

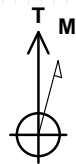


SECTION DETAILS

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	987.5	20.63	78.28	972.8	24.9	119.9	3.00	78.28	122.4	
4	6688.4	20.63	78.28	6308.2	432.7	2086.3	0.00	0.00	2130.7	
5	7375.9	0.00	0.00	6981.0	457.6	2206.2	3.00	180.00	2253.1	
6	9697.9	0.00	0.00	9303.0	457.6	2206.2	0.00	0.00	2253.1	RULISON FEDERAL 33B-17 PBHL 7.27

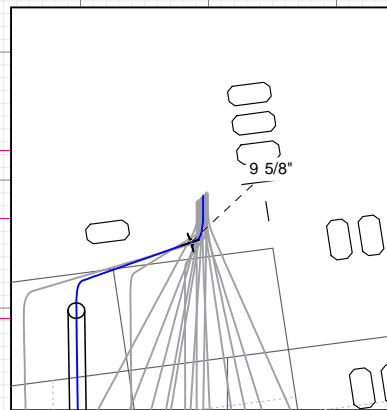
Project: Garfield County, CO (UTM 12N)
Site: S17-T7S-R94W
Well: RULISON FEDERAL 33B-17
Wellbore: OH
Design: PLAN #3

FORMATION TOP DETAILS		
TVDPath	MDPath	Formation
5768.0	6111.2	OHIO_CREEK.MBL (SSTVD)
6299.0	6678.6	WILLIAMS_FORK.MBL (SSTVD)
7081.0	7475.9	TOP_GAS.MBL (SSTVD)
9153.0	9547.9	ROLLINS.MBL (SSTVD)
9303.0	9697.9	TD.MBL (SSTVD)



Azimuths to True North
Magnetic North: 9.50°

Magnetic Field
Strength: 51960.0nT
Dip Angle: 65.72°
Date: 5/4/2015
Model: HDGM

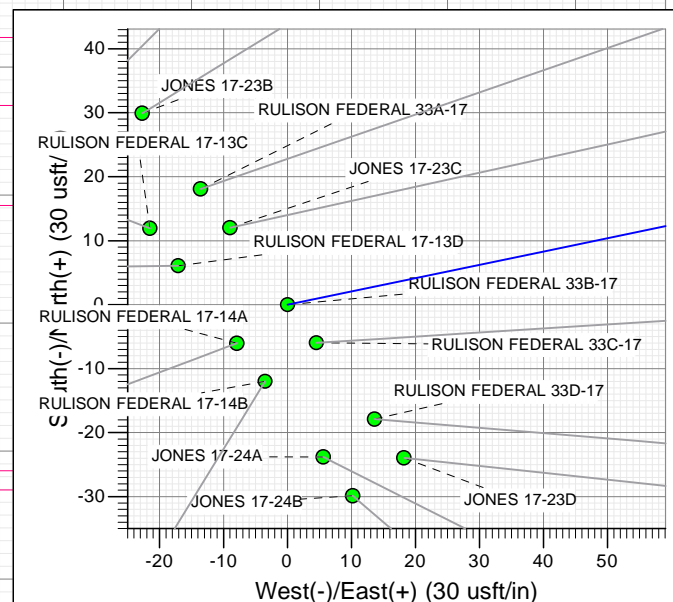
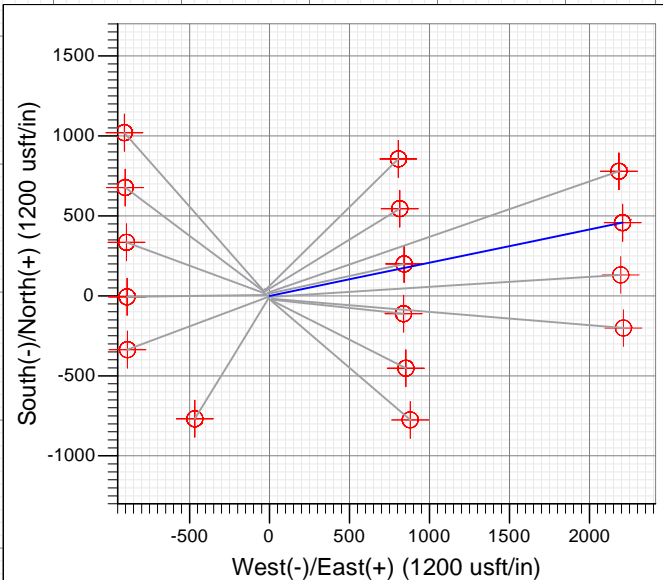


