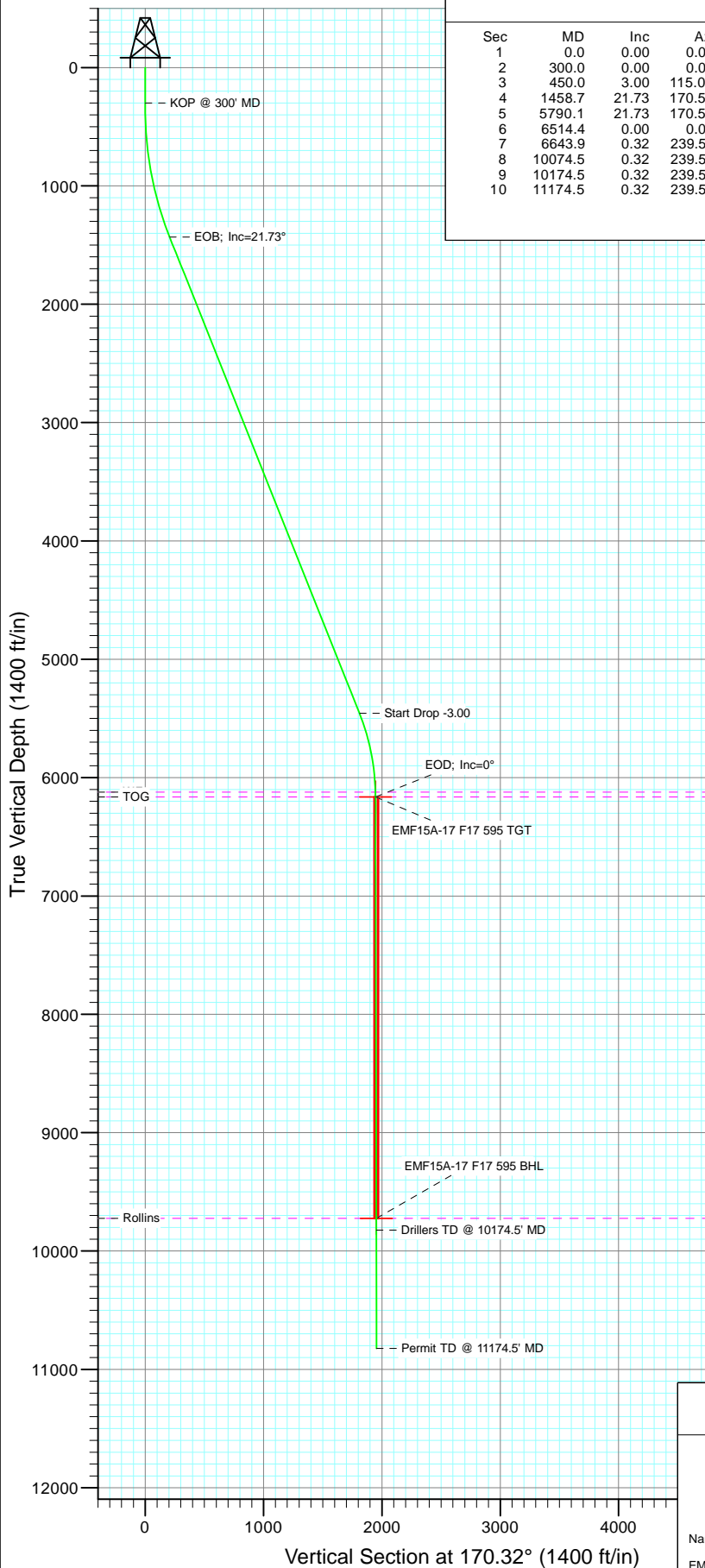
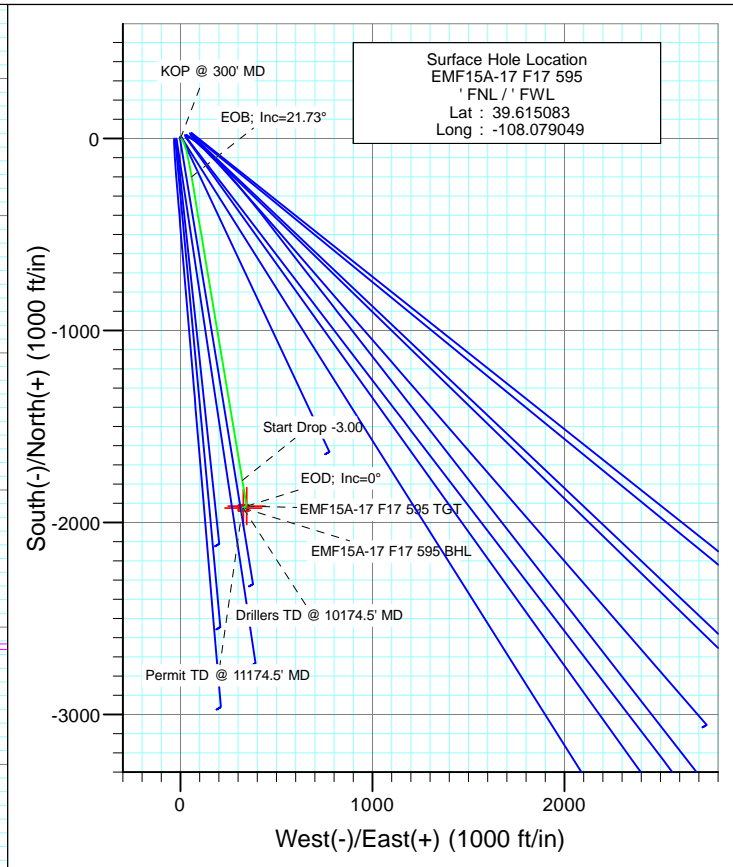




