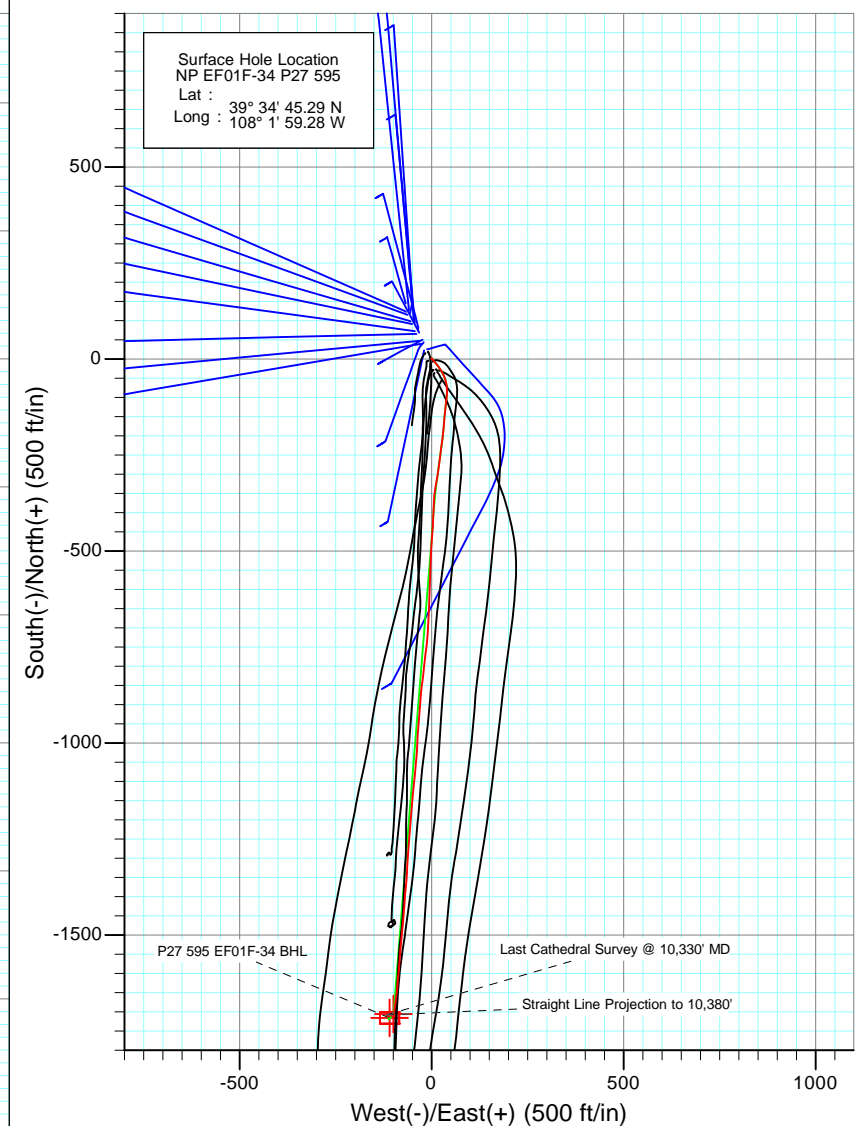
