

# **MALLARD EXPLORATION**

**WELD COUNTY, COLORADO (NAD 83)**

**SE SW SEC. 34 T8N R60W 6th P.M.**

**GREEN TEAL FED 34-27-6HC**

**ORIGINAL WELLBORE**

**06 September, 2017**

**Plan: PROPOSAL 1**



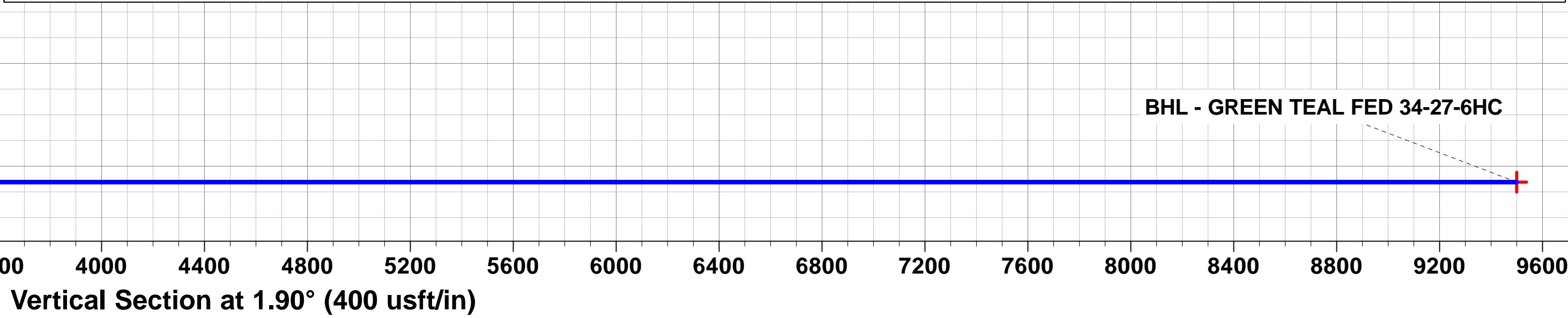
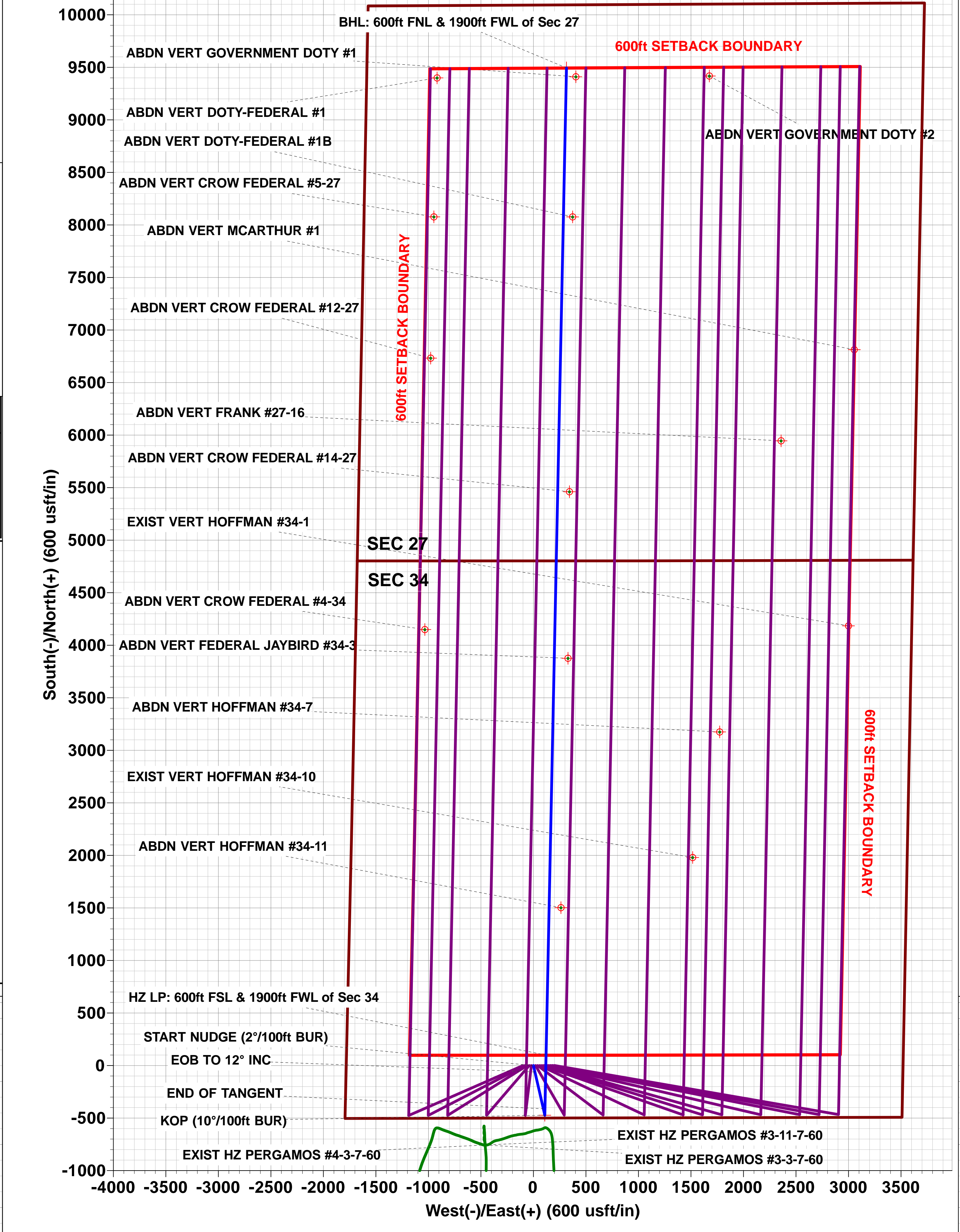
