

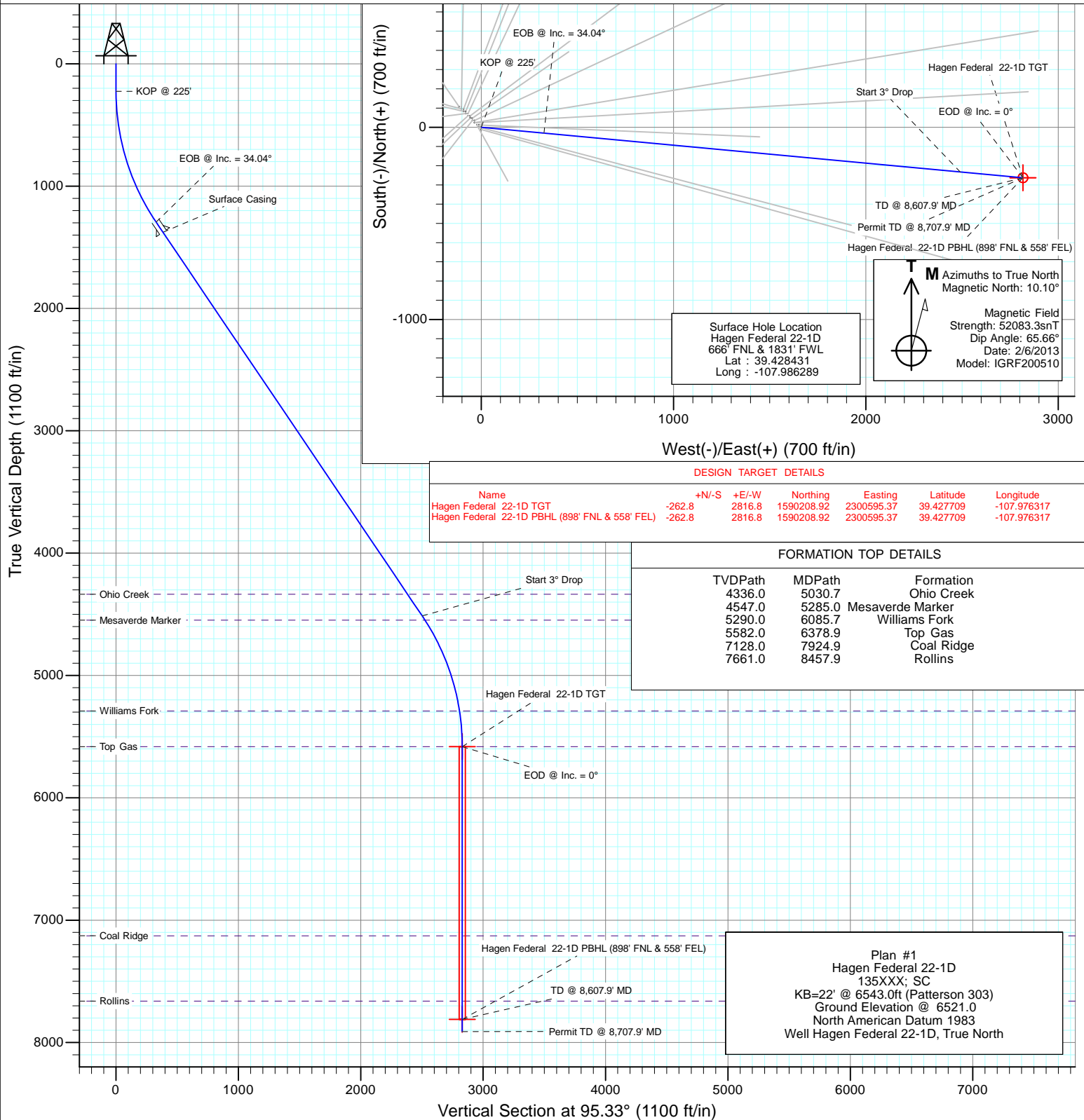


Project: S. Piceance (Parachute)  
Site: PC-22 Pad NENW 2 7S 95W  
Well: Hagen Federal 22-1D  
Wellbore: OH  
Design: Plan #1



