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PRELIMINARY REPORT ON SECTION 9182/M.(L.J. SMITH)
WHYTE RIVER

Introduction

On the 18th and 19th May, 1924 an examination was made of the outcrop and the accessible openings in the large orebody traversing this section. The time available was insufficient to permit of a detailed survey and the investigation was hampered by obstructions in all the important mine openings, therefore, this report is of necessity brief and inconclusive. The collapsed mine openings represent the work of a company operating here many years ago.

Situation, Access etc.

The property is situated three miles west of Luina a small settlement on the banks of Whyte River at the foot of Magnet Range. It is easily accessible by road from Waratah, lying only half a mile south of the 13-mile peg.

The Orebodies

Two orebodies are known: one dominantly zinciferous, the other western one containing a higher proportion of lead. Both orebodies are contained in Silurian limestone near the line of contact with Devonian syenite and pyroxenite, and both dip sharply to the north-east. Main or east lode extends from the northern end of the property in a south-eastern direction three quarters of a mile and the outcropping ore, which consists largely of ferro-manganese oxides, is fifty to one hundred feet wide. At the northern end ores of zinc and lead have been exposed in the bed of a small creek and also in No. 2 adit neither of which is now accessible. In the creek bed the lode is only 16 feet wide and at two chains northward it peters out. The following analysis is representative of the material in the dump:-

Insoluble materials	23.80 per cent
Iron	26.00 " "
Alumina	3.14 " "
Lime	Nil " "
Magnesia	1.09 " "
Zinc	4.52 " "
Lead	0.40 " "
Manganese	9.57 " "
Carbon dioxide	12.02 " "
Sulphur	2.61 " "
Arsenic	trace
Loss on ignition	4.80 " "

The ore here consists of zincite (the bright pink oxide of zinc), smithsonite (carbonate of zinc), a little zinc blende, and a smaller proportion of galena. The absence of lime is remarkable and shows that the original limestone has been completely replaced by silica and metallic minerals.

In No. 2 adit, 200 feet southward, the lode is penetrated 40 feet, and consists of similar minerals in a similar gangue. A bulk sample of the material on the dump showed the following content:-

Silver	Trace
Lead	0.1 per cent
Zinc	0.8 " "

In the Silurian sandstone underlying the limestone bed disseminated bodies of lead and zinc ores occur and are apparently of the same average quality with enrichments here and there.

A quarter of a mile further southward No. 3 adit, driven from creek level a distance of 540' completely intersects the lode which, it is reported, is nearly 100 feet in width. A bulk sample of the material on the dump contained:-

Silver	Trace
Lead	0.15 per cent
Zinc	1.20 " "

The outcrop at this point is particularly massive and the ferromanganese ore composing it extends below adit level. A grab sample of this material showed the following constitution:-

Silver	Trace
Zinc	0.75 per cent
Iron	34.00 " "
Manganese	21.26 " "

The high proportion of manganese is particularly striking. If this grab sample may be taken as an indication of the average quality of the ore this may prove a very valuable product of the mine.

Beyond this point the lode outcrops boldly to and beyond the southern limits of the property, and has been penetrated by exploratory works (now inaccessible) at several points along its course.

West lode is intersected by an adit crosscut over 600 feet in length driven under the direction of Geo. Bottriell for the original syndicate about 20 years ago. At surface the lode contained a high proportion of chloride of silver 40 tons of which was mined and sold to the Magnet Company. The body of chloride of silver did not continue far below tunnel level, but gave place to galena, sphalerite, and zincite. A bulk sample of material on the dump contained:-

Lead	0.2 per cent
Zinc	1.45 " "
Silica	38.68 " "
Lime	7.30 " "
Silver	4 oz. 19 dwt. 7 grns.

Ore of very much higher grade and containing over ten per cent of lead is stacked at tunnel mouth. The lode which is reported to be nearly 40 feet wide, was cut at 200 feet from the entrance and is about 400 feet from East lode. Besides galena and sphalerite, the non sulphidic minerals zincite and smithsonite are present, and quartz in narrow veinlets is prominent. A little pyrite is noticeable here and there and rhodonite colours the quartzitic matrix. The ore occurs in blebs and streaks through the quartzitic rock but not in intimate association.

A few feet beyond the entrance to the adit crosscut a shaft was sunk to a depth of 154 feet in limestone and a crosscut was driven from 140 feet level in a south-westerly direction to the lode. From reports it is gleaned that the ore of the lode is of similar quality to that already described as coming from the adit.

In addition to the information obtained from these openings several exploratory surface works reveal chloride of silver in the capping material.

All the works described are at very shallow levels - too shallow, even if they were accessible, to form an idea as to the actual value of the lode as a source of zinc and lead. The content of silver is negligible except at certain points at the outcrop of west lode. The ferromanganese oxides represent the products of mangano-siderite which will be found below the zone of oxidation. Probably secondary enrichment of considerable extent and value will be found as development is carried out.

Suggested Method of Exploration and Mining

Occurring in a bed of altered limestone exploration by means of shafts would be hampered by a great inflow of water. The cheapest and most expeditious method is that of diamond drilling, for which the conditions generally are particularly favourable.

If it is found that the primary ores occur at no great depth below the surface and that the outcropping ferromanganese ore is of present value the most suitable method of excavation now is that of open-cutting and later that of quarrying.

Conclusion

This enormous lode has received very little attention owing to its comparative poorness in the average content of lead and zinc. In the early days when only the richest of ores could be mined and marketed because of heavy transport and treatment costs ore of this quality was valueless, but employing present methods of concentration and excavation, the outlook is more promising. The information revealed by the few exploratory works that have been made provides sufficient encouragement to prosecute the work in a thorough manner. A careful sampling of the capping material in order to arrive at the average value of the manganese and iron components should be the first consideration of the lessees. If that ore is marketable the property becomes one of value.

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Hobart.
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