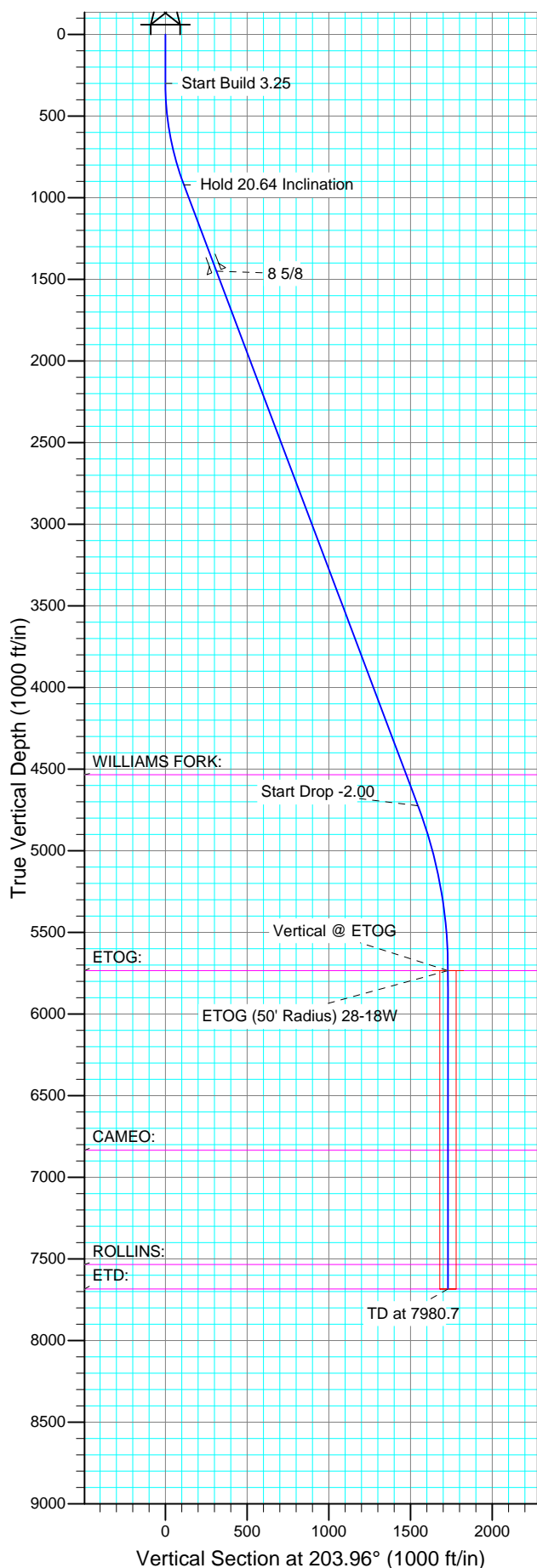




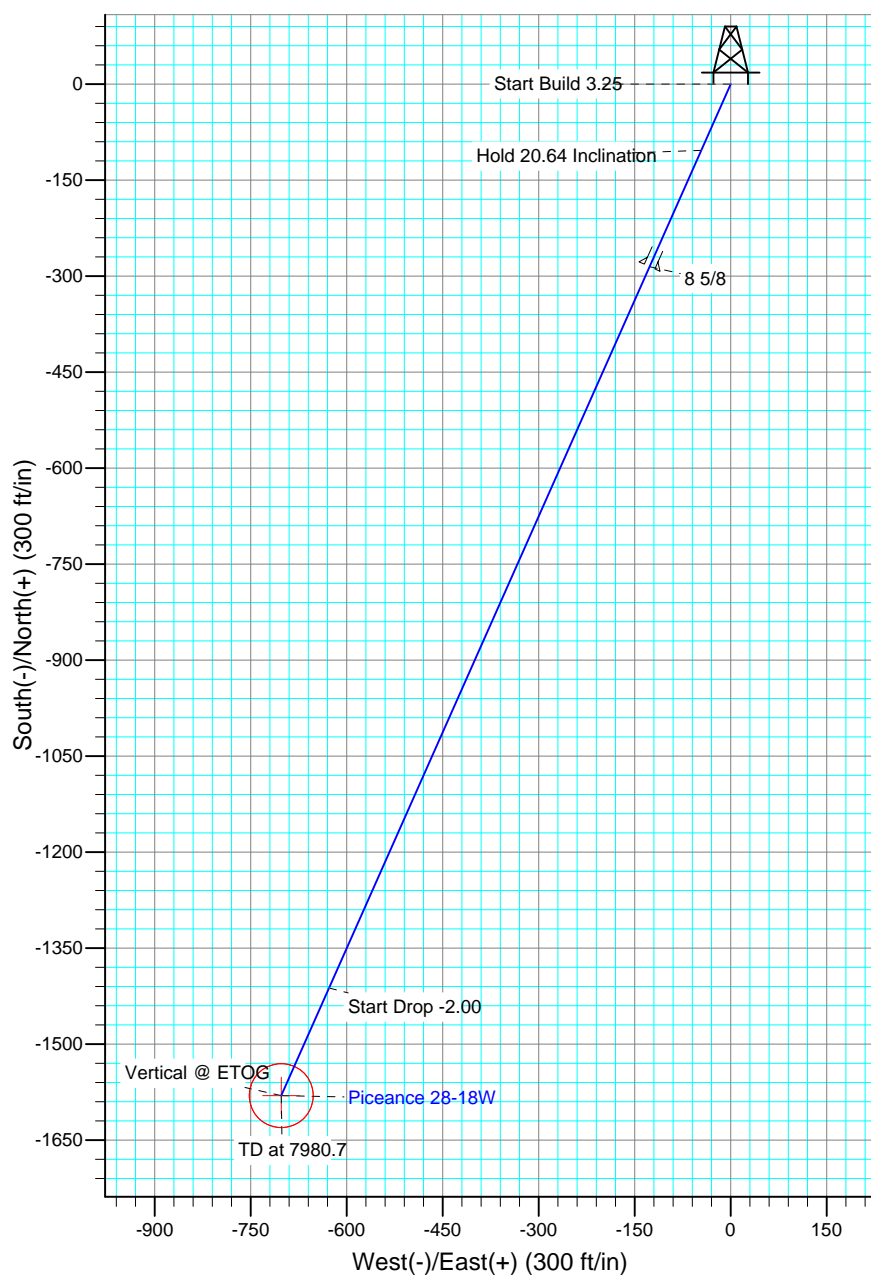
Well Name: Piceance 28-18W  
Surface Location: Piceance 28-11 Pad  
North American Datum 1983  
US State Plane 1983 , Colorado Central Zone  
Ground Elevation: 7580.0  
WELL @ 7604.0ft (Original Well Elev)

+N/-S +E/-W Northing Easting Latitude Longitude Slot  
0.0 0.0 1523183.50 2354904.34 39° 14' 51.576 N 107° 46' 41.340 W

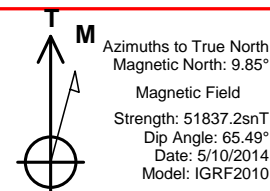
Project: Mesa County, CO  
Site: Piceance 28-11 Pad  
Well: Piceance 28-18W  
Wellbore: Wellbore #1  
Design: Plan #1 10May14 kjs



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	300.0	0.00	0.00	300.0	0.0	0.0	0.00	0.00	0.0	
3	935.2	20.64	203.96	921.5	-103.4	-46.0	3.25	203.96	113.2	
4	4998.6	20.64	203.96	4724.0	-1412.6	-627.7	0.00	0.00	1545.8	
5	6030.7	0.00	0.00	5734.0	-1580.7	-702.4	2.00	180.00	1729.7	ETOG (50' Radius) 28-18W
6	7980.7	0.00	0.00	7684.0	-1580.7	-702.4	0.00	0.00	1729.7	



FORMATION TOP DETAILS		
TVDPATH	MDPATH	Formation
4534.0	4795.5	WILLIAMS FORK:
5734.0	6030.7	ETOG:
6834.0	7130.7	CAMEO:
7534.0	7830.7	ROLLINS:
7684.0	7980.7	ETD:



# **Piceance Energy, LLC**

**Mesa County, CO**

**Piceance 28-11 Pad**

**Piceance 28-18W**

**Wellbore #1**

**Plan: Plan #1 10May14 kjs**

## **Standard Planning Report - Geographic**

**11 May, 2014**

# New Tech

## Planning Report - Geographic

<b>Database:</b>	EDM 2003.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Piceance 28-18W
<b>Company:</b>	Piceance Energy, LLC	<b>TVD Reference:</b>	WELL @ 7604.0ft (Original Well Elev)
<b>Project:</b>	Mesa County, CO	<b>MD Reference:</b>	WELL @ 7604.0ft (Original Well Elev)
<b>Site:</b>	Piceance 28-11 Pad	<b>North Reference:</b>	True
<b>Well:</b>	Piceance 28-18W	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 10May14 kjs		

