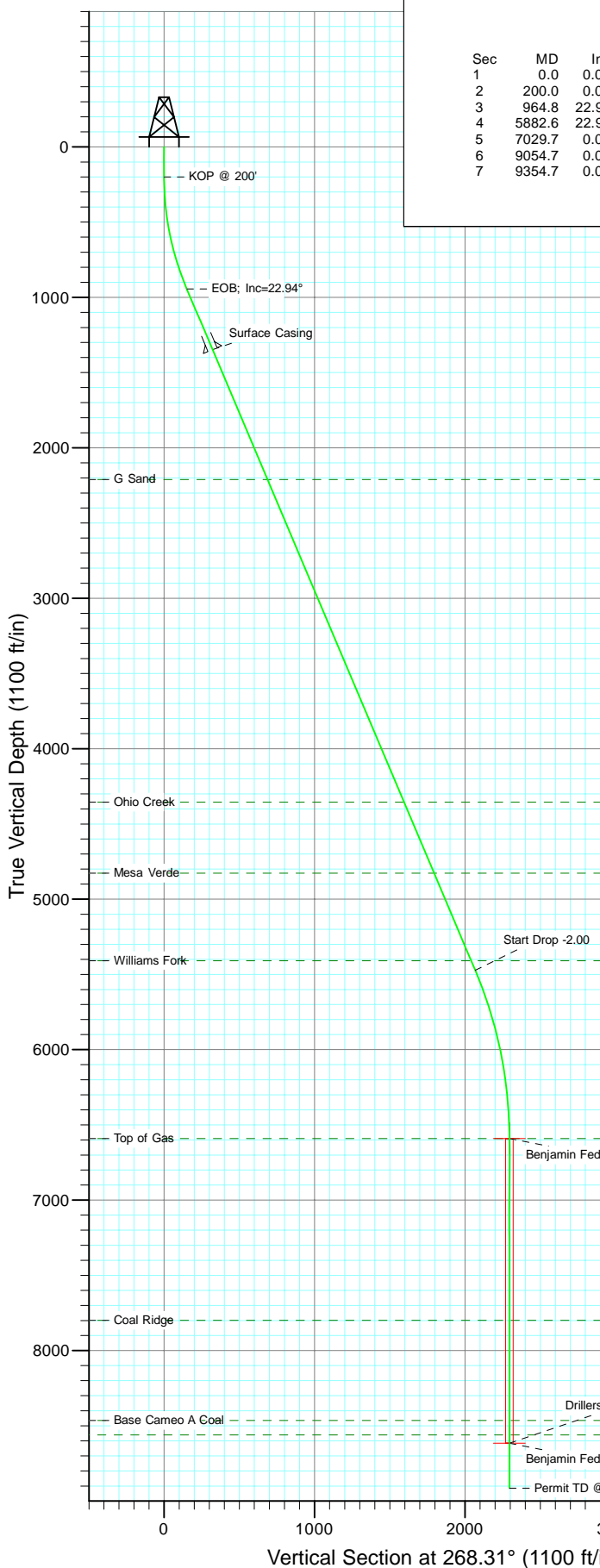


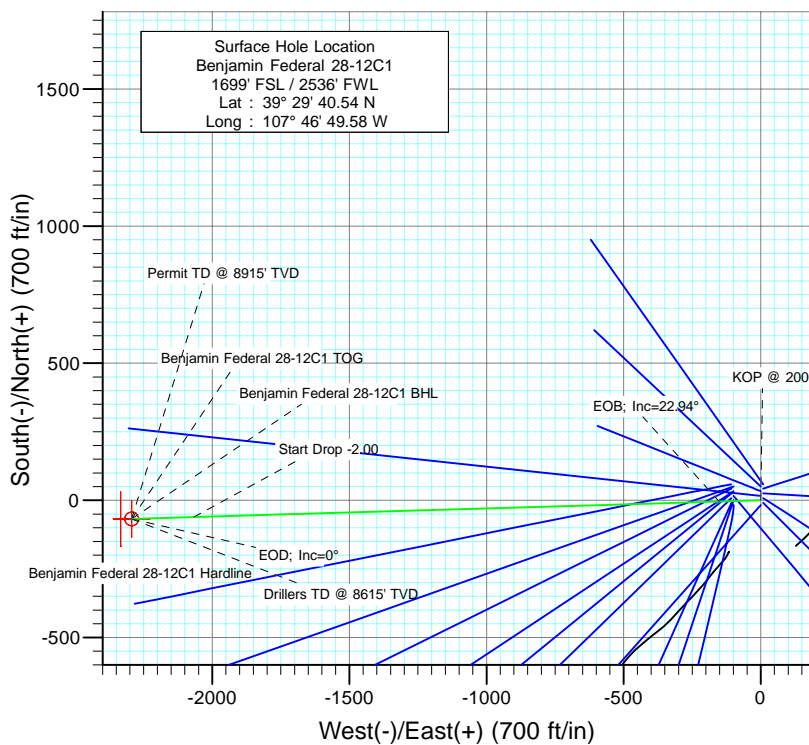


Project: Mamm Creek
Site: K28NW Pad
Well: Benjamin Federal 28-12C1
Wellbore: DD
Design: Plan #1



SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	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	964.8	22.94	268.31	944.5	-4.5	-151.0	3.00	268.31	151.1	
4	5882.6	22.94	268.31	5473.3	-61.0	-2067.2	0.00	0.00	2068.1	
5	7029.7	0.00	0.00	6590.0	-67.7	-2293.7	2.00	180.00	2294.7	Benjamin Federal 28-12C1 TOG
6	9054.7	0.00	0.00	8615.0	-67.7	-2293.7	0.00	0.00	2294.7	Benjamin Federal 28-12C1 BHL
7	9354.7	0.00	0.00	8915.0	-67.7	-2293.7	0.00	0.00	2294.7	



FORMATION TOP DETAILS

TVDPath	MDPath	Formation
2211.0	2340.1	G Sand
4355.0	4668.2	Ohio Creek
4827.0	5180.8	Mesa Verde
5409.0	5812.8	Williams Fork
6590.0	7029.7	Top of Gas
7799.0	8238.7	Coal Ridge
8465.0	8904.7	Base Cameo A Coal
8560.0	8999.7	Rollins



Azimuths to True North
Magnetic North: 10.36°

Magnetic Field
Strength: 52406.0nT
Dip Angle: 65.82°
Date: 6/23/2010
Model: IGRF200510

Plan #1
Benjamin Federal 28-12C1
BHL = (1670 FSL - 240 FWL) Job #10xxx: KR
WELL @ 5965.0ft (Original Well Elev)
North American Datum 1983
Well Benjamin Federal 28-12C1, True North

Type	Target	Azimuth	Origin	Type	N/S	E/W	From	TVD
Target	Benjamin Federal 28-12C1 BHL	268.31	Slot		0.0	0.0		0.0
Name		TVD	+N/-S	+E/-W	Latitude	Longitude		
Benjamin Federal 28-12C1 BHL	8615.0	-67.7	-2293.739	29' 39.87 N 107° 47' 18.84 W				

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well Benjamin Federal 28-12C1
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 5965.0ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	WELL @ 5965.0ft (Original Well Elev)
Site:	K28NW Pad	North Reference:	True
Well:	Benjamin Federal 28-12C1	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Project	Mamm Creek		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

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

Well	Benjamin Federal 28-12C1					
Well Position	+N/-S	0.0 ft	Northing:	1,613,114.97 ft	Latitude:	39.494594
	+E/-W	0.0 ft	Easting:	2,356,518.52 ft	Longitude:	-107.780439
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	5,943.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	6/23/2010	10.36	65.82	52,406

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(ft)	(ft)	(ft)	(°)
	0.0	0.0	0.0	268.31

