

REPORT ON THE REX HILL TIN MINEIntroduction

This report is not the result of a personal examination of the above mine, but represents an epitome of reports of former Government Geologists (A. Montgomery and G.A. Waller); Secretary for Mines Reports and other documents.

Location and Access

The Mine is situated five miles north west of the township of Avoca, in north-eastern Tasmania, and is connected with this township by two roads. One road is six miles in length and has steep grades, while the other is twelve miles and has better grades. The surfaces are such that the roads are suitable for motor vehicles for a large part of their length.

Avoca is connected by road and railway with the remainder of the State.

Leases

The mine is embraced in Consolidated Lease No. 9485/M of 83 acres in the name of J. Stevenson. Two Dam Sites 2332/W (20 acres) and 2317/W (40 acres) are held near the Head of Buffalo Creek. A race, 2317/W connects the latter dam with the Mine.

Geology

The country in the vicinity of the Mine is occupied by granite of Devonian age. To the north the granite is overlain by basal strata of the Permo-Carboniferous System. The western boundary of the granite is a large fault plane trending north west and with the down throw to the south west. Permo-Carboniferous rocks and Mesozoic diabase abut against the granite on the down throw side of the fault.

Economic Geology

The tin deposits are contained in the Granite and their formation was connected with the final phase of the consolidation of the granitic magma. Portions of the Granite were attacked by mineralising solutions and/or vapours and converted into tin ore.

The ore consists of a hard, quartzose granular rock which is best described as quartz greisen. A mica, (either gilbertite or pinite) usually accompanies the quartz. Chlorite talc, tourmaline and fluorspar may also be present. Cassiterite is the most abundant metallic mineral and occurs as fine grains and crystals throughout the greisen. Galena, sphalerite, and chalcopyrite are also present to a slight extent. Galena was more abundant near the surface, but is considered of secondary origin and will not occur at depth.

The Mine Workings

The earliest workings consisted of an open cut 15" diameter and 9 feet deep with a 33 foot shaft sunk from one side. Later an adit was driven in a N.N.E. direction and gave backs of 40 feet. Still later a main shaft was sunk to the south east of the deposit and three levels driven: No. 1 being at 140 feet: No. 2 at 215 feet, and No. 3 at 290 feet.

History

The ore body was discovered prior to 1890. It was originally regarded as a silver lead lode, and was worked by the Rex Hill Silver Mining Company No Liability. When it was realised that cassiterite was the most important ore, the mine was worked for that mineral. Several Companies (Rex Hill Tin Mining Co. Ltd.) operated between 1893 and 1900. In 1900 the Mount Rex Tin Mining Company N.L. was formed and continued until 1909, the bulk of active operations being carried out prior to 1906.

During recent years the mine has been held under lease but not worked.

The Mount Rex Company was the most active of the Companies and sunk the main shaft and put in the three levels referred to above. It also erected a 20 head stamp battery, with complete concentrating and calcining plant.

The Ore Body

The underground works have proved the ore body to be a large cylindrical body about 60 to 150 feet in diameter and already proved to a depth of 200 feet. At No. 1 level it was 60 feet by 80 feet. At the No. 2 level it was, judging by the Mine plans 150 x 110 feet. The No. 3 level was driven, but while it would most probably cut the ore body, no information is available as to dimensions.

Grade of Ore

Speaking of the ore taken from the chamber worked below the adit level, G.A. Waller states "... The present company has crushed 1160 tons for 81 tons of concentrates, or 7 per cent. The latter averaged 68% metallic tin (Note: the ore therefore contained 4.75% metallic tin)". As regards the ore at the lower (No. 1 level) this seems to be satisfactory. Some is very rich and other parts poor, but as far as one can judge at present, it appears to be about the same as that at the chamber level. It might be thought that the 1160 tons taken from the chamber, might be taken as a fair bulk sample. It is true that the above was taken just as it came, and was not picked or classified in any way but several rich bands of ore were struck, which must have had the result of raising the average of the sample above that of the deposit as a whole. The average of the deposit can, however, afford to fall a good deal below this figure".....

In 1902 the Manager of the Mine reported that the averages of the stone raised to date have been 2.3 per cent, and of stone treated 2.1 per cent.

Treatment returns in 1904 and 1905 gave a tin content of 1.3 per cent to 1.4 per cent.

As to the grade in the lower parts of the mine, no information is available.

Production

From incomplete records of the production by the Mt. Rex Co. it would appear that about 650 tons of tin ore (concentrates) were won between 1900 and 1913, but mostly between 1900 and 1905.

The ore produced prior to 1900 might possibly bring this total up to 1000 tons of ore.

Reserves

No information can be given as to the ore reserves. In 1905 the Mine Manager reported that the payable ore had been worked out at the No. 2 level, and only No. 1 level was being worked. Whether the unpayable ore of that time would be payable now, would depend on the grade of it. The further question as to the reserves between Nos. 2 and 3 levels cannot be decided owing to lack of information.

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26th February, 1927.