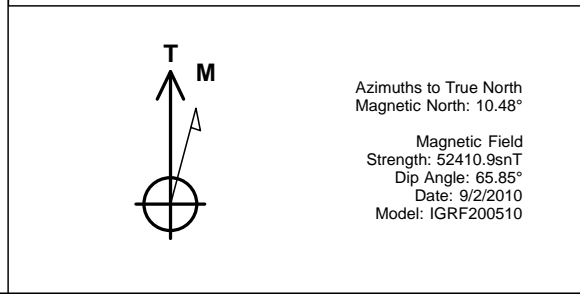
Project: North Piceance  
 Site: F17 595 Pad  
 Well: EMF15A-17 F17 595  
 Wellbore: DD  
 Design: Plan #4



SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	300.0	0.00	0.00	300.0	0.0	0.0	0.00	0.00	0.0	
3	450.0	3.00	115.00	449.9	-1.7	3.6	2.00	115.00	2.2	
4	1458.7	21.73	170.52	1432.3	-199.0	58.8	2.00	62.23	206.1	
5	5790.1	21.73	170.52	5455.9	-1780.6	323.0	0.00	0.00	1809.6	
6	6514.4	0.00	0.00	6163.0	-1914.5	345.4	3.00	180.00	1945.3	EMF15A-17 F17 595 TGT
7	6643.9	0.32	239.58	6292.5	-1914.7	345.1	0.25	239.58	1945.4	
8	10074.5	0.32	239.58	9723.0	-1924.5	328.4	0.00	0.00	1952.3	EMF15A-17 F17 595 BHL
9	10174.5	0.32	239.58	9823.0	-1924.8	327.9	0.00	0.00	1952.5	
10	11174.5	0.32	239.58	10823.0	-1927.6	323.0	0.00	0.00	1954.5	



FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
6123.0	6474.4	WF
6163.0	6514.4	TOG
9723.0	10074.5	Rollins



Plan #4 EMF15A-17 F17 595 105XXX; LR							
KBE2 @ 6330.0ft North American Datum 1983 Well EMF15A-17 F17 595, True North							
Type	Target	Azimuth	Origin	Type	N/S	E/W	From
Target	EMF15A-17 F17 595 BHL	170.32	Slot		0.0	0.0	TVD
							0.0
Name	TVD	+N/-S	+E/-W	Latitude	Longitude		
EMF15A-17 F17 595 BHL	6163.0	-1914.5	345.4	39.609828	-108.077823		
	9723.0	-1924.5	328.4	39.609800	-108.077883		

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well EMF15A-17 F17 595
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	KBE2 @ 6330.0ft
<b>Project:</b>	North Piceance	<b>MD Reference:</b>	KBE2 @ 6330.0ft
<b>Site:</b>	F17 595 Pad	<b>North Reference:</b>	True
<b>Well:</b>	EMF15A-17 F17 595	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<b>Design:</b>	Plan #4		

<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		F17 595 Pad			
Site Position:		Northing:	1,659,259.22 ft	Latitude:	39° 36' 54.52 N
From:	Lat/Long	Easting:	2,273,585.37 ft	Longitude:	108° 4' 43.81 W
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.63 °