Plan Sections										
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	
964.8	22.94	268.31	944.5	-4.5	-151.0	3.00	3.00	0.00	268.31	
5,882.6	22.94	268.31	5,473.3	-61.0	-2,067.2	0.00	0.00	0.00	0.00	
7,029.7	0.00	0.00	6,590.0	-67.7	-2,293.7	2.00	-2.00	0.00	180.00	Benjamin Federal 28-
9,054.7	0.00	0.00	8,615.0	-67.7	-2,293.7	0.00	0.00	0.00	0.00	Benjamin Federal 28-
9,354.7	0.00	0.00	8,915.0	-67.7	-2,293.7	0.00	0.00	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well Benjamin Federal 28-12C1
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 5965.0ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	WELL @ 5965.0ft (Original Well Elev)
Site:	K28NW Pad	North Reference:	True
Well:	Benjamin Federal 28-12C1	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	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	Benjamin Federal 28-12C1 Hardline
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	268.31	300.0	-0.1	-2.6	2.6	3.00	3.00	
400.0	6.00	268.31	399.6	-0.3	-10.5	10.5	3.00	3.00	
500.0	9.00	268.31	498.8	-0.7	-23.5	23.5	3.00	3.00	
600.0	12.00	268.31	597.1	-1.2	-41.7	41.7	3.00	3.00	
700.0	15.00	268.31	694.3	-1.9	-65.0	65.1	3.00	3.00	
800.0	18.00	268.31	790.2	-2.8	-93.4	93.5	3.00	3.00	
900.0	21.00	268.31	884.4	-3.7	-126.8	126.9	3.00	3.00	
964.8	22.94	268.31	944.5	-4.5	-151.0	151.1	3.00	3.00	EOB; Inc=22.94°
1,000.0	22.94	268.31	976.9	-4.9	-164.7	164.8	0.00	0.00	
1,100.0	22.94	268.31	1,069.0	-6.0	-203.7	203.8	0.00	0.00	
1,200.0	22.94	268.31	1,161.1	-7.2	-242.7	242.8	0.00	0.00	
1,300.0	22.94	268.31	1,253.2	-8.3	-281.6	281.8	0.00	0.00	
1,400.0	22.94	268.31	1,345.3	-9.5	-320.6	320.7	0.00	0.00	
1,403.0	22.94	268.31	1,348.1	-9.5	-321.8	321.9	0.00	0.00	Surface Casing
1,500.0	22.94	268.31	1,437.4	-10.6	-359.6	359.7	0.00	0.00	
1,600.0	22.94	268.31	1,529.5	-11.8	-398.5	398.7	0.00	0.00	
1,700.0	22.94	268.31	1,621.6	-12.9	-437.5	437.7	0.00	0.00	
1,800.0	22.94	268.31	1,713.7	-14.1	-476.5	476.7	0.00	0.00	
1,900.0	22.94	268.31	1,805.7	-15.2	-515.4	515.6	0.00	0.00	
2,000.0	22.94	268.31	1,897.8	-16.4	-554.4	554.6	0.00	0.00	
2,100.0	22.94	268.31	1,989.9	-17.5	-593.4	593.6	0.00	0.00	
2,200.0	22.94	268.31	2,082.0	-18.7	-632.3	632.6	0.00	0.00	
2,300.0	22.94	268.31	2,174.1	-19.8	-671.3	671.6	0.00	0.00	
2,340.1	22.94	268.31	2,211.0	-20.3	-686.9	687.2	0.00	0.00	G Sand
2,400.0	22.94	268.31	2,266.2	-21.0	-710.2	710.6	0.00	0.00	
2,500.0	22.94	268.31	2,358.3	-22.1	-749.2	749.5	0.00	0.00	
2,600.0	22.94	268.31	2,450.4	-23.3	-788.2	788.5	0.00	0.00	
