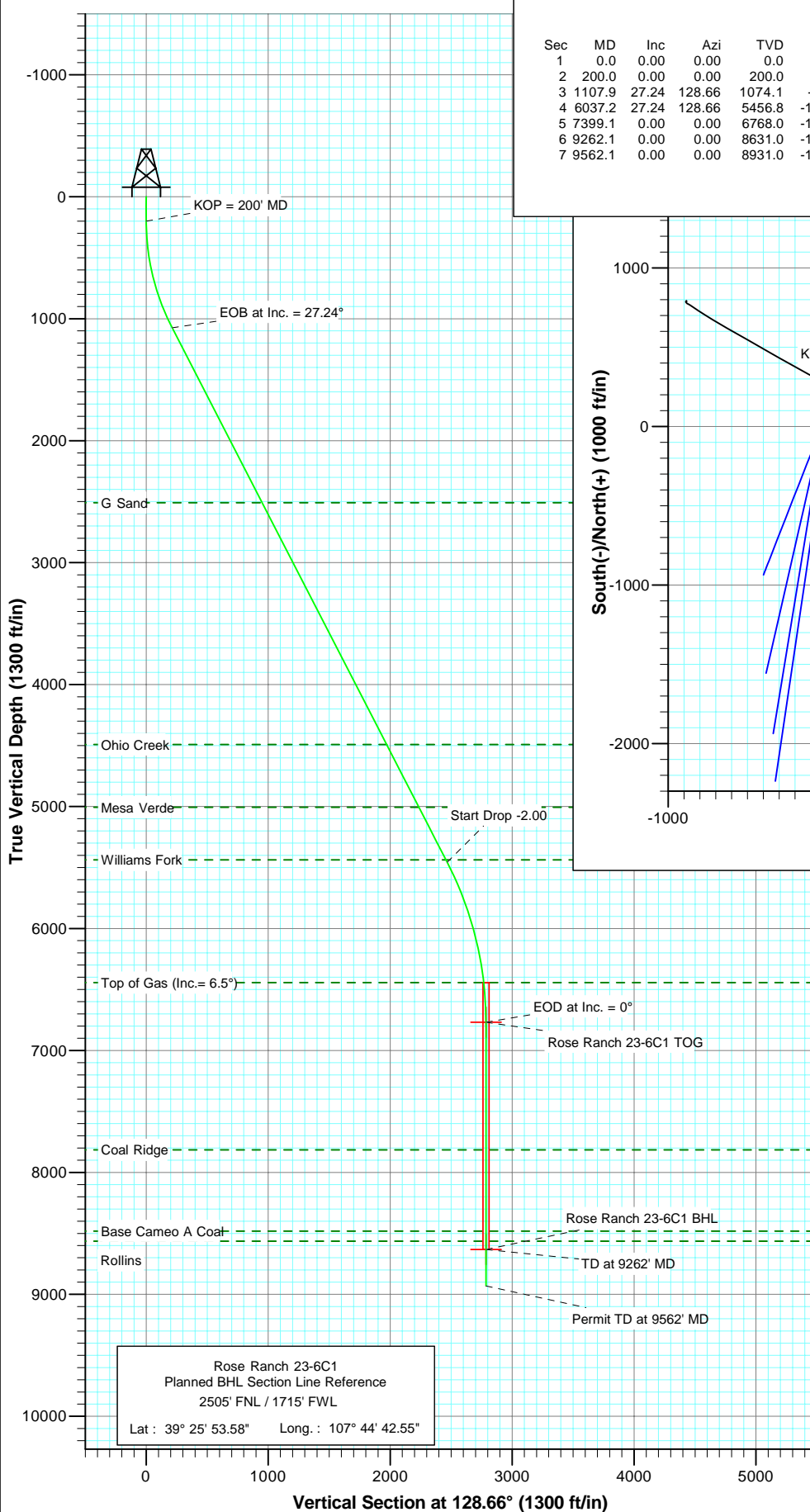
