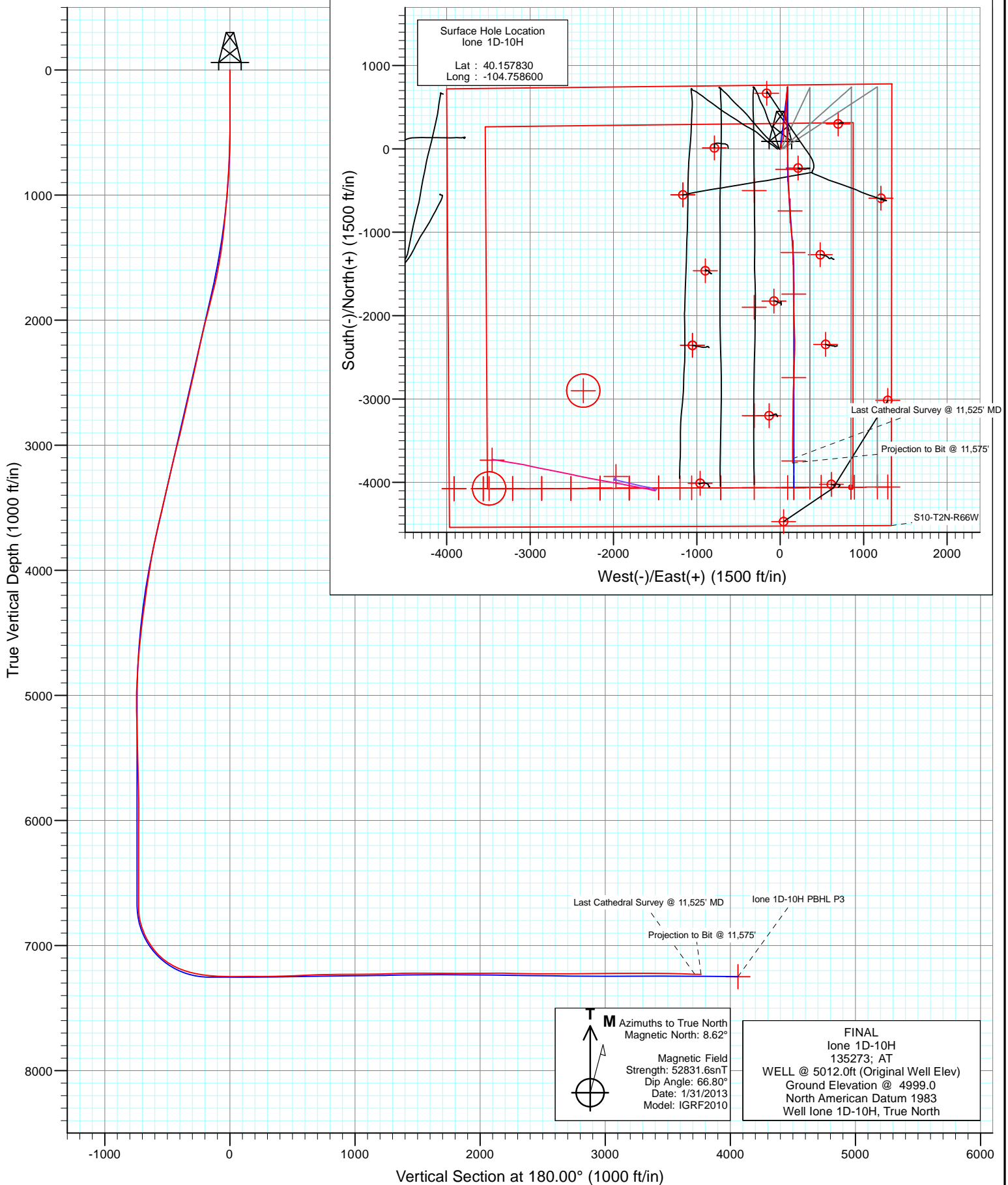


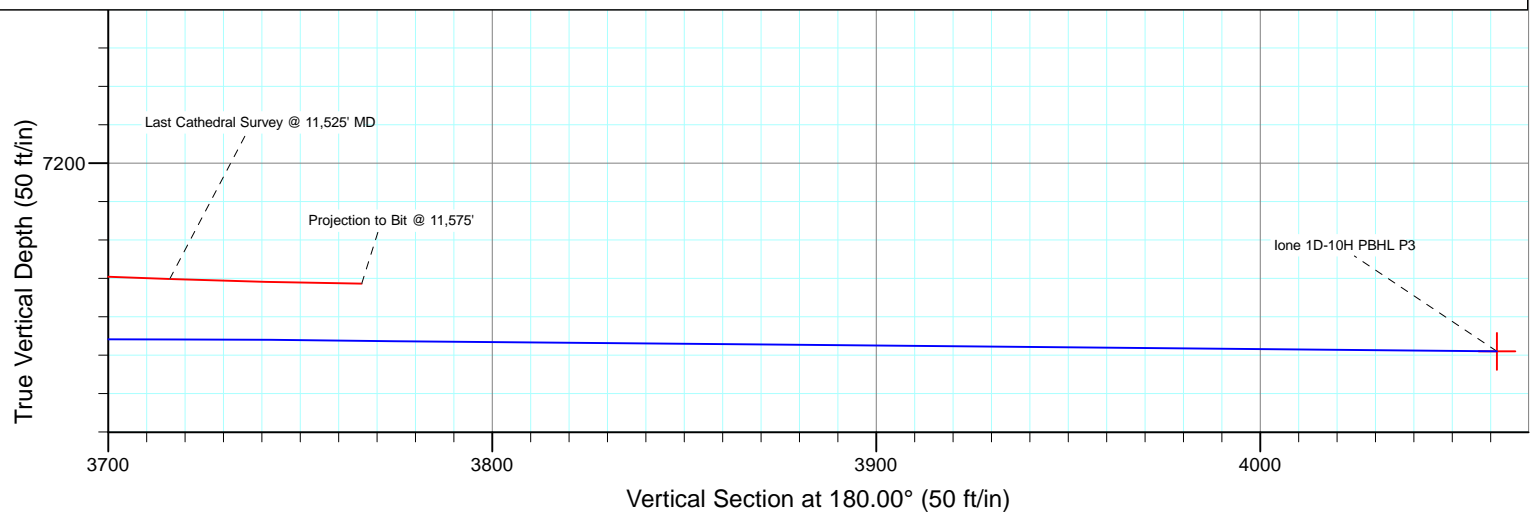
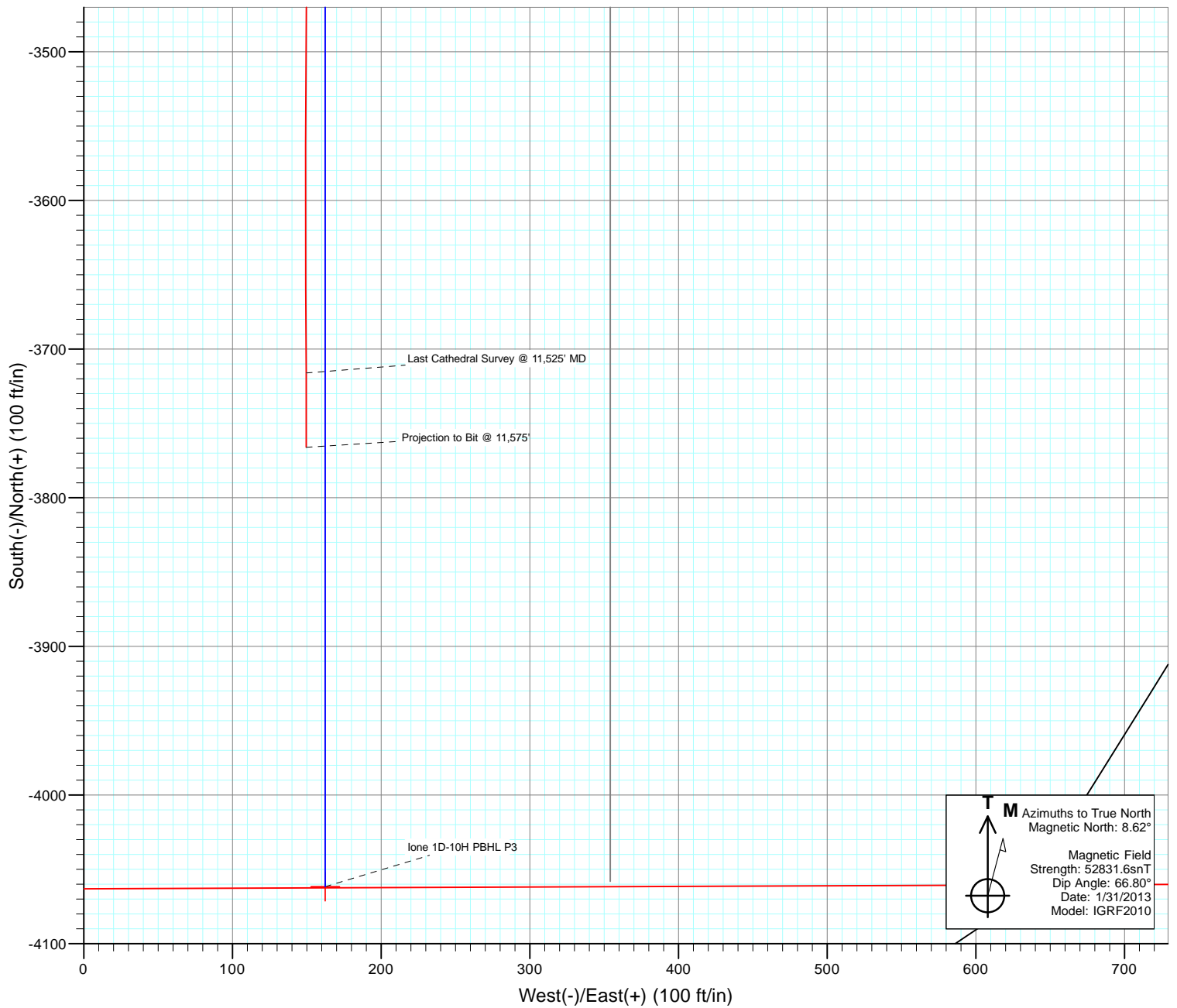


Project: DJ Wattenberg
Site: S10-T2N-R66W (lone)
Well: lone 1D-10H
Wellbore: Hz
Design: FINAL





Project: DJ Wattenberg
Site: S10-T2N-R66W (lone)
Well: lone 1D-10H
Wellbore: Hz
Design: FINAL



Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well lone 1D-10H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5012.0ft (Original Well Elev)
Site:	S10-T2N-R66W (lone)	MD Reference:	WELL @ 5012.0ft (Original Well Elev)
Well:	lone 1D-10H	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		S10-T2N-R66W (lone)			
Site Position:		Northing:	1,297,164.02 ft	Latitude:	40.146710
From:	Lat/Long	Easting:	3,207,875.24 ft	Longitude:	-104.756410
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	0.48 °

Well	lone 1D-10H					
Well Position	+N/-S	0.0 ft	Northing:	1,301,209.52 ft	Latitude:	40.157830
	+E/-W	0.0 ft	Easting:	3,207,229.17 ft	Longitude:	-104.758600
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	4,999.0 ft

Wellbore	Hz				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	1/31/2013	8.62	66.80	52,832

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

Survey Program	Date	6/27/2013			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
138.0	11,575.0	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	
138.0	0.50	115.30	138.0	-0.3	0.5	0.3	0.36	0.36	
231.0	0.50	139.40	231.0	-0.7	1.2	0.7	0.22	0.00	
324.0	0.20	108.60	324.0	-1.1	1.6	1.1	0.37	-0.32	
417.0	0.00	109.60	417.0	-1.2	1.7	1.2	0.22	-0.22	
510.0	1.40	56.90	510.0	-0.5	2.7	0.5	1.51	1.51	
603.0	1.80	39.30	602.9	1.2	4.6	-1.2	0.68	0.43	
