

# **MALLARD EXPLORATION**

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

**SE SW SEC. 35 T8N R60W 6th P.M.**

**CINNAMON TEAL FED 35-1HN**

**ORIGINAL WELLBORE**

**28 November, 2018**

**Plan: PROPOSAL #2**



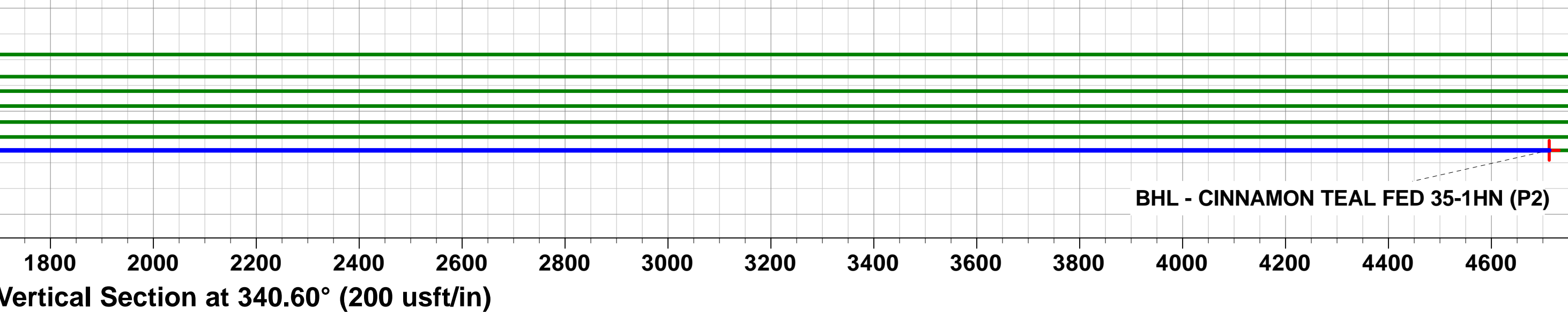
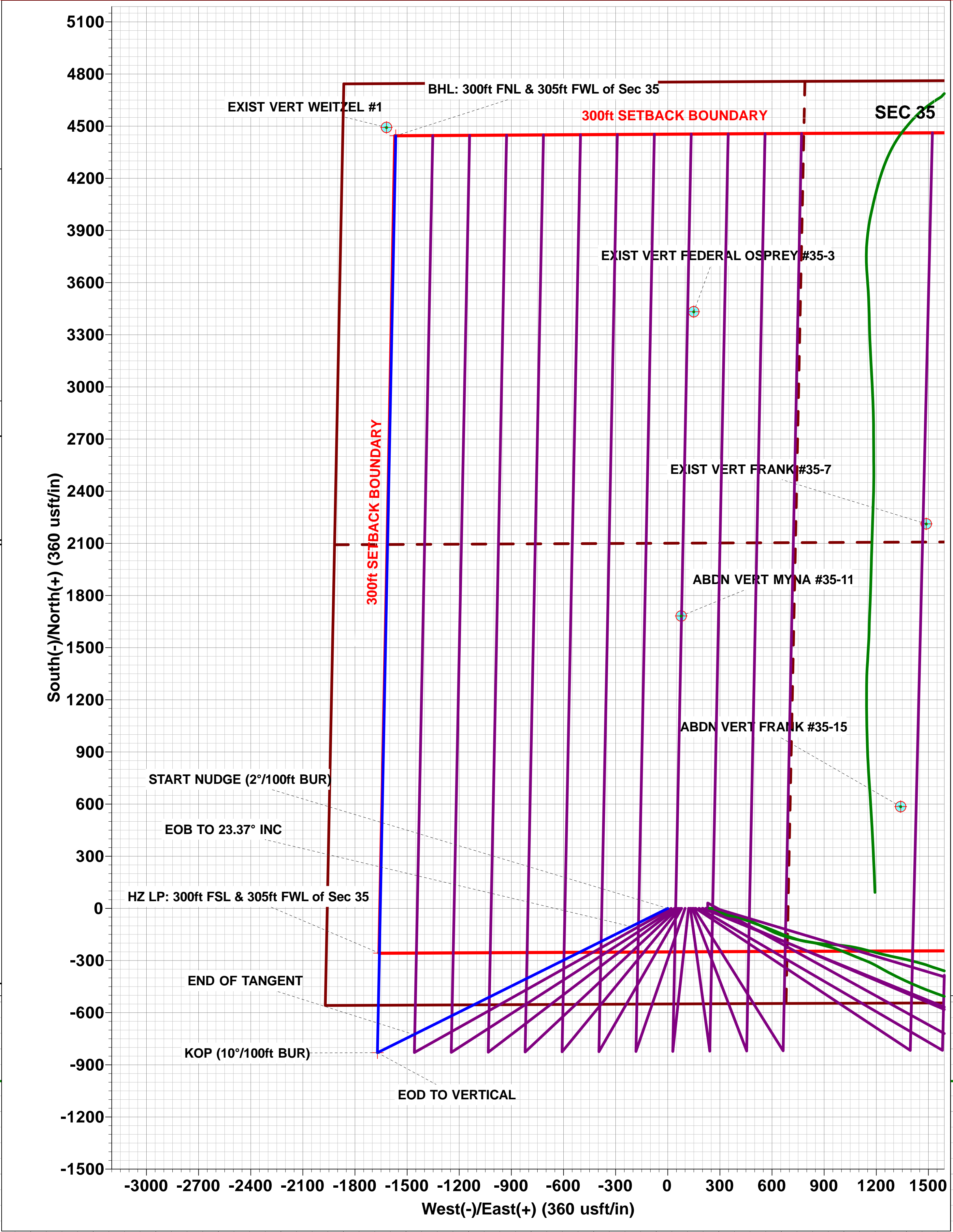
