

## 5. RESULTS (Cont'd)

### 5.4 Seismic Reflection Profiling

The 300 J boomer recorded a series of flat-lying reflectors down to about 100 ms two-way travel time beneath the seabed. Below this level, the arrival of the first seabed multiple echo made identification of deeper horizons difficult. At an assumed average propagation velocity of 1800 m/sec, this effective penetration time is equivalent to 90 m.

This excellent propagation of the seismic signals into the seabed and to considerable depths indicates an absence of cemented material at the seafloor. No shallow geological information is available within the surveyed area, hence a precise lithology cannot be assigned to each reflecting layer. The seismic boundaries represent interfaces across which there is a change in acoustic impedance (the product of the compressional shock-wave velocity and the density of the transmitting medium). Thus, sudden changes in cementation or consolidation, or grain-size changes (e.g. silt to sand or sand to gravel) may generate reflections. The acoustic boundaries recorded in the PELICAN-5 area are all laterally-persistent, and of roughly similar amplitude. Therefore major changes in cementation or grain-size are considered unlikely and it is believed the sequence represents an interbedded series of clays, silts and sands, with different degrees of consolidation.

In the top few metres of the seabed material only weak reflectors are present, probably representing minor laminations in the clayey sequences. The first significant horizon varies in depth from 3.3 to 4.4 m, and lies at 4.0 m at the proposed drilling location. There is then an approximate 10 m gap of