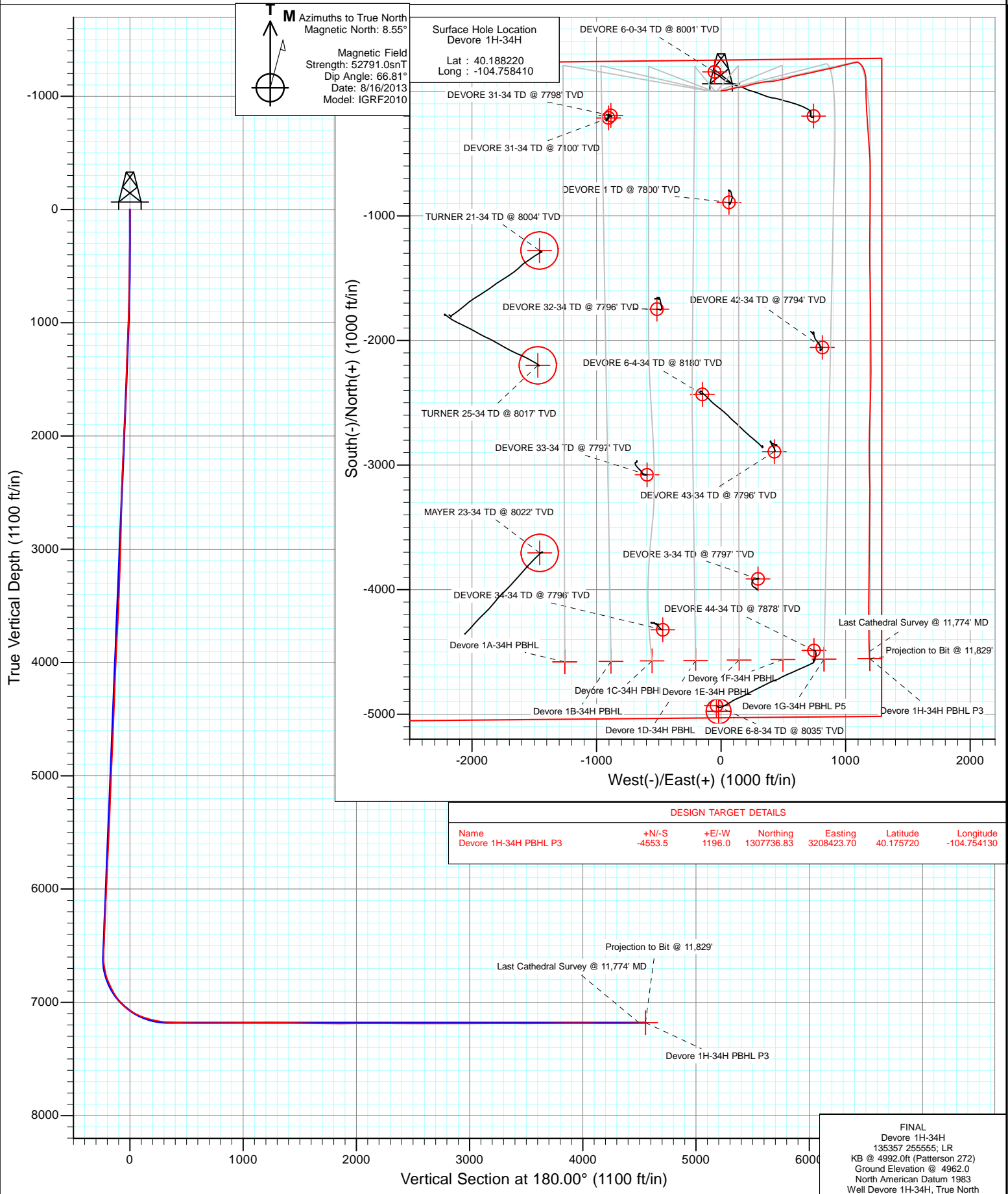


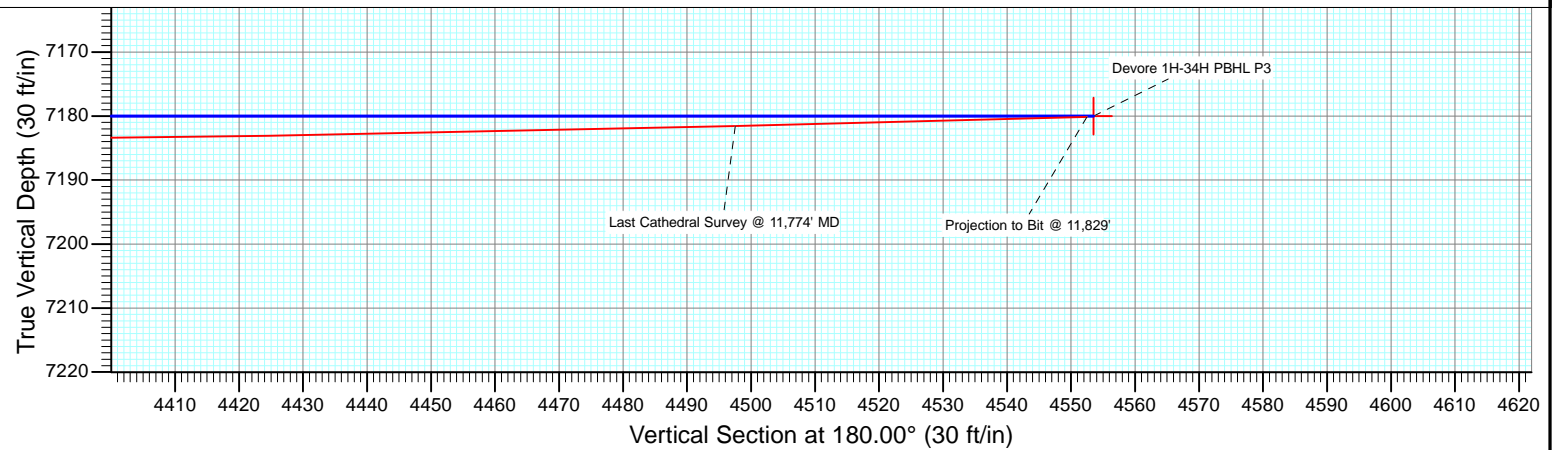
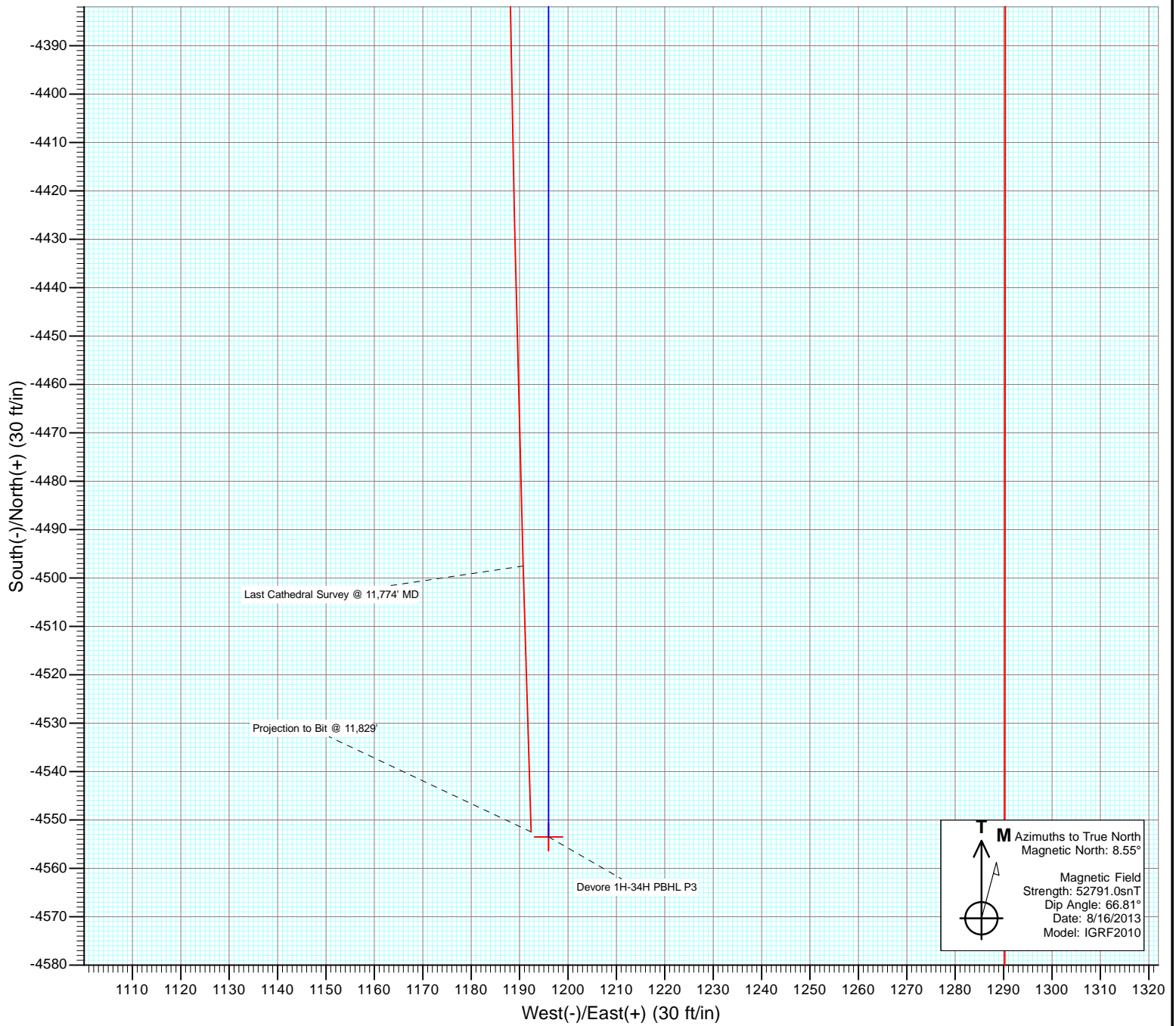


Project: DJ Wattenberg
Site: S34-T3N-R66W (Devore)
Well: Devore 1H-34H
Wellbore: Hz
Design: FINAL





Project: DJ Wattenberg
Site: S34-T3N-R66W (Devore)
Well: Devore 1H-34H
Wellbore: Hz
Design: FINAL



Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Devore 1H-34H
Project:	DJ Wattenberg	TVD Reference:	KB @ 4992.0ft (Patterson 272)
Site:	S34-T3N-R66W (Devore)	MD Reference:	KB @ 4992.0ft (Patterson 272)
Well:	Devore 1H-34H	North Reference:	True
Wellbore:	Hz	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 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		S34-T3N-R66W (Devore)			
Site Position:		Northing:	1,307,711.17 ft	Latitude:	40.175660
From:	Lat/Long	Easting:	3,207,971.22 ft	Longitude:	-104.755750
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	0.48 °

Well	Devore 1H-34H					
Well Position	+N/-S	0.0 ft	Northing:	1,312,280.17 ft	Latitude:	40.188220
	+E/-W	0.0 ft	Easting:	3,207,189.70 ft	Longitude:	-104.758410
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,962.0 ft

Wellbore	Hz				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	8/16/2013	8.55	66.81	52,791

Design	FINAL				
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction	
	(ft)	(ft)	(ft)	(°)	
	0.0	0.0	0.0	180.00	

Survey Program	Date	8/30/2013			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
134.0	11,829.0	Survey #1 (Hz)	Geolink MWD	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		
134.0	0.60	12.10	134.0	0.7	0.1	-0.7	0.45	0.45		
166.0	0.70	0.00	166.0	1.0	0.2	-1.0	0.53	0.31		
260.0	1.20	63.40	260.0	2.1	1.1	-2.1	1.15	0.53		
354.0	1.80	62.30	354.0	3.2	3.2	-3.2	0.64	0.64		
447.0	2.80	80.70	446.9	4.2	6.8	-4.2	1.32	1.08		
541.0	4.20	82.40	540.7	5.1	12.5	-5.1	1.49	1.49		
