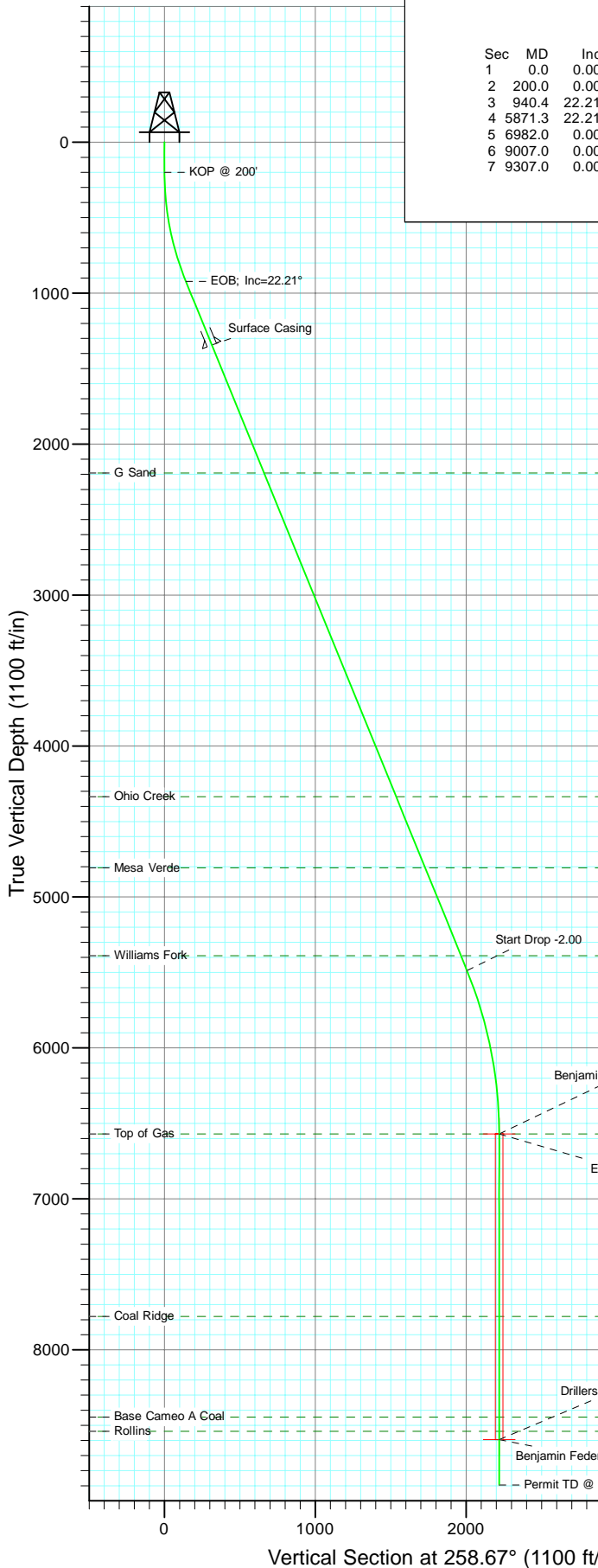
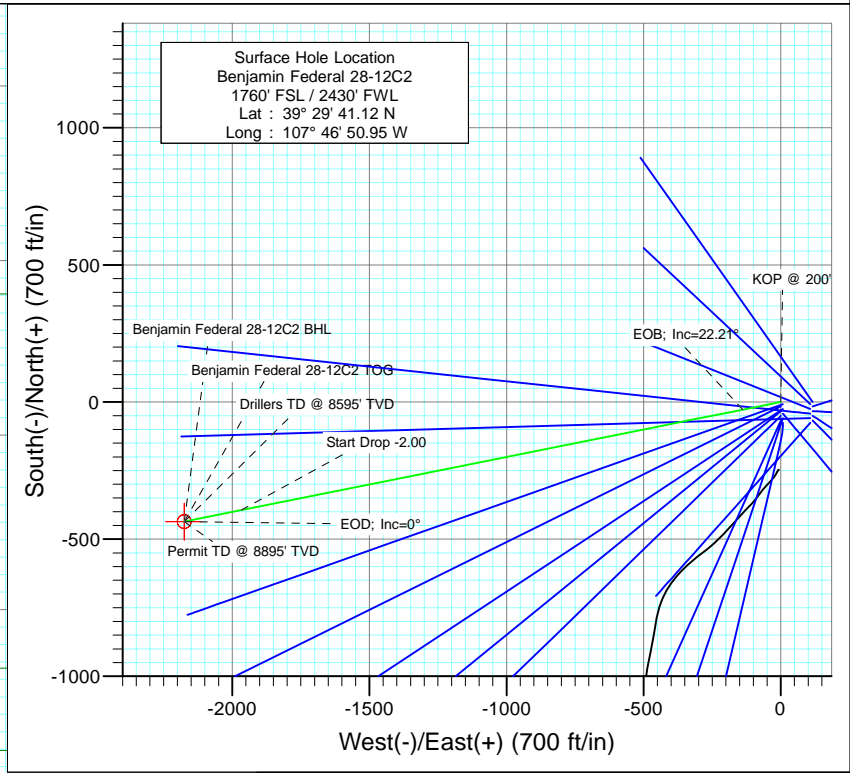




