

# **MALLARD EXPLORATION**

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

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

**CINNAMON TEAL 35-12HN**

**ORIGINAL WELLBORE**

**18 September, 2017**

**Plan: PROPOSAL #1**



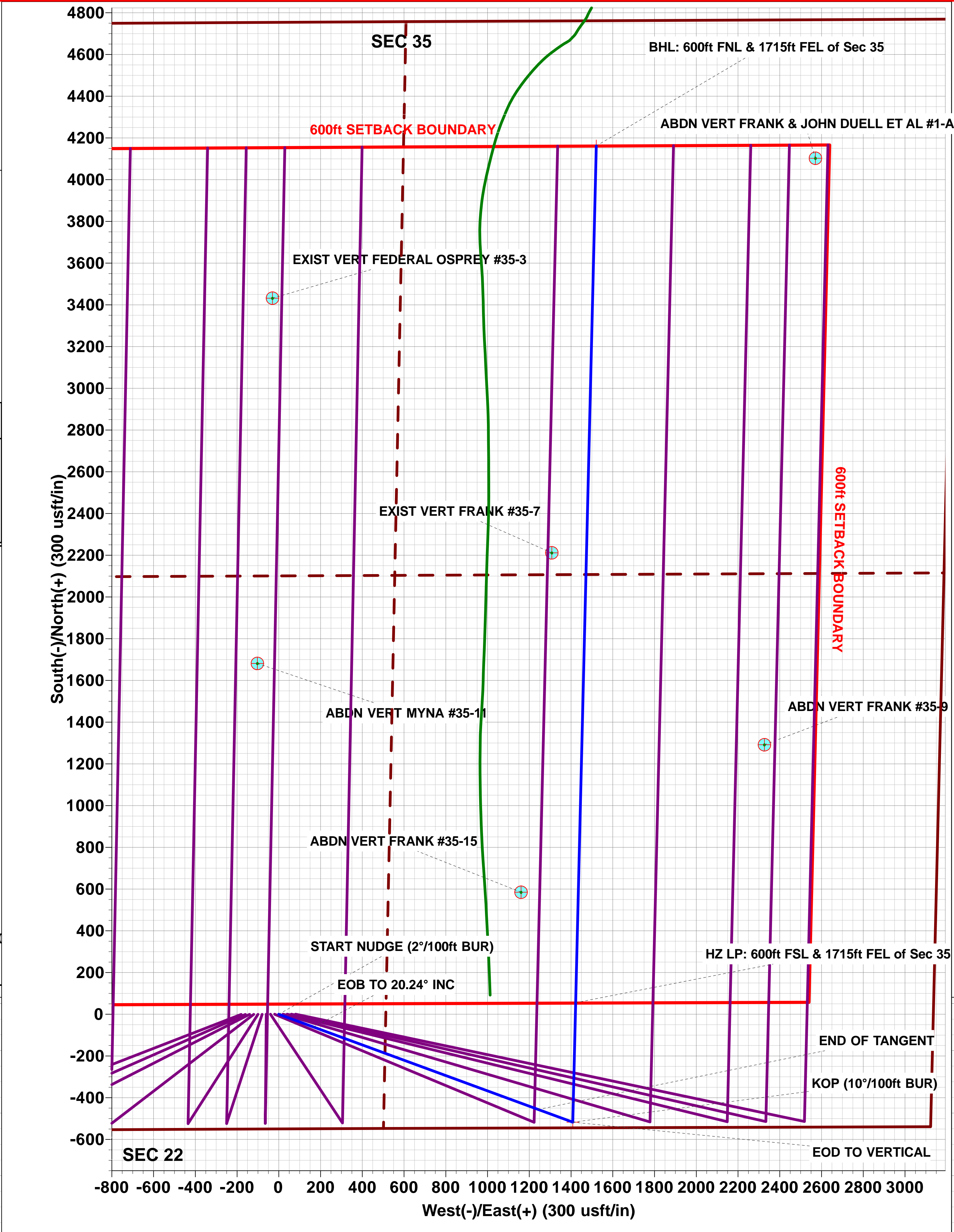