634.0	5.80	83.30	633.3	6.1	20.5	-6.1	1.72	1.72		
728.0	6.10	86.20	726.8	6.9	30.2	-6.9	0.45	0.32		
791.0	6.50	80.20	789.5	7.8	37.1	-7.8	1.22	0.63		
884.0	7.80	75.00	881.7	10.3	48.3	-10.3	1.56	1.40		
955.0	8.00	76.10	952.1	12.7	57.8	-12.7	0.35	0.28		
1,020.0	7.80	77.20	1,016.4	14.8	66.5	-14.8	0.39	-0.31		

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Devore 1H-34H
Project:	DJ Wattenberg	TVD Reference:	KB @ 4992.0ft (Patterson 272)
Site:	S34-T3N-R66W (Devore)	MD Reference:	KB @ 4992.0ft (Patterson 272)
Well:	Devore 1H-34H	North Reference:	True
Wellbore:	Hz	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 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
1,114.0	8.00	75.60	1,109.5	17.8	79.0	-17.8	0.32	0.21	
1,207.0	10.20	75.20	1,201.4	21.6	93.3	-21.6	2.37	2.37	
1,301.0	9.80	71.60	1,293.9	26.2	108.9	-26.2	0.79	-0.43	
1,394.0	9.20	81.80	1,385.7	29.8	123.8	-29.8	1.92	-0.65	
1,488.0	10.20	87.30	1,478.3	31.2	139.5	-31.2	1.45	1.06	
1,582.0	11.80	82.10	1,570.6	32.9	157.4	-32.9	2.00	1.70	
1,675.0	11.40	80.80	1,661.7	35.7	175.9	-35.7	0.51	-0.43	
1,769.0	10.90	76.70	1,753.9	39.2	193.7	-39.2	1.00	-0.53	
1,862.0	10.40	72.70	1,845.3	43.8	210.3	-43.8	0.96	-0.54	
1,956.0	11.50	72.50	1,937.6	49.1	227.3	-49.1	1.17	1.17	
2,050.0	11.90	73.10	2,029.7	54.7	245.5	-54.7	0.44	0.43	
2,145.0	11.60	81.30	2,122.7	59.0	264.3	-59.0	1.78	-0.32	
2,239.0	11.40	79.00	2,214.8	62.2	282.8	-62.2	0.53	-0.21	
2,333.0	11.40	75.70	2,306.9	66.3	300.9	-66.3	0.69	0.00	
2,428.0	11.40	80.90	2,400.1	70.1	319.3	-70.1	1.08	0.00	
2,522.0	10.90	78.10	2,492.3	73.4	337.1	-73.4	0.78	-0.53	
2,617.0	9.90	85.20	2,585.7	75.9	354.1	-75.9	1.71	-1.05	
2,711.0	11.00	87.70	2,678.2	77.0	371.1	-77.0	1.27	1.17	
2,806.0	10.50	85.70	2,771.5	78.0	388.8	-78.0	0.66	-0.53	
2,900.0	10.50	83.70	2,863.9	79.6	405.8	-79.6	0.39	0.00	
2,995.0	10.30	82.20	2,957.4	81.7	422.8	-81.7	0.35	-0.21	
