DEPARTMENT OF MINES
SOUTH AUSTRALIA

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REPORT ON TIN FIELD AT E. AREA DAM

Grid F.5

Attention has been redirected to the locality near E. Area Dam at which tin ore was found in 1900 near the southern margin of a lake, the surface of which is dry but beneath which abundant salt water is struck at a depth of 2 feet. Previous attempts to work this place have not been successful, and there is no recorded commercial production. The difficulty in prospecting the lode system has been that concerned with the disposal of the saline water. The few shallow openings made are now inaccessible through flooding. To enable the lode matter to beexamined and sampled, and the possibilities of profitable mining assessed it will be necessary to drain the openings and pump the water over low sand dunes marginal to the lake bed for a distance of about 1600 feet into a natural depression. When earlier attempts were made to work the deposit there is no doubt but that the water removed from the excavations returned to them, and consequently no material progress was made.

It is not possible to make any material addition to the report of Mr. H.Y.L. Brown, dated January, 1901, in which it was stated that tinø ore occurs in decomposed granite and in payable quantity over a width of 4 feet. A later report, also by Mr. H.Y.L. Brown and dated February, 1902, mentions the need for pumping machinery to prospect the area and states that a shaft had been sunk to a depth of 54 feet but that water prevented any further exploration.

An attempt was made to reopen the workings by a prospector in 1917, but again the water problem proved insoluble with the means at his disposal.

Recently Mr. J.F. Heylen Senr., has put forward a

proposal to work the deposit and has applied for plant to pump the water out of the old workings and to treat the ore by sluicing. He does not yet seem to understand that the hydraulicking methods that are applicable to alluvial deposits carrying tin ore are not applicable to compact lode matter which requires crushing in order to free the tin ore from the matrix in which it occurs.

Mr. Heylen has treated, by sluicing and panning, a few tons of the material dumped round the old shaft and the rock underlying the dump, and the concentrates obtained in this way have shown high assay values.

The Chief Inspector of Mines has recently visited the locality twice, and has found that the dump at the old shaft carries about 0.25% of tin, and that a sample of 5 cwt. taken from the decomposed rock underlying the dump carried 0.21% of tin. A concentrate obtained by sluicing followed by panning the latter sample gave an assay return of 61.5% of tin. The recovery of tin from the lode matter in this test was 40%. The results of this small test indicate that 732 tons of ore would be required to produce 1 ton of concentrate of the grade mentioned. At the present price of tin the crude ore at the mine would contain only 5s. worth of recoverable tin, if all the ore is of the grade of the sample tested. When assays are made of concentrates obtained by panning, the results must always be recalculated to the proportion present in the crude material whence these concentrates are derived. Otherwise a wrong impression may be given of the grade of the crude ore on which production depends.

The trustees administering this fund for assisting metalliferous mining are aware of the demand for tin in Australia at the present time and have approved of the transfer of some plant from Glenloth to Earea Dam. Mr. Heylen has been advised also that he can obtain further items of plant on a hire basis, if he is prepared to unwater the mine and pump the water to a sufficiently distant place to prevent its immediate return to the

excavations. He has been informed that a further inspection of the place will be made when the unwatering has been done and that the further question of providing plant for dealing with the ore can then be examined. At the present time it is not known whether the installation of any such plant on the mine is justified.

Assistance is available for any tin-mining proposition that possesses efficient merit under the terms agreed to jointly by the Commonwealth and State Governments, as set out in the following extract:

(a) No advance will be granted unless it is recommended by an officer of the Department of Mines.

(b) All advances granted are to be considered in relation to the increased employment that may result from their allocation.

(c) The recipient of any advance must provide an amount equal to the sum allocated from the fund, either in the form of working capital or its equivalent in labour.

(d) All advances are to be regarded as loans, for the repayment of which provision must be made and collateral security for which must be given is available.

(e) So far as is practicable the advances will be made only for developmental work that is specified in detail, and payments will be made for work actually accomplished after measurement by an officer of the Department of Mines.

All applicants for advances must signify their acceptance of these conditions.

Mr. Heylen's attention has been drawn more than once to the need for some financial backing to enable him to mine tin ore at Earea Dam, but his replies to enquiries on this subject

are vague and unsatisfactory. He does not know anything about tin-mining and informed me on the occasion of a recent visit to Adelaide that he had had no experience at all in dealing with tin, as has been quite apparent from his proposals. If any success is to be made out of tin-mining at Earea Dam it would appear that operations must be placed in the hands of an experienced man.

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