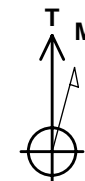
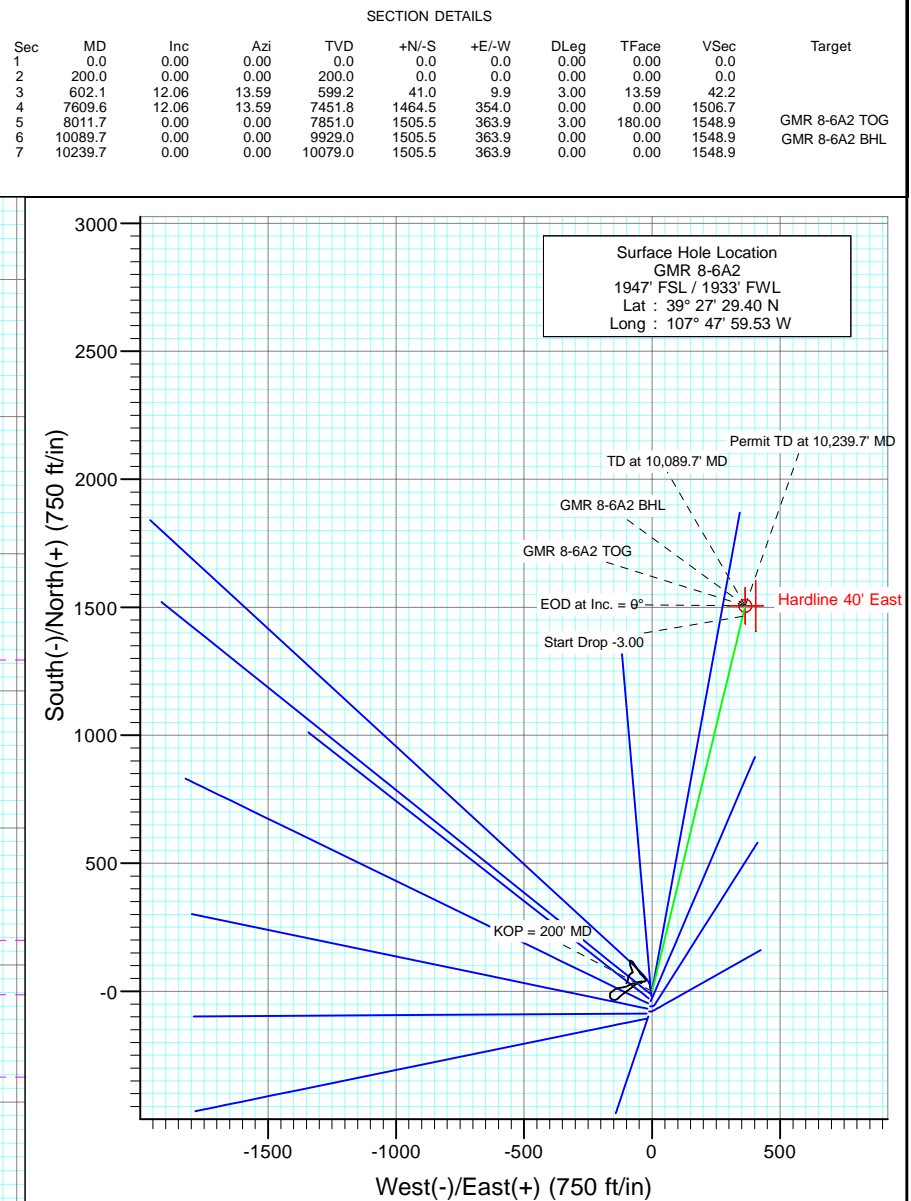
