

MALLARD EXPLORATION

WELD COUNTY, COLORADO (NAD 83)

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

CINNAMON TEAL FED 35-6HC

ORIGINAL WELLBORE

18 September, 2017

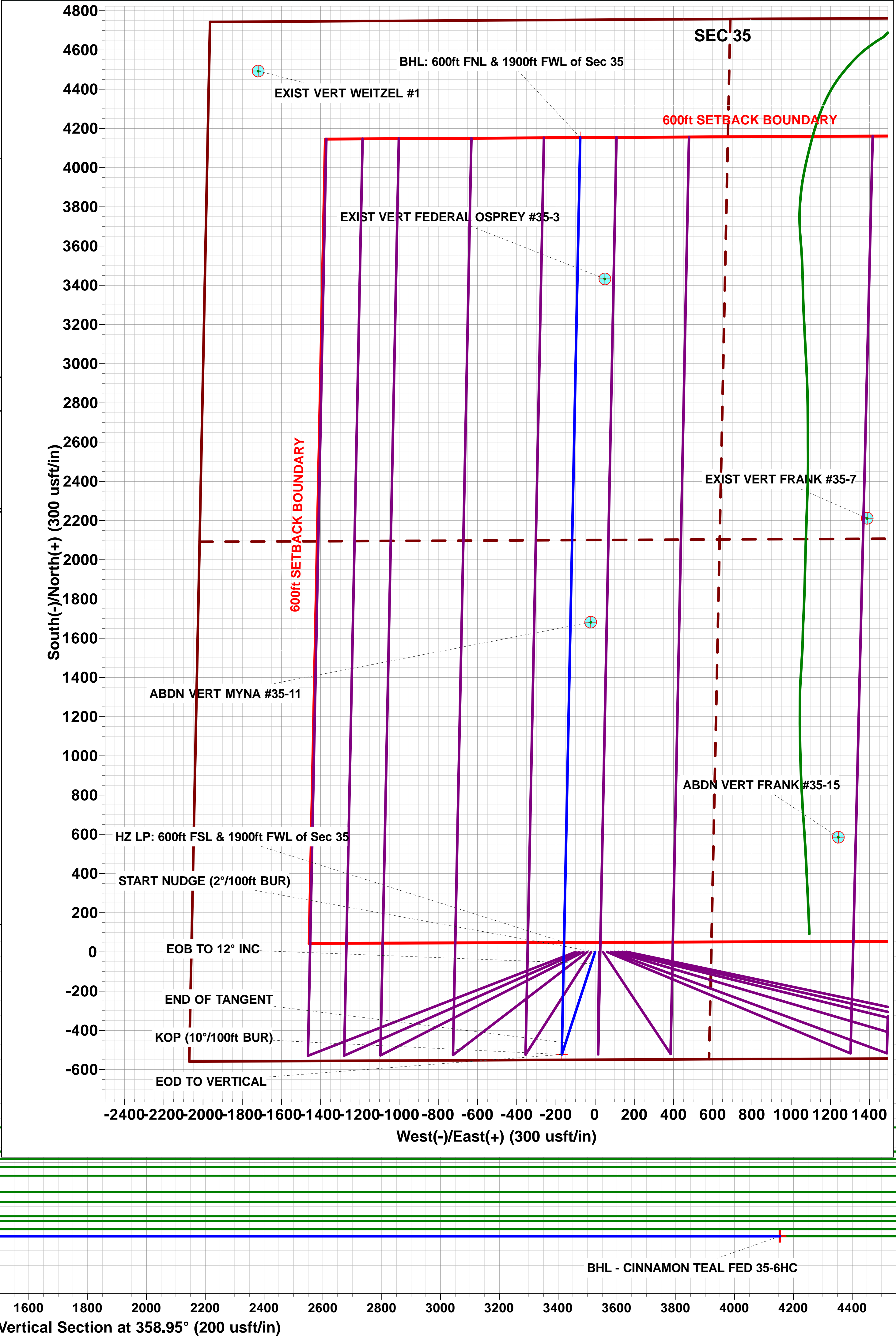
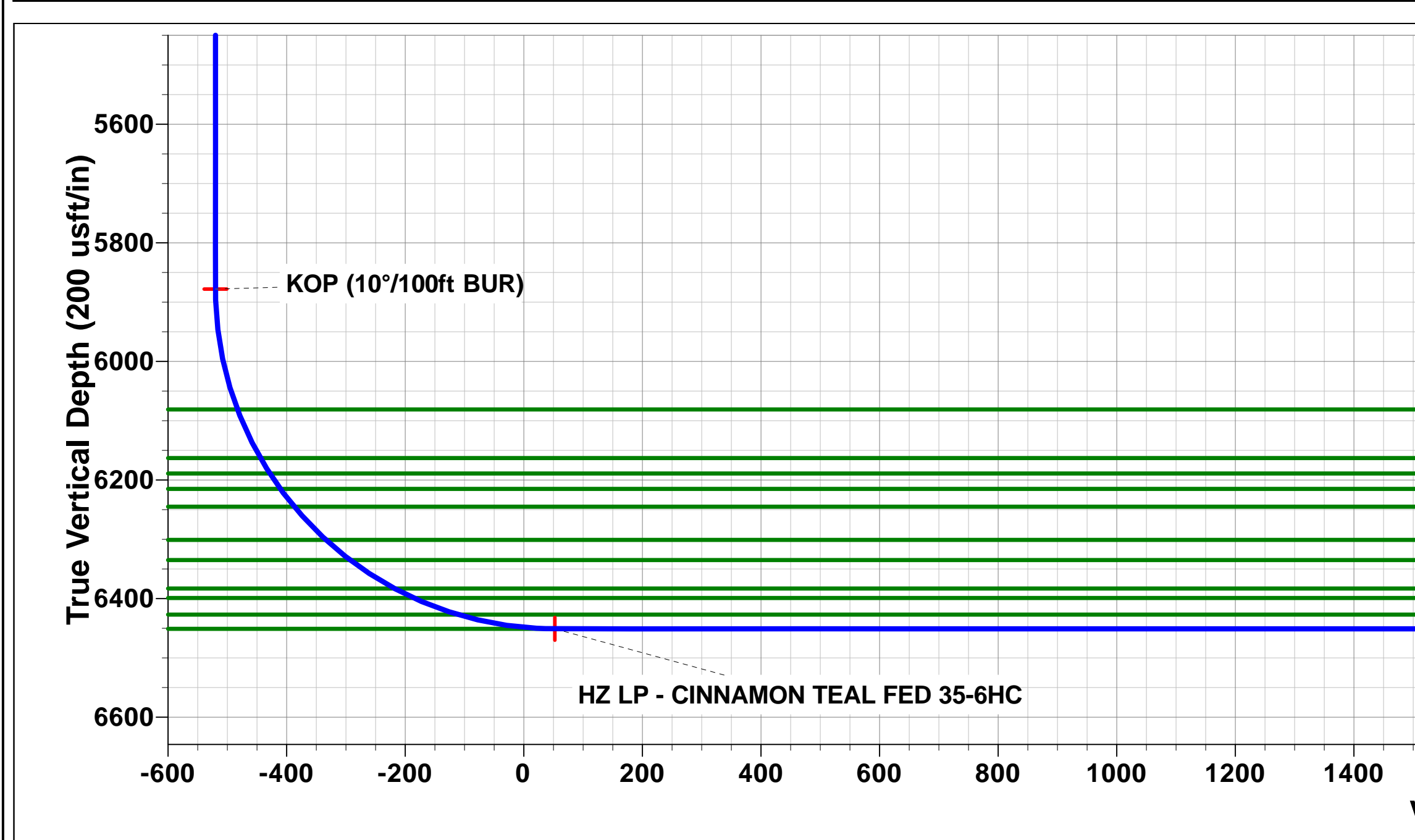
