AZ6513

# MARATHON OIL U.K., LTD.

**LICENCE P804** 

UNITED KINGDOM CONTINENTAL SHELF

ST. GEORGE'S CHANNEL

**EXPLORATION WELL 103/1-1** 

FINAL GEOLOGICAL REPORT

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Figure 1 Location map

Figure 2 Actual versus prognosed well section

Figure 3 Horner plot of temperature data

Figure 4 Actual versus planned drilling path

## **TABLES**

Table 1 Drilling and casing history

Table 2 Wireline logs

Table 3 Temperature data

Table 4 Sidewall core summary

Table 5 Checkshot survey results

Table 6 Deviation survey data

Table 7 Stratigraphic succession

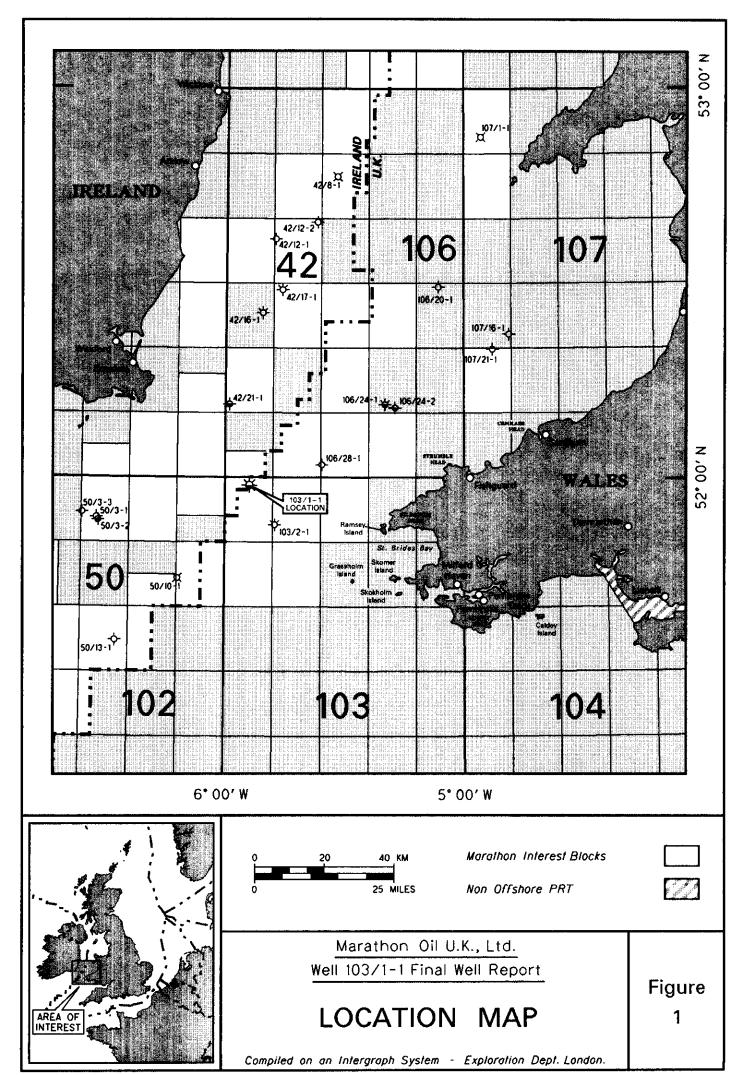
Table 8 Hydrocarbon shows in cuttings samples

Table 9 Gas peaks recorded

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## **ENCLOSURE**

Enclosure 1 103/1-1 Summary of well results montage



### 1. GENERAL INFORMATION

## 1.1 Objectives

The 103/1-1 well was planned as a 15,000 FT TVDSS test of the Dragon prospect. The well is located in the St. George's Channel, 25 miles west of the Welsh coast on the eastern side of the UK/Ireland International Boundary (Figure 1). It was designed to test the hydrocarbon bearing potential of Middle Jurassic sandstones and limestones in a fairly simple four-way dip closure mapped at Bathonian Limestone level and Lower Triassic sandstones (Top Carboniferous closest mapped horizon) where trapping was believed to have been created by a horst feature.

Reservoir potential was thought to exist in thin shallow marine sandstones and oolitic limestones of Bathonian and Bajocian age below 7,500 FT TVDSS (Figure 2). Oil shows have been recorded in the 106/24-1 and 106/24A-2B wells (25 miles to the northwest) in these intervals, potential reservoir sections being interbedded with impermeable shales and claystones which would act as vertical seals. There was also a possibility that Upper Jurassic sandstones with reservoir potential could be encountered in the well.

Sourcing of Middle and Upper Jurassic reservoirs was expected to be from Liassic shales.

Reservoir potential had been recognized in the Lower Triassic Sherwood Sandstone over more than a four hundred foot interval in the 103/2-1 well, 7.5 miles to the southeast of the Dragon prospect. The Sherwood Sandstone also occurs in the 106/28-1 well (12.5 miles to the northwest) and Irish wells 42/12-1, 42/12-2 and 42/16-1. Gas shows were encountered in the 42/16-1 section. Sealing is provided by impermeable mudstones and siltstones of the Mercia Mudstone Group. The Sherwood Sandstone at the 103/1-1 well location (Figure 2) was expected below 14,000 feet (TVDSS).

Underlying Carboniferous coal bearing sequences may provide the hydrocarbon source for Triassic reservoirs. There was believed to be a possibility that Carboniferous sandstones with reservoir potential could be encountered, however where seen in control wells these sandstones are normally tight.