CASING DETAILS

TVD	MD	Name
1218.4	1250.0	9 5/8"
9275.0	9669.9	4-1/2"

TD at 9697.9
RULISON FEDERAL 33B-17 PBHL 7.27

PLAN #3 RULISON FEDERAL 33B-17 15XXX LR 30' KB @ 7442.0usft (H&P 330) Ground Level @ 7412.0 NAD 1927 - Western US Well RULISON FEDERAL 33B-17, True North									
Type	Target	Azimuth	Origin	Type	N/S	E/W	From	TVD	
TD	No Target (Freehand)	78.28	Slot	Slot	0.0	0.0	0.0	9274.0	
Name								9303.0	
RULISON FEDERAL 33B-17 PBHL								457.6	
RULISON FEDERAL 33B-17 PBHL 7.27								457.6	
								2206.2	
								2206.2	
								Latitude	Longitude
								39.437447	-107.907005
								39.437447	-107.907005



Vertical Section at 78.28° (1500 usft/in)

WELL DETAILS: RULISON FEDERAL 33B-17

+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.0	0.0	14335659.70	2511595.00	39.436191	-107.914812

CATHEDRAL



Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well RULISON FEDERAL 33B-17
Company:	Caerus Oil & Gas	TVD Reference:	30' KB @ 7442.0usft (H&P 330)
Project:	Garfield County, CO (UTM 12N)	MD Reference:	30' KB @ 7442.0usft (H&P 330)
Site:	S17-T7S-R94W	North Reference:	True
Well:	RULISON FEDERAL 33B-17	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #3		

Project	Garfield County, CO (UTM 12N)		
Map System:	Universal Transverse Mercator (US Survey Feet)	System Datum:	Mean Sea Level
Geo Datum:	NAD 1927 - Western US		
Map Zone:	Zone 12N (114 W to 108 W)		

Site		S17-T7S-R94W			
Site Position:		Northing:	14,335,694.75 usft	Latitude:	39.436290
From:	Map	Easting:	2,511,566.57 usft	Longitude:	-107.914909
Position Uncertainty:	0.0 usft	Slot Radius:	13-3/16 "	Grid Convergence:	1.96 °

Well	RULISON FEDERAL 33B-17					
Well Position	+N/-S	0.0 usft	Northing:	14,335,659.70 usft	Latitude:	39.436191
	+E/-W	0.0 usft	Easting:	2,511,595.00 usft	Longitude:	-107.914812
Position Uncertainty		0.0 usft	Wellhead Elevation:	0.0 usft	Ground Level:	7,412.0 usft

Wellbore	OH				
Magnetics	Model Name	Sample Date	Declination	Dip Angle	Field Strength
			(°)	(°)	(nT)
	HDGM	5/4/2015	9.50	65.72	51,960

Design	PLAN #3			
Audit Notes:				
Version:	Phase:	PLAN	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD)	+N/-S	+E/-W	Direction
	(usft)	(usft)	(usft)	(°)
	0.0	0.0	0.0	78.28

