

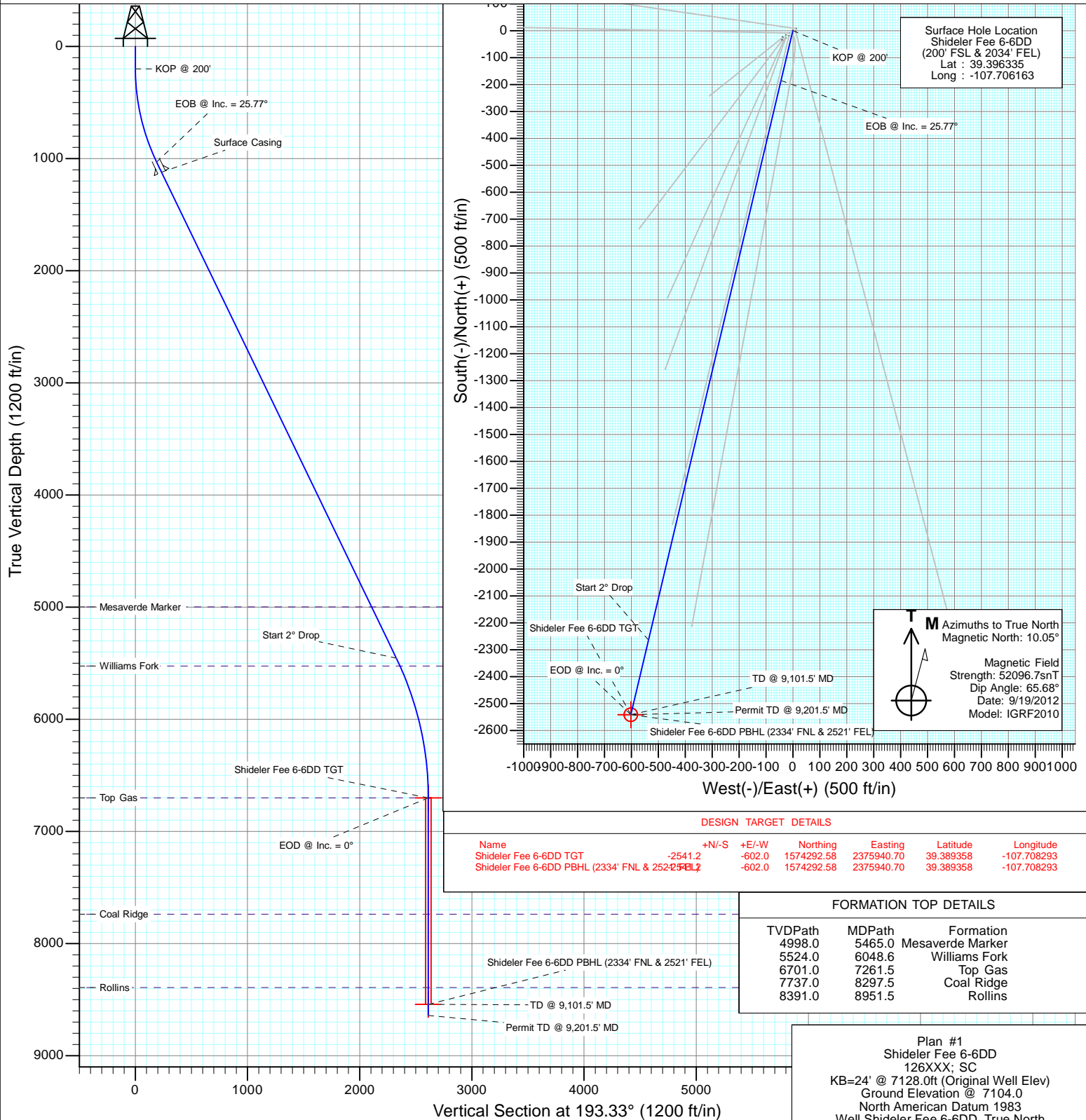


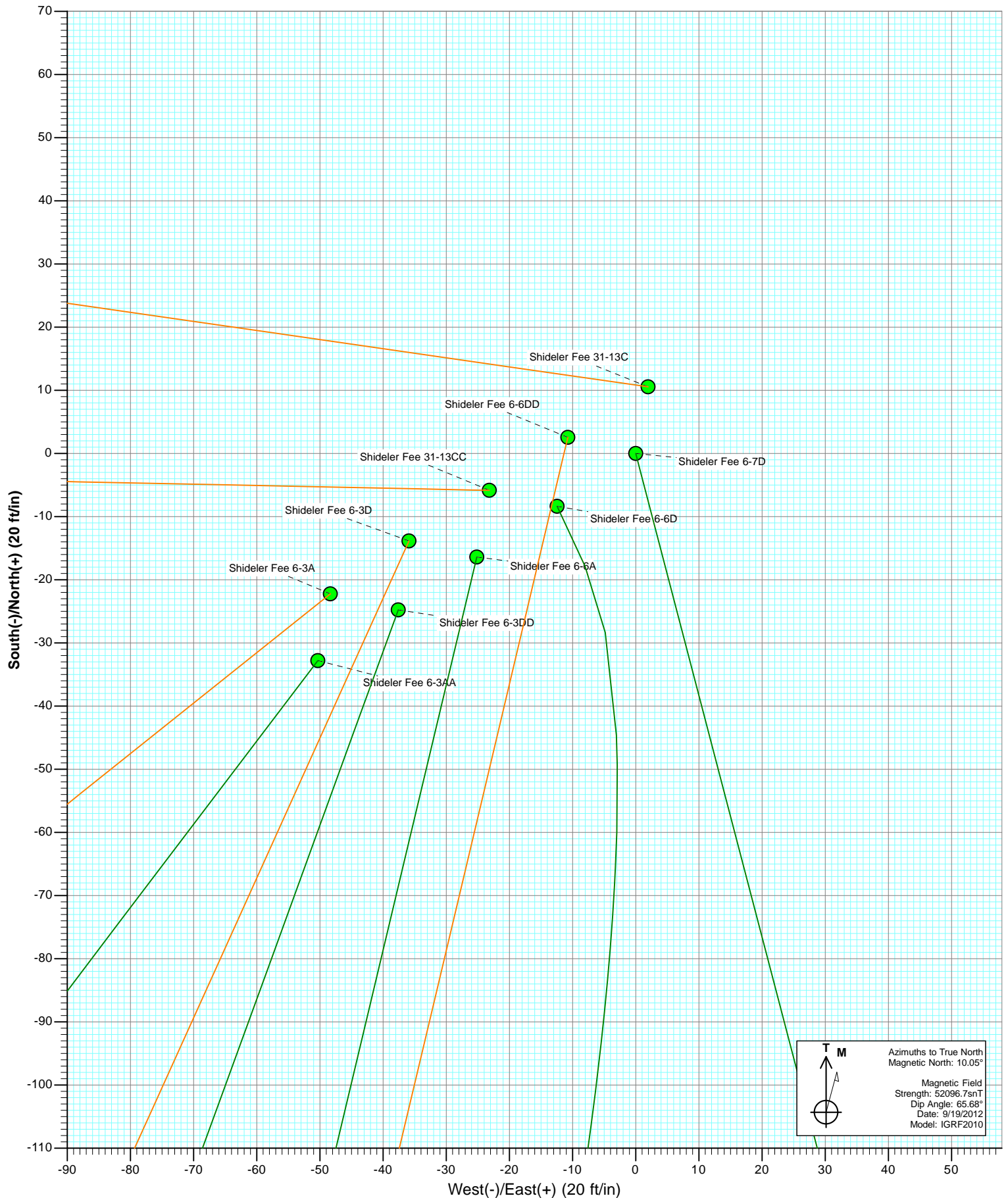
Project: Mamm Creek
Site: O31E Pad
Well: Shideler Fee 6-6DD
Wellbore: DD
Design: Plan #1

