

MALLARD EXPLORATION

WELD COUNTY, COLORADO (NAD 83)

SE NW SEC. 21 T8N R60W 6th P.M.

GOLDENEYE FED 21-16-7HN

ORIGINAL WELLBORE

03 September, 2019

Plan: PROPOSAL #3





Project: WELD COUNTY, COLORADO (NAD 83)
Site: SE NW SEC. 21 T8N R60W 6th P.M.
Well: GOLDENEYE FED 21-16-7HN
Wellbore: ORIGINAL WELLBORE
Design: PROPOSAL #3

ANNOTATIONS								
TVD	MD	Inc	Azi	+N/-S	+E/-W	VSec	Dep	Annotation
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	SHL: 2366ft FNL & 2276ft FWL of Sec 21
100.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00	START NUDGE (4"/100ft BUR)
1070.22	1165.90	42.64	140.32	-291.41	241.73	-183.83	378.62	EOB TO 42.64° INC
4764.82	6187.99	42.64	140.32	-2909.53	2413.53	-1835.44	3780.28	END OF TANGENT
5735.04	7253.90	0.00	0.00	-3200.95	2655.27	-2019.27	4158.91	EOD TO VERTICAL
5835.04	7353.90	0.00	0.00	-3200.95	2655.27	-2019.27	4158.91	KOP (10°/100ft BUR)
6408.00	8253.89	90.00	1.09	-2628.10	2666.17	-1481.51	4731.86	LP: 300ft FSL & 305ft FEL of Sec 21
6408.00	18218.63	90.00	1.10	7334.83	2856.23	7871.33	14696.60	BHL: 300ft FNL & 305ft FEL of Sec 16

