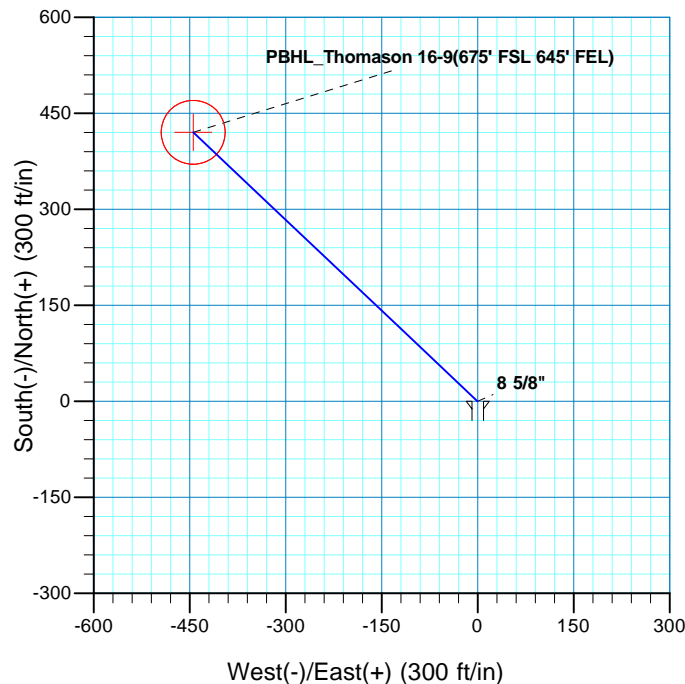
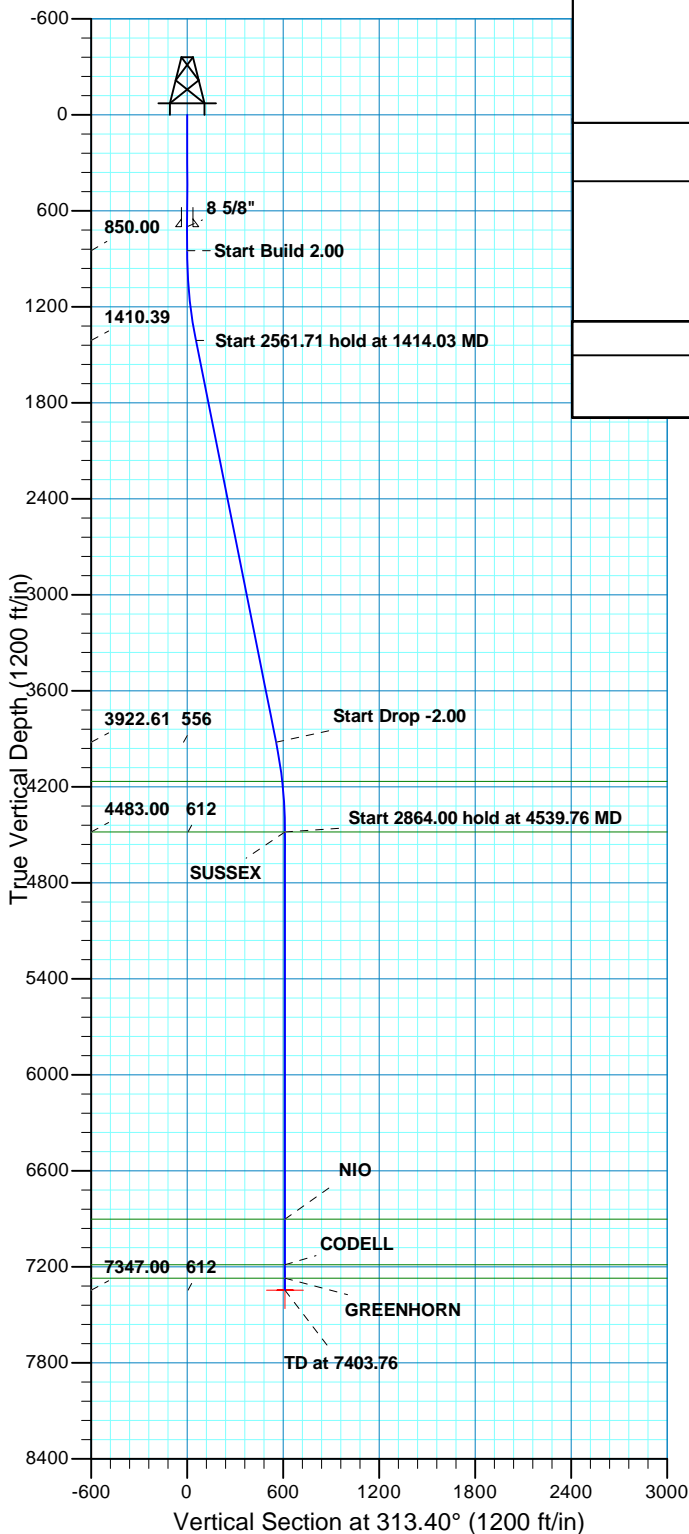


