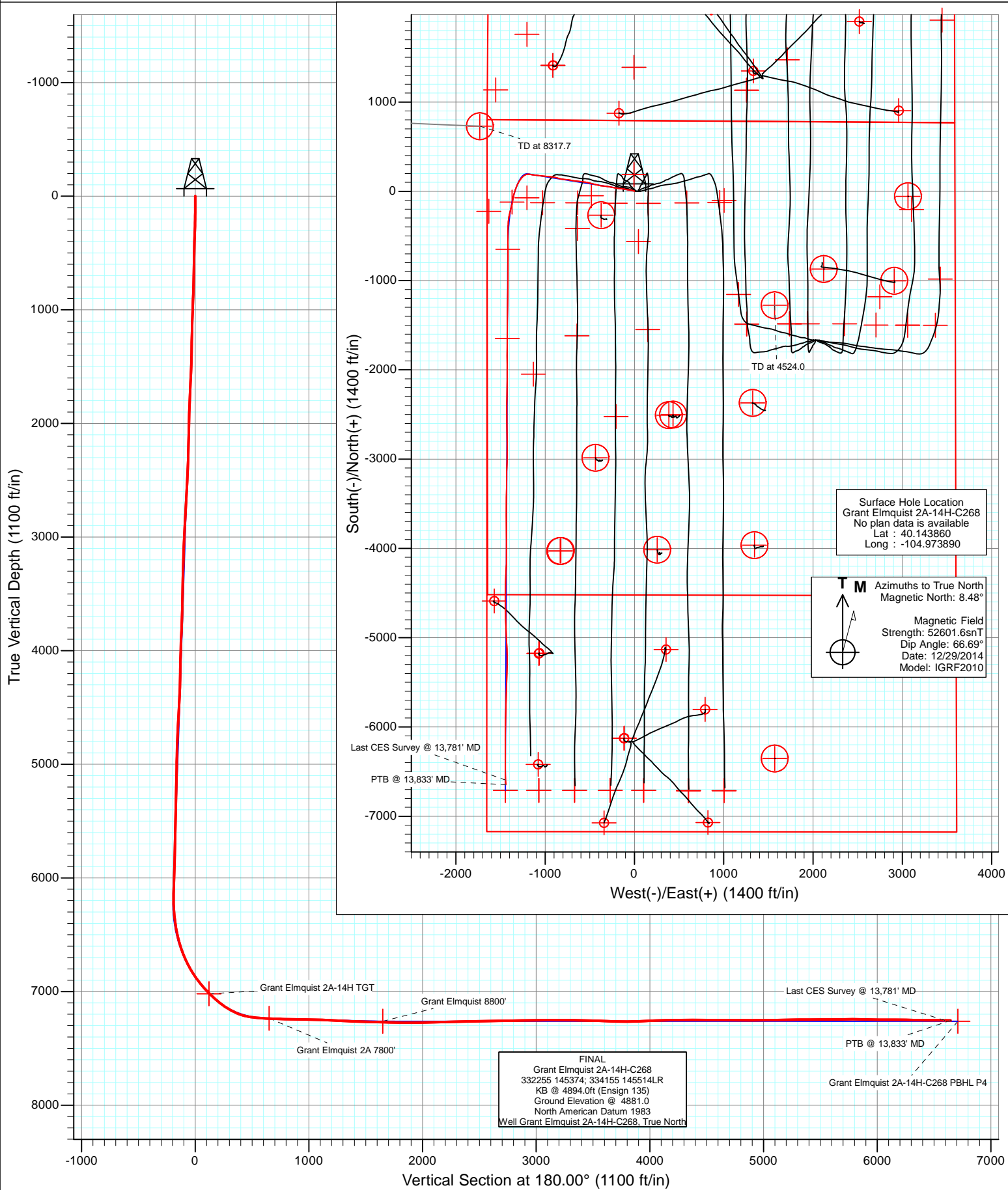




Project: DJ Wattenberg
Site: S14-T2N-R68W (Grant Elmquist/Salisbury/Hurt)
Well: Grant Elmquist 2A-14H-C268
Wellbore: Hz
Design: FINAL



HP Survey Report

Company: EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference: Well Grant Elmquist 2A-14H-C268
Project: DJ Wattenberg	TVD Reference: KB @ 4894.0ft (Ensign 135)
Site: S14-T2N-R68W (Grant Elmquist/Salisbury/Hurt)	MD Reference: KB @ 4894.0ft (Ensign 135)
Well: Grant Elmquist 2A-14H-C268	North Reference: True
Wellbore: Hz	Survey Calculation Method: Minimum Curvature
Design: FINAL	Database: USA EDM R5000 Multi Users DB

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 S14-T2N-R68W (Grant Elmquist/Salisbury/Hurt)				
Site Position:	Northing:	1,295,686.81 ft	Latitude:	40.143850
From: Lat/Long	Easting:	3,147,060.98 ft	Longitude:	-104.973980
Position Uncertainty: 0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	0.34 °

Well Grant Elmquist 2A-14H-C268				
Well Position	+N/-S	0.0 ft	Northing:	1,295,690.58 ft
	+E/-W	0.0 ft	Easting:	3,147,086.12 ft
			Longitude:	-104.973890
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft
			Ground Level:	4,881.0 ft

Wellbore Hz					
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/29/2014	8.48	66.69	52,602

Design FINAL				
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	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

Survey Program		Date 1/7/2015
From (ft)	To (ft)	Survey (Wellbore)
143.0	13,833.0	Survey #1 (Hz)
		Tool Name Geolink MWD
		Description Geolink MWD

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
143.0	0.50	328.30	143.0	0.5	-0.3	-0.5	0.35	0.35	
234.0	2.80	302.10	234.0	2.1	-2.4	-2.1	2.60	2.53	
325.0	5.10	295.60	324.7	5.0	-8.0	-5.0	2.57	2.53	
417.0	5.30	282.60	416.4	7.7	-15.8	-7.7	1.30	0.22	
509.0	6.40	280.40	507.9	9.5	-25.0	-9.5	1.22	1.20	
601.0	7.70	278.10	599.2	11.3	-36.1	-11.3	1.45	1.41	
693.0	8.40	277.80	690.3	13.1	-48.9	-13.1	0.76	0.76	
785.0	9.90	277.90	781.1	15.1	-63.4	-15.1	1.63	1.63	
816.0	10.60	279.50	811.6	15.9	-68.8	-15.9	2.44	2.26	
926.0	11.70	280.10	919.5	19.6	-89.8	-19.6	1.01	1.00	
1,021.0	11.90	280.90	1,012.5	23.1	-108.9	-23.1	0.27	0.21	
1,115.0	11.90	279.30	1,104.5	26.5	-128.0	-26.5	0.35	0.00	

HP

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Grant Elmquist 2A-14H-C268
Project:	DJ Wattenberg	TVD Reference:	KB @ 4894.0ft (Ensign 135)
Site:	S14-T2N-R68W (Grant Elmquist/Salisbury/Hurt)	MD Reference:	KB @ 4894.0ft (Ensign 135)
Well:	Grant Elmquist 2A-14H-C268	North Reference:	True
Wellbore:	Hz	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM R5000 Multi Users DB

