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## 1. SUMMARY:

E.L. 7/88 of 15 square kilometres surrounding Beaconsfield is held to facilitate:

- (a) Continuing exploration from surface of the depth extensions of the Tasmanian Reef.
- (b) Exploration for other gold deposits in the Beaconsfield area which could be developed to supplement and commercially enhance production from the Tasmanian Reef.

In 1991, dewatering of the Tasmanian Reef via the Hart Shaft was stopped by the development partners at the 160 metre (below surface) level, firstly because of a diminution of interest by some and secondly a lack of funds by others. Since then, the water level has been gradually rising and is presently at the 115 metre level.

It was agreed that in order to justify the substantial capital investment necessary to continue with the dewatering and subsequent underground exploration and development program, a higher level of confidence was required in the resource potential of the Tasmania Reef for at least 200 metres below the lowest former mine workings (ie) between 450-650 metres below surface.

This enhanced level of confidence was to be acquired by way of core drilling programs from surface.

An initial drilling program of four cored holes was designed and commenced in July 93. The program is estimated to cost \$400,000 and take 7-8 months to complete.

The first of these holes, B18, has been completed at 699 metres but assay results are not yet available. The second hole B19 was wedged off B18 and is at 250 metres.

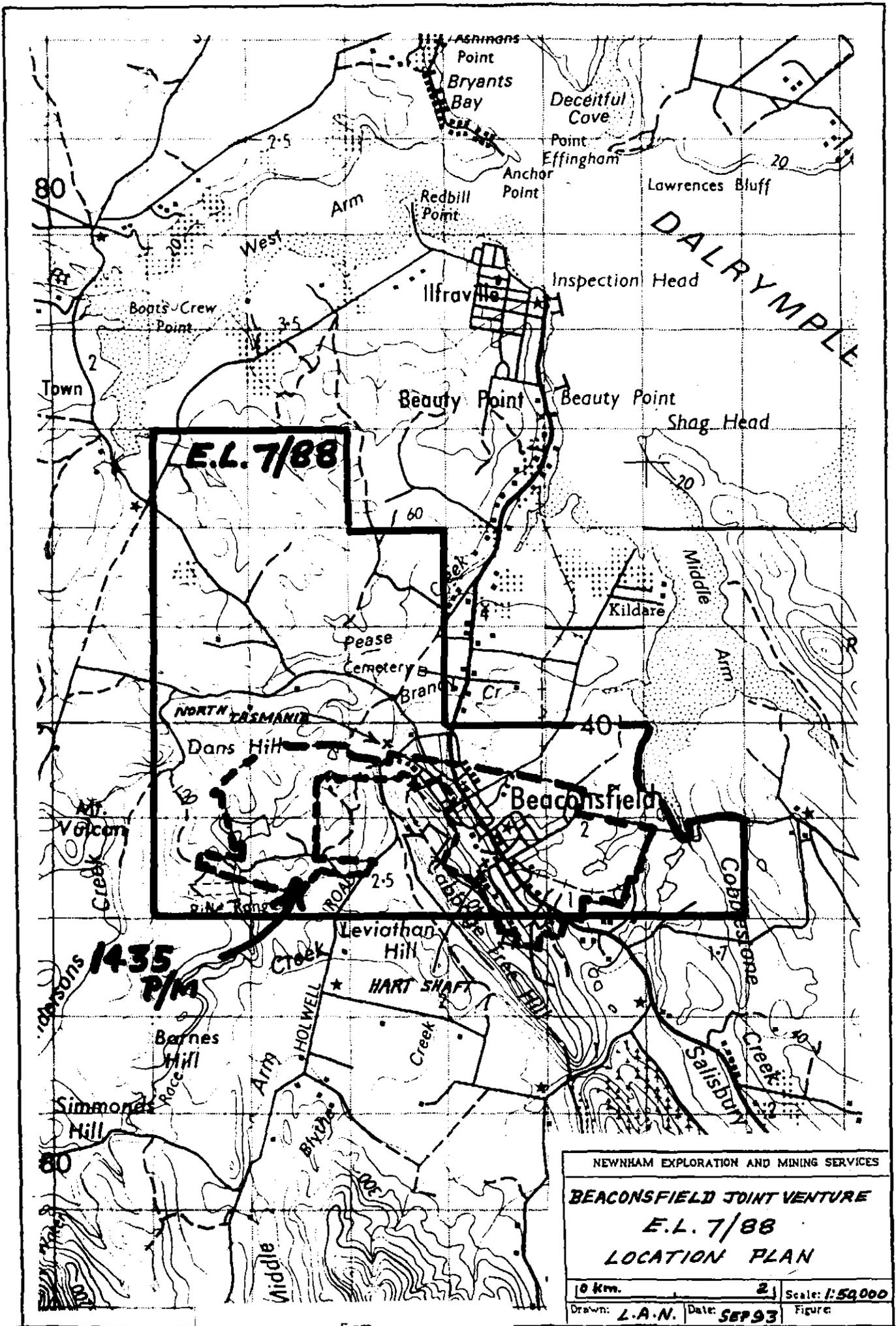
It was further decided that during the course of this drilling program, a thorough review would be made of previous exploration within the E.L. to determine the direction of future exploration designed to locate additional gold deposits which could be mined in conjunction with development of the Tasmania Reef so as to enhance the cash flow situation in the early development years.

Initial work on this review suggests three areas present exploration opportunities for the discovery of additional resources.

In order of priority:

- (a) North Tasmania Reef below 120m. level.
- (b) Transition Beds to the north of the North Tasmania Mine.
- (c) Transition Beds between the Tasmania and North Tasmania Reefs.

Evaluation of the first of these areas should be by way of core drilling to moderate depths. Evaluation of the latter two areas should be by way of fences of air core or reverse circulation drilling using a face sampling hammer.



NEWNHAM EXPLORATION AND MINING SERVICES

**BEACONSFIELD JOINT VENTURE**

**E.L. 7/88**

**LOCATION PLAN**

10 Km. 2 Scale: 1:50,000

Drawn: L.A.N. Date: SEP 93 Figure:

2. **TENURE:**

E.L. 7/88 was granted on 14 October 1988 in respect to a 31 square kilometre area around Beaconsfield. It was subsequently reduced to five square kilometres in October 1991, but was amalgamated with E.L.A. 16/91 in 1991 to cover the current 15 square kilometre area.

Within the E.L. are two significant Mining Leases:

- (a) M.L. 1435P/M of 427 hectares held by the Beaconsfield project partners, and which has effect at varying depths below surface.
- (b) M.L. 145M/69 held by the BHP Company Limited for all minerals, but primarily worked in shallow quarries for silica.

E.L. 7/88 was transferred on 18 August 1993 into the joint names of Beaconsfield Gold N.L., Allstate Prospecting Pty. Limited, and Poseidon Gold Limited.

### 3. DRILLING PROGRAM - TASMANIA REEF

The decision has been made to enhance understanding and confidence in the resource potential of the Tasmania Reef below the 450 metre mine level, by way of core drilling from surface.

An initial program of three holes was designed and costed. Details of this program are in the appended report:

*"Proposed Drilling Program, Beaconsfield Gold Mine, Tasmania. Technical Proposal and Cost Estimate Report."*

This program was subsequently modified and expanded to a four hole program, estimated to cost \$400,000 and take seven - eight months to complete. Details are in the appended report:

*"Update Report, Proposed Drilling Program, Beaconsfield Mine."*

Drilling commenced in early July 1993. The first hole B18 (Hole 3 on the plan in the above report) was completed at 699 metres. It intersected a reef structure between 649 - 653 metres together with a footwall stockwork zone. Assays are not yet available.

The second hole B19 was branched out of this first hole at 240 metres and has advanced to 250 metres at the time of writing.

This initial program should be completed early in 1994. An assessment of results should lead to one of three decisions;

- drill additional holes from surface,
- continue with further exploration from underground,
- temporarily suspend all work.

#### 4. NORTH TASMANIA MINE:

Because of the substantial lead time in any underground development of the Tasmania Reef, it was considered commercially desirable to attempt to locate other gold resources in the adjacent area which offered scope for earlier development.

To this end, substantial airborne and surface exploration programs have been conducted over a period of years on E.L. 7/88.

The most attractive target to emerge from this work has been the North Tasmania area, which lies one kilometre north of the Tasmania Reef.

The former North Tasmania mine workings have been redrawn from old plans and their approximate location is presented on the attached Maps 1 and 2.

The North Tasmania is an attractive prospect because it is the one deposit in the area whose geological setting most closely mirrors that of the Tasmania Reef.

Early development of the North Tasmania Reef was effected by way of a vertical and an underlay shaft. The vertical shaft was sunk 150 metres and a number of levels developed along an east-west reef structure which dipped south in Cabbage Tree Conglomerates. It was terminated to the west and east by cross-courses (faults).

On the 120 metre level, the eastern fault was driven on both north and south and the reef continuation was located on the eastern side approximately 60 metres to the South. The reef structure was then driven on in Transition Beds on this eastern side of the fault for approximately 150 metres until stopped by poor ventilation.

Rather poor records suggest that on the 120 metre level, the reef in the Transition Beds was generally thin (<1 metre) and grades were apparently low (<5g/t). Chalcopyrite and pyrite were common.

It was originally planned that ventilation on the 120 metre level would be improved by connecting this drive to the Beacon Shaft workings further east, but this work was never completed.

There is little geological information on the Beacon Mine. However, dump samples taken by Allstate in the early 1970's were gold and arsenic anomalous.

In 1991, Beaconsfield Gold Mines reopened the North Tasmania inclined shaft and several of the upper levels to the 25 metre level. Sampling and mapping in

this section of the mine which lies in the less prospective Cabbage Tree Conglomerates, confirmed the generally erratic and low grade nature of the reef in this area.

In the 1970's, Allstate completed a line of auger holes across the eastern end of the known reef zone. These vertical holes were generally shallow geochemical holes (<20 metres). A gold-arsenic anomaly was defined in two of the holes : RB34, 35, both in Transition Beds.

RB34 was important because the deeper, anomalous section was cored and intersected 1-2 metres of the quartz-carbonate-pyrite veins containing up to 1.15g/t gold and >1,000ppm arsenic.

If the 120 metre level in the North Tasmania Mine is extrapolated back to surface assuming a 60 degree south dip on the reef, it would have passed through the anomalous zones in RB34 and 35. It is therefore concluded that this auger/core drilling successfully defined the eastern section of the North Tasmania Reef near surface.

