

# **MALLARD EXPLORATION**

**WELD COUNTY**

**SEC 22-T8N-R60W**

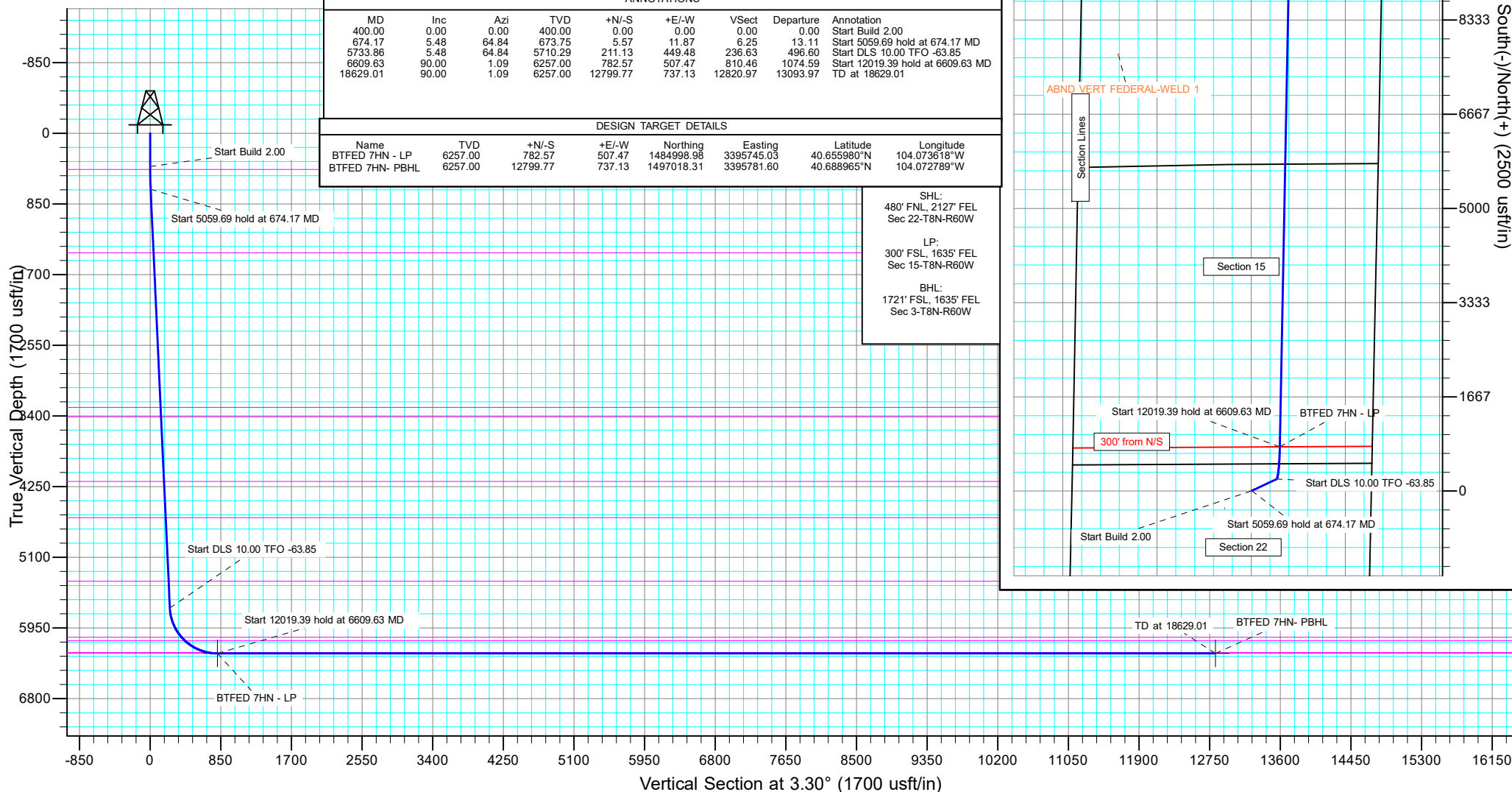
**BLUE TEAL FED 15-3-7HN**

**ORIGINAL WELLBORE**

**Plan: PROPOSAL 1**

## **Standard Planning Report**

**09 September, 2020**



## Planning Report

<b>Database:</b>	EDM 5000.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well BLUE TEAL FED 15-3-7HN
<b>Company:</b>	MALLARD EXPLORATION	<b>TVD Reference:</b>	KB 27' @ 4919.00usft
<b>Project:</b>	WELD COUNTY	<b>MD Reference:</b>	KB 27' @ 4919.00usft
<b>Site:</b>	SEC 22-T8N-R60W	<b>North Reference:</b>	True
<b>Well:</b>	BLUE TEAL FED 15-3-7HN	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL 1		