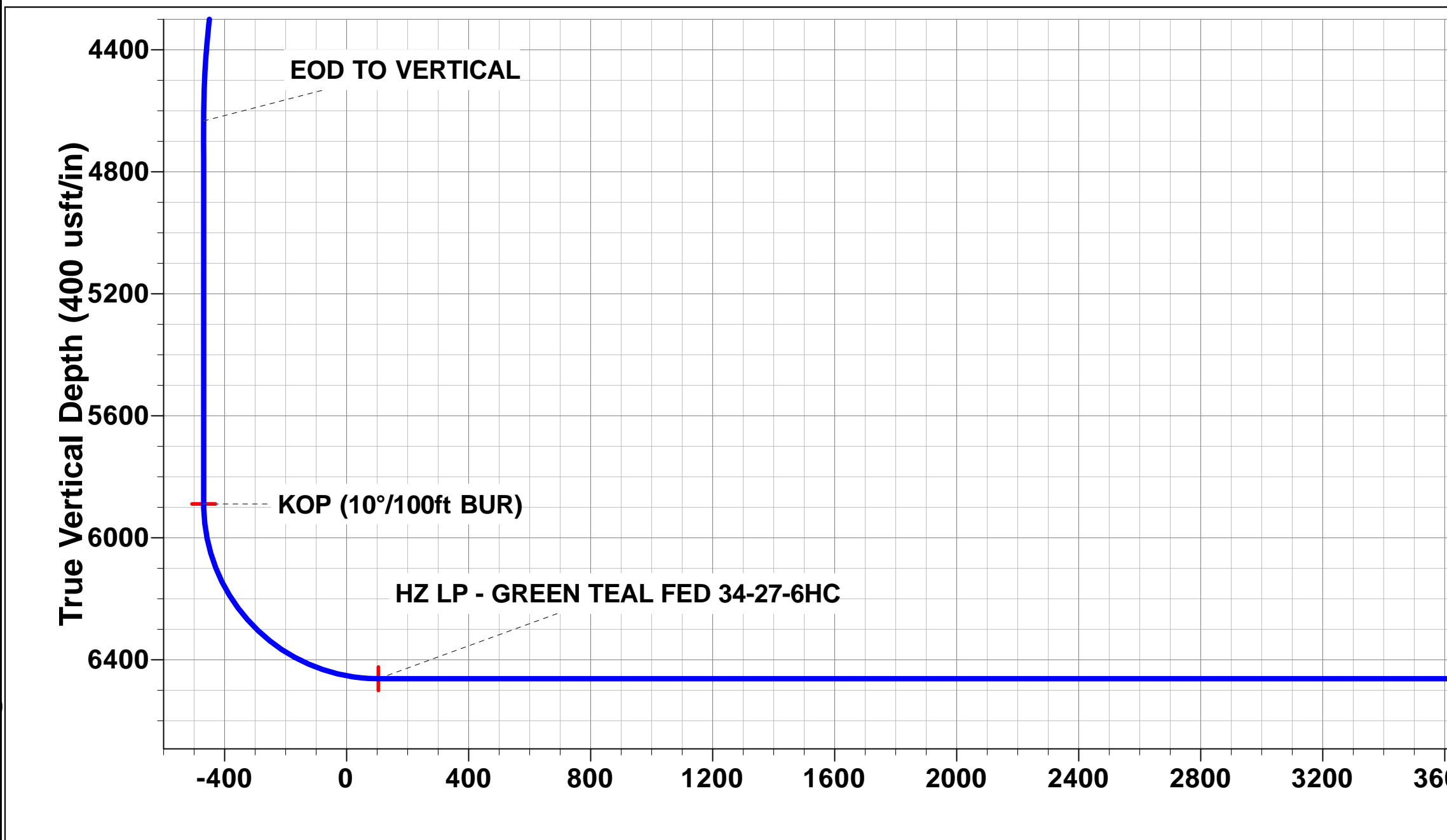
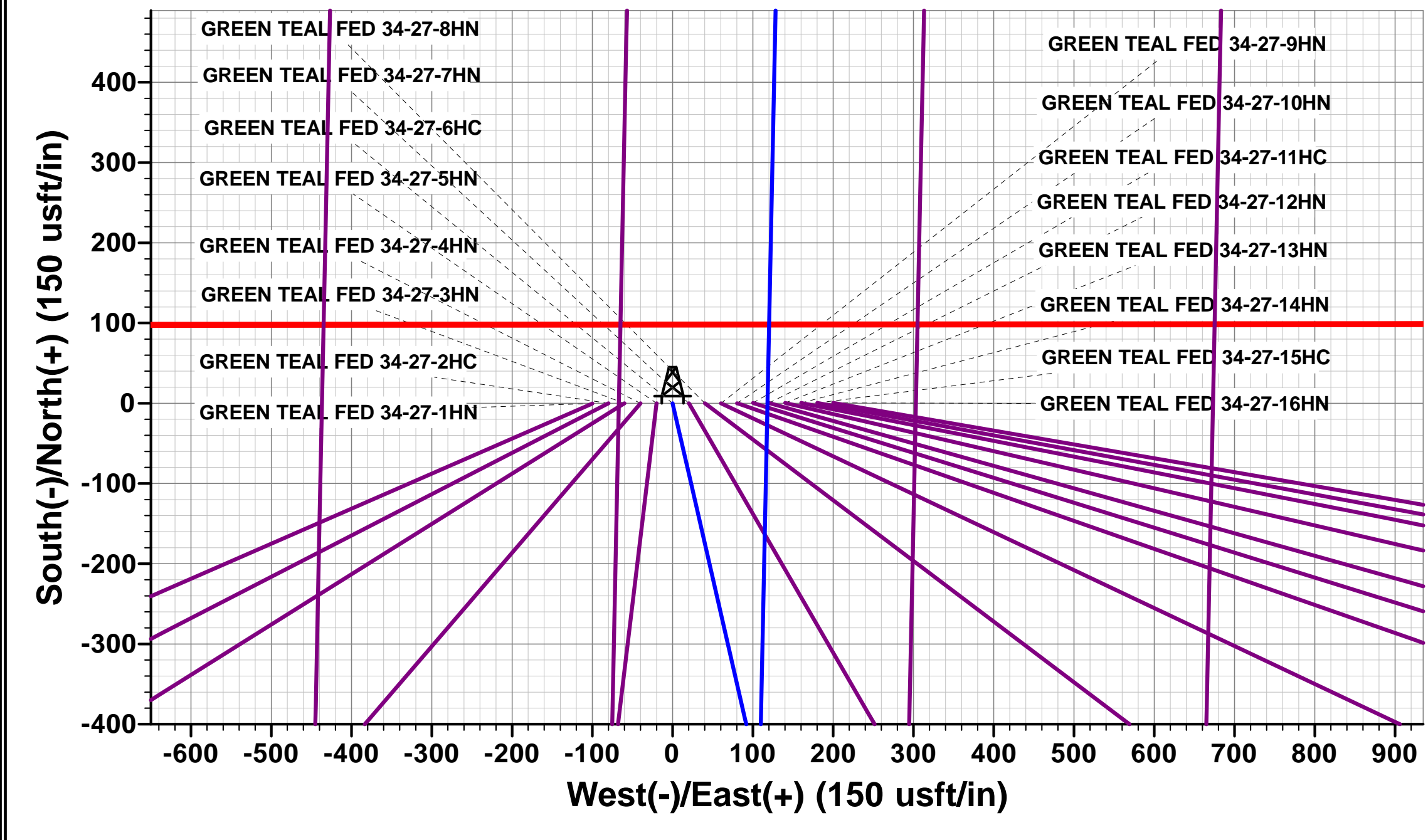
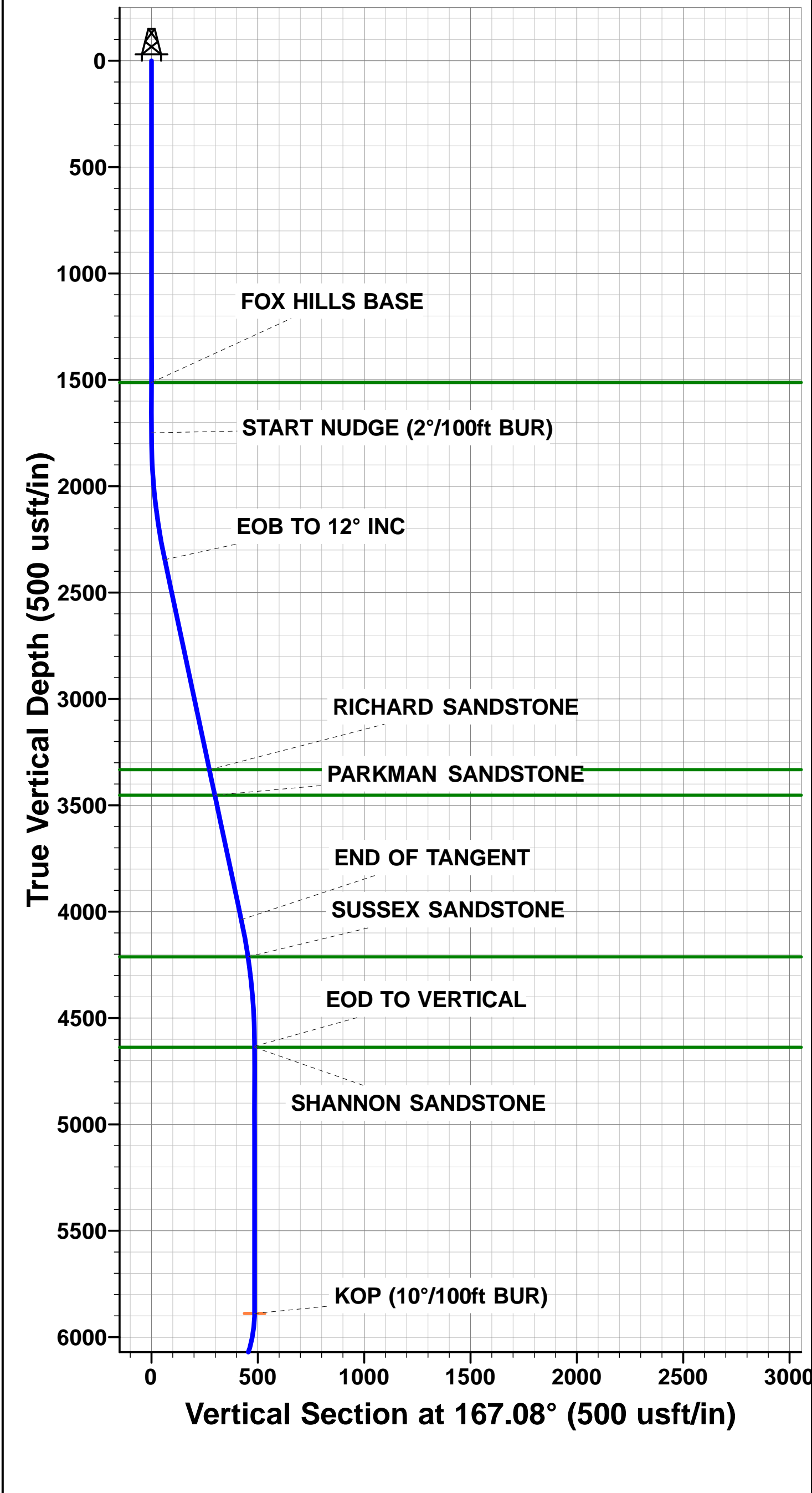


