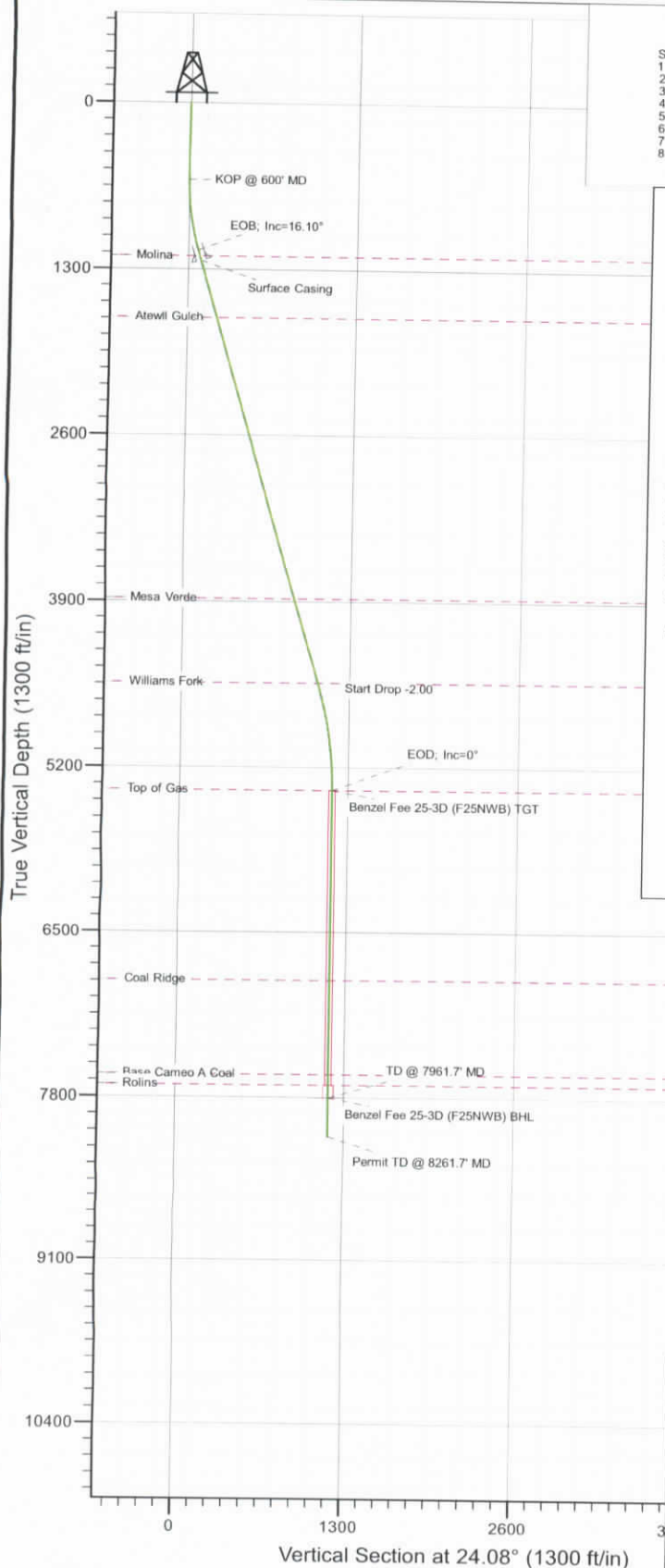
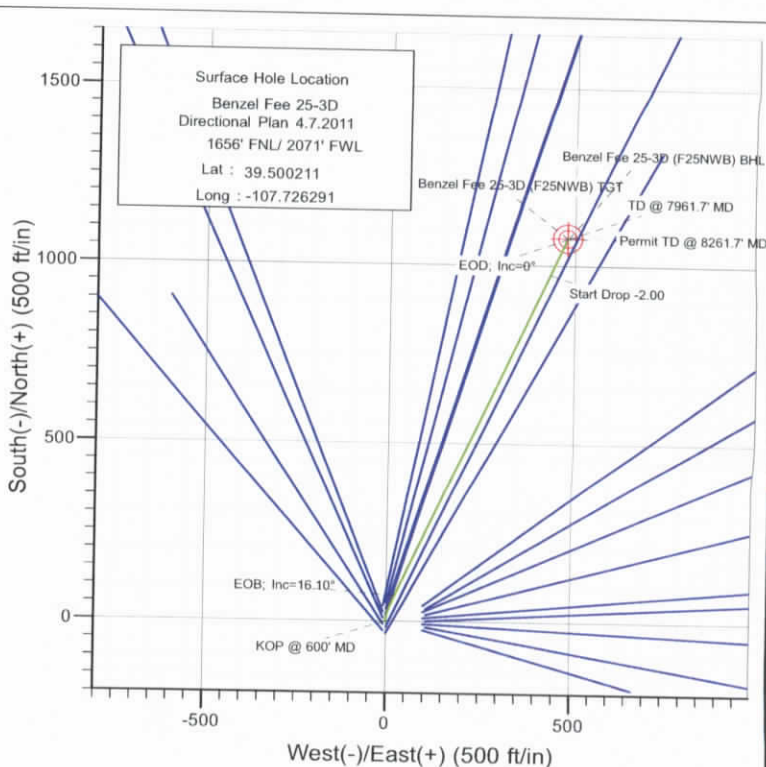




