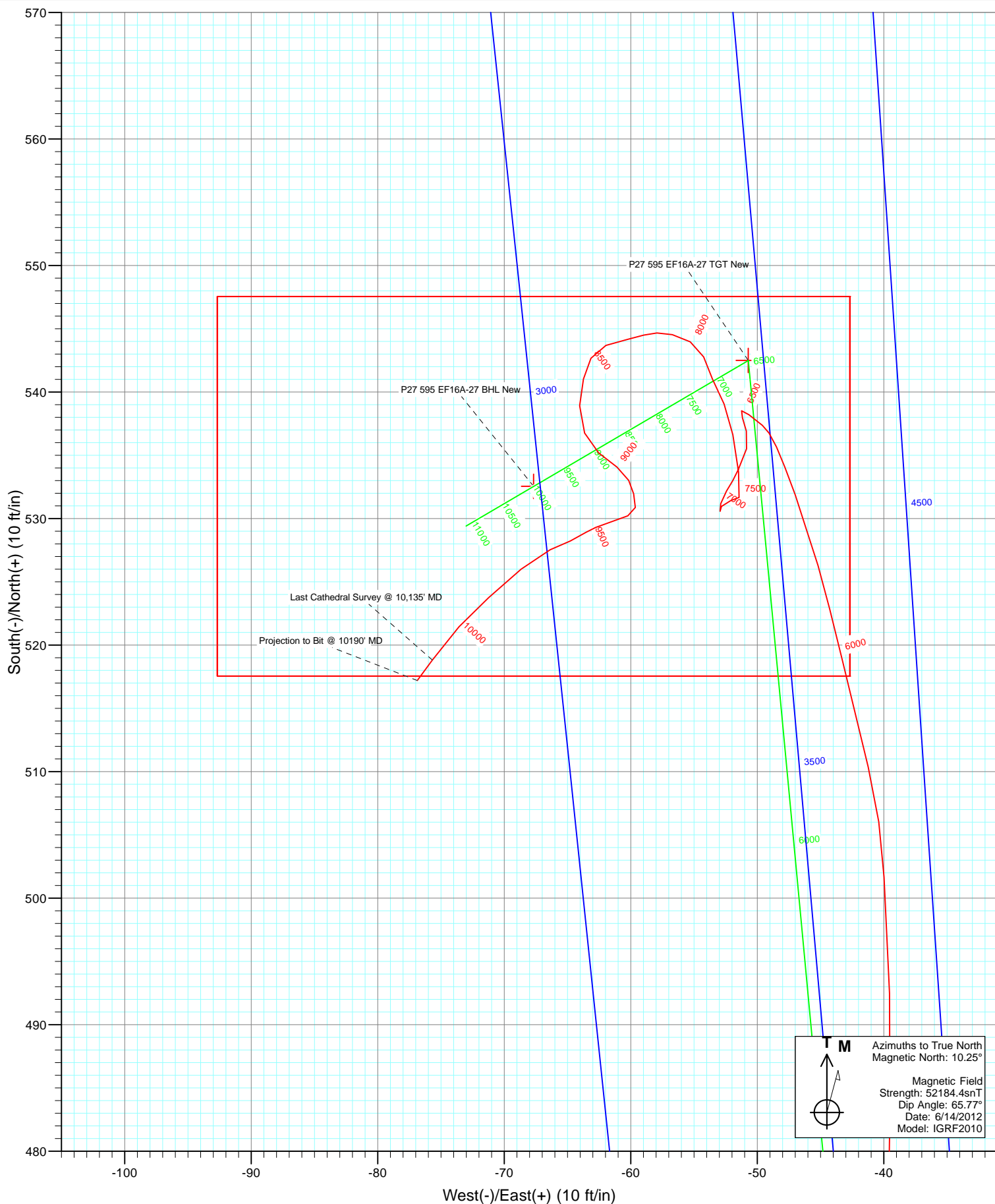


Azimuths to True North  
 Magnetic North: 10.25°

Magnetic Field  
 Strength: 52184.4nT  
 Dip Angle: 65.77°  
 Date: 6/14/2012  
 Model: IGRF2010

FINAL NP EF16A-27 P27 595 125287/157355 (SH) 125366/169055 (MH): SC EF16A-27 P27 @ 6671.0ft (Patterson #303) North American Datum 1983 Well NP EF16A-27 P27 595, True North						
Type	Target	Azimuth	Origin Type	N/S	E/W	From TVD
Target	P27 595 EF16A-27 BHL	345.07	Slot	0.0	0.0	0.0
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	
P27 595 EF16A-27 TGT New	6503.0	542.5	-50.7	39° 34' 51.580 N	108° 2' 0.487 W	
P27 595 EF16A-27 BHL New	10063.0	532.6	-67.7	39° 34' 51.482 N	108° 2' 0.704 W	



# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well NP EF16A-27 P27 595
<b>Project:</b>	North Piceance	<b>TVD Reference:</b>	EF16A-27 P27 @ 6671.0ft (Patterson #303)
<b>Site:</b>	P27 595 (S27-T5S-R95W)	<b>MD Reference:</b>	EF16A-27 P27 @ 6671.0ft (Patterson #303)
<b>Well:</b>	NP EF16A-27 P27 595	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	FINAL	<b>Database:</b>	USA EDM 5000 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		P27 595 (S27-T5S-R95W)			
Site Position:		Northing:	1,645,842.89 ft	Latitude:	39° 34' 45.450 N
From:	Lat/Long	Easting:	2,286,079.88 ft	Longitude:	108° 1' 59.430 W
Position Uncertainty:	0.0 ft	Slot Radius:	0.000 in	Grid Convergence:	-1.60 °

Well	NP EF16A-27 P27 595					
Well Position	+N/-S	0.0 ft	Northing:	1,645,921.48 ft	Latitude:	39° 34' 46.218 N
	+E/-W	0.0 ft	Easting:	2,286,050.02 ft	Longitude:	108° 1' 59.839 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	6,649.0 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>
	IGRF2010	6/14/2012	10.25	65.77	52,184

<b>Design</b>	FINAL				
<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	345.07	

<b>Survey Program</b>	<b>Date</b>	6/24/2012			
<b>From (ft)</b>	<b>To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Description</b>	
50.0	134.0	Survey #1 (DD)	Gyro	Gyro	
203.0	10,190.0	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		
50.0	0.47	128.94	50.0	-0.1	0.2	-0.2	0.94	0.94		
100.0	0.30	168.55	100.0	-0.4	0.3	-0.5	0.61	-0.34		
134.0	0.03	131.79	134.0	-0.5	0.4	-0.6	0.81	-0.79	Last Gyro Survey @ 134' MD	
203.0	0.20	131.79	203.0	-0.6	0.5	-0.7	0.25	0.25		
233.0	0.40	24.20	233.0	-0.5	0.6	-0.6	1.66	0.67		
264.0	0.70	79.90	264.0	-0.4	0.8	-0.6	1.87	0.97		
295.0	0.80	83.90	295.0	-0.3	1.2	-0.6	0.36	0.32		
325.0	0.90	108.70	325.0	-0.4	1.6	-0.8	1.26	0.33		
356.0	1.10	83.60	356.0	-0.4	2.1	-1.0	1.54	0.65		
387.0	1.40	68.50	387.0	-0.2	2.8	-1.0	1.43	0.97		
417.0	1.80	36.80	417.0	0.3	3.4	-0.6	3.18	1.33		

