

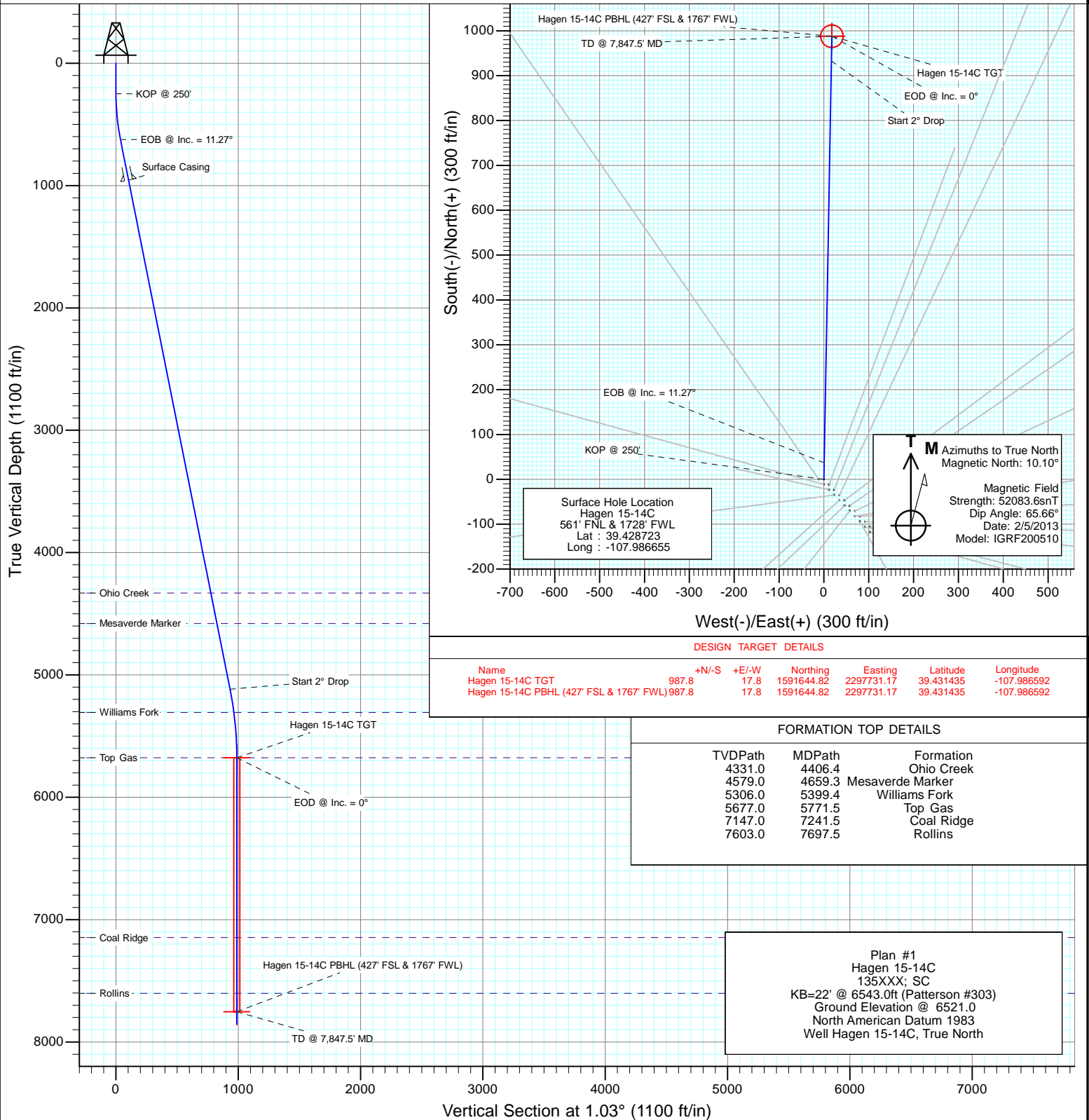


Project: S. Piceance (Parachute)  
 Site: PC-22 Pad NENW 2 7S 95W  
 Well: Hagen 15-14C  
 Wellbore: OH  
 Design: Plan #1



