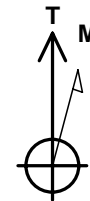
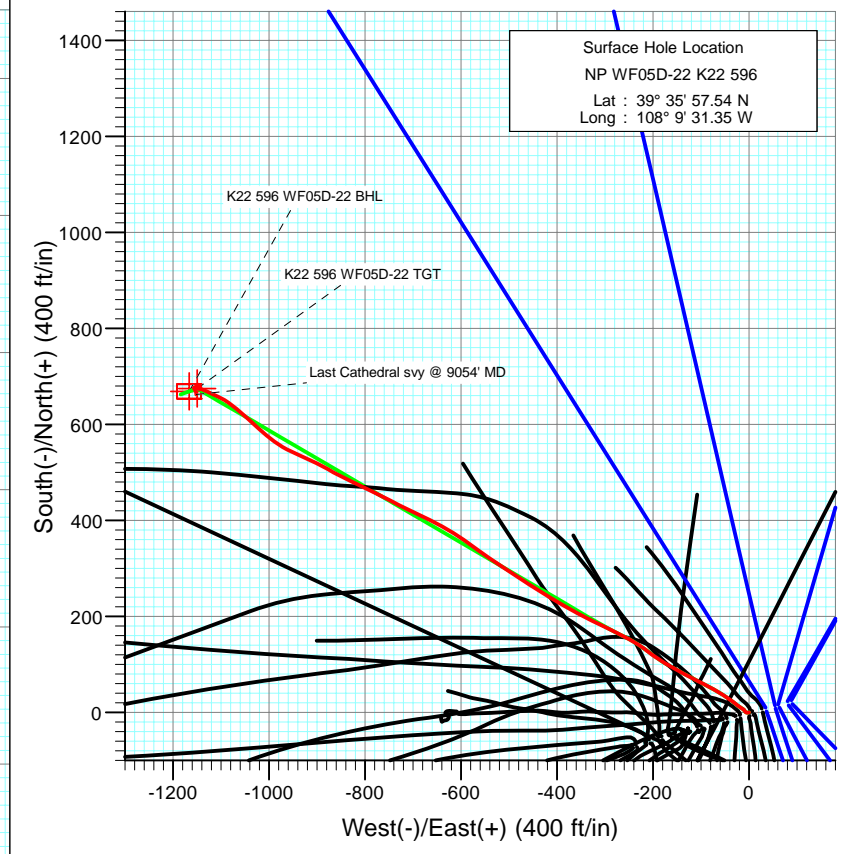
