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E.L. 9/76

BLUE TIER AREA

PROGRESS REPORT

OPEN FILE

Submitted by:

May, 1984

Beddows

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CONTENTS

	<u>PAGE</u>
SUMMARY	
1. INTRODUCTION	1.
2. LAND TENURE	2.
3. EXPENDITURE	3.
4. PREVIOUS WORK	3.
4.1 Exploration at the Anchor Mine	3.
4.2 Exploration on the Licence Area	4.
5. WORK COMPLETED APRIL-MAY, 1984	4.
6. RESULTS	6.
6.1 Gough's Lode Area	6.
6.2 North Liberator Area	6.
7. CONCLUSIONS	7.

APPENDICES

APPENDIX 1 Expenditure

APPENDIX 2 Diamond Drill Hole Logs (1984) - BT178-BT180

SUMMARY

Three diamond drill holes, totalling 412m, were completed in the southern part of E.L. 9/76 in April-May, 1984. These holes were designed to test two areas for open cuttable, greisen-style tin mineralization in concealed cupolas of the Alkali Granite. The two target areas were the Gough's Lode area, north-west of the Anchor Mine, and the North Liberator area, 2.5 km further west.

Drilling in the Gough's Lode area failed to intersect Alkali Granite in either of the two holes completed there. Given the geometric constraints imposed on the shape of the Alkali Granite roof by other drill intersections and the known outcrop pattern, an Anchor-sized, open cuttable mineralized cupola cannot be present in this area.

In the North Liberator area, the hole drilled intersected weakly greisenized Alkali Granite. Unfortunately the greisen proved to be tin poor (average grade, 55 ppm Sn). The depth of the Alkali Granite intersection suggests that the Alkali Granite roof forms a "spur" from the Crystal Hill dome. Consequently, an Anchor-sized, open cuttable mineralized cupola cannot be present in this area, either.

LIST OF FIGURESFigure

1. Locality Map (In text).
2. Drill hole locality plan (1:20,000)
3. Structural contours at the top of the Alkali Granite, Blue Tier Area (1:20,000)
4. Structural contours at the top of the Alkali Granite, Sheet 4 (1:5,000)

1. INTRODUCTION

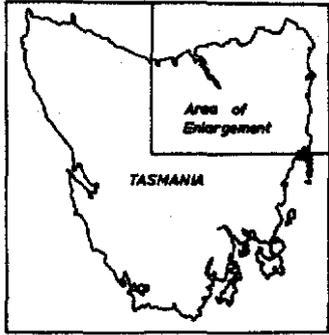
E.L. 9/76, the Blue Tier Exploration Licence area, covers 76 km² of elevated terrain situated approximately 30 km northwest of St Helens in N.E. Tasmania (Figure 1). The area enclosed by the licence includes the Anchor Mine and other numerous small mines of the Blue Tier Tinfield. The mines in the area are no longer active, but production from the tin field between 1870 and 1930 was about 4,000 tonnes of tin. The Anchor Mine accounted for some 2,350 tonnes or about 59% of production from the area (Ross, 1983).

The Blue Tier is a large steep-sided plateau which is about 700m above sea level and about 500m above the surrounding country. The lower slopes are covered with extensive eucalypt, wattle and myrtle forests. The upper slopes and plateau, with an average rainfall between 1500 and 2000 mm/year, are covered mainly by rainforest, scrub myrtle and grasslands. The entire region has been extensively logged.

