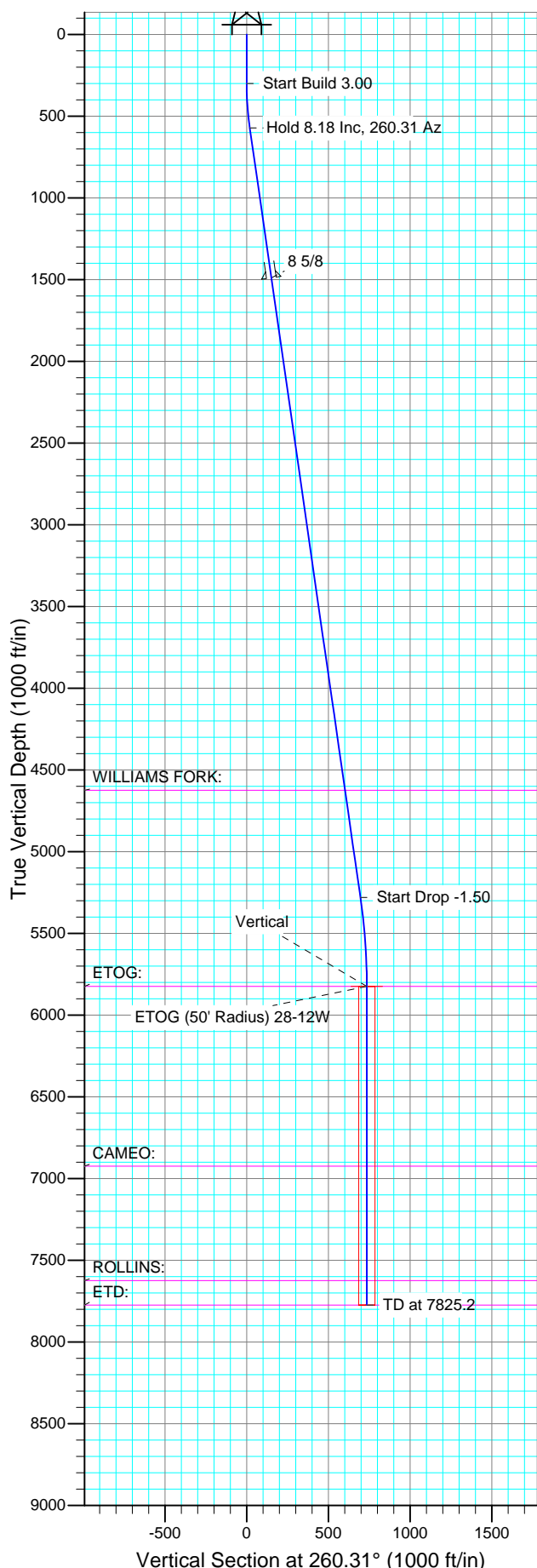




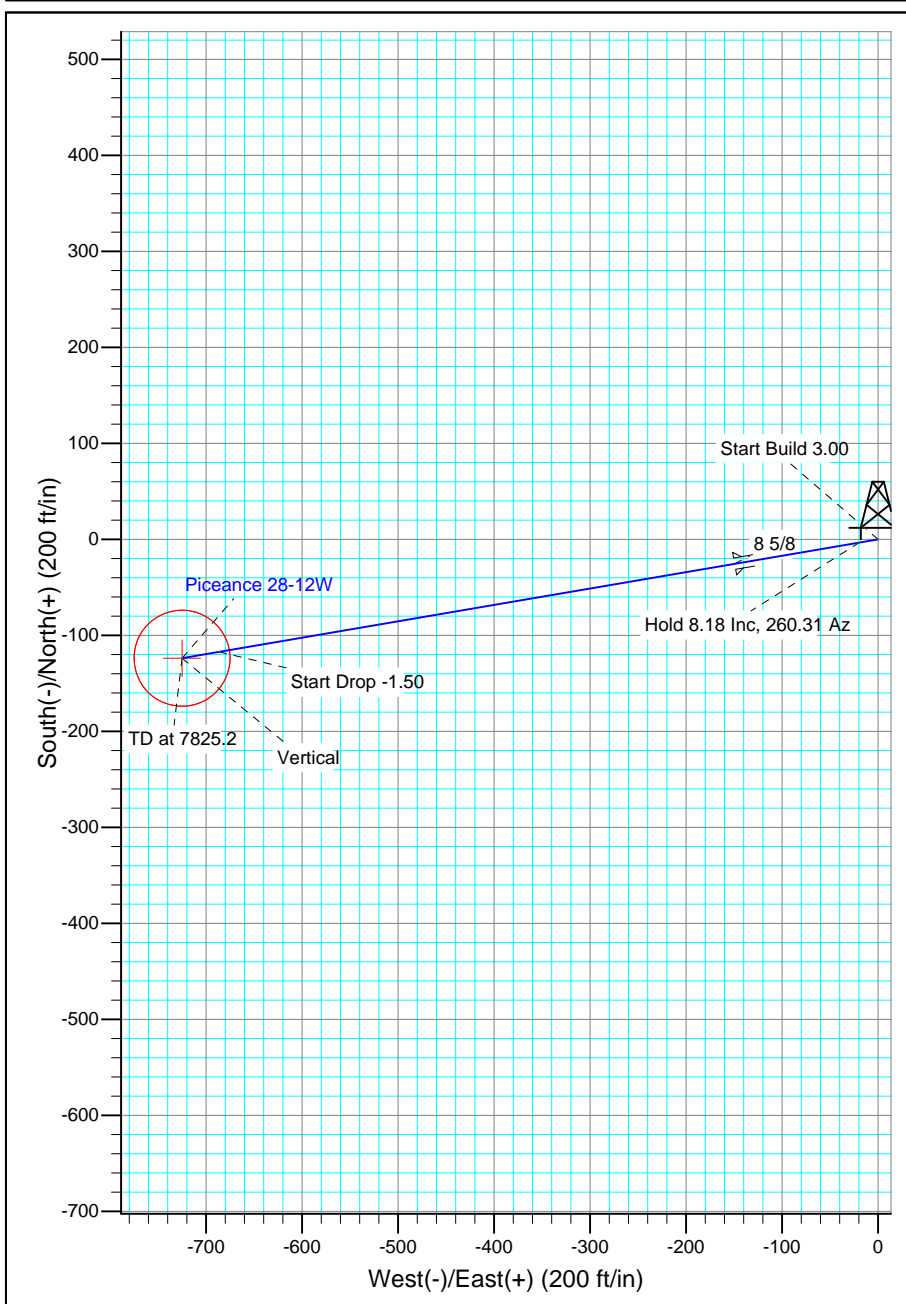
Well Name: Piceance 28-12W  
Surface Location: Piceance 28-11 Pad  
North American Datum 1983  
US State Plane 1983, Colorado Central Zone  
Ground Elevation: 7580.0  
WELL @ 7604.0ft (Original Well Elev)

Project: Mesa County, CO  
Site: Piceance 28-11 Pad  
Well: Piceance 28-12W  
Wellbore: Wellbore #1  
Design: Plan #1 10May14 kjs

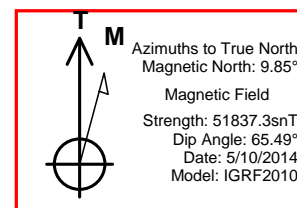
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.0	0.0	1523230.48	2354919.69	39° 14' 52.044 N	107° 46' 41.160 W	



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	ETOG (50' Radius) 28-12W
2	300.0	0.00	0.00	300.0	0.0	0.0	0.00	0.00	0.0	
3	572.8	8.18	260.31	571.9	-3.3	-19.2	3.00	260.31	19.4	
4	5329.6	8.18	260.31	5280.3	-117.3	-686.6	0.00	0.00	696.6	
5	5875.2	0.00	0.00	5824.0	-123.8	-725.0	1.50	180.00	735.5	
6	7825.2	0.00	0.00	7774.0	-123.8	-725.0	0.00	0.00	735.5	



FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
4624.0	4666.6	WILLIAMS FORK:
5824.0	5875.2	ETOG:
6924.0	6975.2	CAMEO:
7624.0	7675.2	ROLLINS:
7774.0	7825.2	ETD:



# **Piceance Energy, LLC**

**Mesa County, CO**

**Piceance 28-11 Pad**

**Piceance 28-12W**

**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 28-12W
<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 28-12W	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Plan #1 10May14 kjs		

<b>Project</b>	Mesa 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		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 28-12W					
Well Position	+N/-S	0.0 ft	Northing:	1,523,230.48 ft	Latitude:	39° 14' 52.044 N
	+E/-W	0.0 ft	Easting:	2,354,919.69 ft	Longitude:	107° 46' 41.160 W
Position Uncertainty		0.0 ft	Wellhead Elevation:	ft	Ground Level:	7,580.0 ft

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

<b>Design</b>	Plan #1 10May14 kjs			
<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) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.0	0.0	0.0	260.31

<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	
300.0	0.00	0.00	300.0	0.0	0.0	0.00	0.00	0.00	0.00	
572.8	8.18	260.31	571.9	-3.3	-19.2	3.00	3.00	0.00	260.31	
5,329.6	8.18	260.31	5,280.3	-117.3	-686.6	0.00	0.00	0.00	0.00	
5,875.2	0.00	0.00	5,824.0	-123.8	-725.0	1.50	-1.50	0.00	180.00	ETOG (50' Radius) 260.31
7,825.2	0.00	0.00	7,774.0	-123.8	-725.0	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 28-12W
<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 28-12W	<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	1,523,230.48	2,354,919.69	39° 14' 52.044 N	107° 46' 41.160 W
200.0	0.00	0.00	200.0	0.0	0.0	1,523,230.48	2,354,919.69	39° 14' 52.044 N	107° 46' 41.160 W
300.0	0.00	0.00	300.0	0.0	0.0	1,523,230.48	2,354,919.69	39° 14' 52.044 N	107° 46' 41.160 W
<b>Start Build 3.00</b>									
400.0	3.00	260.31	400.0	-0.4	-2.6	1,523,230.11	2,354,917.10	39° 14' 52.040 N	107° 46' 41.193 W
572.8	8.18	260.31	571.9	-3.3	-19.2	1,523,227.69	2,354,900.44	39° 14' 52.012 N	107° 46' 41.404 W
<b>Hold 8.18 Inclination</b>									
600.0	8.18	260.31	598.8	-3.9	-23.0	1,523,227.13	2,354,896.61	39° 14' 52.005 N	107° 46' 41.452 W
800.0	8.18	260.31	796.8	-8.7	-51.1	1,523,223.05	2,354,868.43	39° 14' 51.958 N	107° 46' 41.809 W
1,000.0	8.18	260.31	994.7	-13.5	-79.1	1,523,218.96	2,354,840.26	39° 14' 51.910 N	107° 46' 42.166 W
1,200.0	8.18	260.31	1,192.7	-18.3	-107.2	1,523,214.87	2,354,812.08	39° 14' 51.863 N	107° 46' 42.522 W
1,400.0	8.18	260.31	1,390.6	-23.1	-135.2	1,523,210.78	2,354,783.91	39° 14' 51.816 N	107° 46' 42.879 W
1,500.0	8.18	260.31	1,489.6	-25.5	-149.3	1,523,208.74	2,354,769.82	39° 14' 51.792 N	107° 46' 43.058 W
<b>8 5/8</b>									
1,600.0	8.18	260.31	1,588.6	-27.9	-163.3	1,523,206.70	2,354,755.73	39° 14' 51.768 N	107° 46' 43.236 W
1,800.0	8.18	260.31	1,786.6	-32.7	-191.4	1,523,202.61	2,354,727.56	39° 14' 51.721 N	107° 46' 43.593 W
2,000.0	8.18	260.31	1,984.5	-37.5	-219.4	1,523,198.52	2,354,699.38	39° 14' 51.674 N	107° 46' 43.949 W
2,200.0	8.18	260.31	2,182.5	-42.3	-247.5	1,523,194.43	2,354,671.21	39° 14' 51.626 N	107° 46' 44.306 W
2,400.0	8.18	260.31	2,380.5	-47.1	-275.6	1,523,190.34	2,354,643.03	39° 14' 51.579 N	107° 46' 44.663 W
