



Wellbore History

GENERAL

Well 30/7-3 was drilled in the Fensal sub-basin south-southeast of the Hild Discovery and north of the Odin Discovery.

The main objective of the well was to test a mapped seismic anomaly below the "MI" marker, prognosed to be a possible porous carbonate development at Cenomanian level. The location of the well gave a test of the anomaly on the western edge, according to the seismic mapping. Secondary objectives were possible Early Cretaceous sand/limestone pinch-outs and Late Jurassic sands.

OPERATIONS AND RESULTS

The well 30/7-3 was spudded with the semi-submersible installation Polyglomar Driller on 6 August 1976 and drilled to TD at 4044 m in the Early Cretaceous (Albian - Aptian) Cromer Knoll Group. When drilling the 12" hole at 3001 m, a leak was discovered in the wellhead. A groove was cut in the sealing area between the wellhead and the collet connector. A wellhead extension was run in the damaged wellhead with four o-rings as seal towards the original wellhead. The drilling was continued and 9 5/8" casing was set at 3782 m. While drilling 8-3/8" hole at 4044 m circulation was lost. When the mud weight was reduced in an attempt to re-establish circulation the well started to flow. A barite plug was set at bottom, and this finally stabilized the well. The well was drilled with freshwater gel to 700 m and with lignosulphonate mud from 700 m to TD.

A comparison of the results from the seismic velocity survey and the seismic interpretations identify the interval between 3795 m and 3918 m as the target seismic anomaly. In this interval a sequence of limestone, marlstone and shale was found. The limestone is composed of mainly calcite with recognisable coccoliths. In the lower part minor terrigenous components of quartz sand and silt, and mica flakes were encountered. In places the limestone became very argillaceous grading to marlstone and shale. No visible porosity or any hydrocarbon shows were seen in this sequence.

Minor amounts of C1 and occasional C2 were reported from about 1500 m. From about 1900 m gas concentrations of about 1% C1, with C2 and C3 coming in towards 2070 m, were seen. In Paleocene sandstone stringers (2093 m to 2407 m) a weak to good, white to yellow fluorescence with a slow to fast streaming, pale white to yellow fluorescent cut was seen, but no visible oil stain was noted on the samples. At approximately 2840 m a thin limestone gave a fair yellow fluorescence and a medium fast streaming white to yellow to fluorescent cut. The samples had no oil stain. In the limestones at approximately 3750 m fair shows were reported. No oil stain was seen, but the samples gave a pale yellow fluorescence and a slow streaming milky yellow fluorescent cut. From 4020 m a substantial increase in the background gas was seen and a peak of 15 % C1, C2 and C3 was recorded at 4029 m. Since no porous or permeable interval was described the recorded gas in this sequence was interpreted as shale gas bleeding from a highly over-pressured shale interval. The shows at 2093 m to 2407 m and at 3750 m were confirmed by post-well geochemical analyses.

The seismic velocity survey indicated the total depth of the well to be very close to the Early Cretaceous pinch-out.

Electrical logs were run prior to final abandonment. One conventional core was cut in the Albian ? Aptian interval from 3918.8 m to 3936.8 m (34.5 % recovery). Due to high pressure the well was permanently abandoned on 25 October 1976, before the expected TD was reached. The well is classified as dry with weak shows.

TESTING

No drill stem test was performed

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 30/7-3