



# **MALLARD EXPLORATION**

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

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

**GREEN TEAL FED 34-27-2HN**

**ORIGINAL WELLBORE**

**11 March, 2020**

**Plan: PROPOSAL #2**





Project: WELD COUNTY, COLORADO (NAD 83)  
Site: SE SW SEC. 34 T8N R60W 6th P.M.  
Well: GREEN TEAL FED 34-27-2HN  
Wellbore: ORIGINAL WELLBORE  
Design: PROPOSAL #2

ANNOTATIONS

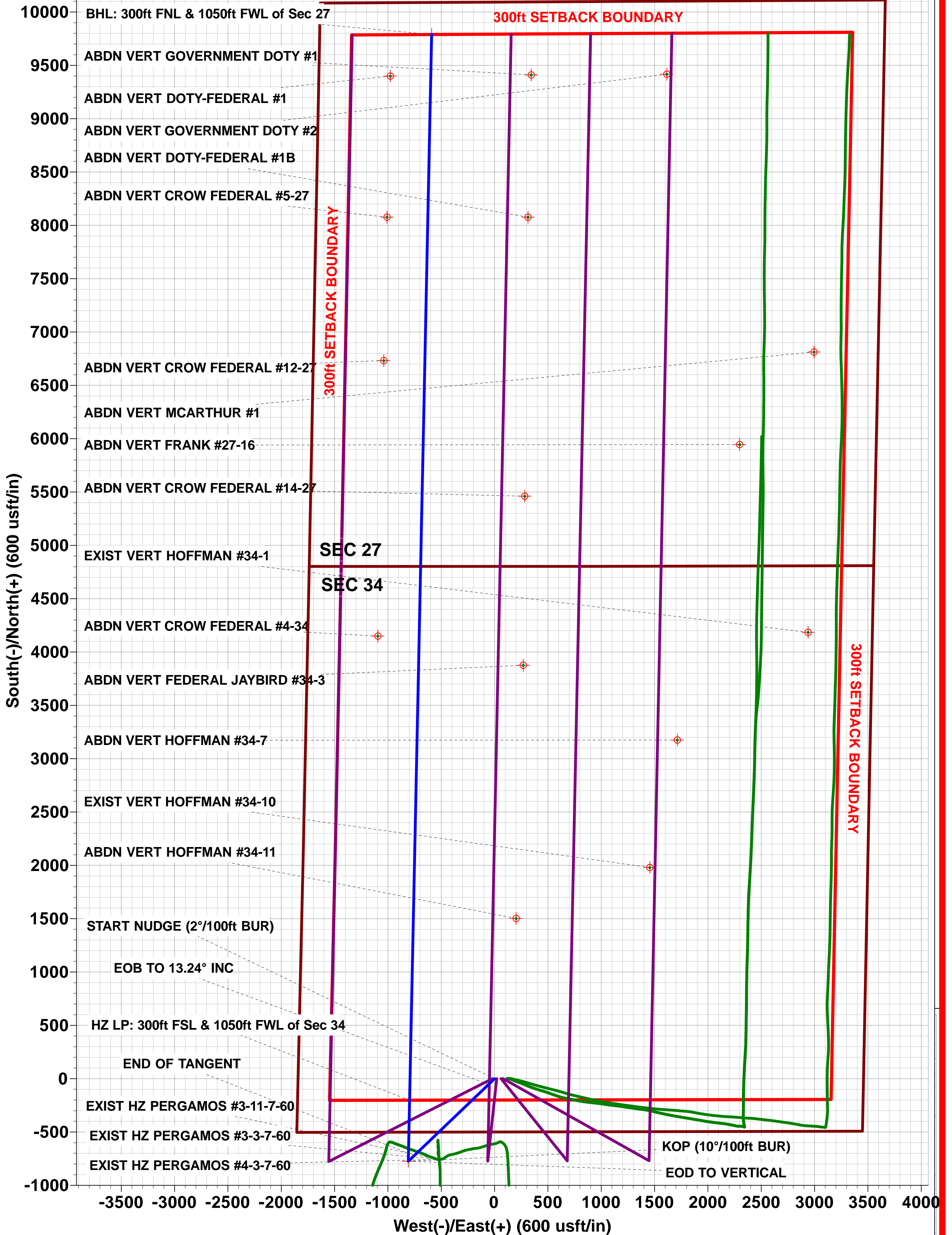
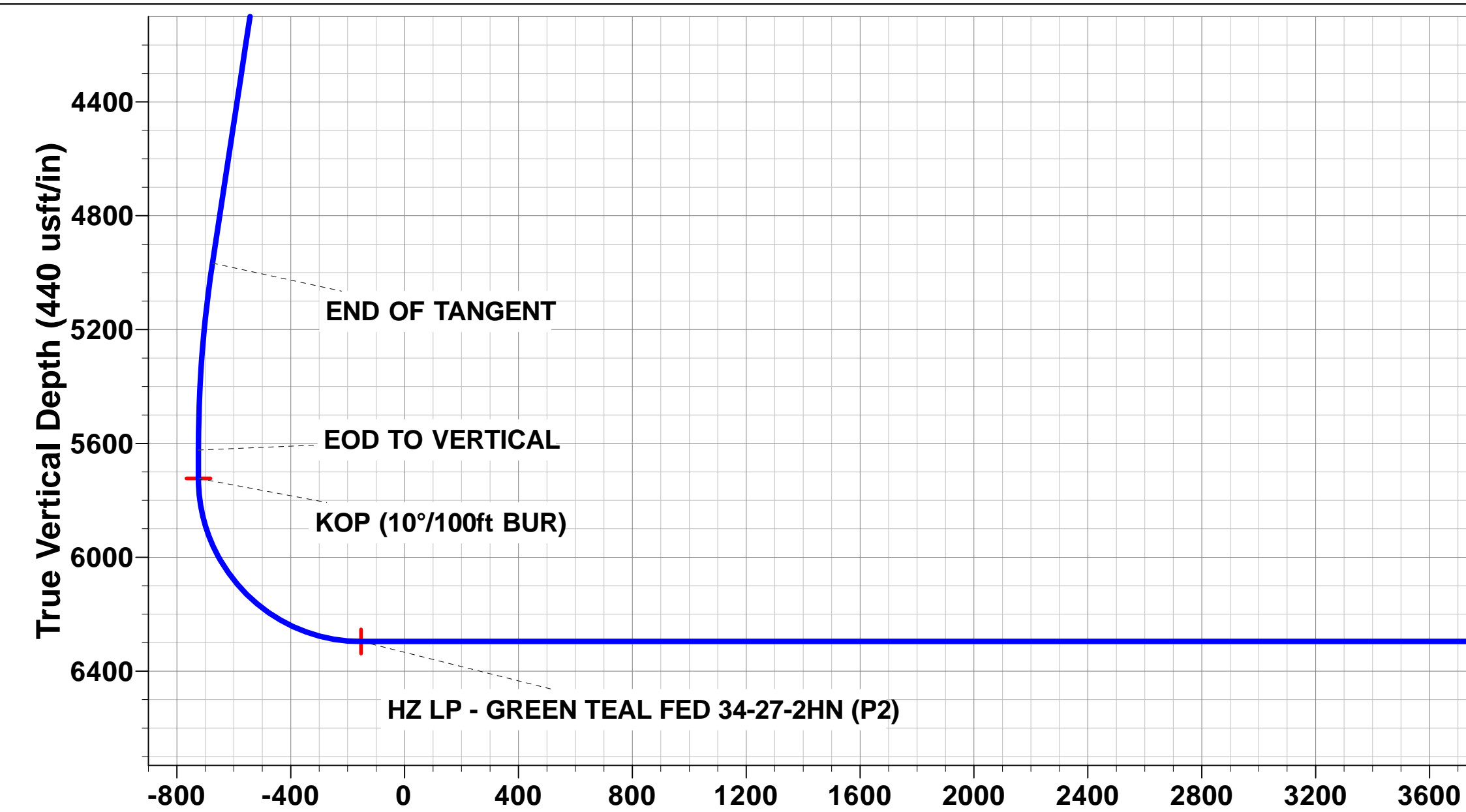
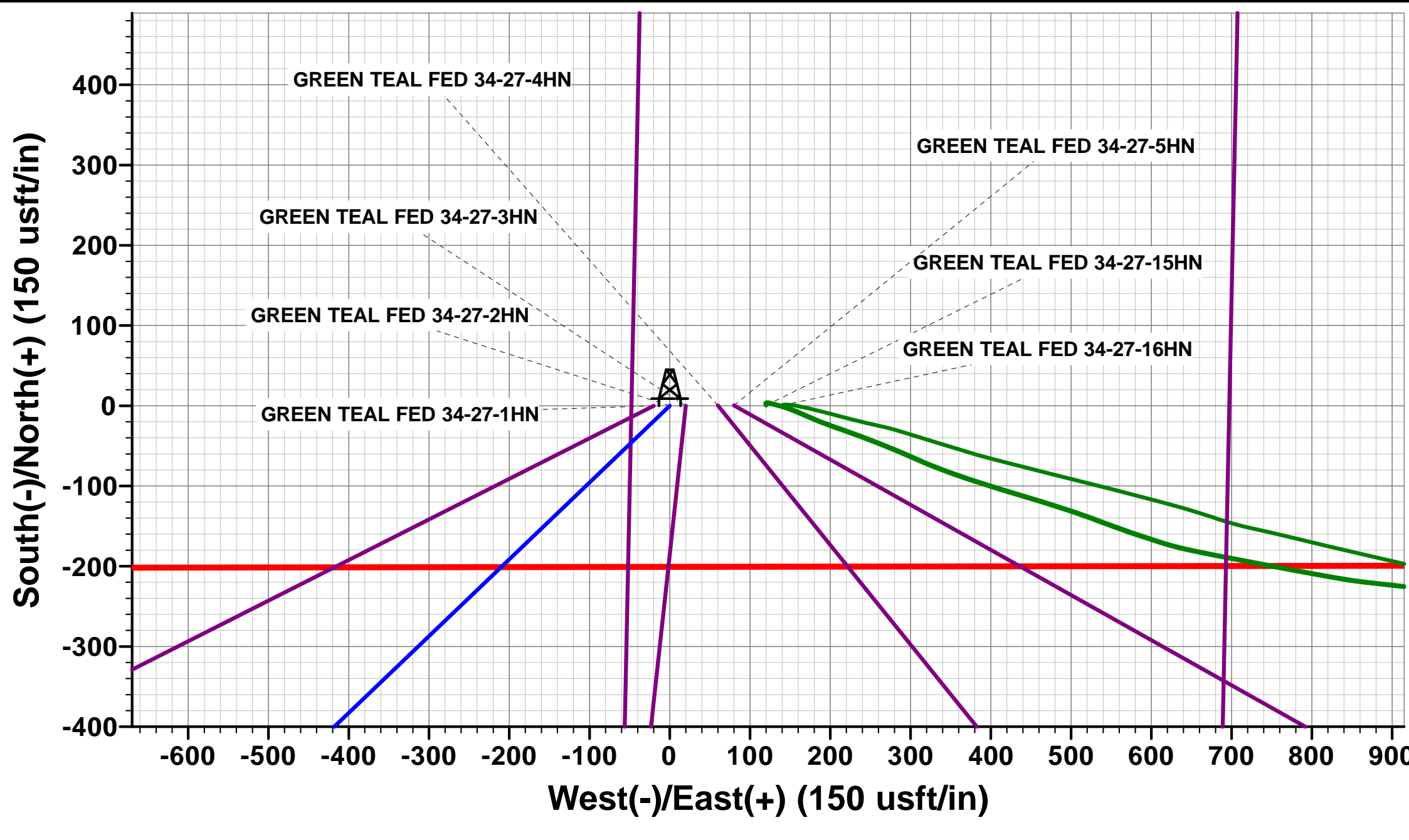
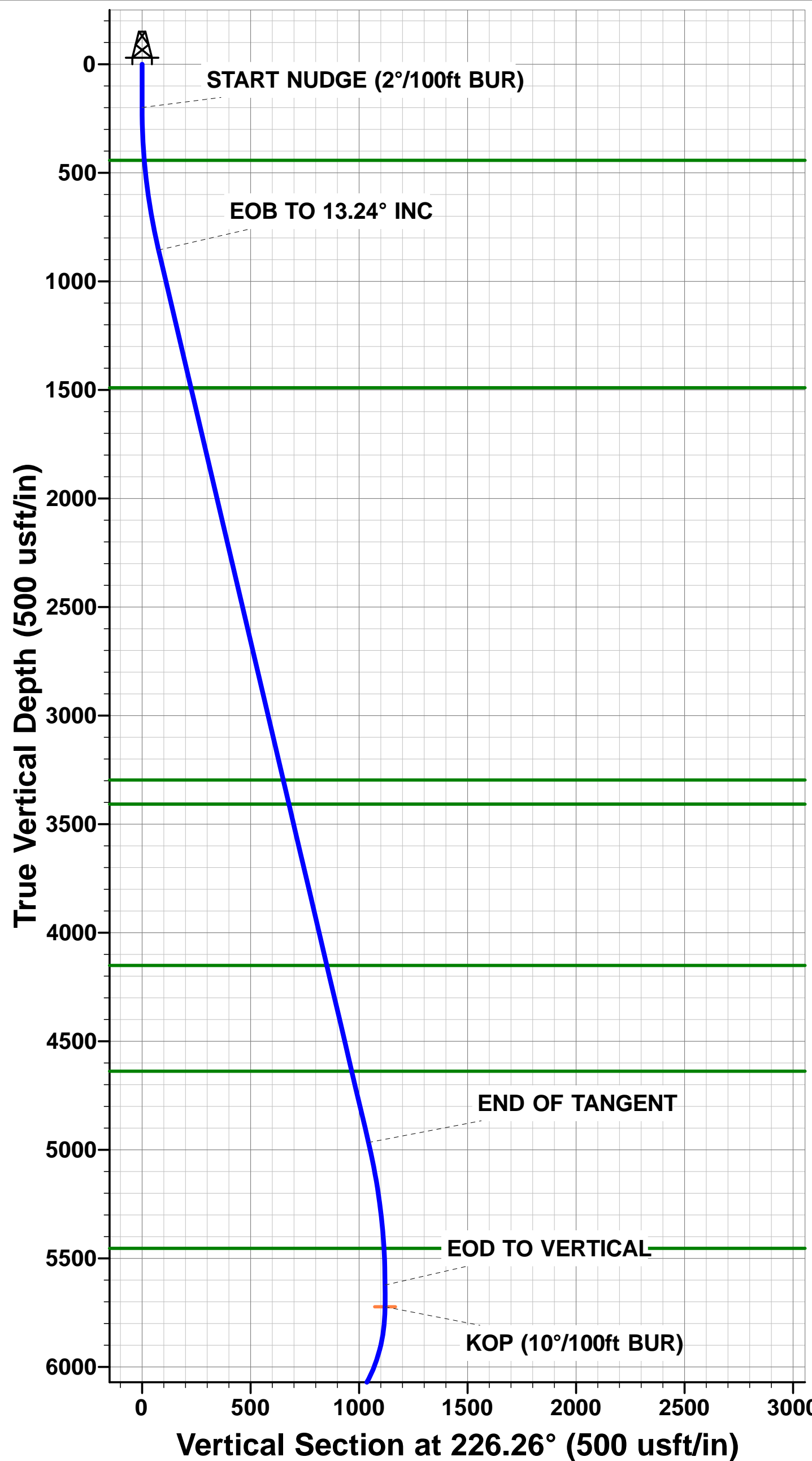
MD	Inc	Azi	TVD	+N/-S	+E/-W	VSec	Dep	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	SHL: 500ft FSL & 1842ft FWL of Sec 34
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	START NUDGE (2°/100ft BUR)
862.21	13.24	226.26	856.33	-52.68	-55.05	-49.28	76.20	EOB TO 13.24° INC
5084.90	13.24	226.26	4966.70	-721.59	-753.97	-674.92	1043.63	END OF TANGENT
5747.12	0.00	0.00	5623.04	-774.27	-809.02	-724.20	1119.82	EOD TO VERTICAL
5847.12	0.00	0.00	5723.04	-774.27	-809.02	-724.20	1119.82	KOP (10°/100ft BUR)
6747.12	90.00	1.19	6296.00	-201.43	-797.12	-153.11	1692.78	HZ LP: 300ft FSL & 1050ft FWL of Sec 34
16740.54	90.00	1.18	6296.00	9789.84	-590.03	9807.60	11686.20	BHL: 300ft FNL & 1050ft FWL of Sec 27