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
1,210.0	11.50	275.60	1,197.5	29.0	-147.1	-29.0	0.89	-0.42	
1,301.0	11.20	274.30	1,286.7	30.6	-164.9	-30.6	0.43	-0.33	
1,393.0	11.60	278.80	1,376.9	32.6	-182.9	-32.6	1.06	0.43	
1,485.0	11.40	274.80	1,467.1	34.8	-201.2	-34.8	0.89	-0.22	
1,576.0	12.40	281.60	1,556.1	37.5	-219.7	-37.5	1.89	1.10	
1,668.0	12.60	285.40	1,646.0	42.2	-239.0	-42.2	0.92	0.22	
1,760.0	12.60	280.90	1,735.7	46.7	-258.6	-46.7	1.07	0.00	
1,851.0	12.50	278.20	1,824.6	50.0	-278.1	-50.0	0.65	-0.11	
1,943.0	12.70	276.20	1,914.4	52.5	-298.0	-52.5	0.52	0.22	
2,035.0	12.30	276.60	2,004.2	54.8	-317.8	-54.8	0.44	-0.43	
2,127.0	11.90	277.30	2,094.1	57.1	-336.9	-57.1	0.46	-0.43	
2,218.0	11.10	277.20	2,183.3	59.4	-354.9	-59.4	0.88	-0.88	
2,310.0	10.40	277.40	2,273.7	61.6	-371.9	-61.6	0.76	-0.76	
2,401.0	11.40	281.00	2,363.0	64.3	-388.9	-64.3	1.33	1.10	
2,493.0	11.60	283.60	2,453.2	68.2	-406.8	-68.2	0.60	0.22	
2,585.0	12.50	285.00	2,543.2	73.0	-425.4	-73.0	1.03	0.98	
2,677.0	11.90	284.50	2,633.1	77.9	-444.2	-77.9	0.66	-0.65	
2,768.0	11.60	284.40	2,722.2	82.6	-462.2	-82.6	0.33	-0.33	
2,860.0	12.70	283.50	2,812.1	87.2	-481.0	-87.2	1.21	1.20	
2,952.0	11.70	283.80	2,902.0	91.8	-499.8	-91.8	1.09	-1.09	
3,044.0	12.90	285.10	2,991.9	96.7	-518.8	-96.7	1.34	1.30	
3,138.0	12.50	279.40	3,083.6	101.1	-539.0	-101.1	1.40	-0.43	
3,232.0	11.30	277.30	3,175.6	103.9	-558.2	-103.9	1.36	-1.28	
3,327.0	12.10	277.70	3,268.6	106.5	-577.3	-106.5	0.85	0.84	
3,422.0	12.40	277.20	3,361.5	109.1	-597.2	-109.1	0.33	0.32	
3,516.0	12.50	273.80	3,453.3	111.0	-617.4	-111.0	0.79	0.11	
3,611.0	12.70	276.10	3,546.0	112.8	-638.1	-112.8	0.57	0.21	
3,706.0	11.10	273.90	3,638.9	114.5	-657.6	-114.5	1.75	-1.68	
3,800.0	12.30	283.30	3,731.0	117.5	-676.3	-117.5	2.39	1.28	
3,895.0	12.90	281.60	3,823.7	121.9	-696.6	-121.9	0.74	0.63	
3,990.0	14.10	276.70	3,916.1	125.4	-718.5	-125.4	1.74	1.26	
4,084.0	13.70	276.90	4,007.3	128.1	-740.9	-128.1	0.43	-0.43	
4,179.0	13.20	276.90	4,099.7	130.7	-762.8	-130.7	0.53	-0.53	
4,273.0	11.20	274.80	4,191.6	132.8	-782.6	-132.8	2.18	-2.13	
4,368.0	10.10	274.60	4,285.0	134.2	-800.1	-134.2	1.16	-1.16	
4,462.0	11.30	278.80	4,377.3	136.3	-817.4	-136.3	1.52	1.28	
4,557.0	12.30	286.70	4,470.3	140.6	-836.3	-140.6	2.00	1.05	
4,652.0	12.90	285.70	4,563.0	146.4	-856.2	-146.4	0.67	0.63	
4,746.0	11.30	287.20	4,654.9	152.0	-875.1	-152.0	1.73	-1.70	
4,841.0	11.30	280.30	4,748.1	156.4	-893.1	-156.4	1.42	0.00	
4,936.0	12.50	276.60	4,841.1	159.2	-912.5	-159.2	1.50	1.26	
5,030.0	11.70	276.50	4,933.0	161.5	-932.1	-161.5	0.85	-0.85	
5,125.0	10.20	276.20	5,026.2	163.5	-950.0	-163.5	1.58	-1.58	
5,220.0	11.00	276.60	5,119.6	165.4	-967.4	-165.4	0.85	0.84	
5,314.0	12.00	275.30	5,211.7	167.4	-986.0	-167.4	1.10	1.06	
5,409.0	11.80	277.80	5,304.7	169.6	-1,005.5	-169.6	0.58	-0.21	
5,503.0	11.50	275.90	5,396.7	171.9	-1,024.3	-171.9	0.52	-0.32	
5,598.0	12.10	273.90	5,489.7	173.5	-1,043.7	-173.5	0.76	0.63	
5,692.0	12.00	276.00	5,581.7	175.2	-1,063.2	-175.2	0.48	-0.11	
5,787.0	12.40	275.40	5,674.5	177.2	-1,083.2	-177.2	0.44	0.42	
5,882.0	12.50	275.80	5,767.3	179.2	-1,103.6	-179.2	0.14	0.11	
5,976.0	12.50	278.70	5,859.1	181.8	-1,123.7	-181.8	0.67	0.00	
6,071.0	12.00	280.90	5,951.9	185.2	-1,143.6	-185.2	0.72	-0.53	

HP

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Grant Elmquist 2A-14H-C268
Project:	DJ Wattenberg	TVD Reference:	KB @ 4894.0ft (Ensign 135)
Site:	S14-T2N-R68W (Grant Elmquist/Salisbury/Hurt)	MD Reference:	KB @ 4894.0ft (Ensign 135)
Well:	Grant Elmquist 2A-14H-C268	North Reference:	True
Wellbore:	Hz	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM R5000 Multi Users DB