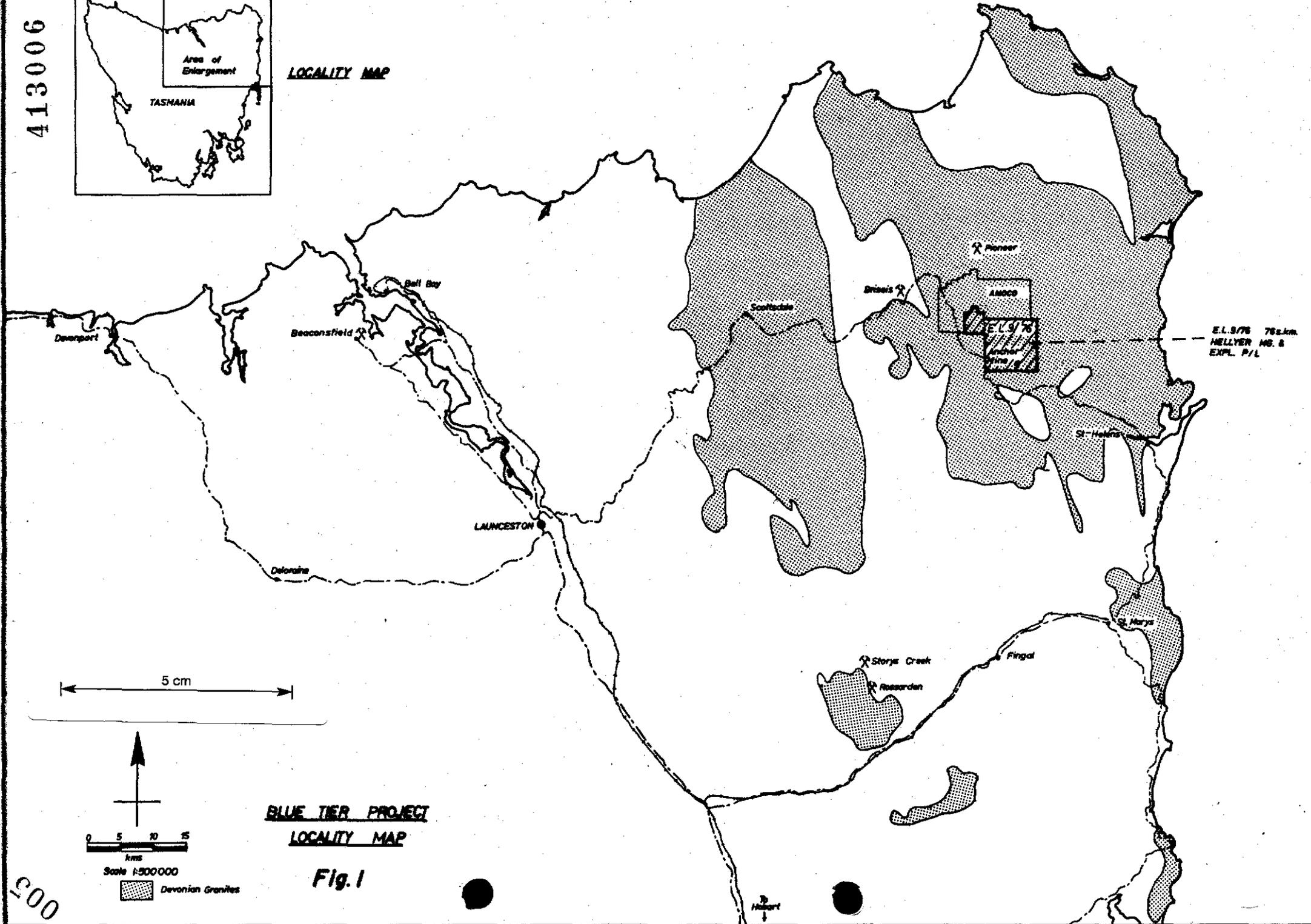
E.L. 9/76 includes a portion of a large Devonian granite mass, the Blue Tier Batholith, as shown in Figure 1. This granite mass is comprised of two major rock types in the licence area, (a) Poimena Adamellite (Dg-p, Dg-fp), which is a convenient name given to a variety of porphyritic, tin poor granites and (b) Alkali Granite (Dg-a) which consists of equigranular, tin-bearing leucogranites. The Alkali Granite intrudes the Poimena Adamellite. A variety of stanniferous deposits are present:-

- (1) Vein style mineralization-occurs in both rock types.
- (2) Greisenized Cupolas - occur only in the Alkali Granite.

413006



LOCALITY MAP



BLUE TIER PROJECT
LOCALITY MAP

Fig. 1

500

- (3) Alluvial deposits - formed by erosion of the above two.

In all three cases the ore mineral is cassiterite.

Exploration in the area since the 1960's has concentrated primarily on the greisen deposit at the Anchor Mine, firstly by Aberfoyle and later when Renison Ltd. began exploration in late 1977 in joint venture with Hellyer Mining and Exploration P/L. In mid-1981 a potential deposit had been assessed and delineated but was considered to be too small. Since that time exploration has continued on surrounding areas in an attempt to define additional deposits to supplement the Anchor resource.

This year, as proposed by Roberts and Cartwright (1984), a three hole drilling program was designed to test the remaining prospective areas. These areas were the North Anchor area (around Gough's Lode) and in the North Liberator area. Results of this drilling program are detailed in this report.

