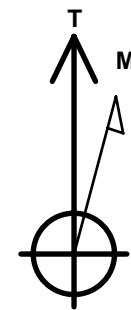
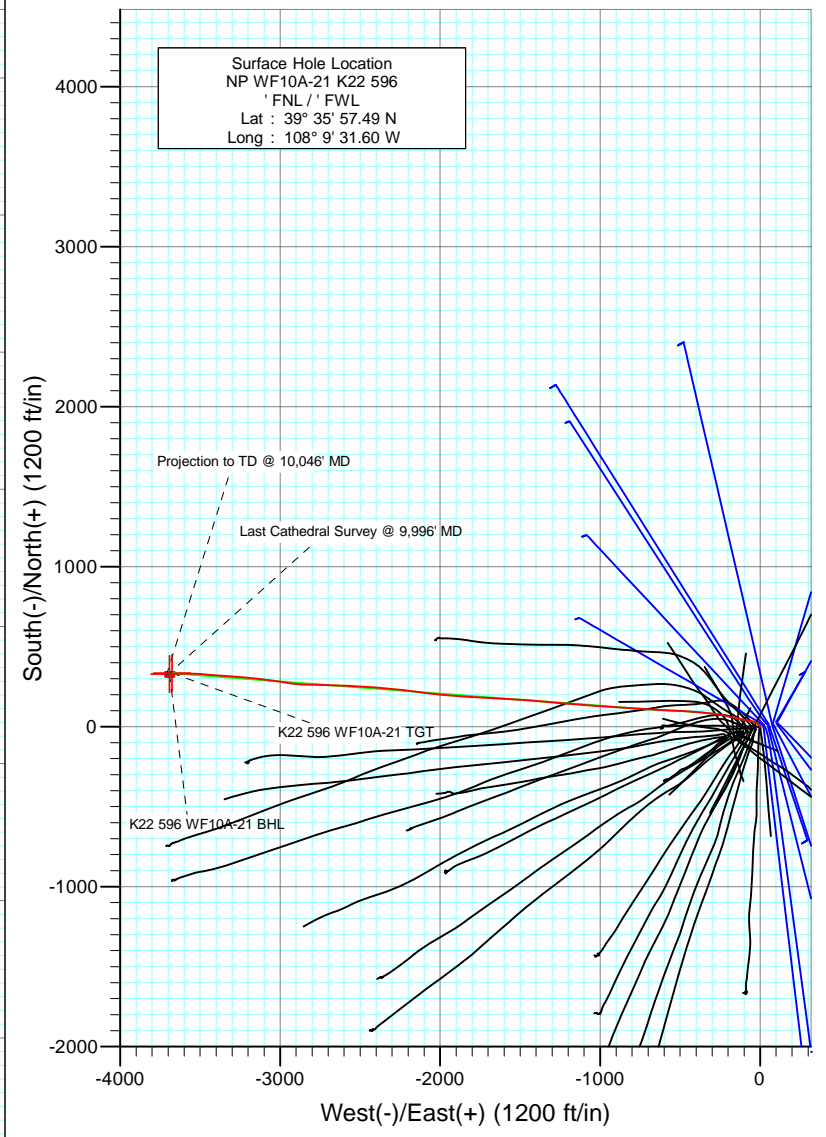