In 1988, Beaconsfield Gold Mines completed seven angled percussion holes using an open hole hammer, in the North Tasmania area. The holes were designed to test both the eastern extension of the North Tasmania Reef and the Allstate drill hole anomalies.

Hole BC1 was probably drilled on the hangingwall side of the reef. Holes BC3, 4, 5 and 6 probably didn't reach the reef position. The remaining two holes BC2 and BC7 should have intersected the reef approximately 40 metres below surface (ie) about a third of the depth to the 120 metre level.

BC7 intersected 6m 0.25g/t Au from 40-46 metres down hole and BC2 intersected minor gold (0.03g/t) from 30-40 metres.

Arsenic, which is regarded as a very significant geochemical halo element around gold reefs in north-east Tasmania, was not assayed for.

Open hole hammer drilling testing for narrow high grade gold deposits in water bearing sediments is not regarded as an appropriate exploration tool. Further, the justification for testing the North Tasmania Reef between a poor outcrop and the 120 metre mine level where grades and widths are known to be relatively poor, is questionable.

The geological setting of the North Tasmania reef was very similar to that of the Tasmania Reef, including persistence in strike length within the Transition Beds. Whilst the Tasmania Reef was strongly mineralised at surface, there is no reason why the top of any similar reef must also be mineralised at the

present surface. The top could be concealed at depth with only weak or no expression to surface. For example, most of the high grade reefs at Mathinna (Golden Gate) had deeply buried tops with no surface expression.

If the North Tasmania reef is to have scope for relatively shallow commercial mineralisation, then clearly such scope only exists below the 120 metre level.

This scope can most appropriately be tested by several cored holes, testing the reef in the Transition Beds approximately 200 metres below surface (see recommendations below).

5. **OTHER REEF POTENTIAL:**

Based on the premise that the best opportunities for discovering additional reefs at Beaconsfield is to explore for reefs with similar geology to the Tasmania Reef, (ie) transverse fault structures in the Transition Beds, then potential remains in two areas;

- (a) the Transition Beds between the Tasmania Reef and the North Tasmania Reef, west of the Main Slide (main cross-course) and north of the Olive Branch Mine (ie) in the general reservoir - hospital area,
- (b) the Transition Beds north of the North Tasmania Mine, and east of the main cross-course in that mine.

There is a possible three kilometres of strike length of favourable host rocks in that area.

## 6. RECOMMENDATIONS FOR FUTURE EXPLORATION:

Future exploration should be directed to four areas in the following prioritised sequence;

- 6.1 resource confirmation of Tasmania Reef below 1600 R.L.,
- 6.2 core drill testing of North Tasmania Reef approximately 200 metres beneath surface,
- 6.3 testing for reef structures parallel to North Tasmania Reef in Transition Beds to the north of the North Tasmania Mine,
- 6.4 testing for reef structures parallel to and between the North Tasmania Mine and Tasmania Reef, to the west of the main cross-course and north of the Olive Branch Mine.

### 6.1 Tasmania Reef:

Existing data on the Tasmania Reef below 1600 R.L. is only sufficient to permit the resource in this area to be classified as an Inferred Mineral Resource.

Approximately ten additional evenly spaced cored drill holes (including the current program) would be required to elevate the resource estimate to the Indicated Mineral Resource category.

More closely spaced drilling, probably from underground, in combination with some level development exposures would be necessary to estimate Measured Mineral Resources from which reserves could be calculated.

Should the current drilling program provide sufficient encouragement to complete a further 5 - 6 holes from surface, this additional drilling would cost approximately \$600,000.

### 6.2 North Tasmania Reef:

Three cored holes as shown on the accompanying 1 : 2000 Plan 1. are recommended to test the North Tasmania Reef approximately 200 metres beneath surface, to determine if the reef is showing an improvement with depth below the 120 metre mine level.

This program would total 900 metres and cost approximately \$90,000.

Specific drill sites have not been determined and there may be some complications in that area with houses, hospital etc. Sites can be more appropriately determined once a decision is made on the program.

6.3 Reef Structures North of North Tasmania Mine:

Any reefs in this area which may have a similar geological setting to the Tasmania and North Tasmania Reefs, will be concealed (non-outcropping).

A cost effective way to explore for such a target is with strategically sited fences of deep reverse circulation or air-core angled holes. If R.C. drilling is used, it must be done with a face sampling hammer. All samples should be assayed for gold and arsenic. Arsenic is considered more useful at this initial stage of exploration than gold, because of its halo nature around reefs.

6.4 Reef Structures between Tasmania-North Tasmania Reefs:

The relatively small wedge of Transition Beds between the Tasmania and North Tasmania Reefs, west of the main cross-course and north of the Olive Branch Mine has not been tested for Tasmania Reef analogues.

This wedge of ground has a strike length in the Transition Beds of approximately 600 metres. Target reefs will be concealed (non-outcropping) and the reef potential could be initially tested as in 6.3 above. Such a program has not been costed and designed at this stage.

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*APPENDIX 'A'*

**PROPOSED DRILLING PROGRAM  
BEACONSFIELD GOLD MINE, TASMANIA  
TECHNICAL PROPOSAL AND COST  
ESTIMATE REPORT**

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10 March 1992

## **SUMMARY**

As Stage 1 of a two stage program to better define and characterise the Tasmania Reef beneath the former mine workings, it has been proposed that a core drilling program of three holes totalling approximately 2,500 metres, including, a number of "additional sample" wedged holes, be undertaken.

This program could be completed from two sites adjacent to the Fire Station in the centre of town, at an estimated costs of \$300,000 over a three month period.

The top sections of these holes would facilitate later stages of closer patterns of drill holes above 1400 R.L. but would be of limited value in the proposed Stage 2 wide spaced drilling between 1200-1400 R.L.

Four contractors capable of efficiently completing the Stage 1 program, have been identified and approached on an "expression of interest" basis. Quotations have not been called for at this point in time.

The staged drilling program approach to acquiring additional information deep on the Tasmania Reef is supported. However, the validity and value of attempting to achieve a pattern closer than the 100 x 100 metres pattern proposed in Stage 2 is questioned on technical and "diminishing return" grounds.

Appropriate regard for previous drilling experiences at Beaconsfield should maximise the effectiveness of these proposed stages in terms of time, cost and data acquisition.

## **BACKGROUND**

As managers of the Beaconsfield Gold Mine project, ACM is considering the acquisition of additional resource data on the reef beneath the former workings, by way of a multi-staged core drilling program.

This core would provide additional information on resource grade, tonnes, grade variability, mineability and metallurgical characteristics. Such information would assist in the assessment of future development options for the project.

Originally, a 50 metre x 50 metre \$2.75 M surface drilling program to define the resource between 1600-1100 R.L. was considered.

If the drilling of this pattern was staged or widened to a 100 metre x 100 metre pattern, the cost estimate was reduced to \$0.6 M.

A more recent proposal from ACM involves a first stage three hole program to better define and characterise the resource between the lowest mine level and 1400 R.L. If results from this stage warrant it, a second stage five hole program could be undertaken to effectively complete a 100 metre x 100 metre pattern over a dip length of 400 metres beneath the former workings.

This report addresses technical, budget and scheduling aspects of Stage 1 of this latest proposal.

### **STAGE 1 PROGRAM OBJECTIVES**

The two prime objectives of the Stage 1 program are to:

- better define the in-situ resource potential of the Tasmania Reef between 1400-1600 R.L.;
- acquire a sufficient quantity of core samples to facilitate additional metallurgical characterisation of the 1400-1600 R.L. resources.

To achieve these two objectives, it is proposed to:

- complete three cored drill holes from two surface sites. The planned intersections provide the basis for a 100 metres x 100 metre pattern and are shown on the accompanying longitudinal projection as Holes 1, 2, 3;
- drill two short "branch holes" adjacent to each of the three prime holes. The branch holes will only be 5-10 metres from the prime hole. They will provide firstly, an insight into grade variation over short distances of the reef and secondly, approximately 5 kilograms of sample for each metre of reef intersected, for metallurgical testing purposes.

The latter justification for the branch holes is regarded as the more important.

## **PROGRAM DESIGN FACTORS**

The detailed design of the three holes was fundamentally determined by recognition of:

- (i) importance of *time* to the project;
- (ii) importance of *money* to the project;
- (iii) previous *drilling problems* and practices in the area;
- (iv) potential requirements of *Stage 2* drilling;
- (v) constraints on availability of *drilling sites* in the town.

### **(i) TIME**

Because of the combined impacts of rising water in the shaft and on-going corporate costs associated with maintaining the operation on a care and maintenance basis, the time factor is important.

Whilst it *may* be technically possible to drill all three holes from one site with one rig, the program duration would be extended by about 30% or one month.

One rig on each of two sites is recommended. Provided the rigs are reasonably sound reduced, one daylight shift of 11 hours/day, 7 days per week is possible (i.e.) 77 drilling hours/week/machine.

### **(ii) BUDGET**

With deep hole drilling, there is a delicate balance between "best technical practice", time and money.

The basic drilling objective is to get these three holes where planned in the shortest possible time, at the best price, whilst minimising the risk of technical failure.

This factor is not only important in the hole design but also in the choice of contractor.

### **(iii) PREVIOUS DRILLING PRACTICE AND PROBLEMS**

Previous deep-hole drilling programs at Beaconsfield have met with three major problems:

- an East dipping stratigraphic unit known as the "sheared pebble conglomerate" which contains swelling clays, under high hydrostatic pressure.

- various depth of unconsolidated surface material which is deepest (up to 130m) in a North to South gutter through the town. This represents either an old river channel (deep lead) or a decomposed outcrop of a cavernous limestone bed. The effect of shaft dewatering on the stability of this unit is unknown.
- a haematitic limestone unit, which can be cavernous, to the East of the Mine. This unit causes severe deflection of drill holes.

The three proposed holes have been designed to avoid these three major problems.

Past drilling practices which have been successful in both penetrating soft near surface units, and in deviation control have been recognised and incorporated into the program.

For the above reasons, the original program sites known as B21 and B19 have been rejected *for this program* and alternative sites and hole modifications planned.

**(iv) STAGE 2**

As far as the constraints of time, money and technical aspects permit, the three Stage 1 holes have been designed to facilitate later in-fill drilling of the reef above 1400 R.L. from the same sites and parent holes. It *may* also be possible to complete Stage 2, Holes 4 and 5 from Sites A and B.

However, the completion of Stage 2, Holes 6, 7, 8 will require two new sites and any infill drilling between 1200-1400 R.L. would be undertaken from these sites.

