

MALLARD EXPLORATION

WELD COUNTY

SEC 32-T9N-R60W

CANVASBACK 32-33-6HN

OWB

PROPOSAL 2

Anticollision Report

20 June, 2022

Anticollision Report

Company:	MALLARD EXPLORATION	Local Co-ordinate Reference:	Well CANVASBACK 32-33-6HN
Project:	WELD COUNTY	TVD Reference:	KB 27' @ 4973.00usft
Reference Site:	SEC 32-T9N-R60W	MD Reference:	KB 27' @ 4973.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	CANVASBACK 32-33-6HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 5000.16 Single User Db
Reference Design:	PROPOSAL 2	Offset TVD Reference:	Offset Datum

Reference	PROPOSAL 2		
Filter type:	NO GLOBAL FILTER: Using user defined selection & filtering criteria		
Interpolation Method:	MD + Stations Interval 100.00usft	Error Model:	ISCWSA
Depth Range:	Unlimited	Scan Method:	Closest Approach 3D
Results Limited by:	Maximum centre distance of 10,000.00usft	Error Surface:	Pedal Curve
Warning Levels Evaluated at:	2.00 Sigma	Casing Method:	Not applied

Survey Tool Program	Date	6/20/2022		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
0.00	17,089.98	PROPOSAL 2 (OWB)	MWD	OWSG MWD - Standard

Summary						
Site Name	Reference Measured Depth (usft)	Offset Measured Depth (usft)	Distance Between Centres (usft)	Distance Between Ellipses (usft)	Separation Factor	Warning
Offset Well - Wellbore - Design						
SEC 32-T9N-R60W						
CANVASBACK 32-33-5HN - ORIGINAL WELLBORE - PR	300.00	299.00	20.05	16.57	5.763	CC
CANVASBACK 32-33-5HN - ORIGINAL WELLBORE - PR	17,078.80	16,968.96	510.87	-52.11	0.907	No-Go Zone - Stop Drilling, E
CANVASBACK 32-33-7HN - ORIGINAL WELLBORE - PR	200.00	200.00	20.05	17.56	8.050	CC
CANVASBACK 32-33-7HN - ORIGINAL WELLBORE - PR	17,089.98	17,289.27	509.78	-55.23	0.902	No-Go Zone - Stop Drilling, E
CANVASBACK 32-33-8HN - ORIGINAL WELLBORE - PR	0.00	1.00	40.11			
CANVASBACK 32-33-8HN - ORIGINAL WELLBORE - PR	200.00	200.00	41.79	39.09	15.485	ES
CANVASBACK 32-33-8HN - ORIGINAL WELLBORE - PR	17,089.98	17,639.68	1,166.51	600.81	2.062	SF
CANVASBACK FED 32-33-1HN - OWB - PROPOSAL 2	100.00	97.00	99.89	99.08	122.039	CC
CANVASBACK FED 32-33-1HN - OWB - PROPOSAL 2	200.00	194.28	101.20	98.38	35.863	ES
CANVASBACK FED 32-33-1HN - OWB - PROPOSAL 2	17,089.98	17,049.03	3,511.36	2,941.66	6.164	SF
CANVASBACK FED 32-33-2HN - ORIGINAL WELLBORE	200.00	197.00	79.84	77.37	32.375	CC
CANVASBACK FED 32-33-2HN - ORIGINAL WELLBORE	300.00	295.81	80.55	76.99	22.606	ES
CANVASBACK FED 32-33-2HN - ORIGINAL WELLBORE	17,089.98	16,884.98	2,685.96	2,119.54	4.742	SF
CANVASBACK FED 32-33-3HN - ORIGINAL WELLBORE	300.00	298.00	60.16	56.68	17.318	CC, ES
CANVASBACK FED 32-33-3HN - ORIGINAL WELLBORE	17,089.98	16,824.07	1,931.92	1,365.40	3.410	SF
CANVASBACK FED 32-33-4HN - ORIGINAL WELLBORE	300.00	298.00	40.11	36.63	11.546	CC, ES
CANVASBACK FED 32-33-4HN - ORIGINAL WELLBORE	17,089.98	16,904.91	1,182.08	615.44	2.086	SF
EXIST HZ SHABLE FEDERAL LB33-78HN - Wellbore #1	12,790.55	9,798.55	73.30	-19.19	0.792	No-Go Zone - Stop Drilling, C
EXIST HZ SHABLE FEDERAL LB33-78HN - Wellbore #1	12,800.00	9,798.78	73.90	-20.57	0.782	No-Go Zone - Stop Drilling, E
EXIST HZ SHABLE LB 32-68HN - Wellbore #1 - Wellbore	5,691.01	10,687.00	2,894.77	2,747.21	19.617	CC
EXIST HZ SHABLE LB 32-68HN - Wellbore #1 - Wellbore	5,700.00	10,687.00	2,894.79	2,747.08	19.598	ES
EXIST HZ SHABLE LB 32-68HN - Wellbore #1 - Wellbore	7,600.00	10,687.00	2,976.25	2,809.59	17.858	SF

Offset Design:	SEC 32-T9N-R60W - CANVASBACK 32-33-5HN - ORIGINAL WELLBORE - PROPOSAL 1												Offset Site Error:	0.00 usft
Survey Program:	0-MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Rule Assigned:		Minimum Separation (usft)	Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)				
0.00	0.00	0.00	0.00	0.00	0.00	-1.58	20.04	-0.55	20.07					
100.00	100.00	99.00	99.00	0.42	0.41	-1.58	20.04	-0.55	20.05	19.22	0.83	24.248		
200.00	200.00	199.00	199.00	1.25	1.24	-1.58	20.04	-0.55	20.05	17.57	2.48	8.076		
300.00	300.00	299.00	299.00	1.74	1.74	-1.58	20.04	-0.55	20.05	16.57	3.48	5.763	CC	
400.00	399.98	398.98	398.98	2.24	2.12	153.95	20.04	-0.55	21.60	17.30	4.30	5.025		
500.00	499.84	499.62	499.60	3.42	2.55	157.15	18.58	-1.48	24.88	19.12	5.76	4.321		

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	MALLARD EXPLORATION	Local Co-ordinate Reference:	Well CANVASBACK 32-33-6HN
Project:	WELD COUNTY	TVD Reference:	KB 27' @ 4973.00usft
Reference Site:	SEC 32-T9N-R60W	MD Reference:	KB 27' @ 4973.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	CANVASBACK 32-33-6HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 5000.16 Single User Db
Reference Design:	PROPOSAL 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC 32-T9N-R60W - CANVASBACK 32-33-5HN - ORIGINAL WELLBORE - PROPOSAL 1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD												Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
				(usft)	(usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
600.00	599.45	600.38	600.22	4.32	3.64	158.92	14.13	-4.31	28.34	20.76	7.59	3.737	
700.00	698.70	701.27	700.71	5.10	4.51	159.69	6.68	-9.04	31.93	22.81	9.12	3.500	
800.00	797.47	802.27	800.95	5.81	5.26	159.75	-3.76	-15.67	35.63	25.15	10.49	3.398	
900.00	895.62	903.39	900.80	6.47	5.96	159.31	-17.19	-24.21	39.44	27.71	11.73	3.362	
1,000.00	993.06	1,004.61	1,000.14	7.10	6.62	158.49	-33.62	-34.64	43.35	30.46	12.89	3.364	
1,100.00	1,089.64	1,105.95	1,098.83	7.71	7.24	157.39	-53.01	-46.95	47.38	33.40	13.98	3.390	
1,200.00	1,185.27	1,207.39	1,196.75	8.30	7.85	156.09	-75.36	-61.15	51.52	36.51	15.01	3.432	
1,290.38	1,270.77	1,299.16	1,284.47	8.77	8.38	154.79	-98.10	-75.59	55.39	39.52	15.86	3.491	
1,300.00	1,279.82	1,308.94	1,293.76	8.80	8.44	154.64	-100.66	-77.22	55.79	39.86	15.93	3.502	
1,400.00	1,373.90	1,410.50	1,389.68	9.11	9.04	152.18	-128.84	-95.12	58.37	41.78	16.59	3.518	
1,500.00	1,467.99	1,510.44	1,483.53	9.45	9.43	149.09	-157.83	-113.53	59.77	42.66	17.11	3.493	
1,600.00	1,562.07	1,610.38	1,577.38	9.81	9.77	146.16	-186.82	-131.94	61.33	43.71	17.63	3.480	
1,700.00	1,656.16	1,710.32	1,671.24	10.18	10.12	143.37	-215.81	-150.36	63.05	44.85	18.20	3.465	
1,800.00	1,750.24	1,810.26	1,765.09	10.57	10.48	140.74	-244.80	-168.77	64.91	46.08	18.83	3.447	
1,900.00	1,844.32	1,910.20	1,858.94	10.96	10.86	138.26	-273.79	-187.18	66.89	47.37	19.52	3.426	
2,000.00	1,938.41	2,010.14	1,952.80	11.37	11.24	135.93	-302.78	-205.60	69.00	48.73	20.27	3.404	
2,100.00	2,032.49	2,110.08	2,046.65	11.78	11.64	133.73	-331.77	-224.01	71.21	50.14	21.08	3.379	
2,200.00	2,126.57	2,210.02	2,140.50	12.21	12.05	131.68	-360.76	-242.42	73.52	51.59	21.93	3.353	
2,300.00	2,220.66	2,309.96	2,234.36	12.64	12.47	129.75	-389.75	-260.84	75.92	53.10	22.82	3.326	
2,400.00	2,314.74	2,409.90	2,328.21	13.08	12.89	127.94	-418.74	-279.25	78.40	54.64	23.76	3.300	
2,500.00	2,408.82	2,509.84	2,422.06	13.52	13.32	126.24	-447.73	-297.66	80.95	56.22	24.73	3.273	
2,600.00	2,502.91	2,609.77	2,515.92	13.97	13.76	124.65	-476.71	-316.08	83.57	57.84	25.73	3.248	
2,700.00	2,596.99	2,709.71	2,609.77	14.42	14.21	123.15	-505.70	-334.49	86.25	59.49	26.76	3.223	
2,800.00	2,691.07	2,809.65	2,703.62	14.88	14.66	121.75	-534.69	-352.90	88.99	61.17	27.82	3.199	
2,900.00	2,785.16	2,909.59	2,797.48	15.35	15.11	120.43	-563.68	-371.32	91.78	62.88	28.90	3.176	
3,000.00	2,879.24	3,009.53	2,891.33	15.81	15.57	119.19	-592.67	-389.73	94.61	64.62	29.99	3.155	
3,100.00	2,973.33	3,109.47	2,985.18	16.28	16.03	118.02	-621.66	-408.14	97.48	66.38	31.10	3.134	
3,200.00	3,067.41	3,209.41	3,079.04	16.76	16.50	116.92	-650.65	-426.56	100.39	68.17	32.23	3.115	
3,300.00	3,161.49	3,309.35	3,172.89	17.23	16.97	115.88	-679.64	-444.97	103.34	69.98	33.36	3.097	
3,400.00	3,255.58	3,409.29	3,266.75	17.71	17.44	114.90	-708.63	-463.38	106.32	71.81	34.51	3.081	
3,500.00	3,349.66	3,509.23	3,360.60	18.20	17.92	113.98	-737.62	-481.80	109.32	73.66	35.67	3.065	
3,600.00	3,443.74	3,609.17	3,454.45	18.68	18.41	113.10	-766.61	-500.21	112.36	75.53	36.83	3.051	
3,700.00	3,537.83	3,709.11	3,548.31	19.18	18.90	112.27	-795.60	-518.62	115.42	77.41	38.01	3.037	
3,800.00	3,631.91	3,809.05	3,642.16	19.70	19.46	111.48	-824.59	-537.04	118.50	79.32	39.18	3.025	
3,900.00	3,725.99	3,908.99	3,736.01	20.28	20.05	110.73	-853.58	-555.45	121.60	81.24	40.36	3.013	
4,000.00	3,820.08	4,008.93	3,829.87	20.87	20.66	110.02	-882.57	-573.86	124.73	83.18	41.55	3.002	
4,100.00	3,914.16	4,108.87	3,923.72	21.47	21.27	109.35	-911.56	-592.28	127.87	85.12	42.75	2.991	
4,200.00	4,008.24	4,208.81	4,017.57	22.07	21.88	108.70	-940.55	-610.69	131.03	87.09	43.94	2.982	
4,300.00	4,102.33	4,308.75	4,111.43	22.68	22.50	108.09	-969.54	-629.10	134.20	89.06	45.14	2.973	
4,400.00	4,196.41	4,408.69	4,205.28	23.28	23.11	107.51	-998.53	-647.52	137.39	91.05	46.35	2.965	
4,500.00	4,290.49	4,508.63	4,299.13	23.88	23.72	106.95	-1,027.52	-665.93	140.60	93.04	47.55	2.957	
4,600.00	4,384.58	4,608.57	4,392.99	24.49	24.34	106.42	-1,056.51	-684.34	143.81	95.05	48.76	2.949	
4,700.00	4,478.66	4,708.51	4,486.84	25.09	24.95	105.91	-1,085.50	-702.76	147.04	97.07	49.97	2.943	
4,800.00	4,572.75	4,808.44	4,580.69	25.69	25.57	105.42	-1,114.49	-721.17	150.28	99.10	51.18	2.936	
4,900.00	4,666.83	4,908.38	4,674.55	26.30	26.18	104.95	-1,143.48	-739.58	153.53	101.13	52.39	2.930	
5,000.00	4,760.91	5,007.94	4,768.15	26.90	26.77	104.63	-1,172.09	-757.75	156.84	103.26	53.58	2.927	
5,100.00	4,855.00	5,106.94	4,862.19	27.51	27.33	105.34	-1,198.22	-774.36	160.63	105.91	54.72	2.935	
5,200.00	4,949.08	5,205.65	4,956.95	28.11	27.83	107.19	-1,221.53	-789.16	165.12	109.32	55.80	2.959	
5,300.00	5,043.16	5,303.83	5,052.09	28.72	28.27	110.02	-1,241.97	-802.14	170.61	113.80	56.80	3.003	
5,400.00	5,137.25	5,401.26	5,147.27	29.32	28.66	113.68	-1,259.53	-813.29	177.54	119.81	57.73	3.076	
5,500.00	5,231.33	5,497.73	5,242.15	29.93	28.98	117.96	-1,274.20	-822.61	186.44	127.88	58.56	3.184	
5,600.00	5,325.41	5,593.03	5,336.41	30.53	29.25	122.62	-1,286.05	-830.14	197.84	138.53	59.31	3.336	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	MALLARD EXPLORATION	Local Co-ordinate Reference:	Well CANVASBACK 32-33-6HN
Project:	WELD COUNTY	TVD Reference:	KB 27' @ 4973.00usft
Reference Site:	SEC 32-T9N-R60W	MD Reference:	KB 27' @ 4973.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	CANVASBACK 32-33-6HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 5000.16 Single User Db
Reference Design:	PROPOSAL 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC 32-T9N-R60W - CANVASBACK 32-33-5HN - ORIGINAL WELLBORE - PROPOSAL 1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD												Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
		Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
5,700.00	5,419.50	5,686.97	5,429.73	31.14	29.47	127.44	-1,295.12	-835.90	212.21	152.25	59.96	3.539	
5,800.00	5,513.58	5,779.40	5,521.85	31.75	29.64	132.19	-1,301.53	-839.97	229.90	169.40	60.50	3.800	
5,900.00	5,607.66	5,870.16	5,612.49	32.35	29.81	136.71	-1,305.38	-842.42	251.14	190.18	60.96	4.120	
6,000.00	5,701.75	5,959.12	5,701.42	32.96	29.95	140.91	-1,306.79	-843.32	276.01	214.78	61.23	4.508	
6,100.00	5,795.83	6,052.53	5,794.83	33.56	29.96	144.84	-1,306.81	-843.32	303.61	241.99	61.62	4.927	
6,113.74	5,808.76	6,065.45	5,807.76	33.64	29.96	145.33	-1,306.81	-843.32	307.50	245.83	61.67	4.986	
6,150.00	5,843.02	6,101.20	5,843.49	33.86	29.92	157.42	-1,306.80	-842.40	317.94	256.06	61.88	5.138	
6,200.00	5,890.57	6,150.19	5,892.22	34.18	29.89	175.65	-1,306.75	-837.54	332.64	270.54	62.10	5.357	
6,250.00	5,938.13	6,198.61	5,939.80	34.48	29.92	-166.15	-1,306.66	-828.66	347.55	285.35	62.20	5.588	
6,300.00	5,985.36	6,246.54	5,986.00	34.71	29.94	-150.03	-1,306.53	-815.95	362.51	300.28	62.23	5.826	
6,350.00	6,031.88	6,294.07	6,030.61	34.89	29.96	-136.83	-1,306.36	-799.57	377.37	315.18	62.19	6.068	
6,400.00	6,077.36	6,341.25	6,073.40	35.04	29.96	-126.38	-1,306.16	-779.72	391.99	329.90	62.09	6.313	
6,450.00	6,121.43	6,388.17	6,114.18	35.16	29.95	-118.11	-1,305.93	-756.55	406.22	344.29	61.93	6.559	
6,500.00	6,163.76	6,434.87	6,152.76	35.26	29.94	-111.49	-1,305.66	-730.25	419.95	358.23	61.72	6.804	
6,550.00	6,204.04	6,481.41	6,188.94	35.35	29.92	-106.11	-1,305.36	-701.02	433.04	371.57	61.47	7.044	
6,600.00	6,241.95	6,527.82	6,222.55	35.42	29.89	-101.68	-1,305.04	-669.03	445.39	384.18	61.21	7.276	
6,650.00	6,277.21	6,574.14	6,253.40	35.47	29.86	-97.99	-1,304.69	-634.50	456.91	395.95	60.96	7.495	
6,700.00	6,309.55	6,620.38	6,281.32	35.51	29.84	-94.91	-1,304.31	-597.65	467.49	406.75	60.73	7.697	
6,750.00	6,338.72	6,666.57	6,306.15	35.54	29.82	-92.32	-1,303.92	-558.71	477.05	416.49	60.56	7.878	
6,800.00	6,364.50	6,712.72	6,327.74	35.57	29.83	-90.16	-1,303.51	-517.95	485.53	425.08	60.45	8.032	
6,850.00	6,386.70	6,758.81	6,345.97	35.60	29.87	-88.37	-1,303.08	-475.62	492.86	432.44	60.42	8.157	
6,900.00	6,405.14	6,804.86	6,360.72	35.66	29.95	-86.91	-1,302.63	-432.02	498.98	438.49	60.49	8.249	
6,950.00	6,419.68	6,850.00	6,371.74	35.74	30.11	-85.75	-1,302.19	-388.26	503.86	443.21	60.65	8.308	
7,000.00	6,430.22	6,896.75	6,379.48	35.86	30.34	-84.87	-1,301.72	-342.17	507.45	446.50	60.95	8.326	
7,050.00	6,436.67	6,942.56	6,383.40	36.05	30.65	-84.25	-1,301.26	-296.55	509.73	448.39	61.33	8.311	
7,100.00	6,438.99	6,990.10	6,384.00	36.30	31.02	-83.93	-1,300.78	-249.02	510.64	448.77	61.86	8.254	
7,102.92	6,439.00	6,993.02	6,384.00	36.32	31.04	-83.93	-1,300.75	-246.10	510.64	448.74	61.90	8.249	
7,200.00	6,439.00	7,090.10	6,383.99	36.99	31.97	-83.93	-1,299.76	-149.02	510.65	447.16	63.49	8.043	
7,300.00	6,439.00	7,190.10	6,383.99	37.90	33.11	-83.93	-1,298.75	-49.03	510.65	445.15	65.50	7.796	
7,400.00	6,439.00	7,290.10	6,383.99	38.99	34.41	-83.93	-1,297.73	50.97	510.65	442.75	67.90	7.521	
7,500.00	6,439.00	7,390.10	6,383.98	40.25	35.88	-83.93	-1,296.72	150.96	510.66	440.02	70.64	7.229	
7,600.00	6,439.00	7,490.10	6,383.98	41.65	37.48	-83.93	-1,295.70	250.96	510.66	436.98	73.68	6.931	
7,700.00	6,439.00	7,590.10	6,383.97	43.18	39.21	-83.93	-1,294.69	350.95	510.66	433.68	76.98	6.634	
7,800.00	6,439.00	7,690.10	6,383.97	44.82	41.04	-83.93	-1,293.67	450.95	510.67	430.15	80.52	6.342	
7,900.00	6,439.00	7,790.10	6,383.96	46.56	42.97	-83.93	-1,292.66	550.94	510.67	426.41	84.26	6.060	
8,000.00	6,439.00	7,890.10	6,383.96	48.39	44.98	-83.93	-1,291.64	650.94	510.68	422.49	88.18	5.791	
8,100.00	6,439.00	7,990.10	6,383.96	50.30	47.06	-83.93	-1,290.63	750.93	510.68	418.42	92.26	5.535	
8,200.00	6,439.00	8,090.10	6,383.95	52.29	49.21	-83.92	-1,289.61	850.93	510.68	414.21	96.47	5.294	
8,300.00	6,439.00	8,190.10	6,383.95	54.34	51.42	-83.92	-1,288.60	950.92	510.69	409.88	100.80	5.066	
8,400.00	6,439.00	8,290.10	6,383.94	56.45	53.67	-83.92	-1,287.58	1,050.92	510.69	405.45	105.24	4.853	
8,500.00	6,439.00	8,390.10	6,383.94	58.61	55.96	-83.92	-1,286.57	1,150.91	510.69	400.93	109.76	4.653	
8,600.00	6,439.00	8,490.10	6,383.94	60.82	58.30	-83.92	-1,285.55	1,250.91	510.70	396.33	114.37	4.465	
8,700.00	6,439.00	8,590.10	6,383.93	63.06	60.67	-83.92	-1,284.54	1,350.90	510.70	391.65	119.05	4.290	
8,800.00	6,439.00	8,690.10	6,383.93	65.35	63.06	-83.92	-1,283.52	1,450.89	510.71	386.91	123.79	4.126	
8,900.00	6,439.00	8,790.10	6,383.92	67.67	65.49	-83.92	-1,282.51	1,550.89	510.71	382.12	128.59	3.972	
9,000.00	6,439.00	8,890.10	6,383.92	70.01	67.93	-83.92	-1,281.49	1,650.88	510.71	377.28	133.44	3.827	
9,100.00	6,439.00	8,990.10	6,383.91	72.39	70.40	-83.92	-1,280.48	1,750.88	510.72	372.39	138.33	3.692	
9,200.00	6,439.00	9,090.10	6,383.91	74.79	72.89	-83.92	-1,279.46	1,850.87	510.72	367.46	143.26	3.565	
9,300.00	6,439.00	9,190.10	6,383.91	77.21	75.40	-83.92	-1,278.45	1,950.87	510.72	362.49	148.23	3.445	
9,400.00	6,439.00	9,290.10	6,383.90	79.65	77.92	-83.92	-1,277.43	2,050.86	510.73	357.49	153.24	3.333	
9,500.00	6,439.00	9,390.10	6,383.90	82.12	80.46	-83.92	-1,276.42	2,150.86	510.73	352.46	158.27	3.227	
9,600.00	6,439.00	9,490.10	6,383.89	84.59	83.00	-83.92	-1,275.40	2,250.85	510.74	347.41	163.33	3.127	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	MALLARD EXPLORATION	Local Co-ordinate Reference:	Well CANVASBACK 32-33-6HN
Project:	WELD COUNTY	TVD Reference:	KB 27' @ 4973.00usft
Reference Site:	SEC 32-T9N-R60W	MD Reference:	KB 27' @ 4973.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	CANVASBACK 32-33-6HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 5000.16 Single User Db
Reference Design:	PROPOSAL 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC 32-T9N-R60W - CANVASBACK 32-33-5HN - ORIGINAL WELLBORE - PROPOSAL 1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
9,700.00	6,439.00	9,590.10	6,383.89	87.09	85.56	-83.92	-1,274.39	2,350.85	510.74	342.33	168.41	3.033	
9,800.00	6,439.00	9,690.10	6,383.88	89.60	88.14	-83.92	-1,273.37	2,450.84	510.74	337.22	173.52	2.943	
9,900.00	6,439.00	9,790.10	6,383.88	92.12	90.72	-83.92	-1,272.36	2,550.84	510.75	332.10	178.65	2.859	
10,000.00	6,439.00	9,890.10	6,383.88	94.65	93.31	-83.92	-1,271.34	2,650.83	510.75	326.96	183.79	2.779	
10,100.00	6,439.00	9,990.10	6,383.87	97.20	95.90	-83.92	-1,270.33	2,750.83	510.75	321.80	188.96	2.703	
10,200.00	6,439.00	10,090.10	6,383.87	99.75	98.51	-83.92	-1,269.31	2,850.82	510.76	316.62	194.13	2.631	
10,300.00	6,439.00	10,190.10	6,383.86	102.32	101.12	-83.92	-1,268.30	2,950.82	510.76	311.43	199.33	2.562	
10,400.00	6,439.00	10,290.10	6,383.86	104.89	103.74	-83.92	-1,267.28	3,050.81	510.77	306.23	204.53	2.497	
10,500.00	6,439.00	10,390.10	6,383.85	107.47	106.37	-83.91	-1,266.27	3,150.81	510.77	301.02	209.75	2.435	
10,600.00	6,439.00	10,490.10	6,383.85	110.06	109.00	-83.91	-1,265.25	3,250.80	510.77	295.79	214.98	2.376	
10,700.00	6,439.00	10,590.10	6,383.85	112.66	111.64	-83.91	-1,264.24	3,350.80	510.78	290.55	220.23	2.319	
10,800.00	6,439.00	10,690.10	6,383.84	115.26	114.28	-83.91	-1,263.23	3,450.79	510.78	285.30	225.48	2.265	
10,900.00	6,439.00	10,790.10	6,383.84	117.87	116.92	-83.91	-1,262.21	3,550.79	510.78	280.05	230.74	2.214	
11,000.00	6,439.00	10,890.10	6,383.83	120.49	119.57	-83.91	-1,261.20	3,650.78	510.79	274.78	236.01	2.164	
11,100.00	6,439.00	10,990.10	6,383.83	123.11	122.23	-83.91	-1,260.18	3,750.78	510.79	269.51	241.29	2.117	
11,200.00	6,439.00	11,090.10	6,383.82	125.73	124.88	-83.91	-1,259.17	3,850.77	510.80	264.22	246.57	2.072	
11,300.00	6,439.00	11,190.10	6,383.82	128.36	127.54	-83.91	-1,258.15	3,950.77	510.80	258.94	251.86	2.028	
11,400.00	6,439.00	11,290.10	6,383.82	131.00	130.21	-83.91	-1,257.14	4,050.76	510.80	253.64	257.16	1.986 Collision Risk Procedures Req.	
11,500.00	6,439.00	11,390.10	6,383.81	133.64	132.87	-83.91	-1,256.12	4,150.76	510.81	248.34	262.47	1.946 Collision Risk Procedures Req.	
11,600.00	6,439.00	11,490.10	6,383.81	136.28	135.54	-83.91	-1,255.11	4,250.75	510.81	243.03	267.78	1.908 Collision Risk Procedures Req.	
11,700.00	6,439.00	11,590.10	6,383.80	138.93	138.22	-83.91	-1,254.09	4,350.75	510.81	237.72	273.10	1.870 Collision Risk Procedures Req.	
11,800.00	6,439.00	11,690.10	6,383.80	141.58	140.89	-83.91	-1,253.08	4,450.74	510.82	232.40	278.42	1.835 Collision Risk Procedures Req.	
11,900.00	6,439.00	11,790.10	6,383.79	144.23	143.57	-83.91	-1,252.06	4,550.74	510.82	227.08	283.75	1.800 Collision Risk Procedures Req.	
12,000.00	6,439.00	11,890.10	6,383.79	146.89	146.25	-83.91	-1,251.05	4,650.73	510.83	221.75	289.08	1.767 Collision Risk Procedures Req.	
12,100.00	6,439.00	11,990.10	6,383.79	149.55	148.93	-83.91	-1,250.03	4,750.72	510.83	216.41	294.41	1.735 Collision Risk Procedures Req.	
12,200.00	6,439.00	12,090.10	6,383.78	152.21	151.62	-83.91	-1,249.02	4,850.72	510.83	211.08	299.76	1.704 Collision Risk Procedures Req.	
12,300.00	6,439.00	12,190.10	6,383.78	154.88	154.30	-83.91	-1,248.00	4,950.71	510.84	205.74	305.10	1.674 Collision Risk Procedures Req.	
12,400.00	6,439.00	12,290.10	6,383.77	157.55	156.99	-83.91	-1,246.99	5,050.71	510.84	200.39	310.45	1.645 Collision Risk Procedures Req.	
12,500.00	6,439.00	12,390.10	6,383.77	160.22	159.68	-83.91	-1,245.97	5,150.70	510.84	195.04	315.80	1.618 Collision Risk Procedures Req.	
12,600.00	6,439.00	12,490.10	6,383.76	162.89	162.37	-83.91	-1,244.96	5,250.70	510.85	189.69	321.15	1.591 Collision Risk Procedures Req.	
12,700.00	6,439.00	12,590.10	6,383.76	165.57	165.06	-83.91	-1,243.94	5,350.69	510.85	184.34	326.51	1.565 Collision Risk Procedures Req.	
12,800.00	6,439.00	12,690.10	6,383.76	168.24	167.76	-83.90	-1,242.93	5,450.69	510.86	178.98	331.87	1.539 Collision Risk Procedures Req.	
12,900.00	6,439.00	12,790.10	6,383.75	170.92	170.45	-83.90	-1,241.91	5,550.68	510.86	173.62	337.24	1.515 Collision Risk Procedures Req.	
13,000.00	6,439.00	12,890.10	6,383.75	173.60	173.15	-83.90	-1,240.90	5,650.68	510.86	168.26	342.61	1.491 Collision Avoidance Req.	
13,100.00	6,439.00	12,990.10	6,383.74	176.29	175.85	-83.90	-1,239.88	5,750.67	510.87	162.89	347.98	1.468 Collision Avoidance Req.	
13,200.00	6,439.00	13,090.10	6,383.74	178.97	178.55	-83.90	-1,238.87	5,850.67	510.87	157.52	353.35	1.446 Collision Avoidance Req.	
13,300.00	6,439.00	13,190.10	6,383.73	181.66	181.25	-83.90	-1,237.85	5,950.66	510.87	152.15	358.72	1.424 Collision Avoidance Req.	
13,400.00	6,439.00	13,290.10	6,383.73	184.35	183.95	-83.90	-1,236.84	6,050.66	510.88	146.78	364.10	1.403 Collision Avoidance Req.	
13,500.00	6,439.00	13,390.10	6,383.73	187.04	186.66	-83.90	-1,235.82	6,150.65	510.88	141.40	369.48	1.383 Collision Avoidance Req.	
13,600.00	6,439.00	13,490.10	6,383.72	189.73	189.36	-83.90	-1,234.81	6,250.65	510.89	136.02	374.86	1.363 Collision Avoidance Req.	
13,700.00	6,439.00	13,590.10	6,383.72	192.42	192.07	-83.90	-1,233.79	6,350.64	510.89	130.65	380.24	1.344 Collision Avoidance Req.	
13,800.00	6,439.00	13,690.10	6,383.71	195.11	194.77	-83.90	-1,232.78	6,450.64	510.89	125.26	385.63	1.325 Collision Avoidance Req.	
13,900.00	6,439.00	13,790.10	6,383.71	197.81	197.48	-83.90	-1,231.76	6,550.63	510.90	119.88	391.02	1.307 Collision Avoidance Req.	
14,000.00	6,439.00	13,890.10	6,383.70	200.51	200.19	-83.90	-1,230.75	6,650.63	510.90	114.49	396.41	1.289 Collision Avoidance Req.	
14,100.00	6,439.00	13,990.10	6,383.70	203.20	202.90	-83.90	-1,229.73	6,750.62	510.90	109.11	401.80	1.272 Collision Avoidance Req.	
14,200.00	6,439.00	14,090.10	6,383.70	205.90	205.61	-83.90	-1,228.72	6,850.62	510.91	103.72	407.19	1.255 Collision Avoidance Req.	
14,300.00	6,439.00	14,190.10	6,383.69	208.60	208.32	-83.90	-1,227.70	6,950.61	510.91	98.33	412.58	1.238 Collision Avoidance Req.	
14,400.00	6,439.00	14,290.10	6,383.69	211.30	211.03	-83.90	-1,226.69	7,050.61	510.92	92.94	417.98	1.222 Collision Avoidance Req.	
14,500.00	6,439.00	14,390.10	6,383.68	214.01	213.74	-83.90	-1,225.67	7,150.60	510.92	87.54	423.38	1.207 Collision Avoidance Req.	
14,600.00	6,439.00	14,490.10	6,383.68	216.71	216.45	-83.90	-1,224.66	7,250.60	510.92	82.15	428.77	1.192 Collision Avoidance Req.	
14,700.00	6,439.00	14,590.10	6,383.67	219.41	219.16	-83.90	-1,223.64	7,350.59	510.93	76.75	434.17	1.177 Collision Avoidance Req.	
14,800.00	6,439.00	14,690.10	6,383.67	222.12	221.88	-83.90	-1,222.63	7,450.59	510.93	71.36	439.57	1.162 Collision Avoidance Req.	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	MALLARD EXPLORATION	Local Co-ordinate Reference:	Well CANVASBACK 32-33-6HN
Project:	WELD COUNTY	TVD Reference:	KB 27' @ 4973.00usft
Reference Site:	SEC 32-T9N-R60W	MD Reference:	KB 27' @ 4973.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	CANVASBACK 32-33-6HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 5000.16 Single User Db
Reference Design:	PROPOSAL 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC 32-T9N-R60W - CANVASBACK 32-33-5HN - ORIGINAL WELLBORE - PROPOSAL 1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
14,900.00	6,439.00	14,790.10	6,383.67	224.82	224.59	-83.90	-1,221.61	7,550.58	510.93	65.96	444.98	1.148	Collision Avoidance Req.
15,000.00	6,439.00	14,890.10	6,383.66	227.53	227.31	-83.89	-1,220.60	7,650.58	510.94	60.56	450.38	1.134	Collision Avoidance Req.
15,100.00	6,439.00	14,990.10	6,383.66	230.24	230.02	-83.89	-1,219.58	7,750.57	510.94	55.16	455.78	1.121	Collision Avoidance Req.
15,200.00	6,439.00	15,090.10	6,383.65	232.94	232.74	-83.89	-1,218.57	7,850.57	510.95	49.76	461.19	1.108	Collision Avoidance Req.
15,300.00	6,439.00	15,190.10	6,383.65	235.65	235.46	-83.89	-1,217.55	7,950.56	510.95	44.35	466.60	1.095	Collision Avoidance Req.
15,400.00	6,439.00	15,290.10	6,383.64	238.36	238.17	-83.89	-1,216.54	8,050.56	510.95	38.95	472.00	1.083	Collision Avoidance Req.
15,500.00	6,439.00	15,390.10	6,383.64	241.07	240.89	-83.89	-1,215.53	8,150.55	510.96	33.54	477.41	1.070	Collision Avoidance Req.
15,600.00	6,439.00	15,490.10	6,383.64	243.78	243.61	-83.89	-1,214.51	8,250.54	510.96	28.14	482.82	1.058	Collision Avoidance Req.
15,700.00	6,439.00	15,590.10	6,383.63	246.50	246.33	-83.89	-1,213.50	8,350.54	510.96	22.73	488.23	1.047	Collision Avoidance Req.
15,800.00	6,439.00	15,690.10	6,383.63	249.21	249.05	-83.89	-1,212.48	8,450.53	510.97	17.32	493.65	1.035	Collision Avoidance Req.
15,900.00	6,439.00	15,790.10	6,383.62	251.92	251.77	-83.89	-1,211.47	8,550.53	510.97	11.91	499.06	1.024	Collision Avoidance Req.
16,000.00	6,439.00	15,890.10	6,383.62	254.63	254.49	-83.89	-1,210.45	8,650.52	510.98	6.50	504.47	1.013	Collision Avoidance Req.
16,100.00	6,439.00	15,990.10	6,383.61	257.35	257.21	-83.89	-1,209.44	8,750.52	510.98	1.09	509.89	1.002	Collision Avoidance Req.
16,200.00	6,439.00	16,090.10	6,383.61	260.06	259.93	-83.89	-1,208.42	8,850.51	510.98	-4.32	515.30	0.992	No-Go Zone - Stop Drilling
16,300.00	6,439.00	16,190.10	6,383.61	262.78	262.65	-83.89	-1,207.41	8,950.51	510.99	-9.73	520.72	0.981	No-Go Zone - Stop Drilling
16,400.00	6,439.00	16,290.10	6,383.60	265.49	265.37	-83.89	-1,206.39	9,050.50	510.99	-15.14	526.13	0.971	No-Go Zone - Stop Drilling
16,500.00	6,439.00	16,390.10	6,383.60	268.21	268.09	-83.89	-1,205.38	9,150.50	510.99	-20.56	531.55	0.961	No-Go Zone - Stop Drilling
16,600.00	6,439.00	16,490.10	6,383.59	270.93	270.81	-83.89	-1,204.36	9,250.49	511.00	-25.97	536.97	0.952	No-Go Zone - Stop Drilling
16,700.00	6,439.00	16,590.10	6,383.59	273.64	273.54	-83.89	-1,203.35	9,350.49	511.00	-31.38	542.39	0.942	No-Go Zone - Stop Drilling
16,800.00	6,439.00	16,690.10	6,383.58	276.36	276.26	-83.89	-1,202.33	9,450.48	511.01	-36.80	547.81	0.933	No-Go Zone - Stop Drilling
16,900.00	6,439.00	16,790.10	6,383.58	279.08	278.98	-83.89	-1,201.32	9,550.48	511.01	-42.22	553.23	0.924	No-Go Zone - Stop Drilling
17,000.00	6,439.00	16,890.10	6,383.58	281.80	281.71	-83.89	-1,200.30	9,650.47	511.01	-47.63	558.65	0.915	No-Go Zone - Stop Drilling
17,078.80	6,439.00	16,968.96	6,384.00	283.94	283.85	-83.93	-1,199.61	9,729.33	510.87	-52.11	562.98	0.907	No-Go Zone - Stop Drilling, ES, SF
17,089.98	6,439.00	16,968.96	6,384.00	284.24	283.85	-83.93	-1,199.61	9,729.33	510.99	-51.71	562.70	0.908	No-Go Zone - Stop Drilling

