



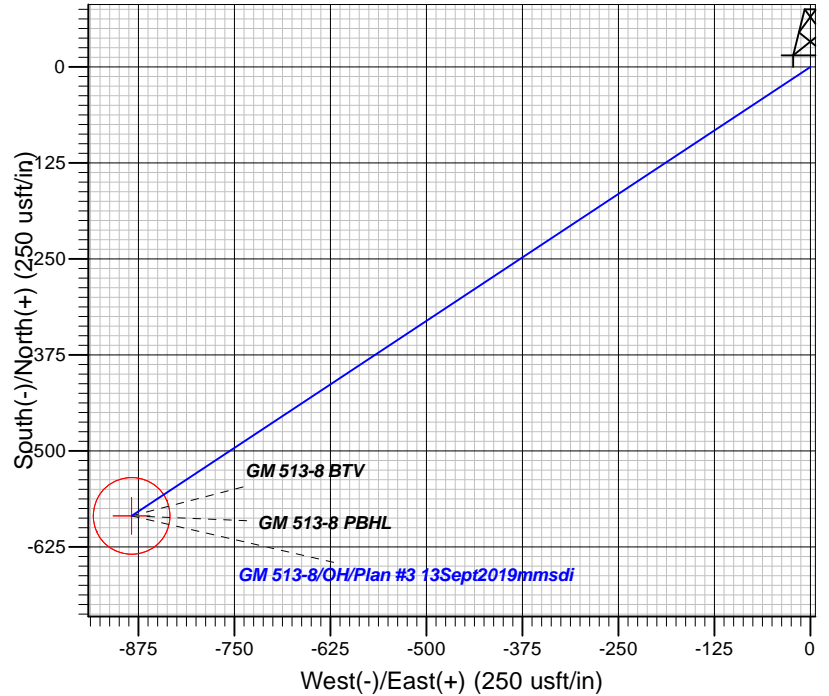
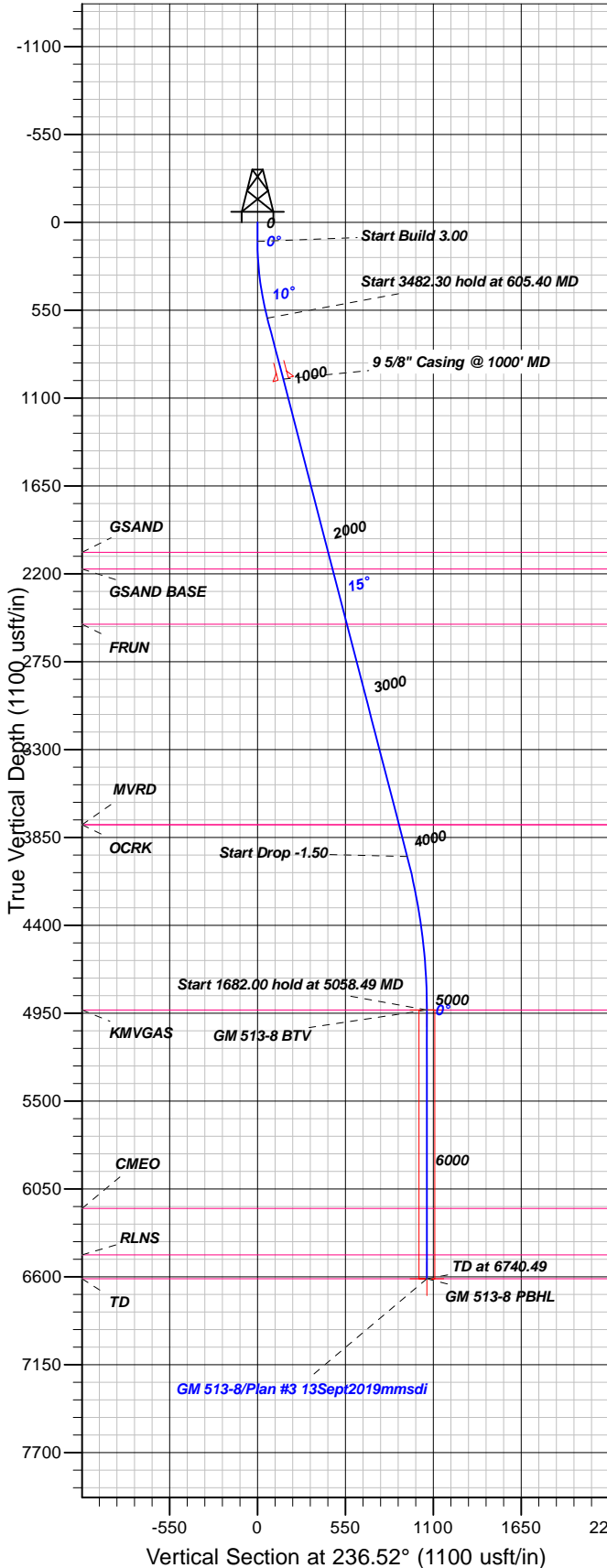
Azimuths to True North
Magnetic North: 9.52°