<b>Project</b>	WELD COUNTY		
<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		

Site		SEC 22-T8N-R60W				
Site Position:		Northing:	1,488,376.93	usft	Latitude:	40.665181°N
From:	Lat/Long	Easting:	3,397,319.63	usft	Longitude:	104.067747°W
Position Uncertainty:		0.00	usft	Slot Radius:	13.200	in

Well		BLUE TEAL FED 15-3-7HN				
Well Position	+N/-S	0.00 usft	Northing:	1,484,208.36 usft	Latitude:	40.653832°N
	+E/-W	0.00 usft	Easting:	3,395,250.19 usft	Longitude:	104.075447°W
Position Uncertainty		0.00 usft	Wellhead Elevation:	usft	Ground Level:	4,892.00 usft
Grid Convergence:		0.92 °				

<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	7/6/2020	7.60	66.99	52,254.58322995

<b>Design</b>	PROPOSAL 1				
<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>	
	0.00	0.00	0.00	3.30	

<b>Plan Survey Tool Program</b>	<b>Date</b>	9/9/2020			
<b>Depth From (usft)</b>	<b>Depth To (usft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>	
1	0.00	18,629.01	PROPOSAL 1 (ORIGINAL WELL	MWD	
			OWSG MWD - Standard		

<b>Plan Sections</b>										
<b>Measured Depth (usft)</b>	<b>Inclination (°)</b>	<b>Azimuth (°)</b>	<b>Vertical Depth (usft)</b>	<b>+N/-S (usft)</b>	<b>+E/-W (usft)</b>	<b>Dogleg Rate (°/100ft)</b>	<b>Build Rate (°/100ft)</b>	<b>Turn Rate (°/100ft)</b>	<b>TFO (°)</b>	<b>Target</b>
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00	
674.17	5.48	64.84	673.75	5.57	11.87	2.00	2.00	0.00	64.84	
5,733.86	5.48	64.84	5,710.29	211.13	449.48	0.00	0.00	0.00	0.00	
6,609.63	90.00	1.09	6,257.00	782.57	507.47	10.00	9.65	-7.28	-63.85	BT FED 7HN - LP
18,629.01	90.00	1.09	6,257.00	12,799.77	737.13	0.00	0.00	0.00	0.00	BT FED 7HN- PBHL

