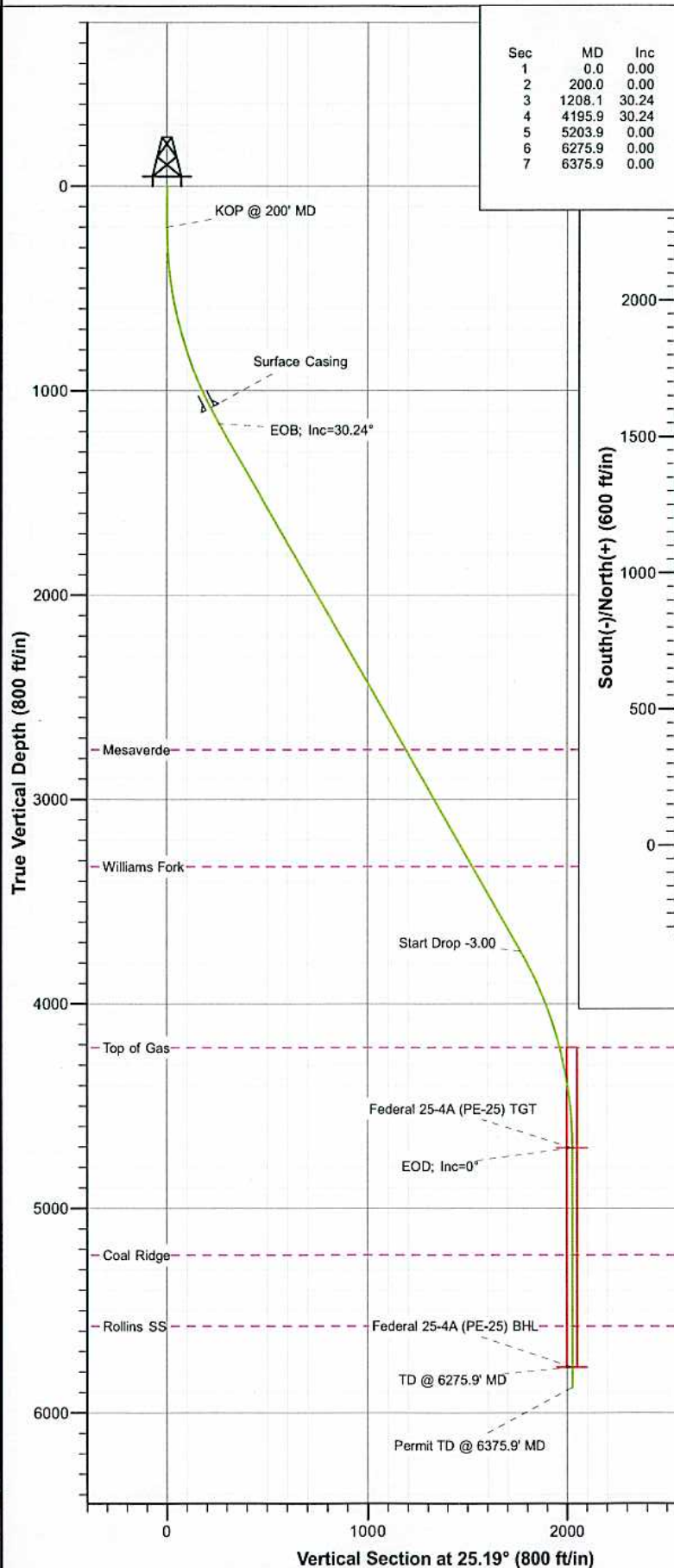
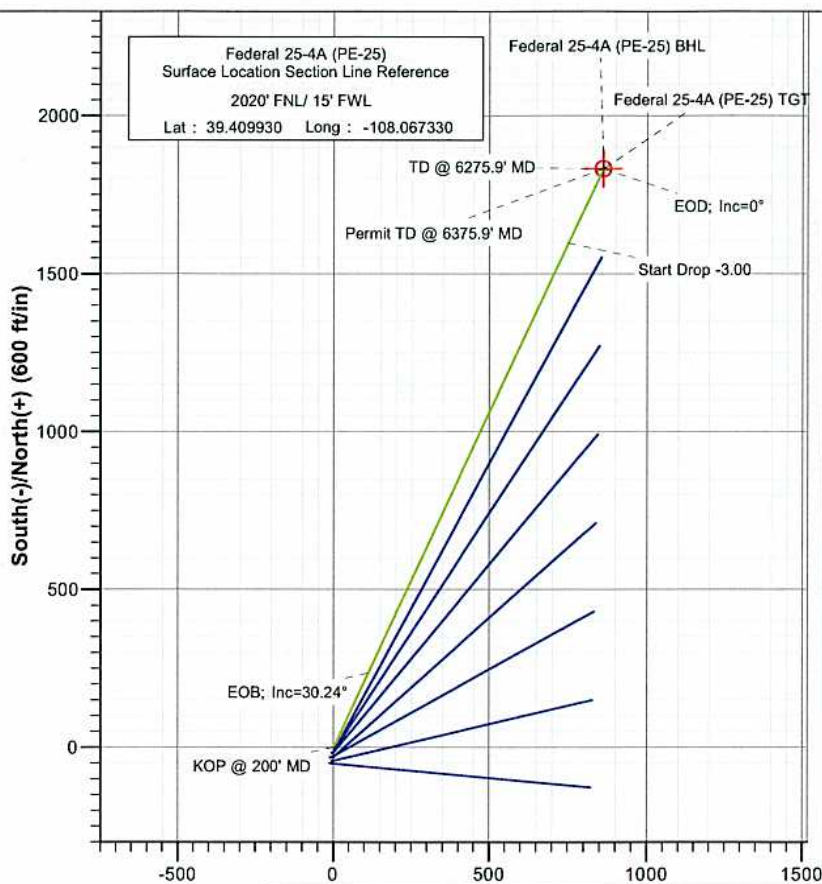




