.7	88.51	-2,408.0	-90.9	439.1	383.8	55.34	7.935	
9,800.0	7,211.0	7,303.1	7,150.1	50.0	11.7	88.64	-2,408.0	-90.9	481.0	423.9	57.04	8.433	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Ione 1B-8H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4917.0ft (Original Well Elev)
Reference Site:	S8-T2N-R66W (Ione)	**MD Reference:**	WELL @ 4917.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ione 1B-8H	**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 S8-T2N-R66W (Ione) - Ione 1A-8H - 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	89.96	0.0	11.2	11.2				
100.0	100.0	100.0	100.0	0.2	0.2	89.96	0.0	11.2	11.2	10.9	0.30	36.814	
200.0	200.0	200.0	200.0	0.3	0.3	89.96	0.0	11.2	11.2	10.5	0.65	17.127	CC, ES
300.0	300.0	299.3	299.3	0.5	0.5	87.66	0.6	13.7	13.7	12.7	1.00	13.666	SF
400.0	400.0	398.4	398.0	0.7	0.7	32.02	2.2	21.2	19.2	17.8	1.35	14.196	
500.0	499.8	497.0	495.8	0.9	1.0	33.62	4.9	33.7	27.1	25.4	1.71	15.856	
600.0	599.6	596.5	594.2	1.1	1.3	33.84	8.1	48.2	37.0	34.9	2.07	17.864	
700.0	699.5	696.0	692.6	1.3	1.6	33.96	11.3	62.7	46.9	44.4	2.43	19.264	
800.0	799.3	795.6	791.0	1.5	1.9	34.05	14.4	77.2	56.7	53.9	2.80	20.294	
900.0	899.1	895.1	889.4	1.7	2.2	34.11	17.6	91.7	66.6	63.5	3.16	21.083	
1,000.0	999.0	994.6	987.8	1.9	2.5	34.15	20.8	106.2	76.5	73.0	3.52	21.707	
1,100.0	1,098.8	1,094.1	1,086.2	2.1	2.8	34.18	24.0	120.7	86.4	82.5	3.89	22.212	
1,200.0	1,198.6	1,193.6	1,184.6	2.3	3.1	34.21	27.1	135.2	96.3	92.0	4.25	22.630	
1,300.0	1,298.5	1,293.1	1,283.0	2.5	3.4	34.23	30.3	149.7	106.2	101.5	4.62	22.980	
1,400.0	1,398.3	1,392.6	1,381.4	2.7	3.8	34.25	33.5	164.2	116.0	111.1	4.98	23.279	
1,500.0	1,498.2	1,492.1	1,479.8	2.9	4.1	34.26	36.6	178.7	125.9	120.6	5.35	23.536	
1,600.0	1,598.0	1,591.6	1,578.2	3.1	4.4	34.28	39.8	193.2	135.8	130.1	5.72	23.761	
1,700.0	1,697.8	1,691.2	1,676.6	3.3	4.7	34.29	43.0	207.7	145.7	139.6	6.08	23.958	
1,800.0	1,797.7	1,790.7	1,775.0	3.5	5.0	34.30	46.2	222.2	155.6	149.1	6.45	24.132	
1,900.0	1,897.5	1,890.2	1,873.4	3.7	5.3	34.31	49.3	236.7	165.4	158.6	6.81	24.287	
2,000.0	1,997.3	1,989.7	1,971.8	3.9	5.6	34.31	52.5	251.2	175.3	168.2	7.18	24.427	
2,100.0	2,097.2	2,089.2	2,070.2	4.1	5.9	34.32	55.7	265.7	185.2	177.7	7.54	24.553	
2,200.0	2,197.0	2,188.7	2,168.6	4.3	6.3	34.33	58.8	280.2	195.1	187.2	7.91	24.667	
2,300.0	2,296.8	2,288.2	2,267.0	4.5	6.6	34.33	62.0	294.6	205.0	196.7	8.27	24.771	
2,400.0	2,396.7	2,387.7	2,365.4	4.7	6.9	34.34	65.2	309.1	214.9	206.2	8.64	24.866	
2,500.0	2,496.5	2,487.2	2,463.8	4.9	7.2	34.34	68.3	323.6	224.7	215.7	9.01	24.953	
2,600.0	2,596.4	2,586.7	2,562.2	5.1	7.5	34.35	71.5	338.1	234.6	225.3	9.37	25.034	
2,700.0	2,696.2	2,686.3	2,660.6	5.3	7.8	34.35	74.7	352.6	244.5	234.8	9.74	25.108	
2,800.0	2,796.0	2,785.8	2,759.0	5.5	8.1	34.35	77.9	367.1	254.4	244.3	10.10	25.177	
2,900.0	2,895.9	2,885.3	2,857.4	5.7	8.5	34.36	81.0	381.6	264.3	253.8	10.47	25.241	
3,000.0	2,995.7	2,984.8	2,955.8	5.9	8.8	34.36	84.2	396.1	274.2	263.3	10.84	25.301	
3,100.0	3,095.5	3,084.3	3,054.2	6.1	9.1	34.36	87.4	410.6	284.0	272.8	11.20	25.357	
3,200.0	3,195.4	3,183.8	3,152.6	6.3	9.4	34.36	90.5	425.1	293.9	282.4	11.57	25.409	
3,300.0	3,295.2	3,283.3	3,251.0	6.5	9.7	34.37	93.7	439.6	303.8	291.9	11.93	25.458	
3,400.0	3,395.0	3,382.8	3,349.4	6.7	10.0	34.37	96.9	454.1	313.7	301.4	12.30	25.504	
3,500.0	3,494.9	3,482.3	3,447.8	6.9	10.3	34.37	100.1	468.6	323.6	310.9	12.67	25.548	
3,600.0	3,594.7	3,581.9	3,546.2	7.1	10.7	34.37	103.2	483.1	333.5	320.4	13.03	25.589	
3,700.0	3,694.6	3,681.4	3,644.6	7.3	11.0	34.38	106.4	497.6	343.3	329.9	13.40	25.627	