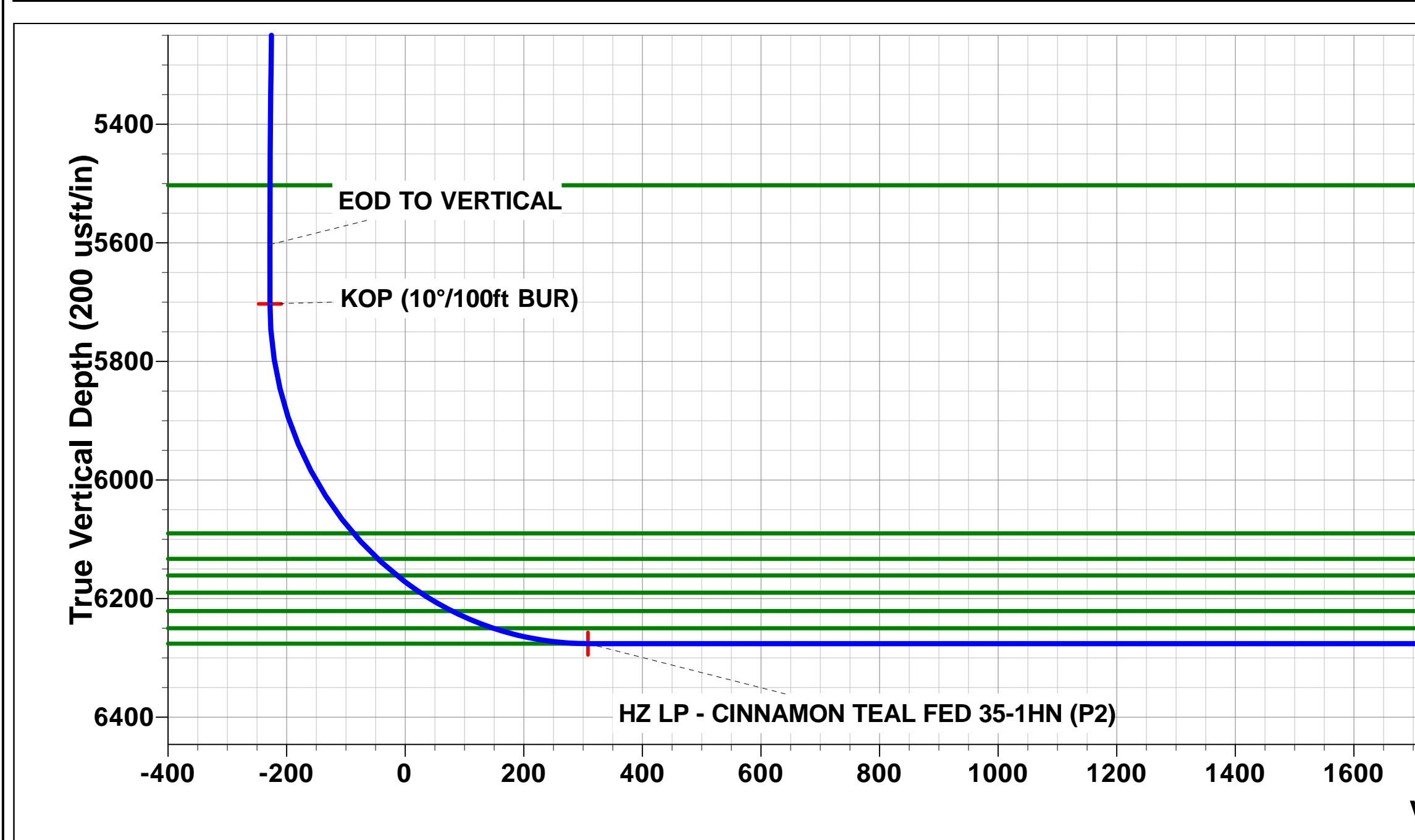
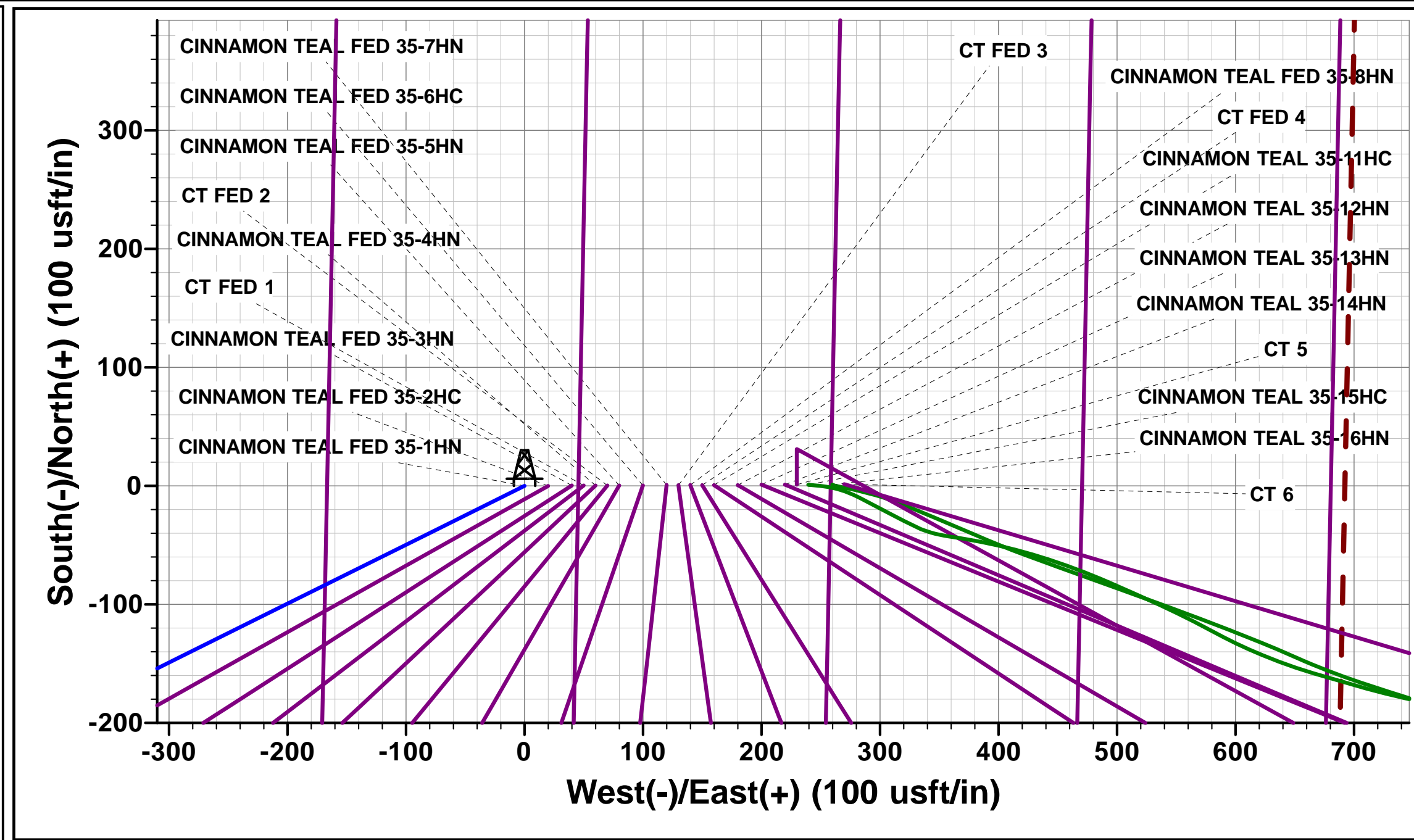
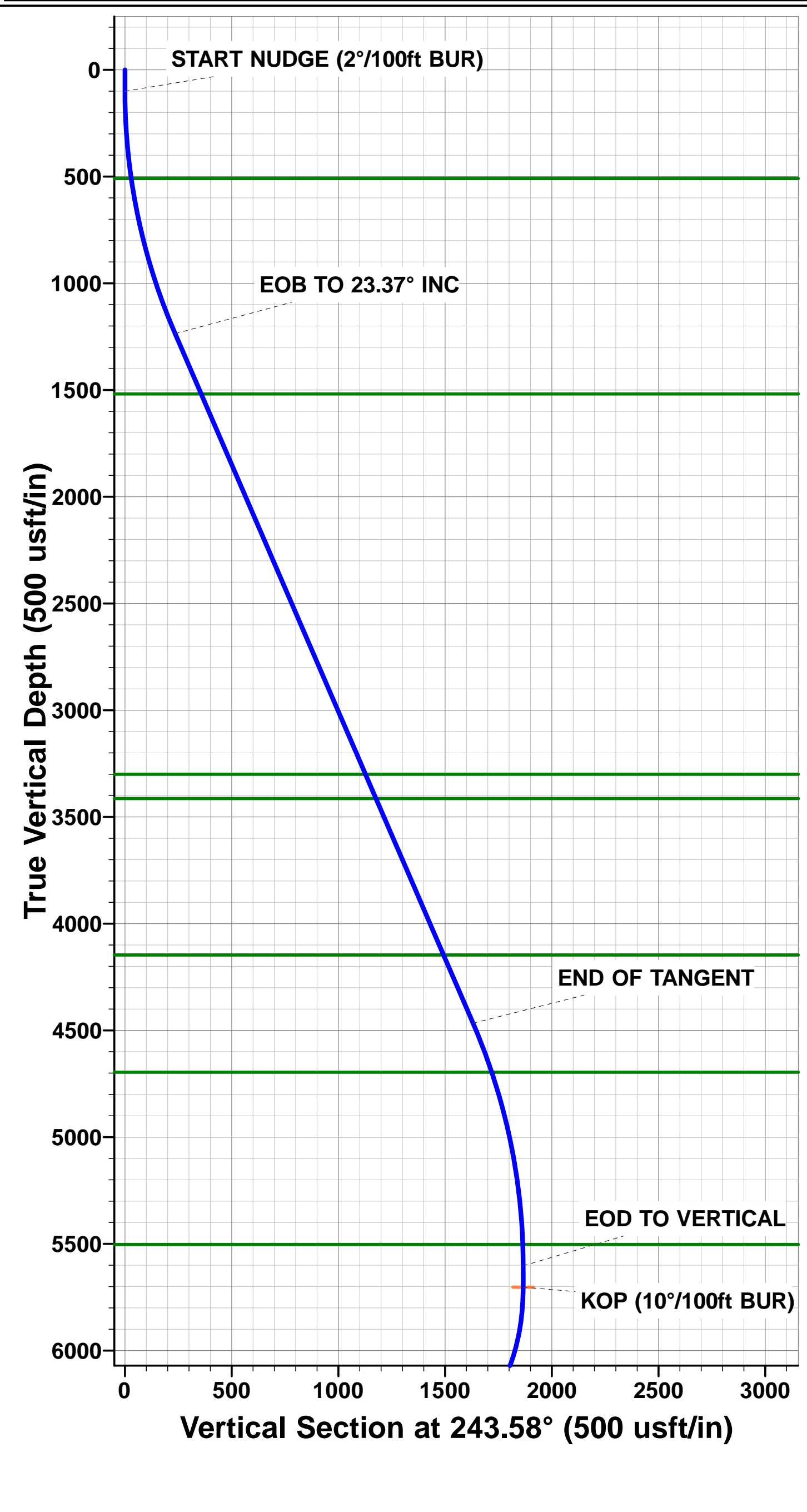