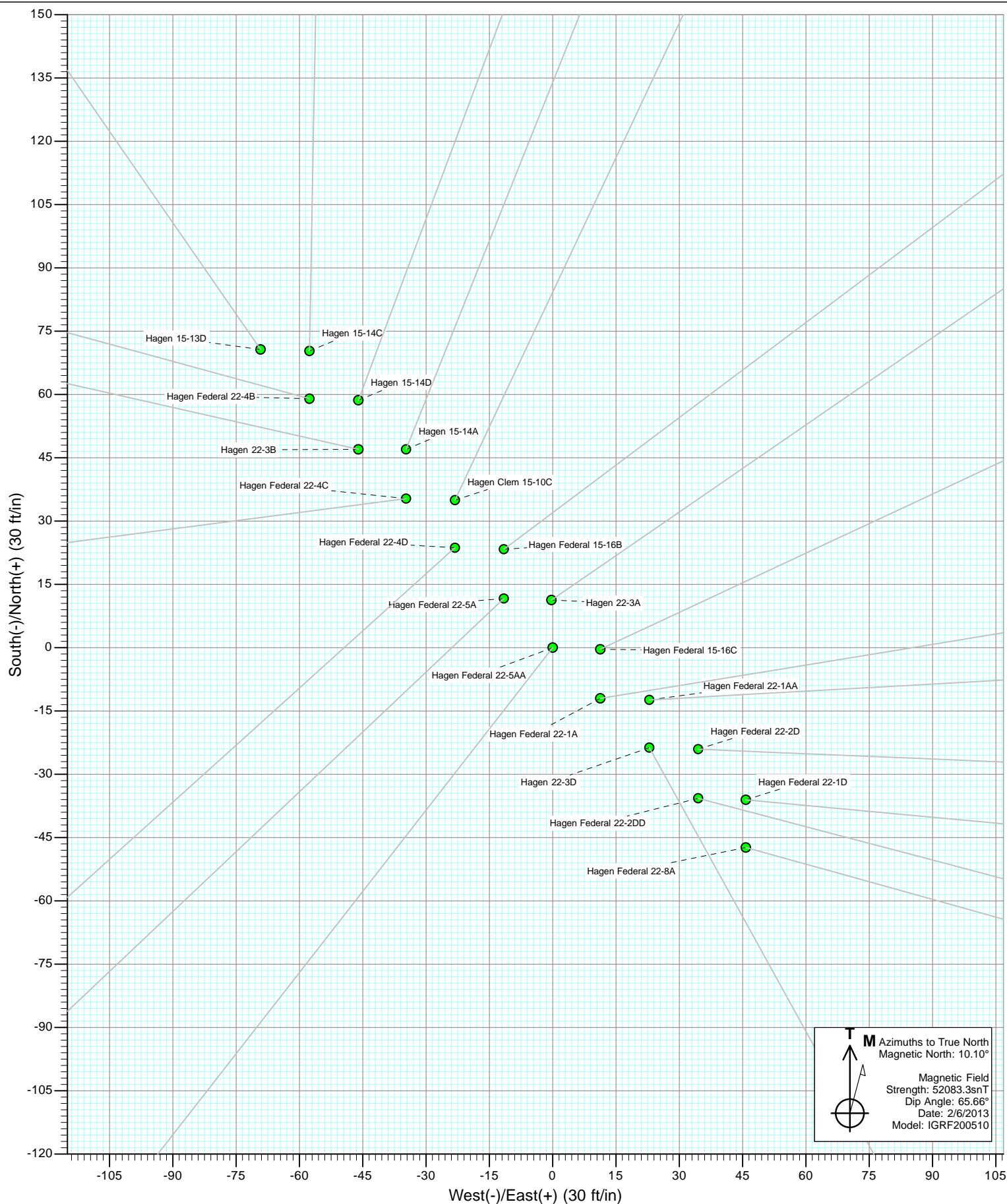
#### SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSec	Target
1	0.0	0.00	0.00	0.0	0.0	0.0	0.00	0.00	0.0	
2	225.0	0.00	0.00	225.0	0.0	0.0	0.00	0.00	0.0	
3	1359.7	34.04	95.33	1294.1	-30.4	325.9	3.00	95.33	327.3	
4	5244.1	34.04	95.33	4512.9	-232.4	2491.0	0.00	0.00	2501.8	
5	6378.9	0.00	0.00	5582.0	-262.8	2816.8	3.00	180.00	2829.1	Hagen Federal 22-1D TGT
6	8607.9	0.00	0.00	7811.0	-262.8	2816.8	0.00	0.00	2829.1	Hagen Federal 22-1D PBHL (898' FNL & 558' FEL)
7	8707.9	0.00	0.00	7911.0	-262.8	2816.8	0.00	0.00	2829.1	





