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REPORT ON PROSPECTS
AUTHORITY TO PROSPECT NO. 5 AP/AM
MOUNT BISCHOFF WITH RECOMMENDATION
FOR DRILLING
MARCH 1964 by K.R. GLASSON
CONSULTANT

AP/AM No 5 Drilling
Recommendation by
K.R. Glasson March 1964

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INTERIM REPORT ON BISCHOFF EXTENDED

INTRODUCTION

During February, 1964 mapping was carried out on the underground (No. 6 Level) of the Bischoff Extended area, together with extensive regional mapping. The aim of the regional mapping was to re-appraise the stratigraphic and structural interpretation of Hopwood and Anderson (Jan., 1963) and to check the possible potential of mineralisation in the Bischoff Extended area and how it might be tested.

Publications available included C.W. Gudgion's Report on the Giblin Lode (Trans. Min. & Met., 1919) and A. McIntosh Reid's Report (Geological Survey Bulletin of Tasmania, No. 34).

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DISCUSSION ON REGIONAL GEOLOGY

On the regional scale the stratigraphic sequence and structures postulated by Hopwood and Anderson appear to be correct; complete proof of this interpretation would only be established if the type section obtained at Mt. Bischoff were to reappear between Mt. Bischoff and Mt. Magnet. However, mapping in this area merely confirmed that the overwall rocks continued but the lode formation (i.e. dolomite) and the underwall rocks do not crop out. In other words, the rocks dipping down to the west from Mt. Bischoff continue the flat westward plunge, even though minor reversals occur, without the exposure of the dolomite and underwall rocks.

The regional anticlinal nature of the Mt. Bischoff structure can be postulated with a high degree of certainty. The rocks mapped at Mt. Cleveland and termed the Mt. Cleveland Group have been checked on a regional scale and these definitely overlie the Mt. Bischoff Group. This, of course, is a reversal of the sequence as proposed by Reid, but agrees with Solomon's

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interpretation. Equating the present nomenclature with that of Solomon, the Mt. Cleveland Group corresponds to Solomon's Dundas Group and the Mt. Bischoff Group is the equivalent of his Pre-Cambrian rock sequence. In all, there is very close agreement with the regional mapping carried out in February, 1964 and that of Solomon shown on his plan T531, of which a photo copy is available on file.

DISCUSSION ON MT. BISCHOFF EXTENDED

The orebodies mined in the Mt. Bischoff Extended leases comprise the Giblin Ore Shoots. These were described by Gudgion and they comprise vein and fracture filling ore shoots having a strike N18W and dipping on an average of 38° to the west. Mineralisation persisted over a strike length of 2000 feet and was mined to a depth of 1000 feet. The average width of the lode was 24 inches and the grade 1.0% Sn. On Gudgion's longitudinal section there appeared to be two distinct ore shoots each plunging to the north. This section shows development down to the No. 6 intermediate level. Reid stated, however, that the orebodies as a whole pitch to the south as indicated by his section. (Unfortunately this section is not attached to the publication available). Individual shoots however, Reid stated, did pitch to the north and with complex faulting this resulted in rich and poor ore shoots, with the rich ore occurring on the hanging wall side of faults. Reid noted that the ore widened where the lode had steep dips but the tin content remained constant for either steep or flat sections.

Gudgion noted that "The lode persists through country rocks consisting chiefly of slate (altered and normal) with lesser quantities of metamorphosed quartzite, very much intruded by porphyry dykes. No alteration in content or size of the lode can be observed while passing from one rock type to another, except in

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depth where the richer ore appears to be in the zone of the western dyke and porphyry boss."

The fracture pattern containing the mineralisation was plotted on a scale 50 feet = 1 inch on a survey plan of No. 6 Level, at this scale, supplied by the Tasmanian Mines Department.

An examination of this level showed:

(i) Mineralisation was not continuous but was controlled by faulting and jointing;

(ii) The angle of dip of the lode varied considerably along the strike;

(iii) The mineralisation occurred in slate, quartzite and porphyry but was not influenced by the bedding or foliation in these rocks;

(iv) The dolomite (lode horizon) was not exposed on this level.

The proposed potential for the Mt. Bischoff Extended area is that the dolomite lode horizon may occur in the footwall of the existing workings and that this horizon, when intersected by favourable structures (fractures), would provide a large replacement-type deposit equivalent to the Mt. Bischoff main workings. It is likely from the mapping that suitable fractures exist since there appears to be a zone of fractures corresponding to the fracture pattern already mined. However the postulated occurrence of a large replacement-type deposit must take into account several unknown or uncertain features that require discussion.

STRUCTURES OF MT. BISCHOFF EXTENDED

As stated previously, the occurrence of a large scale replacement-type orebody on the Mt. Bischoff Extended area is dependent upon the following assumptions (vide Report Feb., 1963, Hopwood

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and Anderson):

- (1) That the dolomite and ore horizon is continuous;
- (2) That the fault down the western side of the open cut (1500 W) is downthrown to the west (because of the non-occurrence of the ^{dolomite in} valleys surrounding Mt. Bischoff).