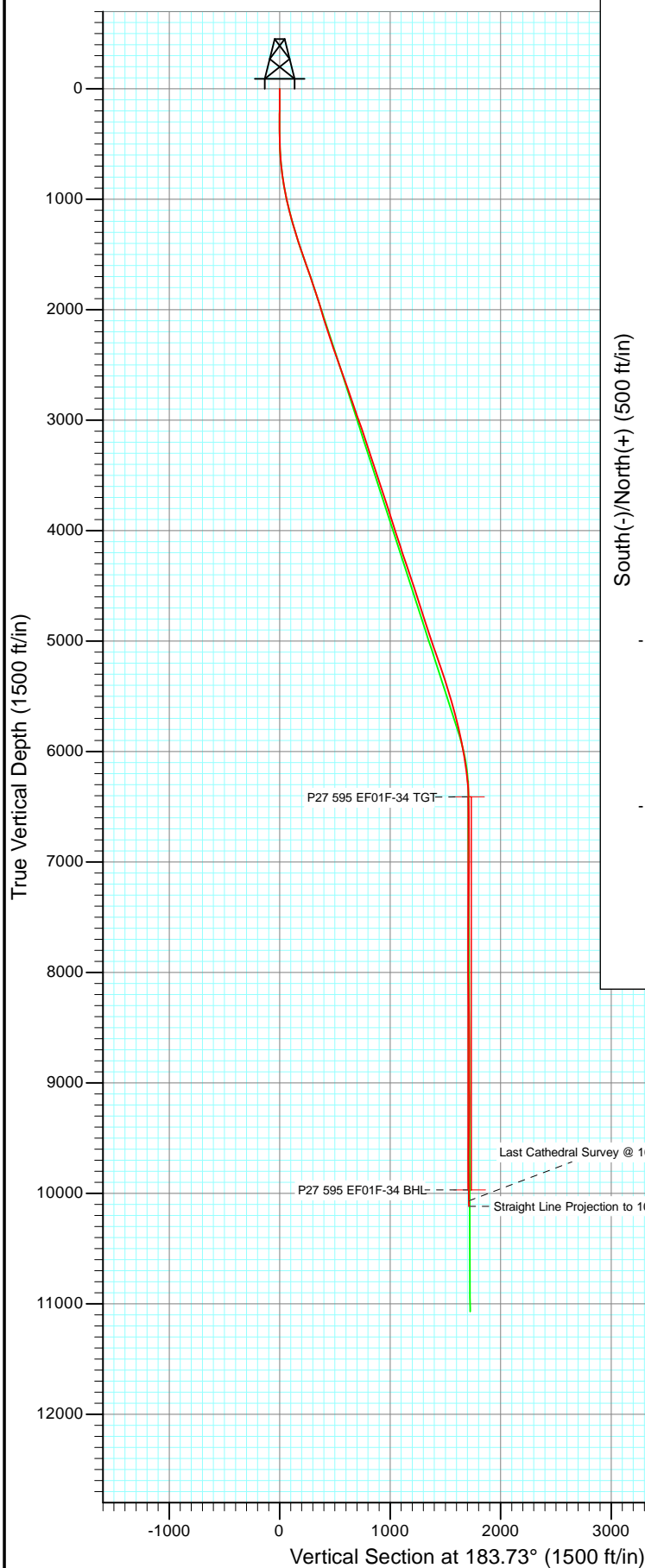