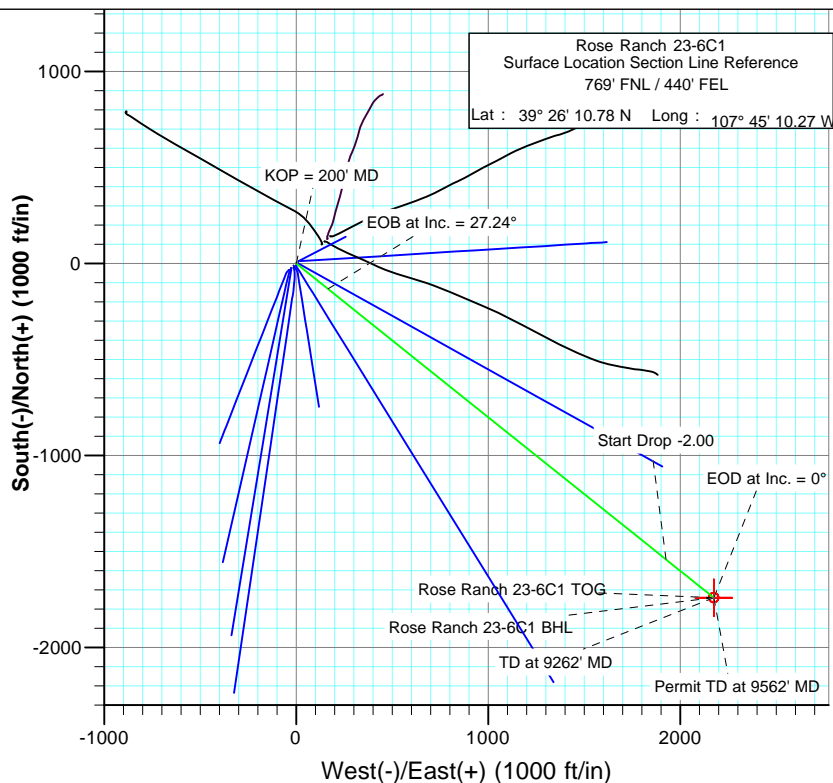




