

REFLECTING UNITS

Ties to available land well control were not used as an interpretation starting point. It is significant however that the mapped seismic units can be closely correlated with known subsurface geological units. The seismic data can be divided into four units on the basis of reflection character, and the interpretation has been based largely on recognition of these seismic units.

(a) Horizon "A" to Horizon "B" (Postulated Gippsland Limestone)

The sonic logs indicate a steady increase in velocity through this unit. Though no major velocity variations which would give strong reflections are present, there are numerous minor variations. This velocity situation results in seismic data comprised primarily of discontinuous high frequency reflections.

The reflection mapped as horizon "A" is observed best in the shelf portions of the basin. Where it is not too shallow to be affected by the first break suppression, the reflection is observed to be continuous, high amplitude, and of fairly high frequency. The short (600 m) spread single fold sections generally are of better quality for the shallow reflections due to the first break suppression of the longer C.D.P. spreads, and were in most cases used in constructing the horizon "A" map. There is a marked deterioration in this interval's quality to the northeast. It becomes similar to the rest of the reflections in and above this unit suggesting a possible absence of any depositional break at this horizon in this portion of the basin.

(b) Horizon "B" to Horizon "C" (Postulated Lakes Entrance Formation)

This zone onshore has an interval velocity between 1500 and 2000 ft/sec. less than that of the overlying postulated Gippsland Limestone. This inversion gives rise to continuous, generally higher amplitude, lower frequency events that are observed in the limestone.

Probably the most gratifying seismic result of this survey was the way in which reflection quality from this interval improved as a result of C.D.P. multiple cancellation. The reflection character varied over the mapped area and four distinct character types could be distinguished. Possible correlation of these reflection types with stratigraphy will be discussed under "Interpretation".

(c) Horizon "C" to Horizon "D" (Postulated Latrobe Valley Coal Measures)

Velocity inversions persist throughout the upper portion of this interval where coal is the dominant rock type. This unit is characterised by a zone of extremely high amplitude, low frequency reflections which are often discontinuous due to facies variations and unconformity truncation. However their quality is so good that they make mapping a practical undertaking, which would otherwise be an almost impossible task. There is generally no reflection from the actual unconformity surface; in many instances there is the appearance of one, due primarily to the abrupt erosion of these strong coal reflectors.