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
6,166.0	11.30	280.10	6,044.9	188.7	-1,162.5	-188.7	0.76	-0.74	
6,260.0	10.90	272.20	6,137.2	190.6	-1,180.4	-190.6	1.67	-0.43	
6,307.0	11.00	270.00	6,183.3	190.8	-1,189.3	-190.8	0.91	0.21	
6,355.0	12.40	264.40	6,230.3	190.3	-1,199.0	-190.3	3.75	2.92	
6,402.0	13.30	254.70	6,276.2	188.4	-1,209.3	-188.4	4.97	1.91	
6,449.0	13.50	248.20	6,321.9	184.9	-1,219.6	-184.9	3.23	0.43	
6,496.0	14.00	240.50	6,367.5	180.1	-1,229.6	-180.1	4.03	1.06	
6,544.0	14.90	234.20	6,414.0	173.6	-1,239.7	-173.6	3.77	1.87	
6,591.0	16.00	227.40	6,459.3	165.7	-1,249.4	-165.7	4.51	2.34	
6,639.0	17.30	222.10	6,505.3	155.9	-1,259.0	-155.9	4.16	2.71	
6,686.0	18.80	219.90	6,550.0	144.9	-1,268.6	-144.9	3.51	3.19	
6,734.0	20.40	214.00	6,595.2	132.1	-1,278.2	-132.1	5.30	3.33	
6,781.0	22.50	209.50	6,639.0	117.4	-1,287.2	-117.4	5.67	4.47	
6,828.0	24.60	208.50	6,682.1	101.0	-1,296.3	-101.0	4.55	4.47	
6,875.0	26.60	206.80	6,724.4	83.0	-1,305.7	-83.0	4.53	4.26	
6,923.0	29.80	205.00	6,766.7	62.6	-1,315.6	-62.6	6.90	6.67	
6,970.0	33.10	202.80	6,806.8	40.2	-1,325.5	-40.2	7.43	7.02	
7,018.0	34.90	199.60	6,846.6	15.2	-1,335.2	-15.2	5.29	3.75	
7,065.0	36.70	196.40	6,884.8	-11.0	-1,343.7	11.0	5.52	3.83	
7,112.0	39.10	192.80	6,921.8	-38.9	-1,350.9	38.9	6.94	5.11	
7,159.0	41.70	190.10	6,957.6	-68.8	-1,357.0	68.8	6.67	5.53	
7,207.0	44.00	190.20	6,992.8	-100.9	-1,362.7	100.9	4.79	4.79	
7,254.0	46.20	191.60	7,026.0	-133.6	-1,369.0	133.6	5.13	4.68	
7,301.0	48.50	194.50	7,057.8	-167.2	-1,376.8	167.2	6.67	4.89	
7,348.0	51.20	196.00	7,088.1	-201.9	-1,386.3	201.9	6.24	5.74	
7,396.0	54.20	194.50	7,117.2	-238.7	-1,396.3	238.7	6.73	6.25	
7,443.0	58.00	189.80	7,143.4	-276.9	-1,404.5	276.9	11.58	8.09	
7,490.0	62.20	185.90	7,166.9	-317.2	-1,410.0	317.2	11.47	8.94	
7,537.0	66.20	183.80	7,187.3	-359.4	-1,413.6	359.4	9.41	8.51	
7,585.0	71.90	181.70	7,204.5	-404.1	-1,415.7	404.1	12.56	11.87	
7,632.0	77.70	180.50	7,216.8	-449.4	-1,416.6	449.4	12.58	12.34	
7,679.0	82.10	179.70	7,225.0	-495.7	-1,416.7	495.7	9.51	9.36	
7,722.0	84.80	179.60	7,230.0	-538.4	-1,416.4	538.4	6.28	6.28	
7,835.0	87.10	179.90	7,237.9	-651.1	-1,415.9	651.1	2.05	2.04	
7,926.0	88.10	180.40	7,241.7	-742.0	-1,416.2	742.0	1.23	1.10	
8,018.0	89.70	180.50	7,243.5	-834.0	-1,416.9	834.0	1.74	1.74	
8,110.0	89.00	179.80	7,244.6	-926.0	-1,417.1	926.0	1.08	-0.76	
8,201.0	88.50	180.10	7,246.5	-1,017.0	-1,417.0	1,017.0	0.64	-0.55	
8,293.0	88.30	180.70	7,249.1	-1,108.9	-1,417.7	1,108.9	0.69	-0.22	
8,385.0	87.00	181.30	7,252.9	-1,200.8	-1,419.3	1,200.8	1.56	-1.41	
8,476.0	86.50	180.80	7,258.0	-1,291.7	-1,421.0	1,291.7	0.78	-0.55	
8,568.0	88.30	181.30	7,262.2	-1,383.6	-1,422.6	1,383.6	2.03	1.96	
8,660.0	88.00	180.70	7,265.2	-1,475.5	-1,424.2	1,475.5	0.73	-0.33	
8,752.0	88.90	180.70	7,267.7	-1,567.5	-1,425.4	1,567.5	0.98	0.98	
8,843.0	88.40	180.00	7,269.8	-1,658.4	-1,425.9	1,658.4	0.95	-0.55	
8,935.0	88.60	180.30	7,272.2	-1,750.4	-1,426.2	1,750.4	0.39	0.22	
9,027.0	90.00	180.00	7,273.3	-1,842.4	-1,426.4	1,842.4	1.56	1.52	
9,119.0	90.00	179.60	7,273.3	-1,934.4	-1,426.1	1,934.4	0.43	0.00	
9,210.0	92.00	179.50	7,271.8	-2,025.4	-1,425.4	2,025.4	2.20	2.20	
9,302.0	91.50	180.60	7,268.9	-2,117.3	-1,425.5	2,117.3	1.31	-0.54	
9,393.0	90.90	181.20	7,267.0	-2,208.3	-1,426.9	2,208.3	0.93	-0.66	
9,485.0	90.90	180.90	7,265.6	-2,300.3	-1,428.6	2,300.3	0.33	0.00	
9,576.0	91.00	180.60	7,264.1	-2,391.3	-1,429.8	2,391.3	0.35	0.11	

HP

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Grant Elmquist 2A-14H-C268
Project:	DJ Wattenberg	TVD Reference:	KB @ 4894.0ft (Ensign 135)
Site:	S14-T2N-R68W (Grant Elmquist/Salisbury/Hurt)	MD Reference:	KB @ 4894.0ft (Ensign 135)
Well:	Grant Elmquist 2A-14H-C268	North Reference:	True
Wellbore:	Hz	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM R5000 Multi Users DB

Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Formations / Comments
9,668.0	91.10	179.80	7,262.4	-2,483.2	-1,430.1	2,483.2	0.88	0.11	
9,760.0	91.40	179.20	7,260.4	-2,575.2	-1,429.3	2,575.2	0.73	0.33	
9,852.0	91.30	178.70	7,258.2	-2,667.2	-1,427.6	2,667.2	0.55	-0.11	
9,943.0	90.50	179.80	7,256.8	-2,758.1	-1,426.4	2,758.1	1.49	-0.88	
10,038.0	91.30	179.20	7,255.3	-2,853.1	-1,425.6	2,853.1	1.05	0.84	
10,132.0	91.70	181.40	7,252.8	-2,947.1	-1,426.1	2,947.1	2.38	0.43	
10,227.0	90.20	181.40	7,251.3	-3,042.0	-1,428.4	3,042.0	1.58	-1.58	
10,321.0	89.40	181.10	7,251.6	-3,136.0	-1,430.4	3,136.0	0.91	-0.85	
10,416.0	90.50	180.10	7,251.7	-3,231.0	-1,431.4	3,231.0	1.56	1.16	
10,510.0	89.00	180.40	7,252.1	-3,325.0	-1,431.8	3,325.0	1.63	-1.60	
10,605.0	88.70	180.60	7,254.0	-3,420.0	-1,432.7	3,420.0	0.38	-0.32	
10,700.0	88.00	181.20	7,256.7	-3,514.9	-1,434.2	3,514.9	0.97	-0.74	
10,794.0	87.60	180.80	7,260.3	-3,608.9	-1,435.8	3,608.9	0.60	-0.43	
10,889.0	89.50	179.70	7,262.7	-3,703.8	-1,436.2	3,703.8	2.31	2.00	
10,983.0	89.20	179.60	7,263.8	-3,797.8	-1,435.6	3,797.8	0.34	-0.32	
11,078.0	92.70	178.50	7,262.2	-3,892.8	-1,434.1	3,892.8	3.86	3.68	
11,172.0	92.90	179.50	7,257.6	-3,986.6	-1,432.4	3,986.6	1.08	0.21	
11,267.0	92.00	180.90	7,253.6	-4,081.5	-1,432.8	4,081.5	1.75	-0.95	
11,314.0	92.70	180.60	7,251.7	-4,128.5	-1,433.4	4,128.5	1.62	1.49	
11,361.0	90.40	182.20	7,250.4	-4,175.5	-1,434.5	4,175.5	5.96	-4.89	
11,456.0	89.50	183.00	7,250.5	-4,270.4	-1,438.8	4,270.4	1.27	-0.95	
11,551.0	90.00	181.80	7,250.9	-4,365.3	-1,442.8	4,365.3	1.37	0.53	
11,646.0	90.80	180.70	7,250.2	-4,460.3	-1,444.9	4,460.3	1.43	0.84	
11,740.0	89.10	180.40	7,250.3	-4,554.2	-1,445.8	4,554.2	1.84	-1.81	
11,835.0	89.30	179.60	7,251.6	-4,649.2	-1,445.8	4,649.2	0.87	0.21	
11,929.0	90.10	178.60	7,252.1	-4,743.2	-1,444.3	4,743.2	1.36	0.85	
12,024.0	90.30	177.80	7,251.8	-4,838.2	-1,441.3	4,838.2	0.87	0.21	
12,118.0	90.40	177.60	7,251.2	-4,932.1	-1,437.6	4,932.1	0.24	0.11	
12,213.0	89.80	176.70	7,251.0	-5,027.0	-1,432.8	5,027.0	1.14	-0.63	
12,307.0	90.90	177.70	7,250.5	-5,120.9	-1,428.2	5,120.9	1.58	1.17	
12,402.0	91.40	179.30	7,248.6	-5,215.8	-1,425.7	5,215.8	1.76	0.53	
12,496.0	90.40	180.70	7,247.1	-5,309.8	-1,425.7	5,309.8	1.83	-1.06	
12,591.0	90.20	182.40	7,246.6	-5,404.7	-1,428.3	5,404.7	1.80	-0.21	
12,686.0	90.30	181.90	7,246.2	-5,499.7	-1,431.9	5,499.7	0.54	0.11	
12,780.0	90.30	181.60	7,245.7	-5,593.6	-1,434.8	5,593.6	0.32	0.00	
12,875.0	90.90	181.20	7,244.7	-5,688.6	-1,437.1	5,688.6	0.76	0.63	
12,970.0	90.00	181.90	7,243.9	-5,783.6	-1,439.6	5,783.6	1.20	-0.95	
13,064.0	89.10	181.70	7,244.7	-5,877.5	-1,442.6	5,877.5	0.98	-0.96	
13,159.0	88.50	180.80	7,246.7	-5,972.5	-1,444.7	5,972.5	1.14	-0.63	
13,253.0	90.10	181.10	7,247.8	-6,066.4	-1,446.2	6,066.4	1.73	1.70	
13,348.0	89.50	180.20	7,248.2	-6,161.4	-1,447.3	6,161.4	1.14	-0.63	
13,442.0	89.10	179.50	7,249.3	-6,255.4	-1,447.1	6,255.4	0.86	-0.43	
13,537.0	89.20	180.10	7,250.7	-6,350.4	-1,446.7	6,350.4	0.64	0.11	
13,631.0	89.20	179.30	7,252.0	-6,444.4	-1,446.2	6,444.4	0.85	0.00	
13,726.0	89.90	179.00	7,252.8	-6,539.4	-1,444.8	6,539.4	0.80	0.74	
13,781.0	89.20	177.80	7,253.2	-6,594.4	-1,443.3	6,594.4	2.53	-1.27	Last CES Survey @ 13,781' MD
13,833.0	89.20	177.80	7,253.9	-6,646.3	-1,441.3	6,646.3	0.00	0.00	PTB @ 13,833' MD

HP Survey Report

Company: EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference: Well Grant Elmquist 2A-14H-C268
Project: DJ Wattenberg	TVD Reference: KB @ 4894.0ft (Ensign 135)
Site: S14-T2N-R68W (Grant Elmquist/Salisbury/Hurt)	MD Reference: KB @ 4894.0ft (Ensign 135)
Well: Grant Elmquist 2A-14H-C268	North Reference: True
Wellbore: Hz	Survey Calculation Method: Minimum Curvature
Design: FINAL	Database: USA EDM R5000 Multi Users DB

Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target - Shape	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
Grant Elmquist 2A 7800' - survey misses target center by 4.2ft at 7833.0ft MD (7237.8 TVD, -649.1 N, -1415.9 E) - Point	0.00	0.00	7,235.0	-649.3	-1,419.1	1,295,032.86	3,145,670.90	40.142077	-104.978966
Grant Elmquist 2A-14H - survey misses target center by 5.4ft at 7240.5ft MD (7016.6 TVD, -124.1 N, -1367.1 E) - Point	0.00	0.00	7,019.0	-121.0	-1,370.8	1,295,561.50	3,145,716.06	40.143528	-104.978793
Grant Elmquist 2A-14H - survey misses target center by 83.6ft at 13833.0ft MD (7253.9 TVD, -6646.3 N, -1441.3 E) - Point	0.00	0.00	7,200.0	-6,710.0	-1,445.7	1,288,972.14	3,145,680.22	40.125440	-104.979060
Grant Elmquist 8800' - survey misses target center by 8.7ft at 8833.6ft MD (7269.6 TVD, -1649.1 N, -1425.9 E) - Point	0.00	0.00	7,261.2	-1,649.3	-1,423.5	1,294,032.86	3,145,672.44	40.139332	-104.978981
Grant Elmquist 2A-14H - survey misses target center by 64.2ft at 13833.0ft MD (7253.9 TVD, -6646.3 N, -1441.3 E) - Point	0.00	0.00	7,261.2	-6,710.0	-1,445.7	1,288,972.14	3,145,680.22	40.125440	-104.979060

Survey Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	
13,781.0	7,253.2	-6,594.4	-1,443.3	Last CES Survey @ 13,781' MD
13,833.0	7,253.9	-6,646.3	-1,441.3	PTB @ 13,833' MD

Checked By: _____ Approved By: _____ Date: _____

EnCana Oil & Gas (USA) Inc

DJ Wattenberg

S14-T2N-R68W (Grant Elmquist/Salisbury/Hurt)

Grant Elmquist 2A-14H-C268

Hz

Survey: Survey #1

Survey Report - Geographic

07 January, 2015

HP
Survey Report - Geographic

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Grant Elmquist 2A-14H-C268
Project:	DJ Wattenberg	TVD Reference:	KB @ 4894.0ft (Ensign 135)
Site:	S14-T2N-R68W (Grant Elmquist/Salisbury/Hurt)	MD Reference:	KB @ 4894.0ft (Ensign 135)
Well:	Grant Elmquist 2A-14H-C268	North Reference:	True
Wellbore:	Hz	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM R5000 Multi Users DB

