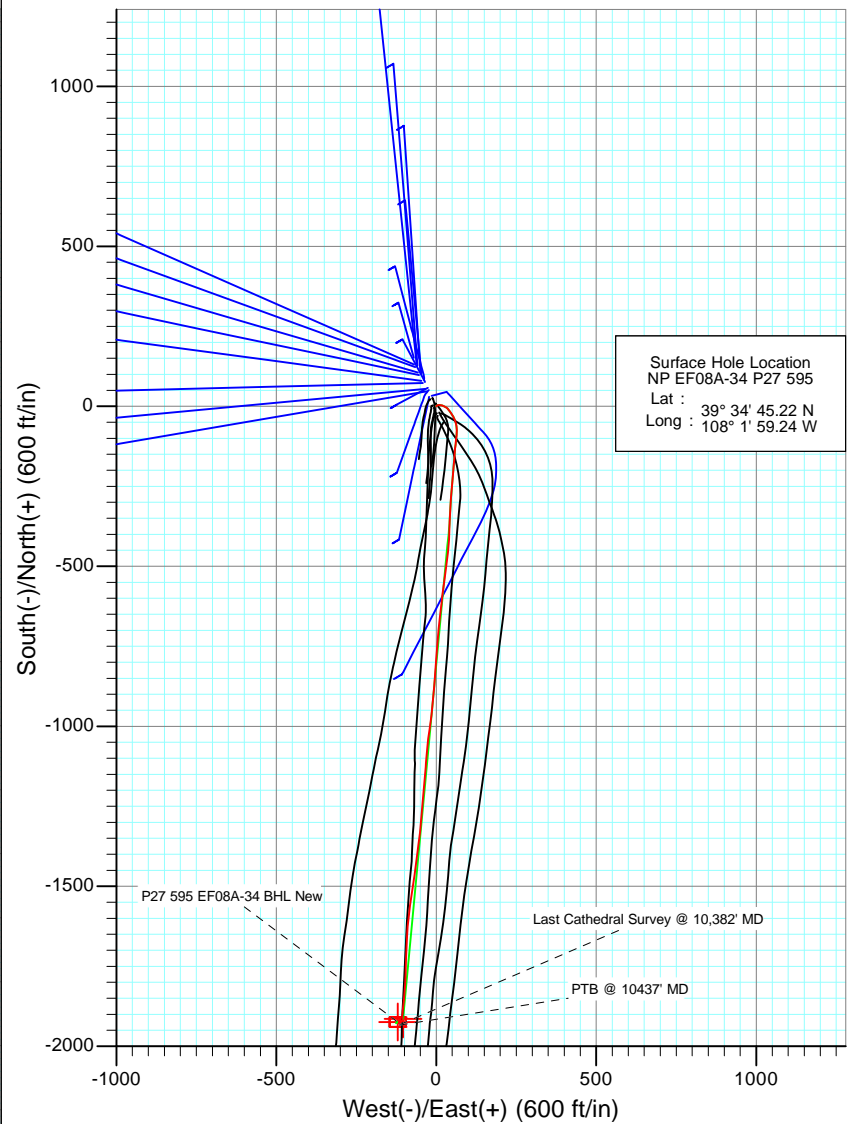
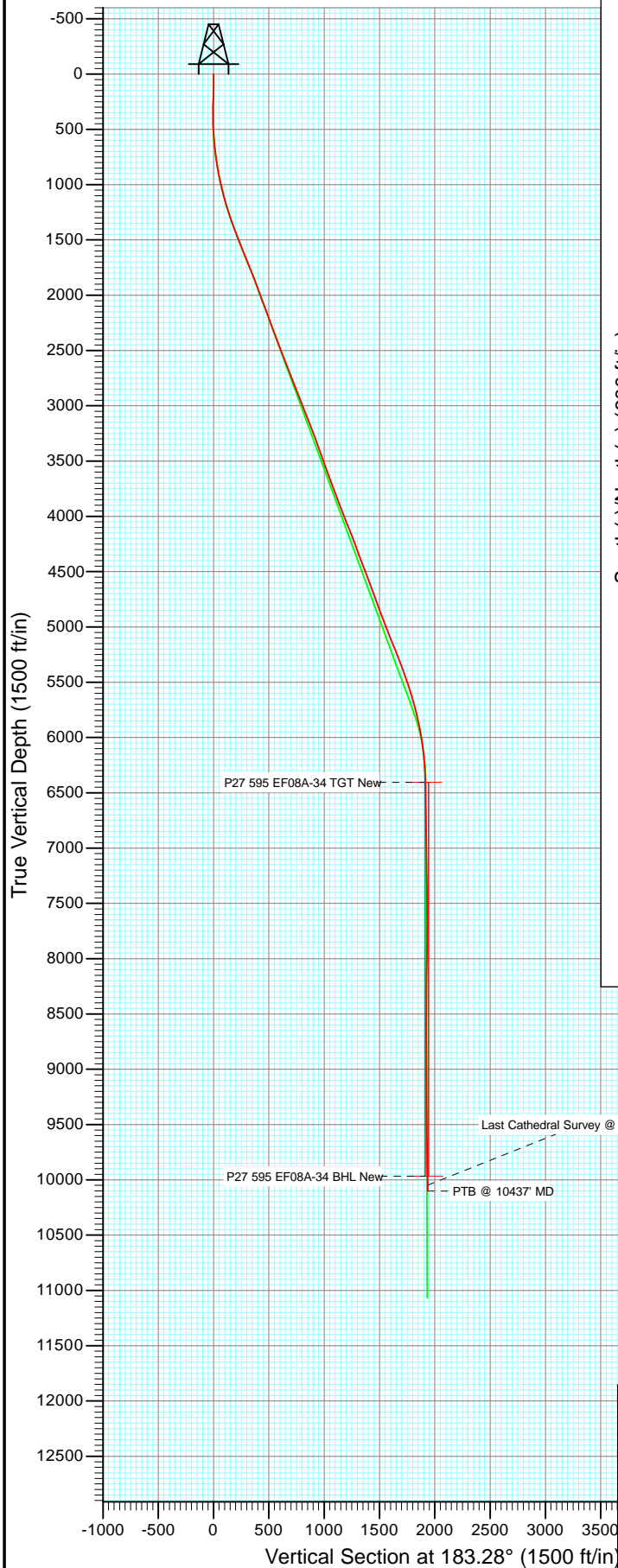
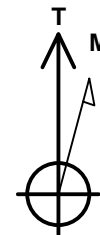




