

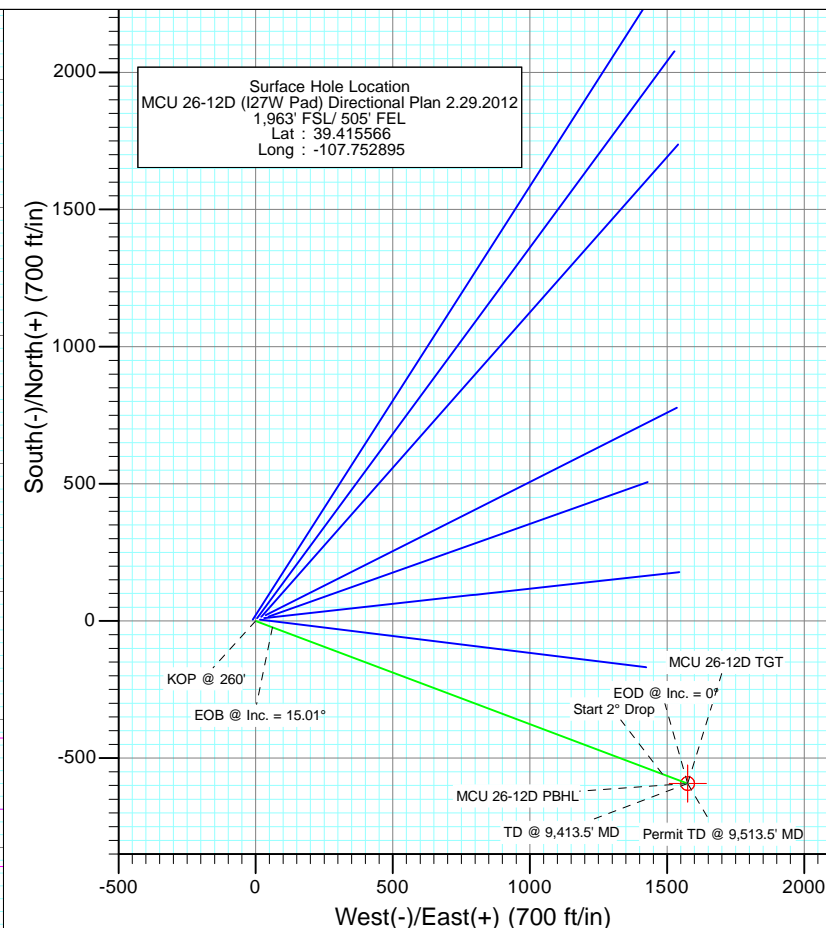
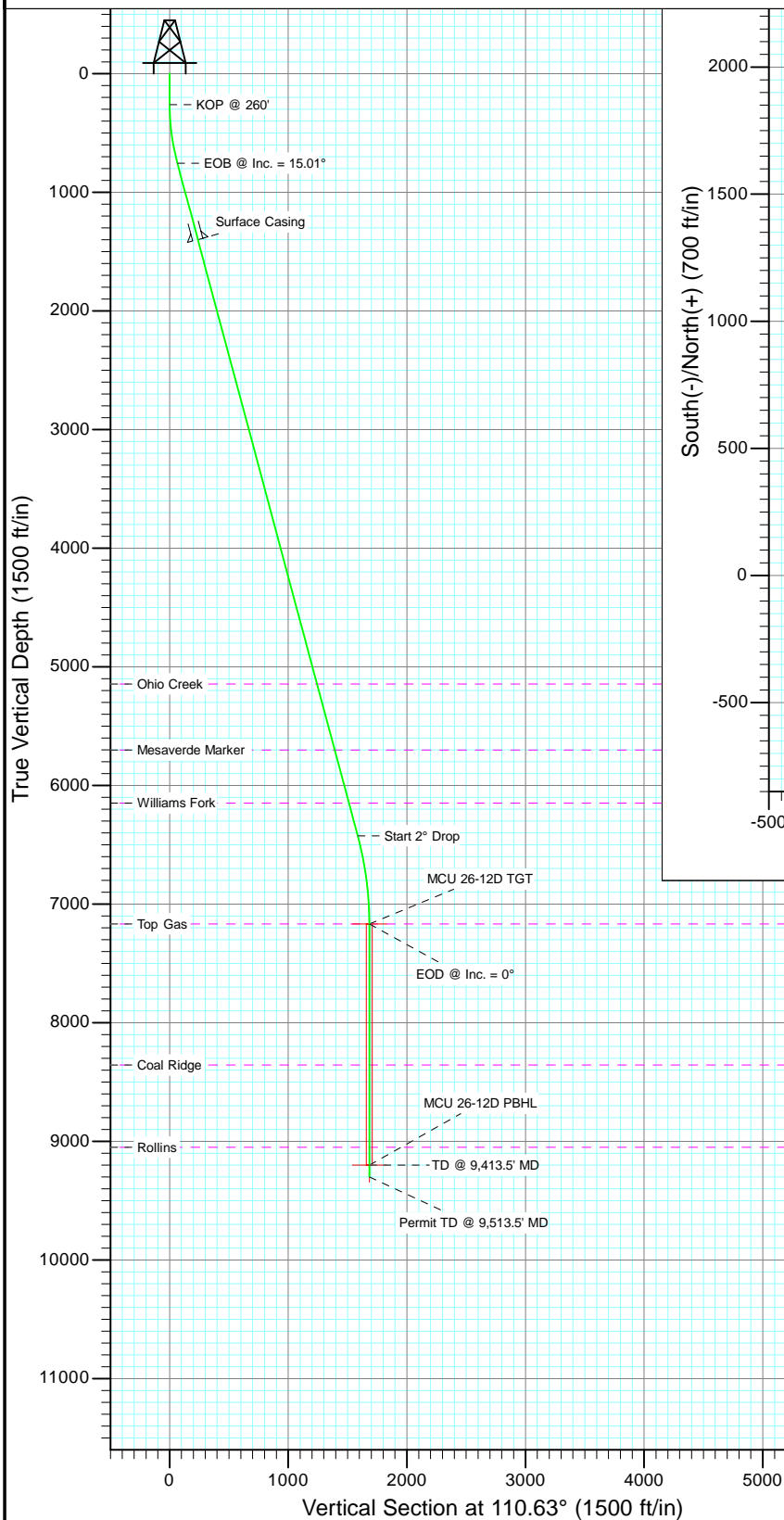


