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REPORT ON LEASE No. 9M-57 50 acres P. TOWNROW, APPLICANT
(EXE RIVER)

Introduction

Following an application for Government assistance the mine was examined to determine whether financial aid was warranted.

History

The present lease covers part of the X Proprietary Syndicate's consolidated lease. This syndicate prospected the area and several trenches exposed tin bearing quartz-tourmaline veins. These were then explored underground by one main adit and several small drives off this. The surface and underground workings were connected by rises and little development has been carried out since.

The veins were reported to have been rich in patches; the country rock caught up in the vein system assayed up to 0.7% tin and the country rock between veins 0.2% tin.

There is no record of any production from this mine prior to 1959.

Location and Access

The area being worked is situated on a hillside about 200 yards west of the Exe River and one quarter of a mile south of the Rosebery Road. Access is by means of the old Exe River Tramway for part of the distance, then by track to the mill site. At present the track is impassable to all except four wheel drive vehicles.

The Surface Plant

A winch driven by a car engine is installed near the main adit portal. This is used to move the ore truck up and down a 200 ft. haulage.

The mill, which is about 80 feet vertically below the adit, comprises a small jaw crusher, a rod mill, belt classifier and separating table. The plant is driven by a Southern Cross Diesel motor which also powers a small air compressor used to operate a pneumatic drill.

Geology

The country rock in the immediate area consists of sediments of the Crimson Creek Formation, probably of Lower-Middle Cambrian age. They are interbedded argillites, siltstones and fine greywackes varying in colour from grey to fawn and reddish brown. Colour differences are partly due to the deep weathering.

Most of the sediments are slightly indurated; jointing is well developed but irregular, and cleavage is not prominent.

The ore is carried in quartz veins as fine to rarely fairly coarse cassiterite together with green tourmaline and a little pyrite and arsenopyrite. The sulphides have

been mainly oxidised and leached out. After a lengthy examination of vein material a few crystals of cassiterite were observed, ranging in size up to 1½ mm.

The Veins and Underground Workings

Underground development is essentially that of the old X Proprietary Syndicate with some additional stoping by the present lessees and is shown in the accompanying plan and section.

The two longest drives followed quartz-tourmaline veins which have also been worked at the surface.

In the main drive a vein system is first observed at the winze 115 ft. from the portal. The vein appears to terminate here against planes striking 350° and 360° and dipping 71°W and 56°E respectively. The vein is thin at this point but within a few feet it widens and becomes most irregular, stringers penetrating the walls and country rock is enclosed by masses of quartz-tourmaline vein material. From here as far as the rise the vein has been stoped out and appears to become thinner upwards. Ten feet past the rise the vein splits into two well defined parallel veins, 2'6" apart, up to 4" wide, striking 280° and dipping 62°N which thin out and were abandoned after being driven on for a further 20 feet.

An extension of the main drive at a slight angle to it did not follow these veins but struck a probable extension of one (Strike 277° Dip 62°N) about 12 feet from its face.

A 40 foot drive bearing 10°from the end of the main drive intersected thin patches of quartz-tourmaline but was abandoned because of the discontinuity and size of the veins.

Another drive bearing 248° extends 70' from a point 128' from the portal but no signs of vein material were observed in this. (H. Conder 1918, reports a drive with these measurements from the bottom of the winze, but does not record the upper drive). The winze is now inaccessible.

The shorter of the two main drives branches 15 feet from the portal and bears 320°. This followed a plane encrusted with iron oxide which eventually shows quartz tourmaline veining. This widened at the end of the drive and has been stoped. From the top of the stope two inclined rises connect with the surface trenches. There is very little visible vein material left in this section of the workings.

Conclusions

Only two veins have been worked, the others being considered too small. These two veins were also located at the surface and were prospected before 1912. Recent operations have involved working known veins and little or no exploration has been done. Considering the tin content of the ore treated by the present lease holder the venture cannot have been economic and as the ore bodies are decreasing in size prospects of improvement are negligable.

The return of 0.26% Sn from 133 tons of ore worked recently suggests that early assays were of picked samples. It is therefore not advisable to spend further money on equipment to work the present grade of ore.

A.B. Gulline,

18th November, 1960 GEOLOGIST ZEEHAN