2. LAND TENURE

E.L. 9/76 is held by Hellyer Mining and Exploration Pty. Ltd., and is explored under a Joint Venture Agreement with Renison Ltd. Current project equity is Renison 60%, Hellyer 40%. The Licence operator is Gold Fields Exploration Pty. Ltd.

A number of small mining leases are held in the Licence area and these are detailed by Roberts (1982). The mining leases previously held over the Cambria Workings are now incorporated in E.L. 9/76.

3. EXPENDITURE

Expenditure on this area for the ten months to the end of April 1984 amounted to \$135,406. Only part of this was used during the program described in this report, the rest being spent on the previous exploration program completed in July-September, 1983. Although complete cost figures are not yet to hand, the cost of the recent program is estimated at approximately \$30,000.

4. PREVIOUS WORK

Exploratory work carried out on E.L. 9/76 can be divided into two categories (a) exploration around the Anchor Mine, and (b) exploration over the rest of the Licence area.

Details of all work completed on the Blue Tier area before Renison Ltd. commenced work in 1977 are shown in Ross (1978).

4.1 Exploration at the Anchor Mine

- (a) Diamond Drilling. Five drilling programs, comprising 83 exploration and 16 bulk sample holes (for metallurgical testing), have been completed at the Anchor Mine.
- (b) Other Work. This included metallurgical testing of ore from the Anchor, and an Indicative Feasibility Study.

It was decided, however, that the Anchor deposit was of insufficient size for development, and exploration efforts were directed to other areas of the Exploration Licence in order to locate additional

resources to supplement the Anchor. A multi-element lithogeochemical survey over the Anchor Mine was carried out to determine if there is a halo effect around mineralization and whether it may be used for exploration. The halo effect proved to be only limited (Cartwright, 1983).

4.2 Exploration elsewhere on the Licence Area

A photogeological study was done in 1979 and the results proved to be disappointing as different granite types could not be distinguished photogeologically. Then in 1979, 1980 and 1981 the majority of the E.L. was systematically ground surveyed over cut lines. This ground survey included geochemical samples and some geological mapping (Roberts, 1982).

A regional drilling program based primarily on the results of the ground surveys was undertaken to find stanniferous greisen bodies (Roberts, 1982). Although unsuccessful in accomplishing its aim it delineated areas of potential for this type of deposit. These areas of potential were drilled in a thirteen hole program in 1983 (Cartwright, 1983). The results were again disappointing.

5. WORK COMPLETED APRIL-MAY, 1984

The work completed in the April-May, 1984 period consisted entirely of a three hole drilling program. These three holes, numbered BT 178 to BT 180 and totalling 411.7m, were based on the proposals outlined by Roberts and Cartwright (1984). The drilling contractor was Associated Diamond Drillers.

Two holes were drilled in the North Anchor area around Gough's Lode and the other in the North Liberator area.

Access to the first two holes was by a single bulldozed track of about 2 km length which ran from an existing track which accessed Poimena Rd. The second hole was accessed from Lottah Rd by a logging track and about 250 m of bulldozed track. All the bulldozing was done by Mr. P. Grose (contractor). Owing to wind and rain, a bulldozer was required to clear the track into the first two holes, to shift the rig between BT 178 and 179, and then to remove the rig from the final site (BT 180). This work was done under contract by St Helens Readymix Concrete Company.

BT 178 and 179 in the Gough's Lode area were each triconed for the first 4m and then cored, firstly in NQ for 30.0m and 25.0m respectively, and then BQ to the bottom. BT 180 was cored from the surface using HQ for 0.0-3.0m NQ for 3.0-11.5m and BQ to the end. The hole collars were located using tape, compass and clinometer surveys. A total of 32 samples from BT 180 from greisenized Poimena and Alkali Granite were assayed for Sn and WO_3 at the Renison Assay Laboratory. Drill Logs and profiles are attached as Appendix 2.

6. RESULTS6.1 Gough's Lode Area

B.T. 178 was drilled at the centre of an interpreted Alkali Granite cupola just south of Gough's Lode. The hole encountered 151.0m of Poimena Adamellite. Hence the interpreted Alkali Granite cupola was either further to the north and west or to the east but not large enough to be of interest.