Project: Mamm Creek
 Site: F25NWB Pad
 Well: Benzel Fee 25-3D (F25NWB Pad) Directional Plan 4.7.2011
 Wellbore: DD
 Design: Plan #1



SECTION DETAILS										
Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	V Sect	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	600.0	0.00	0.00	600.0	0.0	0.0	0.00	0.00	0.0	
3	700.0	3.00	350.00	700.0	2.6	-0.5	3.00	350.00	2.2	
4	1157.8	16.10	24.48	1150.6	72.5	23.9	3.00	41.41	75.9	
5	4730.6	16.10	24.48	4583.2	974.4	434.5	0.00	0.00	1066.9	
6	5535.7	0.00	0.00	5377.8	1076.7	481.1	2.00	180.00	1179.3	Benzel Fee 25-3D (F25NWB) TGT
7	7961.7	0.00	0.00	7803.8	1076.7	481.1	0.00	0.00	1179.3	Benzel Fee 25-3D (F25NWB) BHL
8	8261.7	0.00	0.00	8103.8	1076.7	481.1	0.00	0.00	1179.3	



FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
1195.8	1204.8	Molina
1681.8	1710.7	Atewll Gulch
3876.8	3995.3	Mesa Verde
4540.8	4686.4	Williams Fork
5377.8	5535.7	Top of Gas
6880.8	7038.7	Coal Ridge
7621.8	7779.7	Base Cameo A Coal
7703.8	7861.7	Rolins



Azimuths to True North
 Magnetic North: 10.26°
 Magnetic Field
 Strength: 52308.0nT
 Dip Angle: 65.80°
 Date: 4/7/2011
 Model: IGRF2010

