



## Wellbore History

### GENERAL

Well 8/9-1 is located in the Åsta Graben. It was designed to test a salt structure in the central part of the Norwegian-Danish basin. The primary objective was to penetrate Basal Jurassic unconformity sands in a crestal position of the closure. The sands were estimated to have an approximate gross thickness of 60 m and were expected to be Late Jurassic in age.

The well is Reference Well for the Fiskebank Formation.

### OPERATIONS AND RESULTS

Wildcat well 8/9-1 was spudded with the semi-submersible installation Ocean Viking on 22 December 1975 and drilled to TD at 2376 m in the Late Permian Zechstein salt. The well was drilled with salt gel down to 411 m and with a lignosulphonate / gypsum mud from 411 m to TD.

The well penetrated fine-grained silty sandstone very rich in glauconite in the interval 1316 m to 1376 m in Paleocene. Net sand for the interval was 60 m and porosities derived from the density log and corrected for clay effects were in the range 16 % to 24 %. In the interval 2124 m to 2149 m in the Late Jurassic a series of interbedded claystones, siltstones and sandstones were penetrated. The only true sandstone interval here existed between 2147 m and 2149 m where porosities ranged from 7 % to 14% calculated from density - neutron cross plot. All other low GR and permeable intervals in the Late Jurassic section indicated porosities substantially less than this and corresponding sidewall cores showed tight siltstones. In the Middle Jurassic the interval 2168.7 m to 2222.6 m was found to contain a sequence of predominantly interbedded sandstones, siltstones, and claystones with occasional thin carbonaceous beds. The caliper indicated a net sand of approximately 25 m out of a gross interval of 54 m. The porosities in this interval were exceedingly variable from one sandstone unit to the next and ranged from 5 % to 26 %. The sands with the highest porosities occurred near the top of the section between 2171 m and 2175 m. The Zechstein Group was encountered at 2247 m. A thin sand was present overlying the Zechstein Group. This sand was fine-grained grading to siltstone being poorly sorted with some medium sized grains. It was light grey and well cemented with a poor visible porosity.

Hydrocarbons in commercial quantities were not encountered in this well. The only indications were found as gas shows in Miocene-Oligocene limestones. While drilling, the total gas detector showed fairly high contents of methane, in one case measured to more than 20%. These limestones are thought to be slightly overpressured and fractured but occur only as thin 30 cm to 60 cm beds in the 8/9-1 well. No shows were encountered in the Jurassic sandstones, which was the primary objective. A bright spot just east of the well indicated possible gas accumulations in Middle Tertiary sands. The corresponding sand in this well was penetrated at 998 m without any significant increase in background gas.

No conventional core was cut and no fluid sample was taken in the well

The well was permanently abandoned as a dry hole on 10 February 1976.

### TESTING

No drill stem test was performed

## LITHOSTRATIGRAPHY & HISTORY FOR WELL: 8/9-1