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<b>Project:</b>	WELD COUNTY	<b>MD Reference:</b>	KB 27' @ 4919.00usft
<b>Site:</b>	SEC 22-T8N-R60W	<b>North Reference:</b>	True
<b>Well:</b>	BLUE TEAL FED 15-3-7HN	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100.00	0.00	0.00	100.00	0.00	0.00	0.00	0.00	0.00	0.00
200.00	0.00	0.00	200.00	0.00	0.00	0.00	0.00	0.00	0.00
300.00	0.00	0.00	300.00	0.00	0.00	0.00	0.00	0.00	0.00
400.00	0.00	0.00	400.00	0.00	0.00	0.00	0.00	0.00	0.00
Start Build 2.00									
435.00	0.70	64.84	435.00	0.09	0.19	0.10	2.00	2.00	0.00
Fox Hills Base									
500.00	2.00	64.84	499.98	0.74	1.58	0.83	2.00	2.00	0.00
600.00	4.00	64.84	599.84	2.97	6.32	3.33	2.00	2.00	0.00
674.17	5.48	64.84	673.75	5.57	11.87	6.25	2.00	2.00	0.00
Start 5059.69 hold at 674.17 MD									
700.00	5.48	64.84	699.46	6.62	14.10	7.42	0.00	0.00	0.00
800.00	5.48	64.84	799.01	10.69	22.75	11.98	0.00	0.00	0.00
900.00	5.48	64.84	898.55	14.75	31.40	16.53	0.00	0.00	0.00
1,000.00	5.48	64.84	998.09	18.81	40.05	21.08	0.00	0.00	0.00
1,100.00	5.48	64.84	1,097.63	22.87	48.70	25.64	0.00	0.00	0.00
1,200.00	5.48	64.84	1,197.18	26.94	57.34	30.19	0.00	0.00	0.00
1,300.00	5.48	64.84	1,296.72	31.00	65.99	34.74	0.00	0.00	0.00
1,400.00	5.48	64.84	1,396.26	35.06	74.64	39.30	0.00	0.00	0.00
1,441.93	5.48	64.84	1,438.00	36.77	78.27	41.20	0.00	0.00	0.00
Pierre Shale Top									
1,500.00	5.48	64.84	1,495.80	39.12	83.29	43.85	0.00	0.00	0.00
1,600.00	5.48	64.84	1,595.35	43.19	91.94	48.40	0.00	0.00	0.00
1,700.00	5.48	64.84	1,694.89	47.25	100.59	52.96	0.00	0.00	0.00
1,800.00	5.48	64.84	1,794.43	51.31	109.24	57.51	0.00	0.00	0.00
1,900.00	5.48	64.84	1,893.97	55.38	117.89	62.06	0.00	0.00	0.00
2,000.00	5.48	64.84	1,993.51	59.44	126.54	66.61	0.00	0.00	0.00
2,100.00	5.48	64.84	2,093.06	63.50	135.19	71.17	0.00	0.00	0.00
2,200.00	5.48	64.84	2,192.60	67.56	143.83	75.72	0.00	0.00	0.00
2,300.00	5.48	64.84	2,292.14	71.63	152.48	80.27	0.00	0.00	0.00
2,400.00	5.48	64.84	2,391.68	75.69	161.13	84.83	0.00	0.00	0.00
2,500.00	5.48	64.84	2,491.23	79.75	169.78	89.38	0.00	0.00	0.00
2,600.00	5.48	64.84	2,590.77	83.81	178.43	93.93	0.00	0.00	0.00
2,700.00	5.48	64.84	2,690.31	87.88	187.08	98.49	0.00	0.00	0.00
2,800.00	5.48	64.84	2,789.85	91.94	195.73	103.04	0.00	0.00	0.00
2,900.00	5.48	64.84	2,889.40	96.00	204.38	107.59	0.00	0.00	0.00
3,000.00	5.48	64.84	2,988.94	100.07	213.03	112.15	0.00	0.00	0.00
3,100.00	5.48	64.84	3,088.48	104.13	221.68	116.70	0.00	0.00	0.00
3,200.00	5.48	64.84	3,188.02	108.19	230.32	121.25	0.00	0.00	0.00
3,300.00	5.48	64.84	3,287.57	112.25	238.97	125.81	0.00	0.00	0.00
3,308.47	5.48	64.84	3,296.00	112.60	239.71	126.19	0.00	0.00	0.00
Richard Sandstone									
3,400.00	5.48	64.84	3,387.11	116.32	247.62	130.36	0.00	0.00	0.00
3,424.00	5.48	64.84	3,411.00	117.29	249.70	131.45	0.00	0.00	0.00
Parkman Sandstone									
3,500.00	5.48	64.84	3,486.65	120.38	256.27	134.91	0.00	0.00	0.00
3,600.00	5.48	64.84	3,586.19	124.44	264.92	139.47	0.00	0.00	0.00
3,700.00	5.48	64.84	3,685.74	128.50	273.57	144.02	0.00	0.00	0.00
3,800.00	5.48	64.84	3,785.28	132.57	282.22	148.57	0.00	0.00	0.00
3,900.00	5.48	64.84	3,884.82	136.63	290.87	153.13	0.00	0.00	0.00
4,000.00	5.48	64.84	3,984.36	140.69	299.52	157.68	0.00	0.00	0.00
4,100.00	5.48	64.84	4,083.91	144.75	308.16	162.23	0.00	0.00	0.00

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<b>Well:</b>	BLUE TEAL FED 15-3-7HN	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL 1		

