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DEPT. OF MINES				
REF. No. <i>7885/82</i>				

PROJECT NAME: Exploration Licence 5/81

TITLE: Six Monthly Report to the Tasmanian Department of Mines, for the period 12th November, 1981 to 12th May, 1982.

**OPEN FILE**

AREA NAME/S, STATE 1:250,000 SHEET NO/S & COORDINATES: Launceston K55-04  
E567 000m.  
N5448 000m.

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TABLE NOS: 11

APPENDICES: 1

AUTHOR/S: B.D. MELLOR

DATE: 11.6.82

**82-1776**

AUSTRALIAN ANGLO AMERICAN LIMITED

Incorporated in the State of Victoria

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EXPLORATION LICENCE 5/81

Six Monthly Report to the Tasmanian Department of Mines  
for the period 12th November, 1981 to 12th May, 1982.

1. INTRODUCTION

Australian Anglo American Prospecting Limited (AAA) and the Triako group of companies are exploring the Ringarooma Valley and the Great Northern Plain for alluvial tin deposits, under a Joint Venture agreement (AAA- Triako Ringarooma Joint Venture). Moruka Tin Pty. Ltd. and Kibuka Mines Pty. Ltd. are members of the Triako group of companies. Amdex Mining Limited is Triako's operating company based at Pioneer, Tasmania. The principal tenements involved in the Joint Venture are:-

<u>Tenement</u>	<u>Company</u>
E.L. 5/81	Australian Anglo American Prospecting Proprietary Limited
E.L. 28/76	Moruka Tin Pty. Ltd.
E.L. 2/77	Kibuka Mines Pty. Ltd.
A.P. 1/80	Kibuka Mines Pty. Ltd.

The location of these tenements is shown on the attached plan. It is intended to investigate these tenements as much as possible as one prospecting entity.

2. WORK DONE

Work done has included a geomorphological survey, using Landsat imagery, and a Heavy Mineral stream sediment survey.

3. GEOMORPHOLOGICAL SURVEY

(N.B. All bearings refer to AMG grid north)

The geomorphological survey covered the eastern half of the 1:250 000 Launceston map sheet K55-4. The study was based on the Landsat Station (No. CO60881/223 882 3055 Path 96 Row 89). Regrettably, the survey produced little of real value as a prospecting aid.

2.

The main points of interest are as follows:-

3.1. Folding

No fold axes or closures were detected.

3.2. Fracturing

3.2.1. Rose diagrams (TAS-10-6-.58,61 & 59)

Rose diagrams show the major fracture trends are:- 20°, 80°, 120° and 140°, and the regional strike is 135°.

3.2.2. Fracture Density Analysis (TAS-10-54,53,57,68,55,56 & 60)

High densities of fractures and intersection of fractures appear to be associated with outcrop of granodiorite and, to a lesser extent, to Jurassic dolerite. The directional density plots indicate the fracture trends are uniform, except for the 4-26° fracture trend which is concentrated in the central, northern and eastern part of the region.

3.3. Geomorphological Interpretation

3.3.1. Structural Control

There is strong coincidence of structural lineaments and/or fractures with river and stream valleys, and the prominent trend of drainage throughout the area is north-west. In places, there has been capture by drainage controlled by east-west fractures. Fracture analysis indicates that the north west trending fractures predate the later east west trending fractures.

3.3.2. Warping

Little or no evidence for major warping, either up or down, has been detected from Landsat imagery.

...3

## 3.

3.3.3 Evolution of Geomorphology

The general development history may be summarised as follows:-

Initially, northerly and southerly trending rivers developed from a northeast - southwest trending palaeodivide in pre to early Tertiary. This drainage was controlled by strong northwest and northeast trending fractures and the regional strike. Subsequently, during the Tertiary the development of east-west fractures (related to stress fields that produced the Bass Basin) resulted in headward erosion of subsequent streams along these fractures and therefore capture of the northerly and southerly trending streams. The temporal pattern was determined by changes in sea level during the Tertiary, (which controlled the rejuvenation throughout the area), and the fault controlled uplift to the east of the Tamar graben, along the pre Tertiary palaeodivide. This accentuated the headwater erosion of eastward flowing consequent streams resulting in captures.

4. HEAVY MINERAL CONCENTRATE STREAM SEDIMENT SURVEY

One sample of conglomerate and four stream samples were collected. Heavy mineral concentrates were prepared from these samples by panning and bromoform separation. The concentrate was then "tinned" in a zinc dish with hydrochloric acid to assist identification of cassiterite. The concentrates were then submitted to Central Mineralogical Services for mineralogical examination. A copy of their report is appended.