Project: Mamm Creek  
 Site: I27W  
 Well: MCU 26-12D (I27W Pad) Directional Plan 2.29.2012  
 Wellbore: OH  
 Design: Plan #1



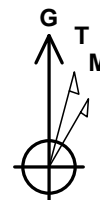
#### SECTION DETAILS

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	260.0	0.00	0.00	260.0	0.0	0.0	0.00	0.00	0.0	
3	760.3	15.01	110.63	754.6	-22.9	61.0	3.00	110.63	65.1	
4	6630.1	15.01	110.63	6424.1	-558.4	1483.6	0.00	0.00	1585.2	
5	7380.5	0.00	360.00	7166.0	-592.8	1575.0	2.00	180.00	1682.9	MCU 26-12D TGT
6	9413.5	0.00	360.00	9199.0	-592.8	1575.0	0.00	360.00	1682.9	MCU 26-12D PBHL
7	9513.5	0.00	360.00	9299.0	-592.8	1575.0	0.00	360.00	1682.9	



#### FORMATION TOP DETAILS

TVDPath	MDPath	Formation
5144.0	5304.7	Ohio Creek
5701.0	5881.4	Mesaverde Marker
6148.0	6344.2	Williams Fork
7166.0	7380.5	Top Gas
8356.0	8570.5	Coal Ridge
9049.0	9263.5	Rollins



