

# **MALLARD EXPLORATION**

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

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

**GREEN TEAL FED 34-27-14HN**

**ORIGINAL WELLBORE**

**06 September, 2017**

**Plan: PROPOSAL 1**



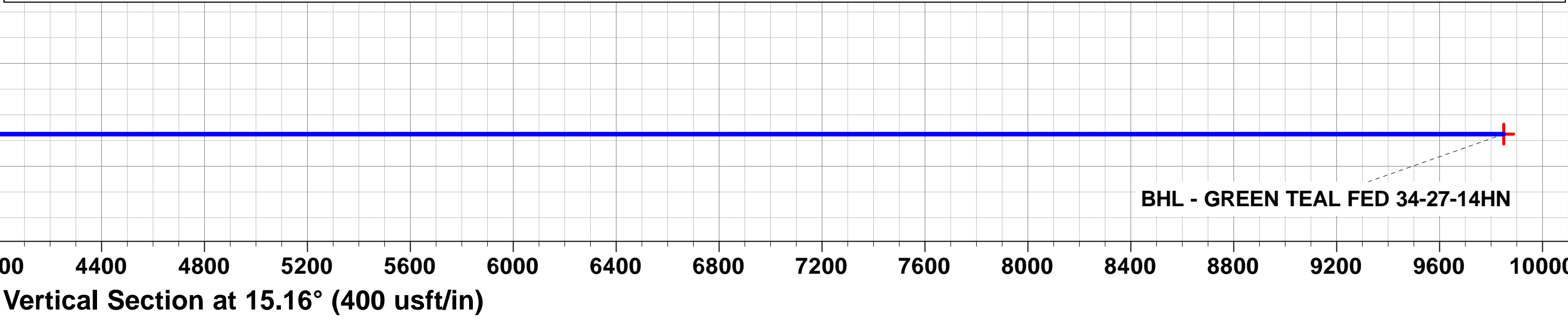
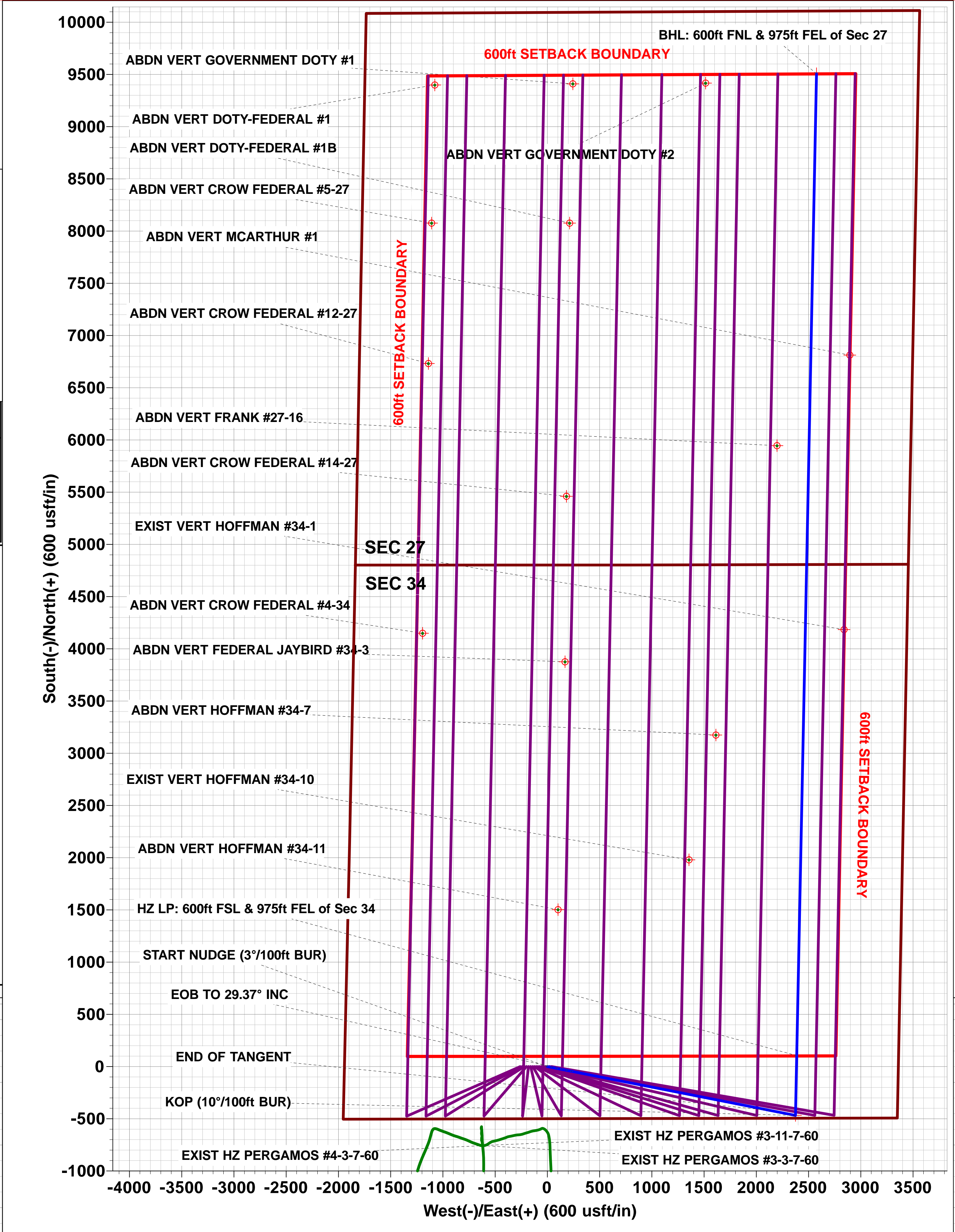
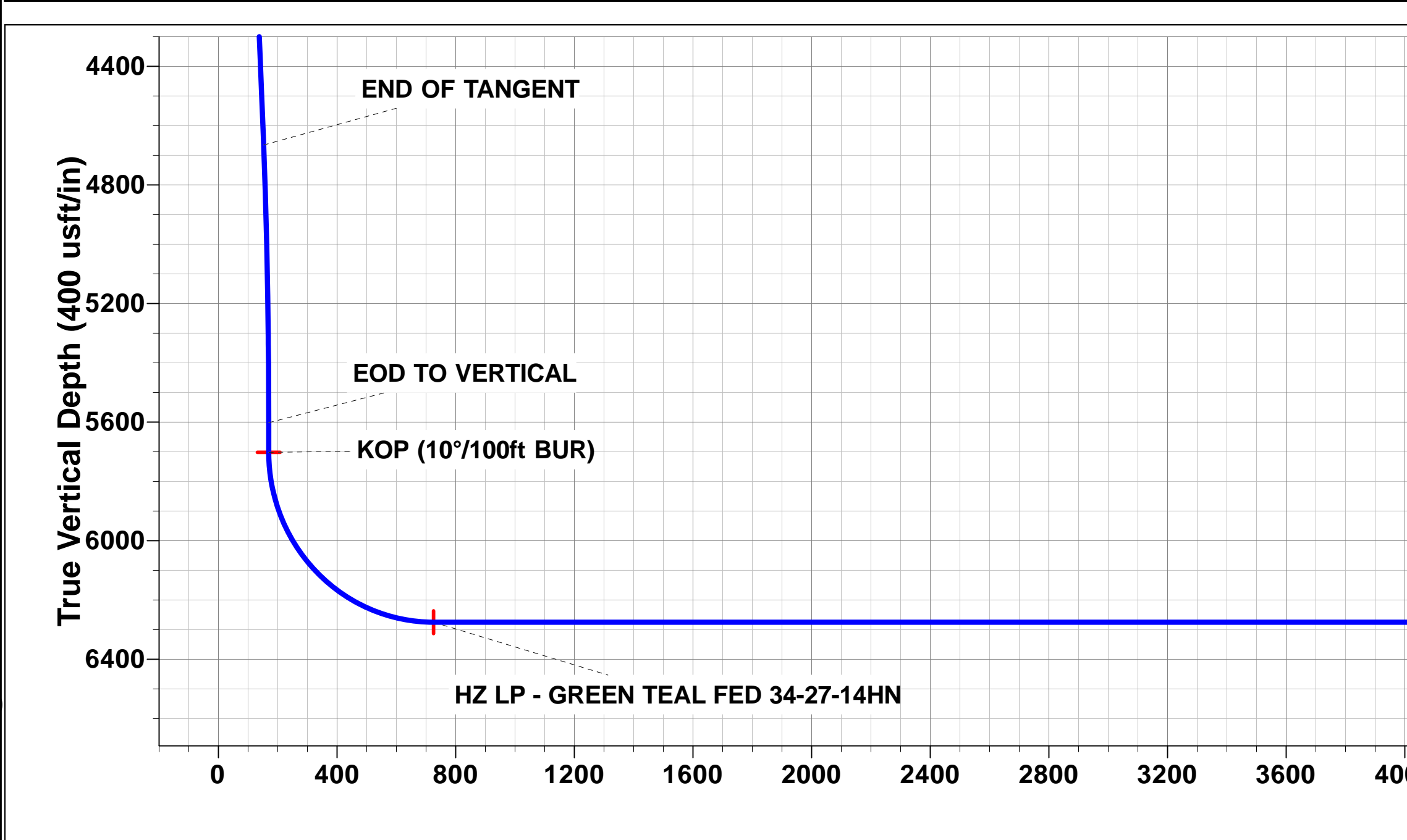
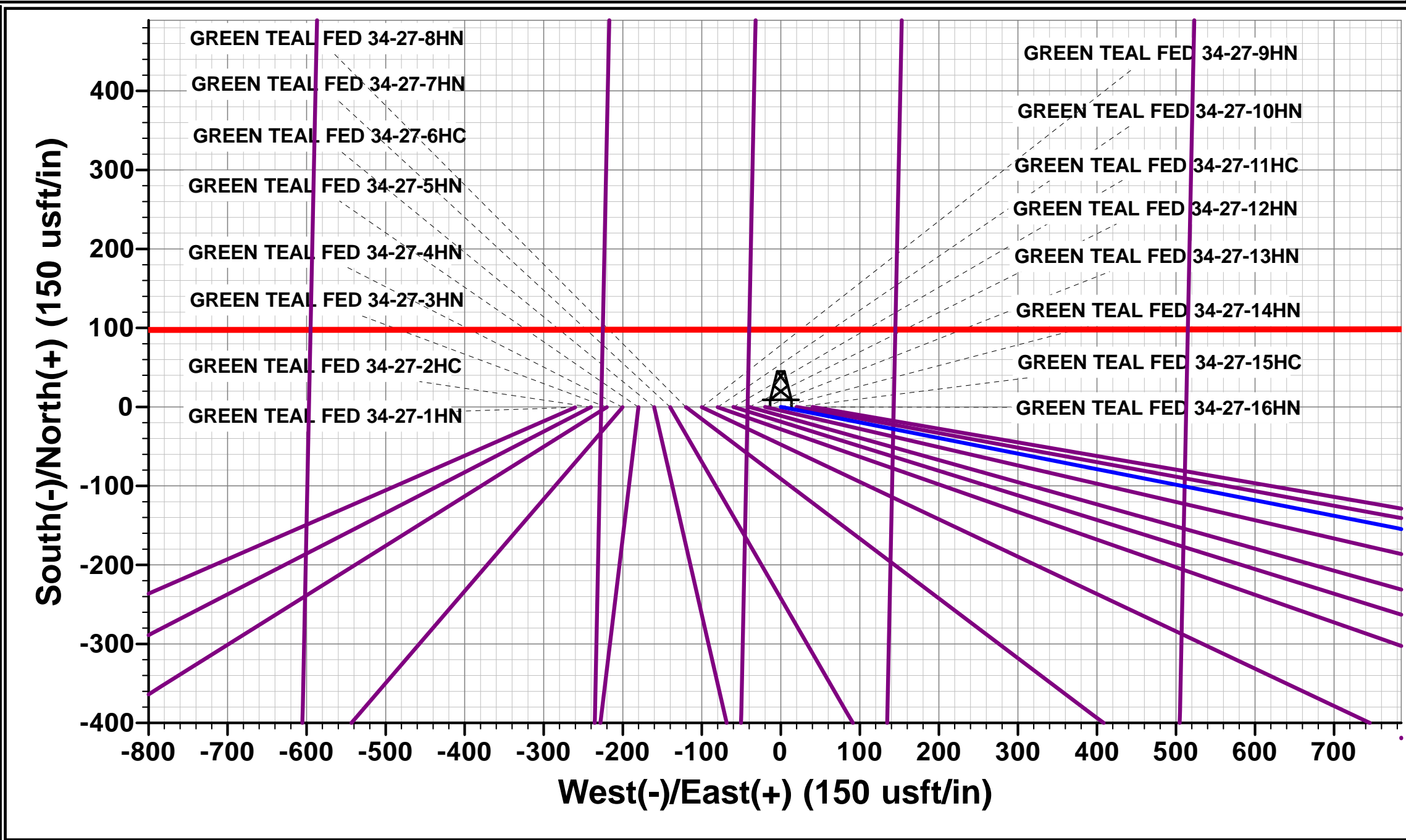
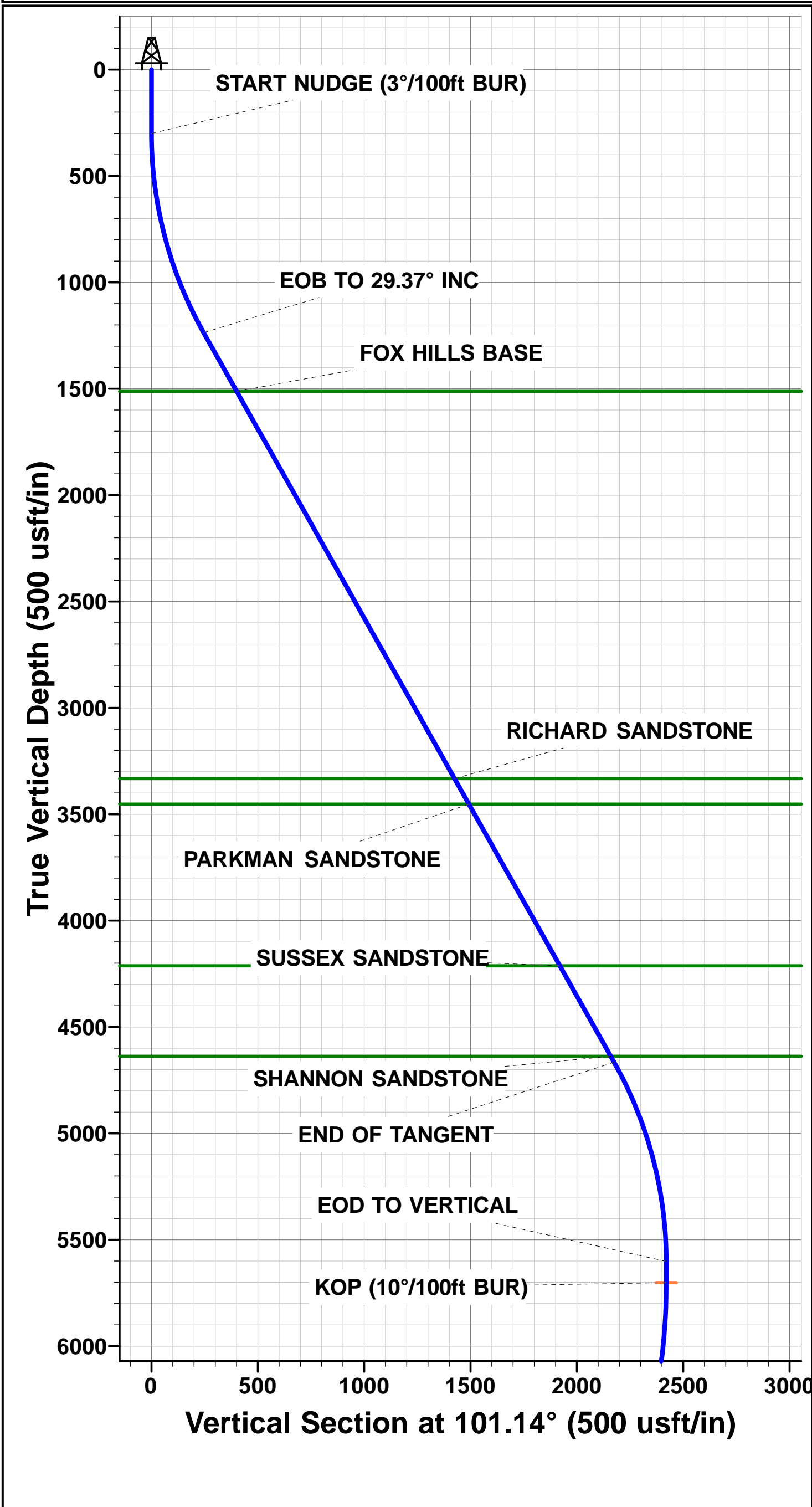