Anticollision Report

Company:	MALLARD EXPLORATION	Local Co-ordinate Reference:	Well CANVASBACK 32-33-6HN
Project:	WELD COUNTY	TVD Reference:	KB 27' @ 4973.00usft
Reference Site:	SEC 32-T9N-R60W	MD Reference:	KB 27' @ 4973.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	CANVASBACK 32-33-6HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 5000.16 Single User Db
Reference Design:	PROPOSAL 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC 32-T9N-R60W - CANVASBACK 32-33-7HN - ORIGINAL WELLBORE - PROPOSAL 1													Offset Site Error: 0.00 usft
Survey Program: 0-MWD													Offset Well Error: 0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	177.62	-20.03	0.83	20.05				
100.00	100.00	100.00	100.00	0.42	0.42	177.62	-20.03	0.83	20.05	19.22	0.83	24.129	
200.00	200.00	200.00	200.00	1.25	1.25	177.62	-20.03	0.83	20.05	17.56	2.49	8.050	CC
300.00	300.00	299.31	299.29	1.74	1.86	179.27	-21.66	0.28	21.68	18.12	3.56	6.090	
400.00	399.98	398.48	398.33	2.24	3.17	-25.21	-26.54	-1.39	25.04	19.79	5.25	4.766	
500.00	499.84	497.54	497.00	3.42	4.12	-24.47	-34.64	-4.15	28.57	21.32	7.25	3.942	
600.00	599.45	596.46	595.20	4.32	4.93	-24.68	-45.96	-8.01	32.23	23.39	8.83	3.649	
700.00	698.70	695.27	692.80	5.10	5.65	-25.56	-60.45	-12.96	36.02	25.82	10.20	3.533	
800.00	797.47	793.94	789.70	5.81	6.32	-26.89	-78.10	-18.98	39.96	28.55	11.41	3.503	
900.00	895.62	892.50	885.77	6.47	6.95	-28.54	-98.86	-26.06	44.07	31.56	12.51	3.523	
1,000.00	993.06	990.92	980.91	7.10	7.56	-30.41	-122.71	-34.20	48.37	34.85	13.52	3.578	
1,100.00	1,089.64	1,089.21	1,075.00	7.71	8.15	-32.42	-149.60	-43.38	52.88	38.42	14.46	3.657	
1,200.00	1,185.27	1,187.38	1,167.95	8.30	8.72	-34.51	-179.49	-53.57	57.62	42.28	15.35	3.755	
1,290.38	1,270.77	1,275.99	1,250.87	8.77	9.23	-36.43	-209.04	-63.66	62.13	46.05	16.08	3.865	
1,300.00	1,279.82	1,285.41	1,259.63	8.80	9.28	-36.63	-212.32	-64.78	62.63	46.50	16.13	3.883	
1,400.00	1,373.90	1,383.22	1,349.86	9.11	9.83	-37.77	-248.02	-76.96	69.53	52.66	16.87	4.121	
1,500.00	1,467.99	1,480.55	1,438.33	9.45	10.37	-37.45	-286.42	-90.06	79.37	61.56	17.81	4.457	
1,600.00	1,562.07	1,577.20	1,524.77	9.81	10.89	-36.17	-327.35	-104.02	92.14	73.30	18.85	4.889	
1,700.00	1,656.16	1,672.95	1,608.91	10.18	11.41	-34.39	-370.59	-118.78	107.90	87.98	19.92	5.416	
1,800.00	1,750.24	1,767.61	1,690.54	10.57	11.90	-32.44	-415.93	-134.25	126.69	105.70	20.99	6.036	
1,900.00	1,844.32	1,863.35	1,771.71	10.96	12.30	-30.53	-463.98	-150.64	148.13	126.11	22.01	6.729	
2,000.00	1,938.41	1,960.85	1,854.18	11.37	12.66	-29.03	-513.19	-167.43	170.01	146.96	23.05	7.376	
2,100.00	2,032.49	2,058.34	1,936.66	11.78	13.04	-27.87	-562.39	-184.22	191.97	167.90	24.08	7.974	
2,200.00	2,126.57	2,155.83	2,019.13	12.21	13.43	-26.95	-611.60	-201.01	214.00	188.90	25.10	8.526	
2,300.00	2,220.66	2,253.32	2,101.60	12.64	13.82	-26.21	-660.80	-217.80	236.07	209.94	26.13	9.035	
2,400.00	2,314.74	2,350.82	2,184.08	13.08	14.21	-25.59	-710.01	-234.58	258.17	231.01	27.16	9.505	
2,500.00	2,408.82	2,448.31	2,266.55	13.52	15.01	-25.06	-759.21	-251.37	280.29	252.10	28.19	9.942	
2,600.00	2,502.91	2,545.80	2,349.02	13.97	15.92	-24.62	-808.42	-268.16	302.44	273.20	29.24	10.344	
2,700.00	2,596.99	2,643.29	2,431.49	14.42	16.83	-24.23	-857.62	-284.95	324.60	294.31	30.29	10.716	
2,800.00	2,691.07	2,740.79	2,513.97	14.88	17.73	-23.90	-906.83	-301.74	346.77	315.42	31.35	11.062	
2,900.00	2,785.16	2,838.28	2,596.44	15.35	18.64	-23.60	-956.04	-318.53	368.95	336.54	32.41	11.383	
3,000.00	2,879.24	2,935.77	2,678.91	15.81	19.55	-23.34	-1,005.24	-335.32	391.14	357.66	33.48	11.682	
3,100.00	2,973.33	3,033.26	2,761.38	16.28	20.47	-23.11	-1,054.45	-352.11	413.33	378.78	34.56	11.961	
3,200.00	3,067.41	3,130.76	2,843.86	16.76	21.38	-22.90	-1,103.65	-368.89	435.53	399.90	35.64	12.221	
3,300.00	3,161.49	3,228.25	2,926.33	17.23	22.30	-22.71	-1,152.86	-385.68	457.74	421.02	36.73	12.464	
3,400.00	3,255.58	3,325.74	3,008.80	17.71	23.21	-22.53	-1,202.06	-402.47	479.95	442.14	37.82	12.691	
3,500.00	3,349.66	3,423.23	3,091.27	18.20	24.13	-22.38	-1,251.27	-419.26	502.17	463.25	38.91	12.905	
3,600.00	3,443.74	3,520.73	3,173.75	18.68	25.05	-22.23	-1,300.47	-436.05	524.39	484.37	40.01	13.105	
3,700.00	3,537.83	3,618.22	3,256.22	19.18	25.97	-22.10	-1,349.68	-452.84	546.61	505.49	41.12	13.294	
3,800.00	3,631.91	3,715.71	3,338.69	19.70	26.89	-21.98	-1,398.88	-469.63	568.83	526.60	42.23	13.471	
3,900.00	3,725.99	3,813.20	3,421.17	20.28	27.81	-21.87	-1,448.09	-486.42	591.06	547.72	43.34	13.638	
4,000.00	3,820.08	3,910.70	3,503.64	20.87	28.73	-21.76	-1,497.29	-503.20	613.28	568.83	44.45	13.797	
4,100.00	3,914.16	4,008.19	3,586.11	21.47	29.65	-21.67	-1,546.50	-519.99	635.51	589.94	45.57	13.946	
4,200.00	4,008.24	4,105.68	3,668.58	22.07	30.57	-21.58	-1,595.71	-536.78	657.75	611.06	46.69	14.087	
4,300.00	4,102.33	4,203.17	3,751.06	22.68	31.49	-21.49	-1,644.91	-553.57	679.98	632.16	47.81	14.222	
4,400.00	4,196.41	4,300.66	3,833.53	23.28	32.41	-21.41	-1,694.12	-570.36	702.21	653.27	48.94	14.349	
4,500.00	4,290.49	4,398.16	3,916.00	23.88	33.33	-21.34	-1,743.32	-587.15	724.45	674.38	50.07	14.470	
4,600.00	4,384.58	4,495.65	3,998.47	24.49	34.25	-21.27	-1,792.53	-603.94	746.68	695.49	51.20	14.585	
4,700.00	4,478.66	4,593.14	4,080.95	25.09	35.18	-21.20	-1,841.73	-620.73	768.92	716.59	52.33	14.694	
4,800.00	4,572.75	4,690.63	4,163.42	25.69	36.10	-21.14	-1,890.94	-637.51	791.16	737.70	53.46	14.798	
4,900.00	4,666.83	4,815.79	4,270.22	26.30	37.25	-21.10	-1,952.68	-658.58	812.16	757.12	55.04	14.755	
5,000.00	4,760.91	4,952.35	4,389.82	26.90	38.42	-21.15	-2,015.04	-679.86	828.80	772.03	56.77	14.600	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	MALLARD EXPLORATION	Local Co-ordinate Reference:	Well CANVASBACK 32-33-6HN
Project:	WELD COUNTY	TVD Reference:	KB 27' @ 4973.00usft
Reference Site:	SEC 32-T9N-R60W	MD Reference:	KB 27' @ 4973.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	CANVASBACK 32-33-6HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 5000.16 Single User Db
Reference Design:	PROPOSAL 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC 32-T9N-R60W - CANVASBACK 32-33-7HN - ORIGINAL WELLBORE - PROPOSAL 1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD												Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.00	4,855.00	5,090.73	4,514.07	27.51	39.51	-21.32	-2,072.66	-699.52	840.83	782.44	58.39	14.401	
5,200.00	4,949.08	5,230.31	4,642.23	28.11	40.49	-21.59	-2,124.95	-717.36	848.18	788.31	59.87	14.166	
5,300.00	5,043.16	5,370.43	4,773.44	28.72	41.37	-21.98	-2,171.45	-733.22	850.83	789.61	61.22	13.898	
5,400.00	5,137.25	5,510.43	4,906.78	29.32	42.14	-22.48	-2,211.78	-746.98	848.78	786.37	62.41	13.601	
5,500.00	5,231.33	5,649.64	5,041.28	29.93	42.79	-23.10	-2,245.73	-758.57	842.08	778.64	63.44	13.274	
5,600.00	5,325.41	5,787.42	5,175.96	30.53	43.33	-23.86	-2,273.20	-767.94	830.81	766.50	64.31	12.919	
5,700.00	5,419.50	5,923.17	5,309.86	31.14	43.74	-24.77	-2,294.24	-775.12	815.09	750.08	65.02	12.536	
5,800.00	5,513.58	6,056.34	5,442.10	31.75	44.04	-25.85	-2,309.02	-780.16	795.11	729.53	65.58	12.125	
5,900.00	5,607.66	6,186.45	5,571.86	32.35	44.25	-27.12	-2,317.84	-783.17	771.05	705.06	65.99	11.684	
6,000.00	5,701.75	6,313.07	5,698.43	32.96	44.35	-28.62	-2,321.05	-784.27	743.16	676.91	66.26	11.217	
6,100.00	5,795.83	6,410.48	5,795.83	33.56	44.34	-29.95	-2,321.08	-784.28	713.22	646.33	66.88	10.663	
6,113.74	5,808.76	6,423.40	5,808.76	33.64	44.34	-30.14	-2,321.08	-784.28	709.13	642.14	66.98	10.586	
6,150.00	5,843.02	6,456.49	5,841.83	33.86	44.34	-19.70	-2,321.08	-783.50	698.31	631.04	67.28	10.380	
6,200.00	5,890.57	6,501.56	5,886.71	34.18	44.37	-3.58	-2,321.03	-779.39	683.35	615.67	67.68	10.096	
6,250.00	5,938.13	6,546.24	5,930.73	34.48	44.41	12.69	-2,320.96	-771.84	668.43	600.38	68.05	9.822	
6,300.00	5,985.36	6,590.60	5,973.72	34.71	44.45	27.10	-2,320.85	-760.98	653.65	585.26	68.40	9.557	
6,350.00	6,031.88	6,634.72	6,015.53	34.89	44.47	38.76	-2,320.71	-746.92	639.11	570.40	68.72	9.301	
6,400.00	6,077.36	6,678.67	6,055.98	35.04	44.47	47.85	-2,320.53	-729.74	624.91	555.91	68.99	9.057	
6,450.00	6,121.43	6,722.53	6,094.91	35.16	44.47	54.94	-2,320.33	-709.57	611.14	541.92	69.22	8.829	
6,500.00	6,163.76	6,766.34	6,132.15	35.26	44.46	60.53	-2,320.09	-686.50	597.90	528.50	69.39	8.616	
6,550.00	6,204.04	6,810.18	6,167.53	35.35	44.43	65.03	-2,319.83	-660.65	585.28	515.76	69.52	8.419	
6,600.00	6,241.95	6,854.08	6,200.88	35.42	44.40	68.71	-2,319.54	-632.12	573.37	503.77	69.60	8.238	
6,650.00	6,277.21	6,900.00	6,233.32	35.47	44.35	71.77	-2,319.21	-599.64	562.27	492.63	69.65	8.073	
6,700.00	6,309.55	6,942.21	6,260.76	35.51	44.30	74.34	-2,318.89	-567.58	552.04	482.32	69.73	7.917	
6,750.00	6,338.72	6,986.50	6,286.94	35.54	44.24	76.51	-2,318.53	-531.86	542.78	472.98	69.80	7.776	
6,800.00	6,364.50	7,030.97	6,310.36	35.57	44.18	78.34	-2,318.14	-494.07	534.55	464.66	69.90	7.648	
6,850.00	6,386.70	7,075.63	6,330.86	35.60	44.11	79.87	-2,317.74	-454.42	527.42	457.38	70.04	7.530	
6,900.00	6,405.14	7,120.48	6,348.29	35.66	44.04	81.14	-2,317.32	-413.11	521.45	451.21	70.24	7.423	
6,950.00	6,419.68	7,165.52	6,362.48	35.74	43.96	82.16	-2,316.89	-370.38	516.69	446.17	70.52	7.327	
7,000.00	6,430.22	7,210.74	6,373.30	35.86	43.89	82.95	-2,316.44	-326.49	513.17	442.30	70.87	7.241	
7,050.00	6,436.67	7,256.13	6,380.66	36.05	43.82	83.52	-2,315.99	-281.71	510.93	439.62	71.30	7.166	
7,100.00	6,438.99	7,301.67	6,384.45	36.30	43.75	83.86	-2,315.53	-236.34	509.99	438.17	71.82	7.101	
7,102.92	6,439.00	7,304.33	6,384.56	36.32	43.74	83.87	-2,315.50	-233.68	509.97	438.12	71.85	7.098	
7,146.41	6,439.00	7,345.70	6,385.00	36.59	43.69	83.92	-2,315.08	-192.32	509.92	437.46	72.45	7.038	
7,200.00	6,439.00	7,399.29	6,385.00	36.99	43.63	83.92	-2,314.54	-138.73	509.92	436.65	73.27	6.959	
7,300.00	6,439.00	7,499.29	6,384.99	37.90	43.55	83.92	-2,313.53	-38.74	509.92	434.79	75.12	6.788	
7,400.00	6,439.00	7,599.29	6,384.99	38.99	43.53	83.92	-2,312.51	61.26	509.92	432.60	77.32	6.595	
7,500.00	6,439.00	7,699.29	6,384.98	40.25	43.61	83.92	-2,311.50	161.25	509.91	430.09	79.82	6.388	
7,600.00	6,439.00	7,799.29	6,384.98	41.65	43.86	83.92	-2,310.49	261.25	509.91	427.30	82.61	6.173	
7,700.00	6,439.00	7,899.29	6,384.98	43.18	44.43	83.92	-2,309.47	361.24	509.91	424.26	85.65	5.953	
7,800.00	6,439.00	7,999.29	6,384.97	44.82	45.42	83.92	-2,308.46	461.24	509.91	420.98	88.93	5.734	
7,900.00	6,439.00	8,099.29	6,384.97	46.56	46.79	83.92	-2,307.45	561.23	509.91	417.50	92.41	5.518	
8,000.00	6,439.00	8,199.29	6,384.96	48.39	48.42	83.92	-2,306.43	661.23	509.91	413.83	96.07	5.307	
8,100.00	6,439.00	8,299.29	6,384.96	50.30	50.21	83.92	-2,305.42	761.22	509.91	410.00	99.90	5.104	
8,200.00	6,439.00	8,399.29	6,384.96	52.29	52.12	83.92	-2,304.41	861.22	509.90	406.03	103.87	4.909	
8,300.00	6,439.00	8,499.29	6,384.95	54.34	54.12	83.92	-2,303.39	961.21	509.90	401.93	107.97	4.722	
8,400.00	6,439.00	8,599.29	6,384.95	56.45	56.18	83.92	-2,302.38	1,061.21	509.90	397.71	112.19	4.545	
8,500.00	6,439.00	8,699.29	6,384.95	58.61	58.31	83.91	-2,301.37	1,161.20	509.90	393.39	116.51	4.376	
8,600.00	6,439.00	8,799.29	6,384.94	60.82	60.49	83.91	-2,300.35	1,261.20	509.90	388.98	120.92	4.217	
8,700.00	6,439.00	8,899.29	6,384.94	63.06	62.71	83.91	-2,299.34	1,361.19	509.90	384.49	125.41	4.066	
8,800.00	6,439.00	8,999.29	6,384.94	65.35	64.98	83.91	-2,298.33	1,461.19	509.90	379.92	129.98	3.923	
8,900.00	6,439.00	9,099.29	6,384.93	67.67	67.28	83.91	-2,297.32	1,561.18	509.90	375.29	134.61	3.788	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	MALLARD EXPLORATION	Local Co-ordinate Reference:	Well CANVASBACK 32-33-6HN
Project:	WELD COUNTY	TVD Reference:	KB 27' @ 4973.00usft
Reference Site:	SEC 32-T9N-R60W	MD Reference:	KB 27' @ 4973.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	CANVASBACK 32-33-6HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 5000.16 Single User Db
Reference Design:	PROPOSAL 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC 32-T9N-R60W - CANVASBACK 32-33-7HN - ORIGINAL WELLBORE - PROPOSAL 1													Offset Site Error: 0.00 usft
Survey Program: 0-MWD													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
9,000.00	6,439.00	9,199.29	6,384.93	70.01	69.61	83.91	-2,296.30	1,661.18	509.89	370.60	139.30	3.660	
9,100.00	6,439.00	9,299.29	6,384.93	72.39	71.97	83.91	-2,295.29	1,761.17	509.89	365.85	144.04	3.540	
9,200.00	6,439.00	9,399.29	6,384.93	74.79	74.36	83.91	-2,294.28	1,861.17	509.89	361.06	148.83	3.426	
9,300.00	6,439.00	9,499.29	6,384.92	77.21	76.76	83.91	-2,293.26	1,961.16	509.89	356.22	153.67	3.318	
9,400.00	6,439.00	9,599.29	6,384.92	79.65	79.19	83.91	-2,292.25	2,061.16	509.89	351.34	158.55	3.216	
9,500.00	6,439.00	9,699.29	6,384.92	82.12	81.64	83.91	-2,291.24	2,161.15	509.89	346.43	163.46	3.119	
9,600.00	6,439.00	9,799.29	6,384.92	84.59	84.11	83.91	-2,290.22	2,261.15	509.89	341.48	168.40	3.028	
9,700.00	6,439.00	9,899.29	6,384.91	87.09	86.59	83.91	-2,289.21	2,361.14	509.88	336.50	173.38	2.941	
9,800.00	6,439.00	9,999.29	6,384.91	89.60	89.09	83.91	-2,288.20	2,461.14	509.88	331.50	178.38	2.858	
9,900.00	6,439.00	10,099.29	6,384.91	92.12	91.60	83.91	-2,287.18	2,561.13	509.88	326.47	183.41	2.780	
10,000.00	6,439.00	10,199.29	6,384.91	94.65	94.12	83.91	-2,286.17	2,661.13	509.88	321.41	188.47	2.705	
10,100.00	6,439.00	10,299.29	6,384.91	97.20	96.66	83.91	-2,285.16	2,761.12	509.88	316.34	193.54	2.634	
10,200.00	6,439.00	10,399.29	6,384.90	99.75	99.20	83.91	-2,284.14	2,861.12	509.88	311.24	198.63	2.567	
10,300.00	6,439.00	10,499.29	6,384.90	102.32	101.76	83.91	-2,283.13	2,961.11	509.88	306.13	203.75	2.503	
10,400.00	6,439.00	10,599.29	6,384.90	104.89	104.32	83.91	-2,282.12	3,061.11	509.87	301.00	208.88	2.441	
10,500.00	6,439.00	10,699.29	6,384.90	107.47	106.90	83.91	-2,281.10	3,161.10	509.87	295.85	214.02	2.382	
10,600.00	6,439.00	10,799.29	6,384.90	110.06	109.48	83.91	-2,280.09	3,261.09	509.87	290.69	219.18	2.326	
10,700.00	6,439.00	10,899.29	6,384.90	112.66	112.06	83.91	-2,279.08	3,361.09	509.87	285.51	224.36	2.273	
10,800.00	6,439.00	10,999.29	6,384.89	115.26	114.66	83.91	-2,278.06	3,461.08	509.87	280.33	229.54	2.221	
10,900.00	6,439.00	11,099.29	6,384.89	117.87	117.26	83.91	-2,277.05	3,561.08	509.87	275.13	234.74	2.172	
11,000.00	6,439.00	11,199.29	6,384.89	120.49	119.87	83.91	-2,276.04	3,661.07	509.87	269.92	239.95	2.125	
11,100.00	6,439.00	11,299.29	6,384.89	123.11	122.48	83.91	-2,275.03	3,761.07	509.86	264.69	245.17	2.080	
11,200.00	6,439.00	11,399.29	6,384.89	125.73	125.10	83.91	-2,274.01	3,861.06	509.86	259.46	250.40	2.036	
11,300.00	6,439.00	11,499.29	6,384.89	128.36	127.72	83.91	-2,273.00	3,961.06	509.86	254.22	255.64	1.994 Collision Risk Procedures Req.	
11,400.00	6,439.00	11,599.29	6,384.89	131.00	130.35	83.91	-2,271.99	4,061.05	509.86	248.97	260.89	1.954 Collision Risk Procedures Req.	
11,500.00	6,439.00	11,699.29	6,384.89	133.64	132.98	83.91	-2,270.97	4,161.05	509.86	243.71	266.15	1.916 Collision Risk Procedures Req.	
11,600.00	6,439.00	11,799.29	6,384.89	136.28	135.62	83.91	-2,269.96	4,261.04	509.86	238.45	271.41	1.879 Collision Risk Procedures Req.	
11,700.00	6,439.00	11,899.29	6,384.89	138.93	138.26	83.91	-2,268.95	4,361.04	509.86	233.18	276.68	1.843 Collision Risk Procedures Req.	
11,800.00	6,439.00	11,999.29	6,384.89	141.58	140.90	83.91	-2,267.93	4,461.03	509.86	227.90	281.96	1.808 Collision Risk Procedures Req.	
11,900.00	6,439.00	12,099.29	6,384.89	144.23	143.55	83.91	-2,266.92	4,561.03	509.85	222.61	287.24	1.775 Collision Risk Procedures Req.	
12,000.00	6,439.00	12,199.29	6,384.89	146.89	146.20	83.91	-2,265.91	4,661.02	509.85	217.32	292.53	1.743 Collision Risk Procedures Req.	
12,100.00	6,439.00	12,299.29	6,384.89	149.55	148.85	83.91	-2,264.89	4,761.02	509.85	212.02	297.83	1.712 Collision Risk Procedures Req.	
12,200.00	6,439.00	12,399.29	6,384.89	152.21	151.51	83.91	-2,263.88	4,861.01	509.85	206.72	303.13	1.682 Collision Risk Procedures Req.	
12,300.00	6,439.00	12,499.29	6,384.89	154.88	154.17	83.91	-2,262.87	4,961.01	509.85	201.41	308.44	1.653 Collision Risk Procedures Req.	
12,400.00	6,439.00	12,599.29	6,384.89	157.55	156.83	83.91	-2,261.86	5,061.00	509.85	196.10	313.75	1.625 Collision Risk Procedures Req.	
12,500.00	6,439.00	12,699.29	6,384.89	160.22	159.50	83.91	-2,260.84	5,161.00	509.85	190.78	319.07	1.598 Collision Risk Procedures Req.	
12,600.00	6,439.00	12,799.29	6,384.89	162.89	162.17	83.91	-2,259.83	5,260.99	509.84	185.46	324.39	1.572 Collision Risk Procedures Req.	
12,700.00	6,439.00	12,899.29	6,384.89	165.57	164.84	83.91	-2,258.82	5,360.99	509.84	180.13	329.71	1.546 Collision Risk Procedures Req.	
12,800.00	6,439.00	12,999.29	6,384.89	168.24	167.51	83.91	-2,257.80	5,460.98	509.84	174.80	335.04	1.522 Collision Risk Procedures Req.	
12,900.00	6,439.00	13,099.29	6,384.89	170.92	170.18	83.91	-2,256.79	5,560.98	509.84	169.46	340.38	1.498 Collision Avoidance Req.	
13,000.00	6,439.00	13,199.29	6,384.89	173.60	172.86	83.91	-2,255.78	5,660.97	509.84	164.13	345.71	1.475 Collision Avoidance Req.	
13,100.00	6,439.00	13,299.29	6,384.89	176.29	175.54	83.91	-2,254.77	5,760.97	509.84	158.78	351.05	1.452 Collision Avoidance Req.	
13,200.00	6,439.00	13,399.29	6,384.89	178.97	178.22	83.91	-2,253.75	5,860.96	509.84	153.44	356.40	1.431 Collision Avoidance Req.	
13,300.00	6,439.00	13,499.29	6,384.89	181.66	180.90	83.91	-2,252.74	5,960.96	509.83	148.09	361.74	1.409 Collision Avoidance Req.	
13,400.00	6,439.00	13,599.29	6,384.89	184.35	183.58	83.91	-2,251.73	6,060.95	509.83	142.74	367.09	1.389 Collision Avoidance Req.	
13,500.00	6,439.00	13,699.29	6,384.90	187.04	186.26	83.91	-2,250.71	6,160.95	509.83	137.39	372.45	1.369 Collision Avoidance Req.	
13,600.00	6,439.00	13,799.29	6,384.90	189.73	188.95	83.91	-2,249.70	6,260.94	509.83	132.03	377.80	1.349 Collision Avoidance Req.	
13,700.00	6,439.00	13,899.29	6,384.90	192.42	191.64	83.91	-2,248.69	6,360.94	509.83	126.67	383.16	1.331 Collision Avoidance Req.	
13,800.00	6,439.00	13,999.29	6,384.90	195.11	194.33	83.91	-2,247.67	6,460.93	509.83	121.31	388.52	1.312 Collision Avoidance Req.	
13,900.00	6,439.00	14,099.29	6,384.90	197.81	197.02	83.91	-2,246.66	6,560.93	509.83	115.94	393.88	1.294 Collision Avoidance Req.	
14,000.00	6,439.00	14,199.29	6,384.90	200.51	199.71	83.91	-2,245.65	6,660.92	509.82	110.57	399.25	1.277 Collision Avoidance Req.	
14,100.00	6,439.00	14,299.29	6,384.90	203.20	202.40	83.91	-2,244.64	6,760.92	509.82	105.20	404.62	1.260 Collision Avoidance Req.	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	MALLARD EXPLORATION	Local Co-ordinate Reference:	Well CANVASBACK 32-33-6HN
Project:	WELD COUNTY	TVD Reference:	KB 27' @ 4973.00usft
Reference Site:	SEC 32-T9N-R60W	MD Reference:	KB 27' @ 4973.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	CANVASBACK 32-33-6HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 5000.16 Single User Db
Reference Design:	PROPOSAL 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC 32-T9N-R60W - CANVASBACK 32-33-7HN - ORIGINAL WELLBORE - PROPOSAL 1													Offset Site Error: 0.00 usft
Survey Program: 0-MWD													Offset Well Error: 0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
14,200.00	6,439.00	14,399.29	6,384.91	205.90	205.10	83.91	-2,243.62	6,860.91	509.82	99.83	409.99	1.244	Collision Avoidance Req.
14,300.00	6,439.00	14,499.29	6,384.91	208.60	207.79	83.91	-2,242.61	6,960.91	509.82	94.46	415.36	1.227	Collision Avoidance Req.
14,400.00	6,439.00	14,599.29	6,384.91	211.30	210.49	83.91	-2,241.60	7,060.90	509.82	89.08	420.73	1.212	Collision Avoidance Req.
14,500.00	6,439.00	14,699.29	6,384.91	214.01	213.19	83.91	-2,240.59	7,160.90	509.82	83.71	426.11	1.196	Collision Avoidance Req.
14,600.00	6,439.00	14,799.29	6,384.92	216.71	215.89	83.91	-2,239.57	7,260.89	509.82	78.33	431.49	1.182	Collision Avoidance Req.
14,700.00	6,439.00	14,899.29	6,384.92	219.41	218.59	83.91	-2,238.56	7,360.88	509.81	72.94	436.87	1.167	Collision Avoidance Req.
14,800.00	6,439.00	14,999.29	6,384.92	222.12	221.29	83.91	-2,237.55	7,460.88	509.81	67.56	442.25	1.153	Collision Avoidance Req.
14,900.00	6,439.00	15,099.29	6,384.92	224.82	223.99	83.91	-2,236.53	7,560.87	509.81	62.18	447.63	1.139	Collision Avoidance Req.
15,000.00	6,439.00	15,199.29	6,384.92	227.53	226.69	83.91	-2,235.52	7,660.87	509.81	56.79	453.02	1.125	Collision Avoidance Req.
15,100.00	6,439.00	15,299.29	6,384.93	230.24	229.39	83.91	-2,234.51	7,760.86	509.81	51.40	458.41	1.112	Collision Avoidance Req.
15,200.00	6,439.00	15,399.29	6,384.93	232.94	232.10	83.91	-2,233.50	7,860.86	509.81	46.01	463.79	1.099	Collision Avoidance Req.
15,300.00	6,439.00	15,499.29	6,384.93	235.65	234.80	83.91	-2,232.48	7,960.85	509.80	40.62	469.18	1.087	Collision Avoidance Req.
15,400.00	6,439.00	15,599.29	6,384.94	238.36	237.51	83.91	-2,231.47	8,060.85	509.80	35.23	474.57	1.074	Collision Avoidance Req.
15,500.00	6,439.00	15,699.29	6,384.94	241.07	240.21	83.91	-2,230.46	8,160.84	509.80	29.83	479.97	1.062	Collision Avoidance Req.
15,600.00	6,439.00	15,799.29	6,384.94	243.78	242.92	83.91	-2,229.44	8,260.84	509.80	24.44	485.36	1.050	Collision Avoidance Req.
15,700.00	6,439.00	15,899.29	6,384.95	246.50	245.63	83.91	-2,228.43	8,360.83	509.80	19.04	490.76	1.039	Collision Avoidance Req.
15,800.00	6,439.00	15,999.29	6,384.95	249.21	248.34	83.91	-2,227.42	8,460.83	509.80	13.65	496.15	1.028	Collision Avoidance Req.
15,900.00	6,439.00	16,099.29	6,384.95	251.92	251.05	83.91	-2,226.41	8,560.82	509.80	8.25	501.55	1.016	Collision Avoidance Req.
16,000.00	6,439.00	16,199.29	6,384.96	254.63	253.76	83.91	-2,225.39	8,660.82	509.79	2.85	506.95	1.006	Collision Avoidance Req.
16,100.00	6,439.00	16,299.29	6,384.96	257.35	256.47	83.91	-2,224.38	8,760.81	509.79	-2.55	512.35	0.995	No-Go Zone - Stop Drilling
16,200.00	6,439.00	16,399.29	6,384.96	260.06	259.18	83.92	-2,223.37	8,860.81	509.79	-7.96	517.75	0.985	No-Go Zone - Stop Drilling
16,300.00	6,439.00	16,499.29	6,384.97	262.78	261.89	83.92	-2,222.36	8,960.80	509.79	-13.36	523.15	0.974	No-Go Zone - Stop Drilling
16,400.00	6,439.00	16,599.29	6,384.97	265.49	264.60	83.92	-2,221.34	9,060.80	509.79	-18.76	528.55	0.964	No-Go Zone - Stop Drilling
16,500.00	6,439.00	16,699.29	6,384.97	268.21	267.31	83.92	-2,220.33	9,160.79	509.79	-24.17	533.96	0.955	No-Go Zone - Stop Drilling
16,600.00	6,439.00	16,799.29	6,384.98	270.93	270.03	83.92	-2,219.32	9,260.79	509.79	-29.58	539.36	0.945	No-Go Zone - Stop Drilling
16,700.00	6,439.00	16,899.29	6,384.98	273.64	272.74	83.92	-2,218.31	9,360.78	509.78	-34.98	544.77	0.936	No-Go Zone - Stop Drilling
16,800.00	6,439.00	16,999.29	6,384.99	276.36	275.46	83.92	-2,217.29	9,460.78	509.78	-40.39	550.17	0.927	No-Go Zone - Stop Drilling
16,900.00	6,439.00	17,099.29	6,384.99	279.08	278.17	83.92	-2,216.28	9,560.77	509.78	-45.80	555.58	0.918	No-Go Zone - Stop Drilling
17,000.00	6,439.00	17,199.29	6,385.00	281.80	280.89	83.92	-2,215.27	9,660.77	509.78	-51.21	560.99	0.909	No-Go Zone - Stop Drilling
17,089.98	6,439.00	17,289.27	6,385.00	284.24	282.49	83.92	-2,214.36	9,750.74	509.78	-55.23	565.00	0.902	No-Go Zone - Stop Drilling, ES, SF