696.0	2.90	39.30	695.9	4.2	7.0	-4.2	1.18	1.18	
789.0	3.40	21.40	788.7	8.6	9.5	-8.6	1.18	0.54	
882.0	3.80	12.30	881.5	14.1	11.2	-14.1	0.75	0.43	
972.0	4.30	4.00	971.3	20.4	12.0	-20.4	0.85	0.56	
1,017.0	4.40	1.60	1,016.2	23.8	12.2	-23.8	0.46	0.22	
1,110.0	4.90	349.40	1,108.9	31.3	11.6	-31.3	1.19	0.54	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well lone 1D-10H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5012.0ft (Original Well Elev)
Site:	S10-T2N-R66W (lone)	MD Reference:	WELL @ 5012.0ft (Original Well Elev)
Well:	lone 1D-10H	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
1,203.0	6.50	2.00	1,201.4	40.5	11.0	-40.5	2.17	1.72	
1,296.0	5.40	0.60	1,293.9	50.1	11.2	-50.1	1.19	-1.18	
1,389.0	8.10	15.50	1,386.3	60.8	13.0	-60.8	3.44	2.90	
1,482.0	9.80	22.90	1,478.1	74.4	17.9	-74.4	2.20	1.83	
1,575.0	11.30	22.20	1,569.6	90.1	24.4	-90.1	1.62	1.61	
1,668.0	12.70	18.40	1,660.5	108.3	31.1	-108.3	1.73	1.51	
1,761.0	14.20	10.60	1,751.0	129.2	36.4	-129.2	2.53	1.61	
1,854.0	14.20	6.20	1,841.2	151.7	39.7	-151.7	1.16	0.00	
1,947.0	14.10	2.20	1,931.3	174.4	41.4	-174.4	1.06	-0.11	
2,042.0	13.80	359.30	2,023.5	197.3	41.7	-197.3	0.80	-0.32	
2,137.0	13.30	355.90	2,115.9	219.5	40.8	-219.5	0.99	-0.53	
2,231.0	12.80	354.10	2,207.5	240.7	38.9	-240.7	0.69	-0.53	
2,326.0	12.00	1.20	2,300.3	261.0	38.1	-261.0	1.81	-0.84	
2,421.0	11.90	3.60	2,393.2	280.6	38.9	-280.6	0.53	-0.11	
2,516.0	13.10	11.00	2,485.9	301.0	41.5	-301.0	2.10	1.26	
2,611.0	13.50	10.70	2,578.4	322.5	45.7	-322.5	0.43	0.42	
2,706.0	12.60	8.10	2,670.9	343.6	49.2	-343.6	1.13	-0.95	
2,801.0	13.40	8.40	2,763.5	364.8	52.2	-364.8	0.85	0.84	
2,896.0	12.40	7.80	2,856.1	385.8	55.2	-385.8	1.06	-1.05	