Project: Mamm Creek
Site: A22W Pad (S22-T7S-R93W)
Well: Rose Ranch 23-6C1
Wellbore: DD
Plan: Plan #1



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	1107.9	27.24	128.66	1074.1	-132.3	165.4	3.00	128.66	211.8	
4	6037.2	27.24	128.66	5456.8	-1541.8	1927.0	0.00	0.00	2467.8	Rose Ranch 23-6C1 TOG
5	7399.1	0.00	0.00	6768.0	-1740.2	2175.0	2.00	180.00	2785.5	Rose Ranch 23-6C1 BHL
6	9262.1	0.00	0.00	8631.0	-1740.2	2175.0	0.00	0.00	2785.5	
7	9562.1	0.00	0.00	8931.0	-1740.2	2175.0	0.00	0.00	2785.5	



FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
2508.0	2720.6	G Sand
4491.0	4950.9	Ohio Creek
5006.0	5530.2	Mesa Verde
5438.0	6016.0	Williams Fork
6443.0	7073.4	Top of Gas (Inc. = 6.5°)
7815.0	8446.1	Coal Ridge
8481.0	9112.1	Base Cameo A Coal
8564.0	9195.1	Rollins

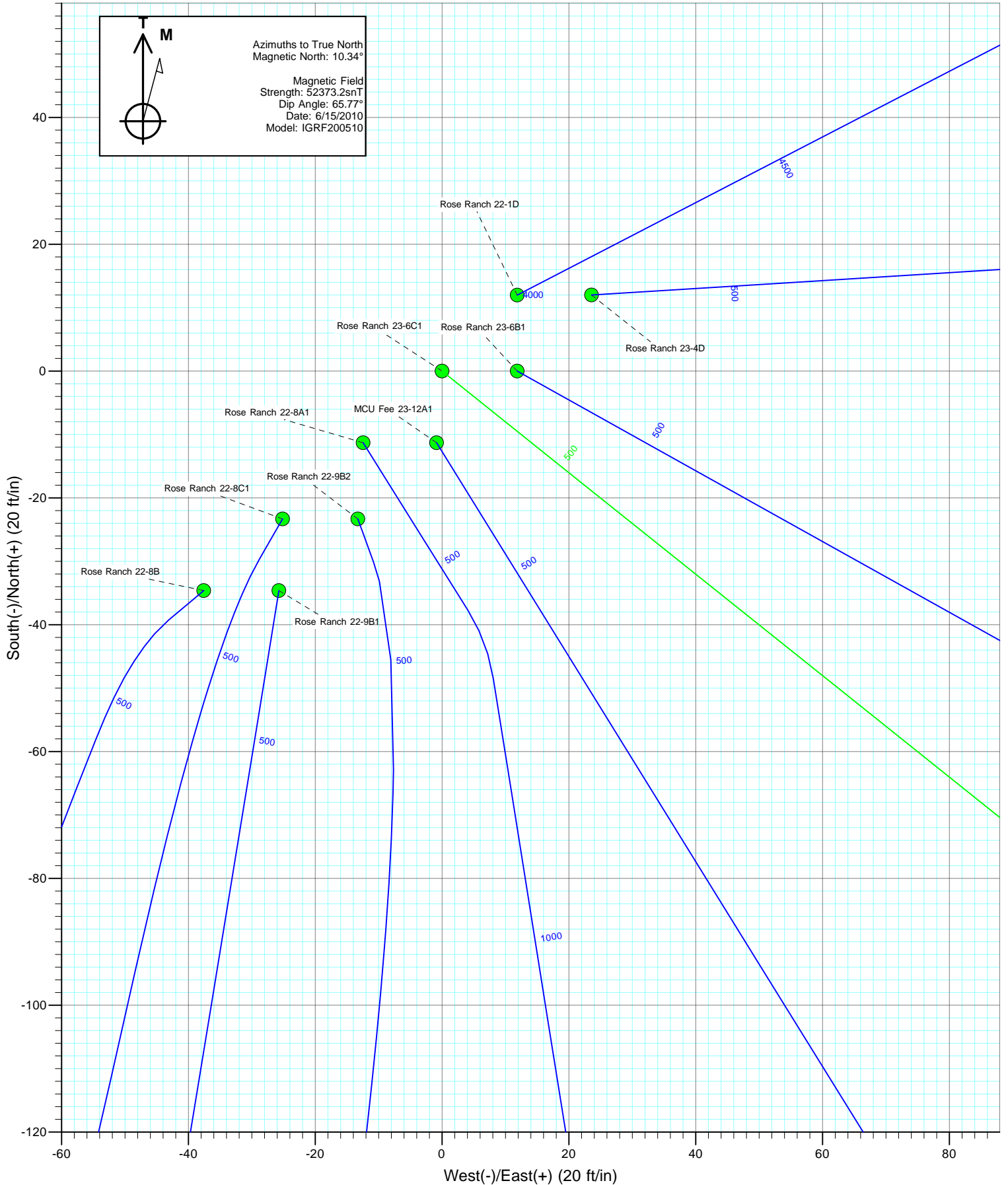


Azimuths to True North
Magnetic North: 10.34°
Magnetic Field
Strength: 52373.2nT
Dip Angle: 65.77°
Date: 6/15/2010
Model: IGRF200510

DESIGN DETAILS: Plan #1					
Job #10xxx: KR					
WELL @ 6806.0ft (Original Well Elev)					
Target	Azimuth	Origin Type	N/S	E/W	From TVD
Rose Ranch 23-6C1 BHL	128.66	Slot	0.0	0.0	0.0