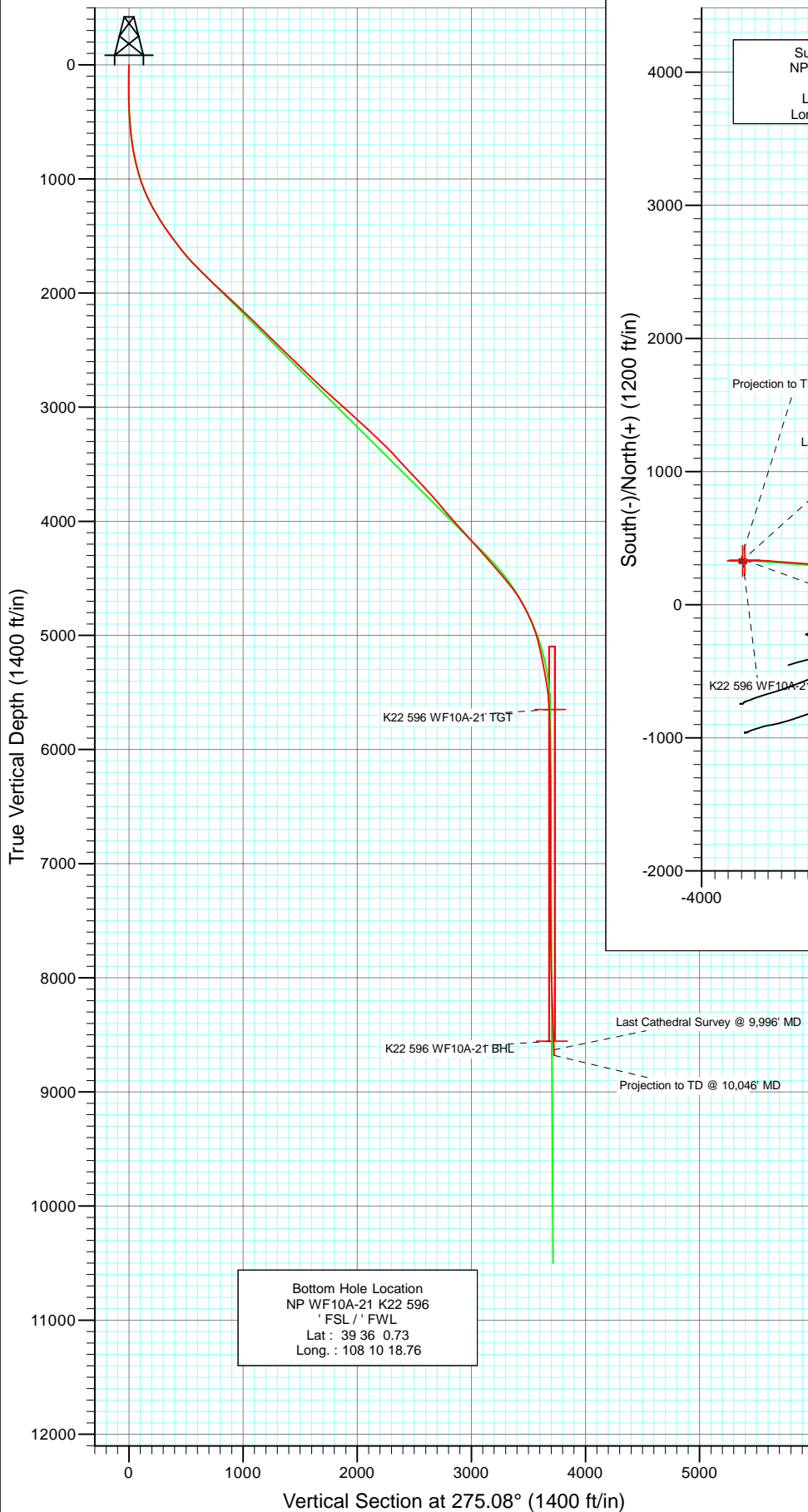




