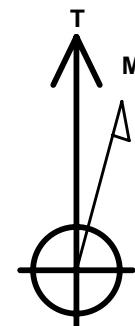
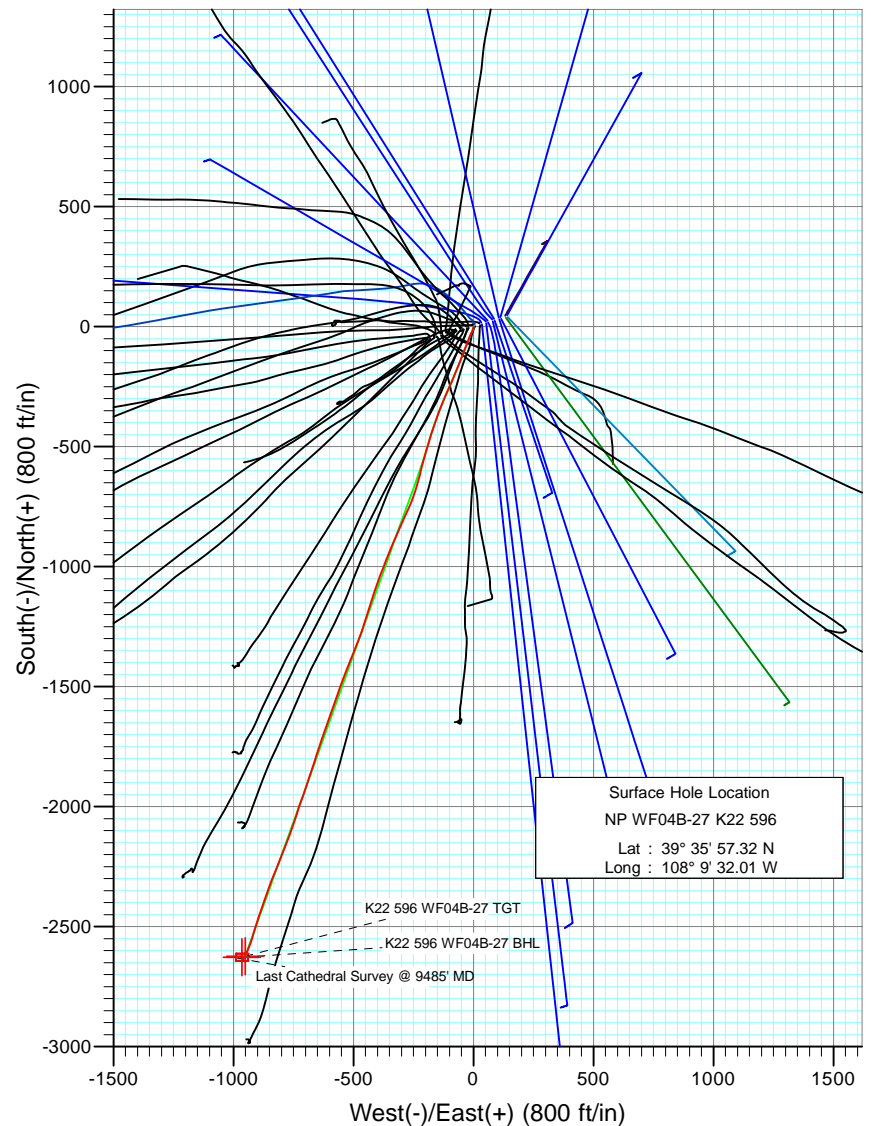
