

UNPUBLISHED REPORT 1966/15

X-ray analysis of sample from Bass Strait Bore No. 9 (Esso Bore 2) (5540–5550 feet)

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Further to my memorandum on the rock specimen and thin section originally received (Unpublished Report 1966/14), an x-ray analysis has subsequently been performed by Mr R. Ford, the whole core from the above footage has been since examined, and two or three more thin sections obtained. In the light of these some addenda and corrigenda are desirable.

X-ray evidence showed that the rock consisted of mainly silica with weaker lines for kaolin or chlorite, white mica (possibly illite) and calcite, and a weak line for dolomite. The findings corresponded with the fine grained silica and chalcedony, opaque clay minerals and yellowish carbonates found in thin section. Weak but fairly definite lines for orthoclase were also obtained and on re-examining the thin section, the phenocrysts were found to consist of fine grained material, part of which had a higher refractive index than balsam and part, in the core of the phenocrysts, has a lower refractive index. This latter mineral, in view of the x-ray evidence, is almost certainly orthoclase.

Chlorite was not seen in thin section but this may have been due to very fine grain. It may be noted here that the core was said to be green when it first came out of the hole.

In view of this evidence the rock is more likely to be an orthoclase porphyry of the porphyroid group, consisting of phenocrysts of orthoclase in a quartzo-feldspathic matrix containing chlorite. Somewhat similar textures appear in thin sections of orthoclase porphyries from Rosebery and Pt Hibbs.

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