

REPORT

on

THE HINEMOA MINE SOUTH MOUNT VICTORIA

Location

This mine is located on sections 1701G and 1725G last held by H.A. Rayner. These sections are situated in the south western portion of the South Mt. Victoria district and are on the main branch of the Dan Rivulet. The mine is approximately ten miles north west of Mathinna and three and a half miles south-south-east from Alberton.

Access

From Mathinna a fairly good road goes to within about four and a half miles of the principal workings. From the end of the road the mine may be reached by following a track leading to Alberton. This crosses to the east of the Dan Rivulet at a distance of some two miles from the road and then follows the eastern bank of the rivulet. At a distance of a little over three miles from the road a branch track leads right to the mine workings.

Previous Report

A description of the earlier mining activities on this property will be found in W.H. Twelvetree's report "On the South Mt. Victoria Mining Field, 1904".

History

It is uncertain as to when and by whom the lode was discovered but three ten acre sections viz 290, 295 and 307G were taken up by R. O'Brien, J.F. O'Kelly and F.L. Parham, respectively, in January 1903. In April of that year the Hinemoa Mining Company was formed with the object of acquiring and developing these sections and the mine became known as the Hinemoa. The company had a paid up capital of £1,200 consisting of 12,000 shares at 2/- each. This was increased in October 1903 by the issue of a further 1,000 shares at 6/- each.

During its tenure of the leases the company drove an adit and did some surface trenching to the south of it on what was considered to be a parallel lode lying to the east of that in the adit (as will be shown later these lodes are probably identical). The adit was extended for a distance of a little over two hundred feet. The lode narrowed towards the end of the adit workings and for some reason it was considered that it has been faulted. A crosscut was then put in to the east in an endeavour to pick up the lode but, as will be explained later, it failed to reveal anything of importance. Assays published by the company showed that although the lode was generally low grade it contained gold to the value of 17 dwts per ton in some places. Twelvetrees report states that a crushing of 70 lbs returned 8 dwts per ton.

In 1906 the northern leases i.e. 290 and 295 were declared void on the application of W. Devitt who then held the sections until December 1908. They were applied

for by Godfrey Fisher in March 1911 but the lease was cancelled in February 1912. In October 1925 the northern section was applied for by H.A. Rayner and R.O'Brien and in June 1926 the adjoining section to the south was taken up by H.A. Rayner.

During the period 1906-1927 the principal work on the property appears to have consisted in trenching across the lode in order to pick up its southern continuation and also to locate payable shoots of ore.

Owing to the revival in gold mining Mr. H.A. Rayner has again commenced work on this lode, the area being held at present under prospecting licence.

Topography

In the vicinity of the mine the country is rugged and mountainous. The Dan Rivulet flows through the north eastern corner of section 1701 and the mine workings are located on its steep western bank. The sides of the valley rise at an angle of 35° to 40° hence conditions are favourable for development by adit levels. The approximate elevation at the mouth of the present adit is 1800 feet above sea level.

Geology

The lode occurs in Cambro-Ordovician slates and quartzites of the Mathinna Series. To the north of the mine these strike $N 30^{\circ} W$ and dip generally to the north east. It is probable that some folding occurs in the district as this is a common feature of the Mathinna series in other areas in which they have been examined.

The Lode

This is a quartzose formation varying in colour from dark grey to bluish-grey to white. It contains a good deal of pyrite and arsenopyrite and occasional patches of fine grained galena. Chalcopyrite occurs in a few places. Only occasional patches of free gold occur throughout the lode and it is probable that the bulk of the gold is present with the sulphide minerals.

In general the lode partakes of the character of a replacement deposit rather than that of a simple quartz vein. In many places it grades into the enclosing slates and quartzites and the walls are not defined. Unreplaced fragments of slate and quartzite are fairly common throughout the lode. As will be described below it varies in width from place to place the mean width being two to three feet. In some places it narrows to a few quartz stringers.