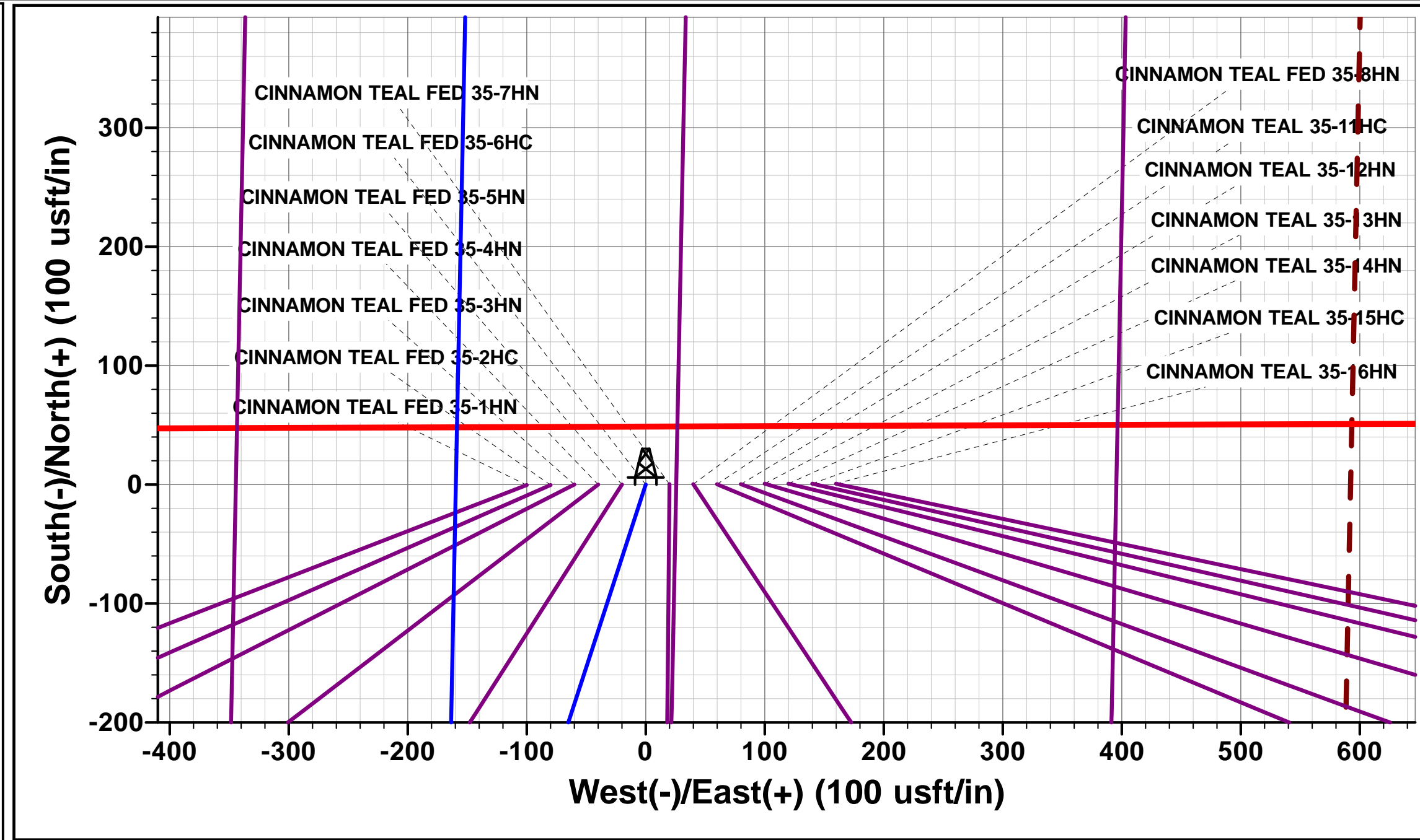
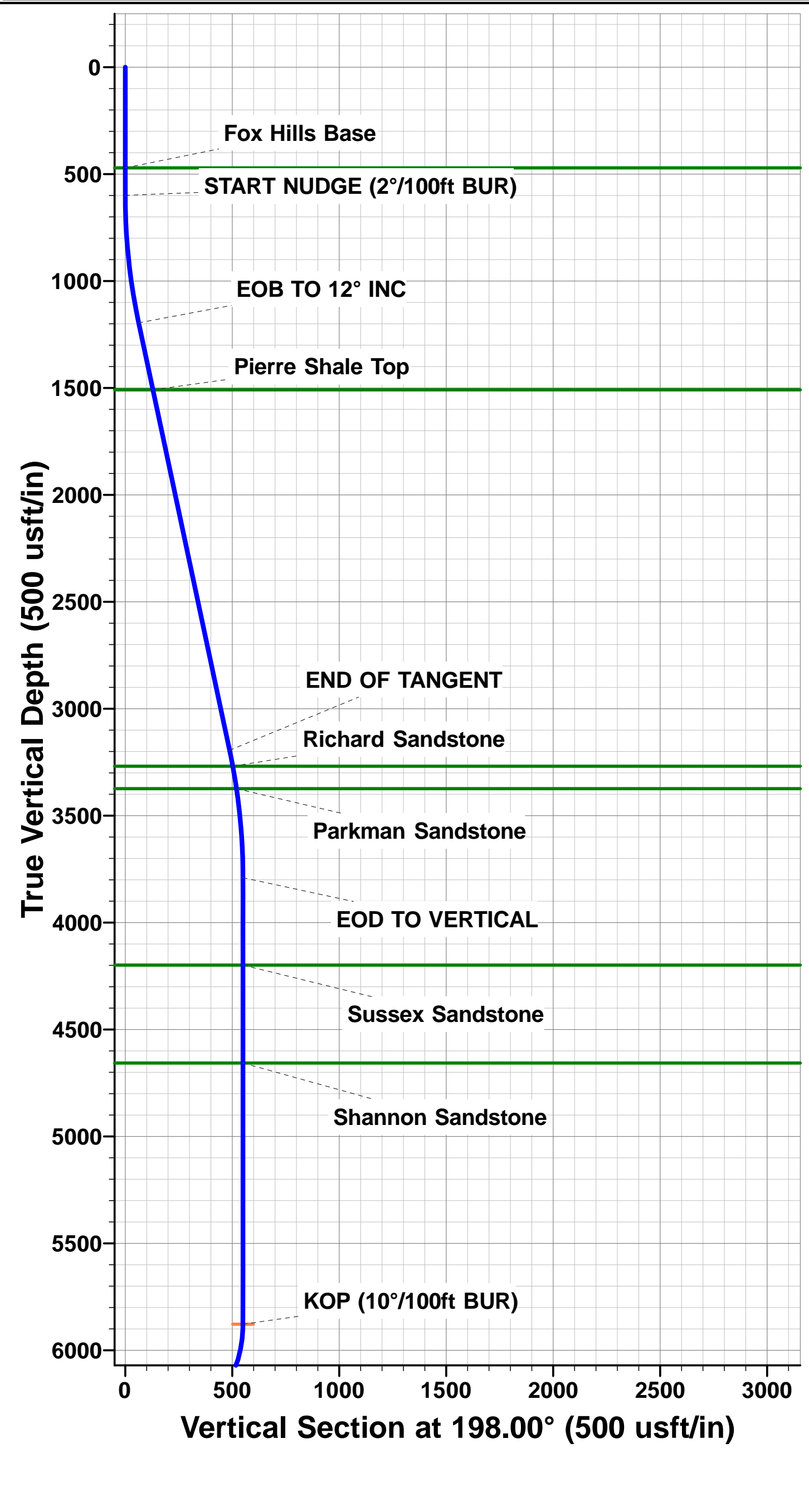
Plan: PROPOSAL #1