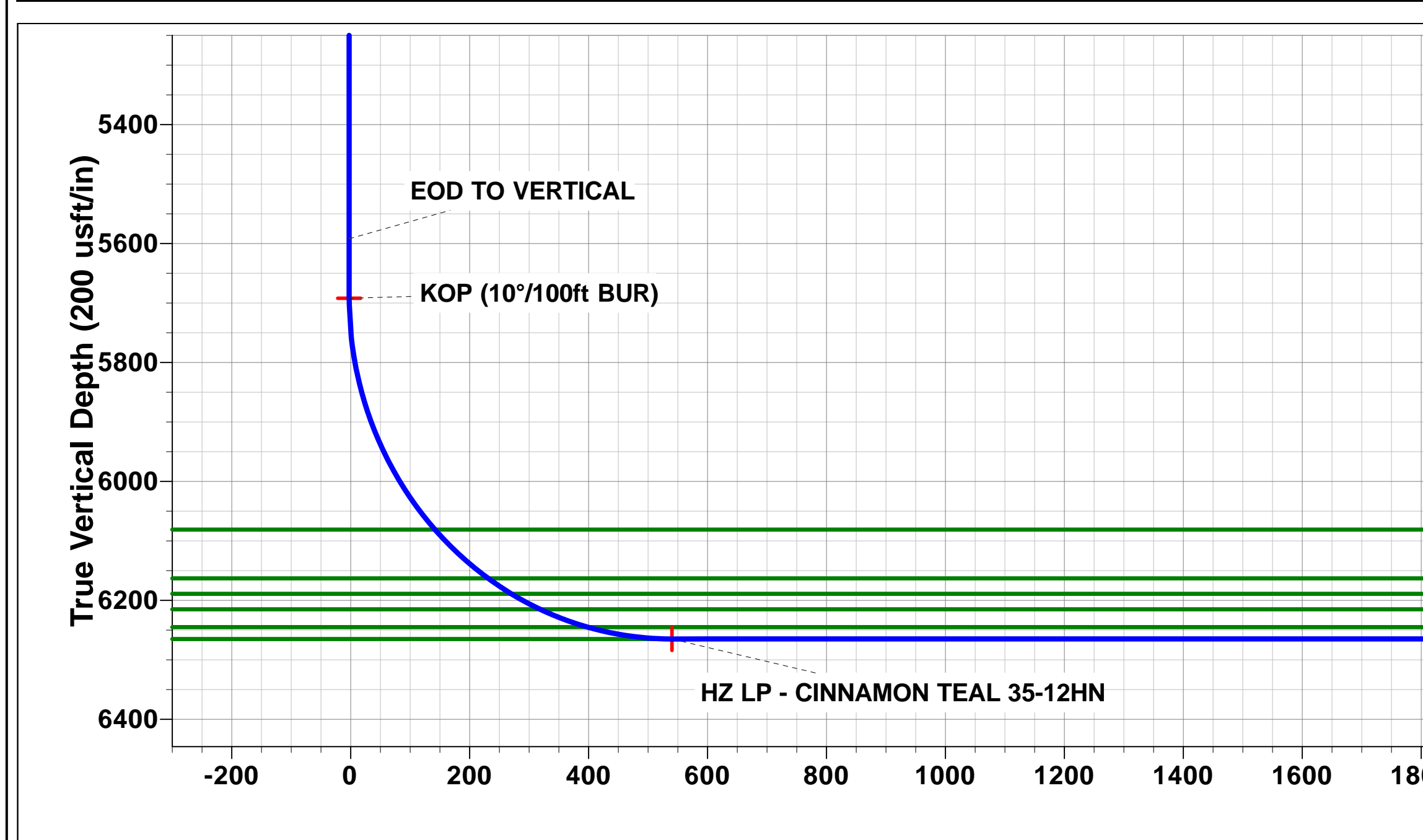
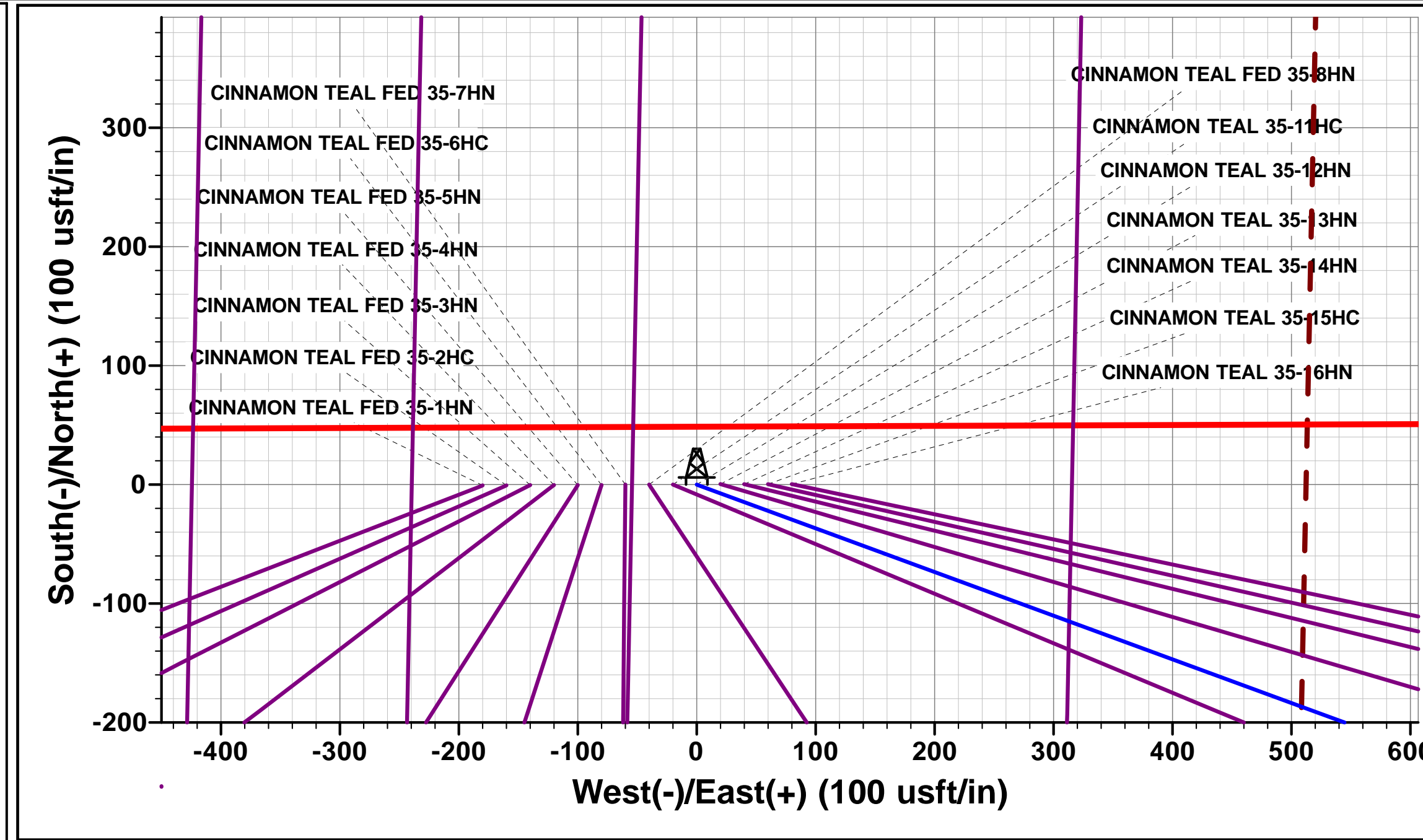
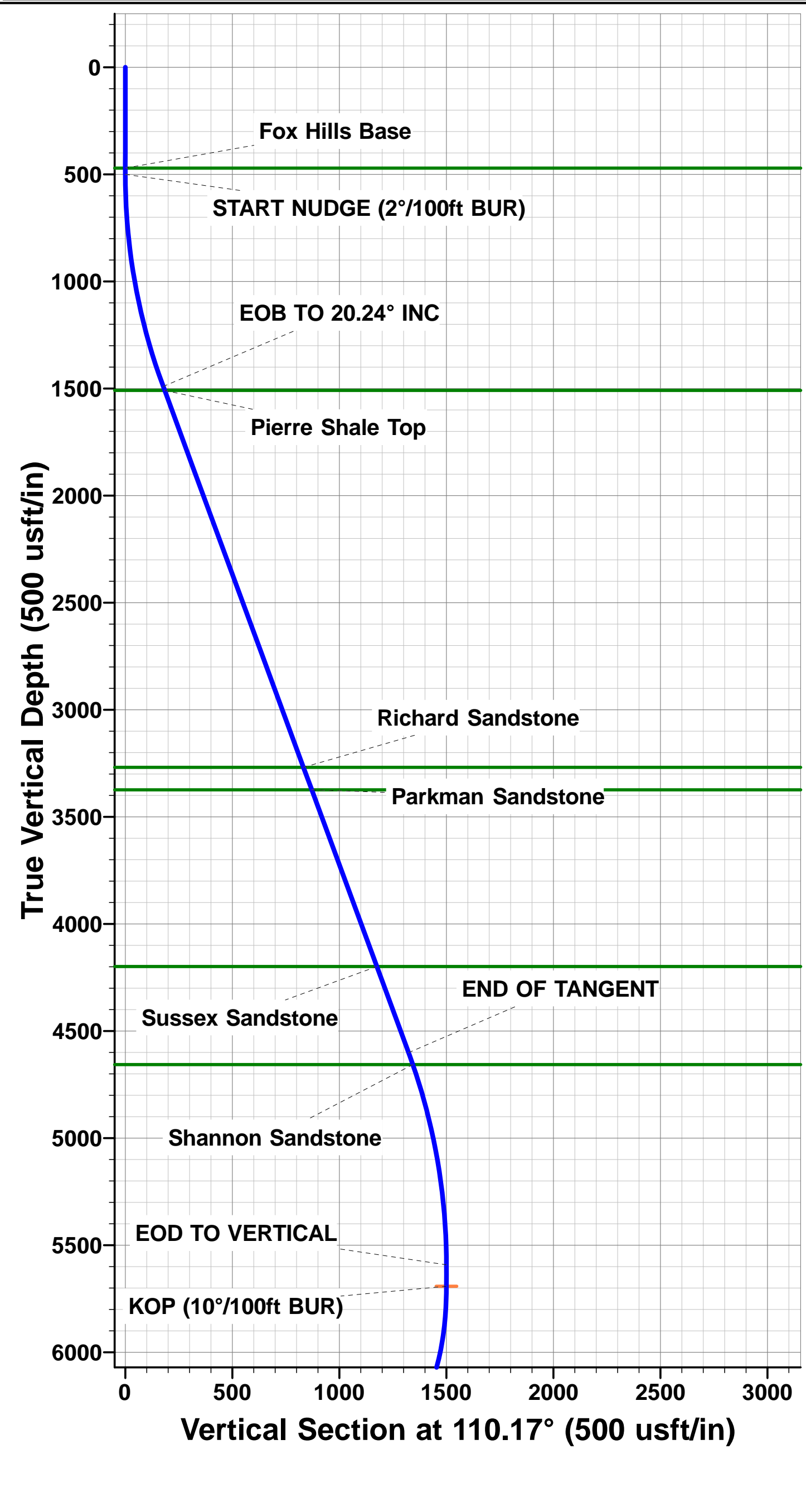