Project: North Piceance  
 Site: P27 595 (S27-T5S-R95W)  
 Well: NP EF08A-34 P27 595  
 Wellbore: DD  
 Design: FINAL



Surface Hole Location  
 NP EF08A-34 P27 595  
 Lat : 39° 34' 45.22 N  
 Long : 108° 1' 59.24 W



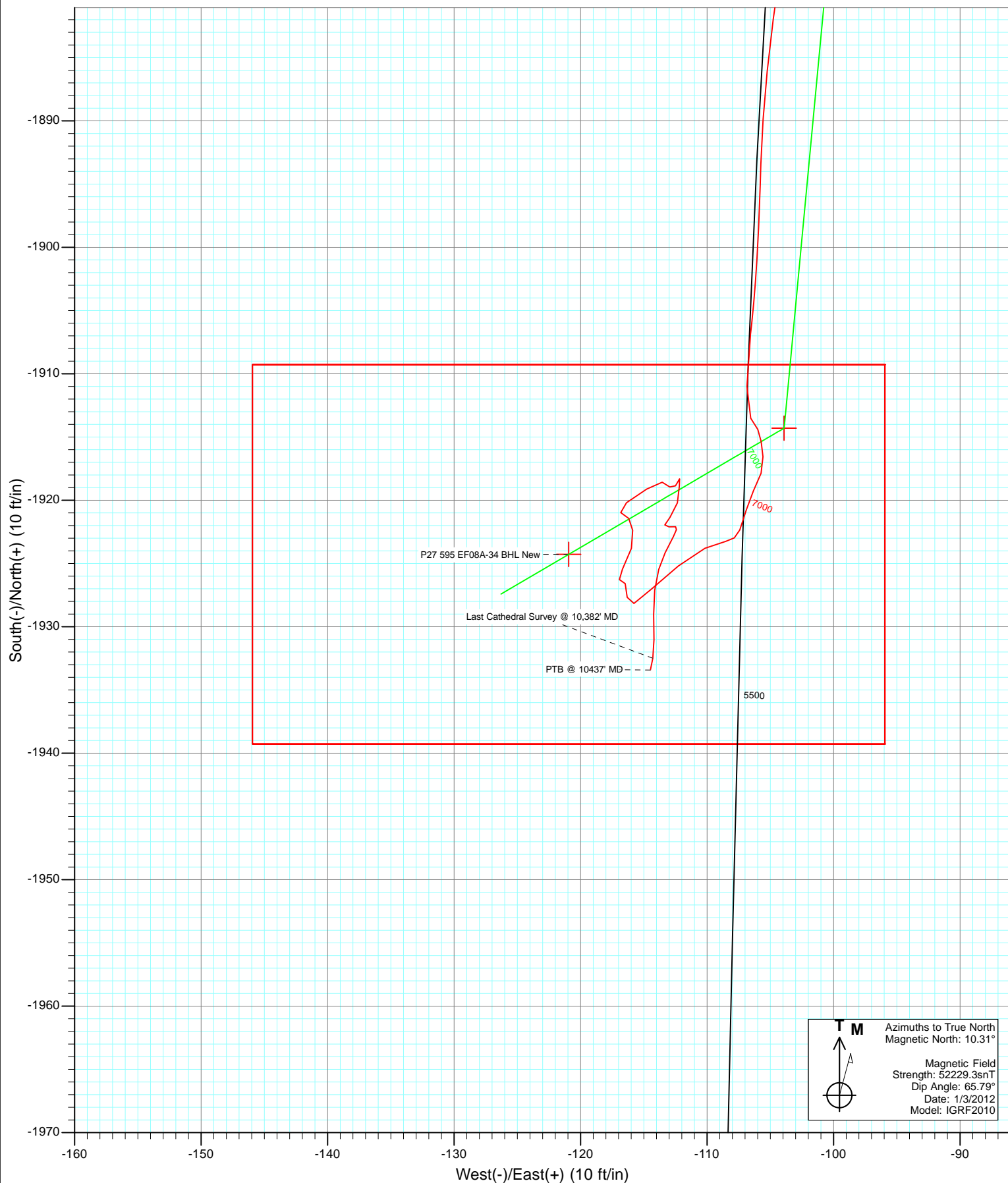
Azimuths to True North  
 Magnetic North: 10.31°

Magnetic Field  
 Strength: 52229.3nT  
 Dip Angle: 65.79°  
 Date: 1/3/2012  
 Model: IGRF2010

Type		Target		Azimuth		Origin Type		N/S	E/W	From TVD
Target		P27 595 EF08A-34 BHL		183.28		Slot		0.0	0.0	0.0
Name		TVD		+N/-S		+E/-W		Latitude		Longitude
P27 595 EF08A-34 TGT New		6406.0		-1914.3		-103.9		39° 34' 26.30 N		108° 2' 0.57 W
P27 595 EF08A-34 BHL New		9966.0		-1924.3		-120.9		39° 34' 26.20 N		108° 2' 0.79 W