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

ANNOTATIONS										PROPOSED LOCAL COORDINATES: SHL: 550ft FSL & 2060ft FWL Sec 35 HZ LP: 600ft FSL & 1900ft FWL Sec 35 BHL: 600ft FNL & 1900ft FWL of Sec 35
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: 550ft FSL & 2060ft FWL of Sec 35		
600.0	600.0	0.00	0.00	0.0	0.0	0.0	0.0	START NUDGE (2"/100ft BUR)		
1195.6	1200.0	12.00	198.00	-59.5	-19.3	-59.2	62.6	EOB TO 12" INC		
3194.7	3243.8	12.00	198.00	-463.7	-150.7	-460.8	487.5	END OF TANGENT		
3790.3	3843.8	0.00	0.00	-523.2	-170.0	-520.0	550.1	EOD TO VERTICAL		
5878.1	5931.5	0.00	0.00	-523.2	-170.0	-520.0	550.1	KOP (10"/100ft BUR)		
6451.0	6831.4	90.00	1.15	49.6	-158.5	52.5	1123.0	HZ LP: 600ft FSL & 1900ft FWL of Sec 35		
6451.0	10936.4	90.00	1.16	4153.7	-76.1	4154.4	5228.0	BHL: 600ft FNL & 1900ft FWL of Sec 35		
WELLBORE TARGET DETAILS (LAT/LONG)										
Name				TVD	+N/-S	+E/-W	Latitude		Longitude	
KOP - CINNAMON TEAL FED 35-6HC				5878.1	-523.2	-170.0	40.611623		-104.062061	
HZ LP - CINNAMON TEAL FED 35-6HC				6451.0	49.6	-158.5	40.613195		-104.062020	
BHL - CINNAMON TEAL FED 35-6HC				6451.0	4153.7	-76.1	40.624460		-104.061723	



Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well CINNAMON TEAL FED 35-6HC
Company:	MALLARD EXPLORATION	TVD Reference:	KB-EST @ 4940.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4940.0usft (Original Well Elev)
Site:	SE SW SEC. 35 T8N R60W 6th P.M.	North Reference:	True
Well:	CINNAMON TEAL FED 35-6HC	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

Project	WELD COUNTY, COLORADO (NAD 83)		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		Using geodetic scale factor

Site	SE SW SEC. 35 T8N R60W 6th P.M.		
Site Position:		Northing:	1,469,416.68 usft
From:	Lat/Long	Easting:	3,399,274.71 usft
Position Uncertainty:	0.0 usft	Slot Radius:	1.10000ft
		Latitude:	40.613058
		Longitude:	-104.061809
		Grid Convergence:	0.93 °

Well	CINNAMON TEAL FED 35-6HC		
Well Position	+N-S	0.3 usft	Northing:
	+E-W	100.0 usft	Easting:
Position Uncertainty		0.0 usft	Wellhead Elevation:
			Latitude:
			Longitude:
			Ground Level:

Wellbore	ORIGINAL WELLBORE				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	18/09/2017	7.82	67.12	52,544

Design	PROPOSAL #1			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.0
Vertical Section:	Depth From (TVD) (usft)	+N-S (usft)	+E-W (usft)	Direction (°)
	6,451.0	0.0	0.0	358.95

Plan Sections											
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	-4,940.0	0.0	0.0	0.00	0.00	0.00	0.00	
600.0	0.00	0.00	600.0	-4,340.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,200.0	12.00	198.00	1,195.6	-3,744.4	-59.5	-19.3	2.00	2.00	0.00	198.00	
3,243.8	12.00	198.00	3,194.7	-1,745.3	-463.7	-150.7	0.00	0.00	0.00	0.00	
3,843.8	0.00	0.00	3,790.3	-1,149.7	-523.2	-170.0	2.00	-2.00	0.00	180.00	
5,931.5	0.00	0.00	5,878.1	938.1	-523.2	-170.0	0.00	0.00	0.00	0.00	KOP - CINNAMON
6,831.4	90.00	1.15	6,451.0	1,511.0	49.6	-158.5	10.00	10.00	0.13	1.15	HZ LP - CINNAMON
10,936.4	90.00	1.16	6,451.0	1,511.0	4,153.7	-76.1	0.00	0.00	0.00	84.11	BHL - CINNAMON