Project: WELD COUNTY, COLORADO (NAD 83)  
Site: SE SW SEC. 35 T8N R60W 6th P.M.  
Well: CINNAMON TEAL 35-12HN  
Wellbore: ORIGINAL WELLBORE  
Design: PROPOSAL #1

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 & 2140ft FWL of Sec 35	
500.0	500.0	0.00	0.00	0.0	0.0	0.0	0.0	START NUDGE (2°/100ft BUR)	
1490.9	1511.8	20.24	110.17	-61.0	166.0	-0.3	176.8	EOB TO 20.24° INC	
4601.2	4826.7	20.24	110.17	-456.3	1242.3	-2.2	1323.5	END OF TANGENT	
5592.1	5838.5	0.00	0.00	-517.3	1408.3	-2.5	1500.3	EOD TO VERTICAL	
5692.1	5938.5	0.00	0.00	-517.3	1408.3	-2.5	1500.3	KOP (10°/100ft BUR)	
6265.0	6838.5	90.00	1.38	55.5	1422.1	540.2	2073.2	HZ LP: 600ft FSL & 1715ft FEL of Sec 35	
6265.0	10946.0	90.00	1.38	4161.8	1520.9	4431.0	6180.7	BHL: 600ft FNL & 1715ft FEL of Sec 35	

PROPOSED LOCAL COORDINATES:  
  
SHL: 550ft FSL & 2140ft FWL Sec 35  
  
HZ LP: 600ft FSL & 1715ft FEL Sec 35  
  
BHL: 600ft FNL & 1715ft FEL of Sec 35

WELLBORE TARGET DETAILS (LAT/LONG)					
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP - CINNAMON TEAL 35-12HN	5692.1	-517.3	1408.3	40.611640	-104.056089
HZ LP - CINNAMON TEAL 35-12HN	6265.0	55.5	1422.1	40.613212	-104.056039
BHL - CINNAMON TEAL 35-12HN	6265.0	4161.8	1520.9	40.624483	-104.055682



# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well CINNAMON TEAL 35-12HN
<b>Company:</b>	MALLARD EXPLORATION	<b>TVD Reference:</b>	KB-EST @ 4940.0usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 4940.0usft (Original Well Elev)
<b>Site:</b>	SE SW SEC. 35 T8N R60W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	CINNAMON TEAL 35-12HN	<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. 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>	0.0 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 35-12HN		
<b>Well Position</b>	<b>+N-S</b>	0.7 usft	<b>Northing:</b>
	<b>+E-W</b>	179.9 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	18/09/2017	7.82	67.12	52,544

<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>
	6,265.0	0.0	0.0	20.08

<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	-4,940.0	0.0	0.0	0.00	0.00	0.00	0.00	
500.0	0.00	0.00	500.0	-4,440.0	0.0	0.0	0.00	0.00	0.00	0.00	
1,511.8	20.24	110.17	1,490.9	-3,449.1	-61.0	166.0	2.00	2.00	0.00	110.17	
4,826.7	20.24	110.17	4,601.2	-338.8	-456.3	1,242.3	0.00	0.00	0.00	0.00	
5,838.5	0.00	0.00	5,592.1	652.1	-517.3	1,408.3	2.00	-2.00	0.00	180.00	
5,938.5	0.00	0.00	5,692.1	752.1	-517.3	1,408.3	0.00	0.00	0.00	0.00	KOP - CINNAMON
6,838.5	90.00	1.38	6,265.0	1,325.0	55.5	1,422.1	10.00	10.00	0.15	1.38	HZ LP - CINNAMOI
10,946.0	90.00	1.38	6,265.0	1,325.0	4,161.8	1,520.9	0.00	0.00	0.00	154.55	BHL - CINNAMON

# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well CINNAMON TEAL 35-12HN
<b>Company:</b>	MALLARD EXPLORATION	<b>TVD Reference:</b>	KB-EST @ 4940.0usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 4940.0usft (Original Well Elev)
<b>Site:</b>	SE SW SEC. 35 T8N R60W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	CINNAMON TEAL 35-12HN	<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: 550ft FSL &amp; 2140ft FWL of Sec 35</b>										
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
<b>Fox Hills Base</b>										
471.0	0.00	0.00	471.0	4,469.00	0.0	0.0	0.0	0.00	0.00	0.00
<b>START NUDGE (2°/100ft BUR)</b>										
500.0	0.00	0.00	500.0	4,440.00	0.0	0.0	0.0	0.00	0.00	0.00
600.0	2.00	110.17	600.0	4,340.02	-0.6	1.6	0.0	2.00	2.00	0.00
700.0	4.00	110.17	699.8	4,240.16	-2.4	6.6	0.0	2.00	2.00	0.00
800.0	6.00	110.17	799.5	4,140.55	-5.4	14.7	0.0	2.00	2.00	0.00
900.0	8.00	110.17	898.7	4,041.30	-9.6	26.2	0.0	2.00	2.00	0.00
1,000.0	10.00	110.17	997.5	3,942.53	-15.0	40.9	-0.1	2.00	2.00	0.00
1,100.0	12.00	110.17	1,095.6	3,844.38	-21.6	58.8	-0.1	2.00	2.00	0.00
1,200.0	14.00	110.17	1,193.1	3,746.94	-29.3	79.9	-0.1	2.00	2.00	0.00
1,300.0	16.00	110.17	1,289.6	3,650.36	-38.3	104.2	-0.2	2.00	2.00	0.00
1,400.0	18.00	110.17	1,385.3	3,554.73	-48.3	131.6	-0.2	2.00	2.00	0.00
1,500.0	20.00	110.17	1,479.8	3,460.18	-59.6	162.2	-0.3	2.00	2.00	0.00
<b>EOB TO 20.24° INC</b>										
1,511.8	20.24	110.17	1,490.9	3,449.06	-61.0	166.0	-0.3	2.00	2.00	0.00
<b>Pierre Shale Top</b>										
1,531.1	20.24	110.17	1,509.0	3,431.00	-63.3	172.2	-0.3	0.00	0.00	0.00
1,600.0	20.24	110.17	1,573.7	3,366.35	-71.5	194.6	-0.3	0.00	0.00	0.00
1,700.0	20.24	110.17	1,667.5	3,272.52	-83.4	227.1	-0.4	0.00	0.00	0.00
1,800.0	20.24	110.17	1,761.3	3,178.70	-95.3	259.6	-0.5	0.00	0.00	0.00
1,900.0	20.24	110.17	1,855.1	3,084.87	-107.3	292.0	-0.5	0.00	0.00	0.00
2,000.0	20.24	110.17	1,949.0	2,991.04	-119.2	324.5	-0.6	0.00	0.00	0.00
2,100.0	20.24	110.17	2,042.8	2,897.21	-131.1	357.0	-0.6	0.00	0.00	0.00
2,200.0	20.24	110.17	2,136.6	2,803.39	-143.0	389.4	-0.7	0.00	0.00	0.00
2,300.0	20.24	110.17	2,230.4	2,709.56	-155.0	421.9	-0.7	0.00	0.00	0.00
2,400.0	20.24	110.17	2,324.3	2,615.73	-166.9	454.4	-0.8	0.00	0.00	0.00
2,500.0	20.24	110.17	2,418.1	2,521.91	-178.8	486.8	-0.9	0.00	0.00	0.00
2,600.0	20.24	110.17	2,511.9	2,428.08	-190.8	519.3	-0.9	0.00	0.00	0.00
2,700.0	20.24	110.17	2,605.7	2,334.25	-202.7	551.8	-1.0	0.00	0.00	0.00
2,800.0	20.24	110.17	2,699.6	2,240.42	-214.6	584.3	-1.0	0.00	0.00	0.00
2,900.0	20.24	110.17	2,793.4	2,146.60	-226.5	616.7	-1.1	0.00	0.00	0.00
3,000.0	20.24	110.17	2,887.2	2,052.77	-238.5	649.2	-1.1	0.00	0.00	0.00
3,100.0	20.24	110.17	2,981.1	1,958.94	-250.4	681.7	-1.2	0.00	0.00	0.00
3,200.0	20.24	110.17	3,074.9	1,865.12	-262.3	714.1	-1.3	0.00	0.00	0.00
3,300.0	20.24	110.17	3,168.7	1,771.29	-274.2	746.6	-1.3	0.00	0.00	0.00
3,400.0	20.24	110.17	3,262.5	1,677.46	-286.2	779.1	-1.4	0.00	0.00	0.00
<b>Richard Sandstone</b>										
3,406.9	20.24	110.17	3,269.0	1,671.00	-287.0	781.3	-1.4	0.00	0.00	0.00
3,500.0	20.24	110.17	3,356.4	1,583.64	-298.1	811.5	-1.4	0.00	0.00	0.00
<b>Parkman Sandstone</b>										
3,518.8	20.24	110.17	3,374.0	1,566.00	-300.3	817.6	-1.4	0.00	0.00	0.00
3,600.0	20.24	110.17	3,450.2	1,489.81	-310.0	844.0	-1.5	0.00	0.00	0.00
3,700.0	20.24	110.17	3,544.0	1,395.98	-321.9	876.5	-1.5	0.00	0.00	0.00
3,800.0	20.24	110.17	3,637.8	1,302.15	-333.9	908.9	-1.6	0.00	0.00	0.00
3,900.0	20.24	110.17	3,731.7	1,208.33	-345.8	941.4	-1.7	0.00	0.00	0.00
4,000.0	20.24	110.17	3,825.5	1,114.50	-357.7	973.9	-1.7	0.00	0.00	0.00