2,990.0	14.50	7.00	2,947.5	407.4	58.0	-407.4	2.24	2.23	
3,085.0	14.10	6.50	3,039.6	430.7	60.8	-430.7	0.44	-0.42	
3,180.0	13.60	4.10	3,131.8	453.4	62.9	-453.4	0.80	-0.53	
3,275.0	12.90	2.90	3,224.3	475.1	64.2	-475.1	0.79	-0.74	
3,370.0	13.60	11.10	3,316.8	496.7	66.9	-496.7	2.11	0.74	
3,465.0	12.90	8.40	3,409.2	518.1	70.6	-518.1	0.98	-0.74	
3,560.0	13.10	7.50	3,501.8	539.3	73.6	-539.3	0.30	0.21	
3,655.0	13.80	7.60	3,594.2	561.2	76.5	-561.2	0.74	0.74	
3,750.0	12.60	4.40	3,686.7	582.7	78.8	-582.7	1.48	-1.26	
3,845.0	11.60	359.80	3,779.6	602.6	79.5	-602.6	1.46	-1.05	
3,940.0	10.50	355.70	3,872.8	620.8	78.9	-620.8	1.42	-1.16	
4,035.0	8.90	4.20	3,966.5	636.8	78.7	-636.8	2.26	-1.68	
4,130.0	9.10	12.10	4,060.3	651.5	80.9	-651.5	1.32	0.21	
4,225.0	8.20	9.50	4,154.2	665.5	83.6	-665.5	1.03	-0.95	
4,319.0	8.00	7.80	4,247.3	678.6	85.5	-678.6	0.33	-0.21	
4,415.0	7.60	5.00	4,342.4	691.5	87.0	-691.5	0.57	-0.42	
4,510.0	6.50	359.70	4,436.7	703.2	87.5	-703.2	1.34	-1.16	
4,604.0	6.20	356.90	4,530.1	713.5	87.2	-713.5	0.46	-0.32	
4,699.0	5.30	6.20	4,624.6	723.0	87.4	-723.0	1.36	-0.95	
4,794.0	4.80	3.00	4,719.3	731.4	88.1	-731.4	0.60	-0.53	
4,889.0	2.80	13.20	4,814.0	737.6	88.8	-737.6	2.21	-2.11	
4,984.0	3.10	10.00	4,908.9	742.4	89.8	-742.4	0.36	0.32	
5,079.0	1.60	320.00	5,003.8	745.9	89.4	-745.9	2.53	-1.58	
5,174.0	1.60	216.20	5,098.8	745.9	87.8	-745.9	2.65	0.00	
5,269.0	1.80	213.70	5,193.8	743.6	86.2	-743.6	0.22	0.21	
5,364.0	1.60	213.70	5,288.7	741.2	84.6	-741.2	0.21	-0.21	
5,449.0	1.90	211.60	5,373.7	739.0	83.2	-739.0	0.36	0.35	
5,554.0	1.50	199.10	5,478.7	736.2	81.8	-736.2	0.52	-0.38	
5,649.0	1.30	152.10	5,573.6	734.1	81.9	-734.1	1.19	-0.21	