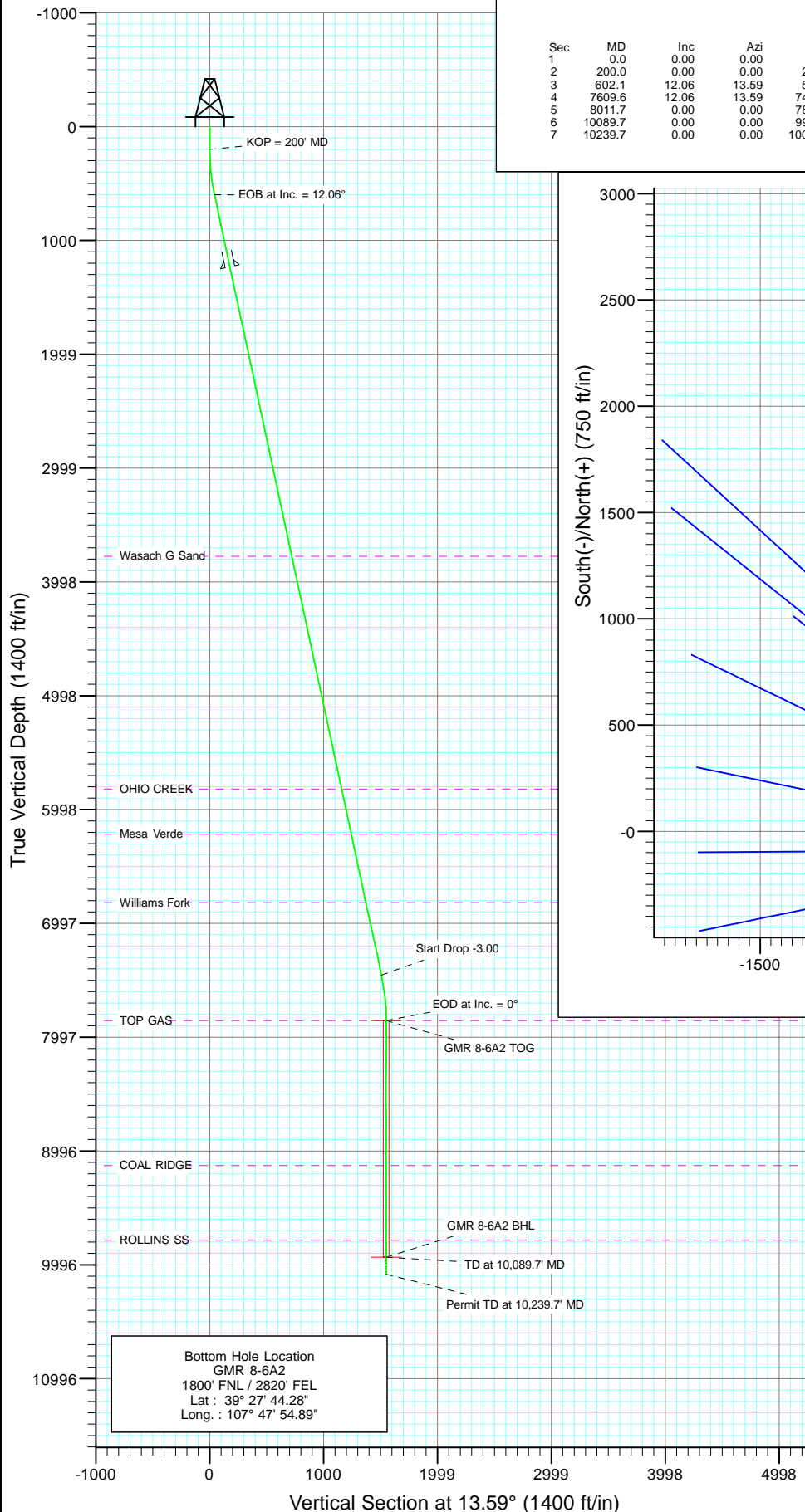