Project: WELD COUNTY, COLORADO (NAD 83)  
Site: SE SW SEC. 34 T8N R60W 6th P.M.  
Well: GREEN TEAL FED 34-27-14HN  
Wellbore: ORIGINAL WELLBORE  
Design: PROPOSAL 1

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 & 1942ft FWL of Sec 34		
300.0	300.0	0.00	0.00	0.0	0.0	0.0	0.0	START NUDDGE (3°/100ft BUR)		
1236.6	1278.9	29.37	101.14	-47.4	240.8	17.2	245.4	EOB TO 29.37° INC		
4665.5	5213.4	29.37	101.14	-420.3	2133.9	152.5	2174.9	END OF TANGENT		
5602.1	6192.3	0.00	0.00	-467.7	2374.7	169.7	2420.3	EOD TO VERTICAL		
5702.1	6292.3	0.00	0.00	-467.7	2374.7	169.7	2420.3	KOP (10°/100ft BUR)		
6275.0	7192.2	90.00	1.16	105.1	2386.3	725.6	2993.2	HZ LP: 600ft FSL & 975ft FEL of Sec 34		
6275.0	16595.6	90.00	1.15	9506.5	2576.1	9849.4	12396.6	BHL: 600ft FNL & 975ft FEL of Sec 27		