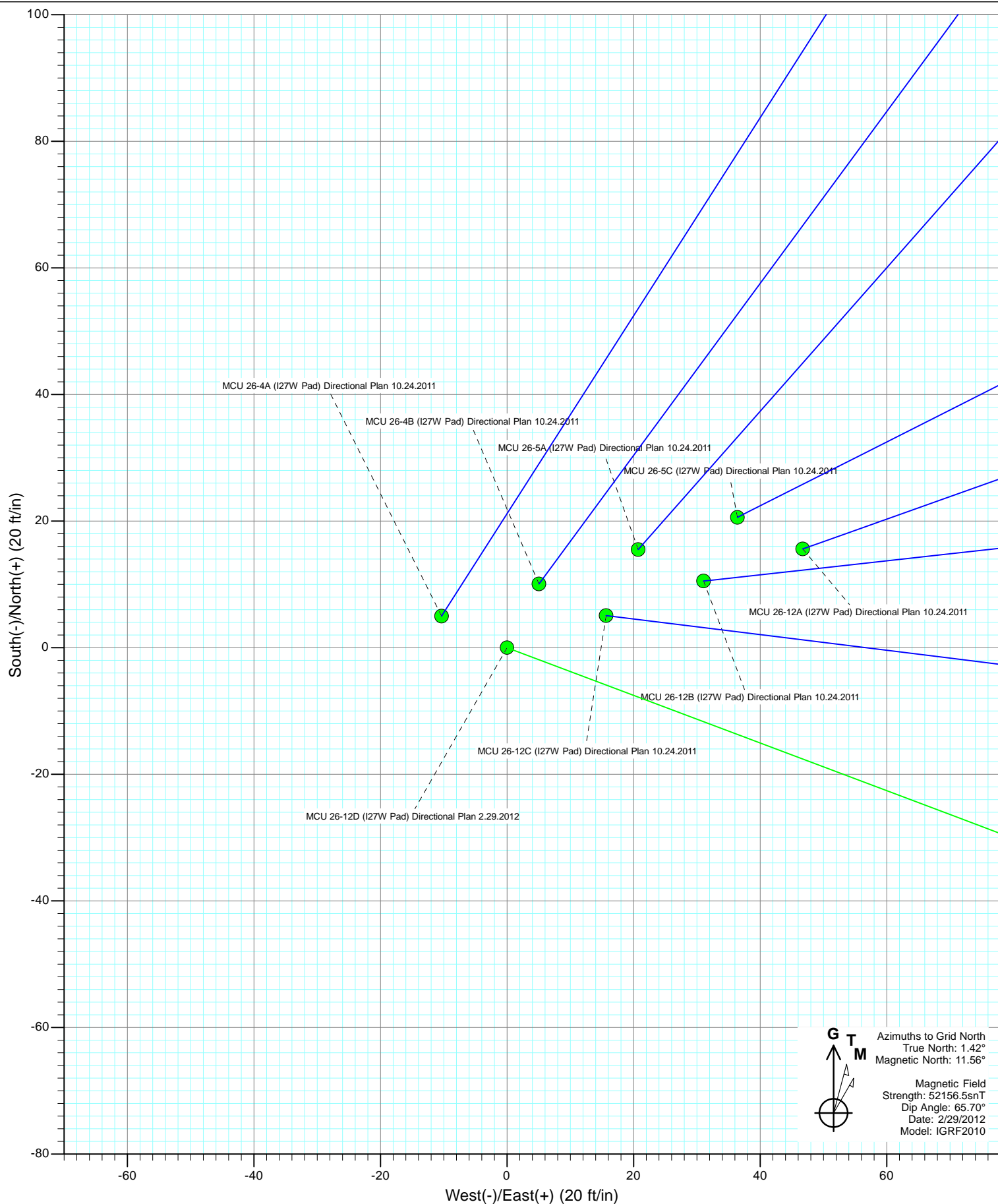
Azimuths to Grid North  
 True North: 1.42°  
 Magnetic North: 11.56°

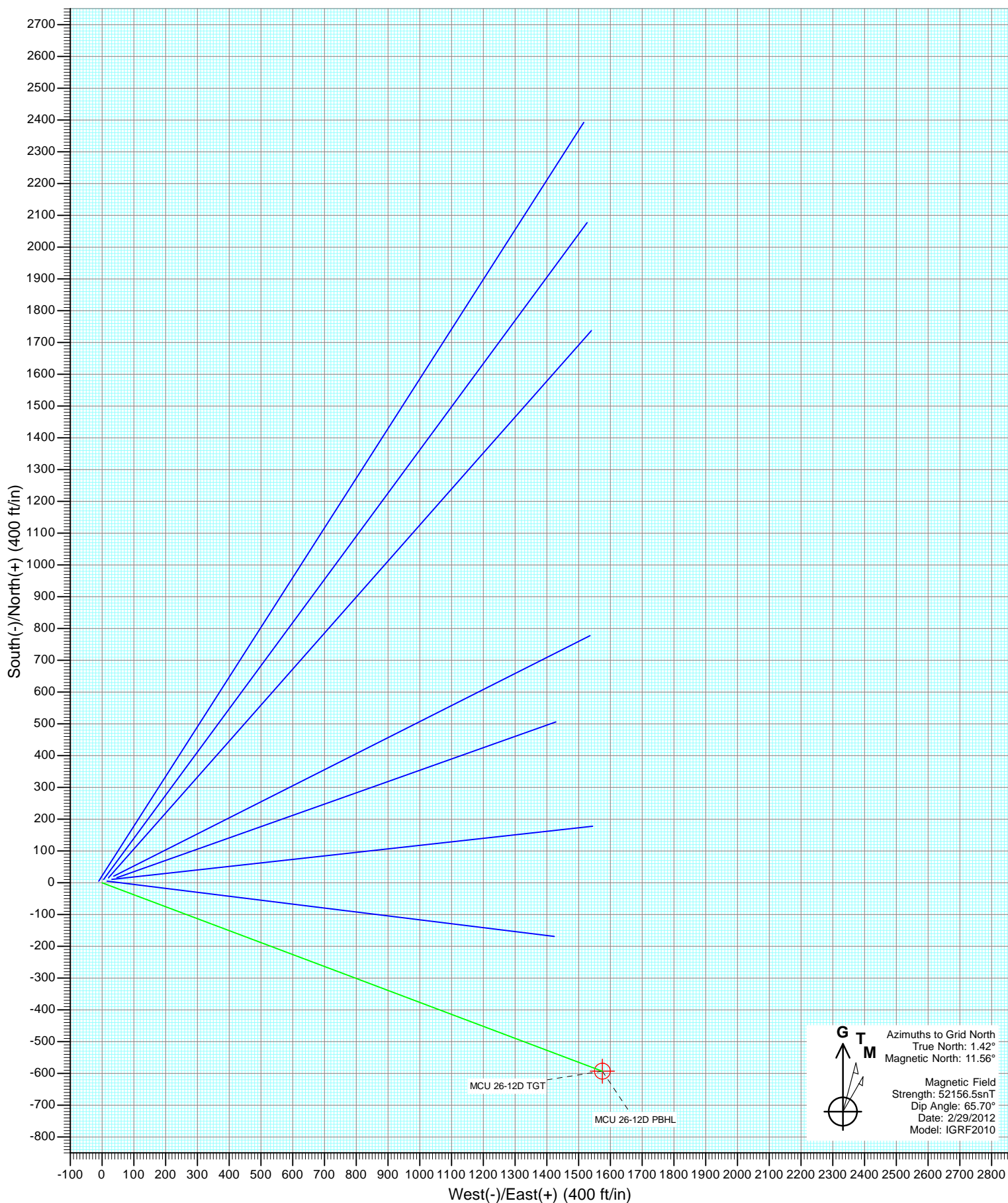
Magnetic Field  
 Strength: 52156.5snT  
 Dip Angle: 65.70°  
 Date: 2/29/2012  
 Model: IGRF2010

