

MALLARD EXPLORATION

WELD COUNTY, COLORADO (NAD 83)

NW NE SEC. 22 T8N R60W 6th P.M.

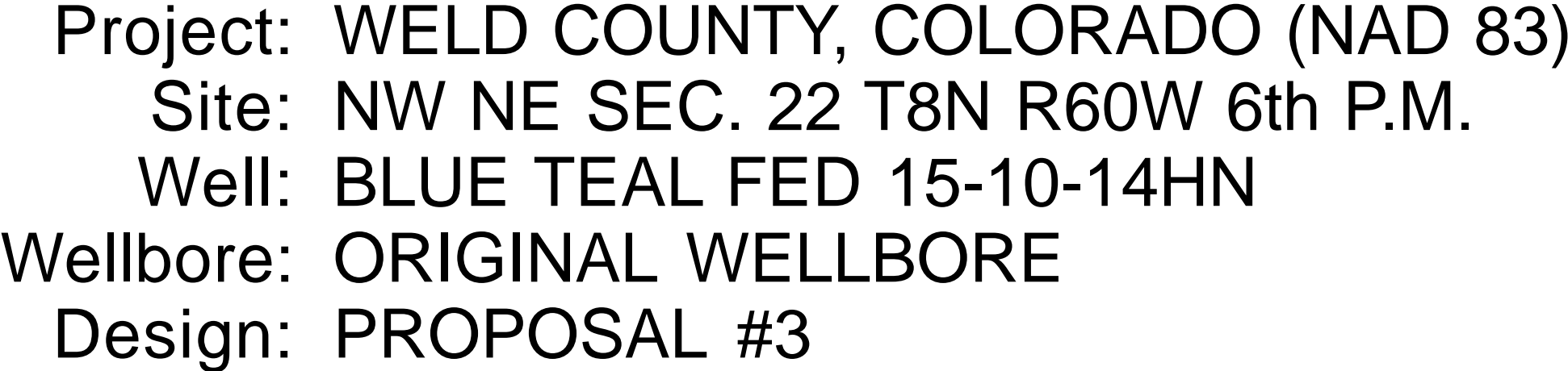
BLUE TEAL FED 15-10-14HN

ORIGINAL WELLBORE

19 March, 2018

Plan: PROPOSAL #3



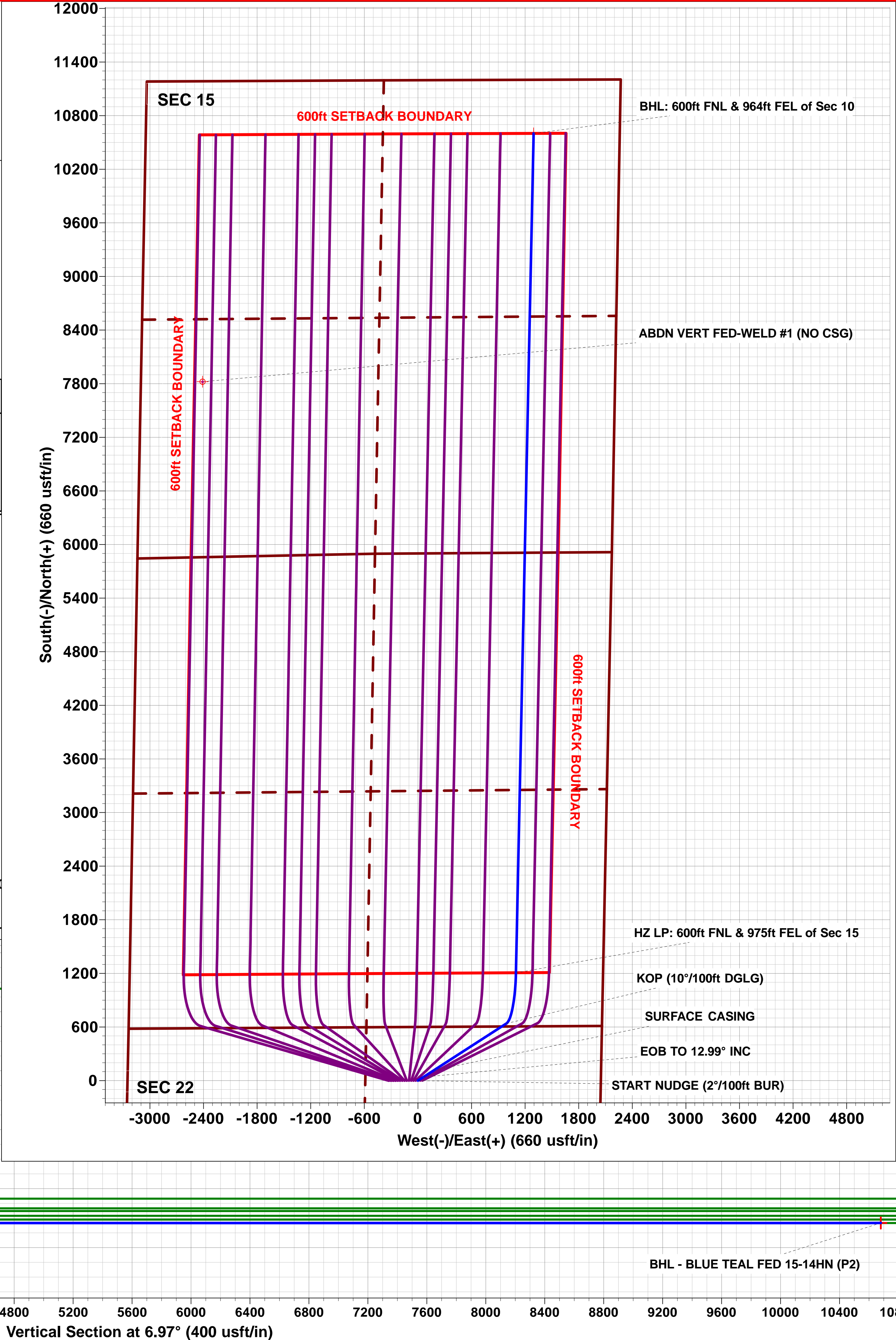


The figure consists of three geological plots related to well path analysis.

Top Left Plot: Vertical Section at 57.18° (500 usft/in)
 This plot shows True Vertical Depth (500 usft/in) on the Y-axis (0 to 6000) versus Vertical Section at 57.18° (500 usft/in) on the X-axis (0 to 3000). Key features include:
 - **START NUDGE (2°/100ft BUR)**: Indicated at the top left.
 - **EOB TO 12.99° INC**: Indicated near the top.
 - **FOX HILLS BASE**: A horizontal line at approximately 1500 depth.
 - **SURFACE CASING**: A horizontal line at approximately 1800 depth.
 - **RICHARD SANDSTONE**: A horizontal line at approximately 3300 depth.
 - **SUSSEX SANDSTONE**: A horizontal line at approximately 4100 depth.
 - **SHANNON SANDSTONE**: A horizontal line at approximately 4600 depth.
 - **KOP (10°/100ft DGLG)**: Indicated near the bottom right.
 - **SHARON SPRINGS**: Indicated at the bottom right.

Top Right Plot: Plan View of Well Paths
 This plot shows South(-)/North(+) (100 usft/in) on the Y-axis (-200 to 300) versus West(-)/East(+) (100 usft/in) on the X-axis (-600 to 400). It displays multiple well paths (Blue Teal) and their corresponding depths (e.g., 15-1HN, 15-2HC, 15-3HN, 15-4HN, 15-5HN, 15-6HC, 15-7HN, 15-8HN, 15-9HN, 15-10HN, 15-11HC, 15-12HN, 15-13HN, 15-14HN, 15-15HC, 15-16HN). A dashed red line indicates a specific path or boundary.