Well	EMF15A-17 F17 595					
Well Position	+N/-S	0.0 ft	Northing:	1,659,238.64 ft	Latitude:	39° 36' 54.30 N
	+E/-W	0.0 ft	Easting:	2,273,524.78 ft	Longitude:	108° 4' 44.58 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	6,308.0 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>
	IGRF200510	9/2/2010	10.48	65.85	52,411

<b>Design</b>	Plan #4			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	170.32

<b>Plan Sections</b>										
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target
0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.00	0.00	0.00	0.00	
450.0	3.00	115.00	449.9	-1.7	3.6	2.00	2.00	0.00	115.00	
1,458.7	21.73	170.52	1,432.3	-199.0	58.8	2.00	1.86	5.50	62.23	
5,790.1	21.73	170.52	5,455.9	-1,780.6	323.0	0.00	0.00	0.00	0.00	
6,514.4	0.00	0.00	6,163.0	-1,914.5	345.4	3.00	-3.00	0.00	180.00	EMF15A-17 F17 595
6,643.9	0.32	239.58	6,292.5	-1,914.7	345.1	0.25	0.25	-93.02	239.58	
10,074.5	0.32	239.58	9,723.0	-1,924.5	328.4	0.00	0.00	0.00	0.00	EMF15A-17 F17 595
10,174.5	0.32	239.58	9,823.0	-1,924.8	327.9	0.00	0.00	0.00	0.00	
11,174.5	0.32	239.58	10,823.0	-1,927.6	323.0	0.00	0.00	0.00	0.00	

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well EMF15A-17 F17 595
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	KBE2 @ 6330.0ft
<b>Project:</b>	North Piceance	<b>MD Reference:</b>	KBE2 @ 6330.0ft
<b>Site:</b>	F17 595 Pad	<b>North Reference:</b>	True
<b>Well:</b>	EMF15A-17 F17 595	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<b>Design:</b>	Plan #4		

### Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
0.0	0.00	0.00	0.0	0.0	0.0	0.0	0.00	0.00	
100.0	0.00	0.00	100.0	0.0	0.0	0.0	0.00	0.00	
200.0	0.00	0.00	200.0	0.0	0.0	0.0	0.00	0.00	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	KOP @ 300' MD
400.0	2.00	115.00	400.0	-0.7	1.6	1.0	2.00	2.00	
450.0	3.00	115.00	449.9	-1.7	3.6	2.2	2.00	2.00	
500.0	3.58	129.33	499.8	-3.2	6.0	4.2	2.00	1.15	
600.0	5.14	146.15	599.6	-8.9	10.9	10.6	2.00	1.56	
700.0	6.93	154.76	699.0	-18.1	15.9	20.5	2.00	1.79	
800.0	8.81	159.78	798.1	-30.7	21.1	33.8	2.00	1.88	
900.0	10.73	163.03	896.6	-46.8	26.5	50.6	2.00	1.92	
1,000.0	12.68	165.30	994.5	-66.3	32.0	70.7	2.00	1.95	
1,100.0	14.64	166.97	1,091.7	-89.2	37.6	94.3	2.00	1.96	
1,200.0	16.61	168.25	1,188.0	-115.5	43.4	121.2	2.00	1.97	
1,300.0	18.58	169.27	1,283.3	-145.2	49.3	151.4	2.00	1.98	
1,400.0	20.56	170.10	1,377.5	-178.1	55.3	184.9	2.00	1.98	
1,458.7	21.73	170.52	1,432.3	-199.0	58.8	206.1	2.00	1.98	EOB; Inc=21.73°
1,500.0	21.73	170.52	1,470.6	-214.1	61.3	221.4	0.00	0.00	
1,600.0	21.73	170.52	1,563.5	-250.6	67.4	258.4	0.00	0.00	
1,700.0	21.73	170.52	1,656.4	-287.1	73.5	295.4	0.00	0.00	
1,800.0	21.73	170.52	1,749.3	-323.6	79.6	332.4	0.00	0.00	
1,900.0	21.73	170.52	1,842.2	-360.2	85.7	369.4	0.00	0.00	
2,000.0	21.73	170.52	1,935.1	-396.7	91.8	406.5	0.00	0.00	
2,100.0	21.73	170.52	2,028.0	-433.2	97.9	443.5	0.00	0.00	
2,200.0	21.73	170.52	2,120.9	-469.7	104.0	480.5	0.00	0.00	
2,300.0	21.73	170.52	2,213.8	-506.2	110.1	517.5	0.00	0.00	
2,400.0	21.73	170.52	2,306.7	-542.7	116.2	554.5	0.00	0.00	
2,500.0	21.73	170.52	2,399.6	-579.2	122.3	591.6	0.00	0.00	
2,600.0	21.73	170.52	2,492.5	-615.8	128.4	628.6	0.00	0.00	
2,700.0	21.73	170.52	2,585.4	-652.3	134.5	665.6	0.00	0.00	
2,800.0	21.73	170.52	2,678.3	-688.8	140.6	702.6	0.00	0.00	
2,900.0	21.73	170.52	2,771.2	-725.3	146.7	739.7	0.00	0.00	
3,000.0	21.73	170.52	2,864.1	-761.8	152.8	776.7	0.00	0.00	
3,100.0	21.73	170.52	2,957.0	-798.3	158.9	813.7	0.00	0.00	
3,200.0	21.73	170.52	3,049.9	-834.9	165.0	850.7	0.00	0.00	
3,300.0	21.73	170.52	3,142.7	-871.4	171.1	887.7	0.00	0.00	
3,400.0	21.73	170.52	3,235.6	-907.9	177.2	924.8	0.00	0.00	
3,500.0	21.73	170.52	3,328.5	-944.4	183.3	961.8	0.00	0.00	
3,600.0	21.73	170.52	3,421.4	-980.9	189.4	998.8	0.00	0.00	
3,700.0	21.73	170.52	3,514.3	-1,017.4	195.5	1,035.8	0.00	0.00	
3,800.0	21.73	170.52	3,607.2	-1,053.9	201.6	1,072.8	0.00	0.00	
3,900.0	21.73	170.52	3,700.1	-1,090.5	207.7	1,109.9	0.00	0.00	
4,000.0	21.73	170.52	3,793.0	-1,127.0	213.8	1,146.9	0.00	0.00	
4,100.0	21.73	170.52	3,885.9	-1,163.5	219.9	1,183.9	0.00	0.00	
4,200.0	21.73	170.52	3,978.8	-1,200.0	226.0	1,220.9	0.00	0.00	
4,300.0	21.73	170.52	4,071.7	-1,236.5	232.1	1,257.9	0.00	0.00	
4,400.0	21.73	170.52	4,164.6	-1,273.0	238.2	1,295.0	0.00	0.00	
4,500.0	21.73	170.52	4,257.5	-1,309.5	244.3	1,332.0	0.00	0.00	
4,600.0	21.73	170.52	4,350.4	-1,346.1	250.4	1,369.0	0.00	0.00	
4,700.0	21.73	170.52	4,443.3	-1,382.6	256.5	1,406.0	0.00	0.00	
4,800.0	21.73	170.52	4,536.2	-1,419.1	262.6	1,443.0	0.00	0.00	
4,900.0	21.73	170.52	4,629.1	-1,455.6	268.7	1,480.1	0.00	0.00	

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well EMF15A-17 F17 595
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	KBE2 @ 6330.0ft
<b>Project:</b>	North Piceance	<b>MD Reference:</b>	KBE2 @ 6330.0ft
<b>Site:</b>	F17 595 Pad	<b>North Reference:</b>	True
<b>Well:</b>	EMF15A-17 F17 595	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<b>Design:</b>	Plan #4		

### Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
5,000.0	21.73	170.52	4,722.0	-1,492.1	274.8	1,517.1	0.00	0.00	
5,100.0	21.73	170.52	4,814.9	-1,528.6	280.9	1,554.1	0.00	0.00	
5,200.0	21.73	170.52	4,907.8	-1,565.2	287.0	1,591.1	0.00	0.00	
5,300.0	21.73	170.52	5,000.6	-1,601.7	293.1	1,628.2	0.00	0.00	
5,400.0	21.73	170.52	5,093.5	-1,638.2	299.2	1,665.2	0.00	0.00	
5,500.0	21.73	170.52	5,186.4	-1,674.7	305.3	1,702.2	0.00	0.00	
5,600.0	21.73	170.52	5,279.3	-1,711.2	311.4	1,739.2	0.00	0.00	
5,700.0	21.73	170.52	5,372.2	-1,747.7	317.5	1,776.2	0.00	0.00	
5,790.1	21.73	170.52	5,455.9	-1,780.6	323.0	1,809.6	0.00	0.00	Start Drop -3.00
5,800.0	21.43	170.52	5,465.1	-1,784.2	323.6	1,813.2	2.99	-2.99	
5,900.0	18.43	170.52	5,559.1	-1,817.8	329.3	1,847.3	3.00	-3.00	
6,000.0	15.43	170.52	5,654.8	-1,846.6	334.1	1,876.4	3.00	-3.00	
6,100.0	12.43	170.52	5,751.8	-1,870.3	338.0	1,900.5	3.00	-3.00	
6,200.0	9.43	170.52	5,850.0	-1,889.0	341.1	1,919.5	3.00	-3.00	
6,300.0	6.43	170.52	5,949.0	-1,902.6	343.4	1,933.3	3.00	-3.00	
6,400.0	3.43	170.52	6,048.7	-1,911.1	344.8	1,941.9	3.00	-3.00	
6,474.4	1.20	170.52	6,123.0	-1,914.1	345.3	1,944.9	3.00	-3.00	WF
6,500.0	0.43	170.52	6,148.6	-1,914.4	345.4	1,945.2	3.00	-3.00	
6,514.4	0.00	0.00	6,163.0	-1,914.5	345.4	1,945.3	3.00	-3.00	EOD; Inc=0° - TOG - EMF15A-17 F17 595 TGT
6,600.0	0.21	239.58	6,248.6	-1,914.6	345.3	1,945.4	0.25	0.25	
6,643.9	0.32	239.58	6,292.5	-1,914.7	345.1	1,945.4	0.25	0.25	
6,700.0	0.32	239.58	6,348.6	-1,914.8	344.8	1,945.5	0.00	0.00	
6,800.0	0.32	239.58	6,448.6	-1,915.1	344.3	1,945.7	0.00	0.00	
6,900.0	0.32	239.58	6,548.6	-1,915.4	343.8	1,945.9	0.00	0.00	
7,000.0	0.32	239.58	6,648.6	-1,915.7	343.3	1,946.1	0.00	0.00	
7,100.0	0.32	239.58	6,748.6	-1,916.0	342.9	1,946.3	0.00	0.00	
7,200.0	0.32	239.58	6,848.6	-1,916.3	342.4	1,946.5	0.00	0.00	
7,300.0	0.32	239.58	6,948.6	-1,916.5	341.9	1,946.7	0.00	0.00	
7,400.0	0.32	239.58	7,048.6	-1,916.8	341.4	1,946.9	0.00	0.00	
7,500.0	0.32	239.58	7,148.6	-1,917.1	340.9	1,947.1	0.00	0.00	
7,600.0	0.32	239.58	7,248.6	-1,917.4	340.4	1,947.3	0.00	0.00	
7,700.0	0.32	239.58	7,348.6	-1,917.7	339.9	1,947.5	0.00	0.00	
7,800.0	0.32	239.58	7,448.6	-1,918.0	339.5	1,947.7	0.00	0.00	
7,900.0	0.32	239.58	7,548.6	-1,918.3	339.0	1,947.9	0.00	0.00	
8,000.0	0.32	239.58	7,648.6	-1,918.5	338.5	1,948.1	0.00	0.00	
8,100.0	0.32	239.58	7,748.6	-1,918.8	338.0	1,948.3	0.00	0.00	
8,200.0	0.32	239.58	7,848.6	-1,919.1	337.5	1,948.5	0.00	0.00	
8,300.0	0.32	239.58	7,948.6	-1,919.4	337.0	1,948.7	0.00	0.00	
8,400.0	0.32	239.58	8,048.6	-1,919.7	336.5	1,948.9	0.00	0.00	
8,500.0	0.32	239.58	8,148.6	-1,920.0	336.0	1,949.1	0.00	0.00	
8,600.0	0.32	239.58	8,248.6	-1,920.3	335.6	1,949.3	0.00	0.00	
8,700.0	0.32	239.58	8,348.6	-1,920.5	335.1	1,949.5	0.00	0.00	
8,800.0	0.32	239.58	8,448.5	-1,920.8	334.6	1,949.7	0.00	0.00	
8,900.0	0.32	239.58	8,548.5	-1,921.1	334.1	1,949.9	0.00	0.00	
9,000.0	0.32	239.58	8,648.5	-1,921.4	333.6	1,950.1	0.00	0.00	
9,100.0	0.32	239.58	8,748.5	-1,921.7	333.1	1,950.3	0.00	0.00	
9,200.0	0.32	239.58	8,848.5	-1,922.0	332.6	1,950.5	0.00	0.00	
9,300.0	0.32	239.58	8,948.5	-1,922.3	332.1	1,950.7	0.00	0.00	
9,400.0	0.32	239.58	9,048.5	-1,922.6	331.7	1,950.9	0.00	0.00	
9,500.0	0.32	239.58	9,148.5	-1,922.8	331.2	1,951.1	0.00	0.00	
9,600.0	0.32	239.58	9,248.5	-1,923.1	330.7	1,951.3	0.00	0.00	
9,700.0	0.32	239.58	9,348.5	-1,923.4	330.2	1,951.5	0.00	0.00	