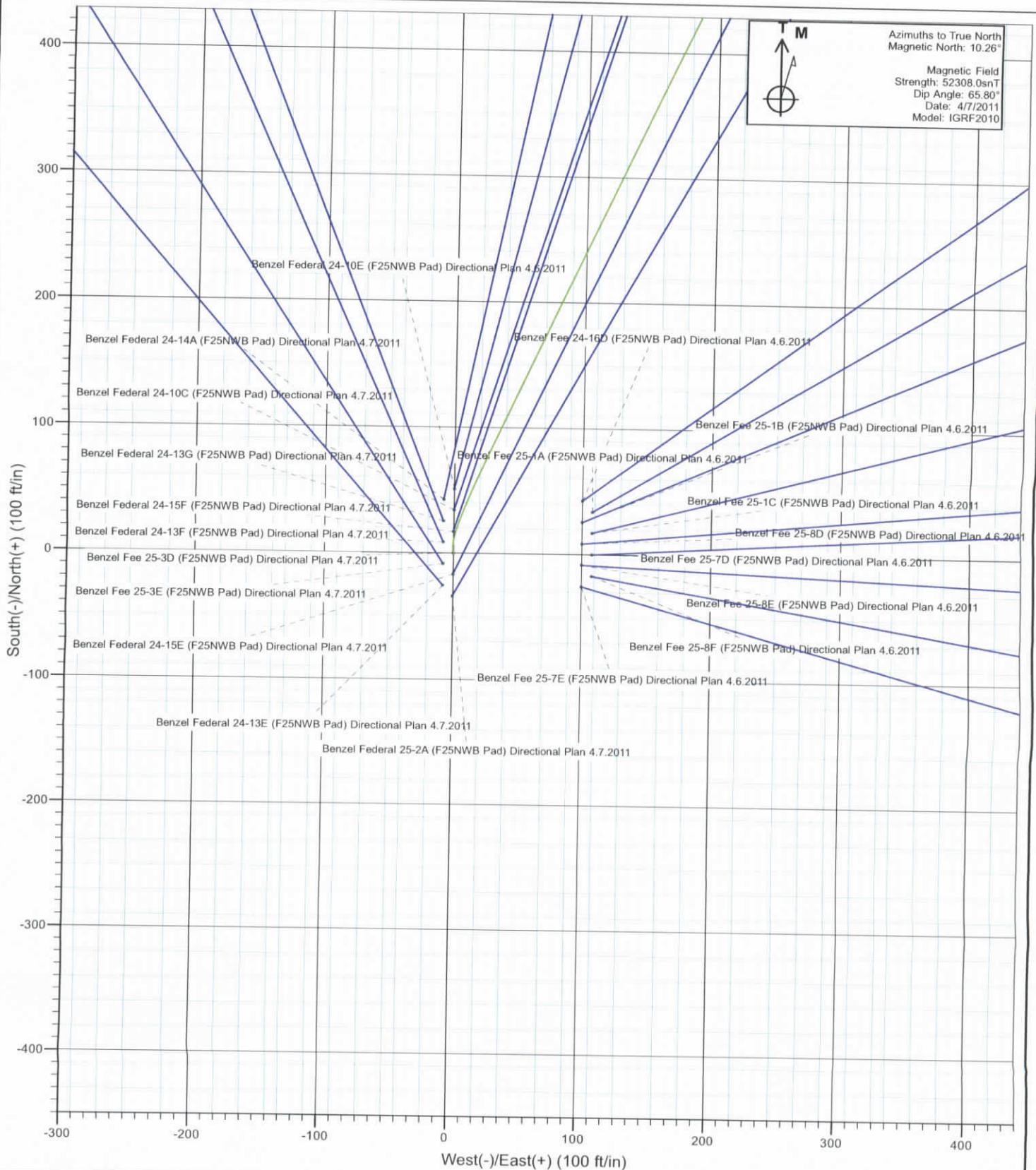
Plan #1
 Benzel Fee 25-3D (F25NWB Pad) Directional Plan 4.7.2011
 115XXX; BH

KBE @ 5848.8ft (Original Well Elev)
 North American Datum 1983
 Well Benzel Fee 25-3D (F25NWB Pad) Directional Plan 4.7.2011, True North

Type	Target	Azimuth	Origin	Type	N/S	E/W	From	TVD
Target	Benzel Fee 25-3D (F25NWB) BHL	24.08	Slot	0.0	0.0	0.0		
Name	Benzel Fee 25-3D (F25NWB) TGT	TVD	+N/-S	+E/-W	Latitude	Longitude		
	Benzel Fee 25-3D (F25NWB) BHL	5377.8	1076.7	481.1	39.503167	-107.724586		
		7803.8	1076.7	481.1	39.503167	-107.724586		