Bottom Plot: Detailed View of KOP and Sharon Springs Area
 This plot shows True Vertical Depth (400 usft/in) on the Y-axis (4400 to 6400) versus an unlabeled X-axis (800 to 4400). It highlights the **KOP (10°/100ft DGLG)** and the **HZ LP - BLUE TEAL FED 15-14HN** well path.



Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well BLUE TEAL FED 15-10-14HN
Company:	MALLARD EXPLORATION	TVD Reference:	KB-EST @ 4907.00usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4907.00usft (Original Well Elev)
Site:	NW NE SEC. 22 T8N R60W 6th P.M.	North Reference:	True
Well:	BLUE TEAL FED 15-10-14HN	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	NW NE SEC. 22 T8N R60W 6th P.M.				
Site Position:		Northing:	1,484,083.08 usft	Latitude:	40.653499
From:	Lat/Long	Easting:	3,395,003.84 usft	Longitude:	-104.076342
Position Uncertainty:	0.00 usft	Slot Radius:	1.10000 ft	Grid Convergence:	0.92 °

Well	BLUE TEAL FED 15-10-14HN					
Well Position	+N/-S	1.80 usft	Northing:	1,484,090.09 usft	Latitude:	40.653504
	+E/-W	324.92 usft	Easting:	3,395,328.68 usft	Longitude:	-104.075171
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	4,891.00 usft

Wellbore	ORIGINAL WELLBORE				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2015	16/03/2018	7.78	67.14	52,508