Project	Mesa 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		Piceance 28-11 Pad			
Site Position:		Northing:	1,523,237.48 ft	Latitude:	39° 14' 52.116 N
From:	Lat/Long	Easting:	2,354,931.19 ft	Longitude:	107° 46' 41.016 W
Position Uncertainty:	0.0 ft	Slot Radius:	"	Grid Convergence:	-1.44 °

Well	Piceance 28-18W					
Well Position	+N/-S	0.0 ft	Northing:	1,523,183.50 ft	Latitude:	39° 14' 51.576 N
	+E/-W	0.0 ft	Easting:	2,354,904.34 ft	Longitude:	107° 46' 41.340 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	7,580.0 ft

Wellbore	Wellbore #1				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2010	5/10/2014	9.85	65.50	51,837

Design	Plan #1 10May14 kjs			
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	203.96

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	
300.0	0.00	0.00	300.0	0.0	0.0	0.00	0.00	0.00	0.00	
935.2	20.64	203.96	921.5	-103.4	-46.0	3.25	3.25	0.00	203.96	
4,998.6	20.64	203.96	4,724.0	-1,412.6	-627.7	0.00	0.00	0.00	0.00	
6,030.7	0.00	0.00	5,734.0	-1,580.7	-702.4	2.00	-2.00	0.00	180.00	ETOG (50' Radius) 2%
7,980.7	0.00	0.00	7,684.0	-1,580.7	-702.4	0.00	0.00	0.00	0.00	