Project: North Piceance  
 Site: K22 596 Pad (S22-T5S-R96W)  
 Well: NP WF10A-21 K22 596  
 Wellbore: DD  
 Design: Final



Azimuths to True North  
 Magnetic North: 10.55°

Magnetic Field  
 Strength: 52414.9snT  
 Dip Angle: 65.83°  
 Date: 6/1/2010  
 Model: IGRF200510

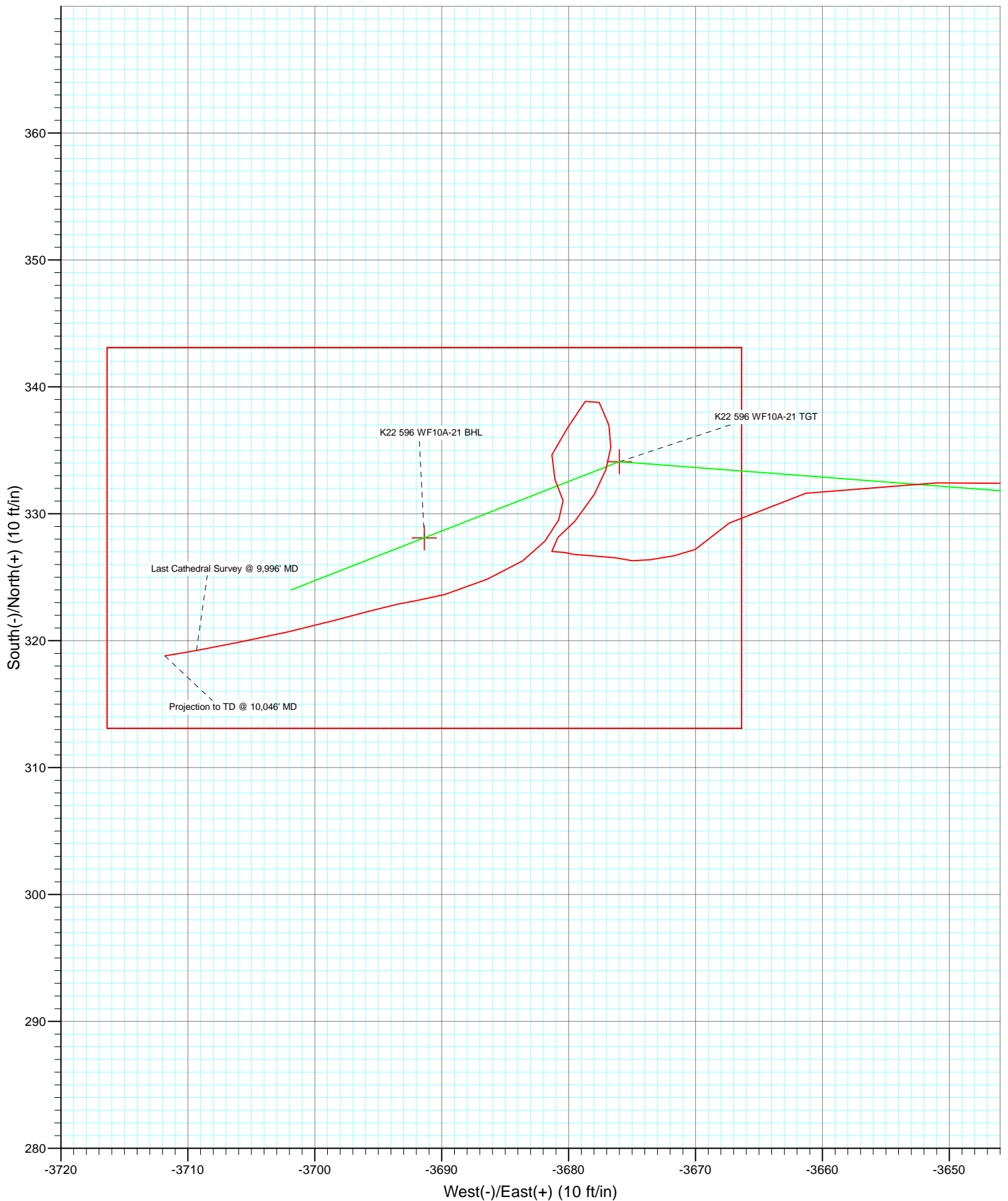
DESIGN DETAILS: DD

105231(SH); LR  
 Well @ 6549.0ft (Patterson 303)

Target	Azimuth	Origin	N/S	E/W From TVD
K22 596 WF10A-21 BHL	275.08	Slot	0.0	0.0



Project: North Piceance  
Site: K22 596 Pad (S22-T5S-R96W)  
Well: NP WF10A-21 K22 596  
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 WF10A-21 K22 596
<b>Project:</b>	North Piceance	<b>TVD Reference:</b>	Well @ 6549.0ft (Patterson 303)
<b>Site:</b>	K22 596 Pad (S22-T5S-R96W)	<b>MD Reference:</b>	Well @ 6549.0ft (Patterson 303)
<b>Well:</b>	NP WF10A-21 K22 596	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	DD	<b>Database:</b>	EDM 5000.1 US 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		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 WF10A-21 K22 596					
Well Position	+N/-S	0.0 ft	Northing:	1,654,140.35 ft	Latitude:	39° 35' 57.49 N
	+E/-W	0.0 ft	Easting:	2,250,904.35 ft	Longitude:	108° 9' 31.60 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	6,527.0 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>
	IGRF200510	6/1/2010	10.55	65.83	52,415