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 (°)
	0.00	0.00	0.00	6.97

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
0.00	0.00	0.00	0.00	-4,907.00	0.00	0.00	0.00	0.00	0.00	0.00	
300.00	0.00	0.00	300.00	-4,607.00	0.00	0.00	0.00	0.00	0.00	0.00	
949.30	12.99	57.18	943.76	-3,963.24	39.71	61.57	2.00	2.00	0.00	57.18	
5,872.70	12.99	57.18	5,741.24	834.24	639.30	991.37	0.00	0.00	0.00	0.00	
6,700.47	90.00	1.21	6,233.25	1,326.25	1,205.61	1,097.36	10.00	9.30	-6.76	-56.66	HZ LP - BLUE TEAL F
16,098.25	90.00	1.21	6,233.20	1,326.20	10,601.31	1,295.25	0.00	0.00	0.00	0.00	BHL - BLUE TEAL FE

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Site:	NW NE SEC. 22 T8N R60W 6th P.M.	North Reference:	True
Well:	BLUE TEAL FED 15-10-14HN	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: 600ft FNL & 2048ft FEL of Sec 22										
0.00	0.00	0.00	0.00	4,907.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	4,807.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	4,707.00	0.00	0.00	0.00	0.00	0.00	0.00
START NUDGE (2°/100ft BUR)										
300.00	0.00	0.00	300.00	4,607.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	2.00	57.18	399.98	4,507.02	0.95	1.47	1.12	2.00	2.00	0.00
500.00	4.00	57.18	499.84	4,407.16	3.78	5.86	4.47	2.00	2.00	0.00
600.00	6.00	57.18	599.45	4,307.55	8.51	13.19	10.04	2.00	2.00	0.00
700.00	8.00	57.18	698.70	4,208.30	15.11	23.43	17.84	2.00	2.00	0.00
800.00	10.00	57.18	797.47	4,109.53	23.59	36.58	27.85	2.00	2.00	0.00
900.00	12.00	57.18	895.62	4,011.38	33.93	52.61	40.06	2.00	2.00	0.00
EOB TO 12.99° INC										
949.30	12.99	57.18	943.76	3,963.24	39.71	61.57	46.88	2.00	2.00	0.00
1,000.00	12.99	57.18	993.16	3,913.84	45.88	71.15	54.17	0.00	0.00	0.00
1,100.00	12.99	57.18	1,090.60	3,816.40	58.06	90.03	68.55	0.00	0.00	0.00
1,200.00	12.99	57.18	1,188.04	3,718.96	70.24	108.92	82.93	0.00	0.00	0.00
1,300.00	12.99	57.18	1,285.49	3,621.51	82.42	127.80	97.31	0.00	0.00	0.00
1,400.00	12.99	57.18	1,382.93	3,524.07	94.60	146.69	111.69	0.00	0.00	0.00
1,500.00	12.99	57.18	1,480.37	3,426.63	106.77	165.57	126.07	0.00	0.00	0.00
FOX HILLS BASE										
1,511.68	12.99	57.18	1,491.75	3,415.25	108.20	167.78	127.75	0.00	0.00	0.00
SURFACE CASING										
1,576.59	12.99	57.18	1,555.00	3,352.00	116.10	180.04	137.08	0.00	0.00	0.00
1,600.00	12.99	57.18	1,577.81	3,329.19	118.95	184.46	140.45	0.00	0.00	0.00
1,700.00	12.99	57.18	1,675.26	3,231.74	131.13	203.35	154.82	0.00	0.00	0.00
1,800.00	12.99	57.18	1,772.70	3,134.30	143.31	222.23	169.20	0.00	0.00	0.00
1,900.00	12.99	57.18	1,870.14	3,036.86	155.49	241.12	183.58	0.00	0.00	0.00
2,000.00	12.99	57.18	1,967.58	2,939.42	167.67	260.00	197.96	0.00	0.00	0.00
2,100.00	12.99	57.18	2,065.03	2,841.97	179.85	278.89	212.34	0.00	0.00	0.00
2,200.00	12.99	57.18	2,162.47	2,744.53	192.02	297.77	226.72	0.00	0.00	0.00
2,300.00	12.99	57.18	2,259.91	2,647.09	204.20	316.66	241.10	0.00	0.00	0.00
2,400.00	12.99	57.18	2,357.35	2,549.65	216.38	335.54	255.48	0.00	0.00	0.00
2,500.00	12.99	57.18	2,454.80	2,452.20	228.56	354.43	269.86	0.00	0.00	0.00
2,600.00	12.99	57.18	2,552.24	2,354.76	240.74	373.31	284.24	0.00	0.00	0.00
2,700.00	12.99	57.18	2,649.68	2,257.32	252.92	392.20	298.61	0.00	0.00	0.00
2,800.00	12.99	57.18	2,747.12	2,159.88	265.10	411.08	312.99	0.00	0.00	0.00
2,900.00	12.99	57.18	2,844.57	2,062.43	277.27	429.97	327.37	0.00	0.00	0.00
3,000.00	12.99	57.18	2,942.01	1,964.99	289.45	448.85	341.75	0.00	0.00	0.00
3,100.00	12.99	57.18	3,039.45	1,867.55	301.63	467.74	356.13	0.00	0.00	0.00
3,200.00	12.99	57.18	3,136.89	1,770.11	313.81	486.62	370.51	0.00	0.00	0.00
3,300.00	12.99	57.18	3,234.34	1,672.66	325.99	505.51	384.89	0.00	0.00	0.00
RICHARD SANDSTONE										
3,361.49	12.99	57.18	3,294.25	1,612.75	333.48	517.12	393.73	0.00	0.00	0.00
3,400.00	12.99	57.18	3,331.78	1,575.22	338.17	524.39	399.27	0.00	0.00	0.00
3,500.00	12.99	57.18	3,429.22	1,477.78	350.34	543.28	413.65	0.00	0.00	0.00
3,600.00	12.99	57.18	3,526.66	1,380.34	362.52	562.16	428.02	0.00	0.00	0.00
3,700.00	12.99	57.18	3,624.11	1,282.89	374.70	581.05	442.40	0.00	0.00	0.00
3,800.00	12.99	57.18	3,721.55	1,185.45	386.88	599.93	456.78	0.00	0.00	0.00
3,900.00	12.99	57.18	3,818.99	1,088.01	399.06	618.82	471.16	0.00	0.00	0.00
4,000.00	12.99	57.18	3,916.43	990.57	411.24	637.70	485.54	0.00	0.00	0.00
4,100.00	12.99	57.18	4,013.87	893.13	423.42	656.59	499.92	0.00	0.00	0.00
4,200.00	12.99	57.18	4,111.32	795.68	435.59	675.47	514.30	0.00	0.00	0.00