3,089.0	10.10	79.80	3,049.9	84.3	439.3	-84.3	0.50	-0.21	
3,184.0	9.70	77.60	3,143.5	87.5	455.3	-87.5	0.58	-0.42	
3,278.0	8.70	75.70	3,236.3	90.9	469.9	-90.9	1.11	-1.06	
3,372.0	9.80	82.00	3,329.0	93.8	484.7	-93.8	1.59	1.17	
3,467.0	10.10	77.10	3,422.6	96.8	500.9	-96.8	0.95	0.32	
3,562.0	8.80	75.60	3,516.3	100.5	516.0	-100.5	1.39	-1.37	
3,656.0	10.20	75.00	3,609.0	104.4	531.0	-104.4	1.49	1.49	
3,750.0	11.60	72.40	3,701.3	109.4	548.1	-109.4	1.58	1.49	
3,845.0	10.40	70.70	3,794.6	115.1	565.3	-115.1	1.31	-1.26	
3,939.0	10.40	76.80	3,887.0	119.9	581.5	-119.9	1.17	0.00	
4,034.0	12.10	79.40	3,980.2	123.7	599.7	-123.7	1.87	1.79	
4,128.0	11.60	78.70	4,072.2	127.3	618.6	-127.3	0.55	-0.53	
4,223.0	11.60	77.90	4,165.3	131.2	637.3	-131.2	0.17	0.00	
4,317.0	11.40	77.40	4,257.4	135.2	655.6	-135.2	0.24	-0.21	
4,412.0	10.70	78.60	4,350.6	139.0	673.4	-139.0	0.78	-0.74	
4,506.0	9.70	77.20	4,443.1	142.5	689.7	-142.5	1.10	-1.06	
4,601.0	10.70	78.90	4,536.6	145.9	706.2	-145.9	1.10	1.05	
4,696.0	9.80	77.60	4,630.1	149.4	722.7	-149.4	0.98	-0.95	
4,790.0	11.20	77.50	4,722.5	153.1	739.5	-153.1	1.49	1.49	
4,884.0	11.10	77.20	4,814.8	157.1	757.2	-157.1	0.12	-0.11	
4,979.0	10.20	76.50	4,908.1	161.0	774.3	-161.0	0.96	-0.95	
5,073.0	11.00	76.50	5,000.5	165.1	791.1	-165.1	0.85	0.85	
5,167.0	11.60	79.40	5,092.7	168.9	809.1	-168.9	0.88	0.64	
5,262.0	11.40	79.90	5,185.8	172.3	827.7	-172.3	0.24	-0.21	
5,356.0	11.10	79.10	5,278.0	175.7	845.8	-175.7	0.36	-0.32	
5,450.0	10.90	76.90	5,370.3	179.4	863.3	-179.4	0.49	-0.21	
5,545.0	10.50	75.70	5,463.6	183.6	880.4	-183.6	0.48	-0.42	
5,639.0	10.80	73.70	5,556.0	188.1	897.2	-188.1	0.51	0.32	
5,734.0	11.90	78.50	5,649.1	192.6	915.3	-192.6	1.53	1.16	
5,828.0	11.00	77.30	5,741.3	196.5	933.6	-196.5	0.99	-0.96	
5,922.0	10.10	74.90	5,833.7	200.6	950.3	-200.6	1.07	-0.96	
