

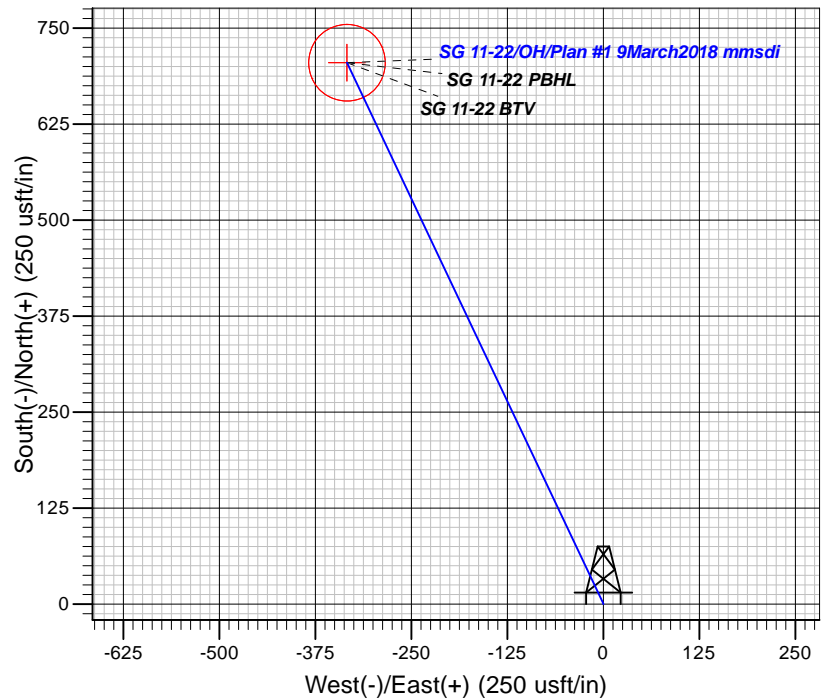
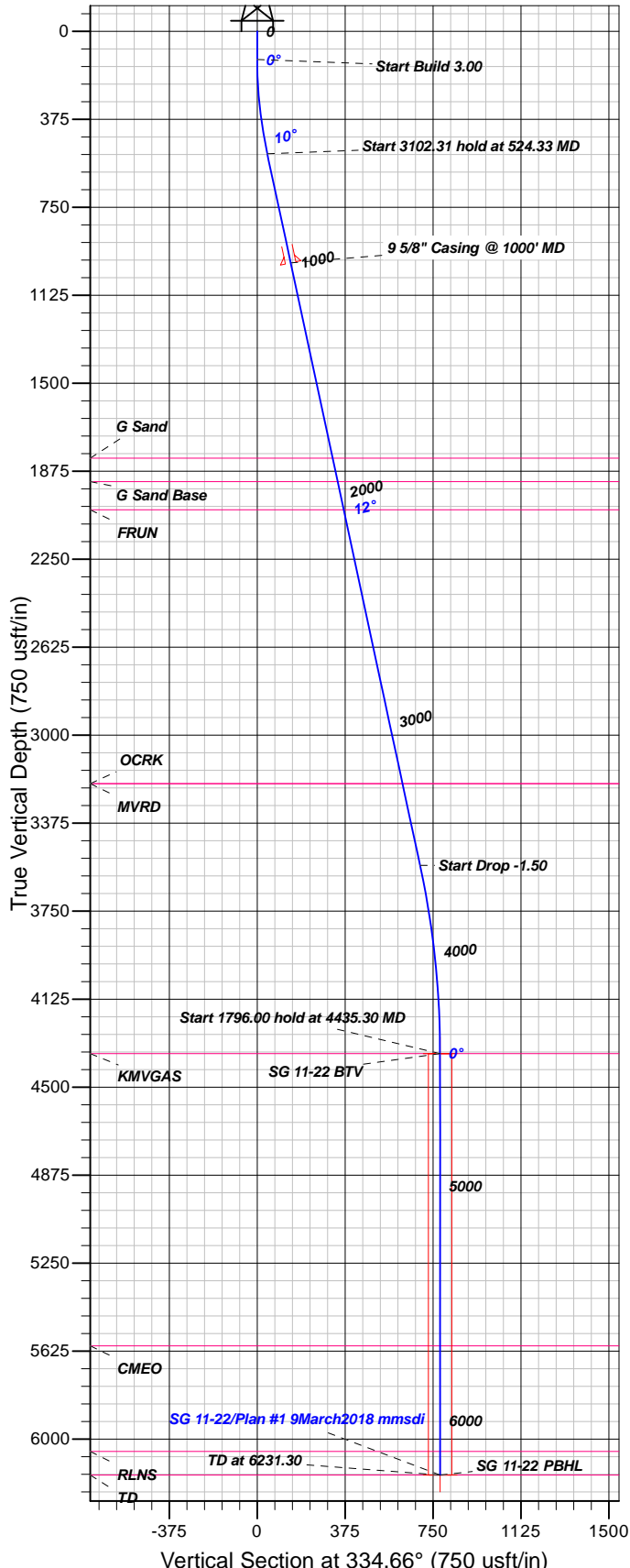