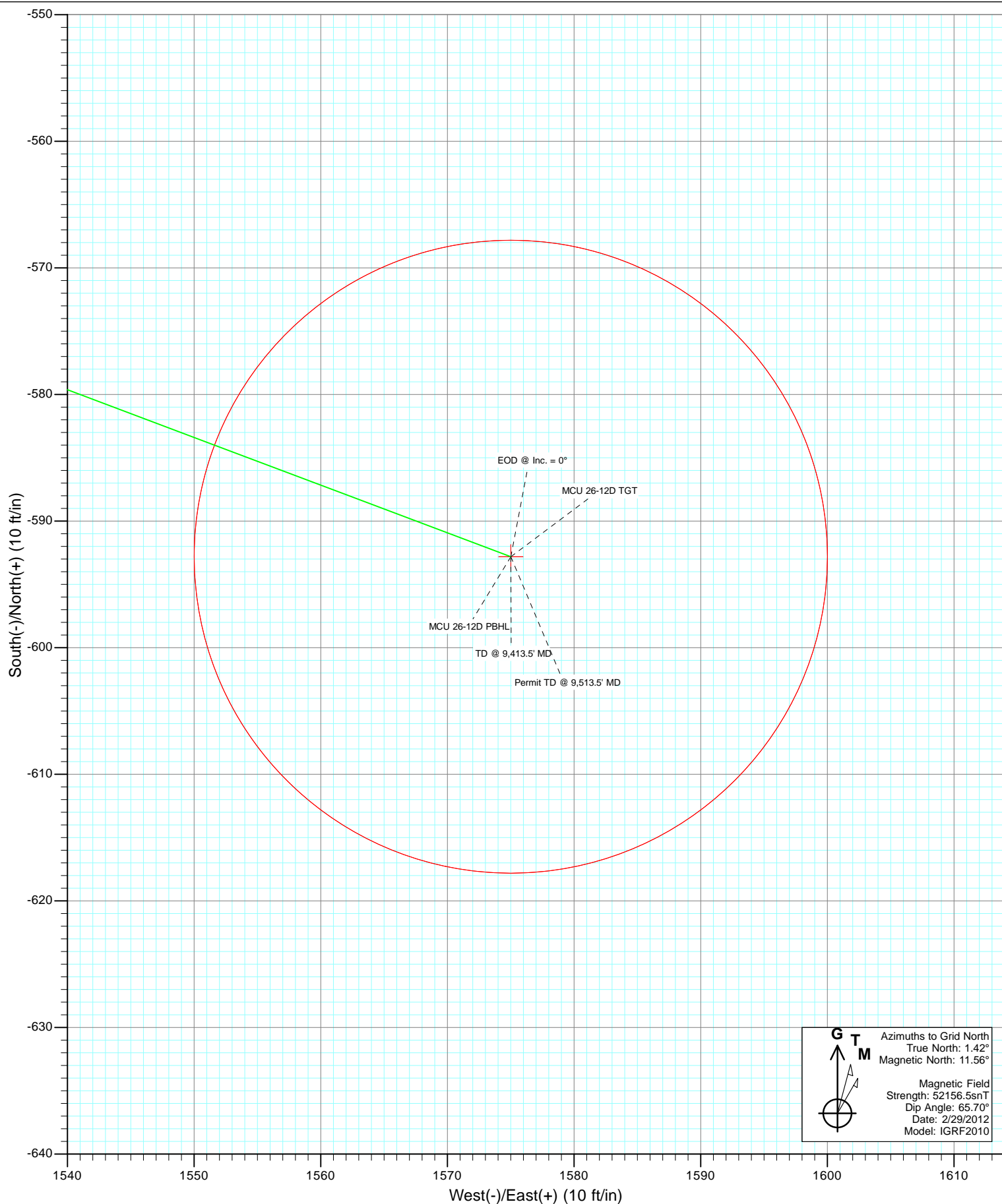
Plan #1  
 MCU 26-12D (I27W Pad) Directional Plan 2.29.2012  
 125XXX; SC