Plan Sections										
Measured Depth	Inclination	Azimuth	Vertical Depth	+N/-S	+E/-W	Dogleg Rate	Build Rate	Turn Rate	TFO	Target
(usft)	(°)	(°)	(usft)	(usft)	(usft)	(°/100usft)	(°/100usft)	(°/100usft)	(°)	
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	
987.5	20.63	78.28	972.8	24.9	119.9	3.00	3.00	0.00	78.28	
6,688.4	20.63	78.28	6,308.2	432.7	2,086.3	0.00	0.00	0.00	0.00	
7,375.9	0.00	0.00	6,981.0	457.6	2,206.2	3.00	-3.00	0.00	180.00	
9,697.9	0.00	0.00	9,303.0	457.6	2,206.2	0.00	0.00	0.00	0.00	RULISON FEDERAL

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well RULISON FEDERAL 33B-17
Company:	Caerus Oil & Gas	TVD Reference:	30' KB @ 7442.0usft (H&P 330)
Project:	Garfield County, CO (UTM 12N)	MD Reference:	30' KB @ 7442.0usft (H&P 330)
Site:	S17-T7S-R94W	North Reference:	True
Well:	RULISON FEDERAL 33B-17	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #3		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	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	
300.0	0.00	0.00	300.0	0.0	0.0	0.0	0.00	0.00	Start Build 3.00
400.0	3.00	78.28	400.0	0.5	2.6	2.6	3.00	3.00	
500.0	6.00	78.28	499.6	2.1	10.2	10.5	3.00	3.00	
600.0	9.00	78.28	598.8	4.8	23.0	23.5	3.00	3.00	
700.0	12.00	78.28	697.1	8.5	40.9	41.7	3.00	3.00	
800.0	15.00	78.28	794.3	13.2	63.7	65.1	3.00	3.00	
900.0	18.00	78.28	890.2	19.0	91.5	93.5	3.00	3.00	
987.5	20.63	78.28	972.8	24.9	119.9	122.4	3.00	3.00	Start 5700.9 hold at 987.5 MD
1,000.0	20.63	78.28	984.4	25.8	124.2	126.8	0.00	0.00	
1,100.0	20.63	78.28	1,078.0	32.9	158.7	162.0	0.00	0.00	
1,200.0	20.63	78.28	1,171.6	40.1	193.2	197.3	0.00	0.00	
1,250.0	20.63	78.28	1,218.4	43.6	210.4	214.9	0.00	0.00	9 5/8"
1,300.0	20.63	78.28	1,265.2	47.2	227.7	232.5	0.00	0.00	
1,400.0	20.63	78.28	1,358.8	54.4	262.1	267.7	0.00	0.00	
1,500.0	20.63	78.28	1,452.4	61.5	296.6	302.9	0.00	0.00	
1,600.0	20.63	78.28	1,546.0	68.7	331.1	338.2	0.00	0.00	
1,700.0	20.63	78.28	1,639.6	75.8	365.6	373.4	0.00	0.00	
1,800.0	20.63	78.28	1,733.2	83.0	400.1	408.6	0.00	0.00	
1,900.0	20.63	78.28	1,826.8	90.1	434.6	443.9	0.00	0.00	
2,000.0	20.63	78.28	1,920.3	97.3	469.1	479.1	0.00	0.00	
2,100.0	20.63	78.28	2,013.9	104.4	503.6	514.3	0.00	0.00	
2,200.0	20.63	78.28	2,107.5	111.6	538.1	549.5	0.00	0.00	
2,300.0	20.63	78.28	2,201.1	118.8	572.6	584.8	0.00	0.00	
2,400.0	20.63	78.28	2,294.7	125.9	607.1	620.0	0.00	0.00	
2,500.0	20.63	78.28	2,388.3	133.1	641.6	655.2	0.00	0.00	
2,600.0	20.63	78.28	2,481.9	140.2	676.1	690.4	0.00	0.00	
2,700.0	20.63	78.28	2,575.5	147.4	710.6	725.7	0.00	0.00	
2,800.0	20.63	78.28	2,669.1	154.5	745.0	760.9	0.00	0.00	
2,900.0	20.63	78.28	2,762.7	161.7	779.5	796.1	0.00	0.00	
3,000.0	20.63	78.28	2,856.2	168.8	814.0	831.4	0.00	0.00	
3,100.0	20.63	78.28	2,949.8	176.0	848.5	866.6	0.00	0.00	
3,200.0	20.63	78.28	3,043.4	183.1	883.0	901.8	0.00	0.00	
3,300.0	20.63	78.28	3,137.0	190.3	917.5	937.0	0.00	0.00	
3,400.0	20.63	78.28	3,230.6	197.5	952.0	972.3	0.00	0.00	
3,500.0	20.63	78.28	3,324.2	204.6	986.5	1,007.5	0.00	0.00	
3,600.0	20.63	78.28	3,417.8	211.8	1,021.0	1,042.7	0.00	0.00	
3,700.0	20.63	78.28	3,511.4	218.9	1,055.5	1,077.9	0.00	0.00	
3,800.0	20.63	78.28	3,605.0	226.1	1,090.0	1,113.2	0.00	0.00	
3,900.0	20.63	78.28	3,698.6	233.2	1,124.5	1,148.4	0.00	0.00	
4,000.0	20.63	78.28	3,792.1	240.4	1,159.0	1,183.6	0.00	0.00	
4,100.0	20.63	78.28	3,885.7	247.5	1,193.5	1,218.9	0.00	0.00	
4,200.0	20.63	78.28	3,979.3	254.7	1,227.9	1,254.1	0.00	0.00	
4,300.0	20.63	78.28	4,072.9	261.8	1,262.4	1,289.3	0.00	0.00	
4,400.0	20.63	78.28	4,166.5	269.0	1,296.9	1,324.5	0.00	0.00	
4,500.0	20.63	78.28	4,260.1	276.1	1,331.4	1,359.8	0.00	0.00	
4,600.0	20.63	78.28	4,353.7	283.3	1,365.9	1,395.0	0.00	0.00	
4,700.0	20.63	78.28	4,447.3	290.5	1,400.4	1,430.2	0.00	0.00	
4,800.0	20.63	78.28	4,540.9	297.6	1,434.9	1,465.4	0.00	0.00	
4,900.0	20.63	78.28	4,634.4	304.8	1,469.4	1,500.7	0.00	0.00	