It is considered technically difficult, risky and expensive to attempt to drill Holes, 1, 2 and 3 from the sites required for Holes 6, 7 and 8.

**(v) DRILL SITE AVAILABILITY**

There are severe restrictions on the number of suitable and available drill sites, and site availability is certainly a major factor influencing the down-hole design of all three holes in Stage 1.

Site constraints are due to the presence of businesses, houses, roads and (importantly) overhead power-lines. The safety risk of tall mast rigs adjacent to power lines is high and unacceptable.

**Holes 1 and 2** would be drilled from one site (**Site A**), situated South of the fire station. Three alternative areas were inspected: the first is immediately behind the Red Ruby Chinese Restaurant which would be difficult; the second is near the fire station and is very confined; the third is on vacant land where hole B11 was collared. This is certainly the best site in terms of access and local acceptability. Its acceptance in preference to the other two possibilities would make the drilling of Hole 1 easier but Hole 2 somewhat more difficult.

I attempted unsuccessfully to re-locate the collar of B11. Following further consideration of the condition of this hole on completion of drilling, it is now not recommended that it be re-collared.

Pending further detailed planning and discussions with local people, my order of preference for Site A is:

- Site B11
- Fire Station
- Chinese Restaurant

It may be possible to drill Stage 2, Hole 5 from this site.

**Hole 3** would be drilled from **Site B** in a vacant paddock North of the fire station. The main constraint here is over-head power lines and these will dictate very tight control on down-hole deviation.

It may be possible to drill Stage 2, Hole 4 from this site.

#### **DRILLING PROCEDURE**

In designing the drill hole specifications, the following considerations were important:

- the reef intersections should be NQ size;
- direction control should be attained whenever possible by known natural deviation patterns, as opposed to more expensive Navi drilling and wedging techniques.

One Navi drilling operation typically costs \$2-3,000. One Hall-Rowe wedging operation costs approximately \$2,000.

Hole collars would be vertical and surveyed prior to commencement of drilling to allow final detailed plotting of holes. Holes would be down-hole surveyed every 20-25 m., with a single shot camera for the purposes of direction control.

**SITE A (HOLES 1 AND 2)**

0-100 m: PW/PQ non-coring, preferably with a casing advancer. This section of hole must remain vertical.

100-120 m: HQ coring, vertical.

120-800 m: Daughter hole; NQ core drill Hole 1 with controlled bearing deviation to the West and flattening at 5-6°/100 m.

To avoid the considerable expense of Navi drilling, deviation will be attempted through direct control (e.g.) bit selection, bit weight etc.

Reef samples: Once through the reef with the daughter hole, two branch hole samples will be obtained.

An NQ branch hole will provide 5 kg. core/metre of reef.

A BQ branch hole will provide 2.7 kg core/metre. Thus, if the reef is three metres wide, *two* NQ branch holes will provide 30 Kg of sample and two BQ holes will provide 16 Kg.

If the branch holes were 75 m long each, an NQ hole would cost approximately \$2,000 more than a BQ hole. Thus, the extra 14 Kg of sample costs \$4,000.

I would recommend the extra sample with NQ, if metallurgical testing is considered important.

On completion of Hole 1, a chrome barrel would be used to continue the parent HQ hole:

120-250 m: HQ coring parent hole; vertical if possible.

250 m: If still vertical, Navi drill a deflection to commence **Hole 2.**

250-700 m: Daughter hole; NQ core drill Hole 2. Dip flattening of 1.5°/100 m., is required.

Bearing control may have to be achieved with Navi drill.

Reef samples: As with Hole 1.

On completion of Hole 2, a chrome barrel would be used to advance the parent a short distance for future use.

**SITE B (HOLE 3)**

Similar procedure to Site A.

0-100 m: PW/PQ non-coring - vertical.

100-250 m: HQ coring - vertical.

250 m: Navi drill branch hole to commence Hole 3.

250-600 m: Daughter hole; NQ coring Hole 3.

Flattening only 1°/100 m., and bearing controlled, possibly with Navi drill.

Reef Samples: As with Holes 1 and 2.

**HOLE CONDITION ON COMPLETION**

Future use of the parent hole will be HQ-NQ coring. Therefore the PW/PQ section of the hole should be left cased.

There is a high probability that PW/PQ cannot be removed from the hole. This is o.k. for future drilling but represents a considerable cost item. A budget allowance is made to cover this.

**NOISE REDUCTION**

Contractors who are asked to quote will be requested to provide details of proposed noise-suppression measures of all rig motors.

A security fence will be required around each site. This should also be sound-proofed. It is recommended that Beaconsfield Gold Mines supply this fence, and this is reflected in the budget.

**METERAGE**

Until final site selection is made, meterages approximate only.

Hole 1: Non-coring - 100 m.  
HQ - 150 m.  
NQ - 800 m.

Hole 2: NQ - 600 m.

Hole 3: Non-coring - 100 m.  
HQ - 150 m.  
NQ - 500 m.

Total Meterage: Non-coring - 200 m  
HQ coring: 300 m  
NQ coring: 1,900 m  
2,400 m

**DRILLING CONTRACTORS**

Five drilling contractors, considered to have relevant experience and appropriate equipment were approached in order to determine their interest, availability and basic cost estimates.

*They were not asked to formally quote at this stage.*

The Companies were:

- Western Deep Hole Drilling, Perth, Murray Pollock
- Australian Diamond Drilling, Stawell, Ian Pringle
- Cherlor Air Drillers, Dubbo, John Ackland
- Longyear, Wynyard, Trevor Sadler
- Diamond Drilling Tasmania, Zeehan, Peter Sharp.

**WESTERN DEEP HOLE DRILLING**

Western Deep Hole Drilling indicated that for a "small" program of 2,500 - 3,000 metres, their mobilisation costs from Perth would be prohibitive for two rigs on a per metre basis and they declined to express a continuing interest.

**AUSTRALIAN DIAMOND DRILLING**

Well known for their drilling for Western Mining Corporation at Stawell and Ballarat Goldfields at Ballarat.

They have two fully sound-proofed L44's available, and have experience in deep hole and Navi drilling. They would have to hire a Navi drill.

I have personally observed them drilling in the middle of Ballarat and they are well recommended by Ballarat Goldfields.

I have not worked with them in the past.

**CHERLOR AIR DRILLERS**

Also well recommended for their drilling in Ballarat, with silenced rigs, including a silenced compound.

They have one top drive rig and one L44 available, and are experienced with deep hole and Navi drilling.

I have not worked with them in the past.

Mobilisation costs (\$17,000) are naturally high.

**LONGYEAR**

One of the two major drilling firms based in Tasmania; They can offer two L44's, with some sound-proofing.

They have extensive experience in Tasmania with deep hole drilling, Navi drilling and wedging. They have local technical and back-up support, and own their own Navi drill.

The Company and manager are well known to myself.

**DIAMOND DRILLING TASMANIA**

The other major Tasmanian based drilling firm; They would also offer two sound-modified L44's.

Similar comments re: experience and back-up to Longyear.

The Company and manager are well known to myself.

A *rough* cost comparison is provided below. Each of these Companies would be capable of completing this program and each offers different advantages.

*If Beaconsfield Gold Mines decide to proceed with this program, I would recommend that all four Companies be asked to Tender.*

### Preliminary Cost Estimate Analysis

	Longyear	Diamond Drilling Tas.	Aust Diamond Drilling	Cherlor Air Drillers	Broad Average
Mobilisation	2,000	7,000	6,000	17,000	6,000
Non-Coring p. m. 200 m.	46 9,000	Field Cost + Est 4,000	Estimate 6,000	26 5,000	6,000
PQ Core p. m. 40 m.	115 4,000	92 4,000	90 4,000	Estimate 4,000	4,000
HQ Core p. m. 300 m.	83 25,000	76 23,000	75 22,000	71 21,000	22,000
NQ Core p. m. 1900 m.	75 142,000	72 137,000	75 142,000	77 146,000	142,000
Surveys (100 shots)	6,000	6,000	6,000	6,000	6,000
Delays/hour Active: Non-Active:	98 70	85 55	150	120	
Consumables	List price	Cost + ?	Cost + 10%	Cost + 15%	Cost + ?
Navi Drilling or Wedging 11 operations Per operation: Total:	2,000 22,000	2,500 27,000	2,000 22,000	2,500 27,000	24,000
Direct Costs	210,000	208,000	208,000	226,000	210,000
15% Extras including delays & consumables	31,000	31,000	31,000	34,000	31,000
<b>TOTAL ESTIMATES</b>	<b>241,000</b>	<b>239,000</b>	<b>239,000</b>	<b>260,000</b>	<b>241,000</b>

### **CORE HANDLING**

The three parent holes plus six branch holes will hopefully generate approximately 40 m. of reef core.

Thus, each metre of reef core is worth about \$8,000, and important future decisions will be based on this material.

It must therefore be treated with great respect.

Security on reef drill core where normally the reef and the gold are highly visible, in a township environment, has been a problem in previous drilling programs at Beaconsfield.

The project geologist should be present on the rigs at all times when the reef area is being drilled, and should personally transport the core to the core shed.

All core should be photographed prior to logging, principally for engineering and record purposes.

Reef core from the daughter holes should be sawn, sampled and despatched to the laboratory personally by the geologist.

Considerable thought should be directed towards the methods of assay sample preparation and assaying, and laboratory selection. If a Tasmanian laboratory is selected for this work, the geologist should personally transport the samples to the laboratory.

Petrological samples should be thin slices sawn from the racked half of the daughter holes. The branch holes should not be split or sampled.

Once assays and petrological work are available, branch holes can be sampled, boxed and despatched as jointly agreed by the metallurgist and geologist.

To minimise costs, non-reef core should be stacked in the shed on pallets but reef core should be racked in a **lockable rack**.

### **BUDGET**

The total cost of this Stage 1 program is estimated at \$300,000. Scope exists to reduce this estimate by changing some aspects of the drilling program and cutting a few corners. However, these savings may well be offset against unanticipated drilling problems, for example, there are risks involved in Navi drilling or casing wedging off vertical parent holes.

A budget is attached and assumes a late March - early April start. The four main cost areas are:

• drilling	\$240,000
• project management	30,000
• core handling	18,000
• support services	<u>12,000</u>
	<u>\$300,000</u>

#### **DRILLING**

The initial cost estimates from the four contractors suggest direct charges will be approximately \$210,000. To this should be added down-hole consumables, delay charges, and equipment left down-hole, for example, PQ casing, which could cost \$15,000 alone, in order to keep holes open for future use.