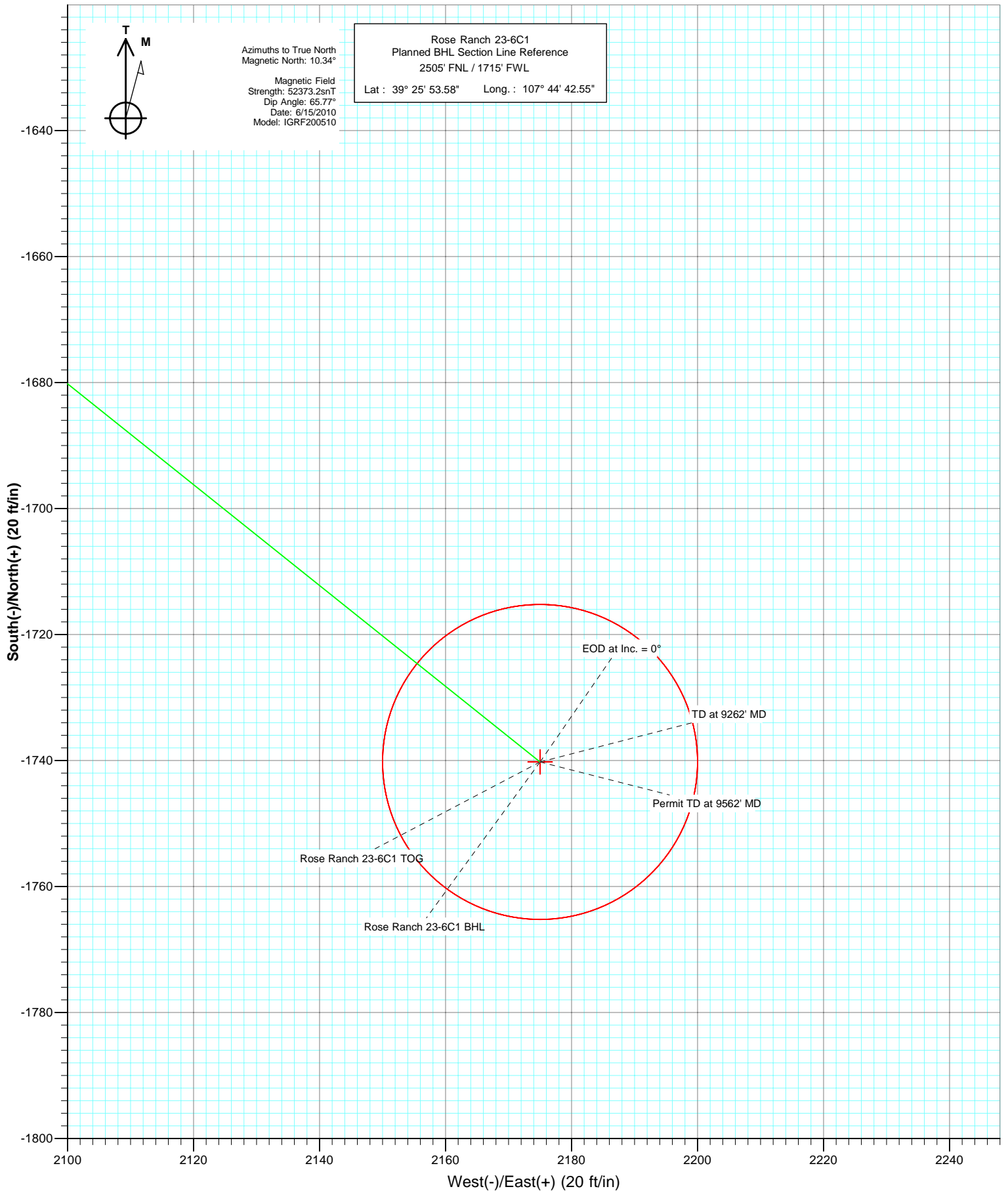


Project: Mamm Creek
Site: A22W Pad (S22-T7S-R93W)
Well: Rose Ranch 23-6C1
Wellbore: DD
Design: Plan #1





Project: Mamm Creek
Site: A22W Pad (S22-T7S-R93W)
Well: Rose Ranch 23-6C1
Wellbore: DD
Plan: Plan #1



Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well Rose Ranch 23-6C1
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 6806.0ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	WELL @ 6806.0ft (Original Well Elev)
Site:	A22W Pad (S22-T7S-R93W)	North Reference:	True
Well:	Rose Ranch 23-6C1	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		A22W Pad (S22-T7S-R93W)			
Site Position:		Northing:	1,591,715.91 ft	Latitude:	39° 26' 10.90 N
From:	Lat/Long	Easting:	2,363,798.79 ft	Longitude:	107° 45' 9.97 W
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.42 °

Well	Rose Ranch 23-6C1					
Well Position	+N/-S	0.0 ft	Northing:	1,591,704.47 ft	Latitude:	39° 26' 10.78 N
	+E/-W	0.0 ft	Easting:	2,363,774.78 ft	Longitude:	107° 45' 10.27 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	6,784.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	6/15/2010	10.34	65.77	52,373

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	128.66

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	
1,107.9	27.24	128.66	1,074.1	-132.3	165.4	3.00	3.00	0.00	128.66	
6,037.2	27.24	128.66	5,456.8	-1,541.8	1,927.0	0.00	0.00	0.00	0.00	
7,399.1	0.00	0.00	6,768.0	-1,740.2	2,175.0	2.00	-2.00	0.00	180.00	Rose Ranch 23-6C1 1
9,262.1	0.00	0.00	8,631.0	-1,740.2	2,175.0	0.00	0.00	0.00	0.00	Rose Ranch 23-6C1 1
9,562.1	0.00	0.00	8,931.0	-1,740.2	2,175.0	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 Rose Ranch 23-6C1
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 6806.0ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	WELL @ 6806.0ft (Original Well Elev)
Site:	A22W Pad (S22-T7S-R93W)	North Reference:	True
Well:	Rose Ranch 23-6C1	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	
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	128.66	300.0	-1.6	2.0	2.6	3.00	3.00	
400.0	6.00	128.66	399.6	-6.5	8.2	10.5	3.00	3.00	
500.0	9.00	128.66	498.8	-14.7	18.4	23.5	3.00	3.00	
600.0	12.00	128.66	597.1	-26.1	32.6	41.7	3.00	3.00	
700.0	15.00	128.66	694.3	-40.7	50.8	65.1	3.00	3.00	
800.0	18.00	128.66	790.2	-58.4	73.0	93.5	3.00	3.00	
900.0	21.00	128.66	884.4	-79.2	99.1	126.9	3.00	3.00	
1,000.0	24.00	128.66	976.8	-103.2	128.9	165.1	3.00	3.00	
1,100.0	27.00	128.66	1,067.1	-130.0	162.5	208.2	3.00	3.00	
1,107.9	27.24	128.66	1,074.1	-132.3	165.4	211.8	3.00	3.00	EOB at Inc. = 27.24°
1,200.0	27.24	128.66	1,156.0	-158.6	198.3	253.9	0.00	0.00	
1,300.0	27.24	128.66	1,244.9	-187.2	234.0	299.7	0.00	0.00	
1,400.0	27.24	128.66	1,333.8	-215.8	269.7	345.5	0.00	0.00	
1,434.0	27.24	128.66	1,364.0	-225.5	281.9	361.0	0.00	0.00	Surface Casing
1,500.0	27.24	128.66	1,422.7	-244.4	305.5	391.2	0.00	0.00	
1,600.0	27.24	128.66	1,511.6	-273.0	341.2	437.0	0.00	0.00	
1,700.0	27.24	128.66	1,600.5	-301.6	377.0	482.8	0.00	0.00	
1,800.0	27.24	128.66	1,689.4	-330.2	412.7	528.5	0.00	0.00	
1,900.0	27.24	128.66	1,778.4	-358.8	448.4	574.3	0.00	0.00	
