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BEACONSFIELD GOLD PROSPECT

REPORT

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1972

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BEACONSFIELD GOLD PROSPECT

REPORT

TITLE

By agreement dated 21st April 1969 between Power Corporation Australia Ltd., the Company has the right to acquire Exploration Licence No. 7/69 of 5,300 acres covering the Beaconsfield Goldfield.

The licence covers metallic minerals and is granted on a six month basis depending on work performed. It was recently renewed for a further six months.

LOCATION AND ACCESS

The mine is situated within the town of Beaconsfield on the West Tamar Highway, 26 miles north of Launceston, Tasmania.

The port facilities at Beauty Point are three road miles north of the deposit.

HISTORY

Gold was first discovered in 1877, leading to the opening of the Tasmania Gold Mine which was worked almost continuously until 1914. Total production was 854,600 ozs of gold from 1,067,556 tons of ore, giving a recovered grade of 16.01 dwt. per ton.

The exact reasons for the closing down of the mine are uncertain as the workings were still in ore of economic grade. However, it is considered that the combination of the three following factors were the cause.

1. Ownership changed from local to London based. Overseas control resulted in loss of efficiency in management with much pilfering of gold by workers.

2. This was one of the first mines in Australia to experience major strike action. It was virtually an Australian "test case" by the unions and apparently there was much hostility by the miners.

3. Water inflowed at rates up to 2½ million gallons per day. While pumps were adequate, it was necessarily expensive to keep the mine dry. As the mine filled up during stoppages, it tood much time to pump it out after each strike.

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GEOLOGY

The crest of the Cabbage Tree-Blue Tier ridge immediately west of the Beaconsfield township is composed of rocks of the Cabbage Tree Conglomerate. These beds are conformably overlain by members of the Caroline Creek Sandstone and Gordon Limestone. Rocks are of Ordovician age, trending N35°W and dip 40° - 60°N.E. (although local internal folding is present).

OREBODY

The Tasmania reef is a fissue reef with the quartz emplaced in a pre-existent fault zone (fault movement 100' north side east). The reef has been displaced by two major fault zones and numerous smaller movements. The main Tasmania reef is that portion of the reef lying east of the "main cross course" (the easternmost fault); this is the richest and deeply mined section of the reef which has been intersected by the Mine's Department hole B4.

The main Tasmania reef transgresses almost all members of the Caroline Creek Sandstone and lies entirely within that succession. It has an overall length of about 1,300' strikes 050° (average) and dips 50° - 60° to S.E. Stoping outlines indicate an overall plunge of the ore body to the N.E. at 55° with individual richer "shoots" within the ore body also trending N.E. but with shallower plunges varying from 35° to 50°.

MINERALISATION

The reef has been worked over a length of 1,300 ft. and to a depth of 1,500 ft. Width varies from a few inches to 25 ft. with stope widths averaging 7ft. to 8ft. Above the 400 ft. level it is free milling, but below this the lode consists of quartz with pyrite, chalcopyrite, galena, sphalerite and other sulphides carrying gold and some silver.

The gold grades are reported as consistent laterally but varying with depth. Above the 400' level it was rich, the recovered grade being nearly 25 dwt. per ton, while at the base of the workings it was 9 to 13 dwts. per ton over a width of 7ft. and a strike length of 940 ft. Diamond drill intersections by the Tasmanian Department of Mines of 8.5 to 17 ft. and grades of 26.8 to 60.2 dwt. per ton over mineable widths persists below the base of the old workings. Significant amounts of copper and some silver are also present.

TABLE I

True Reef Width (Feet)	Gold (Dwts./ton)	Silver (Dwts./ton)	Copper %
12.5	60.2	4.7	1.06
17.0	42.0	6.6	0.91
8.5	26.8	11.0	1.10

EXPLORATION

(A) Tasmanian Department of Mines

Diamond drill hole No. B4 was collared south east of the old workings (see plan), with the target being the lode at the 2,000 ft. level. The hole was severely curved, probably due to lithological effects as the bedding/core angle was narrow. This had the effect of giving the lode intersection higher and further west of the target zone. Two deflection holes were wedged off, giving intersections B4, B4a on the 1,700 ft. lefel and B4b on the 1,725 ft. level, (assays in Table I above).

