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GEOLOGICAL REPORT ON THE SOUTHERN EXTENSION OF THE RAZORBACK TIN LODE, TASMANIA.

P. O'Shea - 11th May, 1971

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GIPPSLAND MINERALS N.L. DATE: 11th May, 1971.

MEMORANDUM

TO: Mr. C. P. Barnes,
CHIEF GEOLOGIST.

MICROFILMED

FROM: P. J. O'SHEA

SUBJECT: RAZORBACK TIN MINE, DUNDAS, TASMANIA

GEOLOGICAL REPORT ON THE SOUTHERN EXTENSION OF THE RAZORBACK TIN LODE

Geological mapping on the scale of 50 ft. to 1 inch was carried out to the south of the open-cut above the mill, at the Razorback tin mine. Mapping was carried out in order to delineate any southern extension to the Razorback lode. The area mapped is contained in one 20 acre lease ($\frac{45m}{39}$), and one 5 acre lease ($\frac{38m}{50}$), at present held under option by Gippsland Minerals N.L.

In addition to mapping, two costeans have been put in across the chert zone, and sampling in these costeans has been carried out across 5 feet intervals.

Topography

The area is rugged, with dense bush, and has a high annual rainfall averaging 100 inches. A north-west trending ridge is the dominant topographical feature in the area mapped; to the west of this ridge is a valley, followed by the main eastern slope of Mt. Razorback, and to the east of the ridge the ground dips away to the south-east (see geological plan).

Geological mapping was facilitated by grid lines cut through the bush by the Bureau of Mineral Resources; outcrop is very poor, and solid rock is often covered by up to 15 ft. of colluvium.

The area is drained by a stream running in the valley to the west of the ridge, which flows south-east into the Dundas Rivulet.

General Geology

The Razorback lode is a fissure-replacement lode occupying a north-west trending fault zone between greywacke-conglomerate or Hodge Slates to the west and serpentine to the east. In the area mapped, only Hodge Slates are found to the west of the fault, with limonitic chert and serpentine to the east; the fault in this area is vertical (Blissett & Gulline, 1961).

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Oxidation is widespread in the area, with 'false gossans' commonly capping barren chert and serpentine. In addition, recent colluvium covering much of the east slope of the ridge has been oxidised, and in places the result is a hard ironstone breccia; an outcrop of this breccia can be seen on the track just below the mill.

Stratigraphy

The Hodge Slates were laid down during middle Cambrian times, and belong to the Dundas Group. Pyroxenite was intruded into the Dundas Group sediments, probably during the upper Cambrian, and was later completely serpentinised in the Razorback area. During the Devonian Tabberabberan orogeny, both the Hodge Slates and the serpentine were strongly folded, forming part of the north-east limb of the Zeehan syncline. The orogeny was followed by N.N.W. trending faults (e.g. the Razorback fault), which were later mineralised.

Hodge Slates

The term is a misnomer, as the sediments assigned to this formation are in fact shales, laminated siltstones and massive siltstones. The sediments are grey to dark grey-black in colour and have been cleaved, it often being difficult to differentiate between cleavage and bedding.

The beds exhibit a regional N.N.W. strike and westerly dip of between 60° and 80°. No mineralization was noted in this formation in the area mapped.

Chert Zone

On the east side of the Razorback fault in the area mapped, a zone of chert and ferruginous talcose serpentine occurs between the Hodge Slates and the serpentine proper. This zone strikes N.N.W., dips east at between 75° and vertical, and exhibits an average thickness of 150 feet.

Chert can only be traced in this zone south of the main open-cut, and represents the southern expression of the Razorback lode which is only fully developed north of the main open-cut.

The zone consists of pale grey-white chert, often with quartz veining at outcrop, with irregular bands of soft ferruginous talcose

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serpentine.
This ferruginous talcose serpentine has been formed due to the alteration of the serpentine proper by hydrothermal fluids, and is frequently traversed by slickensides.

The chert outcrops along strike as a series of isolated knolls, and is criss-crossed by irregular ⅛" to 2" thick gossan veins at some outcrops.

The chert is hard, flinty when only moderately weathered, but exhibits a spongy texture when completely weathered.

Serpentine

Green serpentine outcrops on the track between the main open-cut and the old battery site. The serpentine-chert zone contact is a rather indefinite boundary, since the differentiation between altered and unaltered serpentine is difficult to establish at outcrop. The main difference at outcrop is in the oxidised gossanous capping; in the serpentine proper, this gossan capping is generally deep red-brown, whereas in the chert zone the oxidised capping is generally brown-yellow in colour.

Mineralization

In the area mapped, five adits have been found which were driven across the strike of the geological formations in order to investigate the southern extension of the Razorback lode. Four of these adits have their portals on the east side of the ridge, and one on the west; according to Mr. J. Hodge, another adit was driven from the west side of the ridge, however, this adit was not located during the present survey.

Adit No. 1 is dammed up and was not inspected, while a rock-fall at the portal precluded any inspection of Adit No. 4.
Descriptions of these adits by earlier parties as quoted in Blissett & Gulline (1961), are given below:

Adit No. 1

"According to Thomas and Henderson (1943) the adit is 136 feet long and passes through talcose serpentine and then pistomesite bordering a gossan zone 40 feet wide. The fault is vertical with conglomerate to the west".

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Adit No. 4

"This adit was innaccessible in 1943. Reid (1925) states that it is 115 feet long. The first 56 feet are in massive serpentine, with decomposed unpayable lode material from that point to the end".