Project: Mamm Creek  
 Site: K28NW Pad  
 Well: Benjamin Federal 28-12C2  
 Wellbore: DD  
 Design: Plan #1



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	200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.0		
3	940.4	22.21	258.67	922.0	-27.9	-139.0	3.00	258.67	141.7		
4	5871.3	22.21	258.67	5487.0	-394.2	-1966.8	0.00	0.00	2005.9		
5	6982.0	0.00	0.00	6570.0	-436.0	-2175.2	2.00	180.00	2218.5	Benjamin Federal 28-12C2 TOG	
6	9007.0	0.00	0.00	8595.0	-436.0	-2175.2	0.00	0.00	2218.5	Benjamin Federal 28-12C2 BHL	
7	9307.0	0.00	0.00	8895.0	-436.0	-2175.2	0.00	0.00	2218.5		



FORMATION TOP DETAILS			
TVDPath	MDPath	Formation	
2191.0	2311.1	G Sand	0.00
4335.0	4627.0	Ohio Creek	0.00
4807.0	5136.8	Mesa Verde	0.00
5389.0	5765.5	Williams Fork	0.00
6570.0	6982.0	Top of Gas	0.00
7779.0	8191.0	Coal Ridge	0.00
8445.0	8857.0	Base Cameo A Coal	0.00
8540.0	8952.0	Rollins	0.00

Azimuths to True North  
 Magnetic North: 10.36°

Magnetic Field  
 Strength: 52406.1snT  
 Dip Angle: 65.82°  
 Date: 6/23/2010  
 Model: IGRF200510

Plan #1 Benjamin Federal 28-12C2 BHL = (1360 FSL - 240 FWL) Job # 1052xx; KR						
WELL @ 5965.0ft (Original Well Elev) North American Datum 1983 Well Benjamin Federal 28-12C2, True North						
Type	Target	MD	Azimuth	Origin	Type	N/S
Target	Benjamin Federal 28-12C2 BHL	8595.67	258.67	Slot	0.0	0.0
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	
Benjamin Federal 28-12C2 BHL	8595.0	-436.0	-2175.239° 29'	36.81 N 107° 47'	18.70 W	

# Cathedral Energy Services

## Planning Report

<b>Database:</b> EDM 5000.1 US Multi Users DB	<b>Local Co-ordinate Reference:</b> Well Benjamin Federal 28-12C2
<b>Company:</b> EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b> WELL @ 5965.0ft (Original Well Elev)
<b>Project:</b> Mamm Creek	<b>MD Reference:</b> WELL @ 5965.0ft (Original Well Elev)
<b>Site:</b> K28NW Pad	<b>North Reference:</b> True
<b>Well:</b> Benjamin Federal 28-12C2	<b>Survey Calculation Method:</b> Minimum Curvature
<b>Wellbore:</b> DD	
<b>Design:</b> Plan #1	

<b>Project</b> Mamm Creek		
<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		

<b>Site</b> K28NW Pad					
<b>Site Position:</b>		<b>Northing:</b>	1,613,160.16 ft	<b>Latitude:</b>	39.494711
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,356,412.22 ft	<b>Longitude:</b>	-107.780819
<b>Position Uncertainty:</b>	0.0 ft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b>	-1.44 °