These intersections were sufficient to warrant further drilling to obtain intersections at greater depths.

(B) Allstate Explorations N.L.

Field work commenced 1st June 1969 with two separate programmes. These were -

(i) To explore the area for possible parallel reefs hidden by alluvium.

(ii) To intersect the lode at 3,000 ft. level with a diamond drill hole.

Results

(i) A Gemco augering programme was carried out in the area surrounding the old mine workings. Anomalies delineated were only associated with dump material and no parallel reefs were indicated.

(ii) Drilling of the deep hole commenced on 16th July 1969 and was terminated on 15th October 1971. Five stages of drilling were involved from the one vertical collar, each section ensuing from the previous one after wedging (see Table II). A maximum drilling depth of 3,530' was achieved in D.D.H.3II and the geological section (indicated by the Mines Department hole B4) was found to be complete. Drilling has failed to intersect the reef.

TABLE II

ALLSTATE DRILLING FROM SINGLE COLLAR BEACONSFIELD					
Depth (Drill Footage)	DDHI	DDH2	DDH3I	DDH3II	DDHIII
1000'			808'	895'	
2000'					2164'
3000'			3042'	3530'	2768'

The adverse geological conditions in the initial stage of the deep hole programme necessitated the drilling of D.D.H.2, D.D.H3I and D.D.H3II from the original hole D.D.HI.

D.D.H3III was terminated in conglomerate at 3,530' and at this stage was thought to have passed the "high side" of the reef to the north. Subsequently, wedging to the south west from the 2,164' level of D.D.H.3II was carried out giving rise to D.D.H3III (see sections) which again failed to intersect the reef above the 2,768' level where the hole was terminated.

DISCUSSION

The projection of the reef (as mapped in the old Mine workings) down to a position vertically below the collar of the Allstate deep hole (see cross section) would intersect D.D.H3II at the 3,215' drilled level (disregarding the Mine's Department hole intersection). At 3,230' in D.D.H3II the veining in the core becomes heavier and at 3,260' to 3,265' the rock is extremely heavily veined and brecciated in places; this is followed by a zone where recovery was only 22% (average over 10' to 3,275')/ This is a possible fault or shear zone and may be continuous with the gold bearing Tasmania Reef. Implications of this are that the reef has either thinned or petered out at this depth.

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A consideration of the Mine's Department intersection would tend to throw doubt on this conclusion. Projection of the reef down through this intersection indicates that the Allstate holes D.D.H3II and 3III have both passed the "high side" of the reef to the north.

It has been suggested that conglomerate intersected at 3,530' in D.D.H3II (see longitudinal section) could be statigraphically similar to the conglomerate horizon mapped in the old mine workings. The implication is that there was 200' vertical displacement of the strate between the mine workings and the Allstate hole and that deeper drilling of D.D.H3II may have intersected the reef on the southern "low side". Evidence at present tends to throw doubts on this suggestion. This conglomerate horizon would be intersected by the Mines Department hole and in fact there is a sequence in the core which is basically a quartzite but has scattered conglomerate pebbles and occasional pebble horizons. This same sequence has been intersected by the Allstate hole in a position which suggests no displacement between the holes. The rock at 3,530' is of a different nature being a solid conglomerate (as opposed to the one described above) and is probably the top of the Cabbage Tree Conglomerate sequence.

If the reef has steepened with depth or has been laterally faulted this would indicate that the Allstate hole has passed the "low side" of the reef to the south.

CONCLUSION

(i) Mine's Department drilling has proved that high grade gold with significant copper and silver mineralisation, over mineable widths, exists below the old workings.

(ii) There are pros and cons for the various hypotheses concerning the position of the Tasmania gold reef with respect to the Allstate Deep hole (see discussion).

(iii) A diamond drill hole collared perhaps half way between the Allstate and Department of Mines holes would be beneficial in determining the nature of the reef at the intersected level and indicating the position of the reef deeper to the north east.

