



Mallard Exploration

Weld Co., CO

Sec.25-T08N-R60W

Eider 36-1-6HN

API #05-123-51702

Original Hole

Survey: Renovare MWD Surface

Standard Survey Report

16 October, 2022



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Company:	Mallard Exploration	Local Co-ordinate Reference:	Well Eider 36-1-6HN
Project:	Weld Co., CO	TVD Reference:	KB 15' @ 4942.00usft (Cartel 11)
Site:	Sec.25-T08N-R60W	MD Reference:	KB 15' @ 4942.00usft (Cartel 11)
Well:	Eider 36-1-6HN	North Reference:	True
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	RE1012221-6	Database:	EDM 5000.1 Single User Db

Project	Weld Co., CO		
Map System:	US State Plane 1983	System Datum:	Mean Sea Level
Geo Datum:	North American Datum 1983		
Map Zone:	Colorado Northern Zone		

Site	Sec.25-T08N-R60W		
Site Position:		Northing:	1,475,455.272 usft
From:	Lat/Long	Easting:	3,405,512.537 usft
Position Uncertainty:	0.00 usft	Slot Radius:	13-3/16 "
		Latitude:	40° 37' 45.664 N
		Longitude:	104° 2' 20.350 W
		Grid Convergence:	0.94 °

Well	Eider 36-1-6HN, SWSE 25 8N60W 6		
Well Position	+N/-S	0.00 usft	Northing: 1,475,455.593 usft
	+E/-W	0.00 usft	Easting: 3,405,532.519 usft
Position Uncertainty	0.00 usft	Wellhead Elevation:	4,942.00 usft
		Ground Level:	4,927.00 usft

Wellbore	Original Hole				
Magnetics	Model Name	Sample Date	Declination (°)	Dip Angle (°)	Field Strength (nT)
	IGRF2020	10/15/22	7.34	66.88	52,005

Design	RE1012221-6			
Audit Notes:				
Version:	1.0	Phase:	ACTUAL	Tie On Depth: 0.00
Vertical Section:	Depth From (TVD) (usft)	+N/-S (usft)	+E/-W (usft)	Direction (°)
	0.00	0.00	0.00	174.47

Survey Program	Date	10/16/22		
From (usft)	To (usft)	Survey (Wellbore)	Tool Name	Description
138.00	1,670.00	Renovare MWD Surface (Original Hole)	MWD	MWD - Standard

Survey									
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Surface									
138.00	1.90	126.60	137.97	-1.36	1.84	1.53	1.38	1.38	0.00
First Renovare Survey									
229.00	2.60	122.90	228.90	-3.38	4.78	3.83	0.79	0.77	-4.07
320.00	3.00	122.70	319.80	-5.79	8.52	6.59	0.44	0.44	-0.22
407.00	3.90	128.00	406.64	-8.84	12.77	10.03	1.10	1.03	6.09
496.00	4.90	121.20	495.37	-12.68	18.40	14.39	1.27	1.12	-7.64
583.00	4.30	130.30	582.09	-16.71	24.07	18.95	1.08	-0.69	10.46
670.00	5.30	130.30	668.79	-21.42	29.62	24.17	1.15	1.15	0.00

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Well:	Eider 36-1-6HN	North Reference:	True
Wellbore:	Original Hole	Survey Calculation Method:	Minimum Curvature
Design:	RE1012221-6	Database:	EDM 5000.1 Single User Db

Survey										
Measured Depth (usft)	Inclination (°)	Azimuth (°)	Vertical Depth (usft)	+N/-S (usft)	+E/-W (usft)	Vertical Section (usft)	Dogleg Rate (°/100usft)	Build Rate (°/100usft)	Turn Rate (°/100usft)	
758.00	5.60	133.50	756.39	-27.00	35.83	30.33	0.49	0.34	3.64	
845.00	7.40	135.40	842.83	-33.92	42.85	37.89	2.08	2.07	2.18	
932.00	9.20	135.30	928.91	-42.85	51.67	47.63	2.07	2.07	-0.11	
1,019.00	12.20	134.20	1,014.39	-54.20	63.16	60.04	3.46	3.45	-1.26	
1,106.00	14.90	130.90	1,098.96	-67.94	78.21	75.16	3.23	3.10	-3.79	
1,193.00	16.65	128.71	1,182.68	-83.06	96.39	91.96	2.12	2.01	-2.52	
1,280.00	18.70	123.50	1,265.58	-98.55	117.75	109.44	2.97	2.36	-5.99	
1,369.00	18.80	118.90	1,349.86	-113.36	142.20	126.54	1.66	0.11	-5.17	
1,455.00	17.90	122.50	1,431.49	-127.16	165.48	142.51	1.68	-1.05	4.19	
1,543.00	17.30	126.90	1,515.37	-142.28	187.35	159.67	1.66	-0.68	5.00	
1,620.00	19.20	128.50	1,588.50	-157.04	206.42	176.20	2.55	2.47	2.08	
Last Renovare Survey										
1,670.00	19.20	128.50	1,635.71	-167.28	219.29	187.63	0.00	0.00	0.00	
Proj to BHL/TD										

Survey Annotations					
Measured Depth (usft)	Vertical Depth (usft)	Local Coordinates			
		+N/-S (usft)	+E/-W (usft)	Comment	
0.00	0.00	0.00	0.00	Surface	
138.00	137.97	-1.36	1.84	First Renovare Survey	
1,620.00	1,588.50	-157.04	206.42	Last Renovare Survey	
1,670.00	1,635.71	-167.28	219.29	Proj to BHL/TD	

Checked By: _____ Approved By: _____ Date: _____