WELL DETAILS: P_Thomason 16-9					
GL 4867' & RKB 15' @ 4882.00ft (ASSUMED)					
+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
0.00	0.00	1297390.67	3234729.34	40° 8' 48.051 N	104° 39' 37.159 W

DESIGN TARGET DETAILS							
Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
PBHL	7347.00	420.39	-444.48	1297806.84	3234280.90	40° 8' 52.206 N	104° 39' 42.883 W
- plan hits target center							
Shape							
Circle (Radius: 50.00)							

SECTION DETAILS									
MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	Vsect	Target
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
850.00	0.00	0.00	850.00	0.00	0.00	0.00	0.00	0.00	
1414.03	11.28	313.40	1410.39	38.03	-40.21	2.00	313.40	55.34	
3975.74	11.28	313.40	3922.61	382.36	-404.27	0.00	0.00	556.45	
4539.76	0.00	0.00	4483.00	420.39	-444.48	2.00	180.00	611.79	
7403.76	0.00	0.00	7347.00	420.39	-444.48	0.00	0.00	611.79	PBHL_Thomason 16-9(675' FSL 645' FEL)
PROJECT DETAILS: COLORADO NORTHERN ZONE - 83							FORMATION TOP DETAILS		
Geodetic System: US State Plane 1983							TVDPath	MDPath	Formation
Datum: North American Datum 1983							4167.00	4223.12	PARKMAN
Ellipsoid: GRS 1980							4483.00	4539.76	SUSSEX
Zone: Colorado Northern Zone							6903.00	6959.76	NIO
Location: SECTION 9 T2NR65W							7187.00	7243.76	CODELL
System Datum: Mean Sea Level							7271.00	7327.76	GREENHORN
CASING DETAILS									
TVD	MD	Name	Size						
700.00	700.00	8 5/8"	8.620						



# **US ROCKIES REGION PLANNING**

**COLORADO NORTHERN ZONE - 83**

**WELD\_Thomason 16-9 Pad**

**P\_Thomason 16-9**

**P\_Thomason 16-9**

**Plan: PLAN #1 9-13-10 RHS**

## **Standard Planning Report**

**13 September, 2010**

<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well P_Thomason 16-9
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4867' & RKB 15' @ 4882.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 4867' & RKB 15' @ 4882.00ft (ASSUMED)
<b>Site:</b>	WELD_Thomason 16-9 Pad	<b>North Reference:</b>	True
<b>Well:</b>	P_Thomason 16-9	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	P_Thomason 16-9		
<b>Design:</b>	PLAN #1 9-13-10 RHS		

<b>Project</b>	COLORADO NORTHERN ZONE - 83, KERR MCGEE OIL & GAS ONSHORE LP		
<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 Northern Zone		

Site		WELD_Thomason 16-9 Pad, SECTION 9 T2NR65W			
Site Position:		Northing:	1,297,390.68 usft	Latitude:	40° 8' 48.052 N
From:	Lat/Long	Easting:	3,234,729.34 usft	Longitude:	104° 39' 37.159 W
Position Uncertainty:	0.00 ft	Slot Radius:	13.200 in	Grid Convergence:	0.54 °

Well	P_Thomason 16-9, 254' FSL 192' FWL					
Well Position	+N/-S	-0.01 ft	Northing:	1,297,390.67 usft	Latitude:	40° 8' 48.051 N
	+E/-W	0.00 ft	Easting:	3,234,729.34 usft	Longitude:	104° 39' 37.159 W
Position Uncertainty		0.00 ft	Wellhead Elevation:		Ground Level:	4,867.00 ft

