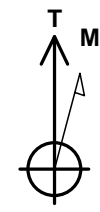
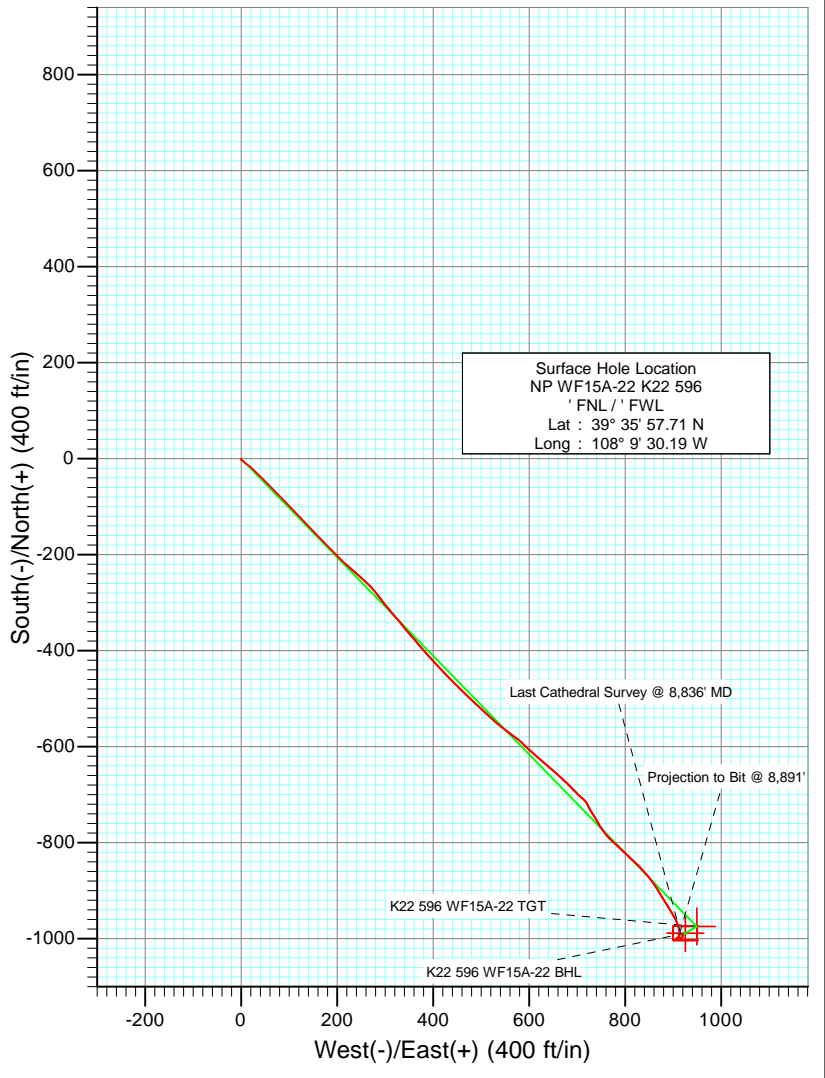