Project: Mamm Creek
Site: NESW S8 T7S R93W (K8W Pad)
Well: GMR 8-6A2
Wellbore: DD
Design: Plan #1



Azimuths to True North
Magnetic North: 10.45°

Magnetic Field
Strength: 52432.2snT
Dip Angle: 65.80°
Date: 10/28/2009
Model: IGRF200510

FORMATION TOP DETAILS

TVDPath	MDPath	Formation
3773.0	3847.6	Wasach G Sand
5817.0	5937.8	OHIO CREEK
6215.0	6344.8	Mesa Verde
6816.0	6959.4	Williams Fork
7851.0	8011.7	TOP GAS
9124.0	9284.7	COAL RIDGE
9779.0	9939.7	ROLLINS SS

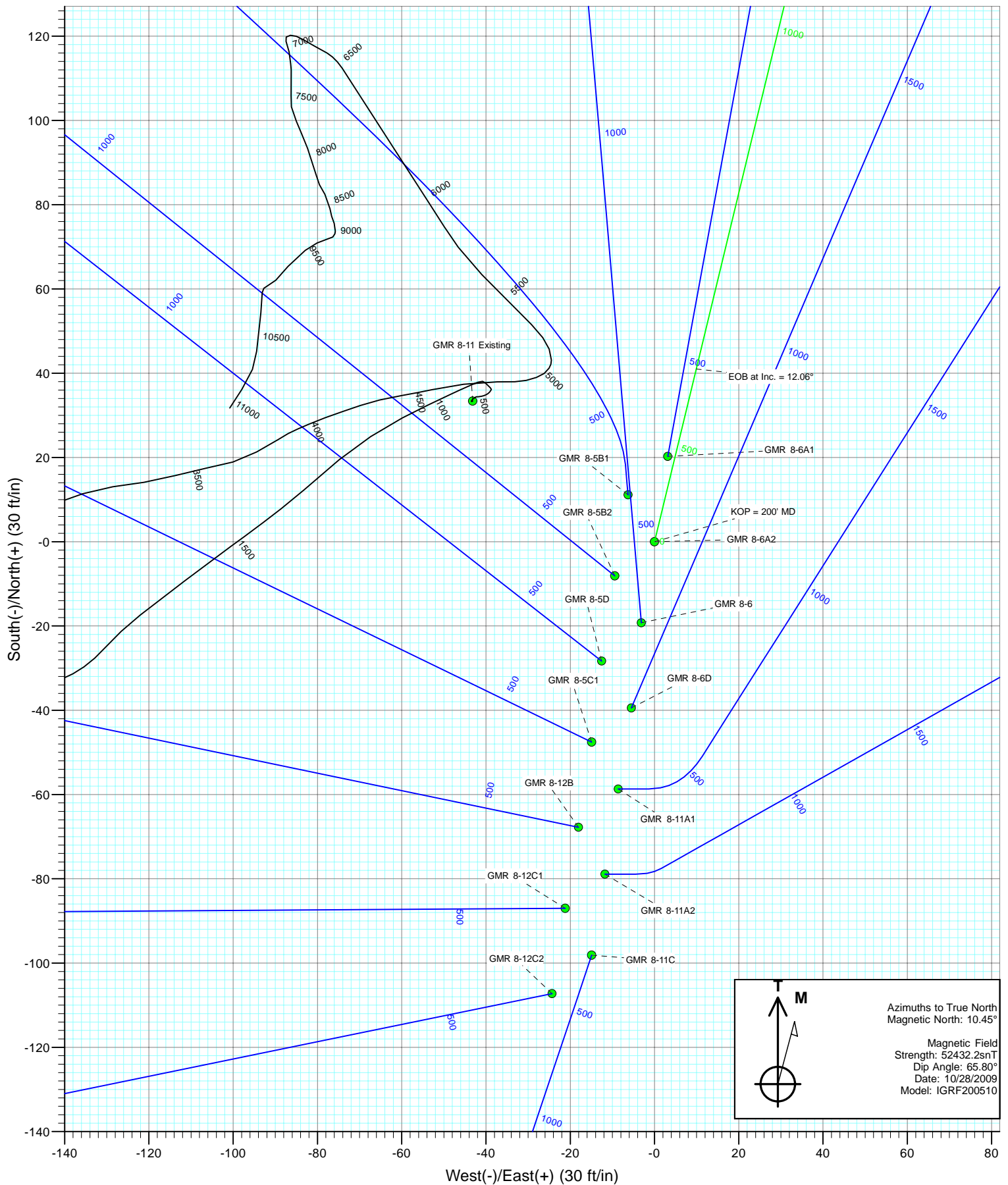
DESIGN DETAILS: Plan #1

Job #95xxx: KR
KBE @ 7848.0ft (Original Well Elev)

Target	Azimuth	Origin	N/S	E/W	From TVD
GMR 8-6A2 BHL	13.59	Slot	0.0	0.0	0.0



Project: Mamm Creek
Site: NESW S8 T7S R93W (K8W Pad)
Well: GMR 8-6A2
Wellbore: DD
Design: Plan #1