3,800.0	3,794.4	3,780.9	3,743.0	7.5	11.3	34.38	109.6	512.1	353.2	339.5	13.76	25.664	
3,900.0	3,894.2	3,880.4	3,841.3	7.7	11.6	34.38	112.7	526.6	363.1	349.0	14.13	25.699	
4,000.0	3,994.1	3,979.9	3,939.7	7.9	11.9	34.38	115.9	541.1	373.0	358.5	14.49	25.732	
4,100.0	4,093.9	4,079.4	4,038.1	8.1	12.2	34.38	119.1	555.6	382.9	368.0	14.86	25.763	
4,200.0	4,193.7	4,178.9	4,136.5	8.3	12.5	34.38	122.3	570.1	392.7	377.5	15.23	25.793	
4,300.0	4,293.6	4,278.4	4,234.9	8.5	12.9	34.39	125.4	584.6	402.6	387.0	15.59	25.822	
4,400.0	4,393.4	4,377.9	4,333.3	8.7	13.2	34.39	128.6	599.1	412.5	396.6	15.96	25.849	
4,500.0	4,493.2	4,477.4	4,431.7	8.9	13.5	34.39	131.8	613.6	422.4	406.1	16.32	25.875	
4,600.0	4,593.1	4,577.0	4,530.1	9.1	13.8	34.39	134.9	628.1	432.3	415.6	16.69	25.899	
4,700.0	4,692.9	4,676.5	4,628.5	9.3	14.1	34.39	138.1	642.6	442.2	425.1	17.06	25.923	
4,800.0	4,792.8	4,776.0	4,726.9	9.5	14.4	34.39	141.3	657.1	452.0	434.6	17.42	25.946	
4,900.0	4,892.6	4,875.5	4,825.3	9.7	14.7	34.39	144.5	671.6	461.9	444.1	17.79	25.968	
5,000.0	4,992.4	4,975.0	4,923.7	9.9	15.1	34.39	147.6	686.1	471.8	453.7	18.15	25.988	
5,100.0	5,092.3	5,074.5	5,022.1	10.1	15.4	34.39	150.8	700.6	481.7	463.2	18.52	26.009	

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 Ione 1B-8H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4917.0ft (Original Well Elev)
Reference Site:	S8-T2N-R66W (Ione)	**MD Reference:**	WELL @ 4917.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ione 1B-8H	**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 S8-T2N-R66W (Ione) - Ione 1A-8H - 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	5,192.1	5,174.0	5,120.5	10.3	15.7	34.40	154.0	715.1	491.6	472.7	18.89	26.028	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Ione 1B-8H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4917.0ft (Original Well Elev)
Reference Site:	S8-T2N-R66W (Ione)	**MD Reference:**	WELL @ 4917.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ione 1B-8H	**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 S8-T2N-R66W (Ione) - Ione 1C-8H - 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	-89.89	0.0	-8.4	8.4				
100.0	100.0	100.0	100.0	0.2	0.2	-89.89	0.0	-8.4	8.4	8.1	0.30	27.611	
200.0	200.0	200.0	200.0	0.3	0.3	-89.89	0.0	-8.4	8.4	7.7	0.65	12.846	
300.0	300.0	300.0	300.0	0.5	0.5	-89.89	0.0	-8.4	8.4	7.4	1.00	8.370	CC, ES
400.0	400.0	400.0	400.0	0.7	0.7	-153.51	0.0	-8.4	10.6	9.3	1.35	7.877	
500.0	499.8	499.8	499.8	0.9	0.8	-162.67	0.0	-8.4	15.9	14.2	1.70	9.380	
600.0	599.6	599.6	599.6	1.1	1.0	-167.22	0.0	-8.4	21.5	19.4	2.05	10.481	
700.0	699.5	699.5	699.5	1.3	1.2	-169.90	0.0	-8.4	27.1	24.7	2.40	11.296	
800.0	799.3	799.3	799.3	1.5	1.4	-171.65	0.0	-8.4	32.7	30.0	2.75	11.918	
900.0	899.1	899.1	899.1	1.7	1.5	-172.89	0.0	-8.4	38.4	35.3	3.09	12.407	
1,000.0	999.0	999.0	999.0	1.9	1.7	-173.81	0.0	-8.4	44.1	40.6	3.44	12.801	
1,100.0	1,098.8	1,098.8	1,098.8	2.1	1.9	-174.52	0.0	-8.4	49.8	46.0	3.79	13.125	
1,200.0	1,198.6	1,198.6	1,198.6	2.3	2.1	-175.08	0.0	-8.4	55.5	51.3	4.14	13.395	
1,300.0	1,298.5	1,298.5	1,298.5	2.5	2.2	-175.54	0.0	-8.4	61.2	56.7	4.49	13.625	
1,400.0	1,398.3	1,398.3	1,398.3	2.7	2.4	-175.92	0.0	-8.4	66.9	62.0	4.84	13.822	
1,500.0	1,498.2	1,498.2	1,498.2	2.9	2.6	-176.25	0.0	-8.4	72.6	67.4	5.19	13.993	
1,600.0	1,598.0	1,598.0	1,598.0	3.1	2.8	-176.52	0.0	-8.4	78.3	72.7	5.53	14.143	
1,700.0	1,697.8	1,697.8	1,697.8	3.3	2.9	-176.76	0.0	-8.4	84.0	78.1	5.88	14.276	
1,800.0	1,797.7	1,797.7	1,797.7	3.5	3.1	-176.96	0.0	-8.4	89.7	83.5	6.23	14.393	
1,900.0	1,897.5	1,897.5	1,897.5	3.7	3.3	-177.15	0.0	-8.4	95.4	88.8	6.58	14.499	