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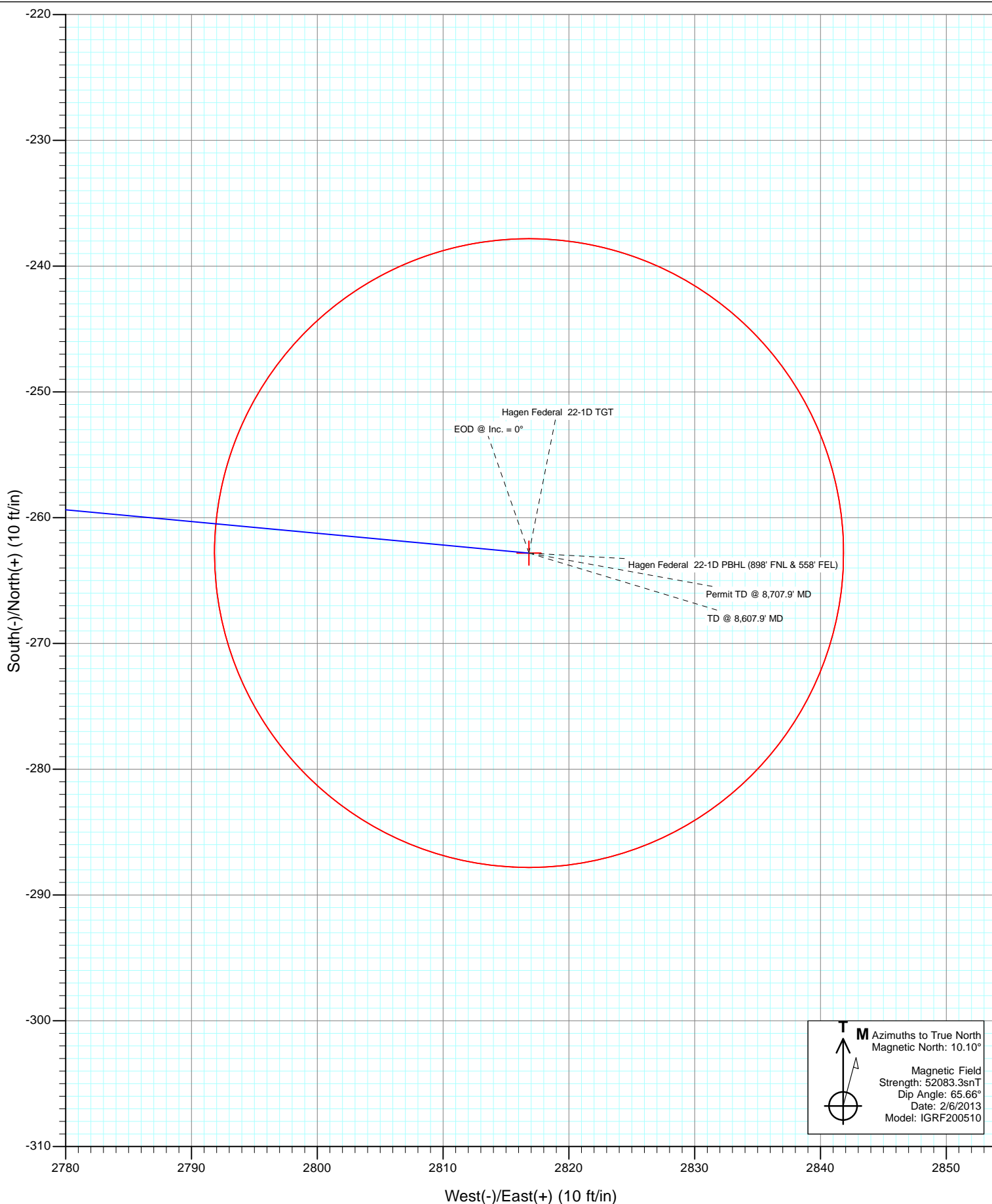