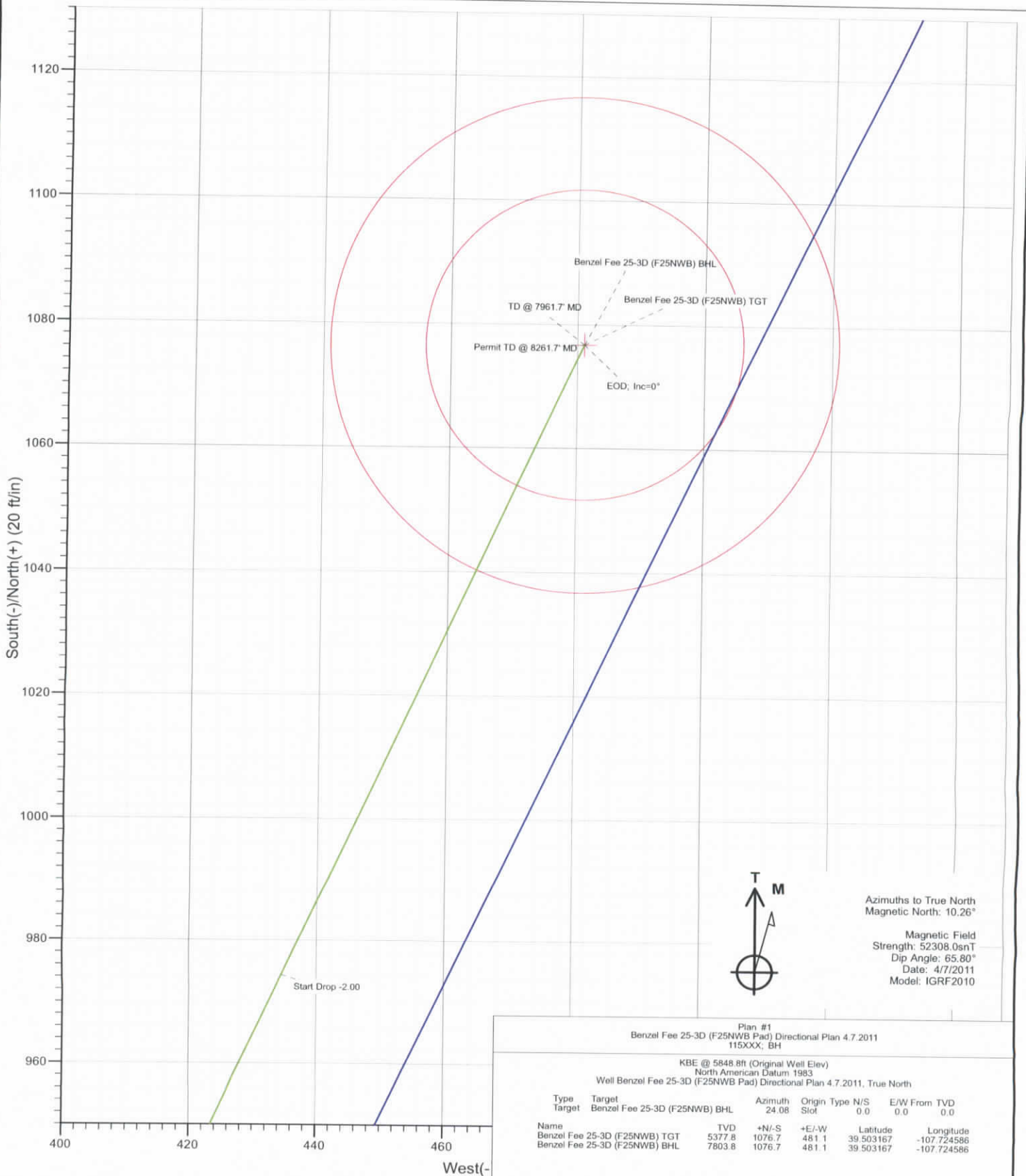


Project: Mamm Creek
Site: F25NWB Pad
Well: Benzel Fee 25-3D (F25NWB Pad) Directional Plan 4.7.2011
Wellbore: DD
Design: Plan #1