Planning Report

Database:	US EDM 2003.21 Multi User Db	Local Co-ordinate Reference:	Well GMR 8-6A2
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KBE @ 7848.0ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	KBE @ 7848.0ft (Original Well Elev)
Site:	NESW S8 T7S R93W (K8W Pad)	North Reference:	True
Well:	GMR 8-6A2	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		NESW S8 T7S R93W (K8W Pad)			
Site Position:		Northing:	1,599,999.23 ft	Latitude:	39.458194
From:	Lat/Long	Easting:	2,350,698.86 ft	Longitude:	-107.799878
Position Uncertainty:	0.0 ft	Slot Radius:	in	Grid Convergence:	-1.45 °

Well	GMR 8-6A2					
Well Position	+N/-S	0.0 ft	Northing:	1,599,989.05 ft	Latitude:	39.458167
	+E/-W	0.0 ft	Easting:	2,350,700.96 ft	Longitude:	-107.799869
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	7,826.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	10/28/2009	10.45	65.80	52,432

Design	Plan #1			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	13.59

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	
602.1	12.06	13.59	599.2	41.0	9.9	3.00	3.00	0.00	13.59	
7,609.6	12.06	13.59	7,451.8	1,464.5	354.0	0.00	0.00	0.00	0.00	
8,011.7	0.00	0.00	7,851.0	1,505.5	363.9	3.00	-3.00	0.00	180.00	GMR 8-6A2 TOG
10,089.7	0.00	0.00	9,929.0	1,505.5	363.9	0.00	0.00	0.00	0.00	GMR 8-6A2 BHL
10,239.7	0.00	0.00	10,079.0	1,505.5	363.9	0.00	0.00	0.00	0.00	

Planning Report

Database:	US EDM 2003.21 Multi User Db	Local Co-ordinate Reference:	Well GMR 8-6A2
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KBE @ 7848.0ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	KBE @ 7848.0ft (Original Well Elev)
Site:	NESW S8 T7S R93W (K8W Pad)	North Reference:	True
Well:	GMR 8-6A2	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	Hardline 40' East
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' MD
300.0	3.00	13.59	300.0	2.5	0.6	2.6	3.00	3.00	
400.0	6.00	13.59	399.6	10.2	2.5	10.5	3.00	3.00	
500.0	9.00	13.59	498.8	22.9	5.5	23.5	3.00	3.00	
600.0	12.00	13.59	597.1	40.6	9.8	41.7	3.00	3.00	
602.1	12.06	13.59	599.2	41.0	9.9	42.2	3.00	3.00	EOB at Inc. = 12.06°
700.0	12.06	13.59	694.9	60.9	14.7	62.6	0.00	0.00	
800.0	12.06	13.59	792.7	81.2	19.6	83.5	0.00	0.00	
900.0	12.06	13.59	890.5	101.5	24.5	104.4	0.00	0.00	
1,000.0	12.06	13.59	988.2	121.8	29.4	125.3	0.00	0.00	