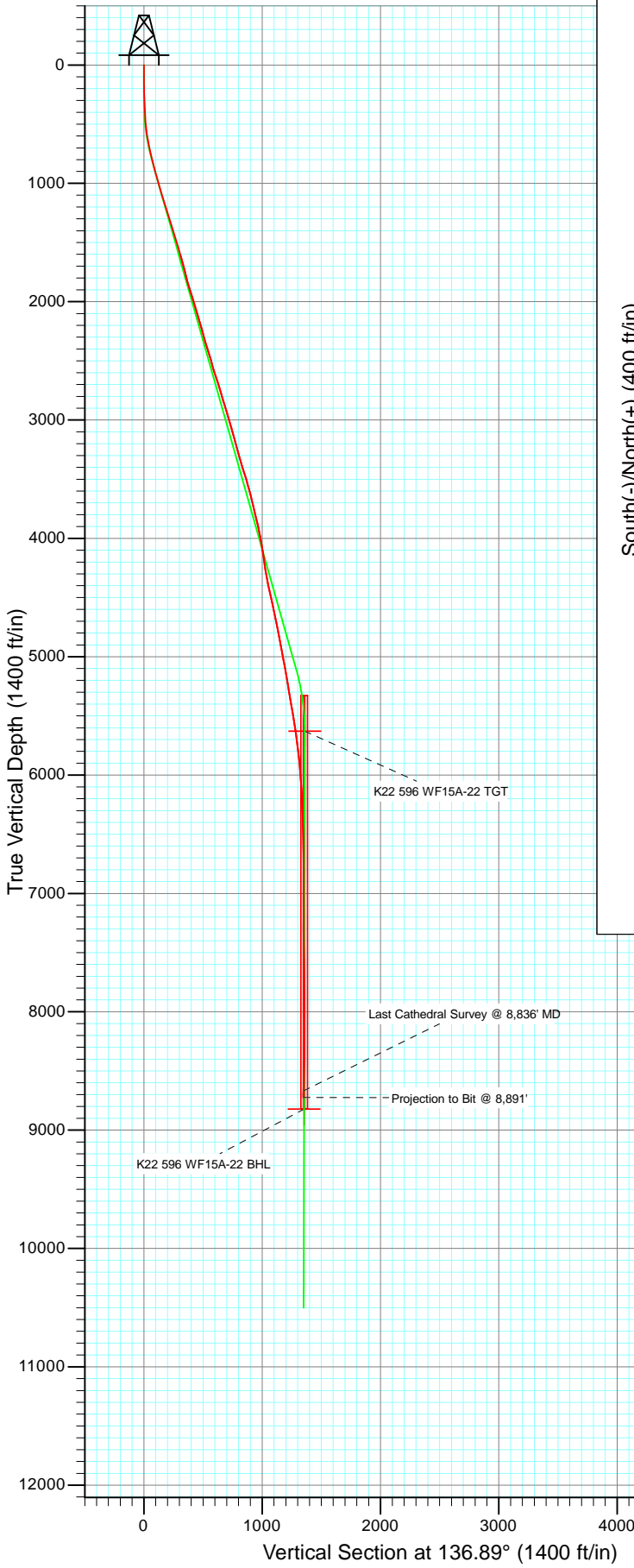