Anticollision Report

Company:	MALLARD EXPLORATION	Local Co-ordinate Reference:	Well CANVASBACK 32-33-6HN
Project:	WELD COUNTY	TVD Reference:	KB 27' @ 4973.00usft
Reference Site:	SEC 32-T9N-R60W	MD Reference:	KB 27' @ 4973.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	CANVASBACK 32-33-6HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 5000.16 Single User Db
Reference Design:	PROPOSAL 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC 32-T9N-R60W - CANVASBACK 32-33-8HN - ORIGINAL WELLBORE - PROPOSAL 1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD												Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	1.00	1.00	0.00	0.00	177.62	-40.07	1.66	40.11				
100.00	100.00	100.99	100.99	0.42	0.42	177.62	-40.07	1.66	40.11	39.27	0.84	47.673	
200.00	200.00	200.00	199.98	1.25	1.49	178.31	-41.76	1.23	41.79	39.09	2.70	15.485 ES	
300.00	300.00	298.02	297.87	1.74	2.96	-179.97	-46.70	-0.02	46.81	42.17	4.64	10.088	
400.00	399.98	396.11	395.58	2.24	3.96	-25.15	-54.89	-2.10	53.62	47.56	6.06	8.847	
500.00	499.84	493.96	492.72	3.42	4.78	-24.69	-66.28	-5.00	60.62	52.69	7.93	7.642	
600.00	599.45	591.57	589.16	4.32	5.51	-24.91	-80.85	-8.70	67.79	58.33	9.46	7.168	
700.00	698.70	688.93	684.79	5.10	6.19	-25.62	-98.53	-13.20	75.11	64.32	10.79	6.961	
800.00	797.47	786.04	779.50	5.81	6.82	-26.68	-119.30	-18.48	82.61	70.62	12.00	6.887	
900.00	895.62	882.90	873.19	6.47	7.43	-27.98	-143.11	-24.54	90.32	77.21	13.10	6.892	
1,000.00	993.06	979.51	965.76	7.10	8.02	-29.47	-169.89	-31.35	98.24	84.10	14.14	6.948	
1,100.00	1,089.64	1,075.86	1,057.10	7.71	8.59	-31.08	-199.60	-38.90	106.42	91.31	15.11	7.041	
1,200.00	1,185.27	1,171.96	1,147.12	8.30	9.14	-32.77	-232.18	-47.19	114.88	98.84	16.04	7.161	
1,290.38	1,270.77	1,258.59	1,227.27	8.77	9.63	-34.34	-264.05	-55.29	122.80	105.98	16.81	7.304	
1,300.00	1,279.82	1,267.80	1,235.72	8.80	9.69	-34.52	-267.58	-56.19	123.67	106.80	16.87	7.331	
1,400.00	1,373.90	1,363.24	1,322.70	9.11	10.22	-35.88	-305.65	-65.87	134.44	116.86	17.58	7.647	
1,500.00	1,467.99	1,458.03	1,407.73	9.45	10.74	-36.51	-346.23	-76.18	148.26	129.86	18.40	8.058	
1,600.00	1,562.07	1,551.97	1,490.60	9.81	11.24	-36.56	-389.11	-87.09	165.03	145.75	19.28	8.559	
1,700.00	1,656.16	1,644.87	1,571.08	10.18	11.74	-36.19	-434.08	-98.52	184.71	164.51	20.21	9.142	
1,800.00	1,750.24	1,736.56	1,648.99	10.57	12.22	-35.54	-480.93	-110.44	207.26	186.12	21.15	9.801	
1,900.00	1,844.32	1,826.88	1,724.19	10.96	12.68	-34.73	-529.41	-122.76	232.67	210.58	22.09	10.534	
2,000.00	1,938.41	1,915.69	1,796.55	11.37	13.13	-33.83	-579.30	-135.45	260.89	237.88	23.01	11.336	
2,100.00	2,032.49	2,000.00	1,863.74	11.78	13.55	-32.93	-628.65	-148.00	291.92	268.10	23.81	12.258	
2,200.00	2,126.57	2,088.25	1,932.44	12.21	13.98	-31.98	-682.34	-161.65	325.64	300.85	24.79	13.134	
2,300.00	2,220.66	2,177.45	2,000.42	12.64	14.32	-31.06	-738.30	-175.88	361.63	335.94	25.70	14.073	
2,400.00	2,314.74	2,270.50	2,071.19	13.08	14.89	-30.26	-796.85	-190.77	397.94	371.23	26.71	14.897	
2,500.00	2,408.82	2,363.54	2,141.96	13.52	15.93	-29.60	-855.40	-205.65	434.30	406.56	27.74	15.653	
2,600.00	2,502.91	2,456.59	2,212.72	13.97	16.97	-29.03	-913.95	-220.54	470.71	441.93	28.78	16.355	
2,700.00	2,596.99	2,549.63	2,283.49	14.42	18.02	-28.55	-972.49	-235.43	507.15	477.32	29.82	17.005	
2,800.00	2,691.07	2,642.68	2,354.25	14.88	19.07	-28.13	-1,031.04	-250.32	543.61	512.74	30.87	17.610	
2,900.00	2,785.16	2,735.73	2,425.02	15.35	20.12	-27.76	-1,089.59	-265.21	580.10	548.18	31.92	18.171	
3,000.00	2,879.24	2,828.77	2,495.78	15.81	21.18	-27.44	-1,148.14	-280.09	616.61	583.62	32.98	18.694	
3,100.00	2,973.33	2,921.82	2,566.55	16.28	22.24	-27.16	-1,206.69	-294.98	653.13	619.08	34.05	19.182	
3,200.00	3,067.41	3,014.86	2,637.31	16.76	23.29	-26.90	-1,265.24	-309.87	689.66	654.54	35.12	19.637	
3,300.00	3,161.49	3,107.91	2,708.08	17.23	24.35	-26.67	-1,323.79	-324.76	726.21	690.01	36.20	20.062	
3,400.00	3,255.58	3,200.95	2,778.85	17.71	25.42	-26.46	-1,382.34	-339.65	762.76	725.48	37.28	20.461	
3,500.00	3,349.66	3,294.00	2,849.61	18.20	26.48	-26.27	-1,440.89	-354.53	799.32	760.95	38.37	20.834	
3,600.00	3,443.74	3,387.04	2,920.38	18.68	27.54	-26.10	-1,499.44	-369.42	835.89	796.43	39.46	21.184	
3,700.00	3,537.83	3,480.09	2,991.14	19.18	28.60	-25.94	-1,557.99	-384.31	872.46	831.91	40.55	21.514	
3,800.00	3,631.91	3,573.13	3,061.91	19.70	29.67	-25.79	-1,616.54	-399.20	909.04	867.39	41.65	21.824	
3,900.00	3,725.99	3,666.18	3,132.67	20.28	30.73	-25.66	-1,675.09	-414.08	945.63	902.87	42.76	22.117	
4,000.00	3,820.08	3,759.23	3,203.44	20.87	31.80	-25.54	-1,733.64	-428.97	982.22	938.36	43.86	22.393	
4,100.00	3,914.16	3,852.27	3,274.21	21.47	32.87	-25.42	-1,792.19	-443.86	1,018.81	973.84	44.97	22.654	
4,200.00	4,008.24	3,945.32	3,344.97	22.07	33.93	-25.31	-1,850.74	-458.75	1,055.41	1,009.32	46.08	22.901	
4,300.00	4,102.33	4,038.36	3,415.74	22.68	35.00	-25.21	-1,909.29	-473.64	1,092.01	1,044.80	47.20	23.135	
4,400.00	4,196.41	4,131.41	3,486.50	23.28	36.07	-25.12	-1,967.84	-488.52	1,128.61	1,080.29	48.32	23.357	
4,500.00	4,290.49	4,224.45	3,557.27	23.88	37.14	-25.03	-2,026.38	-503.41	1,165.21	1,115.77	49.44	23.568	
4,600.00	4,384.58	4,317.50	3,628.03	24.49	38.20	-24.95	-2,084.93	-518.30	1,201.82	1,151.25	50.56	23.769	
4,700.00	4,478.66	4,410.54	3,698.80	25.09	39.27	-24.87	-2,143.48	-533.19	1,238.43	1,186.74	51.69	23.959	
4,800.00	4,572.75	4,503.59	3,769.57	25.69	40.34	-24.80	-2,202.03	-548.07	1,275.04	1,222.22	52.82	24.141	
4,900.00	4,666.83	4,596.64	3,840.33	26.30	41.41	-24.73	-2,260.58	-562.96	1,311.65	1,257.70	53.95	24.314	
5,000.00	4,760.91	4,694.27	3,914.60	26.90	42.53	-24.66	-2,322.01	-578.58	1,348.25	1,293.10	55.15	24.447	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	MALLARD EXPLORATION	Local Co-ordinate Reference:	Well CANVASBACK 32-33-6HN
Project:	WELD COUNTY	TVD Reference:	KB 27' @ 4973.00usft
Reference Site:	SEC 32-T9N-R60W	MD Reference:	KB 27' @ 4973.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	CANVASBACK 32-33-6HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 5000.16 Single User Db
Reference Design:	PROPOSAL 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC 32-T9N-R60W - CANVASBACK 32-33-8HN - ORIGINAL WELLBORE - PROPOSAL 1													Offset Site Error: 0.00 usft
Survey Program: 0-MWD													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
5,100.00	4,855.00	4,869.79	4,051.88	27.51	44.46	-24.61	-2,427.96	-605.52	1,381.77	1,324.16	57.61	23.984	
5,200.00	4,949.08	5,052.31	4,201.46	28.11	46.31	-24.67	-2,529.28	-631.28	1,409.51	1,349.51	60.00	23.491	
5,300.00	5,043.16	5,240.69	4,362.49	28.72	48.05	-24.85	-2,623.95	-655.36	1,431.16	1,368.96	62.20	23.008	
5,400.00	5,137.25	5,433.52	4,533.61	29.32	49.63	-25.14	-2,710.03	-677.25	1,446.46	1,382.29	64.17	22.543	
5,500.00	5,231.33	5,629.18	4,712.94	29.93	51.02	-25.55	-2,785.76	-696.50	1,455.24	1,389.39	65.85	22.099	
5,600.00	5,325.41	5,825.86	4,898.17	30.53	52.20	-26.09	-2,849.76	-712.78	1,457.43	1,390.20	67.23	21.678	
5,700.00	5,419.50	6,021.74	5,086.71	31.14	53.16	-26.76	-2,901.10	-725.83	1,453.04	1,384.75	68.28	21.280	
5,800.00	5,513.58	6,215.01	5,275.85	31.75	53.90	-27.56	-2,939.41	-735.57	1,442.18	1,373.18	69.00	20.900	
5,900.00	5,607.66	6,404.01	5,462.99	32.35	54.39	-28.51	-2,964.84	-742.04	1,425.08	1,355.69	69.39	20.536	
6,000.00	5,701.75	6,587.31	5,645.75	32.96	54.67	-29.62	-2,978.03	-745.39	1,402.02	1,332.56	69.46	20.183	
6,100.00	5,795.83	6,738.43	5,796.83	33.56	54.73	-30.70	-2,980.52	-746.03	1,373.65	1,304.26	69.39	19.795	
6,113.74	5,808.76	6,751.35	5,809.76	33.64	54.73	-30.79	-2,980.52	-746.03	1,369.59	1,300.09	69.49	19.708	
6,150.00	5,843.02	6,785.62	5,844.02	33.86	54.73	-20.12	-2,980.52	-746.03	1,358.79	1,289.04	69.74	19.483	
6,200.00	5,890.57	6,830.96	5,889.36	34.18	54.73	-3.53	-2,980.52	-745.59	1,343.69	1,273.62	70.07	19.177	
6,250.00	5,938.13	6,874.22	5,932.48	34.48	54.75	13.24	-2,980.48	-742.27	1,328.55	1,258.18	70.36	18.882	
6,300.00	5,985.36	6,917.44	5,975.19	34.71	54.79	28.15	-2,980.42	-735.72	1,313.48	1,242.87	70.61	18.603	
6,350.00	6,031.88	6,960.69	6,017.31	34.89	54.82	40.31	-2,980.32	-725.96	1,298.60	1,227.79	70.81	18.340	
6,400.00	6,077.36	7,004.04	6,058.67	35.04	54.85	49.90	-2,980.19	-713.02	1,284.03	1,213.08	70.95	18.097	
6,450.00	6,121.43	7,047.56	6,099.10	35.16	54.86	57.46	-2,980.02	-696.92	1,269.87	1,198.84	71.03	17.878	
6,500.00	6,163.76	7,091.32	6,138.39	35.26	54.86	63.51	-2,979.83	-677.68	1,256.24	1,185.20	71.04	17.685	
6,550.00	6,204.04	7,135.37	6,176.35	35.35	54.85	68.45	-2,979.60	-655.35	1,243.24	1,172.25	70.99	17.514	
6,600.00	6,241.95	7,179.77	6,212.76	35.42	54.83	72.55	-2,979.34	-629.96	1,230.98	1,160.09	70.89	17.364	
6,650.00	6,277.21	7,224.57	6,247.39	35.47	54.81	75.99	-2,979.06	-601.56	1,219.55	1,148.78	70.77	17.233	
6,700.00	6,309.55	7,269.81	6,280.00	35.51	54.77	78.91	-2,978.74	-570.23	1,209.05	1,138.42	70.63	17.118	
6,750.00	6,338.72	7,315.52	6,310.34	35.54	54.73	81.39	-2,978.39	-536.05	1,199.57	1,129.07	70.50	17.015	
6,800.00	6,364.50	7,361.74	6,338.14	35.57	54.67	83.49	-2,978.02	-499.16	1,191.17	1,120.78	70.40	16.921	
6,850.00	6,386.70	7,408.47	6,363.15	35.60	54.62	85.27	-2,977.62	-459.69	1,183.94	1,113.60	70.34	16.832	
6,900.00	6,405.14	7,455.73	6,385.07	35.66	54.55	86.73	-2,977.19	-417.84	1,177.92	1,107.58	70.34	16.746	
6,950.00	6,419.68	7,503.51	6,403.67	35.74	54.49	87.91	-2,976.75	-373.84	1,173.17	1,102.75	70.42	16.659	
7,000.00	6,430.22	7,551.82	6,418.67	35.86	54.41	88.82	-2,976.28	-327.94	1,169.72	1,099.13	70.60	16.569	
7,050.00	6,436.67	7,600.62	6,429.85	36.05	54.34	89.47	-2,975.80	-280.45	1,167.61	1,096.74	70.87	16.476	
7,100.00	6,438.99	7,650.00	6,437.00	36.30	54.27	89.85	-2,975.30	-231.61	1,166.84	1,095.60	71.25	16.378	
7,102.92	6,439.00	7,652.79	6,437.28	36.32	54.27	89.87	-2,975.27	-228.84	1,166.84	1,095.57	71.27	16.372	
7,200.00	6,439.00	7,749.69	6,440.00	36.99	54.15	90.00	-2,974.29	-132.03	1,166.83	1,094.34	72.50	16.095	
7,300.00	6,439.00	7,849.69	6,439.99	37.90	54.06	90.00	-2,973.28	-32.03	1,166.83	1,092.64	74.19	15.728	
7,400.00	6,439.00	7,949.69	6,439.99	38.99	54.00	90.00	-2,972.26	67.96	1,166.83	1,090.60	76.23	15.306	
7,500.00	6,439.00	8,049.69	6,439.98	40.25	53.99	90.00	-2,971.25	167.96	1,166.82	1,088.21	78.61	14.843	
7,600.00	6,439.00	8,149.69	6,439.98	41.65	54.03	90.00	-2,970.23	267.95	1,166.82	1,085.54	81.28	14.355	
7,700.00	6,439.00	8,249.69	6,439.97	43.18	54.13	90.00	-2,969.22	367.95	1,166.82	1,082.59	84.23	13.853	
7,800.00	6,439.00	8,349.69	6,439.97	44.82	54.32	90.00	-2,968.20	467.94	1,166.81	1,079.40	87.42	13.347	
7,900.00	6,439.00	8,449.69	6,439.96	46.56	54.63	90.00	-2,967.19	567.94	1,166.81	1,075.98	90.83	12.846	
8,000.00	6,439.00	8,549.69	6,439.96	48.39	55.11	90.00	-2,966.17	667.93	1,166.81	1,072.38	94.43	12.356	
8,100.00	6,439.00	8,649.69	6,439.95	50.30	55.81	90.00	-2,965.16	767.93	1,166.81	1,068.60	98.21	11.881	
8,200.00	6,439.00	8,749.69	6,439.95	52.29	56.77	90.00	-2,964.14	867.92	1,166.80	1,064.66	102.14	11.424	
8,300.00	6,439.00	8,849.69	6,439.94	54.34	58.01	90.00	-2,963.13	967.92	1,166.80	1,060.59	106.21	10.986	
8,400.00	6,439.00	8,949.69	6,439.94	56.45	59.49	90.00	-2,962.11	1,067.91	1,166.80	1,056.40	110.40	10.569	
8,500.00	6,439.00	9,049.69	6,439.93	58.61	61.17	90.00	-2,961.10	1,167.91	1,166.79	1,052.10	114.70	10.173	
8,600.00	6,439.00	9,149.69	6,439.93	60.82	63.01	90.00	-2,960.08	1,267.90	1,166.79	1,047.70	119.09	9.797	
8,700.00	6,439.00	9,249.69	6,439.92	63.06	64.96	90.00	-2,959.07	1,367.90	1,166.79	1,043.21	123.57	9.442	
8,800.00	6,439.00	9,349.69	6,439.92	65.35	67.00	90.00	-2,958.05	1,467.89	1,166.78	1,038.65	128.13	9.106	
8,900.00	6,439.00	9,449.69	6,439.92	67.67	69.12	90.00	-2,957.04	1,567.89	1,166.78	1,034.02	132.76	8.788	
9,000.00	6,439.00	9,549.69	6,439.91	70.01	71.29	90.00	-2,956.03	1,667.88	1,166.78	1,029.32	137.46	8.488	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	MALLARD EXPLORATION	Local Co-ordinate Reference:	Well CANVASBACK 32-33-6HN
Project:	WELD COUNTY	TVD Reference:	KB 27' @ 4973.00usft
Reference Site:	SEC 32-T9N-R60W	MD Reference:	KB 27' @ 4973.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	CANVASBACK 32-33-6HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 5000.16 Single User Db
Reference Design:	PROPOSAL 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC 32-T9N-R60W - CANVASBACK 32-33-8HN - ORIGINAL WELLBORE - PROPOSAL 1													Offset Site Error: 0.00 usft
Survey Program: 0-MWD													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
9,100.00	6,439.00	9,649.69	6,439.91	72.39	73.52	90.00	-2,955.01	1,767.88	1,166.77	1,024.57	142.20	8.205	
9,200.00	6,439.00	9,749.69	6,439.91	74.79	75.79	90.00	-2,954.00	1,867.87	1,166.77	1,019.77	147.00	7.937	
9,300.00	6,439.00	9,849.69	6,439.90	77.21	78.09	90.00	-2,952.98	1,967.87	1,166.77	1,014.92	151.85	7.684	
9,400.00	6,439.00	9,949.69	6,439.90	79.65	80.43	90.00	-2,951.97	2,067.86	1,166.76	1,010.03	156.74	7.444	
9,500.00	6,439.00	10,049.69	6,439.90	82.12	82.79	89.99	-2,950.95	2,167.86	1,166.76	1,005.10	161.66	7.217	
9,600.00	6,439.00	10,149.69	6,439.89	84.59	85.18	89.99	-2,949.94	2,267.85	1,166.76	1,000.14	166.62	7.002	
9,700.00	6,439.00	10,249.69	6,439.89	87.09	87.59	89.99	-2,948.92	2,367.85	1,166.75	995.14	171.61	6.799	
9,800.00	6,439.00	10,349.69	6,439.89	89.60	90.02	89.99	-2,947.91	2,467.84	1,166.75	990.12	176.63	6.605	
9,900.00	6,439.00	10,449.69	6,439.89	92.12	92.47	89.99	-2,946.89	2,567.83	1,166.75	985.07	181.68	6.422	
10,000.00	6,439.00	10,549.69	6,439.88	94.65	94.94	89.99	-2,945.88	2,667.83	1,166.74	979.99	186.75	6.248	
10,100.00	6,439.00	10,649.69	6,439.88	97.20	97.42	89.99	-2,944.86	2,767.82	1,166.74	974.89	191.85	6.082	
10,200.00	6,439.00	10,749.69	6,439.88	99.75	99.91	89.99	-2,943.85	2,867.82	1,166.74	969.78	196.96	5.924	
10,300.00	6,439.00	10,849.69	6,439.88	102.32	102.42	89.99	-2,942.83	2,967.81	1,166.73	964.64	202.10	5.773	
10,400.00	6,439.00	10,949.69	6,439.87	104.89	104.94	89.99	-2,941.82	3,067.81	1,166.73	959.48	207.25	5.630	
10,500.00	6,439.00	11,049.69	6,439.87	107.47	107.47	89.99	-2,940.80	3,167.80	1,166.73	954.31	212.42	5.493	
10,600.00	6,439.00	11,149.69	6,439.87	110.06	110.01	89.99	-2,939.79	3,267.80	1,166.73	949.13	217.60	5.362	
10,700.00	6,439.00	11,249.69	6,439.87	112.66	112.56	89.99	-2,938.77	3,367.79	1,166.72	943.93	222.80	5.237	
10,800.00	6,439.00	11,349.69	6,439.87	115.26	115.12	89.99	-2,937.76	3,467.79	1,166.72	938.71	228.01	5.117	
10,900.00	6,439.00	11,449.69	6,439.86	117.87	117.69	89.99	-2,936.74	3,567.78	1,166.72	933.49	233.23	5.002	
11,000.00	6,439.00	11,549.69	6,439.86	120.49	120.26	89.99	-2,935.73	3,667.78	1,166.71	928.25	238.47	4.893	
11,100.00	6,439.00	11,649.69	6,439.86	123.11	122.84	89.99	-2,934.71	3,767.77	1,166.71	923.00	243.71	4.787	
11,200.00	6,439.00	11,749.69	6,439.86	125.73	125.43	89.99	-2,933.70	3,867.77	1,166.71	917.74	248.97	4.686	
11,300.00	6,439.00	11,849.69	6,439.86	128.36	128.03	89.99	-2,932.68	3,967.76	1,166.70	912.47	254.23	4.589	
11,400.00	6,439.00	11,949.69	6,439.86	131.00	130.63	89.99	-2,931.67	4,067.76	1,166.70	907.19	259.51	4.496	
11,500.00	6,439.00	12,049.69	6,439.86	133.64	133.23	89.99	-2,930.66	4,167.75	1,166.70	901.91	264.79	4.406	
11,600.00	6,439.00	12,149.69	6,439.86	136.28	135.84	89.99	-2,929.64	4,267.75	1,166.69	896.61	270.08	4.320	
11,700.00	6,439.00	12,249.69	6,439.86	138.93	138.46	89.99	-2,928.63	4,367.74	1,166.69	891.31	275.38	4.237	
11,800.00	6,439.00	12,349.69	6,439.86	141.58	141.08	89.99	-2,927.61	4,467.74	1,166.69	886.01	280.68	4.157	
11,900.00	6,439.00	12,449.69	6,439.86	144.23	143.70	89.99	-2,926.60	4,567.73	1,166.68	880.69	285.99	4.079	
12,000.00	6,439.00	12,549.69	6,439.86	146.89	146.33	89.99	-2,925.58	4,667.73	1,166.68	875.37	291.31	4.005	
12,100.00	6,439.00	12,649.69	6,439.86	149.55	148.97	89.99	-2,924.57	4,767.72	1,166.68	870.04	296.63	3.933	
12,200.00	6,439.00	12,749.69	6,439.86	152.21	151.60	89.99	-2,923.55	4,867.72	1,166.67	864.71	301.96	3.864	
12,300.00	6,439.00	12,849.69	6,439.86	154.88	154.24	89.99	-2,922.54	4,967.71	1,166.67	859.37	307.30	3.797	
12,400.00	6,439.00	12,949.69	6,439.86	157.55	156.89	89.99	-2,921.52	5,067.71	1,166.67	854.03	312.64	3.732	
12,500.00	6,439.00	13,049.69	6,439.86	160.22	159.53	89.99	-2,920.51	5,167.70	1,166.66	848.68	317.98	3.669	
12,600.00	6,439.00	13,149.69	6,439.86	162.89	162.18	89.99	-2,919.49	5,267.70	1,166.66	843.33	323.33	3.608	
12,700.00	6,439.00	13,249.69	6,439.86	165.57	164.84	89.99	-2,918.48	5,367.69	1,166.66	837.97	328.68	3.549	
12,800.00	6,439.00	13,349.69	6,439.86	168.24	167.49	89.99	-2,917.46	5,467.68	1,166.65	832.61	334.04	3.493	
12,900.00	6,439.00	13,449.69	6,439.86	170.92	170.15	89.99	-2,916.45	5,567.68	1,166.65	827.25	339.40	3.437	
13,000.00	6,439.00	13,549.69	6,439.86	173.60	172.81	89.99	-2,915.43	5,667.68	1,166.65	821.88	344.77	3.384	
13,100.00	6,439.00	13,649.69	6,439.86	176.29	175.47	89.99	-2,914.42	5,767.67	1,166.64	816.51	350.14	3.332	
13,200.00	6,439.00	13,749.69	6,439.86	178.97	178.14	89.99	-2,913.40	5,867.67	1,166.64	811.13	355.51	3.282	
13,300.00	6,439.00	13,849.69	6,439.86	181.66	180.80	89.99	-2,912.39	5,967.66	1,166.64	805.75	360.88	3.233	
13,400.00	6,439.00	13,949.69	6,439.87	184.35	183.47	89.99	-2,911.37	6,067.66	1,166.63	800.37	366.26	3.185	
13,500.00	6,439.00	14,049.69	6,439.87	187.04	186.14	89.99	-2,910.36	6,167.65	1,166.63	794.99	371.64	3.139	
13,600.00	6,439.00	14,149.69	6,439.87	189.73	188.82	89.99	-2,909.34	6,267.64	1,166.63	789.60	377.03	3.094	
13,700.00	6,439.00	14,249.70	6,439.87	192.42	191.49	89.99	-2,908.33	6,367.64	1,166.62	784.21	382.41	3.051	
13,800.00	6,439.00	14,349.70	6,439.87	195.11	194.17	89.99	-2,907.31	6,467.63	1,166.62	778.82	387.80	3.008	
13,900.00	6,439.00	14,449.70	6,439.87	197.81	196.85	89.99	-2,906.30	6,567.63	1,166.62	773.42	393.20	2.967	
14,000.00	6,439.00	14,549.70	6,439.88	200.51	199.53	89.99	-2,905.28	6,667.62	1,166.62	768.03	398.59	2.927	
14,100.00	6,439.00	14,649.70	6,439.88	203.20	202.21	89.99	-2,904.27	6,767.62	1,166.61	762.63	403.99	2.888	
14,200.00	6,439.00	14,749.70	6,439.88	205.90	204.89	89.99	-2,903.26	6,867.61	1,166.61	757.22	409.39	2.850	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	MALLARD EXPLORATION	Local Co-ordinate Reference:	Well CANVASBACK 32-33-6HN
Project:	WELD COUNTY	TVD Reference:	KB 27' @ 4973.00usft
Reference Site:	SEC 32-T9N-R60W	MD Reference:	KB 27' @ 4973.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	CANVASBACK 32-33-6HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 5000.16 Single User Db
Reference Design:	PROPOSAL 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC 32-T9N-R60W - CANVASBACK 32-33-8HN - ORIGINAL WELLBORE - PROPOSAL 1													Offset Site Error: 0.00 usft
Survey Program: 0-MWD													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
14,300.00	6,439.00	14,849.70	6,439.88	208.60	207.58	89.99	-2,902.24	6,967.61	1,166.61	751.82	414.79	2.813	
14,400.00	6,439.00	14,949.70	6,439.89	211.30	210.26	89.99	-2,901.23	7,067.60	1,166.60	746.41	420.19	2.776	
14,500.00	6,439.00	15,049.70	6,439.89	214.01	212.95	89.99	-2,900.21	7,167.60	1,166.60	741.00	425.59	2.741	
14,600.00	6,439.00	15,149.70	6,439.89	216.71	215.64	89.99	-2,899.20	7,267.59	1,166.60	735.59	431.00	2.707	
14,700.00	6,439.00	15,249.70	6,439.89	219.41	218.33	89.99	-2,898.18	7,367.59	1,166.59	730.18	436.41	2.673	
14,800.00	6,439.00	15,349.70	6,439.90	222.12	221.02	89.99	-2,897.17	7,467.58	1,166.59	724.77	441.82	2.640	
14,900.00	6,439.00	15,449.70	6,439.90	224.82	223.71	90.00	-2,896.15	7,567.58	1,166.59	719.35	447.23	2.608	
15,000.00	6,439.00	15,549.70	6,439.90	227.53	226.41	90.00	-2,895.14	7,667.57	1,166.58	713.94	452.65	2.577	
15,100.00	6,439.00	15,649.70	6,439.91	230.24	229.10	90.00	-2,894.12	7,767.57	1,166.58	708.52	458.06	2.547	
15,200.00	6,439.00	15,749.70	6,439.91	232.94	231.80	90.00	-2,893.11	7,867.56	1,166.58	703.10	463.48	2.517	
15,300.00	6,439.00	15,849.70	6,439.91	235.65	234.49	90.00	-2,892.09	7,967.56	1,166.57	697.67	468.90	2.488	
15,400.00	6,439.00	15,949.70	6,439.92	238.36	237.19	90.00	-2,891.08	8,067.55	1,166.57	692.25	474.32	2.459	
15,500.00	6,439.00	16,049.70	6,439.92	241.07	239.89	90.00	-2,890.06	8,167.55	1,166.57	686.83	479.74	2.432	
15,600.00	6,439.00	16,149.70	6,439.93	243.78	242.59	90.00	-2,889.05	8,267.54	1,166.56	681.40	485.16	2.404	
15,700.00	6,439.00	16,249.70	6,439.93	246.50	245.29	90.00	-2,888.03	8,367.54	1,166.56	675.97	490.59	2.378	
15,800.00	6,439.00	16,349.70	6,439.93	249.21	247.99	90.00	-2,887.02	8,467.53	1,166.56	670.55	496.01	2.352	
15,900.00	6,439.00	16,449.70	6,439.94	251.92	250.69	90.00	-2,886.00	8,567.53	1,166.55	665.12	501.44	2.326	
16,000.00	6,439.00	16,549.70	6,439.94	254.63	253.39	90.00	-2,884.99	8,667.52	1,166.55	659.68	506.87	2.301	
16,100.00	6,439.00	16,649.70	6,439.95	257.35	256.10	90.00	-2,883.97	8,767.52	1,166.55	654.25	512.29	2.277	
16,200.00	6,439.00	16,749.70	6,439.95	260.06	258.80	90.00	-2,882.96	8,867.51	1,166.54	648.82	517.72	2.253	
16,300.00	6,439.00	16,849.70	6,439.96	262.78	261.50	90.00	-2,881.94	8,967.51	1,166.54	643.39	523.15	2.230	
16,400.00	6,439.00	16,949.70	6,439.96	265.49	264.21	90.00	-2,880.93	9,067.50	1,166.54	637.95	528.59	2.207	
16,500.00	6,439.00	17,049.70	6,439.97	268.21	266.92	90.00	-2,879.91	9,167.50	1,166.53	632.52	534.02	2.184	
16,600.00	6,439.00	17,149.70	6,439.97	270.93	269.62	90.00	-2,878.90	9,267.49	1,166.53	627.08	539.45	2.162	
16,700.00	6,439.00	17,249.70	6,439.98	273.64	272.33	90.00	-2,877.88	9,367.49	1,166.53	621.64	544.89	2.141	
16,800.00	6,439.00	17,349.70	6,439.98	276.36	275.04	90.00	-2,876.87	9,467.48	1,166.52	616.20	550.32	2.120	
16,900.00	6,439.00	17,449.70	6,439.99	279.08	277.75	90.00	-2,875.85	9,567.48	1,166.52	610.76	555.76	2.099	
17,000.00	6,439.00	17,549.70	6,439.99	281.80	280.46	90.00	-2,874.84	9,667.47	1,166.52	605.32	561.20	2.079	
17,089.98	6,439.00	17,639.68	6,440.00	284.24	282.53	90.00	-2,873.93	9,757.45	1,166.51	600.81	565.71	2.062 SF	