1,100.0	12.06	13.59	1,086.0	142.1	34.4	146.2	0.00	0.00	
1,200.0	12.06	13.59	1,183.8	162.5	39.3	167.1	0.00	0.00	
1,250.0	12.06	13.59	1,232.7	172.6	41.7	177.6	0.00	0.00	Surface Casing
1,300.0	12.06	13.59	1,281.6	182.8	44.2	188.0	0.00	0.00	
1,400.0	12.06	13.59	1,379.4	203.1	49.1	208.9	0.00	0.00	
1,500.0	12.06	13.59	1,477.2	223.4	54.0	229.8	0.00	0.00	
1,600.0	12.06	13.59	1,575.0	243.7	58.9	250.7	0.00	0.00	
1,700.0	12.06	13.59	1,672.8	264.0	63.8	271.6	0.00	0.00	
1,800.0	12.06	13.59	1,770.6	284.3	68.7	292.5	0.00	0.00	
1,900.0	12.06	13.59	1,868.4	304.7	73.6	313.4	0.00	0.00	
2,000.0	12.06	13.59	1,966.2	325.0	78.5	334.3	0.00	0.00	
2,100.0	12.06	13.59	2,064.0	345.3	83.5	355.2	0.00	0.00	
2,200.0	12.06	13.59	2,161.7	365.6	88.4	376.1	0.00	0.00	
2,300.0	12.06	13.59	2,259.5	385.9	93.3	397.0	0.00	0.00	
2,400.0	12.06	13.59	2,357.3	406.2	98.2	417.9	0.00	0.00	
2,500.0	12.06	13.59	2,455.1	426.5	103.1	438.8	0.00	0.00	
2,600.0	12.06	13.59	2,552.9	446.9	108.0	459.7	0.00	0.00	
2,700.0	12.06	13.59	2,650.7	467.2	112.9	480.6	0.00	0.00	
2,800.0	12.06	13.59	2,748.5	487.5	117.8	501.5	0.00	0.00	
2,900.0	12.06	13.59	2,846.3	507.8	122.7	522.4	0.00	0.00	
3,000.0	12.06	13.59	2,944.1	528.1	127.7	543.3	0.00	0.00	
3,100.0	12.06	13.59	3,041.9	548.4	132.6	564.2	0.00	0.00	
3,200.0	12.06	13.59	3,139.7	568.7	137.5	585.1	0.00	0.00	
3,300.0	12.06	13.59	3,237.5	589.1	142.4	606.0	0.00	0.00	
3,400.0	12.06	13.59	3,335.2	609.4	147.3	626.9	0.00	0.00	
3,500.0	12.06	13.59	3,433.0	629.7	152.2	647.8	0.00	0.00	
3,600.0	12.06	13.59	3,530.8	650.0	157.1	668.7	0.00	0.00	
3,700.0	12.06	13.59	3,628.6	670.3	162.0	689.6	0.00	0.00	
3,800.0	12.06	13.59	3,726.4	690.6	166.9	710.5	0.00	0.00	
3,847.6	12.06	13.59	3,773.0	700.3	169.3	720.5	0.00	0.00	Wasach G Sand
3,900.0	12.06	13.59	3,824.2	710.9	171.8	731.4	0.00	0.00	
4,000.0	12.06	13.59	3,922.0	731.3	176.8	752.3	0.00	0.00	
4,100.0	12.06	13.59	4,019.8	751.6	181.7	773.2	0.00	0.00	
4,200.0	12.06	13.59	4,117.6	771.9	186.6	794.1	0.00	0.00	
4,300.0	12.06	13.59	4,215.4	792.2	191.5	815.0	0.00	0.00	
4,400.0	12.06	13.59	4,313.2	812.5	196.4	835.9	0.00	0.00	
4,500.0	12.06	13.59	4,411.0	832.8	201.3	856.8	0.00	0.00	
4,600.0	12.06	13.59	4,508.7	853.1	206.2	877.7	0.00	0.00	
4,700.0	12.06	13.59	4,606.5	873.5	211.1	898.6	0.00	0.00	
4,800.0	12.06	13.59	4,704.3	893.8	216.0	919.5	0.00	0.00	