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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)
SUSSEX SANDSTONE										
4,245.60	12.99	57.18	4,155.75	751.25	441.15	684.09	520.85	0.00	0.00	0.00
4,300.00	12.99	57.18	4,208.76	698.24	447.77	694.36	528.68	0.00	0.00	0.00
4,400.00	12.99	57.18	4,306.20	600.80	459.95	713.24	543.06	0.00	0.00	0.00
4,500.00	12.99	57.18	4,403.64	503.36	472.13	732.13	557.44	0.00	0.00	0.00
4,600.00	12.99	57.18	4,501.09	405.91	484.31	751.02	571.81	0.00	0.00	0.00
4,700.00	12.99	57.18	4,598.53	308.47	496.49	769.90	586.19	0.00	0.00	0.00
SHANNON SANDSTONE										
4,746.41	12.99	57.18	4,643.75	263.25	502.14	778.66	592.87	0.00	0.00	0.00
4,800.00	12.99	57.18	4,695.97	211.03	508.67	788.79	600.57	0.00	0.00	0.00
4,900.00	12.99	57.18	4,793.41	113.59	520.84	807.67	614.95	0.00	0.00	0.00
5,000.00	12.99	57.18	4,890.86	16.14	533.02	826.56	629.33	0.00	0.00	0.00
5,100.00	12.99	57.18	4,988.30	-81.30	545.20	845.44	643.71	0.00	0.00	0.00
5,200.00	12.99	57.18	5,085.74	-178.74	557.38	864.33	658.09	0.00	0.00	0.00
5,300.00	12.99	57.18	5,183.18	-276.18	569.56	883.21	672.47	0.00	0.00	0.00
5,400.00	12.99	57.18	5,280.63	-373.63	581.74	902.10	686.85	0.00	0.00	0.00
5,500.00	12.99	57.18	5,378.07	-471.07	593.92	920.98	701.22	0.00	0.00	0.00
5,600.00	12.99	57.18	5,475.51	-568.51	606.09	939.87	715.60	0.00	0.00	0.00
5,700.00	12.99	57.18	5,572.95	-665.95	618.27	958.75	729.98	0.00	0.00	0.00
5,800.00	12.99	57.18	5,670.40	-763.40	630.45	977.64	744.36	0.00	0.00	0.00
KOP (10°/100ft DGLG)										
5,872.70	12.99	57.18	5,741.24	-834.24	639.30	991.37	754.81	0.00	0.00	0.00
5,900.00	14.66	48.14	5,767.75	-860.75	643.27	996.52	759.38	10.00	6.14	-33.13
5,950.00	18.38	36.31	5,815.69	-908.69	653.86	1,005.91	771.02	10.00	7.45	-23.65
6,000.00	22.59	28.55	5,862.52	-955.52	668.66	1,015.17	786.84	10.00	8.42	-15.52
6,050.00	27.06	23.18	5,907.90	-1,000.90	687.56	1,024.24	806.70	10.00	8.93	-10.74
6,100.00	31.68	19.25	5,951.46	-1,044.46	710.42	1,033.06	830.46	10.00	9.23	-7.85
6,150.00	36.38	16.24	5,992.89	-1,085.89	737.07	1,041.54	857.94	10.00	9.42	-6.02
6,200.00	41.15	13.84	6,031.87	-1,124.87	767.30	1,049.62	888.93	10.00	9.54	-4.80
6,250.00	45.96	11.86	6,068.09	-1,161.09	800.89	1,057.26	923.20	10.00	9.62	-3.96
SHARON SPRINGS										
6,250.23	45.96	11.86	6,068.25	-1,161.25	801.05	1,057.29	923.36	0.00	0.00	0.00
6,300.00	50.80	10.17	6,101.29	-1,194.29	837.57	1,064.38	960.47	10.05	9.72	-3.38
6,350.00	55.66	8.71	6,131.21	-1,224.21	877.07	1,070.93	1,000.48	10.00	9.72	-2.93
NIOBRARA A CHALK										
6,354.53	56.11	8.58	6,133.75	-1,226.75	880.78	1,071.49	1,004.23	10.00	9.74	-2.74
NIOBRARA A CHALK BASE										
6,389.25	59.49	7.67	6,152.25	-1,245.25	909.86	1,075.64	1,033.60	10.00	9.75	-2.62
6,400.00	60.54	7.40	6,157.62	-1,250.62	919.09	1,076.86	1,042.91	10.00	9.76	-2.50
6,450.00	65.43	6.22	6,180.33	-1,273.33	963.31	1,082.13	1,087.43	10.00	9.78	-2.37
NIOBRARA B1 CHALK TOP										
6,460.86	66.49	5.98	6,184.75	-1,277.75	973.17	1,083.19	1,097.35	10.00	9.79	-2.25
6,500.00	70.32	5.13	6,199.15	-1,292.15	1,009.39	1,086.70	1,133.73	10.00	9.79	-2.17
NIOBRARA B1 CHALK BASE										
6,536.10	73.86	4.38	6,210.25	-1,303.25	1,043.61	1,089.55	1,168.04	10.00	9.80	-2.07
6,550.00	75.23	4.10	6,213.95	-1,306.95	1,056.97	1,090.54	1,181.43	10.00	9.81	-2.02
6,600.00	80.13	3.11	6,224.62	-1,317.62	1,105.71	1,093.60	1,230.18	10.00	9.81	-1.97
6,650.00	85.04	2.16	6,231.07	-1,324.07	1,155.22	1,095.88	1,279.60	10.00	9.82	-1.91
HZ LP: 600ft FNL & 975ft FEL of Sec 15 - NIOBRARA B2 CHALK TOP										
6,700.47	90.00	1.21	6,233.25	-1,326.25	1,205.61	1,097.36	1,329.80	10.00	9.82	-1.88
6,800.00	90.00	1.21	6,233.25	-1,326.25	1,305.12	1,099.45	1,428.82	0.00	0.00	0.00
6,900.00	90.00	1.21	6,233.25	-1,326.25	1,405.10	1,101.56	1,528.32	0.00	0.00	0.00
7,000.00	90.00	1.21	6,233.25	-1,326.25	1,505.07	1,103.66	1,627.81	0.00	0.00	0.00

