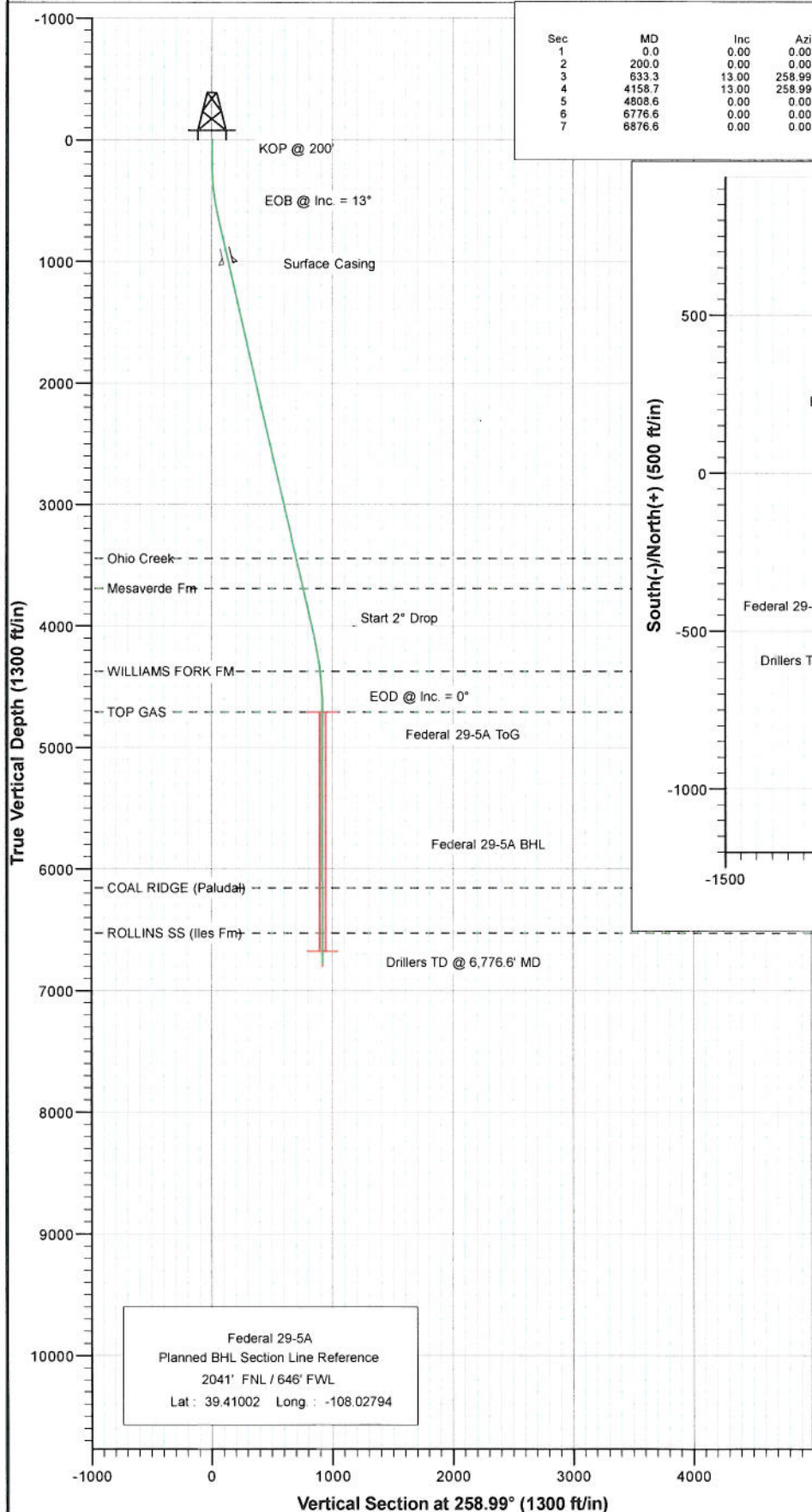
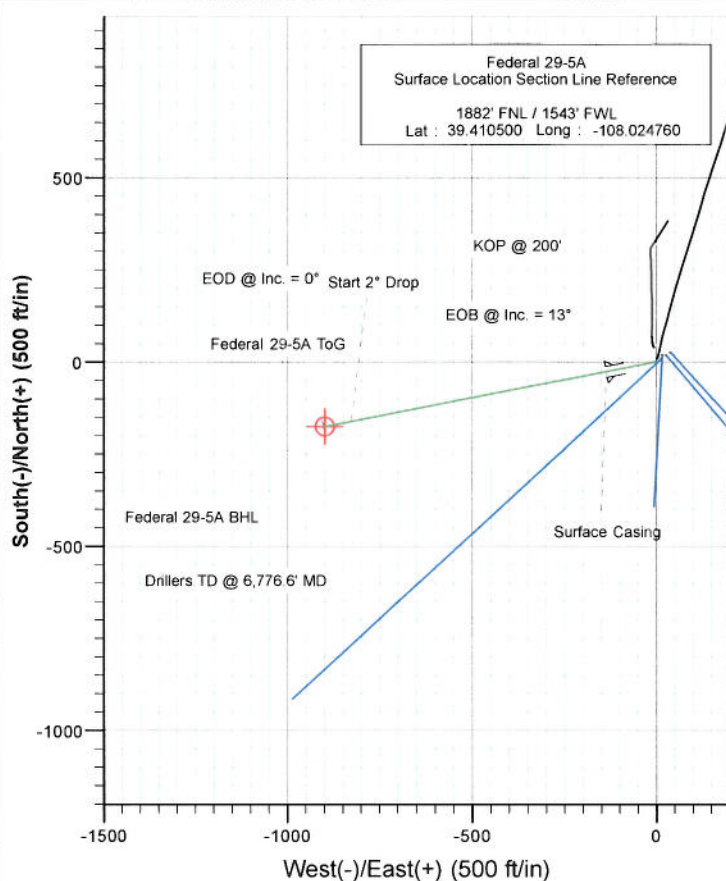




