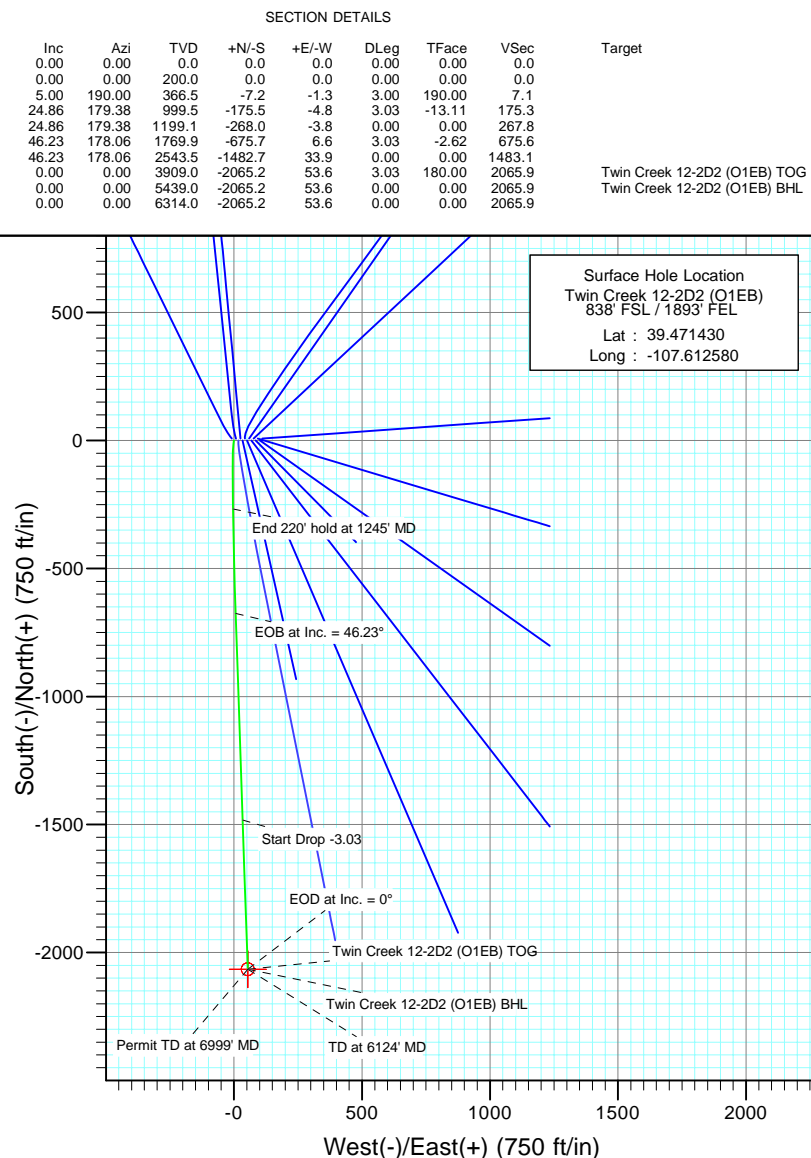
