



## Wellbore History

### GENERAL

Appraisal well 6407/9-2 was the second well in the Northern part of the Draugen Discovery on the Haltenbanken. The main objectives of the appraisal were to improve estimation of oil in place; to evaluate the reservoir quality and sand development on the Northern flank of the structure; calibration of the seismic time pick and velocity model; and to evaluate the oil deliverability and water injection characteristics.

### OPERATIONS AND RESULTS

Appraisal well 6407/9-2 was spudded with the semi-submersible installation Borgny Dolphin on 18 November 1984 and drilled to TD at 1865 m in the Early Jurassic Tilje Formation. The well was drilled with seawater and bentonite down to 813.5 m and with KCl/Polymer mud from 813.5 m to TD. No shallow gas was encountered.

The Rogn Formation came in twenty m below prognosed depth at 1650 m. It consisted of an overall coarsening upwards sand sequence and contained an oil column of 12.5 m down to an oil/water contact at 1663.5 m. The calculated porosity was fairly constant throughout the reservoir at approximately 27%, while measured permeability decreased from up to 5 Darcy in the oil-bearing interval down to 20 mD towards the base of the reservoir. Eight conventional cores were cut from 1638 m to 1706.5 m. Several runs were made with the RFT: the reservoir pressure measured was hydrostatic, 2392 psia at 1625 m. No down hole fluid sample was recovered due to repeated plugging of the sampling probe.

The well was permanently abandoned on 2 February as an oil appraisal

### TESTING

Two DST tests were performed. The water zone was perforated from 1670 to 1675.5 m. An eight hours water injection test at rates up to 8000 b/d did not reveal any immediate problems related to injection of unfiltered clean seawater. After the water zone test the oil zone was perforated from 1651 to 1657 m. The well was gravel packed and rates up to 1177 Sm<sup>3</sup>/day (7400 stb/d) of 40 deg API oil were achieved. The evaluation showed a permeability of 2.6 Darcy. The reservoir temperature was 67 deg C.

## LITHOSTRATIGRAPHY & HISTORY FOR WELL: 6407/9-2