6,017.0	11.10	75.30	5,927.1	205.1	967.2	-205.1	1.06	1.05	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Devore 1H-34H
Project:	DJ Wattenberg	TVD Reference:	KB @ 4992.0ft (Patterson 272)
Site:	S34-T3N-R66W (Devore)	MD Reference:	KB @ 4992.0ft (Patterson 272)
Well:	Devore 1H-34H	North Reference:	True
Wellbore:	Hz	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 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
6,111.0	10.10	74.60	6,019.5	209.6	983.9	-209.6	1.07	-1.06	
6,206.0	11.70	79.10	6,112.7	213.6	1,001.4	-213.6	1.91	1.68	
6,299.0	10.70	75.50	6,204.0	217.6	1,019.0	-217.6	1.31	-1.08	
6,393.0	11.50	77.10	6,296.2	221.8	1,036.6	-221.8	0.91	0.85	
6,488.0	10.50	75.20	6,389.5	226.2	1,054.2	-226.2	1.12	-1.05	
6,582.0	10.90	80.50	6,481.8	229.8	1,071.2	-229.8	1.13	0.43	
6,645.0	10.10	79.40	6,543.8	231.8	1,082.5	-231.8	1.31	-1.27	
6,676.0	9.60	78.30	6,574.3	232.9	1,087.7	-232.9	1.72	-1.61	
6,708.0	9.50	90.50	6,605.9	233.4	1,093.0	-233.4	6.32	-0.31	
6,739.0	12.10	110.40	6,636.3	232.2	1,098.6	-232.2	14.55	8.39	
6,770.0	15.30	120.30	6,666.5	229.0	1,105.2	-229.0	12.76	10.32	
6,801.0	16.40	126.70	6,696.3	224.3	1,112.2	-224.3	6.66	3.55	
6,832.0	17.70	129.30	6,725.9	218.7	1,119.4	-218.7	4.86	4.19	
6,864.0	19.00	135.40	6,756.3	211.9	1,126.8	-211.9	7.24	4.06	
6,895.0	21.80	145.50	6,785.3	203.6	1,133.6	-203.6	14.48	9.03	
6,927.0	25.20	153.80	6,814.7	192.6	1,140.0	-192.6	14.80	10.62	
6,958.0	27.30	159.00	6,842.5	180.0	1,145.4	-180.0	10.04	6.77	
6,990.0	27.60	161.30	6,870.9	166.2	1,150.4	-166.2	3.44	0.94	
7,021.0	29.20	164.70	6,898.2	152.1	1,154.7	-152.1	7.34	5.16	
7,052.0	31.90	168.60	6,924.9	136.7	1,158.4	-136.7	10.80	8.71	
7,084.0	33.50	172.30	6,951.8	119.7	1,161.2	-119.7	8.00	5.00	
7,116.0	36.50	177.50	6,978.0	101.4	1,162.8	-101.4	13.21	9.37	
7,147.0	40.40	180.80	7,002.3	82.2	1,163.1	-82.2	14.21	12.58	