Experience suggests 15% should be added to the direct charges, bringing the total to \$240,000.

#### **SUPERVISION**

One experienced hands-on geologist could handle all aspects of this project alone. Charges would be restricted to salary, travel and accommodation.

The total program could take up to 15 weeks of 6-7 days per week, and a total charge of \$30,000 is estimated.

Salary	25,000
Travel	1,000
Accommodation	<u>4,000</u>
	<u>\$30,000</u>

Some options exist to reduce this by up to 10%.

**CORE HANDLING**

Core trays, racks, pallets, saw hire, sample bags etc., \$4-5/metre	9,000
Assaying 100 samples at \$40 each	4,000
Petrology	2,000
Initial Metallurgical testing	<u>3,000</u>
	<u>\$18,000</u>

The amount allocated for metallurgical testing is clearly only sufficient for a very preliminary amount of testing.

**SUPPORT SERVICES**

2 x Security fences, partially soundproofed	6,000
2 x Site rehabilitation	4,000
Drafting, typing, report presentation	<u>2,000</u>
	<u>\$12,000</u>

**TOTAL COST**

The total cost estimate of \$300,000 represents \$120 per metre, and compares more than favourably with the original detailed drilling proposal.

**BUDGET CONTROL**

Very tight cost control and budget management is important, and in the first instance should be the clear and direct responsibility of the project geologist.

**CONTINGENCY ALLOWANCE**

No contingency amount is shown in the budget. A certain amount of flexibility exists in the budget and contingencies would have to be covered in this way.

**SCHEDULE**

The complete Stage 1 program, as outlined above, will take approximately 15 weeks to complete, including detailed planning and preparation, drilling, data evaluation and reporting.

The probable timing in the middle of winter is unfortunate but cannot be avoided.

The schedule on the following page assumes a late March - early April start. The program could be shortened by drilling two shifts per rig, 7 days a week, but this is **not recommended** in the middle of Beaconsfield.

One or two weeks (and approximately \$20,000) could also be saved if only one, instead of two, branch holes were drilled off each daughter hole. This would effectively mean that a three metre reef intersection would produce 15 kilograms of core (as against 30 kilograms from two intersections) for metallurgical testing.

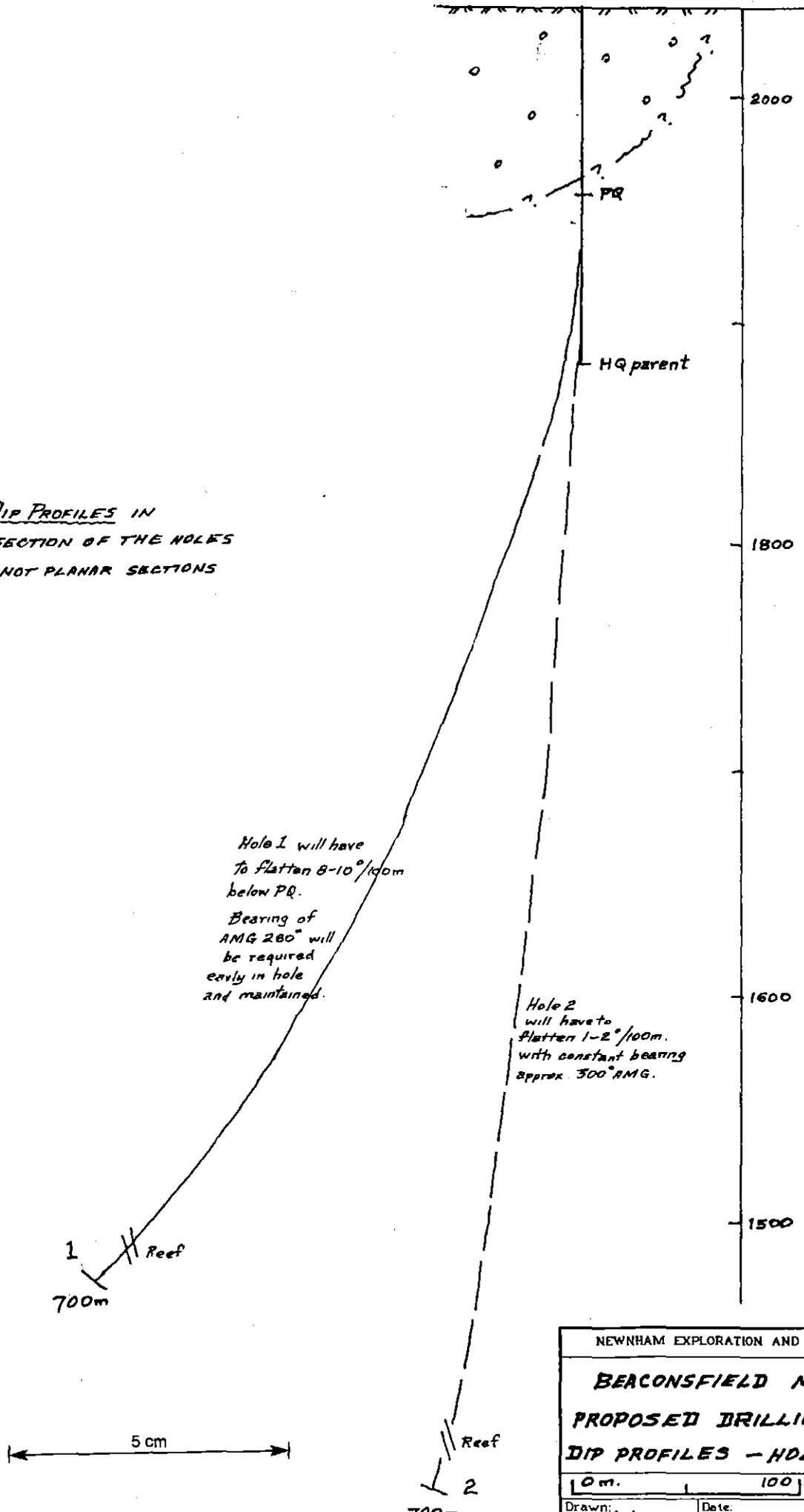
**SCHEDULE**

	March	April	May	June	July
Surveying, detailed hole design, Council Agreement	I				
Arrival first rig. Construct security fence	I				
Drilling Holes 1, & 2		I			
Arrival second rig. Construct security fence		I			
Drill Hole 3		I			
Assaying			I		I
Petrology			I		I
Metallurgical testing			I		I
Reporting					I

**BUDGET**

	March	April	May	June	July	TOTALS
Drilling Contractors	5,000	45,000	90,000	90,000	10,000	240,000
Project Management	2,000	7,000	7,000	7,000	7,000	30,000
Core Handling	-	7,000	2,000	3,000	6,000	18,000
Support Services	3,000	3,000	-	-	6,000	12,000
<b>TOTALS</b>	<b>10,000</b>	<b>62,000</b>	<b>99,000</b>	<b>100,000</b>	<b>29,000</b>	<b>300,000</b>

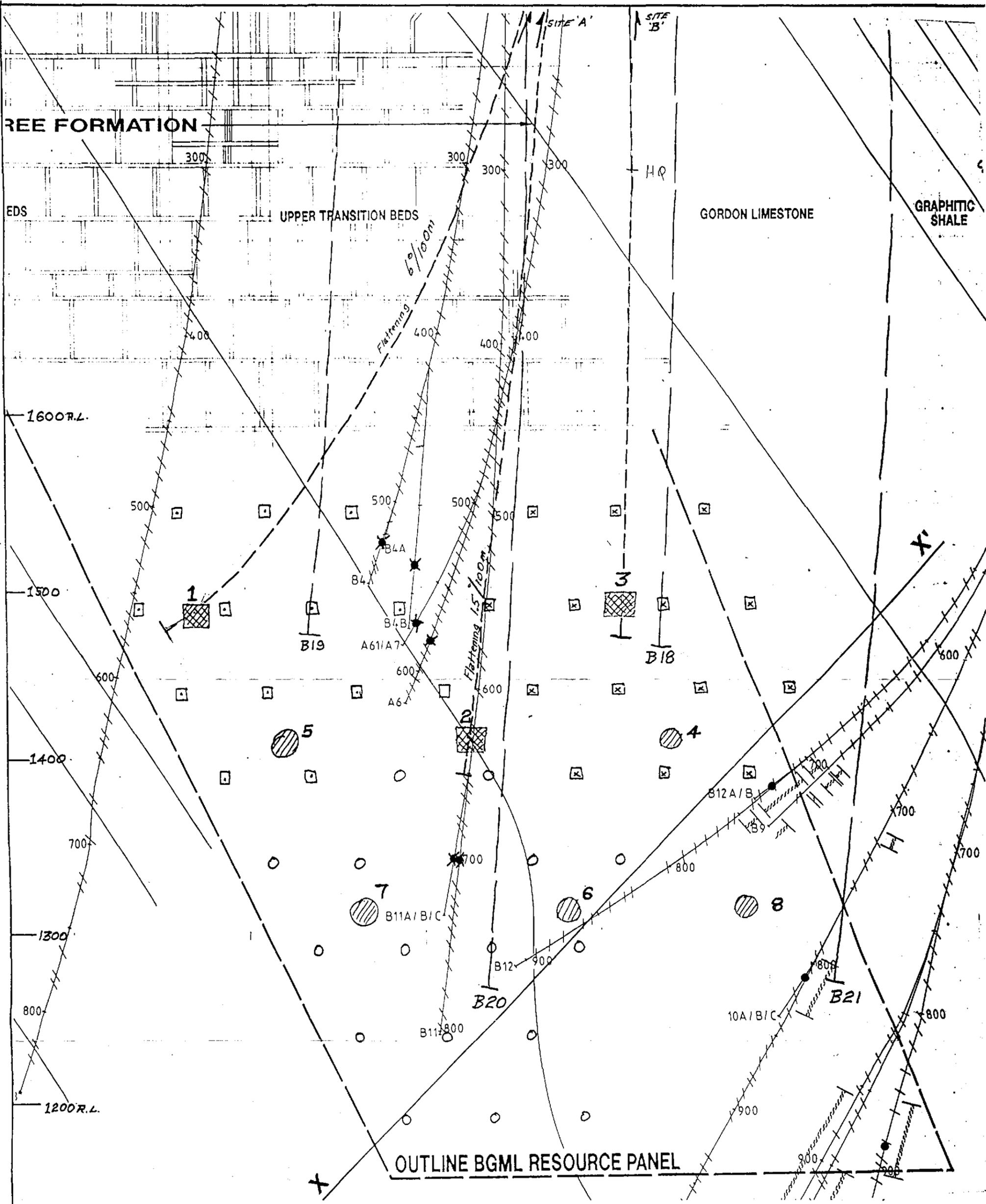
DIP PROFILES IN  
 THE SECTION OF THE HOLES  
 (A) NOT PLANAR SECTIONS



Hole 1 will have  
 to flatten 8-10°/100m  
 below PR.  
 Bearing of  
 AMG 280° will  
 be required  
 early in hole  
 and maintained.

