



U.R. 1960/79

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PORT CAMPBELL NO. 2 WELL

**B1822696**

8.7.60.

A. Schwarz  
(Campbell)  
ReportsMemorandum - Chief Government Geologist.

79 | Micropalaeontological Examination of Rotary  
Cuttings from Port Campbell No.2 Well -  
Depths: 5130 to 5615 feet.

A detailed micropalaeontological examination of the interval 5130 feet to 5615 feet has been conducted on samples submitted by Frome Broken Hill Co.Pty.Ltd., on the 4th August. The basic results of this investigation are as follows :-

(i) Foraminifera regarded as being of Cretaceous age first appear at 5500 feet and persist down to the deepest sample submitted (5615 feet). The fauna is very sparse. The most characteristic species are Haplophragmoides dickinsoni Crespin, and Textularia anacooraensis Crespin. These two species were found in the interval 4400 feet to 5025 feet in Port Campbell No.1, but were associated with more abundant fauna below 4695 feet. I believe that in Port Campbell No.1, the faunal assemblage above 4695 feet is of brackish water origin and must be regarded as a distinct faunal assemblage from that below 4695 feet, which is definitely marine. Thus I would correlate the interval below 5500 feet in Port Campbell No.2 with that interval between 4400 feet and 4695 feet in Port Campbell No.1. The age of this highest faunal assemblage is definitely Cretaceous but may be slightly younger than the Upper Albian Age (upmost Lower Cretaceous) which can now be confidently assigned to the interval from 4695 feet to 5025 feet, in Port Campbell No.1.

(ii) Upper Eocene foraminifera are common in samples down to 5440 feet (Port Campbell No.2). An occasional Tertiary foraminifera is found with the Cretaceous ones below 5500 feet, but must be regarded as contamination. However as contamination within the Cretaceous is very slight, the more abundant occurrence of Upper Eocene fossils above 5440 feet suggests an Upper Eocene age for the beds above 5440 feet. If the possibility of contamination from higher beds was dismissed, I would point out that there must be a disconformity between the Upper Eocene beds at 5440 feet and the Albian or immediate post Albian beds below 5500 feet.

I have been informed by Mr. MacQueen of Frome Broken Hill Co. that the well site geologists working for Frome Broken Hill, have placed the top of the "Belfast Formation" in Port Campbell No.2 at 5606 feet. In other words they have correlated the beds at 5606 feet in Port Campbell No.2 with those at 4930 feet in Port Campbell No.1. On the evidence cited above I must dispute this correlation on palaeontological grounds. I fully realize that the "Belfast Mudstone" is a Rock Stratigraphic Unit (as defined in the Aust. Geol. Soc. Code of Geological Nomenclature).

cont....

Surely over a distance of less than two miles (between Well No.1 & No.2) palaeontological evidence for correlation of Rock Units cannot be dismissed. Not only is the fauna different at 5606 feet in Well No.2, but the environment is brackish compared with the good marine conditions of the "Belfast Mudstone" in Well No.1

I am of the opinion that the true "Belfast Mudstone" (as defined by Frome Broken Hill geologists) will not be encountered until another 500 feet is drilled in Port Campbell No.2 Well, below the bottom hole depth of August 3rd (5615 feet). I would also like to emphasise that in Port Campbell No.1 Well the marine Cretaceous mudstones occur above the "Belfast Mudstone" up to 4695 feet. The marine Cretaceous mudstone core at 4649 - 55 feet in Belfast No.4 Bore has been correlated with a marine Cretaceous mudstone core at 4757 feet in Port Campbell No.1 by both Kenley (1959 - Mines Dept. unpublished report) and myself. Therefore I postulate that Marine Cretaceous beds (mudstones?) will probably be drilled at a depth, some 250 feet, below 5615 feet in Port Campbell No.2 Well.

Sgd. David Taylor  
Geologist.