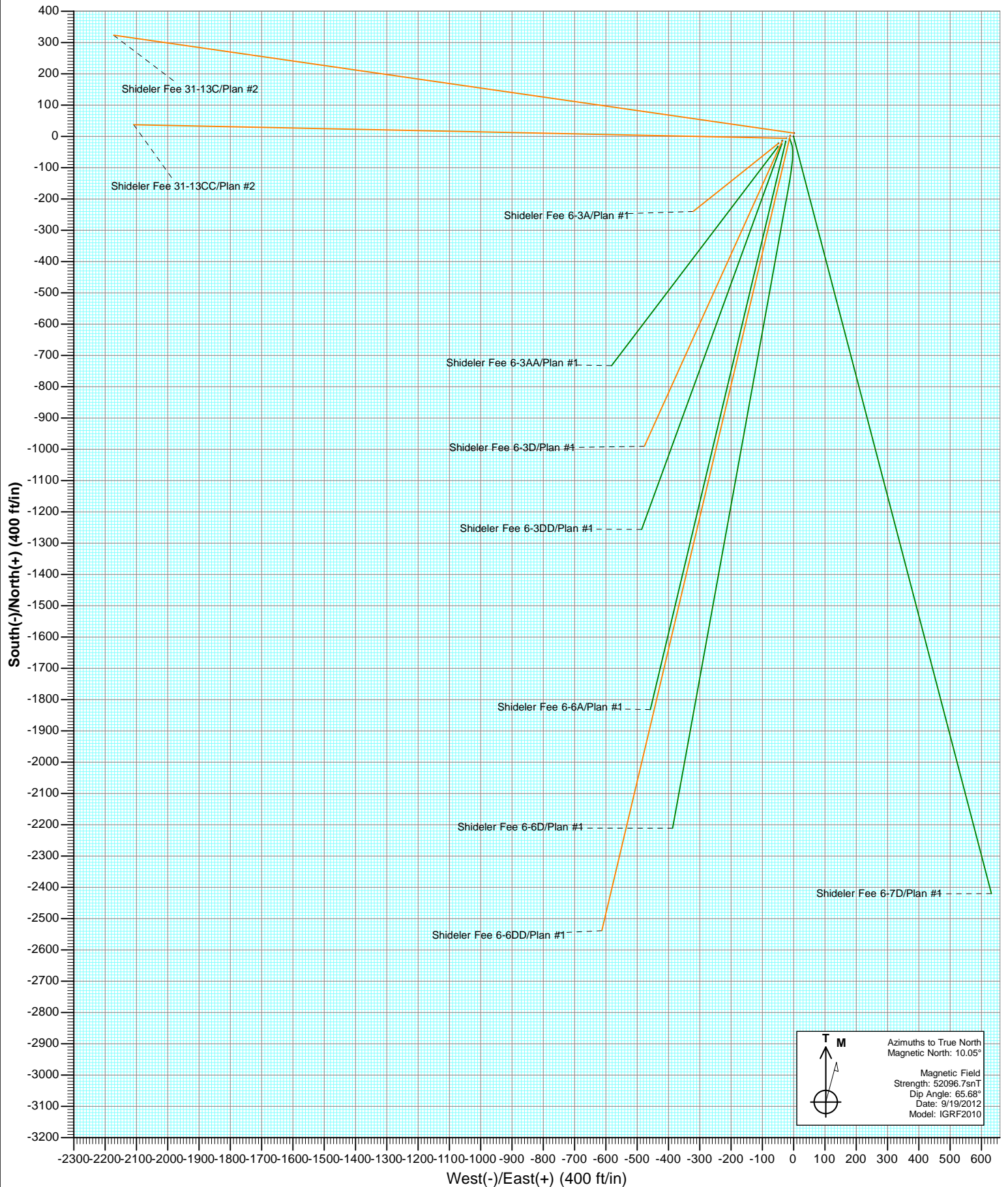


SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VFace	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	1059.1	25.77	193.33	1030.4	-184.9	-43.8	3.00	193.33	190.0	
4	5972.8	25.77	193.33	5455.3	-2263.9	-536.3	0.00	0.00	2326.6	
5	7261.5	0.00	0.00	6701.0	-2541.2	-602.0	2.00	180.00	2611.5	Shideler Fee 6-6DD TGT
6	9101.5	0.00	0.00	8541.0	-2541.2	-602.0	0.00	0.00	2611.5	Shideler Fee 6-6DD PBHL (2334' FNL & 2521' FEL)
7	9201.5	0.00	0.00	8641.0	-2541.2	-602.0	0.00	0.00	2611.5	







Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Shideler Fee 6-6DD
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KB=24' @ 7128.0ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	KB=24' @ 7128.0ft (Original Well Elev)
Site:	O31E Pad	North Reference:	True
Well:	Shideler Fee 6-6DD	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		O31E Pad			
Site Position:		Northing:	1,577,012.73 ft	Latitude:	39.396873
From:	Lat/Long	Easting:	2,376,675.10 ft	Longitude:	-107.705929
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.39 °

Well	Shideler Fee 6-6DD					
Well Position	+N/-S	0.0 ft	Northing:	1,576,818.43 ft	Latitude:	39.396335
	+E/-W	0.0 ft	Easting:	2,376,604.23 ft	Longitude:	-107.706163
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	7,104.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	9/19/2012	10.05	65.68	52,097

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	193.33

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	
1,059.1	25.77	193.33	1,030.4	-184.9	-43.8	3.00	3.00	0.00	193.33	
5,972.8	25.77	193.33	5,455.3	-2,263.9	-536.3	0.00	0.00	0.00	0.00	
7,261.5	0.00	0.00	6,701.0	-2,541.2	-602.0	2.00	-2.00	0.00	180.00	Shideler Fee 6-6DD T
9,101.5	0.00	0.00	8,541.0	-2,541.2	-602.0	0.00	0.00	0.00	0.00	Shideler Fee 6-6DD F
9,201.5	0.00	0.00	8,641.0	-2,541.2	-602.0	0.00	0.00	0.00	0.00	

