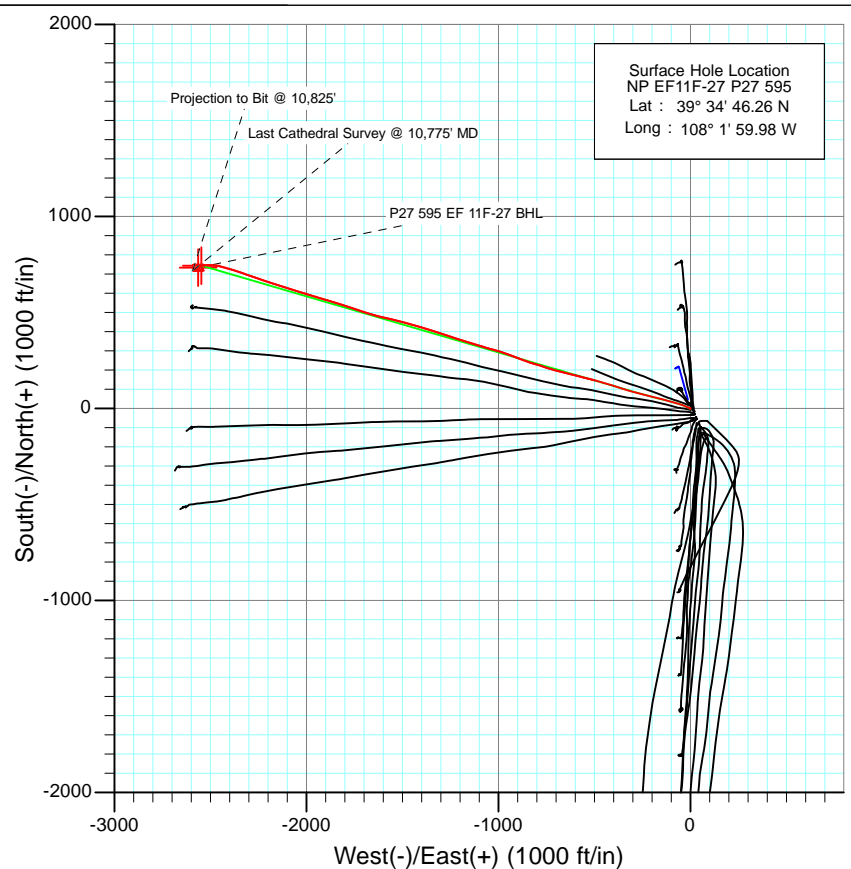
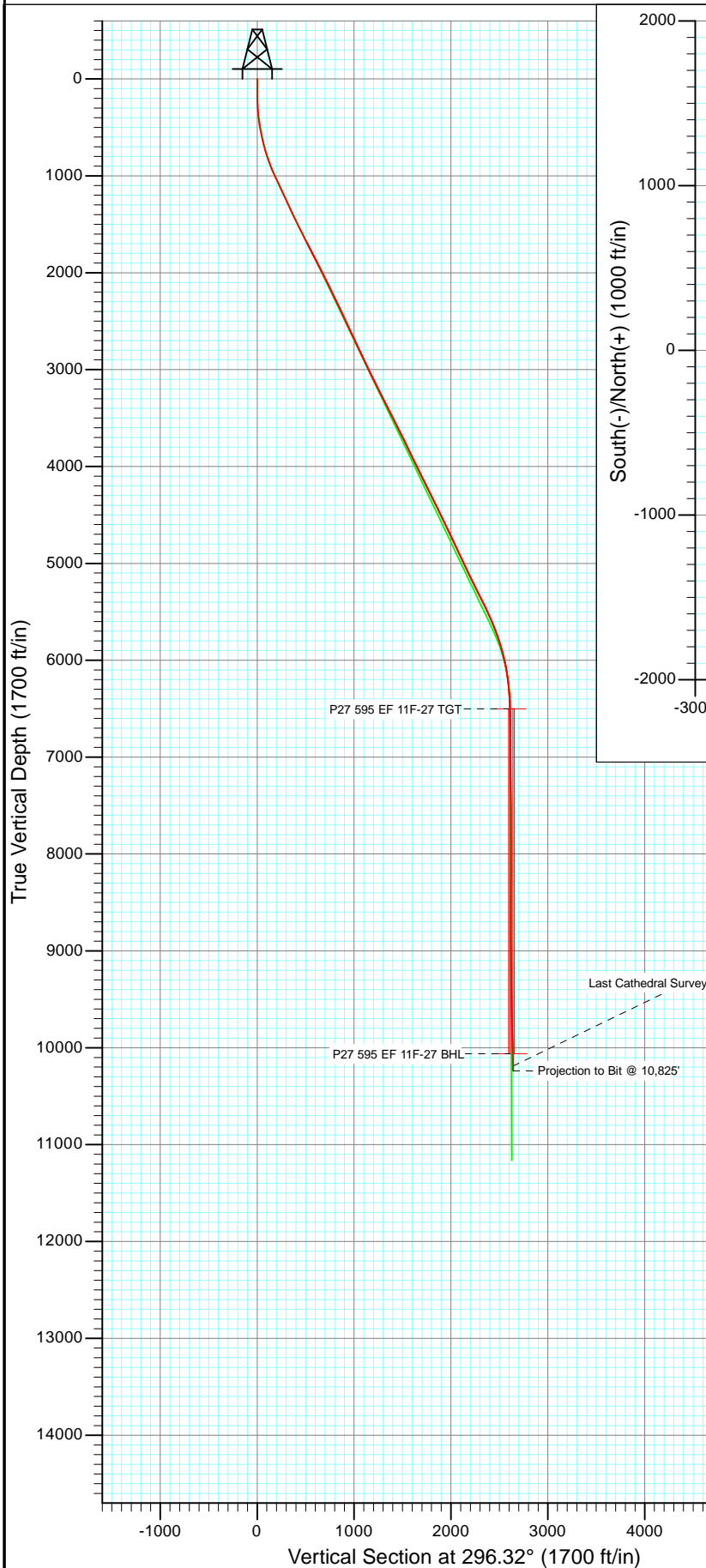
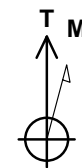




