RIO TINTO AUSTRALIAN EXPLORATION PTY. LIMITED

MELBOURNE, AUSTRALIA

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REPORT ON INVESTIGATION OF GROUND MAGNETIC ANOMALY GRAND PRIZE AREA, WESTERN TASMANIA

by

F.G. Hamilton

FILE REFERENCE:—

MAP REFERENCE:—

DATE:— 21/4/60

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REPORT ON INVESTIGATION OF GROUND MAGNETIC ANOMALY GRAND PRIZE AREA, WESTERN TASMANIA

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C O N T E N T S

P L A N S

CONCLUSIONS AND RECOMMENDATIONS

The anomaly, as given verbally by the B.M.R., extends over a distance of 1300 feet, open both ends and is of the order of 5,000 gammas.

It occurs in our S.P.L. between the Grand Prize and Razorback Tin Mines but does not agree with them in strike as it follows the contact of the bedded rocks and the serpentine for the most part, but in the south it is in the Razorback-type conglomerates 200 feet east of the contact. Along the contact of the bedded rocks and the serpentine there is a zone of silicified and magnetite-bearing rocks. This zone is not a gossanous outcrop like that exposed at either the Razorback or Grand Prize Mines, but the presence of magnetite-rich zones in the serpentine could be an indication of a nickeliferous deposit worthy of further testing.

The B.M.R. geophysical grid does not cover a sufficient area as the anomaly is continuing both north and south of the surveyed grid lines.

It is recommended that the B.M.R. grid be extended both north and south, only in the anomalous areas, but that all lines in the anomalous area be tested by magnetometer. This work is necessary to pinpoint accurately the anomaly before costeaning or pitting is commenced and before representative sampling can be carried out.

INTRODUCTION

This report covers an investigation and a detailed geological mapping of only the area in the immediate vicinity of the magnetic anomaly and does not take into account any regional structures. In this work I was assisted by D. King both in the field and in the drafting of plans.

LOCALITY

The anomaly occurs in our S.P.L. half a mile south of the Grand Prize Tin Mine and one mile north of the Razorback Tin Mine at Dundas in West Tasmania. Access is gained from the road to the Grand Prize Mine. The country is hilly and covered by dense timber.

GEOLOGY

A detailed geological plan (Scale 1" to 100', No. T.667) showing all visible outcrop has been prepared. Also one (Scale 1" to 20 chns., No. T.668) showing the position of the anomaly in relationship to the Grand Prize and Razorback Tin Mines and the ground held in that locality.

The anomaly occurs in Cambrian rocks and in the north it follows the contact of the bedded sequence (Dundas Group) and the serpentine for a distance of 800 feet. For the remaining 500 feet to the south it is in Razorback-type conglomerates. At the southern limit of the geophysical grid the anomaly is 200 feet east of the contact.

Along the contact of the bedded rocks and the serpentine there is a zone of slightly siliceous and ferruginous rocks. In places these are heavily mineralized with magnetite. This mineralized zone is not a true gossan like that found at the Razorback and Grand Prize Tin Mines.

Although the anomaly occurs on line, between the Grand Prize and Razorback Tin Mines, which are only 1½ miles apart, it does not conform with them in strike, but appears, if extended in a north westerly direction, to coincide with a gossan outcrop on the road to the Grand Prize. However this could not be confirmed by the mapping and more geophysical work in this area would be helpful.

At a co-ordinate position of 1340S and 100W (See Plan T.667) in a creek bed there is an exposure of serpentine pug which is probably the surface expression of a strong fault which may continue along the contact.

Along the margin of the serpentine there are several exposures of ferruginous capping, no doubt derived by the leaching of the magnetite from the serpentine.

In West Tasmania the presence of magnetite-rich zones in the serpentine could be an indication of a nickeliferous deposit worthy of further testing.

GEOPHYSICS

Information supplied by the B.M.R. consisted of only two end points of the anomaly which is stated to extend in a straight line between them. These points are at co-ordinate positions of 1400S on the base line and 2400S, 850E. Results over the intervening ground are unknown. The geophysical work is incomplete in that the anomaly is continuing both north and south beyond the present grid. More geophysical work is required in the anomalous areas. Grid lines 1000S and 1200S have already been extended to the west of the main base line in order to facilitate mapping but they have not been tested by the magnetometer.

In the anomalous area to the south, grid lines are being cut at 2600S and 2800S.

I am informed that the B.M.R. found no comparable ground magnetic anomalies over the Razorback and Grand Prize Tin Mines.

SAMPLING

(a) Geochemical

Field dithizone tests, although showing an intensity of mineralization over a zone parallel to the anomaly, do not conform exactly with it but fall to the west on the down hill side.

(b) Chip Sampling

At the present time it is impossible to obtain representative samples of the siliceous and ferruginous zone because of the limited exposures and the dense scrub and timber. The geophysical work should be followed by either costeaning or pitting, thus enabling reliable sampling to be done.

Five chip samples were taken and the positions of these are shown on Plan No. T.667. Three were taken of the serpentine to be assayed for nickel, one of the serpentine pug and one of the gossan outcrop on the Grand Prize Road. The latter is to be assayed for lead and tin.

RECOMMENDATIONS

In the absence of detailed information from the B.M.R. it is recommended that the anomalous areas and extensions along strike be re-covered by a magnetic survey to pin-point the anomaly peaks which could then be tested by costeaning or pitting with subsequent sampling.

21st April, 1960.

F.G. Hamilton,
Geologist.