Azimuths to True North  
Magnetic North: 9.48°

Magnetic Field  
Strength: 51724.5snT  
Dip Angle: 65.63°  
Date: 3/9/2018  
Model: HDGM

## Well Details: SG 11-22

GL 6092.4' & RKB 24' @ 6116.40usft  
+N/-S 0.00 +E/-W 0.00 Northing 1591235.00 Easting 2264542.40 Latitude 39.4277668 Longitude -108.1039855 Slot SG 11-22 (A5)



## FORMATION TOP DETAILS

TVDPath	MDPath	Formation
1819.00	1851.65	G Sand
1919.00	1953.93	G Sand Base
2039.00	2076.67	FRUN
3207.00	3271.34	MVRD
3207.00	3271.34	OCRK
4357.00	4435.30	KMGAS
5603.00	5681.30	CMEO
6053.00	6131.30	RLNS
6153.00	6231.30	TD

Plan: Plan #1 9March2018 mmsdi

13:20, March 13 2018  
Created By: Mel Mireles

PROJECT DETAILS: Garfield County, CO NAD83

Geodetic System: US State Plane 1983  
Datum: North American Datum 1983  
Ellipsoid: GRS 1980  
Zone: Colorado Central Zone

System Datum: Mean Sea Level

## CASING DETAILS

TVD	MD	Name	Size
986.37	1000.00	5/8" Casing @ 1000' MD	9.62

## SECTION DETAILS

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
2	120.00	0.00	0.00	120.00	0.00	0.00	0.00	0.00	0.00	
3	524.33	12.13	334.66	521.32	38.54	-18.25	3.00	334.66	42.64	
4	3626.64	12.13	334.66	3554.37	627.69	-297.27	0.00	0.00	694.53	
5	4435.30	0.00	0.00	4357.00	704.76	-333.78	1.50	180.00	779.81	SG 11-22 BTV
6	6231.30	0.00	0.00	6153.00	704.76	-333.78	0.00	0.00	779.81	SG 11-22 PBHL

## DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
SG 11-22 BTV	4357.00	704.76	-333.78	1591949.04	2264228.96	39.4297017	-108.1051672	Circle (Radius: 50.00)
- plan hits target center								
SG 11-22 PBHL	6153.00	704.76	-333.78	1591949.04	2264228.96	39.4297017	-108.1051672	Point
- plan hits target center								



# **TEP Rocky Mountain LLC**

**Garfield County, CO NAD83**

**SG 11-22 Pad**

**SG 11-22 - Slot SG 11-22 (A5)**

**OH**

**Plan: Plan #1 9March2018 mmsdi**

## **Standard Planning Report**

**12 March, 2018**



<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well SG 11-22 - Slot SG 11-22 (A5)
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	GL 6092.4' & RKB 24' @ 6116.40usft
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	GL 6092.4' & RKB 24' @ 6116.40usft
<b>Site:</b>	SG 11-22 Pad	<b>North Reference:</b>	True
<b>Well:</b>	SG 11-22	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1 9March2018 mmsdi		

<b>Project</b>	Garfield County, CO NAD83		
<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		

<b>Site</b>	SG 11-22 Pad			
<b>Site Position:</b>		<b>Northing:</b>	1,591,239.00 usft	<b>Latitude:</b> 39.4277783
<b>From:</b> Map		<b>Easting:</b>	2,264,548.70 usft	<b>Longitude:</b> -108.1039637
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13.20 in	<b>Grid Convergence:</b> -1.64 °