2,000.0	1,997.3	1,997.3	1,997.3	3.9	3.5	-177.31	0.0	-8.4	101.1	94.2	6.93	14.594	
2,100.0	2,097.2	2,097.2	2,097.2	4.1	3.6	-177.45	0.0	-8.4	106.8	99.6	7.28	14.680	
2,200.0	2,197.0	2,197.0	2,197.0	4.3	3.8	-177.58	0.0	-8.4	112.6	104.9	7.63	14.758	
2,300.0	2,296.8	2,296.8	2,296.8	4.5	4.0	-177.70	0.0	-8.4	118.3	110.3	7.98	14.829	
2,400.0	2,396.7	2,396.7	2,396.7	4.7	4.2	-177.80	0.0	-8.4	124.0	115.7	8.32	14.894	
2,500.0	2,496.5	2,496.5	2,496.5	4.9	4.3	-177.90	0.0	-8.4	129.7	121.0	8.67	14.955	
2,600.0	2,596.4	2,596.4	2,596.4	5.1	4.5	-177.99	0.0	-8.4	135.4	126.4	9.02	15.010	
2,700.0	2,696.2	2,696.2	2,696.2	5.3	4.7	-178.07	0.0	-8.4	141.1	131.8	9.37	15.062	
2,800.0	2,796.0	2,796.0	2,796.0	5.5	4.9	-178.15	0.0	-8.4	146.8	137.1	9.72	15.110	
2,900.0	2,895.9	2,895.9	2,895.9	5.7	5.0	-178.21	0.0	-8.4	152.6	142.5	10.07	15.154	
3,000.0	2,995.7	2,995.7	2,995.7	5.9	5.2	-178.28	0.0	-8.4	158.3	147.9	10.42	15.196	
3,100.0	3,095.5	3,095.5	3,095.5	6.1	5.4	-178.34	0.0	-8.4	164.0	153.2	10.76	15.235	
3,200.0	3,195.4	3,195.4	3,195.4	6.3	5.6	-178.40	0.0	-8.4	169.7	158.6	11.11	15.271	
3,300.0	3,295.2	3,295.2	3,295.2	6.5	5.7	-178.45	0.0	-8.4	175.4	164.0	11.46	15.305	
3,400.0	3,395.0	3,395.0	3,395.0	6.7	5.9	-178.50	0.0	-8.4	181.1	169.3	11.81	15.338	
3,500.0	3,494.9	3,494.9	3,494.9	6.9	6.1	-178.54	0.0	-8.4	186.9	174.7	12.16	15.368	
3,600.0	3,594.7	3,594.7	3,594.7	7.1	6.3	-178.59	0.0	-8.4	192.6	180.1	12.51	15.397	
3,700.0	3,694.6	3,694.6	3,694.6	7.3	6.4	-178.63	0.0	-8.4	198.3	185.4	12.86	15.424	
3,800.0	3,794.4	3,794.4	3,794.4	7.5	6.6	-178.67	0.0	-8.4	204.0	190.8	13.20	15.450	
3,900.0	3,894.2	3,894.2	3,894.2	7.7	6.8	-178.70	0.0	-8.4	209.7	196.2	13.55	15.474	
4,000.0	3,994.1	3,994.1	3,994.1	7.9	6.9	-178.74	0.0	-8.4	215.4	201.5	13.90	15.497	
4,100.0	4,093.9	4,099.4	4,099.4	8.1	7.1	-178.18	2.6	-8.6	220.0	205.7	14.26	15.425	
4,200.0	4,193.7	4,201.7	4,201.4	8.3	7.3	-176.61	9.8	-9.0	222.4	207.8	14.62	15.212	
4,300.0	4,293.6	4,301.5	4,300.9	8.5	7.5	-174.99	17.3	-9.5	224.8	209.8	14.98	15.007	
4,400.0	4,393.4	4,401.2	4,400.4	8.7	7.7	-173.40	24.8	-10.0	227.3	212.0	15.34	14.819	
4,500.0	4,493.2	4,501.0	4,499.9	8.9	7.9	-171.85	32.3	-10.5	230.0	214.3	15.70	14.647	
4,600.0	4,593.1	4,600.8	4,599.3	9.1	8.0	-170.34	39.7	-11.0	232.9	216.8	16.07	14.490	
4,700.0	4,692.9	4,700.5	4,698.8	9.3	8.2	-168.87	47.2	-11.5	235.9	219.5	16.44	14.347	
4,800.0	4,792.8	4,800.3	4,798.3	9.5	8.4	-167.43	54.7	-12.0	239.1	222.3	16.82	14.216	
4,900.0	4,892.6	4,900.1	4,897.8	9.7	8.6	-166.03	62.2	-12.6	242.4	225.2	17.20	14.097	
5,000.0	4,992.4	4,999.9	4,997.3	9.9	8.8	-164.68	69.7	-13.1	245.9	228.3	17.58	13.989	
5,100.0	5,092.3	5,099.6	5,096.8	10.1	9.0	-163.36	77.2	-13.6	249.5	231.5	17.96	13.891	

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 Ione 1B-8H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4917.0ft (Original Well Elev)
Reference Site:	S8-T2N-R66W (Ione)	**MD Reference:**	WELL @ 4917.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ione 1B-8H	**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 S8-T2N-R66W (Ione) - Ione 1C-8H - 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	5,192.1	5,199.4	5,196.3	10.3	9.2	-162.07	84.7	-14.1	253.2	234.9	18.35	13.801	
5,300.0	5,291.9	5,299.2	5,295.8	10.5	9.4	-160.83	92.2	-14.6	257.1	238.3	18.74	13.721	
5,400.0	5,391.8	5,398.9	5,395.2	10.7	9.6	-159.62	99.7	-15.1	261.1	241.9	19.13	13.648	
5,500.0	5,491.6	5,498.7	5,494.7	10.9	9.8	-158.45	107.2	-15.6	265.1	245.6	19.52	13.582	
5,600.0	5,591.4	5,598.5	5,594.2	11.1	10.0	-157.32	114.7	-16.1	269.3	249.4	19.92	13.523	