<b>Well</b> Benjamin Federal 28-12C2						
<b>Well Position</b>	<b>+N/-S</b>	0.0 ft	<b>Northing:</b>	1,613,176.33 ft	<b>Latitude:</b>	39.494756
	<b>+E/-W</b>	0.0 ft	<b>Easting:</b>	2,356,412.47 ft	<b>Longitude:</b>	-107.780820
<b>Position Uncertainty</b>		0.0 ft	<b>Wellhead Elevation:</b>	ft	<b>Ground Level:</b>	5,943.0 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</b>
	IGRF200510	6/23/2010	(°)	(°)	(nT)
			10.36	65.82	52,406

<b>Design</b> Plan #1					
<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)</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Direction</b>	
	(ft)	(ft)	(ft)	(°)	
	0.0	0.0	0.0	258.67	

<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	
200.0	0.00	0.00	200.0	0.0	0.0	0.00	0.00	0.00	0.00	
940.4	22.21	258.67	922.0	-27.9	-139.0	3.00	3.00	0.00	258.67	
5,871.3	22.21	258.67	5,487.0	-394.2	-1,966.8	0.00	0.00	0.00	0.00	
6,982.0	0.00	0.00	6,570.0	-436.0	-2,175.2	2.00	-2.00	0.00	180.00	Benjamin Federal 28-
9,007.0	0.00	0.00	8,595.0	-436.0	-2,175.2	0.00	0.00	0.00	0.00	Benjamin Federal 28-
9,307.0	0.00	0.00	8,895.0	-436.0	-2,175.2	0.00	0.00	0.00	0.00	

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	EDM 5000.1 US Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Benjamin Federal 28-12C2
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Project:</b>	Mamm Creek	<b>MD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Site:</b>	K28NW Pad	<b>North Reference:</b>	True
<b>Well:</b>	Benjamin Federal 28-12C2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<b>Design:</b>	Plan #1		