The objective was to determine whether the heavy mineral assemblage gave any indication of Blue Tier Batholith origin. If such indications were found, they would support the placer depositional model developed by Newton-Smith (1981.)

## 4.

Sample 1 was of conglomerate taken from Hardmans Hill. This conglomerate rests directly on sediments of the Mathinna Beds and could possibly have been a basal conglomerate along the trend of the Cascade Lead. Samples 2 (EQ667 497), 3 (EQ657 494) and 4 (EQ656 496) were stream sediment samples taken from sites downstream from Hardmans Hill and/or from streams draining the trend of the Cascade Lead, and northwest of the Tertiary Basalt. Sample 5 (EQ659 536) was taken from the Boobyalla River, about 2½ kilometres downstream from the site of the Gellibrand Plain drill site (EQ653 512. See Report on EL2/77, Six-Monthly Report to the Department of Mines, Tasmania for the period ending 7th March, 1982).

The results of the survey are inconclusive. Cassiterite zircon, rutile (+ anatase), ilmenite, topaz and tourmaline were recognised in trace amounts in the concentrates. Most of the cassiterite occurred as small angular grains, probably derived from a nearby source.

It is most likely that the cassiterite and other heavy minerals are derived from small, mineralised quartz veins injected into the Mathinna Beds sediments by mineralised acidic rocks of the Blue Tier Batholith. It is probable that the Blue Tier Batholith is not deeply buried in this locality, and evidence for this includes the embayment structure of the Mathinna Beds relative to the Blue Tier Batholith plus the existence of the adjacent broad zone of contact metamorphosed Mathinna Beds.

5. FUTURE PROGRAMME5.1 Geomorphological Survey

The geomorphological survey based on the study of air-photographs is in progress, and will be continued.

5.2 Drilling

It is proposed to drill to test for mineralisation and to define the profile of the basement of the Tertiary sediments below the basalt cover near the narrowest width between the Mathinna Beds to the west and the Blue Tier Batholith to the east. The holes will be drilled late in 1982, after the finish of the wet season.

5.

6. EXPENDITURE

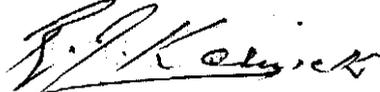
A statutory declaration of the expenditure incurred on work carried out by the AAA-Triako Ringarooma Joint Venture is attached.



Bruce D. Mellor

Divisional Geologist,  
Tasmania.

Approved by



R.J. Kernick  
Exploration Manager

Date: 11.6.82

I, ANKA URSULA MARTHA HOPP of 17 Busana Way, Nunawading in the State of Victoria, Accounts Supervisor DO SOLEMNLY AND SINCERELY DECLARE as follows -

1. That the details of work for the three months ended 31 May 1982 on tenements in the Ringarooma Joint Venture are described in the accompanying report.
2. That in the three months ended 31 May 1982 we have expended \$26 457 on the above tenements analysed as follows -

	\$
(a) Field staff and associated costs	3 453
(b) Operating costs	1 315
(c) Tenement costs	-
(d) Specialist services	15 629
(e) Project management	4 410
(f) Drilling	-
(g) Contractors	1 650
(h) Capital expenditure	-
	26 457

3. That the cumulative amount expended on tenements in the Ringarooma Joint Venture to 31 May 1982 is \$193 376.

AND I MAKE this solemn declaration conscientiously believing the same to be true and by virtue of the provisions of an Act of the Parliament of Victoria rendering persons making a false declaration punishable for wilful and corrupt perjury.

DECLARED AT *MELBOURNE* )  
 )  
 in the State of Victoria )  
 )  
 this *22nd* day of )  
 )  
 June 1982 )

Before me:

*[Signature]*  
 A Commissioner for taking Declarations and  
 Affidavits under the Evidence Act 1958.

