



# Crestone Peak Resources

Well Name:

Herren 1H-33H-H367

Project Name:

Sec 33 T3N-R67W

Pad Name:

Herren Pad

## ANNOTATIONS

MD	Inc	Azi	TVD	+N/-S	+E/-W	VSec	Departure	Annotation
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	Start Build 2.00
949.14	6.98	70.95	948.28	6.94	20.09	-19.55	21.25	Hold 6.98 Inc, 70.95 Az
6534.02	6.98	70.95	6491.73	228.55	661.87	-644.24	700.22	KOP 8/100
7741.87	90.00	269.25	7290.00	249.93	-49.88	67.26	1527.65	LP 90 Inc, 269.25 Az
10691.87	90.00	269.25	7290.00	211.32	-2999.63	3007.07	4477.65	Begin 1.5/100 Turn
11057.48	90.00	274.73	7290.00	224.02	-3364.88	3372.31	4843.26	Hold 274.73 Az
12024.74	90.00	274.73	7290.00	303.85	-4328.84	4339.49	5810.52	TD at 12024.74

## Geodetic Datum:

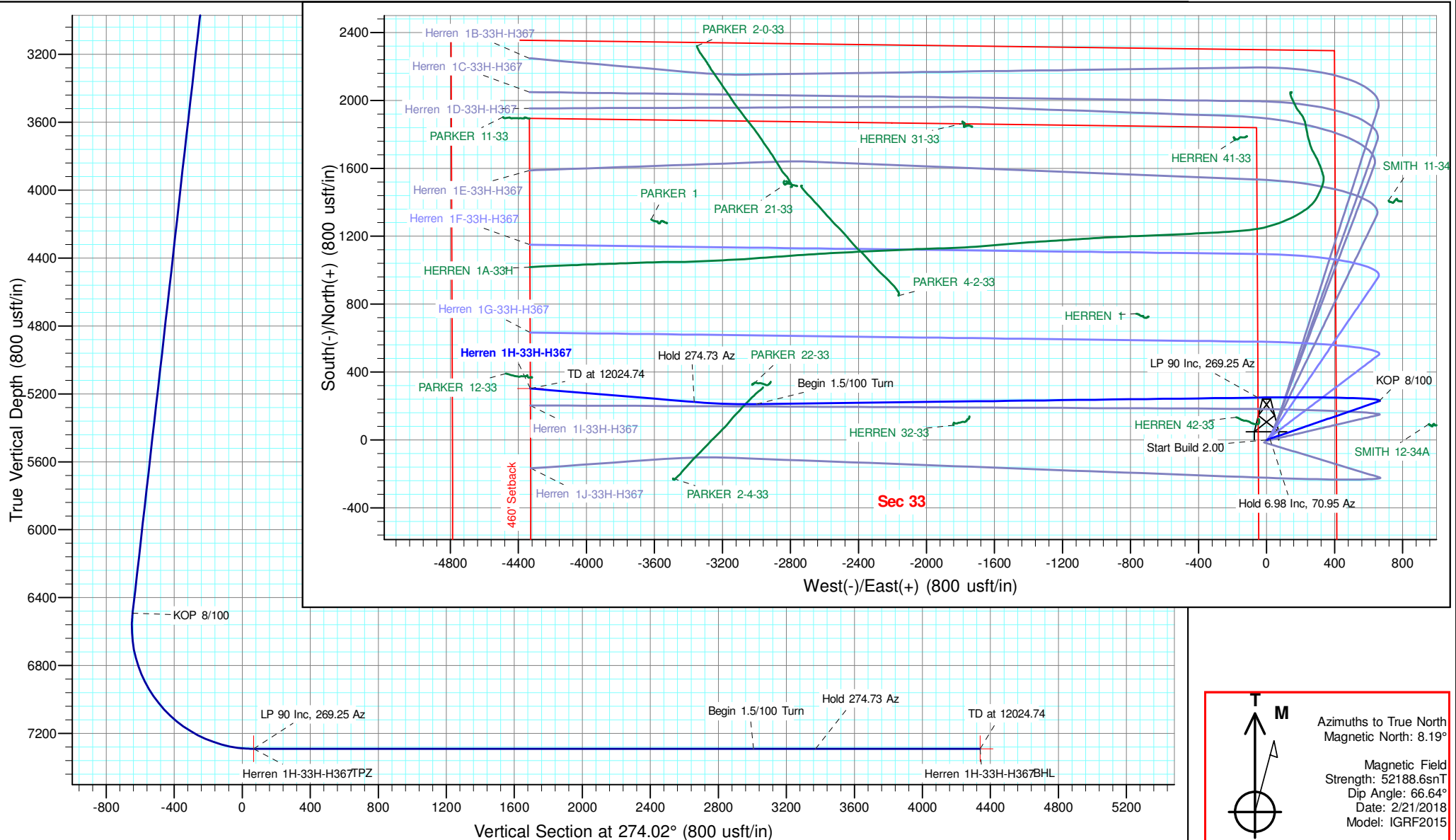
North American Datum 1983  
US State Plane 1983, Colorado Northern Zone