Planning Report



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Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4940.0usft (Original Well Elev)
Site:	SE SW SEC. 35 T8N R60W 6th P.M.	North Reference:	True
Well:	CINNAMON TEAL FED 35-6HC	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	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)
SHL: 550ft FSL & 2060ft FWL of Sec 35										
0.0	0.00	0.00	0.0	4,940.00	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	4,840.00	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	4,740.00	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	4,640.00	0.0	0.0	0.0	0.00	0.00	0.00
400.0	0.00	0.00	400.0	4,540.00	0.0	0.0	0.0	0.00	0.00	0.00
Fox Hills Base										
471.0	0.00	0.00	471.0	4,469.00	0.0	0.0	0.0	0.00	0.00	0.00
500.0	0.00	0.00	500.0	4,440.00	0.0	0.0	0.0	0.00	0.00	0.00
START NUDGE (2°/100ft BUR)										
600.0	0.00	0.00	600.0	4,340.00	0.0	0.0	0.0	0.00	0.00	0.00
700.0	2.00	198.00	700.0	4,240.02	-1.7	-0.5	-1.6	2.00	2.00	0.00
800.0	4.00	198.00	799.8	4,140.16	-6.6	-2.2	-6.6	2.00	2.00	0.00
900.0	6.00	198.00	899.5	4,040.55	-14.9	-4.8	-14.8	2.00	2.00	0.00
1,000.0	8.00	198.00	998.7	3,941.30	-26.5	-8.6	-26.4	2.00	2.00	0.00
1,100.0	10.00	198.00	1,097.5	3,842.53	-41.4	-13.4	-41.1	2.00	2.00	0.00
EOB TO 12° INC										
1,200.0	12.00	198.00	1,195.6	3,744.38	-59.5	-19.3	-59.2	2.00	2.00	0.00
1,300.0	12.00	198.00	1,293.4	3,646.56	-79.3	-25.8	-78.8	0.00	0.00	0.00
1,400.0	12.00	198.00	1,391.3	3,548.75	-99.1	-32.2	-98.5	0.00	0.00	0.00
1,500.0	12.00	198.00	1,489.1	3,450.93	-118.9	-38.6	-118.1	0.00	0.00	0.00
Pierre Shale Top										
1,520.4	12.00	198.00	1,509.0	3,431.00	-122.9	-39.9	-122.1	0.00	0.00	0.00
1,600.0	12.00	198.00	1,586.9	3,353.12	-138.6	-45.0	-137.8	0.00	0.00	0.00
1,700.0	12.00	198.00	1,684.7	3,255.30	-158.4	-51.5	-157.4	0.00	0.00	0.00
1,800.0	12.00	198.00	1,782.5	3,157.49	-178.2	-57.9	-177.1	0.00	0.00	0.00
1,900.0	12.00	198.00	1,880.3	3,059.67	-198.0	-64.3	-196.7	0.00	0.00	0.00
2,000.0	12.00	198.00	1,978.1	2,961.86	-217.7	-70.7	-216.4	0.00	0.00	0.00
2,100.0	12.00	198.00	2,076.0	2,864.04	-237.5	-77.2	-236.0	0.00	0.00	0.00
2,200.0	12.00	198.00	2,173.8	2,766.23	-257.3	-83.6	-255.7	0.00	0.00	0.00
2,300.0	12.00	198.00	2,271.6	2,668.41	-277.0	-90.0	-275.4	0.00	0.00	0.00
2,400.0	12.00	198.00	2,369.4	2,570.60	-296.8	-96.4	-295.0	0.00	0.00	0.00
2,500.0	12.00	198.00	2,467.2	2,472.78	-316.6	-102.9	-314.7	0.00	0.00	0.00
2,600.0	12.00	198.00	2,565.0	2,374.97	-336.4	-109.3	-334.3	0.00	0.00	0.00
2,700.0	12.00	198.00	2,662.8	2,277.16	-356.1	-115.7	-354.0	0.00	0.00	0.00
2,800.0	12.00	198.00	2,760.7	2,179.34	-375.9	-122.1	-373.6	0.00	0.00	0.00
2,900.0	12.00	198.00	2,858.5	2,081.53	-395.7	-128.6	-393.3	0.00	0.00	0.00
3,000.0	12.00	198.00	2,956.3	1,983.71	-415.5	-135.0	-412.9	0.00	0.00	0.00
3,100.0	12.00	198.00	3,054.1	1,885.90	-435.2	-141.4	-432.6	0.00	0.00	0.00
3,200.0	12.00	198.00	3,151.9	1,788.08	-455.0	-147.8	-452.2	0.00	0.00	0.00
END OF TANGENT										
3,243.8	12.00	198.00	3,194.7	1,745.28	-463.7	-150.7	-460.8	0.00	0.00	0.00
3,300.0	10.88	198.00	3,249.8	1,690.16	-474.3	-154.1	-471.4	2.00	-2.00	0.00
Richard Sandstone										
3,319.5	10.49	198.00	3,269.0	1,671.00	-477.7	-155.2	-474.8	2.00	-2.00	0.00
3,400.0	8.88	198.00	3,348.4	1,591.64	-490.6	-159.4	-487.6	2.00	-2.00	0.00
Parkman Sandstone										
3,425.9	8.36	198.00	3,374.0	1,566.00	-494.3	-160.6	-491.3	2.00	-2.00	0.00
3,500.0	6.88	198.00	3,447.4	1,492.59	-503.6	-163.6	-500.5	2.00	-2.00	0.00
3,600.0	4.88	198.00	3,546.9	1,393.12	-513.3	-166.8	-510.2	2.00	-2.00	0.00
3,700.0	2.88	198.00	3,646.6	1,293.35	-519.8	-168.9	-516.6	2.00	-2.00	0.00
3,800.0	0.88	198.00	3,746.6	1,193.41	-522.9	-169.9	-519.7	2.00	-2.00	0.00
EOD TO VERTICAL										