Project: S. Piceance (Parachute)
 Site: SWNW Sec 25-T7S-R96W (PE-25 Pad)
 Well: Federal 25-4A (PE-25)
 Wellbore: DD
 Plan: Plan #1



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	1208.1	30.24	25.19	1161.9	235.2	110.6	3.00	25.19	259.9	
4	4195.9	30.24	25.19	3743.1	1596.9	751.1	0.00	0.00	1764.7	
5	5203.9	0.00	0.00	4705.0	1832.1	861.7	3.00	180.00	2024.6	Federal 25-4A (PE-25) TGT
6	6275.9	0.00	0.00	5777.0	1832.1	861.7	0.00	0.00	2024.6	Federal 25-4A (PE-25) BHL
7	6375.9	0.00	0.00	5877.0	1832.1	861.7	0.00	0.00	2024.6	



FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
2757.0	3054.4	Mesaverde
3330.0	3717.7	Williams Fork
4215.0	4708.4	Top of Gas
5229.0	5727.9	Coal Ridge
5577.0	6075.9	Rollins SS



Azimuths to True North
 Magnetic North: 10.41°
 Magnetic Field
 Strength: 52278.5nT
 Dip Angle: 65.68°
 Date: 12/22/2010
 Model: IGRF200510

Plan #1 Federal 25-4A (PE-25) 105XXX; BH						
KBE @ 5410.0ft (Original Well Elev) North American Datum 1983 Well Federal 25-4A (PE-25), True North						
Type	Target	Azimuth	Origin	Type	N/S	E/W From TVD
Target	Federal 25-4A (PE-25) BH	25.19	Slot	0.0	0.0	0.0
Name	TVD	+N/-S	+E/-W	Latitude	Longitude	
Federal 25-4A (PE-25) TGT	705.0	1832.1	861.7	39.414960	-108.064280	
Federal 25-4A (PE-25) BHL	777.0	1832.1	861.7	39.414960	-108.064280	

Cathedral Energy Services

Planning Report

Database:	EDM 5000.1 US Multi Users DB	Local Co-ordinate Reference:	Well Federal 25-4A (PE-25)
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	KBE @ 5410.0ft (Original Well Elev)
Project:	S. Piceance (Parachute)	MD Reference:	KBE @ 5410.0ft (Original Well Elev)
Site:	SWNW Sec 25-T7S-R96W (PE-25 Pad)	North Reference:	True
Well:	Federal 25-4A (PE-25)	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #1		