Magnetic Field
Strength: 51682.7snT
Dip Angle: 65.67°
Date: 6/21/2018
Model: HDGM

Well Details: GM 513-8

GL 6280' & RKB 24' @ 6304.00usft

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Slot
0.00	0.00	1599856.09	2256688.69	39.4508047	-108.1326615	GM 513-8 (B8)



FORMATION TOP DETAILS

TVDPth	MDPath	Formation
2066.00	2119.86	GSAND
2171.00	2228.34	GSAND BASE
2516.00	2584.79	FRUN
3771.00	3881.45	MVRD
3771.00	3881.45	OCKR
4931.00	5058.49	KMGAS
6173.00	6300.49	CMEO
6463.00	6590.49	RLNS
6613.00	6740.49	TD

Plan: Plan #3 13Sept2019mmsdi

17:17, September 13 2019
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
982.12	1000.00	9 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	605.40	14.56	236.52	600.19	-33.85	-51.17	3.00	236.52	61.35	
4	4087.69	14.56	236.52	3970.62	-516.88	-781.41	0.00	0.00	936.89	
5	5058.49	0.00	0.00	4931.00	-584.57	-883.75	1.50	180.00	1059.60	GM 513-8 BTV
6	6740.49	0.00	0.00	6613.00	-584.57	-883.75	0.00	0.00	1059.60	GM 513-8 PBHL

DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
GM 513-8 BTV	4931.00	-584.57	-883.75	1599297.37	2255788.37	39.4491997	-108.1357910	Circle (Radius: 50.00)
- plan hits target center								
GM 513-8 PBHL	6613.00	-584.57	-883.75	1599297.37	2255788.37	39.4491997	-108.1357910	Point
- plan hits target center								



TEP Rocky Mountain LLC

Garfield County, CO NAD83

GV 1-8 Pad

GM 513-8 - Slot GM 513-8 (B8)

OH

Plan: Plan #3 13Sept2019mmsdi

Standard Planning Report

13 September, 2019



Database:	Grand Junction District	Local Co-ordinate Reference:	Well GM 513-8 - Slot GM 513-8 (B8)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 6280' & RKB 24' @ 6304.00usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 6280' & RKB 24' @ 6304.00usft
Site:	GV 1-8 Pad	North Reference:	True
Well:	GM 513-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 13Sept2019mmsdi		

Project	Garfield County, CO NAD83		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Central Zone		

Site		GV 1-8 Pad			
Site Position:		Northing:	1,599,836.41 usft	Latitude:	39.4507498
From:	Map	Easting:	2,256,677.81 usft	Longitude:	-108.1326980
Position Uncertainty:	0.00 usft	Slot Radius:	13.20 in	Grid Convergence:	-1.66

Well	GM 513-8 - Slot GM 513-8 (B8)					
Well Position	+N/-S	19.99 usft	Northing:	1,599,856.09 usft	Latitude:	39.4508047
	+E/-W	10.31 usft	Easting:	2,256,688.69 usft	Longitude:	-108.1326615
Position Uncertainty		0.00 usft	Wellhead Elevation:	0.00 usft	Ground Level:	6,280.00 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	HDGM	6/21/2018	9.52	65.67	51,683

Design	Plan #3 13Sept2019mmsdi			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	236.52

