

MALLARD EXPLORATION

WELD COUNTY, COLORADO (NAD 83)

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

CINNAMON TEAL FED 35-4HN

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 35-4HN
Wellbore: ORIGINAL WELLBORE
Design: PROPOSAL #1

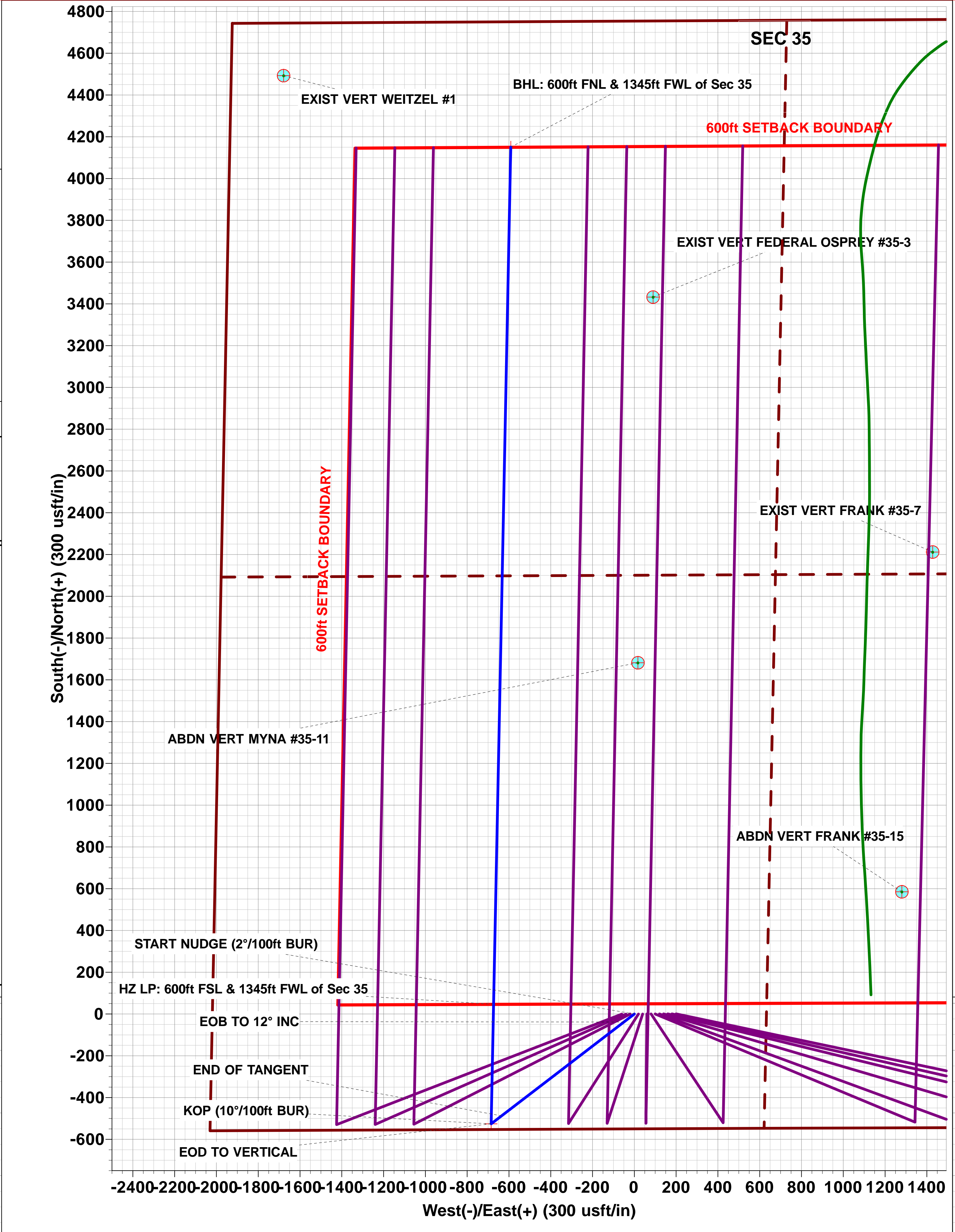
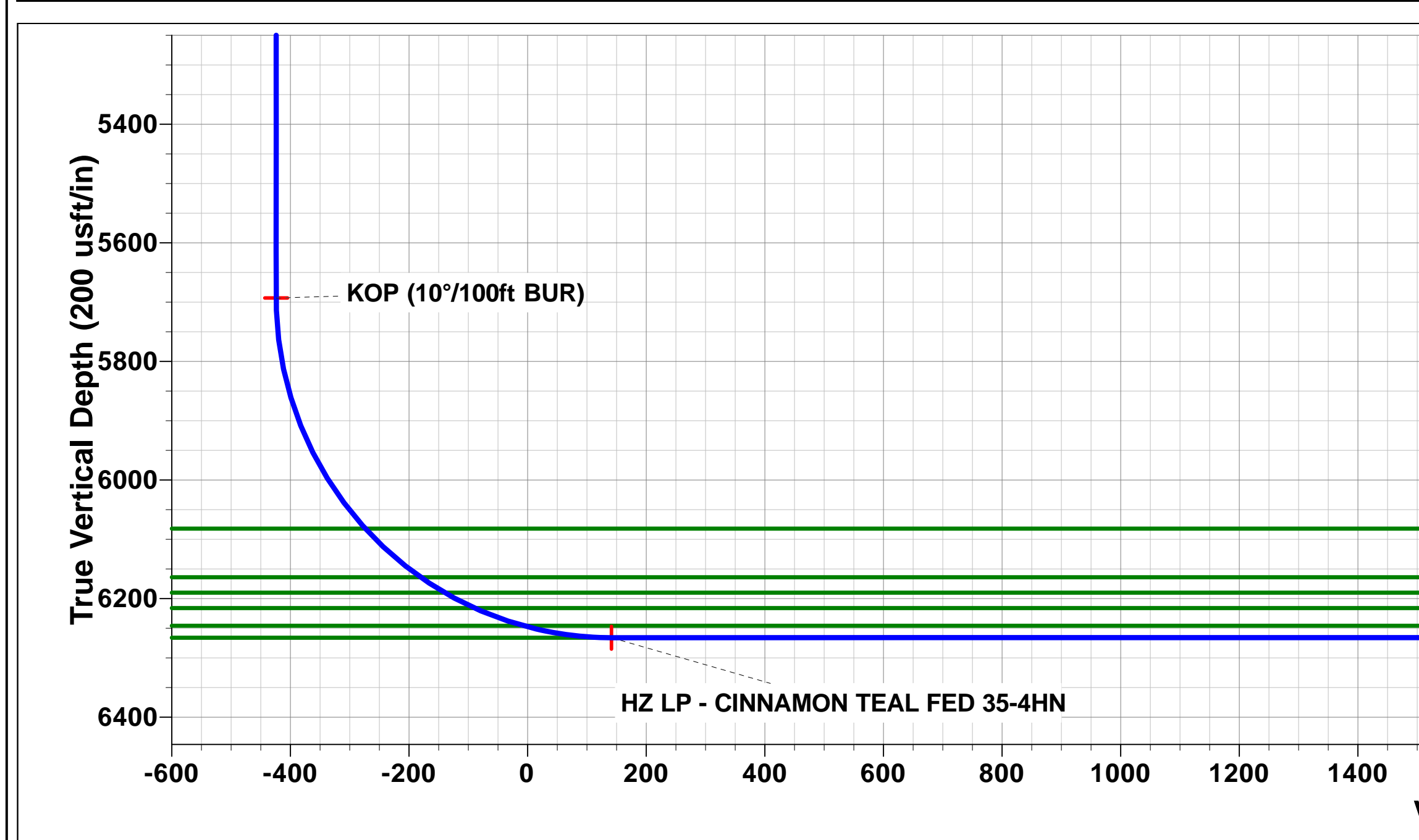
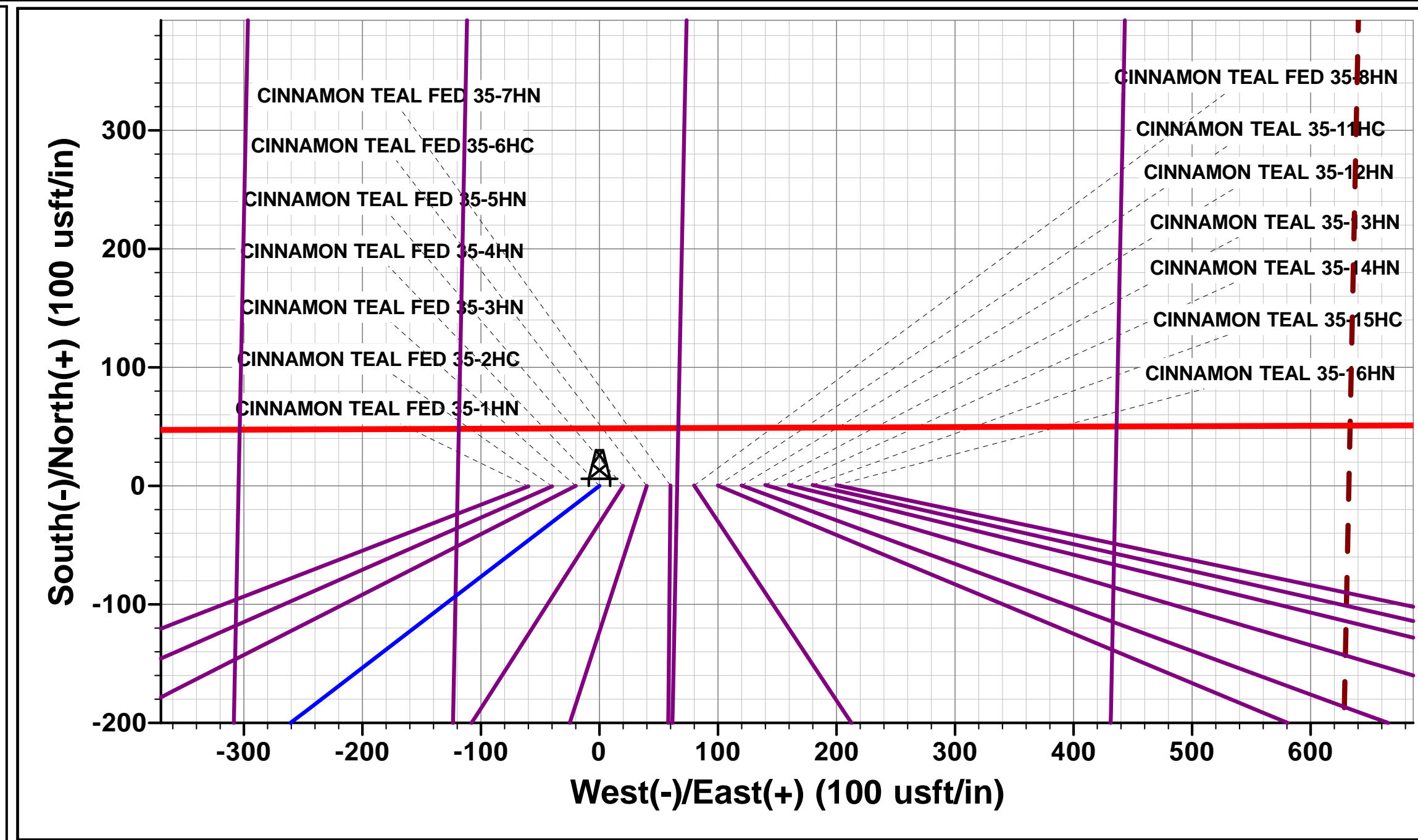