Planned Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	
4,200.00	5.48	64.84	4,183.45	148.82	316.81	166.79	0.00	0.00	0.00	
4,203.57	5.48	64.84	4,187.00	148.96	317.12	166.95	0.00	0.00	0.00	
Sussex Sandstone										
4,300.00	5.48	64.84	4,282.99	152.88	325.46	171.34	0.00	0.00	0.00	
4,400.00	5.48	64.84	4,382.53	156.94	334.11	175.89	0.00	0.00	0.00	
4,500.00	5.48	64.84	4,482.07	161.01	342.76	180.45	0.00	0.00	0.00	
4,600.00	5.48	64.84	4,581.62	165.07	351.41	185.00	0.00	0.00	0.00	
4,643.58	5.48	64.84	4,625.00	166.84	355.18	186.98	0.00	0.00	0.00	
Shannon Sandstone										
4,700.00	5.48	64.84	4,681.16	169.13	360.06	189.55	0.00	0.00	0.00	
4,800.00	5.48	64.84	4,780.70	173.19	368.71	194.11	0.00	0.00	0.00	
4,900.00	5.48	64.84	4,880.24	177.26	377.36	198.66	0.00	0.00	0.00	
5,000.00	5.48	64.84	4,979.79	181.32	386.01	203.21	0.00	0.00	0.00	
5,100.00	5.48	64.84	5,079.33	185.38	394.65	207.77	0.00	0.00	0.00	
5,200.00	5.48	64.84	5,178.87	189.44	403.30	212.32	0.00	0.00	0.00	
5,300.00	5.48	64.84	5,278.41	193.51	411.95	216.87	0.00	0.00	0.00	
5,400.00	5.48	64.84	5,377.96	197.57	420.60	221.43	0.00	0.00	0.00	
5,410.09	5.48	64.84	5,388.00	197.98	421.47	221.88	0.00	0.00	0.00	
TeePee Buttes										
5,500.00	5.48	64.84	5,477.50	201.63	429.25	225.98	0.00	0.00	0.00	
5,600.00	5.48	64.84	5,577.04	205.70	437.90	230.53	0.00	0.00	0.00	
5,700.00	5.48	64.84	5,676.58	209.76	446.55	235.08	0.00	0.00	0.00	
5,733.86	5.48	64.84	5,710.29	211.13	449.48	236.63	0.00	0.00	0.00	
Start DLS 10.00 TFO -63.85										
5,750.00	6.36	51.65	5,726.34	212.02	450.88	237.59	10.00	5.44	-81.72	
5,800.00	10.28	29.43	5,775.82	217.62	455.24	243.44	10.00	7.84	-44.43	
5,850.00	14.86	20.03	5,824.61	227.54	459.63	253.59	10.00	9.16	-18.80	
5,900.00	19.64	15.05	5,872.35	241.69	464.02	267.96	10.00	9.56	-9.95	
5,950.00	24.51	11.98	5,918.68	259.96	468.35	286.45	10.00	9.73	-6.15	
6,000.00	29.42	9.88	5,963.23	282.21	472.62	308.92	10.00	9.82	-4.21	
6,050.00	34.35	8.33	6,005.67	308.28	476.77	335.18	10.00	9.87	-3.09	
6,100.00	39.30	7.13	6,045.69	337.97	480.78	365.05	10.00	9.90	-2.40	
6,122.74	41.55	6.67	6,063.00	352.61	482.55	379.77	10.00	9.91	-2.04	
Sharon Springs										
6,150.00	44.26	6.16	6,082.96	371.04	484.62	398.29	10.00	9.92	-1.85	
6,178.68	47.10	5.68	6,103.00	391.45	486.74	418.79	10.00	9.93	-1.68	
Niobrara Top										
6,200.00	49.22	5.35	6,117.22	407.26	488.26	434.66	10.00	9.93	-1.55	
6,250.00	54.19	4.66	6,148.20	446.34	491.68	473.87	10.00	9.94	-1.40	
6,300.00	59.16	4.04	6,175.66	487.99	494.84	515.63	10.00	9.95	-1.23	
6,350.00	64.14	3.49	6,199.39	531.88	497.72	559.62	10.00	9.95	-1.11	
6,400.00	69.12	2.98	6,219.22	577.69	500.30	605.50	10.00	9.96	-1.02	
6,450.00	74.10	2.50	6,234.99	625.07	502.57	652.93	10.00	9.96	-0.95	
6,487.12	77.79	2.16	6,244.00	661.04	504.03	688.92	10.00	9.96	-0.91	
Niobrara B2 Chalk Target Top										
6,500.00	79.08	2.05	6,246.58	673.65	504.49	701.54	10.00	9.96	-0.89	
6,550.00	84.06	1.61	6,253.91	723.07	506.07	750.97	10.00	9.96	-0.88	
6,575.71	86.62	1.39	6,256.00	748.68	506.74	776.58	10.00	9.96	-0.86	
Niobrara B2 Chalk Target Center										
6,600.00	89.04	1.18	6,256.92	772.95	507.28	800.84	10.00	9.96	-0.86	
6,609.63	90.00	1.09	6,257.00	782.57	507.47	810.46	10.00	9.96	-0.86	
Start 12019.39 hold at 6609.63 MD										
6,700.00	90.00	1.09	6,257.00	872.93	509.20	900.76	0.00	0.00	0.00	