Project: WELD COUNTY, COLORADO (NAD 83)  
Site: SE SW SEC. 34 T8N R60W 6th P.M.  
Well: GREEN TEAL FED 34-27-6HC  
Wellbore: ORIGINAL WELLBORE  
Design: PROPOSAL 1

ANNOTATIONS									
TVD	MD	Inc	Azi	+N/-S	+E/-W	VSect	Dep	Annotation	
0.0	0.0	0.00	0.00	0.0	0.0	0.0	0.0	SHL: 500ft FSL & 1782ft FWL of Sec 34	
1750.0	1750.0	0.00	0.00	0.0	0.0	0.0	0.0	START NUDGE (2"/100ft BUR)	
2345.6	2350.0	12.00	167.08	-61.0	14.0	-60.5	62.6	EOB TO 12° INC	
4037.7	4079.9	12.00	167.08	-411.6	94.4	-408.2	422.3	END OF TANGENT	
4633.3	4679.9	0.00	0.00	-472.6	108.4	-468.8	484.9	EOD TO VERTICAL	
5889.0	5935.6	0.00	0.00	-472.6	108.4	-468.8	484.9	KOP (10"/100ft BUR)	
6462.0	6835.6	90.00	1.18	100.2	120.2	104.2	1057.8	HZ LP: 600ft FSL & 1900ft FWL of Sec 34	
6462.0	16231.8	90.00	1.19	9494.4	314.4	9499.6	10454.0	BHL: 600ft FNL & 1900ft FWL of Sec 27	

PROPOSED LOCAL COORDINATES:  
  
SHL: 500ft FSL & 1782ft FWL Sec 34  
HZ LP: 600ft FSL & 1900ft FWL Sec 34  
  
BHL: 600ft FNL & 1900ft FWL of Sec 27

WELLBORE TARGET DETAILS (LAT/LONG)					
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP - GREEN TEAL FED 34-27-6HC	5889.0	-472.6	108.4	40.611579	-104.081157
HZ LP - GREEN TEAL FED 34-27-6HC	6462.0	100.2	120.2	40.613151	-104.081114
BHL - GREEN TEAL FED 34-27-6HC	6462.0	9494.4	314.4	40.638936	-104.080414



# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well GREEN TEAL FED 34-27-6HC
<b>Company:</b>	MALLARD EXPLORATION	<b>TVD Reference:</b>	KB-EST @ 4939.0usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 4939.0usft (Original Well Elev)
<b>Site:</b>	SE SW SEC. 34 T8N R60W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	GREEN TEAL FED 34-27-6HC	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL 1		

<b>Project</b>	WELD COUNTY, COLORADO (NAD 83)		
<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		Using geodetic scale factor

<b>Site</b>	SE SW SEC. 34 T8N R60W 6th P.M.		
<b>Site Position:</b>		<b>Northing:</b>	1,469,260.15 usft
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,393,696.59 usft
<b>Position Uncertainty:</b>	0.0 usft	<b>Slot Radius:</b>	1.10000ft
		<b>Latitude:</b>	40.612875
		<b>Longitude:</b>	-104.081907
		<b>Grid Convergence:</b>	0.92 °

<b>Well</b>	GREEN TEAL FED 34-27-6HC		
<b>Well Position</b>	<b>+N-S</b>	0.3 usft	<b>Northing:</b>
	<b>+E-W</b>	100.0 usft	<b>Easting:</b>
<b>Position Uncertainty</b>		0.0 usft	<b>Wellhead Elevation:</b>
			<b>Latitude:</b>
			<b>Longitude:</b>
			<b>Ground Level:</b>

<b>Wellbore</b>	ORIGINAL WELLBORE				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2015	06/09/2017	7.83	67.12	52,546

<b>Design</b>	PROPOSAL 1			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<b>Tie On Depth:</b>	0.0
<b>Vertical Section:</b>	<b>Depth From (TVD) (usft)</b>	<b>+N-S (usft)</b>	<b>+E-W (usft)</b>	<b>Direction (°)</b>
	6,462.0	0.0	0.0	1.90

<b>Plan Sections</b>											
MD (usft)	Inc (°)	Azi (°)	Vertical Depth	SS (usft)	+N-S (usft)	+E-W (usft)	Dogleg Rate (°/100usf)	Build Rate (°/100usf)	Turn Rate (°/100usf)	TFO (°)	Target
0.0	0.00	0.00	0.0	-4,939.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,750.0	0.00	0.00	1,750.0	-3,189.0	0.0	0.0	0.00	0.00	0.00	0.00	
2,350.0	12.00	167.08	2,345.6	-2,593.4	-61.0	14.0	2.00	2.00	0.00	167.08	
4,079.9	12.00	167.08	4,037.7	-901.3	-411.6	94.4	0.00	0.00	0.00	0.00	
4,679.9	0.00	0.00	4,633.3	-305.7	-472.6	108.4	2.00	-2.00	0.00	180.00	
5,935.6	0.00	0.00	5,889.0	950.0	-472.6	108.4	0.00	0.00	0.00	0.00	KOP - GREEN TEA
6,835.6	90.00	1.18	6,462.0	1,523.0	100.2	120.2	10.00	10.00	0.13	1.18	HZ LP - GREEN TE
16,231.8	90.00	1.19	6,462.0	1,523.0	9,494.4	314.4	0.00	0.00	0.00	38.05	BHL - GREEN TEA

# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well GREEN TEAL FED 34-27-6HC
<b>Company:</b>	MALLARD EXPLORATION	<b>TVD Reference:</b>	KB-EST @ 4939.0usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 4939.0usft (Original Well Elev)
<b>Site:</b>	SE SW SEC. 34 T8N R60W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	GREEN TEAL FED 34-27-6HC	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL 1		

Planned Survey										
MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
<b>SHL: 500ft FSL &amp; 1782ft FWL of Sec 34</b>										
0.0	0.00	0.00	0.0	4,939.00	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	4,839.00	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	4,739.00	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	4,639.00	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	4,539.00	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	4,439.00	0.0	0.0	0.0	0.00	0.00	0.00
600.0	0.00	0.00	600.0	4,339.00	0.0	0.0	0.0	0.00	0.00	0.00
700.0	0.00	0.00	700.0	4,239.00	0.0	0.0	0.0	0.00	0.00	0.00
800.0	0.00	0.00	800.0	4,139.00	0.0	0.0	0.0	0.00	0.00	0.00
900.0	0.00	0.00	900.0	4,039.00	0.0	0.0	0.0	0.00	0.00	0.00
1,000.0	0.00	0.00	1,000.0	3,939.00	0.0	0.0	0.0	0.00	0.00	0.00
1,100.0	0.00	0.00	1,100.0	3,839.00	0.0	0.0	0.0	0.00	0.00	0.00
1,200.0	0.00	0.00	1,200.0	3,739.00	0.0	0.0	0.0	0.00	0.00	0.00
1,300.0	0.00	0.00	1,300.0	3,639.00	0.0	0.0	0.0	0.00	0.00	0.00
1,400.0	0.00	0.00	1,400.0	3,539.00	0.0	0.0	0.0	0.00	0.00	0.00
1,500.0	0.00	0.00	1,500.0	3,439.00	0.0	0.0	0.0	0.00	0.00	0.00
<b>FOX HILLS BASE</b>										
1,513.0	0.00	0.00	1,513.0	3,426.00	0.0	0.0	0.0	0.00	0.00	0.00
1,600.0	0.00	0.00	1,600.0	3,339.00	0.0	0.0	0.0	0.00	0.00	0.00
1,700.0	0.00	0.00	1,700.0	3,239.00	0.0	0.0	0.0	0.00	0.00	0.00
<b>START NUDGE (2°/100ft BUR)</b>										
1,750.0	0.00	0.00	1,750.0	3,189.00	0.0	0.0	0.0	0.00	0.00	0.00
1,800.0	1.00	167.08	1,800.0	3,139.00	-0.4	0.1	-0.4	2.00	2.00	0.00
1,900.0	3.00	167.08	1,899.9	3,039.07	-3.8	0.9	-3.8	2.00	2.00	0.00
2,000.0	5.00	167.08	1,999.7	2,939.32	-10.6	2.4	-10.5	2.00	2.00	0.00
2,100.0	7.00	167.08	2,099.1	2,839.87	-20.8	4.8	-20.6	2.00	2.00	0.00
2,200.0	9.00	167.08	2,198.2	2,740.85	-34.4	7.9	-34.1	2.00	2.00	0.00
2,300.0	11.00	167.08	2,296.6	2,642.37	-51.3	11.8	-50.9	2.00	2.00	0.00
<b>EOB TO 12° INC</b>										
2,350.0	12.00	167.08	2,345.6	2,593.38	-61.0	14.0	-60.5	2.00	2.00	0.00
2,400.0	12.00	167.08	2,394.5	2,544.47	-71.2	16.3	-70.6	0.00	0.00	0.00
2,500.0	12.00	167.08	2,492.3	2,446.65	-91.4	21.0	-90.7	0.00	0.00	0.00
2,600.0	12.00	167.08	2,590.2	2,348.84	-111.7	25.6	-110.8	0.00	0.00	0.00
2,700.0	12.00	167.08	2,688.0	2,251.03	-131.9	30.3	-130.9	0.00	0.00	0.00
2,800.0	12.00	167.08	2,785.8	2,153.21	-152.2	34.9	-151.0	0.00	0.00	0.00
2,900.0	12.00	167.08	2,883.6	2,055.40	-172.5	39.6	-171.1	0.00	0.00	0.00
3,000.0	12.00	167.08	2,981.4	1,957.58	-192.7	44.2	-191.2	0.00	0.00	0.00
3,100.0	12.00	167.08	3,079.2	1,859.77	-213.0	48.9	-211.3	0.00	0.00	0.00
3,200.0	12.00	167.08	3,177.0	1,761.95	-233.3	53.5	-231.4	0.00	0.00	0.00
3,300.0	12.00	167.08	3,274.9	1,664.14	-253.5	58.2	-251.5	0.00	0.00	0.00
<b>RICHARD SANDSTONE</b>										
3,359.4	12.00	167.08	3,333.0	1,606.00	-265.6	60.9	-263.4	0.00	0.00	0.00
3,400.0	12.00	167.08	3,372.7	1,566.32	-273.8	62.8	-271.6	0.00	0.00	0.00
<b>PARKMAN SANDSTONE</b>										
3,482.1	12.00	167.08	3,453.0	1,486.00	-290.4	66.6	-288.1	0.00	0.00	0.00
3,500.0	12.00	167.08	3,470.5	1,468.51	-294.1	67.4	-291.7	0.00	0.00	0.00
3,600.0	12.00	167.08	3,568.3	1,370.69	-314.3	72.1	-311.8	0.00	0.00	0.00
3,700.0	12.00	167.08	3,666.1	1,272.88	-334.6	76.7	-331.9	0.00	0.00	0.00
3,800.0	12.00	167.08	3,763.9	1,175.06	-354.9	81.4	-352.0	0.00	0.00	0.00
3,900.0	12.00	167.08	3,861.8	1,077.25	-375.1	86.0	-372.1	0.00	0.00	0.00
4,000.0	12.00	167.08	3,959.6	979.43	-395.4	90.7	-392.2	0.00	0.00	0.00
<b>END OF TANGENT</b>										