Cathedral Energy Services

Planning Report

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Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KB=24' @ 7128.0ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	KB=24' @ 7128.0ft (Original Well Elev)
Site:	O31E Pad	North Reference:	True
Well:	Shideler Fee 6-6DD	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'
300.0	3.00	193.33	300.0	-2.5	-0.6	2.6	3.00	3.00	
400.0	6.00	193.33	399.6	-10.2	-2.4	10.5	3.00	3.00	
500.0	9.00	193.33	498.8	-22.9	-5.4	23.5	3.00	3.00	
600.0	12.00	193.33	597.1	-40.6	-9.6	41.7	3.00	3.00	
700.0	15.00	193.33	694.3	-63.3	-15.0	65.1	3.00	3.00	
800.0	18.00	193.33	790.2	-91.0	-21.5	93.5	3.00	3.00	
900.0	21.00	193.33	884.4	-123.4	-29.2	126.9	3.00	3.00	
1,000.0	24.00	193.33	976.8	-160.7	-38.1	165.1	3.00	3.00	
1,059.1	25.77	193.33	1,030.4	-184.9	-43.8	190.0	3.00	3.00	EOB @ Inc. = 25.77°
1,100.0	25.77	193.33	1,067.3	-202.2	-47.9	207.8	0.00	0.00	
1,159.1	25.77	193.33	1,120.5	-227.2	-53.8	233.5	0.00	0.00	Surface Casing
1,200.0	25.77	193.33	1,157.3	-244.5	-57.9	251.3	0.00	0.00	
1,300.0	25.77	193.33	1,247.4	-286.8	-67.9	294.7	0.00	0.00	
1,400.0	25.77	193.33	1,337.4	-329.1	-78.0	338.2	0.00	0.00	
1,500.0	25.77	193.33	1,427.5	-371.4	-88.0	381.7	0.00	0.00	
1,600.0	25.77	193.33	1,517.5	-413.7	-98.0	425.2	0.00	0.00	
1,700.0	25.77	193.33	1,607.6	-456.0	-108.0	468.7	0.00	0.00	
1,800.0	25.77	193.33	1,697.6	-498.3	-118.1	512.1	0.00	0.00	
1,900.0	25.77	193.33	1,787.7	-540.7	-128.1	555.6	0.00	0.00	
2,000.0	25.77	193.33	1,877.7	-583.0	-138.1	599.1	0.00	0.00	
2,100.0	25.77	193.33	1,967.8	-625.3	-148.1	642.6	0.00	0.00	
2,200.0	25.77	193.33	2,057.8	-667.6	-158.1	686.1	0.00	0.00	
2,300.0	25.77	193.33	2,147.9	-709.9	-168.2	729.5	0.00	0.00	
2,400.0	25.77	193.33	2,237.9	-752.2	-178.2	773.0	0.00	0.00	
2,500.0	25.77	193.33	2,328.0	-794.5	-188.2	816.5	0.00	0.00	
2,600.0	25.77	193.33	2,418.0	-836.8	-198.2	860.0	0.00	0.00	
2,700.0	25.77	193.33	2,508.1	-879.1	-208.3	903.5	0.00	0.00	
2,800.0	25.77	193.33	2,598.1	-921.5	-218.3	947.0	0.00	0.00	
2,900.0	25.77	193.33	2,688.2	-963.8	-228.3	990.4	0.00	0.00	
3,000.0	25.77	193.33	2,778.2	-1,006.1	-238.3	1,033.9	0.00	0.00	
3,100.0	25.77	193.33	2,868.3	-1,048.4	-248.4	1,077.4	0.00	0.00	
3,200.0	25.77	193.33	2,958.3	-1,090.7	-258.4	1,120.9	0.00	0.00	