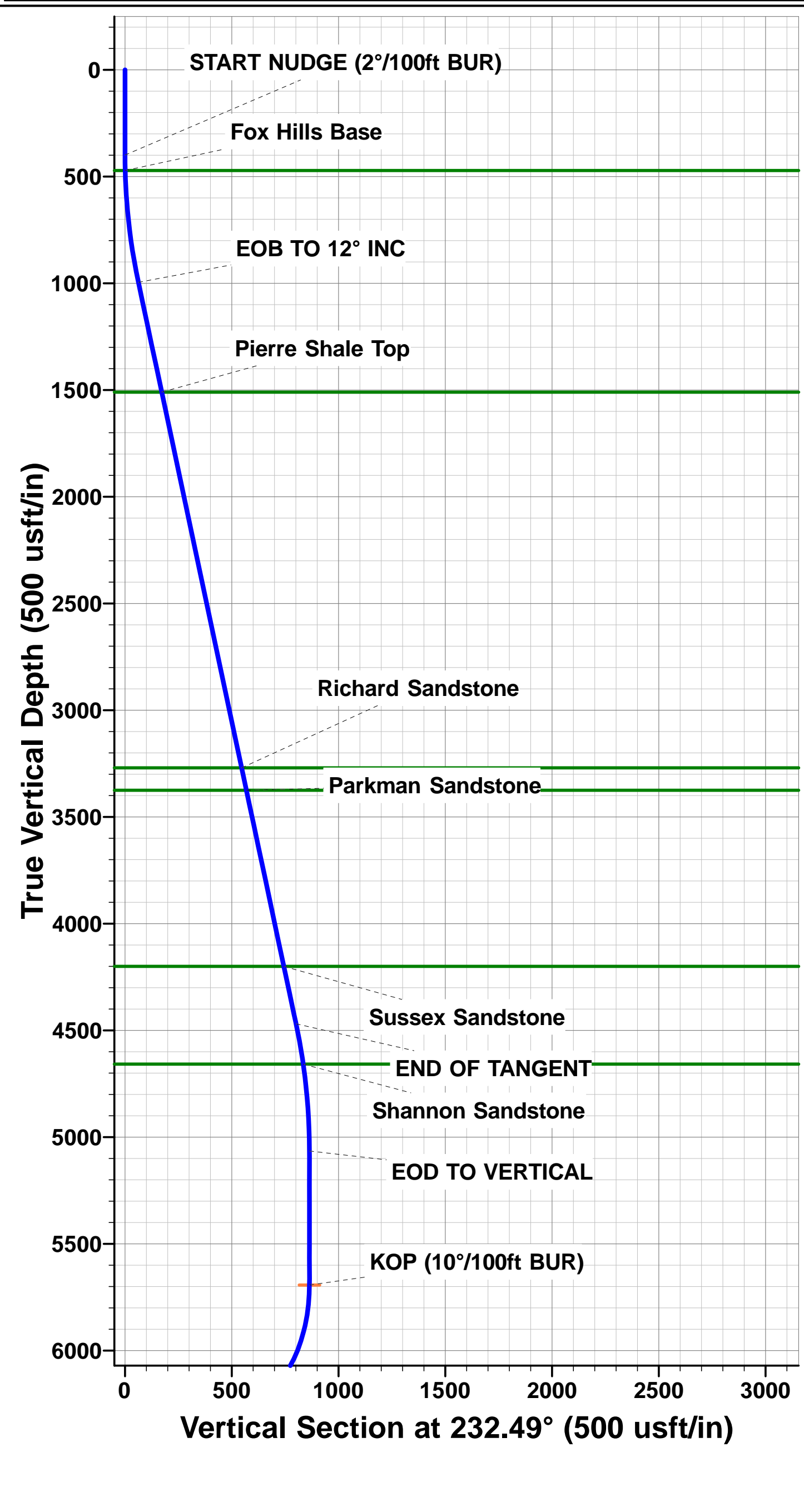
ANNOTATIONS									
TVD	MD	Inc	Azi	+N/-S	+E/-W	VSec	Dep	Annotation	
0.0	0.0	0.00	0.00	0.0	0.0	0.0	0.0	SHL: 550ft FSL & 2020ft FWL of Sec 35	
400.0	400.0	0.00	0.00	0.0	0.0	0.0	0.0	START NUDGE (2"/100ft BUR)	
995.6	1000.0	12.00	232.49	-38.1	-49.7	-30.7	62.6	EOB TO 12" INC	
4469.6	4551.5	12.00	232.49	-487.7	-635.4	-393.2	801.0	END OF TANGENT	
5065.2	5151.5	0.00	0.00	-525.8	-685.1	-423.9	863.6	EOD TO VERTICAL	
5693.1	5779.5	0.00	0.00	-525.8	-685.1	-423.9	863.6	KOP (10"/100ft BUR)	
6266.0	6679.4	90.00	1.15	47.0	-673.6	141.5	1436.5	HZ LP: 600ft FSL & 1345ft FWL of Sec 35	
6266.0	10783.6	90.00	1.14	4150.4	-591.3	4192.3	5540.8	BHL: 600ft FNL & 1345ft FWL of Sec 35	