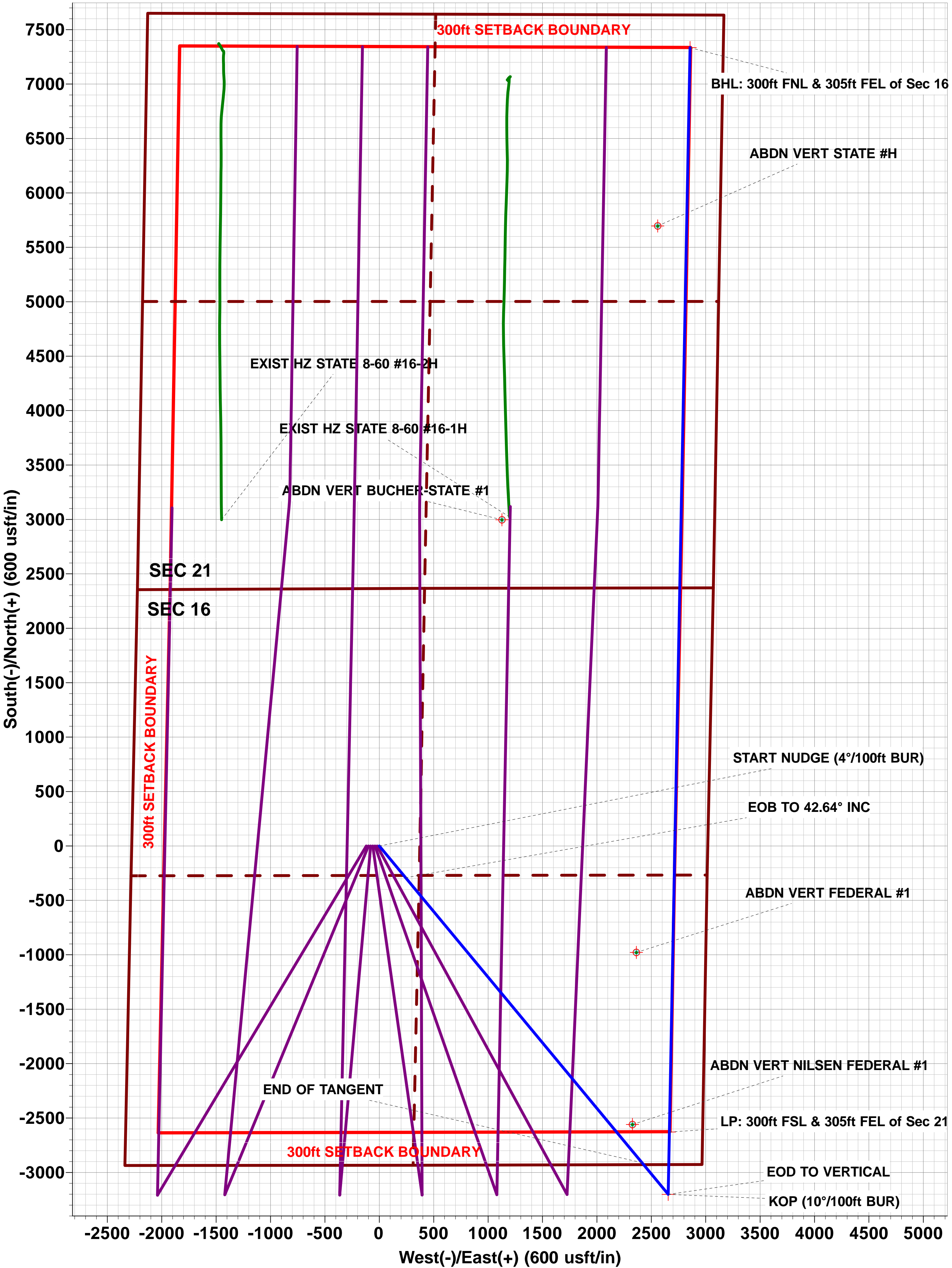
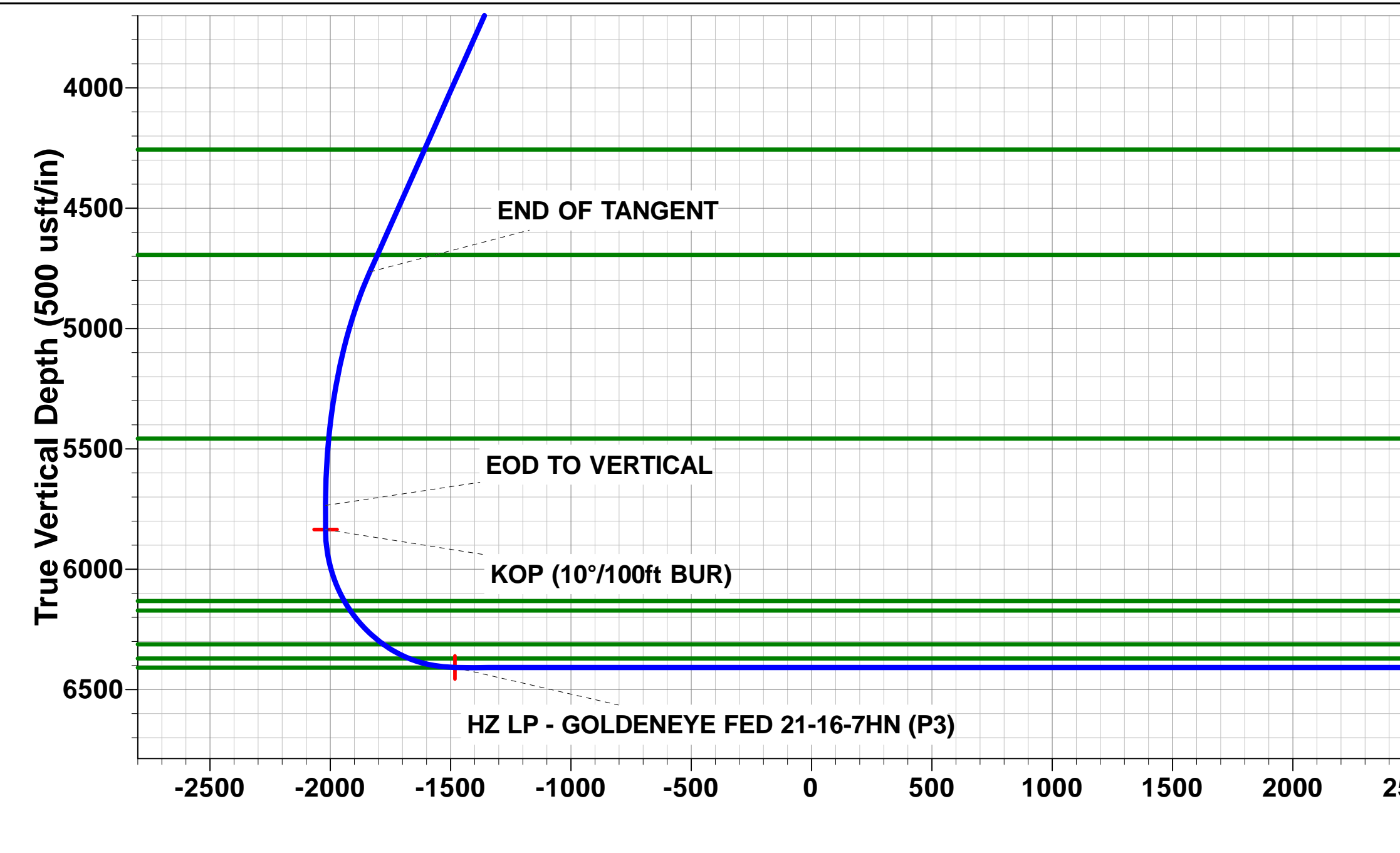