Anticollision Report

Company:	MALLARD EXPLORATION	Local Co-ordinate Reference:	Well CANVASBACK 32-33-6HN
Project:	WELD COUNTY	TVD Reference:	KB 27' @ 4973.00usft
Reference Site:	SEC 32-T9N-R60W	MD Reference:	KB 27' @ 4973.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	CANVASBACK 32-33-6HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 5000.16 Single User Db
Reference Design:	PROPOSAL 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC 32-T9N-R60W - CANVASBACK FED 32-33-1HN - OWB - PROPOSAL 2													Offset Site Error: 0.00 usft
Survey Program: 0-MWD													Offset Well Error: 0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-2.07	99.83	-3.60	99.94				
100.00	100.00	97.00	97.00	0.42	0.40	-2.07	99.83	-3.60	99.89	99.08	0.82	122.039	CC
200.00	200.00	194.28	194.26	1.25	1.69	-2.57	101.06	-4.54	101.20	98.38	2.82	35.863	ES
300.00	300.00	291.26	291.12	1.74	3.02	-4.07	104.91	-7.47	105.34	100.88	4.46	23.626	
400.00	399.98	387.71	387.23	2.24	3.99	-147.39	111.31	-12.35	113.88	108.13	5.75	19.803	
500.00	499.84	483.15	482.00	3.42	4.79	145.83	120.18	-19.11	128.28	120.84	7.44	17.237	
600.00	599.45	577.12	574.91	4.32	5.50	144.64	131.36	-27.62	148.41	139.60	8.81	16.841	
700.00	698.70	669.20	665.46	5.10	6.13	143.78	144.66	-37.76	174.10	164.09	10.01	17.391	
800.00	797.47	759.00	753.21	5.81	6.72	143.17	159.86	-49.33	205.17	194.08	11.10	18.488	
900.00	895.62	846.20	837.79	6.47	7.27	142.71	176.70	-62.16	241.45	229.34	12.10	19.947	
1,000.00	993.06	930.49	918.91	7.10	7.75	142.34	194.92	-76.04	282.71	269.70	13.01	21.733	
1,100.00	1,089.64	1,015.19	999.78	7.71	8.07	142.03	214.93	-91.29	328.54	314.77	13.78	23.845	
1,200.00	1,185.27	1,102.51	1,083.04	8.30	8.34	141.94	235.85	-107.22	377.17	362.62	14.55	25.920	
1,290.38	1,270.77	1,180.16	1,157.10	8.77	8.61	141.98	254.45	-121.39	423.20	407.96	15.24	27.770	
1,300.00	1,279.82	1,188.36	1,164.92	8.80	8.64	142.06	256.42	-122.89	428.21	412.91	15.30	27.990	
1,400.00	1,373.90	1,273.60	1,246.19	9.11	8.94	142.80	276.84	-138.45	480.27	464.33	15.94	30.126	
1,500.00	1,467.99	1,358.83	1,327.47	9.45	9.25	143.39	297.26	-154.00	532.38	515.76	16.62	32.025	
1,600.00	1,562.07	1,444.06	1,408.74	9.81	9.57	143.88	317.67	-169.56	584.52	567.19	17.33	33.729	
1,700.00	1,656.16	1,529.30	1,490.02	10.18	9.90	144.28	338.09	-185.11	636.69	618.64	18.06	35.259	
1,800.00	1,750.24	1,614.53	1,571.30	10.57	10.24	144.63	358.51	-200.67	688.88	670.08	18.80	36.635	
1,900.00	1,844.32	1,699.76	1,652.57	10.96	10.59	144.93	378.93	-216.22	741.09	721.52	19.57	37.873	
2,000.00	1,938.41	1,784.99	1,733.85	11.37	10.94	145.19	399.35	-231.78	793.30	772.96	20.35	38.987	
2,100.00	2,032.49	1,870.23	1,815.12	11.78	11.30	145.41	419.77	-247.33	845.53	824.39	21.14	39.994	
2,200.00	2,126.57	1,955.46	1,896.40	12.21	11.66	145.61	440.19	-262.89	897.77	875.82	21.95	40.906	
2,300.00	2,220.66	2,040.69	1,977.67	12.64	12.03	145.79	460.61	-278.44	950.01	927.25	22.76	41.734	
2,400.00	2,314.74	2,125.93	2,058.95	13.08	12.40	145.95	481.03	-294.00	1,002.26	978.67	23.59	42.487	
2,500.00	2,408.82	2,211.16	2,140.23	13.52	12.78	146.09	501.45	-309.55	1,054.52	1,030.09	24.43	43.173	
2,600.00	2,502.91	2,296.39	2,221.50	13.97	13.16	146.22	521.86	-325.11	1,106.77	1,081.51	25.27	43.801	
2,700.00	2,596.99	2,381.62	2,302.78	14.42	13.55	146.34	542.28	-340.66	1,159.04	1,132.92	26.12	44.375	
2,800.00	2,691.07	2,466.86	2,384.05	14.88	13.93	146.45	562.70	-356.21	1,211.30	1,184.33	26.98	44.902	
2,900.00	2,785.16	2,552.09	2,465.33	15.35	14.32	146.55	583.12	-371.77	1,263.57	1,235.73	27.84	45.387	
3,000.00	2,879.24	2,637.32	2,546.60	15.81	14.72	146.64	603.54	-387.32	1,315.84	1,287.13	28.71	45.834	
3,100.00	2,973.33	2,722.56	2,627.88	16.28	15.11	146.72	623.96	-402.88	1,368.12	1,338.53	29.58	46.248	
3,200.00	3,067.41	2,807.79	2,709.16	16.76	15.51	146.80	644.38	-418.43	1,420.39	1,389.93	30.46	46.630	
3,300.00	3,161.49	2,893.02	2,790.43	17.23	15.91	146.88	664.80	-433.99	1,472.67	1,441.32	31.34	46.985	
3,400.00	3,255.58	2,978.25	2,871.71	17.71	16.31	146.94	685.22	-449.54	1,524.95	1,492.72	32.23	47.315	
3,500.00	3,349.66	3,063.49	2,952.98	18.20	16.71	147.01	705.64	-465.10	1,577.23	1,544.11	33.12	47.622	
3,600.00	3,443.74	3,148.72	3,034.26	18.68	17.12	147.07	726.05	-480.65	1,629.51	1,595.50	34.01	47.908	
3,700.00	3,537.83	3,233.95	3,115.54	19.18	17.52	147.12	746.47	-496.21	1,681.79	1,646.88	34.91	48.175	
3,800.00	3,631.91	3,319.19	3,196.81	19.70	17.93	147.17	766.89	-511.76	1,734.08	1,698.27	35.81	48.425	
3,900.00	3,725.99	3,404.42	3,278.09	20.28	18.34	147.22	787.31	-527.32	1,786.36	1,749.65	36.71	48.660	
4,000.00	3,820.08	3,489.65	3,359.36	20.87	18.75	147.27	807.73	-542.87	1,838.65	1,801.03	37.62	48.880	
4,100.00	3,914.16	3,574.88	3,440.64	21.47	19.17	147.31	828.15	-558.43	1,890.93	1,852.41	38.52	49.086	
4,200.00	4,008.24	3,660.12	3,521.91	22.07	19.58	147.35	848.57	-573.98	1,943.22	1,903.79	39.43	49.281	
4,300.00	4,102.33	3,745.35	3,603.19	22.68	19.99	147.39	868.99	-589.54	1,995.51	1,955.16	40.34	49.464	
4,400.00	4,196.41	3,830.58	3,684.47	23.28	20.41	147.43	889.41	-605.09	2,047.80	2,006.54	41.26	49.637	
4,500.00	4,290.49	3,915.82	3,765.74	23.88	20.83	147.46	909.83	-620.65	2,100.09	2,057.92	42.17	49.800	
4,600.00	4,384.58	4,001.05	3,847.02	24.49	21.24	147.50	930.25	-636.20	2,152.38	2,109.29	43.09	49.954	
4,700.00	4,478.66	4,086.28	3,928.29	25.09	21.66	147.53	950.66	-651.76	2,204.67	2,160.66	44.01	50.100	
4,800.00	4,572.75	4,171.52	4,009.57	25.69	22.08	147.56	971.08	-667.31	2,256.96	2,212.03	44.92	50.238	
4,900.00	4,666.83	4,256.75	4,090.85	26.30	22.50	147.59	991.50	-682.87	2,309.25	2,263.40	45.85	50.370	
5,000.00	4,760.91	4,341.98	4,172.12	26.90	22.92	147.62	1,011.92	-698.42	2,361.54	2,314.77	46.77	50.494	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	MALLARD EXPLORATION	Local Co-ordinate Reference:	Well CANVASBACK 32-33-6HN
Project:	WELD COUNTY	TVD Reference:	KB 27' @ 4973.00usft
Reference Site:	SEC 32-T9N-R60W	MD Reference:	KB 27' @ 4973.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	CANVASBACK 32-33-6HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 5000.16 Single User Db
Reference Design:	PROPOSAL 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC 32-T9N-R60W - CANVASBACK FED 32-33-1HN - OWB - PROPOSAL 2												Offset Site Error:	0.00 usft
Survey Program: 0-MWD												Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
		Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
5,100.00	4,855.00	4,427.21	4,253.40	27.51	23.34	147.64	1,032.34	-713.98	2,413.83	2,366.14	47.69	50.613	
5,200.00	4,949.08	4,512.45	4,334.67	28.11	23.77	147.67	1,052.76	-729.53	2,466.12	2,417.51	48.62	50.725	
5,300.00	5,043.16	4,597.68	4,415.95	28.72	24.19	147.69	1,073.18	-745.09	2,518.42	2,468.87	49.54	50.832	
5,400.00	5,137.25	4,682.91	4,497.22	29.32	24.61	147.72	1,093.60	-760.64	2,570.71	2,520.24	50.47	50.934	
5,500.00	5,231.33	4,768.15	4,578.50	29.93	25.04	147.74	1,114.02	-776.20	2,623.00	2,571.60	51.40	51.032	
5,600.00	5,325.41	4,853.38	4,659.78	30.53	25.46	147.76	1,134.44	-791.75	2,675.30	2,622.97	52.33	51.124	
5,700.00	5,419.50	4,938.61	4,741.05	31.14	25.89	147.78	1,154.85	-807.31	2,727.59	2,674.33	53.26	51.213	
5,800.00	5,513.58	5,023.84	4,822.33	31.75	26.32	147.80	1,175.27	-822.86	2,779.88	2,725.69	54.19	51.298	
5,900.00	5,607.66	5,109.08	4,903.60	32.35	26.74	147.82	1,195.69	-838.42	2,832.18	2,777.05	55.12	51.378	
6,000.00	5,701.75	5,194.31	4,984.88	32.96	27.17	147.84	1,216.11	-853.97	2,884.47	2,828.42	56.06	51.456	
6,100.00	5,795.83	5,279.54	5,066.15	33.56	27.60	147.86	1,236.53	-869.53	2,936.77	2,879.78	56.99	51.530	
6,113.74	5,808.76	5,291.25	5,077.32	33.64	27.66	147.86	1,239.34	-871.66	2,943.95	2,886.84	57.12	51.542	
6,150.00	5,843.02	5,322.08	5,106.72	33.86	27.82	159.84	1,246.72	-877.29	2,963.01	2,905.56	57.45	51.576	
6,200.00	5,890.57	5,364.18	5,146.87	34.18	28.03	178.00	1,256.81	-884.97	2,989.51	2,931.62	57.89	51.641	
6,250.00	5,938.13	5,405.52	5,186.28	34.48	28.24	-163.78	1,266.71	-892.52	3,016.09	2,957.80	58.29	51.742	
6,300.00	5,985.36	5,445.77	5,224.67	34.71	28.44	-147.54	1,276.35	-899.86	3,042.60	2,983.93	58.66	51.865	
6,350.00	6,031.88	5,484.64	5,261.73	34.89	28.64	-134.18	1,285.66	-906.96	3,068.88	3,009.87	59.01	52.007	
6,400.00	6,077.36	5,521.82	5,297.18	35.04	28.82	-123.51	1,294.57	-913.74	3,094.80	3,035.49	59.31	52.179	
6,450.00	6,121.43	5,557.03	5,330.76	35.16	29.00	-114.98	1,303.01	-920.17	3,120.24	3,060.68	59.56	52.387	
6,500.00	6,163.76	5,590.02	5,362.21	35.26	29.17	-108.06	1,310.91	-926.19	3,145.10	3,085.34	59.76	52.632	
6,550.00	6,204.04	5,620.51	5,391.29	35.35	29.32	-102.34	1,318.22	-931.75	3,169.26	3,109.36	59.90	52.907	
6,600.00	6,241.95	5,648.29	5,417.78	35.42	29.46	-97.54	1,324.87	-936.82	3,192.65	3,132.64	60.01	53.204	
6,650.00	6,277.21	5,673.14	5,441.48	35.47	29.59	-93.43	1,330.82	-941.36	3,215.17	3,155.09	60.08	53.516	
6,700.00	6,309.55	5,694.87	5,462.20	35.51	29.70	-89.89	1,336.03	-945.32	3,236.73	3,176.61	60.13	53.832	
6,750.00	6,338.72	5,713.32	5,479.79	35.54	29.79	-86.80	1,340.45	-948.69	3,257.27	3,197.12	60.16	54.145	
6,800.00	6,364.50	5,728.34	5,494.12	35.57	29.87	-84.09	1,344.05	-951.43	3,276.71	3,216.52	60.18	54.445	
6,850.00	6,386.70	5,739.83	5,505.07	35.60	29.93	-81.71	1,346.80	-953.53	3,294.95	3,234.74	60.21	54.724	
6,900.00	6,405.14	5,747.69	5,512.57	35.66	29.97	-79.62	1,348.68	-954.96	3,311.93	3,251.69	60.24	54.976	
6,950.00	6,419.68	5,751.87	5,516.55	35.74	29.99	-77.78	1,349.68	-955.73	3,327.55	3,267.27	60.29	55.193	
7,000.00	6,430.22	5,752.32	5,516.99	35.86	29.99	-76.19	1,349.79	-955.81	3,341.74	3,281.39	60.35	55.372	
7,050.00	6,436.67	5,749.06	5,513.88	36.05	29.98	-74.82	1,349.01	-955.21	3,354.41	3,293.98	60.43	55.510	
7,100.00	6,438.99	5,742.10	5,507.24	36.30	29.94	-73.69	1,347.34	-953.94	3,365.46	3,304.93	60.53	55.604	
7,102.92	6,439.00	5,741.59	5,506.75	36.32	29.94	-73.63	1,347.22	-953.85	3,366.05	3,305.52	60.53	55.609	
7,200.00	6,439.00	5,724.10	5,490.08	36.99	29.85	-73.33	1,343.03	-950.66	3,386.98	3,326.19	60.80	55.711	
7,300.00	6,439.00	7,295.81	6,383.00	37.90	37.77	-89.11	1,589.23	-117.86	3,396.96	3,324.45	72.50	46.852	
7,400.00	6,439.00	7,395.80	6,383.00	38.99	39.14	-89.11	1,591.41	-17.89	3,398.12	3,323.14	74.98	45.321	
7,500.00	6,439.00	7,495.80	6,383.00	40.25	40.63	-89.11	1,593.59	82.08	3,399.29	3,321.53	77.76	43.714	
7,600.00	6,439.00	7,595.79	6,383.00	41.65	42.24	-89.11	1,595.77	182.05	3,400.46	3,319.64	80.82	42.074	
7,700.00	6,439.00	7,695.78	6,383.00	43.18	43.96	-89.11	1,597.94	282.02	3,401.62	3,317.50	84.12	40.435	
7,800.00	6,439.00	7,795.77	6,383.00	44.82	45.77	-89.11	1,600.12	381.99	3,402.79	3,315.14	87.65	38.823	
7,900.00	6,439.00	7,895.77	6,383.00	46.56	47.67	-89.11	1,602.30	481.96	3,403.96	3,312.59	91.36	37.257	
8,000.00	6,439.00	7,995.76	6,383.00	48.39	49.65	-89.11	1,604.48	581.93	3,405.12	3,309.87	95.25	35.749	
8,100.00	6,439.00	8,095.75	6,383.00	50.30	51.69	-89.11	1,606.66	681.90	3,406.29	3,307.00	99.29	34.307	
8,200.00	6,439.00	8,195.75	6,383.00	52.29	53.80	-89.11	1,608.83	781.87	3,407.46	3,304.00	103.46	32.936	
8,300.00	6,439.00	8,295.74	6,383.00	54.34	55.96	-89.11	1,611.01	881.84	3,408.62	3,300.88	107.75	31.636	
8,400.00	6,439.00	8,395.73	6,383.00	56.45	58.16	-89.11	1,613.19	981.81	3,409.79	3,297.65	112.14	30.407	
8,500.00	6,439.00	8,495.73	6,383.00	58.61	60.41	-89.11	1,615.37	1,081.78	3,410.96	3,294.33	116.62	29.248	
8,600.00	6,439.00	8,595.72	6,383.00	60.82	62.70	-89.11	1,617.55	1,181.75	3,412.12	3,290.94	121.19	28.156	
8,700.00	6,439.00	8,695.71	6,383.00	63.06	65.02	-89.11	1,619.72	1,281.72	3,413.29	3,287.46	125.82	27.127	
8,800.00	6,439.00	8,795.71	6,383.00	65.35	67.38	-89.11	1,621.90	1,381.69	3,414.46	3,283.93	130.53	26.159	
8,900.00	6,439.00	8,895.70	6,383.00	67.67	69.76	-89.11	1,624.08	1,481.65	3,415.62	3,280.33	135.29	25.246	
9,000.00	6,439.00	8,995.69	6,383.00	70.01	72.17	-89.11	1,626.26	1,581.62	3,416.79	3,276.68	140.11	24.387	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	MALLARD EXPLORATION	Local Co-ordinate Reference:	Well CANVASBACK 32-33-6HN
Project:	WELD COUNTY	TVD Reference:	KB 27' @ 4973.00usft
Reference Site:	SEC 32-T9N-R60W	MD Reference:	KB 27' @ 4973.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	CANVASBACK 32-33-6HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 5000.16 Single User Db
Reference Design:	PROPOSAL 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC 32-T9N-R60W - CANVASBACK FED 32-33-1HN - OWB - PROPOSAL 2													Offset Site Error: 0.00 usft
Survey Program: 0-MWD													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
9,100.00	6,439.00	9,095.69	6,383.00	72.39	74.60	-89.11	1,628.44	1,681.59	3,417.96	3,272.99	144.97	23.577	
9,200.00	6,439.00	9,195.68	6,383.00	74.79	77.05	-89.11	1,630.61	1,781.56	3,419.12	3,269.25	149.87	22.814	
9,300.00	6,439.00	9,295.67	6,383.00	77.21	79.52	-89.11	1,632.79	1,881.53	3,420.29	3,265.47	154.82	22.093	
9,400.00	6,439.00	9,395.67	6,383.00	79.65	82.00	-89.11	1,634.97	1,981.50	3,421.46	3,261.66	159.79	21.412	
9,500.00	6,439.00	9,495.66	6,383.00	82.12	84.50	-89.11	1,637.15	2,081.47	3,422.62	3,257.82	164.80	20.768	
9,600.00	6,439.00	9,595.65	6,383.00	84.59	87.02	-89.11	1,639.33	2,181.44	3,423.79	3,253.95	169.84	20.159	
9,700.00	6,439.00	9,695.65	6,383.00	87.09	89.55	-89.11	1,641.50	2,281.41	3,424.96	3,250.05	174.91	19.581	
9,800.00	6,439.00	9,795.64	6,383.00	89.60	92.09	-89.11	1,643.68	2,381.38	3,426.12	3,246.12	180.00	19.034	
9,900.00	6,439.00	9,895.63	6,383.00	92.12	94.64	-89.11	1,645.86	2,481.35	3,427.29	3,242.18	185.11	18.515	
10,000.00	6,439.00	9,995.63	6,383.00	94.65	97.20	-89.11	1,648.04	2,581.32	3,428.46	3,238.21	190.24	18.022	
10,100.00	6,439.00	10,095.62	6,383.00	97.20	99.77	-89.11	1,650.22	2,681.29	3,429.62	3,234.23	195.39	17.552	
10,200.00	6,439.00	10,195.61	6,383.00	99.75	102.35	-89.11	1,652.40	2,781.26	3,430.79	3,230.23	200.56	17.106	
10,300.00	6,439.00	10,295.60	6,383.00	102.32	104.94	-89.12	1,654.57	2,881.23	3,431.96	3,226.21	205.75	16.681	
10,400.00	6,439.00	10,395.60	6,383.00	104.89	107.54	-89.12	1,656.75	2,981.20	3,433.12	3,222.18	210.95	16.275	
10,500.00	6,439.00	10,495.59	6,383.00	107.47	110.14	-89.12	1,658.93	3,081.17	3,434.29	3,218.13	216.16	15.888	
10,600.00	6,439.00	10,595.58	6,383.00	110.06	112.75	-89.12	1,661.11	3,181.14	3,435.46	3,214.07	221.38	15.518	
10,700.00	6,439.00	10,695.58	6,383.00	112.66	115.36	-89.12	1,663.29	3,281.11	3,436.62	3,210.00	226.62	15.164	
10,800.00	6,439.00	10,795.57	6,383.00	115.26	117.98	-89.12	1,665.46	3,381.07	3,437.79	3,205.92	231.87	14.826	
10,900.00	6,439.00	10,895.56	6,383.00	117.87	120.61	-89.12	1,667.64	3,481.04	3,438.95	3,201.82	237.13	14.502	
11,000.00	6,439.00	10,995.56	6,383.00	120.49	123.24	-89.12	1,669.82	3,581.01	3,440.12	3,197.72	242.40	14.192	
11,100.00	6,439.00	11,095.55	6,383.00	123.11	125.87	-89.12	1,672.00	3,680.98	3,441.29	3,193.61	247.68	13.894	
11,200.00	6,439.00	11,195.54	6,383.00	125.73	128.51	-89.12	1,674.18	3,780.95	3,442.45	3,189.49	252.97	13.608	
11,300.00	6,439.00	11,295.54	6,383.00	128.36	131.16	-89.12	1,676.35	3,880.92	3,443.62	3,185.36	258.26	13.334	
11,400.00	6,439.00	11,395.53	6,383.00	131.00	133.80	-89.12	1,678.53	3,980.89	3,444.79	3,181.22	263.56	13.070	
11,500.00	6,439.00	11,495.52	6,383.00	133.64	136.45	-89.12	1,680.71	4,080.86	3,445.95	3,177.08	268.87	12.816	
11,600.00	6,439.00	11,595.52	6,383.00	136.28	139.11	-89.12	1,682.89	4,180.83	3,447.12	3,172.93	274.19	12.572	
11,700.00	6,439.00	11,695.51	6,383.00	138.93	141.77	-89.12	1,685.07	4,280.80	3,448.29	3,168.78	279.51	12.337	
11,800.00	6,439.00	11,795.50	6,383.00	141.58	144.43	-89.12	1,687.24	4,380.77	3,449.45	3,164.62	284.84	12.110	
11,900.00	6,439.00	11,895.50	6,383.00	144.23	147.09	-89.12	1,689.42	4,480.74	3,450.62	3,160.45	290.17	11.892	
12,000.00	6,439.00	11,995.49	6,383.00	146.89	149.75	-89.12	1,691.60	4,580.71	3,451.79	3,156.28	295.51	11.681	
12,100.00	6,439.00	12,095.48	6,383.00	149.55	152.42	-89.12	1,693.78	4,680.68	3,452.95	3,152.10	300.86	11.477	
12,200.00	6,439.00	12,195.48	6,383.00	152.21	155.09	-89.12	1,695.96	4,780.65	3,454.12	3,147.92	306.21	11.280	
12,300.00	6,439.00	12,295.47	6,383.00	154.88	157.77	-89.12	1,698.14	4,880.62	3,455.29	3,143.73	311.56	11.090	
12,400.00	6,439.00	12,395.46	6,383.00	157.55	160.44	-89.12	1,700.31	4,980.59	3,456.45	3,139.54	316.92	10.907	
12,500.00	6,439.00	12,495.46	6,383.00	160.22	163.12	-89.12	1,702.49	5,080.56	3,457.62	3,135.34	322.28	10.729	
12,600.00	6,439.00	12,595.45	6,383.00	162.89	165.80	-89.12	1,704.67	5,180.53	3,458.79	3,131.14	327.64	10.557	
12,700.00	6,439.00	12,695.44	6,383.00	165.57	168.48	-89.12	1,706.85	5,280.49	3,459.95	3,126.94	333.01	10.390	
12,800.00	6,439.00	12,795.43	6,383.00	168.24	171.16	-89.12	1,709.03	5,380.46	3,461.12	3,122.73	338.39	10.228	
12,900.00	6,439.00	12,895.43	6,383.00	170.92	173.85	-89.12	1,711.20	5,480.43	3,462.29	3,118.53	343.76	10.072	
13,000.00	6,439.00	12,995.42	6,383.00	173.60	176.54	-89.12	1,713.38	5,580.40	3,463.45	3,114.31	349.14	9.920	
13,100.00	6,439.00	13,095.41	6,383.00	176.29	179.22	-89.12	1,715.56	5,680.37	3,464.62	3,110.10	354.52	9.773	
13,200.00	6,439.00	13,195.41	6,383.00	178.97	181.91	-89.12	1,717.74	5,780.34	3,465.79	3,105.88	359.91	9.630	
13,300.00	6,439.00	13,295.40	6,383.00	181.66	184.60	-89.12	1,719.92	5,880.31	3,466.95	3,101.66	365.30	9.491	
13,400.00	6,439.00	13,395.39	6,383.00	184.35	187.30	-89.12	1,722.09	5,980.28	3,468.12	3,097.43	370.69	9.356	
13,500.00	6,439.00	13,495.39	6,383.00	187.04	189.99	-89.12	1,724.27	6,080.25	3,469.29	3,093.21	376.08	9.225	
13,600.00	6,439.00	13,595.38	6,383.00	189.73	192.69	-89.12	1,726.45	6,180.22	3,470.45	3,088.98	381.48	9.097	
13,700.00	6,439.00	13,695.37	6,383.00	192.42	195.38	-89.13	1,728.63	6,280.19	3,471.62	3,084.75	386.88	8.973	
13,800.00	6,439.00	13,795.37	6,383.00	195.11	198.08	-89.13	1,730.81	6,380.16	3,472.79	3,080.51	392.28	8.853	
13,900.00	6,439.00	13,895.36	6,383.00	197.81	200.78	-89.13	1,732.98	6,480.13	3,473.95	3,076.28	397.68	8.736	
14,000.00	6,439.00	13,995.35	6,383.00	200.51	203.48	-89.13	1,735.16	6,580.10	3,475.12	3,072.04	403.08	8.621	
14,100.00	6,439.00	14,095.35	6,383.00	203.20	206.18	-89.13	1,737.34	6,680.07	3,476.29	3,067.80	408.49	8.510	
14,200.00	6,439.00	14,195.34	6,383.00	205.90	208.88	-89.13	1,739.52	6,780.04	3,477.45	3,063.56	413.90	8.402	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	MALLARD EXPLORATION	Local Co-ordinate Reference:	Well CANVASBACK 32-33-6HN
Project:	WELD COUNTY	TVD Reference:	KB 27' @ 4973.00usft
Reference Site:	SEC 32-T9N-R60W	MD Reference:	KB 27' @ 4973.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	CANVASBACK 32-33-6HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 5000.16 Single User Db
Reference Design:	PROPOSAL 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC 32-T9N-R60W - CANVASBACK FED 32-33-1HN - OWB - PROPOSAL 2													Offset Site Error:	0.00 usft	
Survey Program:		0-MWD		Offset		Semi Major Axis		Offset Wellbore Centre		Rule Assigned:				Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning		
14,300.00	6,439.00	14,295.33	6,383.00	208.60	211.58	-89.13	1,741.70	6,880.01	3,478.62	3,059.31	419.31	8.296			
14,400.00	6,439.00	14,395.33	6,383.00	211.30	214.28	-89.13	1,743.87	6,979.98	3,479.79	3,055.07	424.72	8.193			
14,500.00	6,439.00	14,495.32	6,383.00	214.01	216.99	-89.13	1,746.05	7,079.95	3,480.95	3,050.82	430.13	8.093			
14,600.00	6,439.00	14,595.31	6,383.00	216.71	219.69	-89.13	1,748.23	7,179.91	3,482.12	3,046.57	435.55	7.995			
14,700.00	6,439.00	14,695.31	6,383.00	219.41	222.40	-89.13	1,750.41	7,279.88	3,483.29	3,042.32	440.97	7.899			
14,800.00	6,439.00	14,795.30	6,383.00	222.12	225.11	-89.13	1,752.59	7,379.85	3,484.45	3,038.07	446.38	7.806			
14,900.00	6,439.00	14,895.29	6,383.00	224.82	227.81	-89.13	1,754.77	7,479.82	3,485.62	3,033.82	451.80	7.715			
15,000.00	6,439.00	14,995.29	6,383.00	227.53	230.52	-89.13	1,756.94	7,579.79	3,486.79	3,029.56	457.22	7.626			
15,100.00	6,439.00	15,095.28	6,383.00	230.24	233.23	-89.13	1,759.12	7,679.76	3,487.95	3,025.31	462.65	7.539			
15,200.00	6,439.00	15,195.27	6,383.00	232.94	235.94	-89.13	1,761.30	7,779.73	3,489.12	3,021.05	468.07	7.454			
15,300.00	6,439.00	15,295.26	6,383.00	235.65	238.65	-89.13	1,763.48	7,879.70	3,490.29	3,016.79	473.50	7.371			
15,400.00	6,439.00	15,395.26	6,383.00	238.36	241.36	-89.13	1,765.66	7,979.67	3,491.45	3,012.53	478.92	7.290			
15,500.00	6,439.00	15,495.25	6,383.00	241.07	244.07	-89.13	1,767.83	8,079.64	3,492.62	3,008.27	484.35	7.211			
15,600.00	6,439.00	15,595.24	6,383.00	243.78	246.78	-89.13	1,770.01	8,179.61	3,493.79	3,004.01	489.78	7.133			
15,700.00	6,439.00	15,695.24	6,383.00	246.50	249.50	-89.13	1,772.19	8,279.58	3,494.95	2,999.75	495.21	7.058			
15,800.00	6,439.00	15,795.23	6,383.00	249.21	252.21	-89.13	1,774.37	8,379.55	3,496.12	2,995.48	500.64	6.983			
15,900.00	6,439.00	15,895.22	6,383.00	251.92	254.92	-89.13	1,776.55	8,479.52	3,497.29	2,991.22	506.07	6.911			
16,000.00	6,439.00	15,995.22	6,383.00	254.63	257.64	-89.13	1,778.72	8,579.49	3,498.45	2,986.95	511.50	6.840			
16,100.00	6,439.00	16,095.21	6,383.00	257.35	260.35	-89.13	1,780.90	8,679.46	3,499.62	2,982.68	516.94	6.770			
16,200.00	6,439.00	16,195.20	6,383.00	260.06	263.07	-89.13	1,783.08	8,779.43	3,500.79	2,978.41	522.37	6.702			
16,300.00	6,439.00	16,295.20	6,383.00	262.78	265.78	-89.13	1,785.26	8,879.40	3,501.95	2,974.15	527.81	6.635			
16,400.00	6,439.00	16,395.19	6,383.00	265.49	268.50	-89.13	1,787.44	8,979.37	3,503.12	2,969.88	533.24	6.569			
16,500.00	6,439.00	16,495.18	6,383.00	268.21	271.22	-89.13	1,789.61	9,079.33	3,504.29	2,965.60	538.68	6.505			
16,600.00	6,439.00	16,595.18	6,383.00	270.93	273.93	-89.13	1,791.79	9,179.30	3,505.45	2,961.33	544.12	6.442			
16,700.00	6,439.00	16,695.17	6,383.00	273.64	276.65	-89.13	1,793.97	9,279.27	3,506.62	2,957.06	549.56	6.381			
16,800.00	6,439.00	16,795.16	6,383.00	276.36	279.37	-89.13	1,796.15	9,379.24	3,507.79	2,952.79	555.00	6.320			
16,900.00	6,439.00	16,895.16	6,383.00	279.08	282.09	-89.13	1,798.33	9,479.21	3,508.95	2,948.51	560.44	6.261			
17,000.00	6,439.00	16,995.15	6,383.00	281.80	284.80	-89.13	1,800.50	9,579.18	3,510.12	2,944.24	565.88	6.203			
17,089.98	6,439.00	17,049.03	6,383.00	284.24	286.27	-89.13	1,801.68	9,633.05	3,511.36	2,941.66	569.69	6.164 SF			

Anticollision Report

Company:	MALLARD EXPLORATION	Local Co-ordinate Reference:	Well CANVASBACK 32-33-6HN
Project:	WELD COUNTY	TVD Reference:	KB 27' @ 4973.00usft
Reference Site:	SEC 32-T9N-R60W	MD Reference:	KB 27' @ 4973.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	CANVASBACK 32-33-6HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 5000.16 Single User Db
Reference Design:	PROPOSAL 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC 32-T9N-R60W - CANVASBACK FED 32-33-2HN - ORIGINAL WELLBORE - PROPOSAL 1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
0.00	0.00	0.00	0.00	0.00	0.00	-1.99	79.79	-2.77	79.90				
100.00	100.00	97.00	97.00	0.42	0.40	-1.99	79.79	-2.77	79.84	79.02	0.82	97.538	
200.00	200.00	197.00	197.00	1.25	1.22	-1.99	79.79	-2.77	79.84	77.37	2.47	32.375 CC	
300.00	300.00	295.81	295.79	1.74	2.07	-3.02	80.43	-4.24	80.55	76.99	3.56	22.606 ES	
400.00	399.98	394.34	394.19	2.24	3.27	147.84	82.43	-8.81	84.42	79.81	4.61	18.300	
500.00	499.84	492.32	491.82	3.42	4.20	144.94	85.76	-16.43	93.09	86.93	6.15	15.128	
600.00	599.45	589.43	588.23	4.32	4.98	142.10	90.37	-26.99	106.61	99.20	7.41	14.387	
700.00	698.70	685.36	683.04	5.10	5.67	139.60	96.22	-40.36	124.94	116.42	8.52	14.662	
800.00	797.47	780.88	776.95	5.81	6.00	137.58	103.21	-56.37	147.86	138.52	9.34	15.833	
900.00	895.62	877.45	871.76	6.47	6.26	136.57	110.55	-73.15	173.76	163.63	10.12	17.166	
1,000.00	993.06	973.33	965.91	7.10	6.56	136.41	117.83	-89.82	202.11	191.18	10.92	18.500	
1,100.00	1,089.64	1,068.43	1,059.27	7.71	6.87	136.76	125.06	-106.35	232.89	221.15	11.74	19.839	
1,200.00	1,185.27	1,162.61	1,151.75	8.30	7.19	137.43	132.21	-122.72	266.15	253.59	12.57	21.177	
1,290.38	1,270.77	1,246.86	1,234.46	8.77	7.49	138.19	138.61	-137.37	298.39	285.09	13.29	22.445	
1,300.00	1,279.82	1,255.77	1,243.22	8.80	7.52	138.33	139.29	-138.92	301.93	288.58	13.36	22.607	
1,400.00	1,373.90	1,348.49	1,334.25	9.11	7.86	139.57	146.33	-155.04	338.84	324.81	14.03	24.150	
1,500.00	1,467.99	1,441.21	1,425.28	9.45	8.20	140.56	153.38	-171.15	375.86	361.12	14.74	25.505	
1,600.00	1,562.07	1,533.92	1,516.32	9.81	8.56	141.38	160.42	-187.27	412.96	397.50	15.46	26.715	
1,700.00	1,656.16	1,626.64	1,607.35	10.18	8.92	142.06	167.46	-203.39	450.12	433.93	16.19	27.798	
1,800.00	1,750.24	1,719.35	1,698.38	10.57	9.29	142.64	174.51	-219.50	487.33	470.39	16.94	28.769	
1,900.00	1,844.32	1,812.07	1,789.41	10.96	9.66	143.14	181.55	-235.62	524.57	506.87	17.70	29.642	
2,000.00	1,938.41	1,904.79	1,880.44	11.37	10.03	143.57	188.59	-251.74	561.85	543.38	18.46	30.429	
2,100.00	2,032.49	1,997.50	1,971.48	11.78	10.42	143.95	195.63	-267.85	599.14	579.90	19.24	31.139	
2,200.00	2,126.57	2,090.22	2,062.51	12.21	10.80	144.28	202.68	-283.97	636.46	616.44	20.02	31.784	
2,300.00	2,220.66	2,182.93	2,153.54	12.64	11.19	144.58	209.72	-300.09	673.80	652.98	20.82	32.369	
2,400.00	2,314.74	2,275.65	2,244.57	13.08	11.58	144.84	216.76	-316.20	711.14	689.53	21.61	32.903	
2,500.00	2,408.82	2,368.37	2,335.61	13.52	11.98	145.08	223.81	-332.32	748.50	726.09	22.42	33.391	
2,600.00	2,502.91	2,461.08	2,426.64	13.97	12.37	145.30	230.85	-348.44	785.87	762.65	23.22	33.838	
2,700.00	2,596.99	2,553.80	2,517.67	14.42	12.77	145.50	237.89	-364.55	823.25	799.22	24.04	34.249	
2,800.00	2,691.07	2,646.51	2,608.70	14.88	13.17	145.68	244.94	-380.67	860.64	835.79	24.85	34.627	
2,900.00	2,785.16	2,739.23	2,699.74	15.35	13.58	145.84	251.98	-396.79	898.03	872.36	25.68	34.977	
3,000.00	2,879.24	2,831.95	2,790.77	15.81	13.98	145.99	259.02	-412.90	935.43	908.93	26.50	35.300	
3,100.00	2,973.33	2,924.66	2,881.80	16.28	14.39	146.13	266.07	-429.02	972.84	945.51	27.33	35.600	
3,200.00	3,067.41	3,017.38	2,972.83	16.76	14.79	146.26	273.11	-445.14	1,010.25	982.09	28.16	35.879	
3,300.00	3,161.49	3,110.09	3,063.86	17.23	15.20	146.38	280.15	-461.25	1,047.66	1,018.67	28.99	36.139	
3,400.00	3,255.58	3,202.81	3,154.90	17.71	15.61	146.49	287.20	-477.37	1,085.08	1,055.25	29.83	36.381	
3,500.00	3,349.66	3,295.52	3,245.93	18.20	16.03	146.60	294.24	-493.49	1,122.50	1,091.83	30.66	36.608	
3,600.00	3,443.74	3,388.24	3,336.96	18.68	16.44	146.70	301.28	-509.60	1,159.92	1,128.42	31.50	36.820	
3,700.00	3,537.83	3,480.96	3,427.99	19.18	16.85	146.79	308.33	-525.72	1,197.35	1,165.00	32.34	37.019	
3,800.00	3,631.91	3,573.67	3,519.03	19.70	17.27	146.87	315.37	-541.84	1,234.77	1,201.59	33.19	37.206	
3,900.00	3,725.99	3,666.39	3,610.06	20.28	17.68	146.96	322.41	-557.95	1,272.21	1,238.17	34.03	37.382	
4,000.00	3,820.08	3,759.10	3,701.09	20.87	18.10	147.03	329.46	-574.07	1,309.64	1,274.76	34.88	37.548	
4,100.00	3,914.16	3,851.82	3,792.12	21.47	18.51	147.10	336.50	-590.19	1,347.07	1,311.35	35.73	37.704	
4,200.00	4,008.24	3,944.54	3,883.16	22.07	18.93	147.17	343.54	-606.31	1,384.51	1,347.93	36.58	37.852	
4,300.00	4,102.33	4,037.25	3,974.19	22.68	19.35	147.24	350.59	-622.42	1,421.95	1,384.52	37.43	37.992	
4,400.00	4,196.41	4,129.97	4,065.22	23.28	19.77	147.30	357.63	-638.54	1,459.39	1,421.11	38.28	38.124	
4,500.00	4,290.49	4,222.68	4,156.25	23.88	20.19	147.36	364.67	-654.66	1,496.83	1,457.70	39.13	38.250	
4,600.00	4,384.58	4,315.40	4,247.28	24.49	20.61	147.41	371.71	-670.77	1,534.27	1,494.28	39.99	38.370	
4,700.00	4,478.66	4,408.12	4,338.32	25.09	21.03	147.46	378.76	-686.89	1,571.71	1,530.87	40.84	38.483	
4,800.00	4,572.75	4,500.83	4,429.35	25.69	21.45	147.52	385.80	-703.01	1,609.16	1,567.46	41.70	38.591	
4,900.00	4,666.83	4,593.55	4,520.38	26.30	21.87	147.56	392.84	-719.12	1,646.60	1,604.05	42.55	38.694	
5,000.00	4,760.91	4,686.26	4,611.41	26.90	22.29	147.61	399.89	-735.24	1,684.05	1,640.64	43.41	38.792	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	MALLARD EXPLORATION	Local Co-ordinate Reference:	Well CANVASBACK 32-33-6HN
Project:	WELD COUNTY	TVD Reference:	KB 27' @ 4973.00usft
Reference Site:	SEC 32-T9N-R60W	MD Reference:	KB 27' @ 4973.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	CANVASBACK 32-33-6HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 5000.16 Single User Db
Reference Design:	PROPOSAL 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC 32-T9N-R60W - CANVASBACK FED 32-33-2HN - ORIGINAL WELLBORE - PROPOSAL 1													Offset Site Error: 0.00 usft
Survey Program: 0-MWD													Offset Well Error: 0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.00	4,855.00	4,778.98	4,702.45	27.51	22.71	147.65	406.93	-751.36	1,721.50	1,677.23	44.27	38.886	
5,200.00	4,949.08	4,871.69	4,793.48	28.11	23.13	147.70	413.97	-767.47	1,758.94	1,713.81	45.13	38.975	
5,300.00	5,043.16	4,964.41	4,884.51	28.72	23.56	147.74	421.02	-783.59	1,796.39	1,750.40	45.99	39.061	
5,400.00	5,137.25	5,057.13	4,975.54	29.32	23.98	147.77	428.06	-799.71	1,833.84	1,786.99	46.85	39.142	
5,500.00	5,231.33	5,149.84	5,066.58	29.93	24.40	147.81	435.10	-815.82	1,871.29	1,823.58	47.71	39.221	
5,600.00	5,325.41	5,242.56	5,157.61	30.53	24.83	147.85	442.15	-831.94	1,908.74	1,860.17	48.57	39.296	
5,700.00	5,419.50	5,335.27	5,248.64	31.14	25.25	147.88	449.19	-848.06	1,946.20	1,896.76	49.44	39.368	
5,800.00	5,513.58	5,427.99	5,339.67	31.75	25.68	147.91	456.23	-864.17	1,983.65	1,933.35	50.30	39.437	
5,900.00	5,607.66	5,520.71	5,430.70	32.35	26.10	147.95	463.28	-880.29	2,021.10	1,969.94	51.16	39.503	
6,000.00	5,701.75	5,613.42	5,521.74	32.96	26.53	147.98	470.32	-896.41	2,058.55	2,006.53	52.03	39.567	
6,100.00	5,795.83	5,706.14	5,612.77	33.56	26.95	148.01	477.36	-912.52	2,096.01	2,043.12	52.89	39.628	
6,113.74	5,808.76	5,718.88	5,625.28	33.64	27.01	148.01	478.33	-914.74	2,101.15	2,048.14	53.01	39.638	
6,150.00	5,843.02	5,752.44	5,658.23	33.86	27.16	159.22	480.88	-920.57	2,114.84	2,061.52	53.32	39.665	
6,200.00	5,890.57	5,798.36	5,703.32	34.18	27.37	176.30	484.37	-928.55	2,133.99	2,080.25	53.74	39.710	
6,250.00	5,938.13	5,843.55	5,747.68	34.48	27.58	-166.57	487.80	-936.41	2,153.36	2,099.24	54.13	39.783	
6,300.00	5,985.36	5,889.89	5,793.28	34.71	27.78	-151.42	491.35	-943.88	2,172.85	2,118.34	54.51	39.860	
6,350.00	6,031.88	5,938.77	5,841.80	34.89	27.99	-139.08	495.28	-948.12	2,192.28	2,137.37	54.91	39.922	
6,400.00	6,077.36	5,989.03	5,891.86	35.04	28.15	-129.35	499.52	-948.14	2,211.51	2,156.24	55.26	40.019	
6,450.00	6,121.43	6,040.88	5,943.30	35.16	28.23	-121.68	504.05	-943.55	2,230.39	2,174.81	55.58	40.133	
6,500.00	6,163.76	6,094.58	5,995.87	35.26	28.20	-115.57	508.89	-933.90	2,248.78	2,192.98	55.79	40.306	
6,550.00	6,204.04	6,150.35	6,049.27	35.35	28.12	-110.61	514.03	-918.70	2,266.53	2,210.65	55.89	40.554	
6,600.00	6,241.95	6,208.45	6,103.02	35.42	28.01	-106.54	519.44	-897.40	2,283.51	2,227.61	55.90	40.852	
6,650.00	6,277.21	6,269.09	6,156.52	35.47	27.89	-103.15	525.10	-869.47	2,299.56	2,243.71	55.85	41.172	
6,700.00	6,309.55	6,332.45	6,208.91	35.51	27.76	-100.32	530.96	-834.39	2,314.54	2,258.76	55.78	41.492	
6,750.00	6,338.72	6,398.63	6,259.15	35.54	27.64	-97.95	536.94	-791.79	2,328.31	2,272.60	55.71	41.790	
6,800.00	6,364.50	6,467.62	6,305.92	35.57	27.55	-95.97	542.95	-741.48	2,340.73	2,285.04	55.69	42.029	
6,850.00	6,386.70	6,539.26	6,347.72	35.60	27.48	-94.32	548.83	-683.66	2,351.67	2,295.91	55.76	42.176	
6,900.00	6,405.14	6,613.22	6,382.96	35.66	27.47	-92.96	554.45	-618.94	2,361.00	2,305.04	55.96	42.189	
6,950.00	6,419.68	6,688.98	6,410.12	35.74	27.53	-91.86	559.61	-548.46	2,368.63	2,312.28	56.35	42.037	
7,000.00	6,430.22	6,765.85	6,427.96	35.86	27.69	-91.00	564.16	-473.88	2,374.47	2,317.53	56.94	41.701	
7,050.00	6,436.67	6,843.03	6,435.68	36.05	27.97	-90.36	567.93	-397.24	2,378.47	2,320.74	57.73	41.198	
7,100.00	6,438.99	6,899.66	6,436.00	36.30	28.25	-90.01	570.26	-340.66	2,380.75	2,322.21	58.55	40.663	
7,102.92	6,439.00	6,902.57	6,436.00	36.32	28.27	-90.00	570.38	-337.75	2,380.85	2,322.25	58.60	40.629	
7,200.00	6,439.00	6,999.61	6,436.00	36.99	28.89	-90.00	574.32	-240.79	2,383.81	2,323.36	60.45	39.434	
7,300.00	6,439.00	7,099.57	6,436.00	37.90	29.75	-90.00	578.39	-140.92	2,386.87	2,324.10	62.76	38.029	
7,400.00	6,439.00	7,199.52	6,436.00	38.99	30.85	-90.00	582.45	-41.05	2,389.92	2,324.47	65.45	36.514	
7,500.00	6,439.00	7,299.47	6,436.00	40.25	32.19	-90.00	586.52	58.82	2,392.98	2,324.51	68.47	34.950	
7,600.00	6,439.00	7,399.43	6,436.00	41.65	33.75	-90.00	590.58	158.69	2,396.03	2,324.26	71.77	33.384	
7,700.00	6,439.00	7,499.38	6,436.00	43.18	35.49	-90.00	594.64	258.56	2,399.09	2,323.76	75.32	31.851	
7,800.00	6,439.00	7,599.33	6,436.00	44.82	37.39	-90.00	598.71	358.43	2,402.14	2,323.05	79.09	30.373	
7,900.00	6,439.00	7,699.29	6,436.00	46.56	39.41	-90.00	602.77	458.30	2,405.20	2,322.16	83.04	28.965	
8,000.00	6,439.00	7,799.24	6,436.00	48.39	41.53	-90.00	606.84	558.17	2,408.25	2,321.10	87.15	27.633	
8,100.00	6,439.00	7,899.19	6,436.00	50.30	43.73	-90.00	610.90	658.04	2,411.31	2,319.90	91.40	26.381	
8,200.00	6,439.00	7,999.15	6,436.00	52.29	46.00	-90.00	614.96	757.91	2,414.36	2,318.59	95.78	25.208	
8,300.00	6,439.00	8,099.10	6,436.00	54.34	48.32	-90.00	619.03	857.78	2,417.42	2,317.16	100.25	24.113	
8,400.00	6,439.00	8,199.05	6,436.00	56.45	50.69	-90.00	623.09	957.65	2,420.47	2,315.65	104.83	23.090	
8,500.00	6,439.00	8,299.01	6,436.00	58.61	53.10	-90.00	627.16	1,057.52	2,423.53	2,314.05	109.48	22.137	
8,600.00	6,439.00	8,398.96	6,436.00	60.82	55.54	-90.00	631.22	1,157.40	2,426.58	2,312.38	114.20	21.248	
8,700.00	6,439.00	8,498.91	6,436.00	63.06	58.01	-90.00	635.29	1,257.27	2,429.64	2,310.65	118.99	20.419	
8,800.00	6,439.00	8,598.87	6,436.00	65.35	60.50	-90.00	639.35	1,357.14	2,432.69	2,308.86	123.83	19.645	
8,900.00	6,439.00	8,698.82	6,436.00	67.67	63.02	-90.00	643.41	1,457.01	2,435.75	2,307.03	128.72	18.923	
9,000.00	6,439.00	8,798.77	6,436.00	70.01	65.55	-90.00	647.48	1,556.88	2,438.80	2,305.15	133.66	18.247	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	MALLARD EXPLORATION	Local Co-ordinate Reference:	Well CANVASBACK 32-33-6HN
Project:	WELD COUNTY	TVD Reference:	KB 27' @ 4973.00usft
Reference Site:	SEC 32-T9N-R60W	MD Reference:	KB 27' @ 4973.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	CANVASBACK 32-33-6HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 5000.16 Single User Db
Reference Design:	PROPOSAL 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC 32-T9N-R60W - CANVASBACK FED 32-33-2HN - ORIGINAL WELLBORE - PROPOSAL 1												Offset Site Error: 0.00 usft
Survey Program: 0-MWD												Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)		
9,100.00	6,439.00	8,898.73	6,436.00	72.39	68.10	-90.00	651.54	1,656.75	2,441.86	2,303.22	138.63	17.614
9,200.00	6,439.00	8,998.68	6,436.00	74.79	70.66	-90.00	655.61	1,756.62	2,444.91	2,301.27	143.65	17.020
9,300.00	6,439.00	9,098.63	6,436.00	77.21	73.24	-90.00	659.67	1,856.49	2,447.97	2,299.28	148.69	16.464
9,400.00	6,439.00	9,198.59	6,436.00	79.65	75.83	-90.00	663.73	1,956.36	2,451.02	2,297.26	153.76	15.940
9,500.00	6,439.00	9,298.54	6,436.00	82.12	78.42	-90.00	667.80	2,056.23	2,454.08	2,295.22	158.86	15.448
9,600.00	6,439.00	9,398.49	6,436.00	84.59	81.03	-90.00	671.86	2,156.10	2,457.13	2,293.15	163.98	14.984
9,700.00	6,439.00	9,498.45	6,436.00	87.09	83.65	-90.00	675.93	2,255.97	2,460.19	2,291.06	169.13	14.547
9,800.00	6,439.00	9,598.40	6,436.00	89.60	86.27	-90.00	679.99	2,355.84	2,463.24	2,288.95	174.29	14.133
9,900.00	6,439.00	9,698.35	6,436.00	92.12	88.90	-90.00	684.06	2,455.71	2,466.30	2,286.83	179.47	13.742
10,000.00	6,439.00	9,798.31	6,436.00	94.65	91.53	-90.00	688.12	2,555.58	2,469.35	2,284.69	184.67	13.372
10,100.00	6,439.00	9,898.26	6,436.00	97.20	94.18	-90.00	692.18	2,655.45	2,472.41	2,282.53	189.88	13.021
10,200.00	6,439.00	9,998.21	6,436.00	99.75	96.82	-90.00	696.25	2,755.33	2,475.46	2,280.35	195.11	12.688
10,300.00	6,439.00	10,098.17	6,436.00	102.32	99.47	-90.00	700.31	2,855.20	2,478.52	2,278.17	200.35	12.371
10,400.00	6,439.00	10,198.12	6,436.00	104.89	102.13	-90.00	704.38	2,955.07	2,481.57	2,275.97	205.60	12.070
10,500.00	6,439.00	10,298.07	6,436.00	107.47	104.79	-90.00	708.44	3,054.94	2,484.63	2,273.76	210.87	11.783
10,600.00	6,439.00	10,398.03	6,436.00	110.06	107.45	-90.00	712.50	3,154.81	2,487.69	2,271.55	216.14	11.510
10,700.00	6,439.00	10,497.98	6,436.00	112.66	110.12	-90.00	716.57	3,254.68	2,490.74	2,269.32	221.42	11.249
10,800.00	6,439.00	10,597.93	6,436.00	115.26	112.79	-90.00	720.63	3,354.55	2,493.80	2,267.08	226.71	11.000
10,900.00	6,439.00	10,697.89	6,436.00	117.87	115.46	-90.00	724.70	3,454.42	2,496.85	2,264.84	232.01	10.762
11,000.00	6,439.00	10,797.84	6,436.00	120.49	118.14	-90.00	728.76	3,554.29	2,499.91	2,262.58	237.32	10.534
11,100.00	6,439.00	10,897.79	6,436.00	123.11	120.81	-90.00	732.83	3,654.16	2,502.96	2,260.32	242.64	10.316
11,200.00	6,439.00	10,997.75	6,436.00	125.73	123.49	-90.00	736.89	3,754.03	2,506.02	2,258.06	247.96	10.107
11,300.00	6,439.00	11,097.70	6,436.00	128.36	126.18	-90.00	740.95	3,853.90	2,509.07	2,255.78	253.29	9.906
11,400.00	6,439.00	11,197.65	6,436.00	131.00	128.86	-90.00	745.02	3,953.77	2,512.13	2,253.50	258.62	9.714
11,500.00	6,439.00	11,297.61	6,436.00	133.64	131.55	-90.00	749.08	4,053.64	2,515.18	2,251.22	263.96	9.529
11,600.00	6,439.00	11,397.56	6,436.00	136.28	134.24	-90.00	753.15	4,153.51	2,518.24	2,248.93	269.31	9.351
11,700.00	6,439.00	11,497.51	6,436.00	138.93	136.93	-90.00	757.21	4,253.39	2,521.29	2,246.64	274.66	9.180
11,800.00	6,439.00	11,597.47	6,436.00	141.58	139.62	-90.00	761.27	4,353.26	2,524.35	2,244.34	280.01	9.015
11,900.00	6,439.00	11,697.42	6,436.00	144.23	142.31	-90.00	765.34	4,453.13	2,527.40	2,242.03	285.37	8.857
12,000.00	6,439.00	11,797.37	6,436.00	146.89	145.00	-90.00	769.40	4,553.00	2,530.46	2,239.73	290.73	8.704
12,100.00	6,439.00	11,897.33	6,436.00	149.55	147.70	-90.00	773.47	4,652.87	2,533.51	2,237.41	296.10	8.556
12,200.00	6,439.00	11,997.28	6,436.00	152.21	150.40	-90.00	777.53	4,752.74	2,536.57	2,235.10	301.47	8.414
12,300.00	6,439.00	12,097.23	6,436.00	154.88	153.10	-90.00	781.60	4,852.61	2,539.62	2,232.78	306.84	8.277
12,400.00	6,439.00	12,197.19	6,436.00	157.55	155.80	-90.00	785.66	4,952.48	2,542.68	2,230.46	312.22	8.144
12,500.00	6,439.00	12,297.14	6,436.00	160.22	158.50	-90.00	789.72	5,052.35	2,545.73	2,228.13	317.60	8.016
12,600.00	6,439.00	12,397.09	6,436.00	162.89	161.20	-90.00	793.79	5,152.22	2,548.79	2,225.80	322.98	7.891
12,700.00	6,439.00	12,497.05	6,436.00	165.57	163.90	-90.00	797.85	5,252.09	2,551.84	2,223.47	328.37	7.771
12,800.00	6,439.00	12,597.00	6,436.00	168.24	166.60	-90.00	801.92	5,351.96	2,554.90	2,221.14	333.76	7.655
12,900.00	6,439.00	12,696.95	6,436.00	170.92	169.31	-90.00	805.98	5,451.83	2,557.95	2,218.80	339.15	7.542
13,000.00	6,439.00	12,796.91	6,436.00	173.60	172.01	-90.00	810.04	5,551.70	2,561.01	2,216.46	344.55	7.433
13,100.00	6,439.00	12,896.86	6,436.00	176.29	174.72	-90.00	814.11	5,651.57	2,564.06	2,214.12	349.94	7.327
13,200.00	6,439.00	12,996.81	6,436.00	178.97	177.43	-90.00	818.17	5,751.45	2,567.12	2,211.78	355.34	7.224
13,300.00	6,439.00	13,096.77	6,436.00	181.66	180.13	-90.00	822.24	5,851.32	2,570.17	2,209.43	360.74	7.125
13,400.00	6,439.00	13,196.72	6,436.00	184.35	182.84	-90.00	826.30	5,951.19	2,573.23	2,207.08	366.14	7.028
13,500.00	6,439.00	13,296.67	6,436.00	187.04	185.55	-90.00	830.37	6,051.06	2,576.28	2,204.73	371.55	6.934
13,600.00	6,439.00	13,396.63	6,436.00	189.73	188.26	-90.00	834.43	6,150.93	2,579.34	2,202.38	376.96	6.843
13,700.00	6,439.00	13,496.58	6,436.00	192.42	190.97	-90.00	838.49	6,250.80	2,582.39	2,200.03	382.37	6.754
13,800.00	6,439.00	13,596.53	6,436.00	195.11	193.68	-90.00	842.56	6,350.67	2,585.45	2,197.67	387.78	6.667
13,900.00	6,439.00	13,696.49	6,436.00	197.81	196.39	-90.00	846.62	6,450.54	2,588.50	2,195.32	393.19	6.583
14,000.00	6,439.00	13,796.44	6,436.00	200.51	199.10	-90.00	850.69	6,550.41	2,591.56	2,192.96	398.60	6.502
14,100.00	6,439.00	13,896.39	6,436.00	203.20	201.82	-90.00	854.75	6,650.28	2,594.61	2,190.60	404.02	6.422
14,200.00	6,439.00	13,996.35	6,436.00	205.90	204.53	-90.00	858.81	6,750.15	2,597.67	2,188.24	409.43	6.345