Project: North Piceance  
Site: P27 595 (S27-T5S-R95W)  
Well: NP EF08A-34 P27 595  
Wellbore: DD  
Design: FINAL



# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well NP EF08A-34 P27 595
<b>Project:</b>	North Piceance	<b>TVD Reference:</b>	EF08A-34 P27 @ 6671.0ft (Patterson 303)
<b>Site:</b>	P27 595 (S27-T5S-R95W)	<b>MD Reference:</b>	EF08A-34 P27 @ 6671.0ft (Patterson 303)
<b>Well:</b>	NP EF08A-34 P27 595	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	DD	<b>Database:</b>	USA EDM 5000 Multi Users DB

<b>Project</b>	North Piceance		
<b>Map System:</b>	US State Plane 1983	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	North American Datum 1983		
<b>Map Zone:</b>	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 EF08A-34 P27 595					
Well Position	+N/-S	0.0 ft	Northing:	1,645,818.96 ft	Latitude:	39° 34' 45.22 N
	+E/-W	0.0 ft	Easting:	2,286,093.96 ft	Longitude:	108° 1' 59.24 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	6,649.0 ft

<b>Wellbore</b>	DD				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	1/3/2012	10.31	65.79	52,229

<b>Design</b>	DD				
<b>Audit Notes:</b>					
<b>Version:</b>	1.0	<b>Phase:</b>	ACTUAL	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD)</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Direction</b>	
	(ft)	(ft)	(ft)	(°)	
	0.0	0.0	0.0	183.28	

<b>Survey Program</b>	<b>Date</b>	1/13/2012			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
150.0	295.0	Survey #1 (DD)	Gyro	Gyro	
356.0	10,437.0	Survey #2 (DD)	MWD	Geolink MWD	

<b>Survey</b>										
<b>Measured Depth (ft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Vertical Section (ft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Formations / Comments</b>	
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00		
150.0	0.88	44.87	150.0	0.8	0.8	-0.9	0.59	0.59		
171.0	1.13	38.31	171.0	1.1	1.1	-1.2	1.31	1.19		
200.0	1.51	36.35	200.0	1.6	1.5	-1.7	1.32	1.31		
205.0	2.17	48.02	205.0	1.7	1.6	-1.8	15.11	13.20		
235.0	1.89	48.11	235.0	2.5	2.4	-2.6	0.93	-0.93		
265.0	1.82	64.18	264.9	3.0	3.2	-3.2	1.74	-0.23		
295.0	2.16	72.04	294.9	3.4	4.1	-3.6	1.45	1.13	Last Gyro Survey @ 295' MD	
356.0	3.60	84.70	355.9	3.9	7.1	-4.3	2.57	2.36		
387.0	4.30	89.50	386.8	4.0	9.3	-4.5	2.50	2.26		
417.0	5.30	95.50	416.7	3.9	11.8	-4.5	3.73	3.33		
448.0	6.20	104.40	447.5	3.3	14.8	-4.2	4.08	2.90		