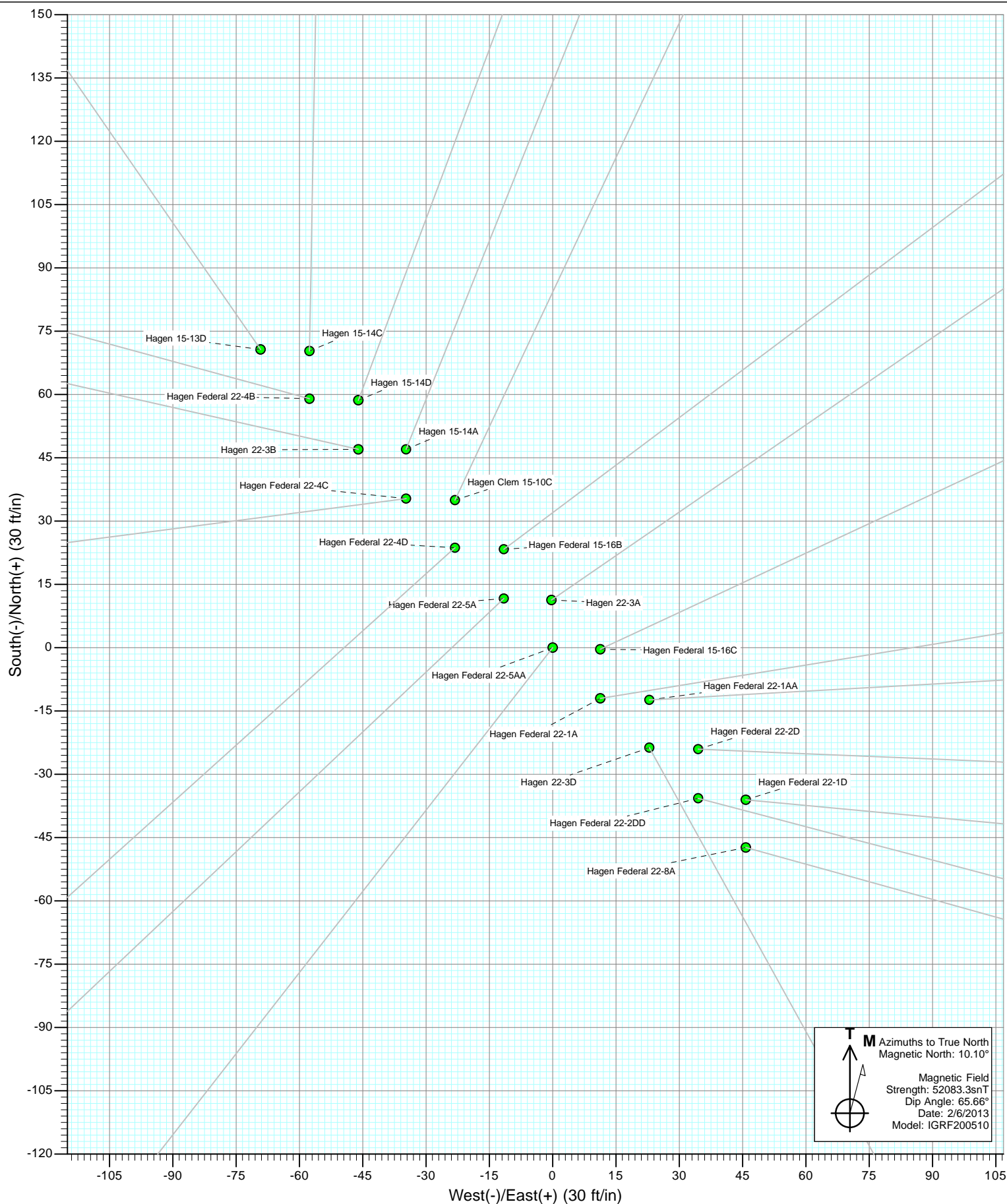
#### SECTION DETAILS

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	250.0	0.00	0.00	250.0	0.0	0.0	0.00	0.00	0.0	
3	625.8	11.27	1.03	623.4	36.9	0.7	3.00	1.03	36.9	
4	5207.7	11.27	1.03	5116.9	932.5	16.8	0.00	0.00	932.7	
5	5771.5	0.00	0.00	5677.0	987.8	17.8	2.00	180.00	988.0	Hagen 15-14C TGT
6	7847.5	0.00	0.00	7753.0	987.8	17.8	0.00	0.00	988.0	Hagen 15-14C PBHL (427' FSL & 1767' FWL)
7	7947.5	0.00	0.00	7853.0	987.8	17.8	0.00	0.00	988.0	