Project: Mamm Creek
 Site: F25NWB Pad
 Well: Benzel Fee 25-3D (F25NWB Pad) Directional Plan 4.7.2011
 Wellbore: DD
 Design: Plan #1



Azimuths to True North
 Magnetic North: 10.26°
 Magnetic Field
 Strength: 52308.0snT
 Dip Angle: 65.80°
 Date: 4/7/2011
 Model: IGRF2010

Plan #1
 Benzel Fee 25-3D (F25NWB Pad) Directional Plan 4.7.2011
 115XXX; BH

KBE @ 5848.8ft (Original Well Elev)
 North American Datum 1983
 Well Benzel Fee 25-3D (F25NWB Pad) Directional Plan 4.7.2011, True North

Type	Target	Azimuth	Origin	Type	N/S	E/W	From	TVD
Target	Benzel Fee 25-3D (F25NWB) BHL	24.08	Slot		0.0			0.0
Name		TVD	+N/-S	+E/-W	Latitude		Longitude	
	Benzel Fee 25-3D (F25NWB) TGT	5377.8	1076.7	481.1	39.503167		-107.724586	
	Benzel Fee 25-3D (F25NWB) BHL	7803.8	1076.7	481.1	39.503167		-107.724586	

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well Benzel Fee 25-3D (F25NWB Pad) Direction
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KBE @ 5848.8ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	KBE @ 5848.8ft (Original Well Elev)
Site:	F25NWB Pad	North Reference:	True
Well:	Benzel Fee 25-3D (F25NWB Pad) Directional Plan 4.7.	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	F25NWB Pad				
Site Position:		Northing:	1,614,821.30 ft	Latitude:	39.500328
From:	Lat/Long	Easting:	2,371,946.03 ft	Longitude:	-107.725936
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.40 "

Well	Benzel Fee 25-3D (F25NWB Pad) Directional Plan 4.7.2011					
Well Position	+N/-S	0.0 ft	Northing:	1,614,781.14 ft	Latitude:	39.500211
	+E/-W	0.0 ft	Easting:	2,371,844.84 ft	Longitude:	-107.726291
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	5,826.8 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	4/7/2011	10.26	65.80	52,308