KBE @ 7223.0ft (Original Well Elev)  
 North American Datum 1983  
 Well MCU 26-12D (I27W Pad) Directional Plan 2.29.2012, Grid North

Target		Azimuth	Origin Type	N/S	E/W
TD No Target (Freehand)		110.63	Slot	0.0	0.0
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
MCU 26-12D TGT	7166.0	-592.8	1575.0	39.414046	-107.747270
MCU 26-12D PBHL	9199.0	-592.8	1575.0	39.414046	-107.747270







# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well MCU 26-12D (I27W Pad) Directional Plan 2
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	KBE @ 7223.0ft (Original Well Elev)
<b>Project:</b>	Mamm Creek	<b>MD Reference:</b>	KBE @ 7223.0ft (Original Well Elev)
<b>Site:</b>	I27W	<b>North Reference:</b>	Grid
<b>Well:</b>	MCU 26-12D (I27W Pad) Directional Plan 2.29.2012	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<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>	I27W			
<b>Site Position:</b>		<b>Northing:</b>	1,584,160.49 ft	<b>Latitude:</b> 39.415612
<b>From:</b>	Lat/Long	<b>Easting:</b>	2,363,622.14 ft	<b>Longitude:</b> -107.752731
<b>Position Uncertainty:</b>	0.0 ft	<b>Slot Radius:</b>	13.200 in	<b>Grid Convergence:</b> -1.42 °

<b>Well</b>	MCU 26-12D (I27W Pad) Directional Plan 2.29.2012			
<b>Well Position</b>	<b>+N/-S</b>	0.0 ft	<b>Northing:</b>	1,584,144.88 ft
	<b>+E/-W</b>	0.0 ft	<b>Easting:</b>	2,363,575.40 ft
<b>Position Uncertainty</b>		0.0 ft	<b>Wellhead Elevation:</b>	ft
			<b>Ground Level:</b>	7,201.0 ft

<b>Wellbore</b>	OH				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	2/29/2012	10.14	65.70	52,156

<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) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	110.63

<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	
260.0	0.00	0.00	260.0	0.0	0.0	0.00	0.00	0.00	0.00	
760.3	15.01	110.63	754.6	-22.9	61.0	3.00	3.00	0.00	110.63	
6,630.1	15.01	110.63	6,424.1	-558.4	1,483.6	0.00	0.00	0.00	0.00	
7,380.5	0.00	360.00	7,166.0	-592.8	1,575.0	2.00	-2.00	0.00	180.00	MCU 26-12D TGT
9,413.5	0.00	360.00	9,199.0	-592.8	1,575.0	0.00	0.00	0.00	360.00	MCU 26-12D PBHL
9,513.5	0.00	360.00	9,299.0	-592.8	1,575.0	0.00	0.00	0.00	360.00	