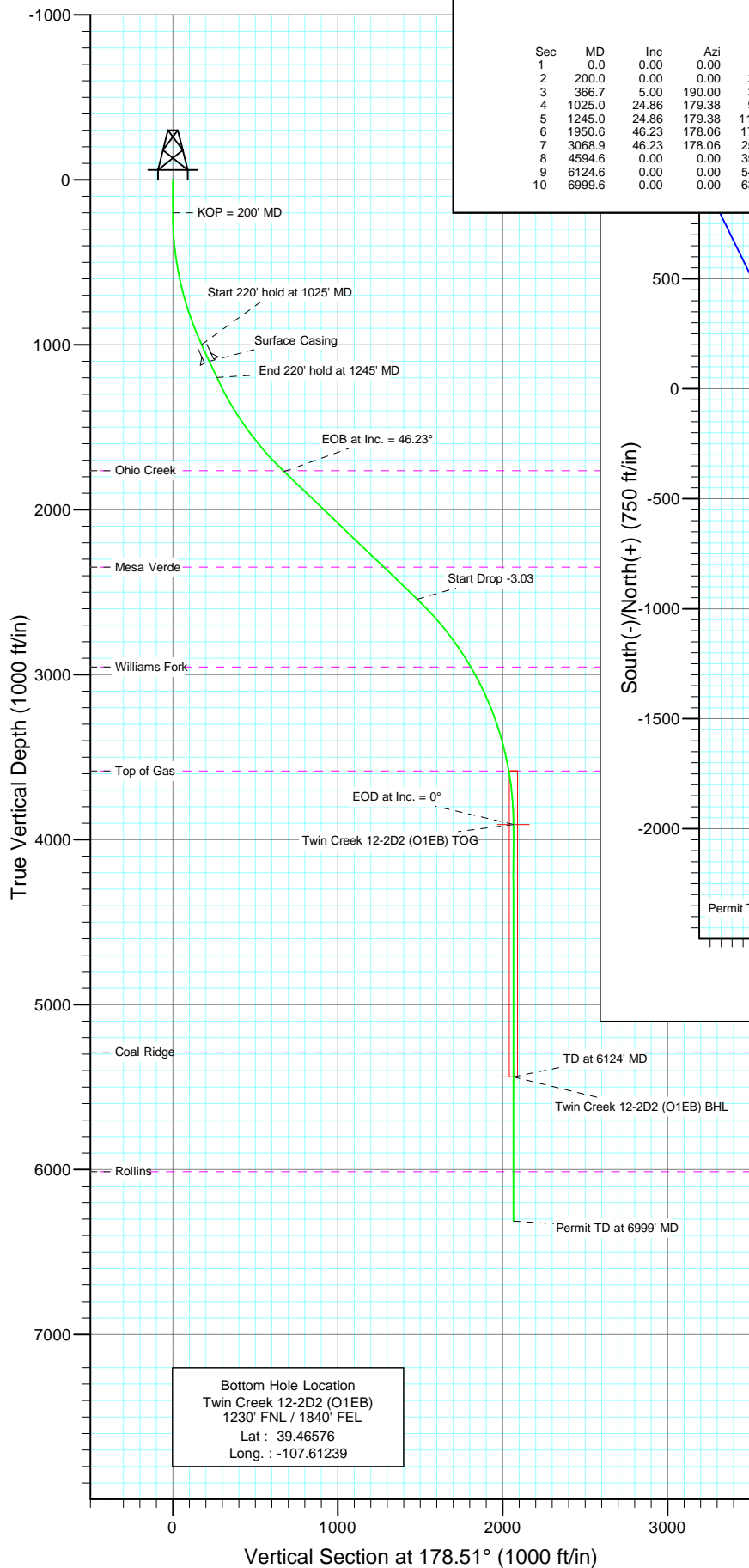