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<b>Project:</b>	WELD COUNTY	<b>MD Reference:</b>	KB 27' @ 4919.00usft
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<b>Wellbore:</b>	ORIGINAL WELLBORE		
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Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
6,800.00	90.00	1.09	6,257.00	972.91	511.11	1,000.69	0.00	0.00	0.00
6,900.00	90.00	1.09	6,257.00	1,072.89	513.02	1,100.61	0.00	0.00	0.00
7,000.00	90.00	1.09	6,257.00	1,172.88	514.93	1,200.54	0.00	0.00	0.00
7,100.00	90.00	1.09	6,257.00	1,272.86	516.84	1,300.47	0.00	0.00	0.00
7,200.00	90.00	1.09	6,257.00	1,372.84	518.75	1,400.39	0.00	0.00	0.00
7,300.00	90.00	1.09	6,257.00	1,472.82	520.66	1,500.32	0.00	0.00	0.00
7,400.00	90.00	1.09	6,257.00	1,572.80	522.57	1,600.25	0.00	0.00	0.00
7,500.00	90.00	1.09	6,257.00	1,672.78	524.48	1,700.17	0.00	0.00	0.00
7,600.00	90.00	1.09	6,257.00	1,772.77	526.39	1,800.10	0.00	0.00	0.00
7,700.00	90.00	1.09	6,257.00	1,872.75	528.30	1,900.02	0.00	0.00	0.00
7,800.00	90.00	1.09	6,257.00	1,972.73	530.21	1,999.95	0.00	0.00	0.00
7,900.00	90.00	1.09	6,257.00	2,072.71	532.12	2,099.88	0.00	0.00	0.00
8,000.00	90.00	1.09	6,257.00	2,172.69	534.03	2,199.80	0.00	0.00	0.00
8,100.00	90.00	1.09	6,257.00	2,272.67	535.94	2,299.73	0.00	0.00	0.00
8,200.00	90.00	1.09	6,257.00	2,372.66	537.86	2,399.65	0.00	0.00	0.00
8,300.00	90.00	1.09	6,257.00	2,472.64	539.77	2,499.58	0.00	0.00	0.00
8,400.00	90.00	1.09	6,257.00	2,572.62	541.68	2,599.51	0.00	0.00	0.00
8,500.00	90.00	1.09	6,257.00	2,672.60	543.59	2,699.43	0.00	0.00	0.00
8,600.00	90.00	1.09	6,257.00	2,772.58	545.50	2,799.36	0.00	0.00	0.00
8,700.00	90.00	1.09	6,257.00	2,872.56	547.41	2,899.29	0.00	0.00	0.00
8,800.00	90.00	1.09	6,257.00	2,972.55	549.32	2,999.21	0.00	0.00	0.00
8,900.00	90.00	1.09	6,257.00	3,072.53	551.23	3,099.14	0.00	0.00	0.00
9,000.00	90.00	1.09	6,257.00	3,172.51	553.14	3,199.06	0.00	0.00	0.00
9,100.00	90.00	1.09	6,257.00	3,272.49	555.05	3,298.99	0.00	0.00	0.00
9,200.00	90.00	1.09	6,257.00	3,372.47	556.96	3,398.92	0.00	0.00	0.00
9,300.00	90.00	1.09	6,257.00	3,472.46	558.87	3,498.84	0.00	0.00	0.00
9,400.00	90.00	1.09	6,257.00	3,572.44	560.78	3,598.77	0.00	0.00	0.00
9,500.00	90.00	1.09	6,257.00	3,672.42	562.69	3,698.70	0.00	0.00	0.00
9,600.00	90.00	1.09	6,257.00	3,772.40	564.60	3,798.62	0.00	0.00	0.00
9,700.00	90.00	1.09	6,257.00	3,872.38	566.51	3,898.55	0.00	0.00	0.00
9,800.00	90.00	1.09	6,257.00	3,972.36	568.42	3,998.47	0.00	0.00	0.00
9,900.00	90.00	1.09	6,257.00	4,072.35	570.33	4,098.40	0.00	0.00	0.00
10,000.00	90.00	1.09	6,257.00	4,172.33	572.24	4,198.33	0.00	0.00	0.00
10,100.00	90.00	1.09	6,257.00	4,272.31	574.15	4,298.25	0.00	0.00	0.00
10,200.00	90.00	1.09	6,257.00	4,372.29	576.06	4,398.18	0.00	0.00	0.00
10,300.00	90.00	1.09	6,257.00	4,472.27	577.97	4,498.11	0.00	0.00	0.00
10,400.00	90.00	1.09	6,257.00	4,572.25	579.89	4,598.03	0.00	0.00	0.00
10,500.00	90.00	1.09	6,257.00	4,672.24	581.80	4,697.96	0.00	0.00	0.00
10,600.00	90.00	1.09	6,257.00	4,772.22	583.71	4,797.88	0.00	0.00	0.00
10,700.00	90.00	1.09	6,257.00	4,872.20	585.62	4,897.81	0.00	0.00	0.00
10,800.00	90.00	1.09	6,257.00	4,972.18	587.53	4,997.74	0.00	0.00	0.00
10,900.00	90.00	1.09	6,257.00	5,072.16	589.44	5,097.66	0.00	0.00	0.00
11,000.00	90.00	1.09	6,257.00	5,172.15	591.35	5,197.59	0.00	0.00	0.00
11,100.00	90.00	1.09	6,257.00	5,272.13	593.26	5,297.51	0.00	0.00	0.00
11,200.00	90.00	1.09	6,257.00	5,372.11	595.17	5,397.44	0.00	0.00	0.00
11,300.00	90.00	1.09	6,257.00	5,472.09	597.08	5,497.37	0.00	0.00	0.00
11,400.00	90.00	1.09	6,257.00	5,572.07	598.99	5,597.29	0.00	0.00	0.00
11,500.00	90.00	1.09	6,257.00	5,672.05	600.90	5,697.22	0.00	0.00	0.00
11,600.00	90.00	1.09	6,257.00	5,772.04	602.81	5,797.15	0.00	0.00	0.00
11,700.00	90.00	1.09	6,257.00	5,872.02	604.72	5,897.07	0.00	0.00	0.00
11,800.00	90.00	1.09	6,257.00	5,972.00	606.63	5,997.00	0.00	0.00	0.00
11,900.00	90.00	1.09	6,257.00	6,071.98	608.54	6,096.92	0.00	0.00	0.00
12,000.00	90.00	1.09	6,257.00	6,171.96	610.45	6,196.85	0.00	0.00	0.00
12,100.00	90.00	1.09	6,257.00	6,271.94	612.36	6,296.78	0.00	0.00	0.00

