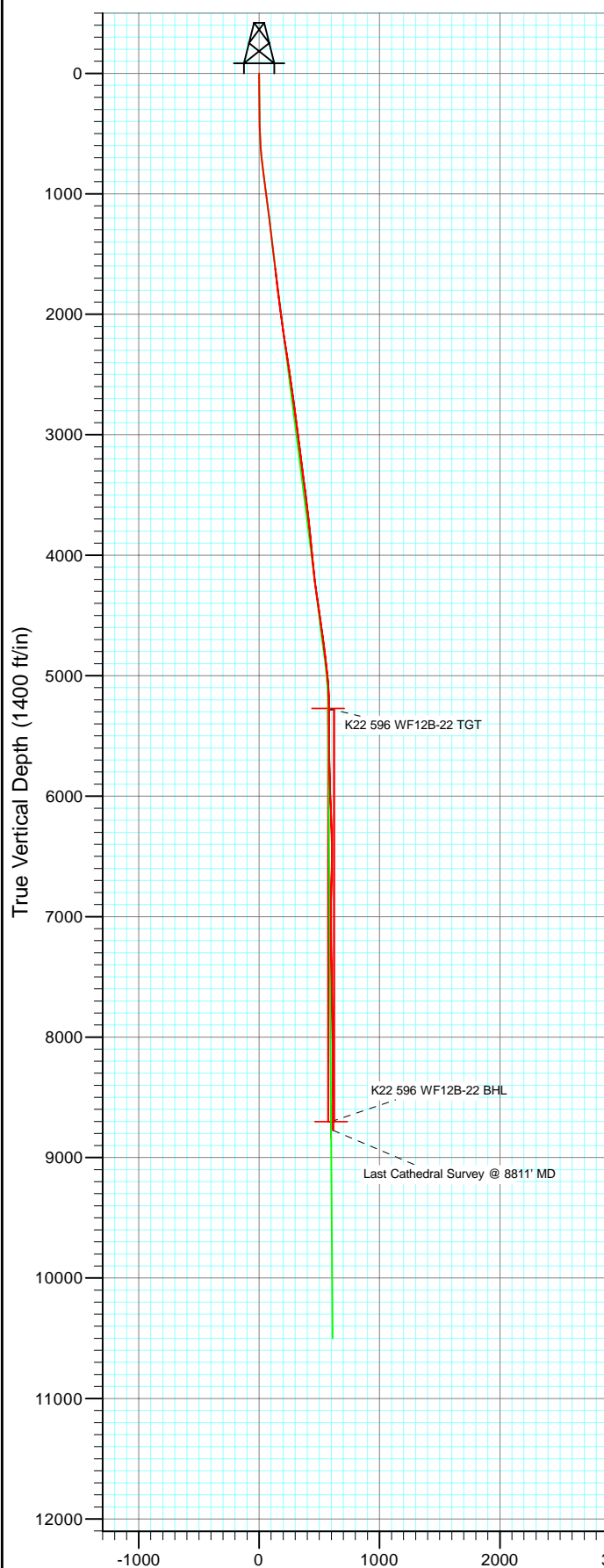
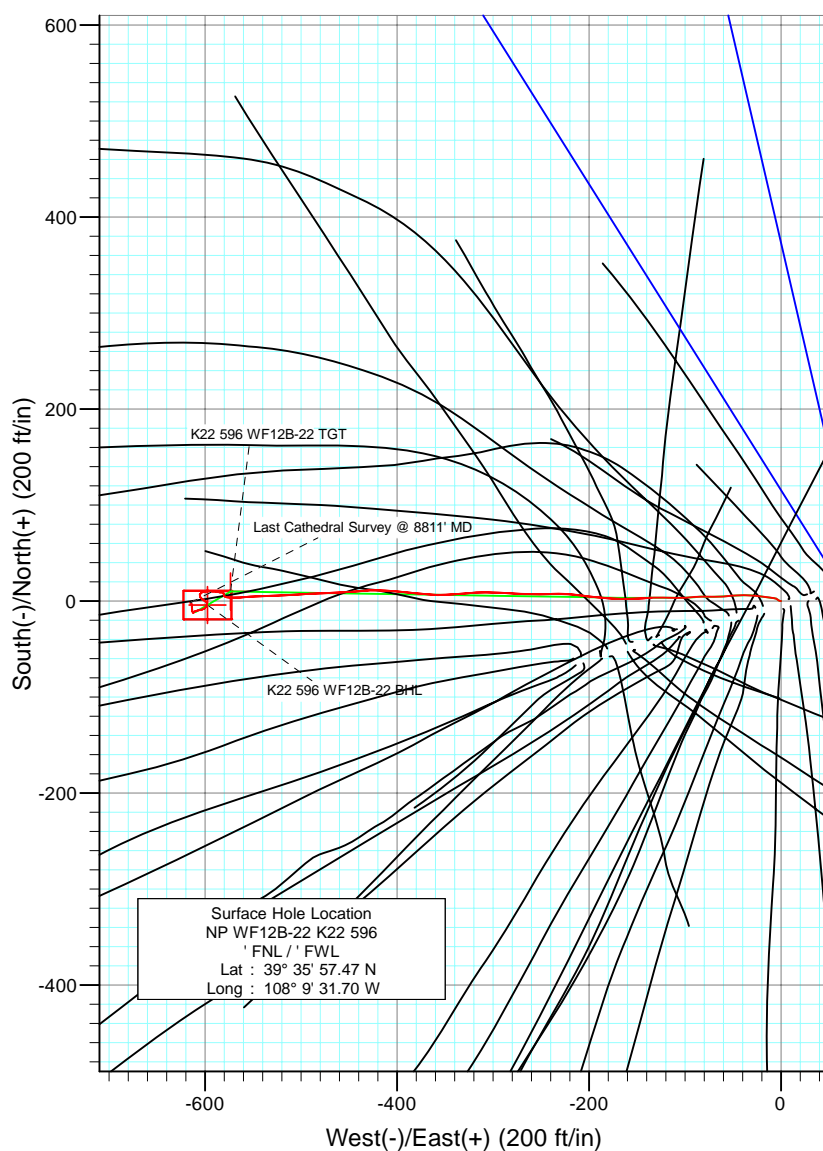