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	MALLARD EXPLORATION	Local Co-ordinate Reference:	Well CANVASBACK 32-33-6HN
Project:	WELD COUNTY	TVD Reference:	KB 27' @ 4973.00usft
Reference Site:	SEC 32-T9N-R60W	MD Reference:	KB 27' @ 4973.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	CANVASBACK 32-33-6HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 5000.16 Single User Db
Reference Design:	PROPOSAL 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC 32-T9N-R60W - CANVASBACK FED 32-33-2HN - ORIGINAL WELLBORE - PROPOSAL 1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD												Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
		Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
14,300.00	6,439.00	14,096.30	6,436.00	208.60	207.24	-90.00	862.88	6,850.02	2,600.72	2,185.87	414.85	6.269	
14,400.00	6,439.00	14,196.25	6,436.00	211.30	209.96	-90.00	866.94	6,949.89	2,603.78	2,183.51	420.27	6.195	
14,500.00	6,439.00	14,296.20	6,436.00	214.01	212.67	-90.00	871.01	7,049.76	2,606.83	2,181.14	425.69	6.124	
14,600.00	6,439.00	14,396.16	6,436.00	216.71	215.38	-90.00	875.07	7,149.63	2,609.89	2,178.78	431.11	6.054	
14,700.00	6,439.00	14,496.11	6,436.00	219.41	218.10	-90.00	879.14	7,249.51	2,612.94	2,176.41	436.54	5.986	
14,800.00	6,439.00	14,596.06	6,436.00	222.12	220.81	-90.00	883.20	7,349.38	2,616.00	2,174.04	441.96	5.919	
14,900.00	6,439.00	14,696.02	6,436.00	224.82	223.53	-90.00	887.26	7,449.25	2,619.05	2,171.67	447.39	5.854	
15,000.00	6,439.00	14,795.97	6,436.00	227.53	226.25	-90.00	891.33	7,549.12	2,622.11	2,169.30	452.81	5.791	
15,100.00	6,439.00	14,895.92	6,436.00	230.24	228.96	-90.00	895.39	7,648.99	2,625.17	2,166.93	458.24	5.729	
15,200.00	6,439.00	14,995.88	6,436.00	232.94	231.68	-90.00	899.46	7,748.86	2,628.22	2,164.55	463.67	5.668	
15,300.00	6,439.00	15,095.83	6,436.00	235.65	234.40	-90.00	903.52	7,848.73	2,631.28	2,162.18	469.10	5.609	
15,400.00	6,439.00	15,195.78	6,436.00	238.36	237.11	-90.00	907.58	7,948.60	2,634.33	2,159.80	474.53	5.551	
15,500.00	6,439.00	15,295.74	6,436.00	241.07	239.83	-90.00	911.65	8,048.47	2,637.39	2,157.43	479.96	5.495	
15,600.00	6,439.00	15,395.69	6,436.00	243.78	242.55	-90.00	915.71	8,148.34	2,640.44	2,155.05	485.39	5.440	
15,700.00	6,439.00	15,495.64	6,436.00	246.50	245.27	-90.00	919.78	8,248.21	2,643.50	2,152.67	490.83	5.386	
15,800.00	6,439.00	15,595.60	6,436.00	249.21	247.99	-90.00	923.84	8,348.08	2,646.55	2,150.29	496.26	5.333	
15,900.00	6,439.00	15,695.55	6,436.00	251.92	250.70	-90.00	927.91	8,447.95	2,649.61	2,147.91	501.69	5.281	
16,000.00	6,439.00	15,795.50	6,436.00	254.63	253.42	-90.00	931.97	8,547.82	2,652.66	2,145.53	507.13	5.231	
16,100.00	6,439.00	15,895.46	6,436.00	257.35	256.14	-90.00	936.03	8,647.69	2,655.72	2,143.15	512.57	5.181	
16,200.00	6,439.00	15,995.41	6,436.00	260.06	258.86	-90.00	940.10	8,747.57	2,658.77	2,140.77	518.00	5.133	
16,300.00	6,439.00	16,095.36	6,436.00	262.78	261.58	-90.00	944.16	8,847.44	2,661.83	2,138.39	523.44	5.085	
16,400.00	6,439.00	16,195.32	6,436.00	265.49	264.30	-90.00	948.23	8,947.31	2,664.88	2,136.00	528.88	5.039	
16,500.00	6,439.00	16,295.27	6,436.00	268.21	267.02	-90.00	952.29	9,047.18	2,667.94	2,133.62	534.32	4.993	
16,600.00	6,439.00	16,395.22	6,436.00	270.93	269.74	-90.00	956.35	9,147.05	2,670.99	2,131.24	539.76	4.949	
16,700.00	6,439.00	16,495.18	6,436.00	273.64	272.46	-90.00	960.42	9,246.92	2,674.05	2,128.85	545.20	4.905	
16,800.00	6,439.00	16,595.13	6,436.00	276.36	275.18	-90.00	964.48	9,346.79	2,677.10	2,126.46	550.64	4.862	
16,900.00	6,439.00	16,695.08	6,436.00	279.08	277.91	-90.00	968.55	9,446.66	2,680.16	2,124.08	556.08	4.820	
17,000.00	6,439.00	16,795.04	6,436.00	281.80	280.63	-90.00	972.61	9,546.53	2,683.21	2,121.69	561.52	4.778	
17,089.98	6,439.00	16,884.98	6,436.00	284.24	283.08	-90.00	976.27	9,636.40	2,685.96	2,119.54	566.42	4.742 SF	

Anticollision Report

Company:	MALLARD EXPLORATION	Local Co-ordinate Reference:	Well CANVASBACK 32-33-6HN
Project:	WELD COUNTY	TVD Reference:	KB 27' @ 4973.00usft
Reference Site:	SEC 32-T9N-R60W	MD Reference:	KB 27' @ 4973.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	CANVASBACK 32-33-6HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 5000.16 Single User Db
Reference Design:	PROPOSAL 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC 32-T9N-R60W - CANVASBACK FED 32-33-3HN - ORIGINAL WELLBORE - PROPOSAL 1													Offset Site Error: 0.00 usft
Survey Program: 0-MWD													Offset Well Error: 0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Semi Major Axis Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-2.11	60.12	-2.22	60.19				
100.00	100.00	98.00	98.00	0.42	0.41	-2.11	60.12	-2.22	60.16	59.34	0.82	73.123	
200.00	200.00	198.00	198.00	1.25	1.23	-2.11	60.12	-2.22	60.16	57.68	2.47	24.313	
300.00	300.00	298.00	298.00	1.74	1.73	-2.11	60.12	-2.22	60.16	56.68	3.47	17.318	CC, ES
400.00	399.98	398.23	398.21	2.24	2.35	150.46	59.85	-3.88	61.49	57.27	4.22	14.567	
500.00	499.84	498.32	498.16	3.42	3.48	148.17	59.03	-8.99	65.53	59.98	5.55	11.815	
600.00	599.45	598.10	597.56	4.32	4.38	144.90	57.65	-17.52	72.44	65.89	6.55	11.067	
700.00	698.70	697.44	696.17	5.10	5.14	141.22	55.73	-29.39	82.41	75.02	7.38	11.160	
800.00	797.47	796.19	793.71	5.81	5.84	137.61	53.29	-44.53	95.54	87.39	8.15	11.721	
900.00	895.62	894.56	890.42	6.47	6.10	134.61	50.42	-62.35	111.81	103.02	8.79	12.719	
1,000.00	993.06	992.74	986.87	7.10	6.37	133.28	47.50	-80.42	130.66	121.10	9.55	13.677	
1,100.00	1,089.64	1,090.46	1,082.88	7.71	6.67	133.17	44.60	-98.40	151.87	141.50	10.37	14.639	
1,200.00	1,185.27	1,187.60	1,178.31	8.30	6.98	133.82	41.72	-116.28	175.44	164.20	11.24	15.610	
1,290.38	1,270.77	1,274.79	1,263.98	8.77	7.28	134.81	39.13	-132.32	198.83	186.81	12.02	16.542	
1,300.00	1,279.82	1,284.04	1,273.07	8.80	7.31	134.97	38.86	-134.02	201.43	189.34	12.09	16.665	
1,400.00	1,373.90	1,380.17	1,367.51	9.11	7.65	136.37	36.01	-151.71	228.51	215.68	12.83	17.811	
1,500.00	1,467.99	1,476.30	1,461.96	9.45	8.00	137.48	33.15	-169.40	255.68	242.09	13.59	18.809	
1,600.00	1,562.07	1,572.43	1,556.40	9.81	8.36	138.38	30.30	-187.09	282.94	268.57	14.36	19.697	
1,700.00	1,656.16	1,668.56	1,650.85	10.18	8.72	139.11	27.45	-204.78	310.24	295.10	15.14	20.489	
1,800.00	1,750.24	1,764.69	1,745.29	10.57	9.10	139.73	24.59	-222.47	337.58	321.66	15.93	21.197	
1,900.00	1,844.32	1,860.82	1,839.74	10.96	9.47	140.26	21.74	-240.16	364.96	348.24	16.72	21.832	
2,000.00	1,938.41	1,956.95	1,934.19	11.37	9.86	140.71	18.89	-257.85	392.36	374.84	17.51	22.402	
2,100.00	2,032.49	2,053.08	2,028.63	11.78	10.25	141.10	16.03	-275.54	419.78	401.46	18.32	22.917	
2,200.00	2,126.57	2,149.21	2,123.08	12.21	10.64	141.45	13.18	-293.23	447.21	428.09	19.13	23.383	
2,300.00	2,220.66	2,245.34	2,217.52	12.64	11.04	141.76	10.33	-310.92	474.66	454.72	19.94	23.806	
2,400.00	2,314.74	2,341.47	2,311.97	13.08	11.44	142.03	7.47	-328.61	502.12	481.36	20.76	24.191	
2,500.00	2,408.82	2,437.60	2,406.41	13.52	11.85	142.27	4.62	-346.30	529.59	508.01	21.58	24.543	
2,600.00	2,502.91	2,533.73	2,500.86	13.97	12.26	142.49	1.77	-363.99	557.07	534.66	22.40	24.865	
2,700.00	2,596.99	2,629.86	2,595.30	14.42	12.67	142.69	-1.09	-381.68	584.55	561.32	23.23	25.161	
2,800.00	2,691.07	2,725.99	2,689.75	14.88	13.08	142.87	-3.94	-399.37	612.04	587.98	24.06	25.433	
2,900.00	2,785.16	2,822.12	2,784.19	15.35	13.49	143.04	-6.79	-417.06	639.54	614.64	24.90	25.684	
3,000.00	2,879.24	2,918.25	2,878.64	15.81	13.91	143.19	-9.65	-434.74	667.03	641.30	25.74	25.917	
3,100.00	2,973.33	3,014.38	2,973.08	16.28	14.33	143.33	-12.50	-452.43	694.54	667.96	26.58	26.133	
3,200.00	3,067.41	3,110.51	3,067.53	16.76	14.75	143.46	-15.35	-470.12	722.05	694.63	27.42	26.333	
3,300.00	3,161.49	3,206.64	3,161.98	17.23	15.17	143.58	-18.20	-487.81	749.56	721.29	28.26	26.520	
3,400.00	3,255.58	3,302.77	3,256.42	17.71	15.59	143.69	-21.06	-505.50	777.07	747.96	29.11	26.694	
3,500.00	3,349.66	3,398.90	3,350.87	18.20	16.02	143.79	-23.91	-523.19	804.58	774.63	29.96	26.857	
3,600.00	3,443.74	3,495.03	3,445.31	18.68	16.44	143.89	-26.76	-540.88	832.10	801.29	30.81	27.009	
3,700.00	3,537.83	3,591.16	3,539.76	19.18	16.87	143.98	-29.62	-558.57	859.62	827.96	31.66	27.153	
3,800.00	3,631.91	3,687.29	3,634.20	19.70	17.29	144.07	-32.47	-576.26	887.14	854.63	32.51	27.287	
3,900.00	3,725.99	3,783.42	3,728.65	20.28	17.72	144.15	-35.32	-593.95	914.67	881.30	33.37	27.414	
4,000.00	3,820.08	3,879.55	3,823.09	20.87	18.15	144.22	-38.18	-611.64	942.19	907.97	34.22	27.533	
4,100.00	3,914.16	3,975.68	3,917.54	21.47	18.58	144.29	-41.03	-629.33	969.72	934.64	35.08	27.646	
4,200.00	4,008.24	4,071.81	4,011.98	22.07	19.01	144.36	-43.88	-647.02	997.25	961.31	35.93	27.752	
4,300.00	4,102.33	4,167.94	4,106.43	22.68	19.44	144.42	-46.74	-664.71	1,024.78	987.98	36.79	27.853	
4,400.00	4,196.41	4,264.07	4,200.88	23.28	19.88	144.48	-49.59	-682.40	1,052.31	1,014.66	37.65	27.949	
4,500.00	4,290.49	4,360.20	4,295.32	23.88	20.31	144.54	-52.44	-700.09	1,079.84	1,041.33	38.51	28.040	
4,600.00	4,384.58	4,456.33	4,389.77	24.49	20.74	144.60	-55.30	-717.78	1,107.37	1,068.00	39.37	28.126	
4,700.00	4,478.66	4,552.46	4,484.21	25.09	21.17	144.65	-58.15	-735.47	1,134.90	1,094.67	40.23	28.208	
4,800.00	4,572.75	4,648.59	4,578.66	25.69	21.61	144.70	-61.00	-753.16	1,162.44	1,121.34	41.10	28.286	
4,900.00	4,666.83	4,744.72	4,673.10	26.30	22.04	144.74	-63.86	-770.84	1,189.97	1,148.01	41.96	28.360	
5,000.00	4,760.91	4,840.85	4,767.55	26.90	22.48	144.79	-66.71	-788.53	1,217.51	1,174.68	42.82	28.431	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	MALLARD EXPLORATION	Local Co-ordinate Reference:	Well CANVASBACK 32-33-6HN
Project:	WELD COUNTY	TVD Reference:	KB 27' @ 4973.00usft
Reference Site:	SEC 32-T9N-R60W	MD Reference:	KB 27' @ 4973.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	CANVASBACK 32-33-6HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 5000.16 Single User Db
Reference Design:	PROPOSAL 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC 32-T9N-R60W - CANVASBACK FED 32-33-3HN - ORIGINAL WELLBORE - PROPOSAL 1													Offset Site Error: 0.00 usft
Survey Program: 0-MWD													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
5,100.00	4,855.00	4,936.98	4,861.99	27.51	22.91	144.83	-69.56	-806.22	1,245.04	1,201.36	43.69	28.499	
5,200.00	4,949.08	5,033.11	4,956.44	28.11	23.35	144.87	-72.42	-823.91	1,272.58	1,228.03	44.55	28.564	
5,300.00	5,043.16	5,129.24	5,050.88	28.72	23.79	144.91	-75.27	-841.60	1,300.12	1,254.70	45.42	28.626	
5,400.00	5,137.25	5,225.37	5,145.33	29.32	24.22	144.95	-78.12	-859.29	1,327.65	1,281.37	46.28	28.689	
5,500.00	5,231.33	5,320.25	5,238.66	29.93	24.64	145.02	-80.83	-876.06	1,355.22	1,308.12	47.10	28.773	
5,600.00	5,325.41	5,414.28	5,331.65	30.53	25.10	145.21	-83.05	-889.82	1,382.92	1,335.03	47.89	28.877	
5,700.00	5,419.50	5,507.85	5,424.59	31.14	25.58	145.52	-84.77	-900.52	1,410.79	1,362.16	48.63	29.009	
5,800.00	5,513.58	5,600.00	5,516.42	31.75	26.02	145.93	-86.00	-908.12	1,438.88	1,389.56	49.32	29.175	
5,900.00	5,607.66	5,692.82	5,609.11	32.35	26.42	146.46	-86.76	-912.82	1,467.24	1,417.28	49.96	29.369	
6,000.00	5,701.75	5,783.87	5,700.14	32.96	26.60	147.07	-87.03	-914.55	1,495.95	1,445.40	50.55	29.592	
6,100.00	5,795.83	5,877.56	5,793.83	33.56	26.63	147.75	-87.04	-914.57	1,524.99	1,473.88	51.11	29.838	
6,113.74	5,808.76	5,890.49	5,806.76	33.64	26.63	147.84	-87.04	-914.57	1,529.00	1,477.81	51.18	29.873	
6,150.00	5,843.02	5,928.11	5,844.36	33.86	26.57	158.97	-87.01	-913.53	1,539.66	1,488.29	51.37	29.973	
6,200.00	5,890.57	5,979.76	5,895.71	34.18	26.52	176.03	-86.85	-908.10	1,554.57	1,503.00	51.58	30.141	
6,250.00	5,938.13	6,030.65	5,945.62	34.48	26.47	-166.78	-86.56	-898.25	1,569.62	1,517.92	51.71	30.357	
6,300.00	5,985.36	6,080.86	5,993.82	34.71	26.40	-151.49	-86.15	-884.24	1,584.69	1,532.91	51.78	30.606	
6,350.00	6,031.88	6,130.48	6,040.06	34.89	26.32	-138.99	-85.63	-866.31	1,599.66	1,547.85	51.81	30.877	
6,400.00	6,077.36	6,179.57	6,084.12	35.04	26.22	-129.10	-85.00	-844.69	1,614.40	1,562.61	51.79	31.170	
6,450.00	6,121.43	6,228.22	6,125.79	35.16	26.13	-121.28	-84.26	-819.64	1,628.81	1,577.08	51.74	31.484	
6,500.00	6,163.76	6,276.48	6,164.89	35.26	26.02	-115.01	-83.44	-791.39	1,642.77	1,591.13	51.64	31.811	
6,550.00	6,204.04	6,324.40	6,201.22	35.35	25.92	-109.90	-82.53	-760.18	1,656.17	1,604.64	51.53	32.138	
6,600.00	6,241.95	6,372.03	6,234.63	35.42	25.81	-105.66	-81.54	-726.26	1,668.90	1,617.48	51.43	32.452	
6,650.00	6,277.21	6,419.41	6,264.95	35.47	25.71	-102.11	-80.47	-689.88	1,680.87	1,629.52	51.35	32.735	
6,700.00	6,309.55	6,466.57	6,292.05	35.51	25.61	-99.12	-79.35	-651.32	1,691.97	1,640.66	51.32	32.970	
6,750.00	6,338.72	6,513.53	6,315.78	35.54	25.52	-96.59	-78.16	-610.83	1,702.13	1,650.78	51.36	33.142	
6,800.00	6,364.50	6,560.29	6,336.05	35.57	25.43	-94.46	-76.93	-568.72	1,711.27	1,659.78	51.49	33.236	
6,850.00	6,386.70	6,606.87	6,352.75	35.60	25.36	-92.68	-75.66	-525.28	1,719.31	1,667.59	51.72	33.242	
6,900.00	6,405.14	6,653.25	6,365.83	35.66	25.30	-91.22	-74.36	-480.80	1,726.19	1,674.13	52.07	33.154	
6,950.00	6,419.68	6,700.00	6,375.32	35.74	25.26	-90.05	-73.03	-435.06	1,731.86	1,679.33	52.53	32.966	
7,000.00	6,430.22	6,745.43	6,380.95	35.86	25.24	-89.16	-71.71	-390.01	1,736.28	1,683.17	53.11	32.692	
7,050.00	6,436.67	6,791.20	6,382.99	36.05	25.24	-88.54	-70.38	-344.32	1,739.41	1,685.62	53.80	32.334	
7,100.00	6,438.99	6,840.85	6,383.00	36.30	25.26	-88.23	-68.93	-294.69	1,741.18	1,686.48	54.70	31.833	
7,102.92	6,439.00	6,843.77	6,383.00	36.32	25.26	-88.22	-68.84	-291.77	1,741.24	1,686.48	54.75	31.802	
7,200.00	6,439.00	6,940.84	6,382.99	36.99	25.32	-88.22	-66.01	-194.75	1,743.09	1,686.26	56.83	30.672	
7,300.00	6,439.00	7,040.82	6,382.98	37.90	25.51	-88.23	-63.09	-94.81	1,745.00	1,685.62	59.38	29.387	
7,400.00	6,439.00	7,140.80	6,382.97	38.99	26.34	-88.23	-60.17	5.13	1,746.91	1,684.61	62.30	28.040	
7,500.00	6,439.00	7,240.78	6,382.97	40.25	28.04	-88.23	-57.25	105.07	1,748.81	1,683.28	65.54	26.683	
7,600.00	6,439.00	7,340.76	6,382.96	41.65	30.05	-88.23	-54.33	205.01	1,750.72	1,681.67	69.05	25.354	
7,700.00	6,439.00	7,440.74	6,382.95	43.18	32.20	-88.23	-51.41	304.94	1,752.63	1,679.84	72.79	24.077	
7,800.00	6,439.00	7,540.73	6,382.95	44.82	34.45	-88.23	-48.49	404.88	1,754.54	1,677.80	76.74	22.865	
7,900.00	6,439.00	7,640.71	6,382.94	46.56	36.76	-88.24	-45.57	504.82	1,756.45	1,675.60	80.85	21.725	
8,000.00	6,439.00	7,740.69	6,382.93	48.39	39.14	-88.24	-42.65	604.76	1,758.36	1,673.25	85.11	20.661	
8,100.00	6,439.00	7,840.67	6,382.93	50.30	41.55	-88.24	-39.73	704.70	1,760.27	1,670.77	89.49	19.669	
8,200.00	6,439.00	7,940.65	6,382.92	52.29	44.01	-88.24	-36.81	804.64	1,762.17	1,668.19	93.99	18.749	
8,300.00	6,439.00	8,040.63	6,382.92	54.34	46.50	-88.24	-33.89	904.58	1,764.08	1,665.50	98.58	17.895	
8,400.00	6,439.00	8,140.61	6,382.91	56.45	49.01	-88.24	-30.97	1,004.52	1,765.99	1,662.74	103.25	17.104	
8,500.00	6,439.00	8,240.60	6,382.91	58.61	51.55	-88.25	-28.05	1,104.45	1,767.90	1,659.90	108.00	16.370	
8,600.00	6,439.00	8,340.58	6,382.90	60.82	54.11	-88.25	-25.13	1,204.39	1,769.81	1,657.00	112.81	15.689	
8,700.00	6,439.00	8,440.56	6,382.89	63.06	56.68	-88.25	-22.21	1,304.33	1,771.72	1,654.04	117.67	15.056	
8,800.00	6,439.00	8,540.54	6,382.89	65.35	59.27	-88.25	-19.29	1,404.27	1,773.63	1,651.03	122.59	14.468	
8,900.00	6,439.00	8,640.52	6,382.88	67.67	61.87	-88.25	-16.37	1,504.21	1,775.53	1,647.98	127.55	13.920	
9,000.00	6,439.00	8,740.50	6,382.88	70.01	64.48	-88.25	-13.45	1,604.15	1,777.44	1,644.89	132.55	13.409	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	MALLARD EXPLORATION	Local Co-ordinate Reference:	Well CANVASBACK 32-33-6HN
Project:	WELD COUNTY	TVD Reference:	KB 27' @ 4973.00usft
Reference Site:	SEC 32-T9N-R60W	MD Reference:	KB 27' @ 4973.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	CANVASBACK 32-33-6HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 5000.16 Single User Db
Reference Design:	PROPOSAL 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC 32-T9N-R60W - CANVASBACK FED 32-33-3HN - ORIGINAL WELLBORE - PROPOSAL 1												Offset Site Error: 0.00 usft
Survey Program: 0-MWD												Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)		
9,100.00	6,439.00	8,840.48	6,382.88	72.39	67.10	-88.26	-10.53	1,704.09	1,779.35	1,641.77	137.59	12.933
9,200.00	6,439.00	8,940.47	6,382.87	74.79	69.73	-88.26	-7.61	1,804.03	1,781.26	1,638.61	142.65	12.487
9,300.00	6,439.00	9,040.45	6,382.87	77.21	72.37	-88.26	-4.69	1,903.97	1,783.17	1,635.42	147.75	12.069
9,400.00	6,439.00	9,140.43	6,382.86	79.65	75.02	-88.26	-1.77	2,003.90	1,785.08	1,632.21	152.87	11.677
9,500.00	6,439.00	9,240.41	6,382.86	82.12	77.67	-88.26	1.15	2,103.84	1,786.99	1,628.97	158.01	11.309
9,600.00	6,439.00	9,340.39	6,382.85	84.59	80.32	-88.27	4.07	2,203.78	1,788.89	1,625.72	163.18	10.963
9,700.00	6,439.00	9,440.37	6,382.85	87.09	82.99	-88.27	6.99	2,303.72	1,790.80	1,622.44	168.36	10.637
9,800.00	6,439.00	9,540.35	6,382.85	89.60	85.65	-88.27	9.91	2,403.66	1,792.71	1,619.15	173.57	10.329
9,900.00	6,439.00	9,640.34	6,382.84	92.12	88.32	-88.27	12.83	2,503.60	1,794.62	1,615.84	178.78	10.038
10,000.00	6,439.00	9,740.32	6,382.84	94.65	91.00	-88.27	15.75	2,603.54	1,796.53	1,612.51	184.02	9.763
10,100.00	6,439.00	9,840.30	6,382.84	97.20	93.68	-88.27	18.67	2,703.48	1,798.44	1,609.18	189.26	9.502
10,200.00	6,439.00	9,940.28	6,382.83	99.75	96.36	-88.28	21.60	2,803.41	1,800.35	1,605.83	194.52	9.255
10,300.00	6,439.00	10,040.26	6,382.83	102.32	99.04	-88.28	24.52	2,903.35	1,802.26	1,602.47	199.79	9.021
10,400.00	6,439.00	10,140.24	6,382.83	104.89	101.73	-88.28	27.44	3,003.29	1,804.17	1,599.09	205.07	8.798
10,500.00	6,439.00	10,240.23	6,382.83	107.47	104.42	-88.28	30.36	3,103.23	1,806.07	1,595.71	210.36	8.586
10,600.00	6,439.00	10,340.21	6,382.82	110.06	107.11	-88.28	33.28	3,203.17	1,807.98	1,592.32	215.66	8.383
10,700.00	6,439.00	10,440.19	6,382.82	112.66	109.80	-88.28	36.20	3,303.11	1,809.89	1,588.92	220.97	8.191
10,800.00	6,439.00	10,540.17	6,382.82	115.26	112.50	-88.29	39.12	3,403.05	1,811.80	1,585.52	226.29	8.007
10,900.00	6,439.00	10,640.15	6,382.82	117.87	115.19	-88.29	42.04	3,502.99	1,813.71	1,582.10	231.61	7.831
11,000.00	6,439.00	10,740.13	6,382.82	120.49	117.89	-88.29	44.96	3,602.93	1,815.62	1,578.68	236.94	7.663
11,100.00	6,439.00	10,840.11	6,382.82	123.11	120.59	-88.29	47.88	3,702.86	1,817.53	1,575.25	242.27	7.502
11,200.00	6,439.00	10,940.10	6,382.81	125.73	123.30	-88.29	50.80	3,802.80	1,819.44	1,571.82	247.62	7.348
11,300.00	6,439.00	11,040.08	6,382.81	128.36	126.00	-88.29	53.72	3,902.74	1,821.35	1,568.38	252.96	7.200
11,400.00	6,439.00	11,140.06	6,382.81	131.00	128.70	-88.30	56.64	4,002.68	1,823.26	1,564.94	258.32	7.058
11,500.00	6,439.00	11,240.04	6,382.81	133.64	131.41	-88.30	59.56	4,102.62	1,825.16	1,561.49	263.68	6.922
11,600.00	6,439.00	11,340.02	6,382.81	136.28	134.12	-88.30	62.48	4,202.56	1,827.07	1,558.04	269.04	6.791
11,700.00	6,439.00	11,440.00	6,382.81	138.93	136.83	-88.30	65.40	4,302.50	1,828.98	1,554.58	274.40	6.665
11,800.00	6,439.00	11,539.98	6,382.81	141.58	139.54	-88.30	68.32	4,402.44	1,830.89	1,551.12	279.78	6.544
11,900.00	6,439.00	11,639.97	6,382.81	144.23	142.25	-88.31	71.24	4,502.37	1,832.80	1,547.65	285.15	6.427
12,000.00	6,439.00	11,739.95	6,382.81	146.89	144.96	-88.31	74.17	4,602.31	1,834.71	1,544.18	290.53	6.315
12,100.00	6,439.00	11,839.93	6,382.81	149.55	147.67	-88.31	77.09	4,702.25	1,836.62	1,540.71	295.91	6.207
12,200.00	6,439.00	11,939.91	6,382.81	152.21	150.38	-88.31	80.01	4,802.19	1,838.53	1,537.23	301.30	6.102
12,300.00	6,439.00	12,039.89	6,382.81	154.88	153.10	-88.31	82.93	4,902.13	1,840.44	1,533.75	306.69	6.001
12,400.00	6,439.00	12,139.87	6,382.81	157.55	155.81	-88.31	85.85	5,002.07	1,842.35	1,530.27	312.08	5.904
12,500.00	6,439.00	12,239.85	6,382.81	160.22	158.52	-88.32	88.77	5,102.01	1,844.26	1,526.79	317.47	5.809
12,600.00	6,439.00	12,339.84	6,382.81	162.89	161.24	-88.32	91.69	5,201.95	1,846.17	1,523.30	322.87	5.718
12,700.00	6,439.00	12,439.82	6,382.81	165.57	163.96	-88.32	94.61	5,301.88	1,848.08	1,519.81	328.27	5.630
12,800.00	6,439.00	12,539.80	6,382.81	168.24	166.67	-88.32	97.53	5,401.82	1,849.98	1,516.32	333.67	5.544
12,900.00	6,439.00	12,639.78	6,382.81	170.92	169.39	-88.32	100.45	5,501.76	1,851.89	1,512.82	339.07	5.462
13,000.00	6,439.00	12,739.76	6,382.81	173.60	172.11	-88.32	103.37	5,601.70	1,853.80	1,509.32	344.48	5.381
13,100.00	6,439.00	12,839.74	6,382.82	176.29	174.83	-88.33	106.30	5,701.64	1,855.71	1,505.82	349.89	5.304
13,200.00	6,439.00	12,939.72	6,382.82	178.97	177.55	-88.33	109.22	5,801.58	1,857.62	1,502.32	355.30	5.228
13,300.00	6,439.00	13,039.71	6,382.82	181.66	180.27	-88.33	112.14	5,901.52	1,859.53	1,498.82	360.71	5.155
13,400.00	6,439.00	13,139.69	6,382.82	184.35	182.99	-88.33	115.06	6,001.46	1,861.44	1,495.32	366.13	5.084
13,500.00	6,439.00	13,239.67	6,382.82	187.04	185.71	-88.33	117.98	6,101.39	1,863.35	1,491.81	371.54	5.015
13,600.00	6,439.00	13,339.65	6,382.83	189.73	188.43	-88.34	120.90	6,201.33	1,865.26	1,488.30	376.96	4.948
13,700.00	6,439.00	13,439.63	6,382.83	192.42	191.15	-88.34	123.82	6,301.27	1,867.17	1,484.79	382.38	4.883
13,800.00	6,439.00	13,539.61	6,382.83	195.11	193.87	-88.34	126.74	6,401.21	1,869.08	1,481.28	387.80	4.820
13,900.00	6,439.00	13,639.59	6,382.83	197.81	196.59	-88.34	129.66	6,501.15	1,870.99	1,477.77	393.22	4.758
14,000.00	6,439.00	13,739.58	6,382.84	200.51	199.31	-88.34	132.59	6,601.09	1,872.90	1,474.25	398.64	4.698
14,100.00	6,439.00	13,839.56	6,382.84	203.20	202.04	-88.34	135.51	6,701.03	1,874.81	1,470.74	404.07	4.640
14,200.00	6,439.00	13,939.54	6,382.84	205.90	204.76	-88.35	138.43	6,800.97	1,876.72	1,467.22	409.50	4.583