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	KOP @ 200'
300.0	3.00	258.67	300.0	-0.5	-2.6	2.6	3.00	3.00	
400.0	6.00	258.67	399.6	-2.1	-10.3	10.5	3.00	3.00	
500.0	9.00	258.67	498.8	-4.6	-23.1	23.5	3.00	3.00	
600.0	12.00	258.67	597.1	-8.2	-40.9	41.7	3.00	3.00	
700.0	15.00	258.67	694.3	-12.8	-63.8	65.1	3.00	3.00	
800.0	18.00	258.67	790.2	-18.4	-91.7	93.5	3.00	3.00	
900.0	21.00	258.67	884.4	-24.9	-124.4	126.9	3.00	3.00	
940.4	22.21	258.67	922.0	-27.9	-139.0	141.7	3.00	3.00	EOB; Inc=22.21°
1,000.0	22.21	258.67	977.2	-32.3	-161.1	164.3	0.00	0.00	
1,100.0	22.21	258.67	1,069.7	-39.7	-198.1	202.1	0.00	0.00	
1,200.0	22.21	258.67	1,162.3	-47.1	-235.2	239.9	0.00	0.00	
1,300.0	22.21	258.67	1,254.9	-54.6	-272.3	277.7	0.00	0.00	
1,396.0	22.21	258.67	1,343.8	-61.7	-307.8	314.0	0.00	0.00	Surface Casing
1,400.0	22.21	258.67	1,347.5	-62.0	-309.3	315.5	0.00	0.00	
1,500.0	22.21	258.67	1,440.1	-69.4	-346.4	353.3	0.00	0.00	
1,600.0	22.21	258.67	1,532.6	-76.9	-383.5	391.1	0.00	0.00	
1,700.0	22.21	258.67	1,625.2	-84.3	-420.5	428.9	0.00	0.00	
1,800.0	22.21	258.67	1,717.8	-91.7	-457.6	466.7	0.00	0.00	
1,900.0	22.21	258.67	1,810.4	-99.1	-494.7	504.5	0.00	0.00	
2,000.0	22.21	258.67	1,903.0	-106.6	-531.7	542.3	0.00	0.00	
2,100.0	22.21	258.67	1,995.5	-114.0	-568.8	580.1	0.00	0.00	
2,200.0	22.21	258.67	2,088.1	-121.4	-605.9	617.9	0.00	0.00	
2,300.0	22.21	258.67	2,180.7	-128.9	-642.9	655.7	0.00	0.00	
2,311.1	22.21	258.67	2,191.0	-129.7	-647.1	659.9	0.00	0.00	G Sand
2,400.0	22.21	258.67	2,273.3	-136.3	-680.0	693.5	0.00	0.00	
2,500.0	22.21	258.67	2,365.8	-143.7	-717.1	731.3	0.00	0.00	
2,600.0	22.21	258.67	2,458.4	-151.2	-754.1	769.1	0.00	0.00	
2,700.0	22.21	258.67	2,551.0	-158.6	-791.2	806.9	0.00	0.00	
2,800.0	22.21	258.67	2,643.6	-166.0	-828.3	844.8	0.00	0.00	
2,900.0	22.21	258.67	2,736.2	-173.4	-865.3	882.6	0.00	0.00	
3,000.0	22.21	258.67	2,828.7	-180.9	-902.4	920.4	0.00	0.00	
3,100.0	22.21	258.67	2,921.3	-188.3	-939.5	958.2	0.00	0.00	
3,200.0	22.21	258.67	3,013.9	-195.7	-976.6	996.0	0.00	0.00	
3,300.0	22.21	258.67	3,106.5	-203.2	-1,013.6	1,033.8	0.00	0.00	
3,400.0	22.21	258.67	3,199.1	-210.6	-1,050.7	1,071.6	0.00	0.00	
3,500.0	22.21	258.67	3,291.6	-218.0	-1,087.8	1,109.4	0.00	0.00	
3,600.0	22.21	258.67	3,384.2	-225.4	-1,124.8	1,147.2	0.00	0.00	
3,700.0	22.21	258.67	3,476.8	-232.9	-1,161.9	1,185.0	0.00	0.00	
3,800.0	22.21	258.67	3,569.4	-240.3	-1,199.0	1,222.8	0.00	0.00	
3,900.0	22.21	258.67	3,661.9	-247.7	-1,236.0	1,260.6	0.00	0.00	
4,000.0	22.21	258.67	3,754.5	-255.2	-1,273.1	1,298.4	0.00	0.00	
4,100.0	22.21	258.67	3,847.1	-262.6	-1,310.2	1,336.2	0.00	0.00	
4,200.0	22.21	258.67	3,939.7	-270.0	-1,347.2	1,374.0	0.00	0.00	
4,300.0	22.21	258.67	4,032.3	-277.4	-1,384.3	1,411.8	0.00	0.00	
4,400.0	22.21	258.67	4,124.8	-284.9	-1,421.4	1,449.6	0.00	0.00	
4,500.0	22.21	258.67	4,217.4	-292.3	-1,458.4	1,487.4	0.00	0.00	
4,600.0	22.21	258.67	4,310.0	-299.7	-1,495.5	1,525.2	0.00	0.00	
4,627.0	22.21	258.67	4,335.0	-301.7	-1,505.5	1,535.5	0.00	0.00	Ohio Creek
4,700.0	22.21	258.67	4,402.6	-307.2	-1,532.6	1,563.0	0.00	0.00	

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	EDM 5000.1 US Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Benjamin Federal 28-12C2
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Project:</b>	Mamm Creek	<b>MD Reference:</b>	WELL @ 5965.0ft (Original Well Elev)
<b>Site:</b>	K28NW Pad	<b>North Reference:</b>	True
<b>Well:</b>	Benjamin Federal 28-12C2	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	DD		
<b>Design:</b>	Plan #1		