PROPOSED LOCAL COORDINATES:

SHL: 550ft FSL & 2020ft FWL Sec 35
HZ LP: 600ft FSL & 1345ft FWL Sec 35

BHL: 600ft FNL & 1345ft FWL of Sec 35

WELLBORE TARGET DETAILS (LAT/LONG)					
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP - CINNAMON TEAL FED 35-4HN	5693.1	-525.8	-685.1	40.611616	-104.064061
HZ LP - CINNAMON TEAL FED 35-4HN	6266.0	47.0	-673.6	40.613188	-104.064019
BHL - CINNAMON TEAL FED 35-4HN	6266.0	4150.4	-591.3	40.624451	-104.063723



Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well CINNAMON TEAL FED 35-4HN
Company:	MALLARD EXPLORATION	TVD Reference:	KB-EST @ 4941.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4941.0usft (Original Well Elev)
Site:	SE SW SEC. 35 T8N R60W 6th P.M.	North Reference:	True
Well:	CINNAMON TEAL FED 35-4HN	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 35-4HN		
Well Position	+N/-S	0.4 usft	Northing:
	+E/-W	60.0 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 (°)
	6,266.0	0.0	0.0	351.89

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	-4,941.0	0.0	0.0	0.00	0.00	0.00	0.00	
400.0	0.00	0.00	400.0	-4,541.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,000.0	12.00	232.49	995.6	-3,945.4	-38.1	-49.7	2.00	2.00	0.00	232.49	
4,551.5	12.00	232.49	4,469.6	-471.4	-487.7	-635.4	0.00	0.00	0.00	0.00	
5,151.5	0.00	0.00	5,065.2	124.2	-525.8	-685.1	2.00	-2.00	0.00	180.00	
5,779.5	0.00	0.00	5,693.1	752.1	-525.8	-685.1	0.00	0.00	0.00	0.00	KOP - CINNAMON
6,679.4	90.00	1.15	6,266.0	1,325.0	47.0	-673.6	10.00	10.00	0.13	1.15	HZ LP - CINNAMOI
10,783.6	90.00	1.14	6,266.0	1,325.0	4,150.4	-591.3	0.00	0.00	0.00	-118.84	BHL - CINNAMON