The lode strikes in a general north south direction and dips to the west at 50° to 70° . The prospecting and development work carried out show that it extends over a total length of 760 feet.

Adit Workings:- At the toe of the adit the lode is one foot wide but at the brow or portal the width has increased to 3 feet. At a point 10 feet south of the brow it narrows considerably and from there south for a distance of 35 to 40 feet it consists of a few small quartz stringers and irregular bunches of quartz. From 60 to 80 feet from the brow the average width is about 2 feet, the maximum width being 2 feet 6 inches and the minimum 1 foot.

At a point 110 feet south of the brow the lode widens to 3 feet and maintains this width for a distance of 60 to 70 feet. At a little over 170 feet it narrows considerably and in the face of the present drive consists of a few 1 inch quartz veins extending over a width of 1 foot on the western side of the face.

From the above description it will be apparent that the lode as exposed in the adit consists of a number of bulges or lenses of ore occurring in one continuous channel. The slide or fault referred to in Twelvetree's report has had no influence on the lode and the quartz veins in the face of the drive clearly represent its southern continuation.

Surface Workings-South from the mouth of the adit the country rises sharply and slopes at an angle of 35° to 40° into the Dan Rivulet. The surface outcrop of the lode rises from the tunnel at an average angle of 20° . The steep sides of the valley are covered by rock debris to a depth of 6 to 8 feet and hence some difficulty has been experienced in locating the lode by surface trenching. As will be apparent by a glance at the plan some of the earlier trenches have been put in above the lode and some below it.

On the plan the trenches have been numbered from north to south. Work carried out by the present occupier is indicated by the addition of the letter R. The longitudinal section shows the heights of the various trenches above the adit level and hence the amount of backs available.

No. 1 trench, which lies 80 feet south of the adit mouth, has been put in along the course of the lode. Here it is 6 to 8 inches wide and is striking $N.23\frac{1}{2}^{\circ} W.$

Nos. 2 and 3 trenches are now filled with rubble and No. 4 is entirely in slates and quartzites. From their plan positions it is probable that Nos. 2 and 4 are above the lode.

In No. 5 trench the top of lode has just been exposed. Some large pieces of lode material were seen in the end of this trench but it is not yet deep enough to uncover the solid ore.

No. 6 is an old trench which is now filled in.

Between No. 6 and 7 trenches, at a distance of 370 feet from the brow of the adit, a shallow shaft has been sunk on the lode to a depth of 10 feet. Here the lode is 3 feet 6 inches wide. There is 10 inches of ore on the hanging wall followed by 7 inches of soft earthy material and then by 2 feet of solid ore in the footwall. The mean dip of the lode in the shaft is $69^{\circ} W.$ On projecting it down to the adit level on this dip it is apparent that this portion of the lode represents the southern continuation of that seen in the adit.

In No. 7 trench the lode is 3 feet 6 inches wide. It consists of bluish grey quartz with pyrite and arsenopyrite. A measured dip gave $57\frac{1}{2}^{\circ} W.$ This is probably a little flatter than the normal dip.

No. 8 trench is 8 feet long and 7 feet deep and has been put down along the course of the lode. In order to facilitate working operations and to test the lode at a

slightly lower point another trench is being brought in across the lode from a point a few feet down the hill. In the present trench the lode consists of 12 inches of solid ore on the hanging wall with 18 inches on the footwall, these two portions being separated by 7 inches of soft earthy material. The dip of the lode in this trench was 50° W.

In No.9 trench only the upper rubbly portion of the lode has been exposed.

No.10 is a deep trench cut through dense black slates and dark coloured quartzites. The lode is 2 feet 3 inches wide and consists of bluish coloured quartz freely impregnated with pyrite.

Nos. 11 and 12 are old trenches situated in a shallow depression on the hillside. Here the depth of rubble is greater than it is elsewhere and the lode has not been exposed.

The next trench south i.e. No.13 is also in rubble but odd pieces of lodestuff occur here and there in it.