Project	S. Piceance (Parachute), Garfield County, CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

Site	SWNW Sec 25-T7S-R96W (PE-25 Pad)				
Site Position:		Northing:	1,584,438.30 ft	Latitude:	39.409900
From:	Lat/Long	Easting:	2,274,718.76 ft	Longitude:	-108.067310
Position Uncertainty:	0.0 ft	Slot Radius:	13.200in	Grid Convergence:	-1.62 °

Well	Federal 25-4A (PE-25)					
Well Position	+N/-S	0.0 ft	Northing:	1,584,449.38 ft	Latitude:	39.409930
	+E/-W	0.0 ft	Easting:	2,274,713.42 ft	Longitude:	-108.067330
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	5,388.0 ft

Wellbore	DD				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	12/22/2010	10.41	65.68	52,279

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	25.19

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	
1,208.1	30.24	25.19	1,161.9	235.2	110.6	3.00	3.00	0.00	25.19	
4,195.9	30.24	25.19	3,743.1	1,596.9	751.1	0.00	0.00	0.00	0.00	
5,203.9	0.00	0.00	4,705.0	1,832.1	861.7	3.00	-3.00	0.00	180.00	Federal 25-4A (PE-25)
6,275.9	0.00	0.00	5,777.0	1,832.1	861.7	0.00	0.00	0.00	0.00	Federal 25-4A (PE-25)
6,375.9	0.00	0.00	5,877.0	1,832.1	861.7	0.00	0.00	0.00	0.00	

Cathedral Energy Services

Planning Report

Database: EDM 5000.1 US Multi Users DB
 Company: EnCana Oil & Gas (USA) Inc
 Project: S. Piceance (Parachute)
 Site: SWNW Sec 25-T7S-R96W (PE-25 Pad)
 Well: Federal 25-4A (PE-25)
 Wellbore: DD
 Design: Plan #1

Local Co-ordinate Reference: Well Federal 25-4A (PE-25)
 TVD Reference: KBE @ 5410.0ft (Original Well Elev)
 MD Reference: KBE @ 5410.0ft (Original Well Elev)
 North Reference: True
 Survey Calculation Method: Minimum Curvature