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Design:	PROPOSAL #3		

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7,100.00	90.00	1.21	6,233.25	-1,326.25	1,605.05	1,105.77	1,727.31	0.00	0.00	0.00
7,200.00	90.00	1.21	6,233.25	-1,326.25	1,705.03	1,107.87	1,826.80	0.00	0.00	0.00
7,300.00	90.00	1.21	6,233.25	-1,326.25	1,805.01	1,109.98	1,926.30	0.00	0.00	0.00
7,400.00	90.00	1.21	6,233.25	-1,326.25	1,904.98	1,112.09	2,025.79	0.00	0.00	0.00
7,500.00	90.00	1.21	6,233.25	-1,326.25	2,004.96	1,114.19	2,125.29	0.00	0.00	0.00
7,600.00	90.00	1.21	6,233.25	-1,326.25	2,104.94	1,116.30	2,224.78	0.00	0.00	0.00
7,700.00	90.00	1.21	6,233.24	-1,326.24	2,204.92	1,118.40	2,324.28	0.00	0.00	0.00
7,800.00	90.00	1.21	6,233.24	-1,326.24	2,304.90	1,120.51	2,423.77	0.00	0.00	0.00
7,900.00	90.00	1.21	6,233.24	-1,326.24	2,404.87	1,122.61	2,523.27	0.00	0.00	0.00
8,000.00	90.00	1.21	6,233.24	-1,326.24	2,504.85	1,124.72	2,622.76	0.00	0.00	0.00
8,100.00	90.00	1.21	6,233.24	-1,326.24	2,604.83	1,126.83	2,722.26	0.00	0.00	0.00
8,200.00	90.00	1.21	6,233.24	-1,326.24	2,704.81	1,128.93	2,821.75	0.00	0.00	0.00
8,300.00	90.00	1.21	6,233.24	-1,326.24	2,804.78	1,131.04	2,921.25	0.00	0.00	0.00
8,400.00	90.00	1.21	6,233.24	-1,326.24	2,904.76	1,133.14	3,020.75	0.00	0.00	0.00
8,500.00	90.00	1.21	6,233.24	-1,326.24	3,004.74	1,135.25	3,120.24	0.00	0.00	0.00
8,600.00	90.00	1.21	6,233.24	-1,326.24	3,104.72	1,137.35	3,219.74	0.00	0.00	0.00
8,700.00	90.00	1.21	6,233.24	-1,326.24	3,204.70	1,139.46	3,319.23	0.00	0.00	0.00
8,800.00	90.00	1.21	6,233.24	-1,326.24	3,304.67	1,141.57	3,418.73	0.00	0.00	0.00
8,900.00	90.00	1.21	6,233.24	-1,326.24	3,404.65	1,143.67	3,518.22	0.00	0.00	0.00
9,000.00	90.00	1.21	6,233.24	-1,326.24	3,504.63	1,145.78	3,617.72	0.00	0.00	0.00
9,100.00	90.00	1.21	6,233.24	-1,326.24	3,604.61	1,147.88	3,717.21	0.00	0.00	0.00
9,200.00	90.00	1.21	6,233.24	-1,326.24	3,704.59	1,149.99	3,816.71	0.00	0.00	0.00
9,300.00	90.00	1.21	6,233.24	-1,326.24	3,804.56	1,152.09	3,916.20	0.00	0.00	0.00
9,400.00	90.00	1.21	6,233.24	-1,326.24	3,904.54	1,154.20	4,015.70	0.00	0.00	0.00
9,500.00	90.00	1.21	6,233.24	-1,326.24	4,004.52	1,156.31	4,115.19	0.00	0.00	0.00
9,600.00	90.00	1.21	6,233.23	-1,326.23	4,104.50	1,158.41	4,214.69	0.00	0.00	0.00