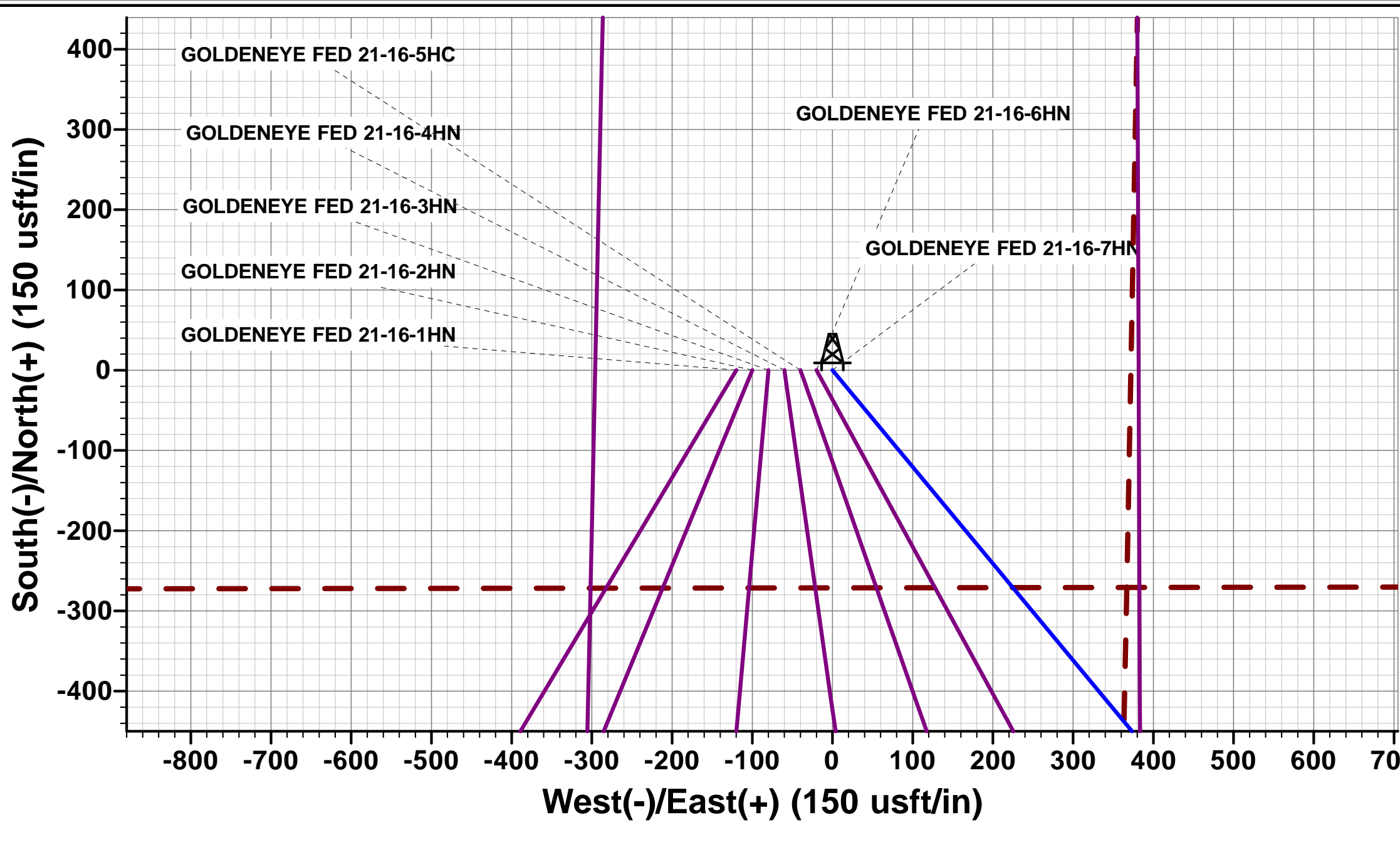
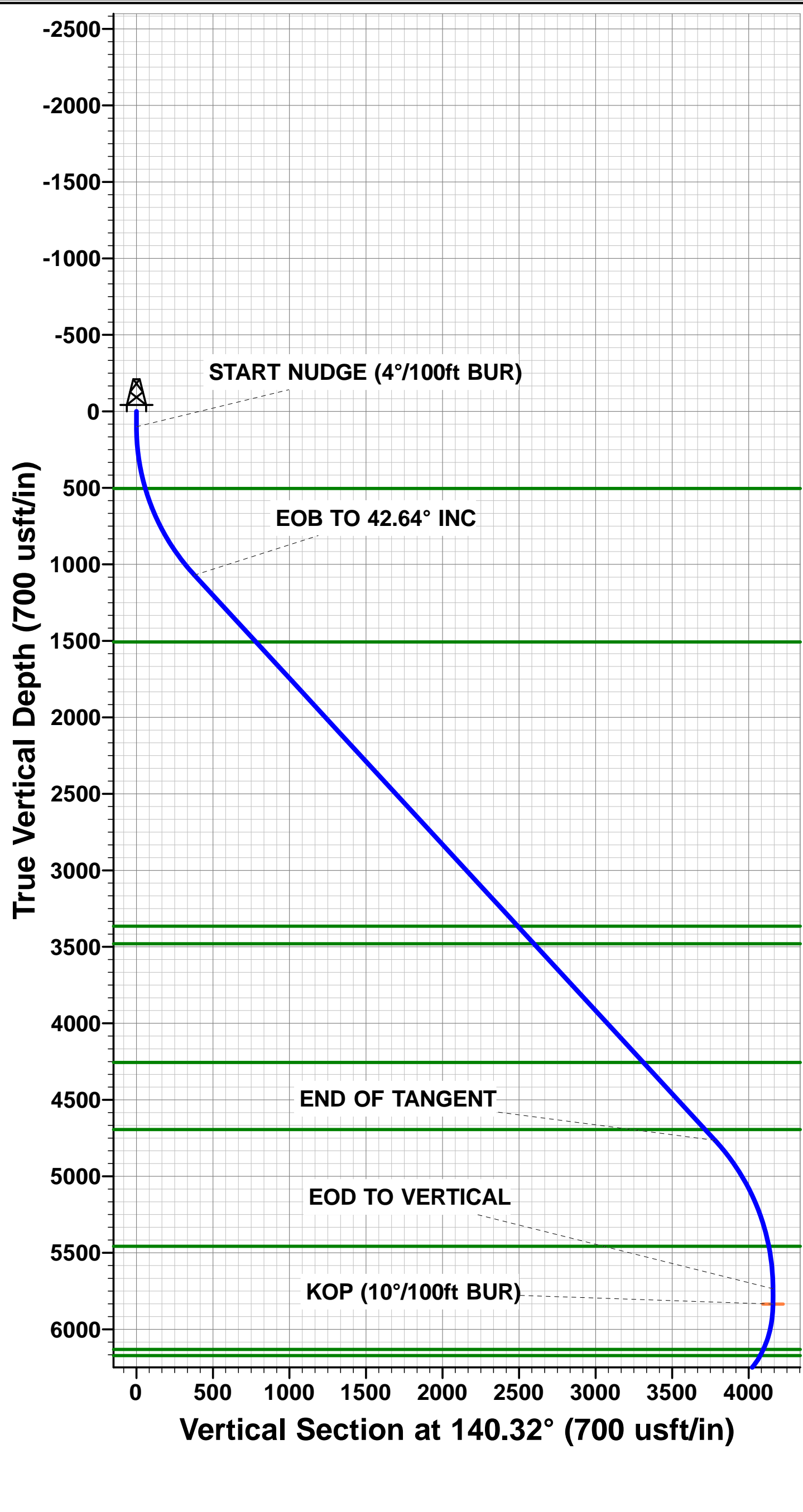
PROPOSED LOCAL COORDINATES:

SHL: 2366ft FNL & 2276ft FWL Sec 21

HZ LP: 300ft FSL & 305ft FEL Sec 21

BHL: 300ft FNL & 305ft FEL of Sec 16

WELLBORE TARGET DETAILS (LAT/LONG)					
Name	TVD	+N/-S	+E/-W	Latitude	Longitude
KOP - GOLDENEYE FED 21-16-7HN (P3)	5835.04	-3200.95	2655.27	40.639804	-104.088338
HZ LP - GOLDENEYE FED 21-16-7HN (P3)	6408.00	-2628.10	2666.17	40.641376	-104.088298
BHL - GOLDENEYE FED 21-16-7HN (P3)	6408.00	7334.83	2856.23	40.668722	-104.087609



Planning Report



Database:	Database 1	Local Co-ordinate Reference:	Well GOLDENEYE FED 21-16-7HN
Company:	MALLARD EXPLORATION	TVD Reference:	KB 25' @ 4961.00usft
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB 25' @ 4961.00usft
Site:	SE NW SEC. 21 T8N R60W 6th P.M.	North Reference:	True
Well:	GOLDENEYE FED 21-16-7HN	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #3		

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 NW SEC. 21 T8N R60W 6th P.M.		
Site Position:		Northing:	1,482,197.63 usft
From:	Lat/Long	Easting:	3,388,929.95 usft
Position Uncertainty:	0.00 usft	Slot Radius:	1.10 ft
		Latitude:	40.648590
		Longitude:	-104.098337
		Grid Convergence:	0.91 °

Well	GOLDENEYE FED 21-16-7HN		
Well Position	+N/-S	-0.01 usft	Northing:
	+E/-W	119.88 usft	Easting:
Position Uncertainty	0.00 usft		Wellhead Elevation:
			Latitude:
			Longitude:
			Ground Level:

Wellbore	ORIGINAL WELLBORE				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	03/09/2019	7.63	67.09	52,334

Design	PROPOSAL #3			
Audit Notes:				
Version:	Phase:	PROTOTYPE	Tie On Depth:	0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	1.00	0.00	0.00	21.28