5,700.0	5,691.3	5,698.3	5,693.7	11.3	10.2	-156.22	122.2	-16.6	273.6	253.3	20.31	13.470	
5,800.0	5,791.1	5,798.0	5,793.2	11.5	10.4	-155.15	129.7	-17.1	278.0	257.3	20.71	13.423	
5,900.0	5,891.0	5,897.8	5,892.7	11.7	10.6	-154.12	137.2	-17.6	282.5	261.4	21.11	13.381	
6,000.0	5,990.8	5,997.6	5,992.2	11.9	10.8	-153.12	144.7	-18.1	287.1	265.6	21.51	13.344	
6,100.0	6,090.6	6,097.3	6,091.7	12.1	11.0	-152.15	152.2	-18.6	291.8	269.8	21.92	13.312	
6,200.0	6,190.5	6,197.1	6,191.2	12.3	11.2	-151.21	159.7	-19.1	296.5	274.2	22.32	13.284	
6,300.0	6,290.3	6,296.9	6,290.6	12.5	11.4	-150.31	167.2	-19.6	301.3	278.6	22.73	13.259	
6,400.0	6,390.1	6,396.7	6,390.1	12.7	11.6	-149.43	174.7	-20.1	306.2	283.1	23.13	13.238	
6,500.0	6,490.0	6,496.4	6,489.6	12.9	11.8	-148.58	182.2	-20.6	311.2	287.6	23.54	13.221	
6,600.0	6,589.8	6,596.1	6,589.0	13.1	12.0	151.87	189.7	-21.1	316.2	292.2	23.94	13.209	
6,700.0	6,689.1	6,694.3	6,687.0	13.2	12.2	105.40	197.0	-21.6	321.3	297.0	24.30	13.221	
6,800.0	6,785.6	6,792.9	6,785.4	13.3	12.3	103.08	200.2	-22.1	328.1	303.6	24.57	13.357	
6,900.0	6,876.8	6,896.6	6,888.2	13.3	12.4	104.86	187.5	-22.6	337.2	312.6	24.65	13.680	
7,000.0	6,960.7	7,006.0	6,992.9	13.4	12.5	107.55	156.3	-23.1	347.9	323.3	24.58	14.155	
7,100.0	7,035.0	7,121.7	7,096.1	13.6	12.5	110.35	104.4	-23.6	359.4	335.0	24.45	14.703	
7,200.0	7,098.1	7,243.9	7,193.0	13.8	12.6	112.92	30.2	-24.1	370.8	346.4	24.41	15.189	
7,300.0	7,148.2	7,372.8	7,277.9	14.3	12.9	115.07	-66.5	-24.6	381.0	356.3	24.70	15.428	
7,400.0	7,184.3	7,507.5	7,343.9	14.9	13.6	116.68	-183.6	-24.9	389.1	363.6	25.51	15.254	
7,500.0	7,205.3	7,646.5	7,384.7	15.7	14.6	117.63	-316.3	-25.1	394.0	367.0	26.98	14.602	
7,600.0	7,211.0	7,781.6	7,396.0	16.6	15.9	117.90	-450.7	-25.2	395.4	366.3	29.06	13.608	
7,700.0	7,211.0	7,881.6	7,396.0	17.7	17.0	117.90	-550.7	-25.2	395.4	364.4	31.04	12.740	
7,800.0	7,211.0	7,981.6	7,396.0	18.9	18.2	117.90	-650.7	-25.2	395.4	362.2	33.18	11.915	
7,900.0	7,211.0	8,081.6	7,396.0	20.1	19.5	117.90	-750.7	-25.2	395.4	359.9	35.47	11.146	
8,000.0	7,211.0	8,181.6	7,396.0	21.4	20.9	117.90	-850.7	-25.2	395.4	357.5	37.88	10.438	
8,100.0	7,211.0	8,281.6	7,396.0	22.8	22.3	117.90	-950.7	-25.2	395.4	355.0	40.38	9.792	
8,200.0	7,211.0	8,381.6	7,396.0	24.2	23.8	117.90	-1,050.7	-25.2	395.4	352.4	42.96	9.203	
8,300.0	7,211.0	8,481.6	7,396.0	25.7	25.3	117.90	-1,150.7	-25.2	395.4	349.8	45.61	8.669	
8,400.0	7,211.0	8,581.6	7,396.0	27.2	26.8	117.90	-1,250.7	-25.2	395.4	347.1	48.31	8.185	
8,500.0	7,211.0	8,681.6	7,396.0	28.8	28.4	117.90	-1,350.7	-25.2	395.4	344.3	51.06	7.744	
8,600.0	7,211.0	8,781.6	7,396.0	30.3	29.9	117.90	-1,450.7	-25.2	395.4	341.5	53.84	7.343	
8,700.0	7,211.0	8,881.6	7,396.0	31.9	31.5	117.90	-1,550.7	-25.2	395.4	338.7	56.66	6.978	
8,800.0	7,211.0	8,981.6	7,396.0	33.5	33.1	117.90	-1,650.7	-25.2	395.4	335.9	59.51	6.644	
8,900.0	7,211.0	9,081.6	7,396.0	35.1	34.8	117.90	-1,750.7	-25.2	395.4	333.0	62.38	6.338	
9,000.0	7,211.0	9,181.6	7,396.0	36.7	36.4	117.90	-1,850.7	-25.2	395.4	330.1	65.28	6.057	
9,100.0	7,211.0	9,281.6	7,396.0	38.4	38.1	117.90	-1,950.7	-25.2	395.4	327.2	68.19	5.798	
9,200.0	7,211.0	9,381.6	7,396.0	40.0	39.7	117.90	-2,050.7	-25.2	395.4	324.3	71.12	5.560	
9,300.0	7,211.0	9,481.6	7,396.0	41.7	41.4	117.90	-2,150.7	-25.2	395.4	321.3	74.06	5.339	
9,400.0	7,211.0	9,581.6	7,396.0	43.3	43.1	117.90	-2,250.7	-25.2	395.4	318.4	77.02	5.134	
9,500.0	7,211.0	9,681.6	7,396.0	45.0	44.7	117.90	-2,350.7	-25.2	395.4	315.4	79.98	4.943	
9,600.0	7,211.0	9,781.6	7,396.0	46.7	46.4	117.90	-2,450.7	-25.2	395.4	312.4	82.96	4.766	
9,700.0	7,211.0	9,881.6	7,396.0	48.3	48.1	117.90	-2,550.7	-25.2	395.4	309.4	85.95	4.600	