Project: North Piceance
 Site: P27 595 (S27-T5S-R95W)
 Well: NP EF11F-27 P27 595
 Wellbore: DD
 Design: FINAL



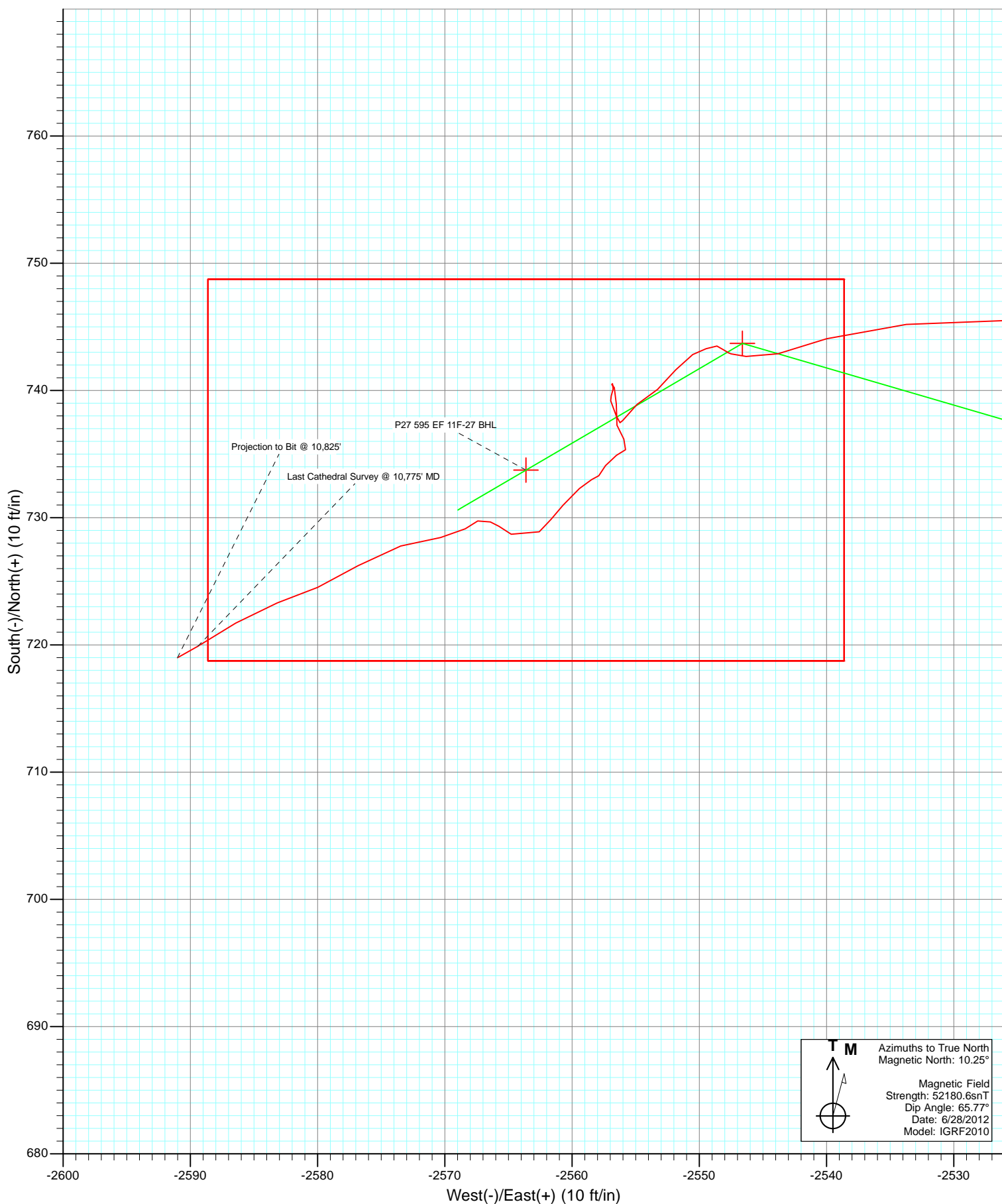
Surface Hole Location
 NP EF11F-27 P27 595
 Lat : 39° 34' 46.26 N
 Long : 108° 1' 59.98 W



