

PRELIMINARY REPORT ON
QUEENSBURY MINE
WESTERN DISTRICT

Preliminary Statement

The lodes opened on this property were discovered during the early years of exploration of the Western Division, and were first attacked by the late R. McKimmie at shallow adit levels.

Years after the lodes were further explored by G. Law and Sons, again by way of adits, and the ore excavated was sent to Zeehan Smelters. The cost of transport was so heavy that those miners failed in their essay at profitable production. In order to reduce the cost of transport the next operator W. Grieve constructed a wooden-rail tramway from the mine to the Zeehan-Strahan railway. That work certainly reduced the cost of delivery but not sufficiently to allow of successful operations. Grieve sank a main shaft to 46 feet and performed other exploratory work. In later years the late James Harrison, erstwhile Inspector of Mines for the Western Division leased the land and carried on development work until 1920. This party sank the main shaft to 100 feet and drove north and south on the lode, producing in the process a few hundred tons of marketable ore. The present lessee (A.J. Pearson of Abbotsham) has only recently acquired the property.

All operators failed mainly because of two reasons; the low silver content of the ore; and the high cost of transport. Today the low silver content of the ore is counterbalanced by the higher market rates for lead and zinc, and the cost of transport can be overcome with little difficulty by substituting the horse tram by motor vehicle.

Production

The complete record of production is not at hand, but that of the latest producers is fairly correct.

W. Grieve produced from the 45 foot level of main shaft 350 tons of ore consisting in part of lead 40% and silver in the proportion of 6 oz. per ton.

James Harrison sold to Tasmanian Smelting Company 250 tons of ore to A.G. Morton 100 tons, and to Sulphide Corporation 80 tons of an average value 56 per cent lead and 7 oz. of silver per ton.

Area, Situation and Access

The mine is enclosed within the boundaries of lease 6140/E of 80 acres charted in the name of A.J. Pearson.

It is situated a little to the west of the half-way point between Zeehan and Mt. Lyell, and on the north side of Henty River. Access is by way of a two foot gauge wooden rail tramway seven miles in length which connects the mine with the railway siding 9 miles from Zeehan. The tramway is of light grade over the greater part and the bedrock is solid and capable of withstanding heavy traffic. It has been suggested that a better route is via the valley of Henty River, but

the present route is shorter and not difficult. If the proposed road between Zeehan and Lyell is to be constructed soon it would be advisable to wait and construct a connecting road with that and so have a direct line of transport to Zeehan. Both routes traverse button-grass plains, with a quartz gravel sub-soil resting on hard slate and sandstone. Road connection is preferred to tramway because the cost of transport by motor vehicle is not one sixth the cost of transport by tramway. For instance, under existing conditions two horses and driver are required to deliver one ton of ore daily - a rate equal to $7/6$ per ton per mile, with a 3-ton motor lorry three trips per day could be run over the same route. Motor transport is essential to success.

Geologic Relations

Professor Range between the mine and Grieve Siding is occupied by the Silurian rocks, West Coast Range Conglomerate and Tubicoliar Sandstone. Their structure in that Range has not been deciphered, but they appear to lie in the Mt. Zeehan anticlinorium. On the south side are deposits of deep buttongrass covered gravels (the waste of Silurian rocks) which effectively hide from view the bedrocks. These button-grass plains lie in the area of the coastal peneplain from which the western mountain ranges rise abruptly 3000 to 4000 feet. In the small area under review the peneplain has been sharply incised by numerous fast-flowing tributaries of Henty River, in the valleys of which the lodes and the containing rocks are exposed for examination. The formation there belongs to the Zeehan series of slates, tuffs, and basic igneous intrusives, the last being similar in appearance to that of Manganese Hill and slightly schistose. Three parallel faults coursing approximately 70° heave the country to the westward. Their position are marked by abrupt changes in the course of the stream. (It is important to have the faults definitely located in order that the continuations of the lode fissures may be found without difficulty). Faulting on a minor scale is a particular feature of these ore-bodies, the ore shoots occurring in a series of irregular steps in the ore channel.

Westward towards Henty River bridge are beds of mudstone, shale, limestone, and sandstone of Permo-Carboniferous age.

The ore-bodies

Four noteworthy lodes have been opened in adits and shafts at the bottom of the valley of Lode Creek. All are similar in their component minerals; but the relative proportions of each mineral in the several lodes varies greatly and the sizes of the lodes also. The lodes are of the replacement-fissure type and are richest along the slate-igneous rock contact. They are composed of galena and sphalerite with a little chalcopyrite and tetrahedrite set in a gangue of quartz and siderite. Pyrite is rare. Banding is noticeable coxcomb structure not much in evidence. Quartz reticulations are traversed by siderite, which generally encloses the sulphidic minerals but appears also as blebs throughout the body of the galena and sphalerite ores.