2,700.0	22.94	268.31	2,542.5	-24.4	-827.1	827.5	0.00	0.00	
2,800.0	22.94	268.31	2,634.5	-25.6	-866.1	866.5	0.00	0.00	
2,900.0	22.94	268.31	2,726.6	-26.7	-905.1	905.5	0.00	0.00	
3,000.0	22.94	268.31	2,818.7	-27.9	-944.0	944.4	0.00	0.00	
3,100.0	22.94	268.31	2,910.8	-29.0	-983.0	983.4	0.00	0.00	
3,200.0	22.94	268.31	3,002.9	-30.2	-1,022.0	1,022.4	0.00	0.00	
3,300.0	22.94	268.31	3,095.0	-31.3	-1,060.9	1,061.4	0.00	0.00	
3,400.0	22.94	268.31	3,187.1	-32.5	-1,099.9	1,100.4	0.00	0.00	
3,500.0	22.94	268.31	3,279.2	-33.6	-1,138.8	1,139.3	0.00	0.00	
3,600.0	22.94	268.31	3,371.3	-34.7	-1,177.8	1,178.3	0.00	0.00	
3,700.0	22.94	268.31	3,463.4	-35.9	-1,216.8	1,217.3	0.00	0.00	
3,800.0	22.94	268.31	3,555.4	-37.0	-1,255.7	1,256.3	0.00	0.00	
3,900.0	22.94	268.31	3,647.5	-38.2	-1,294.7	1,295.3	0.00	0.00	
4,000.0	22.94	268.31	3,739.6	-39.3	-1,333.7	1,334.3	0.00	0.00	
4,100.0	22.94	268.31	3,831.7	-40.5	-1,372.6	1,373.2	0.00	0.00	
4,200.0	22.94	268.31	3,923.8	-41.6	-1,411.6	1,412.2	0.00	0.00	
4,300.0	22.94	268.31	4,015.9	-42.8	-1,450.6	1,451.2	0.00	0.00	
4,400.0	22.94	268.31	4,108.0	-43.9	-1,489.5	1,490.2	0.00	0.00	
4,500.0	22.94	268.31	4,200.1	-45.1	-1,528.5	1,529.2	0.00	0.00	
4,600.0	22.94	268.31	4,292.2	-46.2	-1,567.5	1,568.1	0.00	0.00	
4,668.2	22.94	268.31	4,355.0	-47.0	-1,594.0	1,594.7	0.00	0.00	Ohio Creek
4,700.0	22.94	268.31	4,384.2	-47.4	-1,606.4	1,607.1	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well Benjamin Federal 28-12C1
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 5965.0ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	WELL @ 5965.0ft (Original Well Elev)
Site:	K28NW Pad	North Reference:	True
Well:	Benjamin Federal 28-12C1	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	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	22.94	268.31	4,476.3	-48.5	-1,645.4	1,646.1	0.00	0.00	
4,900.0	22.94	268.31	4,568.4	-49.7	-1,684.3	1,685.1	0.00	0.00	
5,000.0	22.94	268.31	4,660.5	-50.8	-1,723.3	1,724.1	0.00	0.00	
5,100.0	22.94	268.31	4,752.6	-52.0	-1,762.3	1,763.0	0.00	0.00	
5,180.8	22.94	268.31	4,827.0	-52.9	-1,793.8	1,794.5	0.00	0.00	Mesa Verde
5,200.0	22.94	268.31	4,844.7	-53.1	-1,801.2	1,802.0	0.00	0.00	
5,300.0	22.94	268.31	4,936.8	-54.3	-1,840.2	1,841.0	0.00	0.00	
5,400.0	22.94	268.31	5,028.9	-55.4	-1,879.2	1,880.0	0.00	0.00	
5,500.0	22.94	268.31	5,121.0	-56.6	-1,918.1	1,919.0	0.00	0.00	
5,600.0	22.94	268.31	5,213.1	-57.7	-1,957.1	1,957.9	0.00	0.00	
5,700.0	22.94	268.31	5,305.1	-58.9	-1,996.1	1,996.9	0.00	0.00	