No.14 trench is wholly in slates and quartzites and there is no sign of the lode.

At the top end of No.15 trench there is a good deal of loose lode material. This is an old trench now partially filled in but judging by the amount of lode material lying about it would appear that the solid ore has been cut in this trench. It is probable that Nos. 13 and 14 trenches have not been extended sufficiently far into the hill to cut the lode and that the pieces of lodestuff seen in No.13 trench have been shed from a point a few feet higher up the hill.

The total length of the lode as shown by both the adit and surface workings is 760 feet. The present work, i.e. from the shaft to No.10 trench, indicates the presence of a continuous shoot of ore extending over a length of 180 feet.

Gold Content of the Lode

During the examination of the mine twelve samples were taken. Their positions are shown on the accompanying plan of the mine and the assay results are tabulated as follows:-

Table No.1

Assay Results of Samples, Hinemoa Mine

Sample No.	Regd. No.	Location	Assay Value			Width	Remarks			
			Gold					Silver		
			Ozs.dwt.grs.			Ozs.dwt.grs.				
1	1012	No.15 trench	0	0	13	0	0	19		Grab sample from loose lode material
2	1013	No.10 trench	0	9	22	0	2	5	2'3"	
3	1014	No.9 trench	0	2	15	0	1	14		Grab sample from upper rubbly portion
4	1015	No.8 trench 6' below surface	0	2	21	0	2	8	2'6"	
5	1016	No.7 trench	0	2	2	0	1	14	3'6"	
6	1017	Shaft 370'S. of adit	0	0	13	0	2	15	3'0"	
7	1018	Brow of adit	2	4	10	1	13	23	3'0"	
8	1019	Adit 76's. of brow	0	10	11	0	7	14	2'6"	

Sample No.	Regd. No.	Location	Assay Value			Width	Remarks
			Gold		Silver		
			Ozs.dwt.grs.	Ozs .dwt.grs.			
9	1020	Adit 111'S. of brow	1 1 4	0 11 12	3'0"		
10	1021	Adit 147'S. of brow	0 9 16	0 3 9	2'3"		
11	1022	Adit 167'S. of brow	trace	0 2 8	3'0"		
12	1023	Adit 19'N. of brow	0 7 1	0 4 23	1'0"		

With the exception of No.11 the samples taken from the adit indicate generally a fairly high average gold content for this portion of the lode. The average of the six samples is 15 dwts per ton (i.e. Nos. 7 -12).

The samples from the trenches are low but as will be shown below better values exist in this section.

Prior to my examination of the property a number of samples have been taken from various portion of the lode by Mr. Rayner. These were assayed in the Government Laboratory, Launceston. The results are shown in the following table:-

Table No. 2

Assay Results of Samples, Hinemoa Mine

Sample No.	Regd. No.	Location	Assay Value			Width	Remarks			
			Gold					Silver		
			Ozs.	dwt.	grs.	Ozs.	dwt.	grs.		
1	496	No. 10 trench	0	3	6	0	0	9		
2	497	No. 9 trench	0	8	2	0	1	2		
3	498	No. 8 trench	0	13	18	0	1	23		
4	499	No. 7 trench	0	2	2	0	0	13		
5	538	No. 10 trench	0	5	5	0	1	7		
6	539	Adit 19' N. of brow	0	19	14	0	6	13	1'	approximate position
7	540	Shaft 370'S. of adit	0	1	7	0	1	19		
8	681	Uncertain	0	0	19	0	0	12		
9	682	Shaft 370'S of adit	0	2	15	0	2	15		
10	775	Adit 15'N. of brow	0	10	5	0	7	8	1'	approximate position

Sample No.	Regd. No.	Location	Assay			Value			Width	Remarks
			Gold			Silver				
			Ozs.dwt.grs.			Ozs.dwt.grs.				
11	776	Adit N. of brow	1	2	11	0	10	5	1'	exact position uncertain
12	777	Brow of adit	14	7	11	4	18	0	1' on east wall	
13	778	Adit, near sample 9, table 1	1	3	6	0	12	0	3'	approximate position
14.	779	Adit, near sample 10, table 1	0	8	15	0	4	23	2'3"	do. do.
15	780	Adit, near sample 11, table 1	0	2	21	0	1	20	2'3"	do. do.

