

FORAMINIFERA BIOSTRATIGRAPHY - NARIMBA 1 BASS BASIN

When side wall cores were examined between 3000' and 6800'. No fauna was found in the basal 3 side wall cores; at 6160', 6505' and 6800'. Two distributional sheets have been submitted showing occurrence of planktonic and benthonic foraminifera and other fauna, whilst a third sheet shows environmental analysis and interpretation.

BIOSTRATIGRAPHY

The biostratigraphic zonation applied here is that used by Taylor in the completion report for Esso Bass-1 and other subsidized Bass Basin wells.

The earliest fauna found was at 5850' which contained an indetermined planktonic species and a benthonic fauna typical of the Demon's Bluff Formation ("Upper Eocene shale"), which consisted of arenaceous foraminifera and a peculiar pyritic tube of obvious organic origin. It is assumed that this fauna represents the late Eocene. The side wall core at 5500' contains a similar fauna, though the presence of Globigerina angioporoides could extend the age up to the early Oligocene (Zone J), but no older than late Eocene.

The poor fauna at 5000' gave no clear zonal indications but was probably of Oligocene age. Globigerina woodi makes its initial appearance at 4500' and as the fauna lacks Globigerionoides spp a placement on the Oligocene/Miocene boundary (Zone II) is suggested. A similar determination applies to 4000'.

The presence of Globigerinoides spp. and Globoquadrina dehiscens (s.s.) without Praeorbulina spp. or Orbulina spp. clearly indicates an early Miocene age for side wall cores at 3500' and 3000'.

ENVIRONMENT

The dominance of primitive arenaceous forms and pyritic tubes with sparse planktonic faunas in the late Eocene to early Oligocene faunas at 5850' and 5500' implies a salt marsh or lagoonal environment. The presence of sparse, though well preserved, planktonic foraminifera precludes any suggestion that deposition was in deep oceanic circumstances at or below CaCO₃ compensation depth. Connection with the open ocean was inhibited and thus oxygenation was very poor as is evident from the ratio of arenaceous to calcareous benthonic to planktonic foraminifera.

Shallow continental shelf conditions prevailed from late Oligocene into the early Miocene (between 5000' and 3000'). Oceanic circulation gradually increased up the section. The pattern of environments/development in Narimba-1 was similar to that in all other Bass Basin wells.