PROPOSED LOCAL COORDINATES:

SHL: 500ft FSL & 1842ft FWL Sec 34  
HZ LP: 300ft FSL & 1050ft FWL Sec 34  
BHL: 300ft FNL & 1050ft FWL of Sec 27

WELLBORE TARGET DETAILS (LAT/LONG)

Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP - GREEN TEAL FED 34-27-2HN (P2)	5723.04	-774.27	-809.02	40.610751	-104.084244
HZ LP - GREEN TEAL FED 34-27-2HN (P2)	6296.00	-201.44	-797.12	40.612323	-104.084201
BHL - GREEN TEAL FED 34-27-2HN (P2)	6296.00	9789.84	-590.03	40.639747	-104.083456



## Planning Report

<b>Database:</b>	Database 1	<b>Local Co-ordinate Reference:</b>	Well GREEN TEAL FED 34-27-2HN
<b>Company:</b>	MALLARD EXPLORATION	<b>TVD Reference:</b>	KB 27' @ 4950.00usft
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB 27' @ 4950.00usft
<b>Site:</b>	SE SW SEC. 34 T8N R60W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	GREEN TEAL FED 34-27-2HN	<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. 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>	0.00 usft	<b>Slot Radius:</b>	1.10 ft
		<b>Latitude:</b>	40.612875
		<b>Longitude:</b>	-104.081907
		<b>Grid Convergence:</b>	0.92 °

<b>Well</b>	GREEN TEAL FED 34-27-2HN		
<b>Well Position</b>	<b>+N/-S</b>	0.34 usft	<b>Northing:</b>
	<b>+E/-W</b>	160.20 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>
	IGRF2020	2020-03-11	7.63	66.97	52,266.42117762

<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>
	6,296.00	0.00	0.00	356.55