## Elevation:

Ground Elevation: 4849.00  
KB Elevation: WELL @ 4872.00usft (Original Well Elev)

## DESIGN TARGET DETAILS

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude	Shape
Herren 1H-33H-H367	7290.00	303.85	-4328.84	1310435.80	3166879.79	40.184000	-104.902711	Point
Herren 1H-33H-H367 TPZ	7290.00	249.93	-49.88	1310411.45	3171159.02	40.183853	-104.887397	Point





# **Crestone Peak Resources**

**Sec 33 T3N-R67W**

**Herren Pad**

**Herren 1H-33H-H367**

**Wellbore #1**

**Plan: Design #1 23Feb18 kjs**

## **Standard Planning Report**

**07 March, 2018**



# Microsoft Planning Report

<b>Database:</b>	EDM 5000.14 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Herren 1H-33H-H367
<b>Company:</b>	Crestone Peak Resources	<b>TVD Reference:</b>	WELL @ 4872.00usft (Original Well Elev)
<b>Project:</b>	Sec 33 T3N-R67W	<b>MD Reference:</b>	WELL @ 4872.00usft (Original Well Elev)
<b>Site:</b>	Herren Pad	<b>North Reference:</b>	True
<b>Well:</b>	Herren 1H-33H-H367	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 23Feb18 kjs		

<b>Project</b>	Sec 33 T3N-R67W, Weld 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 Northern Zone		

<b>Site</b>	Herren Pad			
<b>Site Position:</b>		<b>Northing:</b>	1,310,204.30 usft	<b>Latitude:</b> 40.183282
<b>From:</b>	Map	<b>Easting:</b>	3,171,253.06 usft	<b>Longitude:</b> -104.887065
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	13-3/16 "	<b>Grid Convergence:</b> 0.40 °

<b>Well</b>	Herren 1H-33H-H367			
<b>Well Position</b>	<b>+N/-S</b>	-42.14 usft	<b>Northing:</b>	1,310,161.87 usft
	<b>+E/-W</b>	-42.72 usft	<b>Easting:</b>	3,171,210.63 usft
<b>Position Uncertainty</b>	0.00 usft	<b>Wellhead Elevation:</b>		<b>Ground Level:</b> 4,849.00 usft

<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>
	IGRF2015	2/21/2018	8.19	66.64	52,188.58448761

<b>Design</b>	Design #1 23Feb18 kjs			
<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	274.02

<b>Plan Survey Tool Program</b>	<b>Date</b>	3/7/2018		
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>
1	0.00	12,024.74	Design #1 23Feb18 kjs (Wellbore)	MWD
				OWSG MWD - Standard

<b>Plan Sections</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Dogleg Rate (°/100usft)</b>	<b>Build Rate (°/100usft)</b>	<b>Turn Rate (°/100usft)</b>	<b>TFO (°)</b>	<b>Target</b>
0.00	0.00	0.00	0.00	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	
949.14	6.98	70.95	948.28	6.94	20.09	2.00	2.00	0.00	70.95	
6,534.02	6.98	70.95	6,491.73	228.55	661.87	0.00	0.00	0.00	0.00	
7,741.87	90.00	269.25	7,290.00	249.93	-49.88	8.00	6.87	-13.39	-161.57	Herren 1H-33H-H367 TPZ
10,691.87	90.00	269.25	7,290.00	211.32	-2,999.63	0.00	0.00	0.00	0.00	
11,057.48	90.00	274.73	7,290.00	224.02	-3,364.88	1.50	0.00	1.50	90.00	
12,024.74	90.00	274.73	7,290.00	303.85	-4,328.84	0.00	0.00	0.00	0.00	Herren 1H-33H-H367 BHL

<b>Database:</b>	EDM 5000.14 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Herren 1H-33H-H367
<b>Company:</b>	Crestone Peak Resources	<b>TVD Reference:</b>	WELL @ 4872.00usft (Original Well Elev)
<b>Project:</b>	Sec 33 T3N-R67W	<b>MD Reference:</b>	WELL @ 4872.00usft (Original Well Elev)
<b>Site:</b>	Herren Pad	<b>North Reference:</b>	True
<b>Well:</b>	Herren 1H-33H-H367	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 23Feb18 kjs		