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	24.08

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	
600.0	0.00	0.00	600.0	0.0	0.0	0.00	0.00	0.00	0.00	
700.0	3.00	350.00	700.0	2.6	-0.5	3.00	3.00	0.00	350.00	
1,157.8	16.10	24.48	1,150.6	72.5	23.9	3.00	2.86	7.53	41.41	
4,730.6	16.10	24.48	4,583.2	974.4	434.5	0.00	0.00	0.00	0.00	
5,535.7	0.00	0.00	5,377.8	1,076.7	481.1	2.00	-2.00	0.00	180.00	Benzel Fee 25-3D (F25NWB Pad)
7,961.7	0.00	0.00	7,803.8	1,076.7	481.1	0.00	0.00	0.00	0.00	Benzel Fee 25-3D (F25NWB Pad)
8,261.7	0.00	0.00	8,103.8	1,076.7	481.1	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 Benzel Fee 25-3D (F25NWB Pad) Direction
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KBE @ 5848.8ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	KBE @ 5848.8ft (Original Well Elev)
Site:	F25NWB Pad	North Reference:	True
Well:	Benzel Fee 25-3D (F25NWB Pad) Directional Plan 4.7.	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	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	
400.0	0.00	0.00	400.0	0.0	0.0	0.0	0.00	0.00	
500.0	0.00	0.00	500.0	0.0	0.0	0.0	0.00	0.00	
600.0	0.00	0.00	600.0	0.0	0.0	0.0	0.00	0.00	KOP @ 600' MD
700.0	3.00	350.00	700.0	2.6	-0.5	2.2	3.00	3.00	
800.0	5.61	10.73	799.7	10.0	0.0	9.1	3.00	2.61	
900.0	8.48	17.94	898.9	21.8	3.2	21.2	3.00	2.87	
1,000.0	11.42	21.50	997.4	38.0	9.1	38.4	3.00	2.94	
1,100.0	14.39	23.61	1,094.9	58.6	17.7	60.7	3.00	2.96	
1,157.8	16.10	24.48	1,150.6	72.5	23.9	75.9	3.00	2.97	EOB; Inc=16.10°
1,200.0	16.10	24.48	1,191.2	83.1	28.7	87.6	0.00	0.00	
1,204.8	16.10	24.48	1,195.8	84.4	29.3	89.0	0.00	0.00	Molina
1,240.0	16.10	24.48	1,229.6	93.2	33.3	98.7	0.00	0.00	Surface Casing
1,300.0	16.10	24.48	1,287.2	108.4	40.2	115.4	0.00	0.00	
1,400.0	16.10	24.48	1,383.3	133.6	51.7	143.1	0.00	0.00	
1,500.0	16.10	24.48	1,479.4	158.9	63.2	170.9	0.00	0.00	
1,600.0	16.10	24.48	1,575.5	184.1	74.7	198.6	0.00	0.00	
1,700.0	16.10	24.48	1,671.5	209.4	86.2	226.3	0.00	0.00	
1,710.7	16.10	24.48	1,681.8	212.1	87.4	229.3	0.00	0.00	Atewll Gulch
1,800.0	16.10	24.48	1,767.6	234.6	97.7	254.1	0.00	0.00	
1,900.0	16.10	24.48	1,863.7	259.9	109.2	281.8	0.00	0.00	
2,000.0	16.10	24.48	1,959.8	285.1	120.7	309.5	0.00	0.00	
2,100.0	16.10	24.48	2,055.8	310.3	132.2	337.3	0.00	0.00	
2,200.0	16.10	24.48	2,151.9	335.6	143.7	365.0	0.00	0.00	
2,300.0	16.10	24.48	2,248.0	360.8	155.2	392.7	0.00	0.00	
2,400.0	16.10	24.48	2,344.1	386.1	166.7	420.5	0.00	0.00	
2,500.0	16.10	24.48	2,440.2	411.3	178.2	448.2	0.00	0.00	
2,600.0	16.10	24.48	2,536.2	436.6	189.7	476.0	0.00	0.00	
2,700.0	16.10	24.48	2,632.3	461.8	201.1	503.7	0.00	0.00	
2,800.0	16.10	24.48	2,728.4	487.1	212.6	531.4	0.00	0.00	
2,900.0	16.10	24.48	2,824.5	512.3	224.1	559.2	0.00	0.00	
3,000.0	16.10	24.48	2,920.5	537.5	235.6	586.9	0.00	0.00	
3,100.0	16.10	24.48	3,016.6	562.8	247.1	614.6	0.00	0.00	
3,200.0	16.10	24.48	3,112.7	588.0	258.6	642.4	0.00	0.00	
3,300.0	16.10	24.48	3,208.8	613.3	270.1	670.1	0.00	0.00	
3,400.0	16.10	24.48	3,304.8	638.5	281.6	697.8	0.00	0.00	
3,500.0	16.10	24.48	3,400.9	663.8	293.1	725.6	0.00	0.00	
3,600.0	16.10	24.48	3,497.0	689.0	304.6	753.3	0.00	0.00	
3,700.0	16.10	24.48	3,593.1	714.3	316.1	781.1	0.00	0.00	
3,800.0	16.10	24.48	3,689.1	739.5	327.6	808.8	0.00	0.00	
3,900.0	16.10	24.48	3,785.2	764.7	339.1	836.5	0.00	0.00	
3,995.3	16.10	24.48	3,876.8	788.8	350.0	863.0	0.00	0.00	Mesa Verde
4,000.0	16.10	24.48	3,881.3	790.0	350.6	864.3	0.00	0.00	
4,100.0	16.10	24.48	3,977.4	815.2	362.1	892.0	0.00	0.00	
4,200.0	16.10	24.48	4,073.4	840.5	373.5	919.7	0.00	0.00	
4,300.0	16.10	24.48	4,169.5	865.7	385.0	947.5	0.00	0.00	
4,400.0	16.10	24.48	4,265.6	891.0	396.5	975.2	0.00	0.00	
4,500.0	16.10	24.48	4,361.7	916.2	408.0	1,003.0	0.00	0.00	
4,600.0	16.10	24.48	4,457.8	941.4	419.5	1,030.7	0.00	0.00	