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well MCU 26-12D (I27W Pad) Directional Plan 2
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	KBE @ 7223.0ft (Original Well Elev)
<b>Project:</b>	Mamm Creek	<b>MD Reference:</b>	KBE @ 7223.0ft (Original Well Elev)
<b>Site:</b>	I27W	<b>North Reference:</b>	Grid
<b>Well:</b>	MCU 26-12D (I27W Pad) Directional Plan 2.29.2012	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<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	
260.0	0.00	0.00	260.0	0.0	0.0	0.0	0.00	0.00	KOP @ 260'
300.0	1.20	110.63	300.0	-0.1	0.4	0.4	3.00	3.00	
400.0	4.20	110.63	399.9	-1.8	4.8	5.1	3.00	3.00	
500.0	7.20	110.63	499.4	-5.3	14.1	15.1	3.00	3.00	
600.0	10.20	110.63	598.2	-10.6	28.2	30.2	3.00	3.00	
700.0	13.20	110.63	696.1	-17.8	47.2	50.5	3.00	3.00	
760.3	15.01	110.63	754.6	-22.9	61.0	65.1	3.00	3.00	EOB @ Inc. = 15.01°
800.0	15.01	110.63	792.9	-26.6	70.6	75.4	0.00	0.00	
900.0	15.01	110.63	889.5	-35.7	94.8	101.3	0.00	0.00	
1,000.0	15.01	110.63	986.1	-44.8	119.1	127.2	0.00	0.00	
1,100.0	15.01	110.63	1,082.7	-53.9	143.3	153.1	0.00	0.00	
1,200.0	15.01	110.63	1,179.3	-63.1	167.5	179.0	0.00	0.00	
1,300.0	15.01	110.63	1,275.9	-72.2	191.8	204.9	0.00	0.00	
1,400.0	15.01	110.63	1,372.5	-81.3	216.0	230.8	0.00	0.00	
1,427.0	15.01	110.63	1,398.6	-83.8	222.6	237.8	0.00	0.00	Surface Casing
1,500.0	15.01	110.63	1,469.1	-90.4	240.2	256.7	0.00	0.00	
1,600.0	15.01	110.63	1,565.7	-99.5	264.5	282.6	0.00	0.00	
1,700.0	15.01	110.63	1,662.2	-108.7	288.7	308.5	0.00	0.00	
1,800.0	15.01	110.63	1,758.8	-117.8	313.0	334.4	0.00	0.00	
1,900.0	15.01	110.63	1,855.4	-126.9	337.2	360.3	0.00	0.00	
2,000.0	15.01	110.63	1,952.0	-136.0	361.4	386.2	0.00	0.00	
2,100.0	15.01	110.63	2,048.6	-145.2	385.7	412.1	0.00	0.00	
2,200.0	15.01	110.63	2,145.2	-154.3	409.9	438.0	0.00	0.00	
2,300.0	15.01	110.63	2,241.8	-163.4	434.1	463.9	0.00	0.00	
2,400.0	15.01	110.63	2,338.4	-172.5	458.4	489.8	0.00	0.00	
2,500.0	15.01	110.63	2,435.0	-181.6	482.6	515.7	0.00	0.00	
2,600.0	15.01	110.63	2,531.5	-190.8	506.8	541.6	0.00	0.00	
2,700.0	15.01	110.63	2,628.1	-199.9	531.1	567.5	0.00	0.00	
2,800.0	15.01	110.63	2,724.7	-209.0	555.3	593.3	0.00	0.00	
2,900.0	15.01	110.63	2,821.3	-218.1	579.5	619.2	0.00	0.00	
3,000.0	15.01	110.63	2,917.9	-227.3	603.8	645.1	0.00	0.00	
3,100.0	15.01	110.63	3,014.5	-236.4	628.0	671.0	0.00	0.00	
3,200.0	15.01	110.63	3,111.1	-245.5	652.3	696.9	0.00	0.00	
3,300.0	15.01	110.63	3,207.7	-254.6	676.5	722.8	0.00	0.00	
3,400.0	15.01	110.63	3,304.3	-263.7	700.7	748.7	0.00	0.00	
3,500.0	15.01	110.63	3,400.8	-272.9	725.0	774.6	0.00	0.00	
3,600.0	15.01	110.63	3,497.4	-282.0	749.2	800.5	0.00	0.00	
3,700.0	15.01	110.63	3,594.0	-291.1	773.4	826.4	0.00	0.00	
3,800.0	15.01	110.63	3,690.6	-300.2	797.7	852.3	0.00	0.00	
3,900.0	15.01	110.63	3,787.2	-309.4	821.9	878.2	0.00	0.00	
4,000.0	15.01	110.63	3,883.8	-318.5	846.1	904.1	0.00	0.00	
4,100.0	15.01	110.63	3,980.4	-327.6	870.4	930.0	0.00	0.00	
4,200.0	15.01	110.63	4,077.0	-336.7	894.6	955.9	0.00	0.00	
4,300.0	15.01	110.63	4,173.6	-345.8	918.8	981.8	0.00	0.00	
4,400.0	15.01	110.63	4,270.1	-355.0	943.1	1,007.7	0.00	0.00	
4,500.0	15.01	110.63	4,366.7	-364.1	967.3	1,033.6	0.00	0.00	
4,600.0	15.01	110.63	4,463.3	-373.2	991.6	1,059.5	0.00	0.00	
4,700.0	15.01	110.63	4,559.9	-382.3	1,015.8	1,085.4	0.00	0.00	
4,800.0	15.01	110.63	4,656.5	-391.5	1,040.0	1,111.3	0.00	0.00	