Project: North Piceance
 Site: K22 596 Pad (S22-T5S-R96W)
 Well: NP WF15A-22 K22 596
 Wellbore: DD
 Design: FINAL

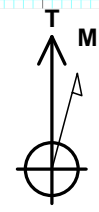
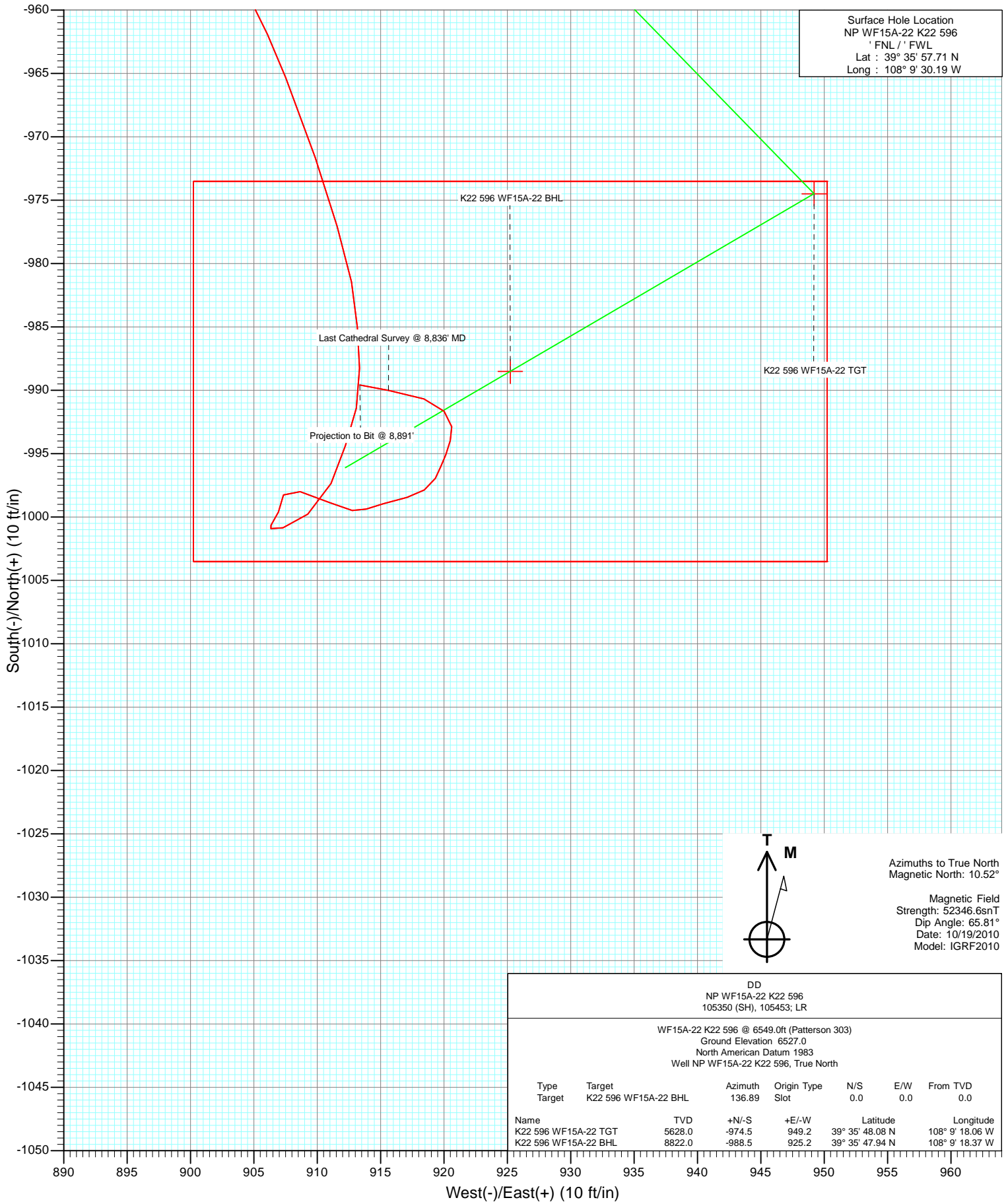


Azimuths to True North
 Magnetic North: 10.52°
 Magnetic Field
 Strength: 52346.6snT
 Dip Angle: 65.81°
 Date: 10/19/2010
 Model: IGRF2010

DD NP WF15A-22 K22 596 105350 (SH), 105453; LR						
WF15A-22 K22 596 @ 6549.0ft (Patterson 303) Ground Elevation 6527.0 North American Datum 1983 Well NP WF15A-22 K22 596, True North						
Type	Target	Azimuth	Origin Type	N/S	E/W	From TVD
Target	K22 596 WF15A-22 BHL	136.89	Slot	0.0	0.0	0.0
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	
K22 596 WF15A-22 TGT	5628.0	-974.5	949.2	39° 35' 48.08 N	108° 9' 18.06 W	
K22 596 WF15A-22 BHL	8822.0	888.6	926.2	39° 35' 47.04 N	108° 9' 18.37 W	



Project: North Piceance
 Site: K22 596 Pad (S22-T5S-R96W)
 Well: NP WF15A-22 K22 596
 Wellbore: DD
 Design: FINAL



Azimuths to True North
 Magnetic North: 10.52°

Magnetic Field
 Strength: 52346.6snT
 Dip Angle: 65.81°
 Date: 10/19/2010
 Model: IGRF2010