# Planning Report



<b>Database:</b>	EDM 5000.1 Single User Db	<b>Local Co-ordinate Reference:</b>	Well CINNAMON TEAL 35-12HN
<b>Company:</b>	MALLARD EXPLORATION	<b>TVD Reference:</b>	KB-EST @ 4940.0usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 4940.0usft (Original Well Elev)
<b>Site:</b>	SE SW SEC. 35 T8N R60W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	CINNAMON TEAL 35-12HN	<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)
4,100.0	20.24	110.17	3,919.3	1,020.67	-369.7	1,006.4	-1.8	0.00	0.00	0.00
4,200.0	20.24	110.17	4,013.2	926.85	-381.6	1,038.8	-1.8	0.00	0.00	0.00
4,300.0	20.24	110.17	4,107.0	833.02	-393.5	1,071.3	-1.9	0.00	0.00	0.00
<b>Sussex Sandstone</b>										
<b>4,398.1</b>	<b>20.24</b>	<b>110.17</b>	<b>4,199.0</b>	<b>741.00</b>	<b>-405.2</b>	<b>1,103.1</b>	<b>-1.9</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
4,400.0	20.24	110.17	4,200.8	739.19	-405.4	1,103.8	-1.9	0.00	0.00	0.00
4,500.0	20.24	110.17	4,294.6	645.37	-417.4	1,136.2	-2.0	0.00	0.00	0.00
4,600.0	20.24	110.17	4,388.5	551.54	-429.3	1,168.7	-2.1	0.00	0.00	0.00
4,700.0	20.24	110.17	4,482.3	457.71	-441.2	1,201.2	-2.1	0.00	0.00	0.00
4,800.0	20.24	110.17	4,576.1	363.88	-453.1	1,233.6	-2.2	0.00	0.00	0.00
<b>END OF TANGENT</b>										
<b>4,826.7</b>	<b>20.24</b>	<b>110.17</b>	<b>4,601.2</b>	<b>338.84</b>	<b>-456.3</b>	<b>1,242.3</b>	<b>-2.2</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
<b>Shannon Sandstone</b>										
<b>4,886.0</b>	<b>19.05</b>	<b>110.17</b>	<b>4,657.0</b>	<b>283.00</b>	<b>-463.2</b>	<b>1,261.0</b>	<b>-2.2</b>	<b>2.00</b>	<b>-2.00</b>	<b>0.00</b>
4,900.0	18.77	110.17	4,670.3	269.74	-464.8	1,265.3	-2.2	2.00	-2.00	0.00
5,000.0	16.77	110.17	4,765.5	174.52	-475.3	1,293.9	-2.3	2.00	-2.00	0.00
5,100.0	14.77	110.17	4,861.7	78.29	-484.7	1,319.4	-2.3	2.00	-2.00	0.00
5,200.0	12.77	110.17	4,958.8	-18.83	-492.9	1,341.8	-2.4	2.00	-2.00	0.00
5,300.0	10.77	110.17	5,056.7	-116.73	-499.9	1,360.9	-2.4	2.00	-2.00	0.00
5,400.0	8.77	110.17	5,155.3	-215.27	-505.7	1,376.9	-2.4	2.00	-2.00	0.00
5,500.0	6.77	110.17	5,254.3	-314.35	-510.4	1,389.5	-2.4	2.00	-2.00	0.00
5,600.0	4.77	110.17	5,353.8	-413.84	-513.9	1,399.0	-2.5	2.00	-2.00	0.00
5,700.0	2.77	110.17	5,453.6	-513.61	-516.1	1,405.2	-2.5	2.00	-2.00	0.00
5,800.0	0.77	110.17	5,553.6	-613.56	-517.2	1,408.1	-2.5	2.00	-2.00	0.00
<b>EOD TO VERTICAL</b>										
<b>5,838.5</b>	<b>0.00</b>	<b>0.00</b>	<b>5,592.1</b>	<b>-652.10</b>	<b>-517.3</b>	<b>1,408.3</b>	<b>-2.5</b>	<b>2.00</b>	<b>-2.00</b>	<b>0.00</b>
5,900.0	0.00	0.00	5,653.6	-713.56	-517.3	1,408.3	-2.5	0.00	0.00	0.00
<b>KOP (10°/100ft BUR)</b>										
<b>5,938.5</b>	<b>0.00</b>	<b>0.00</b>	<b>5,692.1</b>	<b>-752.10</b>	<b>-517.3</b>	<b>1,408.3</b>	<b>-2.5</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
6,000.0	6.15	1.38	5,753.4	-813.44	-514.0	1,408.4	0.6	10.00	10.00	0.00
6,100.0	16.15	1.38	5,851.4	-911.43	-494.7	1,408.8	18.9	10.00	10.00	0.00
6,200.0	26.15	1.38	5,944.6	-1,004.58	-458.7	1,409.7	53.1	10.00	10.00	0.00
6,300.0	36.15	1.38	6,030.1	-1,090.05	-407.0	1,411.0	102.0	10.00	10.00	0.00
<b>Sharon Springs</b>										
<b>6,366.0</b>	<b>42.75</b>	<b>1.38</b>	<b>6,081.0</b>	<b>-1,141.00</b>	<b>-365.1</b>	<b>1,412.0</b>	<b>141.7</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