Planning Report



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Company:	MALLARD EXPLORATION	TVD Reference:	KB-EST @ 4941.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4941.0usft (Original Well Elev)
Site:	SE SW SEC. 35 T8N R60W 6th P.M.	North Reference:	True
Well:	CINNAMON TEAL FED 35-4HN	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 & 2020ft FWL of Sec 35										
0.0	0.00	0.00	0.0	4,941.00	0.0	0.0	0.0	0.00	0.00	0.00
100.0	0.00	0.00	100.0	4,841.00	0.0	0.0	0.0	0.00	0.00	0.00
200.0	0.00	0.00	200.0	4,741.00	0.0	0.0	0.0	0.00	0.00	0.00
300.0	0.00	0.00	300.0	4,641.00	0.0	0.0	0.0	0.00	0.00	0.00
START NUDGE (2°/100ft BUR)										
400.0	0.00	0.00	400.0	4,541.00	0.0	0.0	0.0	0.00	0.00	0.00
Fox Hills Base										
472.0	1.44	232.49	472.0	4,469.00	-0.6	-0.7	-0.4	2.00	2.00	0.00
500.0	2.00	232.49	500.0	4,441.02	-1.1	-1.4	-0.9	2.00	2.00	0.00
600.0	4.00	232.49	599.8	4,341.16	-4.2	-5.5	-3.4	2.00	2.00	0.00
700.0	6.00	232.49	699.5	4,241.55	-9.6	-12.4	-7.7	2.00	2.00	0.00
800.0	8.00	232.49	798.7	4,142.30	-17.0	-22.1	-13.7	2.00	2.00	0.00
900.0	10.00	232.49	897.5	4,043.53	-26.5	-34.5	-21.4	2.00	2.00	0.00
EOB TO 12° INC										
1,000.0	12.00	232.49	995.6	3,945.38	-38.1	-49.7	-30.7	2.00	2.00	0.00
1,100.0	12.00	232.49	1,093.4	3,847.56	-50.8	-66.2	-40.9	0.00	0.00	0.00
1,200.0	12.00	232.49	1,191.3	3,749.75	-63.4	-82.6	-51.1	0.00	0.00	0.00
1,300.0	12.00	232.49	1,289.1	3,651.93	-76.1	-99.1	-61.3	0.00	0.00	0.00
1,400.0	12.00	232.49	1,386.9	3,554.12	-88.7	-115.6	-71.6	0.00	0.00	0.00
1,500.0	12.00	232.49	1,484.7	3,456.30	-101.4	-132.1	-81.8	0.00	0.00	0.00
Pierre Shale Top										
1,525.9	12.00	232.49	1,510.0	3,431.00	-104.7	-136.4	-84.4	0.00	0.00	0.00
1,600.0	12.00	232.49	1,582.5	3,358.49	-114.1	-148.6	-92.0	0.00	0.00	0.00
1,700.0	12.00	232.49	1,680.3	3,260.67	-126.7	-165.1	-102.2	0.00	0.00	0.00
1,800.0	12.00	232.49	1,778.1	3,162.86	-139.4	-181.6	-112.4	0.00	0.00	0.00
1,900.0	12.00	232.49	1,876.0	3,065.04	-152.0	-198.1	-122.6	0.00	0.00	0.00
2,000.0	12.00	232.49	1,973.8	2,967.23	-164.7	-214.6	-132.8	0.00	0.00	0.00
2,100.0	12.00	232.49	2,071.6	2,869.41	-177.4	-231.1	-143.0	0.00	0.00	0.00
2,200.0	12.00	232.49	2,169.4	2,771.60	-190.0	-247.6	-153.2	0.00	0.00	0.00
2,300.0	12.00	232.49	2,267.2	2,673.78	-202.7	-264.1	-163.4	0.00	0.00	0.00
2,400.0	12.00	232.49	2,365.0	2,575.97	-215.3	-280.6	-173.6	0.00	0.00	0.00
2,500.0	12.00	232.49	2,462.8	2,478.16	-228.0	-297.1	-183.8	0.00	0.00	0.00
2,600.0	12.00	232.49	2,560.7	2,380.34	-240.6	-313.6	-194.0	0.00	0.00	0.00
2,700.0	12.00	232.49	2,658.5	2,282.53	-253.3	-330.1	-204.2	0.00	0.00	0.00
2,800.0	12.00	232.49	2,756.3	2,184.71	-266.0	-346.5	-214.4	0.00	0.00	0.00
2,900.0	12.00	232.49	2,854.1	2,086.90	-278.6	-363.0	-224.6	0.00	0.00	0.00
3,000.0	12.00	232.49	2,951.9	1,989.08	-291.3	-379.5	-234.8	0.00	0.00	0.00
3,100.0	12.00	232.49	3,049.7	1,891.27	-303.9	-396.0	-245.0	0.00	0.00	0.00
3,200.0	12.00	232.49	3,147.5	1,793.45	-316.6	-412.5	-255.3	0.00	0.00	0.00
3,300.0	12.00	232.49	3,245.4	1,695.64	-329.3	-429.0	-265.5	0.00	0.00	0.00
Richard Sandstone										
3,325.2	12.00	232.49	3,270.0	1,671.00	-332.4	-433.2	-268.0	0.00	0.00	0.00
3,400.0	12.00	232.49	3,343.2	1,597.82	-341.9	-445.5	-275.7	0.00	0.00	0.00
Parkman Sandstone										
3,432.5	12.00	232.49	3,375.0	1,566.00	-346.0	-450.9	-279.0	0.00	0.00	0.00
3,500.0	12.00	232.49	3,441.0	1,500.01	-354.6	-462.0	-285.9	0.00	0.00	0.00
3,600.0	12.00	232.49	3,538.8	1,402.19	-367.2	-478.5	-296.1	0.00	0.00	0.00
3,700.0	12.00	232.49	3,636.6	1,304.38	-379.9	-495.0	-306.3	0.00	0.00	0.00
3,800.0	12.00	232.49	3,734.4	1,206.56	-392.6	-511.5	-316.5	0.00	0.00	0.00
3,900.0	12.00	232.49	3,832.3	1,108.75	-405.2	-528.0	-326.7	0.00	0.00	0.00
4,000.0	12.00	232.49	3,930.1	1,010.93	-417.9	-544.5	-336.9	0.00	0.00	0.00
4,100.0	12.00	232.49	4,027.9	913.12	-430.5	-561.0	-347.1	0.00	0.00	0.00