7,179.0	45.60	180.80	7,025.7	60.3	1,162.8	-60.3	16.25	16.25	
7,211.0	51.30	179.90	7,046.9	36.4	1,162.6	-36.4	17.94	17.81	
7,242.0	55.50	179.30	7,065.4	11.5	1,162.8	-11.5	13.64	13.55	
7,274.0	59.00	178.30	7,082.7	-15.4	1,163.4	15.4	11.25	10.94	
7,305.0	62.30	177.60	7,097.9	-42.4	1,164.3	42.4	10.83	10.65	
7,337.0	65.10	177.00	7,112.1	-71.0	1,165.7	71.0	8.91	8.75	
7,368.0	69.10	176.60	7,124.1	-99.5	1,167.3	99.5	12.96	12.90	
7,400.0	72.10	176.90	7,134.7	-129.7	1,169.0	129.7	9.42	9.37	
7,431.0	73.40	177.20	7,143.9	-159.2	1,170.5	159.2	4.29	4.19	
7,463.0	75.80	177.00	7,152.4	-190.0	1,172.1	190.0	7.52	7.50	
7,494.0	78.50	176.60	7,159.3	-220.2	1,173.8	220.2	8.80	8.71	
7,526.0	80.60	176.40	7,165.1	-251.6	1,175.7	251.6	6.59	6.56	
7,557.0	82.80	176.00	7,169.6	-282.2	1,177.7	282.2	7.21	7.10	
7,588.0	84.50	176.10	7,173.0	-313.0	1,179.9	313.0	5.49	5.48	
7,601.0	85.50	175.60	7,174.2	-325.9	1,180.8	325.9	8.59	7.69	
7,667.0	88.10	175.90	7,177.9	-391.6	1,185.7	391.6	3.97	3.94	
7,730.0	88.60	175.80	7,179.7	-454.4	1,190.2	454.4	0.81	0.79	
7,824.0	88.70	177.10	7,181.9	-548.2	1,196.0	548.2	1.39	0.11	
7,919.0	90.00	179.50	7,183.0	-643.1	1,198.9	643.1	2.87	1.37	
8,013.0	90.60	180.40	7,182.5	-737.1	1,198.9	737.1	1.15	0.64	
8,108.0	90.90	180.30	7,181.2	-832.1	1,198.4	832.1	0.33	0.32	
8,202.0	90.20	180.60	7,180.3	-926.1	1,197.6	926.1	0.81	-0.74	
8,297.0	90.20	180.50	7,180.0	-1,021.1	1,196.7	1,021.1	0.11	0.00	
8,393.0	90.30	180.70	7,179.6	-1,117.1	1,195.7	1,117.1	0.23	0.10	
8,488.0	90.70	180.50	7,178.7	-1,212.1	1,194.7	1,212.1	0.47	0.42	
8,583.0	89.50	179.50	7,178.6	-1,307.1	1,194.7	1,307.1	1.64	-1.26	
8,679.0	88.70	179.40	7,180.1	-1,403.1	1,195.6	1,403.1	0.84	-0.83	
8,773.0	88.40	178.50	7,182.5	-1,497.0	1,197.4	1,497.0	1.01	-0.32	
8,869.0	88.80	179.60	7,184.8	-1,593.0	1,199.0	1,593.0	1.22	0.42	