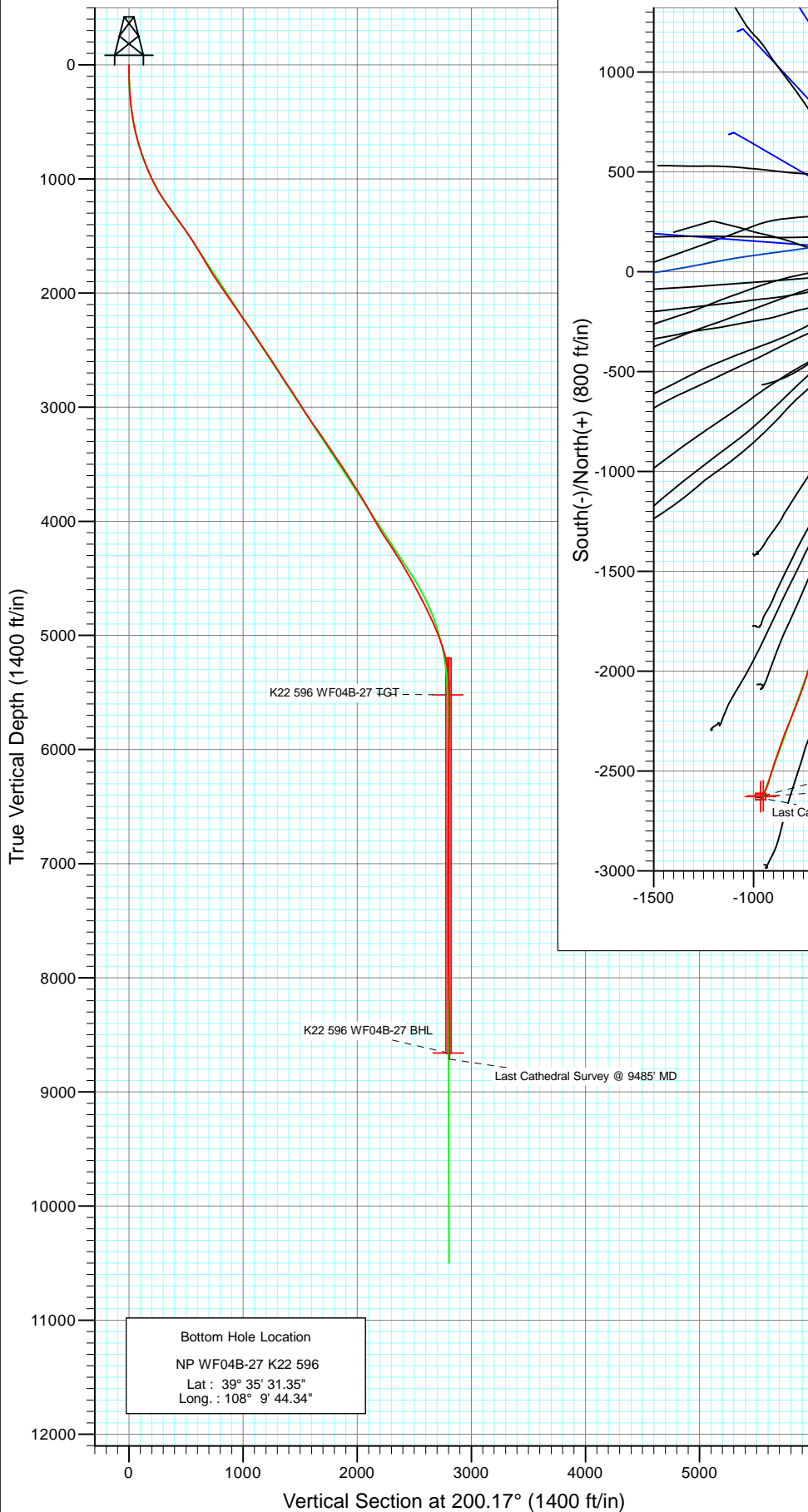