9,700.00	90.00	1.21	6,233.23	-1,326.23	4,204.47	1,160.52	4,314.18	0.00	0.00	0.00
9,800.00	90.00	1.21	6,233.23	-1,326.23	4,304.45	1,162.62	4,413.68	0.00	0.00	0.00
9,900.00	90.00	1.21	6,233.23	-1,326.23	4,404.43	1,164.73	4,513.17	0.00	0.00	0.00
10,000.00	90.00	1.21	6,233.23	-1,326.23	4,504.41	1,166.83	4,612.67	0.00	0.00	0.00
10,100.00	90.00	1.21	6,233.23	-1,326.23	4,604.39	1,168.94	4,712.16	0.00	0.00	0.00
10,200.00	90.00	1.21	6,233.23	-1,326.23	4,704.36	1,171.05	4,811.66	0.00	0.00	0.00
10,300.00	90.00	1.21	6,233.23	-1,326.23	4,804.34	1,173.15	4,911.15	0.00	0.00	0.00
10,400.00	90.00	1.21	6,233.23	-1,326.23	4,904.32	1,175.26	5,010.65	0.00	0.00	0.00
10,500.00	90.00	1.21	6,233.23	-1,326.23	5,004.30	1,177.36	5,110.15	0.00	0.00	0.00
10,600.00	90.00	1.21	6,233.23	-1,326.23	5,104.27	1,179.47	5,209.64	0.00	0.00	0.00
10,700.00	90.00	1.21	6,233.23	-1,326.23	5,204.25	1,181.57	5,309.14	0.00	0.00	0.00
10,800.00	90.00	1.21	6,233.23	-1,326.23	5,304.23	1,183.68	5,408.63	0.00	0.00	0.00
10,900.00	90.00	1.21	6,233.23	-1,326.23	5,404.21	1,185.79	5,508.13	0.00	0.00	0.00
11,000.00	90.00	1.21	6,233.23	-1,326.23	5,504.19	1,187.89	5,607.62	0.00	0.00	0.00
11,100.00	90.00	1.21	6,233.23	-1,326.23	5,604.16	1,190.00	5,707.12	0.00	0.00	0.00
11,200.00	90.00	1.21	6,233.23	-1,326.23	5,704.14	1,192.10	5,806.61	0.00	0.00	0.00
11,300.00	90.00	1.21	6,233.23	-1,326.23	5,804.12	1,194.21	5,906.11	0.00	0.00	0.00
11,400.00	90.00	1.21	6,233.22	-1,326.22	5,904.10	1,196.31	6,005.60	0.00	0.00	0.00
11,500.00	90.00	1.21	6,233.22	-1,326.22	6,004.08	1,198.42	6,105.10	0.00	0.00	0.00
11,600.00	90.00	1.21	6,233.22	-1,326.22	6,104.05	1,200.53	6,204.59	0.00	0.00	0.00
11,700.00	90.00	1.21	6,233.22	-1,326.22	6,204.03	1,202.63	6,304.09	0.00	0.00	0.00
11,800.00	90.00	1.21	6,233.22	-1,326.22	6,304.01	1,204.74	6,403.58	0.00	0.00	0.00
11,900.00	90.00	1.21	6,233.22	-1,326.22	6,403.99	1,206.84	6,503.08	0.00	0.00	0.00
12,000.00	90.00	1.21	6,233.22	-1,326.22	6,503.96	1,208.95	6,602.57	0.00	0.00	0.00
12,100.00	90.00	1.21	6,233.22	-1,326.22	6,603.94	1,211.05	6,702.07	0.00	0.00	0.00
12,200.00	90.00	1.21	6,233.22	-1,326.22	6,703.92	1,213.16	6,801.56	0.00	0.00	0.00
12,300.00	90.00	1.21	6,233.22	-1,326.22	6,803.90	1,215.27	6,901.06	0.00	0.00	0.00
12,400.00	90.00	1.21	6,233.22	-1,326.22	6,903.88	1,217.37	7,000.55	0.00	0.00	0.00