6,400.0	46.15	1.38	6,105.3	-1,165.25	-341.3	1,412.5	164.3	10.00	10.00	0.00
<b>Niobrara A Chalk</b>										
<b>6,491.3</b>	<b>55.28</b>	<b>1.38</b>	<b>6,163.0</b>	<b>-1,223.00</b>	<b>-270.8</b>	<b>1,414.2</b>	<b>231.1</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
6,500.0	56.15	1.38	6,167.9	-1,227.90	-263.6	1,414.4	237.9	10.00	10.00	0.00
<b>Niobrara A Chalk Base</b>										
<b>6,540.0</b>	<b>60.15</b>	<b>1.38</b>	<b>6,189.0</b>	<b>-1,249.00</b>	<b>-229.6</b>	<b>1,415.2</b>	<b>270.1</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
<b>Niobrara B1 Chalk Top</b>										
<b>6,597.3</b>	<b>65.88</b>	<b>1.38</b>	<b>6,215.0</b>	<b>-1,275.00</b>	<b>-178.6</b>	<b>1,416.4</b>	<b>318.5</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
6,600.0	66.15	1.38	6,216.1	-1,276.09	-176.1	1,416.5	320.8	10.00	10.00	0.00
<b>Niobrara B1 Chalk Base</b>										
<b>6,686.6</b>	<b>74.82</b>	<b>1.38</b>	<b>6,245.0</b>	<b>-1,305.00</b>	<b>-94.6</b>	<b>1,418.5</b>	<b>398.1</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
6,700.0	76.15	1.38	6,248.4	-1,308.35	-81.6	1,418.8	410.3	10.00	10.00	0.00
6,800.0	86.15	1.38	6,263.7	-1,323.71	17.0	1,421.2	503.8	10.00	10.00	0.00
<b>HZ LP: 600ft FSL &amp; 1715ft FEL of Sec 35 - Niobrara B2 Chalk Top (Target)</b>										
<b>6,838.5</b>	<b>90.00</b>	<b>1.38</b>	<b>6,265.0</b>	<b>-1,325.00</b>	<b>55.5</b>	<b>1,422.1</b>	<b>540.2</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
6,900.0	90.00	1.38	6,265.0	-1,325.00	117.0	1,423.6	598.5	0.00	0.00	0.00
7,000.0	90.00	1.38	6,265.0	-1,324.99	216.9	1,426.0	693.2	0.00	0.00	0.00
7,100.0	90.00	1.38	6,265.0	-1,324.99	316.9	1,428.4	787.9	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 35-12HN
<b>Company:</b>	MALLARD EXPLORATION	<b>TVD Reference:</b>	KB-EST @ 4940.0usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 4940.0usft (Original Well Elev)
<b>Site:</b>	SE SW SEC. 35 T8N R60W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	CINNAMON TEAL 35-12HN	<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)
7,200.0	90.00	1.38	6,265.0	-1,324.98	416.9	1,430.8	882.7	0.00	0.00	0.00
7,300.0	90.00	1.38	6,265.0	-1,324.98	516.9	1,433.2	977.4	0.00	0.00	0.00
7,400.0	90.00	1.38	6,265.0	-1,324.98	616.8	1,435.6	1,072.1	0.00	0.00	0.00
7,500.0	90.00	1.38	6,265.0	-1,324.97	716.8	1,438.0	1,166.8	0.00	0.00	0.00
7,600.0	90.00	1.38	6,265.0	-1,324.97	816.8	1,440.4	1,261.6	0.00	0.00	0.00
7,700.0	90.00	1.38	6,265.0	-1,324.97	916.7	1,442.8	1,356.3	0.00	0.00	0.00
7,800.0	90.00	1.38	6,265.0	-1,324.96	1,016.7	1,445.2	1,451.0	0.00	0.00	0.00
7,900.0	90.00	1.38	6,265.0	-1,324.96	1,116.7	1,447.6	1,545.7	0.00	0.00	0.00
8,000.0	90.00	1.38	6,265.0	-1,324.96	1,216.6	1,450.0	1,640.4	0.00	0.00	0.00
8,100.0	90.00	1.38	6,265.0	-1,324.96	1,316.6	1,452.4	1,735.2	0.00	0.00	0.00
8,200.0	90.00	1.38	6,265.0	-1,324.96	1,416.6	1,454.8	1,829.9	0.00	0.00	0.00
8,300.0	90.00	1.38	6,265.0	-1,324.95	1,516.6	1,457.2	1,924.6	0.00	0.00	0.00
8,400.0	90.00	1.38	6,265.0	-1,324.95	1,616.5	1,459.6	2,019.3	0.00	0.00	0.00
8,500.0	90.00	1.38	6,265.0	-1,324.95	1,716.5	1,462.0	2,114.1	0.00	0.00	0.00
8,600.0	90.00	1.38	6,265.0	-1,324.95	1,816.5	1,464.5	2,208.8	0.00	0.00	0.00