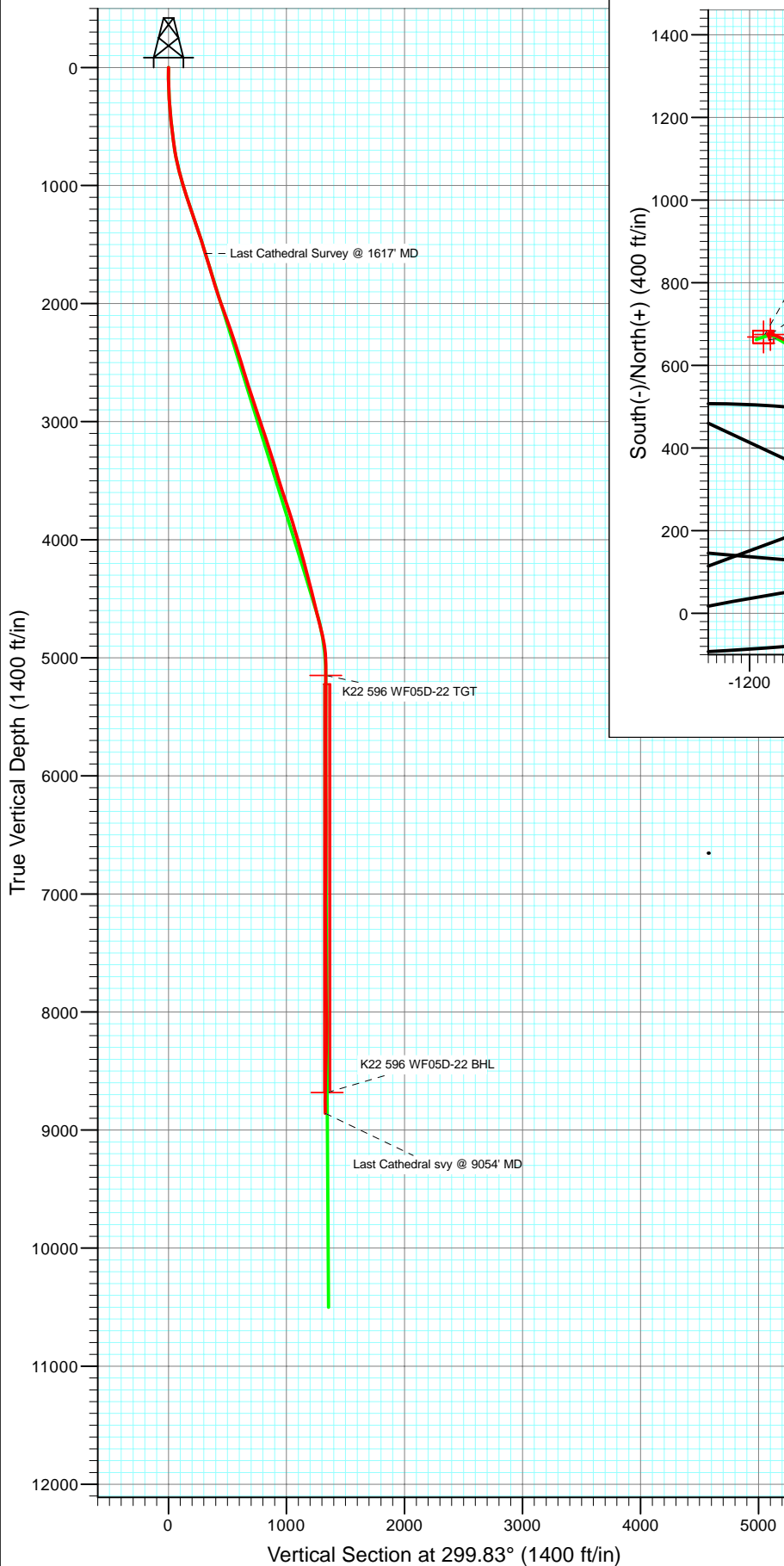