Project: North Piceance
 Site: P27 595 (S27-T5S-R95W)
 Well: NP EF01F-34 P27 595
 Wellbore: DD
 Design: FINAL



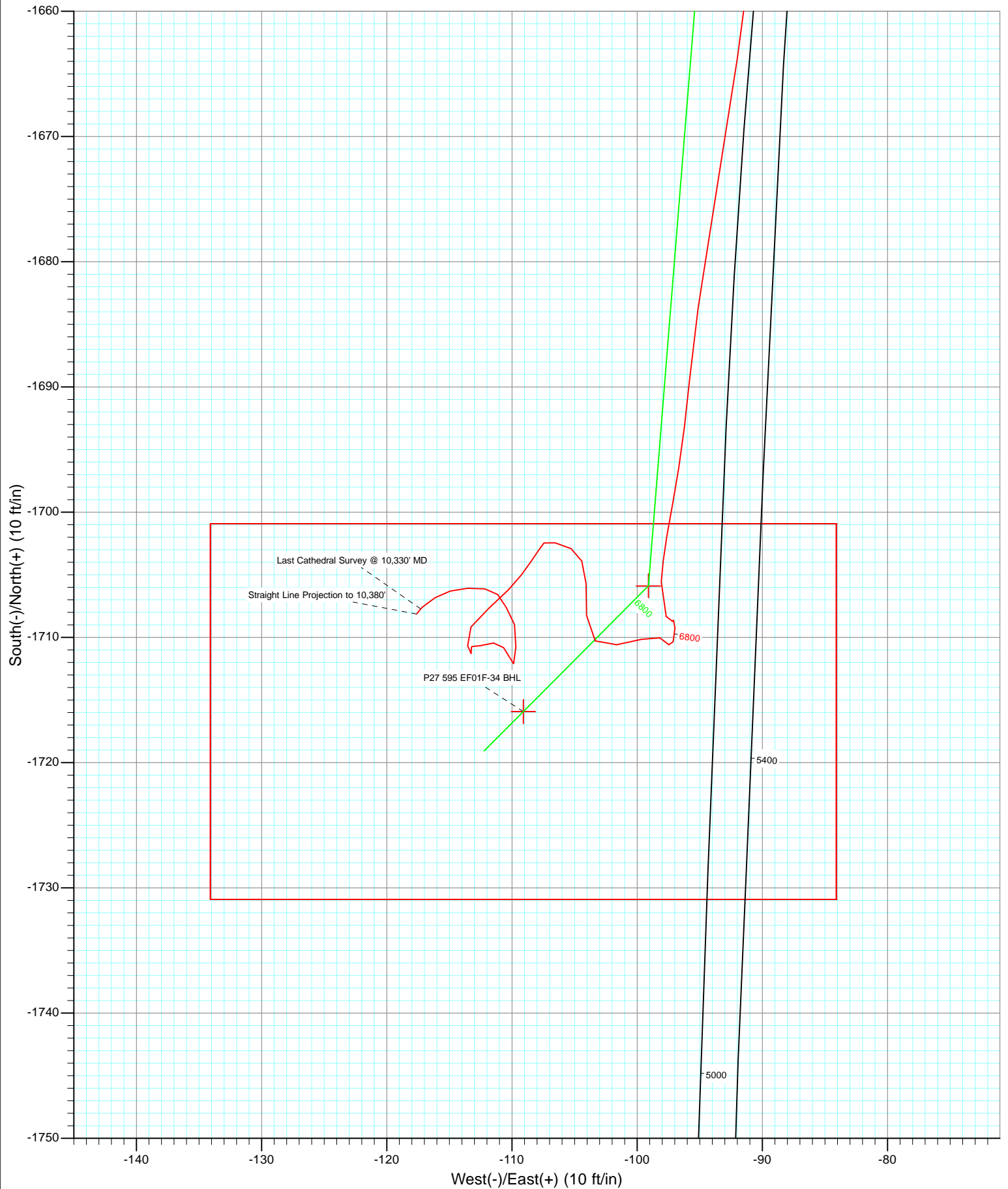
Azimuths to True North
 Magnetic North: 10.46°

Magnetic Field
 Strength: 52346.6nT
 Dip Angle: 65.82°
 Date: 11/5/2010
 Model: IGRF2010

DD						
NP EF01F-34 P27 595						
115522/122855 (SH) 125094/131255 (MH); LR						
WELL @ 6671.0ft (Patterson 303)						
North American Datum 1983						
Well NP EF01F-34 P27 595, True North						
Type User	Target No Target (Freehand)	TVD	Azimuth 183.73	Origin Type Slot	N/S 0.0	E/W 0.0
Name						
P27 595 EF01F-34 TGT		6409.0	+N/-S -1705.9	+E/-W -99.1	Latitude 39° 34' 28.43 N	Longitude 108° 2' 0.55 W
P27 595 EF01F-34 BHL		9969.0	-1715.9	-109.1	Latitude 39° 34' 28.33 N	Longitude 108° 2' 0.67 W



Project: North Piceance
Site: P27 595 (S27-T5S-R95W)
Well: NP EF01F-34 P27 595
Wellbore: DD
Design: FINAL



Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well NP EF01F-34 P27 595
Project:	North Piceance	TVD Reference:	WELL @ 6671.0ft (Patterson 303)
Site:	P27 595 (S27-T5S-R95W)	MD Reference:	WELL @ 6671.0ft (Patterson 303)
Well:	NP EF01F-34 P27 595	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	USA EDM 5000 Multi Users DB

Project	North Piceance		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

Site		P27 595 (S27-T5S-R95W)			
Site Position:		Northing:	1,645,842.89 ft	Latitude:	39° 34' 45.45 N
From:	Lat/Long	Easting:	2,286,079.88 ft	Longitude:	108° 1' 59.43 W
Position Uncertainty:	0.0 ft	Slot Radius:	0.000 in	Grid Convergence:	-1.60 °

Well	NP EF01F-34 P27 595					
Well Position	+N/-S	0.0 ft	Northing:	1,645,825.96 ft	Latitude:	39° 34' 45.29 N
	+E/-W	0.0 ft	Easting:	2,286,091.06 ft	Longitude:	108° 1' 59.28 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	6,649.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	11/5/2010	10.46	65.82	52,347