PROPOSED LOCAL COORDINATES:  
  
SHL: 500ft FSL & 1942ft FWL Sec 34  
  
HZ LP: 600ft FSL & 975ft FEL Sec 34  
  
BHL: 600ft FNL & 975ft FEL of Sec 27

WELLBORE TARGET DETAILS (LAT/LONG)					
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP - GREEN TEAL FED 34-27-14HN	5702.1	-467.7	2374.7	40.611593	-104.072417
HZ LP - GREEN TEAL FED 34-27-14HN	6275.0	105.1	2386.3	40.613165	-104.072375
BHL - GREEN TEAL FED 34-27-14HN	6275.0	9506.5	2576.1	40.638970	-104.071688



# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well GREEN TEAL FED 34-27-14HN
<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 34-27-14HN	<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 34-27-14HN		
<b>Well Position</b>	<b>+N-S</b>	0.7 usft	<b>Northing:</b>
	<b>+E-W</b>	260.2 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>
	6,275.0	0.0	0.0	15.16

<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	
300.0	0.00	0.00	300.0	-4,639.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,278.9	29.37	101.14	1,236.6	-3,702.4	-47.4	240.8	3.00	3.00	0.00	101.14	
5,213.4	29.37	101.14	4,665.5	-273.5	-420.3	2,133.9	0.00	0.00	0.00	0.00	
6,192.3	0.00	0.00	5,602.1	663.1	-467.7	2,374.7	3.00	-3.00	0.00	180.00	
6,292.3	0.00	0.00	5,702.1	763.1	-467.7	2,374.7	0.00	0.00	0.00	0.00	KOP - GREEN TEA
7,192.2	90.00	1.16	6,275.0	1,336.0	105.1	2,386.3	10.00	10.00	0.13	1.16	HZ LP - GREEN TE
16,595.6	90.00	1.15	6,275.0	1,336.0	9,506.5	2,576.1	0.00	0.00	0.00	-82.25	BHL - GREEN TEA

# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well GREEN TEAL FED 34-27-14HN
<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 34-27-14HN	<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; 1942ft 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
<b>START NUDGE (3°/100ft BUR)</b>										
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	3.00	101.14	400.0	4,539.05	-0.5	2.6	0.2	3.00	3.00	0.00
500.0	6.00	101.14	499.6	4,439.37	-2.0	10.3	0.7	3.00	3.00	0.00
600.0	9.00	101.14	598.8	4,340.23	-4.5	23.1	1.6	3.00	3.00	0.00
700.0	12.00	101.14	697.1	4,241.92	-8.1	40.9	2.9	3.00	3.00	0.00
800.0	15.00	101.14	794.3	4,144.69	-12.6	63.9	4.6	3.00	3.00	0.00
900.0	18.00	101.14	890.2	4,048.82	-18.1	91.7	6.6	3.00	3.00	0.00
1,000.0	21.00	101.14	984.4	3,954.57	-24.5	124.5	8.9	3.00	3.00	0.00
1,100.0	24.00	101.14	1,076.8	3,862.19	-31.9	162.0	11.6	3.00	3.00	0.00
1,200.0	27.00	101.14	1,167.1	3,771.94	-40.2	204.2	14.6	3.00	3.00	0.00
<b>EOB TO 29.37° INC</b>										
1,278.9	29.37	101.14	1,236.6	3,702.41	-47.4	240.8	17.2	3.00	3.00	0.00
1,300.0	29.37	101.14	1,255.0	3,684.01	-49.4	251.0	17.9	0.00	0.00	0.00
1,400.0	29.37	101.14	1,342.1	3,596.86	-58.9	299.1	21.4	0.00	0.00	0.00
1,500.0	29.37	101.14	1,429.3	3,509.71	-68.4	347.2	24.8	0.00	0.00	0.00
<b>FOX HILLS BASE</b>										
1,596.1	29.37	101.14	1,513.0	3,426.00	-77.5	393.4	28.1	0.00	0.00	0.00
1,600.0	29.37	101.14	1,516.4	3,422.56	-77.9	395.3	28.2	0.00	0.00	0.00
1,700.0	29.37	101.14	1,603.6	3,335.41	-87.3	443.4	31.7	0.00	0.00	0.00
1,800.0	29.37	101.14	1,690.7	3,248.26	-96.8	491.5	35.1	0.00	0.00	0.00
1,900.0	29.37	101.14	1,777.9	3,161.11	-106.3	539.6	38.6	0.00	0.00	0.00
2,000.0	29.37	101.14	1,865.0	3,073.96	-115.8	587.8	42.0	0.00	0.00	0.00
2,100.0	29.37	101.14	1,952.2	2,986.81	-125.2	635.9	45.4	0.00	0.00	0.00
2,200.0	29.37	101.14	2,039.3	2,899.66	-134.7	684.0	48.9	0.00	0.00	0.00
2,300.0	29.37	101.14	2,126.5	2,812.51	-144.2	732.1	52.3	0.00	0.00	0.00
2,400.0	29.37	101.14	2,213.6	2,725.36	-153.7	780.2	55.7	0.00	0.00	0.00
2,500.0	29.37	101.14	2,300.8	2,638.22	-163.1	828.3	59.2	0.00	0.00	0.00
2,600.0	29.37	101.14	2,387.9	2,551.07	-172.6	876.5	62.6	0.00	0.00	0.00
2,700.0	29.37	101.14	2,475.1	2,463.92	-182.1	924.6	66.1	0.00	0.00	0.00
2,800.0	29.37	101.14	2,562.2	2,376.77	-191.6	972.7	69.5	0.00	0.00	0.00
2,900.0	29.37	101.14	2,649.4	2,289.62	-201.0	1,020.8	72.9	0.00	0.00	0.00
3,000.0	29.37	101.14	2,736.5	2,202.47	-210.5	1,068.9	76.4	0.00	0.00	0.00
3,100.0	29.37	101.14	2,823.7	2,115.32	-220.0	1,117.0	79.8	0.00	0.00	0.00
3,200.0	29.37	101.14	2,910.8	2,028.17	-229.5	1,165.1	83.3	0.00	0.00	0.00
3,300.0	29.37	101.14	2,998.0	1,941.02	-239.0	1,213.3	86.7	0.00	0.00	0.00
3,400.0	29.37	101.14	3,085.1	1,853.87	-248.4	1,261.4	90.1	0.00	0.00	0.00
3,500.0	29.37	101.14	3,172.3	1,766.72	-257.9	1,309.5	93.6	0.00	0.00	0.00
3,600.0	29.37	101.14	3,259.4	1,679.57	-267.4	1,357.6	97.0	0.00	0.00	0.00
<b>RICHARD SANDSTONE</b>										
3,684.4	29.37	101.14	3,333.0	1,606.00	-275.4	1,398.2	99.9	0.00	0.00	0.00
3,700.0	29.37	101.14	3,346.6	1,592.42	-276.9	1,405.7	100.4	0.00	0.00	0.00
3,800.0	29.37	101.14	3,433.7	1,505.27	-286.3	1,453.8	103.9	0.00	0.00	0.00
<b>PARKMAN SANDSTONE</b>										
3,822.1	29.37	101.14	3,453.0	1,486.00	-288.4	1,464.5	104.6	0.00	0.00	0.00
3,900.0	29.37	101.14	3,520.9	1,418.12	-295.8	1,502.0	107.3	0.00	0.00	0.00
4,000.0	29.37	101.14	3,608.0	1,330.97	-305.3	1,550.1	110.8	0.00	0.00	0.00
4,100.0	29.37	101.14	3,695.2	1,243.82	-314.8	1,598.2	114.2	0.00	0.00	0.00
4,200.0	29.37	101.14	3,782.3	1,156.67	-324.2	1,646.3	117.6	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 34-27-14HN
<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 34-27-14HN	<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)
4,300.0	29.37	101.14	3,869.5	1,069.52	-333.7	1,694.4	121.1	0.00	0.00	0.00
4,400.0	29.37	101.14	3,956.6	982.37	-343.2	1,742.5	124.5	0.00	0.00	0.00
4,500.0	29.37	101.14	4,043.8	895.22	-352.7	1,790.6	127.9	0.00	0.00	0.00
4,600.0	29.37	101.14	4,130.9	808.07	-362.1	1,838.8	131.4	0.00	0.00	0.00
<b>SUSSEX SANDSTONE</b>										
<b>4,694.2</b>	<b>29.37</b>	<b>101.14</b>	<b>4,213.0</b>	<b>726.00</b>	<b>-371.1</b>	<b>1,884.1</b>	<b>134.6</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