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	S14-T2N-R68W (Grant Elmquist/Salisbury/Hurt)				
Site Position:		Northing:	1,295,686.81 ft	Latitude:	40.143850
From:	Lat/Long	Easting:	3,147,060.98 ft	Longitude:	-104.973980
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	0.34 °

Well	Grant Elmquist 2A-14H-C268					
Well Position	+N/-S	0.0 ft	Northing:	1,295,690.58 ft	Latitude:	40.143860
	+E/-W	0.0 ft	Easting:	3,147,086.12 ft	Longitude:	-104.973890
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,881.0 ft

Wellbore	Hz				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	12/29/2014	8.48	66.69	52,602

Design	FINAL				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	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	

Survey Program	Date	1/7/2015			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
143.0	13,833.0	Survey #1 (Hz)	Geolink MWD	Geolink MWD	

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude	
0.0	0.00	0.00	0.0	0.0	0.0	1,295,690.58	3,147,086.12	40.143860	-104.973890	
143.0	0.50	328.30	143.0	0.5	-0.3	1,295,691.11	3,147,085.79	40.143862	-104.973891	
234.0	2.80	302.10	234.0	2.1	-2.4	1,295,692.62	3,147,083.69	40.143866	-104.973899	
325.0	5.10	295.60	324.7	5.0	-8.0	1,295,695.51	3,147,078.14	40.143874	-104.973919	
417.0	5.30	282.60	416.4	7.7	-15.8	1,295,698.16	3,147,070.29	40.143881	-104.973947	
509.0	6.40	280.40	507.9	9.5	-25.0	1,295,699.96	3,147,061.09	40.143886	-104.973980	
601.0	7.70	278.10	599.2	11.3	-36.1	1,295,701.69	3,147,049.93	40.143891	-104.974019	
693.0	8.40	277.80	690.3	13.1	-48.9	1,295,703.39	3,147,037.16	40.143896	-104.974065	
785.0	9.90	277.90	781.1	15.1	-63.4	1,295,705.30	3,147,022.66	40.143901	-104.974117	
816.0	10.60	279.50	811.6	15.9	-68.8	1,295,706.11	3,147,017.20	40.143904	-104.974136	
926.0	11.70	280.10	919.5	19.6	-89.8	1,295,709.61	3,146,996.22	40.143914	-104.974211	
1,021.0	11.90	280.90	1,012.5	23.1	-108.9	1,295,713.04	3,146,977.10	40.143923	-104.974280	

HP
Survey Report - Geographic

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Grant Elmquist 2A-14H-C268
Project:	DJ Wattenberg	TVD Reference:	KB @ 4894.0ft (Ensign 135)
Site:	S14-T2N-R68W (Grant Elmquist/Salisbury/Hurt)	MD Reference:	KB @ 4894.0ft (Ensign 135)
Well:	Grant Elmquist 2A-14H-C268	North Reference:	True
Wellbore:	Hz	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM R5000 Multi Users DB

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude	
1,115.0	11.90	279.30	1,104.5	26.5	-128.0	1,295,716.32	3,146,958.00	40.143933	-104.974348	
1,210.0	11.50	275.60	1,197.5	29.0	-147.1	1,295,718.72	3,146,938.89	40.143940	-104.974416	
1,301.0	11.20	274.30	1,286.7	30.6	-164.9	1,295,720.16	3,146,921.04	40.143944	-104.974480	
1,393.0	11.60	278.80	1,376.9	32.6	-182.9	1,295,722.14	3,146,902.98	40.143950	-104.974545	
1,485.0	11.40	274.80	1,467.1	34.8	-201.2	1,295,724.20	3,146,884.76	40.143956	-104.974610	
1,576.0	12.40	281.60	1,556.1	37.5	-219.7	1,295,726.81	3,146,866.21	40.143963	-104.974676	
1,668.0	12.60	285.40	1,646.0	42.2	-239.0	1,295,731.35	3,146,846.84	40.143976	-104.974745	
1,760.0	12.60	280.90	1,735.7	46.7	-258.6	1,295,735.79	3,146,827.28	40.143988	-104.974815	
1,851.0	12.50	278.20	1,824.6	50.0	-278.1	1,295,738.96	3,146,807.77	40.143997	-104.974885	
1,943.0	12.70	276.20	1,914.4	52.5	-298.0	1,295,741.35	3,146,787.85	40.144004	-104.974956	
2,035.0	12.30	276.60	2,004.2	54.8	-317.8	1,295,743.46	3,146,768.04	40.144010	-104.975027	
2,127.0	11.90	277.30	2,094.1	57.1	-336.9	1,295,745.67	3,146,748.89	40.144017	-104.975095	
2,218.0	11.10	277.20	2,183.3	59.4	-354.9	1,295,747.86	3,146,730.88	40.144023	-104.975160	
2,310.0	10.40	277.40	2,273.7	61.6	-371.9	1,295,749.93	3,146,713.84	40.144029	-104.975221	