Colin Jones

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COMPANY ALLSTATE EXPLORATIONS N.L.	DATE 18.5.72 FILE
MEMORANDUM TO: DR. W. L. YOUNG FROM COLIN JONES	COPIES TO:
SUBJECT REPORT BY MR. A.J. NALDART "DIAMOND DRILLING ALLSTATE TASMANIA PTY. LTD. - BEACONSFIELD". 30th March, 1972 TO THE DIRECTOR OF MINES, HOBART	

INTRODUCTION

Mr. Noldart has criticised the Beaconsfield Gold Prospect Report and subsequently inferred that Allstate's failure to obtain a gold intersection was due to insufficient drilling, rather than positioning of the hole or absence of the reef at this depth.

This report will paint out the discrepancies in Mr. Noldart's major criticisms and defend the theories proposed in the original Beaconsfield Gold Prospect Report.

DISCUSSION

1. Correlation

The main area of Mr. Noldart's criticism lies in lithological correlations between the Mines Department Hole B4 and Allstate Hole 3II (all accompanying diagram). His report tries to infer that the rock sequence intersected by the mine workings and the Mines Department Hole B4 is essentially a conglomerate (as opposed to basically a quartzite with conglomerate pebbles and horizons), and that this sequence correlates with the solid conglomerate intersected in the last 2 feet of Allstate Hole 3II (ie. at 3,528 ft). However a look at the longitudinal section of Mr. Noldart's original report on the Tasmania Reef (1967) shows this sequence described as "GRIT and conglomerate horizon from old mine plans (date unknown) and DDH B4" which would seem to suggest that small size particles predominate and conglomerate is present to a lesser extent; this description compares favourably with the sequence in the Allstate hole from 3,350 ft to 3,528 ft. (see accompanying diagram).

It would take a large stretch of the imagination to correlate the 1.5 ft of solid conglomerate at 3,528 ft to 3,530 ft in the Allstate hole with any rock type in the Mine's Department hole B4 (especially the conglomerate lenses at 1,752 ft. and 1,774 ft).

Mr. Noldart goes on to infer that the Allstate hole did not go deep enough (ie. that the Allstate hole is "shallower" stratigraphically than the Mines Department hole). This would mean that the Allstate correlations between rock units at higher levels would be wrong and thus an "independent" geologist was commissioned by Mr. Noldart to disprove the existence of a marker horizon between the two drill holes after an inspection of the Mines Department hole core. In fact, this horizon was predicted to the very foot during drilling from consideration of rocks correlated at even higher levels (ie. 2,626 ft). So it would now appear that to prove that the Allstate hole did not go deep enough would require an "independent" geologist to disprove the existence of three marker horizons (indicated in the accompanying diagram), or introduce a fault in the lower sections of the hole (as suggested and discussed in the Beaconsfield Gold Prospect report).

2. Cross Section (Projected)

Other criticisms seem to be directed at information shown projected on the cross section of the reef. These criticisms seem to stem from a lack of understanding of the nature of the section (ie. projections of geological boundaries between the two holes are termed "impossible").

A discrepancy in dip of the ore-body is inferred from the fact that 50^{o} - 60^{o} is quoted in the report and the section shows the reef plotted at approximately 70^{o}. Now 50^{o} - 60^{o} is the figure taken from Mr. Naldart's original report (1967) and indicates the dip of the ore-body as mined. However a plan projection of the reef (see Beaconsfield Gold Prospect report) indicates that although extensive parts of the reef dip at 50^{o} - 60^{o}, there are also areas of local steepening (ie. a dip of approximately 80^{o} is evident in lower levels of the reef). The cross section shows the "average" lines through various levels of the reef projected onto the plane of the section. The fact that this plots at approximately 70^{o} merely indicates that 70^{o} is a realistic figure for the average trend of the reef (projected) in this section. Furthermore a projection of the reef to depth from actual plots of the mine levels would be a more realistic method of predicting the position of the reef at depth than merely constructing lines plunging at 50^{o} - 60^{o} from the surface.