<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	275.08	

<b>Survey Program</b>	<b>Date</b>	7/7/2010			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
170.0	1,995.0	Survey #1 (DD)	MWD	Geolink MWD	
2,068.0	10,046.0	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	
170.0	0.30	91.60	170.0	0.0	0.4	-0.4	0.18	0.18	
199.0	0.30	35.30	199.0	0.0	0.6	-0.6	0.98	0.00	
230.0	0.30	48.30	230.0	0.2	0.7	-0.7	0.22	0.00	
260.0	0.40	33.80	260.0	0.3	0.8	-0.8	0.44	0.33	
290.0	0.50	47.40	290.0	0.5	0.9	-0.9	0.49	0.33	
320.0	1.00	5.70	320.0	0.8	1.1	-1.0	2.36	1.67	
351.0	2.10	343.90	351.0	1.6	0.9	-0.8	3.96	3.55	
381.0	2.70	334.90	381.0	2.8	0.5	-0.2	2.36	2.00	
412.0	3.60	332.50	411.9	4.3	-0.3	0.7	2.93	2.90	
442.0	4.30	322.40	441.8	6.1	-1.4	1.9	3.28	2.33	
472.0	5.50	313.60	471.7	7.9	-3.1	3.8	4.71	4.00	

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well NP WF10A-21 K22 596
<b>Project:</b>	North Piceance	<b>TVD Reference:</b>	Well @ 6549.0ft (Patterson 303)
<b>Site:</b>	K22 596 Pad (S22-T5S-R96W)	<b>MD Reference:</b>	Well @ 6549.0ft (Patterson 303)
<b>Well:</b>	NP WF10A-21 K22 596	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	DD	<b>Database:</b>	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
503.0	6.30	310.50	502.6	10.1	-5.5	6.4	2.78	2.58	
549.0	7.40	311.20	548.2	13.7	-9.6	10.8	2.40	2.39	
594.0	7.50	309.60	592.9	17.4	-14.1	15.6	0.51	0.22	
640.0	8.20	304.40	638.4	21.2	-19.1	20.9	2.17	1.52	
686.0	8.80	297.20	683.9	24.7	-24.9	27.0	2.65	1.30	
732.0	10.10	290.50	729.3	27.7	-31.8	34.2	3.70	2.83	
777.0	11.40	290.90	773.5	30.7	-39.7	42.3	2.89	2.89	
823.0	12.60	284.00	818.5	33.5	-48.8	51.6	4.06	2.61	
869.0	14.10	282.80	863.3	36.0	-59.1	62.1	3.32	3.26	
915.0	14.80	278.10	907.8	38.0	-70.4	73.5	2.97	1.52	
960.0	15.80	281.10	951.2	40.0	-82.1	85.4	2.83	2.22	
1,006.0	16.70	279.30	995.4	42.3	-94.8	98.2	2.24	1.96	
1,052.0	18.70	281.60	1,039.2	44.8	-108.5	112.1	4.61	4.35	
1,097.0	21.40	282.80	1,081.5	48.1	-123.6	127.4	6.07	6.00	
1,146.0	23.90	283.20	1,126.7	52.4	-142.0	146.1	5.11	5.10	
1,192.0	26.00	282.90	1,168.4	56.7	-160.9	165.3	4.57	4.57	
1,238.0	27.50	283.50	1,209.5	61.5	-181.1	185.8	3.31	3.26	
1,283.0	28.70	281.20	1,249.2	66.0	-201.8	206.8	3.59	2.67	