4,700.0	29.37	101.14	4,218.1	720.92	-371.6	1,886.9	134.8	0.00	0.00	0.00
4,800.0	29.37	101.14	4,305.2	633.77	-381.1	1,935.0	138.3	0.00	0.00	0.00
4,900.0	29.37	101.14	4,392.4	546.62	-390.6	1,983.1	141.7	0.00	0.00	0.00
5,000.0	29.37	101.14	4,479.5	459.47	-400.1	2,031.2	145.1	0.00	0.00	0.00
5,100.0	29.37	101.14	4,566.7	372.32	-409.5	2,079.3	148.6	0.00	0.00	0.00
<b>SHANNON SANDSTONE</b>										
<b>5,181.8</b>	<b>29.37</b>	<b>101.14</b>	<b>4,638.0</b>	<b>301.00</b>	<b>-417.3</b>	<b>2,118.7</b>	<b>151.4</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
5,200.0	29.37	101.14	4,653.8	285.17	-419.0	2,127.5	152.0	0.00	0.00	0.00
<b>END OF TANGENT</b>										
<b>5,213.4</b>	<b>29.37</b>	<b>101.14</b>	<b>4,665.5</b>	<b>273.49</b>	<b>-420.3</b>	<b>2,133.9</b>	<b>152.5</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
5,300.0	26.77	101.14	4,741.9	197.08	-428.1	2,173.9	155.3	3.00	-3.00	0.00
5,400.0	23.77	101.14	4,832.3	106.66	-436.4	2,215.8	158.3	3.00	-3.00	0.00
5,500.0	20.77	101.14	4,924.9	14.13	-443.7	2,252.9	161.0	3.00	-3.00	0.00
5,600.0	17.77	101.14	5,019.3	-80.26	-450.1	2,285.3	163.3	3.00	-3.00	0.00
5,700.0	14.77	101.14	5,115.2	-176.24	-455.5	2,312.8	165.3	3.00	-3.00	0.00
5,800.0	11.77	101.14	5,212.6	-273.56	-459.9	2,335.3	166.9	3.00	-3.00	0.00
5,900.0	8.77	101.14	5,310.9	-371.95	-463.4	2,352.8	168.1	3.00	-3.00	0.00
6,000.0	5.77	101.14	5,410.1	-471.13	-465.8	2,365.2	169.0	3.00	-3.00	0.00
6,100.0	2.77	101.14	5,509.8	-570.84	-467.3	2,372.5	169.5	3.00	-3.00	0.00
<b>EOD TO VERTICAL</b>										
<b>6,192.3</b>	<b>0.00</b>	<b>0.00</b>	<b>5,602.1</b>	<b>-663.10</b>	<b>-467.7</b>	<b>2,374.7</b>	<b>169.7</b>	<b>3.00</b>	<b>-3.00</b>	<b>0.00</b>
6,200.0	0.00	0.00	5,609.8	-670.81	-467.7	2,374.7	169.7	0.00	0.00	0.00
<b>KOP (10°/100ft BUR)</b>										
<b>6,292.3</b>	<b>0.00</b>	<b>0.00</b>	<b>5,702.1</b>	<b>-763.10</b>	<b>-467.7</b>	<b>2,374.7</b>	<b>169.7</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
6,300.0	0.77	1.16	5,709.8	-770.81	-467.6	2,374.7	169.7	10.00	10.00	0.00
6,400.0	10.77	1.16	5,809.2	-870.17	-457.6	2,374.9	179.5	10.00	10.00	0.00
6,500.0	20.77	1.16	5,905.3	-966.29	-430.5	2,375.5	205.8	10.00	10.00	0.00
6,600.0	30.77	1.16	5,995.2	-1,056.22	-387.0	2,376.3	247.9	10.00	10.00	0.00
6,700.0	40.77	1.16	6,076.3	-1,137.25	-328.7	2,377.5	304.6	10.00	10.00	0.00
<b>SHARON SPRINGS</b>										
<b>6,733.5</b>	<b>44.13</b>	<b>1.16</b>	<b>6,101.0</b>	<b>-1,162.00</b>	<b>-306.0</b>	<b>2,378.0</b>	<b>326.6</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
6,800.0	50.78	1.16	6,145.9	-1,206.91	-257.1	2,379.0	374.0	10.00	10.00	0.00
<b>NIOBRARA A CHALK</b>										
<b>6,841.6</b>	<b>54.93</b>	<b>1.16</b>	<b>6,171.0</b>	<b>-1,232.00</b>	<b>-224.0</b>	<b>2,379.6</b>	<b>406.2</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
<b>NIOBRARA A CHALK BASE</b>										
<b>6,893.7</b>	<b>60.15</b>	<b>1.16</b>	<b>6,199.0</b>	<b>-1,260.00</b>	<b>-180.0</b>	<b>2,380.5</b>	<b>448.9</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
6,900.0	60.78	1.16	6,202.1	-1,263.08	-174.6	2,380.6	454.2	10.00	10.00	0.00
<b>NIOBRARA B1 CHALK TOP</b>										
<b>6,953.5</b>	<b>66.13</b>	<b>1.16</b>	<b>6,226.0</b>	<b>-1,287.00</b>	<b>-126.7</b>	<b>2,381.6</b>	<b>500.6</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
7,000.0	70.78	1.16	6,243.1	-1,304.06	-83.5	2,382.5	542.5	10.00	10.00	0.00
<b>NIOBRARA B1 CHALK BASE</b>										
<b>7,032.9</b>	<b>74.07</b>	<b>1.16</b>	<b>6,253.0</b>	<b>-1,314.00</b>	<b>-52.1</b>	<b>2,383.1</b>	<b>573.0</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
7,100.0	80.78	1.16	6,267.6	-1,328.60	13.3	2,384.5	636.5	10.00	10.00	0.00
<b>HZ LP: 600ft FSL &amp; 975ft FEL of Sec 34 - NIOBRARA B2 CHALK TOP</b>										
<b>7,192.2</b>	<b>90.00</b>	<b>1.16</b>	<b>6,275.0</b>	<b>-1,336.00</b>	<b>105.1</b>	<b>2,386.3</b>	<b>725.6</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
7,200.0	90.00	1.16	6,275.0	-1,336.00	112.9	2,386.5	733.1	0.00	0.00	0.00
7,300.0	90.00	1.16	6,275.0	-1,336.00	212.9	2,388.5	830.2	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 34-27-14HN
<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 34-27-14HN	<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)
7,400.0	90.00	1.16	6,275.0	-1,336.00	312.8	2,390.5	927.2	0.00	0.00	0.00