2,401.0	11.40	281.00	2,363.0	64.3	-388.9	1,295,752.61	3,146,696.85	40.144037	-104.975281	
2,493.0	11.60	283.60	2,453.2	68.2	-406.8	1,295,756.41	3,146,678.91	40.144047	-104.975345	
2,585.0	12.50	285.00	2,543.2	73.0	-425.4	1,295,761.05	3,146,660.28	40.144060	-104.975412	
2,677.0	11.90	284.50	2,633.1	77.9	-444.2	1,295,765.89	3,146,641.45	40.144074	-104.975479	
2,768.0	11.60	284.40	2,722.2	82.6	-462.2	1,295,770.41	3,146,623.48	40.144087	-104.975543	
2,860.0	12.70	283.50	2,812.1	87.2	-481.0	1,295,774.96	3,146,604.66	40.144100	-104.975611	
2,952.0	11.70	283.80	2,902.0	91.8	-499.8	1,295,779.43	3,146,585.74	40.144112	-104.975678	
3,044.0	12.90	285.10	2,991.9	96.7	-518.8	1,295,784.22	3,146,566.73	40.144126	-104.975746	
3,138.0	12.50	279.40	3,083.6	101.1	-539.0	1,295,788.50	3,146,546.54	40.144138	-104.975818	
3,232.0	11.30	277.30	3,175.6	103.9	-558.2	1,295,791.22	3,146,527.35	40.144145	-104.975887	
3,327.0	12.10	277.70	3,268.6	106.5	-577.3	1,295,793.62	3,146,508.24	40.144152	-104.975955	
3,422.0	12.40	277.20	3,361.5	109.1	-597.2	1,295,796.11	3,146,488.24	40.144159	-104.976027	
3,516.0	12.50	273.80	3,453.3	111.0	-617.4	1,295,797.93	3,146,468.06	40.144165	-104.976099	
3,611.0	12.70	276.10	3,546.0	112.8	-638.1	1,295,799.60	3,146,447.41	40.144170	-104.976173	
3,706.0	11.10	273.90	3,638.9	114.5	-657.6	1,295,801.22	3,146,427.89	40.144174	-104.976242	
3,800.0	12.30	283.30	3,731.0	117.5	-676.3	1,295,804.02	3,146,409.10	40.144182	-104.976310	
3,895.0	12.90	281.60	3,823.7	121.9	-696.6	1,295,808.37	3,146,388.84	40.144195	-104.976382	
3,990.0	14.10	276.70	3,916.1	125.4	-718.5	1,295,811.72	3,146,366.94	40.144204	-104.976460	
4,084.0	13.70	276.90	4,007.3	128.1	-740.9	1,295,814.26	3,146,344.50	40.144212	-104.976540	
4,179.0	13.20	276.90	4,099.7	130.7	-762.8	1,295,816.78	3,146,322.55	40.144219	-104.976619	
4,273.0	11.20	274.80	4,191.6	132.8	-782.6	1,295,818.72	3,146,302.78	40.144225	-104.976690	
4,368.0	10.10	274.60	4,285.0	134.2	-800.1	1,295,820.05	3,146,285.28	40.144228	-104.976752	
4,462.0	11.30	278.80	4,377.3	136.3	-817.4	1,295,822.02	3,146,267.95	40.144234	-104.976814	
4,557.0	12.30	286.70	4,470.3	140.6	-836.3	1,295,826.24	3,146,249.03	40.144246	-104.976882	
4,652.0	12.90	285.70	4,563.0	146.4	-856.2	1,295,831.90	3,146,229.09	40.144262	-104.976953	
4,746.0	11.30	287.20	4,654.9	152.0	-875.1	1,295,837.35	3,146,210.16	40.144277	-104.977020	
4,841.0	11.30	280.30	4,748.1	156.4	-893.1	1,295,841.66	3,146,192.09	40.144289	-104.977085	
4,936.0	12.50	276.60	4,841.1	159.2	-912.5	1,295,844.39	3,146,172.70	40.144297	-104.977154	
5,030.0	11.70	276.50	4,933.0	161.5	-932.1	1,295,846.52	3,146,153.11	40.144303	-104.977224	
5,125.0	10.20	276.20	5,026.2	163.5	-950.0	1,295,848.42	3,146,135.16	40.144309	-104.977288	
5,220.0	11.00	276.60	5,119.6	165.4	-967.4	1,295,850.26	3,146,117.79	40.144314	-104.977351	
5,314.0	12.00	275.30	5,211.7	167.4	-986.0	1,295,852.09	3,146,099.14	40.144319	-104.977417	
5,409.0	11.80	277.80	5,304.7	169.6	-1,005.5	1,295,854.20	3,146,079.67	40.144326	-104.977487	
5,503.0	11.50	275.90	5,396.7	171.9	-1,024.3	1,295,856.36	3,146,060.81	40.144332	-104.977554	
5,598.0	12.10	273.90	5,489.7	173.5	-1,043.7	1,295,857.89	3,146,041.45	40.144336	-104.977623	
5,692.0	12.00	276.00	5,581.7	175.2	-1,063.2	1,295,859.47	3,146,021.89	40.144341	-104.977693	
5,787.0	12.40	275.40	5,674.5	177.2	-1,083.2	1,295,861.34	3,146,001.90	40.144346	-104.977765	
5,882.0	12.50	275.80	5,767.3	179.2	-1,103.6	1,295,863.22	3,145,981.51	40.144352	-104.977838	
5,976.0	12.50	278.70	5,859.1	181.8	-1,123.7	1,295,865.67	3,145,961.32	40.144359	-104.977910	
6,071.0	12.00	280.90	5,951.9	185.2	-1,143.6	1,295,868.97	3,145,941.44	40.144368	-104.977981	
6,166.0	11.30	280.10	6,044.9	188.7	-1,162.5	1,295,872.36	3,145,922.55	40.144378	-104.978048	

