

INTRODUCTION

Overpressured shales can exist for three reasons:

- 1 Inversion
- 2 Inability to dewater
- 3 Hydrocarbon generation and expulsion

The presence of overpressured shales in the T91-2 gazettal area, Bass Basin was investigated at several locations (Fig 1) to determine whether potentially adverse drilling conditions created by overpressured shales could exist at depth throughout the gazetted region.

In order to establish the presence of overpressured shales, it was necessary to demonstrate the existence of an interval where shale bulk densities were lower than the regional density trend and the presence of abnormally high porosities (Ranson, R.C.). A direct reading from raw log data does not necessarily highlight such an overpressured zone (Fig 2). However, if porosity related parameters for shales (eg acoustic, density or neutron logs) are plotted on a logarithmic scale, against depth plotted on a linear scale, overpressured zones in a well can be observed more easily (Figs 3-6).