Planning Report

Database:	US EDM 2003.21 Multi User Db	Local Co-ordinate Reference:	Well GMR 8-6A2
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KBE @ 7848.0ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	KBE @ 7848.0ft (Original Well Elev)
Site:	NESW S8 T7S R93W (K8W Pad)	North Reference:	True
Well:	GMR 8-6A2	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
4,900.0	12.06	13.59	4,802.1	914.1	220.9	940.4	0.00	0.00	
5,000.0	12.06	13.59	4,899.9	934.4	225.9	961.3	0.00	0.00	
5,100.0	12.06	13.59	4,997.7	954.7	230.8	982.2	0.00	0.00	
5,200.0	12.06	13.59	5,095.5	975.0	235.7	1,003.1	0.00	0.00	
5,300.0	12.06	13.59	5,193.3	995.4	240.6	1,024.0	0.00	0.00	
5,400.0	12.06	13.59	5,291.1	1,015.7	245.5	1,044.9	0.00	0.00	
5,500.0	12.06	13.59	5,388.9	1,036.0	250.4	1,065.8	0.00	0.00	
5,600.0	12.06	13.59	5,486.7	1,056.3	255.3	1,086.7	0.00	0.00	
5,700.0	12.06	13.59	5,584.5	1,076.6	260.2	1,107.6	0.00	0.00	
5,800.0	12.06	13.59	5,682.2	1,096.9	265.1	1,128.5	0.00	0.00	
5,900.0	12.06	13.59	5,780.0	1,117.2	270.0	1,149.4	0.00	0.00	
5,937.8	12.06	13.59	5,817.0	1,124.9	271.9	1,157.3	0.00	0.00	OHIO CREEK
6,000.0	12.06	13.59	5,877.8	1,137.6	275.0	1,170.3	0.00	0.00	
6,100.0	12.06	13.59	5,975.6	1,157.9	279.9	1,191.2	0.00	0.00	
6,200.0	12.06	13.59	6,073.4	1,178.2	284.8	1,212.1	0.00	0.00	
6,300.0	12.06	13.59	6,171.2	1,198.5	289.7	1,233.0	0.00	0.00	
6,344.8	12.06	13.59	6,215.0	1,207.6	291.9	1,242.4	0.00	0.00	Mesa Verde
6,400.0	12.06	13.59	6,269.0	1,218.8	294.6	1,253.9	0.00	0.00	
6,500.0	12.06	13.59	6,366.8	1,239.1	299.5	1,274.8	0.00	0.00	
6,600.0	12.06	13.59	6,464.6	1,259.4	304.4	1,295.7	0.00	0.00	
6,700.0	12.06	13.59	6,562.4	1,279.8	309.3	1,316.6	0.00	0.00	
6,800.0	12.06	13.59	6,660.2	1,300.1	314.2	1,337.5	0.00	0.00	
6,900.0	12.06	13.59	6,758.0	1,320.4	319.1	1,358.4	0.00	0.00	
6,959.4	12.06	13.59	6,816.0	1,332.4	322.1	1,370.8	0.00	0.00	Williams Fork
7,000.0	12.06	13.59	6,855.7	1,340.7	324.1	1,379.3	0.00	0.00	
7,100.0	12.06	13.59	6,953.5	1,361.0	329.0	1,400.2	0.00	0.00	
7,200.0	12.06	13.59	7,051.3	1,381.3	333.9	1,421.1	0.00	0.00	
7,300.0	12.06	13.59	7,149.1	1,401.6	338.8	1,442.0	0.00	0.00	
7,400.0	12.06	13.59	7,246.9	1,422.0	343.7	1,462.9	0.00	0.00	
7,500.0	12.06	13.59	7,344.7	1,442.3	348.6	1,483.8	0.00	0.00	
7,600.0	12.06	13.59	7,442.5	1,462.6	353.5	1,504.7	0.00	0.00	
7,609.6	12.06	13.59	7,451.8	1,464.5	354.0	1,506.7	0.00	0.00	Start Drop -3.00
7,700.0	9.35	13.59	7,540.7	1,480.9	357.9	1,523.5	3.00	-3.00	
7,800.0	6.35	13.59	7,639.8	1,494.1	361.1	1,537.2	3.00	-3.00	
7,900.0	3.35	13.59	7,739.4	1,502.4	363.1	1,545.6	3.00	-3.00	
8,000.0	0.35	13.59	7,839.3	1,505.5	363.9	1,548.8	3.00	-3.00	
8,011.7	0.00	0.00	7,851.0	1,505.5	363.9	1,548.9	3.00	-3.00	EOD at Inc. = 0° - TOP GAS - GMR 8-6A2 TOC
8,100.0	0.00	0.00	7,939.3	1,505.5	363.9	1,548.9	0.00	0.00	
8,200.0	0.00	0.00	8,039.3	1,505.5	363.9	1,548.9	0.00	0.00	
8,300.0	0.00	0.00	8,139.3	1,505.5	363.9	1,548.9	0.00	0.00	
8,400.0	0.00	0.00	8,239.3	1,505.5	363.9	1,548.9	0.00	0.00	
8,500.0	0.00	0.00	8,339.3	1,505.5	363.9	1,548.9	0.00	0.00	
8,600.0	0.00	0.00	8,439.3	1,505.5	363.9	1,548.9	0.00	0.00	
8,700.0	0.00	0.00	8,539.3	1,505.5	363.9	1,548.9	0.00	0.00	
8,800.0	0.00	0.00	8,639.3	1,505.5	363.9	1,548.9	0.00	0.00	
8,900.0	0.00	0.00	8,739.3	1,505.5	363.9	1,548.9	0.00	0.00	
9,000.0	0.00	0.00	8,839.3	1,505.5	363.9	1,548.9	0.00	0.00	
9,100.0	0.00	0.00	8,939.3	1,505.5	363.9	1,548.9	0.00	0.00	
9,200.0	0.00	0.00	9,039.3	1,505.5	363.9	1,548.9	0.00	0.00	
9,284.7	0.00	0.00	9,124.0	1,505.5	363.9	1,548.9	0.00	0.00	COAL RIDGE
9,300.0	0.00	0.00	9,139.3	1,505.5	363.9	1,548.9	0.00	0.00	
9,400.0	0.00	0.00	9,239.3	1,505.5	363.9	1,548.9	0.00	0.00	