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Site:	SE SW SEC. 35 T8N R60W 6th P.M.	North Reference:	True
Well:	CINNAMON TEAL FED 35-6HC	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	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)
3,843.8	0.00	0.00	3,790.3	1,149.66	-523.2	-170.0	-520.0	2.00	-2.00	0.00
3,900.0	0.00	0.00	3,846.6	1,093.41	-523.2	-170.0	-520.0	0.00	0.00	0.00
4,000.0	0.00	0.00	3,946.6	993.41	-523.2	-170.0	-520.0	0.00	0.00	0.00
4,100.0	0.00	0.00	4,046.6	893.41	-523.2	-170.0	-520.0	0.00	0.00	0.00
4,200.0	0.00	0.00	4,146.6	793.41	-523.2	-170.0	-520.0	0.00	0.00	0.00
Sussex Sandstone										
4,252.4	0.00	0.00	4,199.0	741.00	-523.2	-170.0	-520.0	0.00	0.00	0.00
4,300.0	0.00	0.00	4,246.6	693.41	-523.2	-170.0	-520.0	0.00	0.00	0.00
4,400.0	0.00	0.00	4,346.6	593.41	-523.2	-170.0	-520.0	0.00	0.00	0.00
4,500.0	0.00	0.00	4,446.6	493.41	-523.2	-170.0	-520.0	0.00	0.00	0.00
4,600.0	0.00	0.00	4,546.6	393.41	-523.2	-170.0	-520.0	0.00	0.00	0.00
4,700.0	0.00	0.00	4,646.6	293.41	-523.2	-170.0	-520.0	0.00	0.00	0.00
Shannon Sandstone										
4,710.4	0.00	0.00	4,657.0	283.00	-523.2	-170.0	-520.0	0.00	0.00	0.00
4,800.0	0.00	0.00	4,746.6	193.41	-523.2	-170.0	-520.0	0.00	0.00	0.00
4,900.0	0.00	0.00	4,846.6	93.41	-523.2	-170.0	-520.0	0.00	0.00	0.00
5,000.0	0.00	0.00	4,946.6	-6.59	-523.2	-170.0	-520.0	0.00	0.00	0.00
5,100.0	0.00	0.00	5,046.6	-106.59	-523.2	-170.0	-520.0	0.00	0.00	0.00
5,200.0	0.00	0.00	5,146.6	-206.59	-523.2	-170.0	-520.0	0.00	0.00	0.00
5,300.0	0.00	0.00	5,246.6	-306.59	-523.2	-170.0	-520.0	0.00	0.00	0.00
5,400.0	0.00	0.00	5,346.6	-406.59	-523.2	-170.0	-520.0	0.00	0.00	0.00
5,500.0	0.00	0.00	5,446.6	-506.59	-523.2	-170.0	-520.0	0.00	0.00	0.00
5,600.0	0.00	0.00	5,546.6	-606.59	-523.2	-170.0	-520.0	0.00	0.00	0.00
5,700.0	0.00	0.00	5,646.6	-706.59	-523.2	-170.0	-520.0	0.00	0.00	0.00
5,800.0	0.00	0.00	5,746.6	-806.59	-523.2	-170.0	-520.0	0.00	0.00	0.00
5,900.0	0.00	0.00	5,846.6	-906.59	-523.2	-170.0	-520.0	0.00	0.00	0.00
KOP (10°/100ft BUR)										
5,931.5	0.00	0.00	5,878.1	-938.10	-523.2	-170.0	-520.0	0.00	0.00	0.00
6,000.0	6.85	1.15	5,946.4	-1,006.42	-519.1	-169.9	-515.9	10.00	10.00	0.00
6,100.0	16.85	1.15	6,044.2	-1,104.17	-498.6	-169.5	-495.4	10.00	10.00	0.00
Sharon Springs										
6,138.9	20.74	1.15	6,081.0	-1,141.00	-486.1	-169.3	-482.9	10.00	10.00	0.00
6,200.0	26.85	1.15	6,136.9	-1,196.86	-461.4	-168.8	-458.3	10.00	10.00	0.00
Niobrara A Chalk										
6,229.7	29.82	1.15	6,163.0	-1,223.00	-447.4	-168.5	-444.2	10.00	10.00	0.00
Niobrara A Chalk Base										
6,260.1	32.87	1.15	6,189.0	-1,249.00	-431.5	-168.2	-428.4	10.00	10.00	0.00
Niobrara B1 Chalk Top										
6,291.7	36.02	1.15	6,215.0	-1,275.00	-413.7	-167.8	-410.6	10.00	10.00	0.00
6,300.0	36.85	1.15	6,221.7	-1,281.70	-408.7	-167.7	-405.6	10.00	10.00	0.00
Niobrara B1 Chalk Base										
6,329.7	39.82	1.15	6,245.0	-1,305.00	-390.3	-167.3	-387.2	10.00	10.00	0.00
6,400.0	46.85	1.15	6,296.1	-1,356.09	-342.1	-166.4	-339.0	10.00	10.00	0.00
Niobrara B2 Chalk Base										
6,407.2	47.58	1.15	6,301.0	-1,361.00	-336.8	-166.3	-333.7	10.00	10.00	0.00
Niobrara C Chalk Top										
6,460.4	52.89	1.15	6,335.0	-1,395.00	-296.0	-165.5	-292.9	10.00	10.00	0.00
6,500.0	56.85	1.15	6,357.8	-1,417.78	-263.6	-164.8	-260.5	10.00	10.00	0.00
Niobrara C Chalk Base										
6,549.5	61.80	1.15	6,383.0	-1,443.00	-221.1	-164.0	-218.0	10.00	10.00	0.00
Niobrara D Chalk Top										
6,585.4	65.40	1.15	6,399.0	-1,459.00	-188.9	-163.3	-185.8	10.00	10.00	0.00