Two faults affect the structure of the west Bischoff area:

- (i) A normal fault approximately following the 1500 W co-ordinate (mentioned above) and dipping approximately 70°W.
- (ii) A reverse thrust fault approximately parallel to the 2000 N co-ordinate and dipping approximately 40°S.

The fault (i) has little affect on the potential as, even at depth, it does not cross the lease boundary (2000 W). Fault (ii), because of its low angle of dip, places all levels (in the X-Y-Z section) below the No. 4 level in the underthrust block of this fault. The dip of this fault was determined by constructing structure contours between two widely spaced outcrops of the fault.

Sub-areas and structures determined on the No. 6 level conform to the structures previously obtained on surface mapping (February, 1963).

The persistence of the dolomite is postulated with some reserve since such horizons do tend to be lenticular. However there is no evidence to support a statement that it does not persist. For this reason it is recommended that two diamond drill holes be put in to test the stratigraphic sequence in order that the potential in terms of possible large scale reserves due to replacement might exist. It is proposed that two holes be drilled from the No. 6 addit near the first drive from the cross cut.

The reason for selecting two drill holes is based on the difficulty of selecting drill sites such that the porphyry dykes will not be intersected and hence obscure the stratigraphy. The reason for selecting underground drilling instead of surface drill-

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ling is to obtain intersections in shorter drill holes and avoid intersecting older workings.

It is expected that the drill holes will be collared in black shales and quartzite and enter the dolomite at depths of approximately 400-500 feet and will be terminated beyond the expected mineralisation at the footwall contact of the dolomite and underlying slates.

It is pointed out that the No. 6 level is accessible and has been drained. No additional site preparation should be required and the collar site can be moved so that headroom is available for pulling of rods, etc. if necessary.

RECOMMENDATIONS

1. That two drill holes be sited from the No. 6 addit to test possible mineralisation and the persistence of the dolomite formation. The selected site for the collar, together with azimuth, is shown on the attached plan.

2. If the first hole remains in sediments and does not intersect porphyry then, depending on the stratigraphy and mineralisation intersected, the second hole may be either modified or not drilled.

3. Further drilling or investigation will be dependent upon results obtained from this programme.

CONCLUSIONS

1. The mapping and interpretation as shown on section X-Y-Z warrants the investigation proposed.

2. The opinion expressed by Anderson and Hopwood (1963) that the best position for testing, if the ground were available, was near the Thompson workings, is still valid; but in view of

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the lease position, the testing in the Mt. Bischoff Extended area now assumes a higher priority.



K.R. Glasson

March, 1964

Accompanying Maps

Bischoff Extended Geology Plan No 6 Level

Geological Section - Mt Bischoff

- East West Section. Subparallel to fold axes

ADDENDUM

(EXTRACT FROM LETTER TO A.A.C. MASON
FROM MR. K. R. GLASSON)

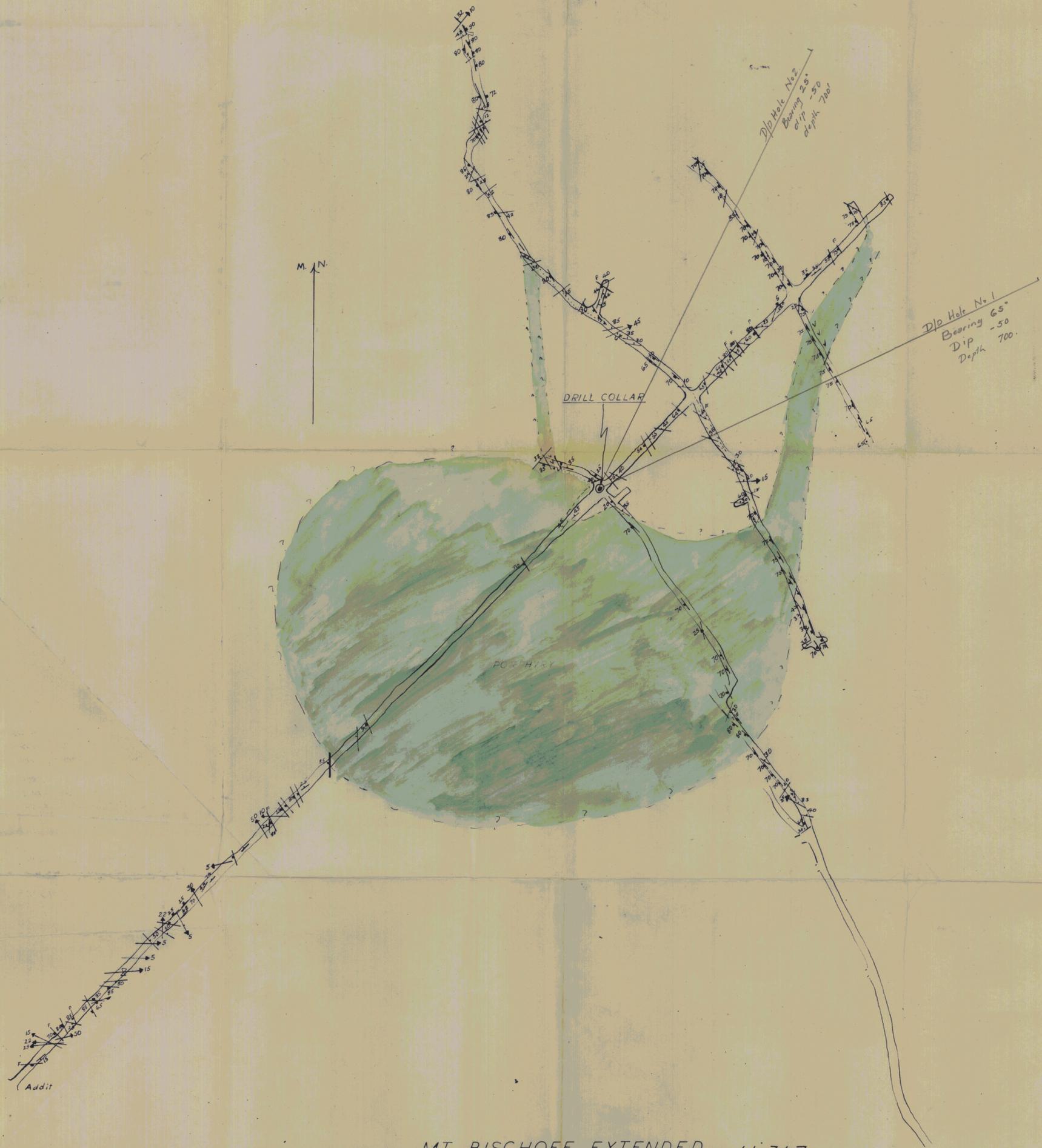
"Two holes have been recommended but unless the porphyry spreads or changes the position as indicated on proposed drill section a good intersection on the dolomite is postulated. I foresee hole No.1 should suffice to prove the stratigraphy.