Planning Report

Database:	US EDM 2003.21 Multi User Db	Local Co-ordinate Reference:	Well GMR 8-6A2
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KBE @ 7848.0ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	KBE @ 7848.0ft (Original Well Elev)
Site:	NESW S8 T7S R93W (K8W Pad)	North Reference:	True
Well:	GMR 8-6A2	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
9,500.0	0.00	0.00	9,339.3	1,505.5	363.9	1,548.9	0.00	0.00	
9,600.0	0.00	0.00	9,439.3	1,505.5	363.9	1,548.9	0.00	0.00	
9,700.0	0.00	0.00	9,539.3	1,505.5	363.9	1,548.9	0.00	0.00	
9,800.0	0.00	0.00	9,639.3	1,505.5	363.9	1,548.9	0.00	0.00	
9,900.0	0.00	0.00	9,739.3	1,505.5	363.9	1,548.9	0.00	0.00	
9,939.7	0.00	0.00	9,779.0	1,505.5	363.9	1,548.9	0.00	0.00	ROLLINS SS
10,000.0	0.00	0.00	9,839.3	1,505.5	363.9	1,548.9	0.00	0.00	
10,089.7	0.00	0.00	9,929.0	1,505.5	363.9	1,548.9	0.00	0.00	TD at 10,089.7' MD - GMR 8-6A2 BHL
10,100.0	0.00	0.00	9,939.3	1,505.5	363.9	1,548.9	0.00	0.00	
10,200.0	0.00	0.00	10,039.3	1,505.5	363.9	1,548.9	0.00	0.00	
10,239.7	0.00	0.00	10,079.0	1,505.5	363.9	1,548.9	0.00	0.00	Permit TD at 10,239.7' MD

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
GMR 8-6A2 BHL - plan hits target center - Circle (radius 25.0)	0.00	0.00	9,929.0	1,505.5	363.9	1,601,484.88	2,351,102.85	39.462300	-107.798581
GMR 8-6A2 TOG - plan hits target center - Point	0.00	0.00	7,851.0	1,505.5	363.9	1,601,484.88	2,351,102.85	39.462300	-107.798581
Hardline 40' East - plan misses target center by 9949.4ft at 0.0ft MD (0.0 TVD, 0.0 N, 0.0 E) - Polygon	0.00	0.00	-9,899.0	915.7	401.6	1,600,894.25	2,351,125.56	39.460681	-107.798447
Point 1			-9,899.0	100.0	40.0	1,600,993.21	2,351,168.08		
Point 2			-9,899.0	-100.0	40.0	1,600,793.27	2,351,163.02		

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
1,250.0	1,232.7	Surface Casing	5.500	6.000

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,847.6	3,773.0	Wasach G Sand			
5,937.8	5,817.0	OHIO CREEK			
6,344.8	6,215.0	Mesa Verde			
6,959.4	6,816.0	Williams Fork			
8,011.7	7,851.0	TOP GAS			
9,284.7	9,124.0	COAL RIDGE			
9,939.7	9,779.0	ROLLINS SS			

Planning Report

Database:	US EDM 2003.21 Multi User Db	Local Co-ordinate Reference:	Well GMR 8-6A2
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KBE @ 7848.0ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	KBE @ 7848.0ft (Original Well Elev)
Site:	NESW S8 T7S R93W (K8W Pad)	North Reference:	True
Well:	GMR 8-6A2	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' MD
602.1	599.2	41.0	9.9	EOB at Inc. = 12.06°
7,609.6	7,451.8	1,464.5	354.0	Start Drop -3.00
8,011.7	7,851.0	1,505.5	363.9	EOD at Inc. = 0°
10,089.7	9,929.0	1,505.5	363.9	TD at 10,089.7' MD
10,239.7	10,079.0	1,505.5	363.9	Permit TD at 10,239.7' MD