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well NP EF08A-34 P27 595
<b>Project:</b>	North Piceance	<b>TVD Reference:</b>	EF08A-34 P27 @ 6671.0ft (Patterson 303)
<b>Site:</b>	P27 595 (S27-T5S-R95W)	<b>MVD Reference:</b>	EF08A-34 P27 @ 6671.0ft (Patterson 303)
<b>Well:</b>	NP EF08A-34 P27 595	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	DD	<b>Database:</b>	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
479.0	6.90	109.00	478.3	2.3	18.2	-3.3	2.82	2.26	
509.0	7.60	109.10	508.1	1.1	21.8	-2.3	2.33	2.33	
558.0	7.80	120.70	556.6	-1.7	27.7	0.1	3.19	0.41	
604.0	8.30	128.30	602.2	-5.3	33.0	3.4	2.55	1.09	
650.0	9.10	141.20	647.7	-10.2	37.9	8.1	4.57	1.74	
696.0	9.60	145.40	693.0	-16.2	42.3	13.8	1.84	1.09	
741.0	10.00	147.30	737.4	-22.6	46.6	19.9	1.14	0.89	
787.0	10.50	147.20	782.7	-29.5	51.0	26.5	1.09	1.09	
833.0	11.10	152.60	827.8	-36.9	55.3	33.7	2.56	1.30	
879.0	10.90	160.20	873.0	-45.0	58.8	41.5	3.18	-0.43	
925.0	11.30	168.50	918.1	-53.5	61.2	49.9	3.58	0.87	
971.0	12.00	171.40	963.2	-62.6	62.8	58.9	1.98	1.52	
1,016.0	12.90	175.70	1,007.1	-72.3	63.9	68.5	2.87	2.00	
1,062.0	13.40	182.70	1,051.9	-82.7	64.0	78.9	3.63	1.09	
1,108.0	14.30	186.60	1,096.6	-93.7	63.1	89.9	2.82	1.96	
1,154.0	15.40	186.20	1,141.1	-105.4	61.8	101.7	2.40	2.39	
1,199.0	16.90	187.50	1,184.3	-117.8	60.3	114.2	3.43	3.33	
1,245.0	18.30	185.80	1,228.1	-131.6	58.7	128.1	3.24	3.04	
1,291.0	19.10	185.00	1,271.7	-146.3	57.3	142.8	1.83	1.74	
1,337.0	18.70	183.50	1,315.2	-161.2	56.2	157.7	1.37	-0.87	
1,383.0	19.20	184.30	1,358.7	-176.1	55.2	172.6	1.22	1.09	
1,428.0	20.20	185.00	1,401.1	-191.2	53.9	187.8	2.28	2.22	
1,520.0	21.60	185.70	1,487.0	-223.9	50.9	220.6	1.55	1.52	
1,612.0	22.50	184.50	1,572.3	-258.3	47.8	255.1	1.09	0.98	
1,704.0	21.70	183.20	1,657.5	-292.8	45.5	289.7	1.02	-0.87	
1,795.0	21.90	183.60	1,742.0	-326.5	43.5	323.5	0.27	0.22	
1,893.0	21.70	182.50	1,833.0	-362.9	41.5	359.9	0.46	-0.20	
1,985.0	20.40	181.10	1,918.9	-395.9	40.5	392.9	1.51	-1.41	
2,076.0	19.80	184.40	2,004.4	-427.1	39.0	424.2	1.41	-0.66	
2,168.0	21.00	187.30	2,090.6	-459.0	35.7	456.2	1.71	1.30	
2,259.0	19.30	186.10	2,176.0	-490.1	32.0	487.5	1.92	-1.87	
2,351.0	20.20	187.50	2,262.6	-521.0	28.4	518.5	1.11	0.98	
2,443.0	21.20	187.60	2,348.7	-553.2	24.1	551.0	1.09	1.09	
2,534.0	20.70	187.30	2,433.6	-585.5	19.9	583.4	0.56	-0.55	
2,625.0	22.00	186.80	2,518.4	-618.4	15.8	616.5	1.44	1.43	
2,717.0	20.90	186.60	2,604.0	-651.8	11.9	650.1	1.20	-1.20	
2,808.0	21.50	185.00	2,688.9	-684.5	8.6	682.9	0.92	0.66	
2,900.0	20.80	185.60	2,774.7	-717.6	5.5	716.1	0.80	-0.76	
2,991.0	21.80	184.60	2,859.5	-750.5	2.6	749.1	1.17	1.10	
3,083.0	21.00	184.20	2,945.1	-784.0	0.0	782.7	0.88	-0.87	
3,174.0	22.00	183.20	3,029.8	-817.3	-2.2	816.0	1.17	1.10	
3,266.0	21.40	183.80	3,115.3	-851.2	-4.2	850.1	0.70	-0.65	
3,358.0	21.50	185.70	3,200.9	-884.7	-7.0	883.7	0.76	0.11	
3,449.0	19.70	185.60	3,286.1	-916.6	-10.2	915.7	1.98	-1.98	
3,541.0	21.00	186.10	3,372.3	-948.4	-13.4	947.6	1.43	1.41	
3,632.0	19.00	187.10	3,457.8	-979.3	-17.0	978.7	2.23	-2.20	
3,724.0	18.90	188.10	3,544.8	-1,009.0	-21.0	1,008.5	0.37	-0.11	
3,816.0	19.90	187.20	3,631.6	-1,039.2	-25.0	1,039.0	1.13	1.09	
3,907.0	20.70	185.70	3,717.0	-1,070.6	-28.6	1,070.5	1.05	0.88	
3,999.0	22.00	184.40	3,802.7	-1,104.0	-31.5	1,104.0	1.50	1.41	
4,091.0	19.80	183.30	3,888.6	-1,136.7	-33.7	1,136.8	2.43	-2.39	
4,182.0	21.60	186.40	3,973.7	-1,168.7	-36.5	1,168.9	2.32	1.98	
4,273.0	22.60	185.50	4,058.0	-1,202.8	-40.0	1,203.1	1.16	1.10	