The galena and sphalerite as a rule are dissociated and are readily separable by ordinary concentrating appliances. The galena is of fine grainsize, dense and massive; the sphalerite is coarsely crystalline and of light resin colour.

The value of the ore

In the account of production it has been stated that the average value of the ore sold was 56% lead and 7 oz. silver per ton. That consisted of 'prill' or sorted ore and milled and concentrated ore mixed. According to the report of the last operator the amount of 'prill' ore varied, but he estimates that one eighth of the ore in the lode can be sorted as first grade, the remainder being of high milling grade. The sub-joined table contains the analyses of a number of samples of ore taken by the writer during the period of this investigation.

No. of Sample	Description of ore	per cent			Silver per ton		
		Copper	Lead	zinc	oz.	Dwt.	Gr.
1	Tetrahedrite	16.3	0.2		13	1	8
2	Crude Galena and Blende ore (bulk sample)		21.6	8.1	2	12	6
3	Galena Concentrate		54.2	9.1	7	3	18
4	Galena from No. 4 Lode		38.2		6	4	3
5	Zinc Blende (Sphalerite)			51.5			

Samples Nos. 2 and 3 convey an idea of the value of the ore. No. 2 is a bulk sample of the crude ore from main shaft and may be regarded as representative of the quality of the ore as opened in that shoot. No. 3 is a bulk sample of prill and milled ore in the bins.

The Lodes where exposed in the Workings

Main or No. 1 Lode is exposed in a north adit cut into the bank of a tributary of Lode Creek, in two adits near main shaft and in two levels from main shaft. North adit is now inaccessible owing to slurry and collapse of roof but on the dump are ores similar in all respects to the ore mined at and near the main shaft. In the adits and open stopes near the shaft the lode is 3 feet wide, coursing N. 7° W. and dipping west at 60°. It is contained in decomposed igneous rock and is exposed about 120 feet. At the ends of these drives the lode is very narrow and comparatively poor. According to a statement furnished by James Harrison the lode was driven on 20 feet north and 40 feet south from the 45-foot level of main shaft. There it was found to consist of second-grade ore containing 40% lead and 5 to 9 oz. of silver per ton after sorting out the poor material. From the 100-foot level Harrison opened the lode 40 feet south and 20 feet north where it was 3 to 6 feet wide. In the south end it is small, but is 2 feet wide in north end. That was all the work performed on main lode.

No. 2 Lode opened in a short adit from the east bank of the creek and in a shaft, courses N. 25° W. and dips south-westward at 50°. It is one to two feet wide and lies at the slate contact. This body is not open for examination, but the material on the dump is of similar quality to that of main lode.

No. 3 Lode is not exposed. A shaft was sunk 50 feet to cut this body, but inflow of bad air and water interrupted the work.

No. 4 Lode is a large body farther downstream. It is opened on the East and West sides of the creek in small open cuts and trenches and in an adit and shaft on west side. Where exposed it appears to be about 10 feet wide and lies at the contact of slate and basic igneous rock and courses 5° E. of N. It consists at this point of galena, sphalerite, and chalcopryrite in equal proportion, all fine in grain but not in intimate association. Tetrahedrite is prominent and generally associated with chalcopryrite. The gangue is white opaque quartz. The several ores occur in bands with unreplaced rock. Coxcomb structure is not a striking feature. The important openings on this body are not accessible, therefore, an idea of its value could not be determined.

There is evidence in the large boulders of mineralised quartz upstream and downstream of other undiscovered bodies of ore.

General Remarks

It will be seen by the foregoing account that there are here four known lodes as yet in the early stages of development. Their values at certain points has been determined, and, these are of considerable importance. Lodes (2 and 3) could be explored at 100-foot level by crosscutting from main shaft on No. 1 Lode. All the work so far performed can be regarded as exploratory only.

The milling and concentrating plant is a small one and may be of a little further service during the process of development but it is too small to be of any real value if the ore-bodies develop as expected.

In the main shaft workings on main or No. 1 Lode the rich Zinc ore was not mined because at that time the market was unsatisfactory. Today that ore is marketable and adds considerably to the value of the property. In fact it is of little less value than the lead ore.

Future successful operations depends in the first place, on the construction of a connecting road. This may cost \$4,000 to £5,000, but it is essential.

Sgd. A.M. Reid
DIRECTOR OF MINES

30th June, 1927