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Site: PC-22 Pad NENW 2 7S 95W



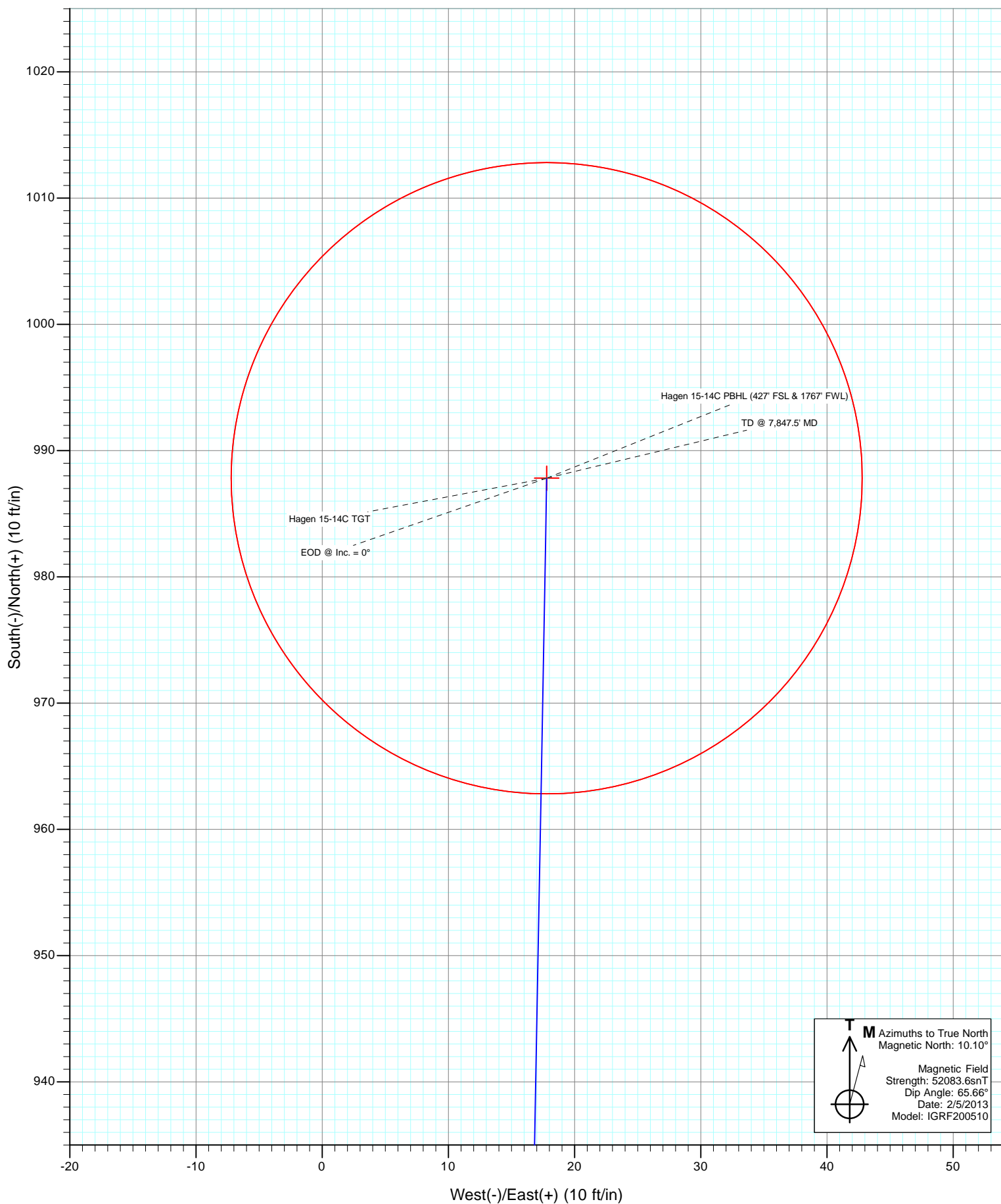


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Site: PC-22 Pad NENW 2 7S 95W  
Well: Hagen 15-14C  
Wellbore: OH  
Design: Plan #1



# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Hagen 15-14C
<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 15-14C	<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 15-14C					
Well Position	+N/-S	0.0 ft	Northing:	1,590,657.86 ft	Latitude:	39.428723
	+E/-W	0.0 ft	Easting:	2,297,686.34 ft	Longitude:	-107.986655
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	2/5/2013	10.10	65.66	52,084

<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	1.03

<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	
250.0	0.00	0.00	250.0	0.0	0.0	0.00	0.00	0.00	0.00	
625.8	11.27	1.03	623.4	36.9	0.7	3.00	3.00	0.00	1.03	
5,207.7	11.27	1.03	5,116.9	932.5	16.8	0.00	0.00	0.00	0.00	
5,771.5	0.00	0.00	5,677.0	987.8	17.8	2.00	-2.00	0.00	180.00	Hagen 15-14C TGT
7,847.5	0.00	0.00	7,753.0	987.8	17.8	0.00	0.00	0.00	0.00	Hagen 15-14C PBHL
7,947.5	0.00	0.00	7,853.0	987.8	17.8	0.00	0.00	0.00	0.00	

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<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 15-14C	<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	
250.0	0.00	0.00	250.0	0.0	0.0	0.0	0.00	0.00	KOP @ 250'
300.0	1.50	1.03	300.0	0.7	0.0	0.7	3.00	3.00	
400.0	4.50	1.03	399.8	5.9	0.1	5.9	3.00	3.00	
500.0	7.50	1.03	499.3	16.3	0.3	16.3	3.00	3.00	
600.0	10.50	1.03	598.0	32.0	0.6	32.0	3.00	3.00	
625.8	11.27	1.03	623.4	36.9	0.7	36.9	3.00	3.00	EOB @ Inc. = 11.27°
700.0	11.27	1.03	696.1	51.4	0.9	51.4	0.00	0.00	
800.0	11.27	1.03	794.2	70.9	1.3	70.9	0.00	0.00	
900.0	11.27	1.03	892.3	90.4	1.6	90.5	0.00	0.00	
963.9	11.27	1.03	955.0	102.9	1.9	103.0	0.00	0.00	Surface Casing
1,000.0	11.27	1.03	990.4	110.0	2.0	110.0	0.00	0.00	
1,100.0	11.27	1.03	1,088.4	129.5	2.3	129.6	0.00	0.00	
1,200.0	11.27	1.03	1,186.5	149.1	2.7	149.1	0.00	0.00	
1,300.0	11.27	1.03	1,284.6	168.6	3.0	168.7	0.00	0.00	
1,400.0	11.27	1.03	1,382.6	188.2	3.4	188.2	0.00	0.00	
1,500.0	11.27	1.03	1,480.7	207.7	3.7	207.8	0.00	0.00	
1,600.0	11.27	1.03	1,578.8	227.3	4.1	227.3	0.00	0.00	
1,700.0	11.27	1.03	1,676.8	246.8	4.4	246.9	0.00	0.00	
1,800.0	11.27	1.03	1,774.9	266.4	4.8	266.4	0.00	0.00	
1,900.0	11.27	1.03	1,873.0	285.9	5.2	286.0	0.00	0.00	
2,000.0	11.27	1.03	1,971.1	305.5	5.5	305.5	0.00	0.00	
2,100.0	11.27	1.03	2,069.1	325.0	5.9	325.1	0.00	0.00	
2,200.0	11.27	1.03	2,167.2	344.6	6.2	344.6	0.00	0.00	
2,300.0	11.27	1.03	2,265.3	364.1	6.6	364.2	0.00	0.00	
2,400.0	11.27	1.03	2,363.3	383.7	6.9	383.7	0.00	0.00	
2,500.0	11.27	1.03	2,461.4	403.2	7.3	403.3	0.00	0.00	
2,600.0	11.27	1.03	2,559.5	422.8	7.6	422.8	0.00	0.00	
2,700.0	11.27	1.03	2,657.5	442.3	8.0	442.4	0.00	0.00	
2,800.0	11.27	1.03	2,755.6	461.9	8.3	461.9	0.00	0.00	
2,900.0	11.27	1.03	2,853.7	481.4	8.7	481.5	0.00	0.00	
3,000.0	11.27	1.03	2,951.8	501.0	9.0	501.0	0.00	0.00	
3,100.0	11.27	1.03	3,049.8	520.5	9.4	520.6	0.00	0.00	
3,200.0	11.27	1.03	3,147.9	540.1	9.7	540.1	0.00	0.00	
3,300.0	11.27	1.03	3,246.0	559.6	10.1	559.7	0.00	0.00	
3,400.0	11.27	1.03	3,344.0	579.2	10.4	579.2	0.00	0.00	
3,500.0	11.27	1.03	3,442.1	598.7	10.8	598.8	0.00	0.00	
3,600.0	11.27	1.03	3,540.2	618.3	11.1	618.4	0.00	0.00	
3,700.0	11.27	1.03	3,638.3	637.8	11.5	637.9	0.00	0.00	
3,800.0	11.27	1.03	3,736.3	657.3	11.8	657.5	0.00	0.00	
3,900.0	11.27	1.03	3,834.4	676.9	12.2	677.0	0.00	0.00	
4,000.0	11.27	1.03	3,932.5	696.4	12.5	696.6	0.00	0.00	
4,100.0	11.27	1.03	4,030.5	716.0	12.9	716.1	0.00	0.00	
4,200.0	11.27	1.03	4,128.6	735.5	13.3	735.7	0.00	0.00	
4,300.0	11.27	1.03	4,226.7	755.1	13.6	755.2	0.00	0.00	
4,400.0	11.27	1.03	4,324.7	774.6	14.0	774.8	0.00	0.00	
4,406.4	11.27	1.03	4,331.0	775.9	14.0	776.0	0.00	0.00	Ohio Creek
4,500.0	11.27	1.03	4,422.8	794.2	14.3	794.3	0.00	0.00	
4,600.0	11.27	1.03	4,520.9	813.7	14.7	813.9	0.00	0.00	
4,659.3	11.27	1.03	4,579.0	825.3	14.9	825.5	0.00	0.00	Mesaverde Marker