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well NP EF08A-34 P27 595
<b>Project:</b>	North Piceance	<b>TVD Reference:</b>	EF08A-34 P27 @ 6671.0ft (Patterson 303)
<b>Site:</b>	P27 595 (S27-T5S-R95W)	<b>MD Reference:</b>	EF08A-34 P27 @ 6671.0ft (Patterson 303)
<b>Well:</b>	NP EF08A-34 P27 595	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	DD	<b>Database:</b>	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
4,365.0	21.50	184.60	4,143.3	-1,237.2	-43.1	1,237.6	1.25	-1.20	
4,457.0	20.30	183.30	4,229.2	-1,269.9	-45.3	1,270.5	1.40	-1.30	
4,548.0	19.20	185.20	4,314.9	-1,300.6	-47.6	1,301.2	1.40	-1.21	
4,640.0	21.70	187.40	4,401.1	-1,332.5	-51.2	1,333.3	2.84	2.72	
4,731.0	21.60	187.20	4,485.7	-1,365.8	-55.4	1,366.8	0.14	-0.11	
4,823.0	19.90	186.30	4,571.7	-1,398.2	-59.3	1,399.3	1.88	-1.85	
4,915.0	19.60	188.90	4,658.3	-1,429.0	-63.4	1,430.3	1.01	-0.33	
5,006.0	21.50	188.20	4,743.5	-1,460.6	-68.1	1,462.1	2.11	2.09	
5,098.0	18.90	186.40	4,829.8	-1,492.1	-72.2	1,493.8	2.91	-2.83	
5,189.0	21.00	190.00	4,915.4	-1,522.8	-76.7	1,524.7	2.67	2.31	
5,280.0	22.60	186.90	4,999.9	-1,556.2	-81.6	1,558.4	2.17	1.76	
5,372.0	21.30	187.90	5,085.2	-1,590.3	-86.0	1,592.7	1.47	-1.41	
5,463.0	22.40	183.50	5,169.7	-1,624.0	-89.3	1,626.5	2.17	1.21	
5,554.0	20.80	183.60	5,254.3	-1,657.5	-91.4	1,660.0	1.76	-1.76	
5,645.0	21.10	182.10	5,339.3	-1,689.9	-93.0	1,692.5	0.68	0.33	
5,737.0	19.60	182.80	5,425.5	-1,721.9	-94.4	1,724.5	1.65	-1.63	
5,828.0	18.70	181.40	5,511.5	-1,751.7	-95.5	1,754.3	1.11	-0.99	
5,919.0	17.70	182.20	5,597.9	-1,780.1	-96.4	1,782.7	1.13	-1.10	
6,011.0	14.90	183.20	5,686.2	-1,805.9	-97.6	1,808.6	3.06	-3.04	
6,102.0	13.30	184.60	5,774.5	-1,828.1	-99.1	1,830.7	1.80	-1.76	
6,193.0	12.80	183.60	5,863.1	-1,848.5	-100.5	1,851.3	0.60	-0.55	
6,285.0	10.70	189.30	5,953.2	-1,867.1	-102.6	1,870.0	2.61	-2.28	
6,376.0	8.20	187.40	6,042.9	-1,881.9	-104.8	1,884.8	2.77	-2.75	