Project: North Piceance
Site: K22 596 Pad (S22-T5S-R96W)
Well: NP WF04B-27 K22 596
Wellbore: DD
Design: FINAL



Azimuths to True North
Magnetic North: 10.56°
Magnetic Field
Strength: 52420.8snT
Dip Angle: 65.83°
Date: 5/10/2010
Model: IGRF200510

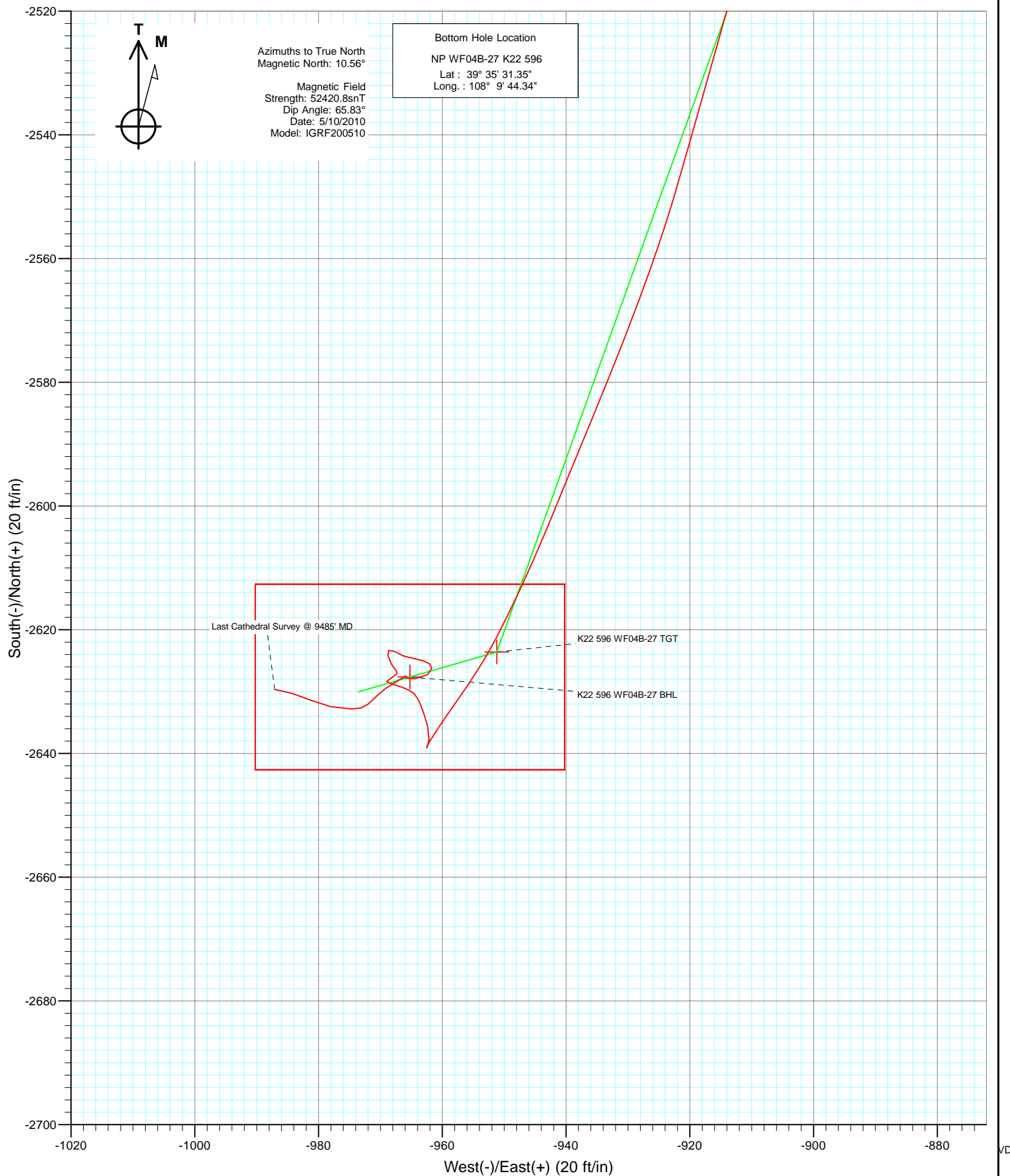
DESIGN DETAILS: DD

105155 (SH) 105204 (MH); LR
Well @ 6549.0ft (Patterson 303)

Target	Azimuth	Origin	N/S	E/W From TVD
K22 596 WF04B-27 BHL	200.17	Slot	0.0	0.0 0.0



Project: North Piceance
Site: K22 596 Pad (S22-T5S-R96W)
Well: NP WF04B-27 K22 596
Wellbore: DD
Design: DD



Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well NP WF04B-27 K22 596
Project:	North Piceance	TVD Reference:	Well @ 6549.0ft (Patterson 303)
Site:	K22 596 Pad (S22-T5S-R96W)	MD Reference:	Well @ 6549.0ft (Patterson 303)
Well:	NP WF04B-27 K22 596	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	EDM 5000.1 US 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		K22 596 Pad (S22-T5S-R96W)			
Site Position:		Northing:	1,654,096.85 ft	Latitude:	39° 35' 57.02 N
From:	Lat/Long	Easting:	2,250,762.90 ft	Longitude:	108° 9' 33.39 W
Position Uncertainty:	0.0 ft	Slot Radius:	0.000 in	Grid Convergence:	-1.68 °