DD							
NP WF15A-22 K22 596							
105350 (SH), 105453; LR							
WF15A-22 K22 596 @ 6549.0ft (Patterson 303)							
Ground Elevation 6527.0							
North American Datum 1983							
Well NP WF15A-22 K22 596, True North							
Type	Target	Azimuth	Origin	Type	N/S	E/W	From TVD
Target	K22 596 WF15A-22 BHL	136.89	Slot		0.0	0.0	0.0
Name		TVD	+N/-S	+E/-W	Latitude		Longitude
K22 596 WF15A-22 TGT		5628.0	-974.5	949.2	39° 35' 48.08 N		108° 9' 18.06 W
K22 596 WF15A-22 BHL		8822.0	-988.5	925.2	39° 35' 47.94 N		108° 9' 18.37 W

Cathedral Energy

Survey Report

Company: EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference: Well NP WF15A-22 K22 596
Project: North Piceance	TVD Reference: WF15A-22 K22 596 @ 6549.0ft (Patterson 303)
Site: K22 596 Pad (S22-T5S-R96W)	MD Reference: WF15A-22 K22 596 @ 6549.0ft (Patterson 303)
Well: NP WF15A-22 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 WF15A-22 K22 596					
Well Position	+N/-S	0.0 ft	Northing:	1,654,159.37 ft	Latitude: 39° 35' 57.71 N
	+E/-W	0.0 ft	Easting:	2,251,015.32 ft	Longitude: 108° 9' 30.19 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)
	IGRF2010	10/19/2010	10.52	65.81	52,347

Design DD					
Audit Notes:					
Version:	1.0	Phase:	ACTUAL	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)	
	0.0	0.0	0.0	136.89	

Survey Program		Date 10/28/2010
From (ft)	To (ft)	Survey (Wellbore)
164.0	1,650.0	Survey #1 (DD)
1,791.0	8,891.0	Survey #2 (DD)
		Tool Name
		MWD
		MWD
		Description
		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	
164.0	1.10	190.80	164.0	-1.5	-0.3	0.9	0.67	0.67	
193.0	1.30	137.00	193.0	-2.1	-0.1	1.4	3.79	0.69	
224.0	1.40	132.60	224.0	-2.6	0.4	2.1	0.46	0.32	
254.0	1.60	112.20	254.0	-3.0	1.1	2.9	1.89	0.67	
284.0	1.90	118.70	284.0	-3.4	1.9	3.7	1.20	1.00	
314.0	2.50	130.40	313.9	-4.0	2.8	4.9	2.49	2.00	
344.0	2.50	134.90	343.9	-4.9	3.8	6.2	0.65	0.00	
374.0	2.60	131.30	373.9	-5.8	4.7	7.5	0.63	0.33	
405.0	2.60	134.00	404.8	-6.8	5.8	8.9	0.40	0.00	
435.0	3.10	133.10	434.8	-7.8	6.9	10.4	1.67	1.67	
465.0	4.10	128.10	464.7	-9.0	8.3	12.3	3.49	3.33	