7,500.0	90.00	1.16	6,275.0	-1,336.00	412.8	2,392.6	1,024.2	0.00	0.00	0.00
7,600.0	90.00	1.16	6,275.0	-1,336.01	512.8	2,394.6	1,121.2	0.00	0.00	0.00
7,700.0	90.00	1.16	6,275.0	-1,336.01	612.8	2,396.6	1,218.3	0.00	0.00	0.00
7,800.0	90.00	1.16	6,275.0	-1,336.01	712.8	2,398.7	1,315.3	0.00	0.00	0.00
7,900.0	90.00	1.16	6,275.0	-1,336.01	812.7	2,400.7	1,412.3	0.00	0.00	0.00
8,000.0	90.00	1.16	6,275.0	-1,336.01	912.7	2,402.7	1,509.4	0.00	0.00	0.00
8,100.0	90.00	1.16	6,275.0	-1,336.01	1,012.7	2,404.7	1,606.4	0.00	0.00	0.00
8,200.0	90.00	1.16	6,275.0	-1,336.01	1,112.7	2,406.8	1,703.4	0.00	0.00	0.00
8,300.0	90.00	1.16	6,275.0	-1,336.01	1,212.7	2,408.8	1,800.5	0.00	0.00	0.00
8,400.0	90.00	1.16	6,275.0	-1,336.02	1,312.6	2,410.8	1,897.5	0.00	0.00	0.00
8,500.0	90.00	1.16	6,275.0	-1,336.02	1,412.6	2,412.8	1,994.5	0.00	0.00	0.00
8,600.0	90.00	1.16	6,275.0	-1,336.02	1,512.6	2,414.9	2,091.5	0.00	0.00	0.00
8,700.0	90.00	1.16	6,275.0	-1,336.02	1,612.6	2,416.9	2,188.6	0.00	0.00	0.00
8,800.0	90.00	1.16	6,275.0	-1,336.02	1,712.5	2,418.9	2,285.6	0.00	0.00	0.00
8,900.0	90.00	1.16	6,275.0	-1,336.02	1,812.5	2,420.9	2,382.6	0.00	0.00	0.00
9,000.0	90.00	1.16	6,275.0	-1,336.02	1,912.5	2,423.0	2,479.7	0.00	0.00	0.00
9,100.0	90.00	1.16	6,275.0	-1,336.02	2,012.5	2,425.0	2,576.7	0.00	0.00	0.00
9,200.0	90.00	1.16	6,275.0	-1,336.02	2,112.5	2,427.0	2,673.7	0.00	0.00	0.00
9,300.0	90.00	1.16	6,275.0	-1,336.02	2,212.4	2,429.0	2,770.7	0.00	0.00	0.00
9,400.0	90.00	1.16	6,275.0	-1,336.03	2,312.4	2,431.1	2,867.8	0.00	0.00	0.00
9,500.0	90.00	1.16	6,275.0	-1,336.03	2,412.4	2,433.1	2,964.8	0.00	0.00	0.00
9,600.0	90.00	1.16	6,275.0	-1,336.03	2,512.4	2,435.1	3,061.8	0.00	0.00	0.00
9,700.0	90.00	1.16	6,275.0	-1,336.03	2,612.4	2,437.1	3,158.9	0.00	0.00	0.00
9,800.0	90.00	1.16	6,275.0	-1,336.03	2,712.3	2,439.2	3,255.9	0.00	0.00	0.00
9,900.0	90.00	1.16	6,275.0	-1,336.03	2,812.3	2,441.2	3,352.9	0.00	0.00	0.00
10,000.0	90.00	1.16	6,275.0	-1,336.03	2,912.3	2,443.2	3,449.9	0.00	0.00	0.00
10,100.0	90.00	1.16	6,275.0	-1,336.03	3,012.3	2,445.2	3,547.0	0.00	0.00	0.00
10,200.0	90.00	1.16	6,275.0	-1,336.03	3,112.3	2,447.2	3,644.0	0.00	0.00	0.00
10,300.0	90.00	1.16	6,275.0	-1,336.03	3,212.2	2,449.3	3,741.0	0.00	0.00	0.00
10,400.0	90.00	1.16	6,275.0	-1,336.03	3,312.2	2,451.3	3,838.1	0.00	0.00	0.00
10,500.0	90.00	1.16	6,275.0	-1,336.03	3,412.2	2,453.3	3,935.1	0.00	0.00	0.00
10,600.0	90.00	1.16	6,275.0	-1,336.03	3,512.2	2,455.3	4,032.1	0.00	0.00	0.00
10,700.0	90.00	1.16	6,275.0	-1,336.03	3,612.2	2,457.4	4,129.1	0.00	0.00	0.00
10,800.0	90.00	1.16	6,275.0	-1,336.03	3,712.1	2,459.4	4,226.2	0.00	0.00	0.00
10,900.0	90.00	1.16	6,275.0	-1,336.03	3,812.1	2,461.4	4,323.2	0.00	0.00	0.00
11,000.0	90.00	1.16	6,275.0	-1,336.03	3,912.1	2,463.4	4,420.2	0.00	0.00	0.00
11,100.0	90.00	1.16	6,275.0	-1,336.03	4,012.1	2,465.4	4,517.3	0.00	0.00	0.00
11,200.0	90.00	1.16	6,275.0	-1,336.04	4,112.1	2,467.5	4,614.3	0.00	0.00	0.00
11,300.0	90.00	1.16	6,275.0	-1,336.04	4,212.0	2,469.5	4,711.3	0.00	0.00	0.00
11,400.0	90.00	1.16	6,275.0	-1,336.04	4,312.0	2,471.5	4,808.3	0.00	0.00	0.00
11,500.0	90.00	1.16	6,275.0	-1,336.04	4,412.0	2,473.5	4,905.4	0.00	0.00	0.00
11,600.0	90.00	1.16	6,275.0	-1,336.04	4,512.0	2,475.5	5,002.4	0.00	0.00	0.00
11,700.0	90.00	1.16	6,275.0	-1,336.04	4,612.0	2,477.6	5,099.4	0.00	0.00	0.00
11,800.0	90.00	1.16	6,275.0	-1,336.04	4,711.9	2,479.6	5,196.4	0.00	0.00	0.00
11,900.0	90.00	1.16	6,275.0	-1,336.04	4,811.9	2,481.6	5,293.5	0.00	0.00	0.00
12,000.0	90.00	1.16	6,275.0	-1,336.04	4,911.9	2,483.6	5,390.5	0.00	0.00	0.00
12,100.0	90.00	1.16	6,275.0	-1,336.04	5,011.9	2,485.6	5,487.5	0.00	0.00	0.00
12,200.0	90.00	1.16	6,275.0	-1,336.04	5,111.9	2,487.6	5,584.6	0.00	0.00	0.00
12,300.0	90.00	1.16	6,275.0	-1,336.04	5,211.8	2,489.7	5,681.6	0.00	0.00	0.00
12,400.0	90.00	1.16	6,275.0	-1,336.04	5,311.8	2,491.7	5,778.6	0.00	0.00	0.00
12,500.0	90.00	1.16	6,275.0	-1,336.04	5,411.8	2,493.7	5,875.6	0.00	0.00	0.00
12,600.0	90.00	1.16	6,275.0	-1,336.04	5,511.8	2,495.7	5,972.7	0.00	0.00	0.00
12,700.0	90.00	1.16	6,275.0	-1,336.03	5,611.8	2,497.7	6,069.7	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 34-27-14HN
<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 34-27-14HN	<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)