9,800.0	7,211.0	9,981.6	7,396.0	50.0	49.8	117.90	-2,650.7	-25.2	395.4	306.4	88.94	4.445	
9,900.0	7,211.0	10,081.6	7,396.0	51.7	51.5	117.90	-2,750.7	-25.2	395.4	303.4	91.95	4.300	
10,000.0	7,211.0	10,181.6	7,396.0	53.4	53.2	117.90	-2,850.7	-25.2	395.4	300.4	94.95	4.164	
10,100.0	7,211.0	10,281.6	7,396.0	55.1	54.9	117.90	-2,950.7	-25.2	395.4	297.4	97.97	4.036	
10,200.0	7,211.0	10,381.6	7,396.0	56.8	56.6	117.90	-3,050.7	-25.2	395.4	294.4	100.99	3.915	
10,300.0	7,211.0	10,481.6	7,396.0	58.5	58.3	117.90	-3,150.7	-25.2	395.4	291.4	104.02	3.801	

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 Ione 1B-8H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4917.0ft (Original Well Elev)
Reference Site:	S8-T2N-R66W (Ione)	**MD Reference:**	WELL @ 4917.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ione 1B-8H	**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 S8-T2N-R66W (Ione) - Ione 1C-8H - 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
10,400.0	7,211.0	10,581.6	7,396.0	60.2	60.0	117.90	-3,250.7	-25.2	395.4	288.3	107.05	3.694	
10,500.0	7,211.0	10,681.6	7,396.0	61.9	61.8	117.90	-3,350.7	-25.2	395.4	285.3	110.08	3.592	
10,600.0	7,211.0	10,781.6	7,396.0	63.6	63.5	117.90	-3,450.7	-25.2	395.4	282.3	113.12	3.495	
10,700.0	7,211.0	10,881.6	7,396.0	65.4	65.2	117.90	-3,550.7	-25.2	395.4	279.2	116.16	3.404	
10,800.0	7,211.0	10,981.6	7,396.0	67.1	66.9	117.90	-3,650.7	-25.2	395.4	276.2	119.20	3.317	
10,900.0	7,211.0	11,081.6	7,396.0	68.8	68.6	117.90	-3,750.7	-25.2	395.4	273.1	122.25	3.234	
11,000.0	7,211.0	11,181.6	7,396.0	70.5	70.4	117.90	-3,850.7	-25.2	395.4	270.1	125.30	3.155	
11,100.0	7,211.0	11,281.6	7,396.0	72.2	72.1	117.90	-3,950.7	-25.2	395.4	267.0	128.36	3.080	
11,200.0	7,211.0	11,381.6	7,396.0	74.0	73.8	117.90	-4,050.7	-25.2	395.4	264.0	131.41	3.009	
11,300.0	7,211.0	11,481.6	7,396.0	75.7	75.5	117.90	-4,150.7	-25.2	395.4	260.9	134.47	2.940	
11,400.0	7,211.0	11,581.6	7,396.0	77.4	77.3	117.90	-4,250.7	-25.2	395.4	257.9	137.53	2.875	
11,500.0	7,211.0	11,681.6	7,396.0	79.1	79.0	117.90	-4,350.7	-25.2	395.4	254.8	140.59	2.812	
11,600.0	7,211.0	11,781.6	7,396.0	80.9	80.7	117.90	-4,450.7	-25.2	395.4	251.7	143.66	2.752	
11,700.0	7,211.0	11,881.6	7,396.0	82.6	82.5	117.90	-4,550.7	-25.2	395.4	248.7	146.72	2.695	
11,739.3	7,211.0	11,920.9	7,396.0	83.3	83.2	117.90	-4,589.9	-25.2	395.4	247.5	147.93	2.673	SF

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Ione 1B-8H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4917.0ft (Original Well Elev)
Reference Site:	S8-T2N-R66W (Ione)	**MD Reference:**	WELL @ 4917.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ione 1B-8H	**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 S8-T2N-R66W (Ione) - Ione 1D-8H - 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	-90.02	0.0	-19.6	19.6				
100.0	100.0	100.0	100.0	0.2	0.2	-90.02	0.0	-19.6	19.6	19.3	0.30	64.425	
200.0	200.0	200.0	200.0	0.3	0.3	-90.02	0.0	-19.6	19.6	18.9	0.65	29.973	
300.0	300.0	300.0	300.0	0.5	0.5	-90.02	0.0	-19.6	19.6	18.6	1.00	19.529	CC, ES
400.0	400.0	398.9	398.9	0.7	0.7	-145.87	1.3	-21.7	23.9	22.6	1.35	17.693	SF
500.0	499.8	498.3	498.0	0.9	0.9	-145.82	4.5	-26.9	33.8	32.1	1.71	19.755	
600.0	599.6	597.8	597.3	1.1	1.1	-145.76	7.7	-32.1	43.7	41.6	2.07	21.116	
700.0	699.5	697.3	696.7	1.3	1.3	-145.72	11.0	-37.3	53.6	51.2	2.43	22.059	
800.0	799.3	796.8	796.0	1.5	1.5	-145.69	14.2	-42.5	63.6	60.8	2.79	22.751	
900.0	899.1	896.3	895.3	1.7	1.7	-145.67	17.4	-47.7	73.5	70.4	3.16	23.279	
1,000.0	999.0	995.8	994.6	1.9	1.9	-145.65	20.6	-52.9	83.4	79.9	3.52	23.695	
