Mallard Exploration

Borehole:	Well:	Field:	Structure:
Original Hole / Rev 0	Pochard 2-35-8HN	CO, Weld County (NAD 83 NZ)	02-07N-61W (Pochard West Pad)

Gravity & Magnetic Parameters

Model:	HDGM 2017	Dip:	66.969°	Date:	02-Jan-2018		
MagDec:	8.135°	FS:	52355.469nT	Gravity FS:	999.066mgn (9.80665 Based)		

Surface Location NAD83 Colorado State Plane, Northern Zone, US Feet

Lat:	N 40 35 52.98	Northing:	1463439.25ftUS	Grid Conv:	0.8529°		
Lon:	W 104 10 48.06	Easting:	3366541.39ftUS	Scale Fact:	0.99997518		

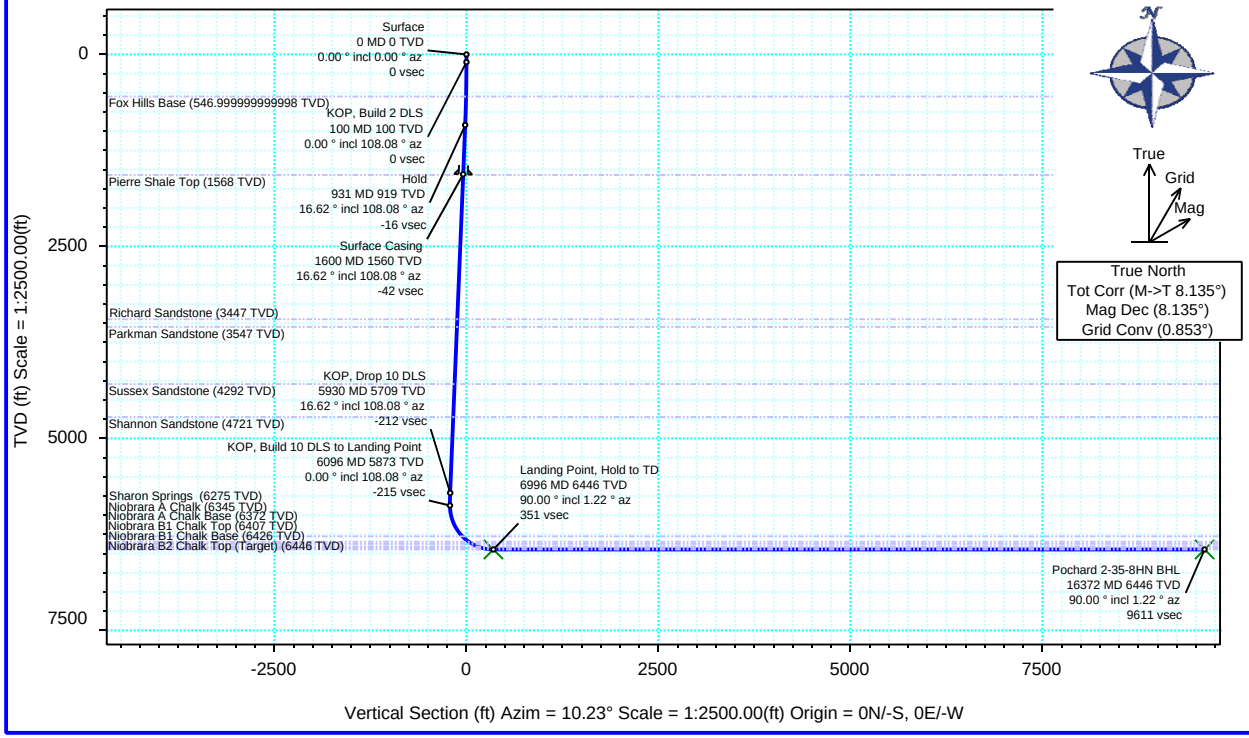
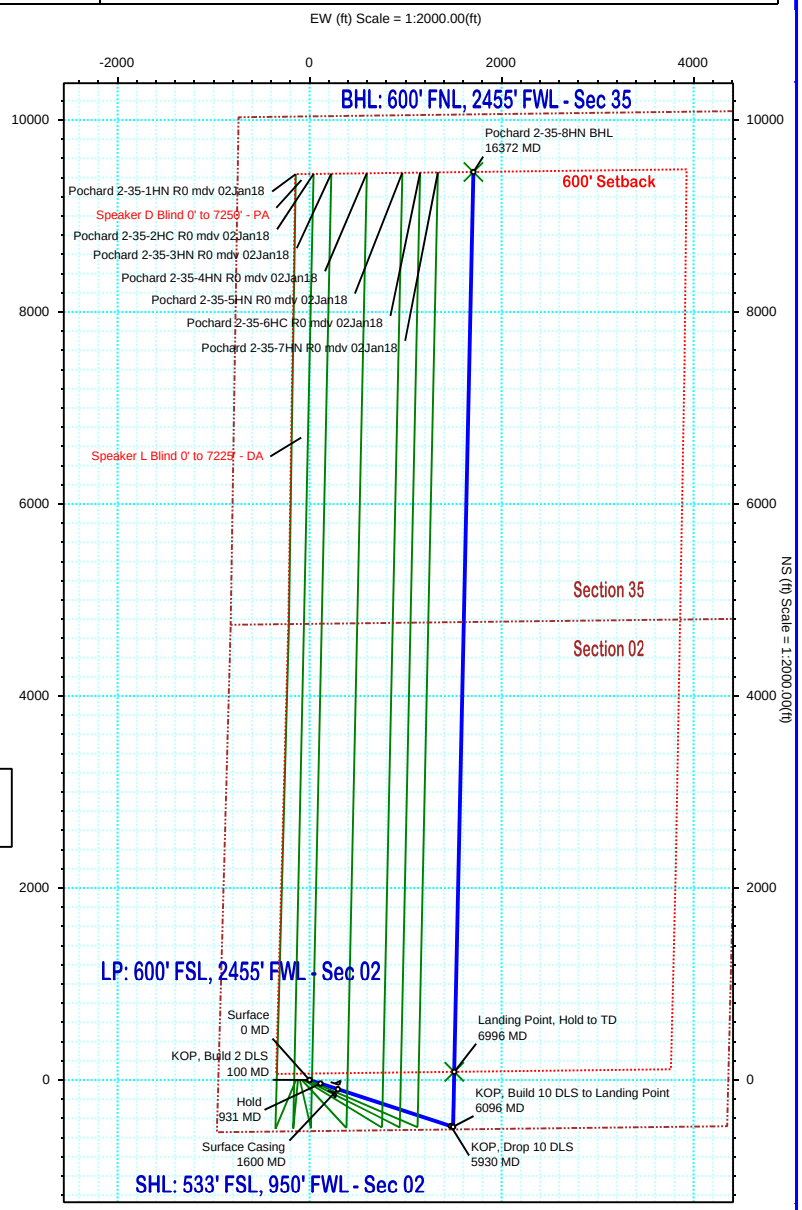
Miscellaneous

