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# EXPLORATION LICENCE 32/97

# "LEVEN RIVER"

# TASMANIA



## Progress Report for the Period 8 May 1999 to 8 May 2000



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Progress Report for period 8 May 1999 to 8 May 2000 - EL 32/1997
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Anon EL32/1997

## ABSTRACT

EL 32/97 is considered to be prospective for base and precious metal deposits within the Mount Read Volcanics , but the prospective host rocks are largely concealed beneath a substantial thickness of Tertiary basalt . In the past , this basalt cover has proven a severe problem for conventional exploration methods , and the area remains little explored .

During the first year , a program of literature review was followed by regional soil geochemistry , using two leading-edge mobile metal ion methods ; a total of 432 samples were collected , at a sampling density of two sites per square kilometre .

In the first part of the second year these samples were checked , repackaged , and despatched to Russia for chemical analysis , but by year end the results had not been received .

Valid anomalies would be evaluated by more detailed sampling with the same methods . Proximity to interpreted regional lineament intersections would be a favourable factor in ranking the geochemical anomalies .

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## INTRODUCTION

### General

The Leven River Exploration Licence (EL 32/97) , granted on 8 May 1998 for a period of five years , comprises 200 square kilometres . The Licence holder is Mr C O Haslam .

This Report summarises exploration completed on EL 32/97 for the period 8 May 1999 to 8 May 2000 .

### Licence Location

The Licence surrounds the former EL 106/87 on the west and north , and then extends a further twelve kilometres north-easterly to Two Hummocks and beyond .

The location of EL 32/97 is shown on Figure 1 .

### Exploration Objective

The exploration program was designed to locate economic metalliferous deposits within the Mount Read Volcanics sequence , with a particular focus on volcanic hosted massive sulfide base metal deposits .

To a very large extent the area of the Licence is covered by Tertiary basalt ; this has constituted a double handicap to mineral exploration in the past .

Firstly , only a minor proportion of the total geological sequence of the region is prospective for economic metalliferous deposits . The younger cover conceals much of the prospective horizons . This aspect has been assisted , to a small extent , by past exploration drillholes which have penetrated through the basalt , and to a somewhat larger extent by the proactive program of stratigraphic drilling and regional geological interpretation undertaken by Mineral Resources Tasmania some years ago .

Secondly , the Tertiary basalt , up to 200m or more in thickness , has proven a severe technological barrier to conventional geophysical and geochemical methods .

Overcoming this constraint has had to await the development of new technology . Mineral Strategies was engaged to apply leading edge soil geochemistry , in an endeavour to surmount the problem .

**Exploration Strategy**

Mineral Strategies staff have applied mobile metal ion soil geochemistry over Tertiary basalt covered areas in Victoria , and are confident of the applicability of the method to EL 32/97 . In the first year of the Licence a regional geochemical sampling program was completed .

Aberfoyle Resources Ltd staff concluded that the network of synvolcanic faults within the Que Hellyer Volcanics basin played an important role in the localisation of the Que River and Hellyer orebodies , particularly where those faults intersected the "Que Hellyer Trend" .

As a logical extension of this , Mineral Strategies proposed to use regional lineament intersections - favouring those azimuths considered most important by Aberfoyle staff - as a complementary method for ranking mobile metal ion geochemical anomalies defined in the regional program .

Careful consideration has also been given to the published work of Dr D E Leaman in this regard .

The Que Hellyer Trend , and a number of the major regional lineaments , are shown in Figure 2 .

## EXPLORATION COMPLETED IN THE REVIEW PERIOD

### Literature Review

Further time was spent in the first part of the year carefully reading selected parts of the vast amount of published literature on the Mount Read Volcanics , and the archived Progress and Final Reports of previous holders of Exploration Licences in the general region . Discussions were also held with geoscience staff members at Mineral Resources Tasmania and at the University of Tasmania .

Given the style of folding in the Hellyer Mine area , the Que Hellyer Volcanics suite intersected in Pancontinental / Outukumpu drillholes MXRD1 and MCDD6 , northwest of Mount Cattley , is likely to be more strongly folded than is shown in Figure 2 (Figure 19 of MRV Project Report 1 , 1991) . This conclusion is shown diagrammatically by green hatching on Figure 2 . If the conclusion is valid , there could be substantially more of the Que Hellyer Volcanics sequence beneath basalt cover in the Beecroft Road / Wattle Park Road / Middlesex Road region of EL 32/97 .

With regard to economic and exploration geology , the Aberfoyle Resources Ltd annual Progress Reports on EL 106/87 since 1993 are considered the most relevant of the available publications .

### Regional Exploration Method

Regional soil geochemistry using the new mobile metal ion technique has been completed . Mineral Strategies uses the original technology developed in Russia , specifically the methods termed MPF and TMGM .

Descriptions of these methods were included in the previous Progress Report .

### Field Exploration Completed

Following the regional program in the first year , it was found that the field crews had missed a number of sampling sites ; a short supplementary field program was required to acquire those samples .

**Soil Sample Preparation and Analysis**

At present , samples can only be analysed at the Government laboratories of Rudgeofizika , in St Petersburg , C.I.S.