1,100.0	1,098.8	1,095.3	1,093.9	2.1	2.1	-145.64	23.8	-58.1	93.4	89.5	3.89	24.031	
1,200.0	1,198.6	1,194.8	1,193.3	2.3	2.3	-145.63	27.1	-63.3	103.3	99.1	4.25	24.309	
1,300.0	1,298.5	1,294.3	1,292.6	2.5	2.5	-145.62	30.3	-68.5	113.3	108.6	4.61	24.541	
1,400.0	1,398.3	1,393.8	1,391.9	2.7	2.7	-145.62	33.5	-73.7	123.2	118.2	4.98	24.739	
1,500.0	1,498.2	1,493.3	1,491.2	2.9	2.9	-145.61	36.7	-78.9	133.1	127.8	5.34	24.910	
1,600.0	1,598.0	1,592.8	1,590.5	3.1	3.1	-145.61	39.9	-84.1	143.1	137.4	5.71	25.058	
1,700.0	1,697.8	1,692.3	1,689.8	3.3	3.3	-145.60	43.2	-89.3	153.0	146.9	6.07	25.188	
1,800.0	1,797.7	1,791.8	1,789.2	3.5	3.5	-145.60	46.4	-94.5	162.9	156.5	6.44	25.303	
1,900.0	1,897.5	1,891.3	1,888.5	3.7	3.7	-145.60	49.6	-99.7	172.9	166.1	6.80	25.406	
2,000.0	1,997.3	1,990.8	1,987.8	3.9	3.9	-145.59	52.8	-104.9	182.8	175.6	7.17	25.498	
2,100.0	2,097.2	2,090.3	2,087.1	4.1	4.1	-145.59	56.1	-110.1	192.7	185.2	7.53	25.581	
2,200.0	2,197.0	2,189.8	2,186.4	4.3	4.3	-145.59	59.3	-115.3	202.7	194.8	7.90	25.656	
2,300.0	2,296.8	2,289.4	2,285.7	4.5	4.5	-145.59	62.5	-120.5	212.6	204.4	8.27	25.725	
2,400.0	2,396.7	2,388.9	2,385.1	4.7	4.7	-145.58	65.7	-125.7	222.6	213.9	8.63	25.788	
2,500.0	2,496.5	2,488.4	2,484.4	4.9	4.9	-145.58	68.9	-130.9	232.5	223.5	9.00	25.845	
2,600.0	2,596.4	2,587.9	2,583.7	5.1	5.1	-145.58	72.2	-136.1	242.4	233.1	9.36	25.898	
2,700.0	2,696.2	2,687.4	2,683.0	5.3	5.3	-145.58	75.4	-141.3	252.4	242.6	9.73	25.947	
2,800.0	2,796.0	2,786.9	2,782.3	5.5	5.5	-145.58	78.6	-146.5	262.3	252.2	10.09	25.992	
2,900.0	2,895.9	2,886.4	2,881.6	5.7	5.7	-145.58	81.8	-151.7	272.2	261.8	10.46	26.034	
3,000.0	2,995.7	2,985.9	2,981.0	5.9	5.9	-145.57	85.1	-156.9	282.2	271.4	10.82	26.074	
3,100.0	3,095.5	3,085.4	3,080.3	6.1	6.1	-145.57	88.3	-162.1	292.1	280.9	11.19	26.110	
3,200.0	3,195.4	3,184.9	3,179.6	6.3	6.3	-145.57	91.5	-167.3	302.0	290.5	11.55	26.145	
3,300.0	3,295.2	3,284.4	3,278.9	6.5	6.5	-145.57	94.7	-172.5	312.0	300.1	11.92	26.177	
3,400.0	3,395.0	3,383.9	3,378.2	6.7	6.7	-145.57	97.9	-177.7	321.9	309.6	12.28	26.207	
3,500.0	3,494.9	3,483.4	3,477.5	6.9	6.9	-145.57	101.2	-182.9	331.9	319.2	12.65	26.236	
3,600.0	3,594.7	3,582.9	3,576.9	7.1	7.2	-145.57	104.4	-188.1	341.8	328.8	13.01	26.263	
3,700.0	3,694.6	3,682.4	3,676.2	7.3	7.4	-145.57	107.6	-193.3	351.7	338.3	13.38	26.288	
3,800.0	3,794.4	3,781.9	3,775.5	7.5	7.6	-145.57	110.8	-198.5	361.7	347.9	13.75	26.312	
3,900.0	3,894.2	3,881.4	3,874.8	7.7	7.8	-145.57	114.1	-203.7	371.6	357.5	14.11	26.335	
4,000.0	3,994.1	3,980.9	3,974.1	7.9	8.0	-145.57	117.3	-208.9	381.5	367.1	14.48	26.357	
4,100.0	4,093.9	4,080.4	4,073.4	8.1	8.2	-145.57	120.5	-214.1	391.5	376.6	14.84	26.377	
4,200.0	4,193.7	4,179.9	4,172.8	8.3	8.4	-145.56	123.7	-219.3	401.4	386.2	15.21	26.397	
4,300.0	4,293.6	4,279.5	4,272.1	8.5	8.6	-145.56	126.9	-224.5	411.3	395.8	15.57	26.415	
4,400.0	4,393.4	4,379.0	4,371.4	8.7	8.8	-145.56	130.2	-229.7	421.3	405.3	15.94	26.433	
4,500.0	4,493.2	4,478.5	4,470.7	8.9	9.0	-145.56	133.4	-234.9	431.2	414.9	16.30	26.450	
4,600.0	4,593.1	4,578.0	4,570.0	9.1	9.2	-145.56	136.6	-240.1	441.2	424.5	16.67	26.466	
4,700.0	4,692.9	4,677.5	4,669.3	9.3	9.4	-145.56	139.8	-245.3	451.1	434.1	17.03	26.482	
4,800.0	4,792.8	4,777.0	4,768.7	9.5	9.6	-145.56	143.0	-250.5	461.0	443.6	17.40	26.497	
4,900.0	4,892.6	4,876.5	4,868.0	9.7	9.8	-145.56	146.3	-255.7	471.0	453.2	17.76	26.511	
5,000.0	4,992.4	4,976.0	4,967.3	9.9	10.0	-145.56	149.5	-260.9	480.9	462.8	18.13	26.525	
5,100.0	5,092.3	5,075.5	5,066.6	10.1	10.2	-145.56	152.7	-266.1	490.8	472.3	18.50	26.538	