<b>Well</b>	SG 11-22 - Slot SG 11-22 (A5)			
<b>Well Position</b>	<b>+N/-S</b>	-4.18 usft	<b>Northing:</b>	1,591,235.00 usft
	<b>+E/-W</b>	-6.18 usft	<b>Easting:</b>	2,264,542.40 usft
<b>Position Uncertainty</b>		0.00 usft	<b>Wellhead Elevation:</b>	0.00 usft
			<b>Ground Level:</b>	6,092.40 usft

<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 (nT)</b>
	HDGM	3/9/2018	9.48	65.63	51,725

<b>Design</b>	Plan #1 9March2018 mmsdi			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	334.66

<b>Plan Sections</b>										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
120.00	0.00	0.00	120.00	0.00	0.00	0.00	0.00	0.00	0.00	
524.33	12.13	334.66	521.32	38.54	-18.25	3.00	3.00	0.00	334.66	
3,626.64	12.13	334.66	3,554.37	627.69	-297.27	0.00	0.00	0.00	0.00	
4,435.30	0.00	0.00	4,357.00	704.76	-333.78	1.50	-1.50	0.00	180.00	SG 11-22 BTV
6,231.30	0.00	0.00	6,153.00	704.76	-333.78	0.00	0.00	0.00	0.00	SG 11-22 PBHL

<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well SG 11-22 - Slot SG 11-22 (A5)
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	GL 6092.4' & RKB 24' @ 6116.40usft
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	GL 6092.4' & RKB 24' @ 6116.40usft
<b>Site:</b>	SG 11-22 Pad	<b>North Reference:</b>	True
<b>Well:</b>	SG 11-22	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1 9March2018 mmsdi		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
120.00	0.00	0.00	120.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>Start Build 3.00</b>									
200.00	2.40	334.66	199.98	1.51	-0.72	1.68	3.00	3.00	0.00
300.00	5.40	334.66	299.73	7.66	-3.63	8.48	3.00	3.00	0.00
400.00	8.40	334.66	399.00	18.52	-8.77	20.49	3.00	3.00	0.00
500.00	11.40	334.66	497.50	34.05	-16.13	37.68	3.00	3.00	0.00
524.33	12.13	334.66	521.32	38.54	-18.25	42.64	3.00	3.00	0.00
<b>Start 3102.31 hold at 524.33 MD</b>									
600.00	12.13	334.66	595.30	52.91	-25.06	58.54	0.00	0.00	0.00
700.00	12.13	334.66	693.06	71.90	-34.05	79.55	0.00	0.00	0.00
800.00	12.13	334.66	790.83	90.89	-43.04	100.57	0.00	0.00	0.00
900.00	12.13	334.66	888.60	109.88	-52.04	121.58	0.00	0.00	0.00
1,000.00	12.13	334.66	986.37	128.87	-61.03	142.59	0.00	0.00	0.00
<b>9 5/8" Casing @ 1000' MD</b>									
1,100.00	12.13	334.66	1,084.13	147.86	-70.03	163.61	0.00	0.00	0.00
1,200.00	12.13	334.66	1,181.90	166.85	-79.02	184.62	0.00	0.00	0.00
1,300.00	12.13	334.66	1,279.67	185.84	-88.01	205.63	0.00	0.00	0.00
1,400.00	12.13	334.66	1,377.44	204.83	-97.01	226.64	0.00	0.00	0.00
1,500.00	12.13	334.66	1,475.20	223.82	-106.00	247.66	0.00	0.00	0.00
1,600.00	12.13	334.66	1,572.97	242.81	-115.00	268.67	0.00	0.00	0.00
1,700.00	12.13	334.66	1,670.74	261.81	-123.99	289.68	0.00	0.00	0.00
1,800.00	12.13	334.66	1,768.51	280.80	-132.98	310.70	0.00	0.00	0.00
1,851.65	12.13	334.66	1,819.00	290.60	-137.63	321.55	0.00	0.00	0.00
<b>G Sand</b>									
1,900.00	12.13	334.66	1,866.27	299.79	-141.98	331.71	0.00	0.00	0.00
1,953.93	12.13	334.66	1,919.00	310.03	-146.83	343.04	0.00	0.00	0.00
<b>G Sand Base</b>									
2,000.00	12.13	334.66	1,964.04	318.78	-150.97	352.72	0.00	0.00	0.00
2,076.67	12.13	334.66	2,039.00	333.34	-157.87	368.83	0.00	0.00	0.00
<b>FRUN</b>									
2,100.00	12.13	334.66	2,061.81	337.77	-159.97	373.73	0.00	0.00	0.00
2,200.00	12.13	334.66	2,159.57	356.76	-168.96	394.75	0.00	0.00	0.00
2,300.00	12.13	334.66	2,257.34	375.75	-177.95	415.76	0.00	0.00	0.00
2,400.00	12.13	334.66	2,355.11	394.74	-186.95	436.77	0.00	0.00	0.00
2,500.00	12.13	334.66	2,452.88	413.73	-195.94	457.79	0.00	0.00	0.00
2,600.00	12.13	334.66	2,550.64	432.72	-204.94	478.80	0.00	0.00	0.00
2,700.00	12.13	334.66	2,648.41	451.71	-213.93	499.81	0.00	0.00	0.00
2,800.00	12.13	334.66	2,746.18	470.70	-222.93	520.82	0.00	0.00	0.00
2,900.00	12.13	334.66	2,843.95	489.69	-231.92	541.84	0.00	0.00	0.00
3,000.00	12.13	334.66	2,941.71	508.69	-240.91	562.85	0.00	0.00	0.00
3,100.00	12.13	334.66	3,039.48	527.68	-249.91	583.86	0.00	0.00	0.00
3,200.00	12.13	334.66	3,137.25	546.67	-258.90	604.88	0.00	0.00	0.00
3,271.34	12.13	334.66	3,207.00	560.22	-265.32	619.87	0.00	0.00	0.00
<b>OCRK - MVRD</b>									
3,300.00	12.13	334.66	3,235.02	565.66	-267.90	625.89	0.00	0.00	0.00
3,400.00	12.13	334.66	3,332.78	584.65	-276.89	646.90	0.00	0.00	0.00
3,500.00	12.13	334.66	3,430.55	603.64	-285.88	667.91	0.00	0.00	0.00
3,600.00	12.13	334.66	3,528.32	622.63	-294.88	688.93	0.00	0.00	0.00
3,626.64	12.13	334.66	3,554.37	627.69	-297.27	694.53	0.00	0.00	0.00
<b>Start Drop -1.50</b>									
3,700.00	11.03	334.66	3,626.23	641.00	-303.58	709.25	1.50	-1.50	0.00

