3. METHODS USED

(a) Shooting

Details of shooting methods are given in the contractor's reports (Appendices 1 and 3).

The noise limits for the entire survey were set at a maximum of 2 μ bar averaged over 5 sec., which is more stringent than is normally specified for the Otway Basin, in an attempt to improve record quality and to map deep reflections. A 3200 metre cable was used with a shot interval of 22.22 metres to give 3 x 24 fold data. The short shot interval was used to increase energy input to enhance record quality. Record length was 5 sec. except in deep water areas where it was increased to either 6 or 7 sec. to maintain 4 sec. of data below water bottom. One sonobuoy refraction probe was attempted on Line H03-20 with good results. The maximum offset recorded was 50,112 feet.

Navigation was by a combined XR-Shoran and G.S.I. Geonav satellite/sonar doppler system. The XR-Shoran was used for the ship's location and the Geonav was used for shotpoint co-ordination. The XR-Shoran was used for the ship's location in place of the Geonav system because of the deep water encountered in the survey. The use of the combined systems worked well, and gave an even shot spacing unaffected by short term changes in boat speed.

(b) Processing

(1) Reflection

Details of processing are given in the contractor's report (Appendix 2).

Processing methods largely followed the methods used in the Portland-King Island Survey. The bulk of the survey used a 2:1 vertical stack to give 24 fold 22.22 metre depth point spacing data. The remainder of the survey used a 3:1 vertical stack to give 24 fold 33.33 metre depth point spacing data. A few lines were processed using both methods. Originally the processing was done using the 3:1 vertical stack but the 2:1 vertical stack was found to give better quality data, due to greater coherent noise cancellation.

The continuous velocity analysis (the 700 package) was used to give control over velocity variations and to ensure optimum stack. Previous experience using alternate depth points gave fair results in