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well Benzel Fee 25-3D (F25NWB Pad) Direction
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KBE @ 5848.8ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	KBE @ 5848.8ft (Original Well Elev)
Site:	F25NWB Pad	North Reference:	True
Well:	Benzel Fee 25-3D (F25NWB Pad) Directional Plan 4.7.	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
4,686.4	16.10	24.48	4,540.8	963.3	429.5	1,054.7	0.00	0.00	Williams Fork
4,700.0	16.10	24.48	4,553.8	966.7	431.0	1,058.4	0.00	0.00	
4,730.6	16.10	24.48	4,583.2	974.4	434.5	1,066.9	0.00	0.00	Start Drop -2.00
4,800.0	14.71	24.48	4,650.1	991.2	442.2	1,085.4	2.00	-2.00	
4,900.0	12.71	24.48	4,747.3	1,012.8	452.0	1,109.1	2.00	-2.00	
5,000.0	10.71	24.48	4,845.2	1,031.3	460.4	1,129.4	2.00	-2.00	
5,100.0	8.71	24.48	4,943.7	1,046.6	467.4	1,146.2	2.00	-2.00	
5,200.0	6.71	24.48	5,042.8	1,058.8	473.0	1,159.7	2.00	-2.00	
5,300.0	4.71	24.48	5,142.3	1,067.9	477.1	1,169.6	2.00	-2.00	
5,400.0	2.71	24.48	5,242.1	1,073.8	479.8	1,176.1	2.00	-2.00	
5,500.0	0.71	24.48	5,342.1	1,076.5	481.0	1,179.1	2.00	-2.00	
5,535.7	0.00	0.00	5,377.8	1,076.7	481.1	1,179.3	2.00	-2.00	EOD; Inc=0° - Top of Gas - Benzel Fee 25-3D (
5,600.0	0.00	0.00	5,442.1	1,076.7	481.1	1,179.3	0.00	0.00	
5,700.0	0.00	0.00	5,542.1	1,076.7	481.1	1,179.3	0.00	0.00	
5,800.0	0.00	0.00	5,642.1	1,076.7	481.1	1,179.3	0.00	0.00	
5,900.0	0.00	0.00	5,742.1	1,076.7	481.1	1,179.3	0.00	0.00	
6,000.0	0.00	0.00	5,842.1	1,076.7	481.1	1,179.3	0.00	0.00	
6,100.0	0.00	0.00	5,942.1	1,076.7	481.1	1,179.3	0.00	0.00	
6,200.0	0.00	0.00	6,042.1	1,076.7	481.1	1,179.3	0.00	0.00	
6,300.0	0.00	0.00	6,142.1	1,076.7	481.1	1,179.3	0.00	0.00	
6,400.0	0.00	0.00	6,242.1	1,076.7	481.1	1,179.3	0.00	0.00	
6,500.0	0.00	0.00	6,342.1	1,076.7	481.1	1,179.3	0.00	0.00	
6,600.0	0.00	0.00	6,442.1	1,076.7	481.1	1,179.3	0.00	0.00	
6,700.0	0.00	0.00	6,542.1	1,076.7	481.1	1,179.3	0.00	0.00	
6,800.0	0.00	0.00	6,642.1	1,076.7	481.1	1,179.3	0.00	0.00	
6,900.0	0.00	0.00	6,742.1	1,076.7	481.1	1,179.3	0.00	0.00	
7,000.0	0.00	0.00	6,842.1	1,076.7	481.1	1,179.3	0.00	0.00	
7,038.7	0.00	0.00	6,880.8	1,076.7	481.1	1,179.3	0.00	0.00	Coal Ridge
7,100.0	0.00	0.00	6,942.1	1,076.7	481.1	1,179.3	0.00	0.00	
7,200.0	0.00	0.00	7,042.1	1,076.7	481.1	1,179.3	0.00	0.00	
7,300.0	0.00	0.00	7,142.1	1,076.7	481.1	1,179.3	0.00	0.00	
7,400.0	0.00	0.00	7,242.1	1,076.7	481.1	1,179.3	0.00	0.00	
7,500.0	0.00	0.00	7,342.1	1,076.7	481.1	1,179.3	0.00	0.00	
7,600.0	0.00	0.00	7,442.1	1,076.7	481.1	1,179.3	0.00	0.00	
7,700.0	0.00	0.00	7,542.1	1,076.7	481.1	1,179.3	0.00	0.00	
7,779.7	0.00	0.00	7,621.8	1,076.7	481.1	1,179.3	0.00	0.00	Base Cameo A Coal
7,800.0	0.00	0.00	7,642.1	1,076.7	481.1	1,179.3	0.00	0.00	
7,861.7	0.00	0.00	7,703.8	1,076.7	481.1	1,179.3	0.00	0.00	Rollins
7,900.0	0.00	0.00	7,742.1	1,076.7	481.1	1,179.3	0.00	0.00	
7,961.7	0.00	0.00	7,803.8	1,076.7	481.1	1,179.3	0.00	0.00	TD @ 7961.7' MD - Benzel Fee 25-3D (F25NW
8,000.0	0.00	0.00	7,842.1	1,076.7	481.1	1,179.3	0.00	0.00	
8,100.0	0.00	0.00	7,942.1	1,076.7	481.1	1,179.3	0.00	0.00	
8,200.0	0.00	0.00	8,042.1	1,076.7	481.1	1,179.3	0.00	0.00	
8,261.7	0.00	0.00	8,103.8	1,076.7	481.1	1,179.3	0.00	0.00	Permit TD @ 8261.7' MD