Project: S. Piceance (Parachute)  
 Site: S29-T7S-R95W (P120#200)  
 Well: Federal 29-5A  
 Wellbore: DD  
 Plan: Plan #2



Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSecl	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	633.3	13.00	258.99	629.6	-9.3	-48.0	3.00	258.99	48.9	
4	4158.7	13.00	258.99	4064.6	-160.8	-826.4	0.00	0.00	841.9	
5	4808.6	0.00	0.00	4709.0	-174.8	-898.5	2.00	180.00	915.3	Federal 29-5A ToG
6	6776.6	0.00	0.00	6677.0	-174.8	-898.5	0.00	0.00	915.3	Federal 29-5A BHL
7	6876.6	0.00	0.00	6777.0	-174.8	-898.5	0.00	0.00	915.3	



FORMATION TOP DETAILS
TVDPath MDPath Formation
3445.0 3522.8 Ohio Creek
3691.0 3775.2 Mesaverde Fm
4372.0 4470.8 WILLIAMS FORK FM
4709.0 4808.6 TOP GAS
6155.0 6254.6 COAL RIDGE (Paludal)
6527.0 6626.6 ROLLINS SS (Iles Fm)



Azimuths to True North  
 Magnetic North: 10.42°  
 Magnetic Field  
 Strength: 52302.1nT  
 Dip Angle: 65.69°  
 Date: 9/27/2010  
 Model: IGRF200510

DESIGN DETAILS: Plan #2  
 115XXX; SC

Target	Azimuth	Origin Type	N/S	E/W
Federal 29-5A BHL	258.99	Slot	0.0	0.0

# Cathedral Energy Services

## Planning Report

Database: USA EDM 5000 Multi Users DB  
Company: EnCana Oil & Gas (USA) Inc  
Project: S. Piceance (Parachute)  
Site: S29-T7S-R95W (PF-29 Pad)  
Well: Federal 29-5A  
Wellbore: DD  
Design: Plan #2

Local Co-ordinate Reference: Well Federal 29-5A  
TVD Reference: WELL @ 6058.0ft (Original Well Elev)  
MD Reference: WELL @ 6058.0ft (Original Well Elev)  
North Reference: True  
Survey Calculation Method: Minimum Curvature

Project S. Piceance (Parachute), Garfield County, CO

Map System: US State Plane 1983  
Geo Datum: North American Datum 1983  
Map Zone: Colorado Central Zone  
System Datum: Mean Sea Level

Site S29-T7S-R95W (PF-29 Pad)

Site Position: Northing: 1,584,347.66 ft Latitude: 39.410580  
From: Lat/Long Easting: 2,286,791.27 ft Longitude: -108.024590  
Position Uncertainty: 0.0 ft Slot Radius: 13.200 in Grid Convergence: -1.59 °