Design	DD				
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	183.73	

Survey Program	Date	2/13/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
150.0	1,800.0	Survey #1 (DD)	MWD	Geolink MWD	
1,893.0	10,380.0	Survey #2 (DD)	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		
150.0	0.40	9.50	150.0	0.5	0.1	-0.5	0.27	0.27		
200.0	0.50	35.30	200.0	0.9	0.2	-0.9	0.45	0.20		
231.0	0.30	32.20	231.0	1.0	0.4	-1.1	0.65	-0.65		
262.0	0.60	346.90	262.0	1.3	0.4	-1.3	1.43	0.97		
292.0	0.40	323.50	292.0	1.5	0.3	-1.5	0.94	-0.67		
322.0	0.30	119.50	322.0	1.6	0.3	-1.6	2.28	-0.33		
353.0	0.50	138.60	353.0	1.4	0.4	-1.4	0.77	0.65		
383.0	1.00	128.90	383.0	1.2	0.7	-1.2	1.71	1.67		
414.0	1.30	137.90	414.0	0.7	1.2	-0.8	1.13	0.97		
445.0	1.70	136.60	445.0	0.1	1.7	-0.2	1.29	1.29		
475.0	2.10	137.00	475.0	-0.6	2.4	0.4	1.33	1.33		

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well NP EF01F-34 P27 595
Project:	North Piceance	TVD Reference:	WELL @ 6671.0ft (Patterson 303)
Site:	P27 595 (S27-T5S-R95W)	MD Reference:	WELL @ 6671.0ft (Patterson 303)
Well:	NP EF01F-34 P27 595	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	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
506.0	2.90	136.30	505.9	-1.6	3.3	1.4	2.58	2.58	
555.0	4.00	138.30	554.8	-3.8	5.3	3.4	2.26	2.24	
601.0	5.40	136.70	600.7	-6.5	7.9	6.0	3.06	3.04	
646.0	6.50	141.50	645.4	-10.1	10.9	9.3	2.68	2.44	
692.0	7.60	142.10	691.1	-14.5	14.4	13.5	2.40	2.39	
738.0	8.70	145.10	736.6	-19.8	18.3	18.5	2.56	2.39	
784.0	9.60	146.40	782.0	-25.8	22.4	24.3	2.01	1.96	
830.0	10.00	150.10	827.4	-32.5	26.5	30.7	1.62	0.87	
875.0	11.00	153.10	871.6	-39.7	30.4	37.6	2.53	2.22	
921.0	11.70	158.20	916.7	-47.9	34.1	45.6	2.66	1.52	
967.0	12.30	163.40	961.7	-56.9	37.2	54.4	2.69	1.30	
1,013.0	12.90	171.80	1,006.6	-66.7	39.4	64.0	4.19	1.30	
1,059.0	13.10	179.00	1,051.4	-77.0	40.2	74.2	3.55	0.43	
1,105.0	13.70	182.70	1,096.2	-87.7	40.0	84.9	2.27	1.30	
1,150.0	14.50	185.30	1,139.8	-98.6	39.3	95.8	2.27	1.78	
1,196.0	16.00	186.60	1,184.2	-110.6	38.0	107.9	3.34	3.26	
1,242.0	16.60	186.00	1,228.4	-123.5	36.6	120.8	1.35	1.30	
1,288.0	17.30	186.10	1,272.4	-136.8	35.2	134.2	1.52	1.52	
1,334.0	17.40	185.20	1,316.3	-150.5	33.8	147.9	0.62	0.22	
1,425.0	17.60	184.00	1,403.1	-177.7	31.6	175.3	0.45	0.22	
1,517.0	18.90	187.50	1,490.4	-206.4	28.7	204.1	1.85	1.41	
1,608.0	19.30	187.20	1,576.4	-235.9	24.9	233.8	0.45	0.44	
1,700.0	19.90	188.30	1,663.1	-266.5	20.7	264.6	0.77	0.65	
1,800.0	18.50	187.90	1,757.5	-299.1	16.1	297.4	1.41	-1.40	Last Cathedral Survey @ 1,800' MD
