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Developments in petroleum exploration offshore West Greenland during 1976

Gilroy Henderson

The first exploration well to be drilled within the concession areas granted offshore West Greenland in April 1975 reached its final depth of between 3500 and 4000 m in August 1976 and was abandoned as a dry hole. The well, Kangâmiut no. 1, was drilled in concession area 34 by the TGA-Grepcos group with Total Grønland Olie A/S as operator using the dynamically positioned drill ship *Pélican*. The well was located about 120 km west of the mouth of Søndre Strømfjord and its coordinates were 66° 09' 00.92" N, 56° 11' 24.28" W. The water depth was 179 m. This is the northernmost well to have been drilled in the marine areas between Canada and Greenland.

GGU was closely involved in the assessment of the application for permission to drill the well. During the drilling phase GGU representatives visited the location on several occasions. The Survey was also represented in the group under the Ministry for Greenland that followed the daily progress of the well. A full series of cuttings, samples and splits of the cores were sent to GGU and processing of these was started on receipt. After the drilling stopped the material and information received were evaluated in close collaboration with the operator.

Since this was the first well in a completely new area the results are of more than usual scientific and economic interest. All sample material, reports and interpretations stemming from the activities of the oil companies are confidential on receipt, but the concession agreements place certain limits to confidentiality. Concerning wells the relevant section in the concession agreement (subarticle 5803 d) allows the Ministry for Greenland "to publish summaries of well data, including information on lithostratigraphic and chronostratigraphic boundaries and on zones which contain hydrocarbons, always provided that the publication shall not take place until 2 years after the completion of a well". This means that the first data on Kangâmiut no. 1 will become available in August 1978.

Only three of the six groups of concessionaires undertook deep-penetration seismic surveys in 1976, and the number of kilometres shot (under 1000 km net) was much less than in

1975 (12 000 km). Part of the work involved reshooting the same lines using a variety of techniques, with a view to improving the quality of the data acquired.

A total of 33 000 km of seismic surveying has been undertaken since the oil industry started work offshore West Greenland. Under the terms of the prospecting licences granted prior to and including 1972, the data recorded under these licences were to be kept confidential for 15 years from date of receipt, but the Ministry for Greenland reserved the right to reduce the period of confidentiality to five years from the expiry of the license if the licensee did not subsequently obtain a petroleum concession in Greenland. Licences granted offshore West Greenland expired in 1972, and only some of the licensees subsequently obtained petroleum concessions. This means that some of the older seismic and other geophysical data will become publicly available during 1977.

Once release dates have been reached both well data and geophysical data will become available through GGU.

Four wells are expected to be drilled offshore West Greenland in 1977. As part of the planning, detailed site surveys were made over nine possible well locations on behalf of the three groups planning to drill. The work comprised detailed bathymetric surveys, side-scan sonar surveys, seismic surveys designed to provide information on the section immediately below the sea floor and bottom sampling.

Representatives from one of the operating companies that visited the Nûgssuaq area during the summer of 1975 returned to the area in 1976 to examine additional sections and collect further material.

The Survey continued to be represented in the working group drawing up regulations to govern the activities of companies undertaking mineral exploration on land in Greenland and in adjacent marine areas. The 'Offshore Drilling Regulations' prepared by this group were published by the Ministry for Greenland in March 1976. The Survey also participated in a Ministry group that produced a television documentary on oil for showing in the Greenland towns.

During 1976 the Survey had numerous visits from representatives of groups holding offshore petroleum concessions and from geologists and other company representatives from companies interested in the other sedimentary areas onshore and offshore Greenland.

Continuation of the aeromagnetic surveys in southern and central West Greenland between 64° and 72°N

Leif Thorning

In the summer of 1976 the aeromagnetic surveys, started in 1975 (Thorning, 1976), were continued. The aircraft type, most of the instrumentation and the general logistic arrangements were as in 1975. Base of operations was again Søndre Strømfjord Air Base. The airborne system was improved by the addition of a radar altimeter with a better performance