



**Wellbore History**

**GENERAL**

The wildcat 6407/1-2 was drilled 43 m NW of well 6407/1-1, which was drilled to 900 m before it was junked due to problems with setting the 20" casing. The objective for both wells was to test for hydrocarbons in Jurassic sandstones. The primary target was Middle Jurassic sand horizons, Early Jurassic sands was secondary target. The well was the first well north of 62 degrees to encounter liquid petroleum.

The well is Type Well for the Kai Formation and Reference Well for the Nordland Group. It is Reference Well for the Lyr Formation, the Fangst Group, and the BÅt Group

**OPERATIONS AND RESULTS**

Wildcat well 6407/1-2 was spudded with the semi-submersible installation Dyvi Delta on 13 November 1982 and drilled to TD at 4560 m in the Late Triassic Grey Beds. The well was drilled with seawater/gel down to 901 m, with gypsum/lignosulphonate from 901 m to 3568 m, and with Spersene/XP-20/resin from 3568 m to TD. At 1817 m loss of mud to the formation was discovered. A survey showed that this was caused by a collapse of 20" casing from approximately 667 m. It was therefore decided to run the 13 3/8" casing at this point. A total of 164 days were spent on the drilling phase, which was 56 days more than prognosed. 22 days were lost due to bad weather, 17 days due to BOP problems, 4 days working with the collapsed 20" casing, 7 days were spent on fishing when the drill string parted. A further 12 days were spent on excessive reaming in the 12 1/4" hole in the Paleocene and top of the Cretaceous formation, and in the 8 1/2" hole in the Heather formation. The reaming was necessary when running back in hole after several days WOW with the BOP closed and the riser disconnected. The well was drilled 60 meters deeper than prognosed. The testing phase lasted for 21 days, which includes a 7" casing tie back operation of 6 days, which was necessary because of a leak in the 9 5/8" at approximately 1850 m. The budget for the well 6407/1-1 was NOK 100 MM. The total cost of the 6407/1-1 and the 6407/1-2 were NOK 204.5 MM for the drilling phase. The cost of the testing phase was NOK 28.3 MM.

Hydrocarbons were found in the Middle Jurassic sandstone, Garn Formation from 3659 m down to a well-defined gas-water contact at 3716 m. The secondary objective was found to be water wet but hydrocarbon shows were recorded in the Early Jurassic Tilje and Åre Formations. The shows became stronger below 4300 m and downwards, with increasing gas shows towards TD.

Four cores were cut in the Middle Jurassic sequence. RFT pressure points were obtained for both target reservoir sections. A RFT segregated fluid sample was taken at 3665 m in the Garn Formation

The well was permanently abandoned on 15 May 1983 as a gas/condensate discovery

**TESTING**

One drill stem test was performed from the interval 3659 m to 3669 m in the Garn Formation. The test produced 454 Sm3 condensate and 394000 Sm3 gas per day during the main flow, on a 19 mm choke. The gas/condensate ratio was 869 Sm3/Sm3. The test also produced 3% CO2 and 6 - 7 ppm of H2S. The reservoir fluid was a gas condensate near the critical point.

LITHOSTRATIGRAPHY & HISTORY FOR WELL: 6407/1-2