Plan Sections											
MD (usft)	Inc (°)	Azi (°)	Vertical Depth	SS (usft)	+N/-S (usft)	+E/-W (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	TFO (°)	Target
0.00	0.00	0.00	0.00	-4,961.00	0.00	0.00	0.00	0.00	0.00	0.00	
100.00	0.00	0.00	100.00	-4,861.00	0.00	0.00	0.00	0.00	0.00	0.00	
1,165.90	42.64	140.32	1,070.22	-3,890.78	-291.42	241.73	4.00	4.00	0.00	140.32	
6,187.99	42.64	140.32	4,764.82	-196.18	-2,909.54	2,413.54	0.00	0.00	0.00	0.00	
7,253.90	0.00	0.00	5,735.04	774.04	-3,200.95	2,655.27	4.00	-4.00	0.00	180.00	
7,353.90	0.00	0.00	5,835.04	874.04	-3,200.95	2,655.27	0.00	0.00	0.00	0.00	KOP - GOLDENEYE
8,253.89	90.00	1.09	6,408.00	1,447.00	-2,628.10	2,666.17	10.00	10.00	0.12	1.09	HZ LP - GOLDENEYE
18,218.63	90.00	1.10	6,408.00	1,447.00	7,334.83	2,856.23	0.00	0.00	0.00	74.90	BHL - GOLDENEYE

Planning Report



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Company:	MALLARD EXPLORATION	TVD Reference:	KB 25' @ 4961.00usft
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB 25' @ 4961.00usft
Site:	SE NW SEC. 21 T8N R60W 6th P.M.	North Reference:	True
Well:	GOLDENEYE FED 21-16-7HN	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #3		

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: 2366ft FNL & 2276ft FWL of Sec 21										
0.00	0.00	0.00	0.00	4,961.00	0.00	0.00	0.00	0.00	0.00	0.00
START NUDGE (4°/100ft BUR)										
100.00	0.00	0.00	100.00	4,861.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	4.00	140.32	199.92	4,761.08	-2.69	2.23	-1.69	4.00	4.00	0.00
300.00	8.00	140.32	299.35	4,661.65	-10.73	8.90	-6.77	4.00	4.00	0.00
400.00	12.00	140.32	397.81	4,563.19	-24.10	19.98	-15.20	4.00	4.00	0.00
500.00	16.00	140.32	494.82	4,466.18	-42.71	35.43	-26.94	4.00	4.00	0.00
Fox Hills Base										
509.56	16.38	140.32	504.00	4,457.00	-44.76	37.13	-28.24	4.00	4.00	0.00
600.00	20.00	140.32	589.91	4,371.09	-66.49	55.15	-41.94	4.00	4.00	0.00
700.00	24.00	140.32	682.61	4,278.39	-95.32	79.06	-60.13	4.00	4.00	0.00
800.00	28.00	140.32	772.47	4,188.53	-129.05	107.05	-81.41	4.00	4.00	0.00
900.00	32.00	140.32	859.05	4,101.95	-167.52	138.96	-105.68	4.00	4.00	0.00
1,000.00	36.00	140.32	941.94	4,019.06	-210.55	174.66	-132.82	4.00	4.00	0.00
1,100.00	40.00	140.32	1,020.73	3,940.27	-257.93	213.96	-162.71	4.00	4.00	0.00
EOB TO 42.64° INC										
1,165.90	42.64	140.32	1,070.22	3,890.78	-291.41	241.73	-183.83	4.00	4.00	0.00
1,200.00	42.64	140.32	1,095.30	3,865.70	-309.19	256.48	-195.05	0.00	0.00	0.00
1,300.00	42.64	140.32	1,168.87	3,792.13	-361.32	299.72	-227.93	0.00	0.00	0.00
1,400.00	42.64	140.32	1,242.44	3,718.56	-413.46	342.97	-260.82	0.00	0.00	0.00
1,500.00	42.64	140.32	1,316.00	3,645.00	-465.59	386.21	-293.71	0.00	0.00	0.00
1,600.00	42.64	140.32	1,389.57	3,571.43	-517.72	429.46	-326.59	0.00	0.00	0.00
1,700.00	42.64	140.32	1,463.14	3,497.86	-569.85	472.70	-359.48	0.00	0.00	0.00
Pierre Shale Top										
1,759.62	42.64	140.32	1,507.00	3,454.00	-600.93	498.49	-379.09	0.00	0.00	0.00
1,800.00	42.64	140.32	1,536.70	3,424.30	-621.98	515.95	-392.37	0.00	0.00	0.00
1,900.00	42.64	140.32	1,610.27	3,350.73	-674.12	559.19	-425.25	0.00	0.00	0.00
2,000.00	42.64	140.32	1,683.84	3,277.16	-726.25	602.44	-458.14	0.00	0.00	0.00
2,100.00	42.64	140.32	1,757.41	3,203.59	-778.38	645.68	-491.03	0.00	0.00	0.00
2,200.00	42.64	140.32	1,830.97	3,130.03	-830.51	688.93	-523.91	0.00	0.00	0.00
2,300.00	42.64	140.32	1,904.54	3,056.46	-882.65	732.17	-556.80	0.00	0.00	0.00
2,400.00	42.64	140.32	1,978.11	2,982.89	-934.78	775.42	-589.69	0.00	0.00	0.00
2,500.00	42.64	140.32	2,051.67	2,909.33	-986.91	818.66	-622.57	0.00	0.00	0.00
2,600.00	42.64	140.32	2,125.24	2,835.76	-1,039.04	861.91	-655.46	0.00	0.00	0.00
2,700.00	42.64	140.32	2,198.81	2,762.19	-1,091.17	905.15	-688.35	0.00	0.00	0.00
2,800.00	42.64	140.32	2,272.38	2,688.62	-1,143.31	948.40	-721.24	0.00	0.00	0.00
2,900.00	42.64	140.32	2,345.94	2,615.06	-1,195.44	991.64	-754.12	0.00	0.00	0.00
3,000.00	42.64	140.32	2,419.51	2,541.49	-1,247.57	1,034.89	-787.01	0.00	0.00	0.00
3,100.00	42.64	140.32	2,493.08	2,467.92	-1,299.70	1,078.13	-819.90	0.00	0.00	0.00
3,200.00	42.64	140.32	2,566.64	2,394.36	-1,351.83	1,121.38	-852.78	0.00	0.00	0.00
3,300.00	42.64	140.32	2,640.21	2,320.79	-1,403.97	1,164.62	-885.67	0.00	0.00	0.00
3,400.00	42.64	140.32	2,713.78	2,247.22	-1,456.10	1,207.87	-918.56	0.00	0.00	0.00
3,500.00	42.64	140.32	2,787.34	2,173.66	-1,508.23	1,251.11	-951.44	0.00	0.00	0.00
3,600.00	42.64	140.32	2,860.91	2,100.09	-1,560.36	1,294.36	-984.33	0.00	0.00	0.00
3,700.00	42.64	140.32	2,934.48	2,026.52	-1,612.49	1,337.60	-1,017.22	0.00	0.00	0.00
3,800.00	42.64	140.32	3,008.05	1,952.95	-1,664.63	1,380.85	-1,050.10	0.00	0.00	0.00
3,900.00	42.64	140.32	3,081.61	1,879.39	-1,716.76	1,424.09	-1,082.99	0.00	0.00	0.00
4,000.00	42.64	140.32	3,155.18	1,805.82	-1,768.89	1,467.34	-1,115.88	0.00	0.00	0.00
4,100.00	42.64	140.32	3,228.75	1,732.25	-1,821.02	1,510.58	-1,148.76	0.00	0.00	0.00
4,200.00	42.64	140.32	3,302.31	1,658.69	-1,873.16	1,553.83	-1,181.65	0.00	0.00	0.00
Richard Sandstone										
4,285.21	42.64	140.32	3,365.00	1,596.00	-1,917.58	1,590.68	-1,209.67	0.00	0.00	0.00