Azimuths to True North
 Magnetic North: 10.25°

Magnetic Field
 Strength: 52180.6snT
 Dip Angle: 65.77°
 Date: 6/28/2012
 Model: IGRF2010

DD NP EF11F-27 P27 595 125290/157555 (SH) 125368/169255 (MH); SC WELL @ 6671.0ft (Original Well Elev) North American Datum 1983 Well NP EF11F-27 P27 595, True North						
Type User	Target	Azimuth	Origin Type	N/S	E/W	From TVD
	No Target (Freehand)	296.32	Slot	0.0	0.0	0.0
Name	TVD	+N/-S	+E/-W	Latitude		Longitude
P27 595 EF 11F-27 TGT	6502.0	743.7	-2546.6	39° 34' 53.61 N 108° 2' 32.51 W		
P27 595 EF 11F-27 BHL	10062.0	733.7	-2563.6	39° 34' 53.51 N 108° 2' 32.72 W		



Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well NP EF11F-27 P27 595
Project:	North Piceance	TVD Reference:	WELL @ 6671.0ft (Original Well Elev)
Site:	P27 595 (S27-T5S-R95W)	MD Reference:	WELL @ 6671.0ft (Original Well Elev)
Well:	NP EF11F-27 P27 595	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	USA EDM 5000 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		P27 595 (S27-T5S-R95W)			
Site Position:		Northing:	1,645,842.89 ft	Latitude:	39° 34' 45.45 N
From:	Lat/Long	Easting:	2,286,079.88 ft	Longitude:	108° 1' 59.43 W
Position Uncertainty:	0.0 ft	Slot Radius:	0.000 in	Grid Convergence:	-1.60 °

Well	NP EF11F-27 P27 595					
Well Position	+N/-S	0.0 ft	Northing:	1,645,925.80 ft	Latitude:	39° 34' 46.26 N
	+E/-W	0.0 ft	Easting:	2,286,039.14 ft	Longitude:	108° 1' 59.98 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	6,649.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	6/28/2012	10.25	65.77	52,181