<b>Wellbore</b>	P_Thomason 16-9				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2010	07/01/2010	8.91	66.90	53,110

<b>Design</b>	PLAN #1 9-13-10 RHS			
<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) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>
	0.00	0.00	0.00	313.40

<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
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
850.00	0.00	0.00	850.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,414.03	11.28	313.40	1,410.39	38.03	-40.21	2.00	2.00	0.00	313.40	
3,975.74	11.28	313.40	3,922.61	382.36	-404.27	0.00	0.00	0.00	0.00	
4,539.76	0.00	0.00	4,483.00	420.39	-444.48	2.00	-2.00	0.00	180.00	
7,403.76	0.00	0.00	7,347.00	420.39	-444.48	0.00	0.00	0.00	0.00	PBHL_Thomason 16-

<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well P_Thomason 16-9
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4867' & RKB 15' @ 4882.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 4867' & RKB 15' @ 4882.00ft (ASSUMED)
<b>Site:</b>	WELD_Thomason 16-9 Pad	<b>North Reference:</b>	True
<b>Well:</b>	P_Thomason 16-9	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	P_Thomason 16-9		
<b>Design:</b>	PLAN #1 9-13-10 RHS		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
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
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
500.00	0.00	0.00	500.00	0.00	0.00	0.00	0.00	0.00	0.00
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
700.00	0.00	0.00	700.00	0.00	0.00	0.00	0.00	0.00	0.00
8 5/8"									
800.00	0.00	0.00	800.00	0.00	0.00	0.00	0.00	0.00	0.00
850.00	0.00	0.00	850.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
900.00	1.00	313.40	900.00	0.30	-0.32	0.44	2.00	2.00	0.00
1,000.00	3.00	313.40	999.93	2.70	-2.85	3.93	2.00	2.00	0.00
1,100.00	5.00	313.40	1,099.68	7.49	-7.92	10.90	2.00	2.00	0.00
1,200.00	7.00	313.40	1,199.13	14.67	-15.51	21.35	2.00	2.00	0.00
1,300.00	9.00	313.40	1,298.15	24.24	-25.62	35.27	2.00	2.00	0.00
1,400.00	11.00	313.40	1,396.63	36.17	-38.24	52.63	2.00	2.00	0.00
1,414.03	11.28	313.40	1,410.39	38.03	-40.21	55.34	2.00	2.00	0.00
Start 2561.71 hold at 1414.03 MD									
1,500.00	11.28	313.40	1,494.70	49.59	-52.43	72.16	0.00	0.00	0.00
1,600.00	11.28	313.40	1,592.77	63.03	-66.64	91.72	0.00	0.00	0.00
1,700.00	11.28	313.40	1,690.84	76.47	-80.85	111.28	0.00	0.00	0.00
1,800.00	11.28	313.40	1,788.91	89.91	-95.06	130.85	0.00	0.00	0.00
1,900.00	11.28	313.40	1,886.97	103.35	-109.27	150.41	0.00	0.00	0.00
2,000.00	11.28	313.40	1,985.04	116.79	-123.49	169.97	0.00	0.00	0.00
2,100.00	11.28	313.40	2,083.11	130.23	-137.70	189.53	0.00	0.00	0.00
2,200.00	11.28	313.40	2,181.18	143.68	-151.91	209.09	0.00	0.00	0.00
2,300.00	11.28	313.40	2,279.25	157.12	-166.12	228.65	0.00	0.00	0.00
2,400.00	11.28	313.40	2,377.32	170.56	-180.33	248.21	0.00	0.00	0.00
2,500.00	11.28	313.40	2,475.38	184.00	-194.54	267.77	0.00	0.00	0.00
2,600.00	11.28	313.40	2,573.45	197.44	-208.76	287.34	0.00	0.00	0.00
2,700.00	11.28	313.40	2,671.52	210.88	-222.97	306.90	0.00	0.00	0.00
2,800.00	11.28	313.40	2,769.59	224.32	-237.18	326.46	0.00	0.00	0.00
2,900.00	11.28	313.40	2,867.66	237.77	-251.39	346.02	0.00	0.00	0.00
3,000.00	11.28	313.40	2,965.72	251.21	-265.60	365.58	0.00	0.00	0.00
3,100.00	11.28	313.40	3,063.79	264.65	-279.81	385.14	0.00	0.00	0.00
3,200.00	11.28	313.40	3,161.86	278.09	-294.03	404.70	0.00	0.00	0.00
3,300.00	11.28	313.40	3,259.93	291.53	-308.24	424.26	0.00	0.00	0.00
3,400.00	11.28	313.40	3,358.00	304.97	-322.45	443.83	0.00	0.00	0.00
3,500.00	11.28	313.40	3,456.06	318.41	-336.66	463.39	0.00	0.00	0.00
3,600.00	11.28	313.40	3,554.13	331.85	-350.87	482.95	0.00	0.00	0.00
3,700.00	11.28	313.40	3,652.20	345.30	-365.08	502.51	0.00	0.00	0.00
3,800.00	11.28	313.40	3,750.27	358.74	-379.30	522.07	0.00	0.00	0.00
3,900.00	11.28	313.40	3,848.34	372.18	-393.51	541.63	0.00	0.00	0.00
3,975.74	11.28	313.40	3,922.61	382.36	-404.27	556.45	0.00	0.00	0.00
Start Drop -2.00									
4,000.00	10.80	313.40	3,946.43	385.55	-407.65	561.09	2.00	-2.00	0.00
4,100.00	8.80	313.40	4,044.96	397.24	-420.01	578.10	2.00	-2.00	0.00
4,200.00	6.80	313.40	4,144.03	406.56	-429.86	591.67	2.00	-2.00	0.00
4,223.12	6.33	313.40	4,167.00	408.38	-431.78	594.31	2.00	-2.00	0.00