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well RULISON FEDERAL 33B-17
Company:	Caerus Oil & Gas	TVD Reference:	30' KB @ 7442.0usft (H&P 330)
Project:	Garfield County, CO (UTM 12N)	MD Reference:	30' KB @ 7442.0usft (H&P 330)
Site:	S17-T7S-R94W	North Reference:	True
Well:	RULISON FEDERAL 33B-17	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #3		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
5,000.0	20.63	78.28	4,728.0	311.9	1,503.9	1,535.9	0.00	0.00	
5,100.0	20.63	78.28	4,821.6	319.1	1,538.4	1,571.1	0.00	0.00	
5,200.0	20.63	78.28	4,915.2	326.2	1,572.9	1,606.4	0.00	0.00	
5,300.0	20.63	78.28	5,008.8	333.4	1,607.4	1,641.6	0.00	0.00	
5,400.0	20.63	78.28	5,102.4	340.5	1,641.9	1,676.8	0.00	0.00	
5,500.0	20.63	78.28	5,196.0	347.7	1,676.4	1,712.0	0.00	0.00	
5,600.0	20.63	78.28	5,289.6	354.8	1,710.9	1,747.3	0.00	0.00	
5,700.0	20.63	78.28	5,383.2	362.0	1,745.3	1,782.5	0.00	0.00	
5,800.0	20.63	78.28	5,476.8	369.2	1,779.8	1,817.7	0.00	0.00	
5,900.0	20.63	78.28	5,570.3	376.3	1,814.3	1,852.9	0.00	0.00	
6,000.0	20.63	78.28	5,663.9	383.5	1,848.8	1,888.2	0.00	0.00	
6,100.0	20.63	78.28	5,757.5	390.6	1,883.3	1,923.4	0.00	0.00	
6,111.2	20.63	78.28	5,768.0	391.4	1,887.2	1,927.3	0.00	0.00	OHIO_CREEK.MBL (SSTVD)
6,200.0	20.63	78.28	5,851.1	397.8	1,917.8	1,958.6	0.00	0.00	
6,300.0	20.63	78.28	5,944.7	404.9	1,952.3	1,993.9	0.00	0.00	
6,400.0	20.63	78.28	6,038.3	412.1	1,986.8	2,029.1	0.00	0.00	
6,500.0	20.63	78.28	6,131.9	419.2	2,021.3	2,064.3	0.00	0.00	
6,600.0	20.63	78.28	6,225.5	426.4	2,055.8	2,099.5	0.00	0.00	
6,678.6	20.63	78.28	6,299.0	432.0	2,082.9	2,127.2	0.00	0.00	WILLIAMS_FORK.MBL (SSTVD)
6,688.4	20.63	78.28	6,308.2	432.7	2,086.3	2,130.7	0.00	0.00	Start Drop -3.00
6,700.0	20.28	78.28	6,319.1	433.5	2,090.2	2,134.7	3.00	-3.00	
6,800.0	17.28	78.28	6,413.7	440.1	2,121.8	2,166.9	3.00	-3.00	