2,600.0	8.18	260.31	2,578.4	-51.9	-303.6	1,523,186.26	2,354,614.86	39° 14' 51.531 N	107° 46' 45.020 W
2,800.0	8.18	260.31	2,776.4	-56.7	-331.7	1,523,182.17	2,354,586.68	39° 14' 51.484 N	107° 46' 45.376 W
3,000.0	8.18	260.31	2,974.4	-61.4	-359.8	1,523,178.08	2,354,558.51	39° 14' 51.437 N	107° 46' 45.733 W
3,200.0	8.18	260.31	3,172.3	-66.2	-387.8	1,523,173.99	2,354,530.33	39° 14' 51.389 N	107° 46' 46.090 W
3,400.0	8.18	260.31	3,370.3	-71.0	-415.9	1,523,169.90	2,354,502.16	39° 14' 51.342 N	107° 46' 46.447 W
3,600.0	8.18	260.31	3,568.2	-75.8	-443.9	1,523,165.82	2,354,473.98	39° 14' 51.294 N	107° 46' 46.803 W
3,800.0	8.18	260.31	3,766.2	-80.6	-472.0	1,523,161.73	2,354,445.81	39° 14' 51.247 N	107° 46' 47.160 W
4,000.0	8.18	260.31	3,964.2	-85.4	-500.1	1,523,157.64	2,354,417.63	39° 14' 51.200 N	107° 46' 47.517 W
4,200.0	8.18	260.31	4,162.1	-90.2	-528.1	1,523,153.55	2,354,389.46	39° 14' 51.152 N	107° 46' 47.874 W
4,400.0	8.18	260.31	4,360.1	-95.0	-556.2	1,523,149.46	2,354,361.28	39° 14' 51.105 N	107° 46' 48.230 W
4,600.0	8.18	260.31	4,558.1	-99.8	-584.3	1,523,145.38	2,354,333.11	39° 14' 51.058 N	107° 46' 48.587 W
4,666.6	8.18	260.31	4,624.0	-101.4	-593.6	1,523,144.01	2,354,323.72	39° 14' 51.042 N	107° 46' 48.706 W
<b>WILLIAMS FORK:</b>									
4,800.0	8.18	260.31	4,756.0	-104.6	-612.3	1,523,141.29	2,354,304.93	39° 14' 51.010 N	107° 46' 48.944 W
5,000.0	8.18	260.31	4,954.0	-109.4	-640.4	1,523,137.20	2,354,276.76	39° 14' 50.963 N	107° 46' 49.301 W
5,200.0	8.18	260.31	5,152.0	-114.2	-668.5	1,523,133.11	2,354,248.58	39° 14' 50.915 N	107° 46' 49.657 W
5,329.6	8.18	260.31	5,280.3	-117.3	-686.6	1,523,130.46	2,354,230.32	39° 14' 50.885 N	107° 46' 49.889 W
<b>Start Drop -1.50</b>									
5,400.0	7.13	260.31	5,350.0	-118.9	-695.9	1,523,129.12	2,354,221.04	39° 14' 50.869 N	107° 46' 50.006 W
5,600.0	4.13	260.31	5,549.0	-122.2	-715.2	1,523,126.30	2,354,201.63	39° 14' 50.836 N	107° 46' 50.252 W
5,800.0	1.13	260.31	5,748.8	-123.7	-724.3	1,523,124.98	2,354,192.56	39° 14' 50.821 N	107° 46' 50.367 W
5,875.2	0.00	0.00	5,824.0	-123.8	-725.0	1,523,124.88	2,354,191.82	39° 14' 50.820 N	107° 46' 50.376 W
<b>Vertical @ ETOG - ETOG: - ETOG (50' Radius) 28-12W</b>									
6,000.0	0.00	0.00	5,948.8	-123.8	-725.0	1,523,124.88	2,354,191.82	39° 14' 50.820 N	107° 46' 50.376 W
6,200.0	0.00	0.00	6,148.8	-123.8	-725.0	1,523,124.88	2,354,191.82	39° 14' 50.820 N	107° 46' 50.376 W
6,400.0	0.00	0.00	6,348.8	-123.8	-725.0	1,523,124.88	2,354,191.82	39° 14' 50.820 N	107° 46' 50.376 W
6,600.0	0.00	0.00	6,548.8	-123.8	-725.0	1,523,124.88	2,354,191.82	39° 14' 50.820 N	107° 46' 50.376 W
6,800.0	0.00	0.00	6,748.8	-123.8	-725.0	1,523,124.88	2,354,191.82	39° 14' 50.820 N	107° 46' 50.376 W
6,975.2	0.00	0.00	6,924.0	-123.8	-725.0	1,523,124.88	2,354,191.82	39° 14' 50.820 N	107° 46' 50.376 W
<b>CAMEO:</b>									
7,000.0	0.00	0.00	6,948.8	-123.8	-725.0	1,523,124.88	2,354,191.82	39° 14' 50.820 N	107° 46' 50.376 W
7,200.0	0.00	0.00	7,148.8	-123.8	-725.0	1,523,124.88	2,354,191.82	39° 14' 50.820 N	107° 46' 50.376 W
7,400.0	0.00	0.00	7,348.8	-123.8	-725.0	1,523,124.88	2,354,191.82	39° 14' 50.820 N	107° 46' 50.376 W
7,600.0	0.00	0.00	7,548.8	-123.8	-725.0	1,523,124.88	2,354,191.82	39° 14' 50.820 N	107° 46' 50.376 W