2,000.0	27.24	128.66	1,867.3	-387.4	484.2	620.1	0.00	0.00	
2,100.0	27.24	128.66	1,956.2	-416.0	519.9	665.8	0.00	0.00	
2,200.0	27.24	128.66	2,045.1	-444.6	555.6	711.6	0.00	0.00	
2,300.0	27.24	128.66	2,134.0	-473.2	591.4	757.4	0.00	0.00	
2,400.0	27.24	128.66	2,222.9	-501.8	627.1	803.1	0.00	0.00	
2,500.0	27.24	128.66	2,311.8	-530.3	662.9	848.9	0.00	0.00	
2,600.0	27.24	128.66	2,400.7	-558.9	698.6	894.7	0.00	0.00	
2,700.0	27.24	128.66	2,489.7	-587.5	734.3	940.4	0.00	0.00	
2,720.6	27.24	128.66	2,508.0	-593.4	741.7	949.9	0.00	0.00	G Sand
2,800.0	27.24	128.66	2,578.6	-616.1	770.1	986.2	0.00	0.00	
2,900.0	27.24	128.66	2,667.5	-644.7	805.8	1,032.0	0.00	0.00	
3,000.0	27.24	128.66	2,756.4	-673.3	841.5	1,077.7	0.00	0.00	
3,100.0	27.24	128.66	2,845.3	-701.9	877.3	1,123.5	0.00	0.00	
3,200.0	27.24	128.66	2,934.2	-730.5	913.0	1,169.3	0.00	0.00	
3,300.0	27.24	128.66	3,023.1	-759.1	948.7	1,215.0	0.00	0.00	
3,400.0	27.24	128.66	3,112.0	-787.7	984.5	1,260.8	0.00	0.00	
3,500.0	27.24	128.66	3,200.9	-816.3	1,020.2	1,306.6	0.00	0.00	
3,600.0	27.24	128.66	3,289.9	-844.9	1,056.0	1,352.4	0.00	0.00	
3,700.0	27.24	128.66	3,378.8	-873.5	1,091.7	1,398.1	0.00	0.00	
3,800.0	27.24	128.66	3,467.7	-902.1	1,127.4	1,443.9	0.00	0.00	
3,900.0	27.24	128.66	3,556.6	-930.6	1,163.2	1,489.7	0.00	0.00	
4,000.0	27.24	128.66	3,645.5	-959.2	1,198.9	1,535.4	0.00	0.00	
4,100.0	27.24	128.66	3,734.4	-987.8	1,234.6	1,581.2	0.00	0.00	
4,200.0	27.24	128.66	3,823.3	-1,016.4	1,270.4	1,627.0	0.00	0.00	
4,300.0	27.24	128.66	3,912.2	-1,045.0	1,306.1	1,672.7	0.00	0.00	
4,400.0	27.24	128.66	4,001.1	-1,073.6	1,341.9	1,718.5	0.00	0.00	
4,500.0	27.24	128.66	4,090.1	-1,102.2	1,377.6	1,764.3	0.00	0.00	
4,600.0	27.24	128.66	4,179.0	-1,130.8	1,413.3	1,810.0	0.00	0.00	
4,700.0	27.24	128.66	4,267.9	-1,159.4	1,449.1	1,855.8	0.00	0.00	
4,800.0	27.24	128.66	4,356.8	-1,188.0	1,484.8	1,901.6	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well Rose Ranch 23-6C1
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 6806.0ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	WELL @ 6806.0ft (Original Well Elev)
Site:	A22W Pad (S22-T7S-R93W)	North Reference:	True
Well:	Rose Ranch 23-6C1	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	27.24	128.66	4,445.7	-1,216.6	1,520.5	1,947.3	0.00	0.00	
4,950.9	27.24	128.66	4,491.0	-1,231.1	1,538.8	1,970.7	0.00	0.00	Ohio Creek
5,000.0	27.24	128.66	4,534.6	-1,245.2	1,556.3	1,993.1	0.00	0.00	
5,100.0	27.24	128.66	4,623.5	-1,273.8	1,592.0	2,038.9	0.00	0.00	
5,200.0	27.24	128.66	4,712.4	-1,302.4	1,627.8	2,084.6	0.00	0.00	
5,300.0	27.24	128.66	4,801.4	-1,331.0	1,663.5	2,130.4	0.00	0.00	
5,400.0	27.24	128.66	4,890.3	-1,359.5	1,699.2	2,176.2	0.00	0.00	
5,500.0	27.24	128.66	4,979.2	-1,388.1	1,735.0	2,221.9	0.00	0.00	
5,530.2	27.24	128.66	5,006.0	-1,396.8	1,745.8	2,235.8	0.00	0.00	Mesa Verde