5,744.0	1.50	142.90	5,668.6	732.2	83.2	-732.2	0.32	0.21	
5,839.0	1.80	148.50	5,763.6	729.9	84.7	-729.9	0.36	0.32	
5,934.0	2.00	117.30	5,858.5	727.9	87.0	-727.9	1.09	0.21	
6,029.0	0.50	35.30	5,953.5	727.5	88.7	-727.5	2.10	-1.58	
6,124.0	0.50	352.00	6,048.5	728.2	88.9	-728.2	0.39	0.00	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well lone 1D-10H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5012.0ft (Original Well Elev)
Site:	S10-T2N-R66W (lone)	MD Reference:	WELL @ 5012.0ft (Original Well Elev)
Well:	lone 1D-10H	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
6,218.0	0.40	258.10	6,142.5	728.5	88.5	-728.5	0.70	-0.11	
6,314.0	0.40	224.30	6,238.5	728.2	87.9	-728.2	0.24	0.00	
6,408.0	0.70	62.80	6,332.5	728.3	88.2	-728.3	1.16	0.32	
6,503.0	0.40	80.30	6,427.5	728.6	89.1	-728.6	0.36	-0.32	
6,598.0	0.00	38.90	6,522.5	728.6	89.4	-728.6	0.42	-0.42	
6,693.0	0.10	205.50	6,617.5	728.6	89.3	-728.6	0.11	0.11	
6,725.0	0.30	306.70	6,649.5	728.6	89.3	-728.6	1.04	0.62	
6,757.0	0.50	303.90	6,681.5	728.7	89.1	-728.7	0.63	0.62	
6,788.0	2.00	218.20	6,712.5	728.4	88.6	-728.4	6.53	4.84	
6,820.0	5.10	203.10	6,744.4	726.6	87.7	-726.6	10.04	9.69	
6,851.0	8.90	193.50	6,775.2	723.0	86.6	-723.0	12.78	12.26	
6,883.0	13.00	190.60	6,806.6	717.1	85.4	-717.1	12.92	12.81	
6,915.0	16.80	190.70	6,837.5	709.0	83.9	-709.0	11.88	11.87	
6,946.0	20.10	190.80	6,866.9	699.3	82.0	-699.3	10.65	10.65	
6,978.0	22.90	190.30	6,896.7	687.8	79.9	-687.8	8.77	8.75	
7,009.0	26.20	187.70	6,924.9	675.1	77.9	-675.1	11.20	10.65	
7,041.0	29.50	185.00	6,953.2	660.2	76.3	-660.2	11.04	10.31	
7,073.0	32.10	183.80	6,980.6	643.9	75.0	-643.9	8.35	8.12	
7,104.0	35.40	181.10	7,006.4	626.7	74.3	-626.7	11.69	10.65	