Project: WELD COUNTY, COLORADO (NAD 83)  
Site: SE SW SEC. 35 T8N R60W 6th P.M.  
Well: CINNAMON TEAL FED 35-1HN  
Wellbore: ORIGINAL WELLBORE  
Design: PROPOSAL #2

ANNOTATIONS										
TVD	MD	Inc	Azi	+N/-S	+E/-W	VSect	Dep	Annotation		
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	SHL: 550ft FSL & 1960ft FWL of Sec 35		
100.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	START NUDGE (2°/100ft BUR)		
1236.38	1268.51	23.37	243.58	-104.59	-210.47	-28.74	235.02	EOB TO 23.37° INC		
4466.66	4787.49	23.37	243.58	-725.77	-1460.51	-199.42	1630.90	END OF TANGENT		
5603.04	5956.00	0.00	0.00	-830.36	-1670.98	-228.15	1865.92	EOD TO VERTICAL		
5703.04	6056.00	0.00	0.00	-830.36	-1670.98	-228.15	1865.92	KOP (10°/100ft BUR)		
6276.00	6956.00	90.00	1.15	-257.52	-1659.48	308.34	2438.88	HZ LP: 300ft FSL & 305ft FWL of Sec 35		
6276.00	11659.28	90.00	1.14	4444.82	-1565.34	4712.40	7142.16	BHL: 300ft FNL & 305ft FWL of Sec 35		

PROPOSED LOCAL COORDINATES:  
  
SHL: 550ft FSL & 1960ft FWL Sec 35  
HZ LP: 300ft FSL & 305ft FWL Sec 35  
BHL: 300ft FNL & 305ft FWL of Sec 35

WELLBORE TARGET DETAILS (LAT/LONG)					
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP - CINNAMON TEAL FED 35-1HN (P2)	5703.04	-830.36	-1670.98	40.610779	-104.067827
HZ LP - CINNAMON TEAL FED 35-1HN (P2)	6276.00	-257.52	-1659.48	40.612351	-104.067786
BHL - CINNAMON TEAL FED 35-1HN (P2)	6276.00	4444.82	-1565.34	40.625258	-104.067448



# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well CINNAMON TEAL FED 35-1HN
<b>Company:</b>	MALLARD EXPLORATION	<b>TVD Reference:</b>	KB 25' @ 4949.00usft
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB 25' @ 4949.00usft
<b>Site:</b>	SE SW SEC. 35 T8N R60W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	CINNAMON TEAL FED 35-1HN	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #2		

<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. 35 T8N R60W 6th P.M.		
<b>Site Position:</b>		<b>Northing:</b>	1,469,416.68 usft
<b>From:</b>	Lat/Long	<b>Easting:</b>	3,399,274.71 usft
<b>Position Uncertainty:</b>	0.00 usft	<b>Slot Radius:</b>	1.10000ft
		<b>Latitude:</b>	40.613058
		<b>Longitude:</b>	-104.061809
		<b>Grid Convergence:</b>	0.93 °

<b>Well</b>	CINNAMON TEAL FED 35-1HN		
<b>Well Position</b>	<b>+N/-S</b>	0.00 usft	<b>Northing:</b>
	<b>+E/-W</b>	0.00 usft	<b>Easting:</b>
<b>Position Uncertainty</b>	0.00 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	28/11/2018	7.69	67.09	52,407

<b>Design</b>	PROPOSAL #2			
<b>Audit Notes:</b>				
<b>Version:</b>	<b>Phase:</b>	PROTOTYPE	<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	340.60

<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
0.00	0.00	0.00	0.00	-4,949.00	0.00	0.00	0.00	0.00	0.00	0.00	
100.00	0.00	0.00	100.00	-4,849.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,268.51	23.37	243.58	1,236.38	-3,712.62	-104.59	-210.47	2.00	2.00	0.00	243.58	
4,787.49	23.37	243.58	4,466.66	-482.34	-725.77	-1,460.51	0.00	0.00	0.00	0.00	
5,956.00	0.00	0.00	5,603.04	654.04	-830.36	-1,670.98	2.00	-2.00	0.00	180.00	
6,056.00	0.00	0.00	5,703.04	754.04	-830.36	-1,670.98	0.00	0.00	0.00	0.00	KOP - CINNAMON
6,956.00	90.00	1.15	6,276.00	1,327.00	-257.52	-1,659.48	10.00	10.00	0.13	1.15	HZ LP - CINNAMON
11,659.28	90.00	1.14	6,276.00	1,327.00	4,444.82	-1,565.34	0.00	0.00	0.00	-85.77	BHL - CINNAMON

# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well CINNAMON TEAL FED 35-1HN
<b>Company:</b>	MALLARD EXPLORATION	<b>TVD Reference:</b>	KB 25' @ 4949.00usft
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB 25' @ 4949.00usft
<b>Site:</b>	SE SW SEC. 35 T8N R60W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	CINNAMON TEAL FED 35-1HN	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #2		