Project: S. Piceance (Parachute)  
Site: PC-22 Pad NENW 2 7S 95W





Project: S. Piceance (Parachute)  
Site: PC-22 Pad NENW 2 7S 95W  
Well: Hagen Federal 22-1D  
Wellbore: OH  
Design: Plan #1



# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Hagen Federal 22-1D
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	KB=22' @ 6543.0ft (Patterson 303)
<b>Project:</b>	S. Piceance (Parachute)	<b>MD Reference:</b>	KB=22' @ 6543.0ft (Patterson 303)
<b>Site:</b>	PC-22 Pad NENW 2 7S 95W	<b>North Reference:</b>	True
<b>Well:</b>	Hagen Federal 22-1D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1		

<b>Project</b>	S. Piceance (Parachute), Garfield County, CO		
<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		

Site		PC-22 Pad NENW 2 7S 95W			
Site Position:		Northing:	1,590,596.09 ft	Latitude:	39.428560
From:	Lat/Long	Easting:	2,297,773.66 ft	Longitude:	-107.986340
Position Uncertainty:	0.0 ft	Slot Radius:	13.200 in	Grid Convergence:	-1.57 °

Well	Hagen Federal 22-1D					
Well Position	+N/-S	0.0 ft	Northing:	1,590,548.72 ft	Latitude:	39.428431
	+E/-W	0.0 ft	Easting:	2,297,786.78 ft	Longitude:	-107.986289
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	6,521.0 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</b>
			(°)	(°)	(nT)
	IGRF200510	2/6/2013	10.10	65.66	52,083

<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)</b>	<b>+N/-S</b>	<b>+E/-W</b>	<b>Direction</b>
	(ft)	(ft)	(ft)	(°)
	0.0	0.0	0.0	95.33