Well Federal 29-5A

Well Position: +N/-S 0.0 ft Northing: 1,584,319.85 ft Latitude: 39.410500  
+E/-W 0.0 ft Easting: 2,286,742.45 ft Longitude: -108.024760  
Position Uncertainty: 0.0 ft Wellhead Elevation: ft Ground Level: 6,036.0 ft

Wellbore DD

Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF200510	9/27/2010	10.42	65.69	52,302

Design Plan #2

Audit Notes:

Version: Phase: PLAN Tie On Depth: 0.0

Vertical Section:	Depth From (TVD) (ft)	+N/-S (ft)	+E/-W (ft)	Direction (°)
	0.0	0.0	0.0	258.99

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	
633.3	13.00	258.99	629.6	-9.3	-48.0	3.00	3.00	0.00	258.99	
4,158.7	13.00	258.99	4,064.6	-160.8	-826.4	0.00	0.00	0.00	0.00	
4,808.6	0.00	0.00	4,709.0	-174.8	-898.5	2.00	-2.00	0.00	180.00	Federal 29-5A ToG
6,776.6	0.00	0.00	6,677.0	-174.8	-898.5	0.00	0.00	0.00	0.00	Federal 29-5A BHL
6,876.6	0.00	0.00	6,777.0	-174.8	-898.5	0.00	0.00	0.00	0.00	



# Cathedral Energy Services

## Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well Federal 29-5A
Company:	EnCana Oil & Gas (USA) Inc	TVD Reference:	WELL @ 6058.0ft (Original Well Elev)
Project:	S. Piceance (Parachute)	MD Reference:	WELL @ 6058.0ft (Original Well Elev)
Site:	S29-T7S-R95W (PF-29 Pad)	North Reference:	True
Well:	Federal 29-5A	Survey Calculation Method:	Minimum Curvature
Wellbore:	DD		
Design:	Plan #2		