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well NP EF16A-27 P27 595
<b>Project:</b>	North Piceance	<b>TVD Reference:</b>	EF16A-27 P27 @ 6671.0ft (Patterson #303)
<b>Site:</b>	P27 595 (S27-T5S-R95W)	<b>MD Reference:</b>	EF16A-27 P27 @ 6671.0ft (Patterson #303)
<b>Well:</b>	NP EF16A-27 P27 595	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	FINAL	<b>Database:</b>	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
448.0	2.10	43.10	447.9	1.1	4.1	0.0	1.19	0.97	
479.0	2.50	28.60	478.9	2.1	4.8	0.8	2.27	1.29	
509.0	2.50	26.40	508.9	3.2	5.4	1.7	0.32	0.00	
557.0	3.60	5.30	556.8	5.7	6.0	3.9	3.24	2.29	
603.0	5.00	356.50	602.7	9.1	6.0	7.3	3.36	3.04	
649.0	6.00	350.20	648.5	13.5	5.5	11.6	2.54	2.17	
695.0	6.10	354.90	694.2	18.3	4.9	16.4	1.10	0.22	
786.0	5.80	350.00	784.7	27.6	3.6	25.8	0.65	-0.33	
878.0	6.10	349.90	876.2	37.0	2.0	35.3	0.33	0.33	
969.0	6.70	350.20	966.7	47.0	0.2	45.4	0.66	0.66	
1,061.0	5.60	352.40	1,058.1	56.8	-1.3	55.2	1.22	-1.20	
1,153.0	5.80	354.00	1,149.7	65.8	-2.4	64.2	0.28	0.22	
1,244.0	5.80	352.00	1,240.2	74.9	-3.5	73.3	0.22	0.00	
1,336.0	5.40	357.00	1,331.8	83.9	-4.4	82.2	0.69	-0.43	
1,427.0	6.20	358.30	1,422.3	93.1	-4.7	91.1	0.89	0.88	
1,519.0	5.60	352.30	1,513.8	102.5	-5.5	100.4	0.93	-0.65	
1,610.0	6.60	357.10	1,604.3	112.1	-6.3	109.9	1.23	1.10	
1,702.0	5.40	353.00	1,695.8	121.7	-7.1	119.4	1.38	-1.30	
1,790.0	5.90	357.60	1,783.4	130.3	-7.8	127.9	0.77	0.57	
1,895.0	6.70	354.30	1,887.8	141.8	-8.7	139.2	0.84	0.76	
1,987.0	5.90	354.90	1,979.2	151.8	-9.6	149.2	0.87	-0.87	
2,078.0	5.60	355.00	2,069.7	160.9	-10.4	158.2	0.33	-0.33	
2,170.0	5.10	351.70	2,161.3	169.4	-11.4	166.7	0.64	-0.54	
2,261.0	4.50	347.90	2,252.0	176.9	-12.7	174.2	0.75	-0.66	
2,353.0	5.30	358.30	2,343.7	184.7	-13.6	182.0	1.30	0.87	
2,445.0	5.30	359.80	2,435.3	193.2	-13.8	190.2	0.15	0.00	
2,536.0	4.90	1.80	2,525.9	201.3	-13.6	198.0	0.48	-0.44	
2,628.0	4.90	352.10	2,617.6	209.1	-14.1	205.7	0.90	0.00	
2,719.0	4.90	349.30	2,708.3	216.8	-15.3	213.4	0.26	0.00	
2,811.0	5.10	348.30	2,799.9	224.7	-16.9	221.4	0.24	0.22	
2,902.0	4.20	349.00	2,890.6	231.9	-18.3	228.8	0.99	-0.99	
2,994.0	5.20	353.60	2,982.3	239.3	-19.4	236.3	1.16	1.09	
3,086.0	4.80	356.20	3,074.0	247.3	-20.2	244.2	0.50	-0.43	
3,177.0	6.10	354.20	3,164.5	255.9	-20.9	252.7	1.44	1.43	
3,269.0	5.50	352.90	3,256.1	265.2	-21.9	261.9	0.67	-0.65	
3,360.0	5.00	349.80	3,346.7	273.4	-23.2	270.1	0.63	-0.55	
3,452.0	6.00	359.80	3,438.3	282.2	-23.9	278.8	1.50	1.09	
3,543.0	6.00	359.20	3,528.8	291.7	-24.0	288.0	0.07	0.00	
3,635.0	5.30	359.70	3,620.3	300.7	-24.1	296.8	0.76	-0.76	
3,726.0	5.90	0.10	3,710.9	309.6	-24.1	305.4	0.66	0.66	
3,818.0	5.70	0.80	3,802.4	318.9	-24.0	314.3	0.23	-0.22	
3,909.0	5.50	356.20	3,893.0	327.8	-24.2	322.9	0.54	-0.22	
4,001.0	4.80	0.70	3,984.6	336.0	-24.5	331.0	0.88	-0.76	
4,092.0	6.20	355.00	4,075.2	344.7	-24.9	339.5	1.65	1.54	
4,184.0	5.60	351.80	4,166.7	354.1	-25.9	348.8	0.74	-0.65	
4,276.0	5.10	354.00	4,258.3	362.6	-27.0	357.3	0.59	-0.54	
4,367.0	4.50	354.90	4,349.0	370.2	-27.8	364.8	0.66	-0.66	
4,459.0	3.80	356.50	4,440.7	376.8	-28.3	371.4	0.77	-0.76	
4,550.0	4.90	353.40	4,531.5	383.7	-28.9	378.2	1.24	1.21	
4,642.0	4.50	354.60	4,623.2	391.2	-29.7	385.6	0.45	-0.43	
4,733.0	4.50	343.50	4,713.9	398.2	-31.0	392.7	0.96	0.00	
4,825.0	4.60	347.00	4,805.6	405.2	-32.9	400.0	0.32	0.11	
4,916.0	4.60	349.00	4,896.3	412.4	-34.4	407.3	0.18	0.00	