<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	
225.0	0.00	0.00	225.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,359.7	34.04	95.33	1,294.1	-30.4	325.9	3.00	3.00	0.00	95.33	
5,244.1	34.04	95.33	4,512.9	-232.4	2,491.0	0.00	0.00	0.00	0.00	
6,378.9	0.00	0.00	5,582.0	-262.8	2,816.8	3.00	-3.00	0.00	180.00	Hagen Federal 22-1C
8,607.9	0.00	0.00	7,811.0	-262.8	2,816.8	0.00	0.00	0.00	0.00	Hagen Federal 22-1C
8,707.9	0.00	0.00	7,911.0	-262.8	2,816.8	0.00	0.00	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 Hagen Federal 22-1D
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	KB=22' @ 6543.0ft (Patterson 303)
<b>Project:</b>	S. Piceance (Parachute)	<b>MD Reference:</b>	KB=22' @ 6543.0ft (Patterson 303)
<b>Site:</b>	PC-22 Pad NENW 2 7S 95W	<b>North Reference:</b>	True
<b>Well:</b>	Hagen Federal 22-1D	<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	
225.0	0.00	0.00	225.0	0.0	0.0	0.0	0.00	0.00	KOP @ 225'
300.0	2.25	95.33	300.0	-0.1	1.5	1.5	3.00	3.00	
400.0	5.25	95.33	399.8	-0.7	8.0	8.0	3.00	3.00	
500.0	8.25	95.33	499.1	-1.8	19.7	19.8	3.00	3.00	
600.0	11.25	95.33	597.6	-3.4	36.5	36.7	3.00	3.00	
700.0	14.25	95.33	695.1	-5.5	58.5	58.8	3.00	3.00	
800.0	17.25	95.33	791.4	-8.0	85.5	85.9	3.00	3.00	
900.0	20.25	95.33	886.0	-11.0	117.5	118.0	3.00	3.00	
1,000.0	23.25	95.33	978.9	-14.4	154.4	155.1	3.00	3.00	
1,100.0	26.25	95.33	1,069.7	-18.3	196.1	197.0	3.00	3.00	
1,200.0	29.25	95.33	1,158.2	-22.6	242.5	243.5	3.00	3.00	
1,300.0	32.25	95.33	1,244.1	-27.4	293.4	294.6	3.00	3.00	
1,359.7	34.04	95.33	1,294.1	-30.4	325.9	327.3	3.00	3.00	EOB @ Inc. = 34.04°
1,400.0	34.04	95.33	1,327.5	-32.5	348.3	349.8	0.00	0.00	
1,459.7	34.04	95.33	1,377.0	-35.6	381.6	383.3	0.00	0.00	Surface Casing
1,500.0	34.04	95.33	1,410.4	-37.7	404.1	405.8	0.00	0.00	
1,600.0	34.04	95.33	1,493.2	-42.9	459.8	461.8	0.00	0.00	
1,700.0	34.04	95.33	1,576.1	-48.1	515.5	517.8	0.00	0.00	
1,800.0	34.04	95.33	1,659.0	-53.3	571.3	573.8	0.00	0.00	
1,900.0	34.04	95.33	1,741.8	-58.5	627.0	629.7	0.00	0.00	
2,000.0	34.04	95.33	1,824.7	-63.7	682.8	685.7	0.00	0.00	
2,100.0	34.04	95.33	1,907.5	-68.9	738.5	741.7	0.00	0.00	
2,200.0	34.04	95.33	1,990.4	-74.1	794.2	797.7	0.00	0.00	
2,300.0	34.04	95.33	2,073.3	-79.3	850.0	853.7	0.00	0.00	
2,400.0	34.04	95.33	2,156.1	-84.5	905.7	909.6	0.00	0.00	
2,500.0	34.04	95.33	2,239.0	-89.7	961.4	965.6	0.00	0.00	
2,600.0	34.04	95.33	2,321.9	-94.9	1,017.2	1,021.6	0.00	0.00	
2,700.0	34.04	95.33	2,404.7	-100.1	1,072.9	1,077.6	0.00	0.00	
2,800.0	34.04	95.33	2,487.6	-105.3	1,128.7	1,133.6	0.00	0.00	
2,900.0	34.04	95.33	2,570.4	-110.5	1,184.4	1,189.5	0.00	0.00	
3,000.0	34.04	95.33	2,653.3	-115.7	1,240.1	1,245.5	0.00	0.00	
3,100.0	34.04	95.33	2,736.2	-120.9	1,295.9	1,301.5	0.00	0.00	
3,200.0	34.04	95.33	2,819.0	-126.1	1,351.6	1,357.5	0.00	0.00	
3,300.0	34.04	95.33	2,901.9	-131.3	1,407.3	1,413.5	0.00	0.00	
3,400.0	34.04	95.33	2,984.8	-136.5	1,463.1	1,469.4	0.00	0.00	
3,500.0	34.04	95.33	3,067.6	-141.7	1,518.8	1,525.4	0.00	0.00	
3,600.0	34.04	95.33	3,150.5	-146.9	1,574.6	1,581.4	0.00	0.00	
3,700.0	34.04	95.33	3,233.4	-152.1	1,630.3	1,637.4	0.00	0.00	
3,800.0	34.04	95.33	3,316.2	-157.3	1,686.0	1,693.4	0.00	0.00	
3,900.0	34.04	95.33	3,399.1	-162.5	1,741.8	1,749.3	0.00	0.00	
4,000.0	34.04	95.33	3,481.9	-167.7	1,797.5	1,805.3	0.00	0.00	
4,100.0	34.04	95.33	3,564.8	-172.9	1,853.2	1,861.3	0.00	0.00	
4,200.0	34.04	95.33	3,647.7	-178.1	1,909.0	1,917.3	0.00	0.00	
4,300.0	34.04	95.33	3,730.5	-183.3	1,964.7	1,973.3	0.00	0.00	
4,400.0	34.04	95.33	3,813.4	-188.5	2,020.5	2,029.2	0.00	0.00	
4,500.0	34.04	95.33	3,896.3	-193.7	2,076.2	2,085.2	0.00	0.00	