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	MALLARD EXPLORATION	Local Co-ordinate Reference:	Well CANVASBACK 32-33-6HN
Project:	WELD COUNTY	TVD Reference:	KB 27' @ 4973.00usft
Reference Site:	SEC 32-T9N-R60W	MD Reference:	KB 27' @ 4973.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	CANVASBACK 32-33-6HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 5000.16 Single User Db
Reference Design:	PROPOSAL 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC 32-T9N-R60W - CANVASBACK FED 32-33-3HN - ORIGINAL WELLBORE - PROPOSAL 1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD												Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
		Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
14,300.00	6,439.00	14,039.52	6,382.85	208.60	207.48	-88.35	141.35	6,900.90	1,878.63	1,463.70	414.92	4.528	
14,400.00	6,439.00	14,139.50	6,382.85	211.30	210.20	-88.35	144.27	7,000.84	1,880.54	1,460.18	420.35	4.474	
14,500.00	6,439.00	14,239.48	6,382.85	214.01	212.93	-88.35	147.19	7,100.78	1,882.45	1,456.66	425.78	4.421	
14,600.00	6,439.00	14,339.46	6,382.86	216.71	215.65	-88.35	150.11	7,200.72	1,884.36	1,453.14	431.21	4.370	
14,700.00	6,439.00	14,439.45	6,382.86	219.41	218.38	-88.35	153.03	7,300.66	1,886.27	1,449.62	436.64	4.320	
14,800.00	6,439.00	14,539.43	6,382.86	222.12	221.10	-88.36	155.96	7,400.60	1,888.18	1,446.10	442.08	4.271	
14,900.00	6,439.00	14,639.41	6,382.87	224.82	223.83	-88.36	158.88	7,500.54	1,890.09	1,442.57	447.51	4.224	
15,000.00	6,439.00	14,739.39	6,382.87	227.53	226.55	-88.36	161.80	7,600.48	1,891.99	1,439.05	452.95	4.177	
15,100.00	6,439.00	14,839.37	6,382.88	230.24	229.28	-88.36	164.72	7,700.41	1,893.90	1,435.52	458.38	4.132	
15,200.00	6,439.00	14,939.35	6,382.88	232.94	232.00	-88.36	167.64	7,800.35	1,895.81	1,431.99	463.82	4.087	
15,300.00	6,439.00	15,039.33	6,382.89	235.65	234.73	-88.37	170.56	7,900.29	1,897.72	1,428.47	469.26	4.044	
15,400.00	6,439.00	15,139.32	6,382.89	238.36	237.45	-88.37	173.48	8,000.23	1,899.63	1,424.94	474.70	4.002	
15,500.00	6,439.00	15,239.30	6,382.90	241.07	240.18	-88.37	176.41	8,100.17	1,901.54	1,421.41	480.14	3.960	
15,600.00	6,439.00	15,339.28	6,382.90	243.78	242.90	-88.37	179.33	8,200.11	1,903.45	1,417.88	485.58	3.920	
15,700.00	6,439.00	15,439.26	6,382.91	246.50	245.63	-88.37	182.25	8,300.05	1,905.36	1,414.35	491.02	3.880	
15,800.00	6,439.00	15,539.24	6,382.91	249.21	248.36	-88.37	185.17	8,399.99	1,907.27	1,410.82	496.46	3.842	
15,900.00	6,439.00	15,639.22	6,382.92	251.92	251.08	-88.38	188.09	8,499.92	1,909.18	1,407.28	501.90	3.804	
16,000.00	6,439.00	15,739.20	6,382.93	254.63	253.81	-88.38	191.01	8,599.86	1,911.09	1,403.75	507.34	3.767	
16,100.00	6,439.00	15,839.19	6,382.93	257.35	256.54	-88.38	193.94	8,699.80	1,913.00	1,400.22	512.79	3.731	
16,200.00	6,439.00	15,939.17	6,382.94	260.06	259.26	-88.38	196.86	8,799.74	1,914.91	1,396.68	518.23	3.695	
16,300.00	6,439.00	16,039.15	6,382.94	262.78	261.99	-88.38	199.78	8,899.68	1,916.82	1,393.15	523.68	3.660	
16,400.00	6,439.00	16,139.13	6,382.95	265.49	264.72	-88.39	202.70	8,999.62	1,918.73	1,389.61	529.12	3.626	
16,500.00	6,439.00	16,239.11	6,382.96	268.21	267.45	-88.39	205.62	9,099.56	1,920.64	1,386.08	534.57	3.593	
16,600.00	6,439.00	16,339.09	6,382.96	270.93	270.17	-88.39	208.54	9,199.50	1,922.55	1,382.54	540.01	3.560	
16,700.00	6,439.00	16,439.07	6,382.97	273.64	272.90	-88.39	211.47	9,299.43	1,924.46	1,379.00	545.46	3.528	
16,800.00	6,439.00	16,539.06	6,382.98	276.36	275.63	-88.39	214.39	9,399.37	1,926.37	1,375.46	550.91	3.497	
16,900.00	6,439.00	16,639.04	6,382.99	279.08	278.36	-88.39	217.31	9,499.31	1,928.28	1,371.93	556.36	3.466	
17,000.00	6,439.00	16,739.02	6,382.99	281.80	281.09	-88.40	220.23	9,599.25	1,930.19	1,368.39	561.81	3.436	
17,089.98	6,439.00	16,824.07	6,383.00	284.24	283.40	-88.40	222.72	9,684.27	1,931.92	1,365.40	566.52	3.410 SF	

Anticollision Report

Company:	MALLARD EXPLORATION	Local Co-ordinate Reference:	Well CANVASBACK 32-33-6HN
Project:	WELD COUNTY	TVD Reference:	KB 27' @ 4973.00usft
Reference Site:	SEC 32-T9N-R60W	MD Reference:	KB 27' @ 4973.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	CANVASBACK 32-33-6HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 5000.16 Single User Db
Reference Design:	PROPOSAL 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC 32-T9N-R60W - CANVASBACK FED 32-33-4HN - ORIGINAL WELLBORE - PROPOSAL 1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD												Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)	Highside Toolface (°)	Offset Wellbore Centre +N/-S (usft)	+E/-W (usft)	Distance Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
0.00	0.00	0.00	0.00	0.00	0.00	-1.98	40.08	-1.39	40.16				
100.00	100.00	98.00	98.00	0.42	0.41	-1.98	40.08	-1.39	40.11	39.29	0.82	48.751	
200.00	200.00	198.00	198.00	1.25	1.23	-1.98	40.08	-1.39	40.11	37.63	2.47	16.209	
300.00	300.00	298.00	298.00	1.74	1.73	-1.98	40.08	-1.39	40.11	36.63	3.47	11.546	CC, ES
400.00	399.98	397.98	397.98	2.24	2.12	152.51	40.08	-1.39	41.65	37.36	4.29	9.707	
500.00	499.84	498.89	498.87	3.42	2.58	153.91	38.97	-2.68	45.22	39.56	5.66	7.991	
600.00	599.45	599.90	599.73	4.32	3.66	153.78	35.53	-6.67	49.61	42.46	7.15	6.936	
700.00	698.70	700.95	700.40	5.10	4.52	152.49	29.77	-13.35	54.82	46.45	8.38	6.545	
800.00	797.47	802.03	800.71	5.81	5.28	150.38	21.70	-22.72	60.91	51.51	9.40	6.480	
900.00	895.62	903.10	900.52	6.47	5.97	147.76	11.31	-34.76	67.95	57.68	10.27	6.618	
1,000.00	993.06	1,004.13	999.67	7.10	6.63	144.87	-1.35	-49.46	76.04	65.02	11.02	6.897	
1,100.00	1,089.64	1,104.98	1,097.89	7.71	7.20	141.89	-16.26	-66.75	85.27	73.58	11.69	7.295	
1,200.00	1,185.27	1,204.29	1,194.28	8.30	7.47	140.04	-31.88	-84.87	96.63	84.28	12.35	7.824	
1,290.38	1,270.77	1,293.79	1,281.14	8.77	7.74	139.69	-45.95	-101.19	109.21	96.11	13.09	8.341	
1,300.00	1,279.82	1,303.30	1,290.37	8.80	7.77	139.72	-47.45	-102.93	110.66	97.50	13.16	8.410	
1,400.00	1,373.90	1,402.15	1,386.31	9.11	8.09	140.03	-62.99	-120.96	125.78	111.87	13.91	9.045	
1,500.00	1,467.99	1,501.00	1,482.25	9.45	8.42	140.27	-78.54	-138.99	140.89	126.20	14.70	9.588	
1,600.00	1,562.07	1,599.84	1,578.18	9.81	8.77	140.47	-94.08	-157.03	156.01	140.50	15.51	10.061	
1,700.00	1,656.16	1,698.69	1,674.12	10.18	9.13	140.63	-109.63	-175.06	171.13	154.79	16.34	10.474	
1,800.00	1,750.24	1,797.54	1,770.06	10.57	9.51	140.76	-125.17	-193.09	186.25	169.06	17.19	10.836	
1,900.00	1,844.32	1,896.39	1,866.00	10.96	9.89	140.88	-140.72	-211.13	201.38	183.32	18.05	11.154	
2,000.00	1,938.41	1,995.24	1,961.94	11.37	10.28	140.98	-156.26	-229.16	216.50	197.57	18.93	11.434	
2,100.00	2,032.49	2,094.09	2,057.88	11.78	10.68	141.06	-171.81	-247.19	231.62	211.80	19.83	11.683	
2,200.00	2,126.57	2,192.94	2,153.82	12.21	11.08	141.14	-187.35	-265.23	246.75	226.02	20.73	11.904	
2,300.00	2,220.66	2,291.79	2,249.76	12.64	11.49	141.20	-202.90	-283.26	261.87	240.23	21.64	12.101	
2,400.00	2,314.74	2,390.64	2,345.70	13.08	11.91	141.26	-218.44	-301.29	277.00	254.44	22.56	12.278	
2,500.00	2,408.82	2,489.49	2,441.64	13.52	12.33	141.32	-233.99	-319.32	292.12	268.63	23.49	12.436	
2,600.00	2,502.91	2,588.34	2,537.58	13.97	12.76	141.36	-249.54	-337.36	307.25	282.82	24.42	12.580	
2,700.00	2,596.99	2,687.19	2,633.52	14.42	13.19	141.41	-265.08	-355.39	322.37	297.01	25.37	12.709	
2,800.00	2,691.07	2,786.03	2,729.45	14.88	13.62	141.45	-280.63	-373.42	337.50	311.19	26.31	12.827	
2,900.00	2,785.16	2,884.88	2,825.39	15.35	14.06	141.48	-296.17	-391.46	352.62	325.36	27.26	12.934	
3,000.00	2,879.24	2,983.73	2,921.33	15.81	14.50	141.52	-311.72	-409.49	367.75	339.53	28.22	13.032	
3,100.00	2,973.33	3,082.58	3,017.27	16.28	14.94	141.55	-327.26	-427.52	382.88	353.70	29.18	13.122	
3,200.00	3,067.41	3,181.43	3,113.21	16.76	15.39	141.57	-342.81	-445.56	398.00	367.86	30.14	13.205	
3,300.00	3,161.49	3,280.28	3,209.15	17.23	15.84	141.60	-358.35	-463.59	413.13	382.02	31.11	13.281	
3,400.00	3,255.58	3,379.13	3,305.09	17.71	16.29	141.63	-373.90	-481.62	428.25	396.18	32.08	13.351	
3,500.00	3,349.66	3,477.98	3,401.03	18.20	16.74	141.65	-389.44	-499.66	443.38	410.33	33.05	13.416	
3,600.00	3,443.74	3,576.83	3,496.97	18.68	17.19	141.67	-404.99	-517.69	458.51	424.48	34.02	13.476	
3,700.00	3,537.83	3,675.68	3,592.91	19.18	17.65	141.69	-420.53	-535.72	473.63	438.63	35.00	13.532	
3,800.00	3,631.91	3,774.53	3,688.85	19.70	18.11	141.71	-436.08	-553.76	488.76	452.78	35.98	13.584	
3,900.00	3,725.99	3,873.38	3,784.78	20.28	18.57	141.72	-451.62	-571.79	503.89	466.93	36.96	13.633	
4,000.00	3,820.08	3,972.23	3,880.72	20.87	19.03	141.74	-467.17	-589.82	519.01	481.07	37.94	13.678	
4,100.00	3,914.16	4,071.07	3,976.66	21.47	19.49	141.76	-482.71	-607.86	534.14	495.21	38.93	13.721	
4,200.00	4,008.24	4,169.92	4,072.60	22.07	19.95	141.77	-498.26	-625.89	549.27	509.35	39.91	13.761	
4,300.00	4,102.33	4,268.77	4,168.54	22.68	20.41	141.78	-513.80	-643.92	564.39	523.49	40.90	13.799	
4,400.00	4,196.41	4,367.62	4,264.48	23.28	20.88	141.80	-529.35	-661.96	579.52	537.63	41.89	13.834	
4,500.00	4,290.49	4,466.47	4,360.42	23.88	21.34	141.81	-544.89	-679.99	594.65	551.77	42.88	13.867	
4,600.00	4,384.58	4,565.32	4,456.36	24.49	21.81	141.82	-560.44	-698.02	609.77	565.90	43.87	13.899	
4,700.00	4,478.66	4,664.17	4,552.30	25.09	22.28	141.83	-575.98	-716.05	624.90	580.04	44.87	13.928	
4,800.00	4,572.75	4,763.02	4,648.24	25.69	22.74	141.84	-591.53	-734.09	640.03	594.17	45.86	13.956	
4,900.00	4,666.83	4,861.87	4,744.18	26.30	23.21	141.85	-607.07	-752.12	655.15	608.30	46.85	13.983	
5,000.00	4,760.91	4,960.72	4,840.12	26.90	23.68	141.86	-622.62	-770.15	670.28	622.43	47.85	14.008	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	MALLARD EXPLORATION	Local Co-ordinate Reference:	Well CANVASBACK 32-33-6HN
Project:	WELD COUNTY	TVD Reference:	KB 27' @ 4973.00usft
Reference Site:	SEC 32-T9N-R60W	MD Reference:	KB 27' @ 4973.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	CANVASBACK 32-33-6HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 5000.16 Single User Db
Reference Design:	PROPOSAL 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC 32-T9N-R60W - CANVASBACK FED 32-33-4HN - ORIGINAL WELLBORE - PROPOSAL 1												Offset Site Error:	0.00 usft
Survey Program: 0-MWD												Offset Well Error:	0.00 usft
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference	Offset	Highside Toolface (°)	+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)	Separation Factor	Warning
5,100.00	4,855.00	5,059.57	4,936.05	27.51	24.15	141.87	-638.17	-788.19	685.41	636.56	48.85	14.032	
5,200.00	4,949.08	5,158.42	5,031.99	28.11	24.62	141.88	-653.71	-806.22	700.53	650.69	49.84	14.055	
5,300.00	5,043.16	5,251.04	5,121.99	28.72	25.08	141.92	-668.01	-822.80	715.90	665.12	50.78	14.098	
5,400.00	5,137.25	5,338.42	5,207.44	29.32	25.53	142.12	-679.94	-836.65	732.65	681.00	51.66	14.184	
5,500.00	5,231.33	5,425.14	5,292.74	29.93	26.00	142.49	-690.10	-848.43	750.95	698.45	52.50	14.304	
5,600.00	5,325.41	5,511.03	5,377.67	30.53	26.45	143.01	-698.49	-858.17	770.81	717.51	53.30	14.461	
5,700.00	5,419.50	5,600.00	5,465.99	31.14	26.90	143.69	-705.43	-866.21	792.31	738.20	54.11	14.643	
5,800.00	5,513.58	5,679.82	5,545.49	31.75	27.27	144.41	-710.12	-871.66	815.45	760.69	54.76	14.891	
5,900.00	5,607.66	5,762.47	5,627.97	32.35	27.63	145.27	-713.46	-875.53	840.34	784.92	55.42	15.164	
6,000.00	5,701.75	5,843.80	5,709.25	32.96	27.86	146.20	-715.23	-877.58	867.03	811.04	55.98	15.487	
6,100.00	5,795.83	5,928.38	5,793.83	33.56	27.95	147.23	-715.57	-877.98	895.48	838.97	56.51	15.846	
6,113.74	5,808.76	5,941.30	5,806.76	33.64	27.95	147.39	-715.57	-877.98	899.47	842.88	56.59	15.894	
6,150.00	5,843.02	5,975.57	5,841.02	33.86	27.96	158.60	-715.57	-877.98	910.13	853.33	56.80	16.023	
6,200.00	5,890.57	6,025.24	5,890.68	34.18	27.92	175.59	-715.55	-877.35	925.16	868.09	57.08	16.210	
6,250.00	5,938.13	6,076.73	5,941.95	34.48	27.86	-167.31	-715.47	-872.64	940.27	882.97	57.30	16.409	
6,300.00	5,985.36	6,128.02	5,992.37	34.71	27.80	-152.13	-715.31	-863.39	955.33	897.86	57.47	16.624	
6,350.00	6,031.88	6,179.15	6,041.62	34.89	27.71	-139.73	-715.06	-849.73	970.20	912.62	57.58	16.848	
6,400.00	6,077.36	6,230.16	6,089.35	35.04	27.62	-129.95	-714.74	-831.78	984.78	927.13	57.65	17.083	
6,450.00	6,121.43	6,281.09	6,135.23	35.16	27.53	-122.24	-714.34	-809.69	998.96	941.30	57.66	17.326	
6,500.00	6,163.76	6,331.99	6,178.93	35.26	27.43	-116.08	-713.88	-783.64	1,012.62	955.00	57.62	17.574	
6,550.00	6,204.04	6,382.87	6,220.14	35.35	27.34	-111.07	-713.35	-753.83	1,025.66	968.11	57.55	17.822	
6,600.00	6,241.95	6,433.76	6,258.55	35.42	27.25	-106.94	-712.75	-720.47	1,037.97	980.50	57.47	18.062	
6,650.00	6,277.21	6,484.66	6,293.85	35.47	27.18	-103.49	-712.09	-683.83	1,049.47	992.07	57.39	18.286	
6,700.00	6,309.55	6,535.57	6,325.77	35.51	27.13	-100.58	-711.39	-644.20	1,060.05	1,002.70	57.35	18.483	
6,750.00	6,338.72	6,586.48	6,354.05	35.54	27.11	-98.13	-710.63	-601.90	1,069.65	1,012.29	57.37	18.646	
6,800.00	6,364.50	6,637.36	6,378.45	35.57	27.12	-96.07	-709.83	-557.27	1,078.19	1,020.74	57.45	18.766	
6,850.00	6,386.70	6,688.19	6,398.78	35.60	27.17	-94.34	-709.00	-510.71	1,085.60	1,027.97	57.63	18.836	
6,900.00	6,405.14	6,738.92	6,414.88	35.66	27.27	-92.93	-708.14	-462.63	1,091.83	1,033.91	57.92	18.852	
6,950.00	6,419.68	6,789.51	6,426.64	35.74	27.42	-91.79	-707.26	-413.45	1,096.83	1,038.52	58.31	18.810	
7,000.00	6,430.22	6,839.92	6,433.99	35.86	27.63	-90.92	-706.37	-363.61	1,100.56	1,041.74	58.82	18.712	
7,050.00	6,436.67	6,890.09	6,436.94	36.05	27.91	-90.30	-705.47	-313.55	1,103.00	1,043.57	59.42	18.561	
7,100.00	6,438.99	6,940.04	6,437.00	36.30	28.25	-90.00	-704.58	-263.61	1,104.12	1,043.94	60.19	18.344	
7,102.92	6,439.00	6,942.96	6,437.00	36.32	28.28	-90.00	-704.53	-260.69	1,104.15	1,043.91	60.24	18.330	
7,200.00	6,439.00	7,040.04	6,437.00	36.99	29.09	-90.00	-702.79	-163.62	1,104.90	1,042.84	62.07	17.802	
7,300.00	6,439.00	7,140.03	6,437.01	37.90	30.15	-90.00	-701.00	-63.64	1,105.68	1,041.33	64.35	17.183	
7,400.00	6,439.00	7,240.03	6,437.01	38.99	31.43	-90.00	-699.21	36.34	1,106.46	1,039.46	67.00	16.514	
7,500.00	6,439.00	7,340.03	6,437.01	40.25	32.92	-90.00	-697.43	136.32	1,107.23	1,037.26	69.98	15.823	
7,600.00	6,439.00	7,440.02	6,437.01	41.65	34.58	-90.00	-695.64	236.30	1,108.01	1,034.77	73.24	15.128	
7,700.00	6,439.00	7,540.02	6,437.01	43.18	36.39	-90.00	-693.85	336.28	1,108.79	1,032.03	76.76	14.446	
7,800.00	6,439.00	7,640.02	6,437.02	44.82	38.33	-90.00	-692.06	436.26	1,109.56	1,029.08	80.49	13.786	
7,900.00	6,439.00	7,740.01	6,437.02	46.56	40.37	-90.00	-690.27	536.24	1,110.34	1,025.93	84.41	13.155	
8,000.00	6,439.00	7,840.01	6,437.02	48.39	42.50	-90.00	-688.49	636.22	1,111.12	1,022.63	88.49	12.557	
8,100.00	6,439.00	7,940.01	6,437.02	50.30	44.70	-90.00	-686.70	736.20	1,111.89	1,019.18	92.71	11.993	
8,200.00	6,439.00	8,040.00	6,437.02	52.29	46.96	-90.00	-684.91	836.19	1,112.67	1,015.61	97.06	11.464	
8,300.00	6,439.00	8,140.00	6,437.03	54.34	49.27	-90.00	-683.12	936.17	1,113.45	1,011.93	101.52	10.968	
8,400.00	6,439.00	8,240.00	6,437.03	56.45	51.63	-90.00	-681.33	1,036.15	1,114.22	1,008.16	106.07	10.505	
8,500.00	6,439.00	8,340.00	6,437.03	58.61	54.02	-90.00	-679.55	1,136.13	1,115.00	1,004.30	110.70	10.072	
8,600.00	6,439.00	8,439.99	6,437.03	60.82	56.45	-90.00	-677.76	1,236.11	1,115.78	1,000.37	115.41	9.668	
8,700.00	6,439.00	8,539.99	6,437.03	63.06	58.91	-90.00	-675.97	1,336.09	1,116.55	996.37	120.18	9.291	
8,800.00	6,439.00	8,639.99	6,437.04	65.35	61.39	-90.00	-674.18	1,436.07	1,117.33	992.32	125.01	8.938	
8,900.00	6,439.00	8,739.98	6,437.04	67.67	63.89	-90.00	-672.39	1,536.05	1,118.11	988.22	129.89	8.608	
9,000.00	6,439.00	8,839.98	6,437.04	70.01	66.41	-90.00	-670.60	1,636.03	1,118.88	984.07	134.82	8.299	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	MALLARD EXPLORATION	Local Co-ordinate Reference:	Well CANVASBACK 32-33-6HN
Project:	WELD COUNTY	TVD Reference:	KB 27' @ 4973.00usft
Reference Site:	SEC 32-T9N-R60W	MD Reference:	KB 27' @ 4973.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	CANVASBACK 32-33-6HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 5000.16 Single User Db
Reference Design:	PROPOSAL 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC 32-T9N-R60W - CANVASBACK FED 32-33-4HN - ORIGINAL WELLBORE - PROPOSAL 1												Offset Site Error: 0.00 usft
Survey Program: 0-MWD												Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)		
9,100.00	6,439.00	8,939.98	6,437.04	72.39	68.95	-90.00	-668.82	1,736.01	1,119.66	979.88	139.78	8.010
9,200.00	6,439.00	9,039.97	6,437.04	74.79	71.51	-90.00	-667.03	1,836.00	1,120.44	975.65	144.79	7.739
9,300.00	6,439.00	9,139.97	6,437.05	77.21	74.08	-90.00	-665.24	1,935.98	1,121.21	971.39	149.82	7.484
9,400.00	6,439.00	9,239.97	6,437.05	79.65	76.66	-90.00	-663.45	2,035.96	1,121.99	967.10	154.89	7.244
9,500.00	6,439.00	9,339.97	6,437.05	82.12	79.25	-90.00	-661.66	2,135.94	1,122.77	962.78	159.98	7.018
9,600.00	6,439.00	9,439.96	6,437.05	84.59	81.85	-90.00	-659.88	2,235.92	1,123.54	958.44	165.10	6.805
9,700.00	6,439.00	9,539.96	6,437.05	87.09	84.46	-90.00	-658.09	2,335.90	1,124.32	954.08	170.24	6.604
9,800.00	6,439.00	9,639.96	6,437.06	89.60	87.07	-90.00	-656.30	2,435.88	1,125.10	949.70	175.40	6.414
9,900.00	6,439.00	9,739.95	6,437.06	92.12	89.70	-90.00	-654.51	2,535.86	1,125.87	945.29	180.58	6.235
10,000.00	6,439.00	9,839.95	6,437.06	94.65	92.33	-90.00	-652.72	2,635.84	1,126.65	940.87	185.78	6.065
10,100.00	6,439.00	9,939.95	6,437.06	97.20	94.97	-90.00	-650.94	2,735.82	1,127.43	936.44	190.99	5.903
10,200.00	6,439.00	10,039.94	6,437.07	99.75	97.61	-90.00	-649.15	2,835.81	1,128.20	931.99	196.21	5.750
10,300.00	6,439.00	10,139.94	6,437.07	102.32	100.26	-90.00	-647.36	2,935.79	1,128.98	927.53	201.45	5.604
10,400.00	6,439.00	10,239.94	6,437.07	104.89	102.91	-90.00	-645.57	3,035.77	1,129.76	923.05	206.71	5.466
10,500.00	6,439.00	10,339.94	6,437.07	107.47	105.57	-90.00	-643.78	3,135.75	1,130.53	918.56	211.97	5.333
10,600.00	6,439.00	10,439.93	6,437.07	110.06	108.23	-90.00	-642.00	3,235.73	1,131.31	914.07	217.24	5.208
10,700.00	6,439.00	10,539.93	6,437.08	112.66	110.90	-90.00	-640.21	3,335.71	1,132.09	909.56	222.53	5.087
10,800.00	6,439.00	10,639.93	6,437.08	115.26	113.57	-90.00	-638.42	3,435.69	1,132.86	905.04	227.82	4.973
10,900.00	6,439.00	10,739.92	6,437.08	117.87	116.24	-90.00	-636.63	3,535.67	1,133.64	900.52	233.12	4.863
11,000.00	6,439.00	10,839.92	6,437.08	120.49	118.91	-90.00	-634.84	3,635.65	1,134.42	895.98	238.43	4.758
11,100.00	6,439.00	10,939.92	6,437.08	123.11	121.59	-90.00	-633.06	3,735.63	1,135.19	891.44	243.75	4.657
11,200.00	6,439.00	11,039.91	6,437.09	125.73	124.27	-90.00	-631.27	3,835.62	1,135.97	886.90	249.07	4.561
11,300.00	6,439.00	11,139.91	6,437.09	128.36	126.96	-90.00	-629.48	3,935.60	1,136.75	882.34	254.40	4.468
11,400.00	6,439.00	11,239.91	6,437.09	131.00	129.64	-90.00	-627.69	4,035.58	1,137.52	877.78	259.74	4.379
11,500.00	6,439.00	11,339.91	6,437.09	133.64	132.33	-90.00	-625.90	4,135.56	1,138.30	873.22	265.08	4.294
11,600.00	6,439.00	11,439.90	6,437.09	136.28	135.02	-90.00	-624.11	4,235.54	1,139.08	868.64	270.43	4.212
11,700.00	6,439.00	11,539.90	6,437.10	138.93	137.71	-90.00	-622.33	4,335.52	1,139.85	864.07	275.78	4.133
11,800.00	6,439.00	11,639.90	6,437.10	141.58	140.40	-90.00	-620.54	4,435.50	1,140.63	859.49	281.14	4.057
11,900.00	6,439.00	11,739.89	6,437.10	144.23	143.10	-90.01	-618.75	4,535.48	1,141.41	854.90	286.50	3.984
12,000.00	6,439.00	11,839.89	6,437.10	146.89	145.80	-90.01	-616.96	4,635.46	1,142.18	850.31	291.87	3.913
12,100.00	6,439.00	11,939.89	6,437.10	149.55	148.49	-90.01	-615.17	4,735.44	1,142.96	845.72	297.24	3.845
12,200.00	6,439.00	12,039.88	6,437.11	152.21	151.19	-90.01	-613.39	4,835.43	1,143.74	841.12	302.62	3.779
12,300.00	6,439.00	12,139.88	6,437.11	154.88	153.89	-90.01	-611.60	4,935.41	1,144.51	836.52	307.99	3.716
12,400.00	6,439.00	12,239.88	6,437.11	157.55	156.60	-90.01	-609.81	5,035.39	1,145.29	831.91	313.38	3.655
12,500.00	6,439.00	12,339.88	6,437.11	160.22	159.30	-90.01	-608.02	5,135.37	1,146.06	827.30	318.76	3.595
12,600.00	6,439.00	12,439.87	6,437.11	162.89	162.00	-90.01	-606.23	5,235.35	1,146.84	822.69	324.15	3.538
12,700.00	6,439.00	12,539.87	6,437.12	165.57	164.71	-90.01	-604.45	5,335.33	1,147.62	818.08	329.54	3.482
12,800.00	6,439.00	12,639.87	6,437.12	168.24	167.42	-90.01	-602.66	5,435.31	1,148.39	813.46	334.93	3.429
12,900.00	6,439.00	12,739.86	6,437.12	170.92	170.12	-90.01	-600.87	5,535.29	1,149.17	808.84	340.33	3.377
13,000.00	6,439.00	12,839.86	6,437.12	173.60	172.83	-90.01	-599.08	5,635.27	1,149.95	804.22	345.73	3.326
13,100.00	6,439.00	12,939.86	6,437.12	176.29	175.54	-90.01	-597.29	5,735.25	1,150.72	799.59	351.13	3.277
13,200.00	6,439.00	13,039.85	6,437.13	178.97	178.25	-90.01	-595.51	5,835.24	1,151.50	794.97	356.54	3.230
13,300.00	6,439.00	13,139.85	6,437.13	181.66	180.96	-90.01	-593.72	5,935.22	1,152.28	790.34	361.94	3.184
13,400.00	6,439.00	13,239.85	6,437.13	184.35	183.68	-90.01	-591.93	6,035.20	1,153.05	785.70	367.35	3.139
13,500.00	6,439.00	13,339.85	6,437.13	187.04	186.39	-90.01	-590.14	6,135.18	1,153.83	781.07	372.76	3.095
13,600.00	6,439.00	13,439.84	6,437.14	189.73	189.10	-90.01	-588.35	6,235.16	1,154.61	776.43	378.17	3.053
13,700.00	6,439.00	13,539.84	6,437.14	192.42	191.82	-90.01	-586.56	6,335.14	1,155.38	771.80	383.59	3.012
13,800.00	6,439.00	13,639.84	6,437.14	195.11	194.53	-90.01	-584.78	6,435.12	1,156.16	767.16	389.00	2.972
13,900.00	6,439.00	13,739.83	6,437.14	197.81	197.25	-90.01	-582.99	6,535.10	1,156.94	762.52	394.42	2.933
14,000.00	6,439.00	13,839.83	6,437.14	200.51	199.96	-90.01	-581.20	6,635.08	1,157.71	757.87	399.84	2.895
14,100.00	6,439.00	13,939.83	6,437.15	203.20	202.68	-90.01	-579.41	6,735.06	1,158.49	753.23	405.26	2.859
14,200.00	6,439.00	14,039.82	6,437.15	205.90	205.40	-90.01	-577.62	6,835.05	1,159.27	748.58	410.68	2.823

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	MALLARD EXPLORATION	Local Co-ordinate Reference:	Well CANVASBACK 32-33-6HN
Project:	WELD COUNTY	TVD Reference:	KB 27' @ 4973.00usft
Reference Site:	SEC 32-T9N-R60W	MD Reference:	KB 27' @ 4973.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	CANVASBACK 32-33-6HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 5000.16 Single User Db
Reference Design:	PROPOSAL 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC 32-T9N-R60W - CANVASBACK FED 32-33-4HN - ORIGINAL WELLBORE - PROPOSAL 1													Offset Site Error: 0.00 usft
Survey Program: 0-MWD													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
14,300.00	6,439.00	14,139.82	6,437.15	208.60	208.11	-90.01	-575.84	6,935.03	1,160.04	743.94	416.11	2.788	
14,400.00	6,439.00	14,239.82	6,437.15	211.30	210.83	-90.01	-574.05	7,035.01	1,160.82	739.29	421.53	2.754	
14,500.00	6,439.00	14,339.82	6,437.15	214.01	213.55	-90.01	-572.26	7,134.99	1,161.60	734.64	426.96	2.721	
14,600.00	6,439.00	14,439.81	6,437.16	216.71	216.27	-90.01	-570.47	7,234.97	1,162.37	729.99	432.39	2.688	
14,700.00	6,439.00	14,539.81	6,437.16	219.41	218.99	-90.01	-568.68	7,334.95	1,163.15	725.33	437.82	2.657	
14,800.00	6,439.00	14,639.81	6,437.16	222.12	221.71	-90.01	-566.90	7,434.93	1,163.93	720.68	443.25	2.626	
14,900.00	6,439.00	14,739.80	6,437.16	224.82	224.43	-90.01	-565.11	7,534.91	1,164.70	716.02	448.68	2.596	
15,000.00	6,439.00	14,839.80	6,437.16	227.53	227.15	-90.01	-563.32	7,634.89	1,165.48	711.37	454.11	2.566	
15,100.00	6,439.00	14,939.80	6,437.17	230.24	229.87	-90.01	-561.53	7,734.87	1,166.26	706.71	459.55	2.538	
15,200.00	6,439.00	15,039.79	6,437.17	232.94	232.59	-90.01	-559.74	7,834.86	1,167.03	702.05	464.98	2.510	
15,300.00	6,439.00	15,139.79	6,437.17	235.65	235.32	-90.01	-557.96	7,934.84	1,167.81	697.39	470.42	2.482	
15,400.00	6,439.00	15,239.79	6,437.17	238.36	238.04	-90.01	-556.17	8,034.82	1,168.59	692.73	475.85	2.456	
15,500.00	6,439.00	15,339.78	6,437.17	241.07	240.76	-90.01	-554.38	8,134.80	1,169.36	688.07	481.29	2.430	
15,600.00	6,439.00	15,439.78	6,437.18	243.78	243.48	-90.01	-552.59	8,234.78	1,170.14	683.41	486.73	2.404	
15,700.00	6,439.00	15,539.78	6,437.18	246.50	246.21	-90.01	-550.80	8,334.76	1,170.92	678.75	492.17	2.379	
15,800.00	6,439.00	15,639.78	6,437.18	249.21	248.93	-90.01	-549.01	8,434.74	1,171.69	674.08	497.61	2.355	
15,900.00	6,439.00	15,739.77	6,437.18	251.92	251.66	-90.01	-547.23	8,534.72	1,172.47	669.42	503.05	2.331	
16,000.00	6,439.00	15,839.77	6,437.18	254.63	254.38	-90.01	-545.44	8,634.70	1,173.25	664.75	508.49	2.307	
16,100.00	6,439.00	15,939.77	6,437.19	257.35	257.10	-90.01	-543.65	8,734.68	1,174.02	660.09	513.94	2.284	
16,200.00	6,439.00	16,039.76	6,437.19	260.06	259.83	-90.01	-541.86	8,834.67	1,174.80	655.42	519.38	2.262	
16,300.00	6,439.00	16,139.76	6,437.19	262.78	262.55	-90.01	-540.07	8,934.65	1,175.58	650.75	524.83	2.240	
16,400.00	6,439.00	16,239.76	6,437.19	265.49	265.28	-90.01	-538.29	9,034.63	1,176.35	646.08	530.27	2.218	
16,500.00	6,439.00	16,339.75	6,437.20	268.21	268.01	-90.01	-536.50	9,134.61	1,177.13	641.41	535.72	2.197	
16,600.00	6,439.00	16,439.75	6,437.20	270.93	270.73	-90.01	-534.71	9,234.59	1,177.91	636.74	541.16	2.177	
16,700.00	6,439.00	16,539.75	6,437.20	273.64	273.46	-90.01	-532.92	9,334.57	1,178.68	632.07	546.61	2.156	
16,800.00	6,439.00	16,639.75	6,437.20	276.36	276.18	-90.01	-531.13	9,434.55	1,179.46	627.40	552.06	2.136	
16,900.00	6,439.00	16,739.74	6,437.20	279.08	278.91	-90.01	-529.35	9,534.53	1,180.24	622.73	557.51	2.117	
17,000.00	6,439.00	16,839.74	6,437.21	281.80	281.64	-90.01	-527.56	9,634.51	1,181.01	618.06	562.95	2.098	
17,089.98	6,439.00	16,904.91	6,437.13	284.24	283.41	-90.01	-526.29	9,699.67	1,182.08	615.44	566.63	2.086 SF	