## Planning Report

<b>Database:</b>	EDM 5000.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well BLUE TEAL FED 15-3-7HN
<b>Company:</b>	MALLARD EXPLORATION	<b>TVD Reference:</b>	KB 27' @ 4919.00usft
<b>Project:</b>	WELD COUNTY	<b>MD Reference:</b>	KB 27' @ 4919.00usft
<b>Site:</b>	SEC 22-T8N-R60W	<b>North Reference:</b>	True
<b>Well:</b>	BLUE TEAL FED 15-3-7HN	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
12,200.00	90.00	1.09	6,257.00	6,371.93	614.27	6,396.70	0.00	0.00	0.00
12,300.00	90.00	1.09	6,257.00	6,471.91	616.18	6,496.63	0.00	0.00	0.00
12,400.00	90.00	1.09	6,257.00	6,571.89	618.09	6,596.56	0.00	0.00	0.00
12,500.00	90.00	1.09	6,257.00	6,671.87	620.00	6,696.48	0.00	0.00	0.00
12,600.00	90.00	1.09	6,257.00	6,771.85	621.92	6,796.41	0.00	0.00	0.00
12,700.00	90.00	1.09	6,257.00	6,871.84	623.83	6,896.33	0.00	0.00	0.00
12,800.00	90.00	1.09	6,257.00	6,971.82	625.74	6,996.26	0.00	0.00	0.00
12,900.00	90.00	1.09	6,257.00	7,071.80	627.65	7,096.19	0.00	0.00	0.00
13,000.00	90.00	1.09	6,257.00	7,171.78	629.56	7,196.11	0.00	0.00	0.00
13,100.00	90.00	1.09	6,257.00	7,271.76	631.47	7,296.04	0.00	0.00	0.00
13,200.00	90.00	1.09	6,257.00	7,371.74	633.38	7,395.97	0.00	0.00	0.00
13,300.00	90.00	1.09	6,257.00	7,471.73	635.29	7,495.89	0.00	0.00	0.00
13,400.00	90.00	1.09	6,257.00	7,571.71	637.20	7,595.82	0.00	0.00	0.00
13,500.00	90.00	1.09	6,257.00	7,671.69	639.11	7,695.74	0.00	0.00	0.00
13,600.00	90.00	1.09	6,257.00	7,771.67	641.02	7,795.67	0.00	0.00	0.00
13,700.00	90.00	1.09	6,257.00	7,871.65	642.93	7,895.60	0.00	0.00	0.00
13,800.00	90.00	1.09	6,257.00	7,971.63	644.84	7,995.52	0.00	0.00	0.00
13,900.00	90.00	1.09	6,257.00	8,071.62	646.75	8,095.45	0.00	0.00	0.00
14,000.00	90.00	1.09	6,257.00	8,171.60	648.66	8,195.37	0.00	0.00	0.00
14,100.00	90.00	1.09	6,257.00	8,271.58	650.57	8,295.30	0.00	0.00	0.00
14,200.00	90.00	1.09	6,257.00	8,371.56	652.48	8,395.23	0.00	0.00	0.00
14,300.00	90.00	1.09	6,257.00	8,471.54	654.39	8,495.15	0.00	0.00	0.00
14,400.00	90.00	1.09	6,257.00	8,571.52	656.30	8,595.08	0.00	0.00	0.00
14,500.00	90.00	1.09	6,257.00	8,671.51	658.21	8,695.01	0.00	0.00	0.00
