



Wellbore History

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GENERAL

Wildcat well 9/2-2 was drilled on a fault-induced dome-formed structural trap (the Alpha structure) in the northwestern part of the block. The primary objective for the well was to test the Jurassic sandstones of the Sandnes- and Bryne Formations in the structure. In addition the well should test the structural and geophysical interpretations, and improve the geological, geochemical and paleontological understanding of the area. The well was programmed and designed as a possible future producer.

OPERATIONS AND RESULTS

Wildcat well 9/2-2 was spudded with the semi-submersible installation Ross Isle 8 august 1987 and drilled to TD at 3550 m in the Triassic Skagerrak Formation. Drilling went on with some minor problems in the interval 2400 - 3000 m. Inclination increased in the 8 1/2" section towards TD and was 11.1° at 3539 m. The well was drilled with seawater and gel down to 363 m, with gypsum/polymer mud from 363 m to 2871 m, and with gel/lignosulphonate mud from 2871 m to TD.

Top Sandnes and Bryne sandstones were reached at 3131 m and 3230 m respectively. From the logs the Middle Jurassic sandstones were interpreted as water bearing. The results of the log interpretation indicated some low hydrocarbon saturations in the lower part of the Sandnes formation and in major parts of the Bryne formation. Some residual hydrocarbons may be present, but the major part of the hydrocarbon saturations, particular in the Bryne formation, is unrealistic due to organic material and coal layers affecting the logs. The first show in the well was recorded at 3114 m and the deepest near TD at 3544 m. The shows were generally seen in shales and coals or in sandstones interbedded with shales and coals. The strongest and most continuous shows were seen in shales from 3114 m to 3234 m (base Egersund Formation - upper Sandnes Formation), and in interbedded sands, shales, and coals in the interval 3417 m to 3498 m (base Bryne Formation and throughout the Fjerritslev Formation). The core from top of the Sandnes reservoir sandstone was devoid of shows and the logs displayed a water-bearing reservoir. Organic geochemical analyses showed excellent source rock potential in the Tau Formation, particularly the upper part which had TOC up to 8 % and hydrogen index up to 570 mg HC/g TOC. Also the lower Bryne Formation had excellent properties with TOC in the range 2.6 to 13 % and hydrogen index in the range 100 to 480 mg HC/g TOC. From vitrinite reflectance and rock-eval Tmax the well is evaluated as mature for oil generation below ca 2900 m and immature above. One run with the FMT tool was made over the interval 3135.8 to 3182.8 m in the Sandnes Fm. The open-hole section below 3182.8 m was not investigated due to malfunction of the FMT tool. No fluid samples were taken. The pressure readings showed a clear water gradient of 1.135 g/cc. This is in good agreement with the water density measured on water samples from the well 9/2-1, DST 1. When comparing FMT data from the wells 9/2-2 and 9/2-1, it is most likely to believe that the Jurassic sandstone in the two wells is in pressure communication. Two cores were cut, one in the Sandnes Formation and one in the Fjerritslev Formation. After having run final electrical logs, it was decided not to test the well.

The well was permanently abandoned on 21 September 1987 as a well with shows.

TESTING

No drill stem test was performed.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 9/2-2