1,893.0	18.00	191.20	1,845.8	-327.8	11.3	326.3	1.23	-0.54	
1,985.0	18.00	184.10	1,933.4	-355.9	7.5	354.6	2.38	0.00	
2,076.0	15.60	183.20	2,020.5	-382.1	5.8	380.9	2.65	-2.64	
2,168.0	17.80	181.50	2,108.6	-408.5	4.7	407.4	2.45	2.39	
2,260.0	17.10	184.20	2,196.3	-436.1	3.4	434.9	1.16	-0.76	
2,351.0	18.30	184.70	2,283.0	-463.7	1.2	462.6	1.33	1.32	
2,443.0	20.30	182.00	2,369.9	-494.0	-0.5	493.0	2.38	2.17	
2,534.0	19.30	183.60	2,455.5	-524.8	-2.0	523.8	1.25	-1.10	
2,625.0	19.90	181.20	2,541.2	-555.3	-3.3	554.3	1.10	0.66	
2,717.0	19.20	183.30	2,627.9	-586.1	-4.5	585.1	1.08	-0.76	
2,808.0	18.80	181.70	2,713.9	-615.7	-5.8	614.7	0.72	-0.44	
2,900.0	19.60	180.90	2,800.8	-645.9	-6.4	645.0	0.92	0.87	
2,991.0	19.20	183.60	2,886.7	-676.1	-7.6	675.2	1.08	-0.44	
3,083.0	19.30	182.80	2,973.5	-706.4	-9.3	705.5	0.31	0.11	
3,175.0	19.40	186.60	3,060.3	-736.7	-11.8	736.0	1.37	0.11	
3,266.0	17.80	187.10	3,146.6	-765.6	-15.3	764.9	1.77	-1.76	
3,358.0	19.30	186.50	3,233.8	-794.6	-18.7	794.2	1.64	1.63	
3,449.0	17.10	186.30	3,320.2	-822.9	-21.9	822.5	2.42	-2.42	
3,541.0	18.60	187.60	3,407.8	-850.9	-25.3	850.7	1.69	1.63	
3,633.0	18.20	183.50	3,495.1	-879.7	-28.1	879.7	1.47	-0.43	
3,724.0	19.40	184.40	3,581.2	-909.0	-30.2	909.0	1.36	1.32	
3,816.0	18.00	186.40	3,668.4	-938.4	-32.9	938.5	1.67	-1.52	
3,907.0	18.40	183.10	3,754.8	-966.7	-35.3	966.9	1.21	0.44	
3,999.0	16.60	182.00	3,842.6	-994.3	-36.5	994.6	1.99	-1.96	
4,091.0	17.60	184.10	3,930.5	-1,021.3	-38.0	1,021.6	1.28	1.09	
4,182.0	18.20	184.40	4,017.1	-1,049.2	-40.0	1,049.6	0.67	0.66	
4,274.0	18.90	186.30	4,104.3	-1,078.3	-42.8	1,078.8	1.01	0.76	
4,365.0	17.60	185.80	4,190.7	-1,106.7	-45.8	1,107.3	1.44	-1.43	
4,457.0	19.40	185.50	4,278.0	-1,135.7	-48.7	1,136.5	1.96	1.96	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well NP EF01F-34 P27 595
Project:	North Piceance	TVD Reference:	WELL @ 6671.0ft (Patterson 303)
Site:	P27 595 (S27-T5S-R95W)	MD Reference:	WELL @ 6671.0ft (Patterson 303)
Well:	NP EF01F-34 P27 595	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	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
4,548.0	18.10	184.30	4,364.2	-1,164.9	-51.2	1,165.7	1.49	-1.43	
4,640.0	19.20	184.80	4,451.3	-1,194.2	-53.5	1,195.2	1.21	1.20	
4,732.0	17.90	185.90	4,538.5	-1,223.3	-56.2	1,224.4	1.46	-1.41	
4,823.0	18.50	183.60	4,625.0	-1,251.7	-58.6	1,252.8	1.03	0.66	
4,915.0	16.30	183.80	4,712.8	-1,279.1	-60.3	1,280.3	2.39	-2.39	
5,006.0	17.70	184.00	4,799.8	-1,305.7	-62.2	1,306.9	1.54	1.54	
5,098.0	19.00	182.40	4,887.1	-1,334.6	-63.8	1,335.9	1.52	1.41	