Hole 2  
 will have to  
 flatten 1-2°/100m.  
 with constant bearing  
 approx 300° AMG.

NEWNHAM EXPLORATION AND MINING SERVICES		
<b>BEACONSFIELD MINE</b>		
<b>PROPOSED DRILLING PROGRAM</b>		
<b>DIP PROFILES - HOLES 1, 2.</b>		
0m.	100	Scale 1:2500
Drawn: IAN	Date: 10 Mar 92	Figure:



- 2 Stage 1 Holes 1400-1600 R.L.
  - 6 Stage 2 Holes 1200-1400 R.L.
  - B18 Branch holes
  - B19 Branch holes
  - B20 Branch holes
- 100m x 100m pattern  
Proposed by R. Gunthorpe  
27 Feb 92
- 50m x 50m pattern  
proposed by J. Hicks  
June 91

- Previous Intersections
- Projected trace Holes 1, 2, 3.

NEWNHAM EXPLORATION AND MINING SERVICE

**BEACONSFIELD MINE**

**PROPOSED DRILLING PROGRAM**

**LONGITUDINAL PROJECTION**

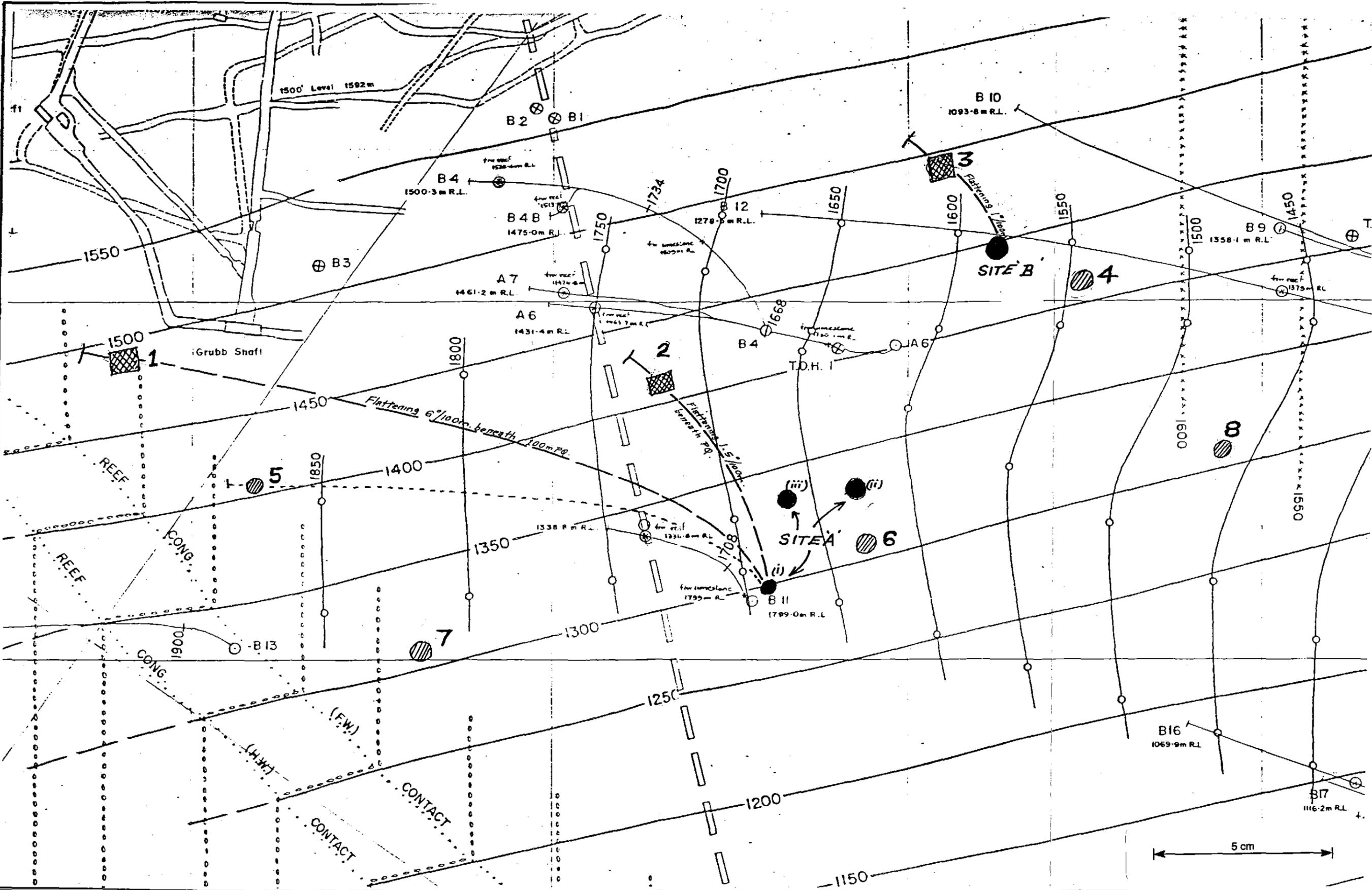
Scale: 1:200

Drawn: L. A. Newham Date: 10 Mar 92 Figure:

Base Drawing: BF 89-18 by  
BGM Limited

5 cm

975032



- Stage 1 Holes
- Stage 2 Holes
- Approximate Collar Sites
- Projected Trace Holes 1, 2, 3.
- Tasmania Reef Contours
- Former Mine Workings

NEWHAM EXPLORATION AND MINING SERVICES

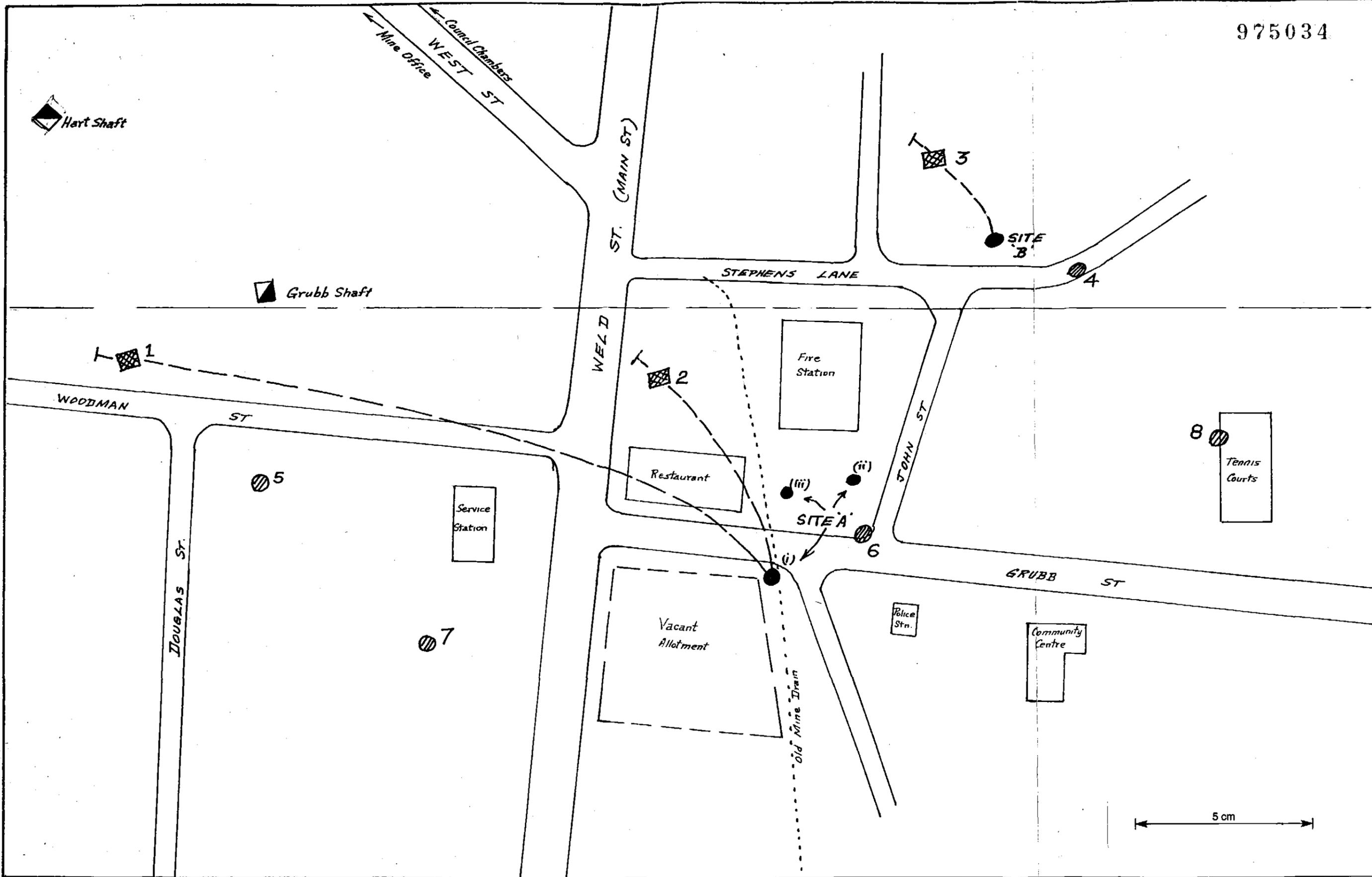
**BEACONSFIELD MINE**  
**PROPOSED DRILLING PROGRAM**  
**PLAN PROTECTION**

0m. 40 Scale: 1:1000

Drawn: J. A. Newham Date: 10 May 92 Figure:

Base Drawing: BF 86-17  
 by ACM Limited

975033



5 cm

- 2 Stage 1 Drill Holes
- 5 Stage 2 Drill Holes
- Collar Sites
- Plan Projection of holes



NEWHAM EXPLORATION AND MINING SERVICES

**BEACONSFIELD MINE**

**PROPOSED DRILLING PROGRAM**

**GEOGRAPHICAL LOCATION**

0 40 Scale: 1:1000

Drawn: L. A. Newham Date: 10 May 92 Figure:



**NEWNHAM EXPLORATION AND MINING SERVICES**

**UPDATE REPORT  
PROPOSED DRILLING PROGRAM  
BEACONSFIELD MINE**

**Prepared for: Beaconsfield Gold M.L.**

**By: Lindsay Newnham**

**Date: 28 April, 1993**

**INTRODUCTION:**

This report supplements the previous drilling report on the proposed drilling program at Beaconsfield:

"Proposed Drilling Program, Beaconsfield Gold Mine, Tasmania. Proposal and Cost Estimate Report" by L.A. Newnham, 10Mar93.