6,468.0	6.20	181.60	6,134.2	-1,893.4	-105.7	1,896.3	2.31	-2.17	
6,559.0	4.10	183.80	6,224.8	-1,901.6	-106.1	1,904.5	2.32	-2.31	
6,650.0	2.60	186.90	6,315.7	-1,906.9	-106.6	1,909.8	1.66	-1.65	
6,742.0	2.60	181.00	6,407.6	-1,911.0	-106.8	1,914.0	0.29	0.00	
6,833.0	0.70	142.80	6,498.6	-1,913.5	-106.5	1,916.5	2.30	-2.09	
6,925.0	0.60	152.70	6,590.5	-1,914.4	-106.0	1,917.3	0.16	-0.11	
7,016.0	0.70	174.70	6,681.5	-1,915.4	-105.7	1,918.3	0.29	0.11	
7,107.0	0.80	172.10	6,772.5	-1,916.6	-105.6	1,919.5	0.12	0.11	
7,199.0	0.90	199.30	6,864.5	-1,917.9	-105.7	1,920.8	0.45	0.11	
7,291.0	1.00	207.50	6,956.5	-1,919.3	-106.3	1,922.2	0.18	0.11	
7,382.0	1.00	193.50	7,047.5	-1,920.7	-106.9	1,923.7	0.27	0.00	
7,474.0	1.10	201.80	7,139.5	-1,922.3	-107.4	1,925.3	0.20	0.11	
7,565.0	1.00	263.40	7,230.5	-1,923.2	-108.5	1,926.3	1.19	-0.11	
7,657.0	1.20	241.80	7,322.5	-1,923.8	-110.2	1,926.9	0.50	0.22	
7,748.0	2.00	233.00	7,413.4	-1,925.2	-112.3	1,928.5	0.92	0.88	
7,837.0	1.60	224.60	7,502.4	-1,927.0	-114.4	1,930.4	0.54	-0.45	
7,928.0	0.70	244.90	7,593.4	-1,928.2	-115.8	1,931.6	1.07	-0.99	
8,020.0	0.90	358.80	7,685.4	-1,927.7	-116.3	1,931.2	1.46	0.22	
8,111.0	0.50	338.20	7,776.3	-1,926.6	-116.5	1,930.1	0.51	-0.44	
8,202.0	0.40	260.30	7,867.3	-1,926.3	-116.9	1,929.8	0.63	-0.11	
8,294.0	1.30	32.50	7,959.3	-1,925.4	-116.7	1,929.0	1.74	0.98	
8,385.0	1.00	11.20	8,050.3	-1,923.8	-116.0	1,927.3	0.57	-0.33	
8,477.0	0.80	354.80	8,142.3	-1,922.4	-115.9	1,925.9	0.35	-0.22	
8,568.0	0.50	320.60	8,233.3	-1,921.4	-116.2	1,924.9	0.53	-0.33	
8,660.0	0.50	291.90	8,325.3	-1,921.0	-116.8	1,924.5	0.27	0.00	
8,751.0	1.30	52.50	8,416.3	-1,920.2	-116.4	1,923.7	1.77	0.88	
8,843.0	1.10	59.90	8,508.3	-1,919.1	-114.8	1,922.5	0.27	-0.22	
8,934.0	0.60	78.00	8,599.3	-1,918.6	-113.5	1,921.9	0.62	-0.55	
9,026.0	0.60	164.20	8,691.3	-1,918.9	-112.9	1,922.3	0.89	0.00	
9,117.0	0.80	30.50	8,782.3	-1,918.9	-112.5	1,922.1	1.42	0.22	