Planning Report



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Company:	MALLARD EXPLORATION	TVD Reference:	KB-EST @ 4940.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4940.0usft (Original Well Elev)
Site:	SE SW SEC. 35 T8N R60W 6th P.M.	North Reference:	True
Well:	CINNAMON TEAL FED 35-6HC	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	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)
6,600.0	66.86	1.15	6,404.9	-1,464.89	-175.6	-163.0	-172.5	10.00	10.00	0.00
Ft. Hays										
6,665.0	73.36	1.15	6,427.0	-1,487.00	-114.5	-161.8	-111.5	10.00	10.00	0.00
6,700.0	76.86	1.15	6,436.0	-1,495.99	-80.7	-161.1	-77.7	10.00	10.00	0.00
6,800.0	86.86	1.15	6,450.1	-1,510.14	18.2	-159.2	21.1	10.00	10.00	0.00
HZ LP: 600ft FSL & 1900ft FWL of Sec 35 - Codell (Target)										
6,831.4	90.00	1.15	6,451.0	-1,511.00	49.6	-158.5	52.5	10.00	10.00	0.00
6,900.0	90.00	1.15	6,451.0	-1,511.00	118.1	-157.2	121.0	0.00	0.00	0.00
7,000.0	90.00	1.15	6,451.0	-1,511.00	218.1	-155.2	220.9	0.00	0.00	0.00
7,100.0	90.00	1.15	6,451.0	-1,511.00	318.1	-153.2	320.9	0.00	0.00	0.00
7,200.0	90.00	1.15	6,451.0	-1,511.00	418.1	-151.2	420.8	0.00	0.00	0.00
7,300.0	90.00	1.15	6,451.0	-1,511.00	518.1	-149.1	520.7	0.00	0.00	0.00
7,400.0	90.00	1.15	6,451.0	-1,511.00	618.0	-147.1	620.6	0.00	0.00	0.00
7,500.0	90.00	1.15	6,451.0	-1,511.00	718.0	-145.1	720.6	0.00	0.00	0.00
7,600.0	90.00	1.15	6,451.0	-1,511.00	818.0	-143.1	820.5	0.00	0.00	0.00
7,700.0	90.00	1.15	6,451.0	-1,511.01	918.0	-141.1	920.4	0.00	0.00	0.00
7,800.0	90.00	1.15	6,451.0	-1,511.01	1,018.0	-139.1	1,020.3	0.00	0.00	0.00
7,900.0	90.00	1.15	6,451.0	-1,511.01	1,117.9	-137.1	1,120.3	0.00	0.00	0.00
8,000.0	90.00	1.15	6,451.0	-1,511.01	1,217.9	-135.1	1,220.2	0.00	0.00	0.00
8,100.0	90.00	1.15	6,451.0	-1,511.01	1,317.9	-133.1	1,320.1	0.00	0.00	0.00
8,200.0	90.00	1.15	6,451.0	-1,511.01	1,417.9	-131.1	1,420.0	0.00	0.00	0.00
8,300.0	90.00	1.15	6,451.0	-1,511.01	1,517.9	-129.1	1,520.0	0.00	0.00	0.00
8,400.0	90.00	1.15	6,451.0	-1,511.01	1,617.8	-127.1	1,619.9	0.00	0.00	0.00
8,500.0	90.00	1.15	6,451.0	-1,511.01	1,717.8	-125.1	1,719.8	0.00	0.00	0.00
8,600.0	90.00	1.15	6,451.0	-1,511.01	1,817.8	-123.1	1,819.8	0.00	0.00	0.00
8,700.0	90.00	1.15	6,451.0	-1,511.01	1,917.8	-121.1	1,919.7	0.00	0.00	0.00
8,800.0	90.00	1.15	6,451.0	-1,511.01	2,017.8	-119.1	2,019.6	0.00	0.00	0.00
8,900.0	90.00	1.15	6,451.0	-1,511.01	2,117.7	-117.1	2,119.5	0.00	0.00	0.00
9,000.0	90.00	1.15	6,451.0	-1,511.01	2,217.7	-115.0	2,219.5	0.00	0.00	0.00
9,100.0	90.00	1.15	6,451.0	-1,511.01	2,317.7	-113.0	2,319.4	0.00	0.00	0.00
9,200.0	90.00	1.15	6,451.0	-1,511.01	2,417.7	-111.0	2,419.3	0.00	0.00	0.00
9,300.0	90.00	1.15	6,451.0	-1,511.01	2,517.7	-109.0	2,519.2	0.00	0.00	0.00
9,400.0	90.00	1.15	6,451.0	-1,511.01	2,617.6	-107.0	2,619.2	0.00	0.00	0.00
9,500.0	90.00	1.15	6,451.0	-1,511.01	2,717.6	-105.0	2,719.1	0.00	0.00	0.00
9,600.0	90.00	1.15	6,451.0	-1,511.01	2,817.6	-103.0	2,819.0	0.00	0.00	0.00
9,700.0	90.00	1.15	6,451.0	-1,511.01	2,917.6	-101.0	2,918.9	0.00	0.00	0.00
9,800.0	90.00	1.15	6,451.0	-1,511.01	3,017.6	-99.0	3,018.9	0.00	0.00	0.00
9,900.0	90.00	1.15	6,451.0	-1,511.01	3,117.5	-96.9	3,118.8	0.00	0.00	0.00
10,000.0	90.00	1.15	6,451.0	-1,511.01	3,217.5	-94.9	3,218.7	0.00	0.00	0.00
10,100.0	90.00	1.15	6,451.0	-1,511.01	3,317.5	-92.9	3,318.6	0.00	0.00	0.00
10,200.0	90.00	1.15	6,451.0	-1,511.00	3,417.5	-90.9	3,418.6	0.00	0.00	0.00
10,300.0	90.00	1.15	6,451.0	-1,511.00	3,517.5	-88.9	3,518.5	0.00	0.00	0.00
10,400.0	90.00	1.15	6,451.0	-1,511.00	3,617.4	-86.9	3,618.4	0.00	0.00	0.00
10,500.0	90.00	1.15	6,451.0	-1,511.00	3,717.4	-84.9	3,718.4	0.00	0.00	0.00
10,600.0	90.00	1.15	6,451.0	-1,511.00	3,817.4	-82.8	3,818.3	0.00	0.00	0.00
10,700.0	90.00	1.15	6,451.0	-1,511.00	3,917.4	-80.8	3,918.2	0.00	0.00	0.00
10,800.0	90.00	1.16	6,451.0	-1,511.00	4,017.4	-78.8	4,018.1	0.00	0.00	0.00
10,900.0	90.00	1.16	6,451.0	-1,511.00	4,117.3	-76.8	4,118.1	0.00	0.00	0.00
BHL: 600ft FNL & 1900ft FWL of Sec 35										
10,936.4	90.00	1.16	6,451.0	-1,511.00	4,153.7	-76.1	4,154.4	0.00	0.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well CINNAMON TEAL FED 35-6HC
Company:	MALLARD EXPLORATION	TVD Reference:	KB-EST @ 4940.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4940.0usft (Original Well Elev)
Site:	SE SW SEC. 35 T8N R60W 6th P.M.	North Reference:	True
Well:	CINNAMON TEAL FED 35-6HC	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