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well NP EF16A-27 P27 595
<b>Project:</b>	North Piceance	<b>TVD Reference:</b>	EF16A-27 P27 @ 6671.0ft (Patterson #303)
<b>Site:</b>	P27 595 (S27-T5S-R95W)	<b>MD Reference:</b>	EF16A-27 P27 @ 6671.0ft (Patterson #303)
<b>Well:</b>	NP EF16A-27 P27 595	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	FINAL	<b>Database:</b>	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
5,008.0	5.50	350.80	4,987.9	420.3	-35.8	415.4	0.99	0.98	
5,099.0	4.70	350.10	5,078.6	428.3	-37.2	423.4	0.88	-0.88	
5,191.0	6.10	354.50	5,170.2	436.9	-38.3	432.0	1.59	1.52	
5,282.0	5.80	358.60	5,260.7	446.3	-38.8	441.2	0.57	-0.33	
5,374.0	5.00	356.60	5,352.3	455.0	-39.2	449.7	0.89	-0.87	
5,465.0	6.00	358.80	5,442.9	463.7	-39.5	458.2	1.12	1.10	
5,557.0	6.20	359.70	5,534.3	473.4	-39.7	467.7	0.24	0.22	
5,648.0	5.80	2.20	5,624.8	483.0	-39.5	476.8	0.52	-0.44	
5,740.0	6.10	357.40	5,716.3	492.5	-39.5	486.0	0.63	0.33	
5,831.0	5.50	357.30	5,806.9	501.7	-40.0	495.0	0.66	-0.66	
5,923.0	5.50	346.30	5,898.4	510.4	-41.2	503.7	1.14	0.00	
6,014.0	5.50	346.60	5,989.0	518.8	-43.3	512.5	0.03	0.00	
6,106.0	4.10	344.00	6,080.7	526.3	-45.2	520.2	1.54	-1.52	
6,197.0	3.30	340.00	6,171.5	531.9	-47.0	526.0	0.92	-0.88	
6,289.0	1.80	335.90	6,263.4	535.7	-48.5	530.1	1.64	-1.63	
6,381.0	0.80	305.50	6,355.4	537.4	-49.6	532.0	1.28	-1.09	
6,472.0	0.90	310.70	6,446.4	538.2	-50.7	533.1	0.14	0.11	
6,528.6	0.30	289.42	6,503.0	538.6	-51.1	533.5	1.11	-1.06	P27 595 EF16A-27 TGT New
6,563.0	0.20	191.80	6,537.4	538.5	-51.2	533.5	1.11	-0.29	
6,655.0	0.50	165.60	6,629.4	538.0	-51.2	533.0	0.36	0.33	
6,746.0	0.90	162.70	6,720.4	536.9	-50.9	531.9	0.44	0.44	
6,838.0	0.90	196.60	6,812.4	535.5	-50.8	530.5	0.57	0.00	
6,930.0	1.30	204.80	6,904.4	533.9	-51.5	529.1	0.47	0.43	
6,975.0	1.20	208.30	6,949.4	533.0	-51.9	528.4	0.28	-0.22	
7,021.0	1.20	214.40	6,995.3	532.2	-52.4	527.7	0.28	0.00	
7,112.0	0.30	158.90	7,086.3	531.2	-52.9	526.9	1.16	-0.99	
7,204.0	0.50	201.10	7,178.3	530.6	-52.9	526.3	0.37	0.22	
7,295.0	1.00	18.80	7,269.3	531.0	-52.8	526.6	1.65	0.55	
7,387.0	0.70	121.30	7,361.3	531.4	-52.1	526.9	1.46	-0.33	
7,479.0	0.70	17.50	7,453.3	531.7	-51.4	527.0	1.20	0.00	
7,570.0	1.90	352.30	7,544.3	533.7	-51.5	528.9	1.43	1.32	
7,662.0	1.80	350.20	7,636.2	536.6	-51.9	531.9	0.13	-0.11	
7,753.0	1.40	336.00	7,727.2	539.1	-52.6	534.4	0.62	-0.44	
7,845.0	1.30	333.70	7,819.2	541.0	-53.5	536.5	0.12	-0.11	
7,936.0	1.10	344.20	7,910.1	542.8	-54.2	538.4	0.33	-0.22	
8,028.0	1.10	292.30	8,002.1	544.0	-55.3	539.8	1.05	0.00	
8,120.0	0.80	291.50	8,094.1	544.5	-56.7	540.8	0.33	-0.33	
8,211.0	0.80	261.40	8,185.1	544.7	-57.9	541.2	0.46	0.00	
8,303.0	0.50	258.40	8,277.1	544.5	-59.0	541.3	0.33	-0.33	
8,395.0	1.10	254.30	8,369.1	544.2	-60.2	541.3	0.65	0.65	
8,486.0	1.20	254.50	8,460.1	543.7	-62.0	541.3	0.11	0.11	
8,578.0	1.00	199.20	8,552.1	542.7	-63.1	540.6	1.13	-0.22	
8,669.0	1.20	200.00	8,643.0	541.0	-63.7	539.2	0.22	0.22	
8,761.0	1.50	178.60	8,735.0	538.9	-64.0	537.2	0.63	0.33	
8,852.0	1.30	159.60	8,826.0	536.8	-63.6	535.0	0.55	-0.22	
8,944.0	1.20	128.10	8,918.0	535.2	-62.5	533.2	0.74	-0.11	
9,035.0	1.10	127.40	9,009.0	534.1	-61.1	531.8	0.11	-0.11	
9,127.0	0.70	156.30	9,100.9	533.0	-60.2	530.5	0.64	-0.43	
9,219.0	0.70	163.10	9,192.9	532.0	-59.8	529.4	0.09	0.00	
9,310.0	0.70	183.60	9,283.9	530.9	-59.6	528.3	0.27	0.00	
9,402.0	0.70	260.00	9,375.9	530.2	-60.2	527.8	0.94	0.00	
9,543.0	1.50	245.30	9,516.9	529.3	-62.8	527.6	0.60	0.57	
9,585.0	0.80	241.80	9,558.9	528.9	-63.5	527.4	1.67	-1.67	