12,800.0	90.00	1.16	6,275.0	-1,336.03	5,711.7	2,499.7	6,166.7	0.00	0.00	0.00
12,900.0	90.00	1.15	6,275.0	-1,336.03	5,811.7	2,501.8	6,263.7	0.00	0.00	0.00
13,000.0	90.00	1.15	6,275.0	-1,336.03	5,911.7	2,503.8	6,360.8	0.00	0.00	0.00
13,100.0	90.00	1.15	6,275.0	-1,336.03	6,011.7	2,505.8	6,457.8	0.00	0.00	0.00
13,200.0	90.00	1.15	6,275.0	-1,336.03	6,111.7	2,507.8	6,554.8	0.00	0.00	0.00
13,300.0	90.00	1.15	6,275.0	-1,336.03	6,211.6	2,509.8	6,651.8	0.00	0.00	0.00
13,400.0	90.00	1.15	6,275.0	-1,336.03	6,311.6	2,511.8	6,748.9	0.00	0.00	0.00
13,500.0	90.00	1.15	6,275.0	-1,336.03	6,411.6	2,513.8	6,845.9	0.00	0.00	0.00
13,600.0	90.00	1.15	6,275.0	-1,336.03	6,511.6	2,515.9	6,942.9	0.00	0.00	0.00
13,700.0	90.00	1.15	6,275.0	-1,336.03	6,611.6	2,517.9	7,039.9	0.00	0.00	0.00
13,800.0	90.00	1.15	6,275.0	-1,336.03	6,711.5	2,519.9	7,137.0	0.00	0.00	0.00
13,900.0	90.00	1.15	6,275.0	-1,336.03	6,811.5	2,521.9	7,234.0	0.00	0.00	0.00
14,000.0	90.00	1.15	6,275.0	-1,336.03	6,911.5	2,523.9	7,331.0	0.00	0.00	0.00
14,100.0	90.00	1.15	6,275.0	-1,336.03	7,011.5	2,525.9	7,428.1	0.00	0.00	0.00
14,200.0	90.00	1.15	6,275.0	-1,336.03	7,111.4	2,527.9	7,525.1	0.00	0.00	0.00
14,300.0	90.00	1.15	6,275.0	-1,336.03	7,211.4	2,530.0	7,622.1	0.00	0.00	0.00
14,400.0	90.00	1.15	6,275.0	-1,336.03	7,311.4	2,532.0	7,719.1	0.00	0.00	0.00
14,500.0	90.00	1.15	6,275.0	-1,336.02	7,411.4	2,534.0	7,816.2	0.00	0.00	0.00
14,600.0	90.00	1.15	6,275.0	-1,336.02	7,511.4	2,536.0	7,913.2	0.00	0.00	0.00
14,700.0	90.00	1.15	6,275.0	-1,336.02	7,611.3	2,538.0	8,010.2	0.00	0.00	0.00
14,800.0	90.00	1.15	6,275.0	-1,336.02	7,711.3	2,540.0	8,107.2	0.00	0.00	0.00
14,900.0	90.00	1.15	6,275.0	-1,336.02	7,811.3	2,542.0	8,204.3	0.00	0.00	0.00
15,000.0	90.00	1.15	6,275.0	-1,336.02	7,911.3	2,544.0	8,301.3	0.00	0.00	0.00
15,100.0	90.00	1.15	6,275.0	-1,336.02	8,011.3	2,546.0	8,398.3	0.00	0.00	0.00
15,200.0	90.00	1.15	6,275.0	-1,336.02	8,111.2	2,548.1	8,495.3	0.00	0.00	0.00
15,300.0	90.00	1.15	6,275.0	-1,336.02	8,211.2	2,550.1	8,592.4	0.00	0.00	0.00
15,400.0	90.00	1.15	6,275.0	-1,336.02	8,311.2	2,552.1	8,689.4	0.00	0.00	0.00
15,500.0	90.00	1.15	6,275.0	-1,336.01	8,411.2	2,554.1	8,786.4	0.00	0.00	0.00
15,600.0	90.00	1.15	6,275.0	-1,336.01	8,511.2	2,556.1	8,883.4	0.00	0.00	0.00
15,700.0	90.00	1.15	6,275.0	-1,336.01	8,611.1	2,558.1	8,980.5	0.00	0.00	0.00
15,800.0	90.00	1.15	6,275.0	-1,336.01	8,711.1	2,560.1	9,077.5	0.00	0.00	0.00
15,900.0	90.00	1.15	6,275.0	-1,336.01	8,811.1	2,562.1	9,174.5	0.00	0.00	0.00
16,000.0	90.00	1.15	6,275.0	-1,336.01	8,911.1	2,564.1	9,271.5	0.00	0.00	0.00
16,100.0	90.00	1.15	6,275.0	-1,336.01	9,011.1	2,566.1	9,368.6	0.00	0.00	0.00
16,200.0	90.00	1.15	6,275.0	-1,336.01	9,111.0	2,568.1	9,465.6	0.00	0.00	0.00
16,300.0	90.00	1.15	6,275.0	-1,336.00	9,211.0	2,570.1	9,562.6	0.00	0.00	0.00
16,400.0	90.00	1.15	6,275.0	-1,336.00	9,311.0	2,572.2	9,659.6	0.00	0.00	0.00
16,500.0	90.00	1.15	6,275.0	-1,336.00	9,411.0	2,574.2	9,756.7	0.00	0.00	0.00
<b>BHL: 600ft FNL &amp; 975ft FEL of Sec 27</b>										
<b>16,595.6</b>	<b>90.00</b>	<b>1.15</b>	<b>6,275.0</b>	<b>-1,336.00</b>	<b>9,506.5</b>	<b>2,576.1</b>	<b>9,849.4</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 34-27-14HN
<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 34-27-14HN	<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 (°)	
1,596.1	1,513.0	FOX HILLS BASE				
3,684.4	3,333.0	RICHARD SANDSTONE				
3,822.1	3,453.0	PARKMAN SANDSTONE				
4,694.2	4,213.0	SUSSEX SANDSTONE				
5,181.8	4,638.0	SHANNON SANDSTONE				
6,733.5	6,101.0	SHARON SPRINGS				
6,841.6	6,171.0	NIOBRARA A CHALK				
6,893.7	6,199.0	NIOBRARA A CHALK BASE				
6,953.5	6,226.0	NIOBRARA B1 CHALK TOP				
7,032.9	6,253.0	NIOBRARA B1 CHALK BASE				
7,192.2	6,275.0	NIOBRARA B2 CHALK TOP				

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 & 1942ft FWL of Sec 34
300.0	300.0	0.0	0.0	START NUDGE (3°/100ft BUR)
1,278.9	1,236.6	-47.4	240.8	EOB TO 29.37° INC
5,213.4	4,665.5	-420.3	2,133.9	END OF TANGENT
6,192.3	5,602.1	-467.7	2,374.7	EOD TO VERTICAL
6,292.3	5,702.1	-467.7	2,374.7	KOP (10°/100ft BUR)
7,192.2	6,275.0	105.1	2,386.3	HZ LP: 600ft FSL & 975ft FEL of Sec 34
16,595.6	6,275.0	9,506.5	2,576.1	BHL: 600ft FNL & 975ft FEL of Sec 27