Cathedral Energy

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well NP WF15A-22 K22 596
Project:	North Piceance	TD Reference:	WF15A-22 K22 596 @ 6549.0ft (Patterson 303)
Site:	K22 596 Pad (S22-T5S-R96W)	MD Reference:	WF15A-22 K22 596 @ 6549.0ft (Patterson 303)
Well:	NP WF15A-22 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
496.0	5.10	126.00	495.6	-10.5	10.3	14.7	3.27	3.23	
545.0	6.90	123.90	544.4	-13.4	14.5	19.7	3.70	3.67	
590.0	8.90	129.90	588.9	-17.2	19.4	25.8	4.80	4.44	
636.0	10.20	135.50	634.3	-22.4	25.0	33.4	3.47	2.83	
682.0	10.90	135.60	679.5	-28.4	30.9	41.8	1.52	1.52	
728.0	12.10	136.00	724.6	-35.0	37.3	51.0	2.61	2.61	
773.0	13.00	134.70	768.5	-41.9	44.2	60.8	2.10	2.00	
865.0	15.40	134.80	857.7	-57.8	60.2	83.3	2.61	2.61	
957.0	16.40	134.60	946.2	-75.5	78.1	108.5	1.09	1.09	
1,048.0	16.60	135.90	1,033.4	-93.9	96.3	134.3	0.46	0.22	
1,139.0	16.60	136.90	1,120.7	-112.7	114.2	160.3	0.31	0.00	
1,231.0	17.10	136.30	1,208.7	-132.1	132.5	187.0	0.58	0.54	
1,322.0	17.10	137.70	1,295.7	-151.7	150.8	213.8	0.45	0.00	
1,414.0	17.60	134.80	1,383.5	-171.5	169.8	241.2	1.09	0.54	
1,506.0	17.30	136.20	1,471.3	-191.1	189.1	268.8	0.56	-0.33	
1,597.0	16.20	134.00	1,558.4	-209.7	207.6	295.0	1.40	-1.21	
1,650.0	15.70	132.50	1,609.4	-219.7	218.2	309.5	1.22	-0.94	Last Cathedral Survey @ 1650' MD
1,791.0	14.20	131.00	1,745.6	-243.9	245.3	345.7	1.10	-1.06	
1,883.0	15.30	132.60	1,834.5	-259.6	262.8	369.1	1.27	1.20	
1,974.0	17.90	142.50	1,921.8	-278.8	280.1	395.0	4.21	2.86	
2,066.0	17.70	140.90	2,009.4	-300.9	297.6	423.0	0.57	-0.22	
2,157.0	16.80	140.30	2,096.3	-321.7	314.7	449.9	1.01	-0.99	
2,249.0	15.90	140.00	2,184.5	-341.6	331.3	475.8	0.98	-0.98	
2,340.0	14.80	140.50	2,272.3	-360.1	346.7	499.8	1.22	-1.21	
2,432.0	17.90	139.00	2,360.6	-379.9	363.4	525.7	3.40	3.37	
2,523.0	16.70	139.30	2,447.5	-400.3	381.1	552.7	1.32	-1.32	
2,615.0	14.90	137.70	2,536.0	-419.1	397.7	577.8	2.01	-1.96	
2,706.0	19.20	136.40	2,623.0	-438.6	415.9	604.4	4.74	4.73	
2,798.0	17.50	135.20	2,710.3	-459.4	436.1	633.4	1.89	-1.85	
2,889.0	15.30	133.90	2,797.6	-477.4	454.4	659.1	2.45	-2.42	
2,980.0	18.10	134.00	2,884.7	-495.5	473.2	685.2	3.08	3.08	
3,072.0	17.00	134.50	2,972.4	-514.9	493.1	712.9	1.21	-1.20	
3,163.0	15.10	132.70	3,059.9	-532.3	511.3	738.0	2.16	-2.09	
3,255.0	14.40	130.50	3,148.9	-547.8	528.8	761.3	0.97	-0.76	
3,346.0	16.60	127.80	3,236.5	-563.1	547.7	785.4	2.54	2.42	
3,438.0	15.90	125.30	3,324.9	-578.5	568.3	810.7	1.08	-0.76	
3,529.0	17.90	133.00	3,411.9	-595.2	588.8	836.9	3.29	2.20	
3,621.0	17.10	133.20	3,499.7	-614.1	609.0	864.5	0.87	-0.87	
3,712.0	15.30	130.30	3,587.1	-631.1	627.9	889.8	2.17	-1.98	
3,803.0	13.70	131.00	3,675.2	-645.9	645.2	912.4	1.77	-1.76	
3,895.0	12.40	130.00	3,764.8	-659.4	660.9	933.1	1.43	-1.41	
3,986.0	14.60	135.20	3,853.3	-673.8	676.5	954.2	2.76	2.42	
4,078.0	11.80	136.50	3,942.8	-688.9	691.2	975.2	3.06	-3.04	
4,169.0	8.50	130.90	4,032.4	-700.0	702.7	991.2	3.78	-3.63	
4,261.0	8.80	133.40	4,123.3	-709.3	712.9	1,005.0	0.52	0.33	
4,352.0	8.80	152.20	4,213.3	-720.2	721.2	1,018.7	3.15	0.00	
4,444.0	10.60	150.20	4,304.0	-733.8	728.7	1,033.7	1.99	1.96	
4,535.0	11.40	148.00	4,393.3	-748.7	737.6	1,050.7	0.99	0.88	
4,627.0	12.90	150.10	4,483.2	-765.3	747.6	1,069.6	1.70	1.63	
4,718.0	12.60	140.90	4,572.0	-781.8	758.9	1,089.4	2.25	-0.33	
4,810.0	12.50	131.60	4,661.8	-796.2	772.7	1,109.3	2.20	-0.11	
4,901.0	11.30	133.70	4,750.9	-808.9	786.5	1,128.0	1.40	-1.32	
4,993.0	10.00	134.00	4,841.3	-820.7	798.7	1,145.0	1.41	-1.41	