# New Tech

## Planning Report - Geographic

<b>Database:</b>	EDM 2003.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Piceance 28-18W
<b>Company:</b>	Piceance Energy, LLC	<b>TVD Reference:</b>	WELL @ 7604.0ft (Original Well Elev)
<b>Project:</b>	Mesa County, CO	<b>MD Reference:</b>	WELL @ 7604.0ft (Original Well Elev)
<b>Site:</b>	Piceance 28-11 Pad	<b>North Reference:</b>	True
<b>Well:</b>	Piceance 28-18W	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 10May14 kjs		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
0.0	0.00	0.00	0.0	0.0	0.0	1,523,183.50	2,354,904.34	39° 14' 51.576 N	107° 46' 41.340 W
200.0	0.00	0.00	200.0	0.0	0.0	1,523,183.50	2,354,904.34	39° 14' 51.576 N	107° 46' 41.340 W
300.0	0.00	0.00	300.0	0.0	0.0	1,523,183.50	2,354,904.34	39° 14' 51.576 N	107° 46' 41.340 W
<b>Start Build 3.25</b>									
400.0	3.25	203.96	399.9	-2.6	-1.2	1,523,180.94	2,354,903.13	39° 14' 51.550 N	107° 46' 41.355 W
600.0	9.75	203.96	598.6	-23.3	-10.3	1,523,160.50	2,354,893.42	39° 14' 51.346 N	107° 46' 41.471 W
800.0	16.25	203.96	793.3	-64.4	-28.6	1,523,119.88	2,354,874.14	39° 14' 50.940 N	107° 46' 41.704 W
935.2	20.64	203.96	921.5	-103.4	-46.0	1,523,081.24	2,354,855.80	39° 14' 50.553 N	107° 46' 41.924 W
<b>Hold 20.64 Inclination</b>									
1,000.0	20.64	203.96	982.2	-124.3	-55.2	1,523,060.60	2,354,846.00	39° 14' 50.347 N	107° 46' 42.042 W
1,200.0	20.64	203.96	1,169.3	-188.8	-83.9	1,522,996.90	2,354,815.76	39° 14' 49.710 N	107° 46' 42.406 W
1,400.0	20.64	203.96	1,356.5	-253.2	-112.5	1,522,933.20	2,354,785.52	39° 14' 49.073 N	107° 46' 42.770 W
1,500.0	20.64	203.96	1,450.1	-285.4	-126.8	1,522,901.35	2,354,770.40	39° 14' 48.755 N	107° 46' 42.952 W
<b>8 5/8</b>									
1,600.0	20.64	203.96	1,543.7	-317.6	-141.1	1,522,869.51	2,354,755.28	39° 14' 48.436 N	107° 46' 43.134 W
1,800.0	20.64	203.96	1,730.8	-382.1	-169.8	1,522,805.81	2,354,725.05	39° 14' 47.799 N	107° 46' 43.498 W
2,000.0	20.64	203.96	1,918.0	-446.5	-198.4	1,522,742.11	2,354,694.81	39° 14' 47.163 N	107° 46' 43.862 W
2,200.0	20.64	203.96	2,105.1	-510.9	-227.0	1,522,678.41	2,354,664.57	39° 14' 46.526 N	107° 46' 44.226 W
2,400.0	20.64	203.96	2,292.3	-575.4	-255.7	1,522,614.71	2,354,634.33	39° 14' 45.889 N	107° 46' 44.590 W
2,600.0	20.64	203.96	2,479.4	-639.8	-284.3	1,522,551.02	2,354,604.09	39° 14' 45.252 N	107° 46' 44.954 W
2,800.0	20.64	203.96	2,666.6	-704.3	-312.9	1,522,487.32	2,354,573.85	39° 14' 44.615 N	107° 46' 45.318 W
3,000.0	20.64	203.96	2,853.8	-768.7	-341.6	1,522,423.62	2,354,543.61	39° 14' 43.978 N	107° 46' 45.682 W
3,200.0	20.64	203.96	3,040.9	-833.1	-370.2	1,522,359.92	2,354,513.38	39° 14' 43.341 N	107° 46' 46.046 W
3,400.0	20.64	203.96	3,228.1	-897.6	-398.8	1,522,296.22	2,354,483.14	39° 14' 42.704 N	107° 46' 46.410 W
3,600.0	20.64	203.96	3,415.2	-962.0	-427.5	1,522,232.52	2,354,452.90	39° 14' 42.067 N	107° 46' 46.774 W
3,800.0	20.64	203.96	3,602.4	-1,026.4	-456.1	1,522,168.83	2,354,422.66	39° 14' 41.430 N	107° 46' 47.138 W
4,000.0	20.64	203.96	3,789.6	-1,090.9	-484.7	1,522,105.13	2,354,392.42	39° 14' 40.793 N	107° 46' 47.502 W
4,200.0	20.64	203.96	3,976.7	-1,155.3	-513.4	1,522,041.43	2,354,362.18	39° 14' 40.157 N	107° 46' 47.865 W
4,400.0	20.64	203.96	4,163.9	-1,219.7	-542.0	1,521,977.73	2,354,331.94	39° 14' 39.520 N	107° 46' 48.229 W
4,600.0	20.64	203.96	4,351.0	-1,284.2	-570.6	1,521,914.03	2,354,301.70	39° 14' 38.883 N	107° 46' 48.593 W
4,795.5	20.64	203.96	4,534.0	-1,347.2	-598.6	1,521,851.76	2,354,272.14	39° 14' 38.260 N	107° 46' 48.949 W
<b>WILLIAMS FORK:</b>									
4,800.0	20.64	203.96	4,538.2	-1,348.6	-599.3	1,521,850.34	2,354,271.47	39° 14' 38.246 N	107° 46' 48.957 W
4,998.6	20.64	203.96	4,724.0	-1,412.6	-627.7	1,521,787.10	2,354,241.44	39° 14' 37.613 N	107° 46' 49.319 W
<b>Start Drop -2.00</b>									
5,000.0	20.61	203.96	4,725.3	-1,413.1	-627.9	1,521,786.64	2,354,241.23	39° 14' 37.609 N	107° 46' 49.321 W
5,200.0	16.61	203.96	4,914.8	-1,471.4	-653.8	1,521,728.98	2,354,213.85	39° 14' 37.032 N	107° 46' 49.651 W
5,400.0	12.61	203.96	5,108.3	-1,517.5	-674.3	1,521,683.40	2,354,192.22	39° 14' 36.577 N	107° 46' 49.911 W
5,600.0	8.61	203.96	5,304.9	-1,551.1	-689.2	1,521,650.12	2,354,176.42	39° 14' 36.244 N	107° 46' 50.101 W
5,800.0	4.61	203.96	5,503.5	-1,572.2	-698.6	1,521,629.31	2,354,166.54	39° 14' 36.036 N	107° 46' 50.220 W
6,000.0	0.61	203.96	5,703.3	-1,580.5	-702.3	1,521,621.07	2,354,162.63	39° 14' 35.953 N	107° 46' 50.267 W
6,030.7	0.00	0.00	5,734.0	-1,580.7	-702.4	1,521,620.92	2,354,162.56	39° 14' 35.952 N	107° 46' 50.268 W
<b>Vertical @ ETOG - ETOG: - ETOG (50' Radius) 28-18W</b>									
6,200.0	0.00	0.00	5,903.3	-1,580.7	-702.4	1,521,620.92	2,354,162.56	39° 14' 35.952 N	107° 46' 50.268 W
6,400.0	0.00	0.00	6,103.3	-1,580.7	-702.4	1,521,620.92	2,354,162.56	39° 14' 35.952 N	107° 46' 50.268 W
6,600.0	0.00	0.00	6,303.3	-1,580.7	-702.4	1,521,620.92	2,354,162.56	39° 14' 35.952 N	107° 46' 50.268 W
6,800.0	0.00	0.00	6,503.3	-1,580.7	-702.4	1,521,620.92	2,354,162.56	39° 14' 35.952 N	107° 46' 50.268 W
7,000.0	0.00	0.00	6,703.3	-1,580.7	-702.4	1,521,620.92	2,354,162.56	39° 14' 35.952 N	107° 46' 50.268 W
7,130.7	0.00	0.00	6,834.0	-1,580.7	-702.4	1,521,620.92	2,354,162.56	39° 14' 35.952 N	107° 46' 50.268 W
<b>CAMEO:</b>									
7,200.0	0.00	0.00	6,903.3	-1,580.7	-702.4	1,521,620.92	2,354,162.56	39° 14' 35.952 N	107° 46' 50.268 W
7,400.0	0.00	0.00	7,103.3	-1,580.7	-702.4	1,521,620.92	2,354,162.56	39° 14' 35.952 N	107° 46' 50.268 W
7,600.0	0.00	0.00	7,303.3	-1,580.7	-702.4	1,521,620.92	2,354,162.56	39° 14' 35.952 N	107° 46' 50.268 W

