

## RENISON BELL TIN MINE

Summary Report of Conclusions arrived at during  
the Recent Examination

## Nature of the Deposits:-

The ore-bodies consist of tin-bearing pyrite and pyrrhotite replacements of dolomite. The dolomite is an alteration product of pyroxenite which intruded the slates and sandstones prior to the irruption of the porphyries from which the tin-bearing solutions were derived.

The main lode extends unbroken from the northern end of the property southward through the central Renison Bell and Montana sections, a distance of 60 chains. From this lode two others of considerable importance branch off to the south-west and have been worked at intervals a distance of 20 chains. In these as in the main lode the rich shoots of ore occur at and near the points of intersection by faults coursing a little north of east, at these points oxidation is more in evidence, and, in consequence, the quantity of tin ore workable under existing conditions is much greater.

The west lode indicated at surface by a large mass of gossan has not been developed. Tin has been detected in the gossan at many points and in one or two places in profitable amounts, but for reasons unknown to the writer, no serious attempt has been made to determine its value.

## Future operations:-

It should be understood at the beginning that the quantity of ore containing free tin oxide was sufficient only to justify the erection of a fire-head stamp battery. Furthermore, this oxidised ore was scattered here and there along the lines of the lodes from one end to the other of the property, and in order to convey it to the concentrating plant costly lines of transport had to be provided. When sulphidic ore was cut operations ceased. The result is that there are enormous quantities of pyritic and pyrrhotitic tin-bearing ore exposed that are unworkable under existing conditions. The tin occurs generally as oxide and as a rule is contained in the sulphidic ore in a very fine state of division. Very little free tin can be recovered by panning the finely crusted pyritic material, but after roasting the liberated ore is easily separated.

As a source of tin only, the pyritic material cannot be operated at a profit. It is necessary, therefore, to recover any other marketable components. The writer would suggest the following process of treatment:-

1. Wet concentration for the recovery of any free tin oxide the ore may contain and its separation from the pyrite and pyrrhotite;
2. The sale of pyrite and pyrrhotite to manufacturers of sulphuric acid;
3. The re-treatment of the roasted ore for the recovery of the contained tin oxide;
4. The sale of the residue as a pigment.

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It is only by performing these operations on a very large scale that this or any other mine on the field can be brought to a profitable condition. In order to operate to advantage there should be an amalgamation of interests. The ore from the several mines should be conveyed to and treated in one large milling and concentrating plant so situated as to be convenient to them all.

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