**New Tech**  
Planning Report - Geographic

<b>Database:</b>	EDM 2003.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Piceance 28-12W
<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 28-12W	<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
7,675.2	0.00	0.00	7,624.0	-123.8	-725.0	1,523,124.88	2,354,191.82	39° 14' 50.820 N	107° 46' 50.376 W
<b>ROLLINS:</b>									
7,800.0	0.00	0.00	7,748.8	-123.8	-725.0	1,523,124.88	2,354,191.82	39° 14' 50.820 N	107° 46' 50.376 W
7,825.2	0.00	0.00	7,774.0	-123.8	-725.0	1,523,124.88	2,354,191.82	39° 14' 50.820 N	107° 46' 50.376 W
<b>TD at 7825.2 - 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	5,824.0	-123.8	-725.0	1,523,124.88	2,354,191.82	39° 14' 50.820 N	107° 46' 50.376 W
- plan hits target									
- Circle (radius 50.0)									

Casing Points					
Measured Depth (ft)	Vertical Depth (ft)	Name	Casing Diameter (")	Hole Diameter (")	
1,500.0	1,489.6	8 5/8	8-5/8	8-5/8	

Formations						
Measured Depth (ft)	Vertical Depth (ft)	Name	Lithology	Dip (°)	Dip Direction (°)	
7,675.2	7,624.0	ROLLINS:				
4,666.6	4,624.0	WILLIAMS FORK:				
5,875.2	5,824.0	ETOG:				
6,975.2	6,924.0	CAMEO:				
7,825.2	7,774.0	ETD:				

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 3.00	
572.8	571.9	-3.3	-19.2	Hold 8.18 Inclination	
5,329.6	5,280.3	-117.3	-686.6	Start Drop -1.50	
5,875.2	5,824.0	-123.8	-725.0	Vertical @ ETOG	
7,825.2	7,774.0	-123.8	-725.0	TD at 7825.2	