7,136.0	37.80	178.20	7,032.1	607.6	74.4	-607.6	9.24	7.50	
7,168.0	41.10	177.80	7,056.8	587.3	75.1	-587.3	10.34	10.31	
7,199.0	44.70	179.30	7,079.5	566.2	75.7	-566.2	12.07	11.61	
7,231.0	49.00	180.10	7,101.4	542.9	75.8	-542.9	13.56	13.44	
7,262.0	53.60	179.60	7,120.8	518.7	75.8	-518.7	14.89	14.84	
7,294.0	57.60	180.30	7,138.9	492.3	75.9	-492.3	12.63	12.50	
7,326.0	60.80	180.70	7,155.2	464.8	75.6	-464.8	10.06	10.00	
7,357.0	64.00	180.20	7,169.6	437.4	75.4	-437.4	10.42	10.32	
7,389.0	66.90	179.70	7,182.9	408.2	75.4	-408.2	9.17	9.06	
7,420.0	69.60	179.60	7,194.4	379.5	75.6	-379.5	8.71	8.71	
7,452.0	72.10	179.10	7,204.9	349.2	76.0	-349.2	7.95	7.81	
7,484.0	74.50	178.30	7,214.1	318.6	76.7	-318.6	7.87	7.50	
7,515.0	77.00	178.00	7,221.7	288.6	77.6	-288.6	8.12	8.06	
7,547.0	79.00	177.90	7,228.4	257.3	78.7	-257.3	6.26	6.25	
7,579.0	80.40	177.90	7,234.1	225.8	79.9	-225.8	4.37	4.37	
7,610.0	82.50	178.20	7,238.7	195.2	80.9	-195.2	6.84	6.77	
7,639.0	84.60	178.60	7,241.9	166.4	81.7	-166.4	7.37	7.24	
7,701.0	88.10	179.60	7,245.9	104.5	82.7	-104.5	5.87	5.65	
7,764.0	89.40	179.00	7,247.3	41.6	83.5	-41.6	2.27	2.06	
7,859.0	90.70	178.40	7,247.2	-53.4	85.6	53.4	1.51	1.37	
7,954.0	89.40	177.50	7,247.1	-148.3	89.0	148.3	1.66	-1.37	
8,049.0	89.50	177.70	7,248.0	-243.3	93.0	243.3	0.24	0.11	
8,144.0	91.60	177.70	7,247.1	-338.2	96.8	338.2	2.21	2.21	
8,239.0	91.30	178.00	7,244.7	-433.1	100.4	433.1	0.45	-0.32	
8,334.0	92.10	177.90	7,241.9	-528.0	103.8	528.0	0.85	0.84	
8,429.0	92.70	177.50	7,237.9	-622.8	107.6	622.8	0.76	0.63	
8,524.0	91.90	176.50	7,234.1	-717.6	112.6	717.6	1.35	-0.84	
8,618.0	91.80	176.30	7,231.0	-811.4	118.5	811.4	0.24	-0.11	