In the drilling proposal (Roberts and Cartwright, 1984) it had been suggested that, if B.T. 178 was completed in Poimena Adamellite at 150m, there would be insufficient room for an open cuttable Anchor-sized deposit in the Gough's Lode area. After reconsidering the evidence, it was decided that there could be room for an open cuttable ore body of the size wanted north-west of B.T. 178 so B.T. 179 was drilled. Unfortunately it also failed to encounter the Alkali Granite over its length of 121.0m.

So, these two holes have essentially closed off the possibility of there being an open cuttable, Anchor-sized body in the North Anchor-Gough's Lode area. There is still the possibility of a smaller cupola under the private property to the east and south of B.T. 178.

6.2 North Liberator Area

The hole drilled in this area, B.T. 180, was also positioned at the centre of an interpreted Alkali Granite cupola, north west of the Crystal Hill Alkali Granite dome. The hole struck weakly greisenized

Alkali Granite at 139.7m.

The greisenized Alkali Granite was assayed for tin and tungsten, as was a patch of greisenized Poimena Adamellite at 20.0m down hole. The assay results were very disappointing with a peak of 180 ppm Sn reached in the Alkali Granite. The average grade of tin in the greisenized Alkali Granite was about 55 ppm. Tungsten values were very similar with an average grade of 60 ppm. The assays returned from the greisenized Poimena Adamellite were even lower with tin averaging 40 ppm and tungsten 30 ppm.

The R.L. of the roof of the Alkali Granite also indicates that the area was not cupola as had been suggested but represents a spur from the Crystal Hill Dome on the flanks of the Australia Dome.

7. CONCLUSIONS

The results from the holes drilled in the Gough's Lode area indicated that there is not an Anchor-sized, mineralized Alkali Granite cupola there. The area seems to overlie a small "valley" in the roof of the Alkali Granite between a possible small cupola to the east of B.T. 178 and the rise in structural contours to the west. The size of the cupola that can be interpreted between Gough's Lode and the previous holes in the North Anchor area is unlikely to be large enough, even at its greatest possible extent, to be of interest. The veins in Gough's Lode area probably represent leakage from the small cupole to the east.

In the North Liberator area the hole struck^K the Alkali Granite at 99m, which means that the Alkali Granite at this point is actually a spur coming off the Crystal

Hill Dome and on the flank of the Australia Dome. The Alkali Granite is only weakly greisenized and contains very little tin and tungsten (maximum value 180 ppm). Due to the morphology of the roof of the Alkali Granite and its tin content, the area can be eliminated as a prospective area for an Anchor-sized deposit.

REFERENCES

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- Roberts, P.A., 1982: E.L. 9/76 Blue Tier Area, Progress Report. Unpublished Report, Renison Ltd.
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APPENDIX 1

1983-84 EXPENDITURE

015

BLUE TIER AREA

EXPENDITURE FOR TEN MONTHS TO END APRIL, 1984

GEOLOGY

- Salaries	21,827
Salary on-costs	7,640
Transport	539
Miscellaneous	1,266
Travel	1,655
Stores	709
	<u>33,636</u>

GEOCHEMISTRY

- Assays	1,113
Stores	209
	<u>1,322</u>

DRILLING

- Miscellaneous	26
Assays	4,425
Outside Contractors	70,682
Stores	980
	<u>76,113</u>

SITE PREPARATION

- Outside Contractors	<u>2,610</u>
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SURVEYING

- Outside Contractors	<u>2,690</u>
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MOTOR VEHICLE EXPENSES