Project: Mamm Creek
Site: SWSE S1-T7S-R92W (O1EB Pad)
Well: Twin Creek 12-2D2 (O1EB)
Wellbore: DD
Design: Plan #1



Azimuths to True North
Magnetic North: 10.35°

Magnetic Field
Strength: 52424.1nT
Dip Angle: 65.83°
Date: 2/3/2010
Model: IGRF2010

FORMATION TOP DETAILS

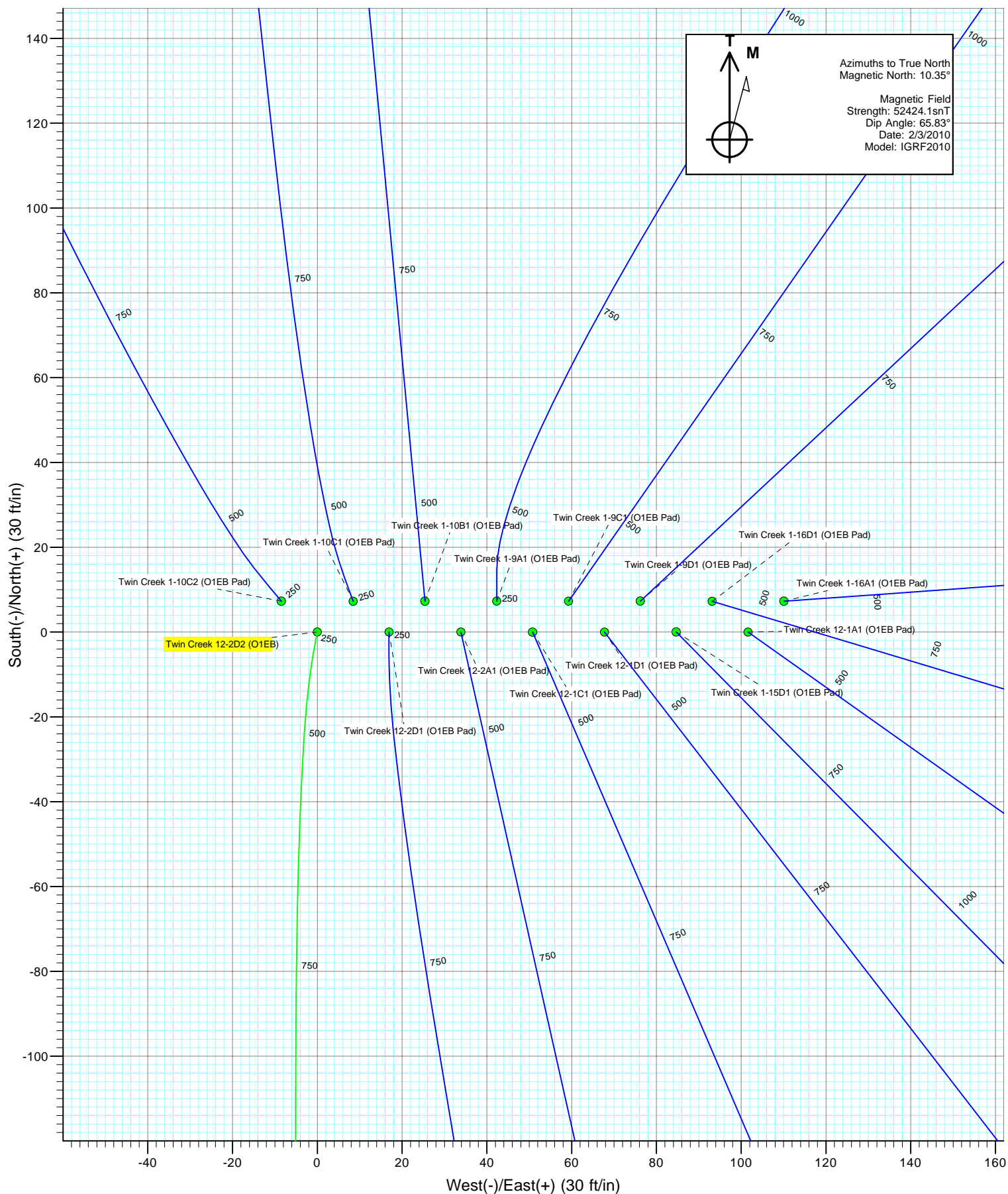
TVDPath	MDPath	Formation
1764.0	1942.1	Ohio Creek
2349.0	2787.7	Mesa Verde
2954.0	3593.5	Williams Fork
3584.0	4268.0	Top of Gas
5289.0	5974.6	Coal Ridge
6014.0	6699.6	Rollins

DESIGN DETAILS: Plan #1

Target	Azimuth	Origin	N/S	E/W	From TVD
Twin Creek 12-2D2 (O1EB) BHL	178.51	Slot	0.0	0.0	0.0