Anticollision Report

Company:	MALLARD EXPLORATION	Local Co-ordinate Reference:	Well CANVASBACK 32-33-6HN
Project:	WELD COUNTY	TVD Reference:	KB 27' @ 4973.00usft
Reference Site:	SEC 32-T9N-R60W	MD Reference:	KB 27' @ 4973.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	CANVASBACK 32-33-6HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 5000.16 Single User Db
Reference Design:	PROPOSAL 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC 32-T9N-R60W - EXIST HZ SHABLE FEDERAL LB33-78HN - Wellbore #1 - Wellbore #1													Offset Site Error: 0.00 usft
Survey Program: 642-MWD, 5497-MWD													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
0.00	0.00	0.00	0.00	0.00	0.00	70.77	1,730.69	4,961.53	5,254.75				
100.00	100.00	83.00	83.00	0.42	1.58	70.77	1,730.69	4,961.53	5,254.72	5,252.72	2.00	2,631.776	
200.00	200.00	183.00	183.00	1.25	3.49	70.77	1,730.69	4,961.53	5,254.72	5,249.99	4.73	1,110.558	
300.00	300.00	283.00	283.00	1.74	5.39	70.77	1,730.69	4,961.53	5,254.72	5,247.59	7.13	736.680	
400.00	399.98	382.98	382.98	2.24	7.30	-135.87	1,730.69	4,961.53	5,255.97	5,246.51	9.46	555.464	
500.00	499.84	482.84	482.84	3.42	9.20	-135.86	1,730.69	4,961.53	5,259.73	5,247.56	12.17	432.016	
600.00	599.45	582.45	582.45	4.32	11.10	-135.84	1,730.69	4,961.53	5,266.00	5,251.26	14.73	357.469	
700.00	698.70	674.00	674.00	5.10	12.26	-135.80	1,730.87	4,961.45	5,274.76	5,258.29	16.47	320.202	
800.00	797.47	768.00	767.99	5.81	12.32	-135.76	1,731.81	4,961.27	5,286.19	5,269.13	17.07	309.726	
900.00	895.62	883.43	883.42	6.47	12.39	-135.74	1,732.65	4,961.09	5,300.09	5,282.43	17.66	300.071	
1,000.00	993.06	978.77	978.75	7.10	12.45	-135.68	1,733.24	4,960.77	5,316.28	5,298.04	18.24	291.489	
1,100.00	1,089.64	1,057.40	1,057.39	7.71	12.50	-135.58	1,734.02	4,960.61	5,335.24	5,316.44	18.80	283.799	
1,200.00	1,185.27	1,165.64	1,165.62	8.30	12.58	-135.53	1,735.13	4,960.22	5,356.56	5,337.18	19.39	276.291	
1,290.38	1,270.77	1,230.00	1,229.97	8.77	12.63	-135.38	1,735.90	4,960.18	5,378.30	5,358.43	19.87	270.711	
1,300.00	1,279.82	1,230.00	1,229.97	8.80	12.63	-135.38	1,735.90	4,960.18	5,380.74	5,360.84	19.90	270.441	
1,400.00	1,373.90	1,320.77	1,320.73	9.11	12.69	-135.63	1,737.07	4,960.41	5,406.30	5,385.97	20.32	266.028	
1,500.00	1,467.99	1,440.34	1,440.30	9.45	12.79	-135.95	1,738.36	4,960.29	5,431.56	5,410.75	20.81	261.030	
1,600.00	1,562.07	1,518.52	1,518.47	9.81	12.86	-136.16	1,739.36	4,960.23	5,457.04	5,435.76	21.28	256.466	
1,700.00	1,656.16	1,624.59	1,624.54	10.18	12.95	-136.44	1,740.42	4,960.26	5,482.63	5,460.84	21.79	251.643	
1,800.00	1,750.24	1,711.28	1,711.22	10.57	13.03	-136.67	1,741.08	4,960.19	5,508.15	5,485.86	22.29	247.090	
1,900.00	1,844.32	1,774.98	1,774.92	10.96	13.08	-136.83	1,741.79	4,960.39	5,534.21	5,511.43	22.79	242.876	
2,000.00	1,938.41	1,860.00	1,859.93	11.37	13.16	-137.05	1,742.62	4,960.83	5,560.53	5,537.22	23.31	238.521	
2,100.00	2,032.49	1,949.00	1,948.92	11.78	13.24	-137.27	1,743.66	4,961.51	5,587.21	5,563.35	23.85	234.230	
2,200.00	2,126.57	2,013.53	2,013.45	12.21	13.30	-137.44	1,744.65	4,962.23	5,614.37	5,589.99	24.38	230.290	
2,300.00	2,220.66	2,071.16	2,071.06	12.64	13.35	-137.58	1,745.49	4,963.08	5,641.99	5,617.09	24.90	226.623	
2,400.00	2,314.74	2,129.00	2,128.87	13.08	13.41	-137.73	1,746.57	4,964.42	5,670.47	5,645.04	25.42	223.028	
2,500.00	2,408.82	2,173.74	2,173.58	13.52	13.45	-137.84	1,747.56	4,965.76	5,699.69	5,673.76	25.94	219.746	
2,600.00	2,502.91	2,219.00	2,218.81	13.97	13.50	-137.95	1,748.65	4,967.28	5,729.61	5,703.16	26.45	216.593	
2,700.00	2,596.99	2,267.97	2,267.71	14.42	13.55	-138.07	1,750.01	4,969.28	5,760.34	5,733.35	26.99	213.441	
2,800.00	2,691.07	2,309.00	2,308.67	14.88	13.61	-138.17	1,751.34	4,971.33	5,792.03	5,764.52	27.51	210.554	
2,900.00	2,785.16	2,359.35	2,358.91	15.35	13.67	-138.30	1,753.24	4,974.18	5,824.54	5,796.49	28.05	207.649	
3,000.00	2,879.24	2,398.00	2,397.45	15.81	13.72	-138.39	1,754.89	4,976.52	5,857.78	5,829.22	28.57	205.062	
3,100.00	2,973.33	2,448.27	2,447.55	16.28	13.80	-138.52	1,757.23	4,979.91	5,891.82	5,862.71	29.11	202.407	
3,200.00	3,067.41	2,488.00	2,487.11	16.76	13.86	-138.61	1,759.20	4,982.98	5,926.76	5,897.14	29.63	200.052	
3,300.00	3,161.49	2,546.24	2,545.07	17.23	13.95	-138.76	1,762.29	4,987.82	5,962.43	5,932.24	30.19	197.479	
3,400.00	3,255.58	2,578.00	2,576.66	17.71	14.00	-138.84	1,764.08	4,990.56	5,998.77	5,968.08	30.69	195.471	
3,500.00	3,349.66	2,640.99	2,639.27	18.20	14.11	-138.99	1,768.03	4,996.30	6,035.72	6,004.45	31.27	193.017	
3,600.00	3,443.74	2,668.00	2,666.08	18.68	14.15	-139.06	1,769.92	4,998.90	6,073.57	6,041.82	31.75	191.300	
3,700.00	3,537.83	2,726.46	2,724.07	19.18	14.27	-139.21	1,774.43	5,004.84	6,112.11	6,079.78	32.33	189.039	
3,800.00	3,631.91	2,757.00	2,754.32	19.70	14.34	-139.28	1,777.01	5,008.10	6,151.48	6,118.66	32.82	187.411	
3,900.00	3,725.99	2,805.17	2,801.98	20.28	14.45	-139.41	1,781.41	5,013.51	6,191.62	6,158.24	33.38	185.495	
4,000.00	3,820.08	2,847.00	2,843.30	20.87	14.54	-139.52	1,785.55	5,018.50	6,232.60	6,198.69	33.91	183.798	
4,100.00	3,914.16	2,880.17	2,876.03	21.47	14.63	-139.60	1,789.06	5,022.64	6,274.37	6,239.96	34.41	182.334	
4,200.00	4,008.24	2,936.00	2,931.00	22.07	14.77	-139.75	1,795.49	5,029.93	6,317.00	6,282.00	35.00	180.483	
4,300.00	4,102.33	2,938.00	2,934.58	22.68	14.86	-139.84	-892.85	5,391.89	6,342.93	6,270.56	72.37	87.642	
4,400.00	4,196.41	2,938.00	2,934.58	23.28	14.95	-139.93	-892.85	5,391.89	6,325.22	6,251.97	73.26	86.342	
4,500.00	4,290.49	2,938.00	2,934.58	23.88	15.04	-139.99	-892.85	5,391.89	6,309.05	6,234.92	74.13	85.104	
4,600.00	4,384.58	2,938.00	2,934.58	24.49	15.13	-140.04	-931.50	5,392.88	6,293.86	6,218.27	75.59	83.263	
4,700.00	4,478.66	2,938.00	2,934.58	25.09	15.22	-140.09	-937.91	5,393.12	6,280.59	6,204.04	76.55	82.047	
4,800.00	4,572.75	2,938.00	2,934.58	25.69	15.31	-140.14	-944.39	5,393.38	6,268.86	6,191.36	77.50	80.892	
4,900.00	4,666.83	2,938.00	2,934.58	26.30	15.40	-140.19	-982.77	5,395.36	6,259.05	6,180.12	78.93	79.298	
5,000.00	4,760.91	2,938.00	2,934.58	26.90	15.49	-140.24	-982.77	5,395.36	6,250.27	6,170.51	79.76	78.365	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	MALLARD EXPLORATION	Local Co-ordinate Reference:	Well CANVASBACK 32-33-6HN
Project:	WELD COUNTY	TVD Reference:	KB 27' @ 4973.00usft
Reference Site:	SEC 32-T9N-R60W	MD Reference:	KB 27' @ 4973.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	CANVASBACK 32-33-6HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 5000.16 Single User Db
Reference Design:	PROPOSAL 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC 32-T9N-R60W - EXIST HZ SHABLE FEDERAL LB33-78HN - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 usft
Survey Program:		642-MWD, 5497-MWD						Rule Assigned:				Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance			Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	Minimum Separation (usft)		Separation Factor
5,100.00	4,855.00	9,028.00	6,343.29	27.51	54.78	-122.35	-982.77	5,395.36	6,243.08	6,162.51	80.57	77.485	
5,200.00	4,949.08	9,028.00	6,343.29	28.11	54.78	-122.35	-982.77	5,395.36	6,237.49	6,156.12	81.37	76.656	
5,300.00	5,043.16	9,028.00	6,343.29	28.72	54.78	-122.35	-982.77	5,395.36	6,233.49	6,151.34	82.15	75.878	
5,400.00	5,137.25	9,028.00	6,343.29	29.32	54.78	-122.35	-982.77	5,395.36	6,231.10	6,148.18	82.92	75.148	
5,500.00	5,231.33	9,053.08	6,343.85	29.93	55.20	-122.13	-1,007.79	5,396.94	6,230.23	6,146.16	84.07	74.105	
5,507.40	5,238.30	9,054.49	6,343.87	29.97	55.23	-122.12	-1,009.19	5,397.03	6,230.23	6,146.08	84.15	74.037	
5,600.00	5,325.41	9,071.91	6,344.19	30.53	55.52	-121.97	-1,026.57	5,398.18	6,230.87	6,145.76	85.11	73.207	
5,700.00	5,419.50	9,090.31	6,344.47	31.14	55.84	-121.81	-1,044.93	5,399.44	6,233.03	6,146.90	86.13	72.366	
5,800.00	5,513.58	9,118.00	6,344.78	31.75	56.31	-121.57	-1,072.55	5,401.42	6,236.71	6,149.43	87.29	71.451	
5,900.00	5,607.66	9,195.96	6,345.52	32.35	57.62	-120.88	-1,150.33	5,406.74	6,241.81	6,152.57	89.24	69.943	
6,000.00	5,701.75	9,198.82	6,345.56	32.96	57.66	-120.86	-1,153.18	5,406.87	6,248.15	6,158.19	89.96	69.456	
6,100.00	5,795.83	9,208.00	6,345.64	33.56	57.82	-120.78	-1,162.34	5,407.48	6,256.09	6,165.33	90.76	68.929	
6,113.74	5,808.76	9,208.00	6,345.64	33.64	57.82	-120.78	-1,162.34	5,407.48	6,257.30	6,166.46	90.85	68.878	
6,150.00	5,843.02	9,208.00	6,345.64	33.86	57.82	-110.99	-1,162.34	5,407.48	6,259.51	6,168.44	91.07	68.732	
6,200.00	5,890.57	9,208.00	6,345.64	34.18	57.82	-95.84	-1,162.34	5,407.48	6,259.16	6,167.74	91.42	68.467	
6,250.00	5,938.13	9,208.00	6,345.64	34.48	57.82	-80.60	-1,162.34	5,407.48	6,254.86	6,163.09	91.77	68.162	
6,300.00	5,985.36	9,208.00	6,345.64	34.71	57.82	-67.28	-1,162.34	5,407.48	6,246.64	6,154.58	92.06	67.857	
6,350.00	6,031.88	9,208.00	6,345.64	34.89	57.82	-56.75	-1,162.34	5,407.48	6,234.55	6,142.27	92.28	67.559	
6,400.00	6,077.36	9,208.00	6,345.64	35.04	57.82	-48.83	-1,162.34	5,407.48	6,218.66	6,126.20	92.46	67.258	
6,450.00	6,121.43	9,244.12	6,346.06	35.16	58.44	-42.62	-1,198.37	5,410.08	6,198.58	6,105.36	93.22	66.494	
6,500.00	6,163.76	9,247.51	6,346.10	35.26	58.50	-38.24	-1,201.74	5,410.36	6,175.29	6,081.89	93.40	66.115	
6,550.00	6,204.04	9,250.83	6,346.15	35.35	58.56	-35.00	-1,205.05	5,410.65	6,148.54	6,054.97	93.57	65.711	
6,600.00	6,241.95	9,254.06	6,346.19	35.42	58.61	-32.61	-1,208.27	5,410.93	6,118.49	6,024.77	93.72	65.281	
6,650.00	6,277.21	9,257.19	6,346.23	35.47	58.67	-30.91	-1,211.39	5,411.21	6,085.32	5,991.45	93.87	64.827	
6,700.00	6,309.55	9,260.20	6,346.27	35.51	58.72	-29.78	-1,214.37	5,411.48	6,049.23	5,955.22	94.01	64.350	
6,750.00	6,338.72	9,297.00	6,346.81	35.54	59.36	-28.69	-1,250.98	5,415.26	6,010.88	5,916.17	94.71	63.466	
6,800.00	6,364.50	9,297.00	6,346.81	35.57	59.36	-28.60	-1,250.98	5,415.26	5,969.59	5,874.81	94.78	62.983	
6,850.00	6,386.70	9,297.00	6,346.81	35.60	59.36	-29.12	-1,250.98	5,415.26	5,926.14	5,831.29	94.85	62.481	
6,900.00	6,405.14	9,297.00	6,346.81	35.66	59.36	-30.45	-1,250.98	5,415.26	5,880.80	5,785.89	94.91	61.962	
6,950.00	6,419.68	9,297.00	6,346.81	35.74	59.36	-33.06	-1,250.98	5,415.26	5,833.89	5,738.92	94.97	61.430	
7,000.00	6,430.22	9,297.00	6,346.81	35.86	59.36	-38.10	-1,250.98	5,415.26	5,785.73	5,690.70	95.02	60.888	
7,050.00	6,436.67	9,297.00	6,346.81	36.05	59.36	-49.06	-1,250.98	5,415.26	5,736.65	5,641.57	95.07	60.338	
7,100.00	6,438.99	9,297.00	6,346.81	36.30	59.36	-78.60	-1,250.98	5,415.26	5,687.02	5,591.89	95.13	59.784	
7,102.92	6,439.00	9,297.00	6,346.81	36.32	59.36	-81.45	-1,250.98	5,415.26	5,684.11	5,588.98	95.13	59.752	
7,200.00	6,439.00	9,297.00	6,346.81	36.99	59.36	-81.45	-1,250.98	5,415.26	5,587.42	5,492.19	95.23	58.675	
7,300.00	6,439.00	9,297.00	6,346.81	37.90	59.36	-81.45	-1,250.98	5,415.26	5,487.84	5,392.50	95.33	57.565	
7,400.00	6,439.00	9,297.00	6,346.81	38.99	59.36	-81.45	-1,250.98	5,415.26	5,388.27	5,292.83	95.45	56.454	
7,500.00	6,439.00	9,297.00	6,346.81	40.25	59.36	-81.45	-1,250.98	5,415.26	5,288.72	5,193.16	95.56	55.342	
7,600.00	6,439.00	9,297.00	6,346.81	41.65	59.36	-81.45	-1,250.98	5,415.26	5,189.19	5,093.50	95.69	54.229	
7,700.00	6,439.00	9,297.00	6,346.81	43.18	59.36	-81.45	-1,250.98	5,415.26	5,089.67	4,993.85	95.82	53.116	
7,800.00	6,439.00	9,297.00	6,346.81	44.82	59.36	-81.45	-1,250.98	5,415.26	4,990.18	4,894.22	95.96	52.001	
7,900.00	6,439.00	9,701.27	6,348.74	46.56	66.31	-52.91	-1,654.07	5,443.71	4,890.35	4,788.53	101.83	48.026	
8,000.00	6,439.00	9,703.24	6,348.73	48.39	66.34	-52.34	-1,656.04	5,443.77	4,790.39	4,688.51	101.88	47.020	
8,100.00	6,439.00	9,705.22	6,348.72	50.30	66.37	-51.75	-1,658.02	5,443.83	4,690.42	4,588.48	101.93	46.014	
8,200.00	6,439.00	9,707.20	6,348.71	52.29	66.41	-51.15	-1,659.99	5,443.89	4,590.45	4,488.46	101.99	45.009	
8,300.00	6,439.00	9,709.17	6,348.70	54.34	66.44	-50.53	-1,661.97	5,443.95	4,490.48	4,388.44	102.04	44.005	
8,400.00	6,439.00	9,711.15	6,348.69	56.45	66.48	-49.90	-1,663.94	5,444.01	4,390.52	4,288.42	102.10	43.002	
8,500.00	6,439.00	9,713.12	6,348.69	58.61	66.51	-49.24	-1,665.92	5,444.07	4,290.55	4,188.39	102.16	42.000	
8,600.00	6,439.00	9,715.10	6,348.68	60.82	66.54	-48.57	-1,667.89	5,444.13	4,190.58	4,088.37	102.21	40.999	
8,700.00	6,439.00	9,717.07	6,348.67	63.06	66.58	-47.89	-1,669.87	5,444.18	4,090.62	3,988.35	102.27	39.999	
8,800.00	6,439.00	9,719.05	6,348.66	65.35	66.61	-47.18	-1,671.84	5,444.24	3,990.66	3,888.33	102.32	39.000	
8,900.00	6,439.00	9,747.00	6,348.54	67.67	67.08	-34.87	-1,699.78	5,445.08	3,890.78	3,788.14	102.64	37.909	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	MALLARD EXPLORATION	Local Co-ordinate Reference:	Well CANVASBACK 32-33-6HN
Project:	WELD COUNTY	TVD Reference:	KB 27' @ 4973.00usft
Reference Site:	SEC 32-T9N-R60W	MD Reference:	KB 27' @ 4973.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	CANVASBACK 32-33-6HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 5000.16 Single User Db
Reference Design:	PROPOSAL 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC 32-T9N-R60W - EXIST HZ SHABLE FEDERAL LB33-78HN - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 usft
Survey Program: 642-MWD, 5497-MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
9,000.00	6,439.00	9,747.00	6,348.54	70.01	67.08	-34.87	-1,699.78	5,445.08	3,790.81	3,688.15	102.66	36.925	
9,100.00	6,439.00	9,747.00	6,348.54	72.39	67.08	-34.87	-1,699.78	5,445.08	3,690.84	3,588.15	102.69	35.942	
9,200.00	6,439.00	9,747.00	6,348.54	74.79	67.08	-34.87	-1,699.78	5,445.08	3,590.87	3,488.15	102.72	34.959	
9,300.00	6,439.00	9,747.00	6,348.54	77.21	67.08	-34.87	-1,699.78	5,445.08	3,490.90	3,388.15	102.75	33.975	
9,400.00	6,439.00	9,747.00	6,348.54	79.65	67.08	-34.87	-1,699.78	5,445.08	3,390.93	3,288.15	102.78	32.992	
9,500.00	6,439.00	9,747.00	6,348.54	82.12	67.08	-34.87	-1,699.78	5,445.08	3,290.97	3,188.15	102.81	32.009	
9,600.00	6,439.00	9,734.85	6,348.59	84.59	66.88	-40.79	-1,687.64	5,444.72	3,190.98	3,088.20	102.78	31.046	
9,700.00	6,439.00	9,736.83	6,348.58	87.09	66.91	-39.89	-1,689.61	5,444.77	3,091.03	2,988.19	102.84	30.056	
9,800.00	6,439.00	9,738.80	6,348.57	89.60	66.95	-38.97	-1,691.59	5,444.83	2,991.08	2,888.18	102.90	29.068	
9,900.00	6,439.00	9,740.78	6,348.56	92.12	66.98	-38.02	-1,693.56	5,444.89	2,891.13	2,788.17	102.95	28.082	
10,000.00	6,439.00	9,742.76	6,348.56	94.65	67.01	-37.05	-1,695.54	5,444.95	2,791.18	2,688.17	103.01	27.096	
10,100.00	6,439.00	9,744.73	6,348.55	97.20	67.05	-36.05	-1,697.51	5,445.01	2,691.24	2,588.17	103.07	26.112	
10,200.00	6,439.00	9,746.71	6,348.54	99.75	67.08	-35.03	-1,699.48	5,445.07	2,591.30	2,488.18	103.12	25.129	
10,300.00	6,439.00	9,747.00	6,348.54	102.32	67.08	-34.87	-1,699.78	5,445.08	2,491.36	2,388.18	103.18	24.146	
10,400.00	6,439.00	9,766.17	6,348.58	104.89	67.41	-23.57	-1,718.95	5,445.47	2,391.29	2,288.10	103.20	23.172	
10,500.00	6,439.00	9,766.96	6,348.58	107.47	67.43	-23.05	-1,719.74	5,445.49	2,291.35	2,188.12	103.23	22.196	
10,600.00	6,439.00	9,767.78	6,348.59	110.06	67.44	-22.51	-1,720.56	5,445.51	2,191.41	2,088.15	103.27	21.221	
10,700.00	6,439.00	9,768.63	6,348.59	112.66	67.46	-21.94	-1,721.41	5,445.53	2,091.48	1,988.18	103.30	20.247	
10,800.00	6,439.00	9,769.52	6,348.59	115.26	67.47	-21.34	-1,722.29	5,445.55	1,991.56	1,888.22	103.33	19.273	
10,900.00	6,439.00	9,770.43	6,348.59	117.87	67.49	-20.72	-1,723.21	5,445.58	1,891.64	1,788.27	103.37	18.300	
11,000.00	6,439.00	9,771.39	6,348.60	120.49	67.50	-20.06	-1,724.16	5,445.60	1,791.73	1,688.33	103.40	17.329	
11,100.00	6,439.00	9,772.38	6,348.60	123.11	67.52	-19.38	-1,725.15	5,445.63	1,691.83	1,588.40	103.43	16.358	
11,200.00	6,439.00	9,773.42	6,348.60	125.73	67.54	-18.66	-1,726.19	5,445.65	1,591.94	1,488.49	103.45	15.388	
11,300.00	6,439.00	9,774.50	6,348.61	128.36	67.56	-17.90	-1,727.27	5,445.68	1,492.07	1,388.59	103.47	14.420	
11,400.00	6,439.00	9,775.62	6,348.61	131.00	67.58	-17.10	-1,728.39	5,445.71	1,392.21	1,288.72	103.49	13.453	
11,500.00	6,439.00	9,776.80	6,348.62	133.64	67.60	-16.26	-1,729.57	5,445.74	1,292.37	1,188.87	103.50	12.487	
11,600.00	6,439.00	9,778.03	6,348.62	136.28	67.62	-15.37	-1,730.80	5,445.78	1,192.56	1,089.06	103.50	11.522	
11,700.00	6,439.00	9,779.31	6,348.62	138.93	67.64	-14.43	-1,732.08	5,445.81	1,092.78	989.29	103.49	10.559	
11,800.00	6,439.00	9,780.66	6,348.63	141.58	67.66	-13.44	-1,733.43	5,445.85	993.05	889.59	103.46	9.598	
11,900.00	6,439.00	9,782.08	6,348.63	144.23	67.69	-12.40	-1,734.84	5,445.89	893.37	789.96	103.41	8.639	
12,000.00	6,439.00	9,783.56	6,348.64	146.89	67.71	-11.29	-1,736.33	5,445.93	793.76	690.44	103.32	7.682	
12,100.00	6,439.00	9,785.12	6,348.65	149.55	67.74	-10.11	-1,737.89	5,445.98	694.27	591.08	103.19	6.728	
12,200.00	6,439.00	9,786.76	6,348.65	152.21	67.77	-8.86	-1,739.53	5,446.03	594.94	491.96	102.98	5.777	
12,300.00	6,439.00	9,788.50	6,348.66	154.88	67.80	-7.54	-1,741.26	5,446.08	495.88	393.23	102.65	4.831	
12,400.00	6,439.00	9,790.32	6,348.67	157.55	67.83	-6.13	-1,743.09	5,446.13	397.27	295.15	102.13	3.890	
12,500.00	6,439.00	9,792.26	6,348.68	160.22	67.86	-4.64	-1,745.02	5,446.19	299.58	198.35	101.24	2.959	
12,600.00	6,439.00	9,794.30	6,348.69	162.89	67.90	-3.05	-1,747.06	5,446.26	204.11	104.47	99.65	2.048	
12,700.00	6,439.00	9,796.47	6,348.70	165.57	67.93	-1.35	-1,749.23	5,446.33	116.48	19.71	96.77	1.204 Collision Avoidance Req.	
12,790.55	6,439.00	9,798.55	6,348.70	167.99	67.97	0.27	-1,751.31	5,446.40	73.30	-19.19	92.49	0.792 No-Go Zone - Stop Drilling, CC	
12,800.00	6,439.00	9,798.78	6,348.71	168.24	67.97	0.45	-1,751.54	5,446.41	73.90	-20.57	94.48	0.782 No-Go Zone - Stop Drilling, ES, SF	
12,900.00	6,439.00	9,801.23	6,348.72	170.92	68.01	2.36	-1,753.99	5,446.49	131.70	19.58	112.12	1.175 Collision Avoidance Req.	
13,000.00	6,439.00	9,803.85	6,348.73	173.60	68.06	4.40	-1,756.60	5,446.58	221.85	110.28	111.57	1.988 Collision Risk Procedures Req.	
13,100.00	6,439.00	9,806.65	6,348.75	176.29	68.11	6.57	-1,759.40	5,446.68	317.92	207.37	110.55	2.876	
13,200.00	6,439.00	9,809.64	6,348.76	178.97	68.16	8.87	-1,762.40	5,446.79	415.83	305.89	109.94	3.782	
13,300.00	6,439.00	9,812.86	6,348.78	181.66	68.21	11.32	-1,765.61	5,446.91	514.53	404.92	109.61	4.694	
13,400.00	6,439.00	9,816.33	6,348.80	184.35	68.27	13.90	-1,769.08	5,447.05	613.63	504.18	109.45	5.606	
13,500.00	6,439.00	9,820.07	6,348.82	187.04	68.34	16.63	-1,772.82	5,447.20	712.97	603.56	109.41	6.516	
13,600.00	6,439.00	9,824.13	6,348.85	189.73	68.41	19.51	-1,776.87	5,447.36	812.46	703.01	109.46	7.423	
13,700.00	6,439.00	9,828.54	6,348.87	192.42	68.48	22.52	-1,781.28	5,447.55	912.05	802.48	109.57	8.324	
13,800.00	6,439.00	9,833.35	6,348.91	195.11	68.57	25.67	-1,786.08	5,447.76	1,011.70	901.95	109.75	9.219	
13,900.00	6,439.00	9,839.12	6,348.95	197.81	68.67	29.24	-1,791.85	5,448.02	1,111.40	1,001.37	110.03	10.101	
14,000.00	6,439.00	9,847.18	6,349.00	200.51	68.81	33.84	-1,799.90	5,448.41	1,211.13	1,100.58	110.55	10.955	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	MALLARD EXPLORATION	Local Co-ordinate Reference:	Well CANVASBACK 32-33-6HN
Project:	WELD COUNTY	TVD Reference:	KB 27' @ 4973.00usft
Reference Site:	SEC 32-T9N-R60W	MD Reference:	KB 27' @ 4973.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	CANVASBACK 32-33-6HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 5000.16 Single User Db
Reference Design:	PROPOSAL 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC 32-T9N-R60W - EXIST HZ SHABLE FEDERAL LB33-78HN - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 usft
Survey Program:		642-MWD, 5497-MWD						Rule Assigned:				Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			Minimum Separation (usft)
14,100.00	6,439.00	9,857.02	6,349.08	203.20	68.98	38.87	-1,809.72	5,448.93	1,310.87	1,199.64	111.23	11.785	
14,200.00	6,439.00	9,869.32	6,349.18	205.90	69.19	44.30	-1,822.00	5,449.63	1,410.61	1,298.49	112.12	12.581	
14,300.00	6,439.00	9,885.11	6,349.31	208.60	69.47	50.07	-1,837.76	5,450.64	1,510.34	1,397.02	113.32	13.329	
14,400.00	6,439.00	9,906.13	6,349.51	211.30	69.84	56.08	-1,858.73	5,452.15	1,610.04	1,495.06	114.98	14.003	
14,500.00	6,439.00	9,935.50	6,349.81	214.01	70.35	62.23	-1,887.99	5,454.59	1,709.67	1,592.28	117.40	14.563	
14,600.00	6,439.00	9,989.30	6,349.47	216.71	69.72	54.31	-1,851.88	5,452.01	1,809.14	1,695.54	113.60	15.926	
14,700.00	6,439.00	9,904.85	6,349.52	219.41	69.82	55.77	-1,857.42	5,452.37	1,908.90	1,795.12	113.78	16.777	
14,800.00	6,439.00	9,926.00	6,349.71	222.12	70.19	60.47	-1,878.53	5,453.76	2,008.74	1,893.45	115.29	17.423	
14,900.00	6,439.00	9,926.00	6,349.71	224.82	70.19	60.47	-1,878.53	5,453.76	2,108.49	1,993.49	114.99	18.336	
15,000.00	6,439.00	9,947.80	6,349.88	227.53	70.57	64.23	-1,900.25	5,455.54	2,208.06	2,091.56	116.50	18.953	
15,100.00	6,439.00	9,951.41	6,349.89	230.24	70.64	64.76	-1,903.86	5,455.82	2,307.78	2,191.29	116.50	19.810	
15,200.00	6,439.00	9,954.89	6,349.90	232.94	70.70	65.26	-1,907.32	5,456.08	2,407.52	2,291.02	116.50	20.666	
15,300.00	6,439.00	9,958.23	6,349.91	235.65	70.76	65.72	-1,910.66	5,456.33	2,507.27	2,390.77	116.50	21.522	
15,400.00	6,439.00	9,961.45	6,349.92	238.36	70.81	66.14	-1,913.87	5,456.57	2,607.03	2,490.53	116.50	22.377	
15,500.00	6,439.00	9,964.55	6,349.92	241.07	70.87	66.54	-1,916.96	5,456.79	2,706.80	2,590.29	116.51	23.232	
15,600.00	6,439.00	9,967.54	6,349.92	243.78	70.92	66.91	-1,919.94	5,457.00	2,806.58	2,690.06	116.52	24.086	
15,700.00	6,439.00	9,970.43	6,349.92	246.50	70.97	67.26	-1,922.82	5,457.20	2,906.37	2,789.83	116.54	24.940	
15,800.00	6,439.00	9,973.21	6,349.92	249.21	71.02	67.58	-1,925.60	5,457.39	3,006.17	2,889.62	116.55	25.793	
15,900.00	6,439.00	9,975.91	6,349.92	251.92	71.07	67.89	-1,928.29	5,457.58	3,105.97	2,989.41	116.57	26.645	
16,000.00	6,439.00	9,978.51	6,349.91	254.63	71.11	68.18	-1,930.88	5,457.75	3,205.79	3,089.20	116.59	27.497	
16,100.00	6,439.00	9,981.02	6,349.90	257.35	71.16	68.45	-1,933.39	5,457.92	3,305.61	3,189.00	116.61	28.348	
16,200.00	6,439.00	9,983.45	6,349.89	260.06	71.20	68.70	-1,935.82	5,458.07	3,405.44	3,288.80	116.63	29.198	
16,300.00	6,439.00	9,985.81	6,349.88	262.78	71.24	68.94	-1,938.17	5,458.22	3,505.27	3,388.61	116.66	30.048	
16,400.00	6,439.00	9,988.09	6,349.87	265.49	71.28	69.17	-1,940.45	5,458.37	3,605.11	3,488.43	116.68	30.897	
16,500.00	6,439.00	10,016.00	6,349.63	268.21	71.77	71.59	-1,968.31	5,459.98	3,705.16	3,586.84	118.32	31.314	
16,600.00	6,439.00	10,016.00	6,349.63	270.93	71.77	71.59	-1,968.31	5,459.98	3,804.98	3,686.78	118.20	32.192	
16,700.00	6,439.00	10,016.00	6,349.63	273.64	71.77	71.59	-1,968.31	5,459.98	3,904.80	3,786.72	118.08	33.070	
16,800.00	6,439.00	10,016.00	6,349.63	276.36	71.77	71.59	-1,968.31	5,459.98	4,004.63	3,886.66	117.97	33.946	
16,900.00	6,439.00	10,016.00	6,349.63	279.08	71.77	71.59	-1,968.31	5,459.98	4,104.47	3,986.60	117.87	34.822	
17,000.00	6,439.00	10,016.00	6,349.63	281.80	71.77	71.59	-1,968.31	5,459.98	4,204.32	4,086.54	117.78	35.697	
17,089.98	6,439.00	10,016.00	6,349.63	284.24	71.77	71.59	-1,968.31	5,459.98	4,294.17	4,176.47	117.70	36.483	