<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	-4,950.00	0.00	0.00	0.00	0.00	0.00	0.00	
200.00	0.00	0.00	200.00	-4,750.00	0.00	0.00	0.00	0.00	0.00	0.00	
862.21	13.24	226.26	856.33	-4,093.67	-52.68	-55.05	2.00	2.00	0.00	226.26	
5,084.90	13.24	226.26	4,966.71	16.71	-721.59	-753.97	0.00	0.00	0.00	0.00	
5,747.12	0.00	0.00	5,623.04	673.04	-774.27	-809.02	2.00	-2.00	0.00	180.00	
5,847.12	0.00	0.00	5,723.04	773.04	-774.27	-809.02	0.00	0.00	0.00	0.00	KOP - GREEN TEA
6,747.12	90.00	1.19	6,296.00	1,346.00	-201.44	-797.12	10.00	10.00	0.13	1.19	HZ LP - GREEN TE
16,740.54	90.00	1.18	6,296.00	1,346.00	9,789.84	-590.03	0.00	0.00	0.00	-80.47	BHL - GREEN TEA

# Planning Report

<b>Database:</b>	Database 1	<b>Local Co-ordinate Reference:</b>	Well GREEN TEAL FED 34-27-2HN
<b>Company:</b>	MALLARD EXPLORATION	<b>TVD Reference:</b>	KB 27' @ 4950.00usft
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB 27' @ 4950.00usft
<b>Site:</b>	SE SW SEC. 34 T8N R60W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	GREEN TEAL FED 34-27-2HN	<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: 500ft FSL &amp; 1842ft FWL of Sec 34</b>										
0.00	0.00	0.00	0.00	4,950.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	4,850.00	0.00	0.00	0.00	0.00	0.00	0.00
<b>START NUDGE (2°/100ft BUR)</b>										
200.00	0.00	0.00	200.00	4,750.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	2.00	226.26	299.98	4,650.02	-1.21	-1.26	-1.13	2.00	2.00	0.00
400.00	4.00	226.26	399.84	4,550.16	-4.83	-5.04	-4.51	2.00	2.00	0.00
<b>Fox Hills Base</b>										
443.29	4.87	226.26	443.00	4,507.00	-7.14	-7.46	-6.68	2.00	2.00	0.00
500.00	6.00	226.26	499.45	4,450.55	-10.85	-11.34	-10.15	2.00	2.00	0.00
600.00	8.00	226.26	598.70	4,351.30	-19.28	-20.14	-18.03	2.00	2.00	0.00
700.00	10.00	226.26	697.47	4,252.53	-30.09	-31.44	-28.15	2.00	2.00	0.00
800.00	12.00	226.26	795.62	4,154.38	-43.28	-45.23	-40.49	2.00	2.00	0.00
<b>EOB TO 13.24° INC</b>										
862.21	13.24	226.26	856.33	4,093.67	-52.68	-55.05	-49.28	2.00	2.00	0.00
900.00	13.24	226.26	893.11	4,056.89	-58.67	-61.30	-54.88	0.00	0.00	0.00
1,000.00	13.24	226.26	990.45	3,959.55	-74.51	-77.85	-69.69	0.00	0.00	0.00
1,100.00	13.24	226.26	1,087.79	3,862.21	-90.35	-94.41	-84.51	0.00	0.00	0.00
1,200.00	13.24	226.26	1,185.13	3,764.87	-106.19	-110.96	-99.32	0.00	0.00	0.00
1,300.00	13.24	226.26	1,282.47	3,667.53	-122.03	-127.51	-114.14	0.00	0.00	0.00
1,400.00	13.24	226.26	1,379.81	3,570.19	-137.87	-144.06	-128.96	0.00	0.00	0.00
1,500.00	13.24	226.26	1,477.15	3,472.85	-153.71	-160.61	-143.77	0.00	0.00	0.00
<b>Pierre Shale Top</b>										
1,513.20	13.24	226.26	1,490.00	3,460.00	-155.80	-162.80	-145.73	0.00	0.00	0.00
1,600.00	13.24	226.26	1,574.49	3,375.51	-169.55	-177.16	-158.59	0.00	0.00	0.00
1,700.00	13.24	226.26	1,671.84	3,278.16	-185.40	-193.72	-173.41	0.00	0.00	0.00
1,800.00	13.24	226.26	1,769.18	3,180.82	-201.24	-210.27	-188.22	0.00	0.00	0.00
1,900.00	13.24	226.26	1,866.52	3,083.48	-217.08	-226.82	-203.04	0.00	0.00	0.00
2,000.00	13.24	226.26	1,963.86	2,986.14	-232.92	-243.37	-217.85	0.00	0.00	0.00
2,100.00	13.24	226.26	2,061.20	2,888.80	-248.76	-259.92	-232.67	0.00	0.00	0.00
2,200.00	13.24	226.26	2,158.54	2,791.46	-264.60	-276.47	-247.49	0.00	0.00	0.00
2,300.00	13.24	226.26	2,255.88	2,694.12	-280.44	-293.03	-262.30	0.00	0.00	0.00
2,400.00	13.24	226.26	2,353.22	2,596.78	-296.28	-309.58	-277.12	0.00	0.00	0.00
2,500.00	13.24	226.26	2,450.56	2,499.44	-312.12	-326.13	-291.93	0.00	0.00	0.00
2,600.00	13.24	226.26	2,547.90	2,402.10	-327.96	-342.68	-306.75	0.00	0.00	0.00
2,700.00	13.24	226.26	2,645.24	2,304.76	-343.80	-359.23	-321.57	0.00	0.00	0.00
2,800.00	13.24	226.26	2,742.58	2,207.42	-359.64	-375.78	-336.38	0.00	0.00	0.00
2,900.00	13.24	226.26	2,839.92	2,110.08	-375.48	-392.33	-351.20	0.00	0.00	0.00
3,000.00	13.24	226.26	2,937.26	2,012.74	-391.32	-408.89	-366.02	0.00	0.00	0.00
3,100.00	13.24	226.26	3,034.60	1,915.40	-407.16	-425.44	-380.83	0.00	0.00	0.00
3,200.00	13.24	226.26	3,131.94	1,818.06	-423.00	-441.99	-395.65	0.00	0.00	0.00
3,300.00	13.24	226.26	3,229.28	1,720.72	-438.85	-458.54	-410.46	0.00	0.00	0.00
<b>Richard Sandstone</b>										
3,369.57	13.24	226.26	3,297.00	1,653.00	-449.87	-470.06	-420.77	0.00	0.00	0.00
3,400.00	13.24	226.26	3,326.62	1,623.38	-454.69	-475.09	-425.28	0.00	0.00	0.00
<b>Parkman Sandstone</b>										
3,483.60	13.24	226.26	3,408.00	1,542.00	-467.93	-488.93	-437.67	0.00	0.00	0.00
3,500.00	13.24	226.26	3,423.96	1,526.04	-470.53	-491.64	-440.10	0.00	0.00	0.00
3,600.00	13.24	226.26	3,521.30	1,428.70	-486.37	-508.20	-454.91	0.00	0.00	0.00
3,700.00	13.24	226.26	3,618.64	1,331.36	-502.21	-524.75	-469.73	0.00	0.00	0.00
3,800.00	13.24	226.26	3,715.98	1,234.02	-518.05	-541.30	-484.55	0.00	0.00	0.00
3,900.00	13.24	226.26	3,813.32	1,136.68	-533.89	-557.85	-499.36	0.00	0.00	0.00
4,000.00	13.24	226.26	3,910.66	1,039.34	-549.73	-574.40	-514.18	0.00	0.00	0.00