As such it provides revised additional information on technical aspects of the program, selection of drilling contractor, and cost estimates.

**PROGRAM OUTLINE:**

The program provides for the drilling of 2,500 metres of core in three parent holes and a number of "additional sample" holes for the purposes of:

- increasing confidence in the resource potential of the Tasmania Reef for a distance of 200 metres beneath the old workings.
- providing material for the further metallurgical testing of the reef
- providing information on the ground conditions in, and adjacent to, the reef.

**RECOMMENDED CHANGES TO PROGRAM:****Rigs:**

It is recommended that only one rig be used, drilling 5-6 daylight shifts per week.

This would have the effect of lengthening the program. Assuming an average production of 100 metres/week, the program would take 5-6 months to complete.

Sound proofing and security would be effected by way of a high wire mesh fence lined with hay bales.

**Contractors:**

Three contractors have been approached and asked to tender (re-tender):

- Longyear
- Diamond Drilling Tasmania
- Mincore

Longyear was the recommended contractor in the previous report. Since then, their Tasmanian manager, Trevor Sadler, has resigned and formed his own company, Mincore. However he has subsequently decided not to go contract drilling and has rejoined Longyear.

Hence Mincore declined to quote.

Longyear has advised that because of severe shortages of quality drillers, they do not wish to re-quote.

Diamond Drilling Tasmania has indicated that they will have a suitable rig available in May and are keen to do the job. Their prices remain unchanged from those of March 1992. At that time they were estimated as the lowest tender.

**It is recommended that Diamond Drilling Tasmania be awarded this contract.** If this is agreed, I will request that they provide a detailed and updated quotation.

#### **Technical Specifications:**

Some changes to the manner in which the holes are drilled are recommended:

- (i) The top part of both holes, possibly to 100 metres, should be drilled with an HW casing advancer, and cased off HW. The holes should then be continued, possibly with a chrome barrel, HQ size to 150-200m.
- (ii) Wedging and directional control (navi) drilling should be avoided wherever possible because it introduces a significant element of technical risk and is expensive. To do this, it is proposed to use both NQ and NQ2 coring systems and chrome NQ barrels.

NQ2 is a thin kerf coring system which not only gives a slightly larger core than NQ but has developed a reputation for keeping holes straight and giving excellent core recoveries.

Thus where the holes have to be kept straight, we would attempt to achieve this with an NQ2 tube and chrome barrel. Where controlled deviation was required, an NQ barrel and external stepped bits would be used.

The reef should be cored NQ2

NQ2 core diameter is 50mm. compared with 47.6mm for NQ. The rod string and hole size are the same. Hence NQ2 gives 10% more core than NQ at no extra cost.

- (iii) The prospectus (but not the original drilling program proposal) showed the sequence of holes as the central hole first, the western hole second and the eastern hole third. There is a strong technical argument for drilling the western hole first and the central hole second as per the original drilling proposal.

If the central hole is drilled first, then the western hole will have to be branched off the parent hole using a hanging wedge in a near vertical parent hole. Not only is such a wedge difficult to orientate but there is always a distinct possibility it will move, especially when using impregnated bits. Hence the western hole would always be at risk of being lost. It could be 90% completed and then lost which would be a tragedy to the program.

If the western hole was drilled first, then the central hole would be branched out of it simply by using a chrome barrel, or advancing the HQ.

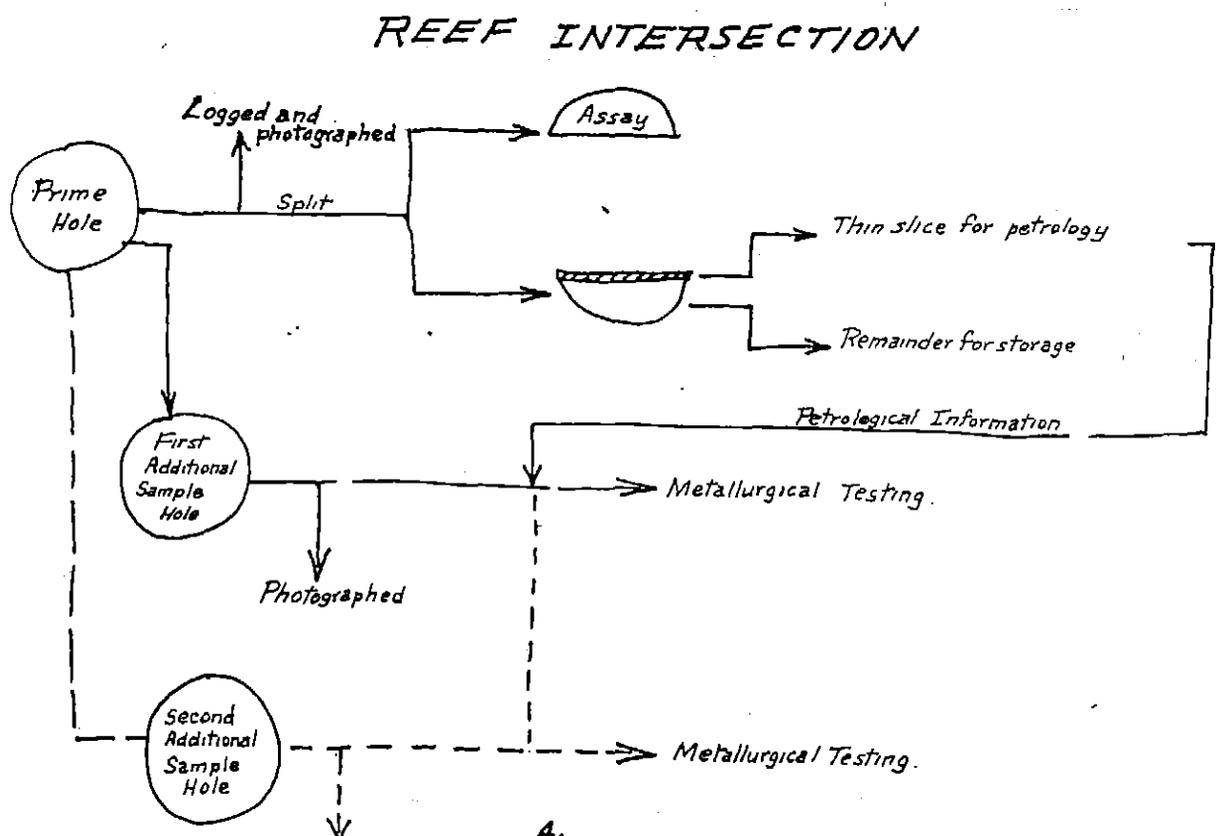
#### "Additional Sample" Holes:

Debate exists as to how many "additional sample" holes should be drilled off the three prime holes.

Additional sample holes are drilled off the prime hole only a few metres from the reef hangingwall. Hence they cut the reef only a metre or two from the original hole.

Their main purpose is to provide extra sample for metallurgical work.

The information gathering sequence from the drilling is illustrated below:



Knowledge on the metallurgical characteristics of the reef is derived from two sources - petrological description and laboratory testing.

Each of the branch holes will cost \$7-8,000 and provide approx. 16-17 kg. of core if drilled NQ2.

The original drilling program provided for two branch holes off each parent hole, ie. six branch holes, which would cost approximately \$45,000.

Hence if one, rather than two branch holes was drilled off each prime hole, it would represent a saving of \$25,000 and provide approx. 50kg. core from three locations for test work.

If no branch holes were drilled, and initial metallurgical characterisation limited to petrological studies, the saving would be \$45,000.

This cost saving could be put towards a fourth prime hole designed to infill some of the substantial resource information gaps which will remain at the conclusion of the planned three holes.

It is therefore recommended that serious consideration be given to drilling either one or no "additional sample" holes off each prime hole.

#### **Mine Engineering Studies:**

Of equal importance to metallurgical studies is information on ground conditions both within the reef structure and on the hanging and footwalls. This information is necessary for future estimates of stoping costs, reef dilution, footwall decline development, shaft extension costs etc.

Data on Ground conditions will be acquired through both appropriate logging and photography prior to splitting for assay. Prime holes should be extended 50 metres into the reef footwall for engineering information purposes.

#### **COST ESTIMATES:**

The previous cost estimate for this drilling program was \$300,000 which was broken down into:

- drilling contractor costs	240,000
- project management	30,000
- core handling	18,000
- support services	12,000

These costs have now been revised as follows:

**Contractor costs: \$240,000**

As mentioned above, Diamond Drilling Tasmania is the recommended contractor. Their estimated costs for this program as detailed in the previous report were \$239,000.

**Project Management: \$45,000**

Because a single rig operation is now envisaged, the total program will take longer and the provision for program management which includes travel and accommodation should be increased to \$45,000.

In addition to the daily duties of rig supervision, core logging and photography, splitting etc., the single rig program should allow time for both a thorough re-evaluation of North Tasmania Mine data and a detailed reconstruction of data on the reef structure on the lowest few levels of the Tasmania Mine to be used as a structural guide to deeper resource estimation.

**Core Handling: \$23,000**

Once the core shed is tidied up, room will be available to properly rack core from this program. It is important that it is professionally stored, primarily for the purposes of future availability and presentation.

New racks and trays will be required.

The budget provision for petrology has been increased. No provision has been included for metallurgy.

The revised core handling estimate is:

- trays, racks etc. @ \$6/m.	\$15,000
- assaying 100 samples @ \$40ea.	4,000
- petrology	4,000
	<hr/>
	\$23,000
	<hr/>

**Support Services:**

This budget item is designed to cover security, environmental and reporting components of the program.

If results of the drilling are encouraging then it may be advisable to upgrade and computerise some data handling and data presentation functions. Hence an increase in this budget item is recommended:

- security	\$6,000
- rehabilitation	4,000
- drafting, reporting, etc.	7,000
	<hr/>
	\$17,000
	<hr/>

**Revised Budget:**

Drilling contractor costs	\$240,000
Management	45,000
Core handling	23,000
Support services	17,000
	<hr/>
Total	\$325,000
	<hr/>

To this should be added provision for metallurgical studies and other Company operational expenses.

