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DEPARTMENT OF SUPPLY AND SHIPPING

MINERAL RESOURCES SURVEY

- GEOLOGICAL REPORT ON THE TALLANDON ANTIMONY MINE -

Report No. 1943/59.

TABLE OF CONTENTS

Situation	..	Page 1
General Geology	..	" 1
Antimony Veins	..	" 1
Possible Ore Reserves	..	" 2

ACCOMPANYING PLAN

Sketch plan of the Tallandoon Antimony Deposit
1"=40'. Plan No. 960.

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Situation:

The Tallandoon Antimony mine, known locally as Dalgliesh and Murphy's, is 2 miles northwesterly from the Tallandoon store on the main Omeo Highway and just within the northeast boundary of the Parish of Tallandoon, County of Bogong. The road from Tallangatta, the nearest railway station, is south via the main highway for 22 miles, then, after a turn to the right off the main road opposite the Tallandoon store, just past the second crossing of the Mitta Mitta River, the Lockhart's Gap road is followed for a mile or so. A bush track for $1\frac{1}{2}$ miles through paddocks on the left hand side of this road leads to within a few hundred yards of the mine, which is situated fairly high up on a steep slope, about 2,200 feet above sea level. The old Tallandoon gold mine is $\frac{1}{2}$ mile northeast of the antimony deposit, but at a lower elevation.

General Geology:

The geology of the area was mapped by J.P.L. Kenny and described in Bulletin 37 of the Victorian Geological Survey, issued in 1915. At that time this antimony reef had not been discovered, but it is situated just inside the northeast boundary of the map which accompanies this bulletin. The country rock is metamorphosed slate and sandstone of Ordovician age, intruded by a host of granitic and pegmatitic dykes and bosses. The antimony reefs outcrop at the northwestern corner of one such granitic boss. The nature of the granite varies considerably, from a coarse pegmatitic type with large crystals of quartz, feldspar and muscovite and abundant tourmaline, to a fine, even-grained mixture of the same minerals, usually showing parallel or sub-parallel arrangement. The change from coarse to fine textured material may take place suddenly, within a few inches, and the two are obviously just different phases of the same intrusive.

Along the northern edge of the granite a band about 25 feet in width has been subjected to hydrothermal alteration accompanied by mineralisation, and this section contains the antimony reefs. The principal change which has affected the granite is the complete sericitization of the feldspars, particularly near the antimony veins, to a yellowish-green mass with a slightly resinous appearance, which in thin section is seen to be composed of a mass of tiny scales of sericite. Small quartz veins of later origin than the sericitisation also traverse the altered granite, and the stibnite mineralisation has followed or accompanied the quartz. The northern boundary between the altered granite and the metamorphics is obviously faulted, and the movement had a strong horizontal component, for slickenside striations pitch consistently west at an angle of only 5 degrees. The antimony veins occupy fissures more or less parallel to this faulting. The western boundary of the granite is very straight and may also have been faulted. This boundary seems to be parallel to the strike of the schists, so it is likely that this wall of the original intrusion was conformable to the bedding of the metamorphic rocks. This seems to be the case with most of the numerous dykes in the district.

Antimony Veins:

The main antimony deposits consist of two veins, 15 to 25 feet apart, which are exposed on the surface only, by drives, open

cuts and costeans for a horizontal distance of 100 feet. The veins strike 70 - 80° west and dip vertically. The main vein lies along or close to the granite-schist contact. It consists usually of a few inches of high grade stibnite, often in radiating masses of acicular crystals an inch or so in length, associated with quartz and a little pyrite. At the end of the lower drive where a face some 20 feet high was exposed, the mineralisation had widened from the surface downwards to a four-foot width of high grade antimony ore. Lenticularity appears to have been a common feature of the tin and gold veins of the district and this probably represents only a local bulge. In the cut higher up the width is about 3 inches. This vein here abuts against the schist contact which is exposed in the end of the cut and it is here that one gains the impression that faulting has occurred along this contact also.