4,600.0	34.04	95.33	3,979.1	-198.9	2,131.9	2,141.2	0.00	0.00	
4,700.0	34.04	95.33	4,062.0	-204.1	2,187.7	2,197.2	0.00	0.00	
4,800.0	34.04	95.33	4,144.8	-209.3	2,243.4	2,253.2	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 Hagen Federal 22-1D
<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	KB=22' @ 6543.0ft (Patterson 303)
<b>Project:</b>	S. Piceance (Parachute)	<b>MD Reference:</b>	KB=22' @ 6543.0ft (Patterson 303)
<b>Site:</b>	PC-22 Pad NENW 2 7S 95W	<b>North Reference:</b>	True
<b>Well:</b>	Hagen Federal 22-1D	<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	34.04	95.33	4,227.7	-214.5	2,299.1	2,309.1	0.00	0.00	
5,000.0	34.04	95.33	4,310.6	-219.7	2,354.9	2,365.1	0.00	0.00	
5,030.7	34.04	95.33	4,336.0	-221.3	2,372.0	2,382.3	0.00	0.00	Ohio Creek
5,100.0	34.04	95.33	4,393.4	-224.9	2,410.6	2,421.1	0.00	0.00	
5,200.0	34.04	95.33	4,476.3	-230.1	2,466.4	2,477.1	0.00	0.00	
5,244.1	34.04	95.33	4,512.9	-232.4	2,491.0	2,501.8	0.00	0.00	Start 3° Drop
5,285.0	32.81	95.33	4,547.0	-234.5	2,513.4	2,524.3	3.00	-3.00	Mesaverde Marker
5,300.0	32.37	95.33	4,559.6	-235.3	2,521.4	2,532.4	3.00	-3.00	
5,400.0	29.37	95.33	4,645.4	-240.0	2,572.5	2,583.7	3.00	-3.00	
5,500.0	26.37	95.33	4,733.8	-244.4	2,619.0	2,630.4	3.00	-3.00	
5,600.0	23.37	95.33	4,824.5	-248.3	2,660.9	2,672.4	3.00	-3.00	
5,700.0	20.37	95.33	4,917.3	-251.7	2,698.0	2,709.7	3.00	-3.00	
5,800.0	17.37	95.33	5,012.0	-254.7	2,730.2	2,742.0	3.00	-3.00	
5,900.0	14.37	95.33	5,108.1	-257.3	2,757.4	2,769.4	3.00	-3.00	
6,000.0	11.37	95.33	5,205.6	-259.3	2,779.5	2,791.6	3.00	-3.00	
6,085.7	8.79	95.33	5,290.0	-260.7	2,794.5	2,806.6	3.00	-3.00	Williams Fork
6,100.0	8.37	95.33	5,304.1	-260.9	2,796.6	2,808.8	3.00	-3.00	
6,200.0	5.37	95.33	5,403.4	-262.0	2,808.5	2,820.7	3.00	-3.00	
6,300.0	2.37	95.33	5,503.2	-262.7	2,815.2	2,827.4	3.00	-3.00	
6,378.9	0.00	0.00	5,582.0	-262.8	2,816.8	2,829.1	3.00	-3.00	EOD @ Inc. = 0° - Top Gas
6,400.0	0.00	0.00	5,603.1	-262.8	2,816.8	2,829.1	0.00	0.00	
6,500.0	0.00	0.00	5,703.1	-262.8	2,816.8	2,829.1	0.00	0.00	
6,600.0	0.00	0.00	5,803.1	-262.8	2,816.8	2,829.1	0.00	0.00	
6,700.0	0.00	0.00	5,903.1	-262.8	2,816.8	2,829.1	0.00	0.00	
6,800.0	0.00	0.00	6,003.1	-262.8	2,816.8	2,829.1	0.00	0.00	
6,900.0	0.00	0.00	6,103.1	-262.8	2,816.8	2,829.1	0.00	0.00	
7,000.0	0.00	0.00	6,203.1	-262.8	2,816.8	2,829.1	0.00	0.00	
7,100.0	0.00	0.00	6,303.1	-262.8	2,816.8	2,829.1	0.00	0.00	
7,200.0	0.00	0.00	6,403.1	-262.8	2,816.8	2,829.1	0.00	0.00	
7,300.0	0.00	0.00	6,503.1	-262.8	2,816.8	2,829.1	0.00	0.00	
7,400.0	0.00	0.00	6,603.1	-262.8	2,816.8	2,829.1	0.00	0.00	
7,500.0	0.00	0.00	6,703.1	-262.8	2,816.8	2,829.1	0.00	0.00	
7,600.0	0.00	0.00	6,803.1	-262.8	2,816.8	2,829.1	0.00	0.00	
7,700.0	0.00	0.00	6,903.1	-262.8	2,816.8	2,829.1	0.00	0.00	
7,800.0	0.00	0.00	7,003.1	-262.8	2,816.8	2,829.1	0.00	0.00	
7,900.0	0.00	0.00	7,103.1	-262.8	2,816.8	2,829.1	0.00	0.00	
7,924.9	0.00	0.00	7,128.0	-262.8	2,816.8	2,829.1	0.00	0.00	Coal Ridge
8,000.0	0.00	0.00	7,203.1	-262.8	2,816.8	2,829.1	0.00	0.00	
8,100.0	0.00	0.00	7,303.1	-262.8	2,816.8	2,829.1	0.00	0.00	
8,200.0	0.00	0.00	7,403.1	-262.8	2,816.8	2,829.1	0.00	0.00	
8,300.0	0.00	0.00	7,503.1	-262.8	2,816.8	2,829.1	0.00	0.00	
8,400.0	0.00	0.00	7,603.1	-262.8	2,816.8	2,829.1	0.00	0.00	
8,457.9	0.00	0.00	7,661.0	-262.8	2,816.8	2,829.1	0.00	0.00	Rollins
8,500.0	0.00	0.00	7,703.1	-262.8	2,816.8	2,829.1	0.00	0.00	
8,607.9	0.00	0.00	7,811.0	-262.8	2,816.8	2,829.1	0.00	0.00	TD @ 8,607.9' MD
8,707.9	0.00	0.00	7,911.0	-262.8	2,816.8	2,829.1	0.00	0.00	Permit TD @ 8,707.9' MD