<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well P_Thomason 16-9
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4867' & RKB 15' @ 4882.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 4867' & RKB 15' @ 4882.00ft (ASSUMED)
<b>Site:</b>	WELD_Thomason 16-9 Pad	<b>North Reference:</b>	True
<b>Well:</b>	P_Thomason 16-9	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	P_Thomason 16-9		
<b>Design:</b>	PLAN #1 9-13-10 RHS		

Planned Survey									
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Vertical Section (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
<b>PARKMAN</b>									
4,300.00	4.80	313.40	4,243.52	413.50	-437.19	601.76	2.00	-2.00	0.00
4,400.00	2.80	313.40	4,343.29	418.05	-442.00	608.38	2.00	-2.00	0.00
4,500.00	0.80	313.40	4,443.24	420.20	-444.28	611.52	2.00	-2.00	0.00
4,539.76	0.00	0.00	4,483.00	420.39	-444.48	611.79	2.00	-2.00	117.18
<b>Start 2864.00 hold at 4539.76 MD - SUSSEX</b>									
4,600.00	0.00	0.00	4,543.24	420.39	-444.48	611.79	0.00	0.00	0.00
4,700.00	0.00	0.00	4,643.24	420.39	-444.48	611.79	0.00	0.00	0.00
4,800.00	0.00	0.00	4,743.24	420.39	-444.48	611.79	0.00	0.00	0.00
4,900.00	0.00	0.00	4,843.24	420.39	-444.48	611.79	0.00	0.00	0.00
5,000.00	0.00	0.00	4,943.24	420.39	-444.48	611.79	0.00	0.00	0.00
5,100.00	0.00	0.00	5,043.24	420.39	-444.48	611.79	0.00	0.00	0.00
5,200.00	0.00	0.00	5,143.24	420.39	-444.48	611.79	0.00	0.00	0.00
5,300.00	0.00	0.00	5,243.24	420.39	-444.48	611.79	0.00	0.00	0.00
5,400.00	0.00	0.00	5,343.24	420.39	-444.48	611.79	0.00	0.00	0.00
5,500.00	0.00	0.00	5,443.24	420.39	-444.48	611.79	0.00	0.00	0.00
5,600.00	0.00	0.00	5,543.24	420.39	-444.48	611.79	0.00	0.00	0.00
5,700.00	0.00	0.00	5,643.24	420.39	-444.48	611.79	0.00	0.00	0.00
5,800.00	0.00	0.00	5,743.24	420.39	-444.48	611.79	0.00	0.00	0.00
5,900.00	0.00	0.00	5,843.24	420.39	-444.48	611.79	0.00	0.00	0.00
6,000.00	0.00	0.00	5,943.24	420.39	-444.48	611.79	0.00	0.00	0.00
6,100.00	0.00	0.00	6,043.24	420.39	-444.48	611.79	0.00	0.00	0.00
6,200.00	0.00	0.00	6,143.24	420.39	-444.48	611.79	0.00	0.00	0.00
6,300.00	0.00	0.00	6,243.24	420.39	-444.48	611.79	0.00	0.00	0.00
6,400.00	0.00	0.00	6,343.24	420.39	-444.48	611.79	0.00	0.00	0.00
6,500.00	0.00	0.00	6,443.24	420.39	-444.48	611.79	0.00	0.00	0.00
6,600.00	0.00	0.00	6,543.24	420.39	-444.48	611.79	0.00	0.00	0.00
6,700.00	0.00	0.00	6,643.24	420.39	-444.48	611.79	0.00	0.00	0.00
6,800.00	0.00	0.00	6,743.24	420.39	-444.48	611.79	0.00	0.00	0.00
6,900.00	0.00	0.00	6,843.24	420.39	-444.48	611.79	0.00	0.00	0.00
6,959.76	0.00	0.00	6,903.00	420.39	-444.48	611.79	0.00	0.00	0.00
<b>NIO</b>									
7,000.00	0.00	0.00	6,943.24	420.39	-444.48	611.79	0.00	0.00	0.00
7,100.00	0.00	0.00	7,043.24	420.39	-444.48	611.79	0.00	0.00	0.00
7,200.00	0.00	0.00	7,143.24	420.39	-444.48	611.79	0.00	0.00	0.00
7,243.76	0.00	0.00	7,187.00	420.39	-444.48	611.79	0.00	0.00	0.00
<b>CODELL</b>									
7,300.00	0.00	0.00	7,243.24	420.39	-444.48	611.79	0.00	0.00	0.00
7,327.76	0.00	0.00	7,271.00	420.39	-444.48	611.79	0.00	0.00	0.00
<b>GREENHORN</b>									
7,400.00	0.00	0.00	7,343.24	420.39	-444.48	611.79	0.00	0.00	0.00
7,403.76	0.00	0.00	7,347.00	420.39	-444.48	611.79	0.00	0.00	0.00
<b>PBHL_Thomason 16-9(675' FSL 645' FEL)</b>									