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	25.19	300.0	2.4	1.1	2.6	3.00	3.00	
400.0	6.00	25.19	399.6	9.5	4.5	10.5	3.00	3.00	
500.0	9.00	25.19	498.8	21.3	10.0	23.5	3.00	3.00	
600.0	12.00	25.19	597.1	37.8	17.8	41.7	3.00	3.00	
700.0	15.00	25.19	694.3	58.9	27.7	65.1	3.00	3.00	
800.0	18.00	25.19	790.2	84.6	39.8	93.5	3.00	3.00	
900.0	21.00	25.19	884.4	114.8	54.0	126.9	3.00	3.00	
1,000.0	24.00	25.19	976.8	149.4	70.3	165.1	3.00	3.00	
1,100.0	27.00	25.19	1,067.1	188.4	88.6	208.2	3.00	3.00	
1,120.0	27.60	25.19	1,084.8	196.7	92.5	217.3	3.00	3.00	Surface Casing
1,200.0	30.00	25.19	1,154.9	231.5	108.9	255.9	3.00	3.00	
1,208.1	30.24	25.19	1,161.9	235.2	110.6	259.9	3.00	3.00	EOB; Inc=30.24°
1,300.0	30.24	25.19	1,241.3	277.1	130.3	306.2	0.00	0.00	
1,400.0	30.24	25.19	1,327.7	322.7	151.8	356.6	0.00	0.00	
1,500.0	30.24	25.19	1,414.1	368.3	173.2	407.0	0.00	0.00	
1,600.0	30.24	25.19	1,500.5	413.8	194.6	457.3	0.00	0.00	
1,700.0	30.24	25.19	1,586.9	459.4	216.1	507.7	0.00	0.00	
1,800.0	30.24	25.19	1,673.3	505.0	237.5	558.0	0.00	0.00	
1,900.0	30.24	25.19	1,759.7	550.6	258.9	608.4	0.00	0.00	
2,000.0	30.24	25.19	1,846.1	596.1	280.4	658.8	0.00	0.00	
2,100.0	30.24	25.19	1,932.5	641.7	301.8	709.1	0.00	0.00	
2,200.0	30.24	25.19	2,018.8	687.3	323.3	759.5	0.00	0.00	
2,300.0	30.24	25.19	2,105.2	732.9	344.7	809.9	0.00	0.00	
2,400.0	30.24	25.19	2,191.6	778.4	366.1	860.2	0.00	0.00	
2,500.0	30.24	25.19	2,278.0	824.0	387.6	910.6	0.00	0.00	
2,600.0	30.24	25.19	2,364.4	869.6	409.0	961.0	0.00	0.00	
2,700.0	30.24	25.19	2,450.8	915.2	430.4	1,011.3	0.00	0.00	
2,800.0	30.24	25.19	2,537.2	960.7	451.9	1,061.7	0.00	0.00	
2,900.0	30.24	25.19	2,623.6	1,006.3	473.3	1,112.1	0.00	0.00	
3,000.0	30.24	25.19	2,710.0	1,051.9	494.7	1,162.4	0.00	0.00	
3,054.4	30.24	25.19	2,757.0	1,076.7	506.4	1,189.8	0.00	0.00	Mesaverde
3,100.0	30.24	25.19	2,796.4	1,097.5	516.2	1,212.8	0.00	0.00	
3,200.0	30.24	25.19	2,882.8	1,143.0	537.6	1,263.2	0.00	0.00	
3,300.0	30.24	25.19	2,969.1	1,188.6	559.0	1,313.5	0.00	0.00	
3,400.0	30.24	25.19	3,055.5	1,234.2	580.5	1,363.9	0.00	0.00	
3,500.0	30.24	25.19	3,141.9	1,279.8	601.9	1,414.2	0.00	0.00	
3,600.0	30.24	25.19	3,228.3	1,325.3	623.4	1,464.6	0.00	0.00	
3,700.0	30.24	25.19	3,314.7	1,370.9	644.8	1,515.0	0.00	0.00	
3,717.7	30.24	25.19	3,330.0	1,379.0	648.6	1,523.9	0.00	0.00	Williams Fork
3,800.0	30.24	25.19	3,401.1	1,416.5	666.2	1,565.3	0.00	0.00	
3,900.0	30.24	25.19	3,487.5	1,462.1	687.7	1,615.7	0.00	0.00	
4,000.0	30.24	25.19	3,573.9	1,507.6	709.1	1,666.1	0.00	0.00	
4,100.0	30.24	25.19	3,660.3	1,553.2	730.5	1,716.4	0.00	0.00	
4,195.9	30.24	25.19	3,743.1	1,596.9	751.1	1,764.7	0.00	0.00	Start Drop -3.00
4,200.0	30.12	25.19	3,746.7	1,598.8	752.0	1,766.8	3.00	-3.00	
4,300.0	27.12	25.19	3,834.4	1,642.1	772.3	1,814.7	3.00	-3.00	
4,400.0	24.12	25.19	3,924.6	1,681.2	790.7	1,857.9	3.00	-3.00	
4,500.0	21.12	25.19	4,016.9	1,716.0	807.1	1,896.4	3.00	-3.00	
4,600.0	18.12	25.19	4,111.1	1,746.4	821.4	1,929.9	3.00	-3.00	

Cathedral Energy Services

Planning Report

Database: EDM 5000.1 US Multi Users DB
Company: EnCana Oil & Gas (USA) Inc
Project: S. Piceance (Parachute)
Site: SWNW Sec 25-T7S-R96W (PE-25 Pad)
Well: Federal 25-4A (PE-25)
Wellbore: DD
Design: Plan #1

Local Co-ordinate Reference: Well Federal 25-4A (PE-25)
TVD Reference: KBE @ 5410.0ft (Original Well Elev)
MD Reference: KBE @ 5410.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