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: 550ft FSL &amp; 1960ft FWL of Sec 35</b>										
0.00	0.00	0.00	0.00	4,949.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>START NUDGE (2°/100ft BUR)</b>										
100.00	0.00	0.00	100.00	4,849.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	2.00	243.58	199.98	4,749.02	-0.78	-1.56	-0.21	2.00	2.00	0.00
300.00	4.00	243.58	299.84	4,649.16	-3.11	-6.25	-0.85	2.00	2.00	0.00
400.00	6.00	243.58	399.45	4,549.55	-6.98	-14.05	-1.92	2.00	2.00	0.00
500.00	8.00	243.58	498.70	4,450.30	-12.41	-24.97	-3.41	2.00	2.00	0.00
<b>Fox Hills Base</b>										
511.41	8.23	243.58	510.00	4,439.00	-13.12	-26.41	-3.61	2.00	2.00	0.00
600.00	10.00	243.58	597.47	4,351.53	-19.37	-38.98	-5.32	2.00	2.00	0.00
700.00	12.00	243.58	695.62	4,253.38	-27.86	-56.06	-7.65	2.00	2.00	0.00
800.00	14.00	243.58	793.06	4,155.94	-37.87	-76.21	-10.41	2.00	2.00	0.00
900.00	16.00	243.58	889.64	4,059.36	-49.39	-99.38	-13.57	2.00	2.00	0.00
1,000.00	18.00	243.58	985.27	3,963.73	-62.40	-125.56	-17.14	2.00	2.00	0.00
1,100.00	20.00	243.58	1,079.82	3,869.18	-76.88	-154.72	-21.13	2.00	2.00	0.00
1,200.00	22.00	243.58	1,173.17	3,775.83	-92.83	-186.81	-25.51	2.00	2.00	0.00
<b>EOB TO 23.37° INC</b>										
1,268.51	23.37	243.58	1,236.38	3,712.62	-104.59	-210.47	-28.74	2.00	2.00	0.00
1,300.00	23.37	243.58	1,265.28	3,683.72	-110.15	-221.66	-30.26	0.00	0.00	0.00
1,400.00	23.37	243.58	1,357.08	3,591.92	-127.80	-257.18	-35.12	0.00	0.00	0.00
1,500.00	23.37	243.58	1,448.88	3,500.12	-145.45	-292.70	-39.97	0.00	0.00	0.00
<b>Pierre Shale Top</b>										
1,576.39	23.37	243.58	1,519.00	3,430.00	-158.94	-319.84	-43.67	0.00	0.00	0.00
1,600.00	23.37	243.58	1,540.67	3,408.33	-163.10	-328.22	-44.82	0.00	0.00	0.00
1,700.00	23.37	243.58	1,632.47	3,316.53	-180.76	-363.75	-49.67	0.00	0.00	0.00
1,800.00	23.37	243.58	1,724.26	3,224.74	-198.41	-399.27	-54.52	0.00	0.00	0.00
1,900.00	23.37	243.58	1,816.06	3,132.94	-216.06	-434.79	-59.37	0.00	0.00	0.00
2,000.00	23.37	243.58	1,907.86	3,041.14	-233.71	-470.32	-64.22	0.00	0.00	0.00
2,100.00	23.37	243.58	1,999.65	2,949.35	-251.37	-505.84	-69.07	0.00	0.00	0.00
2,200.00	23.37	243.58	2,091.45	2,857.55	-269.02	-541.36	-73.92	0.00	0.00	0.00
2,300.00	23.37	243.58	2,183.24	2,765.76	-286.67	-576.88	-78.77	0.00	0.00	0.00
2,400.00	23.37	243.58	2,275.04	2,673.96	-304.32	-612.41	-83.62	0.00	0.00	0.00
2,500.00	23.37	243.58	2,366.84	2,582.16	-321.98	-647.93	-88.47	0.00	0.00	0.00
2,600.00	23.37	243.58	2,458.63	2,490.37	-339.63	-683.45	-93.32	0.00	0.00	0.00
2,700.00	23.37	243.58	2,550.43	2,398.57	-357.28	-718.98	-98.17	0.00	0.00	0.00
2,800.00	23.37	243.58	2,642.23	2,306.77	-374.93	-754.50	-103.02	0.00	0.00	0.00
2,900.00	23.37	243.58	2,734.02	2,214.98	-392.59	-790.02	-107.87	0.00	0.00	0.00
3,000.00	23.37	243.58	2,825.82	2,123.18	-410.24	-825.54	-112.72	0.00	0.00	0.00
3,100.00	23.37	243.58	2,917.61	2,031.39	-427.89	-861.07	-117.57	0.00	0.00	0.00
3,200.00	23.37	243.58	3,009.41	1,939.59	-445.54	-896.59	-122.42	0.00	0.00	0.00
3,300.00	23.37	243.58	3,101.21	1,847.79	-463.19	-932.11	-127.27	0.00	0.00	0.00
3,400.00	23.37	243.58	3,193.00	1,756.00	-480.85	-967.64	-132.12	0.00	0.00	0.00
3,500.00	23.37	243.58	3,284.80	1,664.20	-498.50	-1,003.16	-136.97	0.00	0.00	0.00
<b>Richard Sandstone</b>										
3,516.56	23.37	243.58	3,300.00	1,649.00	-501.42	-1,009.04	-137.77	0.00	0.00	0.00
3,600.00	23.37	243.58	3,376.59	1,572.41	-516.15	-1,038.68	-141.82	0.00	0.00	0.00
<b>Parkman Sandstone</b>										
3,640.75	23.37	243.58	3,414.00	1,535.00	-523.34	-1,053.16	-143.80	0.00	0.00	0.00
3,700.00	23.37	243.58	3,468.39	1,480.61	-533.80	-1,074.20	-146.67	0.00	0.00	0.00
3,800.00	23.37	243.58	3,560.19	1,388.81	-551.46	-1,109.73	-151.52	0.00	0.00	0.00
3,900.00	23.37	243.58	3,651.98	1,297.02	-569.11	-1,145.25	-156.37	0.00	0.00	0.00
4,000.00	23.37	243.58	3,743.78	1,205.22	-586.76	-1,180.77	-161.22	0.00	0.00	0.00



# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well CINNAMON TEAL FED 35-1HN
<b>Company:</b>	MALLARD EXPLORATION	<b>TVD Reference:</b>	KB 25' @ 4949.00usft
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB 25' @ 4949.00usft
<b>Site:</b>	SE SW SEC. 35 T8N R60W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	CINNAMON TEAL FED 35-1HN	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #2		