### 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	258.99	300.0	-0.5	-2.6	2.6	3.00	3.00	
400.0	6.00	258.99	399.6	-2.0	-10.3	10.5	3.00	3.00	
500.0	9.00	258.99	498.8	-4.5	-23.1	23.5	3.00	3.00	
600.0	12.00	258.99	597.1	-8.0	-41.0	41.7	3.00	3.00	
633.3	13.00	258.99	629.6	-9.3	-48.0	48.9	3.00	3.00	EOB @ Inc. = 13°
700.0	13.00	258.99	694.6	-12.2	-62.8	63.9	0.00	0.00	
800.0	13.00	258.99	792.0	-16.5	-84.8	86.4	0.00	0.00	
900.0	13.00	258.99	889.5	-20.8	-106.9	108.9	0.00	0.00	
1,000.0	13.00	258.99	986.9	-25.1	-129.0	131.4	0.00	0.00	
1,031.0	13.00	258.99	1,017.1	-26.4	-135.9	138.4	0.00	0.00	Surface Casing
1,100.0	13.00	258.99	1,084.3	-29.4	-151.1	153.9	0.00	0.00	
1,200.0	13.00	258.99	1,181.8	-33.7	-173.2	176.4	0.00	0.00	
1,300.0	13.00	258.99	1,279.2	-38.0	-195.2	198.9	0.00	0.00	
1,400.0	13.00	258.99	1,376.6	-42.3	-217.3	221.4	0.00	0.00	
1,500.0	13.00	258.99	1,474.1	-46.6	-239.4	243.9	0.00	0.00	
1,600.0	13.00	258.99	1,571.5	-50.9	-261.5	266.4	0.00	0.00	
1,700.0	13.00	258.99	1,669.0	-55.2	-283.6	288.9	0.00	0.00	
1,800.0	13.00	258.99	1,766.4	-59.5	-305.6	311.4	0.00	0.00	
1,900.0	13.00	258.99	1,863.8	-63.8	-327.7	333.9	0.00	0.00	
2,000.0	13.00	258.99	1,961.3	-68.1	-349.8	356.4	0.00	0.00	
2,100.0	13.00	258.99	2,058.7	-72.4	-371.9	378.9	0.00	0.00	
2,200.0	13.00	258.99	2,156.1	-76.6	-394.0	401.4	0.00	0.00	
2,300.0	13.00	258.99	2,253.6	-80.9	-416.0	423.8	0.00	0.00	
2,400.0	13.00	258.99	2,351.0	-85.2	-438.1	446.3	0.00	0.00	
2,500.0	13.00	258.99	2,448.5	-89.5	-460.2	468.8	0.00	0.00	
2,600.0	13.00	258.99	2,545.9	-93.8	-482.3	491.3	0.00	0.00	
2,700.0	13.00	258.99	2,643.3	-98.1	-504.4	513.8	0.00	0.00	
2,800.0	13.00	258.99	2,740.8	-102.4	-526.4	536.3	0.00	0.00	
2,900.0	13.00	258.99	2,838.2	-106.7	-548.5	558.8	0.00	0.00	
3,000.0	13.00	258.99	2,935.6	-111.0	-570.6	581.3	0.00	0.00	
3,100.0	13.00	258.99	3,033.1	-115.3	-592.7	603.8	0.00	0.00	
3,200.0	13.00	258.99	3,130.5	-119.6	-614.8	626.3	0.00	0.00	
3,300.0	13.00	258.99	3,228.0	-123.9	-636.8	648.8	0.00	0.00	
3,400.0	13.00	258.99	3,325.4	-128.2	-658.9	671.3	0.00	0.00	
3,500.0	13.00	258.99	3,422.8	-132.5	-681.0	693.8	0.00	0.00	
3,522.8	13.00	258.99	3,445.0	-133.5	-686.0	698.9	0.00	0.00	Ohio Creek
3,600.0	13.00	258.99	3,520.3	-136.8	-703.1	716.3	0.00	0.00	
3,700.0	13.00	258.99	3,617.7	-141.1	-725.2	738.8	0.00	0.00	
3,775.2	13.00	258.99	3,691.0	-144.3	-741.8	755.7	0.00	0.00	Mesaverde Fm
3,800.0	13.00	258.99	3,715.1	-145.4	-747.2	761.3	0.00	0.00	
3,900.0	13.00	258.99	3,812.6	-149.7	-769.3	783.7	0.00	0.00	
4,000.0	13.00	258.99	3,910.0	-154.0	-791.4	806.2	0.00	0.00	
4,100.0	13.00	258.99	4,007.5	-158.3	-813.5	828.7	0.00	0.00	
4,158.7	13.00	258.99	4,064.6	-160.8	-826.4	841.9	0.00	0.00	Start 2" Drop
4,200.0	12.17	258.99	4,105.0	-162.5	-835.3	850.9	2.00	-2.00	
4,300.0	10.17	258.99	4,203.1	-166.2	-854.3	870.3	2.00	-2.00	
4,400.0	8.17	258.99	4,301.8	-169.2	-869.9	886.3	2.00	-2.00	
4,470.8	6.76	258.99	4,372.0	-171.0	-879.0	895.5	2.00	-2.00	WILLIAMS FORK FM
4,500.0	6.17	258.99	4,401.0	-171.6	-882.2	898.7	2.00	-2.00	

# Cathedral Energy Services

## Planning Report

Database: USA EDM 5000 Multi Users DB  
Company: EnCana Oil & Gas (USA) Inc  
Project: S. Piceance (Parachute)  
Site: S29-T7S-R95W (PF-29 Pad)  
Well: Federal 29-5A  
Wellbore: DD  
Design: Plan #2