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
4,700.0	15.12	25.19	4,206.9	1,772.3	833.6	1,958.5	3.00	-3.00	
4,708.4	14.87	25.19	4,215.0	1,774.3	834.5	1,960.7	3.00	-3.00	Top of Gas
4,800.0	12.12	25.19	4,304.1	1,793.6	843.6	1,982.1	3.00	-3.00	
4,900.0	9.12	25.19	4,402.4	1,810.3	851.4	2,000.5	3.00	-3.00	
5,000.0	6.12	25.19	4,501.5	1,822.3	857.1	2,013.8	3.00	-3.00	
5,100.0	3.12	25.19	4,601.1	1,829.6	860.5	2,021.8	3.00	-3.00	
5,200.0	0.12	25.19	4,701.1	1,832.1	861.7	2,024.6	3.00	-3.00	
5,203.9	0.00	0.00	4,705.0	1,832.1	861.7	2,024.6	3.00	-3.00	EOD; Inc=0° - Federal 25-4A (PE-25) TGT
5,300.0	0.00	0.00	4,801.1	1,832.1	861.7	2,024.6	0.00	0.00	
5,400.0	0.00	0.00	4,901.1	1,832.1	861.7	2,024.6	0.00	0.00	
5,500.0	0.00	0.00	5,001.1	1,832.1	861.7	2,024.6	0.00	0.00	
5,600.0	0.00	0.00	5,101.1	1,832.1	861.7	2,024.6	0.00	0.00	
5,700.0	0.00	0.00	5,201.1	1,832.1	861.7	2,024.6	0.00	0.00	
5,727.9	0.00	0.00	5,229.0	1,832.1	861.7	2,024.6	0.00	0.00	Coal Ridge
5,800.0	0.00	0.00	5,301.1	1,832.1	861.7	2,024.6	0.00	0.00	
5,900.0	0.00	0.00	5,401.1	1,832.1	861.7	2,024.6	0.00	0.00	
6,000.0	0.00	0.00	5,501.1	1,832.1	861.7	2,024.6	0.00	0.00	
6,075.9	0.00	0.00	5,577.0	1,832.1	861.7	2,024.6	0.00	0.00	Rollins SS
6,100.0	0.00	0.00	5,601.1	1,832.1	861.7	2,024.6	0.00	0.00	
6,200.0	0.00	0.00	5,701.1	1,832.1	861.7	2,024.6	0.00	0.00	
6,275.9	0.00	0.00	5,777.0	1,832.1	861.7	2,024.6	0.00	0.00	TD @ 6275.9' MD - Federal 25-4A (PE-25) BHL
6,300.0	0.00	0.00	5,801.1	1,832.1	861.7	2,024.6	0.00	0.00	
6,375.9	0.00	0.00	5,877.0	1,832.1	861.7	2,024.6	0.00	0.00	

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
Federal 25-4A (PE-25) E - plan hits target center - Circle (radius 25.0)	0.00	0.00	5,777.0	1,832.1	861.7	1,586,256.41	2,275,626.54	39.414960	-108.064280
Federal 25-4A (PE-25) T - plan hits target center - Circle (radius 25.0)	0.00	0.00	4,705.0	1,832.1	861.7	1,586,256.41	2,275,626.54	39.414960	-108.064280

Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
1,120.0	1,084.8	Surface Casing	0.000	0.000

Cathedral Energy Services

Planning Report

Database: EDM 5000.1 US Multi Users DB
Company: EnCana Oil & Gas (USA) Inc
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Site: SWNW Sec 25-T7S-R96W (PE-25 Pad)
Well: Federal 25-4A (PE-25)
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Design: Plan #1

Local Co-ordinate Reference: Well Federal 25-4A (PE-25)
TVD Reference: KBE @ 5410.0ft (Original Well Elev)
MD Reference: KBE @ 5410.0ft (Original Well Elev)
North Reference: True
Survey Calculation Method: Minimum Curvature

Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,054.4	2,757.0	Mesaverde		0.00	
3,717.7	3,330.0	Williams Fork		0.00	
4,708.4	4,215.0	Top of Gas		0.00	
5,727.9	5,229.0	Coal Ridge		0.00	
6,075.9	5,577.0	Rollins SS		0.00	

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
1,208.1	1,161.9	235.2	110.6	EOB; Inc=30.24°
4,195.9	3,743.1	1,596.9	751.1	Start Drop -3.00
5,203.9	4,705.0	1,832.1	861.7	EOD; Inc=0°
6,275.9	5,777.0	1,832.1	861.7	TD @ 6275.9' MD
6,375.9	5,877.0	1,832.1	861.7	Permit TD @ 6375.9' MD