8,700.0	90.00	1.38	6,264.9	-1,324.95	1,916.4	1,466.9	2,303.5	0.00	0.00	0.00
8,800.0	90.00	1.38	6,264.9	-1,324.95	2,016.4	1,469.3	2,398.2	0.00	0.00	0.00
8,900.0	90.00	1.38	6,264.9	-1,324.95	2,116.4	1,471.7	2,493.0	0.00	0.00	0.00
9,000.0	90.00	1.38	6,264.9	-1,324.95	2,216.4	1,474.1	2,587.7	0.00	0.00	0.00
9,100.0	90.00	1.38	6,264.9	-1,324.95	2,316.3	1,476.5	2,682.4	0.00	0.00	0.00
9,200.0	90.00	1.38	6,265.0	-1,324.95	2,416.3	1,478.9	2,777.1	0.00	0.00	0.00
9,300.0	90.00	1.38	6,265.0	-1,324.95	2,516.3	1,481.3	2,871.9	0.00	0.00	0.00
9,400.0	90.00	1.38	6,265.0	-1,324.95	2,616.2	1,483.7	2,966.6	0.00	0.00	0.00
9,500.0	90.00	1.38	6,265.0	-1,324.95	2,716.2	1,486.1	3,061.3	0.00	0.00	0.00
9,600.0	90.00	1.38	6,265.0	-1,324.96	2,816.2	1,488.5	3,156.0	0.00	0.00	0.00
9,700.0	90.00	1.38	6,265.0	-1,324.96	2,916.2	1,490.9	3,250.7	0.00	0.00	0.00
9,800.0	90.00	1.38	6,265.0	-1,324.96	3,016.1	1,493.3	3,345.5	0.00	0.00	0.00
9,900.0	90.00	1.38	6,265.0	-1,324.96	3,116.1	1,495.7	3,440.2	0.00	0.00	0.00
10,000.0	90.00	1.38	6,265.0	-1,324.96	3,216.1	1,498.2	3,534.9	0.00	0.00	0.00
10,100.0	90.00	1.38	6,265.0	-1,324.97	3,316.0	1,500.6	3,629.6	0.00	0.00	0.00
10,200.0	90.00	1.38	6,265.0	-1,324.97	3,416.0	1,503.0	3,724.4	0.00	0.00	0.00
10,300.0	90.00	1.38	6,265.0	-1,324.97	3,516.0	1,505.4	3,819.1	0.00	0.00	0.00
10,400.0	90.00	1.38	6,265.0	-1,324.98	3,616.0	1,507.8	3,913.8	0.00	0.00	0.00
10,500.0	90.00	1.38	6,265.0	-1,324.98	3,715.9	1,510.2	4,008.5	0.00	0.00	0.00
10,600.0	90.00	1.38	6,265.0	-1,324.98	3,815.9	1,512.6	4,103.3	0.00	0.00	0.00
10,700.0	90.00	1.38	6,265.0	-1,324.99	3,915.9	1,515.0	4,198.0	0.00	0.00	0.00
10,800.0	90.00	1.38	6,265.0	-1,324.99	4,015.8	1,517.4	4,292.7	0.00	0.00	0.00
10,900.0	90.00	1.38	6,265.0	-1,325.00	4,115.8	1,519.8	4,387.4	0.00	0.00	0.00
<b>BHL: 600ft FNL &amp; 1715ft FEL of Sec 35</b>										
<b>10,946.0</b>	<b>90.00</b>	<b>1.38</b>	<b>6,265.0</b>	<b>-1,325.00</b>	<b>4,161.8</b>	<b>1,520.9</b>	<b>4,431.0</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 35-12HN
<b>Company:</b>	MALLARD EXPLORATION	<b>TVD Reference:</b>	KB-EST @ 4940.0usft (Original Well Elev)
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB-EST @ 4940.0usft (Original Well Elev)
<b>Site:</b>	SE SW SEC. 35 T8N R60W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	CINNAMON TEAL 35-12HN	<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 (°)	
471.0	471.0	Fox Hills Base				
1,531.1	1,509.0	Pierre Shale Top				
3,406.9	3,269.0	Richard Sandstone				
3,518.8	3,374.0	Parkman Sandstone				
4,398.1	4,199.0	Sussex Sandstone				
4,886.0	4,657.0	Shannon Sandstone				
6,366.0	6,081.0	Sharon Springs				
6,491.3	6,163.0	Niobrara A Chalk				
6,540.0	6,189.0	Niobrara A Chalk Base				
6,597.3	6,215.0	Niobrara B1 Chalk Top				
6,686.6	6,245.0	Niobrara B1 Chalk Base				
6,838.5	6,265.0	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 & 2140ft FWL of Sec 35
500.0	500.0	0.0	0.0	START NUDGE (2°/100ft BUR)
1,511.8	1,490.9	-61.0	166.0	EOB TO 20.24° INC
4,826.7	4,601.2	-456.3	1,242.3	END OF TANGENT
5,838.5	5,592.1	-517.3	1,408.3	EOD TO VERTICAL
5,938.5	5,692.1	-517.3	1,408.3	KOP (10°/100ft BUR)
6,838.5	6,265.0	55.5	1,422.1	HZ LP: 600ft FSL & 1715ft FEL of Sec 35
10,946.0	6,265.0	4,161.8	1,520.9	BHL: 600ft FNL & 1715ft FEL of Sec 35