Planning Report



Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well BLUE TEAL FED 15-10-14HN
Company:	MALLARD EXPLORATION	TVD Reference:	KB-EST @ 4907.00usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4907.00usft (Original Well Elev)
Site:	NW NE SEC. 22 T8N R60W 6th P.M.	North Reference:	True
Well:	BLUE TEAL FED 15-10-14HN	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	1.21	6,233.22	-1,326.22	7,003.85	1,219.48	7,100.05	0.00	0.00	0.00
12,600.00	90.00	1.21	6,233.22	-1,326.22	7,103.83	1,221.58	7,199.55	0.00	0.00	0.00
12,700.00	90.00	1.21	6,233.22	-1,326.22	7,203.81	1,223.69	7,299.04	0.00	0.00	0.00
12,800.00	90.00	1.21	6,233.22	-1,326.22	7,303.79	1,225.79	7,398.54	0.00	0.00	0.00
12,900.00	90.00	1.21	6,233.22	-1,326.22	7,403.76	1,227.90	7,498.03	0.00	0.00	0.00
13,000.00	90.00	1.21	6,233.22	-1,326.22	7,503.74	1,230.01	7,597.53	0.00	0.00	0.00
13,100.00	90.00	1.21	6,233.22	-1,326.22	7,603.72	1,232.11	7,697.02	0.00	0.00	0.00
13,200.00	90.00	1.21	6,233.22	-1,326.22	7,703.70	1,234.22	7,796.52	0.00	0.00	0.00
13,300.00	90.00	1.21	6,233.21	-1,326.21	7,803.68	1,236.32	7,896.01	0.00	0.00	0.00
13,400.00	90.00	1.21	6,233.21	-1,326.21	7,903.65	1,238.43	7,995.51	0.00	0.00	0.00
13,500.00	90.00	1.21	6,233.21	-1,326.21	8,003.63	1,240.53	8,095.00	0.00	0.00	0.00
13,600.00	90.00	1.21	6,233.21	-1,326.21	8,103.61	1,242.64	8,194.50	0.00	0.00	0.00
13,700.00	90.00	1.21	6,233.21	-1,326.21	8,203.59	1,244.75	8,293.99	0.00	0.00	0.00
13,800.00	90.00	1.21	6,233.21	-1,326.21	8,303.57	1,246.85	8,393.49	0.00	0.00	0.00
13,900.00	90.00	1.21	6,233.21	-1,326.21	8,403.54	1,248.96	8,492.98	0.00	0.00	0.00
14,000.00	90.00	1.21	6,233.21	-1,326.21	8,503.52	1,251.06	8,592.48	0.00	0.00	0.00
14,100.00	90.00	1.21	6,233.21	-1,326.21	8,603.50	1,253.17	8,691.97	0.00	0.00	0.00
14,200.00	90.00	1.21	6,233.21	-1,326.21	8,703.48	1,255.27	8,791.47	0.00	0.00	0.00
14,300.00	90.00	1.21	6,233.21	-1,326.21	8,803.45	1,257.38	8,890.96	0.00	0.00	0.00
14,400.00	90.00	1.21	6,233.21	-1,326.21	8,903.43	1,259.49	8,990.46	0.00	0.00	0.00
14,500.00	90.00	1.21	6,233.21	-1,326.21	9,003.41	1,261.59	9,089.95	0.00	0.00	0.00
14,600.00	90.00	1.21	6,233.21	-1,326.21	9,103.39	1,263.70	9,189.45	0.00	0.00	0.00
14,700.00	90.00	1.21	6,233.21	-1,326.21	9,203.37	1,265.80	9,288.95	0.00	0.00	0.00
14,800.00	90.00	1.21	6,233.21	-1,326.21	9,303.34	1,267.91	9,388.44	0.00	0.00	0.00
14,900.00	90.00	1.21	6,233.21	-1,326.21	9,403.32	1,270.01	9,487.94	0.00	0.00	0.00
15,000.00	90.00	1.21	6,233.21	-1,326.21	9,503.30	1,272.12	9,587.43	0.00	0.00	0.00
15,100.00	90.00	1.21	6,233.21	-1,326.21	9,603.28	1,274.23	9,686.93	0.00	0.00	0.00
15,200.00	90.00	1.21	6,233.20	-1,326.20	9,703.25	1,276.33	9,786.42	0.00	0.00	0.00
15,300.00	90.00	1.21	6,233.20	-1,326.20	9,803.23	1,278.44	9,885.92	0.00	0.00	0.00
15,400.00	90.00	1.21	6,233.20	-1,326.20	9,903.21	1,280.54	9,985.41	0.00	0.00	0.00
15,500.00	90.00	1.21	6,233.20	-1,326.20	10,003.19	1,282.65	10,084.91	0.00	0.00	0.00
15,600.00	90.00	1.21	6,233.20	-1,326.20	10,103.17	1,284.75	10,184.40	0.00	0.00	0.00
15,700.00	90.00	1.21	6,233.20	-1,326.20	10,203.14	1,286.86	10,283.90	0.00	0.00	0.00
15,800.00	90.00	1.21	6,233.20	-1,326.20	10,303.12	1,288.96	10,383.39	0.00	0.00	0.00
15,900.00	90.00	1.21	6,233.20	-1,326.20	10,403.10	1,291.07	10,482.89	0.00	0.00	0.00
16,000.00	90.00	1.21	6,233.20	-1,326.20	10,503.08	1,293.18	10,582.38	0.00	0.00	0.00
BHL: 600ft FNL & 964ft FEL of Sec 10										
16,098.25	90.00	1.21	6,233.20	-1,326.20	10,601.31	1,295.25	10,680.14	0.00	0.00	0.00