# Planning Report

<b>Database:</b>	Database 1	<b>Local Co-ordinate Reference:</b>	Well GREEN TEAL FED 34-27-2HN
<b>Company:</b>	MALLARD EXPLORATION	<b>TVD Reference:</b>	KB 27' @ 4950.00usft
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB 27' @ 4950.00usft
<b>Site:</b>	SE SW SEC. 34 T8N R60W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	GREEN TEAL FED 34-27-2HN	<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	13.24	226.26	4,008.00	942.00	-565.57	-590.95	-528.99	0.00	0.00	0.00
4,200.00	13.24	226.26	4,105.34	844.66	-581.41	-607.51	-543.81	0.00	0.00	0.00
<b>Sussex Sandstone</b>										
<b>4,246.91</b>	<b>13.24</b>	<b>226.26</b>	<b>4,151.00</b>	<b>799.00</b>	<b>-588.84</b>	<b>-615.27</b>	<b>-550.76</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
4,300.00	13.24	226.26	4,202.68	747.32	-597.25	-624.06	-558.63	0.00	0.00	0.00
4,400.00	13.24	226.26	4,300.02	649.98	-613.09	-640.61	-573.44	0.00	0.00	0.00
4,500.00	13.24	226.26	4,397.36	552.64	-628.93	-657.16	-588.26	0.00	0.00	0.00
4,600.00	13.24	226.26	4,494.70	455.30	-644.77	-673.71	-603.07	0.00	0.00	0.00
4,700.00	13.24	226.26	4,592.04	357.96	-660.61	-690.26	-617.89	0.00	0.00	0.00
<b>Shannon Sandstone</b>										
<b>4,747.21</b>	<b>13.24</b>	<b>226.26</b>	<b>4,638.00</b>	<b>312.00</b>	<b>-668.09</b>	<b>-698.08</b>	<b>-624.89</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
4,800.00	13.24	226.26	4,689.38	260.62	-676.46	-706.82	-632.71	0.00	0.00	0.00
4,900.00	13.24	226.26	4,786.72	163.28	-692.30	-723.37	-647.52	0.00	0.00	0.00
5,000.00	13.24	226.26	4,884.06	65.94	-708.14	-739.92	-662.34	0.00	0.00	0.00
<b>END OF TANGENT</b>										
<b>5,084.90</b>	<b>13.24</b>	<b>226.26</b>	<b>4,966.70</b>	<b>-16.70</b>	<b>-721.59</b>	<b>-753.97</b>	<b>-674.92</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
5,100.00	12.94	226.26	4,981.41	-31.41	-723.95	-756.44	-677.13	2.00	-2.00	0.00
5,200.00	10.94	226.26	5,079.24	-129.24	-738.26	-771.39	-690.51	2.00	-2.00	0.00
5,300.00	8.94	226.26	5,177.74	-227.74	-750.19	-783.86	-701.68	2.00	-2.00	0.00
5,400.00	6.94	226.26	5,276.77	-326.77	-759.75	-793.85	-710.61	2.00	-2.00	0.00
5,500.00	4.94	226.26	5,376.23	-426.23	-766.91	-801.32	-717.31	2.00	-2.00	0.00
<b>TeePee Buttes</b>										
<b>5,577.98</b>	<b>3.38</b>	<b>226.26</b>	<b>5,454.00</b>	<b>-504.00</b>	<b>-770.82</b>	<b>-805.41</b>	<b>-720.97</b>	<b>2.00</b>	<b>-2.00</b>	<b>0.00</b>
5,600.00	2.94	226.26	5,475.99	-525.99	-771.66	-806.29	-721.75	2.00	-2.00	0.00
5,700.00	0.94	226.26	5,575.92	-625.92	-774.00	-808.74	-723.95	2.00	-2.00	0.00
<b>EOD TO VERTICAL</b>										
<b>5,747.12</b>	<b>0.00</b>	<b>0.00</b>	<b>5,623.04</b>	<b>-673.04</b>	<b>-774.27</b>	<b>-809.02</b>	<b>-724.20</b>	<b>2.00</b>	<b>-2.00</b>	<b>0.00</b>
5,800.00	0.00	0.00	5,675.92	-725.92	-774.27	-809.02	-724.20	0.00	0.00	0.00
<b>KOP (10°/100ft BUR)</b>										
<b>5,847.12</b>	<b>0.00</b>	<b>0.00</b>	<b>5,723.04</b>	<b>-773.04</b>	<b>-774.27</b>	<b>-809.02</b>	<b>-724.20</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>
5,900.00	5.29	1.19	5,775.85	-825.85	-771.83	-808.97	-721.77	10.00	10.00	0.00
6,000.00	15.29	1.19	5,874.11	-924.11	-754.00	-808.60	-703.99	10.00	10.00	0.00
6,100.00	25.29	1.19	5,967.79	-1,017.79	-719.38	-807.88	-669.47	10.00	10.00	0.00
6,200.00	35.29	1.19	6,054.03	-1,104.03	-669.02	-806.83	-619.26	10.00	10.00	0.00
<b>Sharon Springs</b>										
<b>6,278.77</b>	<b>43.16</b>	<b>1.19</b>	<b>6,115.00</b>	<b>-1,165.00</b>	<b>-619.26</b>	<b>-805.80</b>	<b>-569.66</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
6,300.00	45.29	1.19	6,130.22	-1,180.22	-604.45	-805.49	-554.89	10.00	10.00	0.00
<b>Niobrara Top</b>										
<b>6,328.87</b>	<b>48.17</b>	<b>1.19</b>	<b>6,150.00</b>	<b>-1,200.00</b>	<b>-583.44</b>	<b>-805.05</b>	<b>-533.95</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
6,400.00	55.29	1.19	6,194.03	-1,244.03	-527.64	-803.90	-478.32	10.00	10.00	0.00
6,500.00	65.29	1.19	6,243.53	-1,293.53	-440.91	-802.09	-391.86	10.00	10.00	0.00
6,600.00	75.29	1.19	6,277.22	-1,327.22	-346.91	-800.14	-298.15	10.00	10.00	0.00
<b>Niobrara B2 Chalk Top</b>										
<b>6,611.40</b>	<b>76.43</b>	<b>1.19</b>	<b>6,280.00</b>	<b>-1,330.00</b>	<b>-335.86</b>	<b>-799.91</b>	<b>-287.13</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
<b>Niobrara B2 Target Top</b>										
<b>6,664.13</b>	<b>81.70</b>	<b>1.19</b>	<b>6,290.00</b>	<b>-1,340.00</b>	<b>-284.12</b>	<b>-798.84</b>	<b>-235.54</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
6,700.00	85.29	1.19	6,294.06	-1,344.06	-248.49	-798.10	-200.03	10.00	10.00	0.00
<b>HZ LP: 300ft FSL &amp; 1050ft FWL of Sec 34 - Niobrara B2 Landing Point</b>										
<b>6,747.12</b>	<b>90.00</b>	<b>1.19</b>	<b>6,296.00</b>	<b>-1,346.00</b>	<b>-201.44</b>	<b>-797.12</b>	<b>-153.12</b>	<b>10.00</b>	<b>10.00</b>	<b>0.00</b>
6,800.00	90.00	1.19	6,296.00	-1,346.00	-148.57	-796.02	-100.41	0.00	0.00	0.00
6,900.00	90.00	1.19	6,296.00	-1,346.00	-48.59	-793.94	-0.74	0.00	0.00	0.00
7,000.00	90.00	1.19	6,296.00	-1,346.00	51.39	-791.86	98.94	0.00	0.00	0.00
7,100.00	90.00	1.19	6,296.00	-1,346.00	151.37	-789.79	198.61	0.00	0.00	0.00

