

INTRODUCTION

The Offshore Gippsland Marine Seismic Survey EC-67, was conducted in the Bass Strait and Tasman Sea between September 1, 1967 and November 24, 1967. Approximately 1260 miles of six-fold C.D.P. reflection seismic data was recorded and processed digitally. The remaining area in Gippsland Basin qualifying for subsidy is defined by 40 mile radii drawn from Barracouta A-1 and B-1 gas wells and a 30 mile radius drawn from the Kingfish A-1 oil well. Approximately 465 miles of the EC-67 survey falls within the subsidy area of the Gippsland Basin. The exploration program covered in the report was done by Esso Exploration and Production Australia Inc. in connection with a farm-in agreement with Hematite Petroleum Pty. Ltd. that cover the following exploration licences: P.E.P. 38 in Victoria, P.E.P. 39 in Victoria, and E.L. 1/60 in Tasmania.

Field work and processing was done by Geophysical Services International, and supervision and interpretation was done by Esso. Field operations are covered in a comprehensive report by G.S.I. that is included in the appendix of this report.

Accompanying the report are subsurface structure maps and isopachous maps interpreted from seismic data obtained from previous surveys and the EC-67 survey.

GIPPSLAND BASIN - GENERAL

The Gippsland Basin is in southeastern Victoria, Australia with approximately two-thirds of the basin located offshore in the Tasman Sea. Water depths vary from 0 to greater than 600 feet, however most of the area falls inside the 300 feet water depth contour.

In general, the term Gippsland Basin refers to those rocks of Upper Cretaceous and Tertiary age. These sediments are underlain by some 20,000+ feet of Lower Cretaceous and several thousand feet of Paleozoic rocks. During the Paleozoic era, the present Gippsland Basin area was part of the broad north-south trending Tasman Geosyncline which extended along the entire east coast of Australia. In Lower Cretaceous time a thick section of sub-graywacke, siltstones and shales was deposited in an east-west trending regional graben or half-graben in contrast to the older depositional trend. The Gippsland Basin began to assume its present configuration at the beginning of Upper Cretaceous time.

The Gippsland Basin is wedge-shaped with the apex to the west and opening to the east. It is bounded on the north by a broad north-south trending mountain system where sedimentary, fine and coarse grained igneous, and some metamorphic Paleozoic rocks outcrop. Eastward the basin extends offshore at least as far as the present continental slope and probably beyond. The southern boundary of the Upper Cretaceous-Tertiary basin is marked by the large normal down-to-the-north east-west trending Foster Fault System, giving the basin a half-graben configuration. The Lower Cretaceous, Upper Cretaceous, Paleocene and most of the Eocene sediments are confined to the north down-side of this fault system. In Late Eocene the fault system stabilised and sediments began to onlap the low-lying granitic area to the south. Older units are progressively overstepped by the younger units. The stable area south of the fault system, the granitic Bassian Rise, extending from Wilsons Promontory to the northeastern corner of Tasmania, separated the Gippsland and Bass Basins. The northern boundary of the basin is a shelfal area with all sediments of the Gippsland Basin thinning by onlap and convergence. Younger sediments generally overstep the older units.