Cathedral Energy

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well NP WF15A-22 K22 596
Project:	North Piceance	TVD Reference:	WF15A-22 K22 596 @ 6549.0ft (Patterson 303)
Site:	K22 596 Pad (S22-T5S-R96W)	MD Reference:	WF15A-22 K22 596 @ 6549.0ft (Patterson 303)
Well:	NP WF15A-22 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
5,084.0	11.20	132.90	4,930.7	-832.2	810.9	1,161.7	1.34	1.32	
5,176.0	10.00	133.00	5,021.1	-843.7	823.3	1,178.6	1.30	-1.30	
5,267.0	11.40	138.00	5,110.6	-855.8	835.1	1,195.5	1.84	1.54	
5,359.0	9.40	139.60	5,201.1	-868.3	846.0	1,212.1	2.20	-2.17	
5,450.0	8.30	141.70	5,291.0	-879.1	854.9	1,226.0	1.26	-1.21	
5,542.0	10.30	147.20	5,381.8	-891.2	863.5	1,240.7	2.38	2.17	
5,633.0	10.20	150.70	5,471.3	-905.1	871.8	1,256.6	0.69	-0.11	
5,725.0	9.00	146.00	5,562.0	-918.2	879.9	1,271.6	1.56	-1.30	
5,816.0	8.30	147.80	5,652.0	-929.6	887.3	1,285.1	0.82	-0.77	
5,908.0	7.60	149.90	5,743.1	-940.5	893.9	1,297.5	0.82	-0.76	
5,999.0	6.40	148.50	5,833.4	-950.0	899.6	1,308.4	1.33	-1.32	
6,091.0	5.40	152.40	5,924.9	-958.2	904.3	1,317.5	1.17	-1.09	
6,182.0	4.40	159.10	6,015.6	-965.3	907.5	1,324.9	1.26	-1.10	
6,274.0	4.00	160.60	6,107.3	-971.6	909.8	1,331.1	0.45	-0.43	
6,365.0	3.20	164.30	6,198.2	-977.1	911.6	1,336.3	0.91	-0.88	
6,456.0	2.50	167.00	6,289.1	-981.4	912.7	1,340.2	0.78	-0.77	
6,548.0	2.00	179.90	6,381.0	-985.0	913.2	1,343.2	0.77	-0.54	
6,639.0	2.10	174.20	6,471.9	-988.3	913.3	1,345.6	0.25	0.11	
6,731.0	1.90	195.90	6,563.9	-991.4	913.1	1,347.8	0.85	-0.22	
6,822.0	2.00	196.30	6,654.8	-994.4	912.2	1,349.4	0.11	0.11	
6,914.0	2.00	205.60	6,746.8	-997.4	911.1	1,350.8	0.35	0.00	
7,005.0	1.90	229.30	6,837.7	-999.8	909.3	1,351.3	0.89	-0.11	
7,097.0	1.00	264.70	6,929.7	-1,000.8	907.3	1,350.7	1.34	-0.98	
7,188.0	0.20	270.10	7,020.7	-1,000.9	906.3	1,350.1	0.88	-0.88	
7,280.0	0.40	31.50	7,112.7	-1,000.6	906.4	1,349.9	0.58	0.22	
7,371.0	1.10	28.00	7,203.7	-999.6	906.9	1,349.6	0.77	0.77	
7,463.0	0.70	358.90	7,295.7	-998.3	907.3	1,348.8	0.65	-0.43	
7,555.0	1.70	102.80	7,387.6	-998.0	908.7	1,349.6	2.16	1.09	
7,646.0	1.50	119.00	7,478.6	-998.9	911.0	1,351.8	0.54	-0.22	
7,737.0	0.90	92.50	7,569.6	-999.5	912.8	1,353.5	0.88	-0.66	
7,829.0	0.50	69.80	7,661.6	-999.4	913.9	1,354.1	0.52	-0.43	
7,920.0	1.30	73.40	7,752.6	-998.9	915.2	1,354.7	0.88	0.88	
8,012.0	1.10	76.70	7,844.5	-998.4	917.1	1,355.6	0.23	-0.22	
8,103.0	0.80	53.40	7,935.5	-997.9	918.4	1,356.2	0.53	-0.33	
8,195.0	0.80	33.90	8,027.5	-996.9	919.3	1,356.1	0.29	0.00	
8,286.0	0.50	9.60	8,118.5	-996.0	919.7	1,355.7	0.44	-0.33	
8,378.0	0.80	31.40	8,210.5	-995.1	920.1	1,355.3	0.42	0.33	
8,470.0	0.70	2.00	8,302.5	-994.0	920.5	1,354.7	0.43	-0.11	
8,561.0	0.70	10.40	8,393.5	-992.9	920.6	1,354.0	0.11	0.00	
8,653.0	1.20	313.30	8,485.5	-991.7	920.0	1,352.7	1.10	0.54	
8,744.0	1.20	289.70	8,576.5	-990.7	918.4	1,350.9	0.54	0.00	
8,836.0	2.40	280.50	8,668.4	-990.0	915.6	1,348.5	1.34	1.30	Last Cathedral Survey @ 8,836' MD
8,891.0	2.40	280.50	8,723.4	-989.6	913.4	1,346.6	0.00	0.00	Projection to Bit @ 8,891'