5,800.0	22.94	268.31	5,397.2	-60.0	-2,035.0	2,035.9	0.00	0.00	
5,812.8	22.94	268.31	5,409.0	-60.2	-2,040.0	2,040.9	0.00	0.00	Williams Fork
5,882.6	22.94	268.31	5,473.3	-61.0	-2,067.2	2,068.1	0.00	0.00	Start Drop -2.00
5,900.0	22.59	268.31	5,489.3	-61.2	-2,073.9	2,074.8	2.00	-2.00	
6,000.0	20.59	268.31	5,582.3	-62.3	-2,110.7	2,111.6	2.00	-2.00	
6,100.0	18.59	268.31	5,676.5	-63.3	-2,144.2	2,145.2	2.00	-2.00	
6,200.0	16.59	268.31	5,771.8	-64.2	-2,174.5	2,175.4	2.00	-2.00	
6,300.0	14.59	268.31	5,868.2	-64.9	-2,201.3	2,202.3	2.00	-2.00	
6,400.0	12.59	268.31	5,965.3	-65.6	-2,224.8	2,225.8	2.00	-2.00	
6,500.0	10.59	268.31	6,063.3	-66.2	-2,244.9	2,245.9	2.00	-2.00	
6,600.0	8.59	268.31	6,161.9	-66.7	-2,261.6	2,262.6	2.00	-2.00	
6,700.0	6.59	268.31	6,261.0	-67.1	-2,274.8	2,275.8	2.00	-2.00	
6,800.0	4.59	268.31	6,360.5	-67.4	-2,284.5	2,285.5	2.00	-2.00	
6,900.0	2.59	268.31	6,460.3	-67.6	-2,290.8	2,291.8	2.00	-2.00	
7,000.0	0.59	268.31	6,560.3	-67.7	-2,293.6	2,294.6	2.00	-2.00	
7,029.7	0.00	0.00	6,590.0	-67.7	-2,293.7	2,294.7	2.00	-2.00	EOD; Inc=0° - Top of Gas - Benjamin Federal 2
7,100.0	0.00	0.00	6,660.3	-67.7	-2,293.7	2,294.7	0.00	0.00	
7,200.0	0.00	0.00	6,760.3	-67.7	-2,293.7	2,294.7	0.00	0.00	
7,300.0	0.00	0.00	6,860.3	-67.7	-2,293.7	2,294.7	0.00	0.00	
7,400.0	0.00	0.00	6,960.3	-67.7	-2,293.7	2,294.7	0.00	0.00	
7,500.0	0.00	0.00	7,060.3	-67.7	-2,293.7	2,294.7	0.00	0.00	
7,600.0	0.00	0.00	7,160.3	-67.7	-2,293.7	2,294.7	0.00	0.00	
7,700.0	0.00	0.00	7,260.3	-67.7	-2,293.7	2,294.7	0.00	0.00	
7,800.0	0.00	0.00	7,360.3	-67.7	-2,293.7	2,294.7	0.00	0.00	
7,900.0	0.00	0.00	7,460.3	-67.7	-2,293.7	2,294.7	0.00	0.00	
8,000.0	0.00	0.00	7,560.3	-67.7	-2,293.7	2,294.7	0.00	0.00	
8,100.0	0.00	0.00	7,660.3	-67.7	-2,293.7	2,294.7	0.00	0.00	
8,200.0	0.00	0.00	7,760.3	-67.7	-2,293.7	2,294.7	0.00	0.00	
8,238.7	0.00	0.00	7,799.0	-67.7	-2,293.7	2,294.7	0.00	0.00	Coal Ridge
8,300.0	0.00	0.00	7,860.3	-67.7	-2,293.7	2,294.7	0.00	0.00	
8,400.0	0.00	0.00	7,960.3	-67.7	-2,293.7	2,294.7	0.00	0.00	
8,500.0	0.00	0.00	8,060.3	-67.7	-2,293.7	2,294.7	0.00	0.00	
8,600.0	0.00	0.00	8,160.3	-67.7	-2,293.7	2,294.7	0.00	0.00	
8,700.0	0.00	0.00	8,260.3	-67.7	-2,293.7	2,294.7	0.00	0.00	
8,800.0	0.00	0.00	8,360.3	-67.7	-2,293.7	2,294.7	0.00	0.00	
8,900.0	0.00	0.00	8,460.3	-67.7	-2,293.7	2,294.7	0.00	0.00	
8,904.7	0.00	0.00	8,465.0	-67.7	-2,293.7	2,294.7	0.00	0.00	Base Cameo A Coal
8,999.7	0.00	0.00	8,560.0	-67.7	-2,293.7	2,294.7	0.00	0.00	Rollins