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 Ione 1B-8H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4917.0ft (Original Well Elev)
Reference Site:	S8-T2N-R66W (Ione)	**MD Reference:**	WELL @ 4917.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ione 1B-8H	**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

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Ione 1B-8H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4917.0ft (Original Well Elev)
Reference Site:	S8-T2N-R66W (Ione)	**MD Reference:**	WELL @ 4917.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ione 1B-8H	**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 S8-T2N-R66W (Ione) - Ione 1E-8H - 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	-90.03	0.0	-30.7	30.7				
100.0	100.0	100.0	100.0	0.2	0.2	-90.03	0.0	-30.7	30.7	30.4	0.30	101.239	
200.0	200.0	200.0	200.0	0.3	0.3	-90.03	0.0	-30.7	30.7	30.1	0.65	47.100	CC, ES
300.0	300.0	298.4	298.3	0.5	0.5	-89.12	0.5	-33.2	33.3	32.3	1.01	33.076	
400.0	400.0	396.0	395.6	0.7	0.7	-144.65	2.1	-40.6	43.0	41.6	1.35	31.881	SF
500.0	499.8	492.0	490.8	0.9	1.0	-145.42	4.6	-52.5	60.1	58.4	1.70	35.371	
600.0	599.6	589.9	587.6	1.1	1.3	-145.46	7.7	-67.3	79.8	77.8	2.06	38.837	
700.0	699.5	687.9	684.4	1.3	1.6	-145.49	10.9	-82.1	99.6	97.1	2.41	41.254	
800.0	799.3	786.0	781.3	1.5	1.9	-145.51	14.0	-96.9	119.3	116.5	2.77	43.032	
900.0	899.1	884.0	878.2	1.7	2.2	-145.52	17.1	-111.7	139.0	135.9	3.13	44.395	
1,000.0	999.0	982.0	975.0	1.9	2.5	-145.53	20.3	-126.5	158.8	155.3	3.49	45.473	
1,100.0	1,098.8	1,080.0	1,071.9	2.1	2.8	-145.54	23.4	-141.3	178.5	174.7	3.85	46.346	
1,200.0	1,198.6	1,178.1	1,168.7	2.3	3.1	-145.55	26.5	-156.1	198.3	194.1	4.21	47.067	
1,300.0	1,298.5	1,276.1	1,265.6	2.5	3.5	-145.55	29.7	-170.9	218.0	213.5	4.57	47.673	
1,400.0	1,398.3	1,374.1	1,362.4	2.7	3.8	-145.55	32.8	-185.7	237.8	232.8	4.93	48.189	
1,500.0	1,498.2	1,472.2	1,459.3	2.9	4.1	-145.56	35.9	-200.5	257.5	252.2	5.30	48.634	
1,600.0	1,598.0	1,570.2	1,556.2	3.1	4.4	-145.56	39.1	-215.3	277.3	271.6	5.66	49.022	
1,700.0	1,697.8	1,668.2	1,653.0	3.3	4.7	-145.56	42.2	-230.1	297.0	291.0	6.02	49.362	
1,800.0	1,797.7	1,766.3	1,749.9	3.5	5.0	-145.57	45.3	-244.9	316.8	310.4	6.38	49.664	
1,900.0	1,897.5	1,864.3	1,846.7	3.7	5.3	-145.57	48.5	-259.7	336.5	329.8	6.74	49.933	
2,000.0	1,997.3	1,962.3	1,943.6	3.9	5.7	-145.57	51.6	-274.5	356.2	349.1	7.10	50.174	
2,100.0	2,097.2	2,060.4	2,040.4	4.1	6.0	-145.57	54.7	-289.3	376.0	368.5	7.46	50.392	
2,200.0	2,197.0	2,158.4	2,137.3	4.3	6.3	-145.57	57.9	-304.1	395.7	387.9	7.82	50.589	
2,300.0	2,296.8	2,256.4	2,234.2	4.5	6.6	-145.57	61.0	-318.9	415.5	407.3	8.18	50.769	
2,400.0	2,396.7	2,354.5	2,331.0	4.7	6.9	-145.58	64.1	-333.7	435.2	426.7	8.54	50.934	
2,500.0	2,496.5	2,452.5	2,427.9	4.9	7.2	-145.58	67.3	-348.5	455.0	446.1	8.91	51.085	
2,600.0	2,596.4	2,550.5	2,524.7	5.1	7.6	-145.58	70.4	-363.2	474.7	465.4	9.27	51.224	
2,700.0	2,696.2	2,648.5	2,621.6	5.3	7.9	-145.58	73.5	-378.0	494.5	484.8	9.63	51.353	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Ione 1B-8H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4917.0ft (Original Well Elev)
Reference Site:	S8-T2N-R66W (Ione)	**MD Reference:**	WELL @ 4917.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ione 1B-8H	**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 S8-T2N-R66W (Ione) - Mason #43-8 (Existing) - Existing - Existing

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
9,800.0	7,211.0	7,163.0	7,163.0	50.0	12.5	-90.00	-2,896.0	752.2	493.3	431.1	62.20	7.931	