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well Benzel Fee 25-3D (F25NWB Pad) Direction
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KBE @ 5848.8ft (Original Well Elev)
Project:	Mamm Creek	MD Reference:	KBE @ 5848.8ft (Original Well Elev)
Site:	F25NWB Pad	North Reference:	True
Well:	Benzel Fee 25-3D (F25NWB Pad) Directional Plan 4.7.	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

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
Benzel Fee 25-3D (F25NWB Pad) - plan hits target center - Circle (radius 25.0)	0.00	0.00	5,377.8	1,076.7	481.1	1,615,845.74	2,372,352.18	39.503167	-107.724586
Benzel Fee 25-3D (F25NWB Pad) - plan hits target center - Circle (radius 40.0)	0.00	0.00	7,803.8	1,076.7	481.1	1,615,845.74	2,372,352.18	39.503167	-107.724586

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
1,240.0	1,229.6	Surface Casing	0.000	0.000

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,204.8	1,195.8	Molina		0.00	
1,710.7	1,681.8	Atewll Gulch		0.00	
3,995.3	3,876.8	Mesa Verde		0.00	
4,686.4	4,540.8	Williams Fork		0.00	
5,535.7	5,377.8	Top of Gas		0.00	
7,038.7	6,880.8	Coal Ridge		0.00	
7,779.7	7,621.8	Base Cameo A Coal		0.00	
7,861.7	7,703.8	Rollins		0.00	

Plan Annotations

Measured Depth (ft)	Vertical Depth (ft)	Local Coordinates		Comment
		+N/-S (ft)	+E/-W (ft)	
600.0	600.0	0.0	0.0	KOP @ 600' MD
1,157.8	1,150.6	2.6	-0.5	EOB; Inc=16.10°
4,730.6	4,583.2	72.5	23.9	Start Drop -2.00
5,535.7	5,377.8	974.4	434.5	EOD; Inc=0°
7,961.7	7,803.8	1,076.7	481.1	TD @ 7961.7' MD
8,261.7	8,103.8	1,076.7	481.1	Permit TD @ 8261.7' MD