Project: North Piceance
 Site: K22 596 Pad (S22-T5S-R96W)
 Well: NP WF05D-22 K22 596
 Wellbore: DD
 Design: Final Survey



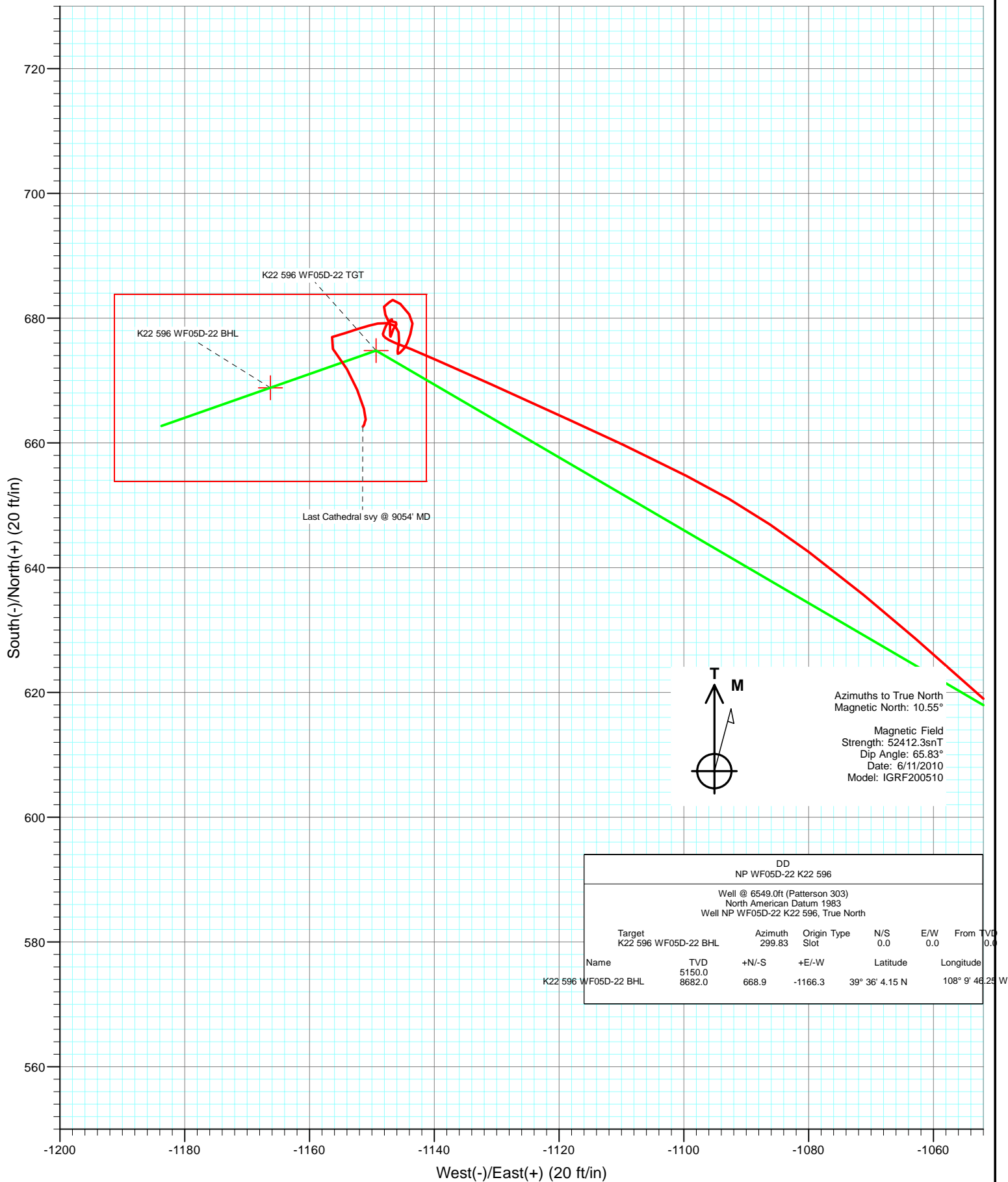
Azimuths to True North
 Magnetic North: 10.55°

Magnetic Field
 Strength: 52412.3snT
 Dip Angle: 65.83°
 Date: 6/11/2010
 Model: IGRF200510

DD NP WF05D-22 K22 596					
Well @ 6549.0ft (Patterson 303) North American Datum 1983 Well NP WF05D-22 K22 596, True North					
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
Target K22 596 WF05D-22 BHL		Azimuth 299.83	Origin Type Slot	N/S 0.0	E/W 0.0
K22 596 WF05D-22 BHL	8682.0	668.9	-1166.3	39° 36' 4.15 N	108° 9' 46.25 W



Project: North Piceance
Site: K22 596 Pad (S22-T5S-R96W)
Well: NP WF05D-22 K22 596
Wellbore: DD
Design: DD





Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well NP WF05D-22 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 WF05D-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 WF05D-22 K22 596			
Well Position	+N/-S	0.0 ft	Northing:	1,654,144.83 ft
	+E/-W	0.0 ft	Easting:	2,250,924.06 ft
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	6/11/2010	10.55	65.83	52,412

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	299.83

Survey Program	Date	7/25/2010			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
170.0	1,617.0	Survey #1 (DD)	MWD	Geolink MWD	
1,696.0	9,054.0	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	
170.0	1.90	255.20	170.0	-0.7	-2.7	2.0	1.12	1.12	
199.0	2.80	280.60	198.9	-0.7	-3.9	3.0	4.67	3.10	
230.0	2.90	301.60	229.9	-0.2	-5.3	4.5	3.36	0.32	
260.0	2.90	313.20	259.9	0.8	-6.5	6.0	1.95	0.00	
290.0	3.40	316.50	289.8	1.9	-7.7	7.6	1.77	1.67	
320.0	3.90	320.40	319.8	3.4	-8.9	9.4	1.86	1.67	
351.0	4.70	325.60	350.7	5.2	-10.3	11.5	2.87	2.58	
381.0	5.60	306.00	380.6	7.1	-12.2	14.1	6.54	3.00	
412.0	6.20	295.80	411.4	8.7	-14.9	17.3	3.89	1.94	
442.0	6.90	303.90	441.2	10.4	-17.9	20.7	3.86	2.33	
472.0	6.60	306.90	471.0	12.5	-20.8	24.2	1.54	-1.00	



Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well NP WF05D-22 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 WF05D-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
503.0	6.60	308.30	501.8	14.6	-23.6	27.7	0.52	0.00	
549.0	6.30	304.90	547.5	17.7	-27.7	32.9	1.06	-0.65	
594.0	7.10	307.30	592.2	20.8	-32.0	38.1	1.88	1.78	
640.0	7.70	307.90	637.8	24.4	-36.7	43.9	1.32	1.30	
689.0	8.80	308.10	686.3	28.8	-42.2	50.9	2.25	2.24	
735.0	10.50	302.80	731.6	33.2	-48.5	58.6	4.17	3.70	
780.0	11.60	301.20	775.8	37.8	-55.8	67.2	2.54	2.44	
826.0	12.80	299.40	820.8	42.7	-64.2	76.9	2.74	2.61	
872.0	13.30	300.50	865.6	47.8	-73.2	87.3	1.21	1.09	
918.0	14.50	297.90	910.2	53.2	-82.8	98.3	2.94	2.61	
963.0	16.40	297.90	953.6	58.8	-93.4	110.3	4.22	4.22	
1,009.0	17.90	297.20	997.6	65.1	-105.5	123.9	3.29	3.26	
1,055.0	18.10	298.00	1,041.3	71.7	-118.1	138.1	0.69	0.43	
1,146.0	18.60	296.70	1,127.7	84.8	-143.5	166.7	0.71	0.55	
1,238.0	17.70	300.90	1,215.1	98.6	-168.6	195.3	1.73	-0.98	
1,329.0	17.80	305.40	1,301.8	113.8	-191.8	223.0	1.51	0.11	
1,421.0	18.40	306.70	1,389.2	130.6	-214.9	251.4	0.79	0.65	
1,512.0	17.80	299.40	1,475.7	146.0	-238.6	279.6	2.58	-0.66	
1,604.0	18.00	298.30	1,563.3	159.7	-263.3	307.9	0.43	0.22	
1,617.0	17.70	297.30	1,575.7	161.5	-266.9	311.8	3.30	-2.31	Last Cathedral Survey @ 1617' MD
1,696.0	17.40	297.30	1,651.0	172.4	-288.0	335.6	0.38	-0.38	
1,788.0	15.90	294.40	1,739.1	184.0	-311.7	361.9	1.86	-1.63	
1,879.0	17.10	296.70	1,826.4	195.1	-335.0	387.7	1.50	1.32	
1,971.0	18.40	298.50	1,914.0	208.1	-359.9	415.7	1.53	1.41	
2,062.0	20.20	301.50	1,999.9	223.2	-385.9	445.8	2.26	1.98	
2,154.0	19.70	300.30	2,086.4	239.3	-412.8	477.2	0.70	-0.54	
2,245.0	19.10	299.60	2,172.2	254.4	-439.0	507.4	0.71	-0.66	
2,337.0	19.50	304.70	2,259.0	270.6	-464.7	537.8	1.88	0.43	
2,428.0	18.50	304.40	2,345.1	287.4	-489.1	567.3	1.10	-1.10	
2,520.0	17.20	303.30	2,432.6	303.1	-512.5	595.4	1.46	-1.41	
2,611.0	16.40	303.10	2,519.7	317.5	-534.6	621.7	0.88	-0.88	
2,703.0	18.30	306.10	2,607.6	333.1	-557.1	649.0	2.28	2.07	
2,794.0	16.60	306.10	2,694.4	349.2	-579.2	676.1	1.87	-1.87	
2,886.0	19.20	302.60	2,781.9	365.1	-602.5	704.3	3.06	2.83	
2,977.0	17.90	301.70	2,868.2	380.5	-627.0	733.2	1.46	-1.43	
3,068.0	19.50	296.90	2,954.4	394.7	-652.5	762.4	2.44	1.76	
3,160.0	18.10	296.00	3,041.5	407.9	-679.0	792.0	1.55	-1.52	
3,251.0	17.10	294.70	3,128.2	419.7	-703.9	819.4	1.18	-1.10	
3,343.0	18.80	297.50	3,215.7	432.2	-729.3	847.7	2.07	1.85	
3,434.0	18.00	297.20	3,302.1	445.4	-754.8	876.4	0.89	-0.88	
3,526.0	17.10	296.50	3,389.8	458.0	-779.6	904.1	1.00	-0.98	
3,617.0	16.30	295.10	3,477.0	469.3	-803.1	930.2	0.98	-0.88	
3,709.0	18.50	296.80	3,564.7	481.4	-827.8	957.6	2.45	2.39	
3,800.0	17.70	295.90	3,651.2	494.0	-853.2	985.8	0.93	-0.88	
3,892.0	18.60	299.50	3,738.7	507.3	-878.5	1,014.5	1.56	0.98	
3,983.0	17.50	297.00	3,825.2	520.6	-903.3	1,042.6	1.48	-1.21	
4,075.0	16.00	292.40	3,913.3	531.8	-927.4	1,069.0	2.17	-1.63	
4,167.0	16.30	295.10	4,001.7	542.1	-950.8	1,094.5	0.88	0.33	
4,258.0	16.30	300.40	4,089.0	553.9	-973.4	1,120.0	1.63	0.00	
4,350.0	15.50	310.70	4,177.5	568.5	-993.8	1,145.0	3.18	-0.87	
4,441.0	14.30	308.20	4,265.4	583.4	-1,011.9	1,168.0	1.50	-1.32	
4,533.0	15.20	313.30	4,354.4	598.7	-1,029.6	1,191.0	1.72	0.98	
4,624.0	14.20	311.70	4,442.4	614.3	-1,046.6	1,213.5	1.19	-1.10	



Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well NP WF05D-22 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 WF05D-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
4,715.0	13.40	311.20	4,530.8	628.7	-1,062.9	1,234.8	0.89	-0.88	
4,807.0	14.30	307.10	4,620.1	642.5	-1,080.0	1,256.5	1.45	0.98	
4,899.0	14.90	296.90	4,709.2	654.7	-1,099.6	1,279.6	2.87	0.65	
4,990.0	13.20	293.90	4,797.4	664.2	-1,119.5	1,301.6	2.03	-1.87	
5,082.0	8.90	294.70	4,887.7	671.5	-1,135.6	1,319.1	4.68	-4.67	
5,173.0	4.30	290.40	4,978.1	675.6	-1,145.2	1,329.5	5.08	-5.05	
5,265.0	0.90	18.20	5,070.0	677.5	-1,148.2	1,333.1	4.74	-3.70	
5,356.0	0.40	22.60	5,161.0	678.5	-1,147.9	1,333.3	0.55	-0.55	
5,447.0	0.30	32.30	5,252.0	679.0	-1,147.6	1,333.3	0.13	-0.11	
5,539.0	0.30	63.00	5,344.0	679.3	-1,147.3	1,333.2	0.17	0.00	
5,630.0	0.30	36.10	5,435.0	679.6	-1,146.9	1,333.0	0.15	0.00	
5,722.0	0.00	280.60	5,527.0	679.8	-1,146.8	1,333.0	0.33	-0.33	
5,813.0	0.40	250.20	5,618.0	679.7	-1,147.1	1,333.2	0.44	0.44	
5,904.0	0.60	94.70	5,709.0	679.5	-1,146.9	1,333.0	1.07	0.22	
5,996.0	0.40	116.40	5,801.0	679.3	-1,146.1	1,332.2	0.30	-0.22	
6,087.0	0.40	225.40	5,892.0	679.0	-1,146.1	1,332.0	0.72	0.00	
6,179.0	0.70	208.70	5,984.0	678.3	-1,146.6	1,332.0	0.37	0.33	
6,271.0	0.90	191.60	6,076.0	677.1	-1,147.0	1,331.8	0.34	0.22	
6,362.0	1.10	4.20	6,167.0	677.2	-1,147.1	1,332.0	2.19	0.22	
6,453.0	1.10	353.40	6,257.9	679.0	-1,147.1	1,332.9	0.23	0.00	
6,545.0	1.20	318.70	6,349.9	680.6	-1,147.8	1,334.3	0.75	0.11	
6,636.0	0.90	37.10	6,440.9	681.8	-1,148.0	1,335.1	1.48	-0.33	
6,728.0	0.50	72.20	6,532.9	682.5	-1,147.2	1,334.7	0.62	-0.43	
6,819.0	0.40	36.00	6,623.9	682.9	-1,146.7	1,334.4	0.32	-0.11	
6,911.0	1.70	131.40	6,715.9	682.3	-1,145.4	1,333.1	1.94	1.41	
7,002.0	1.10	150.80	6,806.9	680.6	-1,144.0	1,331.0	0.83	-0.66	
7,093.0	0.90	174.00	6,897.9	679.2	-1,143.5	1,329.8	0.49	-0.22	
7,185.0	1.30	201.80	6,989.8	677.5	-1,143.8	1,329.3	0.71	0.43	
7,276.0	0.50	194.10	7,080.8	676.1	-1,144.3	1,329.0	0.89	-0.88	
7,368.0	0.60	215.00	7,172.8	675.3	-1,144.7	1,328.9	0.24	0.11	
7,459.0	0.90	227.40	7,263.8	674.5	-1,145.5	1,329.2	0.37	0.33	