<b>Database:</b>	Grand Junction District	<b>Local Co-ordinate Reference:</b>	Well SG 11-22 - Slot SG 11-22 (A5)
<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	GL 6092.4' & RKB 24' @ 6116.40usft
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	GL 6092.4' & RKB 24' @ 6116.40usft
<b>Site:</b>	SG 11-22 Pad	<b>North Reference:</b>	True
<b>Well:</b>	SG 11-22	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1 9March2018 mmsdi		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
3,800.00	9.53	334.66	3,724.62	657.13	-311.21	727.10	1.50	-1.50	0.00
3,900.00	8.03	334.66	3,823.45	670.92	-317.75	742.36	1.50	-1.50	0.00
4,000.00	6.53	334.66	3,922.64	682.37	-323.17	755.03	1.50	-1.50	0.00
4,100.00	5.03	334.66	4,022.13	691.47	-327.48	765.10	1.50	-1.50	0.00
4,200.00	3.53	334.66	4,121.84	698.22	-330.67	772.56	1.50	-1.50	0.00
4,300.00	2.03	334.66	4,221.72	702.60	-332.75	777.41	1.50	-1.50	0.00
4,400.00	0.53	334.66	4,321.70	704.62	-333.71	779.64	1.50	-1.50	0.00
4,435.30	0.00	0.00	4,357.00	704.76	-333.78	779.81	1.50	-1.50	0.00
Start 1796.00 hold at 4435.30 MD - KMGAS - SG 11-22 BTV									
4,500.00	0.00	0.00	4,421.70	704.76	-333.78	779.81	0.00	0.00	0.00
4,600.00	0.00	0.00	4,521.70	704.76	-333.78	779.81	0.00	0.00	0.00
4,700.00	0.00	0.00	4,621.70	704.76	-333.78	779.81	0.00	0.00	0.00
4,800.00	0.00	0.00	4,721.70	704.76	-333.78	779.81	0.00	0.00	0.00
4,900.00	0.00	0.00	4,821.70	704.76	-333.78	779.81	0.00	0.00	0.00
5,000.00	0.00	0.00	4,921.70	704.76	-333.78	779.81	0.00	0.00	0.00
5,100.00	0.00	0.00	5,021.70	704.76	-333.78	779.81	0.00	0.00	0.00
5,200.00	0.00	0.00	5,121.70	704.76	-333.78	779.81	0.00	0.00	0.00
5,300.00	0.00	0.00	5,221.70	704.76	-333.78	779.81	0.00	0.00	0.00
5,400.00	0.00	0.00	5,321.70	704.76	-333.78	779.81	0.00	0.00	0.00
5,500.00	0.00	0.00	5,421.70	704.76	-333.78	779.81	0.00	0.00	0.00
5,600.00	0.00	0.00	5,521.70	704.76	-333.78	779.81	0.00	0.00	0.00
5,681.30	0.00	0.00	5,603.00	704.76	-333.78	779.81	0.00	0.00	0.00
CMEO									
5,700.00	0.00	0.00	5,621.70	704.76	-333.78	779.81	0.00	0.00	0.00
5,800.00	0.00	0.00	5,721.70	704.76	-333.78	779.81	0.00	0.00	0.00
5,900.00	0.00	0.00	5,821.70	704.76	-333.78	779.81	0.00	0.00	0.00
6,000.00	0.00	0.00	5,921.70	704.76	-333.78	779.81	0.00	0.00	0.00
6,100.00	0.00	0.00	6,021.70	704.76	-333.78	779.81	0.00	0.00	0.00
6,131.30	0.00	0.00	6,053.00	704.76	-333.78	779.81	0.00	0.00	0.00
RLNS									
6,200.00	0.00	0.00	6,121.70	704.76	-333.78	779.81	0.00	0.00	0.00
6,231.30	0.00	0.00	6,153.00	704.76	-333.78	779.81	0.00	0.00	0.00
TD at 6231.30 - TD - SG 11-22 PBHL									