Well	NP WF04B-27 K22 596					
Well Position	+N/-S	0.0 ft	Northing:	1,654,124.09 ft	Latitude:	39° 35' 57.32 N
	+E/-W	0.0 ft	Easting:	2,250,871.77 ft	Longitude:	108° 9' 32.01 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	6,527.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	5/10/2010	10.56	65.83	52,421

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	200.17	

Survey Program	Date	5/16/2010			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
174.0	1,715.0	Survey #1 (DD)	MWD	Geolink MWD	
1,799.0	9,485.0	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		
174.0	1.90	192.50	174.0	-2.8	-0.6	2.9	1.09	1.09		
204.0	3.30	188.80	203.9	-4.2	-0.9	4.2	4.70	4.67		
235.0	4.60	194.20	234.9	-6.2	-1.3	6.3	4.36	4.19		
266.0	5.20	197.80	265.7	-8.8	-2.0	8.9	2.17	1.94		
296.0	5.30	197.90	295.6	-11.4	-2.9	11.7	0.33	0.33		
327.0	5.70	196.10	326.5	-14.2	-3.7	14.7	1.41	1.29		
358.0	6.40	195.90	357.3	-17.4	-4.6	17.9	2.26	2.26		
389.0	7.10	204.60	388.1	-20.8	-5.9	21.6	3.99	2.26		
419.0	8.00	208.70	417.8	-24.3	-7.7	25.5	3.49	3.00		
450.0	8.70	207.40	448.5	-28.3	-9.8	29.9	2.34	2.26		
481.0	9.20	206.00	479.1	-32.6	-12.0	34.7	1.76	1.61		