Local Co-ordinate Reference: Well Federal 29-5A  
TVD Reference: WELL @ 6058.0ft (Original Well Elev)  
MD Reference: WELL @ 6058.0ft (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
4,600.0	4.17	258.99	4,500.6	-173.4	-891.0	907.7	2.00	-2.00	
4,700.0	2.17	258.99	4,600.4	-174.4	-896.5	913.3	2.00	-2.00	
4,808.6	0.00	0.00	4,709.0	-174.8	-898.5	915.3	2.00	-2.00	EOD @ Inc. = 0° - TOP GAS
4,900.0	0.00	0.00	4,800.4	-174.8	-898.5	915.3	0.00	0.00	
5,000.0	0.00	0.00	4,900.4	-174.8	-898.5	915.3	0.00	0.00	
5,100.0	0.00	0.00	5,000.4	-174.8	-898.5	915.3	0.00	0.00	
5,200.0	0.00	0.00	5,100.4	-174.8	-898.5	915.3	0.00	0.00	
5,300.0	0.00	0.00	5,200.4	-174.8	-898.5	915.3	0.00	0.00	
5,400.0	0.00	0.00	5,300.4	-174.8	-898.5	915.3	0.00	0.00	
5,500.0	0.00	0.00	5,400.4	-174.8	-898.5	915.3	0.00	0.00	
5,600.0	0.00	0.00	5,500.4	-174.8	-898.5	915.3	0.00	0.00	
5,700.0	0.00	0.00	5,600.4	-174.8	-898.5	915.3	0.00	0.00	
5,800.0	0.00	0.00	5,700.4	-174.8	-898.5	915.3	0.00	0.00	
5,900.0	0.00	0.00	5,800.4	-174.8	-898.5	915.3	0.00	0.00	
6,000.0	0.00	0.00	5,900.4	-174.8	-898.5	915.3	0.00	0.00	
6,100.0	0.00	0.00	6,000.4	-174.8	-898.5	915.3	0.00	0.00	
6,200.0	0.00	0.00	6,100.4	-174.8	-898.5	915.3	0.00	0.00	
6,254.6	0.00	0.00	6,155.0	-174.8	-898.5	915.3	0.00	0.00	COAL RIDGE (Paludal)
6,300.0	0.00	0.00	6,200.4	-174.8	-898.5	915.3	0.00	0.00	
6,400.0	0.00	0.00	6,300.4	-174.8	-898.5	915.3	0.00	0.00	
6,500.0	0.00	0.00	6,400.4	-174.8	-898.5	915.3	0.00	0.00	
6,600.0	0.00	0.00	6,500.4	-174.8	-898.5	915.3	0.00	0.00	
6,626.6	0.00	0.00	6,527.0	-174.8	-898.5	915.3	0.00	0.00	ROLLINS SS (Iles Fm)
6,700.0	0.00	0.00	6,600.4	-174.8	-898.5	915.3	0.00	0.00	
6,776.6	0.00	0.00	6,677.0	-174.8	-898.5	915.3	0.00	0.00	Drillers TD @ 6,776.6' MD
6,800.0	0.00	0.00	6,700.4	-174.8	-898.5	915.3	0.00	0.00	
6,876.6	0.00	0.00	6,777.0	-174.8	-898.5	915.3	0.00	0.00	Permit TD @ 6,876.6" MD

### 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									
Federal 29-5A BHL	0.00	0.00	6,677.0	-174.8	-898.5	1,584,170.08	2,285,839.44	39.410020	-108.027940
- plan hits target center									
- Circle (radius 25.0)									
Federal 29-5A ToG	0.00	0.00	4,709.0	-174.8	-898.5	1,584,170.08	2,285,839.44	39.410020	-108.027940
- plan hits target center									
- Point									

### Casing Points

Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (in)	Hole Diameter (in)
1,031.0	1,017.1	Surface Casing	5.500	6.000

# Cathedral Energy Services

## Planning Report

Database: USA EDM 5000 Multi Users DB  
 Company: EnCana Oil & Gas (USA) Inc  
 Project: S. Piceance (Parachute)  
 Site: S29-T7S-R95W (PF-29 Pad)  
 Well: Federal 29-5A  
 Wellbore: DD  
 Design: Plan #2

Local Co-ordinate Reference: Well Federal 29-5A  
 TVD Reference: WELL @ 6058.0ft (Original Well Elev)  
 MD Reference: WELL @ 6058.0ft (Original Well Elev)  
 North Reference: True  
 Survey Calculation Method: Minimum Curvature

### Formations

Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
3,522.8	3,445.0	Ohio Creek			
3,775.2	3,691.0	Mesaverde Fm			
4,470.8	4,372.0	WILLIAMS FORK FM			
4,808.6	4,709.0	TOP GAS			
6,254.6	6,155.0	COAL RIDGE (Paludal)			
6,626.6	6,527.0	ROLLINS SS (Iles Fm)			

### 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'
633.3	629.6	-9.3	-48.0	EOB @ Inc. = 13°
4,158.7	4,064.6	-160.8	-826.4	Start 2° Drop
4,808.6	4,709.0	-174.8	-898.5	EOD @ Inc. = 0°
6,776.6	6,677.0	-174.8	-898.5	Drillers TD @ 6,776.6' MD
6,876.6	6,777.0	-174.8	-898.5	Permit TD @ 6,876.6" MD