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Well:	CINNAMON TEAL FED 35-4HN	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)
4,200.0	12.00	232.49	4,125.7	815.30	-443.2	-577.5	-357.3	0.00	0.00	0.00
Sussex Sandstone										
4,276.0	12.00	232.49	4,200.0	741.00	-452.8	-590.0	-365.1	0.00	0.00	0.00
4,300.0	12.00	232.49	4,223.5	717.49	-455.8	-593.9	-367.5	0.00	0.00	0.00
4,400.0	12.00	232.49	4,321.3	619.68	-468.5	-610.4	-377.7	0.00	0.00	0.00
4,500.0	12.00	232.49	4,419.1	521.86	-481.2	-626.9	-387.9	0.00	0.00	0.00
END OF TANGENT										
4,551.5	12.00	232.49	4,469.6	471.44	-487.7	-635.4	-393.2	0.00	0.00	0.00
4,600.0	11.03	232.49	4,517.0	423.96	-493.6	-643.1	-397.9	2.00	-2.00	0.00
4,700.0	9.03	232.49	4,615.5	325.50	-504.2	-656.9	-406.5	2.00	-2.00	0.00
Shannon Sandstone										
4,743.0	8.17	232.49	4,658.0	283.00	-508.1	-662.0	-409.6	2.00	-2.00	0.00
4,800.0	7.03	232.49	4,714.5	226.48	-512.7	-668.0	-413.3	2.00	-2.00	0.00
4,900.0	5.03	232.49	4,814.0	127.04	-519.1	-676.3	-418.5	2.00	-2.00	0.00
5,000.0	3.03	232.49	4,913.7	27.29	-523.4	-681.9	-422.0	2.00	-2.00	0.00
5,100.0	1.03	232.49	5,013.6	-72.64	-525.5	-684.7	-423.7	2.00	-2.00	0.00
EOD TO VERTICAL										
5,151.5	0.00	0.00	5,065.2	-124.18	-525.8	-685.1	-423.9	2.00	-2.00	0.00
5,200.0	0.00	0.00	5,113.6	-172.64	-525.8	-685.1	-423.9	0.00	0.00	0.00
5,300.0	0.00	0.00	5,213.6	-272.64	-525.8	-685.1	-423.9	0.00	0.00	0.00
5,400.0	0.00	0.00	5,313.6	-372.64	-525.8	-685.1	-423.9	0.00	0.00	0.00
5,500.0	0.00	0.00	5,413.6	-472.64	-525.8	-685.1	-423.9	0.00	0.00	0.00
5,600.0	0.00	0.00	5,513.6	-572.64	-525.8	-685.1	-423.9	0.00	0.00	0.00
5,700.0	0.00	0.00	5,613.6	-672.64	-525.8	-685.1	-423.9	0.00	0.00	0.00
KOP (10°/100ft BUR)										
5,779.5	0.00	0.00	5,693.1	-752.10	-525.8	-685.1	-423.9	0.00	0.00	0.00
5,800.0	2.05	1.15	5,713.6	-772.63	-525.4	-685.1	-423.6	10.00	10.00	0.00
5,900.0	12.05	1.15	5,812.7	-871.75	-513.2	-684.8	-411.5	10.00	10.00	0.00
6,000.0	22.06	1.15	5,908.2	-967.23	-483.9	-684.3	-382.5	10.00	10.00	0.00
6,100.0	32.06	1.15	5,997.2	-1,056.17	-438.5	-683.3	-337.7	10.00	10.00	0.00
6,200.0	42.06	1.15	6,076.9	-1,135.87	-378.3	-682.1	-278.3	10.00	10.00	0.00
Sharon Springs										
6,206.9	42.75	1.15	6,082.0	-1,141.00	-373.6	-682.0	-273.7	10.00	10.00	0.00
6,300.0	52.06	1.15	6,144.9	-1,203.91	-305.2	-680.7	-206.1	10.00	10.00	0.00
Niobrara A Chalk										
6,332.2	55.28	1.15	6,164.0	-1,223.00	-279.2	-680.1	-180.5	10.00	10.00	0.00
Niobrara A Chalk Base										
6,380.9	60.15	1.15	6,190.0	-1,249.00	-238.1	-679.3	-139.9	10.00	10.00	0.00
6,400.0	62.06	1.15	6,199.2	-1,258.22	-221.4	-679.0	-123.4	10.00	10.00	0.00
Niobrara B1 Chalk Top										
6,438.2	65.88	1.15	6,216.0	-1,275.00	-187.0	-678.3	-89.5	10.00	10.00	0.00
6,500.0	72.06	1.15	6,238.1	-1,297.15	-129.4	-677.1	-32.6	10.00	10.00	0.00
Niobrara B1 Chalk Base										
6,527.5	74.82	1.15	6,246.0	-1,305.00	-103.0	-676.6	-6.6	10.00	10.00	0.00
6,600.0	82.06	1.15	6,260.5	-1,319.51	-32.1	-675.2	63.4	10.00	10.00	0.00
HZ LP: 600ft FSL & 1345ft FWL of Sec 35 - Niobrara B2 Chalk Top (Target)										
6,679.4	90.00	1.15	6,266.0	-1,325.00	47.0	-673.6	141.5	10.00	10.00	0.00
6,700.0	90.00	1.15	6,266.0	-1,325.00	67.6	-673.1	161.9	0.00	0.00	0.00
6,800.0	90.00	1.15	6,266.0	-1,324.99	167.6	-671.1	260.6	0.00	0.00	0.00
6,900.0	90.00	1.15	6,266.0	-1,324.99	267.6	-669.1	359.3	0.00	0.00	0.00
7,000.0	90.00	1.15	6,266.0	-1,324.98	367.5	-667.1	458.0	0.00	0.00	0.00
7,100.0	90.00	1.15	6,266.0	-1,324.98	467.5	-665.1	556.7	0.00	0.00	0.00