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well NP WF04B-27 K22 596
Project:	North Piceance	TVD Reference:	Well @ 6549.0ft (Patterson 303)
Site:	K22 596 Pad (S22-T5S-R96W)	MD Reference:	Well @ 6549.0ft (Patterson 303)
Well:	NP WF04B-27 K22 596	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	EDM 5000.1 US 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
512.0	10.10	202.40	509.7	-37.3	-14.1	39.9	3.49	2.90	
561.0	12.20	198.80	557.8	-46.2	-17.4	49.4	4.51	4.29	
606.0	13.70	199.20	601.6	-55.7	-20.7	59.4	3.34	3.33	
652.0	14.80	201.40	646.2	-66.3	-24.6	70.8	2.66	2.39	
698.0	15.90	203.00	690.6	-77.6	-29.2	82.9	2.56	2.39	
744.0	17.80	202.90	734.6	-89.9	-34.4	96.3	4.13	4.13	
790.0	19.20	202.70	778.2	-103.4	-40.1	110.8	3.05	3.04	
836.0	20.40	201.10	821.5	-117.8	-45.9	126.4	2.86	2.61	
881.0	21.20	201.10	863.5	-132.7	-51.6	142.4	1.78	1.78	
927.0	23.20	201.40	906.1	-148.9	-57.9	159.8	4.35	4.35	
973.0	23.50	201.30	948.4	-165.9	-64.6	178.0	0.66	0.65	
1,065.0	25.50	202.40	1,032.1	-201.3	-78.8	216.1	2.23	2.17	
1,111.0	28.30	202.60	1,073.1	-220.5	-86.8	236.9	6.09	6.09	
1,156.0	31.40	204.40	1,112.1	-241.1	-95.7	259.3	7.17	6.89	
1,202.0	33.60	204.20	1,150.9	-263.6	-105.9	283.9	4.79	4.78	
1,248.0	34.50	203.40	1,189.0	-287.1	-116.3	309.6	2.19	1.96	
1,294.0	34.70	202.90	1,226.9	-311.2	-126.5	335.7	0.75	0.43	
1,340.0	35.30	201.30	1,264.6	-335.6	-136.5	362.1	2.38	1.30	
1,386.0	35.50	202.10	1,302.1	-360.4	-146.3	388.7	1.10	0.43	
1,431.0	35.60	198.70	1,338.7	-384.9	-155.4	414.9	4.40	0.22	
1,477.0	35.80	197.80	1,376.0	-410.4	-163.8	441.7	1.22	0.43	
1,523.0	35.30	197.20	1,413.5	-435.9	-171.9	468.4	1.33	-1.09	
1,569.0	35.20	197.20	1,451.0	-461.2	-179.7	494.9	0.22	-0.22	
1,615.0	34.30	197.40	1,488.8	-486.3	-187.5	521.1	1.97	-1.96	
1,665.0	33.50	196.70	1,530.3	-512.9	-195.7	549.0	1.78	-1.60	
1,715.0	32.40	196.40	1,572.3	-539.0	-203.4	576.1	2.22	-2.20	Last Cathedral Survey @ 1715' MD
1,799.0	30.70	193.20	1,643.9	-581.5	-214.7	619.8	2.84	-2.02	
1,890.0	30.70	194.00	1,722.1	-626.6	-225.6	666.0	0.45	0.00	
1,982.0	30.90	197.20	1,801.2	-672.0	-238.3	712.9	1.79	0.22	
2,074.0	33.50	200.80	1,879.0	-718.3	-254.3	761.9	3.51	2.83	
2,165.0	35.60	205.30	1,954.0	-765.7	-274.5	813.4	3.63	2.31	
2,257.0	34.90	202.70	2,029.1	-814.2	-296.1	866.4	1.80	-0.76	
2,349.0	34.50	204.00	2,104.7	-862.3	-316.9	918.7	0.91	-0.43	
2,440.0	33.80	204.60	2,180.0	-908.9	-337.9	969.6	0.85	-0.77	
2,532.0	35.80	200.90	2,255.6	-957.3	-358.2	1,022.1	3.16	2.17	
2,624.0	34.20	201.70	2,331.0	-1,006.4	-377.3	1,074.8	1.81	-1.74	
2,716.0	33.40	200.70	2,407.4	-1,054.2	-395.8	1,126.0	1.06	-0.87	
2,807.0	34.50	197.10	2,482.9	-1,102.2	-412.3	1,176.8	2.52	1.21	
2,899.0	32.60	197.70	2,559.6	-1,150.7	-427.5	1,227.6	2.10	-2.07	
2,991.0	34.10	198.20	2,636.4	-1,198.9	-443.1	1,278.1	1.66	1.63	
3,082.0	31.80	197.40	2,712.8	-1,246.0	-458.2	1,327.6	2.57	-2.53	
3,174.0	33.40	200.80	2,790.3	-1,292.8	-474.4	1,377.1	2.64	1.74	
3,266.0	34.50	201.60	2,866.6	-1,340.7	-493.0	1,428.5	1.29	1.20	