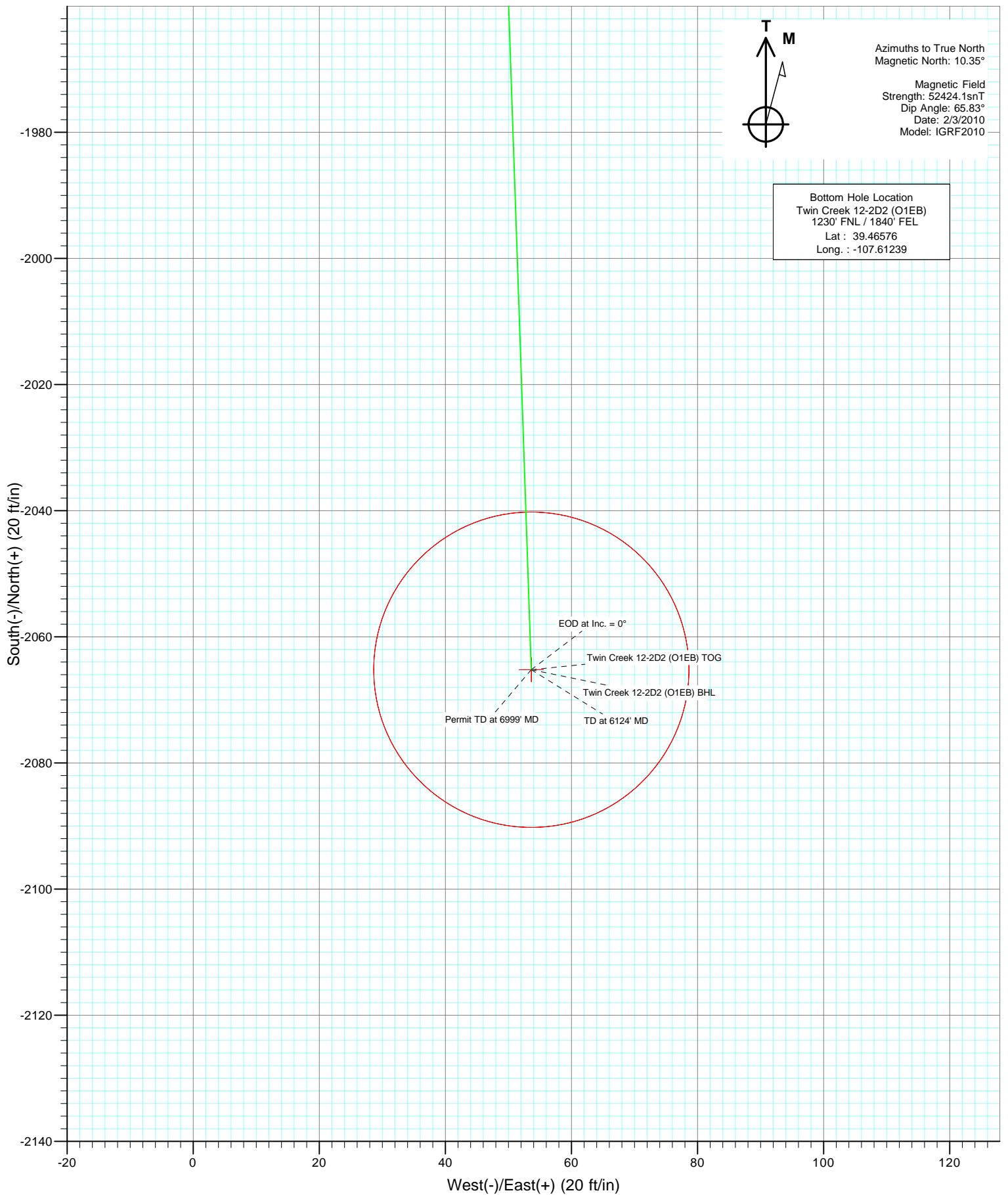


Project: Mamm Creek
Site: SWSE S1-T7S-R92W (O1EB Pad)
Well: Twin Creek 12-2D2 (O1EB)
Wellbore: DD
Design: Plan #1





Project: Mamm Creek
Site: SWSE S1-T7S-R92W (O1EB Pad)
Well: Twin Creek 12-2D2 (O1EB)
Wellbore: DD
Design: Plan #1



Planning Report

Database:	US EDM 2003.21 Multi User Db	Local Co-ordinate Reference:	Well Twin Creek 12-2D2 (O1EB)
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KBE @ 6084.0ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	KBE @ 6084.0ft (Original Well Elev)
Site:	SWSE S1-T7S-R92W (O1EB Pad)	North Reference:	True
Well:	Twin Creek 12-2D2 (O1EB)	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		SWSE S1-T7S-R92W (O1EB Pad)			
Site Position:		Northing:	1,603,540.14 ft	Latitude:	39.471450
From:	Lat/Long	Easting:	2,403,755.74 ft	Longitude:	-107.612310
Position Uncertainty:	0.0 ft	Slot Radius:	in	Grid Convergence:	-1.33 °

Well	Twin Creek 12-2D2 (O1EB)					
Well Position	+N/-S	0.0 ft	Northing:	1,603,534.62 ft	Latitude:	39.471430
	+E/-W	0.0 ft	Easting:	2,403,679.37 ft	Longitude:	-107.612580
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	6,062.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	2/3/2010	10.35	65.83	52,424