14,600.00	90.00	1.09	6,257.00	8,771.49	660.12	8,794.93	0.00	0.00	0.00
14,700.00	90.00	1.09	6,257.00	8,871.47	662.03	8,894.86	0.00	0.00	0.00
14,800.00	90.00	1.09	6,257.00	8,971.45	663.95	8,994.78	0.00	0.00	0.00
14,900.00	90.00	1.09	6,257.00	9,071.43	665.86	9,094.71	0.00	0.00	0.00
15,000.00	90.00	1.09	6,257.00	9,171.42	667.77	9,194.64	0.00	0.00	0.00
15,100.00	90.00	1.09	6,257.00	9,271.40	669.68	9,294.56	0.00	0.00	0.00
15,200.00	90.00	1.09	6,257.00	9,371.38	671.59	9,394.49	0.00	0.00	0.00
15,300.00	90.00	1.09	6,257.00	9,471.36	673.50	9,494.42	0.00	0.00	0.00
15,400.00	90.00	1.09	6,257.00	9,571.34	675.41	9,594.34	0.00	0.00	0.00
15,500.00	90.00	1.09	6,257.00	9,671.32	677.32	9,694.27	0.00	0.00	0.00
15,600.00	90.00	1.09	6,257.00	9,771.31	679.23	9,794.19	0.00	0.00	0.00
15,700.00	90.00	1.09	6,257.00	9,871.29	681.14	9,894.12	0.00	0.00	0.00
15,800.00	90.00	1.09	6,257.00	9,971.27	683.05	9,994.05	0.00	0.00	0.00
15,900.00	90.00	1.09	6,257.00	10,071.25	684.96	10,093.97	0.00	0.00	0.00
16,000.00	90.00	1.09	6,257.00	10,171.23	686.87	10,193.90	0.00	0.00	0.00
16,100.00	90.00	1.09	6,257.00	10,271.21	688.78	10,293.83	0.00	0.00	0.00
16,200.00	90.00	1.09	6,257.00	10,371.20	690.69	10,393.75	0.00	0.00	0.00
16,300.00	90.00	1.09	6,257.00	10,471.18	692.60	10,493.68	0.00	0.00	0.00
16,400.00	90.00	1.09	6,257.00	10,571.16	694.51	10,593.60	0.00	0.00	0.00
16,500.00	90.00	1.09	6,257.00	10,671.14	696.42	10,693.53	0.00	0.00	0.00
16,600.00	90.00	1.09	6,257.00	10,771.12	698.33	10,793.46	0.00	0.00	0.00
16,700.00	90.00	1.09	6,257.00	10,871.11	700.24	10,893.38	0.00	0.00	0.00
16,800.00	90.00	1.09	6,257.00	10,971.09	702.15	10,993.31	0.00	0.00	0.00
16,900.00	90.00	1.09	6,257.00	11,071.07	704.06	11,093.23	0.00	0.00	0.00
17,000.00	90.00	1.09	6,257.00	11,171.05	705.98	11,193.16	0.00	0.00	0.00
17,100.00	90.00	1.09	6,257.00	11,271.03	707.89	11,293.09	0.00	0.00	0.00
17,200.00	90.00	1.09	6,257.00	11,371.01	709.80	11,393.01	0.00	0.00	0.00
17,300.00	90.00	1.09	6,257.00	11,471.00	711.71	11,492.94	0.00	0.00	0.00
17,400.00	90.00	1.09	6,257.00	11,570.98	713.62	11,592.87	0.00	0.00	0.00
17,500.00	90.00	1.09	6,257.00	11,670.96	715.53	11,692.79	0.00	0.00	0.00

