

Horizontal positioning was done by a Shoran radio navigation system operated by Offshore Navigation Inc.

A detailed review of the field techniques, instruments, personnel and production statistics is furnished by Western Geophysical Company and is included as Appendix A with this report.

There is a noticeable improvement in overall data quality for the 069B survey data when compared with previously recorded seismic data. Increased resolution and improved signal to noise ratio result in more interpretable seismic sections.

2. Magnetic Survey:

The Western Geophysical Company recording boat was equipped with a Varian direct readout magnetometer and marine towing system. This instrument is a Varian V-4937 Proton Magnetometer and is rated as a stable system capable of a sensitivity of plus or minus 1 gamma at sample rates of six seconds. The central land station (Varian base station) was not operating and therefore diurnal drift could not be corrected for. The magnetometer was functioning on the entire survey and 206 miles of magnetic coverage was obtained.

Total magnetic intensity is plotted in profile on each seismic section and related to anomalies shown on the reflection seismic section. This is particularly useful where intrusives are expected to exist. These data were not integrated into the regional Magnetic Intensity Map, as any changes are insignificant.

B. DIGITAL PROCESSING:

All digital processing was done by G.S.I. on TIAC computers at St. Leonards, N.S.W. under the supervision of Esso geophysicists. Transcription from IBM format of the field tapes to TIAC format for processing was necessary. The recorded data from six "Aquapulse" pops were summed to provide a signal for one simulated shot. Digital processes include True Amplitude Recovery, Correction for Normal Move Out, 12 fold vertical stack, Time Variant Deconvolution, Time Variant Filter, and Digital A.G.C. This processing was done at a four millisecond sample rate and print out or display was on variable density film negatives. Photographic prints were made from these negatives for visual presentation and interpretation.

Velocity control for normal moveout corrections was retrieved from T-delta T analysis of single fold sections and from Automated Velocity Scans. The location of the Velocity Analysis is shown on Plate XI.

A water depth static correction was applied to the data and plotted on the seismic sections below each shot point. A water depth correction curve is shown on Figure 3.

C. INTERPRETATION METHODS AND GEOLOGIC PARAMETERS:

Various offshore wells furnish sub-surface stratigraphic control for identifying reflection events. These include Crayfish-1, Argonaut-1, Voluta-1, Pecten-1, Nautilus-1 and Mussel-1. Time-depth conversion is made from the well velocity survey data for the areas of interest (Figure 4). It is not practical to continuously map stratigraphic horizons over the entire Otway Basin. Key horizons are mapped in each particular area of interest, depending on basin position and potential reservoir. A brief discussion of the contour maps submitted is as follows:-

Top Pretty Hill Sandstone (Plate II) 1/100,000 - Sheet 5 is tied to the Crayfish-1 well and is a significant unconformity. This horizon is referred to as "Top Crayfish Sand" in the ER-68 subsidy report and is mappable only in this immediate area of the offshore.