

JRMISC B/44-47

THE RAZORBACK Mine,
~~REPORT ON~~ ~~Santa Dandas~~

41

~~MINERAL LEASE No. 7771, 80 ACRES, S. DUNDAS.~~

(44)

~~Charted in the name of J. L. FRIZONI.~~

(Mineral Lease 7771, 80 acres, J.L. Frizoni)
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General Statement

The above lease known as the Razorback Mine was the subject of a report made several years ago by the Director of Mines in his capacity as Government Geologist.

Mr. Reid dealt fully with the geological features of the area also with the economic value of the ore body which is described in detail.

Since the report was compiled no further developmental^{work} has been undertaken, consequently the mine is in the same position today as it then was, excepting that a limited amount of productive work has been carried out intermittently from year to year.

All work done subsequent to the date of report has been centred on ore treatment; milling supplies being obtained from the open cut workings at the northern end of the lease.

The upper ~~part~~ portions of the ore in the open cut consisted of oxidised or free milling ore, below the floor of the excavation it is partly oxidised in places, in irregular association with dense pyritic ore. As depth is attained it merges wholly to dense pyrites

Work carried out in the way of mining and treatment has been on a very limited scale, latterly one man only being engaged in mining ore to keep the mill supplied, his duties also included trucking the ore over a steeply inclined wooden tramway - a distance of 28 chains a horse being used as the motive power.

The results derived from the operations carried on under such adverse conditions have however been remunerative to the operators

Ore Body.

The only portion of the lode worked since the time of Mr. Reid's report is that of the open face workings referred to. A fairly large excavation has been made in the hillside. No record of tonnage treated is available. Recently a shaft was sunk from the

floor of the open cut in dense pyritic ore to a depth of 30 feet and a drive therefrom extended a distance of 50 feet in a northerly direction. The drive throughout being in pyritic lode material. The result obtained from this work was highly payable; massive blocks of high grade tin oxide were met with.

The ore being sulphidic was subjected to a kiln roast prior to crushing and concentration.

In addition to the large body of pyritic ore there are promising developments on the oxidised portions of the ore body extending south of the open cut. Payable gossan has been located and opened up by means of trenches and tunnels at a number of points along the line of lode which has been proved to carry enrichments of tin as well as average grade stone. These places with comparatively small expenditure could be linked up with the tramway to mill.

Ore Treatment.

The oxidised and partly oxidised portions of the orebody can be milled satisfactorily in the ordinary way of crushing and concentration for the separation of the tin oxide. To some extent the sulphidic ore will yield a clean product of tin by simple concentration but a satisfactory separation cannot be made with the secondary product consisting of pyritic concentrates in association with more or less tin oxide. A separation can be effected by roasting the material to eliminate the sulphur and the resulting product re-dressed to obtain the tin oxide.

This method is a common practice in the treatment of stanniferous sulphide ore. Recently experiments have been carried out on the oil flotation process for the separation of tin in pyritic concentrates.

It must be realised however that before a definite pronouncement can be ^{made} on the matter, experimental tests are necessary to determine conclusively if the process can be successfully applied to the ore of this mine.

It has several advantages - when compared with calcining the latter involves re-grinding and re-concentration of the calcined product, whereas with ore flotation a high grade concentrate of tin may be produced direct from the raw pyritic concentrate.

The relative cost of a flotation and a calcining plant is greatly in favour of the former.

A calcining plant will prove to be quite satisfactory in dealing with the pyritic ores, if it is found that ore flotation will not make a satisfactory separation of the tin.

Mine Development

During the past few weeks a Syndicate holding an option over the property has been carrying out developmental operations by continuing the lower tunnel with the object of cutting the lode below the open cut workings.

The tunnel was driven a distance of 87 feet by former owners through soft detrital material when very hard rock was encountered and the work discontinued.

During Driving through the hard bar is now proceeding from available data this band of rock is not more than 20 feet wide and forms the hanging wall of the ore body.

The lower tunnel level is 55 feet vertically below the floor of the open-cut workings, at a point 50 approximately south of shaft sunk below floor of the latter.

As a means of development of the pyritic ore body it is essential that the tunnel should be continued through it, and driving along its course both north and south carried out.

At a convenient point a rise can be put through to the open cut and all ore broken from it can be sent to the mill by this means when tramway connection, established between the lower tunnel level and milling plant.

Conclusion.

The mine is equipped with a plant but the power to drive it is generated by a small low pressure water turbine which is sufficient only to work a section of it, consequently ore treatment is carried out in stages instead of one continuous process as should be done if sufficient power was available.

It is only in the wettest period of the year that sufficient water is available to operate the turbine, although there is no shortage at any period for dressing purposes.

The property has every prospect with development of being a well payable mining venture. A comparatively small additional expenditure to provide additions to plant, transport from mine to mill and power *would be necessary*

The high tension electric transmission line between Zeehan and Williamsford passes within $1\frac{1}{4}$ miles of the mill site. The intervening country is comparatively level and free of heavy bush.

J. B. SCOTT.

State Mining Engineer.

~~Mines Department,~~
Hebert,
22nd November, 1927.