3,300.0	25.77	193.33	3,048.4	-1,133.0	-268.4	1,164.4	0.00	0.00	
3,400.0	25.77	193.33	3,138.4	-1,175.3	-278.4	1,207.8	0.00	0.00	
3,500.0	25.77	193.33	3,228.5	-1,217.6	-288.4	1,251.3	0.00	0.00	
3,600.0	25.77	193.33	3,318.6	-1,259.9	-298.5	1,294.8	0.00	0.00	
3,700.0	25.77	193.33	3,408.6	-1,302.2	-308.5	1,338.3	0.00	0.00	
3,800.0	25.77	193.33	3,498.7	-1,344.6	-318.5	1,381.8	0.00	0.00	
3,900.0	25.77	193.33	3,588.7	-1,386.9	-328.5	1,425.3	0.00	0.00	
4,000.0	25.77	193.33	3,678.8	-1,429.2	-338.6	1,468.7	0.00	0.00	
4,100.0	25.77	193.33	3,768.8	-1,471.5	-348.6	1,512.2	0.00	0.00	
4,200.0	25.77	193.33	3,858.9	-1,513.8	-358.6	1,555.7	0.00	0.00	
4,300.0	25.77	193.33	3,948.9	-1,556.1	-368.6	1,599.2	0.00	0.00	
4,400.0	25.77	193.33	4,039.0	-1,598.4	-378.7	1,642.7	0.00	0.00	
4,500.0	25.77	193.33	4,129.0	-1,640.7	-388.7	1,686.1	0.00	0.00	
4,600.0	25.77	193.33	4,219.1	-1,683.0	-398.7	1,729.6	0.00	0.00	
4,700.0	25.77	193.33	4,309.1	-1,725.4	-408.7	1,773.1	0.00	0.00	
4,800.0	25.77	193.33	4,399.2	-1,767.7	-418.7	1,816.6	0.00	0.00	
4,900.0	25.77	193.33	4,489.2	-1,810.0	-428.8	1,860.1	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Shideler Fee 6-6DD
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KB=24' @ 7128.0ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	KB=24' @ 7128.0ft (Original Well Elev)
Site:	O31E Pad	North Reference:	True
Well:	Shideler Fee 6-6DD	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
5,000.0	25.77	193.33	4,579.3	-1,852.3	-438.8	1,903.5	0.00	0.00	
5,100.0	25.77	193.33	4,669.3	-1,894.6	-448.8	1,947.0	0.00	0.00	
5,200.0	25.77	193.33	4,759.4	-1,936.9	-458.8	1,990.5	0.00	0.00	
5,300.0	25.77	193.33	4,849.4	-1,979.2	-468.9	2,034.0	0.00	0.00	
5,400.0	25.77	193.33	4,939.5	-2,021.5	-478.9	2,077.5	0.00	0.00	
5,465.0	25.77	193.33	4,998.0	-2,049.0	-485.4	2,105.7	0.00	0.00	Mesaverde Marker
5,500.0	25.77	193.33	5,029.5	-2,063.8	-488.9	2,121.0	0.00	0.00	
5,600.0	25.77	193.33	5,119.6	-2,106.1	-498.9	2,164.4	0.00	0.00	
5,700.0	25.77	193.33	5,209.6	-2,148.5	-509.0	2,207.9	0.00	0.00	
5,800.0	25.77	193.33	5,299.7	-2,190.8	-519.0	2,251.4	0.00	0.00	
5,900.0	25.77	193.33	5,389.7	-2,233.1	-529.0	2,294.9	0.00	0.00	
5,972.8	25.77	193.33	5,455.3	-2,263.9	-536.3	2,326.6	0.00	0.00	Start 2° Drop
6,000.0	25.23	193.33	5,479.9	-2,275.3	-539.0	2,338.2	2.00	-2.00	