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
4,800.0	22.21	258.67	4,495.2	-314.6	-1,569.6	1,600.9	0.00	0.00	
4,900.0	22.21	258.67	4,587.7	-322.0	-1,606.7	1,638.7	0.00	0.00	
5,000.0	22.21	258.67	4,680.3	-329.5	-1,643.8	1,676.5	0.00	0.00	
5,100.0	22.21	258.67	4,772.9	-336.9	-1,680.8	1,714.3	0.00	0.00	
5,136.8	22.21	258.67	4,807.0	-339.6	-1,694.5	1,728.2	0.00	0.00	Mesa Verde
5,200.0	22.21	258.67	4,865.5	-344.3	-1,717.9	1,752.1	0.00	0.00	
5,300.0	22.21	258.67	4,958.0	-351.7	-1,755.0	1,789.9	0.00	0.00	
5,400.0	22.21	258.67	5,050.6	-359.2	-1,792.0	1,827.7	0.00	0.00	
5,500.0	22.21	258.67	5,143.2	-366.6	-1,829.1	1,865.5	0.00	0.00	
5,600.0	22.21	258.67	5,235.8	-374.0	-1,866.2	1,903.3	0.00	0.00	
5,700.0	22.21	258.67	5,328.4	-381.5	-1,903.2	1,941.1	0.00	0.00	
5,765.5	22.21	258.67	5,389.0	-386.3	-1,927.5	1,965.9	0.00	0.00	Williams Fork
5,800.0	22.21	258.67	5,420.9	-388.9	-1,940.3	1,978.9	0.00	0.00	
5,871.3	22.21	258.67	5,487.0	-394.2	-1,966.8	2,005.9	0.00	0.00	Start Drop -2.00
5,900.0	21.64	258.67	5,513.6	-396.3	-1,977.3	2,016.6	2.00	-2.00	
6,000.0	19.64	258.67	5,607.1	-403.2	-2,011.8	2,051.8	2.00	-2.00	
6,100.0	17.64	258.67	5,701.9	-409.5	-2,043.1	2,083.8	2.00	-2.00	
6,200.0	15.64	258.67	5,797.7	-415.1	-2,071.2	2,112.4	2.00	-2.00	
6,300.0	13.64	258.67	5,894.5	-420.1	-2,096.0	2,137.7	2.00	-2.00	
6,400.0	11.64	258.67	5,992.0	-424.4	-2,117.5	2,159.6	2.00	-2.00	
6,500.0	9.64	258.67	6,090.3	-428.0	-2,135.6	2,178.0	2.00	-2.00	
6,600.0	7.64	258.67	6,189.2	-431.0	-2,150.3	2,193.1	2.00	-2.00	
6,700.0	5.64	258.67	6,288.5	-433.2	-2,161.6	2,204.6	2.00	-2.00	
6,800.0	3.64	258.67	6,388.2	-434.8	-2,169.6	2,212.7	2.00	-2.00	
6,900.0	1.64	258.67	6,488.0	-435.7	-2,174.1	2,217.3	2.00	-2.00	
6,982.0	0.00	0.00	6,570.0	-436.0	-2,175.2	2,218.5	2.00	-2.00	EOD; Inc=0° - Top of Gas - Benjamin Federal 2
7,000.0	0.00	0.00	6,588.0	-436.0	-2,175.2	2,218.5	0.00	0.00	
7,100.0	0.00	0.00	6,688.0	-436.0	-2,175.2	2,218.5	0.00	0.00	
7,200.0	0.00	0.00	6,788.0	-436.0	-2,175.2	2,218.5	0.00	0.00	
7,300.0	0.00	0.00	6,888.0	-436.0	-2,175.2	2,218.5	0.00	0.00	
7,400.0	0.00	0.00	6,988.0	-436.0	-2,175.2	2,218.5	0.00	0.00	
7,500.0	0.00	0.00	7,088.0	-436.0	-2,175.2	2,218.5	0.00	0.00	
7,600.0	0.00	0.00	7,188.0	-436.0	-2,175.2	2,218.5	0.00	0.00	
7,700.0	0.00	0.00	7,288.0	-436.0	-2,175.2	2,218.5	0.00	0.00	
7,800.0	0.00	0.00	7,388.0	-436.0	-2,175.2	2,218.5	0.00	0.00	
7,900.0	0.00	0.00	7,488.0	-436.0	-2,175.2	2,218.5	0.00	0.00	
8,000.0	0.00	0.00	7,588.0	-436.0	-2,175.2	2,218.5	0.00	0.00	
8,100.0	0.00	0.00	7,688.0	-436.0	-2,175.2	2,218.5	0.00	0.00	
8,191.0	0.00	0.00	7,779.0	-436.0	-2,175.2	2,218.5	0.00	0.00	Coal Ridge
8,200.0	0.00	0.00	7,788.0	-436.0	-2,175.2	2,218.5	0.00	0.00	
8,300.0	0.00	0.00	7,888.0	-436.0	-2,175.2	2,218.5	0.00	0.00	
8,400.0	0.00	0.00	7,988.0	-436.0	-2,175.2	2,218.5	0.00	0.00	
8,500.0	0.00	0.00	8,088.0	-436.0	-2,175.2	2,218.5	0.00	0.00	
8,600.0	0.00	0.00	8,188.0	-436.0	-2,175.2	2,218.5	0.00	0.00	
8,700.0	0.00	0.00	8,288.0	-436.0	-2,175.2	2,218.5	0.00	0.00	
8,800.0	0.00	0.00	8,388.0	-436.0	-2,175.2	2,218.5	0.00	0.00	
8,857.0	0.00	0.00	8,445.0	-436.0	-2,175.2	2,218.5	0.00	0.00	Base Cameo A Coal
8,900.0	0.00	0.00	8,488.0	-436.0	-2,175.2	2,218.5	0.00	0.00	
8,952.0	0.00	0.00	8,540.0	-436.0	-2,175.2	2,218.5	0.00	0.00	Rollins
9,000.0	0.00	0.00	8,588.0	-436.0	-2,175.2	2,218.5	0.00	0.00	
9,007.0	0.00	0.00	8,595.0	-436.0	-2,175.2	2,218.5	0.00	0.00	Drillers TD @ 8595' TVD - Benjamin Federal 28
9,100.0	0.00	0.00	8,688.0	-436.0	-2,175.2	2,218.5	0.00	0.00	