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	296.32	

Survey Program	Date	7/10/2012			
From (ft)	To (ft)	Survey (Wellbore)	Tool Name	Description	
50.0	356.0	Survey #1 (DD)	Gyro	Gyro	
387.0	1,790.0	Survey #2 (DD)	MWD	Geolink MWD	
1,889.0	10,825.0	Survey #3 (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
	1,790.0	28.10	285.60	1,685.8	146.4	-497.4	510.7	0.00	0.00	
	1,889.0	27.60	283.00	1,773.4	157.8	-542.2	556.0	1.33	-0.51	
	1,980.0	27.90	285.70	1,853.9	168.4	-583.2	597.4	1.42	0.33	
	2,072.0	27.20	282.90	1,935.5	178.9	-624.4	639.0	1.60	-0.76	
	2,164.0	27.50	283.90	2,017.2	188.7	-665.6	680.2	0.60	0.33	
	2,255.0	27.60	286.10	2,097.9	199.6	-706.2	721.5	1.12	0.11	
	2,347.0	26.70	288.20	2,179.7	211.9	-746.3	762.9	1.43	-0.98	
	2,438.0	25.60	287.50	2,261.4	224.2	-784.5	802.6	1.26	-1.21	
	2,530.0	25.00	285.00	2,344.6	235.2	-822.2	841.3	1.33	-0.65	
	2,621.0	25.10	292.20	2,427.0	247.5	-858.7	879.4	3.35	0.11	
	2,713.0	24.60	290.90	2,510.5	261.7	-894.6	917.9	0.80	-0.54	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well NP EF11F-27 P27 595
Project:	North Piceance	TVD Reference:	WELL @ 6671.0ft (Original Well Elev)
Site:	P27 595 (S27-T5S-R95W)	MD Reference:	WELL @ 6671.0ft (Original Well Elev)
Well:	NP EF11F-27 P27 595	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	USA EDM 5000 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
2,804.0	25.80	289.00	2,592.9	274.9	-931.1	956.4	1.59	1.32	
2,896.0	25.70	290.50	2,675.7	288.4	-968.7	996.1	0.72	-0.11	
2,987.0	26.30	286.20	2,757.5	301.0	-1,006.5	1,035.6	2.17	0.66	
3,079.0	25.20	284.30	2,840.4	311.5	-1,045.1	1,074.8	1.49	-1.20	
3,170.0	25.90	287.50	2,922.5	322.2	-1,082.8	1,113.4	1.70	0.77	
3,262.0	27.00	287.00	3,004.9	334.4	-1,121.9	1,153.9	1.22	1.20	
3,354.0	26.40	286.80	3,087.1	346.4	-1,161.5	1,194.7	0.66	-0.65	
3,445.0	25.80	286.10	3,168.8	357.7	-1,199.9	1,234.1	0.74	-0.66	
3,537.0	27.50	289.30	3,251.0	370.3	-1,239.2	1,274.9	2.42	1.85	
3,628.0	26.10	288.60	3,332.2	383.6	-1,278.0	1,315.6	1.58	-1.54	
3,720.0	28.20	288.50	3,414.1	397.0	-1,317.8	1,357.2	2.28	2.28	
3,811.0	27.20	286.70	3,494.7	409.8	-1,358.1	1,399.0	1.43	-1.10	
3,903.0	26.10	287.60	3,576.9	422.0	-1,397.5	1,439.7	1.27	-1.20	
3,994.0	27.80	285.50	3,658.0	433.7	-1,437.0	1,480.4	2.14	1.87	
4,086.0	26.90	283.00	3,739.7	444.1	-1,478.0	1,521.7	1.59	-0.98	
4,177.0	25.80	285.20	3,821.3	453.9	-1,517.2	1,561.2	1.62	-1.21	
4,269.0	26.90	283.40	3,903.7	464.0	-1,556.7	1,601.1	1.48	1.20	
4,361.0	25.80	283.10	3,986.1	473.4	-1,596.5	1,640.9	1.20	-1.20	
4,452.0	27.50	285.50	4,067.5	483.5	-1,636.0	1,680.8	2.21	1.87	
4,544.0	26.10	285.50	4,149.6	494.6	-1,676.0	1,721.5	1.52	-1.52	
4,635.0	27.20	289.30	4,230.9	506.8	-1,714.9	1,761.8	2.23	1.21	
4,727.0	25.70	288.10	4,313.3	519.9	-1,753.7	1,802.4	1.73	-1.63	
4,818.0	27.10	288.90	4,394.8	532.8	-1,792.1	1,842.5	1.59	1.54	
4,910.0	25.70	287.60	4,477.2	545.6	-1,830.9	1,883.0	1.65	-1.52	
5,001.0	26.90	287.00	4,558.8	557.6	-1,869.4	1,922.8	1.35	1.32	
5,093.0	25.00	285.20	4,641.5	568.8	-1,908.1	1,962.5	2.24	-2.07	
5,184.0	25.80	286.80	4,723.7	579.5	-1,945.6	2,000.9	1.16	0.88	
5,276.0	25.80	288.20	4,806.5	591.6	-1,983.8	2,040.4	0.66	0.00	
5,368.0	25.20	287.50	4,889.6	603.7	-2,021.5	2,079.6	0.73	-0.65	
5,459.0	26.10	285.60	4,971.6	614.9	-2,059.2	2,118.4	1.34	0.99	
5,551.0	26.50	287.00	5,054.1	626.4	-2,098.4	2,158.6	0.80	0.43	
5,642.0	25.00	287.00	5,136.1	637.9	-2,136.2	2,197.6	1.65	-1.65	
5,734.0	26.10	289.50	5,219.1	650.4	-2,173.8	2,236.8	1.67	1.20	
5,825.0	27.80	288.50	5,300.2	663.8	-2,212.8	2,277.7	1.93	1.87	
5,917.0	26.80	289.80	5,381.9	677.6	-2,252.7	2,319.6	1.27	-1.09	
6,008.0	25.40	288.30	5,463.6	690.7	-2,290.5	2,359.3	1.70	-1.54	
6,100.0	24.20	289.70	5,547.2	703.2	-2,327.0	2,397.6	1.45	-1.30	
6,191.0	23.00	287.50	5,630.5	714.9	-2,361.5	2,433.7	1.64	-1.32	
6,283.0	21.40	286.00	5,715.7	724.9	-2,394.8	2,468.0	1.84	-1.74	
6,375.0	17.50	286.80	5,802.5	733.5	-2,424.2	2,498.1	4.25	-4.24	
6,466.0	15.50	282.10	5,889.7	740.0	-2,449.2	2,523.4	2.64	-2.20	
6,558.0	14.70	278.20	5,978.5	744.3	-2,472.8	2,546.4	1.41	-0.87	
6,649.0	11.90	274.50	6,067.1	746.7	-2,493.6	2,566.1	3.21	-3.08	
6,741.0	9.50	263.40	6,157.5	746.5	-2,510.6	2,581.3	3.43	-2.61	
6,832.0	7.30	269.10	6,247.5	745.6	-2,523.8	2,592.7	2.58	-2.42	
6,924.0	5.10	265.90	6,339.0	745.2	-2,533.7	2,601.5	2.42	-2.39	
7,015.0	3.00	249.30	6,429.7	744.1	-2,540.0	2,606.6	2.62	-2.31	
7,107.0	2.00	258.30	6,521.6	742.9	-2,543.8	2,609.5	1.16	-1.09	
7,198.0	1.20	276.60	6,612.6	742.7	-2,546.3	2,611.6	1.03	-0.88	
7,290.0	0.30	291.90	6,704.6	742.9	-2,547.5	2,612.8	0.99	-0.98	
7,381.0	0.00	280.20	6,795.6	743.0	-2,547.7	2,613.0	0.33	-0.33	
7,473.0	0.40	301.80	6,887.6	743.1	-2,548.0	2,613.3	0.43	0.43	
7,564.0	0.50	299.10	6,978.6	743.5	-2,548.6	2,614.1	0.11	0.11	