The field program was carried out in generally wet conditions , and the samples stored in boxes . When the samples were returned to Melbourne it was found that many of the standard kraft paper sample envelopes had deteriorated or split ; considerable time was spent transferring those samples to new envelopes . In this process it was also noted that many samples still contained a significant amount of small twigs and stones , so the unwanted material was removed .

This exercise showed that a number of sampling sites had been missed by the field crews , and so a short supplementary field program was required .

By the end of the second year (8 May 2000) the sample analyses had still not been received from Russia .

**Discussion**

Results of the regional geochemical survey are not yet available .

The next phase of the field program would involve detailed follow-up soil sampling using the MPF and/or TMGM method(s) over anomalies defined by the regional program . This cannot commence until the results of the regional program are available .

Further consideration of regional structural elements , and the reading of relevant reference works , has continued .

## ENVIRONMENTAL ASPECTS

The geochemical survey involved taking 100g to 150g of soil at the surface , and also at a depth of about 35cm using a hand auger . Sample sites were rehabilitated to their previous condition . It was not necessary to cut lines .

Sampling crews operated on foot from vehicles which remained on public roads , or North Forests Ltd gravel roads .

## EXPENDITURE

Expenditure for the twelve months to 8 May 2000 was approximately $49,000 . A more precise figure will be provided shortly .

## REFERENCES

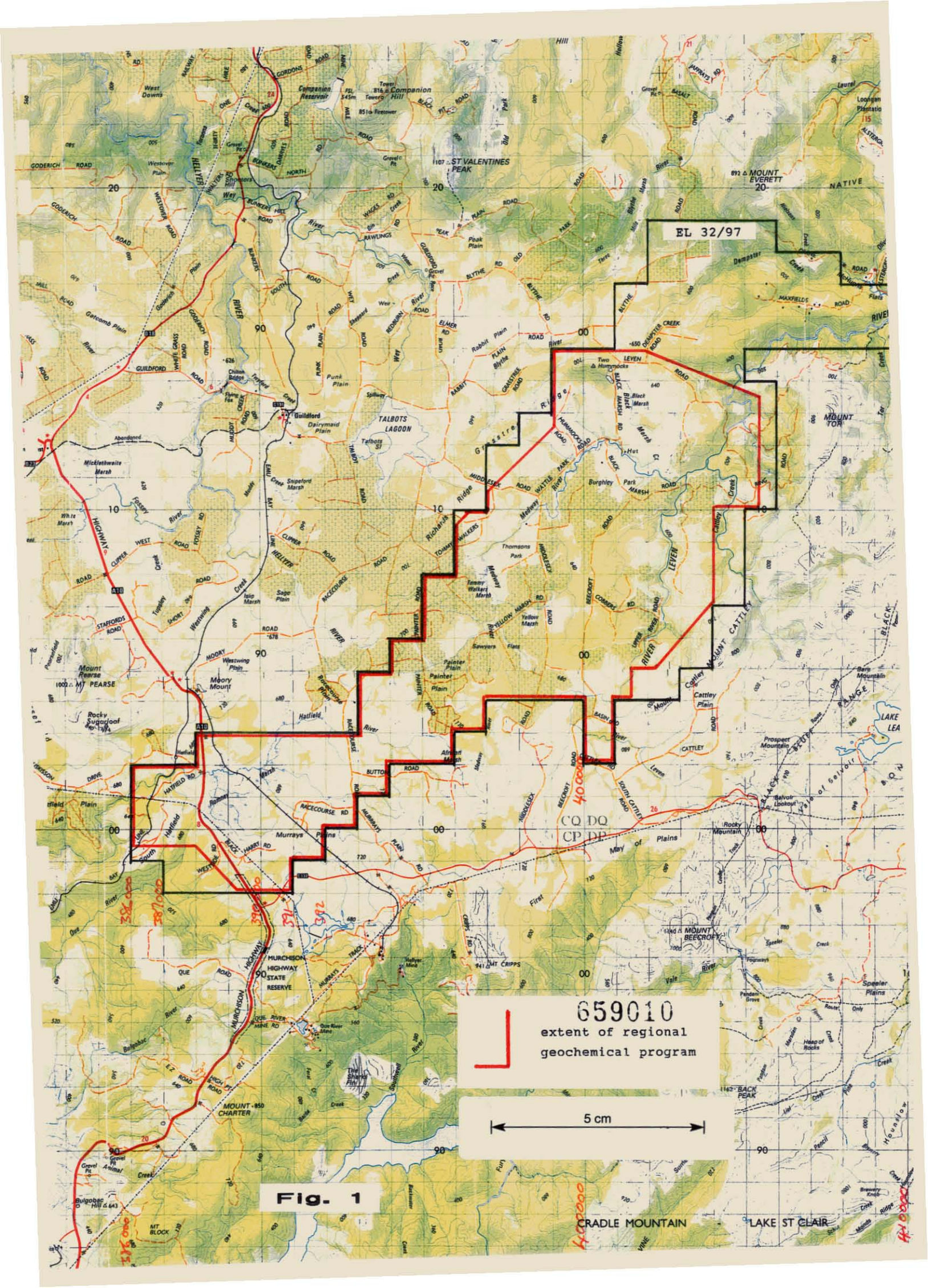
Aberfoyle Resources Ltd Annual Progress Reports on EL 106/87

Dronseika E V , 1996 Hellyer TMI Geochemistry (Internal Report TAS 0028-8/96)

Leaman D E , 1986 Interpretation and Evaluation Report on the 1981 West Tasmania Aeromagnetic Survey (MRT Geophysical Report No.1)

## KEYWORDS

Mount Read Volcanics , mineral exploration , volcanic hosted massive sulfides , geochemistry , mobile metal ion .


