

706 TRANS.

GEOLOGICAL REPORT ON MAY QUEEN AREA - NORTH ZEEHAN.INTRODUCTION:

The area is situated in the North Zeehan district about 2½ miles to the north-west of Zeehan townships. Access is gained from the latter by means of a metalled road to within a few chains of the workings.

In 1896 a mineral lease was applied for by May Queen Prospecting Association where prospecting had revealed a limonite body at surface.

Under the leadership of J. O'Neil a shaft sunk through the outcrop to a depth of 10 feet disclosed a small lode containing some galena and pyrite. Little further work was accomplished at this time but in the succeeding years the land was leased to several companies and individuals who prospected to a limited extent by means of trenches and cut the cappings of May Queen and other lodes in the vicinity.

In 1935 a party of four prospectors employed by the Mines Department and led by G. Clarke discovered lodes to the west and north of May Queen lode, and these are now being explored.

TOPOGRAPHY:

The area consists of low rounded hills bounded by the flat open valleys of small creeks running in general westerly directions to Big Ben Creek. The topography is such that the lodes can be prospected at shallow depths (50 to 90 feet) by means of adits. Permanent mining work however, must of necessity be carried out through shafts.

GEOLOGY:

In the vicinity of the workings the country is occupied by a series of black slates and quartzites of Lower Palaeozoic age (Silurian or Cambro-Ordovician). These rocks are covered about the lower limits of the hills and in the valleys by a small thickness of Permo-Carboniferous tillite, in the form of mudstone conglomerates.

THE LODES IN GENERAL.

In the south-east part of Section 9655/M and the north-west portion of 9652/M (both unleased) a series of possibly six, more or less parallel, lode channels are exposed in trenches along the strike for a maximum distance of 14 chains. They trend in a general north-north-east, south-south-west direction and dip to the east at various angles. The probable northern extensions of two or more of these lodes are again exposed 14 chains further north beyond the north boundary of Section 9655/M, by outcrops and surface works. The lodes usually

outcrop as quartz veinlets in, and siliceous impregnations of the slates and quartzites, and only occasionally exhibit sulphide minerals.

Where the slates and quartzites have a shallow covering of tillite the presence of the underlying lodes, in some localities is indicated by limonite at surface.

CLARKE LODGE:

Clarke lode is the only one of the series which has been opened underground and proved to contain a silver-lead ore shoot.

- (1) Mining Works. The mine openings comprise
- (a) An underlay shaft sunk to a depth of 40 feet on the lode.
  - (b) A north-north-east drive for a distance of 17 feet from 31 feet level of underlay shaft, with 6 feet cut across lode at end of drive.
  - (c) An east-south-easterly cross cut from 36 feet level, being driven to intersect next lode to east. Length 36 feet at time of survey.
  - (d) Prospecting adit sited 179 feet south-south-west of underlay shaft and driven on bearing of  $173^{\circ}$  for 20 feet, where Clarke lode was cut. Adit was continued along a cross fracture to the south-south-east for a further 86 feet with the object of intersecting the next lode to the east, but was not completed.
  - (e) Prospecting adit commencing 363 feet north-north-east of underlay shaft and driven on bearing of  $234^{\circ}$  intersected Clarke lode at 20 feet from mouth of adit. A western cross cut from this point over a distance of 88 feet failed to intersect any further lodes.

An easterly cross cut is now in the initial stages of driving to cut lode exposed by surface trenching to the north-east.

(2) The Lode and Ore Shoot.

Clark lode has a general trend from north-north-east to south-south-west and dips to the east varying at different places along the strike from  $37^{\circ}$  to  $60^{\circ}$ . It is cut at intervals by the underground workings and surface trenching over a length of 660 feet.

At outcrop and in the surface works the lode is represented by a silicious capping or as quartz veinlets in a channel up to two and a half feet in width.

In the drive from underlay shaft the lode channel is 9 feet wide and on the hanging wall side consists of a six inch average width vein of finely crystalline

first class galena, containing small admixtures of tetrahedrite. This vein is pitching to the north-north-east at an angle of  $22^{\circ}$  and dips with hanging wall of lode at  $60^{\circ}$  to the east. A sample of clean galena from the vein was assayed by the Government Chemist and Assayer with the following results:-

Silver	116.7 ozs per ton.
Lead	68.1 per cent.

Remainder of lode to footwall is milling ore consisting of narrow bands of galena and sphalerite in a gangue of quartz and siderite veinlets. A sample of the milling ore taken across a width of 6 feet 6 inches when assayed showed a result of 45.9 ozs. of silver per ton and 8.7 per cent of lead. The shaft and drive have exposed the ore shoot along a length of 23 feet.

Where cut in north adit the lode channel is composed of quartz and siderite veinlets with narrow bands of galena and splashes of pyrite over a width of 5 feet. The assay result of a sample of picked galena from the lode in north adit showed a content of 117.9 ozs of silver per ton and 51.2 per cent of lead.

A lode channel which may represent the northern continuation of Clarke lode is exposed in trenches and open cut to the north east section 9655/M. In the latter the strike is  $190^{\circ}$  and it dips to the east at  $45^{\circ}$ . It consists of quartz veinlets in slate over a width of 5 feet and contains splashes of galena and chalcopryite. This could readily be explored for ore shoots from open cut by way of an adit, giving approximately 90 feet of backs.

#### CONCLUSION:

It is shown that up to six lode channels are located at surface and that one of these, Clarke lode, has been exposed in places along a length of 660 feet and in shaft to a depth of 40 feet. A shoot of ore is exposed at 31 feet level along a length of 23 feet. The probable extension of this ore shoot has also been cut in north prospecting adit. The intervening portion of 290 feet in length has not been tested, but could be proved by driving on the lode from north adit. South of underlay shaft the shoot of ore has not been proved.

Crosscuts from shaft and north adit are now being driven with the object of intersecting and testing the character of lodes further east.

Eventually it will be necessary to sink a vertical shaft to test the lode at depth and if proved satisfactory to act as a main outlet for the ore.

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