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well NP EF08A-34 P27 595
<b>Project:</b>	North Piceance	<b>TVD Reference:</b>	EF08A-34 P27 @ 6671.0ft (Patterson 303)
<b>Site:</b>	P27 595 (S27-T5S-R95W)	<b>MD Reference:</b>	EF08A-34 P27 @ 6671.0ft (Patterson 303)
<b>Well:</b>	NP EF08A-34 P27 595	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	DD	<b>Database:</b>	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
9,208.0	0.00	100.31	8,873.3	-1,918.3	-112.2	1,921.6	0.88	-0.88	
9,300.0	0.70	181.20	8,965.2	-1,918.9	-112.2	1,922.1	0.76	0.76	
9,391.0	1.00	191.30	9,056.2	-1,920.2	-112.3	1,923.5	0.37	0.33	
9,482.0	0.70	229.20	9,147.2	-1,921.3	-112.9	1,924.7	0.68	-0.33	
9,573.0	0.30	176.20	9,238.2	-1,921.9	-113.3	1,925.3	0.63	-0.44	
9,665.0	0.40	73.30	9,330.2	-1,922.1	-113.0	1,925.4	0.60	0.11	
9,756.0	0.30	111.00	9,421.2	-1,922.1	-112.5	1,925.4	0.27	-0.11	
9,848.0	1.00	209.70	9,513.2	-1,922.9	-112.7	1,926.2	1.18	0.76	
9,939.0	0.80	204.10	9,604.2	-1,924.1	-113.3	1,927.5	0.24	-0.22	
10,030.0	1.00	198.50	9,695.2	-1,925.5	-113.8	1,928.8	0.24	0.22	
10,122.0	1.10	183.80	9,787.2	-1,927.1	-114.1	1,930.5	0.31	0.11	
10,213.0	1.30	181.50	9,878.2	-1,929.0	-114.2	1,932.4	0.23	0.22	
10,305.0	1.20	176.90	9,970.1	-1,931.0	-114.2	1,934.4	0.15	-0.11	
10,382.0	1.00	191.60	10,047.1	-1,932.5	-114.3	1,935.9	0.45	-0.26	Last Cathedral Survey @ 10,382' MD
10,437.0	1.00	191.60	10,102.1	-1,933.4	-114.5	1,936.8	0.00	0.00	PTB @ 10437' MD

### 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 EF08A-34 BHL	0.00	0.00	9,966.0	-1,924.3	-120.9	1,643,898.80	2,285,919.43	39° 34' 26.20 N	108° 2' 0.79 W
- actual wellpath misses target center by 9.5ft at 10300.7ft MD (9965.9 TVD, -1930.9 N, -114.2 E)									
- Rectangle (sides W30.0 H50.0 D0.0)									
P27 595 EF08A-34 TGT	0.00	0.00	6,406.0	-1,914.3	-103.9	1,643,908.30	2,285,936.73	39° 34' 26.30 N	108° 2' 0.57 W
- actual wellpath misses target center by 4.5ft at 6740.6ft MD (6406.1 TVD, -1910.9 N, -106.8 E)									
- Point									

### Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
295.0	294.9	3.4	4.1	Last Gyro Survey @ 295' MD
10,382.0	10,047.1	-1,932.5	-114.3	Last Cathedral Survey @ 10,382' MD
10,437.0	10,102.1	-1,933.4	-114.5	PTB @ 10437' MD

Checked By: \_\_\_\_\_ Approved By: \_\_\_\_\_ Date: \_\_\_\_\_