Project: North Piceance
 Site: K22 596 Pad (S22-T5S-R96W)
 Well: NP WF12B-22 K22 596
 Wellbore: DD
 Design: Final Survey



Vertical Section at 269.61° (1400 ft/in)



Surface Hole Location
 NP WF12B-22 K22 596
 ' FNL / ' FWL
 Lat : 39° 35' 57.47 N
 Long : 108° 9' 31.70 W



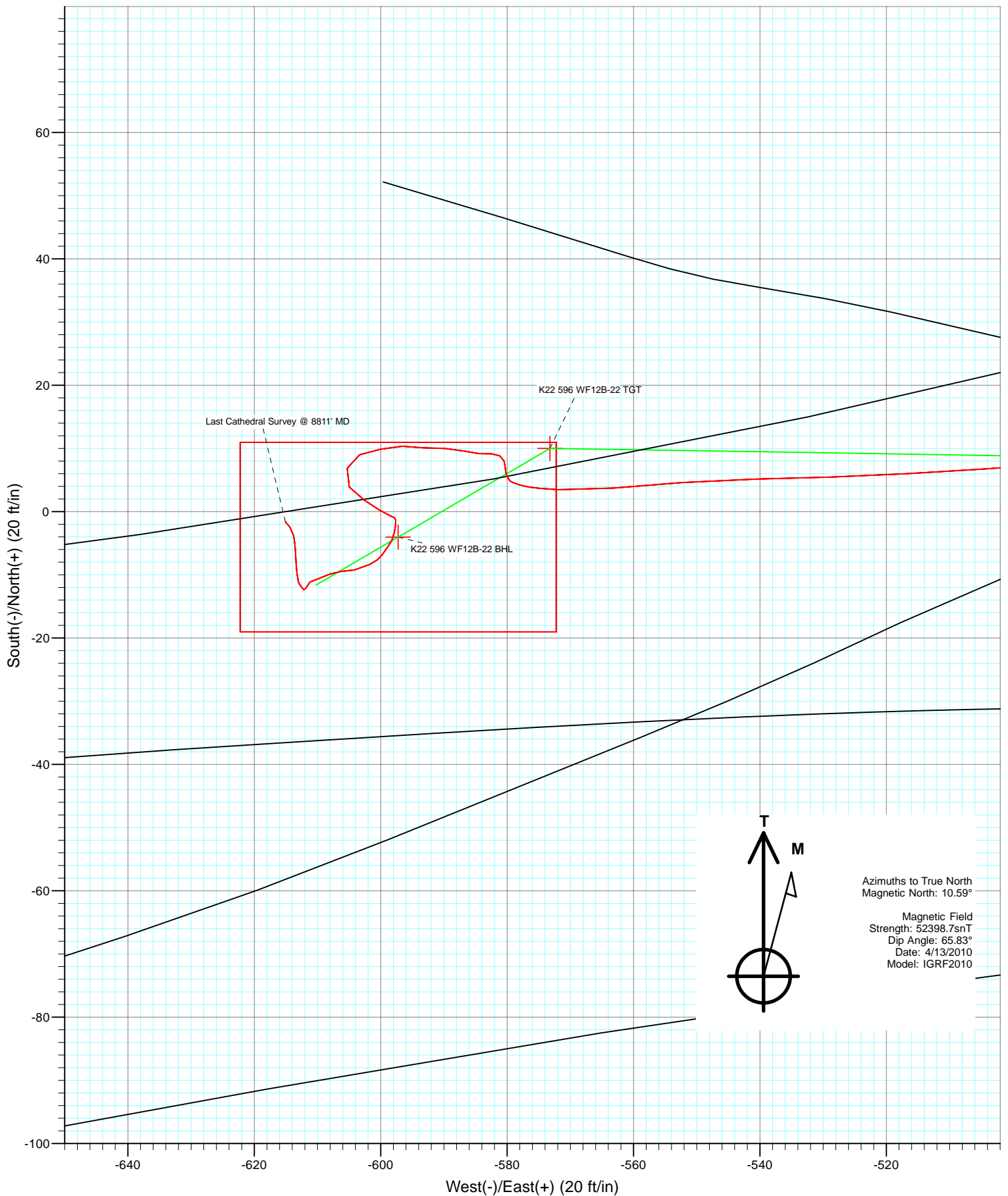
Azimuths to True North
 Magnetic North: 10.59°