Gossan 6'
M568
80
70
40
85
50
45
70
60
70
45
10
track to Grand Prize Mine
50
20
45
800S
TRUE NORTH
GRID
1000S
t20
t20
PRIZE
strata
60
1200S
slate bedded
LIMIT OF GEOPHYSICAL SURVEY
GRAND
M568
M570
Serpentine plug M566
1400S
SURVEY
1600S
laterite
Magnetite rich specimen
B. M. R.
1800S
capping
BASELINE
2000S
Sample M567
2200
70
2400S
200E
400E
600E
800E
LIMIT OF GEOPHYSICAL SURVEY

CAMBRIAN

BEDDED SEQUENCE (DUNDAS G.P.)
inferred
Grewacke Conglomerate
Shaley Slates, Siltstones

SERPENTINE
outcrop
inferred

SILICIFIED & FERRUGINOUS ZONE
Poorly exposed, at contact of bedded rocks and serpentine. Magnetite-rich in places.

IRONSTONE EXPOSURES

GROUND MAGNETIC ANOMALY
of B.M.R. (approx. position)

5 cm

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RIO TINTO AUSTRALIAN EXPLORATION PTY. LIMITED

DETAILED GEOLOGICAL MAP GRAND PRIZE MAGNETIC ANOMALY

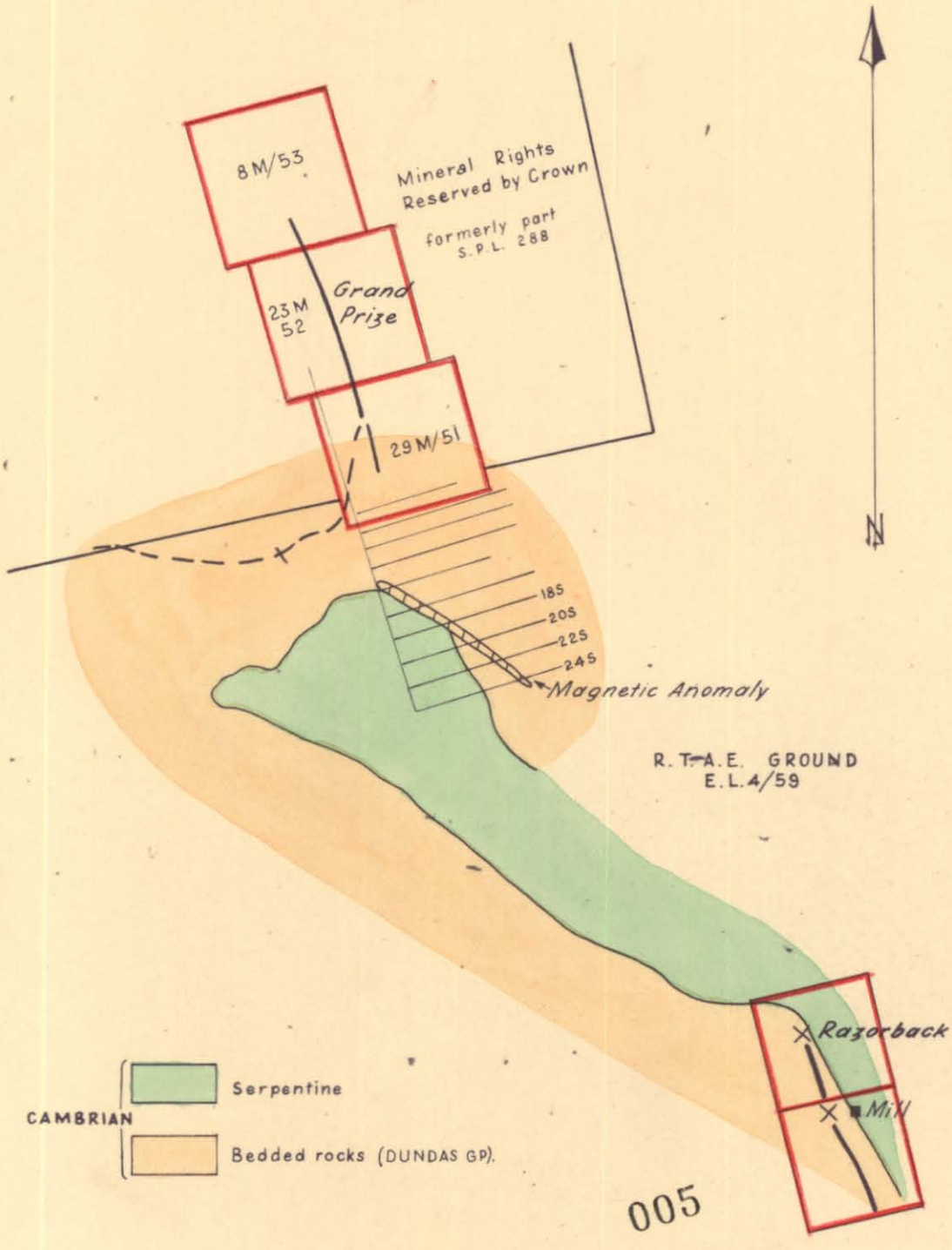
N.W. TASMANIA

SCALE: 100FT. TO 1 INCH

T667

12·4·60

340006



RIO TINTO AUSTRALIAN EXPLORATION PTY. LIMITED

B.M.R. MAGNETIC ANOMALY
GRAND PRIZE AREA

SCALE : 20 CHAINS TO 1 INCH

T668

5 cm

Overlay from photo
Zeehan Run 7/23538

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