8,963.0	89.40	179.50	7,186.3	-1,687.0	1,199.7	1,687.0	0.65	0.64	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Devore 1H-34H
Project:	DJ Wattenberg	TVD Reference:	KB @ 4992.0ft (Patterson 272)
Site:	S34-T3N-R66W (Devore)	MD Reference:	KB @ 4992.0ft (Patterson 272)
Well:	Devore 1H-34H	North Reference:	True
Wellbore:	Hz	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 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
9,058.0	89.60	178.70	7,187.1	-1,782.0	1,201.2	1,782.0	0.87	0.21	
9,152.0	90.40	180.10	7,187.1	-1,875.9	1,202.2	1,875.9	1.72	0.85	
9,247.0	90.20	180.00	7,186.6	-1,970.9	1,202.1	1,970.9	0.24	-0.21	
9,341.0	91.30	179.10	7,185.4	-2,064.9	1,202.8	2,064.9	1.51	1.17	
9,436.0	89.10	179.20	7,185.1	-2,159.9	1,204.2	2,159.9	2.32	-2.32	
9,530.0	90.00	181.00	7,185.8	-2,253.9	1,204.1	2,253.9	2.14	0.96	
9,625.0	89.80	180.90	7,186.0	-2,348.9	1,202.5	2,348.9	0.24	-0.21	
9,719.0	89.50	181.30	7,186.5	-2,442.9	1,200.7	2,442.9	0.53	-0.32	
9,813.0	89.90	181.60	7,187.0	-2,536.8	1,198.3	2,536.8	0.53	0.43	
9,908.0	90.10	181.80	7,187.0	-2,631.8	1,195.5	2,631.8	0.30	0.21	
10,002.0	89.90	181.70	7,187.0	-2,725.8	1,192.6	2,725.8	0.24	-0.21	
10,097.0	90.20	180.50	7,186.9	-2,820.7	1,190.8	2,820.7	1.30	0.32	
10,191.0	90.20	179.60	7,186.6	-2,914.7	1,190.7	2,914.7	0.96	0.00	
10,285.0	90.10	178.90	7,186.4	-3,008.7	1,191.9	3,008.7	0.75	-0.11	
10,380.0	90.20	178.70	7,186.1	-3,103.7	1,193.9	3,103.7	0.24	0.11	
10,474.0	90.30	179.90	7,185.7	-3,197.7	1,195.1	3,197.7	1.28	0.11	
10,568.0	90.00	180.70	7,185.5	-3,291.7	1,194.6	3,291.7	0.91	-0.32	
10,663.0	90.10	180.60	7,185.4	-3,386.7	1,193.5	3,386.7	0.15	0.11	
10,757.0	90.10	180.70	7,185.2	-3,480.7	1,192.4	3,480.7	0.11	0.00	
10,852.0	90.00	180.80	7,185.1	-3,575.7	1,191.2	3,575.7	0.15	-0.11	
10,946.0	90.00	179.70	7,185.1	-3,669.7	1,190.8	3,669.7	1.17	0.00	
11,040.0	90.60	181.00	7,184.6	-3,763.7	1,190.2	3,763.7	1.52	0.64	