REFERENCES

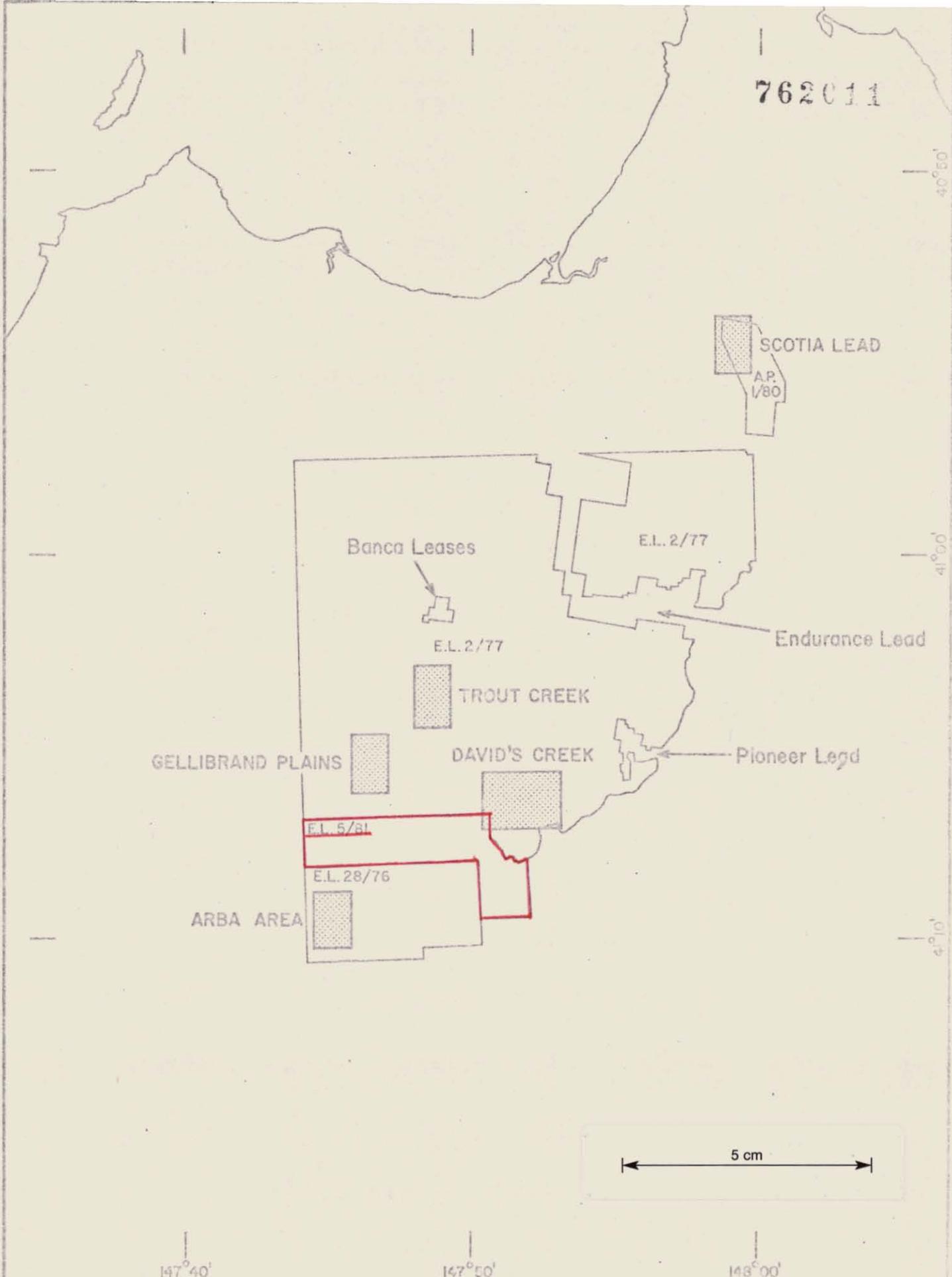
- NEWTON-SMITH, J.      A Preliminary Review of  
the Alluvial Tin Potential  
of the Ringarooma Valley  
including an assessment of  
the mineral tenements held  
by Amdex Mining Limited.  
27th February, 1981.
- HUSSEY, M.C.      Palaeogeomorphological study  
of Northeast Tasmania, Phase 1  
Landsat Analysis.  
1st March, 1982.