1,329.0	29.90	279.80	1,289.3	70.1	-223.9	229.2	3.00	2.61	
1,375.0	31.50	280.60	1,328.8	74.3	-247.0	252.6	3.59	3.48	
1,421.0	32.50	277.00	1,367.8	78.0	-271.1	276.9	4.68	2.17	
1,467.0	33.70	277.90	1,406.4	81.2	-296.0	302.0	2.82	2.61	
1,512.0	35.10	275.60	1,443.5	84.2	-321.2	327.4	4.24	3.11	
1,558.0	36.20	276.20	1,480.9	87.0	-347.9	354.2	2.51	2.39	
1,604.0	36.00	274.30	1,518.0	89.4	-374.9	381.3	2.47	-0.43	
1,649.0	36.90	274.70	1,554.2	91.5	-401.6	408.1	2.07	2.00	
1,695.0	37.60	275.00	1,590.9	93.9	-429.3	435.9	1.57	1.52	
1,741.0	38.60	274.60	1,627.1	96.3	-457.6	464.3	2.24	2.17	
1,787.0	39.90	272.50	1,662.7	98.1	-486.6	493.4	4.04	2.83	
1,832.0	41.70	272.20	1,696.7	99.3	-516.0	522.8	4.02	4.00	
1,878.0	43.00	272.10	1,730.7	100.4	-547.0	553.7	2.83	2.83	
1,924.0	44.00	274.10	1,764.1	102.2	-578.6	585.4	3.70	2.17	
1,970.0	45.10	272.40	1,796.9	104.0	-610.8	617.6	3.53	2.39	
1,995.0	45.10	272.70	1,814.5	104.8	-628.5	635.3	0.85	0.00	Last Cathedral Survey @ 1995' MD
2,068.0	46.00	273.90	1,865.7	107.8	-680.5	687.4	1.70	1.23	
2,159.0	46.50	273.90	1,928.6	112.2	-746.1	753.1	0.55	0.55	
2,251.0	46.90	273.40	1,991.7	116.5	-812.9	820.0	0.59	0.43	
2,342.0	47.80	273.00	2,053.3	120.2	-879.7	886.9	1.04	0.99	
2,434.0	46.40	274.30	2,116.0	124.5	-947.0	954.3	1.84	-1.52	
2,525.0	46.80	273.20	2,178.5	128.8	-1,013.0	1,020.4	0.98	0.44	
2,617.0	45.60	275.10	2,242.2	133.6	-1,079.2	1,086.8	1.98	-1.30	
2,708.0	45.50	274.50	2,305.9	139.1	-1,143.9	1,151.7	0.48	-0.11	
2,800.0	45.00	274.80	2,370.7	144.4	-1,209.0	1,217.1	0.59	-0.54	
2,891.0	46.10	275.50	2,434.4	150.2	-1,273.7	1,282.0	1.33	1.21	
2,982.0	46.00	275.10	2,497.5	156.3	-1,339.0	1,347.6	0.33	-0.11	
3,074.0	45.90	274.50	2,561.5	161.8	-1,404.9	1,413.7	0.48	-0.11	
3,165.0	45.20	273.70	2,625.2	166.4	-1,469.7	1,478.6	0.99	-0.77	
3,257.0	46.90	273.40	2,689.1	170.5	-1,535.8	1,544.8	1.86	1.85	
3,348.0	46.10	273.00	2,751.7	174.2	-1,601.7	1,610.8	0.94	-0.88	
3,440.0	45.70	273.00	2,815.8	177.7	-1,667.6	1,676.8	0.43	-0.43	
3,531.0	49.50	272.90	2,877.1	181.1	-1,734.7	1,744.0	4.18	4.18	
3,623.0	48.20	274.60	2,937.6	185.7	-1,803.9	1,813.2	1.98	-1.41	
3,714.0	47.30	273.00	2,998.8	190.1	-1,871.1	1,880.6	1.63	-0.99	