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well NP EF11F-27 P27 595
Project:	North Piceance	TVD Reference:	WELL @ 6671.0ft (Original Well Elev)
Site:	P27 595 (S27-T5S-R95W)	MD Reference:	WELL @ 6671.0ft (Original Well Elev)
Well:	NP EF11F-27 P27 595	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	USA EDM 5000 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
7,656.0	0.80	231.60	7,070.6	743.3	-2,549.5	2,614.7	0.83	0.33	
7,747.0	0.70	262.50	7,161.6	742.8	-2,550.5	2,615.5	0.45	-0.11	
7,839.0	1.70	214.70	7,253.6	741.6	-2,551.8	2,616.1	1.45	1.09	
7,930.0	1.00	236.70	7,344.5	740.1	-2,553.3	2,616.7	0.94	-0.77	
8,022.0	1.50	232.30	7,436.5	738.9	-2,554.9	2,617.7	0.55	0.54	
8,113.0	0.70	197.90	7,527.5	737.6	-2,556.0	2,618.1	1.10	-0.88	
8,206.0	1.20	339.80	7,620.5	738.0	-2,556.5	2,618.7	1.94	0.54	
8,296.0	0.40	339.80	7,710.5	739.2	-2,557.0	2,619.6	0.89	-0.89	
8,388.0	0.20	64.80	7,802.5	739.6	-2,556.9	2,619.8	0.47	-0.22	
8,479.0	0.60	1.30	7,893.5	740.1	-2,556.8	2,619.9	0.59	0.44	
8,571.0	0.10	225.00	7,985.5	740.5	-2,556.8	2,620.1	0.73	-0.54	
8,670.0	0.00	30.90	8,084.5	740.5	-2,556.9	2,620.1	0.10	-0.10	
8,762.0	0.40	141.20	8,176.5	740.2	-2,556.7	2,619.8	0.43	0.43	
8,854.0	1.30	182.60	8,268.5	738.9	-2,556.5	2,619.1	1.12	0.98	
8,945.0	0.80	171.20	8,359.5	737.3	-2,556.5	2,618.3	0.59	-0.55	
9,037.0	0.80	136.60	8,451.4	736.2	-2,555.9	2,617.4	0.52	0.00	
9,128.0	0.60	220.00	8,542.4	735.3	-2,555.8	2,616.9	1.04	-0.22	
9,220.0	0.50	260.30	8,634.4	734.9	-2,556.5	2,617.3	0.42	-0.11	
9,312.0	1.10	212.10	8,726.4	734.1	-2,557.4	2,617.7	0.93	0.65	
9,403.0	0.10	233.90	8,817.4	733.3	-2,557.9	2,617.9	1.11	-1.10	
9,495.0	0.70	241.40	8,909.4	733.0	-2,558.5	2,618.2	0.65	0.65	
9,586.0	0.80	227.70	9,000.4	732.3	-2,559.4	2,618.8	0.22	0.11	
9,678.0	1.50	222.50	9,092.4	731.0	-2,560.7	2,619.3	0.77	0.76	
9,727.0	1.90	219.20	9,141.4	729.9	-2,561.6	2,619.7	0.84	0.82	
9,769.0	1.80	228.10	9,183.4	728.9	-2,562.6	2,620.1	0.72	-0.24	
9,861.0	1.70	304.50	9,275.3	728.7	-2,564.8	2,622.0	2.35	-0.11	
9,952.0	0.70	291.00	9,366.3	729.7	-2,566.4	2,623.9	1.13	-1.10	
10,044.0	0.60	255.50	9,458.3	729.7	-2,567.4	2,624.8	0.44	-0.11	
10,136.0	0.90	226.60	9,550.3	729.1	-2,568.4	2,625.4	0.52	0.33	
10,227.0	1.80	262.40	9,641.3	728.4	-2,570.3	2,626.9	1.31	0.99	
10,319.0	2.20	254.10	9,733.2	727.8	-2,573.5	2,629.4	0.54	0.43	
10,410.0	2.50	237.50	9,824.1	726.2	-2,576.8	2,631.7	0.81	0.33	
10,502.0	2.00	247.00	9,916.1	724.5	-2,580.0	2,633.8	0.68	-0.54	
10,593.0	2.30	250.80	10,007.0	723.3	-2,583.2	2,636.1	0.36	0.33	
10,684.0	2.30	237.10	10,097.9	721.7	-2,586.4	2,638.3	0.60	0.00	
10,775.0	2.10	240.40	10,188.9	719.9	-2,589.4	2,640.2	0.26	-0.22	Last Cathedral Survey @ 10,775' MD
10,825.0	2.10	240.40	10,238.8	719.0	-2,591.0	2,641.2	0.00	0.00	Projection to Bit @ 10,825'