Magnetic Field
 Strength: 52398.7snT
 Dip Angle: 65.83°
 Date: 4/13/2010
 Model: IGRF2010

DD NP WF12B-22 K22 596 105164; LR						
Well @ 6549.0ft (Patterson 303) North American Datum 1983 Well NP WF12B-22 K22 596, True North						
Type	Target	Azimuth	Origin	Type	N/S	E/W From
Target	K22 596 WF12B-22 BHL	269.61	Slot		0.0	0.0
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	
K22 596 WF12B-22 BHL	8702.0	-4.0	-597.239° 35'	57.43 N	108° 9' 39.33 W	



Project: North Piceance
Site: K22 596 Pad (S22-T5S-R96W)
Well: NP WF12B-22 K22 596
Wellbore: DD
Design: DD



Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well NP WF12B-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 WF12B-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 WF12B-22 K22 596					
Well Position	+N/-S	0.0 ft	Northing:	1,654,138.56 ft	Latitude:	39° 35' 57.47 N
	+E/-W	0.0 ft	Easting:	2,250,896.47 ft	Longitude:	108° 9' 31.70 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	4/13/2010	10.59	65.83	52,399

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	269.61	

Survey Program	Date	6/29/2010			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
173.0	1,630.0	Survey #1 (DD)	MWD	Geolink MWD	
1,791.0	8,811.0	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	
1,630.0	7.20	269.10	1,622.3	3.4	-134.9	134.8	0.00	0.00		
1,791.0	6.20	264.60	1,782.2	2.5	-153.6	153.6	0.70	-0.62		
1,882.0	6.90	271.60	1,872.6	2.2	-164.0	163.9	1.17	0.77		
1,974.0	7.90	272.80	1,963.8	2.6	-175.8	175.8	1.10	1.09		
2,065.0	7.60	276.60	2,054.0	3.6	-188.0	188.0	0.65	-0.33		
2,157.0	8.80	275.30	2,145.1	5.0	-201.1	201.0	1.32	1.30		
2,248.0	7.80	278.50	2,235.1	6.5	-214.1	214.1	1.21	-1.10		
2,340.0	9.10	270.60	2,326.1	7.5	-227.6	227.5	1.89	1.41		
2,431.0	8.90	266.90	2,416.0	7.2	-241.8	241.7	0.67	-0.22		
2,523.0	8.60	271.80	2,506.9	7.0	-255.8	255.7	0.87	-0.33		
2,614.0	8.00	272.60	2,597.0	7.5	-268.9	268.8	0.67	-0.66		
2,706.0	7.90	272.70	2,688.1	8.1	-281.6	281.5	0.11	-0.11		