Planning Report



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Company:	MALLARD EXPLORATION	TVD Reference:	KB 25' @ 4961.00usft
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB 25' @ 4961.00usft
Site:	SE NW SEC. 21 T8N R60W 6th P.M.	North Reference:	True
Well:	GOLDENEYE FED 21-16-7HN	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #3		

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)
4,300.00	42.64	140.32	3,375.88	1,585.12	-1,925.29	1,597.07	-1,214.54	0.00	0.00	0.00
4,400.00	42.64	140.32	3,449.45	1,511.55	-1,977.42	1,640.32	-1,247.42	0.00	0.00	0.00
Parkman Sandstone										
4,441.53	42.64	140.32	3,480.00	1,481.00	-1,999.07	1,658.28	-1,261.08	0.00	0.00	0.00
4,500.00	42.64	140.32	3,523.02	1,437.98	-2,029.55	1,683.56	-1,280.31	0.00	0.00	0.00
4,600.00	42.64	140.32	3,596.58	1,364.42	-2,081.68	1,726.81	-1,313.20	0.00	0.00	0.00
4,700.00	42.64	140.32	3,670.15	1,290.85	-2,133.82	1,770.05	-1,346.08	0.00	0.00	0.00
4,800.00	42.64	140.32	3,743.72	1,217.28	-2,185.95	1,813.30	-1,378.97	0.00	0.00	0.00
4,900.00	42.64	140.32	3,817.28	1,143.72	-2,238.08	1,856.54	-1,411.86	0.00	0.00	0.00
5,000.00	42.64	140.32	3,890.85	1,070.15	-2,290.21	1,899.79	-1,444.74	0.00	0.00	0.00
5,100.00	42.64	140.32	3,964.42	996.58	-2,342.34	1,943.03	-1,477.63	0.00	0.00	0.00
5,200.00	42.64	140.32	4,037.98	923.02	-2,394.48	1,986.28	-1,510.52	0.00	0.00	0.00
5,300.00	42.64	140.32	4,111.55	849.45	-2,446.61	2,029.52	-1,543.40	0.00	0.00	0.00
5,400.00	42.64	140.32	4,185.12	775.88	-2,498.74	2,072.77	-1,576.29	0.00	0.00	0.00
Sussex Sandstone										
5,496.35	42.64	140.32	4,256.00	705.00	-2,548.97	2,114.43	-1,607.98	0.00	0.00	0.00
5,500.00	42.64	140.32	4,258.69	702.31	-2,550.87	2,116.01	-1,609.18	0.00	0.00	0.00
5,600.00	42.64	140.32	4,332.25	628.75	-2,603.00	2,159.26	-1,642.07	0.00	0.00	0.00
5,700.00	42.64	140.32	4,405.82	555.18	-2,655.14	2,202.50	-1,674.95	0.00	0.00	0.00
5,800.00	42.64	140.32	4,479.39	481.61	-2,707.27	2,245.75	-1,707.84	0.00	0.00	0.00
5,900.00	42.64	140.32	4,552.95	408.05	-2,759.40	2,288.99	-1,740.73	0.00	0.00	0.00
6,000.00	42.64	140.32	4,626.52	334.48	-2,811.53	2,332.24	-1,773.61	0.00	0.00	0.00
Shannon Sandstone										
6,091.72	42.64	140.32	4,694.00	267.00	-2,859.35	2,371.90	-1,803.78	0.00	0.00	0.00
6,100.00	42.64	140.32	4,700.09	260.91	-2,863.67	2,375.48	-1,806.50	0.00	0.00	0.00
END OF TANGENT										
6,187.99	42.64	140.32	4,764.82	196.18	-2,909.54	2,413.53	-1,835.44	0.00	0.00	0.00
6,200.00	42.16	140.32	4,773.69	187.31	-2,915.77	2,418.70	-1,839.37	4.00	-4.00	0.00
6,300.00	38.16	140.32	4,850.10	110.90	-2,965.39	2,459.87	-1,870.67	4.00	-4.00	0.00
6,400.00	34.16	140.32	4,930.83	30.17	-3,010.79	2,497.53	-1,899.31	4.00	-4.00	0.00
6,500.00	30.16	140.32	5,015.47	-54.47	-3,051.75	2,531.50	-1,925.15	4.00	-4.00	0.00
6,600.00	26.16	140.32	5,103.62	-142.62	-3,088.06	2,561.62	-1,948.05	4.00	-4.00	0.00
6,700.00	22.16	140.32	5,194.85	-233.85	-3,119.55	2,587.74	-1,967.92	4.00	-4.00	0.00
6,800.00	18.16	140.32	5,288.70	-327.70	-3,146.06	2,609.74	-1,984.64	4.00	-4.00	0.00
6,900.00	14.16	140.32	5,384.73	-423.73	-3,167.47	2,627.50	-1,998.15	4.00	-4.00	0.00
TeePee Buttes										
6,974.08	11.19	140.32	5,457.00	-496.00	-3,179.98	2,637.88	-2,006.04	4.00	-4.00	0.00
7,000.00	10.16	140.32	5,482.47	-521.47	-3,183.68	2,640.94	-2,008.37	4.00	-4.00	0.00
7,100.00	6.16	140.32	5,581.44	-620.44	-3,194.59	2,650.00	-2,015.26	4.00	-4.00	0.00
7,200.00	2.16	140.32	5,681.16	-720.16	-3,200.17	2,654.62	-2,018.78	4.00	-4.00	0.00
EOD TO VERTICAL										
7,253.90	0.00	0.00	5,735.04	-774.04	-3,200.95	2,655.27	-2,019.27	4.00	-4.00	0.00
7,300.00	0.00	0.00	5,781.14	-820.14	-3,200.95	2,655.27	-2,019.27	0.00	0.00	0.00
KOP (10°/100ft BUR)										
7,353.90	0.00	0.00	5,835.04	-874.04	-3,200.95	2,655.27	-2,019.27	0.00	0.00	0.00
7,400.00	4.61	1.09	5,881.09	-920.09	-3,199.10	2,655.31	-2,017.53	10.00	10.00	0.00
7,500.00	14.61	1.09	5,979.57	-1,018.57	-3,182.43	2,655.62	-2,001.88	10.00	10.00	0.00
7,600.00	24.61	1.09	6,073.65	-1,112.65	-3,148.91	2,656.26	-1,970.42	10.00	10.00	0.00
Sharon Springs										
7,666.07	31.22	1.09	6,132.00	-1,171.00	-3,118.00	2,656.85	-1,941.40	10.00	10.00	0.00
7,700.00	34.61	1.09	6,160.48	-1,199.48	-3,099.57	2,657.20	-1,924.10	10.00	10.00	0.00
Niobrara Top										
7,714.12	36.02	1.09	6,172.00	-1,211.00	-3,091.41	2,657.35	-1,916.44	10.00	10.00	0.00