Formations						
MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
471.0	471.0	Fox Hills Base				
1,520.4	1,509.0	Pierre Shale Top				
3,319.5	3,269.0	Richard Sandstone				
3,425.9	3,374.0	Parkman Sandstone				
4,252.4	4,199.0	Sussex Sandstone				
4,710.4	4,657.0	Shannon Sandstone				
6,138.9	6,081.0	Sharon Springs				
6,229.7	6,163.0	Niobrara A Chalk				
6,260.1	6,189.0	Niobrara A Chalk Base				
6,291.7	6,215.0	Niobrara B1 Chalk Top				
6,329.7	6,245.0	Niobrara B1 Chalk Base				
6,407.2	6,301.0	Niobrara B2 Chalk Base				
6,460.4	6,335.0	Niobrara C Chalk Top				
6,549.5	6,383.0	Niobrara C Chalk Base				
6,585.4	6,399.0	Niobrara D Chalk Top				
6,665.0	6,427.0	Ft. Hays				
6,831.4	6,451.0	Codell (Target)				

Plan Annotations				
MD (usft)	TVD (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
0.0	0.0	0.0	0.0	SHL: 550ft FSL & 2060ft FWL of Sec 35
600.0	600.0	0.0	0.0	START NUDGE (2°/100ft BUR)
1,200.0	1,195.6	-59.5	-19.3	EOB TO 12° INC
3,243.8	3,194.7	-463.7	-150.7	END OF TANGENT
3,843.8	3,790.3	-523.2	-170.0	EOD TO VERTICAL
5,931.5	5,878.1	-523.2	-170.0	KOP (10°/100ft BUR)
6,831.4	6,451.0	49.6	-158.5	HZ LP: 600ft FSL & 1900ft FWL of Sec 35
10,936.4	6,451.0	4,153.7	-76.1	BHL: 600ft FNL & 1900ft FWL of Sec 35