6,048.6	24.26	193.33	5,524.0	-2,295.1	-543.7	2,358.6	2.00	-2.00	Williams Fork
6,100.0	23.23	193.33	5,571.0	-2,315.2	-548.5	2,379.3	2.00	-2.00	
6,200.0	21.23	193.33	5,663.6	-2,352.0	-557.2	2,417.1	2.00	-2.00	
6,300.0	19.23	193.33	5,757.4	-2,385.7	-565.2	2,451.7	2.00	-2.00	
6,400.0	17.23	193.33	5,852.4	-2,416.1	-572.4	2,483.0	2.00	-2.00	
6,500.0	15.23	193.33	5,948.4	-2,443.3	-578.8	2,510.9	2.00	-2.00	
6,600.0	13.23	193.33	6,045.3	-2,467.2	-584.5	2,535.5	2.00	-2.00	
6,700.0	11.23	193.33	6,143.1	-2,487.8	-589.4	2,556.7	2.00	-2.00	
6,800.0	9.23	193.33	6,241.5	-2,505.1	-593.4	2,574.5	2.00	-2.00	
6,900.0	7.23	193.33	6,340.4	-2,519.0	-596.7	2,588.8	2.00	-2.00	
7,000.0	5.23	193.33	6,439.8	-2,529.6	-599.2	2,599.6	2.00	-2.00	
7,100.0	3.23	193.33	6,539.6	-2,536.8	-600.9	2,607.0	2.00	-2.00	
7,200.0	1.23	193.33	6,639.5	-2,540.6	-601.8	2,610.9	2.00	-2.00	
7,261.5	0.00	0.00	6,701.0	-2,541.2	-602.0	2,611.5	2.00	-2.00	EOD @ Inc. = 0° - Top Gas
7,300.0	0.00	0.00	6,739.5	-2,541.2	-602.0	2,611.5	0.00	0.00	
7,400.0	0.00	0.00	6,839.5	-2,541.2	-602.0	2,611.5	0.00	0.00	
7,500.0	0.00	0.00	6,939.5	-2,541.2	-602.0	2,611.5	0.00	0.00	
7,600.0	0.00	0.00	7,039.5	-2,541.2	-602.0	2,611.5	0.00	0.00	
7,700.0	0.00	0.00	7,139.5	-2,541.2	-602.0	2,611.5	0.00	0.00	
7,800.0	0.00	0.00	7,239.5	-2,541.2	-602.0	2,611.5	0.00	0.00	
7,900.0	0.00	0.00	7,339.5	-2,541.2	-602.0	2,611.5	0.00	0.00	
8,000.0	0.00	0.00	7,439.5	-2,541.2	-602.0	2,611.5	0.00	0.00	
8,100.0	0.00	0.00	7,539.5	-2,541.2	-602.0	2,611.5	0.00	0.00	
8,200.0	0.00	0.00	7,639.5	-2,541.2	-602.0	2,611.5	0.00	0.00	
8,297.5	0.00	0.00	7,737.0	-2,541.2	-602.0	2,611.5	0.00	0.00	Coal Ridge
8,300.0	0.00	0.00	7,739.5	-2,541.2	-602.0	2,611.5	0.00	0.00	
8,400.0	0.00	0.00	7,839.5	-2,541.2	-602.0	2,611.5	0.00	0.00	
8,500.0	0.00	0.00	7,939.5	-2,541.2	-602.0	2,611.5	0.00	0.00	
8,600.0	0.00	0.00	8,039.5	-2,541.2	-602.0	2,611.5	0.00	0.00	
8,700.0	0.00	0.00	8,139.5	-2,541.2	-602.0	2,611.5	0.00	0.00	
8,800.0	0.00	0.00	8,239.5	-2,541.2	-602.0	2,611.5	0.00	0.00	
8,900.0	0.00	0.00	8,339.5	-2,541.2	-602.0	2,611.5	0.00	0.00	
8,951.5	0.00	0.00	8,391.0	-2,541.2	-602.0	2,611.5	0.00	0.00	Rollins
9,000.0	0.00	0.00	8,439.5	-2,541.2	-602.0	2,611.5	0.00	0.00	
9,101.5	0.00	0.00	8,541.0	-2,541.2	-602.0	2,611.5	0.00	0.00	TD @ 9,101.5' MD
9,201.5	0.00	0.00	8,641.0	-2,541.2	-602.0	2,611.5	0.00	0.00	Permit TD @ 9,201.5' MD