Cathedral Energy

Survey Report

Company: EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference: Well NP WF15A-22 K22 596
Project: North Piceance	TVD Reference: WF15A-22 K22 596 @ 6549.0ft (Patterson 303)
Site: K22 596 Pad (S22-T5S-R96W)	MD Reference: WF15A-22 K22 596 @ 6549.0ft (Patterson 303)
Well: NP WF15A-22 K22 596	North Reference: True
Wellbore: DD	Survey Calculation Method: Minimum Curvature
Design: DD	Database: EDM 5000.1 US Multi Users DB

Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
- Shape									
K22 596 WF15A-22 BHL	0.00	0.00	8,822.0	-988.5	925.2	1,653,144.22	2,251,911.24	39° 35' 47.94 N	108° 9' 18.37 W
- actual wellpath misses target center by 99.3ft at 8891.0ft MD (8723.4 TVD, -989.6 N, 913.4 E)									
- Rectangle (sides W30.0 H50.0 D0.0)									
K22 596 WF15A-22 TG1	0.00	0.00	5,628.0	-974.5	949.2	1,653,157.52	2,251,935.60	39° 35' 48.08 N	108° 9' 18.06 W
- actual wellpath misses target center by 79.0ft at 5803.0ft MD (5639.1 TVD, -928.0 N, 886.3 E)									
- Point									

Design Annotations					
	Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
			+N/-S (ft)	+E/-W (ft)	
	1,650.0	1,609.4	-219.7	218.2	Last Cathedral Survey @ 1650' MD
	8,836.0	8,668.4	-990.0	915.6	Last Cathedral Survey @ 8,836' MD
	8,891.0	8,723.4	-989.6	913.4	Projection to Bit @ 8,891'

Checked By: _____ Approved By: _____ Date: _____