HP
Survey Report - Geographic

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Grant Elmquist 2A-14H-C268
Project:	DJ Wattenberg	TVD Reference:	KB @ 4894.0ft (Ensign 135)
Site:	S14-T2N-R68W (Grant Elmquist/Salisbury/Hurt)	MD Reference:	KB @ 4894.0ft (Ensign 135)
Well:	Grant Elmquist 2A-14H-C268	North Reference:	True
Wellbore:	Hz	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM R5000 Multi Users DB

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude	
6,260.0	10.90	272.20	6,137.2	190.6	-1,180.4	1,295,874.21	3,145,904.59	40.144383	-104.978113	
6,307.0	11.00	270.00	6,183.3	190.8	-1,189.3	1,295,874.33	3,145,895.67	40.144384	-104.978145	
6,355.0	12.40	264.40	6,230.3	190.3	-1,199.0	1,295,873.77	3,145,885.96	40.144382	-104.978179	
6,402.0	13.30	254.70	6,276.2	188.4	-1,209.3	1,295,871.79	3,145,875.74	40.144377	-104.978216	
6,449.0	13.50	248.20	6,321.9	184.9	-1,219.6	1,295,868.26	3,145,865.45	40.144368	-104.978253	
6,496.0	14.00	240.50	6,367.5	180.1	-1,229.6	1,295,863.37	3,145,855.43	40.144354	-104.978289	
6,544.0	14.90	234.20	6,414.0	173.6	-1,239.7	1,295,856.84	3,145,845.41	40.144337	-104.978325	
6,591.0	16.00	227.40	6,459.3	165.7	-1,249.4	1,295,848.86	3,145,835.79	40.144315	-104.978359	
6,639.0	17.30	222.10	6,505.3	155.9	-1,259.0	1,295,839.03	3,145,826.19	40.144288	-104.978394	
6,686.0	18.80	219.90	6,550.0	144.9	-1,268.6	1,295,827.98	3,145,816.71	40.144258	-104.978428	
6,734.0	20.40	214.00	6,595.2	132.1	-1,278.2	1,295,815.05	3,145,807.15	40.144222	-104.978462	
6,781.0	22.50	209.50	6,639.0	117.4	-1,287.2	1,295,800.37	3,145,798.23	40.144182	-104.978495	
6,828.0	24.60	208.50	6,682.1	101.0	-1,296.3	1,295,783.89	3,145,789.23	40.144137	-104.978527	
6,875.0	26.60	206.80	6,724.4	83.0	-1,305.7	1,295,765.85	3,145,779.92	40.144088	-104.978561	
6,923.0	29.80	205.00	6,766.7	62.6	-1,315.6	1,295,745.38	3,145,770.15	40.144032	-104.978596	
6,970.0	33.10	202.80	6,806.8	40.2	-1,325.5	1,295,722.90	3,145,760.37	40.143970	-104.978632	
7,018.0	34.90	199.60	6,846.6	15.2	-1,335.2	1,295,697.82	3,145,750.84	40.143902	-104.978666	
7,065.0	36.70	196.40	6,884.8	-11.0	-1,343.7	1,295,671.63	3,145,742.51	40.143830	-104.978697	
7,112.0	39.10	192.80	6,921.8	-38.9	-1,350.9	1,295,643.65	3,145,735.43	40.143753	-104.978723	
7,159.0	41.70	190.10	6,957.6	-68.8	-1,357.0	1,295,613.77	3,145,729.58	40.143671	-104.978744	
7,207.0	44.00	190.20	6,992.8	-100.9	-1,362.7	1,295,581.60	3,145,724.02	40.143583	-104.978765	
7,254.0	46.20	191.60	7,026.0	-133.6	-1,369.0	1,295,548.88	3,145,717.91	40.143493	-104.978787	
7,301.0	48.50	194.50	7,057.8	-167.2	-1,376.8	1,295,515.17	3,145,710.29	40.143401	-104.978815	
7,348.0	51.20	196.00	7,088.1	-201.9	-1,386.3	1,295,480.46	3,145,701.04	40.143306	-104.978849	
7,396.0	54.20	194.50	7,117.2	-238.7	-1,396.3	1,295,443.57	3,145,691.23	40.143205	-104.978885	
7,443.0	58.00	189.80	7,143.4	-276.9	-1,404.5	1,295,405.40	3,145,683.28	40.143100	-104.978914	
7,490.0	62.20	185.90	7,166.9	-317.2	-1,410.0	1,295,365.02	3,145,677.99	40.142989	-104.978934	
7,537.0	66.20	183.80	7,187.3	-359.4	-1,413.6	1,295,322.85	3,145,674.67	40.142873	-104.978947	
7,585.0	71.90	181.70	7,204.5	-404.1	-1,415.7	1,295,278.08	3,145,672.81	40.142751	-104.978954	
7,632.0	77.70	180.50	7,216.8	-449.4	-1,416.6	1,295,232.75	3,145,672.21	40.142626	-104.978957	
7,679.0	82.10	179.70	7,225.0	-495.7	-1,416.7	1,295,186.49	3,145,672.41	40.142499	-104.978958	
7,722.0	84.80	179.60	7,230.0	-538.4	-1,416.4	1,295,143.78	3,145,672.92	40.142382	-104.978957	
7,735.0	87.10	179.90	7,237.9	-651.1	-1,415.9	1,295,031.08	3,145,674.08	40.142073	-104.978955	
7,726.0	88.10	180.40	7,241.7	-742.0	-1,416.2	1,294,940.16	3,145,674.38	40.141823	-104.978956	
8,018.0	89.70	180.50	7,243.5	-834.0	-1,416.9	1,294,848.18	3,145,674.21	40.141570	-104.978958	
8,110.0	89.00	179.80	7,244.6	-926.0	-1,417.1	1,294,756.19	3,145,674.51	40.141318	-104.978959	
8,201.0	88.50	180.10	7,246.5	-1,017.0	-1,417.0	1,294,665.21	3,145,675.13	40.141068	-104.978959	
8,293.0	88.30	180.70	7,249.1	-1,108.9	-1,417.7	1,294,573.25	3,145,675.03	40.140816	-104.978961	
8,385.0	87.00	181.30	7,252.9	-1,200.8	-1,419.3	1,294,481.33	3,145,673.97	40.140563	-104.978967	
8,476.0	86.50	180.80	7,258.0	-1,291.7	-1,421.0	1,294,390.49	3,145,672.85	40.140314	-104.978973	
8,568.0	88.30	181.30	7,262.2	-1,383.6	-1,422.6	1,294,298.59	3,145,671.71	40.140062	-104.978979	
8,660.0	88.00	180.70	7,265.2	-1,475.5	-1,424.2	1,294,206.65	3,145,670.65	40.139809	-104.978985	
8,752.0	88.90	180.70	7,267.7	-1,567.5	-1,425.4	1,294,114.68	3,145,670.07	40.139557	-104.978989	
8,843.0	88.40	180.00	7,269.8	-1,658.4	-1,425.9	1,294,023.71	3,145,670.06	40.139307	-104.978990	
8,935.0	88.60	180.30	7,272.2	-1,750.4	-1,426.2	1,293,931.74	3,145,670.36	40.139055	-104.978991	
9,027.0	90.00	180.00	7,273.3	-1,842.4	-1,426.4	1,293,839.75	3,145,670.67	40.138802	-104.978992	
9,119.0	90.00	179.60	7,273.3	-1,934.4	-1,426.1	1,293,747.75	3,145,671.53	40.138550	-104.978991	
9,210.0	92.00	179.50	7,271.8	-2,025.4	-1,425.4	1,293,656.78	3,145,672.79	40.138300	-104.978988	
9,302.0	91.50	180.60	7,268.9	-2,117.3	-1,425.5	1,293,564.83	3,145,673.25	40.138048	-104.978989	
9,393.0	90.90	181.20	7,267.0	-2,208.3	-1,426.9	1,293,473.85	3,145,672.36	40.137798	-104.978994	
9,485.0	90.90	180.90	7,265.6	-2,300.3	-1,428.6	1,293,381.87	3,145,671.22	40.137545	-104.979000	
9,576.0	91.00	180.60	7,264.1	-2,391.3	-1,429.8	1,293,290.89	3,145,670.57	40.137296	-104.979004	
9,668.0	91.10	179.80	7,262.4	-2,483.2	-1,430.1	1,293,198.90	3,145,670.80	40.137043	-104.979005	
9,760.0	91.40	179.20	7,260.4	-2,575.2	-1,429.3	1,293,106.94	3,145,672.15	40.136791	-104.979002	
9,852.0	91.30	178.70	7,258.2	-2,667.2	-1,427.6	1,293,014.99	3,145,674.38	40.136538	-104.978996	

HP
Survey Report - Geographic

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Grant Elmquist 2A-14H-C268
Project:	DJ Wattenberg	TVD Reference:	KB @ 4894.0ft (Ensign 135)
Site:	S14-T2N-R68W (Grant Elmquist/Salisbury/Hurt)	MD Reference:	KB @ 4894.0ft (Ensign 135)
Well:	Grant Elmquist 2A-14H-C268	North Reference:	True
Wellbore:	Hz	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM R5000 Multi Users DB