7,200.0	90.00	1.15	6,266.0	-1,324.98	567.5	-663.1	655.4	0.00	0.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well CINNAMON TEAL FED 35-4HN
Company:	MALLARD EXPLORATION	TVD Reference:	KB-EST @ 4941.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4941.0usft (Original Well Elev)
Site:	SE SW SEC. 35 T8N R60W 6th P.M.	North Reference:	True
Well:	CINNAMON TEAL FED 35-4HN	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)
7,300.0	90.00	1.15	6,266.0	-1,324.97	667.5	-661.1	754.0	0.00	0.00	0.00
7,400.0	90.00	1.15	6,266.0	-1,324.97	767.5	-659.1	852.7	0.00	0.00	0.00
7,500.0	90.00	1.15	6,266.0	-1,324.96	867.4	-657.0	951.4	0.00	0.00	0.00
7,600.0	90.00	1.15	6,266.0	-1,324.96	967.4	-655.0	1,050.1	0.00	0.00	0.00
7,700.0	90.00	1.15	6,266.0	-1,324.96	1,067.4	-653.0	1,148.8	0.00	0.00	0.00
7,800.0	90.00	1.15	6,266.0	-1,324.96	1,167.4	-651.0	1,247.5	0.00	0.00	0.00
7,900.0	90.00	1.15	6,266.0	-1,324.95	1,267.4	-649.0	1,346.2	0.00	0.00	0.00
8,000.0	90.00	1.15	6,266.0	-1,324.95	1,367.3	-647.0	1,444.9	0.00	0.00	0.00
8,100.0	90.00	1.15	6,265.9	-1,324.95	1,467.3	-645.0	1,543.6	0.00	0.00	0.00
8,200.0	90.00	1.15	6,265.9	-1,324.95	1,567.3	-643.0	1,642.3	0.00	0.00	0.00
8,300.0	90.00	1.15	6,265.9	-1,324.95	1,667.3	-641.0	1,741.0	0.00	0.00	0.00
8,400.0	90.00	1.15	6,265.9	-1,324.95	1,767.3	-639.0	1,839.7	0.00	0.00	0.00
8,500.0	90.00	1.15	6,265.9	-1,324.94	1,867.2	-637.0	1,938.4	0.00	0.00	0.00
8,600.0	90.00	1.15	6,265.9	-1,324.94	1,967.2	-635.0	2,037.1	0.00	0.00	0.00
8,700.0	90.00	1.15	6,265.9	-1,324.94	2,067.2	-632.9	2,135.8	0.00	0.00	0.00
8,800.0	90.00	1.15	6,265.9	-1,324.94	2,167.2	-630.9	2,234.5	0.00	0.00	0.00
8,900.0	90.00	1.15	6,265.9	-1,324.94	2,267.2	-628.9	2,333.2	0.00	0.00	0.00
9,000.0	90.00	1.15	6,265.9	-1,324.94	2,367.1	-626.9	2,431.9	0.00	0.00	0.00
9,100.0	90.00	1.15	6,265.9	-1,324.95	2,467.1	-624.9	2,530.6	0.00	0.00	0.00
9,200.0	90.00	1.15	6,265.9	-1,324.95	2,567.1	-622.9	2,629.3	0.00	0.00	0.00
9,300.0	90.00	1.15	6,265.9	-1,324.95	2,667.1	-620.9	2,728.0	0.00	0.00	0.00
9,400.0	90.00	1.15	6,265.9	-1,324.95	2,767.1	-618.9	2,826.7	0.00	0.00	0.00
9,500.0	90.00	1.15	6,266.0	-1,324.95	2,867.0	-616.9	2,925.4	0.00	0.00	0.00
9,600.0	90.00	1.15	6,266.0	-1,324.95	2,967.0	-614.9	3,024.1	0.00	0.00	0.00
9,700.0	90.00	1.15	6,266.0	-1,324.96	3,067.0	-612.9	3,122.8	0.00	0.00	0.00
9,800.0	90.00	1.15	6,266.0	-1,324.96	3,167.0	-610.9	3,221.5	0.00	0.00	0.00
9,900.0	90.00	1.15	6,266.0	-1,324.96	3,267.0	-608.9	3,320.2	0.00	0.00	0.00
10,000.0	90.00	1.15	6,266.0	-1,324.97	3,366.9	-606.9	3,418.9	0.00	0.00	0.00
10,100.0	90.00	1.14	6,266.0	-1,324.97	3,466.9	-604.9	3,517.6	0.00	0.00	0.00
10,200.0	90.00	1.14	6,266.0	-1,324.97	3,566.9	-602.9	3,616.3	0.00	0.00	0.00
10,300.0	90.00	1.14	6,266.0	-1,324.98	3,666.9	-600.9	3,715.0	0.00	0.00	0.00
10,400.0	90.00	1.14	6,266.0	-1,324.98	3,766.9	-598.9	3,813.7	0.00	0.00	0.00
10,500.0	90.00	1.14	6,266.0	-1,324.99	3,866.8	-596.9	3,912.4	0.00	0.00	0.00
10,600.0	90.00	1.14	6,266.0	-1,324.99	3,966.8	-594.9	4,011.1	0.00	0.00	0.00
10,700.0	90.00	1.14	6,266.0	-1,325.00	4,066.8	-592.9	4,109.8	0.00	0.00	0.00
BHL: 600ft FNL & 1345ft FWL of Sec 35										
10,783.6	90.00	1.14	6,266.0	-1,325.00	4,150.4	-591.3	4,192.3	0.00	0.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well CINNAMON TEAL FED 35-4HN
Company:	MALLARD EXPLORATION	TVD Reference:	KB-EST @ 4941.0usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4941.0usft (Original Well Elev)
Site:	SE SW SEC. 35 T8N R60W 6th P.M.	North Reference:	True
Well:	CINNAMON TEAL FED 35-4HN	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #1		