# New Tech

## Planning Report - Geographic

<b>Database:</b>	EDM 2003.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Piceance 28-18W
<b>Company:</b>	Piceance Energy, LLC	<b>TVD Reference:</b>	WELL @ 7604.0ft (Original Well Elev)
<b>Project:</b>	Mesa County, CO	<b>MD Reference:</b>	WELL @ 7604.0ft (Original Well Elev)
<b>Site:</b>	Piceance 28-11 Pad	<b>North Reference:</b>	True
<b>Well:</b>	Piceance 28-18W	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 10May14 kjs		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (ft)	Map Easting (ft)	Latitude	Longitude
7,800.0	0.00	0.00	7,503.3	-1,580.7	-702.4	1,521,620.92	2,354,162.56	39° 14' 35.952 N	107° 46' 50.268 W
7,830.7	0.00	0.00	7,534.0	-1,580.7	-702.4	1,521,620.92	2,354,162.56	39° 14' 35.952 N	107° 46' 50.268 W
<b>ROLLINS:</b>									
7,980.7	0.00	0.00	7,684.0	-1,580.7	-702.4	1,521,620.92	2,354,162.56	39° 14' 35.952 N	107° 46' 50.268 W
<b>TD at 7980.7 - ETD:</b>									

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									
ETOG (50' Radius) 28-1	0.00	0.00	5,734.0	-1,580.7	-702.4	1,521,620.92	2,354,162.56	39° 14' 35.952 N	107° 46' 50.268 W
- plan hits target									
- Circle (radius 50.0)									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
1,500.0	1,450.1	8 5/8	8-5/8	8-5/8	

Formations					
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)
7,980.7	7,684.0	ETD:			
7,130.7	6,834.0	CAMEO:			
4,795.5	4,534.0	WILLIAMS FORK:			
6,030.7	5,734.0	ETOG:			
7,830.7	7,534.0	ROLLINS:			

Plan Annotations				
Measured Depth (ft)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Comment
300.0	300.0	0.0	0.0	Start Build 3.25
935.2	921.5	-103.4	-46.0	Hold 20.64 Inclination
4,998.6	4,724.0	-1,412.6	-627.7	Start Drop -2.00
6,030.7	5,734.0	-1,580.7	-702.4	Vertical @ ETOG
7,980.7	7,684.0	-1,580.7	-702.4	TD at 7980.7