## Planning Report

<b>Database:</b>	EDM 5000.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well BLUE TEAL FED 15-3-7HN
<b>Company:</b>	MALLARD EXPLORATION	<b>TVD Reference:</b>	KB 27' @ 4919.00usft
<b>Project:</b>	WELD COUNTY	<b>MD Reference:</b>	KB 27' @ 4919.00usft
<b>Site:</b>	SEC 22-T8N-R60W	<b>North Reference:</b>	True
<b>Well:</b>	BLUE TEAL FED 15-3-7HN	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL 1		

Planned Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)
17,600.00	90.00	1.09	6,257.00	11,770.94	717.44	11,792.72	0.00	0.00	0.00
17,700.00	90.00	1.09	6,257.00	11,870.92	719.35	11,892.64	0.00	0.00	0.00
17,800.00	90.00	1.09	6,257.00	11,970.90	721.26	11,992.57	0.00	0.00	0.00
17,900.00	90.00	1.09	6,257.00	12,070.89	723.17	12,092.50	0.00	0.00	0.00
18,000.00	90.00	1.09	6,257.00	12,170.87	725.08	12,192.42	0.00	0.00	0.00
18,100.00	90.00	1.09	6,257.00	12,270.85	726.99	12,292.35	0.00	0.00	0.00
18,200.00	90.00	1.09	6,257.00	12,370.83	728.90	12,392.28	0.00	0.00	0.00
18,300.00	90.00	1.09	6,257.00	12,470.81	730.81	12,492.20	0.00	0.00	0.00
18,400.00	90.00	1.09	6,257.00	12,570.79	732.72	12,592.13	0.00	0.00	0.00
18,500.00	90.00	1.09	6,257.00	12,670.78	734.63	12,692.05	0.00	0.00	0.00
18,600.00	90.00	1.09	6,257.00	12,770.76	736.54	12,791.98	0.00	0.00	0.00
18,629.01	90.00	1.09	6,257.00	12,799.77	737.13	12,820.97	0.00	0.00	0.00
TD at 18629.01									

Design Targets									
Target Name - hit/miss target - Shape	Dip Angle (°)	Dip Dir. (°)	TVD (usft)	+N/-S (usft)	+E/-W (usft)	Northing (usft)	Easting (usft)	Latitude	Longitude
BTFED 7HN - LP - plan hits target center - Point	0.00	0.00	6,257.00	782.57	507.47	1,484,998.99	3,395,745.02	40.655980°N	104.073618°W
BTFED 7HN- PBHL - plan hits target center - Point	0.00	0.00	6,257.00	12,799.77	737.13	1,497,018.32	3,395,781.60	40.688965°N	104.072789°W

Formations						
Measured Depth (usft)	Vertical Depth (usft)	Name	Lithology	Dip (°)	Dip Direction (°)	
435.00	435.00	Fox Hills Base				
1,441.93	1,438.00	Pierre Shale Top				
3,308.47	3,296.00	Richard Sandstone				
3,424.00	3,411.00	Parkman Sandstone				
4,203.57	4,187.00	Sussex Sandstone				
4,643.58	4,625.00	Shannon Sandstone				
5,410.09	5,388.00	TeePee Buttes				
6,122.74	6,063.00	Sharon Springs				
6,178.68	6,103.00	Niobrara Top				
6,487.12	6,244.00	Niobrara B2 Chalk Target Top				
6,575.71	6,256.00	Niobrara B2 Chalk Target Center				



## Planning Report

<b>Database:</b>	EDM 5000.16 Single User Db	<b>Local Co-ordinate Reference:</b>	Well BLUE TEAL FED 15-3-7HN
<b>Company:</b>	MALLARD EXPLORATION	<b>TVD Reference:</b>	KB 27' @ 4919.00usft
<b>Project:</b>	WELD COUNTY	<b>MD Reference:</b>	KB 27' @ 4919.00usft
<b>Site:</b>	SEC 22-T8N-R60W	<b>North Reference:</b>	True
<b>Well:</b>	BLUE TEAL FED 15-3-7HN	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	ORIGINAL WELLBORE		
<b>Design:</b>	PROPOSAL 1		

Plan Annotations				
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates		Comment
		+N/-S (usft)	+E/-W (usft)	
400.00	400.00	0.00	0.00	Start Build 2.00
674.17	673.75	5.57	11.87	Start 5059.69 hold at 674.17 MD
5,733.86	5,710.29	211.13	449.48	Start DLS 10.00 TFO -63.85
6,609.63	6,257.00	782.57	507.47	Start 12019.39 hold at 6609.63 MD
18,629.01	6,257.00	12,799.77	737.13	TD at 18629.01