**ADDITIONAL SURFACE DRILLING:**

The successful completion of these holes, combined with data from both previous drill holes and the former mine workings should provide sufficient confidence in the resource potential between 1600-1400 RL on which to base a decision to continue with underground development and assessment of the deposit.

However, two large data gaps remain: one on the western end of the reef and one on the eastern end, above the holes proposed in the 1992 Annual Report and Reconstruction Proposal.

It may be prudent to infill the larger of these gaps on the western end of the reef with an additional hole during the current program.

With budget requirements in mind, this could be achieved by not drilling the "additional sample" branch holes and diverting the savings into a fourth prime hole, as shown on the accompanying longitudinal projection. From a technical drilling point of view, the preferred sequence would be as numerically shown: 1, 2, 3, 4.

Time has not permitted detailed planning of a revised program which incorporates such an additional hole. However it is reasonable to assume that if the additional hole was drilled from the same parent hole as holes 2 and 3 (as shown), then it would involve approximately 550-600 metres of NQ drilling together with some wedging and navi drilling. This would add approx. \$30,000 to the drilling contractor costs ( \$70,000 for the additional hole less \$40,000 saved in branch holes). Minor changes to the other budget items would be required as follows:

Drilling contractor costs:	\$270,000
Management:	50,000
Core handling:	27,000
Support services:	18,000
	<hr/>
Total:	\$365,000
	<hr/>

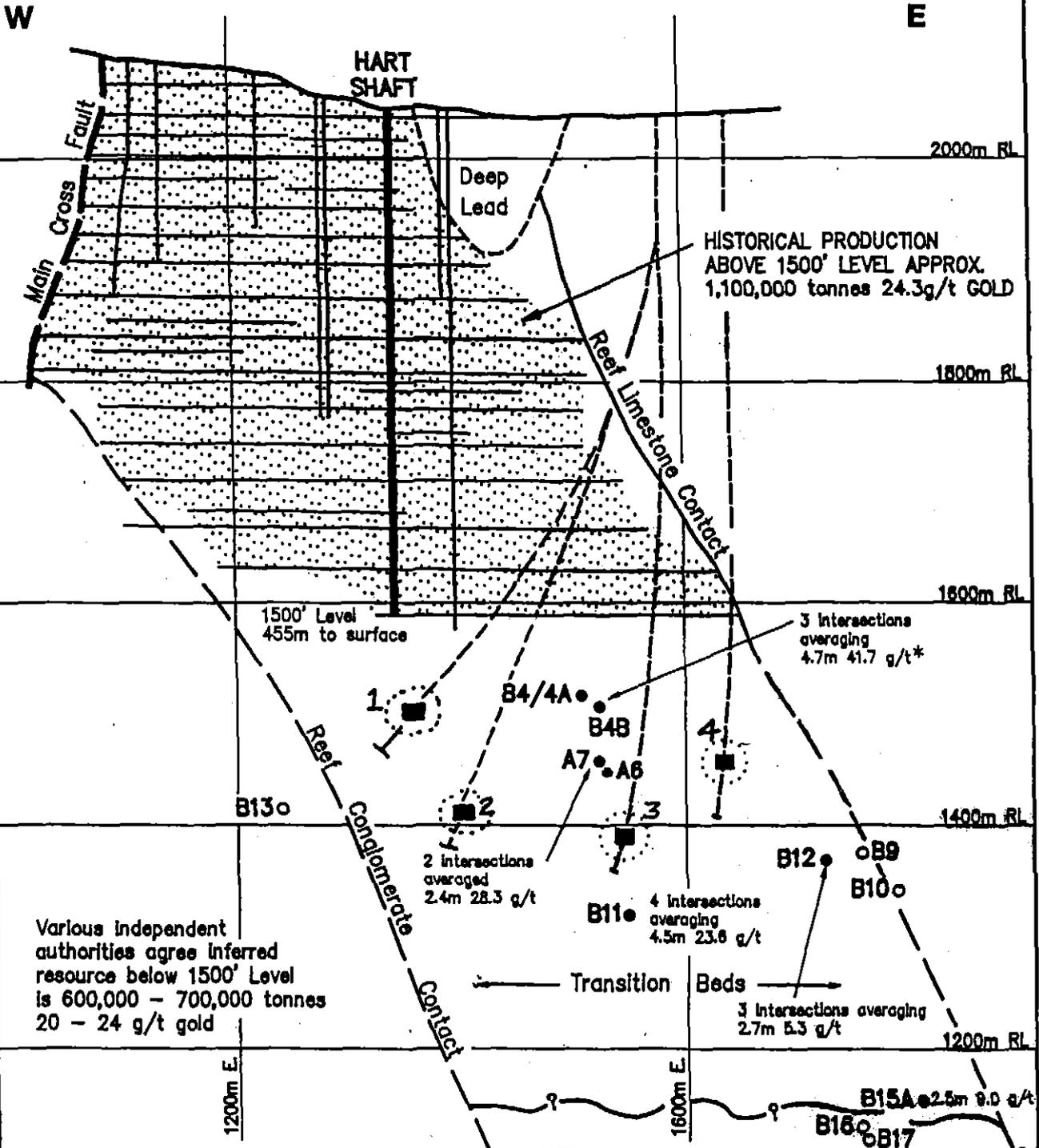
It is necessary to make the decision on whether to drill the originally planned three holes (\$325,000) or the revised program of four holes (\$365,000) prior to the commencement of drilling, because the location of the first, and possibly the second, intersection will depend upon that decision.



L.A. Newnham

# BEACONSFIELD GOLD MINES LIMITED DRILLING PROPOSAL

## LONGITUDINAL PROJECTION OF TASMANIA REEF LOOKING NORTH



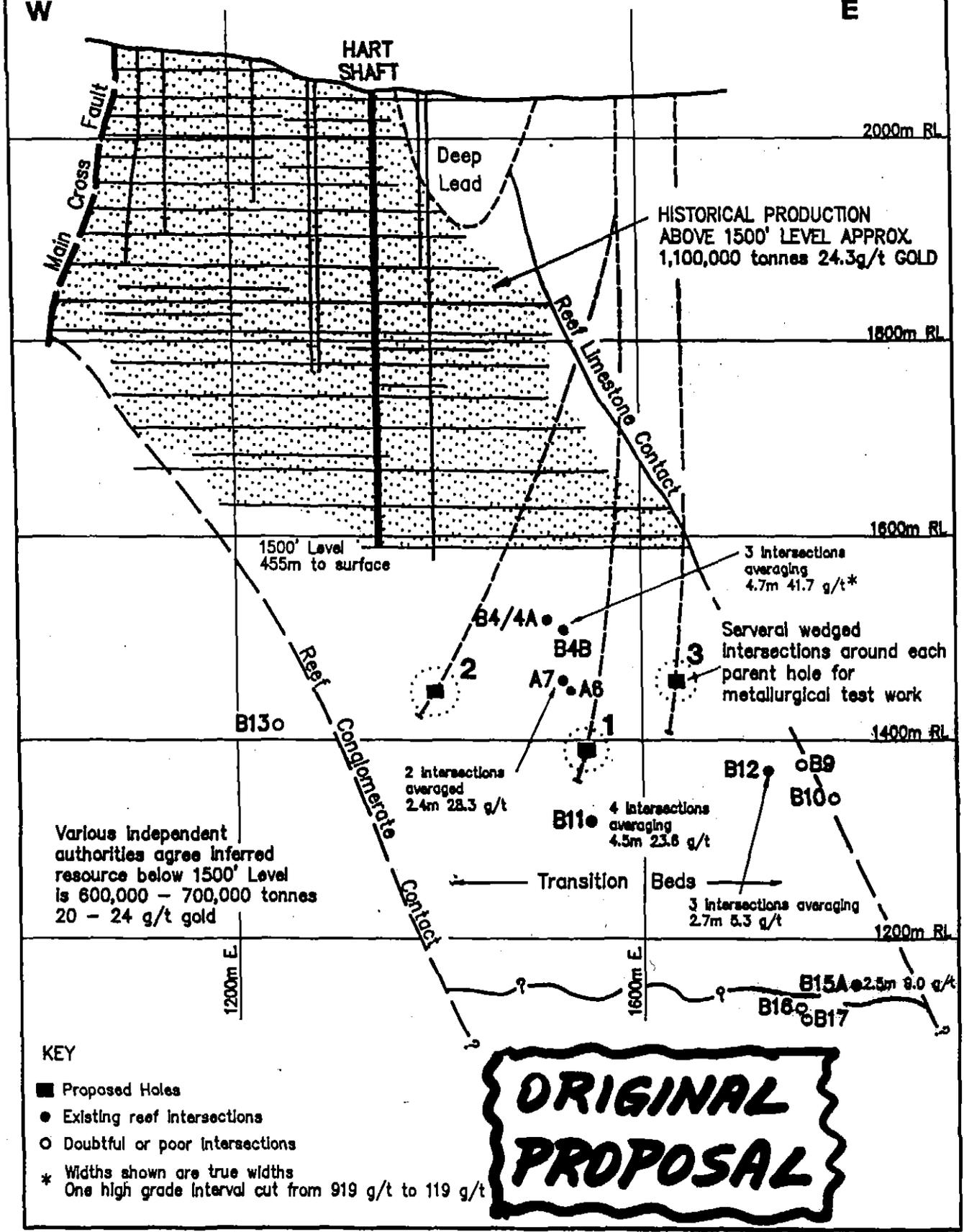
**KEY**

- Proposed Holes
- Existing reef intersections
- Doubtful or poor intersections
- \* Widths shown are true widths  
One high grade interval cut from 919 g/t to 119 g/t