Planning Report



Database:	Database 1	Local Co-ordinate Reference:	Well GOLDENEYE FED 21-16-7HN
Company:	MALLARD EXPLORATION	TVD Reference:	KB 25' @ 4961.00usft
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB 25' @ 4961.00usft
Site:	SE NW SEC. 21 T8N R60W 6th P.M.	North Reference:	True
Well:	GOLDENEYE FED 21-16-7HN	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #3		

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)
7,800.00	44.61	1.09	6,237.42	-1,276.42	-3,035.91	2,658.41	-1,864.34	10.00	10.00	0.00
7,900.00	54.61	1.09	6,302.13	-1,341.13	-2,959.86	2,659.86	-1,792.94	10.00	10.00	0.00
Niobrara B2 Chalk Top										
7,917.41	56.35	1.09	6,312.00	-1,351.00	-2,945.51	2,660.13	-1,779.48	10.00	10.00	0.00
8,000.00	64.61	1.09	6,352.66	-1,391.66	-2,873.72	2,661.50	-1,712.08	10.00	10.00	0.00
Niobrara C Chalk Target Top										
8,046.86	69.30	1.09	6,371.00	-1,410.00	-2,830.62	2,662.32	-1,671.62	10.00	10.00	0.00
8,100.00	74.61	1.09	6,387.46	-1,426.46	-2,780.12	2,663.28	-1,624.22	10.00	10.00	0.00
8,200.00	84.61	1.09	6,405.47	-1,444.47	-2,681.90	2,665.15	-1,532.02	10.00	10.00	0.00
LP: 300ft FSL & 305ft FEL of Sec 21										
8,253.89	90.00	1.09	6,408.00	-1,447.00	-2,628.10	2,666.17	-1,481.51	10.00	10.00	0.00
8,300.00	90.00	1.09	6,408.00	-1,447.00	-2,582.00	2,667.05	-1,438.23	0.00	0.00	0.00
8,400.00	90.00	1.09	6,408.00	-1,447.00	-2,482.02	2,668.95	-1,344.38	0.00	0.00	0.00
8,500.00	90.00	1.09	6,408.00	-1,447.00	-2,382.04	2,670.86	-1,250.52	0.00	0.00	0.00
8,600.00	90.00	1.09	6,408.00	-1,447.00	-2,282.06	2,672.76	-1,156.66	0.00	0.00	0.00
8,700.00	90.00	1.09	6,408.00	-1,447.00	-2,182.07	2,674.66	-1,062.80	0.00	0.00	0.00
8,800.00	90.00	1.09	6,408.01	-1,447.01	-2,082.09	2,676.57	-968.94	0.00	0.00	0.00
8,900.00	90.00	1.09	6,408.01	-1,447.01	-1,982.11	2,678.47	-875.09	0.00	0.00	0.00
9,000.00	90.00	1.09	6,408.01	-1,447.01	-1,882.13	2,680.37	-781.23	0.00	0.00	0.00
9,100.00	90.00	1.09	6,408.01	-1,447.01	-1,782.15	2,682.28	-687.37	0.00	0.00	0.00
9,200.00	90.00	1.09	6,408.01	-1,447.01	-1,682.16	2,684.18	-593.51	0.00	0.00	0.00
9,300.00	90.00	1.09	6,408.01	-1,447.01	-1,582.18	2,686.08	-499.65	0.00	0.00	0.00
9,400.00	90.00	1.09	6,408.01	-1,447.01	-1,482.20	2,687.99	-405.80	0.00	0.00	0.00
9,500.00	90.00	1.09	6,408.01	-1,447.01	-1,382.22	2,689.89	-311.94	0.00	0.00	0.00
9,600.00	90.00	1.09	6,408.01	-1,447.01	-1,282.24	2,691.80	-218.08	0.00	0.00	0.00
9,700.00	90.00	1.09	6,408.01	-1,447.01	-1,182.25	2,693.70	-124.22	0.00	0.00	0.00
9,800.00	90.00	1.09	6,408.02	-1,447.02	-1,082.27	2,695.61	-30.36	0.00	0.00	0.00
9,900.00	90.00	1.09	6,408.02	-1,447.02	-982.29	2,697.51	63.50	0.00	0.00	0.00
10,000.00	90.00	1.09	6,408.02	-1,447.02	-882.31	2,699.41	157.35	0.00	0.00	0.00
10,100.00	90.00	1.09	6,408.02	-1,447.02	-782.33	2,701.32	251.21	0.00	0.00	0.00
10,200.00	90.00	1.09	6,408.02	-1,447.02	-682.35	2,703.22	345.07	0.00	0.00	0.00
10,300.00	90.00	1.09	6,408.02	-1,447.02	-582.36	2,705.13	438.93	0.00	0.00	0.00
10,400.00	90.00	1.09	6,408.02	-1,447.02	-482.38	2,707.03	532.79	0.00	0.00	0.00
10,500.00	90.00	1.09	6,408.02	-1,447.02	-382.40	2,708.94	626.65	0.00	0.00	0.00
10,600.00	90.00	1.09	6,408.02	-1,447.02	-282.42	2,710.84	720.50	0.00	0.00	0.00
10,700.00	90.00	1.09	6,408.02	-1,447.02	-182.44	2,712.75	814.36	0.00	0.00	0.00
10,800.00	90.00	1.09	6,408.02	-1,447.02	-82.45	2,714.65	908.22	0.00	0.00	0.00
10,900.00	90.00	1.09	6,408.02	-1,447.02	17.53	2,716.56	1,002.08	0.00	0.00	0.00
11,000.00	90.00	1.09	6,408.02	-1,447.02	117.51	2,718.46	1,095.94	0.00	0.00	0.00
11,100.00	90.00	1.09	6,408.02	-1,447.02	217.49	2,720.37	1,189.80	0.00	0.00	0.00
11,200.00	90.00	1.09	6,408.02	-1,447.02	317.47	2,722.27	1,283.66	0.00	0.00	0.00
11,300.00	90.00	1.09	6,408.02	-1,447.02	417.45	2,724.18	1,377.52	0.00	0.00	0.00
11,400.00	90.00	1.09	6,408.03	-1,447.03	517.44	2,726.09	1,471.37	0.00	0.00	0.00
11,500.00	90.00	1.09	6,408.03	-1,447.03	617.42	2,727.99	1,565.23	0.00	0.00	0.00
11,600.00	90.00	1.09	6,408.03	-1,447.03	717.40	2,729.90	1,659.09	0.00	0.00	0.00
11,700.00	90.00	1.09	6,408.03	-1,447.03	817.38	2,731.80	1,752.95	0.00	0.00	0.00
11,800.00	90.00	1.09	6,408.03	-1,447.03	917.36	2,733.71	1,846.81	0.00	0.00	0.00
11,900.00	90.00	1.09	6,408.03	-1,447.03	1,017.35	2,735.61	1,940.67	0.00	0.00	0.00
12,000.00	90.00	1.09	6,408.03	-1,447.03	1,117.33	2,737.52	2,034.53	0.00	0.00	0.00
12,100.00	90.00	1.09	6,408.03	-1,447.03	1,217.31	2,739.43	2,128.39	0.00	0.00	0.00
12,200.00	90.00	1.09	6,408.03	-1,447.03	1,317.29	2,741.33	2,222.24	0.00	0.00	0.00
12,300.00	90.00	1.09	6,408.03	-1,447.03	1,417.27	2,743.24	2,316.10	0.00	0.00	0.00
12,400.00	90.00	1.09	6,408.03	-1,447.03	1,517.26	2,745.15	2,409.96	0.00	0.00	0.00