3,358.0	33.10	201.70	2,943.0	-1,388.3	-511.9	1,479.6	1.52	-1.52	
3,449.0	31.30	202.10	3,020.0	-1,433.2	-530.0	1,528.1	1.99	-1.98	
3,540.0	33.60	200.30	3,096.8	-1,478.8	-547.6	1,576.9	2.74	2.53	
3,632.0	36.10	199.00	3,172.3	-1,528.3	-565.3	1,629.5	2.83	2.72	
3,724.0	34.50	198.90	3,247.4	-1,578.6	-582.5	1,682.6	1.74	-1.74	
3,815.0	33.10	200.50	3,323.0	-1,626.2	-599.6	1,733.2	1.82	-1.54	
3,907.0	35.60	198.90	3,399.0	-1,675.1	-617.1	1,785.1	2.89	2.72	
3,999.0	33.80	198.20	3,474.6	-1,724.7	-633.7	1,837.5	2.00	-1.96	
4,090.0	31.30	198.60	3,551.3	-1,771.2	-649.2	1,886.4	2.76	-2.75	
4,182.0	32.30	198.80	3,629.5	-1,817.1	-664.7	1,934.9	1.09	1.09	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well NP WF04B-27 K22 596
Project:	North Piceance	TVD Reference:	Well @ 6549.0ft (Patterson 303)
Site:	K22 596 Pad (S22-T5S-R96W)	MD Reference:	Well @ 6549.0ft (Patterson 303)
Well:	NP WF04B-27 K22 596	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	EDM 5000.1 US 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
4,274.0	33.10	197.50	3,706.9	-1,864.3	-680.2	1,984.5	1.16	0.87	
4,365.0	31.20	197.10	3,784.0	-1,910.6	-694.6	2,032.9	2.10	-2.09	
4,456.0	30.80	202.20	3,862.0	-1,954.7	-710.3	2,079.7	2.92	-0.44	
4,548.0	28.60	197.30	3,941.9	-1,997.5	-725.8	2,125.3	3.56	-2.39	
4,640.0	30.00	197.00	4,022.1	-2,040.5	-739.1	2,170.2	1.53	1.52	
4,731.0	31.50	200.70	4,100.3	-2,084.5	-754.1	2,216.7	2.65	1.65	
4,822.0	34.70	200.40	4,176.6	-2,131.1	-771.6	2,266.4	3.52	3.52	
4,914.0	33.40	201.20	4,252.8	-2,179.2	-789.8	2,317.9	1.49	-1.41	
5,006.0	31.60	201.80	4,330.4	-2,225.2	-808.0	2,367.3	1.99	-1.96	
5,097.0	29.80	202.80	4,408.6	-2,268.2	-825.6	2,413.8	2.06	-1.98	
5,189.0	29.60	201.20	4,488.5	-2,310.5	-842.7	2,459.3	0.89	-0.22	
5,281.0	28.70	198.70	4,568.9	-2,352.6	-858.0	2,504.1	1.65	-0.98	
5,372.0	28.10	198.90	4,648.9	-2,393.5	-871.9	2,547.4	0.67	-0.66	
5,464.0	26.50	199.80	4,730.7	-2,433.4	-885.9	2,589.6	1.80	-1.74	
5,556.0	25.10	198.80	4,813.5	-2,471.1	-899.1	2,629.6	1.59	-1.52	
5,647.0	24.40	195.90	4,896.2	-2,507.5	-910.5	2,667.7	1.54	-0.77	
5,739.0	22.00	195.60	4,980.7	-2,542.4	-920.3	2,703.8	2.61	-2.61	
5,831.0	18.70	202.00	5,067.0	-2,572.7	-930.5	2,735.7	4.32	-3.59	
5,922.0	15.50	202.10	5,153.9	-2,597.5	-940.5	2,762.5	3.52	-3.52	
6,014.0	10.90	205.80	5,243.5	-2,616.7	-948.9	2,783.4	5.08	-5.00	
6,105.0	7.30	215.10	5,333.3	-2,629.2	-956.0	2,797.6	4.26	-3.96	
6,197.0	3.90	213.10	5,424.9	-2,636.6	-961.1	2,806.3	3.70	-3.70	
6,289.0	0.40	70.50	5,516.8	-2,639.1	-962.5	2,809.1	4.59	-3.80	
6,381.0	1.50	2.60	5,608.8	-2,637.8	-962.1	2,807.8	1.52	1.20	
6,472.0	1.40	343.80	5,699.8	-2,635.5	-962.4	2,805.7	0.53	-0.11	
6,564.0	1.40	342.80	5,791.7	-2,633.4	-963.0	2,803.9	0.03	0.00	
6,655.0	1.10	334.10	5,882.7	-2,631.5	-963.8	2,802.4	0.39	-0.33	
6,747.0	0.60	315.50	5,974.7	-2,630.4	-964.5	2,801.6	0.61	-0.54	
6,839.0	0.70	296.40	6,066.7	-2,629.8	-965.3	2,801.4	0.26	0.11	
6,931.0	1.00	289.40	6,158.7	-2,629.3	-966.6	2,801.3	0.34	0.33	
7,022.0	1.20	285.70	6,249.7	-2,628.8	-968.2	2,801.4	0.23	0.22	