7,551.0	1.00	8.80	7,355.8	674.8	-1,145.9	1,329.7	1.95	0.11	
7,642.0	1.00	8.30	7,446.8	676.3	-1,145.6	1,330.3	0.01	0.00	
7,734.0	0.80	343.80	7,538.8	677.8	-1,145.7	1,331.0	0.47	-0.22	
7,825.0	0.70	316.20	7,629.8	678.8	-1,146.3	1,332.0	0.41	-0.11	
7,917.0	1.10	272.70	7,721.8	679.2	-1,147.5	1,333.4	0.83	0.43	
8,009.0	0.80	260.70	7,813.8	679.1	-1,149.1	1,334.6	0.39	-0.33	
8,100.0	1.00	253.20	7,904.7	678.8	-1,150.4	1,335.7	0.25	0.22	
8,191.0	1.30	253.60	7,995.7	678.3	-1,152.2	1,336.9	0.33	0.33	
8,283.0	1.30	250.10	8,087.7	677.6	-1,154.2	1,338.3	0.09	0.00	
8,374.0	1.60	255.20	8,178.7	677.0	-1,156.4	1,339.9	0.36	0.33	
8,466.0	2.60	138.40	8,270.6	675.1	-1,156.2	1,338.8	3.93	1.09	
8,557.0	2.40	152.90	8,361.6	671.8	-1,154.0	1,335.3	0.73	-0.22	
8,649.0	2.20	154.60	8,453.5	668.5	-1,152.4	1,332.2	0.23	-0.22	
8,740.0	1.90	167.40	8,544.4	665.5	-1,151.3	1,329.8	0.60	-0.33	
8,832.0	0.30	193.80	8,636.4	663.8	-1,151.0	1,328.7	1.78	-1.74	
8,924.0	0.20	196.20	8,728.4	663.4	-1,151.1	1,328.6	0.11	-0.11	
9,015.0	0.40	195.60	8,819.4	662.9	-1,151.2	1,328.4	0.22	0.22	
9,054.0	0.70	227.10	8,858.4	662.6	-1,151.4	1,328.5	1.07	0.77	Last Cathedral svy @ 9054' MD



Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well NP WF05D-22 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 WF05D-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 WF05D-22 BHL	0.00	0.00	8,682.0	668.9	-1,166.3	1,654,847.52	2,249,777.87	39° 36' 4.15 N	108° 9' 46.25 W
- actual wellpath misses target center by 16.1ft at 8877.6ft MD (8682.0 TVD, 663.5 N, -1151.1 E)									
- Rectangle (sides W30.0 H50.0 D0.0)									
K22 596 WF05D-22 TG1	0.00	0.00	5,150.0	674.8	-1,149.3	1,654,852.98	2,249,794.99	39° 36' 4.21 N	108° 9' 46.03 W
- actual wellpath misses target center by 3.8ft at 5345.0ft MD (5150.0 TVD, 678.4 N, -1147.9 E)									
- Point									

Design Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	
1,617.0	1,575.7	161.5	-266.9	Last Cathedral Survey @ 1617' MD
9,054.0	8,858.4	662.6	-1,151.4	Last Cathedral svy @ 9054' MD

Checked By: _____ Approved By: _____ Date: _____