Formations					
MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
472.0	472.0	Fox Hills Base			
1,525.9	1,510.0	Pierre Shale Top			
3,325.2	3,270.0	Richard Sandstone			
3,432.5	3,375.0	Parkman Sandstone			
4,276.0	4,200.0	Sussex Sandstone			
4,743.0	4,658.0	Shannon Sandstone			
6,206.9	6,082.0	Sharon Springs			
6,332.2	6,164.0	Niobrara A Chalk			
6,380.9	6,190.0	Niobrara A Chalk Base			
6,438.2	6,216.0	Niobrara B1 Chalk Top			
6,527.5	6,246.0	Niobrara B1 Chalk Base			
6,679.4	6,266.0	Niobrara B2 Chalk Top (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 & 2020ft FWL of Sec 35
400.0	400.0	0.0	0.0	START NUDGE (2°/100ft BUR)
1,000.0	995.6	-38.1	-49.7	EOB TO 12° INC
4,551.5	4,469.6	-487.7	-635.4	END OF TANGENT
5,151.5	5,065.2	-525.8	-685.1	EOD TO VERTICAL
5,779.5	5,693.1	-525.8	-685.1	KOP (10°/100ft BUR)
6,679.4	6,266.0	47.0	-673.6	HZ LP: 600ft FSL & 1345ft FWL of Sec 35
10,783.6	6,266.0	4,150.4	-591.3	BHL: 600ft FNL & 1345ft FWL of Sec 35