# Cathedral Energy Services

## Survey Report

<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>Local Co-ordinate Reference:</b>	Well NP EF16A-27 P27 595
<b>Project:</b>	North Piceance	<b>TVD Reference:</b>	EF16A-27 P27 @ 6671.0ft (Patterson #303)
<b>Site:</b>	P27 595 (S27-T5S-R95W)	<b>MD Reference:</b>	EF16A-27 P27 @ 6671.0ft (Patterson #303)
<b>Well:</b>	NP EF16A-27 P27 595	<b>North Reference:</b>	True
<b>Wellbore:</b>	DD	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Design:</b>	FINAL	<b>Database:</b>	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
9,677.0	1.00	240.60	9,650.9	528.2	-64.8	527.1	0.22	0.22	
9,768.0	1.20	251.40	9,741.9	527.5	-66.4	526.8	0.32	0.22	
9,860.0	2.30	228.20	9,833.8	526.0	-68.7	525.9	1.40	1.20	
9,951.0	2.00	229.40	9,924.8	523.8	-71.2	524.4	0.33	-0.33	
10,043.0	2.10	221.60	10,016.7	521.5	-73.6	522.8	0.32	0.11	
10,088.8	2.10	218.91	10,062.5	520.2	-74.6	521.8	0.22	-0.01	P27 595 EF16A-27 BHL New
10,135.0	2.10	216.20	10,108.6	518.8	-75.7	520.8	0.22	0.01	Last Cathedral Survey @ 10,135' MD
10,190.0	2.10	216.20	10,163.6	517.2	-76.9	519.5	0.00	0.00	Projection to Bit @ 10190' 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									
P27 595 EF16A-27 TGT	0.00	0.00	6,503.0	542.5	-50.7	1,646,465.19	2,286,014.46	39° 34' 51.580 N	108° 2' 0.487 W
- actual wellpath misses target center by 4.0ft at 6528.6ft MD (6503.0 TVD, 538.6 N, -51.1 E)									
- Point									
P27 595 EF16A-27 BHL	0.00	0.00	10,063.0	532.6	-67.7	1,646,455.71	2,285,997.22	39° 34' 51.482 N	108° 2' 0.704 W
- actual wellpath misses target center by 14.2ft at 10088.8ft MD (10062.5 TVD, 520.2 N, -74.6 E)									
- Rectangle (sides W30.0 H50.0 D0.0)									

Design Annotations					
Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates			
		+N/-S (ft)	+E/-W (ft)	Comment	
134.0	134.0	-0.5	0.4	Last Gyro Survey @ 134' MD	
10,135.0	10,108.6	518.8	-75.7	Last Cathedral Survey @ 10,135' MD	
10,190.0	10,163.6	517.2	-76.9	Projection to Bit @ 10190' MD	

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