7,114.0	0.30	57.30	6,341.7	-2,628.4	-969.0	2,801.3	1.54	-0.98	
7,205.0	1.00	51.40	6,432.7	-2,627.7	-968.1	2,800.4	0.77	0.77	
7,297.0	0.30	57.10	6,524.7	-2,627.1	-967.3	2,799.5	0.76	-0.76	
7,389.0	0.50	316.40	6,616.7	-2,626.7	-967.4	2,799.2	0.68	0.22	
7,480.0	1.20	326.40	6,707.6	-2,625.6	-968.2	2,798.4	0.78	0.77	
7,572.0	0.80	353.50	6,799.6	-2,624.2	-968.8	2,797.3	0.66	-0.43	
7,663.0	0.40	48.70	6,890.6	-2,623.3	-968.6	2,796.4	0.72	-0.44	
7,755.0	1.00	119.80	6,982.6	-2,623.5	-967.7	2,796.3	1.03	0.65	
7,847.0	0.90	114.60	7,074.6	-2,624.2	-966.3	2,796.5	0.14	-0.11	
7,938.0	1.30	96.40	7,165.6	-2,624.6	-964.7	2,796.3	0.58	0.44	
8,030.0	0.90	115.90	7,257.6	-2,625.1	-963.0	2,796.1	0.59	-0.43	
8,122.0	0.40	116.50	7,349.6	-2,625.5	-962.0	2,796.2	0.54	-0.54	
8,214.0	0.70	174.50	7,441.6	-2,626.2	-961.7	2,796.8	0.65	0.33	
8,305.0	1.10	236.00	7,532.6	-2,627.3	-962.4	2,798.0	1.08	0.44	
8,397.0	1.60	262.80	7,624.5	-2,627.9	-964.4	2,799.3	0.86	0.54	
8,489.0	0.40	320.40	7,716.5	-2,627.8	-965.9	2,799.7	1.55	-1.30	
8,580.0	0.20	50.30	7,807.5	-2,627.5	-965.9	2,799.4	0.49	-0.22	
8,672.0	0.50	235.00	7,899.5	-2,627.6	-966.1	2,799.6	0.76	0.33	
8,763.0	1.40	239.60	7,990.5	-2,628.4	-967.4	2,800.8	0.99	0.99	
8,855.0	1.00	235.70	8,082.5	-2,629.4	-969.1	2,802.3	0.44	-0.43	
8,947.0	1.10	225.30	8,174.5	-2,630.5	-970.3	2,803.8	0.23	0.11	
9,038.0	1.70	228.00	8,265.4	-2,632.0	-972.0	2,805.7	0.66	0.66	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well NP WF04B-27 K22 596
Project:	North Piceance	TVD Reference:	Well @ 6549.0ft (Patterson 303)
Site:	K22 596 Pad (S22-T5S-R96W)	MD Reference:	Well @ 6549.0ft (Patterson 303)
Well:	NP WF04B-27 K22 596	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	EDM 5000.1 US 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
9,130.0	2.20	274.10	8,357.4	-2,632.8	-974.7	2,807.4	1.73	0.54	
9,222.0	1.90	279.00	8,449.3	-2,632.4	-978.0	2,808.2	0.38	-0.33	
9,313.0	2.20	295.20	8,540.3	-2,631.5	-981.1	2,808.4	0.71	0.33	
9,405.0	2.00	284.70	8,632.2	-2,630.3	-984.2	2,808.4	0.47	-0.22	
9,485.0	2.20	280.60	8,712.2	-2,629.7	-987.1	2,808.7	0.31	0.25	Last Cathedral Survey @ 9485' MD

Targets

Target Name

- hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (ft)	+N/-S (ft)	+E/-W (ft)	Northing (ft)	Easting (ft)	Latitude	Longitude
K22 596 WF04B-27 BHL - actual wellpath misses target center by 33.8ft at 9405.0ft MD (8632.2 TVD, -2630.3 N, -984.2 E) - Rectangle (sides W30.0 H50.0 D0.0)	0.00	0.00	8,660.0	-2,627.6	-965.2	1,651,525.83	2,249,830.07	39° 35' 31.35 N	108° 9' 44.34 W
K22 596 WF04B-27 TG1 - actual wellpath misses target center by 19.2ft at 6292.5ft MD (5520.3 TVD, -2639.1 N, -962.5 E) - Point	0.00	0.00	5,520.0	-2,623.6	-951.2	1,651,529.45	2,249,844.20	39° 35' 31.39 N	108° 9' 44.16 W

Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
1,715.0	1,572.3	-539.0	-203.4	Last Cathedral Survey @ 1715' MD
9,485.0	8,712.2	-2,629.7	-987.1	Last Cathedral Survey @ 9485' MD

Checked By: _____ Approved By: _____ Date: _____