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well NP WF10A-21 K22 596
<b>Project:</b>	North Piceance	<b>TVD Reference:</b>	Well @ 6549.0ft (Patterson 303)
<b>Site:</b>	K22 596 Pad (S22-T5S-R96W)	<b>MD Reference:</b>	Well @ 6549.0ft (Patterson 303)
<b>Well:</b>	NP WF10A-21 K22 596	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	DD	<b>Database:</b>	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
3,806.0	46.70	273.70	3,061.6	194.1	-1,938.2	1,947.8	0.86	-0.65	
3,898.0	48.00	276.80	3,123.9	200.3	-2,005.6	2,015.5	2.85	1.41	
3,989.0	47.40	277.50	3,185.2	208.6	-2,072.4	2,082.7	0.87	-0.66	
4,080.0	47.20	276.10	3,246.9	216.6	-2,138.8	2,149.6	1.15	-0.22	
4,172.0	45.80	276.50	3,310.2	223.9	-2,205.1	2,216.3	1.55	-1.52	
4,264.0	44.20	276.30	3,375.2	231.1	-2,269.8	2,281.3	1.75	-1.74	
4,355.0	42.90	276.00	3,441.2	237.8	-2,332.1	2,344.0	1.45	-1.43	
4,447.0	41.10	275.70	3,509.6	244.1	-2,393.3	2,405.6	1.97	-1.96	
4,538.0	44.60	273.80	3,576.3	249.2	-2,455.0	2,467.4	4.10	3.85	
4,630.0	43.40	272.30	3,642.5	252.6	-2,518.8	2,531.3	1.73	-1.30	
4,721.0	42.80	272.70	3,708.9	255.3	-2,580.9	2,593.4	0.72	-0.66	
4,812.0	41.00	271.20	3,776.6	257.4	-2,641.7	2,654.1	2.26	-1.98	
4,902.0	41.00	271.40	3,844.6	258.8	-2,700.7	2,713.0	0.15	0.00	
4,996.0	40.00	270.90	3,916.0	260.0	-2,761.7	2,773.9	1.12	-1.06	
5,087.0	42.00	271.90	3,984.7	261.5	-2,821.4	2,833.5	2.31	2.20	
5,179.0	41.10	274.60	4,053.6	264.9	-2,882.3	2,894.5	2.18	-0.98	
5,270.0	42.90	278.70	4,121.2	272.0	-2,942.8	2,955.3	3.60	1.98	
5,361.0	42.10	278.70	4,188.3	281.3	-3,003.5	3,016.6	0.88	-0.88	
5,453.0	41.60	278.20	4,256.8	290.3	-3,064.2	3,077.9	0.65	-0.54	
5,544.0	41.30	276.10	4,325.0	297.8	-3,124.0	3,138.1	1.56	-0.33	
5,636.0	41.00	275.70	4,394.3	304.0	-3,184.2	3,198.6	0.43	-0.33	
5,727.0	40.70	274.10	4,463.1	309.1	-3,243.5	3,258.2	1.20	-0.33	
5,819.0	40.10	274.70	4,533.2	313.7	-3,303.0	3,317.8	0.78	-0.65	
5,910.0	35.70	274.60	4,605.0	318.2	-3,358.7	3,373.7	4.84	-4.84	
6,001.0	31.10	274.10	4,680.9	322.0	-3,408.6	3,423.7	5.06	-5.05	
6,093.0	27.90	273.90	4,761.0	325.2	-3,453.8	3,469.0	3.48	-3.48	
6,185.0	24.50	276.30	4,843.5	328.8	-3,494.3	3,509.6	3.87	-3.70	
6,276.0	20.80	271.60	4,927.5	331.3	-3,529.2	3,544.6	4.52	-4.07	
6,367.0	17.10	268.10	5,013.6	331.3	-3,558.7	3,574.1	4.25	-4.07	
6,459.0	11.90	271.40	5,102.6	331.1	-3,581.7	3,597.0	5.72	-5.65	
6,550.0	11.30	271.60	5,191.8	331.5	-3,600.0	3,615.2	0.66	-0.66	
6,642.0	11.30	270.90	5,282.0	331.9	-3,618.0	3,633.2	0.15	0.00	
6,733.0	11.10	271.90	5,371.2	332.4	-3,635.7	3,650.9	0.31	-0.22	
6,825.0	8.00	268.00	5,462.0	332.4	-3,651.0	3,666.1	3.44	-3.37	
6,916.0	5.10	261.40	5,552.4	331.6	-3,661.3	3,676.3	3.29	-3.19	
7,008.0	3.30	229.00	5,644.1	329.3	-3,667.3	3,682.1	3.16	-1.96	
7,099.0	1.00	243.40	5,735.0	327.2	-3,670.0	3,684.6	2.58	-2.53	
7,190.0	1.20	261.30	5,826.0	326.7	-3,671.7	3,686.2	0.43	0.22	
7,282.0	1.20	260.10	5,918.0	326.4	-3,673.6	3,688.0	0.03	0.00	
7,373.0	0.60	280.60	6,009.0	326.3	-3,675.0	3,689.4	0.74	-0.66	
7,465.0	1.10	279.10	6,101.0	326.5	-3,676.3	3,690.8	0.54	0.54	
7,556.0	1.30	271.30	6,192.0	326.7	-3,678.2	3,692.7	0.28	0.22	
7,648.0	0.40	286.30	6,284.0	326.8	-3,679.6	3,694.1	1.00	-0.98	
7,739.0	0.50	276.80	6,375.0	326.9	-3,680.3	3,694.8	0.14	0.11	
7,831.0	0.80	273.80	6,466.9	327.0	-3,681.3	3,695.8	0.33	0.33	
7,952.0	1.60	51.30	6,587.9	328.1	-3,680.8	3,695.4	1.86	0.66	
8,014.0	1.80	42.30	6,649.9	329.4	-3,679.5	3,694.2	0.54	0.32	
8,105.0	1.50	28.50	6,740.9	331.5	-3,678.0	3,692.9	0.54	-0.33	
8,197.0	1.20	20.80	6,832.8	333.5	-3,677.1	3,692.1	0.38	-0.33	
8,288.0	1.10	3.40	6,923.8	335.2	-3,676.7	3,691.9	0.40	-0.11	
8,380.0	1.10	346.70	7,015.8	337.0	-3,676.8	3,692.2	0.35	0.00	
8,471.0	1.40	329.40	7,106.8	338.8	-3,677.6	3,693.1	0.53	0.33	
8,562.0	1.30	211.10	7,197.8	338.9	-3,678.7	3,694.2	2.55	-0.11	