Adit No. 2

"This adit is 23 feet long from the portal to the face, and has been cut in soft oxidised talcose serpentine. Lineations in the serpentine strike N.N.W. at 335° and dip east at 55° (8 feet in from the portal). Chip sampling at five feet intervals has been carried out across the serpentine in this adit."

Adit No. 3

"This adit is partly blocked by a fall near the portal, but is still accessible; it is 175 feet long with a north drive at the end blocked by a fall. A rise at 126 feet in from the portal connects up with the surface and according to Blissett & Gulline (1961), Reid (1925) records that it reached the surface and that rich ore occurred from outcrop to a depth of 20 feet".

"The adit passes through weathered serpentine, talcose in parts, for the first 83 feet, weathered grey-white chert for the next 30 feet, and then gossanous talcose serpentine for 47 feet before reaching the fault at 170 feet with siltstone to the west. The fault here dips east at 85°.

Bulk samples taken at 5 feet intervals over 35 feet in the gossanous talcose serpentine, by Aberfoyle in 1962, gave a maximum tin assay result of 0.011%."

Adit No. 5

"This adit, put in from the west side of the ridge, is blocked 90 feet in from the portal. A northerly branch, at 75 feet in, is blocked after 40 feet. Black siltstones are passed through for the first 42 feet from the portal, then chert for 40 feet, and finally soft gossanous talcose serpentine."

Main Open-Cut

In the main open-cut, the Razorback fault forms the foot wall of the lode, with Hodge Slates to the west and decomposed serpentine to the east. The lode cannot be defined on lithological grounds at the south end of the open-cut and assay results are the only method of distinguishing lode material from barren rock.

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Five bulk samples taken across the south end of the open-cut by Aberfoyle in 1962, varied in tin content between 0.18% and 2.39%; it is not known over what width these samples were taken. The south end of the open cut has been re-sampled during the present survey.

Trenches

Various trenches have been cut across the chert zone south of the main open-cut. These are all overgrown at present; however, if sampling carried out south of the open-cut proves encouraging, these trenches should be cleaned out and re-sampled. The trenches are all cut in weathered chert or gossanous talcose serpentine.

Dozer Cuts

Two dozer cuts have recently been completed across the chert zone south of the main open-cut (see geological plan for positions). In dozer cut No. 1, Hodge Slates to the west of the fault are exposed, and to the east decomposed serpentine, gossanous in patches, is exposed.

Dozer cut No. 2 exposes Hodge Slates to the west of the fault, and decomposed gossanous chert with occasional manganiferous-rich segregations to the east.

Chip sampling at 5 feet intervals has been carried out in both cuts, and the samples are being assayed for tin.

Conclusions

Mineralization to the south of the main open-cut is patchy, and represented by a zone of chert and talcose serpentine which carry irregular developments of gossan.

Results of chip sampling carried out in two dozer-cuts and Adit No. 2 will indicate whether any further development is warranted in this section of the lode.

If results are encouraging, the surface trenches should be cleaned out and re-sampled, also adit No. 4 could be cleaned and sampled.

P. J. O'SHEA
GEOLOGIST.

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ASSAY RESULTS FROM RAZORBACK MINE, ZEEHAN, TASMANIA

(P. O'S: Z363 - Z411)

	Sn		Sn
Z363	.01	Z388	.02
Z364	.01	Z389	.02
Z365	.02	Z390	.02
Z366	2.30	Z391	.02
Z367	.08	Z392	.02
Z368	.02	Z3931	.02
Z369	.08	Z394	.02
Z370	.05	Z395	.02
Z371	.03	Z396	.03
Z372	.08	Z397	.03
Z373	.29	Z398	.03
Z374	.06	Z399	.04
Z375	.02	Z400	.04
Z376	.01	Z401	.07
Z377	.01	Z402	.04
Z378	.09	Z403	.03
Z379	.03	Z404	.04
Z380	.02	Z405	.03
Z381	.05	Z406	.03
Z382	.04	Z407	.05
Z383	.02	Z408	.06
Z384	.01	Z409	.04
Z385	.02	Z410	.02
Z386	.03	Z411	.02
Z387	.03		

Maps in envelope

1. Razorback showing chip sample locations
2. Razorback tin mine.

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DOZER CUT NO. 1

DOZER CUT NO. 2

5 cm

RAZORBACK

PLAN SHOWING

CHIP SAMPLE LOCALITIES

(SCALE 50'-1")

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5 cm

GIPPSLAND MINERALS N.L.

RAZORBACK TIN MINE, DUNDAS, TASMANIA

DRAWN	P.J. O'SHEA	10-5-71
TRACED		
CHECKED		

SCALE 50'= 1"

LEGEND

- Ferruginous cemented breccio-conglomerate.
- Whitish & green-grey chert, with bands of fracturing & silicification.
- Grey to black shales and siltstones, often with slaty cleavage.
- Green serpentine, weathering cream or grey.
- Dip and strike of major incision.
- Approximate geological boundary.
- Track
- Trench
- Drill
- Rise
- Fault
- Lease boundary
- 50ft contours, taken from Bligh & Galliva, 1968.
- Mullock heaps.

BULK SAMPLE DUMPS

MAGNETIC NORTH

RECENT

1050

1200'

1400'

1600'

1800'

2000'

2200'

2400'

2600'

-750'