11,135.0	91.10	180.60	7,183.2	-3,858.6	1,188.9	3,858.6	0.67	0.53	
11,229.0	90.60	180.90	7,181.8	-3,952.6	1,187.7	3,952.6	0.62	-0.53	
11,323.0	89.00	180.70	7,182.2	-4,046.6	1,186.3	4,046.6	1.72	-1.70	
11,418.0	89.20	180.10	7,183.7	-4,141.6	1,185.7	4,141.6	0.67	0.21	
11,512.0	89.80	179.50	7,184.5	-4,235.6	1,186.0	4,235.6	0.90	0.64	
11,606.0	90.50	179.10	7,184.2	-4,329.6	1,187.2	4,329.6	0.86	0.74	
11,701.0	90.90	178.80	7,183.1	-4,424.6	1,188.9	4,424.6	0.53	0.42	
11,774.0	91.50	178.30	7,181.5	-4,497.5	1,190.7	4,497.5	1.07	0.82	Last Cathedral Survey @ 11,774' MD Projection to Bit @ 11,829'
11,829.0	91.50	178.30	7,180.1	-4,552.5	1,192.4	4,552.5	0.00	0.00	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well Devore 1H-34H
Project:	DJ Wattenberg	TVD Reference:	KB @ 4992.0ft (Patterson 272)
Site:	S34-T3N-R66W (Devore)	MD Reference:	KB @ 4992.0ft (Patterson 272)
Well:	Devore 1H-34H	North Reference:	True
Wellbore:	Hz	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

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									
Devore 1H-34H PBHL	0.00	0.00	7,192.0	-4,553.5	1,196.0	1,307,736.83	3,208,423.70	40.175720	-104.754130
- actual wellpath misses target center by 12.5ft at 11829.0ft MD (7180.1 TVD, -4552.5 N, 1192.4 E)									
- Point									
Devore 1H-34H PBHL P	0.00	0.00	7,180.0	-4,553.5	1,196.0	1,307,736.83	3,208,423.70	40.175720	-104.754130
- actual wellpath misses target center by 3.7ft at 11829.0ft MD (7180.1 TVD, -4552.5 N, 1192.4 E)									
- Point									

Design Annotations					
Measured Depth	Vertical Depth	Local Coordinates			
(ft)	(ft)	+N/-S	+E/-W		
		(ft)	(ft)	Comment	
11,774.0	7,181.5	-4,497.5	1,190.7	Last Cathedral Survey @ 11,774' MD	
11,829.0	7,180.1	-4,552.5	1,192.4	Projection to Bit @ 11,829'	

Checked By: _____ Approved By: _____ Date: _____