Plan Sections										
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	
605.40	14.56	236.52	600.19	-33.85	-51.17	3.00	3.00	0.00	236.52	
4,087.69	14.56	236.52	3,970.62	-516.88	-781.41	0.00	0.00	0.00	0.00	
5,058.49	0.00	0.00	4,931.00	-584.57	-883.75	1.50	-1.50	0.00	180.00	GM 513-8 BTV
6,740.49	0.00	0.00	6,613.00	-584.57	-883.75	0.00	0.00	0.00	0.00	GM 513-8 PBHL

Database:	Grand Junction District	Local Co-ordinate Reference:	Well GM 513-8 - Slot GM 513-8 (B8)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 6280' & RKB 24' @ 6304.00usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 6280' & RKB 24' @ 6304.00usft
Site:	GV 1-8 Pad	North Reference:	True
Well:	GM 513-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 13Sept2019mmsdi		

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
Start Build 3.00									
200.00	2.40	236.52	199.98	-0.92	-1.40	1.68	3.00	3.00	0.00
300.00	5.40	236.52	299.73	-4.68	-7.07	8.48	3.00	3.00	0.00
400.00	8.40	236.52	399.00	-11.30	-17.09	20.49	3.00	3.00	0.00
500.00	11.40	236.52	497.50	-20.79	-31.43	37.68	3.00	3.00	0.00
600.00	14.40	236.52	594.96	-33.10	-50.04	60.00	3.00	3.00	0.00
605.40	14.56	236.52	600.19	-33.85	-51.17	61.35	3.00	3.00	0.00
Start 3482.30 hold at 605.40 MD									
700.00	14.56	236.52	691.75	-46.97	-71.01	85.14	0.00	0.00	0.00
800.00	14.56	236.52	788.54	-60.84	-91.98	110.28	0.00	0.00	0.00
900.00	14.56	236.52	885.33	-74.71	-112.95	135.42	0.00	0.00	0.00
1,000.00	14.56	236.52	982.12	-88.58	-133.92	160.56	0.00	0.00	0.00
9 5/8" Casing @ 1000' MD									
1,100.00	14.56	236.52	1,078.90	-102.45	-154.89	185.71	0.00	0.00	0.00
1,200.00	14.56	236.52	1,175.69	-116.32	-175.86	210.85	0.00	0.00	0.00
1,300.00	14.56	236.52	1,272.48	-130.20	-196.83	235.99	0.00	0.00	0.00
1,400.00	14.56	236.52	1,369.27	-144.07	-217.80	261.14	0.00	0.00	0.00
1,500.00	14.56	236.52	1,466.05	-157.94	-238.77	286.28	0.00	0.00	0.00
1,600.00	14.56	236.52	1,562.84	-171.81	-259.74	311.42	0.00	0.00	0.00
1,700.00	14.56	236.52	1,659.63	-185.68	-280.71	336.56	0.00	0.00	0.00
1,800.00	14.56	236.52	1,756.42	-199.55	-301.68	361.71	0.00	0.00	0.00
1,900.00	14.56	236.52	1,853.20	-213.42	-322.65	386.85	0.00	0.00	0.00
2,000.00	14.56	236.52	1,949.99	-227.29	-343.62	411.99	0.00	0.00	0.00
2,100.00	14.56	236.52	2,046.78	-241.16	-364.59	437.13	0.00	0.00	0.00
2,119.86	14.56	236.52	2,066.00	-243.92	-368.75	442.13	0.00	0.00	0.00
GSAND									
2,200.00	14.56	236.52	2,143.57	-255.04	-385.56	462.28	0.00	0.00	0.00
2,228.34	14.56	236.52	2,171.00	-258.97	-391.50	469.40	0.00	0.00	0.00
GSAND BASE									
2,300.00	14.56	236.52	2,240.35	-268.91	-406.53	487.42	0.00	0.00	0.00
2,400.00	14.56	236.52	2,337.14	-282.78	-427.50	512.56	0.00	0.00	0.00
2,500.00	14.56	236.52	2,433.93	-296.65	-448.47	537.70	0.00	0.00	0.00
2,584.79	14.56	236.52	2,516.00	-308.41	-466.25	559.02	0.00	0.00	0.00
FRUN									
2,600.00	14.56	236.52	2,530.72	-310.52	-469.44	562.85	0.00	0.00	0.00
2,700.00	14.56	236.52	2,627.51	-324.39	-490.41	587.99	0.00	0.00	0.00
2,800.00	14.56	236.52	2,724.29	-338.26	-511.38	613.13	0.00	0.00	0.00
2,900.00	14.56	236.52	2,821.08	-352.13	-532.35	638.28	0.00	0.00	0.00
3,000.00	14.56	236.52	2,917.87	-366.00	-553.32	663.42	0.00	0.00	0.00
3,100.00	14.56	236.52	3,014.66	-379.87	-574.29	688.56	0.00	0.00	0.00
3,200.00	14.56	236.52	3,111.44	-393.75	-595.26	713.70	0.00	0.00	0.00
3,300.00	14.56	236.52	3,208.23	-407.62	-616.23	738.85	0.00	0.00	0.00
3,400.00	14.56	236.52	3,305.02	-421.49	-637.20	763.99	0.00	0.00	0.00
3,500.00	14.56	236.52	3,401.81	-435.36	-658.17	789.13	0.00	0.00	0.00
3,600.00	14.56	236.52	3,498.59	-449.23	-679.14	814.27	0.00	0.00	0.00
3,700.00	14.56	236.52	3,595.38	-463.10	-700.11	839.42	0.00	0.00	0.00
3,800.00	14.56	236.52	3,692.17	-476.97	-721.08	864.56	0.00	0.00	0.00
3,881.45	14.56	236.52	3,771.00	-488.27	-738.16	885.04	0.00	0.00	0.00
OCRK - MVRD									
3,900.00	14.56	236.52	3,788.96	-490.84	-742.05	889.70	0.00	0.00	0.00