EL 32/97
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extent of regional
geochemical program
5 cm
CQ DQ
CP DP
CRADLE MOUNTAIN
LAKE ST CLAIR

Fig. 1

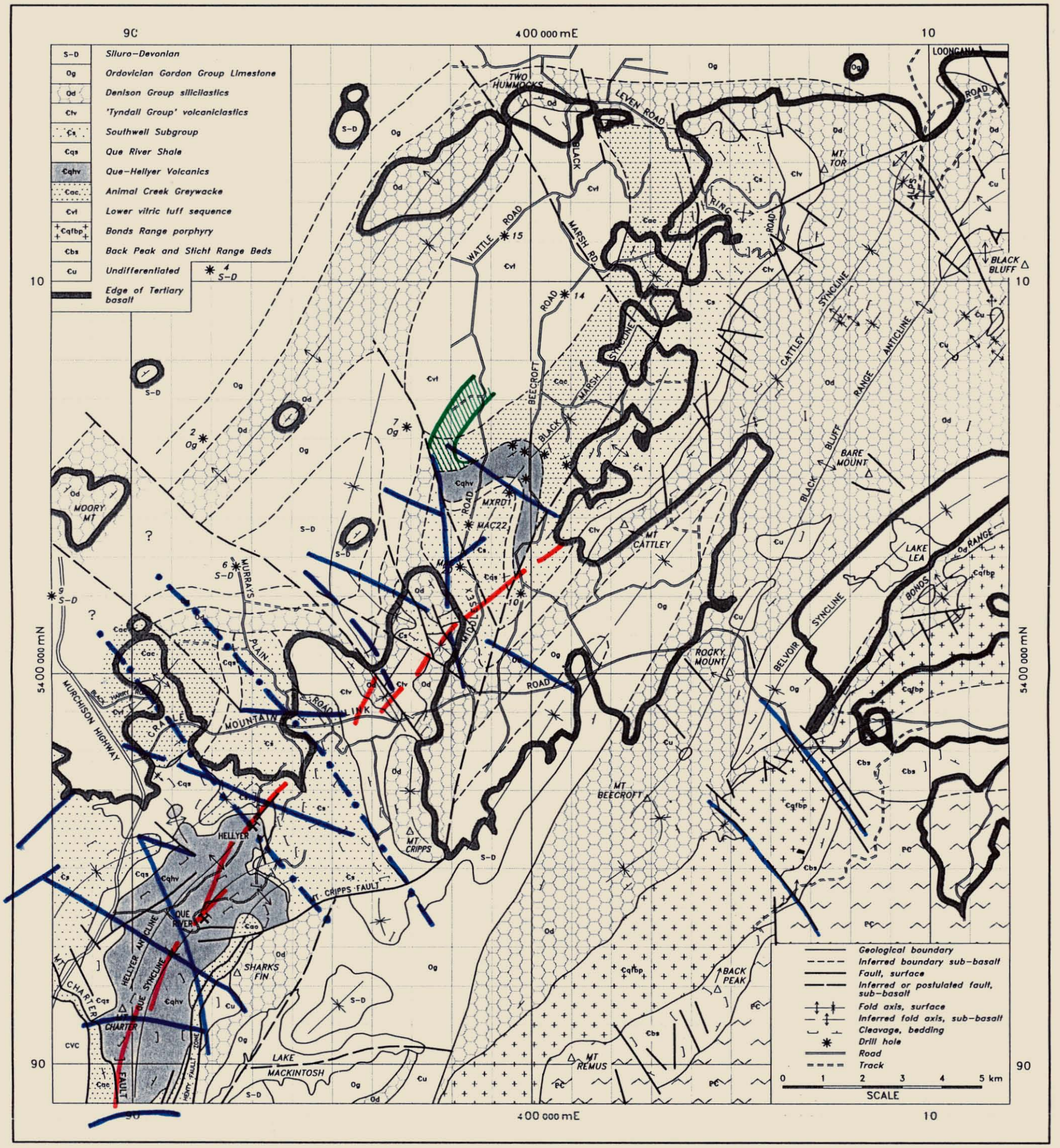


**FIGURE 19. SUB-BASALT MAP AND STRUCTURAL MAP OF THE HELLYER - TWO HUMMOCKS - BLACK BLUFF RANGE AREA**
*Pemberton et al. MRVP Geol. Rep.4 1991.*

5 cm

Que Hellyer Trend

Major Linears

Gravity Break

**Figure 2**

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