3. General

Further criticism was aimed at my discussion of a possible steepening of the ore-body by ignoring the plotted position of the Mines Department intersection. Just as Mr. Noldart considers that

"It is not possible to disregard any information ....." I similarly consider that it is not possible to disregard any possibility, which in this case happens to be that the plot of the Mines Department intersection is only an approximation to its true position because the hole was surveyed by tropari. (Errors from 0^{o} to 90^{o} in azimuth have been recorded using three separate troparis in the course of the Allstate drilling) any slight errors in tropari readings at shallow sections of the hole may introduce larger erros at depth.

CONCLUSION

1. Correlation between the two holes as indicated in the Beaconsfield Gold Prospect report are considered accurate by all personnel associated with the Allstate drilling.

2. Sufficient depth was attained by Allstate drilling to test the possible ore bearing sequence above the Cabbage Tree Conglomerate.

3. I refer to the Beaconsfield Gold Prospect report for the discussion of theories relating to the position of the Tasmania Gold Reef.

4. Discrepancies in Mr. Noldart's report, and subsequent correlations indicated in this report would be confirmed by an examination of both the Mines Department and Allstate core by anyone who cares to look.

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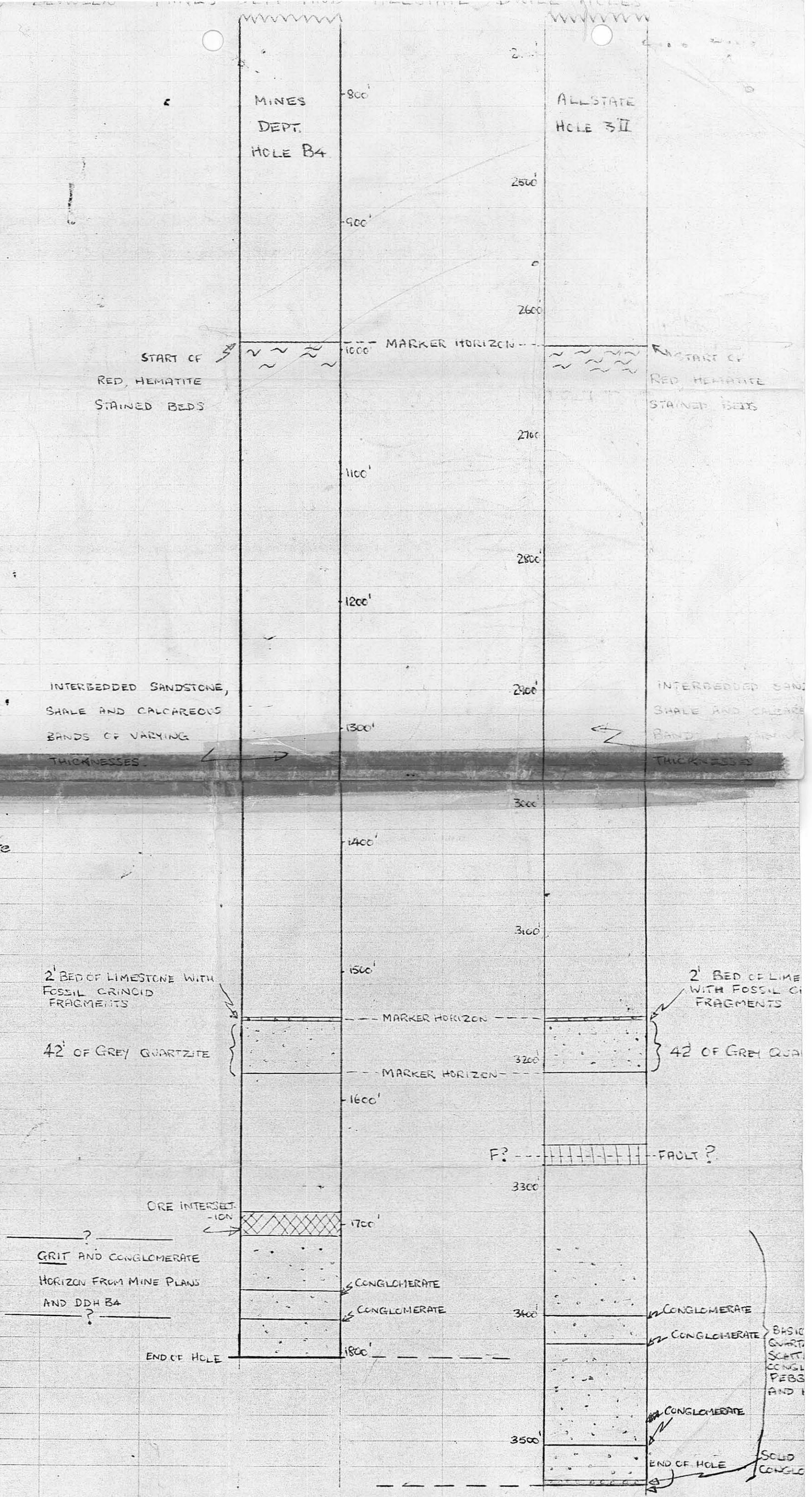
5 cm

