

Two copies of all sections both analog and digital have been sent to the Bureau of Mineral Resources in Canberra.

For a detailed discussion on field procedure, instrumentation, offshore surveying methods, explosives, amount of work in each state, etc., please refer to the appendix in the map folder.

B) REFLECTION HORIZON IDENTIFICATION

The most outstanding feature of the offshore Otway Basin seismic reflection character is the presence of obvious angular unconformities on every seismic section. These erosional surfaces cover the entire basin and when mapped provide a useful and reliable method of dividing the geologic section into time units and to a certain extent, into units of similar depositional environment.

Correlation and mapping of the unconformity surfaces is a challenging job but is necessary before any attempt at mapping bedding is made. For the most part all the reflections originating at bedding surfaces are found to terminate by truncation or by onlap onto an old erosional surface.

The more complete one's knowledge of the geologic history of the Otway Basin the better chance one has of correctly identifying the erosional surfaces. The wells onshore provide depth points on the various unconformities. These depth points cannot be tied directly by the marine seismic data, but they are still very useful for identification of the unconformities. The correlation of discrete beds found in the onshore wells to reflecting horizons in the offshore data is very difficult because the bedding dip is generally steeper and far less predictable than the attitude of the erosional surface. An unconformity on the seismic section can usually be confidently identified by projection to a near shore well. This identified unconformity can then be used to accurately date the rocks miles from the well control if the correlation of the unconformity surface has been accurate.

The principal unconformities that are observed on the marine seismic section and were used in tying the wells are the following:

1. Pre-Miocene - Map is titled, Top of Eocene
2. Pre-Upper Eocene - Map is titled, Top of Lower Eocene-Paleocene.
3. Pre-Tertiary
4. Pre-Upper Cretaceous
5. Pre-Cretaceous

The first two are minor, however the other three show abrupt truncations in many places. Structure maps have been made on all of these unconformity surfaces.

C) REPRESENTATIVE BASIN CROSS SECTIONS

Five sections based on seismic data and well control have been constructed. The seismic lines and well logs, where available, are indicated on the sections. The location of these sections is shown on Figure I. These sections show representative examples of the type of structural and stratigraphic traps that are found in the offshore Otway Basin. Major unconformities are marked and dip of the bedding above and below these unconformities is indicated.