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	178.51

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	
366.7	5.00	190.00	366.5	-7.2	-1.3	3.00	3.00	0.00	190.00	
1,025.0	24.86	179.38	999.5	-175.5	-4.8	3.03	3.02	-1.61	-13.11	
1,245.0	24.86	179.38	1,199.1	-268.0	-3.8	0.00	0.00	0.00	0.00	
1,950.6	46.23	178.06	1,769.9	-675.7	6.6	3.03	3.03	-0.19	-2.62	
3,068.9	46.23	178.06	2,543.5	-1,482.7	33.9	0.00	0.00	0.00	0.00	
4,594.6	0.00	0.00	3,909.0	-2,065.2	53.6	3.03	-3.03	0.00	180.00	Twin Creek 12-2D2 (C
6,124.6	0.00	0.00	5,439.0	-2,065.2	53.6	0.00	0.00	0.00	0.00	Twin Creek 12-2D2 (C
6,999.6	0.00	0.00	6,314.0	-2,065.2	53.6	0.00	0.00	0.00	0.00	

Planning Report

Database:	US EDM 2003.21 Multi User Db	Local Co-ordinate Reference:	Well Twin Creek 12-2D2 (O1EB)
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KBE @ 6084.0ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	KBE @ 6084.0ft (Original Well Elev)
Site:	SWSE S1-T7S-R92W (O1EB Pad)	North Reference:	True
Well:	Twin Creek 12-2D2 (O1EB)	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	190.00	300.0	-2.6	-0.5	2.6	3.00	3.00	
366.7	5.00	190.00	366.5	-7.2	-1.3	7.1	3.00	3.00	
400.0	5.99	187.80	399.6	-10.3	-1.8	10.3	3.03	2.97	
500.0	8.99	184.12	498.8	-23.3	-3.0	23.2	3.03	3.00	
600.0	12.00	182.27	597.1	-41.5	-4.0	41.3	3.03	3.01	
700.0	15.02	181.16	694.3	-64.8	-4.7	64.7	3.03	3.02	
800.0	18.05	180.41	790.2	-93.3	-5.0	93.1	3.03	3.03	
900.0	21.07	179.88	884.4	-126.7	-5.1	126.6	3.03	3.03	
1,000.0	24.10	179.47	976.7	-165.1	-4.9	164.9	3.03	3.03	
1,025.0	24.86	179.38	999.5	-175.5	-4.8	175.3	3.03	3.03	Start 220' hold at 1025' MD
1,100.0	24.86	179.38	1,067.5	-207.0	-4.4	206.8	0.00	0.00	
1,135.8	24.86	179.38	1,100.0	-222.1	-4.3	221.9	0.00	0.00	Surface Casing
1,200.0	24.86	179.38	1,158.2	-249.1	-4.0	248.9	0.00	0.00	
1,245.0	24.86	179.38	1,199.1	-268.0	-3.8	267.8	0.00	0.00	End 220' hold at 1245' MD
1,300.0	26.52	179.21	1,248.6	-291.8	-3.5	291.6	3.03	3.03	
1,400.0	29.55	178.95	1,336.9	-338.8	-2.7	338.6	3.03	3.03	
1,500.0	32.58	178.73	1,422.5	-390.4	-1.7	390.2	3.03	3.03	