Scale 1cm = 1"?



N.B. Down the hole footages are given in this diagram, and may vary slightly from the (relative) true vertical depth,

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BEACONSFIELD GOLD PROSPECT

LONGITUDINAL PROJECTION of TASMANIA GOLD MINE REEF

5 cm

Scale: 1" = 100'

LOOKING NNW

Vertical section { along 067·5° (true.) ⊥ 337·5° (true.)

0' (Level of Main Sharft taken as datum 0'.)

Department of Mines Hole B4

Allstate Hole

500'

1000'

1500'

2000'

2500'

3000'

3500'

LOWER Limestone boundary DDH B4

Very similar section to that recorded by Twelvetrees 1903 on 7th Level

Reef Intersection

Marker

Horizon

D.D.H. 3 (II)

D.D.H. 3 (III)

LEGEND.

Gordon Limestone.

Caroline Creek Sandstone.

Cabbage Tree Conglomerate.

Inferred geological boundary.

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PLAN 1

ALLSTATE EXPLORATIONS N.L.

BEACONSFIELD GOLD PROSPECT

Cross-section of TASMANIA GOLD MINE REEF (projected).

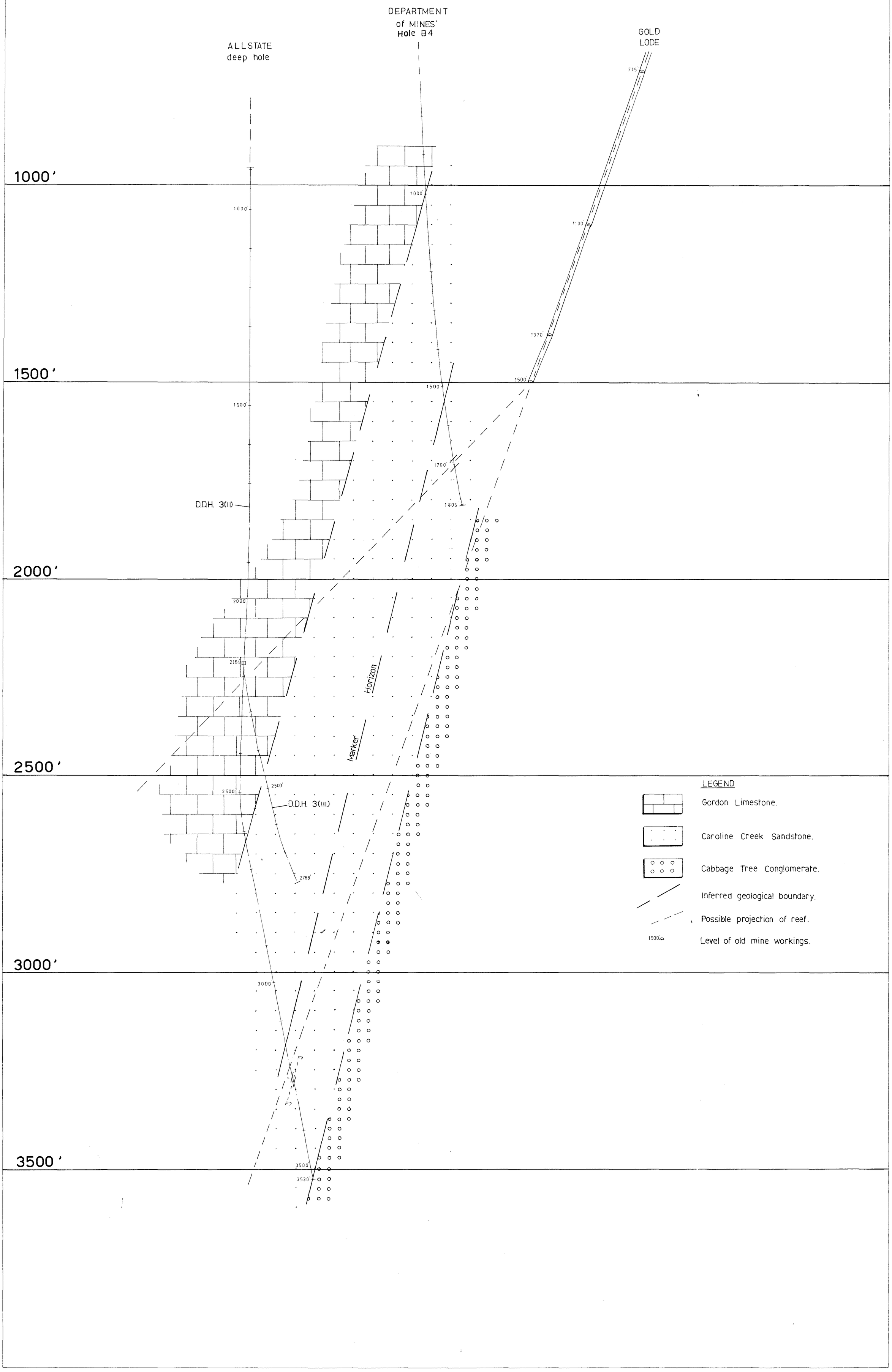
5 cm

Scale: 1" = 100'

LOOKING S.W.

Vertical section { Along 320° (true)
⊥ 050° (true)

500' (Level of Main Shaft taken as datum 0'.)



LEGEND

- Gordon Limestone.
- Caroline Creek Sandstone.
- Cabbage Tree Conglomerate.
- Inferred geological boundary.
- Possible projection of reef.
- 1500' Level of old mine workings.

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PLAN 2

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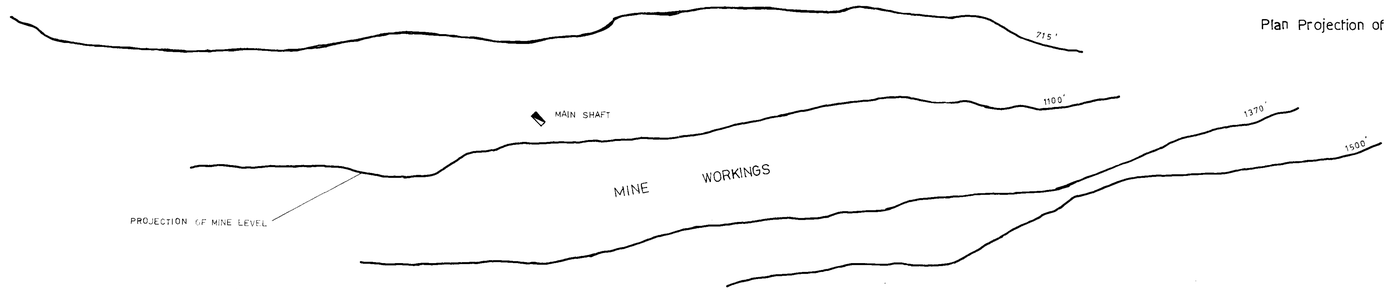
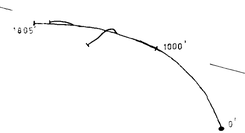
ALLSTATE EXPLORATIONS N.L.

BEACONSFIELD GOLD PROSPECT

Plan Projection of TASMANIA GOLD MINE REEF

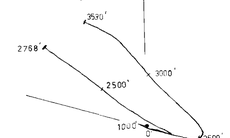




DEPARTMENT OF MINES HOLE B4

LONGITUDINAL SECTION

CROSS SECTION



ALLSTATE DEEP HOLE

TRUE NORTH

Scale: 1" = 100'.

5 cm

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PLAN 3