# Planning Report

<b>Database:</b>	Database 1	<b>Local Co-ordinate Reference:</b>	Well GREEN TEAL FED 34-27-2HN
<b>Company:</b>	MALLARD EXPLORATION	<b>TVD Reference:</b>	KB 27' @ 4950.00usft
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB 27' @ 4950.00usft
<b>Site:</b>	SE SW SEC. 34 T8N R60W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	GREEN TEAL FED 34-27-2HN	<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)
7,200.00	90.00	1.19	6,296.00	-1,346.00	251.35	-787.71	298.28	0.00	0.00	0.00
7,300.00	90.00	1.19	6,296.00	-1,346.00	351.33	-785.63	397.95	0.00	0.00	0.00
7,400.00	90.00	1.19	6,296.01	-1,346.01	451.30	-783.56	497.63	0.00	0.00	0.00
7,500.00	90.00	1.19	6,296.01	-1,346.01	551.28	-781.48	597.30	0.00	0.00	0.00
7,600.00	90.00	1.19	6,296.01	-1,346.01	651.26	-779.40	696.97	0.00	0.00	0.00
7,700.00	90.00	1.19	6,296.01	-1,346.01	751.24	-777.33	796.64	0.00	0.00	0.00
7,800.00	90.00	1.19	6,296.01	-1,346.01	851.22	-775.25	896.32	0.00	0.00	0.00
7,900.00	90.00	1.19	6,296.01	-1,346.01	951.20	-773.17	995.99	0.00	0.00	0.00
8,000.00	90.00	1.19	6,296.01	-1,346.01	1,051.18	-771.10	1,095.66	0.00	0.00	0.00
8,100.00	90.00	1.19	6,296.01	-1,346.01	1,151.15	-769.02	1,195.33	0.00	0.00	0.00
8,200.00	90.00	1.19	6,296.01	-1,346.01	1,251.13	-766.95	1,295.01	0.00	0.00	0.00
8,300.00	90.00	1.19	6,296.01	-1,346.01	1,351.11	-764.87	1,394.68	0.00	0.00	0.00
8,400.00	90.00	1.19	6,296.01	-1,346.01	1,451.09	-762.79	1,494.35	0.00	0.00	0.00
8,500.00	90.00	1.19	6,296.01	-1,346.01	1,551.07	-760.72	1,594.02	0.00	0.00	0.00
8,600.00	90.00	1.19	6,296.01	-1,346.01	1,651.05	-758.64	1,693.70	0.00	0.00	0.00
8,700.00	90.00	1.19	6,296.01	-1,346.01	1,751.02	-756.57	1,793.37	0.00	0.00	0.00
8,800.00	90.00	1.19	6,296.01	-1,346.01	1,851.00	-754.49	1,893.04	0.00	0.00	0.00
8,900.00	90.00	1.19	6,296.01	-1,346.01	1,950.98	-752.42	1,992.71	0.00	0.00	0.00
9,000.00	90.00	1.19	6,296.02	-1,346.02	2,050.96	-750.34	2,092.39	0.00	0.00	0.00
9,100.00	90.00	1.19	6,296.02	-1,346.02	2,150.94	-748.27	2,192.06	0.00	0.00	0.00
9,200.00	90.00	1.19	6,296.02	-1,346.02	2,250.92	-746.19	2,291.73	0.00	0.00	0.00
9,300.00	90.00	1.19	6,296.02	-1,346.02	2,350.90	-744.12	2,391.40	0.00	0.00	0.00
9,400.00	90.00	1.19	6,296.02	-1,346.02	2,450.87	-742.04	2,491.08	0.00	0.00	0.00
9,500.00	90.00	1.19	6,296.02	-1,346.02	2,550.85	-739.97	2,590.75	0.00	0.00	0.00
9,600.00	90.00	1.19	6,296.02	-1,346.02	2,650.83	-737.89	2,690.42	0.00	0.00	0.00
9,700.00	90.00	1.19	6,296.02	-1,346.02	2,750.81	-735.82	2,790.09	0.00	0.00	0.00
9,800.00	90.00	1.19	6,296.02	-1,346.02	2,850.79	-733.74	2,889.77	0.00	0.00	0.00
9,900.00	90.00	1.19	6,296.02	-1,346.02	2,950.77	-731.67	2,989.44	0.00	0.00	0.00
10,000.00	90.00	1.19	6,296.02	-1,346.02	3,050.74	-729.60	3,089.11	0.00	0.00	0.00
10,100.00	90.00	1.19	6,296.02	-1,346.02	3,150.72	-727.52	3,188.78	0.00	0.00	0.00
10,200.00	90.00	1.19	6,296.02	-1,346.02	3,250.70	-725.45	3,288.46	0.00	0.00	0.00
10,300.00	90.00	1.19	6,296.02	-1,346.02	3,350.68	-723.38	3,388.13	0.00	0.00	0.00
10,400.00	90.00	1.19	6,296.02	-1,346.02	3,450.66	-721.30	3,487.80	0.00	0.00	0.00
10,500.00	90.00	1.19	6,296.02	-1,346.02	3,550.64	-719.23	3,587.48	0.00	0.00	0.00
10,600.00	90.00	1.19	6,296.02	-1,346.02	3,650.62	-717.15	3,687.15	0.00	0.00	0.00
10,700.00	90.00	1.19	6,296.02	-1,346.02	3,750.59	-715.08	3,786.82	0.00	0.00	0.00
10,800.00	90.00	1.19	6,296.02	-1,346.02	3,850.57	-713.01	3,886.49	0.00	0.00	0.00
10,900.00	90.00	1.19	6,296.02	-1,346.02	3,950.55	-710.93	3,986.17	0.00	0.00	0.00
11,000.00	90.00	1.19	6,296.02	-1,346.02	4,050.53	-708.86	4,085.84	0.00	0.00	0.00
11,100.00	90.00	1.19	6,296.02	-1,346.02	4,150.51	-706.79	4,185.51	0.00	0.00	0.00
11,200.00	90.00	1.19	6,296.02	-1,346.02	4,250.49	-704.72	4,285.18	0.00	0.00	0.00
11,300.00	90.00	1.19	6,296.02	-1,346.02	4,350.47	-702.64	4,384.86	0.00	0.00	0.00
11,400.00	90.00	1.19	6,296.02	-1,346.02	4,450.44	-700.57	4,484.53	0.00	0.00	0.00
11,500.00	90.00	1.19	6,296.02	-1,346.02	4,550.42	-698.50	4,584.20	0.00	0.00	0.00
11,600.00	90.00	1.19	6,296.02	-1,346.02	4,650.40	-696.43	4,683.87	0.00	0.00	0.00
11,700.00	90.00	1.19	6,296.02	-1,346.02	4,750.38	-694.35	4,783.55	0.00	0.00	0.00
11,800.00	90.00	1.19	6,296.02	-1,346.02	4,850.36	-692.28	4,883.22	0.00	0.00	0.00
11,900.00	90.00	1.19	6,296.02	-1,346.02	4,950.34	-690.21	4,982.89	0.00	0.00	0.00
12,000.00	90.00	1.19	6,296.02	-1,346.02	5,050.31	-688.14	5,082.57	0.00	0.00	0.00
12,100.00	90.00	1.19	6,296.02	-1,346.02	5,150.29	-686.07	5,182.24	0.00	0.00	0.00
12,200.00	90.00	1.19	6,296.02	-1,346.02	5,250.27	-683.99	5,281.91	0.00	0.00	0.00
12,300.00	90.00	1.19	6,296.02	-1,346.02	5,350.25	-681.92	5,381.58	0.00	0.00	0.00
12,400.00	90.00	1.19	6,296.02	-1,346.02	5,450.23	-679.85	5,481.26	0.00	0.00	0.00
12,500.00	90.00	1.19	6,296.02	-1,346.02	5,550.21	-677.78	5,580.93	0.00	0.00	0.00