Anticollision Report

Company:	MALLARD EXPLORATION	Local Co-ordinate Reference:	Well CANVASBACK 32-33-6HN
Project:	WELD COUNTY	TVD Reference:	KB 27' @ 4973.00usft
Reference Site:	SEC 32-T9N-R60W	MD Reference:	KB 27' @ 4973.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	CANVASBACK 32-33-6HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 5000.16 Single User Db
Reference Design:	PROPOSAL 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC 32-T9N-R60W - EXIST HZ SHABLE LB 32-68HN - Wellbore #1 - Wellbore #1													Offset Site Error: 0.00 usft
Survey Program: 638-MWD													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
0.00	0.00	0.00	0.00	0.00	0.00	70.24	1,728.48	4,812.38	5,113.41				
100.00	100.00	83.00	83.00	0.42	1.57	70.24	1,728.48	4,812.38	5,113.38	5,111.39	1.99	2,573.391	
200.00	200.00	183.00	183.00	1.25	3.46	70.24	1,728.48	4,812.38	5,113.38	5,108.67	4.71	1,085.555	
300.00	300.00	283.00	283.00	1.74	5.36	70.24	1,728.48	4,812.38	5,113.38	5,106.28	7.10	720.178	
400.00	399.98	382.98	382.98	2.24	7.25	-136.40	1,728.48	4,812.38	5,114.64	5,105.23	9.42	542.976	
500.00	499.84	482.84	482.84	3.42	9.14	-136.39	1,728.48	4,812.38	5,118.44	5,106.31	12.13	422.025	
600.00	599.45	582.45	582.45	4.32	11.03	-136.37	1,728.48	4,812.38	5,124.76	5,110.08	14.68	349.134	
700.00	698.70	701.76	701.76	5.10	12.11	-136.36	1,728.61	4,812.09	5,133.41	5,117.06	16.35	313.971	
800.00	797.47	789.22	789.22	5.81	12.15	-136.31	1,728.50	4,811.84	5,144.49	5,127.55	16.95	303.597	
900.00	895.62	877.72	877.72	6.47	12.20	-136.25	1,728.51	4,811.80	5,158.36	5,140.84	17.52	294.459	
1,000.00	993.06	954.25	954.25	7.10	12.23	-136.15	1,728.72	4,811.81	5,174.93	5,156.86	18.07	286.358	
1,100.00	1,089.64	1,014.00	1,014.00	7.71	12.27	-135.99	1,728.83	4,812.28	5,194.67	5,176.06	18.61	279.100	
1,200.00	1,185.27	1,086.89	1,086.88	8.30	12.33	-135.83	1,729.05	4,813.26	5,217.48	5,198.29	19.18	272.010	
1,290.38	1,270.77	1,190.37	1,190.35	8.77	12.41	-135.77	1,729.87	4,814.65	5,240.43	5,220.73	19.70	266.033	
1,300.00	1,279.82	1,205.62	1,205.60	8.80	12.41	-135.81	1,730.04	4,814.77	5,242.94	5,223.20	19.74	265.596	
1,400.00	1,373.90	1,068.00	6,356.18	9.11	128.12	168.77	1,156.18	-50.77	5,176.14	5,118.50	57.65	89.788	
1,500.00	1,467.99	1,068.00	6,356.18	9.45	128.12	168.77	1,156.18	-50.77	5,093.55	5,034.79	58.76	86.681	
1,600.00	1,562.07	1,068.00	6,356.18	9.81	128.12	168.77	1,156.18	-50.77	5,011.59	4,951.66	59.93	83.617	
1,700.00	1,656.16	1,068.00	6,356.18	10.18	128.12	168.77	1,156.18	-50.77	4,930.30	4,869.13	61.17	80.604	
1,800.00	1,750.24	1,068.00	6,356.18	10.57	128.12	168.77	1,156.18	-50.77	4,849.71	4,787.25	62.46	77.647	
1,900.00	1,844.32	1,068.00	6,356.18	10.96	128.12	168.77	1,156.18	-50.77	4,769.85	4,706.04	63.81	74.750	
2,000.00	1,938.41	1,068.00	6,356.18	11.37	128.12	168.77	1,156.18	-50.77	4,690.76	4,625.54	65.22	71.918	
2,100.00	2,032.49	1,068.00	6,356.18	11.78	128.12	168.77	1,156.18	-50.77	4,612.49	4,545.79	66.70	69.154	
2,200.00	2,126.57	1,068.00	6,356.18	12.21	128.12	168.77	1,156.18	-50.77	4,535.07	4,466.83	68.24	66.460	
2,300.00	2,220.66	1,068.00	6,356.18	12.64	128.12	168.77	1,156.18	-50.77	4,458.55	4,388.71	69.84	63.840	
2,400.00	2,314.74	1,068.00	6,356.18	13.08	128.12	168.77	1,156.18	-50.77	4,382.97	4,311.47	71.51	61.294	
2,500.00	2,408.82	1,068.00	6,356.18	13.52	128.12	168.77	1,156.18	-50.77	4,308.39	4,235.15	73.24	58.826	
2,600.00	2,502.91	1,068.00	6,356.18	13.97	128.12	168.77	1,156.18	-50.77	4,234.86	4,159.82	75.04	56.436	
2,700.00	2,596.99	1,068.00	6,356.18	14.42	128.12	168.77	1,156.18	-50.77	4,162.43	4,085.53	76.90	54.125	
2,800.00	2,691.07	1,068.00	6,356.18	14.88	128.12	168.77	1,156.18	-50.77	4,091.17	4,012.33	78.84	51.893	
2,900.00	2,785.16	1,068.00	6,356.18	15.35	128.12	168.77	1,156.18	-50.77	4,021.12	3,940.29	80.84	49.743	
3,000.00	2,879.24	1,068.00	6,356.18	15.81	128.12	168.77	1,156.18	-50.77	3,952.37	3,869.46	82.91	47.673	
3,100.00	2,973.33	1,068.00	6,356.18	16.28	128.12	168.77	1,156.18	-50.77	3,884.98	3,799.93	85.04	45.683	
3,200.00	3,067.41	1,068.00	6,356.18	16.76	128.12	168.77	1,156.18	-50.77	3,819.01	3,731.77	87.24	43.775	
3,300.00	3,161.49	1,068.00	6,356.18	17.23	128.12	168.77	1,156.18	-50.77	3,754.55	3,665.04	89.51	41.947	
3,400.00	3,255.58	1,068.00	6,356.18	17.71	128.12	168.77	1,156.18	-50.77	3,691.67	3,599.83	91.84	40.198	
3,500.00	3,349.66	1,068.00	6,356.18	18.20	128.12	168.77	1,156.18	-50.77	3,630.46	3,536.23	94.23	38.530	
3,600.00	3,443.74	1,068.00	6,356.18	18.68	128.12	168.77	1,156.18	-50.77	3,571.00	3,474.33	96.67	36.940	
3,700.00	3,537.83	1,068.00	6,356.18	19.18	128.12	168.77	1,156.18	-50.77	3,513.38	3,414.21	99.17	35.427	
3,800.00	3,631.91	1,068.00	6,356.18	19.70	128.12	168.77	1,156.18	-50.77	3,457.69	3,355.97	101.72	33.992	
3,900.00	3,725.99	1,068.00	6,356.18	20.28	128.12	168.77	1,156.18	-50.77	3,404.03	3,299.72	104.32	32.632	
4,000.00	3,820.08	1,068.00	6,356.18	20.87	128.12	168.77	1,156.18	-50.77	3,352.50	3,245.55	106.95	31.347	
4,100.00	3,914.16	1,068.00	6,356.18	21.47	128.12	168.77	1,156.18	-50.77	3,303.18	3,193.57	109.61	30.136	
4,200.00	4,008.24	1,068.00	6,356.18	22.07	128.12	168.77	1,156.18	-50.77	3,256.20	3,143.90	112.30	28.996	
4,300.00	4,102.33	1,068.00	6,356.18	22.68	128.12	168.77	1,156.18	-50.77	3,211.64	3,096.64	115.00	27.928	
4,400.00	4,196.41	1,068.00	6,356.18	23.28	128.12	168.77	1,156.18	-50.77	3,169.61	3,051.91	117.70	26.929	
4,500.00	4,290.49	1,068.00	6,356.18	23.88	128.12	168.77	1,156.18	-50.77	3,130.21	3,009.81	120.40	25.998	
4,600.00	4,384.58	1,068.00	6,356.18	24.49	128.12	168.77	1,156.18	-50.77	3,093.54	2,970.46	123.08	25.134	
4,700.00	4,478.66	1,068.00	6,356.18	25.09	128.12	168.77	1,156.18	-50.77	3,059.71	2,933.98	125.73	24.335	
4,800.00	4,572.75	1,068.00	6,356.18	25.69	128.12	168.77	1,156.18	-50.77	3,028.80	2,900.46	128.34	23.600	
4,900.00	4,666.83	1,068.00	6,356.18	26.30	128.12	168.77	1,156.18	-50.77	3,000.90	2,870.01	130.89	22.927	
5,000.00	4,760.91	1,068.00	6,356.18	26.90	128.12	168.77	1,156.18	-50.77	2,976.11	2,842.74	133.37	22.315	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	MALLARD EXPLORATION	Local Co-ordinate Reference:	Well CANVASBACK 32-33-6HN
Project:	WELD COUNTY	TVD Reference:	KB 27' @ 4973.00usft
Reference Site:	SEC 32-T9N-R60W	MD Reference:	KB 27' @ 4973.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	CANVASBACK 32-33-6HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 5000.16 Single User Db
Reference Design:	PROPOSAL 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC 32-T9N-R60W - EXIST HZ SHABLE LB 32-68HN - Wellbore #1 - Wellbore #1											Offset Site Error: 0.00 usft
Survey Program: 638-MWD											Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)	
5,100.00	4,855.00	10,687.00	6,356.18	27.51	128.12	168.77	1,156.18	-50.77	2,954.49	2,818.72	
5,200.00	4,949.08	10,687.00	6,356.18	28.11	128.12	168.77	1,156.18	-50.77	2,936.12	2,798.05	
5,300.00	5,043.16	10,687.00	6,356.18	28.72	128.12	168.77	1,156.18	-50.77	2,921.06	2,780.80	
5,400.00	5,137.25	10,687.00	6,356.18	29.32	128.12	168.77	1,156.18	-50.77	2,909.37	2,767.04	
5,500.00	5,231.33	10,687.00	6,356.18	29.93	128.12	168.77	1,156.18	-50.77	2,901.07	2,756.80	
5,600.00	5,325.41	10,687.00	6,356.18	30.53	128.12	168.77	1,156.18	-50.77	2,896.20	2,750.14	
5,691.01	5,411.04	10,687.00	6,356.18	31.09	128.12	168.77	1,156.18	-50.77	2,894.77	2,747.21	147.57 19.617 CC
5,700.00	5,419.50	10,687.00	6,356.18	31.14	128.12	168.77	1,156.18	-50.77	2,894.79	2,747.08	147.71 19.598 ES
5,800.00	5,513.58	10,687.00	6,356.18	31.75	128.12	168.77	1,156.18	-50.77	2,896.83	2,747.63	149.20 19.416
5,900.00	5,607.66	10,687.00	6,356.18	32.35	128.12	168.77	1,156.18	-50.77	2,902.31	2,751.79	150.52 19.282
6,000.00	5,701.75	10,687.00	6,356.18	32.96	128.12	168.77	1,156.18	-50.77	2,911.22	2,759.54	151.68 19.193
6,100.00	5,795.83	10,687.00	6,356.18	33.56	128.12	168.77	1,156.18	-50.77	2,923.52	2,770.85	152.68 19.148
6,113.74	5,808.76	10,687.00	6,356.18	33.64	128.12	168.77	1,156.18	-50.77	2,925.48	2,772.68	152.80 19.146
6,150.00	5,843.02	10,687.00	6,356.18	33.86	128.12	179.04	1,156.18	-50.77	2,930.65	2,777.53	153.12 19.140
6,200.00	5,890.57	10,687.00	6,356.18	34.18	128.12	-165.14	1,156.18	-50.77	2,937.52	2,783.96	153.56 19.129
6,250.00	5,938.13	10,687.00	6,356.18	34.48	128.12	-149.22	1,156.18	-50.77	2,944.06	2,790.05	154.01 19.116
6,300.00	5,985.36	10,687.00	6,356.18	34.71	128.12	-135.24	1,156.18	-50.77	2,950.21	2,795.76	154.46 19.101
6,350.00	6,031.88	10,687.00	6,356.18	34.89	128.12	-124.05	1,156.18	-50.77	2,955.93	2,801.03	154.90 19.083
6,400.00	6,077.36	10,687.00	6,356.18	35.04	128.12	-115.47	1,156.18	-50.77	2,961.18	2,805.87	155.31 19.066
6,450.00	6,121.43	10,687.00	6,356.18	35.16	128.12	-108.96	1,156.18	-50.77	2,965.92	2,810.22	155.70 19.049
6,500.00	6,163.76	10,687.00	6,356.18	35.26	128.12	-103.97	1,156.18	-50.77	2,970.11	2,814.06	156.05 19.033
6,550.00	6,204.04	10,687.00	6,356.18	35.35	128.12	-100.11	1,156.18	-50.77	2,973.74	2,817.35	156.39 19.015
6,600.00	6,241.95	10,687.00	6,356.18	35.42	128.12	-97.10	1,156.18	-50.77	2,976.76	2,820.05	156.71 18.995
6,650.00	6,277.21	10,687.00	6,356.18	35.47	128.12	-94.72	1,156.18	-50.77	2,979.17	2,822.14	157.03 18.972
6,700.00	6,309.55	10,687.00	6,356.18	35.51	128.12	-92.85	1,156.18	-50.77	2,980.95	2,823.58	157.36 18.943
6,750.00	6,338.72	10,687.00	6,356.18	35.54	128.12	-91.40	1,156.18	-50.77	2,982.07	2,824.36	157.71 18.909
6,800.00	6,364.50	10,687.00	6,356.18	35.57	128.12	-90.28	1,156.18	-50.77	2,982.54	2,824.46	158.08 18.867
6,850.00	6,386.70	10,687.00	6,356.18	35.60	128.12	-89.45	1,156.18	-50.77	2,982.35	2,823.87	158.48 18.819
6,900.00	6,405.14	10,687.00	6,356.18	35.66	128.12	-88.88	1,156.18	-50.77	2,981.50	2,822.59	158.91 18.762
6,950.00	6,419.68	10,687.00	6,356.18	35.74	128.12	-88.53	1,156.18	-50.77	2,980.00	2,820.62	159.39 18.697
7,000.00	6,430.22	10,687.00	6,356.18	35.86	128.12	-88.40	1,156.18	-50.77	2,977.86	2,817.96	159.90 18.624
7,050.00	6,436.67	10,687.00	6,356.18	36.05	128.12	-88.46	1,156.18	-50.77	2,975.09	2,814.65	160.44 18.543
7,100.00	6,438.99	10,687.00	6,356.18	36.30	128.12	-88.71	1,156.18	-50.77	2,971.72	2,810.70	161.02 18.455
7,102.92	6,439.00	10,687.00	6,356.18	36.32	128.12	-88.73	1,156.18	-50.77	2,971.50	2,810.45	161.05 18.450
7,200.00	6,439.00	10,687.00	6,356.18	36.99	128.12	-88.73	1,156.18	-50.77	2,965.89	2,803.69	162.21 18.285
7,300.00	6,439.00	10,687.00	6,356.18	37.90	128.12	-88.73	1,156.18	-50.77	2,963.43	2,800.06	163.37 18.140
7,323.07	6,439.00	10,687.00	6,356.18	38.14	128.12	-88.73	1,156.18	-50.77	2,963.34	2,799.69	163.65 18.108
7,400.00	6,439.00	10,687.00	6,356.18	38.99	128.12	-88.73	1,156.18	-50.77	2,964.33	2,799.83	164.51 18.019
7,500.00	6,439.00	10,687.00	6,356.18	40.25	128.12	-88.73	1,156.18	-50.77	2,968.61	2,803.00	165.61 17.925
7,600.00	6,439.00	10,687.00	6,356.18	41.65	128.12	-88.73	1,156.18	-50.77	2,976.25	2,809.59	166.66 17.858 SF
7,700.00	6,439.00	10,477.48	6,357.53	43.18	122.52	-88.76	1,174.35	157.93	2,984.10	2,821.13	162.96 18.311
7,800.00	6,439.00	10,266.09	6,356.90	44.82	116.84	-88.75	1,184.73	369.05	2,988.16	2,828.97	159.19 18.771
7,872.23	6,439.00	10,137.00	6,356.78	46.07	113.36	-88.75	1,186.51	498.11	2,988.09	2,831.02	157.08 19.023
7,900.00	6,439.00	10,137.00	6,356.78	46.56	113.36	-88.75	1,186.51	498.11	2,988.22	2,830.68	157.54 18.968
8,000.00	6,439.00	10,071.58	6,356.64	48.39	111.60	-88.75	1,187.70	563.52	2,989.27	2,831.66	157.61 18.966
8,100.00	6,439.00	9,985.59	6,355.89	50.30	109.30	-88.73	1,190.90	649.44	2,991.95	2,834.72	157.23 19.029
8,200.00	6,439.00	9,867.00	6,357.25	52.29	106.13	-88.76	1,194.50	767.96	2,993.90	2,837.75	156.14 19.174
8,300.00	6,439.00	9,778.00	6,359.12	54.34	103.75	-88.80	1,197.39	856.89	2,996.08	2,840.23	155.85 19.224
8,400.00	6,439.00	9,660.74	6,359.30	56.45	100.62	-88.80	1,201.32	974.09	2,998.48	2,843.56	154.92 19.355
8,500.00	6,439.00	9,552.98	6,358.31	58.61	97.75	-88.78	1,203.87	1,081.81	2,999.83	2,845.56	154.27 19.446
8,600.00	6,439.00	9,469.75	6,358.17	60.82	95.54	-88.78	1,206.17	1,165.01	3,001.59	2,847.33	154.26 19.458
8,700.00	6,439.00	9,386.22	6,358.17	63.06	93.32	-88.78	1,208.92	1,248.50	3,003.87	2,849.59	154.28 19.470

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	MALLARD EXPLORATION	Local Co-ordinate Reference:	Well CANVASBACK 32-33-6HN
Project:	WELD COUNTY	TVD Reference:	KB 27' @ 4973.00usft
Reference Site:	SEC 32-T9N-R60W	MD Reference:	KB 27' @ 4973.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	CANVASBACK 32-33-6HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 5000.16 Single User Db
Reference Design:	PROPOSAL 2	Offset TVD Reference:	Offset Datum

Offset Design: SEC 32-T9N-R60W - EXIST HZ SHABLE LB 32-68HN - Wellbore #1 - Wellbore #1												Offset Site Error:	0.00 usft
Survey Program: 638-MWD												Offset Well Error:	0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Separation Factor	Warning	
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
8,800.00	6,439.00	9,299.40	6,358.27	65.35	91.01	-88.78	1,212.29	1,335.25	3,006.73	2,852.47	154.26	19.491	
8,900.00	6,439.00	9,117.26	6,361.90	67.67	86.18	-88.86	1,217.31	1,517.27	3,008.48	2,856.43	152.05	19.787	
9,000.00	6,439.00	9,059.00	6,362.39	70.01	84.64	-88.86	1,218.31	1,575.51	3,009.29	2,856.50	152.79	19.696	
9,100.00	6,439.00	8,990.29	6,362.34	72.39	82.83	-88.86	1,220.31	1,644.20	3,011.28	2,858.00	153.28	19.645	
9,200.00	6,439.00	8,922.07	6,362.10	74.79	81.03	-88.86	1,223.26	1,712.36	3,014.57	2,860.77	153.80	19.601	
9,300.00	6,439.00	8,813.48	6,361.47	77.21	78.18	-88.85	1,228.61	1,820.81	3,018.52	2,865.08	153.44	19.673	
9,400.00	6,439.00	8,711.38	6,362.13	79.65	75.51	-88.86	1,232.92	1,922.81	3,021.72	2,868.47	153.25	19.718	
9,500.00	6,439.00	8,576.09	6,362.64	82.12	71.98	-88.87	1,237.61	2,058.02	3,024.04	2,871.68	152.35	19.849	
9,600.00	6,439.00	8,500.25	6,363.72	84.59	70.01	-88.90	1,240.46	2,133.80	3,026.73	2,873.92	152.81	19.808	
9,700.00	6,439.00	8,409.00	6,365.51	87.09	67.65	-88.93	1,244.27	2,224.95	3,029.86	2,876.92	152.94	19.811	
9,800.00	6,439.00	8,340.00	6,367.40	89.60	65.87	-88.97	1,247.47	2,293.85	3,033.51	2,879.95	153.56	19.754	
9,900.00	6,439.00	8,272.65	6,369.48	92.12	64.14	-89.01	1,251.29	2,361.05	3,038.21	2,883.99	154.22	19.700	
10,000.00	6,439.00	8,160.00	6,372.04	94.65	61.26	-89.06	1,258.56	2,473.44	3,043.65	2,889.67	153.98	19.767	
10,100.00	6,439.00	8,095.52	6,372.26	97.20	59.62	-89.06	1,262.73	2,537.78	3,049.14	2,894.43	154.71	19.709	
10,200.00	6,439.00	8,027.79	6,371.48	99.75	57.91	-89.05	1,267.97	2,605.30	3,055.86	2,900.50	155.36	19.669	
10,300.00	6,439.00	7,861.77	6,366.45	102.32	53.75	-88.96	1,280.17	2,770.78	3,062.44	2,908.29	154.15	19.867	
10,400.00	6,439.00	7,744.77	6,361.82	104.89	50.85	-88.87	1,286.64	2,887.51	3,067.01	2,913.10	153.91	19.927	
10,500.00	6,439.00	7,652.20	6,359.61	107.47	48.58	-88.83	1,291.77	2,979.91	3,071.59	2,917.40	154.19	19.921	
10,600.00	6,439.00	7,546.00	6,359.60	110.06	46.01	-88.84	1,297.66	3,085.94	3,076.12	2,921.86	154.26	19.941	
10,700.00	6,439.00	7,472.88	6,359.80	112.66	44.27	-88.84	1,301.92	3,158.94	3,080.96	2,925.99	154.97	19.881	
10,800.00	6,439.00	7,367.65	6,357.85	115.26	41.80	-88.81	1,308.66	3,263.93	3,086.41	2,931.27	155.14	19.894	
10,900.00	6,439.00	7,085.70	6,357.53	117.87	35.46	-88.80	1,317.50	3,545.65	3,088.27	2,935.94	152.34	20.273	
11,000.00	6,439.00	6,945.92	6,357.66	120.49	32.56	-88.81	1,316.50	3,685.43	3,086.39	2,934.18	152.21	20.277	
11,100.00	6,439.00	6,800.96	6,352.80	123.11	29.77	-88.71	1,313.93	3,830.25	3,083.67	2,931.51	152.16	20.266	
11,200.00	6,439.00	6,737.00	6,346.59	125.73	28.57	-88.60	1,312.45	3,893.88	3,080.66	2,927.23	153.43	20.079	
11,300.00	6,439.00	6,737.00	6,346.59	128.36	28.57	-88.60	1,312.45	3,893.88	3,080.66	2,924.41	155.63	19.790	
11,303.56	6,439.00	6,712.60	6,343.28	128.46	28.16	-88.54	1,312.31	3,918.06	3,079.61	2,924.22	155.38	19.819	
11,400.00	6,439.00	6,677.00	6,337.15	131.00	27.57	-88.42	1,313.43	3,953.10	3,081.35	2,924.39	156.96	19.632	
11,500.00	6,439.00	6,658.77	6,333.42	133.64	27.31	-88.35	1,314.39	3,970.92	3,085.24	2,926.46	158.78	19.431	
11,600.00	6,439.00	6,574.73	6,311.28	136.28	26.18	-87.94	1,318.71	4,051.83	3,090.45	2,930.56	159.89	19.328	
11,700.00	6,439.00	6,462.88	6,269.24	138.93	25.03	-87.17	1,323.83	4,155.28	3,096.11	2,935.22	160.89	19.243	
11,800.00	6,439.00	6,308.00	6,187.25	141.58	23.98	-85.65	1,325.52	4,286.41	3,100.06	2,938.30	161.76	19.164	
11,900.00	6,439.00	6,264.00	6,160.01	144.23	23.75	-85.15	1,325.60	4,320.96	3,105.58	2,942.17	163.40	19.006	
12,000.00	6,439.00	6,264.00	6,160.01	146.89	23.75	-85.15	1,325.60	4,320.96	3,113.73	2,948.56	165.18	18.851	
12,100.00	6,439.00	6,219.00	6,129.51	149.55	23.54	-84.59	1,326.63	4,354.00	3,124.37	2,957.73	166.64	18.749	
12,200.00	6,439.00	6,192.29	6,109.99	152.21	23.43	-84.23	1,327.40	4,372.22	3,137.58	2,969.49	168.09	18.666	
12,300.00	6,439.00	6,174.00	6,096.05	154.88	23.35	-83.98	1,327.90	4,384.04	3,153.28	2,983.85	169.43	18.611	
12,400.00	6,439.00	6,129.00	6,060.29	157.55	23.19	-83.32	1,329.25	4,411.30	3,171.49	3,000.90	170.60	18.591	
12,500.00	6,439.00	6,105.59	6,041.12	160.22	23.11	-82.98	1,330.03	4,424.73	3,192.22	3,020.51	171.70	18.591	
12,600.00	6,439.00	6,047.01	5,992.25	162.89	22.92	-82.09	1,331.70	4,456.98	3,215.21	3,042.59	172.62	18.626	
12,700.00	6,439.00	6,017.56	5,967.09	165.57	22.83	-81.63	1,332.21	4,472.26	3,240.26	3,066.76	173.49	18.676	
12,800.00	6,439.00	5,994.00	5,946.50	168.24	22.76	-81.26	1,332.56	4,483.71	3,267.83	3,093.57	174.25	18.754	
12,900.00	6,439.00	5,994.00	5,946.50	170.92	22.76	-81.26	1,332.56	4,483.71	3,298.01	3,123.07	174.94	18.853	
13,000.00	6,439.00	5,964.71	5,920.38	173.60	22.67	-80.79	1,333.00	4,496.95	3,330.53	3,155.09	175.44	18.983	
13,100.00	6,439.00	5,949.00	5,906.15	176.29	22.62	-80.53	1,333.27	4,503.60	3,365.62	3,189.76	175.86	19.138	
13,200.00	6,439.00	5,949.00	5,906.15	178.97	22.62	-80.53	1,333.27	4,503.60	3,403.17	3,226.98	176.19	19.315	
13,300.00	6,439.00	5,949.00	5,906.15	181.66	22.62	-80.53	1,333.27	4,503.60	3,443.22	3,266.81	176.41	19.518	
13,400.00	6,439.00	5,924.41	5,883.66	184.35	22.55	-80.13	1,333.93	4,513.51	3,485.27	3,308.75	176.51	19.745	
13,500.00	6,439.00	5,904.00	5,864.85	187.04	22.50	-79.80	1,334.84	4,521.38	3,529.83	3,353.30	176.53	19.995	
13,600.00	6,439.00	5,904.00	5,864.85	189.73	22.50	-79.80	1,334.84	4,521.38	3,576.36	3,399.88	176.48	20.265	
13,700.00	6,439.00	5,904.00	5,864.85	192.42	22.50	-79.80	1,334.84	4,521.38	3,625.05	3,448.71	176.34	20.557	
13,800.00	6,439.00	5,885.26	5,847.47	195.11	22.44	-79.49	1,335.84	4,528.32	3,675.68	3,499.54	176.14	20.868	

CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

Anticollision Report

Company:	MALLARD EXPLORATION	Local Co-ordinate Reference:	Well CANVASBACK 32-33-6HN
Project:	WELD COUNTY	TVD Reference:	KB 27' @ 4973.00usft
Reference Site:	SEC 32-T9N-R60W	MD Reference:	KB 27' @ 4973.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	CANVASBACK 32-33-6HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 5000.16 Single User Db
Reference Design:	PROPOSAL 2	Offset TVD Reference:	Offset Datum

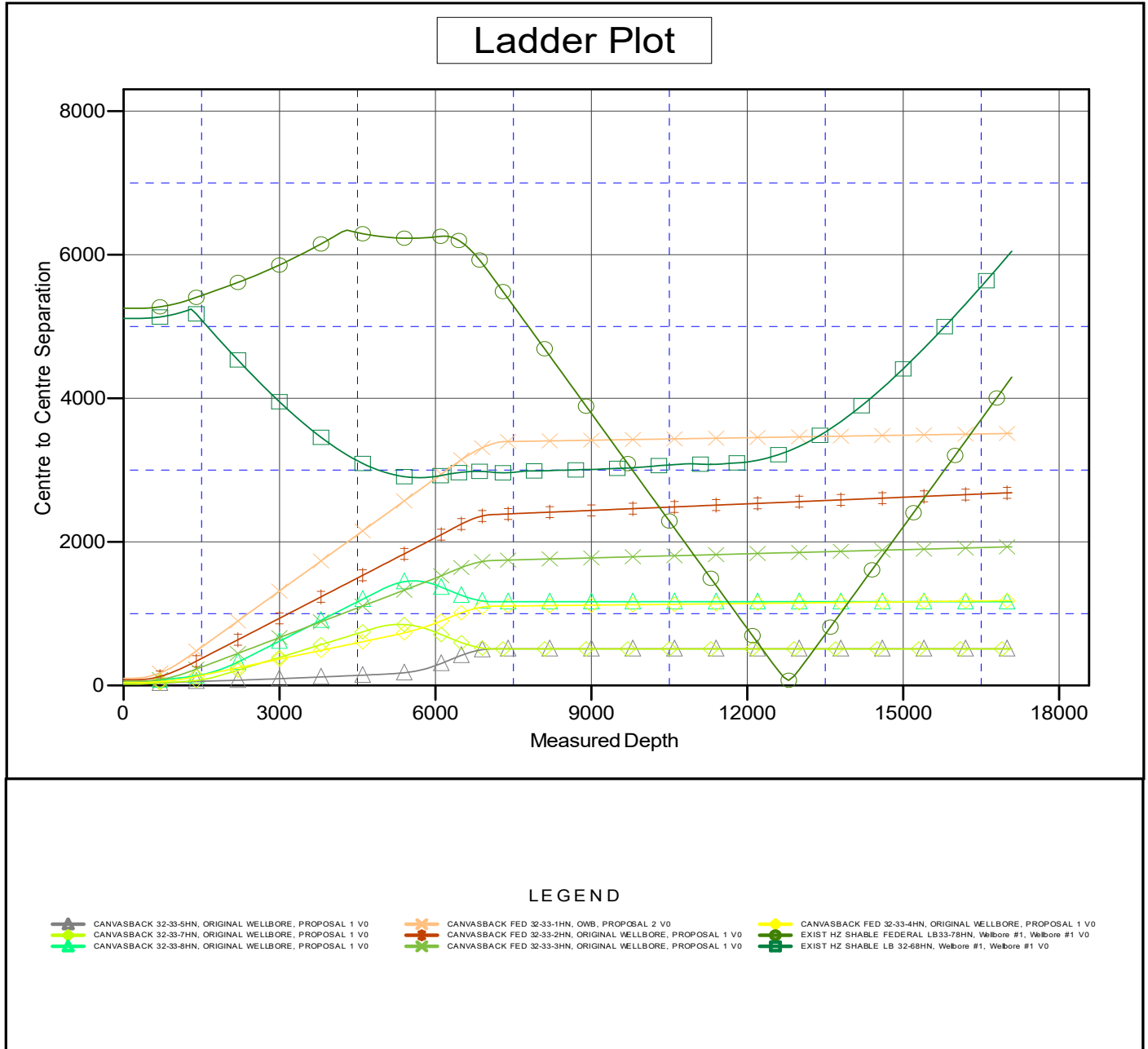
Offset Design: SEC 32-T9N-R60W - EXIST HZ SHABLE LB 32-68HN - Wellbore #1 - Wellbore #1													Offset Site Error: 0.00 usft
Survey Program: 638-MWD													Offset Well Error: 0.00 usft
Reference		Offset		Semi Major Axis		Highside Toolface (°)	Offset Wellbore Centre		Distance		Minimum Separation (usft)	Separation Factor	Warning
Measured Depth (usft)	Vertical Depth (usft)	Measured Depth (usft)	Vertical Depth (usft)	Reference (usft)	Offset (usft)		+N/-S (usft)	+E/-W (usft)	Between Centres (usft)	Between Ellipses (usft)			
13,900.00	6,439.00	5,859.00	5,822.95	197.81	22.36	-79.05	1,337.29	4,537.62	3,728.27	3,552.40	175.87	21.199	
14,000.00	6,439.00	5,859.00	5,822.95	200.51	22.36	-79.05	1,337.29	4,537.62	3,782.51	3,606.97	175.54	21.548	
14,100.00	6,439.00	5,859.00	5,822.95	203.20	22.36	-79.05	1,337.29	4,537.62	3,838.59	3,663.45	175.15	21.916	
14,200.00	6,439.00	5,859.00	5,822.95	205.90	22.36	-79.05	1,337.29	4,537.62	3,896.43	3,721.73	174.70	22.303	
14,300.00	6,439.00	5,834.79	5,800.13	208.60	22.28	-78.65	1,338.64	4,545.59	3,955.66	3,781.42	174.24	22.703	
14,400.00	6,439.00	5,814.00	5,780.35	211.30	22.22	-78.30	1,339.77	4,551.86	4,016.65	3,842.93	173.72	23.122	
14,500.00	6,439.00	5,814.00	5,780.35	214.01	22.22	-78.30	1,339.77	4,551.86	4,078.97	3,905.81	173.16	23.556	
14,600.00	6,439.00	5,814.00	5,780.35	216.71	22.22	-78.30	1,339.77	4,551.86	4,142.77	3,970.20	172.57	24.006	
14,700.00	6,439.00	5,814.00	5,780.35	219.41	22.22	-78.30	1,339.77	4,551.86	4,207.98	4,036.03	171.95	24.472	
14,800.00	6,439.00	5,797.47	5,764.50	222.12	22.17	-78.03	1,340.61	4,556.48	4,274.41	4,103.09	171.32	24.950	
14,900.00	6,439.00	5,790.45	5,757.73	224.82	22.14	-77.91	1,340.94	4,558.34	4,342.12	4,171.46	170.67	25.442	
15,000.00	6,439.00	5,769.00	5,736.98	227.53	22.08	-77.55	1,341.86	4,563.67	4,411.12	4,241.13	169.99	25.950	
15,100.00	6,439.00	5,769.00	5,736.98	230.24	22.08	-77.55	1,341.86	4,563.67	4,481.09	4,311.78	169.30	26.468	
15,200.00	6,439.00	5,769.00	5,736.98	232.94	22.08	-77.55	1,341.86	4,563.67	4,552.18	4,383.57	168.60	26.999	
15,300.00	6,439.00	5,769.00	5,736.98	235.65	22.08	-77.55	1,341.86	4,563.67	4,624.33	4,456.44	167.90	27.543	
15,400.00	6,439.00	5,769.00	5,736.98	238.36	22.08	-77.55	1,341.86	4,563.67	4,697.51	4,530.33	167.18	28.098	
15,500.00	6,439.00	5,769.00	5,736.98	241.07	22.08	-77.55	1,341.86	4,563.67	4,771.67	4,605.20	166.47	28.664	
15,600.00	6,439.00	5,769.00	5,736.98	243.78	22.08	-77.55	1,341.86	4,563.67	4,846.75	4,681.00	165.75	29.242	
15,700.00	6,439.00	5,749.79	5,718.25	246.50	22.01	-77.22	1,342.53	4,567.91	4,922.51	4,757.49	165.02	29.830	
15,800.00	6,439.00	5,746.14	5,714.68	249.21	22.00	-77.16	1,342.64	4,568.65	4,999.24	4,834.94	164.29	30.429	
15,900.00	6,439.00	5,725.00	5,693.92	251.92	21.93	-76.79	1,343.15	4,572.57	5,076.94	4,913.39	163.54	31.043	
16,000.00	6,439.00	5,725.00	5,693.92	254.63	21.93	-76.79	1,343.15	4,572.57	5,155.16	4,992.33	162.83	31.660	
16,100.00	6,439.00	5,725.00	5,693.92	257.35	21.93	-76.79	1,343.15	4,572.57	5,234.12	5,072.00	162.12	32.285	
16,200.00	6,439.00	5,725.00	5,693.92	260.06	21.93	-76.79	1,343.15	4,572.57	5,313.80	5,152.38	161.42	32.919	
16,300.00	6,439.00	5,725.00	5,693.92	262.78	21.93	-76.79	1,343.15	4,572.57	5,394.15	5,233.42	160.72	33.562	
16,400.00	6,439.00	5,725.00	5,693.92	265.49	21.93	-76.79	1,343.15	4,572.57	5,475.15	5,315.11	160.03	34.213	
16,500.00	6,439.00	5,725.00	5,693.92	268.21	21.93	-76.79	1,343.15	4,572.57	5,556.76	5,397.41	159.35	34.872	
16,600.00	6,439.00	5,725.00	5,693.92	270.93	21.93	-76.79	1,343.15	4,572.57	5,638.97	5,480.30	158.67	35.538	
16,700.00	6,439.00	5,725.00	5,693.92	273.64	21.93	-76.79	1,343.15	4,572.57	5,721.75	5,563.74	158.01	36.212	
16,800.00	6,439.00	5,725.00	5,693.92	276.36	21.93	-76.79	1,343.15	4,572.57	5,805.06	5,647.72	157.35	36.894	
16,900.00	6,439.00	5,725.00	5,693.92	279.08	21.93	-76.79	1,343.15	4,572.57	5,888.90	5,732.20	156.70	37.582	
17,000.00	6,439.00	5,725.00	5,693.92	281.80	21.93	-76.79	1,343.15	4,572.57	5,973.24	5,817.18	156.05	38.277	
17,089.98	6,439.00	5,725.00	5,693.92	284.24	21.93	-76.79	1,343.15	4,572.57	6,049.53	5,894.04	155.49	38.907	

Anticollision Report

Company:	MALLARD EXPLORATION	Local Co-ordinate Reference:	Well CANVASBACK 32-33-6HN
Project:	WELD COUNTY	TVD Reference:	KB 27' @ 4973.00usft
Reference Site:	SEC 32-T9N-R60W	MD Reference:	KB 27' @ 4973.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	CANVASBACK 32-33-6HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 5000.16 Single User Db
Reference Design:	PROPOSAL 2	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB 27' @ 4973.00usft
Offset Depths are relative to Offset Datum
Central Meridian is 105.500000°W

Coordinates are relative to: CANVASBACK 32-33-6HN
Coordinate System is US State Plane 1983, Colorado Northern Zone
Grid Convergence at Surface is: 0.89°



CC - Min centre to center distance or convergent point, SF - min separation factor, ES - min ellipse separation

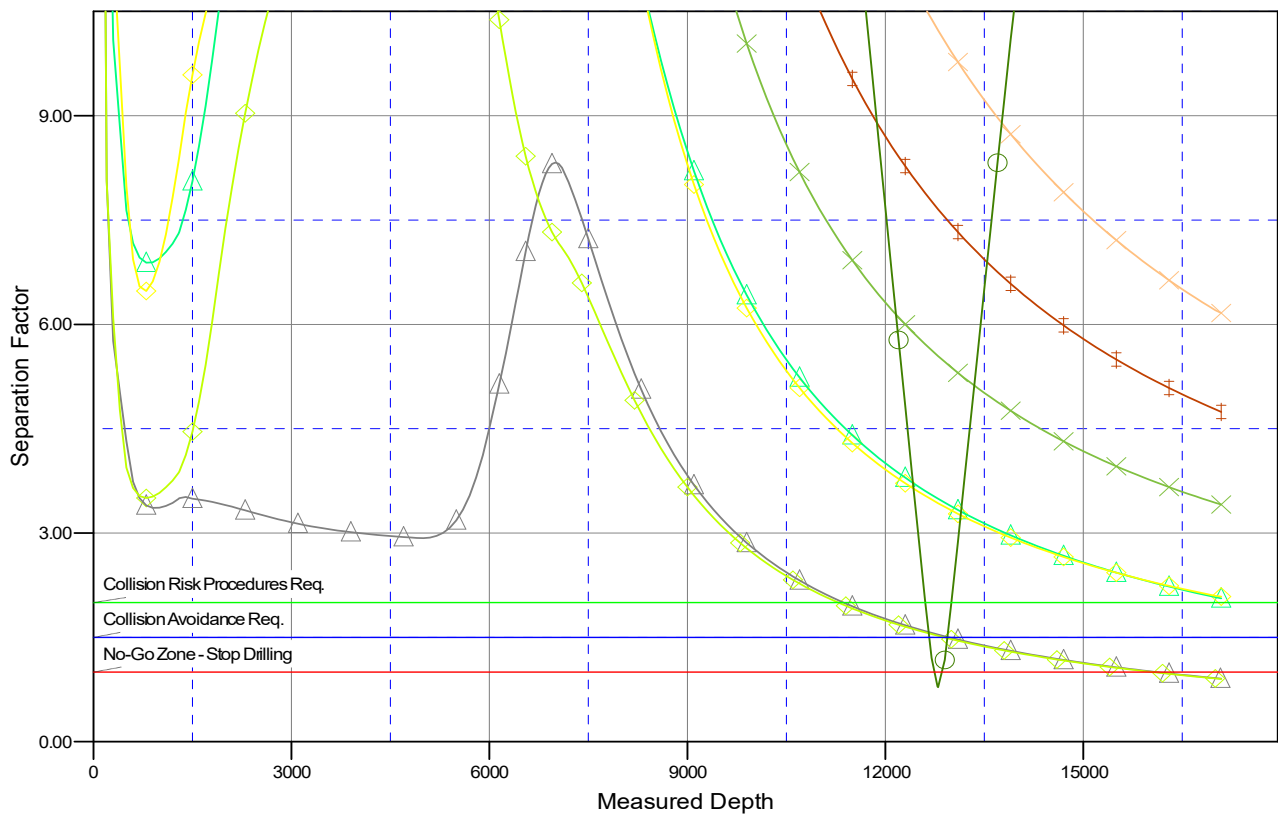
Anticollision Report

Company:	MALLARD EXPLORATION	Local Co-ordinate Reference:	Well CANVASBACK 32-33-6HN
Project:	WELD COUNTY	TVD Reference:	KB 27' @ 4973.00usft
Reference Site:	SEC 32-T9N-R60W	MD Reference:	KB 27' @ 4973.00usft
Site Error:	0.00 usft	North Reference:	True
Reference Well:	CANVASBACK 32-33-6HN	Survey Calculation Method:	Minimum Curvature
Well Error:	0.00 usft	Output errors are at	2.00 sigma
Reference Wellbore	OWB	Database:	EDM 5000.16 Single User Db
Reference Design:	PROPOSAL 2	Offset TVD Reference:	Offset Datum

Reference Depths are relative to KB 27' @ 4973.00usft
 Offset Depths are relative to Offset Datum
 Central Meridian is 105.500000°W

Coordinates are relative to: CANVASBACK 32-33-6HN
 Coordinate System is US State Plane 1983, Colorado Northern Zone
 Grid Convergence at Surface is: 0.89°

Separation Factor Plot



LEGEND

<ul style="list-style-type: none"> CANVASBACK 32-33-5HN, ORIGINAL WELLBORE, PROPOSAL 1 V0 CANVASBACK 32-33-7HN, ORIGINAL WELLBORE, PROPOSAL 1 V0 CANVASBACK 32-33-8HN, ORIGINAL WELLBORE, PROPOSAL 1 V0 	<ul style="list-style-type: none"> CANVASBACK FED 32-33-1HN, OWB, PROPOSAL 2 V0 CANVASBACK FED 32-33-2HN, ORIGINAL WELLBORE, PROPOSAL 1 V0 CANVASBACK FED 32-33-3HN, ORIGINAL WELLBORE, PROPOSAL 1 V0 	<ul style="list-style-type: none"> CANVASBACK FED 32-33-4HN, ORIGINAL WELLBORE, PROPOSAL 1 V0 EXIST HZ SHABLE FEDERAL LB33-78HN, Wellbore #1, Wellbore #1 V0 EXIST HZ SHABLE LB 32-68HN, Wellbore #1, Wellbore #1 V0
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