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)
4,100.00	23.37	243.58	3,835.57	1,113.43	-604.41	-1,216.29	-166.07	0.00	0.00	0.00
4,200.00	23.37	243.58	3,927.37	1,021.63	-622.07	-1,251.82	-170.92	0.00	0.00	0.00
4,300.00	23.37	243.58	4,019.17	929.83	-639.72	-1,287.34	-175.77	0.00	0.00	0.00
4,400.00	23.37	243.58	4,110.96	838.04	-657.37	-1,322.86	-180.62	0.00	0.00	0.00
<b>Sussex Sandstone</b>										
<b>4,439.26</b>	<b>23.37</b>	<b>243.58</b>	<b>4,147.00</b>	<b>802.00</b>	<b>-664.30</b>	<b>-1,336.81</b>	<b>-182.53</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
4,500.00	23.37	243.58	4,202.76	746.24	-675.02	-1,358.39	-185.47	0.00	0.00	0.00
4,600.00	23.37	243.58	4,294.56	654.44	-692.68	-1,393.91	-190.32	0.00	0.00	0.00
4,700.00	23.37	243.58	4,386.35	562.65	-710.33	-1,429.43	-195.17	0.00	0.00	0.00
<b>END OF TANGENT</b>										
<b>4,787.49</b>	<b>23.37</b>	<b>243.58</b>	<b>4,466.66</b>	<b>482.34</b>	<b>-725.77</b>	<b>-1,460.51</b>	<b>-199.42</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
4,800.00	23.12	243.58	4,478.16	470.84	-727.97	-1,464.93	-200.02	2.00	-2.00	0.00
4,900.00	21.12	243.58	4,570.79	378.21	-744.72	-1,498.65	-204.62	2.00	-2.00	0.00
5,000.00	19.12	243.58	4,664.69	284.31	-760.03	-1,529.45	-208.83	2.00	-2.00	0.00
<b>Shannon Sandstone</b>										
<b>5,033.08</b>	<b>18.46</b>	<b>243.58</b>	<b>4,696.00</b>	<b>253.00</b>	<b>-764.77</b>	<b>-1,538.99</b>	<b>-210.13</b>	<b>2.00</b>	<b>-2.00</b>	<b>0.00</b>
5,100.00	17.12	243.58	4,759.72	189.28	-773.87	-1,557.30	-212.63	2.00	-2.00	0.00
5,200.00	15.12	243.58	4,855.79	93.21	-786.23	-1,582.17	-216.03	2.00	-2.00	0.00
5,300.00	13.12	243.58	4,952.76	-3.76	-797.08	-1,604.01	-219.01	2.00	-2.00	0.00
5,400.00	11.12	243.58	5,050.53	-101.53	-806.42	-1,622.81	-221.58	2.00	-2.00	0.00
5,500.00	9.12	243.58	5,148.96	-199.96	-814.24	-1,638.55	-223.73	2.00	-2.00	0.00
5,600.00	7.12	243.58	5,247.96	-298.96	-820.53	-1,651.20	-225.45	2.00	-2.00	0.00
5,700.00	5.12	243.58	5,347.38	-398.38	-825.27	-1,660.74	-226.76	2.00	-2.00	0.00
5,800.00	3.12	243.58	5,447.12	-498.12	-828.47	-1,667.18	-227.64	2.00	-2.00	0.00
<b>TeePee Buttes</b>										
<b>5,855.94</b>	<b>2.00</b>	<b>243.58</b>	<b>5,503.00</b>	<b>-554.00</b>	<b>-829.58</b>	<b>-1,669.42</b>	<b>-227.94</b>	<b>2.00</b>	<b>-2.00</b>	<b>0.00</b>
5,900.00	1.12	243.58	5,547.04	-598.04	-830.12	-1,670.49	-228.09	2.00	-2.00	0.00
<b>EOD TO VERTICAL</b>										
<b>5,956.00</b>	<b>0.00</b>	<b>0.00</b>	<b>5,603.04</b>	<b>-654.04</b>	<b>-830.36</b>	<b>-1,670.98</b>	<b>-228.15</b>	<b>2.00</b>	<b>-2.00</b>	<b>0.00</b>
6,000.00	0.00	0.00	5,647.04	-698.04	-830.36	-1,670.98	-228.15	0.00	0.00	0.00
<b>KOP (10°/100ft BUR)</b>										
<b>6,056.00</b>	<b>0.00</b>	<b>0.00</b>	<b>5,703.04</b>	<b>-754.04</b>	<b>-830.36</b>	<b>-1,670.98</b>	<b>-228.15</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
6,100.00	4.40	1.15	5,747.00	-798.00	-828.67	-1,670.95	-226.57	10.00	10.00	0.00
6,200.00	14.40	1.15	5,845.53	-896.53	-812.36	-1,670.62	-211.30	10.00	10.00	0.00
6,300.00	24.40	1.15	5,939.73	-990.73	-779.20	-1,669.95	-180.24	10.00	10.00	0.00
6,400.00	34.40	1.15	6,026.74	-1,077.74	-730.18	-1,668.97	-134.33	10.00	10.00	0.00
<b>Sharon Springs</b>										
<b>6,480.83</b>	<b>42.48</b>	<b>1.15</b>	<b>6,090.00</b>	<b>-1,141.00</b>	<b>-679.98</b>	<b>-1,667.96</b>	<b>-87.31</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
6,500.00	44.40	1.15	6,103.92	-1,154.92	-666.80	-1,667.70	-74.97	10.00	10.00	0.00
<b>Niobrara Top</b>										
<b>6,542.27</b>	<b>48.63</b>	<b>1.15</b>	<b>6,133.00</b>	<b>-1,184.00</b>	<b>-636.14</b>	<b>-1,667.08</b>	<b>-46.26</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
<b>Niobrara A Chalk</b>										
<b>6,586.62</b>	<b>53.06</b>	<b>1.15</b>	<b>6,161.00</b>	<b>-1,212.00</b>	<b>-601.77</b>	<b>-1,666.39</b>	<b>-14.06</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
6,600.00	54.40	1.15	6,168.91	-1,219.91	-590.98	-1,666.17	-3.97	10.00	10.00	0.00
<b>Niobrara A Chalk Base</b>										
<b>6,638.01</b>	<b>58.20</b>	<b>1.15</b>	<b>6,190.00</b>	<b>-1,241.00</b>	<b>-559.37</b>	<b>-1,665.54</b>	<b>25.64</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
6,700.00	64.40	1.15	6,219.75	-1,270.75	-505.03	-1,664.45	76.53	10.00	10.00	0.00
<b>Niobrara B1 Chalk Top</b>										
<b>6,702.90</b>	<b>64.69</b>	<b>1.15</b>	<b>6,221.00</b>	<b>-1,272.00</b>	<b>-502.42</b>	<b>-1,664.40</b>	<b>78.98</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
<b>Niobrara B1 Chalk Base</b>										
<b>6,782.73</b>	<b>72.67</b>	<b>1.15</b>	<b>6,250.00</b>	<b>-1,301.00</b>	<b>-428.12</b>	<b>-1,662.91</b>	<b>148.56</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
6,800.00	74.40	1.15	6,254.89	-1,305.89	-411.57	-1,662.57	164.07	10.00	10.00	0.00

# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well CINNAMON TEAL FED 35-1HN
<b>Company:</b>	MALLARD EXPLORATION	<b>TVD Reference:</b>	KB 25' @ 4949.00usft
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB 25' @ 4949.00usft
<b>Site:</b>	SE SW SEC. 35 T8N R60W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	CINNAMON TEAL FED 35-1HN	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #2		

## 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)
6,900.00	84.40	1.15	6,273.27	-1,324.27	-313.42	-1,660.60	255.99	10.00	10.00	0.00
<b>HZ LP: 300ft FSL &amp; 305ft FWL of Sec 35 - Niobrara B2 Chalk Top (Target)</b>										
<b>6,956.00</b>	<b>90.00</b>	<b>1.15</b>	<b>6,276.00</b>	<b>-1,327.00</b>	<b>-257.52</b>	<b>-1,659.48</b>	<b>308.34</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
7,000.00	90.00	1.15	6,276.00	-1,327.00	-213.53	-1,658.60	349.54	0.00	0.00	0.00
7,100.00	90.00	1.15	6,276.00	-1,327.00	-113.55	-1,656.59	443.18	0.00	0.00	0.00
7,200.00	90.00	1.15	6,276.00	-1,327.00	-13.57	-1,654.58	536.81	0.00	0.00	0.00
7,300.00	90.00	1.15	6,276.00	-1,327.00	86.41	-1,652.58	630.45	0.00	0.00	0.00
7,400.00	90.00	1.15	6,276.00	-1,327.00	186.39	-1,650.57	724.09	0.00	0.00	0.00
7,500.00	90.00	1.15	6,276.00	-1,327.00	286.37	-1,648.57	817.72	0.00	0.00	0.00
7,600.00	90.00	1.15	6,276.00	-1,327.00	386.35	-1,646.56	911.36	0.00	0.00	0.00
7,700.00	90.00	1.15	6,276.00	-1,327.00	486.33	-1,644.55	1,005.00	0.00	0.00	0.00
7,800.00	90.00	1.15	6,276.00	-1,327.00	586.31	-1,642.55	1,098.63	0.00	0.00	0.00
7,900.00	90.00	1.15	6,276.00	-1,327.00	686.29	-1,640.54	1,192.27	0.00	0.00	0.00
8,000.00	90.00	1.15	6,276.00	-1,327.00	786.27	-1,638.54	1,285.91	0.00	0.00	0.00
8,100.00	90.00	1.15	6,276.00	-1,327.00	886.25	-1,636.53	1,379.54	0.00	0.00	0.00
8,200.00	90.00	1.15	6,276.00	-1,327.00	986.23	-1,634.53	1,473.18	0.00	0.00	0.00
8,300.00	90.00	1.15	6,276.00	-1,327.00	1,086.21	-1,632.53	1,566.82	0.00	0.00	0.00
8,400.00	90.00	1.15	6,276.00	-1,327.00	1,186.19	-1,630.52	1,660.45	0.00	0.00	0.00
8,500.00	90.00	1.15	6,276.00	-1,327.00	1,286.17	-1,628.52	1,754.09	0.00	0.00	0.00
8,600.00	90.00	1.15	6,276.00	-1,327.00	1,386.15	-1,626.52	1,847.73	0.00	0.00	0.00
8,700.00	90.00	1.15	6,276.00	-1,327.00	1,486.13	-1,624.51	1,941.37	0.00	0.00	0.00
8,800.00	90.00	1.15	6,276.00	-1,327.00	1,586.11	-1,622.51	2,035.00	0.00	0.00	0.00
8,900.00	90.00	1.15	6,276.00	-1,327.00	1,686.09	-1,620.51	2,128.64	0.00	0.00	0.00
9,000.00	90.00	1.15	6,276.00	-1,327.00	1,786.07	-1,618.50	2,222.28	0.00	0.00	0.00
9,100.00	90.00	1.15	6,276.00	-1,327.00	1,886.05	-1,616.50	2,315.92	0.00	0.00	0.00
9,200.00	90.00	1.15	6,276.00	-1,327.00	1,986.03	-1,614.50	2,409.56	0.00	0.00	0.00
9,300.00	90.00	1.15	6,276.00	-1,327.00	2,086.01	-1,612.50	2,503.19	0.00	0.00	0.00
9,400.00	90.00	1.15	6,276.00	-1,327.00	2,185.99	-1,610.50	2,596.83	0.00	0.00	0.00
9,500.00	90.00	1.15	6,276.00	-1,327.00	2,285.97	-1,608.50	2,690.47	0.00	0.00	0.00
9,600.00	90.00	1.15	6,276.00	-1,327.00	2,385.95	-1,606.49	2,784.11	0.00	0.00	0.00
9,700.00	90.00	1.15	6,276.00	-1,327.00	2,485.93	-1,604.49	2,877.75	0.00	0.00	0.00
9,800.00	90.00	1.15	6,276.00	-1,327.00	2,585.91	-1,602.49	2,971.38	0.00	0.00	0.00
9,900.00	90.00	1.15	6,276.00	-1,327.00	2,685.89	-1,600.49	3,065.02	0.00	0.00	0.00