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Hagen 15-14C
<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 15-14C	<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
4,700.0	11.27	1.03	4,619.0	833.3	15.0	833.4	0.00	0.00	
4,800.0	11.27	1.03	4,717.0	852.8	15.4	853.0	0.00	0.00	
4,900.0	11.27	1.03	4,815.1	872.4	15.7	872.5	0.00	0.00	
5,000.0	11.27	1.03	4,913.2	891.9	16.1	892.1	0.00	0.00	
5,100.0	11.27	1.03	5,011.2	911.5	16.4	911.6	0.00	0.00	
5,207.7	11.27	1.03	5,116.9	932.5	16.8	932.7	0.00	0.00	Start 2° Drop
5,300.0	9.43	1.03	5,207.6	949.1	17.1	949.3	2.00	-2.00	
5,399.4	7.44	1.03	5,306.0	963.7	17.4	963.9	2.00	-2.00	Williams Fork
5,400.0	7.43	1.03	5,306.6	963.8	17.4	963.9	2.00	-2.00	
5,500.0	5.43	1.03	5,405.9	975.0	17.6	975.1	2.00	-2.00	
5,600.0	3.43	1.03	5,505.6	982.7	17.7	982.8	2.00	-2.00	
5,700.0	1.43	1.03	5,605.5	986.9	17.8	987.1	2.00	-2.00	
5,771.5	0.00	0.00	5,677.0	987.8	17.8	988.0	2.00	-2.00	EOD @ Inc. = 0° - Top Gas
5,800.0	0.00	0.00	5,705.5	987.8	17.8	988.0	0.00	0.00	
5,900.0	0.00	0.00	5,805.5	987.8	17.8	988.0	0.00	0.00	
6,000.0	0.00	0.00	5,905.5	987.8	17.8	988.0	0.00	0.00	
6,100.0	0.00	0.00	6,005.5	987.8	17.8	988.0	0.00	0.00	
6,200.0	0.00	0.00	6,105.5	987.8	17.8	988.0	0.00	0.00	
6,300.0	0.00	0.00	6,205.5	987.8	17.8	988.0	0.00	0.00	
6,400.0	0.00	0.00	6,305.5	987.8	17.8	988.0	0.00	0.00	
6,500.0	0.00	0.00	6,405.5	987.8	17.8	988.0	0.00	0.00	
6,600.0	0.00	0.00	6,505.5	987.8	17.8	988.0	0.00	0.00	
6,700.0	0.00	0.00	6,605.5	987.8	17.8	988.0	0.00	0.00	
6,800.0	0.00	0.00	6,705.5	987.8	17.8	988.0	0.00	0.00	
6,900.0	0.00	0.00	6,805.5	987.8	17.8	988.0	0.00	0.00	
7,000.0	0.00	0.00	6,905.5	987.8	17.8	988.0	0.00	0.00	
7,100.0	0.00	0.00	7,005.5	987.8	17.8	988.0	0.00	0.00	
7,200.0	0.00	0.00	7,105.5	987.8	17.8	988.0	0.00	0.00	
7,241.5	0.00	0.00	7,147.0	987.8	17.8	988.0	0.00	0.00	Coal Ridge
7,300.0	0.00	0.00	7,205.5	987.8	17.8	988.0	0.00	0.00	
7,400.0	0.00	0.00	7,305.5	987.8	17.8	988.0	0.00	0.00	
7,500.0	0.00	0.00	7,405.5	987.8	17.8	988.0	0.00	0.00	
7,600.0	0.00	0.00	7,505.5	987.8	17.8	988.0	0.00	0.00	
7,697.5	0.00	0.00	7,603.0	987.8	17.8	988.0	0.00	0.00	Rollins
7,700.0	0.00	0.00	7,605.5	987.8	17.8	988.0	0.00	0.00	
7,800.0	0.00	0.00	7,705.5	987.8	17.8	988.0	0.00	0.00	
7,847.5	0.00	0.00	7,753.0	987.8	17.8	988.0	0.00	0.00	TD @ 7,847.5' MD
7,900.0	0.00	0.00	7,805.5	987.8	17.8	988.0	0.00	0.00	
7,947.5	0.00	0.00	7,853.0	987.8	17.8	988.0	0.00	0.00	Permit TD @ 7,947.5' MD