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
200.00	0.00	0.00	200.00	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
600.00	0.00	0.00	600.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
800.00	4.00	70.95	799.84	2.28	6.60	-6.42	2.00	2.00	0.00
949.14	6.98	70.95	948.28	6.94	20.09	-19.55	2.00	2.00	0.00
Hold 6.98 Inc, 70.95 Az									
1,000.00	6.98	70.95	998.76	8.95	25.93	-25.24	0.00	0.00	0.00
1,200.00	6.98	70.95	1,197.28	16.89	48.91	-47.61	0.00	0.00	0.00
1,400.00	6.98	70.95	1,395.79	24.83	71.90	-69.98	0.00	0.00	0.00
1,600.00	6.98	70.95	1,594.31	32.76	94.88	-92.35	0.00	0.00	0.00
1,800.00	6.98	70.95	1,792.83	40.70	117.86	-114.72	0.00	0.00	0.00
2,000.00	6.98	70.95	1,991.34	48.63	140.84	-137.09	0.00	0.00	0.00
2,200.00	6.98	70.95	2,189.86	56.57	163.83	-159.46	0.00	0.00	0.00
2,400.00	6.98	70.95	2,388.37	64.51	186.81	-181.83	0.00	0.00	0.00
2,600.00	6.98	70.95	2,586.89	72.44	209.79	-204.21	0.00	0.00	0.00
2,800.00	6.98	70.95	2,785.41	80.38	232.78	-226.58	0.00	0.00	0.00
3,000.00	6.98	70.95	2,983.92	88.31	255.76	-248.95	0.00	0.00	0.00
3,200.00	6.98	70.95	3,182.44	96.25	278.74	-271.32	0.00	0.00	0.00
3,400.00	6.98	70.95	3,380.96	104.19	301.72	-293.69	0.00	0.00	0.00
3,600.00	6.98	70.95	3,579.47	112.12	324.71	-316.06	0.00	0.00	0.00
3,800.00	6.98	70.95	3,777.99	120.06	347.69	-338.43	0.00	0.00	0.00
4,000.00	6.98	70.95	3,976.51	127.99	370.67	-360.80	0.00	0.00	0.00
4,200.00	6.98	70.95	4,175.02	135.93	393.66	-383.17	0.00	0.00	0.00
4,400.00	6.98	70.95	4,373.54	143.87	416.64	-405.54	0.00	0.00	0.00
4,600.00	6.98	70.95	4,572.06	151.80	439.62	-427.91	0.00	0.00	0.00
4,800.00	6.98	70.95	4,770.57	159.74	462.60	-450.28	0.00	0.00	0.00
5,000.00	6.98	70.95	4,969.09	167.68	485.59	-472.65	0.00	0.00	0.00
5,200.00	6.98	70.95	5,167.61	175.61	508.57	-495.03	0.00	0.00	0.00
5,400.00	6.98	70.95	5,366.12	183.55	531.55	-517.40	0.00	0.00	0.00
5,600.00	6.98	70.95	5,564.64	191.48	554.54	-539.77	0.00	0.00	0.00
5,800.00	6.98	70.95	5,763.16	199.42	577.52	-562.14	0.00	0.00	0.00
6,000.00	6.98	70.95	5,961.67	207.36	600.50	-584.51	0.00	0.00	0.00
6,200.00	6.98	70.95	6,160.19	215.29	623.48	-606.88	0.00	0.00	0.00
6,400.00	6.98	70.95	6,358.71	223.23	646.47	-629.25	0.00	0.00	0.00
6,534.02	6.98	70.95	6,491.73	228.55	661.87	-644.24	0.00	0.00	0.00
KOP 8/100									
6,600.00	2.58	30.76	6,557.48	231.13	666.42	-648.60	8.00	-6.67	-60.92
6,800.00	14.81	277.61	6,755.34	238.44	643.24	-624.96	8.00	6.11	-56.57
7,000.00	30.72	272.96	6,939.18	244.51	566.38	-547.87	8.00	7.96	-2.33
7,200.00	46.69	271.33	7,094.75	248.86	441.80	-423.29	8.00	7.98	-0.82
7,400.00	62.67	270.39	7,210.00	251.16	279.16	-260.89	8.00	7.99	-0.47
7,600.00	78.66	269.69	7,276.01	251.24	91.05	-73.24	8.00	7.99	-0.35
7,741.87	90.00	269.25	7,290.00	249.93	-49.88	67.26	8.00	7.99	-0.31
LP 90 Inc, 269.25 Az									
7,800.00	90.00	269.25	7,290.00	249.17	-108.01	125.19	0.00	0.00	0.00
8,000.00	90.00	269.25	7,290.00	246.55	-308.00	324.50	0.00	0.00	0.00
8,200.00	90.00	269.25	7,290.00	243.93	-507.98	523.81	0.00	0.00	0.00
8,400.00	90.00	269.25	7,290.00	241.32	-707.96	723.12	0.00	0.00	0.00
8,600.00	90.00	269.25	7,290.00	238.70	-907.94	922.43	0.00	0.00	0.00
8,800.00	90.00	269.25	7,290.00	236.08	-1,107.93	1,121.74	0.00	0.00	0.00
9,000.00	90.00	269.25	7,290.00	233.46	-1,307.91	1,321.05	0.00	0.00	0.00

