



Wellbore History

GENERAL

The 6407/7-8 Noatun well is located in the Gimsan Basin, ca 15 km north of the Njord Field in the Norwegian Sea. The main objective of the well was to prove hydrocarbons in the Ile and Tilje Formations (Noatun C prospect). The structure was expected to contain gas and condensate.

OPERATIONS AND RESULTS

An 8 1/2" pilot hole (6407/7-U-1) was drilled to 810 m due to a shallow gas warning.

Wildcat well 6407/7-8 was spudded with the semi-submersible installation West Alpha on 18 June 2008 and drilled to TD at 5138 m (5105 m TVD) in the Early Jurassic Åre Formation. No overpressured shallow gas was observed by the ROV at the wellhead or by the MWD while drilling the 8 1/2" pilot hole, the 36" hole or the 26" hole. From ca 800 m to ca 3600 m the well was drilled with a ca 8.5 degree deviation, leading to measured depth at TD being 33 m more than true vertical depth. Due to high temperatures in the reservoir section the MDT wire line operations proved difficult and several runs and Mini-DST's failed or did not give valid data. The well was drilled with Spud mud down to 1109 m, with Glydril mud from 1109 m to 2452 m, and with Versatherm oil based mud from 2452 m to TD.

The well penetrated rocks of Quaternary, Tertiary, Cretaceous, and Jurassic age. A 50 m thick sandstone section was penetrated in the upper Springar Formation and some thin sandstone stringers were penetrated in the Lange Formation, otherwise lithology was mudstone. All sands above BCU were dry. The well proved gas/condensate in both the Fangst and Båt Groups. Gas readings were considered relatively high in the Tertiary with a maximum of 5.3% at 2084 m in the Rogaland Group. The gas levels also increased abruptly when entering the Spekk Formation (maximum 13.1%), and in the reservoirs of the Fangst and Båt Groups. Oil shows were recorded in the intervals 4972 - 5085 m and 5118 - 5127 m in the base Tilje and Åre Formations; else no oil shows were recorded in the well.

Seven cores were cut in the well. Core no 1 was cut in the Ile Formation, the remaining were cut in the Båt Group. MDT runs were run under very good conditions in calm sea, but it proved difficult to hit the sandstone intervals. The results showed that the different reservoir sections belong to separate pressure regimes. The Garn Formation, the Upper Ror and the Tofte Formations did not have any reservoir quality sands present, while the top part of the Ile Formation was too cemented to get any pressure measurements made. In the Tilje and Åre Formations several good quality pressure measurements were made. Gas samples were taken in the Ile Formation at 4525.8 m, 4525.9 m and 4555.2 m, in the Tilje Formation at 4916.0 m, 4958.25 m and 4958.7 m, and in the Åre Formation at 5016.2 m. A successful MDT mini-DST was performed at 5019.1 - 5020.1 m.

The well bore was plugged back to 4000 m and permanently abandoned on 14 September 2008 as a gas/condensate discovery. A sidetrack was prepared to define the hydrocarbon/water contact.

TESTING

No drill stem test was performed.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 6407/7-8