5,600.0	27.24	128.66	5,068.1	-1,416.7	1,770.7	2,267.7	0.00	0.00	
5,700.0	27.24	128.66	5,157.0	-1,445.3	1,806.4	2,313.5	0.00	0.00	
5,800.0	27.24	128.66	5,245.9	-1,473.9	1,842.2	2,359.3	0.00	0.00	
5,900.0	27.24	128.66	5,334.8	-1,502.5	1,877.9	2,405.0	0.00	0.00	
6,000.0	27.24	128.66	5,423.7	-1,531.1	1,913.7	2,450.8	0.00	0.00	
6,016.0	27.24	128.66	5,438.0	-1,535.7	1,919.4	2,458.1	0.00	0.00	Williams Fork
6,037.2	27.24	128.66	5,456.8	-1,541.8	1,927.0	2,467.8	0.00	0.00	Start Drop -2.00
6,100.0	25.98	128.66	5,513.0	-1,559.3	1,948.9	2,495.9	2.00	-2.00	
6,200.0	23.98	128.66	5,603.6	-1,585.7	1,981.9	2,538.2	2.00	-2.00	
6,300.0	21.98	128.66	5,695.7	-1,610.1	2,012.4	2,577.2	2.00	-2.00	
6,400.0	19.98	128.66	5,789.0	-1,632.5	2,040.3	2,613.0	2.00	-2.00	
6,500.0	17.98	128.66	5,883.6	-1,652.8	2,065.7	2,645.6	2.00	-2.00	
6,600.0	15.98	128.66	5,979.2	-1,671.0	2,088.5	2,674.8	2.00	-2.00	
6,700.0	13.98	128.66	6,075.8	-1,687.2	2,108.7	2,700.6	2.00	-2.00	
6,800.0	11.98	128.66	6,173.2	-1,701.2	2,126.3	2,723.1	2.00	-2.00	
6,900.0	9.98	128.66	6,271.4	-1,713.1	2,141.1	2,742.1	2.00	-2.00	
7,000.0	7.98	128.66	6,370.2	-1,722.9	2,153.3	2,757.7	2.00	-2.00	
7,073.4	6.51	128.66	6,443.0	-1,728.7	2,160.6	2,767.0	2.00	-2.00	Top of Gas (Inc. = 6.5°)
7,100.0	5.98	128.66	6,469.4	-1,730.5	2,162.8	2,769.9	2.00	-2.00	
7,200.0	3.98	128.66	6,569.0	-1,735.9	2,169.6	2,778.6	2.00	-2.00	
7,300.0	1.98	128.66	6,668.9	-1,739.1	2,173.7	2,783.8	2.00	-2.00	
7,399.1	0.00	0.00	6,768.0	-1,740.2	2,175.0	2,785.5	2.00	-2.00	EOD at Inc. = 0° - Rose Ranch 23-6C1 TOG
7,400.0	0.00	0.00	6,768.9	-1,740.2	2,175.0	2,785.5	0.00	0.00	
7,500.0	0.00	0.00	6,868.9	-1,740.2	2,175.0	2,785.5	0.00	0.00	
7,600.0	0.00	0.00	6,968.9	-1,740.2	2,175.0	2,785.5	0.00	0.00	
7,700.0	0.00	0.00	7,068.9	-1,740.2	2,175.0	2,785.5	0.00	0.00	
7,800.0	0.00	0.00	7,168.9	-1,740.2	2,175.0	2,785.5	0.00	0.00	
7,900.0	0.00	0.00	7,268.9	-1,740.2	2,175.0	2,785.5	0.00	0.00	
8,000.0	0.00	0.00	7,368.9	-1,740.2	2,175.0	2,785.5	0.00	0.00	
8,100.0	0.00	0.00	7,468.9	-1,740.2	2,175.0	2,785.5	0.00	0.00	
8,200.0	0.00	0.00	7,568.9	-1,740.2	2,175.0	2,785.5	0.00	0.00	
8,300.0	0.00	0.00	7,668.9	-1,740.2	2,175.0	2,785.5	0.00	0.00	
8,400.0	0.00	0.00	7,768.9	-1,740.2	2,175.0	2,785.5	0.00	0.00	
8,446.1	0.00	0.00	7,815.0	-1,740.2	2,175.0	2,785.5	0.00	0.00	Coal Ridge
8,500.0	0.00	0.00	7,868.9	-1,740.2	2,175.0	2,785.5	0.00	0.00	
8,600.0	0.00	0.00	7,968.9	-1,740.2	2,175.0	2,785.5	0.00	0.00	
8,700.0	0.00	0.00	8,068.9	-1,740.2	2,175.0	2,785.5	0.00	0.00	
8,800.0	0.00	0.00	8,168.9	-1,740.2	2,175.0	2,785.5	0.00	0.00	
8,900.0	0.00	0.00	8,268.9	-1,740.2	2,175.0	2,785.5	0.00	0.00	
9,000.0	0.00	0.00	8,368.9	-1,740.2	2,175.0	2,785.5	0.00	0.00	
9,100.0	0.00	0.00	8,468.9	-1,740.2	2,175.0	2,785.5	0.00	0.00	
9,112.1	0.00	0.00	8,481.0	-1,740.2	2,175.0	2,785.5	0.00	0.00	Base Cameo A Coal
9,195.1	0.00	0.00	8,564.0	-1,740.2	2,175.0	2,785.5	0.00	0.00	Rollins