# Planning Report



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<b>Company:</b>	MALLARD EXPLORATION	<b>TVD Reference:</b>	KB-EST @ 4939.0usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 4939.0usft (Original Well Elev)
<b>Site:</b>	SE SW SEC. 34 T8N R60W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	GREEN TEAL FED 34-27-6HC	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL 1		

## Planned Survey

MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
4,079.9	12.00	167.08	4,037.7	901.27	-411.6	94.4	-408.2	0.00	0.00	0.00
4,100.0	11.60	167.08	4,057.4	881.60	-415.6	95.3	-412.2	2.00	-2.00	0.00
4,200.0	9.60	167.08	4,155.7	783.31	-433.5	99.4	-430.0	2.00	-2.00	0.00
<b>SUSSEX SANDSTONE</b>										
4,258.0	8.44	167.08	4,213.0	726.00	-442.4	101.5	-438.8	2.00	-2.00	0.00
4,300.0	7.60	167.08	4,254.6	684.44	-448.1	102.8	-444.4	2.00	-2.00	0.00
4,400.0	5.60	167.08	4,353.9	585.11	-459.3	105.3	-455.5	2.00	-2.00	0.00
4,500.0	3.60	167.08	4,453.6	485.44	-467.1	107.1	-463.3	2.00	-2.00	0.00
4,600.0	1.60	167.08	4,553.5	385.55	-471.5	108.2	-467.7	2.00	-2.00	0.00
<b>EOD TO VERTICAL</b>										
4,679.9	0.00	0.00	4,633.3	305.65	-472.6	108.4	-468.8	2.00	-2.00	0.00
<b>SHANNON SANDSTONE</b>										
4,684.6	0.00	0.00	4,638.0	301.00	-472.6	108.4	-468.8	0.00	0.00	0.00
4,700.0	0.00	0.00	4,653.4	285.56	-472.6	108.4	-468.8	0.00	0.00	0.00
4,800.0	0.00	0.00	4,753.4	185.56	-472.6	108.4	-468.8	0.00	0.00	0.00
4,900.0	0.00	0.00	4,853.4	85.56	-472.6	108.4	-468.8	0.00	0.00	0.00
5,000.0	0.00	0.00	4,953.4	-14.44	-472.6	108.4	-468.8	0.00	0.00	0.00
5,100.0	0.00	0.00	5,053.4	-114.44	-472.6	108.4	-468.8	0.00	0.00	0.00
5,200.0	0.00	0.00	5,153.4	-214.44	-472.6	108.4	-468.8	0.00	0.00	0.00
5,300.0	0.00	0.00	5,253.4	-314.44	-472.6	108.4	-468.8	0.00	0.00	0.00
5,400.0	0.00	0.00	5,353.4	-414.44	-472.6	108.4	-468.8	0.00	0.00	0.00
5,500.0	0.00	0.00	5,453.4	-514.44	-472.6	108.4	-468.8	0.00	0.00	0.00
5,600.0	0.00	0.00	5,553.4	-614.44	-472.6	108.4	-468.8	0.00	0.00	0.00
5,700.0	0.00	0.00	5,653.4	-714.44	-472.6	108.4	-468.8	0.00	0.00	0.00
5,800.0	0.00	0.00	5,753.4	-814.44	-472.6	108.4	-468.8	0.00	0.00	0.00
5,900.0	0.00	0.00	5,853.4	-914.44	-472.6	108.4	-468.8	0.00	0.00	0.00
<b>KOP (10°/100ft BUR)</b>										
5,935.6	0.00	0.00	5,889.0	-950.00	-472.6	108.4	-468.8	0.00	0.00	0.00
6,000.0	6.44	1.18	5,953.3	-1,014.31	-469.0	108.5	-465.1	10.00	10.00	0.00
6,100.0	16.44	1.18	6,051.2	-1,112.20	-449.2	108.9	-445.3	10.00	10.00	0.00
<b>SHARON SPRINGS</b>										
6,152.7	21.71	1.18	6,101.0	-1,162.00	-431.9	109.2	-428.1	10.00	10.00	0.00
6,200.0	26.44	1.18	6,144.2	-1,205.16	-412.7	109.6	-408.8	10.00	10.00	0.00
<b>NIORARA A CHALK</b>										
6,230.4	29.48	1.18	6,171.0	-1,232.00	-398.4	109.9	-394.6	10.00	10.00	0.00
<b>NIORARA A CHALK BASE</b>										
6,263.1	32.75	1.18	6,199.0	-1,260.00	-381.5	110.3	-377.7	10.00	10.00	0.00
<b>NIORARA B1 CHALK TOP</b>										
6,295.8	36.02	1.18	6,226.0	-1,287.00	-363.0	110.7	-359.2	10.00	10.00	0.00
6,300.0	36.44	1.18	6,229.4	-1,290.36	-360.6	110.7	-356.7	10.00	10.00	0.00
<b>NIORARA B1 CHALK BASE</b>										
6,330.0	39.44	1.18	6,253.0	-1,314.00	-342.2	111.1	-338.3	10.00	10.00	0.00
<b>NIORARA B2 CHALK TOP</b>										
6,359.1	42.35	1.18	6,275.0	-1,336.00	-323.1	111.5	-319.2	10.00	10.00	0.00
6,400.0	46.44	1.18	6,304.2	-1,365.23	-294.5	112.1	-290.6	10.00	10.00	0.00
<b>NIORARA B2 CHALK BASE</b>										
6,409.9	47.43	1.18	6,311.0	-1,372.00	-287.3	112.2	-283.4	10.00	10.00	0.00
<b>NIORARA C CHALK TOP</b>										
6,453.1	51.75	1.18	6,339.0	-1,400.00	-254.4	112.9	-250.5	10.00	10.00	0.00
6,500.0	56.44	1.18	6,366.5	-1,427.49	-216.4	113.7	-212.5	10.00	10.00	0.00
<b>NIORARA C CHALK BASE</b>										
6,549.4	61.38	1.18	6,392.0	-1,453.00	-174.1	114.6	-170.2	10.00	10.00	0.00

# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well GREEN TEAL FED 34-27-6HC
<b>Company:</b>	MALLARD EXPLORATION	<b>TVD Reference:</b>	KB-EST @ 4939.0usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 4939.0usft (Original Well Elev)
<b>Site:</b>	SE SW SEC. 34 T8N R60W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	GREEN TEAL FED 34-27-6HC	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL 1		

## Planned Survey

MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
<b>NIORARA D CHALK TOP</b>										
6,582.5	64.69	1.18	6,407.0	-1,468.00	-144.6	115.2	-140.7	10.00	10.00	0.00
6,600.0	66.44	1.18	6,414.2	-1,475.23	-128.7	115.5	-124.8	10.00	10.00	0.00
<b>FT. HAYS</b>										
6,665.7	73.01	1.18	6,437.0	-1,498.00	-67.1	116.8	-63.2	10.00	10.00	0.00
6,700.0	76.44	1.18	6,446.0	-1,507.02	-34.1	117.4	-30.1	10.00	10.00	0.00
6,800.0	86.44	1.18	6,460.9	-1,521.89	64.7	119.5	68.6	10.00	10.00	0.00
<b>HZ LP: 600ft FSL &amp; 1900ft FWL of Sec 34 - CODELL</b>										
6,835.6	90.00	1.18	6,462.0	-1,523.00	100.2	120.2	104.2	10.00	10.00	0.00
6,900.0	90.00	1.18	6,462.0	-1,523.00	164.6	121.5	168.6	0.00	0.00	0.00
7,000.0	90.00	1.18	6,462.0	-1,523.01	264.6	123.6	268.6	0.00	0.00	0.00
7,100.0	90.00	1.18	6,462.0	-1,523.01	364.6	125.7	368.6	0.00	0.00	0.00
7,200.0	90.00	1.18	6,462.0	-1,523.02	464.6	127.7	468.6	0.00	0.00	0.00
7,300.0	90.00	1.18	6,462.0	-1,523.02	564.6	129.8	568.5	0.00	0.00	0.00
7,400.0	90.00	1.18	6,462.0	-1,523.03	664.5	131.9	668.5	0.00	0.00	0.00
7,500.0	90.00	1.18	6,462.0	-1,523.03	764.5	133.9	768.5	0.00	0.00	0.00
7,600.0	90.00	1.18	6,462.0	-1,523.04	864.5	136.0	868.5	0.00	0.00	0.00
7,700.0	90.00	1.18	6,462.0	-1,523.04	964.5	138.1	968.5	0.00	0.00	0.00
7,800.0	90.00	1.18	6,462.0	-1,523.05	1,064.5	140.1	1,068.5	0.00	0.00	0.00
7,900.0	90.00	1.18	6,462.1	-1,523.05	1,164.4	142.2	1,168.5	0.00	0.00	0.00
8,000.0	90.00	1.18	6,462.1	-1,523.06	1,264.4	144.2	1,268.5	0.00	0.00	0.00
8,100.0	90.00	1.18	6,462.1	-1,523.06	1,364.4	146.3	1,368.5	0.00	0.00	0.00
8,200.0	90.00	1.18	6,462.1	-1,523.07	1,464.4	148.4	1,468.5	0.00	0.00	0.00
8,300.0	90.00	1.18	6,462.1	-1,523.07	1,564.3	150.4	1,568.5	0.00	0.00	0.00
8,400.0	90.00	1.18	6,462.1	-1,523.07	1,664.3	152.5	1,668.5	0.00	0.00	0.00
8,500.0	90.00	1.18	6,462.1	-1,523.08	1,764.3	154.6	1,768.5	0.00	0.00	0.00
8,600.0	90.00	1.18	6,462.1	-1,523.08	1,864.3	156.6	1,868.4	0.00	0.00	0.00
8,700.0	90.00	1.18	6,462.1	-1,523.08	1,964.3	158.7	1,968.4	0.00	0.00	0.00
8,800.0	90.00	1.18	6,462.1	-1,523.09	2,064.2	160.8	2,068.4	0.00	0.00	0.00
8,900.0	90.00	1.18	6,462.1	-1,523.09	2,164.2	162.8	2,168.4	0.00	0.00	0.00
9,000.0	90.00	1.18	6,462.1	-1,523.09	2,264.2	164.9	2,268.4	0.00	0.00	0.00
9,100.0	90.00	1.18	6,462.1	-1,523.10	2,364.2	167.0	2,368.4	0.00	0.00	0.00
9,200.0	90.00	1.18	6,462.1	-1,523.10	2,464.2	169.0	2,468.4	0.00	0.00	0.00
9,300.0	90.00	1.18	6,462.1	-1,523.10	2,564.1	171.1	2,568.4	0.00	0.00	0.00
9,400.0	90.00	1.18	6,462.1	-1,523.11	2,664.1	173.1	2,668.4	0.00	0.00	0.00
9,500.0	90.00	1.18	6,462.1	-1,523.11	2,764.1	175.2	2,768.4	0.00	0.00	0.00
9,600.0	90.00	1.18	6,462.1	-1,523.11	2,864.1	177.3	2,868.4	0.00	0.00	0.00
9,700.0	90.00	1.18	6,462.1	-1,523.11	2,964.0	179.3	2,968.4	0.00	0.00	0.00
9,800.0	90.00	1.18	6,462.1	-1,523.11	3,064.0	181.4	3,068.3	0.00	0.00	0.00
9,900.0	90.00	1.18	6,462.1	-1,523.12	3,164.0	183.5	3,168.3	0.00	0.00	0.00
10,000.0	90.00	1.18	6,462.1	-1,523.12	3,264.0	185.5	3,268.3	0.00	0.00	0.00
10,100.0	90.00	1.18	6,462.1	-1,523.12	3,364.0	187.6	3,368.3	0.00	0.00	0.00
10,200.0	90.00	1.18	6,462.1	-1,523.12	3,463.9	189.7	3,468.3	0.00	0.00	0.00
10,300.0	90.00	1.18	6,462.1	-1,523.12	3,563.9	191.7	3,568.3	0.00	0.00	0.00
10,400.0	90.00	1.18	6,462.1	-1,523.12	3,663.9	193.8	3,668.3	0.00	0.00	0.00
10,500.0	90.00	1.18	6,462.1	-1,523.13	3,763.9	195.9	3,768.3	0.00	0.00	0.00
10,600.0	90.00	1.18	6,462.1	-1,523.13	3,863.9	197.9	3,868.3	0.00	0.00	0.00
10,700.0	90.00	1.18	6,462.1	-1,523.13	3,963.8	200.0	3,968.3	0.00	0.00	0.00
10,800.0	90.00	1.18	6,462.1	-1,523.13	4,063.8	202.1	4,068.3	0.00	0.00	0.00
10,900.0	90.00	1.18	6,462.1	-1,523.13	4,163.8	204.1	4,168.3	0.00	0.00	0.00
11,000.0	90.00	1.18	6,462.1	-1,523.13	4,263.8	206.2	4,268.3	0.00	0.00	0.00
11,100.0	90.00	1.18	6,462.1	-1,523.13	4,363.7	208.3	4,368.2	0.00	0.00	0.00
11,200.0	90.00	1.18	6,462.1	-1,523.13	4,463.7	210.3	4,468.2	0.00	0.00	0.00

# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well GREEN TEAL FED 34-27-6HC
<b>Company:</b>	MALLARD EXPLORATION	<b>TVD Reference:</b>	KB-EST @ 4939.0usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 4939.0usft (Original Well Elev)
<b>Site:</b>	SE SW SEC. 34 T8N R60W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	GREEN TEAL FED 34-27-6HC	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL 1		

Planned Survey										
MD (usft)	Inc (°)	Azi (°)	TVD (usft)	SS (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
11,300.0	90.00	1.18	6,462.1	-1,523.13	4,563.7	212.4	4,568.2	0.00	0.00	0.00
11,400.0	90.00	1.18	6,462.1	-1,523.13	4,663.7	214.5	4,668.2	0.00	0.00	0.00
11,500.0	90.00	1.18	6,462.1	-1,523.13	4,763.7	216.5	4,768.2	0.00	0.00	0.00
11,600.0	90.00	1.18	6,462.1	-1,523.13	4,863.6	218.6	4,868.2	0.00	0.00	0.00
11,700.0	90.00	1.18	6,462.1	-1,523.13	4,963.6	220.7	4,968.2	0.00	0.00	0.00
11,800.0	90.00	1.18	6,462.1	-1,523.13	5,063.6	222.7	5,068.2	0.00	0.00	0.00
11,900.0	90.00	1.18	6,462.1	-1,523.13	5,163.6	224.8	5,168.2	0.00	0.00	0.00
12,000.0	90.00	1.18	6,462.1	-1,523.13	5,263.6	226.9	5,268.2	0.00	0.00	0.00
12,100.0	90.00	1.18	6,462.1	-1,523.13	5,363.5	228.9	5,368.2	0.00	0.00	0.00
12,200.0	90.00	1.18	6,462.1	-1,523.13	5,463.5	231.0	5,468.2	0.00	0.00	0.00
12,300.0	90.00	1.18	6,462.1	-1,523.13	5,563.5	233.1	5,568.2	0.00	0.00	0.00
12,400.0	90.00	1.18	6,462.1	-1,523.13	5,663.5	235.1	5,668.1	0.00	0.00	0.00
12,500.0	90.00	1.18	6,462.1	-1,523.13	5,763.4	237.2	5,768.1	0.00	0.00	0.00
12,600.0	90.00	1.19	6,462.1	-1,523.13	5,863.4	239.3	5,868.1	0.00	0.00	0.00
12,700.0	90.00	1.19	6,462.1	-1,523.12	5,963.4	241.3	5,968.1	0.00	0.00	0.00
12,800.0	90.00	1.19	6,462.1	-1,523.12	6,063.4	243.4	6,068.1	0.00	0.00	0.00
12,900.0	90.00	1.19	6,462.1	-1,523.12	6,163.4	245.5	6,168.1	0.00	0.00	0.00
13,000.0	90.00	1.19	6,462.1	-1,523.12	6,263.3	247.6	6,268.1	0.00	0.00	0.00
13,100.0	90.00	1.19	6,462.1	-1,523.12	6,363.3	249.6	6,368.1	0.00	0.00	0.00
13,200.0	90.00	1.19	6,462.1	-1,523.12	6,463.3	251.7	6,468.1	0.00	0.00	0.00
13,300.0	90.00	1.19	6,462.1	-1,523.11	6,563.3	253.8	6,568.1	0.00	0.00	0.00
13,400.0	90.00	1.19	6,462.1	-1,523.11	6,663.3	255.8	6,668.1	0.00	0.00	0.00
13,500.0	90.00	1.19	6,462.1	-1,523.11	6,763.2	257.9	6,768.1	0.00	0.00	0.00
13,600.0	90.00	1.19	6,462.1	-1,523.11	6,863.2	260.0	6,868.1	0.00	0.00	0.00
13,700.0	90.00	1.19	6,462.1	-1,523.10	6,963.2	262.0	6,968.0	0.00	0.00	0.00
13,800.0	90.00	1.19	6,462.1	-1,523.10	7,063.2	264.1	7,068.0	0.00	0.00	0.00
13,900.0	90.00	1.19	6,462.1	-1,523.10	7,163.1	266.2	7,168.0	0.00	0.00	0.00
14,000.0	90.00	1.19	6,462.1	-1,523.10	7,263.1	268.2	7,268.0	0.00	0.00	0.00
14,100.0	90.00	1.19	6,462.1	-1,523.09	7,363.1	270.3	7,368.0	0.00	0.00	0.00
14,200.0	90.00	1.19	6,462.1	-1,523.09	7,463.1	272.4	7,468.0	0.00	0.00	0.00
14,300.0	90.00	1.19	6,462.1	-1,523.09	7,563.1	274.4	7,568.0	0.00	0.00	0.00
14,400.0	90.00	1.19	6,462.1	-1,523.08	7,663.0	276.5	7,668.0	0.00	0.00	0.00
14,500.0	90.00	1.19	6,462.1	-1,523.08	7,763.0	278.6	7,768.0	0.00	0.00	0.00
14,600.0	90.00	1.19	6,462.1	-1,523.08	7,863.0	280.7	7,868.0	0.00	0.00	0.00
14,700.0	90.00	1.19	6,462.1	-1,523.07	7,963.0	282.7	7,968.0	0.00	0.00	0.00
14,800.0	90.00	1.19	6,462.1	-1,523.07	8,063.0	284.8	8,068.0	0.00	0.00	0.00
14,900.0	90.00	1.19	6,462.1	-1,523.06	8,162.9	286.9	8,168.0	0.00	0.00	0.00
15,000.0	90.00	1.19	6,462.1	-1,523.06	8,262.9	288.9	8,267.9	0.00	0.00	0.00
15,100.0	90.00	1.19	6,462.1	-1,523.06	8,362.9	291.0	8,367.9	0.00	0.00	0.00
15,200.0	90.00	1.19	6,462.1	-1,523.05	8,462.9	293.1	8,467.9	0.00	0.00	0.00
15,300.0	90.00	1.19	6,462.0	-1,523.05	8,562.8	295.2	8,567.9	0.00	0.00	0.00
15,400.0	90.00	1.19	6,462.0	-1,523.04	8,662.8	297.2	8,667.9	0.00	0.00	0.00
15,500.0	90.00	1.19	6,462.0	-1,523.04	8,762.8	299.3	8,767.9	0.00	0.00	0.00
15,600.0	90.00	1.19	6,462.0	-1,523.03	8,862.8	301.4	8,867.9	0.00	0.00	0.00
15,700.0	90.00	1.19	6,462.0	-1,523.03	8,962.8	303.4	8,967.9	0.00	0.00	0.00
15,800.0	90.00	1.19	6,462.0	-1,523.02	9,062.7	305.5	9,067.9	0.00	0.00	0.00
15,900.0	90.00	1.19	6,462.0	-1,523.02	9,162.7	307.6	9,167.9	0.00	0.00	0.00
16,000.0	90.00	1.19	6,462.0	-1,523.01	9,262.7	309.6	9,267.9	0.00	0.00	0.00
16,100.0	90.00	1.19	6,462.0	-1,523.01	9,362.7	311.7	9,367.9	0.00	0.00	0.00
16,200.0	90.00	1.19	6,462.0	-1,523.00	9,462.7	313.8	9,467.9	0.00	0.00	0.00
<b>BHL: 600ft FNL &amp; 1900ft FWL of Sec 27</b>										
<b>16,231.8</b>	<b>90.00</b>	<b>1.19</b>	<b>6,462.0</b>	<b>-1,523.00</b>	<b>9,494.4</b>	<b>314.4</b>	<b>9,499.6</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well GREEN TEAL FED 34-27-6HC
<b>Company:</b>	MALLARD EXPLORATION	<b>TVD Reference:</b>	KB-EST @ 4939.0usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 4939.0usft (Original Well Elev)
<b>Site:</b>	SE SW SEC. 34 T8N R60W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	GREEN TEAL FED 34-27-6HC	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL 1		

Formations						
MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
1,513.0	1,513.0	FOX HILLS BASE				
3,359.4	3,333.0	RICHARD SANDSTONE				
3,482.1	3,453.0	PARKMAN SANDSTONE				
4,258.0	4,213.0	SUSSEX SANDSTONE				
4,684.6	4,638.0	SHANNON SANDSTONE				
6,152.7	6,101.0	SHARON SPRINGS				
6,230.4	6,171.0	NIOBRARA A CHALK				
6,263.1	6,199.0	NIOBRARA A CHALK BASE				
6,295.8	6,226.0	NIOBRARA B1 CHALK TOP				
6,330.0	6,253.0	NIOBRARA B1 CHALK BASE				
6,359.1	6,275.0	NIOBRARA B2 CHALK TOP				
6,409.9	6,311.0	NIOBRARA B2 CHALK BASE				
6,453.1	6,339.0	NIOBRARA C CHALK TOP				
6,549.4	6,392.0	NIOBRARA C CHALK BASE				
6,582.5	6,407.0	NIOBRARA D CHALK TOP				
6,665.7	6,437.0	FT. HAYS				
6,835.6	6,462.0	CODELL				

Plan Annotations				
MD (usft)	TVD (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
0.0	0.0	0.0	0.0	SHL: 500ft FSL & 1782ft FWL of Sec 34
1,750.0	1,750.0	0.0	0.0	START NUDGE (2°/100ft BUR)
2,350.0	2,345.6	-61.0	14.0	EOB TO 12° INC
4,079.9	4,037.7	-411.6	94.4	END OF TANGENT
4,679.9	4,633.3	-472.6	108.4	EOD TO VERTICAL
5,935.6	5,889.0	-472.6	108.4	KOP (10°/100ft BUR)
6,835.6	6,462.0	100.2	120.2	HZ LP: 600ft FSL & 1900ft FWL of Sec 34
16,231.8	6,462.0	9,494.4	314.4	BHL: 600ft FNL & 1900ft FWL of Sec 27