9,000.0	0.00	0.00	8,560.3	-67.7	-2,293.7	2,294.7	0.00	0.00	
9,054.7	0.00	0.00	8,615.0	-67.7	-2,293.7	2,294.7	0.00	0.00	Drillers TD @ 8615' TVD - Benjamin Federal 28
9,100.0	0.00	0.00	8,660.3	-67.7	-2,293.7	2,294.7	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well Benjamin Federal 28-12C1
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 5965.0ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	WELL @ 5965.0ft (Original Well Elev)
Site:	K28NW Pad	North Reference:	True
Well:	Benjamin Federal 28-12C1	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	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
9,200.0	0.00	0.00	8,760.3	-67.7	-2,293.7	2,294.7	0.00	0.00	
9,300.0	0.00	0.00	8,860.3	-67.7	-2,293.7	2,294.7	0.00	0.00	
9,354.7	0.00	0.00	8,915.0	-67.7	-2,293.7	2,294.7	0.00	0.00	Permit TD @ 8915' 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 - Circle (radius 25.0)	0.00	0.00	8,615.0	-67.7	-2,293.7	1,613,104.89	2,354,223.82	39.494408	-107.788567
Benjamin Federal 28-12' - plan hits target center - Point	0.00	0.00	6,590.0	-67.7	-2,293.7	1,613,104.89	2,354,223.82	39.494408	-107.788567
Benjamin Federal 28-12' - plan misses target center by 8915.4ft at 0.0ft MD (0.0 TVD, 0.0 N, 0.0 E) - Polygon	0.00	0.00	-8,615.0	-67.7	-2,293.7	1,613,104.89	2,354,223.82	39.494408	-107.788567
Point 1			-8,615.0	100.0	-40.0	1,613,205.86	2,354,186.34		
Point 2			-8,615.0	-100.0	-40.0	1,613,005.92	2,354,181.32		

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
1,403.0	1,348.1	Surface Casing		

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,340.1	2,211.0	G Sand			
4,668.2	4,355.0	Ohio Creek			
5,180.8	4,827.0	Mesa Verde			
5,812.8	5,409.0	Williams Fork			
7,029.7	6,590.0	Top of Gas			
8,238.7	7,799.0	Coal Ridge			
8,904.7	8,465.0	Base Cameo A Coal			
8,999.7	8,560.0	Rollins			

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well Benjamin Federal 28-12C1
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 5965.0ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	WELL @ 5965.0ft (Original Well Elev)
Site:	K28NW Pad	North Reference:	True
Well:	Benjamin Federal 28-12C1	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

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'
964.8	944.5	-4.5	-151.0	EOB; Inc=22.94°
5,882.6	5,473.3	-61.0	-2,067.2	Start Drop -2.00
7,029.7	6,590.0	-67.7	-2,293.7	EOD; Inc=0°
9,054.7	8,615.0	-67.7	-2,293.7	Drillers TD @ 8615' TVD
9,354.7	8,915.0	-67.7	-2,293.7	Permit TD @ 8915' TVD