# Cathedral Energy Services

## Planning Report

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<b>Company:</b>	EnCana Oil & Gas (USA) Inc	<b>TVD Reference:</b>	KB=22' @ 6543.0ft (Patterson 303)
<b>Project:</b>	S. Piceance (Parachute)	<b>MD Reference:</b>	KB=22' @ 6543.0ft (Patterson 303)
<b>Site:</b>	PC-22 Pad NENW 2 7S 95W	<b>North Reference:</b>	True
<b>Well:</b>	Hagen Federal 22-1D	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1		

Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(ft)	(ft)		
- Shape									
Hagen Federal 22-1D P - plan hits target center - Circle (radius 25.0)	0.00	0.00	7,811.0	-262.8	2,816.8	1,590,208.92	2,300,595.37	39.427709	-107.976317
Hagen Federal 22-1D T - plan hits target center - Point	0.00	0.00	5,582.0	-262.8	2,816.8	1,590,208.92	2,300,595.37	39.427709	-107.976317

Casing Points				
Measured Depth	Vertical Depth	Name	Casing Diameter	Hole Diameter
(ft)	(ft)		(in)	(in)
1,459.7	1,377.0	Surface Casing		

Formations					
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction
(ft)	(ft)			(°)	(°)
5,030.7	4,336.0	Ohio Creek			
5,285.0	4,547.0	Mesaverde Marker			
6,085.7	5,290.0	Williams Fork			
6,378.9	5,582.0	Top Gas			
7,924.9	7,128.0	Coal Ridge			
8,457.9	7,661.0	Rollins			

Plan Annotations				
Measured Depth	Vertical Depth	Local Coordinates		Comment
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)	
225.0	225.0	0.0	0.0	KOP @ 225'
1,359.7	1,294.1	-30.4	325.9	EOB @ Inc. = 34.04°
5,244.1	4,512.9	-232.4	2,491.0	Start 3° Drop
6,378.9	5,582.0	-262.8	2,816.8	EOD @ Inc. = 0°
8,607.9	7,811.0	-262.8	2,816.8	TD @ 8,607.9' MD
8,707.9	7,911.0	-262.8	2,816.8	Permit TD @ 8,707.9' MD