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well EMF15A-17 F17 595
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	KBE2 @ 6330.0ft
<b>Project:</b>	North Piceance	<b>MD Reference:</b>	KBE2 @ 6330.0ft
<b>Site:</b>	F17 595 Pad	<b>North Reference:</b>	True
<b>Well:</b>	EMF15A-17 F17 595	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<b>Design:</b>	Plan #4		

### Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Comments / Formations
9,800.0	0.32	239.58	9,448.5	-1,923.7	329.7	1,951.7	0.00	0.00	
9,900.0	0.32	239.58	9,548.5	-1,924.0	329.2	1,951.9	0.00	0.00	
10,000.0	0.32	239.58	9,648.5	-1,924.3	328.7	1,952.1	0.00	0.00	
10,074.5	0.32	239.58	9,723.0	-1,924.5	328.4	1,952.3	0.00	0.00	Rollins - EMF15A-17 F17 595 BHL
10,100.0	0.32	239.58	9,748.5	-1,924.6	328.2	1,952.3	0.00	0.00	
10,174.5	0.32	239.58	9,823.0	-1,924.8	327.9	1,952.5	0.00	0.00	Drillers TD @ 10174.5' MD
10,200.0	0.32	239.58	9,848.5	-1,924.8	327.8	1,952.5	0.00	0.00	
10,300.0	0.32	239.58	9,948.5	-1,925.1	327.3	1,952.7	0.00	0.00	
10,400.0	0.32	239.58	10,048.5	-1,925.4	326.8	1,952.9	0.00	0.00	
10,500.0	0.32	239.58	10,148.5	-1,925.7	326.3	1,953.1	0.00	0.00	
10,600.0	0.32	239.58	10,248.5	-1,926.0	325.8	1,953.3	0.00	0.00	
10,700.0	0.32	239.58	10,348.5	-1,926.3	325.3	1,953.5	0.00	0.00	
10,800.0	0.32	239.58	10,448.5	-1,926.6	324.8	1,953.7	0.00	0.00	
10,900.0	0.32	239.58	10,548.5	-1,926.8	324.4	1,953.9	0.00	0.00	
11,000.0	0.32	239.58	10,648.5	-1,927.1	323.9	1,954.1	0.00	0.00	
11,100.0	0.32	239.58	10,748.5	-1,927.4	323.4	1,954.3	0.00	0.00	
11,174.5	0.32	239.58	10,823.0	-1,927.6	323.0	1,954.5	0.00	0.00	

### 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									
EMF15A-17 F17 595 BH	0.00	0.00	9,723.0	-1,924.5	328.4	1,657,305.62	2,273,798.40	39° 36' 35.28 N	108° 4' 40.38 W
- plan hits target center									
- Rectangle (sides W30.0 H50.0 D0.0)									
EMF15A-17 F17 595 TC	0.00	0.00	6,163.0	-1,914.5	345.4	1,657,315.13	2,273,815.70	39° 36' 35.38 N	108° 4' 40.16 W
- plan hits target center									
- Point									

### Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
6,474.4	6,123.0	WF		0.00	
6,514.4	6,163.0	TOG		0.00	
10,074.5	9,723.0	Rollins		0.00	

### Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
300.0	300.0	0.0	0.0	KOP @ 300' MD
1,458.7	1,432.3	-1.7	3.6	EOB; Inc=21.73°
5,790.1	5,455.9	-199.0	58.8	Start Drop -3.00
6,514.4	6,163.0	-1,780.6	323.0	EOD; Inc=0°
10,174.5	9,823.0	-1,914.5	345.4	Drillers TD @ 10174.5' MD
11,174.5	10,823.0	-1,914.7	345.1	Permit TD @ 11174.5' MD