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well MCU 26-12D (I27W Pad) Directional Plan 2
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	KBE @ 7223.0ft (Original Well Elev)
<b>Project:</b>	Mamm Creek	<b>MD Reference:</b>	KBE @ 7223.0ft (Original Well Elev)
<b>Site:</b>	I27W	<b>North Reference:</b>	Grid
<b>Well:</b>	MCU 26-12D (I27W Pad) Directional Plan 2.29.2012	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<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
4,900.0	15.01	110.63	4,753.1	-400.6	1,064.3	1,137.2	0.00	0.00	
5,000.0	15.01	110.63	4,849.7	-409.7	1,088.5	1,163.0	0.00	0.00	
5,100.0	15.01	110.63	4,946.3	-418.8	1,112.7	1,188.9	0.00	0.00	
5,200.0	15.01	110.63	5,042.9	-427.9	1,137.0	1,214.8	0.00	0.00	
5,300.0	15.01	110.63	5,139.4	-437.1	1,161.2	1,240.7	0.00	0.00	
5,304.7	15.01	110.63	5,144.0	-437.5	1,162.3	1,242.0	0.00	0.00	Ohio Creek
5,400.0	15.01	110.63	5,236.0	-446.2	1,185.4	1,266.6	0.00	0.00	
5,500.0	15.01	110.63	5,332.6	-455.3	1,209.7	1,292.5	0.00	0.00	
5,600.0	15.01	110.63	5,429.2	-464.4	1,233.9	1,318.4	0.00	0.00	
5,700.0	15.01	110.63	5,525.8	-473.5	1,258.1	1,344.3	0.00	0.00	
5,800.0	15.01	110.63	5,622.4	-482.7	1,282.4	1,370.2	0.00	0.00	
5,881.4	15.01	110.63	5,701.0	-490.1	1,302.1	1,391.3	0.00	0.00	Mesaverde Marker
5,900.0	15.01	110.63	5,719.0	-491.8	1,306.6	1,396.1	0.00	0.00	
6,000.0	15.01	110.63	5,815.6	-500.9	1,330.9	1,422.0	0.00	0.00	
6,100.0	15.01	110.63	5,912.2	-510.0	1,355.1	1,447.9	0.00	0.00	
6,200.0	15.01	110.63	6,008.7	-519.2	1,379.3	1,473.8	0.00	0.00	
6,300.0	15.01	110.63	6,105.3	-528.3	1,403.6	1,499.7	0.00	0.00	
6,344.2	15.01	110.63	6,148.0	-532.3	1,414.3	1,511.1	0.00	0.00	Williams Fork
6,400.0	15.01	110.63	6,201.9	-537.4	1,427.8	1,525.6	0.00	0.00	
6,500.0	15.01	110.63	6,298.5	-546.5	1,452.0	1,551.5	0.00	0.00	
6,600.0	15.01	110.63	6,395.1	-555.6	1,476.3	1,577.4	0.00	0.00	
6,630.1	15.01	110.63	6,424.1	-558.4	1,483.6	1,585.2	0.00	0.00	Start 2° Drop
6,700.0	13.61	110.63	6,491.9	-564.5	1,499.7	1,602.4	2.00	-2.00	
6,800.0	11.61	110.63	6,589.5	-572.2	1,520.2	1,624.3	2.00	-2.00	
6,900.0	9.61	110.63	6,687.8	-578.7	1,537.4	1,642.7	2.00	-2.00	
7,000.0	7.61	110.63	6,786.6	-583.9	1,551.4	1,657.7	2.00	-2.00	
7,100.0	5.61	110.63	6,886.0	-588.0	1,562.2	1,669.2	2.00	-2.00	
7,200.0	3.61	110.63	6,985.6	-590.8	1,569.7	1,677.2	2.00	-2.00	
7,300.0	1.61	110.63	7,085.5	-592.4	1,574.0	1,681.8	2.00	-2.00	
7,380.5	0.00	360.00	7,166.0	-592.8	1,575.0	1,682.9	2.00	-2.00	EOD @ Inc. = 0° - Top Gas
7,400.0	0.00	360.00	7,185.5	-592.8	1,575.0	1,682.9	0.00	0.00	
7,500.0	0.00	360.00	7,285.5	-592.8	1,575.0	1,682.9	0.00	0.00	
7,600.0	0.00	360.00	7,385.5	-592.8	1,575.0	1,682.9	0.00	0.00	
7,700.0	0.00	360.00	7,485.5	-592.8	1,575.0	1,682.9	0.00	0.00	
7,800.0	0.00	360.00	7,585.5	-592.8	1,575.0	1,682.9	0.00	0.00	
7,900.0	0.00	360.00	7,685.5	-592.8	1,575.0	1,682.9	0.00	0.00	
8,000.0	0.00	360.00	7,785.5	-592.8	1,575.0	1,682.9	0.00	0.00	
8,100.0	0.00	360.00	7,885.5	-592.8	1,575.0	1,682.9	0.00	0.00	
8,200.0	0.00	360.00	7,985.5	-592.8	1,575.0	1,682.9	0.00	0.00	
8,300.0	0.00	360.00	8,085.5	-592.8	1,575.0	1,682.9	0.00	0.00	
8,400.0	0.00	360.00	8,185.5	-592.8	1,575.0	1,682.9	0.00	0.00	
8,500.0	0.00	360.00	8,285.5	-592.8	1,575.0	1,682.9	0.00	0.00	
8,570.5	0.00	360.00	8,356.0	-592.8	1,575.0	1,682.9	0.00	0.00	Coal Ridge
8,600.0	0.00	360.00	8,385.5	-592.8	1,575.0	1,682.9	0.00	0.00	
8,700.0	0.00	360.00	8,485.5	-592.8	1,575.0	1,682.9	0.00	0.00	
8,800.0	0.00	360.00	8,585.5	-592.8	1,575.0	1,682.9	0.00	0.00	
8,900.0	0.00	360.00	8,685.5	-592.8	1,575.0	1,682.9	0.00	0.00	
9,000.0	0.00	360.00	8,785.5	-592.8	1,575.0	1,682.9	0.00	0.00	
9,100.0	0.00	360.00	8,885.5	-592.8	1,575.0	1,682.9	0.00	0.00	
9,200.0	0.00	360.00	8,985.5	-592.8	1,575.0	1,682.9	0.00	0.00	
9,263.5	0.00	360.00	9,049.0	-592.8	1,575.0	1,682.9	0.00	0.00	Rollins
9,300.0	0.00	360.00	9,085.5	-592.8	1,575.0	1,682.9	0.00	0.00	