8,714.0	89.70	175.50	7,229.8	-907.1	125.3	907.1	2.34	-2.19	
8,809.0	89.40	174.60	7,230.5	-1,001.7	133.5	1,001.7	1.00	-0.32	
8,903.0	90.70	174.80	7,230.5	-1,095.3	142.2	1,095.3	1.40	1.38	
8,998.0	91.60	176.80	7,228.5	-1,190.1	149.2	1,190.1	2.31	0.95	
9,093.0	92.10	177.90	7,225.5	-1,284.9	153.6	1,284.9	1.27	0.53	
9,188.0	91.70	179.00	7,222.3	-1,379.8	156.1	1,379.8	1.23	-0.42	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well lone 1D-10H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5012.0ft (Original Well Elev)
Site:	S10-T2N-R66W (lone)	MD Reference:	WELL @ 5012.0ft (Original Well Elev)
Well:	lone 1D-10H	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
9,283.0	89.60	180.20	7,221.3	-1,474.8	156.8	1,474.8	2.55	-2.21	
9,378.0	89.90	179.90	7,221.7	-1,569.8	156.7	1,569.8	0.45	0.32	
9,473.0	88.90	179.00	7,222.7	-1,664.8	157.6	1,664.8	1.42	-1.05	
9,568.0	89.90	179.70	7,223.7	-1,759.8	158.7	1,759.8	1.28	1.05	
9,663.0	91.30	178.60	7,222.7	-1,854.8	160.1	1,854.8	1.87	1.47	
9,758.0	89.40	178.20	7,222.1	-1,949.7	162.8	1,949.7	2.04	-2.00	
9,853.0	90.30	178.20	7,222.3	-2,044.7	165.7	2,044.7	0.95	0.95	
9,948.0	90.30	178.20	7,221.8	-2,139.6	168.7	2,139.6	0.00	0.00	
10,043.0	88.40	178.00	7,222.9	-2,234.6	171.9	2,234.6	2.01	-2.00	
10,138.0	89.80	180.70	7,224.4	-2,329.5	172.9	2,329.5	3.20	1.47	
10,233.0	88.80	180.30	7,225.6	-2,424.5	172.1	2,424.5	1.13	-1.05	
10,328.0	89.80	182.80	7,226.7	-2,519.5	169.5	2,519.5	2.83	1.05	
10,423.0	90.20	181.90	7,226.7	-2,614.4	165.7	2,614.4	1.04	0.42	
10,518.0	89.30	181.50	7,227.1	-2,709.3	162.8	2,709.3	1.04	-0.95	
10,613.0	90.90	182.40	7,227.0	-2,804.3	159.6	2,804.3	1.93	1.68	