1,600.0	35.61	178.54	1,505.3	-446.4	-0.3	446.3	3.03	3.03	
1,700.0	38.64	178.38	1,585.1	-506.8	1.3	506.6	3.03	3.03	
1,800.0	41.67	178.24	1,661.5	-571.2	3.2	571.1	3.03	3.03	
1,900.0	44.69	178.12	1,734.4	-639.6	5.4	639.5	3.03	3.03	
1,942.1	45.97	178.07	1,764.0	-669.5	6.4	669.5	3.03	3.03	Ohio Creek
1,950.6	46.23	178.06	1,769.9	-675.6	6.6	675.6	3.03	3.03	EOB at Inc. = 46.23°
2,000.0	46.23	178.06	1,804.1	-711.3	7.8	711.2	0.00	0.00	
2,100.0	46.23	178.06	1,873.2	-783.5	10.2	783.5	0.00	0.00	
2,200.0	46.23	178.06	1,942.4	-855.6	12.7	855.7	0.00	0.00	
2,300.0	46.23	178.06	2,011.6	-927.8	15.1	927.9	0.00	0.00	
2,400.0	46.23	178.06	2,080.8	-1,000.0	17.6	1,000.1	0.00	0.00	
2,500.0	46.23	178.06	2,149.9	-1,072.1	20.0	1,072.3	0.00	0.00	
2,600.0	46.23	178.06	2,219.1	-1,144.3	22.4	1,144.5	0.00	0.00	
2,700.0	46.23	178.06	2,288.3	-1,216.5	24.9	1,216.7	0.00	0.00	
2,787.7	46.23	178.06	2,349.0	-1,279.8	27.0	1,280.1	0.00	0.00	Mesa Verde
2,800.0	46.23	178.06	2,357.5	-1,288.6	27.3	1,288.9	0.00	0.00	
2,900.0	46.23	178.06	2,426.7	-1,360.8	29.8	1,361.1	0.00	0.00	
3,000.0	46.23	178.06	2,495.8	-1,433.0	32.2	1,433.3	0.00	0.00	
3,068.9	46.23	178.06	2,543.5	-1,482.7	33.9	1,483.1	0.00	0.00	Start Drop -3.03
3,100.0	45.29	178.06	2,565.2	-1,505.0	34.7	1,505.4	3.03	-3.03	
3,200.0	42.26	178.06	2,637.4	-1,574.1	37.0	1,574.5	3.03	-3.03	
3,300.0	39.23	178.06	2,713.2	-1,639.3	39.2	1,639.8	3.03	-3.03	
3,400.0	36.20	178.06	2,792.3	-1,700.4	41.3	1,700.9	3.03	-3.03	
3,500.0	33.17	178.06	2,874.5	-1,757.3	43.2	1,757.8	3.03	-3.03	
3,593.5	30.33	178.06	2,954.0	-1,806.5	44.9	1,807.0	3.03	-3.03	Williams Fork
3,600.0	30.14	178.06	2,959.6	-1,809.8	45.0	1,810.3	3.03	-3.03	
3,700.0	27.11	178.06	3,047.4	-1,857.6	46.6	1,858.2	3.03	-3.03	
3,800.0	24.08	178.06	3,137.5	-1,900.8	48.1	1,901.4	3.03	-3.03	
3,900.0	21.05	178.06	3,229.9	-1,939.1	49.4	1,939.8	3.03	-3.03	
4,000.0	18.02	178.06	3,324.1	-1,972.5	50.5	1,973.2	3.03	-3.03	
4,100.0	14.99	178.06	3,420.0	-2,000.9	51.5	2,001.6	3.03	-3.03	
4,200.0	11.96	178.06	3,517.2	-2,024.2	52.3	2,024.9	3.03	-3.03	

