

RENISON BELL PYRITIC TIN DEPOSITS

The Renison Bell Tin Mines are situated adjacent to the siding of the same name on the Emu Bay Railway from Burnie to Zeehan, being 78 miles from the former terminus and port. The mines are easily accessible and every facility is provided by the Emu Bay Company for the rapid transport of the products of mining to the markets.

Mining rights for the area are held by Renison Associated Tin Mines N. L., Tasmanian Amalgamated Tin Mines N.L. and others.

The deposits consist of a number of large low grade pyritic tin lodes made up of pyrrhotite and to a lesser extent pyrite. These are impregnated in places with cassiterite in an extremely fine state of division.

Up to the present time operations have been confined almost exclusively to the excavating and mining of the richer ore contained within the zone of oxidation which extends to a maximum depth of 30 feet below surface. The value of ore mined in the past (chiefly oxidised) has been computed as having an average grade of 0.86 % tin. The average content of pyritic ore, the available quantity of which is undoubtedly large, is unknown, but assays, ranging from nil up to .1 % metallic tin have been obtained. The average sulphur content of the pyrrhotite, as indicated by bulk sampling of large parcels, is 36 %.

The production of tin oxide concentrate from these mines, containing over 66 % tin, is in the vicinity of 2000 tons.

The average cost of mining and treating sulphide ore in the past was 8s. 9d. per ton, but it is doubtful whether operations could be performed to such advantage today.

The richer portions of the ore bodies having been removed, the companies have now reached a stage in their operations at which complete change of policy is imperative. Successful operation depends on the solution of the sulphidic ore problem.

If the sulphides are considered as ores of sulphur and iron as well as tin ores they may then be regarded as of potential value. To enable these deposits to assume economic importance research is necessary in regard to the following:-

- (1) Process to enable an increase of tin recoveries to a high standard (possibly by flotation).
- (2) Method of treatment for the recovery of other marketable products, viz., sulphur, sulphate of iron, iron oxide &c. There are two ways in which it is possible to effect this result:- (a) the conversion of the sulphur constituent of the gases from the calcining plant to the elemental condition; (b) the conversion of the sulphides of iron to sulphate of iron.

With regard to sulphur it must be pointed out that the Commonwealth Government gives a bonus of £1. 16. 0. per ton on sulphur produced in Australia.

ACTING GOVERNMENT GEOLOGIST

Mines Department,
Hobart,
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