# Cathedral Energy Services

## Planning Report

**Database:** EDM 5000.1 US Multi Users DB  
**Company:** EnCana Oil & Gas (USA) Inc  
**Project:** Mamm Creek  
**Site:** K28NW Pad  
**Well:** Benjamin Federal 28-12C2  
**Wellbore:** DD  
**Design:** Plan #1

**Local Co-ordinate Reference:** Well Benjamin Federal 28-12C2  
**TVD Reference:** WELL @ 5965.0ft (Original Well Elev)  
**MD Reference:** WELL @ 5965.0ft (Original Well Elev)  
**North Reference:** True  
**Survey Calculation Method:** Minimum Curvature

### 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
9,200.0	0.00	0.00	8,788.0	-436.0	-2,175.2	2,218.5	0.00	0.00	
9,300.0	0.00	0.00	8,888.0	-436.0	-2,175.2	2,218.5	0.00	0.00	
9,307.0	0.00	0.00	8,895.0	-436.0	-2,175.2	2,218.5	0.00	0.00	Permit TD @ 8895' TVD

### 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
Benjamin Federal 28-12' - plan hits target center - Point	0.00	0.00	6,570.0	-436.0	-2,175.2	1,612,795.11	2,354,226.99	39.493558	-107.788528
Benjamin Federal 28-12' - plan hits target center - Circle (radius 25.0)	0.00	0.00	8,595.0	-436.0	-2,175.2	1,612,795.11	2,354,226.99	39.493558	-107.788528

### Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
1,396.0	1,343.8	Surface Casing	5.500	6.000

### Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,311.1	2,191.0	G Sand		0.00	
4,627.0	4,335.0	Ohio Creek		0.00	
5,136.8	4,807.0	Mesa Verde		0.00	
5,765.5	5,389.0	Williams Fork		0.00	
6,982.0	6,570.0	Top of Gas		0.00	
8,191.0	7,779.0	Coal Ridge		0.00	
8,857.0	8,445.0	Base Cameo A Coal		0.00	
8,952.0	8,540.0	Rollins		0.00	

### Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
200.0	200.0	0.0	0.0	KOP @ 200'
940.4	922.0	-27.9	-139.0	EOB; Inc=22.21°
5,871.3	5,487.0	-394.2	-1,966.8	Start Drop -2.00
6,982.0	6,570.0	-436.0	-2,175.2	EOD; Inc=0°
9,007.0	8,595.0	-436.0	-2,175.2	Drillers TD @ 8595' TVD
9,307.0	8,895.0	-436.0	-2,175.2	Permit TD @ 8895' TVD