Database:	EDM 5000.1 Single User Db	Local Co-ordinate Reference:	Well BLUE TEAL FED 15-10-14HN
Company:	MALLARD EXPLORATION	TVD Reference:	KB-EST @ 4907.00usft (Original Well Elev)
Project:	WELD COUNTY, COLORADO (NAD 83)	MD Reference:	KB-EST @ 4907.00usft (Original Well Elev)
Site:	NW NE SEC. 22 T8N R60W 6th P.M.	North Reference:	True
Well:	BLUE TEAL FED 15-10-14HN	Survey Calculation Method:	Minimum Curvature
Wellbore:	ORIGINAL WELLBORE		
Design:	PROPOSAL #3		

Formations					
MD (usft)	TVD (usft)	Name	Lithology	Dip (°)	Dip Direction (°)
1,511.68	1,491.75	FOX HILLS BASE			
3,361.49	3,294.25	RICHARD SANDSTONE			
4,245.60	4,155.75	SUSSEX SANDSTONE			
4,746.41	4,643.75	SHANNON SANDSTONE			
6,250.23	6,068.25	SHARON SPRINGS			
6,354.53	6,133.75	NIOBRARA A CHALK			
6,389.25	6,152.25	NIOBRARA A CHALK BASE			
6,460.86	6,184.75	NIOBRARA B1 CHALK TOP			
6,536.10	6,210.25	NIOBRARA B1 CHALK BASE			
6,700.47	6,233.25	NIOBRARA B2 CHALK TOP			

Plan Annotations				
MD (usft)	TVD (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
0.00	0.00	0.00	0.00	SHL: 600ft FNL & 2048ft FEL of Sec 22
300.00	300.00	0.00	0.00	START NUDGE (2°/100ft BUR)
949.30	943.76	39.71	61.57	EOB TO 12.99° INC
1,576.59	1,555.00	116.10	180.04	SURFACE CASING
5,872.70	5,741.24	639.30	991.37	KOP (10°/100ft DGLG)
6,700.48	6,233.25	1,205.62	1,097.36	HZ LP: 600ft FNL & 975ft FEL of Sec 15
16,098.25	6,233.20	10,601.31	1,295.25	BHL: 600ft FNL & 964ft FEL of Sec 10