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well NP WF12B-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 WF12B-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
2,797.0	7.70	272.00	2,778.2	8.6	-293.9	293.9	0.24	-0.22	
2,889.0	7.30	272.70	2,869.5	9.1	-305.9	305.9	0.45	-0.43	
2,980.0	7.40	265.50	2,959.7	8.9	-317.6	317.5	1.02	0.11	
3,071.0	7.30	265.10	3,050.0	8.0	-329.2	329.1	0.12	-0.11	
3,163.0	7.10	266.70	3,141.2	7.2	-340.7	340.6	0.31	-0.22	
3,254.0	6.90	265.70	3,231.6	6.4	-351.7	351.7	0.26	-0.22	
3,346.0	6.90	276.30	3,322.9	6.6	-362.7	362.7	1.38	0.00	
3,437.0	8.20	274.40	3,413.1	7.7	-374.6	374.6	1.45	1.43	
3,529.0	7.50	274.50	3,504.2	8.7	-387.2	387.1	0.76	-0.76	
3,620.0	6.90	278.50	3,594.5	10.0	-398.5	398.4	0.86	-0.66	
3,712.0	6.30	269.10	3,685.9	10.7	-409.0	408.9	1.34	-0.65	
3,803.0	5.90	275.10	3,776.4	11.0	-418.7	418.6	0.83	-0.44	
3,895.0	5.70	267.90	3,867.9	11.3	-427.9	427.8	0.82	-0.22	
3,986.0	5.80	261.50	3,958.5	10.5	-437.0	436.9	0.71	0.11	
4,078.0	5.10	267.70	4,050.1	9.6	-445.7	445.6	0.99	-0.76	
4,170.0	6.20	268.40	4,141.6	9.3	-454.7	454.7	1.20	1.20	
4,261.0	7.10	265.20	4,232.0	8.7	-465.2	465.2	1.07	0.99	
4,353.0	8.50	269.20	4,323.2	8.1	-477.7	477.6	1.63	1.52	
4,444.0	8.30	266.50	4,413.2	7.6	-491.0	490.9	0.49	-0.22	
4,536.0	8.20	266.10	4,504.2	6.8	-504.2	504.1	0.13	-0.11	
4,627.0	7.80	267.00	4,594.3	6.0	-516.8	516.8	0.46	-0.44	
4,718.0	7.40	267.90	4,684.5	5.5	-528.8	528.8	0.46	-0.44	
4,810.0	7.30	269.00	4,775.8	5.2	-540.6	540.6	0.19	-0.11	
4,902.0	7.30	265.60	4,867.0	4.6	-552.3	552.2	0.47	0.00	
4,993.0	6.40	265.10	4,957.4	3.7	-563.1	563.0	0.99	-0.99	
5,085.0	4.70	272.90	5,049.0	3.5	-572.0	571.9	2.02	-1.85	
5,176.0	2.50	283.30	5,139.8	4.1	-577.6	577.6	2.51	-2.42	
5,268.0	0.80	341.20	5,231.7	5.2	-579.8	579.7	2.37	-1.85	
5,359.0	0.50	329.80	5,322.7	6.1	-580.2	580.1	0.36	-0.33	
5,450.0	0.60	12.20	5,413.7	6.9	-580.3	580.2	0.45	0.11	
5,542.0	0.80	332.20	5,505.7	8.0	-580.5	580.4	0.56	0.22	
5,633.0	0.60	307.30	5,596.7	8.8	-581.2	581.1	0.40	-0.22	
5,725.0	1.20	271.20	5,688.7	9.1	-582.5	582.4	0.87	0.65	
5,816.0	1.30	271.60	5,779.7	9.2	-584.5	584.4	0.11	0.11	
5,907.0	1.80	285.60	5,870.6	9.6	-586.9	586.8	0.69	0.55	
5,999.0	2.00	270.40	5,962.6	10.0	-589.9	589.8	0.59	0.22	
6,091.0	2.30	272.80	6,054.5	10.1	-593.3	593.3	0.34	0.33	
6,182.0	1.80	275.60	6,145.5	10.3	-596.6	596.5	0.56	-0.55	
6,274.0	2.60	253.20	6,237.4	9.9	-600.0	599.9	1.26	0.87	
6,365.0	1.70	258.30	6,328.3	9.0	-603.3	603.2	1.01	-0.99	
6,456.0	2.50	199.20	6,419.3	6.9	-605.3	605.2	2.40	0.88	