Planning Report

Database:	US EDM 2003.21 Multi User Db	Local Co-ordinate Reference:	Well Twin Creek 12-2D2 (O1EB)
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KBE @ 6084.0ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	KBE @ 6084.0ft (Original Well Elev)
Site:	SWSE S1-T7S-R92W (O1EB Pad)	North Reference:	True
Well:	Twin Creek 12-2D2 (O1EB)	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
4,268.0	9.90	178.06	3,584.0	-2,037.1	52.7	2,037.8	3.03	-3.03	Top of Gas
4,300.0	8.93	178.06	3,615.6	-2,042.3	52.9	2,043.0	3.03	-3.03	
4,400.0	5.90	178.06	3,714.7	-2,055.2	53.3	2,055.9	3.03	-3.03	
4,500.0	2.87	178.06	3,814.4	-2,062.9	53.6	2,063.5	3.03	-3.03	
4,594.6	0.00	178.06	3,909.0	-2,065.2	53.6	2,065.9	3.03	-3.03	EOD at Inc. = 0° - Twin Creek 12-2D2 (O1EB) 1
4,600.0	0.00	0.00	3,914.4	-2,065.2	53.6	2,065.9	0.02	-0.02	
4,700.0	0.00	0.00	4,014.4	-2,065.2	53.6	2,065.9	0.00	0.00	
4,800.0	0.00	0.00	4,114.4	-2,065.2	53.6	2,065.9	0.00	0.00	
4,900.0	0.00	0.00	4,214.4	-2,065.2	53.6	2,065.9	0.00	0.00	
5,000.0	0.00	0.00	4,314.4	-2,065.2	53.6	2,065.9	0.00	0.00	
5,100.0	0.00	0.00	4,414.4	-2,065.2	53.6	2,065.9	0.00	0.00	
5,200.0	0.00	0.00	4,514.4	-2,065.2	53.6	2,065.9	0.00	0.00	
5,300.0	0.00	0.00	4,614.4	-2,065.2	53.6	2,065.9	0.00	0.00	
5,400.0	0.00	0.00	4,714.4	-2,065.2	53.6	2,065.9	0.00	0.00	
5,500.0	0.00	0.00	4,814.4	-2,065.2	53.6	2,065.9	0.00	0.00	
5,600.0	0.00	0.00	4,914.4	-2,065.2	53.6	2,065.9	0.00	0.00	
5,700.0	0.00	0.00	5,014.4	-2,065.2	53.6	2,065.9	0.00	0.00	
5,800.0	0.00	0.00	5,114.4	-2,065.2	53.6	2,065.9	0.00	0.00	
5,900.0	0.00	0.00	5,214.4	-2,065.2	53.6	2,065.9	0.00	0.00	
5,974.6	0.00	0.00	5,289.0	-2,065.2	53.6	2,065.9	0.00	0.00	Coal Ridge
6,000.0	0.00	0.00	5,314.4	-2,065.2	53.6	2,065.9	0.00	0.00	
6,100.0	0.00	0.00	5,414.4	-2,065.2	53.6	2,065.9	0.00	0.00	
6,124.6	0.00	0.00	5,439.0	-2,065.2	53.6	2,065.9	0.00	0.00	TD at 6124' MD - Twin Creek 12-2D2 (O1EB) B
6,200.0	0.00	0.00	5,514.4	-2,065.2	53.6	2,065.9	0.00	0.00	
6,300.0	0.00	0.00	5,614.4	-2,065.2	53.6	2,065.9	0.00	0.00	
6,400.0	0.00	0.00	5,714.4	-2,065.2	53.6	2,065.9	0.00	0.00	
6,500.0	0.00	0.00	5,814.4	-2,065.2	53.6	2,065.9	0.00	0.00	
6,600.0	0.00	0.00	5,914.4	-2,065.2	53.6	2,065.9	0.00	0.00	
6,699.6	0.00	0.00	6,014.0	-2,065.2	53.6	2,065.9	0.00	0.00	Rollins
6,700.0	0.00	0.00	6,014.4	-2,065.2	53.6	2,065.9	0.00	0.00	
6,800.0	0.00	0.00	6,114.4	-2,065.2	53.6	2,065.9	0.00	0.00	
6,900.0	0.00	0.00	6,214.4	-2,065.2	53.6	2,065.9	0.00	0.00	
6,999.6	0.00	0.00	6,314.0	-2,065.2	53.6	2,065.9	0.00	0.00	Permit TD at 6999' MD

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									
Twin Creek 12-2D2 (O1I - plan hits target center - Circle (radius 25.0)	0.00	0.00	5,439.0	-2,065.2	53.6	1,601,468.71	2,403,684.98	39.465760	-107.612390
Twin Creek 12-2D2 (O1I - plan hits target center - Point	0.00	0.00	3,909.0	-2,065.2	53.6	1,601,468.71	2,403,684.98	39.465760	-107.612390

Planning Report

Database:	US EDM 2003.21 Multi User Db	Local Co-ordinate Reference:	Well Twin Creek 12-2D2 (O1EB)
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KBE @ 6084.0ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	KBE @ 6084.0ft (Original Well Elev)
Site:	SWSE S1-T7S-R92W (O1EB Pad)	North Reference:	True
Well:	Twin Creek 12-2D2 (O1EB)	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Casing Points				
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
1,135.8	1,100.0	Surface Casing	5.500	6.000

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,942.1	1,764.0	Ohio Creek			
2,787.7	2,349.0	Mesa Verde			
3,593.5	2,954.0	Williams Fork			
4,268.0	3,584.0	Top of Gas			
5,974.6	5,289.0	Coal Ridge			
6,699.6	6,014.0	Rollins			

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
1,025.0	999.5	-175.5	-4.8	Start 220' hold at 1025' MD
1,245.0	1,199.1	-268.0	-3.8	End 220' hold at 1245' MD
1,950.6	1,769.9	-675.6	6.6	EOB at Inc. = 46.23°
3,068.9	2,543.5	-1,482.7	33.9	Start Drop -3.03
4,594.6	3,909.0	-2,065.2	53.6	EOD at Inc. = 0°
6,124.6	5,439.0	-2,065.2	53.6	TD at 6124' MD
6,999.6	6,314.0	-2,065.2	53.6	Permit TD at 6999' MD