Details of the proposed drill holes are on the plans in pencil but are not referred to in the report. They are as follows:-

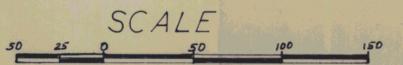
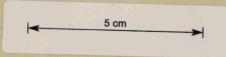
Hole No.1, Bearing 65° , dip 50° , Depth 700
Hole No.2, Bearing 25° , dip 50° , Depth 700

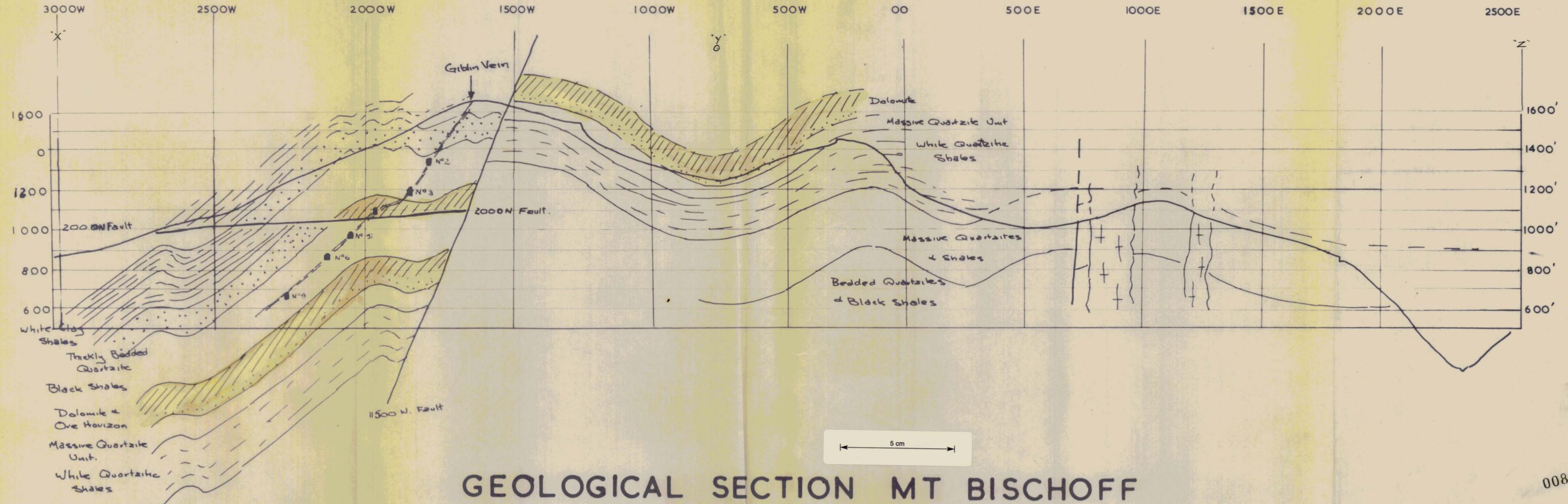
The collar can be moved to adjust a good pulling position for rods in the raise."

K. R. G.



MT. BISCHOFF EXTENDED 64-367
 GEOLOGY PLAN No. 6. LEVEL





GEOLOGICAL SECTION MT BISCHOFF

EAST-WEST SECTION SUBPARALLEL TO FOLD AXES

SCALE 200 FEET TO ONE INCH