9,900.0	7,211.0	7,163.0	7,163.0	51.7	12.5	-90.00	-2,896.0	752.2	452.0	388.1	63.90	7.073	
10,000.0	7,211.0	7,163.0	7,163.0	53.4	12.5	-90.00	-2,896.0	752.2	430.3	364.7	65.60	6.560	
10,045.4	7,211.0	7,163.0	7,163.0	54.2	12.5	-90.00	-2,896.0	752.2	427.9	361.6	66.38	6.447	CC, ES
10,100.0	7,211.0	7,163.0	7,163.0	55.1	12.5	-90.00	-2,896.0	752.2	431.4	364.1	67.31	6.409	SF
10,200.0	7,211.0	7,163.0	7,163.0	56.8	12.5	-90.00	-2,896.0	752.2	455.0	386.0	69.02	6.593	
10,300.0	7,211.0	7,163.0	7,163.0	58.5	12.5	-90.00	-2,896.0	752.2	498.0	427.2	70.73	7.040	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Ione 1B-8H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4917.0ft (Original Well Elev)
Reference Site:	S8-T2N-R66W (Ione)	**MD Reference:**	WELL @ 4917.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ione 1B-8H	**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 S8-T2N-R66W (Ione) - Mason #44-8 (Existing) - Existing - Existing

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
11,400.0	7,211.0	7,173.0	7,173.0	77.4	12.5	-90.00	-4,484.3	751.7	487.1	397.4	89.72	5.429	
11,500.0	7,211.0	7,173.0	7,173.0	79.1	12.5	-90.00	-4,484.3	751.7	447.8	356.4	91.45	4.897	
11,600.0	7,211.0	7,173.0	7,173.0	80.9	12.5	-90.00	-4,484.3	751.7	428.8	335.6	93.18	4.601	
11,633.6	7,211.0	7,173.0	7,173.0	81.4	12.5	-90.00	-4,484.3	751.7	427.4	333.7	93.76	4.559	CC, ES
11,700.0	7,211.0	7,173.0	7,173.0	82.6	12.5	-90.00	-4,484.3	751.7	432.6	337.6	94.91	4.557	SF
11,739.3	7,211.0	7,173.0	7,173.0	83.3	12.5	-90.00	-4,484.3	751.7	440.3	344.7	95.59	4.606	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Ione 1B-8H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4917.0ft (Original Well Elev)
Reference Site:	S8-T2N-R66W (Ione)	**MD Reference:**	WELL @ 4917.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ione 1B-8H	**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 S8-T2N-R66W (Ione) - Mason Gas Unit #3-8 (Existing) - Existing - Existing

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	7,211.0	7,176.0	7,176.0	58.5	12.5	90.00	-3,569.6	219.2	431.9	361.1	70.76	6.104	
10,400.0	7,211.0	7,176.0	7,176.0	60.2	12.5	90.00	-3,569.6	219.2	335.8	263.3	72.47	4.633	
10,500.0	7,211.0	7,176.0	7,176.0	61.9	12.5	90.00	-3,569.6	219.2	242.8	168.7	74.19	3.273	
10,600.0	7,211.0	7,176.0	7,176.0	63.6	12.5	90.00	-3,569.6	219.2	158.7	82.8	75.91	2.091	
10,700.0	7,211.0	7,176.0	7,176.0	65.4	12.5	90.00	-3,569.6	219.2	106.8	29.2	77.63	1.376	Level 3
10,718.9	7,211.0	7,176.0	7,176.0	65.7	12.5	90.00	-3,569.6	219.2	105.1	27.2	77.96	1.348	Level 3, CC, ES, SF
10,800.0	7,211.0	7,176.0	7,176.0	67.1	12.5	90.00	-3,569.6	219.2	132.8	53.4	79.35	1.673	
10,900.0	7,211.0	7,176.0	7,176.0	68.8	12.5	90.00	-3,569.6	219.2	209.4	128.3	81.08	2.583	
11,000.0	7,211.0	7,176.0	7,176.0	70.5	12.5	90.00	-3,569.6	219.2	300.1	217.3	82.80	3.624	
11,100.0	7,211.0	7,176.0	7,176.0	72.2	12.5	90.00	-3,569.6	219.2	395.3	310.8	84.53	4.677	
11,200.0	7,211.0	7,176.0	7,176.0	74.0	12.5	90.00	-3,569.6	219.2	492.4	406.2	86.26	5.709	

Company:	EnCana Oil & Gas (USA) Inc	**Local Co-ordinate Reference:**	Well Ione 1B-8H
Project:	DJ Wattenberg	**TVD Reference:**	WELL @ 4917.0ft (Original Well Elev)
Reference Site:	S8-T2N-R66W (Ione)	**MD Reference:**	WELL @ 4917.0ft (Original Well Elev)
Site Error:	0.0ft	**North Reference:**	True
Reference Well:	Ione 1B-8H	**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 @ 4917.0ft (Original Well Elev)
Offset Depths are relative to Offset Datum
Central Meridian is -105.500000 °

Coordinates are relative to: Ione 1B-8H
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.45°