6,548.0	1.80	137.20	6,511.2	3.9	-605.0	604.9	2.49	-0.76	
6,639.0	2.10	126.20	6,602.2	1.9	-602.7	602.6	0.53	0.33	
6,731.0	1.50	119.30	6,694.1	0.3	-600.2	600.2	0.69	-0.65	
6,822.0	0.90	115.80	6,785.1	-0.6	-598.6	598.6	0.66	-0.66	
6,914.0	0.20	114.80	6,877.1	-1.0	-597.8	597.8	0.76	-0.76	
7,005.0	0.40	176.10	6,968.1	-1.4	-597.6	597.6	0.39	0.22	
7,097.0	0.70	187.70	7,060.1	-2.2	-597.7	597.7	0.35	0.33	
7,188.0	0.80	192.40	7,151.1	-3.4	-597.9	597.9	0.13	0.11	
7,280.0	0.80	204.70	7,243.1	-4.6	-598.3	598.3	0.19	0.00	
7,371.0	0.80	219.70	7,334.1	-5.7	-598.9	599.0	0.23	0.00	
7,463.0	1.10	212.80	7,426.1	-6.9	-599.8	599.9	0.35	0.33	
7,554.0	2.00	244.00	7,517.0	-8.4	-601.7	601.8	1.32	0.99	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well NP WF12B-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 WF12B-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
7,645.0	1.30	260.50	7,608.0	-9.2	-604.2	604.2	0.92	-0.77	
7,737.0	1.30	266.00	7,700.0	-9.5	-606.2	606.3	0.14	0.00	
7,828.0	1.00	245.40	7,791.0	-9.9	-608.0	608.1	0.56	-0.33	
7,920.0	1.30	250.00	7,882.9	-10.6	-609.7	609.8	0.34	0.33	
8,011.0	0.70	246.60	7,973.9	-11.1	-611.2	611.3	0.66	-0.66	
8,103.0	0.90	188.40	8,065.9	-12.1	-611.8	611.9	0.87	0.22	
8,194.0	0.60	329.70	8,156.9	-12.4	-612.2	612.2	1.56	-0.33	
8,240.0	0.90	315.00	8,202.9	-11.9	-612.5	612.6	0.77	0.65	
8,286.0	0.90	335.90	8,248.9	-11.3	-612.9	613.0	0.71	0.00	
8,377.0	1.30	358.60	8,339.9	-9.6	-613.3	613.3	0.64	0.44	
8,423.0	1.30	353.50	8,385.9	-8.6	-613.3	613.4	0.25	0.00	
8,469.0	1.30	357.30	8,431.9	-7.6	-613.4	613.4	0.19	0.00	
8,560.0	1.30	355.40	8,522.8	-5.5	-613.5	613.6	0.05	0.00	
8,652.0	0.90	346.40	8,614.8	-3.8	-613.8	613.8	0.47	-0.43	
8,743.0	0.90	326.60	8,705.8	-2.5	-614.4	614.4	0.34	0.00	
8,811.0	1.00	314.30	8,773.8	-1.6	-615.1	615.1	0.33	0.15	Last Cathedral Survey @ 8811' 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 WF12B-22 TG1 - survey misses target center by 8.0ft at 5308.3ft MD (5272.0 TVD, 5.7 N, -580.0 E) - Point	0.00	0.00	5,272.0	10.0	-573.2	1,654,165.33	2,250,323.80	39° 35' 57.57 N	108° 9' 39.02 W
K22 596 WF12B-22 BHL - survey misses target center by 17.2ft at 8739.1ft MD (8701.9 TVD, -2.5 N, -614.3 E) - Rectangle (sides W30.0 H50.0 D0.0)	0.00	0.00	8,702.0	-4.0	-597.2	1,654,152.01	2,250,299.37	39° 35' 57.43 N	108° 9' 39.33 W

Survey Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates +N/-S (ft)	+E/-W (ft)	Comment
8,811.0	8,773.8	-1.6	-615.1	Last Cathedral Survey @ 8811' MD

Checked By: _____ Approved By: _____ Date: _____