Slot:	Pochard 2-35-8HN	TVD Ref:	KB 20ft(4977ft above MSL)
Plan:	Pochard 2-35-8HN R0 mdv 02Jan18		

Surface Location

Northing: 1463439.25068216 Easting: 3366541.387717 Latitude: N 40 35 52.98 Longitude: W 104 10 48.06 VSec Azimuth: 10.23

Target Description	Grid Coord					Local Coord	
Target Name	Latitude	Longitude	Northing	Easting	TVD	VSec	N(+)/S(-)	E(+)/W(-)
Pochard Pad Sec 02-35 - 600' SB	N 40 35 52.98	W 104 10 49.88	1463436.80	3366401.45	4977.00	-25.22	-0.36	-139.96
Pochard Pad Sec 02-35	N 40 35 52.98	W 104 10 49.88	1463436.80	3366401.45	4977.00	-25.22	-0.36	-139.96
Pochard 2-35-8HN BHL	N 40 37 26.44	W 104 10 25.92	1472921.68	3368107.32	6446.00	9611.12	9458.33	1706.95
Pochard 2-35-8HN LP	N 40 35 53.82	W 104 10 28.51	1463546.25	3368047.85	6446.00	351.04	84.57	1507.93

Critical Points

Critical Point	MD	INCL	AZIM	TVD	VSEC	N(+)/S(-)	E(+)/W(-)	DLS
Surface	0.00	0.00	0.00	0.00	0.00	0.00	0.00	
KOP, Build 2 DLS	100.00	0.00	108.08	100.00	0.00	0.00	0.00	0.00
Fox Hills Base	548.83	8.98	108.08	547.00	-4.79	-10.89	33.36	2.00
Hold	931.06	16.62	108.08	919.45	-16.34	-37.14	113.79	2.00
Surface Casing	1600.00	16.62	108.08	1560.44	-42.47	-96.52	295.69	0.00
Pierre Shale Top	1607.89	16.62	108.08	1568.00	-42.78	-97.22	297.84	0.00
Richard Sandstone	3568.82	16.62	108.08	3447.00	-119.37	-271.28	831.06	0.00
Parkman Sandstone	3673.18	16.62	108.08	3547.00	-123.45	-280.54	859.43	0.00
Sussex Sandstone	4450.67	16.62	108.08	4292.00	-153.81	-349.56	1070.85	0.00
Shannon Sandstone	4898.37	16.62	108.08	4721.00	-171.30	-389.30	1192.59	0.00
KOP, Drop 10 DLS	5929.61	16.62	108.08	5709.15	-211.58	-480.83	1473.01	0.00
KOP, Build 10 DLS to Landing Point	6095.82	0.00	108.08	5873.04	-214.85	-488.26	1495.77	10.00
Sharon Springs	6541.34	44.55	1.22	6275.00	-52.22	-323.64	1499.26	10.00
Niobrara A Chalk	6650.42	55.46	1.22	6345.00	30.19	-240.22	1501.03	10.00
Niobrara A Chalk Base	6701.40	60.56	1.22	6372.00	72.87	-197.01	1501.95	10.00
Niobrara B1 Chalk Top	6783.21	68.74	1.22	6407.00	145.83	-123.15	1503.52	10.00
Niobrara B1 Chalk Base	6844.00	74.82	1.22	6426.00	202.83	-65.45	1504.74	10.00
Landing Point, Hold to TD	6995.82	90.00	1.22	6446.00	351.03	84.57	1507.93	10.00
Niobrara B2 Chalk Top (Target)	16371.69	90.00	1.22	6446.00	9611.12	9458.33	1706.95	0.00
Pochard 2-35-8HN BHL	16371.69	90.00	1.22	6446.00	9611.12	9458.33	1706.95	0.00