10,000.00	90.00	1.15	6,276.00	-1,327.00	2,785.87	-1,598.49	3,158.66	0.00	0.00	0.00
10,100.00	90.00	1.15	6,276.00	-1,327.00	2,885.85	-1,596.49	3,252.30	0.00	0.00	0.00
10,200.00	90.00	1.15	6,276.00	-1,327.00	2,985.83	-1,594.49	3,345.94	0.00	0.00	0.00
10,300.00	90.00	1.15	6,276.00	-1,327.00	3,085.81	-1,592.49	3,439.58	0.00	0.00	0.00
10,400.00	90.00	1.15	6,276.00	-1,327.00	3,185.79	-1,590.49	3,533.22	0.00	0.00	0.00
10,500.00	90.00	1.15	6,276.00	-1,327.00	3,285.77	-1,588.50	3,626.86	0.00	0.00	0.00
10,600.00	90.00	1.15	6,276.00	-1,327.00	3,385.75	-1,586.50	3,720.49	0.00	0.00	0.00
10,700.00	90.00	1.15	6,276.00	-1,327.00	3,485.73	-1,584.50	3,814.13	0.00	0.00	0.00
10,800.00	90.00	1.14	6,276.00	-1,327.00	3,585.71	-1,582.50	3,907.77	0.00	0.00	0.00
10,900.00	90.00	1.14	6,276.00	-1,327.00	3,685.69	-1,580.50	4,001.41	0.00	0.00	0.00
11,000.00	90.00	1.14	6,276.00	-1,327.00	3,785.67	-1,578.50	4,095.05	0.00	0.00	0.00
11,100.00	90.00	1.14	6,276.00	-1,327.00	3,885.65	-1,576.51	4,188.69	0.00	0.00	0.00
11,200.00	90.00	1.14	6,276.00	-1,327.00	3,985.63	-1,574.51	4,282.33	0.00	0.00	0.00
11,300.00	90.00	1.14	6,276.00	-1,327.00	4,085.61	-1,572.51	4,375.97	0.00	0.00	0.00
11,400.00	90.00	1.14	6,276.00	-1,327.00	4,185.59	-1,570.51	4,469.61	0.00	0.00	0.00
11,500.00	90.00	1.14	6,276.00	-1,327.00	4,285.57	-1,568.52	4,563.25	0.00	0.00	0.00
11,600.00	90.00	1.14	6,276.00	-1,327.00	4,385.55	-1,566.52	4,656.89	0.00	0.00	0.00
<b>BHL: 300ft FNL &amp; 305ft FWL of Sec 35</b>										
<b>11,659.28</b>	<b>90.00</b>	<b>1.14</b>	<b>6,276.00</b>	<b>-1,327.00</b>	<b>4,444.82</b>	<b>-1,565.34</b>	<b>4,712.40</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 CINNAMON TEAL FED 35-1HN
<b>Company:</b>	MALLARD EXPLORATION	<b>TVD Reference:</b>	KB 25' @ 4949.00usft
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB 25' @ 4949.00usft
<b>Site:</b>	SE SW SEC. 35 T8N R60W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	CINNAMON TEAL FED 35-1HN	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL #2		

Formations						
MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
511.41	510.00	Fox Hills Base				
1,576.39	1,519.00	Pierre Shale Top				
3,516.56	3,300.00	Richard Sandstone				
3,640.75	3,414.00	Parkman Sandstone				
4,439.26	4,147.00	Sussex Sandstone				
5,033.08	4,696.00	Shannon Sandstone				
5,855.94	5,503.00	TeePee Buttes				
6,480.83	6,090.00	Sharon Springs				
6,542.27	6,133.00	Niobrara Top				
6,586.62	6,161.00	Niobrara A Chalk				
6,638.01	6,190.00	Niobrara A Chalk Base				
6,702.90	6,221.00	Niobrara B1 Chalk Top				
6,782.73	6,250.00	Niobrara B1 Chalk Base				
6,956.00	6,276.00	Niobrara B2 Chalk Top (Target)				

Plan Annotations				
MD (usft)	TVD (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
0.00	0.00	0.00	0.00	SHL: 550ft FSL & 1960ft FWL of Sec 35
100.00	100.00	0.00	0.00	START NUDGE (2°/100ft BUR)
1,268.51	1,236.38	-104.59	-210.47	EOB TO 23.37° INC
4,787.49	4,466.66	-725.77	-1,460.51	END OF TANGENT
5,956.00	5,603.04	-830.36	-1,670.98	EOD TO VERTICAL
6,056.00	5,703.04	-830.36	-1,670.98	KOP (10°/100ft BUR)
6,956.00	6,276.00	-257.52	-1,659.48	HZ LP: 300ft FSL & 305ft FWL of Sec 35
11,659.28	6,276.00	4,444.82	-1,565.34	BHL: 300ft FNL & 305ft FWL of Sec 35