

(6) Relevance to Occurrence of Petroleum(i) Hydrocarbon Occurrences

There were intermittent indications of hydrocarbons in Aroo-1 below 6944 feet, the main zone of interest being in the interval 9100-10,320 feet in sands of Paleocene (upper and lower L. balmei) age. Details of the hydrocarbons are contained in appendices and enclosures dealing with cores, sidewall cores, FIT's and log interpretation.

The first hydrocarbon indication in the well, apart from background gas, was pale yellow fluorescence and slow cut associated with a sandstone from 6935-6950 feet. Sands at 8286-8296 and 8874-8881 feet were associated with logged wet gas. A sidewall core in the lower sand, at 8878 feet, had dull bluish fluorescence and very slow cut. However a sidewall core at 8290 feet gave no indication of fluorescence, nor was fluorescence observed in the cuttings from these two sands.

A sandstone from 9174-9181 feet and several thin sands between 9400 and 10,320 showed dull fluorescence and gave slow cut in cuttings associated with wet gas on the mud log. The best hydrocarbon indication in the well was from the sandstone at 9512-9557 feet which was fluorescent throughout and produced varying degrees of cut in cores 1 and 2 (Appendices 4 and 5). FIT 1 at 9530 feet recovered 1.4 cubic feet of gas, and 1900 cc's of water, probably filtrate. Pressure data indicate that effective permeability of the sandstone is low.

A sandstone (11,848-11,920 feet) within the volcanic sequence, showed wet gas on the chromatograph, without associated fluorescence or cut. Log interpretation of the interval is not reliable due to the great enlargement of the hole.

(ii) Relevance to Occurrence of Petroleum

Aroo-1 confirmed the hydrocarbon potential of the Paleocene to middle Eocene (lower L. balmei to lower N. asperus zones) sediments in this part of the basin. The hydrocarbons in the upper part of this succession, i.e. in M. diversus to N. asperus correlates of the Cormorant-1 gas and condensate bearing sands, were not expected at Aroo because the highest closure mapped prior to drilling was the Brown horizon within the