10,707.0	90.50	181.20	7,225.8	-2,898.2	156.7	2,898.2	1.35	-0.43	
10,802.0	90.80	181.10	7,224.7	-2,993.2	154.7	2,993.2	0.33	0.32	
10,897.0	90.80	180.60	7,223.4	-3,088.2	153.3	3,088.2	0.53	0.00	
10,992.0	91.00	180.40	7,221.9	-3,183.2	152.5	3,183.2	0.30	0.21	
11,087.0	89.70	180.70	7,221.4	-3,278.2	151.6	3,278.2	1.40	-1.37	
11,182.0	89.20	180.60	7,222.3	-3,373.1	150.5	3,373.1	0.54	-0.53	
11,277.0	88.90	180.30	7,223.8	-3,468.1	149.8	3,468.1	0.45	-0.32	
11,372.0	89.00	180.30	7,225.6	-3,563.1	149.3	3,563.1	0.11	0.11	
11,467.0	88.00	179.60	7,228.1	-3,658.1	149.4	3,658.1	1.28	-1.05	
11,525.0	87.90	179.80	7,230.1	-3,716.0	149.7	3,716.0	0.39	-0.17	Last Cathedral Survey @ 11,525' MD
11,575.0	89.40	180.30	7,231.3	-3,766.0	149.6	3,766.0	3.16	3.00	Projection to Bit @ 11,575'

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well lone 1D-10H
Project:	DJ Wattenberg	TVD Reference:	WELL @ 5012.0ft (Original Well Elev)
Site:	S10-T2N-R66W (lone)	MD Reference:	WELL @ 5012.0ft (Original Well Elev)
Well:	lone 1D-10H	North Reference:	True
Wellbore:	Hz	Survey Calculation Method:	Minimum Curvature
Design:	FINAL	Database:	USA EDM 5000 Multi Users DB

Targets									
Target Name									
- hit/miss target	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- Shape	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
lone 1D-10H PBHL P2	0.00	0.00	7,247.0	-4,061.7	162.4	1,297,149.34	3,207,425.53	40.146680	-104.758019
- actual wellpath misses target center by 296.3ft at 11575.0ft MD (7231.3 TVD, -3766.0 N, 149.6 E)									
- Point									
lone 1D-10H Int. Tgt	0.00	0.00	7,253.0	-244.9	89.1	1,300,965.40	3,207,320.32	40.157158	-104.758281