Cathedral Energy Services

Planning Report

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Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KB=24' @ 7128.0ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	KB=24' @ 7128.0ft (Original Well Elev)
Site:	O31E Pad	North Reference:	True
Well:	Shideler Fee 6-6DD	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

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									
Shideler Fee 6-6DD PBI	0.00	0.00	8,541.0	-2,541.2	-602.0	1,574,292.58	2,375,940.70	39.389358	-107.708293
- plan hits target center									
- Circle (radius 25.0)									
Shideler Fee 6-6DD TG1	0.00	0.00	6,701.0	-2,541.2	-602.0	1,574,292.58	2,375,940.70	39.389358	-107.708293
- plan hits target center									
- Point									

Casing Points				
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
1,159.1	1,120.5	Surface Casing		

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
5,465.0	4,998.0	Mesaverde Marker			
6,048.6	5,524.0	Williams Fork			
7,261.5	6,701.0	Top Gas			
8,297.5	7,737.0	Coal Ridge			
8,951.5	8,391.0	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'
1,059.1	1,030.4	-184.9	-43.8	EOB @ Inc. = 25.77°
5,972.8	5,455.3	-2,263.9	-536.3	Start 2° Drop
7,261.5	6,701.0	-2,541.2	-602.0	EOD @ Inc. = 0°
9,101.5	8,541.0	-2,541.2	-602.0	TD @ 9,101.5' MD
9,201.5	8,641.0	-2,541.2	-602.0	Permit TD @ 9,201.5' MD