Sample No.12 may be discounted somewhat as an indication of the true average gold content of the ore, nevertheless the samples from the adit confirm the high average values indicated by table 1. If sample No.7 in table 1 be substituted for No.12 in the above table the average of the samples from the adit would be 19 dwts per ton.

With regard to the samples taken from the trenches, these were not taken across the full width of the lode but each consisted of several pieces of ore taken from various places in the individual trenches. The samples from Nos. 8 and 9 trenches indicate a higher gold content than the corresponding samples in table 1. Twelvetrees (page 18) reports having sampled two trenches towards the southern end of the lode the results being 11 dwts per ton and 4 dwts per ton respectively. He does not state the exact location of his samples but they were probably taken somewhere between Nos 7 and 14 trenches. These results indicate generally that better values exist in the southern section of the lode than is shown by the results of the samples in table 1.

Summary and Conclusions

It will be apparent from the above description that the lode is not of even grade throughout its length but contains zones of low grade and high grade ore. The facts presented indicate that the lode is worth further testing.

The longitudinal section shows a large block of untested ground between the shoot now being opened up at the surface and the adit level. In order to test this southern portion of the lode at depth and at the same time ensure a sufficient and workable amount of backs should it prove payable to mine, the simplest and most economical method would be to put in a drive along the lode such that it would be 100 feet vertically above the present adit level. The starting point for the proposed adit would be 206 feet south from the brow of the present adit along the line of the surface outcrop of the lode. (This point would be approximately 5 to 10 feet east and 26 feet north from No.2 trench). As the exact position of the surface outcrop of the lode at this point is not known a surface trench would have to be put in to uncover the lode before commencing to drive the adit. In order to reach a point below No.10 trench, approximately 370 feet of driving would be necessary. This work would also test that portion of the lode lying between No.2 trench and No.5 trench. The proposed drive would provide 75 feet to 115 feet of backs between points below the shallow shaft and No.10 trench; these figures are subject to an increase on account of the dip of the lode.

In the event of being unable to pick up the lode or the track of it by surface trenching at the position indicated a drive could be put in on a bearing of 180°. The lode should then be picked up at a point below No.5 trench, this would be approximately 140 feet from the starting point. Should this method of development be necessary it may happen that short crosscuts would have to be extended into either wall in order to pick up the lode either before or at a point below No.5 trench.

A point worthy of note is that the occurrence of fairly high average values in the present adit may indicate better values in the deeper ground, though this is by no means uncertain. Hence in order to test thoroughly the block of unproved ground indicated by the longitudinal section it would probably be necessary also to extend the present adit to reach a point below No.10 trench. This would involve approximately 340 feet of driving. As the track of the lode may be seen in the face of the present drive this work should present no difficulties.

As has been indicated the mine, in its present state of development, can be tested quite readily by driving along the lode. Hence crosscutting by means of an adit put in from the hillside would involve a certain amount of unnecessary work and extra expenditure.

The immediate future of the mine depends on the results of the work outlined above.

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FIELD GEOLOGIST
24th Sept. 1932

Mines Department,
HOBART

The above mineral is that known to contain both nickel and cobalt. Among nickeliferous minerals there are two principal varieties (Ni₂Si₂ and Ni₂Si₂SiO₄) which are called. Enclosed herewith are two mineral specimens which are known to conform to the existing results on the test mineral. Calcite, however, possesses an octahedral cleavage and usually reveals curved striations on striking with steel. The test mineral does not show marked cleavage and therefore is identified as garnet. This mineral is in accord with the