# Planning Report

<b>Database:</b>	Database 1	<b>Local Co-ordinate Reference:</b>	Well GREEN TEAL FED 34-27-2HN
<b>Company:</b>	MALLARD EXPLORATION	<b>TVD Reference:</b>	KB 27' @ 4950.00usft
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB 27' @ 4950.00usft
<b>Site:</b>	SE SW SEC. 34 T8N R60W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	GREEN TEAL FED 34-27-2HN	<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)
12,600.00	90.00	1.19	6,296.02	-1,346.02	5,650.19	-675.71	5,680.60	0.00	0.00	0.00
12,700.00	90.00	1.19	6,296.02	-1,346.02	5,750.16	-673.64	5,780.28	0.00	0.00	0.00
12,800.00	90.00	1.19	6,296.02	-1,346.02	5,850.14	-671.56	5,879.95	0.00	0.00	0.00
12,900.00	90.00	1.19	6,296.02	-1,346.02	5,950.12	-669.49	5,979.62	0.00	0.00	0.00
13,000.00	90.00	1.19	6,296.02	-1,346.02	6,050.10	-667.42	6,079.29	0.00	0.00	0.00
13,100.00	90.00	1.19	6,296.02	-1,346.02	6,150.08	-665.35	6,178.97	0.00	0.00	0.00
13,200.00	90.00	1.19	6,296.02	-1,346.02	6,250.06	-663.28	6,278.64	0.00	0.00	0.00
13,300.00	90.00	1.19	6,296.02	-1,346.02	6,350.04	-661.21	6,378.31	0.00	0.00	0.00
13,400.00	90.00	1.19	6,296.02	-1,346.02	6,450.01	-659.14	6,477.99	0.00	0.00	0.00
13,500.00	90.00	1.19	6,296.02	-1,346.02	6,549.99	-657.07	6,577.66	0.00	0.00	0.00
13,600.00	90.00	1.19	6,296.02	-1,346.02	6,649.97	-655.00	6,677.33	0.00	0.00	0.00
13,700.00	90.00	1.19	6,296.02	-1,346.02	6,749.95	-652.93	6,777.00	0.00	0.00	0.00
13,800.00	90.00	1.19	6,296.02	-1,346.02	6,849.93	-650.86	6,876.68	0.00	0.00	0.00
13,900.00	90.00	1.19	6,296.02	-1,346.02	6,949.91	-648.79	6,976.35	0.00	0.00	0.00
14,000.00	90.00	1.19	6,296.02	-1,346.02	7,049.89	-646.72	7,076.02	0.00	0.00	0.00
14,100.00	90.00	1.19	6,296.02	-1,346.02	7,149.86	-644.65	7,175.70	0.00	0.00	0.00
14,200.00	90.00	1.19	6,296.02	-1,346.02	7,249.84	-642.58	7,275.37	0.00	0.00	0.00
14,300.00	90.00	1.19	6,296.02	-1,346.02	7,349.82	-640.51	7,375.04	0.00	0.00	0.00
14,400.00	90.00	1.19	6,296.02	-1,346.02	7,449.80	-638.44	7,474.72	0.00	0.00	0.00
14,500.00	90.00	1.19	6,296.02	-1,346.02	7,549.78	-636.37	7,574.39	0.00	0.00	0.00
14,600.00	90.00	1.19	6,296.01	-1,346.01	7,649.76	-634.30	7,674.06	0.00	0.00	0.00
14,700.00	90.00	1.19	6,296.01	-1,346.01	7,749.74	-632.23	7,773.73	0.00	0.00	0.00
14,800.00	90.00	1.19	6,296.01	-1,346.01	7,849.71	-630.16	7,873.41	0.00	0.00	0.00
14,900.00	90.00	1.19	6,296.01	-1,346.01	7,949.69	-628.09	7,973.08	0.00	0.00	0.00
15,000.00	90.00	1.19	6,296.01	-1,346.01	8,049.67	-626.03	8,072.75	0.00	0.00	0.00
15,100.00	90.00	1.19	6,296.01	-1,346.01	8,149.65	-623.96	8,172.43	0.00	0.00	0.00
15,200.00	90.00	1.19	6,296.01	-1,346.01	8,249.63	-621.89	8,272.10	0.00	0.00	0.00
15,300.00	90.00	1.19	6,296.01	-1,346.01	8,349.61	-619.82	8,371.77	0.00	0.00	0.00
15,400.00	90.00	1.19	6,296.01	-1,346.01	8,449.59	-617.75	8,471.45	0.00	0.00	0.00
15,500.00	90.00	1.19	6,296.01	-1,346.01	8,549.56	-615.68	8,571.12	0.00	0.00	0.00
15,600.00	90.00	1.19	6,296.01	-1,346.01	8,649.54	-613.61	8,670.79	0.00	0.00	0.00
15,700.00	90.00	1.19	6,296.01	-1,346.01	8,749.52	-611.55	8,770.47	0.00	0.00	0.00
15,800.00	90.00	1.18	6,296.01	-1,346.01	8,849.50	-609.48	8,870.14	0.00	0.00	0.00
15,900.00	90.00	1.18	6,296.01	-1,346.01	8,949.48	-607.41	8,969.81	0.00	0.00	0.00
16,000.00	90.00	1.18	6,296.01	-1,346.01	9,049.46	-605.34	9,069.48	0.00	0.00	0.00
16,100.00	90.00	1.18	6,296.01	-1,346.01	9,149.44	-603.27	9,169.16	0.00	0.00	0.00
16,200.00	90.00	1.18	6,296.00	-1,346.00	9,249.42	-601.21	9,268.83	0.00	0.00	0.00
16,300.00	90.00	1.18	6,296.00	-1,346.00	9,349.39	-599.14	9,368.50	0.00	0.00	0.00
16,400.00	90.00	1.18	6,296.00	-1,346.00	9,449.37	-597.07	9,468.18	0.00	0.00	0.00
16,500.00	90.00	1.18	6,296.00	-1,346.00	9,549.35	-595.00	9,567.85	0.00	0.00	0.00
16,600.00	90.00	1.18	6,296.00	-1,346.00	9,649.33	-592.94	9,667.52	0.00	0.00	0.00
16,700.00	90.00	1.18	6,296.00	-1,346.00	9,749.31	-590.87	9,767.20	0.00	0.00	0.00
<b>BHL: 300ft FNL &amp; 1050ft FWL of Sec 27</b>										
<b>16,740.54</b>	<b>90.00</b>	<b>1.18</b>	<b>6,296.00</b>	<b>-1,346.00</b>	<b>9,789.84</b>	<b>-590.03</b>	<b>9,807.60</b>	<b>0.00</b>	<b>0.00</b>	<b>0.00</b>

# Planning Report

<b>Database:</b>	Database 1	<b>Local Co-ordinate Reference:</b>	Well GREEN TEAL FED 34-27-2HN
<b>Company:</b>	MALLARD EXPLORATION	<b>TVD Reference:</b>	KB 27' @ 4950.00usft
<b>Project:</b>	WELD COUNTY, COLORADO (NAD 83)	<b>MD Reference:</b>	KB 27' @ 4950.00usft
<b>Site:</b>	SE SW SEC. 34 T8N R60W 6th P.M.	<b>North Reference:</b>	True
<b>Well:</b>	GREEN TEAL FED 34-27-2HN	<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 (°)
443.29	443.00	Fox Hills Base			
1,513.20	1,490.00	Pierre Shale Top			
3,369.57	3,297.00	Richard Sandstone			
3,483.60	3,408.00	Parkman Sandstone			
4,246.91	4,151.00	Sussex Sandstone			
4,747.21	4,638.00	Shannon Sandstone			
5,577.98	5,454.00	TeePee Buttes			
6,278.77	6,115.00	Sharon Springs			
6,328.87	6,150.00	Niobrara Top			
6,611.40	6,280.00	Niobrara B2 Chalk Top			
6,664.13	6,290.00	Niobrara B2 Target Top			
6,747.12	6,296.00	Niobrara B2 Landing Point			

Plan Annotations				
MD (usft)	TVD (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
0.00	0.00	0.00	0.00	SHL: 500ft FSL & 1842ft FWL of Sec 34
200.00	200.00	0.00	0.00	START NUDGE (2°/100ft BUR)
862.21	856.33	-52.68	-55.05	EOB TO 13.24° INC
5,084.90	4,966.70	-721.59	-753.97	END OF TANGENT
5,747.12	5,623.04	-774.27	-809.02	EOD TO VERTICAL
5,847.12	5,723.04	-774.27	-809.02	KOP (10°/100ft BUR)
6,747.12	6,296.00	-201.43	-797.12	HZ LP: 300ft FSL & 1050ft FWL of Sec 34
16,740.54	6,296.00	9,789.84	-590.03	BHL: 300ft FNL & 1050ft FWL of Sec 27