5,189.0	19.40	185.30	4,973.1	-1,364.4	-65.8	1,365.8	1.14	0.44	
5,280.0	17.90	185.50	5,059.3	-1,393.4	-68.5	1,394.9	1.65	-1.65	
5,372.0	19.80	183.40	5,146.3	-1,423.0	-70.8	1,424.6	2.19	2.07	
5,463.0	18.30	183.90	5,232.4	-1,452.7	-72.7	1,454.3	1.66	-1.65	
5,554.0	18.90	186.00	5,318.6	-1,481.6	-75.2	1,483.3	0.99	0.66	
5,645.0	17.90	186.10	5,405.0	-1,510.1	-78.2	1,512.0	1.10	-1.10	
5,737.0	16.70	185.40	5,492.8	-1,537.4	-81.0	1,539.4	1.32	-1.30	
5,828.0	15.60	184.10	5,580.2	-1,562.6	-83.1	1,564.7	1.27	-1.21	
5,920.0	14.30	185.10	5,669.1	-1,586.2	-85.0	1,588.4	1.44	-1.41	
6,011.0	13.50	185.10	5,757.4	-1,608.0	-86.9	1,610.3	0.88	-0.88	
6,102.0	12.40	184.00	5,846.1	-1,628.3	-88.5	1,630.7	1.24	-1.21	
6,193.0	11.70	185.50	5,935.1	-1,647.3	-90.1	1,649.6	0.84	-0.77	
6,285.0	9.10	188.00	6,025.6	-1,663.8	-92.0	1,666.2	2.87	-2.83	
6,376.0	8.30	189.90	6,115.5	-1,677.4	-94.1	1,679.9	0.93	-0.88	
6,468.0	7.20	185.60	6,206.7	-1,689.6	-95.8	1,692.3	1.35	-1.20	
6,559.0	5.20	190.80	6,297.2	-1,699.4	-97.2	1,702.1	2.28	-2.20	
6,651.0	2.60	183.20	6,388.9	-1,705.6	-98.1	1,708.3	2.88	-2.83	
6,742.0	1.10	144.70	6,479.9	-1,708.3	-97.7	1,711.1	2.05	-1.65	
6,833.0	0.40	0.60	6,570.9	-1,708.7	-97.2	1,711.4	1.59	-0.77	
6,925.0	0.30	164.00	6,662.9	-1,708.6	-97.1	1,711.3	0.75	-0.11	
7,016.0	0.50	172.20	6,753.9	-1,709.3	-97.0	1,711.9	0.23	0.22	
7,108.0	0.90	195.40	6,845.9	-1,710.3	-97.1	1,713.0	0.52	0.43	
7,199.0	0.60	339.70	6,936.9	-1,710.6	-97.5	1,713.3	1.57	-0.33	
7,291.0	0.70	280.30	7,028.9	-1,710.0	-98.2	1,712.8	0.71	0.11	
7,382.0	1.20	256.80	7,119.9	-1,710.2	-99.7	1,713.0	0.69	0.55	
7,474.0	1.30	258.50	7,211.8	-1,710.6	-101.6	1,713.6	0.12	0.11	
7,565.0	1.10	305.50	7,302.8	-1,710.3	-103.3	1,713.4	1.07	-0.22	
7,657.0	1.90	1.10	7,394.8	-1,708.2	-104.0	1,711.4	1.70	0.87	
7,748.0	1.30	356.10	7,485.8	-1,705.7	-104.1	1,708.9	0.68	-0.66	
7,840.0	1.00	340.70	7,577.7	-1,703.9	-104.4	1,707.1	0.47	-0.33	
7,931.0	0.80	292.50	7,668.7	-1,702.9	-105.3	1,706.2	0.83	-0.22	
8,023.0	0.90	288.30	7,760.7	-1,702.4	-106.5	1,705.8	0.13	0.11	
8,114.0	0.40	222.30	7,851.7	-1,702.5	-107.4	1,705.8	0.90	-0.55	
8,206.0	0.50	210.90	7,943.7	-1,703.0	-107.9	1,706.4	0.15	0.11	
8,297.0	0.80	215.90	8,034.7	-1,703.9	-108.4	1,707.3	0.34	0.33	
8,389.0	0.90	216.30	8,126.7	-1,705.0	-109.2	1,708.5	0.11	0.11	
8,480.0	1.10	224.50	8,217.7	-1,706.2	-110.3	1,709.7	0.27	0.22	
8,571.0	1.60	228.20	8,308.6	-1,707.7	-111.8	1,711.3	0.56	0.55	
8,663.0	1.00	216.30	8,400.6	-1,709.2	-113.3	1,712.9	0.71	-0.65	
8,755.0	1.10	166.30	8,492.6	-1,710.7	-113.5	1,714.4	0.97	0.11	