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
SG 11-22 BTV - plan hits target center - Circle (radius 50.00)	0.00	0.00	4,357.00	704.76	-333.78	1,591,949.04	2,264,228.96	39.4297017	-108.1051672
SG 11-22 PBHL - plan hits target center - Point	0.00	0.00	6,153.00	704.76	-333.78	1,591,949.04	2,264,228.96	39.4297017	-108.1051672

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<b>Company:</b>	TEP Rocky Mountain LLC	<b>TVD Reference:</b>	GL 6092.4' & RKB 24' @ 6116.40usft
<b>Project:</b>	Garfield County, CO NAD83	<b>MD Reference:</b>	GL 6092.4' & RKB 24' @ 6116.40usft
<b>Site:</b>	SG 11-22 Pad	<b>North Reference:</b>	True
<b>Well:</b>	SG 11-22	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	OH		
<b>Design:</b>	Plan #1 9March2018 mmsdi		

Casing Points				
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)
1,000.00	986.37	9 5/8" Casing @ 1000' MD	9.62	13.50

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,851.65	1,819.00	G Sand		0.00	0.00
1,953.93	1,919.00	G Sand Base		0.00	0.00
2,076.67	2,039.00	FRUN		0.00	0.00
3,271.34	3,207.00	OCRK		0.00	0.00
3,271.34	3,207.00	MVRD		0.00	0.00
4,435.30	4,357.00	KMVGAS		0.00	0.00
5,681.30	5,603.00	CMEO		0.00	0.00
6,131.30	6,053.00	RLNS		0.00	0.00
6,231.30	6,153.00	TD		0.00	0.00

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
120.00	120.00	0.00	0.00	Start Build 3.00
524.33	521.32	38.54	-18.25	Start 3102.31 hold at 524.33 MD
3,626.64	3,554.37	627.69	-297.27	Start Drop -1.50
4,435.30	4,357.00	704.76	-333.78	Start 1796.00 hold at 4435.30 MD
6,231.30	6,153.00	704.76	-333.78	TD at 6231.30