# Cathedral Energy Services

## Planning Report

<b>Database:</b>	USA EDM 5000 Multi Users DB	<b>Local Co-ordinate Reference:</b>	Well Hagen 15-14C
<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 15-14C	<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 15-14C TGT	0.00	0.00	5,677.0	987.8	17.8	1,591,644.82	2,297,731.17	39.431435	-107.986592
- plan hits target center									
- Point									
Hagen 15-14C PBHL (4'	0.00	0.00	7,753.0	987.8	17.8	1,591,644.82	2,297,731.17	39.431435	-107.986592
- plan hits target center									
- Circle (radius 25.0)									

Casing Points				
Measured Depth	Vertical Depth	Name	Casing Diameter	Hole Diameter
(ft)	(ft)		(in)	(in)
963.9	955.0	Surface Casing		

Formations					
Measured Depth	Vertical Depth	Name	Lithology	Dip	Dip Direction
(ft)	(ft)			(°)	(°)
4,406.4	4,331.0	Ohio Creek			
4,659.3	4,579.0	Mesaverde Marker			
5,399.4	5,306.0	Williams Fork			
5,771.5	5,677.0	Top Gas			
7,241.5	7,147.0	Coal Ridge			
7,697.5	7,603.0	Rollins			

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates			
(ft)	(ft)	+N/-S	+E/-W	Comment	
(ft)	(ft)	(ft)	(ft)		
250.0	250.0	0.0	0.0	KOP @ 250'	
625.8	623.4	36.9	0.7	EOB @ Inc. = 11.27°	
5,207.7	5,116.9	932.5	16.8	Start 2° Drop	
5,771.5	5,677.0	987.8	17.8	EOD @ Inc. = 0°	
7,847.5	7,753.0	987.8	17.8	TD @ 7,847.5' MD	
7,947.5	7,853.0	987.8	17.8	Permit TD @ 7,947.5' MD	