

IV. GEOLOGY

(1) Summary of Previous Work

Line B-14 of the 1963 Flinders Island - Kingston Area Seismic Survey was shot over Aroo, but lack of deep data at that time gave no indication of the structure. The B71A Lines 44 and 51 provided the first data deep enough for the reversal at Aroo to be identified and it was further delineated in the B72A Marine Seismic Survey (Lines 87-91). On the basis of this survey, three fault controlled culminations were mapped at Aroo. In 1973 several lines of the Flinders Seismic Survey were shot over Aroo, these gave much better deep data than had hitherto been recorded and enabled mapping of structural closure at the Blue, Brown and Red horizons in the Aroo area. The Blue closure was considered the most attractive drilling target and Aroo-1 was located on the crest of that structure. The location also lies within the mapped closure of the Brown horizon but outside that of the Red horizon.

Seismic mapping of the Red horizon within the main coal sequence, is relatively easy between Cormorant and Aroo, but neither the Blue nor Brown horizons can be positively traced across faults downthrown to the south in the vicinity of Aroo. Accordingly, although there was reasonable certainty about the structural configuration of these horizons at Aroo, the lithology of the interval below the Brown horizon was conjectural. The Brown to Blue interval was interpreted as shale, at the base of which, amplitude character was believed to indicate sandstone, possibly correlates of very coarse sands in the L. balmei zone in Poonboon-1 and Dondu-1 and T. longus zone sands in Bass-3. The Blue horizon was thought to be an unconformity surface of unknown time value over an interbedded sand-shale sequence, whose seismic character is different on the north and south sides of Aroo. It is not known whether this reflects genuine lithological differences or is due to masking of lower reflections on the south side by the more widespread overlying coals in that area.