- actual wellpath misses target center by 6.4ft at 8050.4ft MD (7248.0 TVD, -244.7 N, 93.1 E)									
- Point									
lone 1D-10H PBHL P3	0.00	0.00	7,249.0	-4,061.7	162.4	1,297,149.34	3,207,425.53	40.146680	-104.758019
- actual wellpath misses target center by 296.5ft at 11575.0ft MD (7231.3 TVD, -3766.0 N, 149.6 E)									
- Point									
lone 1D-10H 9000' TGT	0.00	0.00	7,239.0	-1,242.6	154.1	1,299,968.27	3,207,393.66	40.154419	-104.758049
- actual wellpath misses target center by 12.3ft at 9050.3ft MD (7227.0 TVD, -1242.3 N, 151.8 E)									
- Point									
lone 1D-10H 9500' TGT	0.00	0.00	7,233.0	-1,742.4	162.5	1,299,468.57	3,207,406.22	40.153047	-104.758019
- actual wellpath misses target center by 10.2ft at 9550.7ft MD (7223.6 TVD, -1742.5 N, 158.6 E)									
- Point									
lone 1D-10H 11500' TG	0.00	0.00	7,246.0	-3,742.4	162.4	1,297,468.64	3,207,422.88	40.147557	-104.758019
- actual wellpath misses target center by 19.7ft at 11551.7ft MD (7230.9 TVD, -3742.7 N, 149.7 E)									
- Point									
lone 1D-10H 8500' TGT	0.00	0.00	7,245.0	-743.9	117.8	1,300,466.63	3,207,353.22	40.155788	-104.758178
- actual wellpath misses target center by 12.3ft at 8550.2ft MD (7233.2 TVD, -743.8 N, 114.2 E)									
- Point									
lone 1D-10H 10500' TG	0.00	0.00	7,245.0	-2,742.4	162.5	1,298,468.60	3,207,414.56	40.150302	-104.758019
- actual wellpath misses target center by 17.6ft at 10551.0ft MD (7227.4 TVD, -2742.3 N, 161.9 E)									
- Point									

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
11,525.0	7,230.1	-3,716.0	149.7	Last Cathedral Survey @ 11,525' MD	
11,575.0	7,231.3	-3,766.0	149.6	Projection to Bit @ 11,575'	

Checked By: _____ Approved By: _____ Date: _____