Cathedral Energy Services

Survey Report

Company:	EnCana Oil & Gas (USA) Inc	Local Co-ordinate Reference:	Well NP EF11F-27 P27 595
Project:	North Piceance	TVD Reference:	WELL @ 6671.0ft (Original Well Elev)
Site:	P27 595 (S27-T5S-R95W)	MD Reference:	WELL @ 6671.0ft (Original Well Elev)
Well:	NP EF11F-27 P27 595	North Reference:	True
Wellbore:	DD	Survey Calculation Method:	Minimum Curvature
Design:	DD	Database:	USA EDM 5000 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									
P27 595 EF 11F-27 TGT	0.00	0.00	6,502.0	743.7	-2,546.6	1,646,740.22	2,283,514.26	39° 34' 53.61 N	108° 2' 32.51 W
- survey misses target center by 3.6ft at 7087.5ft MD (6502.1 TVD, 743.0 N, -2543.1 E)									
- Point									
P27 595 EF 11F-27 BHL	0.00	0.00	10,062.0	733.7	-2,563.6	1,646,730.73	2,283,496.98	39° 34' 53.51 N	108° 2' 32.72 W
- survey misses target center by 24.3ft at 10647.1ft MD (10061.0 TVD, 722.5 N, -2585.2 E)									
- Rectangle (sides W30.0 H50.0 D0.0)									

Survey Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	
10,775.0	10,188.9	719.9	-2,589.4	Last Cathedral Survey @ 10,775' MD
10,825.0	10,238.8	719.0	-2,591.0	Projection to Bit @ 10,825'

Checked By: _____ Approved By: _____ Date: _____