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well Rose Ranch 23-6C1
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 6806.0ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	WELL @ 6806.0ft (Original Well Elev)
Site:	A22W Pad (S22-T7S-R93W)	North Reference:	True
Well:	Rose Ranch 23-6C1	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	8,568.9	-1,740.2	2,175.0	2,785.5	0.00	0.00	
9,262.1	0.00	0.00	8,631.0	-1,740.2	2,175.0	2,785.5	0.00	0.00	TD at 9262' MD - Rose Ranch 23-6C1 BHL
9,300.0	0.00	0.00	8,668.9	-1,740.2	2,175.0	2,785.5	0.00	0.00	
9,400.0	0.00	0.00	8,768.9	-1,740.2	2,175.0	2,785.5	0.00	0.00	
9,500.0	0.00	0.00	8,868.9	-1,740.2	2,175.0	2,785.5	0.00	0.00	
9,562.1	0.00	0.00	8,931.0	-1,740.2	2,175.0	2,785.5	0.00	0.00	Permit TD at 9562' 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
Rose Ranch 23-6C1 TO - plan hits target center - Point	0.00	0.00	6,768.0	-1,740.2	2,175.0	1,589,910.87	2,365,905.96	39° 25' 53.58 N	107° 44' 42.55 W
Rose Ranch 23-6C1 BH - plan hits target center - Circle (radius 25.0)	0.00	0.00	8,631.0	-1,740.2	2,175.0	1,589,910.87	2,365,905.96	39° 25' 53.58 N	107° 44' 42.55 W

Casing Points				
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
1,434.0	1,364.0	Surface Casing		

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,720.6	2,508.0	G Sand			
4,950.9	4,491.0	Ohio Creek			
5,530.2	5,006.0	Mesa Verde			
6,016.0	5,438.0	Williams Fork			
7,073.4	6,443.0	Top of Gas (Inc.= 6.5°)			
8,446.1	7,815.0	Coal Ridge			
9,112.1	8,481.0	Base Cameo A Coal			
9,195.1	8,564.0	Rollins			