6,725

ADMINISTRATION COSTS

12,310

TOTAL : 135,406

016

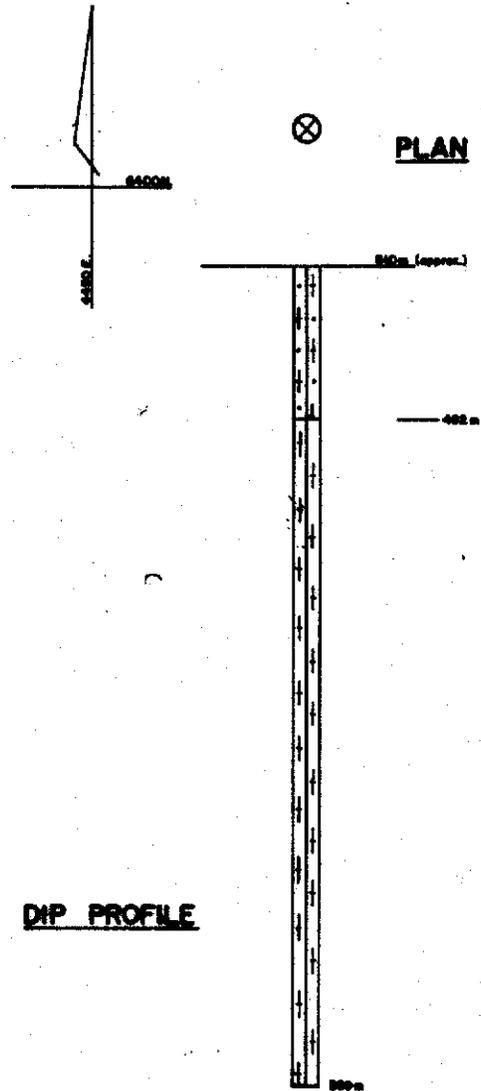
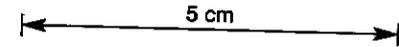
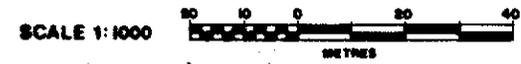
APPENDIX 2

DIAMOND DRILL HOLE LOGS (1984)

BT 178 - 180

HOLE NO. BT 178

GOLD FIELDS EXPLORATION PTY. LIMITED
DIAMOND DRILL HOLE PLOT



020

413021

GOLD FIELDS EXPLORATION PTY. LIMITED
DRILL CORE LOG AND ASSAY DATA

PROJECT: BLUE TIER

HOLE NUMBER: B.T. 178

Page: 2.

LV. PRESS

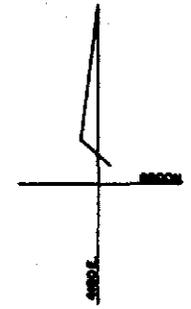
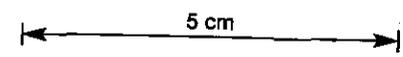
INTERVAL		RECOVERY		DESCRIPTION	ASSAY DATA														
From	To	m	%		Sample No.	From	To	Rec. %											
					The vein surface is coated with sericite.														
73.05	84.30	11.25	100	Essentially unaltered, medium grained, grey, porphyritic granite. Feldspars are up to 4cm long. Minor green sericite alteration is found as a halo around joints and veins. Several xenoliths are found in the core at 79.30 (This has a 1 cm wide reaction rim) and 82.98m, and are about 8cm long.															
84.30	95.90	11.60	100	This intersection is affected by a nearly vertical vein that cuts the core. Sericitic alteration is increased markedly and several small weakly greisenized zones developed around the vein.															
95.90	131.90	36.0	100	Weakly altered to unaltered grey, porphyritic granite, with feldspars up to 3-4 cm long. Quartz are grey and there is a black biotite also present. The only alteration is minor sericite halos around joints and veins.															
131.90	134.70	2.80	100	Weakly greisenized green-grey, porphyritic granite that also is weakly altered.															
				134.7-151.0 WEAKLY TO MODERATELY ALBITIZED POIMENA ADAMELLITE.															
149.52	149.52			Grey to orangey-red porphyritic granite. This intersection shows an increase in albitic alteration from top to bottom. Firstly the feldspars are becoming a pinky-orange colour and gradually the rock becomes a pinky orange colour.															
151.0	151.0			Quite strongly albitized porphyritic granite. Very orange-red in colour with grey to clear quartz.															
				END OF HOLE 151.0m															