Database:	Grand Junction District	Local Co-ordinate Reference:	Well GM 513-8 - Slot GM 513-8 (B8)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 6280' & RKB 24' @ 6304.00usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 6280' & RKB 24' @ 6304.00usft
Site:	GV 1-8 Pad	North Reference:	True
Well:	GM 513-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 13Sept2019mmsdi		

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)
4,000.00	14.56	236.52	3,885.74	-504.71	-763.02	914.84	0.00	0.00	0.00
4,087.69	14.56	236.52	3,970.62	-516.88	-781.41	936.89	0.00	0.00	0.00
Start Drop -1.50									
4,100.00	14.38	236.52	3,982.54	-518.57	-783.98	939.97	1.50	-1.50	0.00
4,200.00	12.88	236.52	4,079.72	-531.57	-803.63	963.53	1.50	-1.50	0.00
4,300.00	11.38	236.52	4,177.48	-543.16	-821.15	984.54	1.50	-1.50	0.00
4,400.00	9.88	236.52	4,275.77	-553.34	-836.53	1,002.98	1.50	-1.50	0.00
4,500.00	8.38	236.52	4,374.50	-562.09	-849.76	1,018.84	1.50	-1.50	0.00
4,600.00	6.88	236.52	4,473.61	-569.41	-860.83	1,032.11	1.50	-1.50	0.00
4,700.00	5.38	236.52	4,573.04	-575.30	-869.73	1,042.79	1.50	-1.50	0.00
4,800.00	3.88	236.52	4,672.71	-579.75	-876.46	1,050.85	1.50	-1.50	0.00
4,900.00	2.38	236.52	4,772.56	-582.76	-881.01	1,056.31	1.50	-1.50	0.00
5,000.00	0.88	236.52	4,872.51	-584.33	-883.38	1,059.15	1.50	-1.50	0.00
5,058.49	0.00	0.00	4,931.00	-584.57	-883.75	1,059.60	1.50	-1.50	0.00
Start 1682.00 hold at 5058.49 MD - KMGAS - GM 513-8 BTV									
5,100.00	0.00	0.00	4,972.51	-584.57	-883.75	1,059.60	0.00	0.00	0.00
5,200.00	0.00	0.00	5,072.51	-584.57	-883.75	1,059.60	0.00	0.00	0.00
5,300.00	0.00	0.00	5,172.51	-584.57	-883.75	1,059.60	0.00	0.00	0.00
5,400.00	0.00	0.00	5,272.51	-584.57	-883.75	1,059.60	0.00	0.00	0.00
5,500.00	0.00	0.00	5,372.51	-584.57	-883.75	1,059.60	0.00	0.00	0.00
5,600.00	0.00	0.00	5,472.51	-584.57	-883.75	1,059.60	0.00	0.00	0.00
5,700.00	0.00	0.00	5,572.51	-584.57	-883.75	1,059.60	0.00	0.00	0.00
5,800.00	0.00	0.00	5,672.51	-584.57	-883.75	1,059.60	0.00	0.00	0.00
5,900.00	0.00	0.00	5,772.51	-584.57	-883.75	1,059.60	0.00	0.00	0.00
6,000.00	0.00	0.00	5,872.51	-584.57	-883.75	1,059.60	0.00	0.00	0.00
6,100.00	0.00	0.00	5,972.51	-584.57	-883.75	1,059.60	0.00	0.00	0.00
6,200.00	0.00	0.00	6,072.51	-584.57	-883.75	1,059.60	0.00	0.00	0.00