The more southerly vein is a streak of ore 3 to 8 inches in width, which occurs typically as a mass of fine-grained stibnite mixed with a varying proportion of quartz and pyrite, between two definite quartz walls, which are usually $\frac{1}{2}$ inch thick and which show crystal growth inwards from the walls. The stibnite is "frozen" to the quartz, and coarse elongated crystals are also found in this vein, particularly near the walls. There are usually planes of parting along both walls, between the quartz and the sericitized granite, so that the antimony ore with the double border of quartz can readily be picked out. Other lesser veinlets 1 to 3 inches in width with varying amounts of stibnite were noticed between the two main veins.

Possible Ore Reserves:

The ore is cut off at the western end by the schist contact and at the eastern end the schist seems to swing around across the strike of veins and may cut them off here also. Observation in this respect was limited by the covering of soil and boulders. On surface exposures a length of 100 feet may be assumed for both veins and an average width of 4 inches. If allowance is made for the bulge exposed in the drive on the main reef, it seems that about 10 tons of high grade ore would be obtainable per foot of depth.

The only figures available on the grade of the ore are from the results of flotation tests on a 1 cwt. sample submitted by J.C. Coldham to the Melbourne University Ore Dressing Laboratory. This assayed 19.5 per cent. Sb, 0.05 per cent. As, 2.3 per cent. Fe, 8.2 per cent. S, 0.05 dwt. Au per ton and 0.75 dwts. Ag per ton. At an average of say 20 per cent. Sb the veins would provide 2 tons of antimony metal per vertical foot, worth about £170. on present prices. Margin for increasing this figure lies in adopting a greater average width or a higher grade for the ore, but it could not amount to more than double the above at the very maximum unless the bulge in the ore at the western end of the main drive should develop exceptionally well upon further exploration. About 200 feet of adit would develop 100 feet of backs below the level of the drive on the main lode. This drive is 60 feet below the highest point on the outcrop, where the south vein runs into the schist contact.

Detailed geological work in the vicinity of the deposit would serve a useful purpose as it is possible that the veins may be faulted off at the western end, and mapping of the boundaries of the intrusive should make it possible to decide if this has occurred and if so, in which direction the faulting has taken place. It should also help to determine the behaviour of the veins at the eastern end.

N.H. Fisher
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13/10/43.

