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SWC/3 22nd August, 1945.

MEMORANDUM:

POSSIBILITY OF TOPAZ PRODUCTION FROM FLINDERS ISLAND.

Topaz is required by Australian Consolidated Industries for the manufacture of refractories and also as a calcium free source of fluorine. It has been suggested that the topaz known to be present in the tin gravels in the Tanners Bay, Killiecrankie Bay area on Flinders Island might be profitably extracted as a by-product to tin mining.

I have visited the area in the company of Mr. A.K. Reynolds the only miner at present holding a mineral lease on the field. I confirm that clear topaz is present as crystals and fragments of crystals up to half an inch in diameter in these gravels. Sample 7C1 is made up of topaz in part collected by me, and in part given me by Mr. Reynolds. Some of the stones are of gem quality, and are known locally as "Killiecrankie diamonds." There is a considerable yardage of gravels present, perhaps 100 million yards with a maximum depth of less than 20 feet. There was insufficient time to make a close estimate. The main drawback to the field is the shortage of water which is inadequate for sluicing. It is impossible to estimate the percentage of topaz present without systematic boring and sampling of the gravels. It is also necessary to determine the sizing distribution of the topaz by screen tests, also its distribution in depth.

However, my impression is that the proportion of topaz present would not justify separation on present suggested values of 10/- per ton per unit of fluorine. On this basis higher grade topaz concentrate would be worth £12 to £17 per ton, which would be reduced by freight and transport costs to £7 to £12 per ton on the field. This is equivalent to 1/5 to 2/4 per ton of gravel containing 1% of topaz. The bulk of gravel could probably be reduced to less than half by screening, but the final separation of topaz from quartz would probably have to be done by sink and float methods which might cost from five shillings to a pound per ton treated. Hence the material after screening would need to run to 5% of topaz or better to pay for treatment. I do not think such values are approached in the Tanner's Bay gravels. However, if the problem of water supply could be overcome of circumvented by using other methods I consider that the systematic boring of these gravels for tin would be warranted in which case such sampling should include an estimation of the topaz content, and the possibility of profitable concentration of topaz reviewed.

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Director of Mines,
HOBART.