Survey										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude	
9,943.0	90.50	179.80	7,256.8	-2,758.1	-1,426.4	1,292,924.02	3,145,676.11	40.136288	-104.978992	
10,038.0	91.30	179.20	7,255.3	-2,853.1	-1,425.6	1,292,829.04	3,145,677.50	40.136028	-104.978989	
10,132.0	91.70	181.40	7,252.8	-2,947.1	-1,426.1	1,292,735.08	3,145,677.56	40.135770	-104.978991	
10,227.0	90.20	181.40	7,251.3	-3,042.0	-1,428.4	1,292,640.11	3,145,675.81	40.135509	-104.978999	
10,321.0	89.40	181.10	7,251.6	-3,136.0	-1,430.4	1,292,546.12	3,145,674.31	40.135251	-104.979006	
10,416.0	90.50	180.10	7,251.7	-3,231.0	-1,431.4	1,292,451.13	3,145,673.88	40.134990	-104.979010	
10,510.0	89.00	180.40	7,252.1	-3,325.0	-1,431.8	1,292,357.13	3,145,674.03	40.134732	-104.979011	
10,605.0	88.70	180.60	7,254.0	-3,420.0	-1,432.7	1,292,262.15	3,145,673.77	40.134472	-104.979014	
10,700.0	88.00	181.20	7,256.7	-3,514.9	-1,434.2	1,292,167.20	3,145,672.84	40.134211	-104.979020	
10,794.0	87.60	180.80	7,260.3	-3,608.9	-1,435.8	1,292,073.27	3,145,671.76	40.133953	-104.979025	
10,889.0	89.50	179.70	7,262.7	-3,703.8	-1,436.2	1,291,978.31	3,145,671.90	40.133692	-104.979027	
10,983.0	89.20	179.60	7,263.8	-3,797.8	-1,435.6	1,291,884.32	3,145,673.04	40.133434	-104.979025	
11,078.0	92.70	178.50	7,262.2	-3,892.8	-1,434.1	1,291,789.38	3,145,675.17	40.133174	-104.979019	
11,172.0	92.90	179.50	7,257.6	-3,986.6	-1,432.4	1,291,695.51	3,145,677.37	40.132916	-104.979013	
11,267.0	92.00	180.90	7,253.6	-4,081.5	-1,432.8	1,291,600.60	3,145,677.60	40.132656	-104.979014	
11,314.0	92.70	180.60	7,251.7	-4,128.5	-1,433.4	1,291,553.65	3,145,677.26	40.132527	-104.979017	
11,361.0	90.40	182.20	7,250.4	-4,175.5	-1,434.5	1,291,506.68	3,145,676.40	40.132398	-104.979021	
11,456.0	89.50	183.00	7,250.5	-4,270.4	-1,438.8	1,291,411.75	3,145,672.65	40.132137	-104.979036	
11,551.0	90.00	181.80	7,250.9	-4,365.3	-1,442.8	1,291,316.82	3,145,669.23	40.131877	-104.979050	
11,646.0	90.80	180.70	7,250.2	-4,460.3	-1,444.9	1,291,221.83	3,145,667.73	40.131616	-104.979058	
11,740.0	89.10	180.40	7,250.3	-4,554.2	-1,445.8	1,291,127.84	3,145,667.38	40.131358	-104.979061	
11,835.0	89.30	179.60	7,251.6	-4,649.2	-1,445.8	1,291,032.85	3,145,667.94	40.131097	-104.979061	
11,929.0	90.10	178.60	7,252.1	-4,743.2	-1,444.3	1,290,938.87	3,145,669.98	40.130839	-104.979056	
12,024.0	90.30	177.80	7,251.8	-4,838.2	-1,441.3	1,290,843.94	3,145,673.53	40.130578	-104.979045	
12,118.0	90.40	177.60	7,251.2	-4,932.1	-1,437.6	1,290,750.04	3,145,677.86	40.130321	-104.979031	
12,213.0	89.80	176.70	7,251.0	-5,027.0	-1,432.8	1,290,655.19	3,145,683.14	40.130060	-104.979014	
12,307.0	90.90	177.70	7,250.5	-5,120.9	-1,428.2	1,290,561.34	3,145,688.29	40.129802	-104.978998	
12,402.0	91.40	179.30	7,248.6	-5,215.8	-1,425.7	1,290,466.41	3,145,691.34	40.129542	-104.978989	
12,496.0	90.40	180.70	7,247.1	-5,309.8	-1,425.7	1,290,372.43	3,145,691.90	40.129284	-104.978989	
12,591.0	90.20	182.40	7,246.6	-5,404.7	-1,428.3	1,290,277.45	3,145,689.89	40.129023	-104.978998	
12,686.0	90.30	181.90	7,246.2	-5,499.7	-1,431.9	1,290,182.50	3,145,686.89	40.128763	-104.979011	
12,780.0	90.30	181.60	7,245.7	-5,593.6	-1,434.8	1,290,088.53	3,145,684.58	40.128505	-104.979021	
12,875.0	90.90	181.20	7,244.7	-5,688.6	-1,437.1	1,289,993.55	3,145,682.82	40.128244	-104.979030	
12,970.0	90.00	181.90	7,243.9	-5,783.6	-1,439.6	1,289,898.58	3,145,680.81	40.127983	-104.979039	
13,064.0	89.10	181.70	7,244.7	-5,877.5	-1,442.6	1,289,804.61	3,145,678.42	40.127725	-104.979049	
13,159.0	88.50	180.80	7,246.7	-5,972.5	-1,444.7	1,289,709.65	3,145,676.91	40.127465	-104.979057	
13,253.0	90.10	181.10	7,247.8	-6,066.4	-1,446.2	1,289,615.66	3,145,675.91	40.127207	-104.979062	
13,348.0	89.50	180.20	7,248.2	-6,161.4	-1,447.3	1,289,520.66	3,145,675.40	40.126946	-104.979066	
13,442.0	89.10	179.50	7,249.3	-6,255.4	-1,447.1	1,289,426.68	3,145,676.20	40.126688	-104.979065	
13,537.0	89.20	180.10	7,250.7	-6,350.4	-1,446.7	1,289,331.69	3,145,677.09	40.126427	-104.979064	
13,631.0	89.20	179.30	7,252.0	-6,444.4	-1,446.2	1,289,237.71	3,145,678.14	40.126169	-104.979062	
13,726.0	89.90	179.00	7,252.8	-6,539.4	-1,444.8	1,289,142.73	3,145,680.12	40.125908	-104.979057	
13,781.0	89.20	177.80	7,253.2	-6,594.4	-1,443.3	1,289,087.77	3,145,681.98	40.125757	-104.979052	
Last CES Survey @ 13,781' MD										
13,833.0	89.20	177.80	7,253.9	-6,646.3	-1,441.3	1,289,035.82	3,145,684.28	40.125615	-104.979044	
PTB @ 13,833' MD										

HP
Survey Report - Geographic

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Grant Elmquist 2A-14H-C268
Project:	DJ Wattenberg	TVD Reference:	KB @ 4894.0ft (Ensign 135)
Site:	S14-T2N-R68W (Grant Elmquist/Salisbury/Hurt)	MD Reference:	KB @ 4894.0ft (Ensign 135)
Well:	Grant Elmquist 2A-14H-C268	North Reference:	True
Wellbore:	Hz	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM R5000 Multi Users DB

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
- Shape									
Grant Elmquist 2A-14H - survey misses target center by 5.4ft at 7240.5ft MD (7016.6 TVD, -124.1 N, -1367.1 E) - Point	0.00	0.00	7,019.0	-121.0	-1,370.8	1,295,561.50	3,145,716.06	40.143528	-104.978794
Grant Elmquist 2A 7800' - survey misses target center by 4.2ft at 7833.0ft MD (7237.8 TVD, -649.1 N, -1415.9 E) - Point	0.00	0.00	7,235.0	-649.3	-1,419.1	1,295,032.86	3,145,670.90	40.142077	-104.978966
Grant Elmquist 8800' - survey misses target center by 8.7ft at 8833.6ft MD (7269.6 TVD, -1649.1 N, -1425.9 E) - Point	0.00	0.00	7,261.2	-1,649.3	-1,423.5	1,294,032.86	3,145,672.44	40.139332	-104.978982
Grant Elmquist 2A-14H-1 - survey misses target center by 64.2ft at 13833.0ft MD (7253.9 TVD, -6646.3 N, -1441.3 E) - Point	0.00	0.00	7,261.2	-6,710.0	-1,445.7	1,288,972.14	3,145,680.22	40.125440	-104.979060

Survey Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	
13,781.0	7,253.2	-6,594.4	-1,443.3	Last CES Survey @ 13,781' MD
13,833.0	7,253.9	-6,646.3	-1,441.3	PTB @ 13,833' MD

Checked By: _____ Approved By: _____ Date: _____