8,846.0	0.30	17.10	8,583.6	-1,711.3	-113.3	1,715.0	1.50	-0.88	
8,937.0	0.30	347.30	8,674.6	-1,710.8	-113.2	1,714.6	0.17	0.00	
9,029.0	0.20	149.40	8,766.6	-1,710.7	-113.2	1,714.5	0.54	-0.11	
9,120.0	0.80	70.20	8,857.6	-1,710.7	-112.5	1,714.4	0.87	0.66	
9,211.0	0.60	90.50	8,948.6	-1,710.4	-111.5	1,714.1	0.35	-0.22	
9,303.0	0.60	140.60	9,040.6	-1,710.8	-110.7	1,714.4	0.55	0.00	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well NP EF01F-34 P27 595
Project:	North Piceance	TVD Reference:	WELL @ 6671.0ft (Patterson 303)
Site:	P27 595 (S27-T5S-R95W)	MD Reference:	WELL @ 6671.0ft (Patterson 303)
Well:	NP EF01F-34 P27 595	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	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
9,394.0	0.80	153.60	9,131.6	-1,711.8	-110.1	1,715.3	0.28	0.22	
9,485.0	0.30	343.10	9,222.6	-1,712.1	-109.9	1,715.6	1.21	-0.55	
9,577.0	1.40	13.20	9,314.6	-1,710.8	-109.7	1,714.3	1.25	1.20	
9,668.0	1.00	332.70	9,405.5	-1,709.0	-109.8	1,712.5	1.00	-0.44	
9,759.0	0.90	336.60	9,496.5	-1,707.6	-110.4	1,711.2	0.13	-0.11	
9,851.0	0.70	313.80	9,588.5	-1,706.6	-111.1	1,710.2	0.40	-0.22	
9,942.0	0.80	275.60	9,679.5	-1,706.1	-112.2	1,709.8	0.55	0.11	
10,034.0	0.90	268.80	9,771.5	-1,706.1	-113.5	1,709.8	0.15	0.11	
10,125.0	0.90	253.80	9,862.5	-1,706.3	-114.9	1,710.2	0.26	0.00	
10,216.0	0.80	237.30	9,953.5	-1,706.8	-116.1	1,710.8	0.29	-0.11	
10,308.0	0.70	228.90	10,045.5	-1,707.6	-117.1	1,711.6	0.16	-0.11	
10,330.0	0.60	218.70	10,067.5	-1,707.7	-117.3	1,711.7	0.69	-0.45	Last Cathedral Survey @ 10,330' MD
10,380.0	0.60	218.70	10,117.5	-1,708.1	-117.6	1,712.2	0.00	0.00	Straight Line Projection to 10,380'

Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
- hit/miss target									
- Shape									
P27 595 EF01F-34 BHL	0.00	0.00	9,969.0	-1,715.9	-109.1	1,644,113.75	2,285,934.17	39° 34' 28.33 N	108° 2' 0.67 W
- actual wellpath misses target center by 11.5ft at 10231.5ft MD (9969.0 TVD, -1707.0 N, -116.3 E)									
- Rectangle (sides W30.0 H50.0 D0.0)									
P27 595 EF01F-34 TGT	0.00	0.00	6,409.0	-1,705.9	-99.1	1,644,123.49	2,285,944.44	39° 34' 28.43 N	108° 2' 0.55 W
- actual wellpath misses target center by 1.1ft at 6671.1ft MD (6409.0 TVD, -1706.4 N, -98.1 E)									
- Point									

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
1,800.0	1,757.5	-299.1	16.1	Last Cathedral Survey @ 1,800' MD	
10,330.0	10,067.5	-1,707.7	-117.3	Last Cathedral Survey @ 10,330' MD	
10,380.0	10,117.5	-1,708.1	-117.6	Straight Line Projection to 10,380'	

Checked By: _____ Approved By: _____ Date: _____