6,900.0	14.28	78.28	6,510.0	445.6	2,148.4	2,194.1	3.00	-3.00	
7,000.0	11.28	78.28	6,607.5	450.1	2,170.0	2,216.2	3.00	-3.00	
7,100.0	8.28	78.28	6,706.0	453.5	2,186.7	2,233.2	3.00	-3.00	
7,200.0	5.28	78.28	6,805.3	455.9	2,198.2	2,245.0	3.00	-3.00	
7,300.0	2.28	78.28	6,905.1	457.3	2,204.7	2,251.6	3.00	-3.00	
7,375.9	0.00	0.00	6,981.0	457.6	2,206.2	2,253.1	3.00	-3.00	Start 2322.0 hold at 7375.9 MD
7,400.0	0.00	0.00	7,005.1	457.6	2,206.2	2,253.1	0.00	0.00	
7,475.9	0.00	0.00	7,081.0	457.6	2,206.2	2,253.1	0.00	0.00	TOP_GAS.MBL (SSTVD)
7,500.0	0.00	0.00	7,105.1	457.6	2,206.2	2,253.1	0.00	0.00	
7,600.0	0.00	0.00	7,205.1	457.6	2,206.2	2,253.1	0.00	0.00	
7,700.0	0.00	0.00	7,305.1	457.6	2,206.2	2,253.1	0.00	0.00	
7,800.0	0.00	0.00	7,405.1	457.6	2,206.2	2,253.1	0.00	0.00	
7,900.0	0.00	0.00	7,505.1	457.6	2,206.2	2,253.1	0.00	0.00	
8,000.0	0.00	0.00	7,605.1	457.6	2,206.2	2,253.1	0.00	0.00	
8,100.0	0.00	0.00	7,705.1	457.6	2,206.2	2,253.1	0.00	0.00	
8,200.0	0.00	0.00	7,805.1	457.6	2,206.2	2,253.1	0.00	0.00	
8,300.0	0.00	0.00	7,905.1	457.6	2,206.2	2,253.1	0.00	0.00	
8,400.0	0.00	0.00	8,005.1	457.6	2,206.2	2,253.1	0.00	0.00	
8,500.0	0.00	0.00	8,105.1	457.6	2,206.2	2,253.1	0.00	0.00	
8,600.0	0.00	0.00	8,205.1	457.6	2,206.2	2,253.1	0.00	0.00	
8,700.0	0.00	0.00	8,305.1	457.6	2,206.2	2,253.1	0.00	0.00	
8,800.0	0.00	0.00	8,405.1	457.6	2,206.2	2,253.1	0.00	0.00	
8,900.0	0.00	0.00	8,505.1	457.6	2,206.2	2,253.1	0.00	0.00	
9,000.0	0.00	0.00	8,605.1	457.6	2,206.2	2,253.1	0.00	0.00	
9,100.0	0.00	0.00	8,705.1	457.6	2,206.2	2,253.1	0.00	0.00	
9,200.0	0.00	0.00	8,805.1	457.6	2,206.2	2,253.1	0.00	0.00	
9,300.0	0.00	0.00	8,905.1	457.6	2,206.2	2,253.1	0.00	0.00	
9,400.0	0.00	0.00	9,005.1	457.6	2,206.2	2,253.1	0.00	0.00	
9,500.0	0.00	0.00	9,105.1	457.6	2,206.2	2,253.1	0.00	0.00	
9,547.9	0.00	0.00	9,153.0	457.6	2,206.2	2,253.1	0.00	0.00	ROLLINS.MBL (SSTVD)