<b>Database:</b>	EDM 5000.14 Single User Db	<b>Local Co-ordinate Reference:</b>	Well Herren 1H-33H-H367
<b>Company:</b>	Crestone Peak Resources	<b>TVD Reference:</b>	WELL @ 4872.00usft (Original Well Elev)
<b>Project:</b>	Sec 33 T3N-R67W	<b>MD Reference:</b>	WELL @ 4872.00usft (Original Well Elev)
<b>Site:</b>	Herren Pad	<b>North Reference:</b>	True
<b>Well:</b>	Herren 1H-33H-H367	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Wellbore #1		
<b>Design:</b>	Design #1 23Feb18 kjs		

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)	
9,200.00	90.00	269.25	7,290.00	230.84	-1,507.89	1,520.36	0.00	0.00	0.00	
9,400.00	90.00	269.25	7,290.00	228.23	-1,707.88	1,719.66	0.00	0.00	0.00	
9,600.00	90.00	269.25	7,290.00	225.61	-1,907.86	1,918.97	0.00	0.00	0.00	
9,800.00	90.00	269.25	7,290.00	222.99	-2,107.84	2,118.28	0.00	0.00	0.00	
10,000.00	90.00	269.25	7,290.00	220.37	-2,307.82	2,317.59	0.00	0.00	0.00	
10,200.00	90.00	269.25	7,290.00	217.75	-2,507.81	2,516.90	0.00	0.00	0.00	
10,400.00	90.00	269.25	7,290.00	215.14	-2,707.79	2,716.21	0.00	0.00	0.00	
10,600.00	90.00	269.25	7,290.00	212.52	-2,907.77	2,915.52	0.00	0.00	0.00	
10,691.87	90.00	269.25	7,290.00	211.32	-2,999.63	3,007.07	0.00	0.00	0.00	
Begin 1.5/100 Turn										
10,800.00	90.00	270.87	7,290.00	211.43	-3,107.76	3,114.94	1.50	0.00	1.50	
11,000.00	90.00	273.87	7,290.00	219.71	-3,307.57	3,314.83	1.50	0.00	1.50	
11,057.48	90.00	274.73	7,290.00	224.02	-3,364.88	3,372.31	1.50	0.00	1.50	
Hold 274.73 Az										
11,200.00	90.00	274.73	7,290.00	235.78	-3,506.92	3,514.82	0.00	0.00	0.00	
11,400.00	90.00	274.73	7,290.00	252.29	-3,706.24	3,714.80	0.00	0.00	0.00	
11,600.00	90.00	274.73	7,290.00	268.80	-3,905.55	3,914.79	0.00	0.00	0.00	
11,800.00	90.00	274.73	7,290.00	285.30	-4,104.87	4,114.77	0.00	0.00	0.00	
12,000.00	90.00	274.73	7,290.00	301.81	-4,304.19	4,314.76	0.00	0.00	0.00	
12,024.74	90.00	274.73	7,290.00	303.85	-4,328.84	4,339.49	0.00	0.00	0.00	
TD at 12024.74										

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		
Herren 1H-33H-H367 TPZ - plan hits target center - Point	0.00	0.00	7,290.00	249.93	-49.88	1,310,411.45	3,171,159.02	40.183853 -104.887397		
Herren 1H-33H-H367 BHL - plan hits target center - Point	0.00	0.00	7,290.00	303.85	-4,328.84	1,310,435.80	3,166,879.79	40.184000 -104.902712		

Plan Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
600.00	600.00	0.00	0.00	Start Build 2.00	
949.14	948.28	6.94	20.09	Hold 6.98 Inc, 70.95 Az	
6,534.02	6,491.73	228.55	661.87	KOP 8/100	
7,741.87	7,290.00	249.93	-49.88	LP 90 Inc, 269.25 Az	
10,691.87	7,290.00	211.32	-2,999.63	Begin 1.5/100 Turn	
11,057.48	7,290.00	224.02	-3,364.88	Hold 274.73 Az	
12,024.74	7,290.00	303.85	-4,328.84	TD at 12024.74	