6,300.00	0.00	0.00	6,172.51	-584.57	-883.75	1,059.60	0.00	0.00	0.00
6,300.49	0.00	0.00	6,173.00	-584.57	-883.75	1,059.60	0.00	0.00	0.00
CMEO									
6,400.00	0.00	0.00	6,272.51	-584.57	-883.75	1,059.60	0.00	0.00	0.00
6,500.00	0.00	0.00	6,372.51	-584.57	-883.75	1,059.60	0.00	0.00	0.00
6,590.49	0.00	0.00	6,463.00	-584.57	-883.75	1,059.60	0.00	0.00	0.00
RLNS									
6,600.00	0.00	0.00	6,472.51	-584.57	-883.75	1,059.60	0.00	0.00	0.00
6,700.00	0.00	0.00	6,572.51	-584.57	-883.75	1,059.60	0.00	0.00	0.00
6,740.49	0.00	0.00	6,613.00	-584.57	-883.75	1,059.60	0.00	0.00	0.00
TD at 6740.49 - TD - GM 513-8 PBHL									

Design Targets									
Target Name	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
- hit/miss target									
- Shape									
GM 513-8 BTV	0.00	0.00	4,931.00	-584.57	-883.75	1,599,297.37	2,255,788.37	39.4491997	-108.1357911
- plan hits target center									
- Circle (radius 50.00)									
GM 513-8 PBHL	0.00	0.00	6,613.00	-584.57	-883.75	1,599,297.37	2,255,788.37	39.4491997	-108.1357911
- plan hits target center									
- Point									

Database:	Grand Junction District	Local Co-ordinate Reference:	Well GM 513-8 - Slot GM 513-8 (B8)
Company:	TEP Rocky Mountain LLC	TVD Reference:	GL 6280' & RKB 24' @ 6304.00usft
Project:	Garfield County, CO NAD83	MD Reference:	GL 6280' & RKB 24' @ 6304.00usft
Site:	GV 1-8 Pad	North Reference:	True
Well:	GM 513-8	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	Plan #3 13Sept2019mmsdi		

Casing Points				
Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (in)	Hole Diameter (in)
1,000.00	982.12	9 5/8" Casing @ 1000' MD	9.62	13.50

Formations					
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
2,119.86	2,066.00	GSAND		0.00	0.00
2,228.34	2,171.00	GSAND BASE		0.00	0.00
2,584.79	2,516.00	FRUN		0.00	0.00
3,881.45	3,771.00	OCRK		0.00	0.00
3,881.45	3,771.00	MVRD		0.00	0.00
5,058.49	4,931.00	KMVGAS		0.00	0.00
6,300.49	6,173.00	CMEO		0.00	0.00
6,590.49	6,463.00	RLNS		0.00	0.00
6,740.49	6,613.00	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
605.40	600.19	-33.85	-51.17	Start 3482.30 hold at 605.40 MD
4,087.69	3,970.62	-516.88	-781.41	Start Drop -1.50
5,058.49	4,931.00	-584.57	-883.75	Start 1682.00 hold at 5058.49 MD
6,740.49	6,613.00	-584.57	-883.75	TD at 6740.49