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well MCU 26-12D (I27W Pad) Directional Plan 2
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	KBE @ 7223.0ft (Original Well Elev)
<b>Project:</b>	Mamm Creek	<b>MD Reference:</b>	KBE @ 7223.0ft (Original Well Elev)
<b>Site:</b>	I27W	<b>North Reference:</b>	Grid
<b>Well:</b>	MCU 26-12D (I27W Pad) Directional Plan 2.29.2012	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<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
9,400.0	0.00	360.00	9,185.5	-592.8	1,575.0	1,682.9	0.00	0.00	
9,413.5	0.00	360.00	9,199.0	-592.8	1,575.0	1,682.9	0.00	0.00	TD @ 9,413.5' MD
9,500.0	0.00	360.00	9,285.5	-592.8	1,575.0	1,682.9	0.00	0.00	
9,513.5	0.00	360.00	9,299.0	-592.8	1,575.0	1,682.9	0.00	0.00	Permit TD @ 9,513.5' 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
MCU 26-12D TGT - plan hits target center - Point	0.00	360.00	7,166.0	-592.8	1,575.0	1,583,552.07	2,365,150.41	39.414046	-107.747270
MCU 26-12D PBHL - plan hits target center - Circle (radius 25.0)	0.00	360.00	9,199.0	-592.8	1,575.0	1,583,552.07	2,365,150.41	39.414046	-107.747270

### Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
1,427.0	1,398.6	Surface Casing	0.000	0.000

### Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
5,304.7	5,144.0	Ohio Creek			
5,881.4	5,701.0	Mesaverde Marker			
6,344.2	6,148.0	Williams Fork			
7,380.5	7,166.0	Top Gas			
8,570.5	8,356.0	Coal Ridge			
9,263.5	9,049.0	Rollins			

### Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment
260.0	260.0	0.0	0.0	KOP @ 260'
760.3	754.6	-22.9	61.0	EOB @ Inc. = 15.01°
6,630.1	6,424.1	-558.4	1,483.6	Start 2° Drop
7,380.5	7,166.0	-592.8	1,575.0	EOD @ Inc. = 0°
9,413.5	9,199.0	-592.8	1,575.0	TD @ 9,413.5' MD
9,513.5	9,299.0	-592.8	1,575.0	Permit TD @ 9,513.5' MD