Planning Report

Database:	USA EDM 5000 Multi Users DB	Local Co-ordinate Reference:	Well RULISON FEDERAL 33B-17
Company:	Caerus Oil & Gas	TVD Reference:	30' KB @ 7442.0usft (H&P 330)
Project:	Garfield County, CO (UTM 12N)	MD Reference:	30' KB @ 7442.0usft (H&P 330)
Site:	S17-T7S-R94W	North Reference:	True
Well:	RULISON FEDERAL 33B-17	Survey Calculation Method:	Minimum Curvature
Wellbore:	OH		
Design:	PLAN #3		

Planned Survey

Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100u)	Comments / Formations
9,600.0	0.00	0.00	9,205.1	457.6	2,206.2	2,253.1	0.00	0.00	
9,669.9	0.00	0.00	9,275.0	457.6	2,206.2	2,253.1	0.00	0.00	4-1/2"
9,697.9	0.00	0.00	9,303.0	457.6	2,206.2	2,253.1	0.00	0.00	TD at 9697.9 - TD.MBL (SSTVD)

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
RULISON FEDERAL 33 - plan hits target center - Circle (radius 50.0)	0.00	1.94	9,274.0	457.6	2,206.2	14,336,192.50	2,513,784.20	39.437447	-107.907005
RULISON FEDERAL 33 - plan hits target center - Circle (radius 50.0)	0.00	1.94	9,303.0	457.6	2,206.2	14,336,192.50	2,513,784.20	39.437447	-107.907005

Casing Points

Measured Depth (usft)	Vertical Depth (usft)	Name	Casing Diameter (")	Hole Diameter (")
9,669.9	9,275.0	4-1/2"	4-1/2	8-3/4
1,250.0	1,218.4	9 5/8"	9-5/8	13-1/2

Formations

Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
6,111.2	5,768.0	OHIO_CREEK.MBL (SSTVD)		0.00	
6,678.6	6,299.0	WILLIAMS_FORK.MBL (SSTVD)		0.00	
7,475.9	7,081.0	TOP_GAS.MBL (SSTVD)		0.00	
9,547.9	9,153.0	ROLLINS.MBL (SSTVD)		0.00	
9,697.9	9,303.0	TD.MBL (SSTVD)		0.00	

Plan Annotations

Measured Depth (usft)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Comment
300.0	300.0	0.0	0.0	Start Build 3.00
987.5	972.8	24.9	119.9	Start 5700.9 hold at 987.5 MD
6,688.4	6,308.2	432.7	2,086.3	Start Drop -3.00
7,375.9	6,981.0	457.6	2,206.2	Start 2322.0 hold at 7375.9 MD
9,697.9	9,303.0	457.6	2,206.2	TD at 9697.9