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well NP WF10A-21 K22 596
<b>Project:</b>	North Piceance	<b>TVD Reference:</b>	Well @ 6549.0ft (Patterson 303)
<b>Site:</b>	K22 596 Pad (S22-T5S-R96W)	<b>MD Reference:</b>	Well @ 6549.0ft (Patterson 303)
<b>Well:</b>	NP WF10A-21 K22 596	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	DD	<b>Database:</b>	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
8,654.0	1.80	215.40	7,289.7	336.8	-3,680.1	3,695.4	0.56	0.54	
8,746.0	1.30	203.30	7,381.7	334.6	-3,681.3	3,696.5	0.65	-0.54	
8,837.0	1.50	147.00	7,472.7	332.7	-3,681.1	3,696.1	1.46	0.22	
8,926.0	0.90	178.80	7,561.7	331.0	-3,680.4	3,695.3	0.98	-0.67	
9,017.0	1.10	204.80	7,652.7	329.5	-3,680.8	3,695.5	0.54	0.22	
9,109.0	1.40	219.50	7,744.6	327.8	-3,681.9	3,696.4	0.47	0.33	
9,200.0	1.60	236.50	7,835.6	326.3	-3,683.6	3,698.0	0.53	0.22	
9,292.0	2.30	246.90	7,927.5	324.9	-3,686.4	3,700.7	0.85	0.76	
9,383.0	2.20	253.80	8,018.5	323.6	-3,689.7	3,703.9	0.32	-0.11	
9,475.0	0.70	270.00	8,110.4	323.2	-3,692.0	3,706.1	1.67	-1.63	
9,566.0	1.20	252.70	8,201.4	322.9	-3,693.5	3,707.6	0.63	0.55	
9,658.0	1.60	258.70	8,293.4	322.3	-3,695.7	3,709.7	0.46	0.43	
9,749.0	2.20	252.70	8,384.4	321.6	-3,698.6	3,712.5	0.69	0.66	
9,840.0	2.40	259.20	8,475.3	320.7	-3,702.1	3,716.0	0.36	0.22	
9,932.0	2.80	257.40	8,567.2	319.8	-3,706.2	3,720.0	0.44	0.43	
9,996.0	2.90	260.40	8,631.1	319.2	-3,709.3	3,723.0	0.28	0.16	Last Cathedral Survey @ 9,996' MD
10,046.0	2.90	260.40	8,681.0	318.8	-3,711.8	3,725.5	0.00	0.00	Projection to TD @ 10,046' 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									
K22 596 WF10A-21 TG1	0.00	0.00	5,650.0	334.1	-3,676.0	1,654,581.88	2,247,239.70	39° 36' 0.79 N	108° 10' 18.56 W
- actual wellpath misses target center by 9.8ft at 7014.0ft MD (5650.1 TVD, 329.0 N, -3667.6 E)									
- Point									
K22 596 WF10A-21 BHL	0.00	0.00	8,556.0	328.1	-3,691.4	1,654,576.34	2,247,224.17	39° 36' 0.73 N	108° 10' 18.76 W
- actual wellpath misses target center by 16.4ft at 9920.1ft MD (8555.3 TVD, 320.0 N, -3705.6 E)									
- Rectangle (sides W30.0 H50.0 D0.0)									

### Design Annotations

Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment
1,995.0	1,814.5	104.8	-628.5	Last Cathedral Survey @ 1995' MD
9,996.0	8,631.1	319.2	-3,709.3	Last Cathedral Survey @ 9,996' MD
10,046.0	8,681.0	318.8	-3,711.8	Projection to TD @ 10,046' MD

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