413023

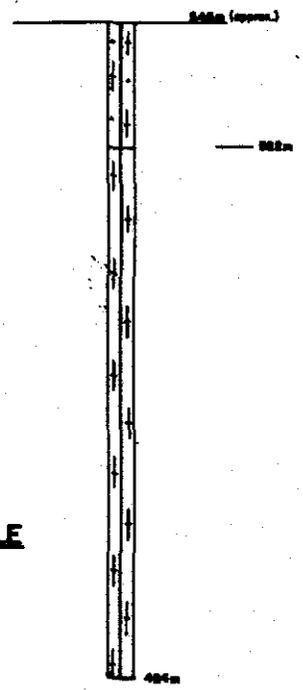
HOLE NO. BT 179

GOLD FIELDS EXPLORATION PTY. LIMITED
DIAMOND DRILL HOLE PLOT

SCALE 1:1000



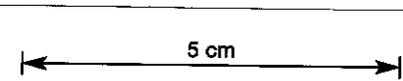
⊗ PLAN



DIP PROFILE

HOLE NO. BT 180

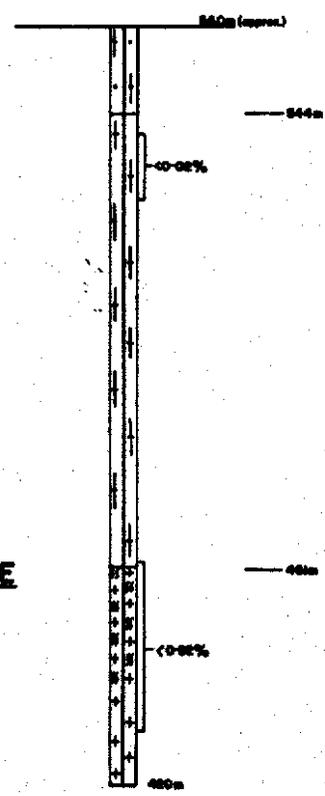
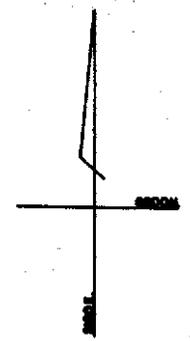
GOLD FIELDS EXPLORATION PTY. LIMITED
DIAMOND DRILL HOLE PLOT



6040 N.
2000 E.



PLAN



DIP PROFILE



- Drill Holes
BT ○ Renison/Goldfields Drilling
- Area of Detailed Drilling at the Anchor Mine
- Structural Contours at the top of the Alkali Granite
- Top of Alkali Granite Contact - 100m below surface

LEGEND

Quaternary
 Dg Alluvium, colluvium
 Tc Gravel, sand, clay

Tertiary
 Tt Basalt
 Tg Agglomerate and tuff

Sluic-Devonian
 Mh Mathinna Beds

BLUE TIER COMPOSITE BATHOLITH

Dg-a Alkali Granite - similar to granite in Anchor Mine, medium grained
 Dg-b Fine to medium grained, includes all other leucocratic types, e.g. quartz-feldspar porphyry, etc. Leucocratic Granite Types
 Dg-c Pimena Adamellite, mesocratic porphyritic biotite granite/adamellite
 Dg-d Granodiorite

→ Apparent Dimple feature in roof of alkali granite
 ~ Dip of granite contact
 - Interpreted geological contact
 - Photo-Lineament
 * Old Workings
 --- Cut Grid Line
 --- Vehicle Track
 --- Sealed Road
 --- Licence Boundary

413033

RENISON LIMITED

**BLUE TIER AREA
STRUCTURAL CONTOURS AT THE
TOP OF THE ALKALI GRANITE**

GEOLOGIST P.A.R./A.J.C. SCALE 1:20000 METRES
 DRAUGHTSMAN T.G.D.S./S.J.F.
 DATE APRIL 1982
 REVISIONS A.J.C. No. 03
 J.W.B. June 1984 DRAWING No. 3



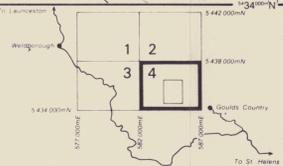


 **GEOLOGICAL CONTACT**
 **STRUCTURAL CONTOURS AT THE TOP OF THE ALKALI GRANITE**
Dg-a ALKALI GRANITE
Dg-p POIMENA ADAMELLITE

413034
5 cm

LEGEND

	Sealed Road		Contour
	Unsealed Road		Spot Elevation
	Main Track		Approx. Spot Elevation
	Minor Track		Form Lines and Bare Spot Elevations indicate lower reliability due to dense vegetation cover
	Bridge		Datum
	Watercourse		Grid Interval
	Fence		
	Power Line		
	Timber Boundary		
	Fusion Doubtful		
	Interpolation Doubtful		



RENISON LIMITED
BLUE TIER AREA
STRUCTURAL CONTOURS AT THE TOP OF THE ALKALI GRANITE AND DRILLING RESULTS
 GEOLOGIST A.J.C.
 DRAUGHTSMAN S.J.F.
 DATE Dec., 83
 REVISIONS JWB June 1984
 SCALE 1:5,000 METRES
 DRAWING No. 4

E.L. 9/76

Mapping photogrammetrically compiled by Associated Aerial Surveys Pty Ltd
 Compilation date November 1978 from aerial photographs dated 12.12.1977