<b>Database:</b>	EDM5000-RobertS-Local	<b>Local Co-ordinate Reference:</b>	Well P_Thomason 16-9
<b>Company:</b>	US ROCKIES REGION PLANNING	<b>TVD Reference:</b>	GL 4867' & RKB 15' @ 4882.00ft (ASSUMED)
<b>Project:</b>	COLORADO NORTHERN ZONE - 83	<b>MD Reference:</b>	GL 4867' & RKB 15' @ 4882.00ft (ASSUMED)
<b>Site:</b>	WELD_Thomason 16-9 Pad	<b>North Reference:</b>	True
<b>Well:</b>	P_Thomason 16-9	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	P_Thomason 16-9		
<b>Design:</b>	PLAN #1 9-13-10 RHS		

Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)		
- Shape									
PBHL_Thomason 16-9(	0.00	0.00	7,347.00	420.39	-444.48	1,297,806.84	3,234,280.90	40° 8' 52.206 N	104° 39' 42.883 W
- plan hits target center									
- Circle (radius 50.00)									

Casing Points					
Measured Depth	Vertical Depth	Name		Casing Diameter	Hole Diameter
(ft)	(ft)			(in)	(in)
700.00	700.00	8 5/8"		8.620	11.000

Formations						
Measured Depth	Vertical Depth	Name		Lithology	Dip	Dip Direction
(ft)	(ft)				(°)	(°)
4,223.12	4,167.00	PARKMAN				
4,539.76	4,483.00	SUSSEX				
6,959.76	6,903.00	NIO				
7,243.76	7,187.00	CODELL				
7,327.76	7,271.00	GREENHORN				

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates		Comment	
(ft)	(ft)	+N/-S (ft)	+E/-W (ft)		
850.00	850.00	0.00	0.00	Start Build 2.00	
1,414.03	1,410.39	38.03	-40.21	Start 2561.71 hold at 1414.03 MD	
3,975.74	3,922.61	382.36	-404.27	Start Drop -2.00	
4,539.76	4,483.00	420.39	-444.48	Start 2864.00 hold at 4539.76 MD	
7,403.76	7,347.00	420.39	-444.48	TD at 7403.76	