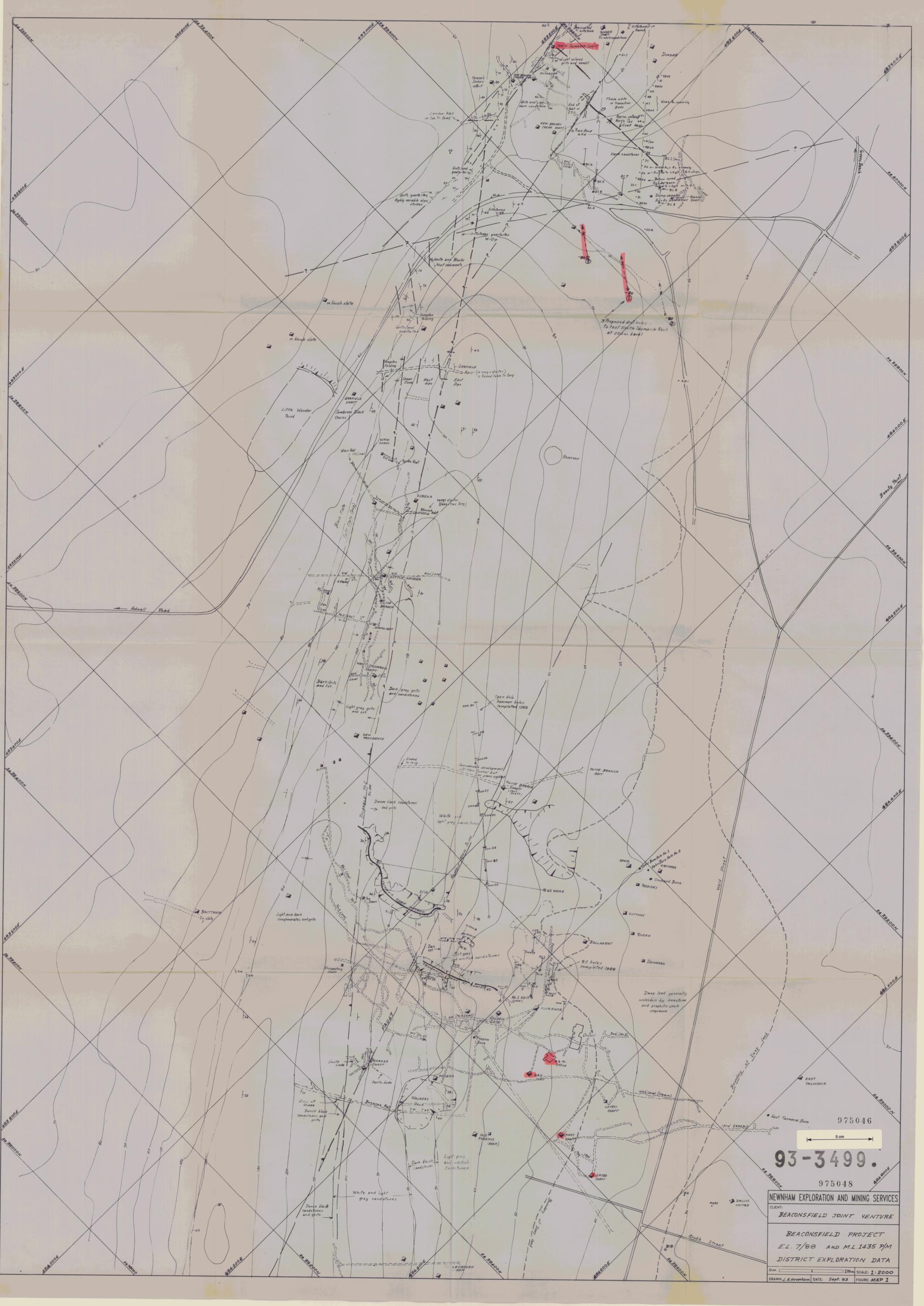
**REVISED  
PROPOSAL**

# BEACONSFIELD GOLD MINES LIMITED DRILLING PROPOSAL

## LONGITUDINAL PROJECTION OF TASMANIA REEF LOOKING NORTH



This drawing incorporates information presented in previous B.G.M. publications and reports, and has been prepared by Newnam Exploration and Mining Services for inclusion in this prospectus. October, 1982



975046

50m

**93-3499.**

975048

NEWNHAM EXPLORATION AND MINING SERVICES

CLIENT: BEACONSFIELD JOINT VENTURE

BEACONSFIELD PROJECT

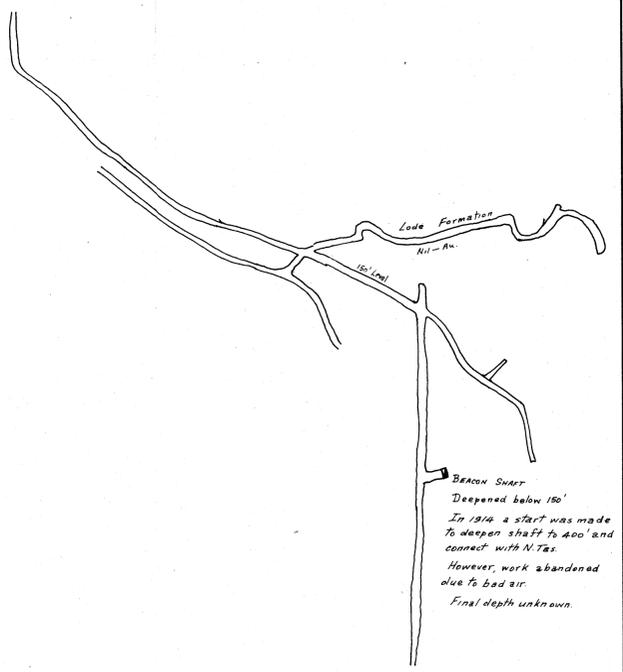
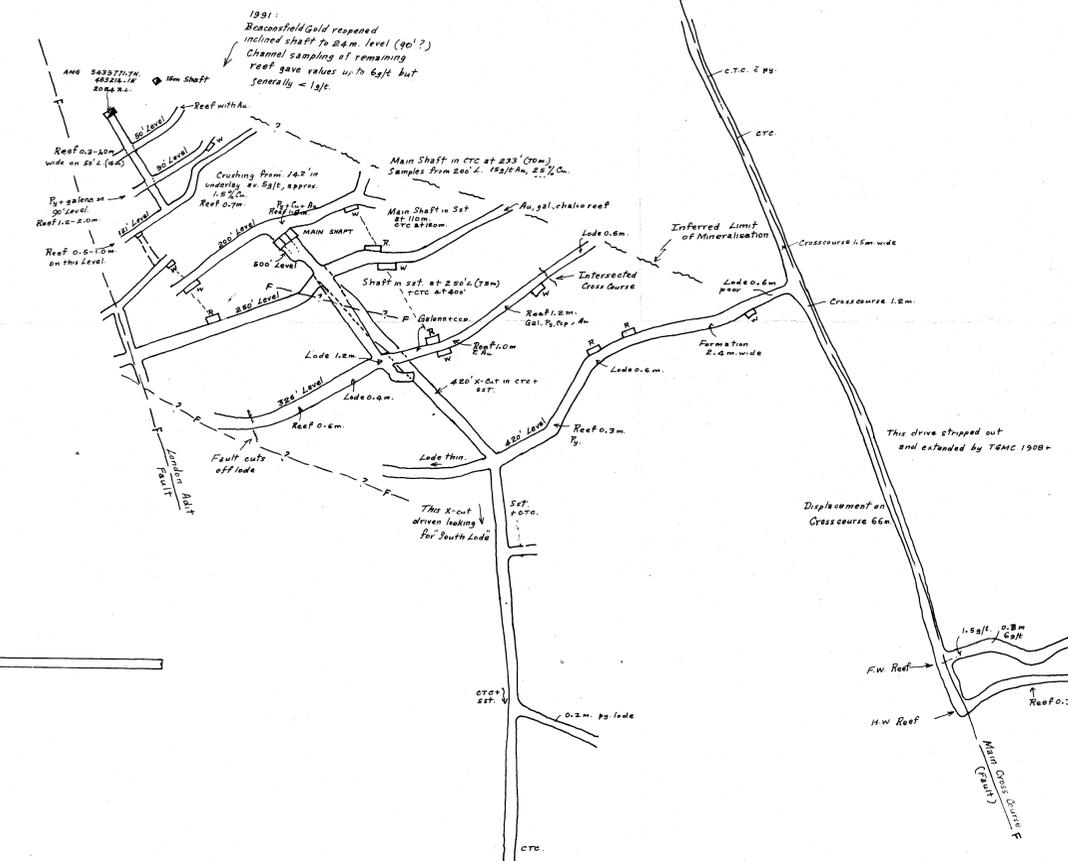
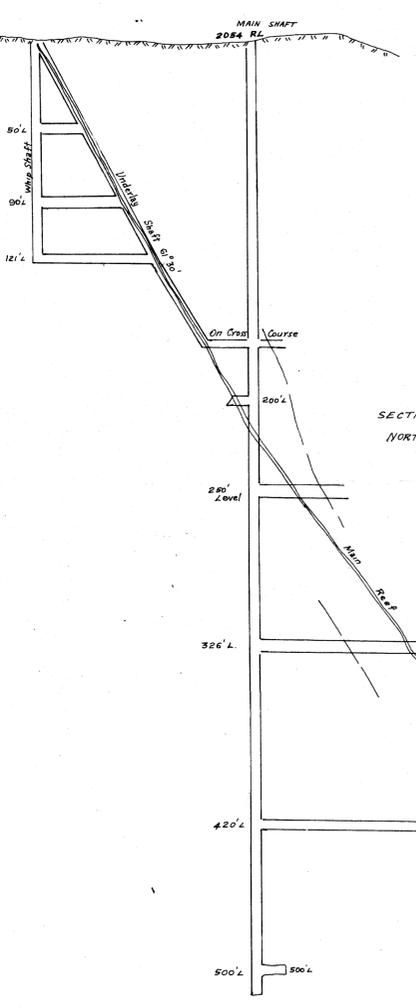
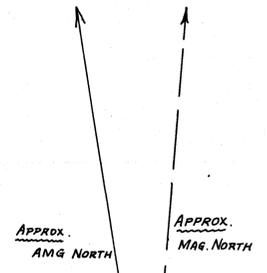
E.L. 7/88 AND M.L.1435 P/M

DISTRICT EXPLORATION DATA

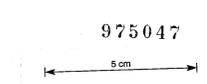
0m 100m SCALE: 1:2000

DRAWN: J. A. Newham DATE: Sept. 93 FIGURE: MAP 1

Data Sources:  
 This map is a collation of data taken from BGM maps, old reports, old plans.  
 Difficulty exists in establishing North with accuracy. The Main Shaft AMG collar co-ordinates and R.L. are accurate.



In 1909, this drive was stopped because poor ventilation. Proposed to link it with the 150' Level in the Beacon Mine. To improve ventilation.



93-3499!

NEWHAM EXPLORATION AND MINING SERVICES			
CLIENT: BEACONSFIELD GOLD N.L.			
NORTH TASMANIA MINE			
PLAN AND SECTIONAL VIEWS			
0	100	200	SCALE: 1:500
DRAWN: L. A. Newham		DATE: August 93	FIGURE: MAP 2