Planning Report



Database:	Database 1	Local Co-ordinate Reference:	Well GOLDENEYE FED 21-16-7HN
Company:	MALLARD EXPLORATION	TVD Reference:	KB 25' @ 4961.00usft
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB 25' @ 4961.00usft
Site:	SE NW SEC. 21 T8N R60W 6th P.M.	North Reference:	True
Well:	GOLDENEYE FED 21-16-7HN	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #3		

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)
12,500.00	90.00	1.09	6,408.03	-1,447.03	1,617.24	2,747.05	2,503.82	0.00	0.00	0.00
12,600.00	90.00	1.09	6,408.03	-1,447.03	1,717.22	2,748.96	2,597.68	0.00	0.00	0.00
12,700.00	90.00	1.09	6,408.03	-1,447.03	1,817.20	2,750.87	2,691.54	0.00	0.00	0.00
12,800.00	90.00	1.09	6,408.03	-1,447.03	1,917.18	2,752.77	2,785.40	0.00	0.00	0.00
12,900.00	90.00	1.09	6,408.03	-1,447.03	2,017.16	2,754.68	2,879.26	0.00	0.00	0.00
13,000.00	90.00	1.09	6,408.03	-1,447.03	2,117.15	2,756.59	2,973.12	0.00	0.00	0.00
13,100.00	90.00	1.09	6,408.03	-1,447.03	2,217.13	2,758.49	3,066.98	0.00	0.00	0.00
13,200.00	90.00	1.09	6,408.03	-1,447.03	2,317.11	2,760.40	3,160.84	0.00	0.00	0.00
13,300.00	90.00	1.09	6,408.03	-1,447.03	2,417.09	2,762.31	3,254.70	0.00	0.00	0.00
13,400.00	90.00	1.09	6,408.03	-1,447.03	2,517.07	2,764.22	3,348.56	0.00	0.00	0.00
13,500.00	90.00	1.09	6,408.03	-1,447.03	2,617.06	2,766.12	3,442.41	0.00	0.00	0.00
13,600.00	90.00	1.09	6,408.03	-1,447.03	2,717.04	2,768.03	3,536.27	0.00	0.00	0.00
13,700.00	90.00	1.09	6,408.03	-1,447.03	2,817.02	2,769.94	3,630.13	0.00	0.00	0.00
13,800.00	90.00	1.09	6,408.03	-1,447.03	2,917.00	2,771.85	3,723.99	0.00	0.00	0.00
13,900.00	90.00	1.09	6,408.03	-1,447.03	3,016.98	2,773.75	3,817.85	0.00	0.00	0.00
14,000.00	90.00	1.09	6,408.03	-1,447.03	3,116.96	2,775.66	3,911.71	0.00	0.00	0.00
14,100.00	90.00	1.09	6,408.03	-1,447.03	3,216.95	2,777.57	4,005.57	0.00	0.00	0.00
14,200.00	90.00	1.09	6,408.03	-1,447.03	3,316.93	2,779.48	4,099.43	0.00	0.00	0.00
14,300.00	90.00	1.09	6,408.03	-1,447.03	3,416.91	2,781.39	4,193.29	0.00	0.00	0.00
14,400.00	90.00	1.09	6,408.03	-1,447.03	3,516.89	2,783.30	4,287.15	0.00	0.00	0.00
14,500.00	90.00	1.09	6,408.03	-1,447.03	3,616.87	2,785.20	4,381.01	0.00	0.00	0.00
14,600.00	90.00	1.09	6,408.03	-1,447.03	3,716.85	2,787.11	4,474.87	0.00	0.00	0.00
14,700.00	90.00	1.09	6,408.03	-1,447.03	3,816.84	2,789.02	4,568.73	0.00	0.00	0.00
14,800.00	90.00	1.09	6,408.03	-1,447.03	3,916.82	2,790.93	4,662.59	0.00	0.00	0.00
14,900.00	90.00	1.09	6,408.03	-1,447.03	4,016.80	2,792.84	4,756.45	0.00	0.00	0.00
15,000.00	90.00	1.09	6,408.03	-1,447.03	4,116.78	2,794.75	4,850.31	0.00	0.00	0.00
15,100.00	90.00	1.09	6,408.03	-1,447.03	4,216.76	2,796.66	4,944.17	0.00	0.00	0.00
15,200.00	90.00	1.09	6,408.02	-1,447.02	4,316.75	2,798.56	5,038.03	0.00	0.00	0.00
15,300.00	90.00	1.09	6,408.02	-1,447.02	4,416.73	2,800.47	5,131.89	0.00	0.00	0.00
15,400.00	90.00	1.09	6,408.02	-1,447.02	4,516.71	2,802.38	5,225.75	0.00	0.00	0.00
15,500.00	90.00	1.09	6,408.02	-1,447.02	4,616.69	2,804.29	5,319.61	0.00	0.00	0.00
15,600.00	90.00	1.09	6,408.02	-1,447.02	4,716.67	2,806.20	5,413.47	0.00	0.00	0.00
15,700.00	90.00	1.09	6,408.02	-1,447.02	4,816.65	2,808.11	5,507.33	0.00	0.00	0.00
15,800.00	90.00	1.09	6,408.02	-1,447.02	4,916.64	2,810.02	5,601.19	0.00	0.00	0.00
15,900.00	90.00	1.09	6,408.02	-1,447.02	5,016.62	2,811.93	5,695.05	0.00	0.00	0.00
16,000.00	90.00	1.09	6,408.02	-1,447.02	5,116.60	2,813.84	5,788.91	0.00	0.00	0.00
16,100.00	90.00	1.09	6,408.02	-1,447.02	5,216.58	2,815.75	5,882.77	0.00	0.00	0.00
16,200.00	90.00	1.09	6,408.02	-1,447.02	5,316.56	2,817.66	5,976.63	0.00	0.00	0.00
16,300.00	90.00	1.09	6,408.02	-1,447.02	5,416.54	2,819.57	6,070.49	0.00	0.00	0.00
16,400.00	90.00	1.09	6,408.02	-1,447.02	5,516.53	2,821.48	6,164.35	0.00	0.00	0.00
16,500.00	90.00	1.09	6,408.02	-1,447.02	5,616.51	2,823.39	6,258.21	0.00	0.00	0.00
16,600.00	90.00	1.09	6,408.02	-1,447.02	5,716.49	2,825.30	6,352.07	0.00	0.00	0.00
16,700.00	90.00	1.09	6,408.02	-1,447.02	5,816.47	2,827.21	6,445.93	0.00	0.00	0.00
16,800.00	90.00	1.09	6,408.01	-1,447.01	5,916.45	2,829.12	6,539.79	0.00	0.00	0.00
16,900.00	90.00	1.09	6,408.01	-1,447.01	6,016.44	2,831.03	6,633.65	0.00	0.00	0.00
17,000.00	90.00	1.09	6,408.01	-1,447.01	6,116.42	2,832.94	6,727.51	0.00	0.00	0.00
17,100.00	90.00	1.09	6,408.01	-1,447.01	6,216.40	2,834.85	6,821.37	0.00	0.00	0.00
17,200.00	90.00	1.09	6,408.01	-1,447.01	6,316.38	2,836.76	6,915.23	0.00	0.00	0.00
17,300.00	90.00	1.09	6,408.01	-1,447.01	6,416.36	2,838.67	7,009.09	0.00	0.00	0.00
17,400.00	90.00	1.09	6,408.01	-1,447.01	6,516.34	2,840.58	7,102.95	0.00	0.00	0.00
17,500.00	90.00	1.09	6,408.01	-1,447.01	6,616.33	2,842.49	7,196.81	0.00	0.00	0.00
17,600.00	90.00	1.10	6,408.01	-1,447.01	6,716.31	2,844.41	7,290.67	0.00	0.00	0.00
17,700.00	90.00	1.10	6,408.01	-1,447.01	6,816.29	2,846.32	7,384.54	0.00	0.00	0.00
17,800.00	90.00	1.10	6,408.00	-1,447.00	6,916.27	2,848.23	7,478.40	0.00	0.00	0.00

Planning Report



Database:	Database 1	Local Co-ordinate Reference:	Well GOLDENEYE FED 21-16-7HN
Company:	MALLARD EXPLORATION	TVD Reference:	KB 25' @ 4961.00usft
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB 25' @ 4961.00usft
Site:	SE NW SEC. 21 T8N R60W 6th P.M.	North Reference:	True
Well:	GOLDENEYE FED 21-16-7HN	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #3		

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)
17,900.00	90.00	1.10	6,408.00	-1,447.00	7,016.25	2,850.14	7,572.26	0.00	0.00	0.00
18,000.00	90.00	1.10	6,408.00	-1,447.00	7,116.23	2,852.05	7,666.12	0.00	0.00	0.00
18,100.00	90.00	1.10	6,408.00	-1,447.00	7,216.22	2,853.96	7,759.98	0.00	0.00	0.00
18,200.00	90.00	1.10	6,408.00	-1,447.00	7,316.20	2,855.87	7,853.84	0.00	0.00	0.00
BHL: 300ft FNL & 305ft FEL of Sec 16										
18,218.63	90.00	1.10	6,408.00	-1,447.00	7,334.82	2,856.23	7,871.33	0.00	0.00	0.00

Formations						
MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
509.56	504.00	Fox Hills Base				
1,759.62	1,507.00	Pierre Shale Top				
4,285.21	3,365.00	Richard Sandstone				
4,441.53	3,480.00	Parkman Sandstone				
5,496.35	4,256.00	Sussex Sandstone				
6,091.72	4,694.00	Shannon Sandstone				
6,974.08	5,457.00	TeePee Buttes				
7,666.07	6,132.00	Sharon Springs				
7,714.12	6,172.00	Niobrara Top				
7,917.41	6,312.00	Niobrara B2 Chalk Top				
8,046.86	6,371.00	Niobrara C Chalk Target Top				

Plan Annotations					
MD (usft)	TVD (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
0.00	0.00	0.00	0.00	SHL: 2366ft FNL & 2276ft FWL of Sec 21	
100.00	100.00	0.00	0.00	START NUDGE (4°/100ft BUR)	
1,165.90	1,070.22	-291.41	241.73	EOB TO 42.64° INC	
6,187.99	4,764.82	-2,909.54	2,413.53	END OF TANGENT	
7,253.90	5,735.04	-3,200.95	2,655.27	EOD TO VERTICAL	
7,353.90	5,835.04	-3,200.95	2,655.27	KOP (10°/100ft BUR)	
8,253.89	6,408.00	-2,628.10	2,666.17	LP: 300ft FSL & 305ft FEL of Sec 21	
18,218.63	6,408.00	7,334.82	2,856.23	BHL: 300ft FNL & 305ft FEL of Sec 16	