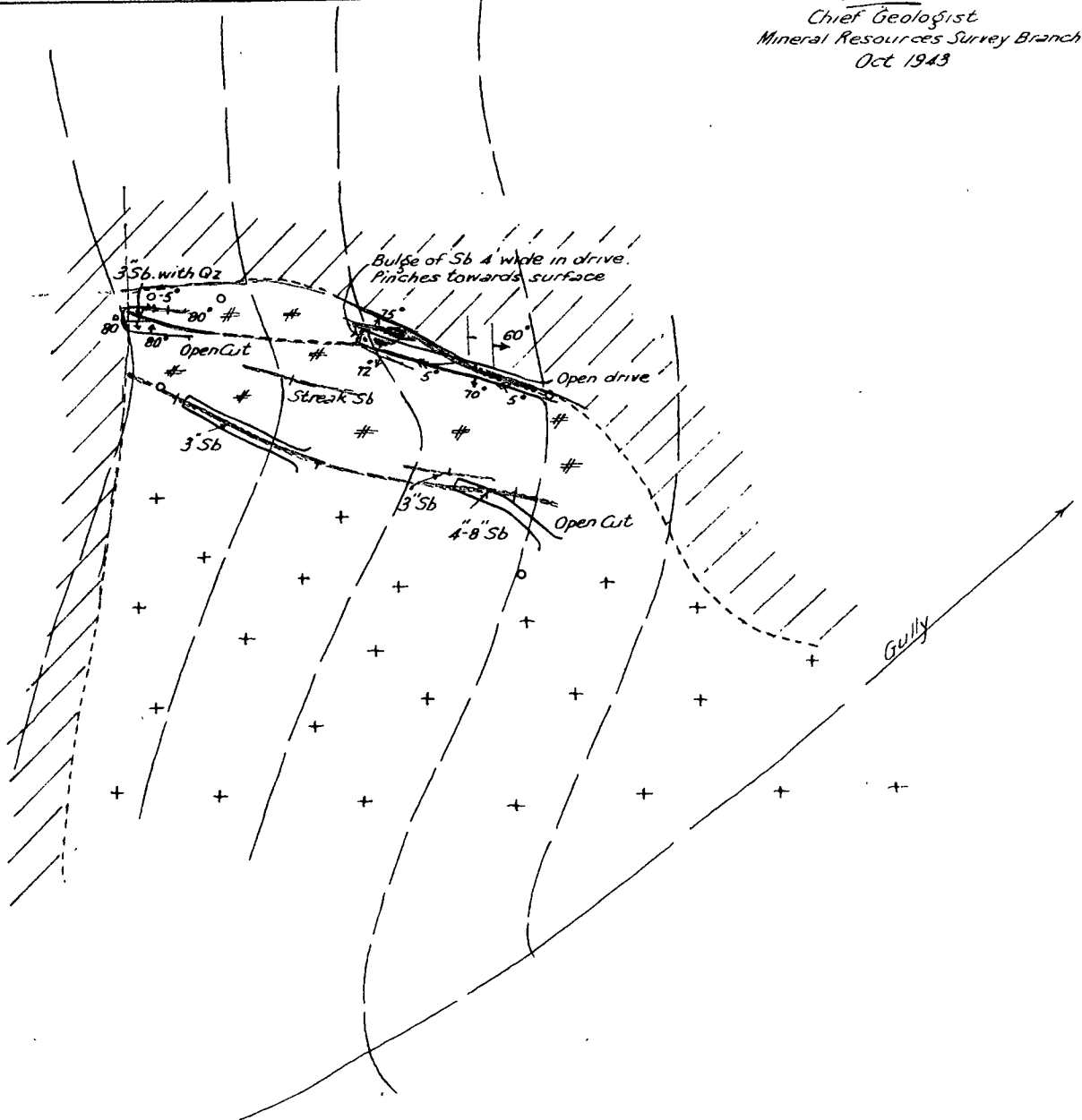
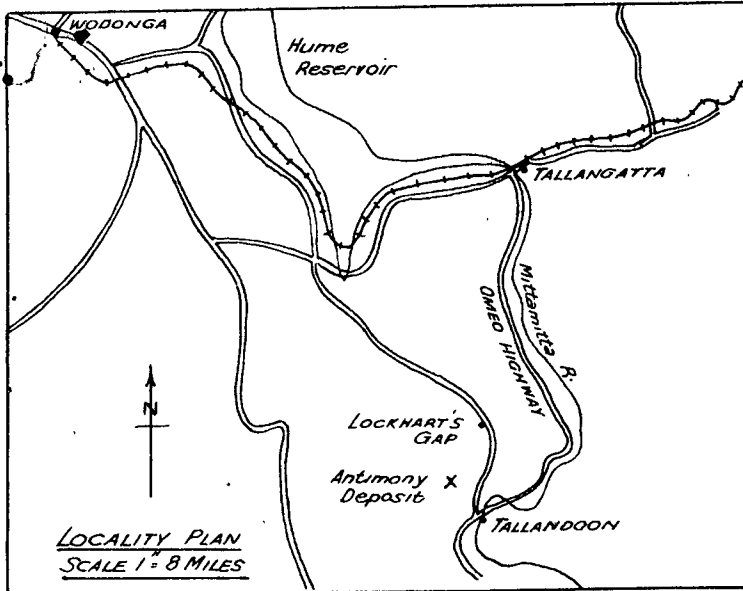
SKETCH PLAN TALLANDOON ANTIMONY DEPOSIT

PARISH OF TALLANDOON
COUNTY OF BOGONG
VICTORIA.

Scale 1" = 40'



M.H. Fisher
Chief Geologist
Mineral Resources Survey Branch
Oct 1943



Reference

Muscovite granite with pegmatitic phases

Sericitised & mineralised granite

Metamorphics - schist etc.

Vein of Antimony ore

Fault with direction of pitch of slickensiding

Contours at 20' intervals