LIST OF PLANS

<u>Plan No</u>	<u>Title</u>	<u>Scale</u>
TAS-10-72	Tenement Location Map	1:250 000
TAS-10-60	Rose Diagram, Lineaments, 5° interval	
TAS-10-58	Rose Diagram, Lineaments, 10° interval	
TAS-10-61	Rose Diagram, Length of Lineaments, 5° interval	
TAS-10-59	Rose Diagram, Length of Lineaments, 10° interval	
TAS-10-54	Lineament Density (Total)	1:1 000 000
TAS-10-53	Lineament Intersection (Total)	1:1 000 000
TAS-10-57	Directional Lineaments, 4° -26°	1:1 000 000
TAS-10-68	Directional Lineaments, 3° -27° (Contoured)	1:1 000 000
TAS-10-55	Directional Lineaments, 129° -161°	1:1 000 000
TAS-10-56	Directional Lineaments, 69° -91°	1:1 000 000

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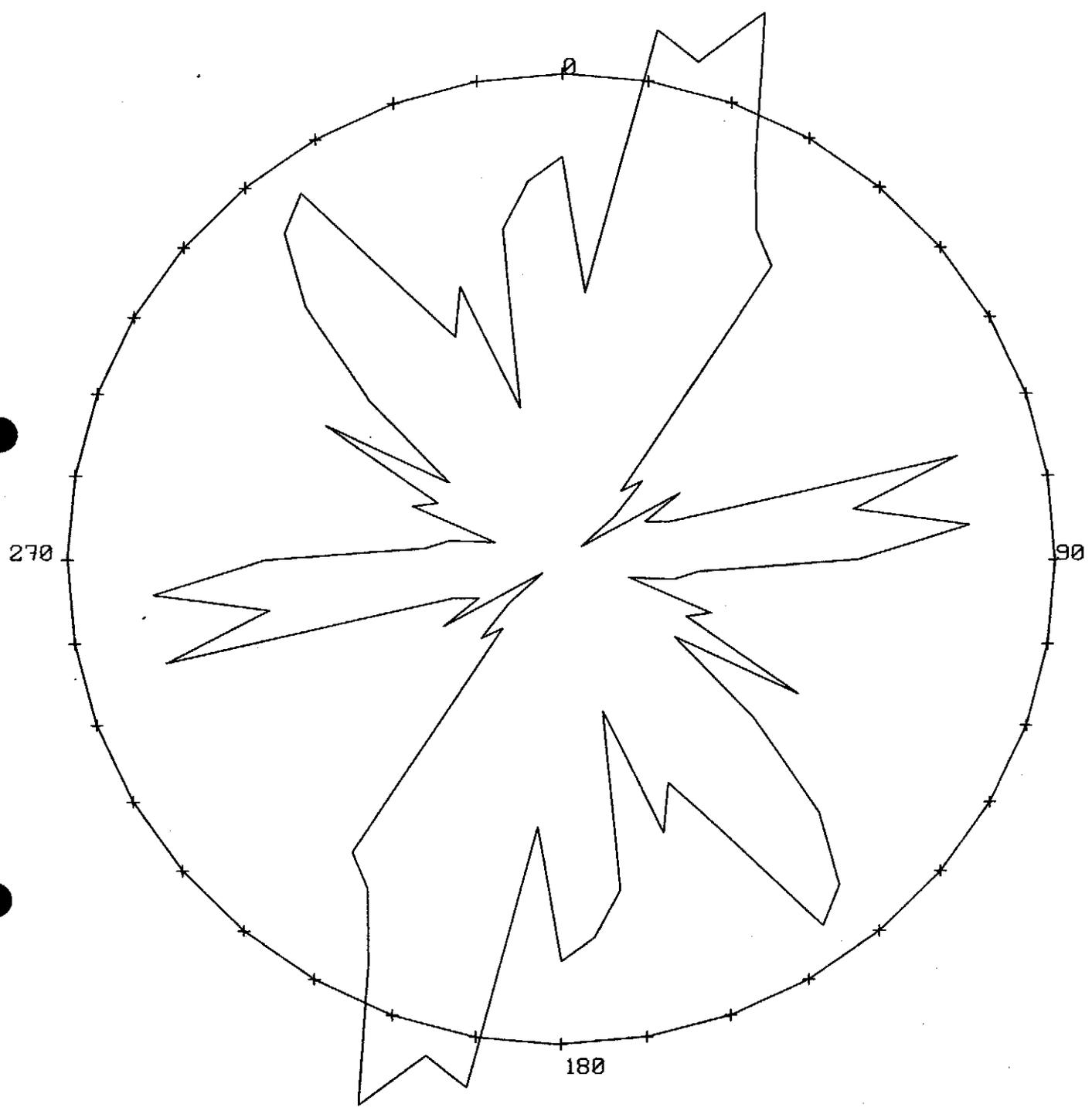
AUSTRALIAN ANGLO AMERICAN LIMITED

TASMANIA DIVISION

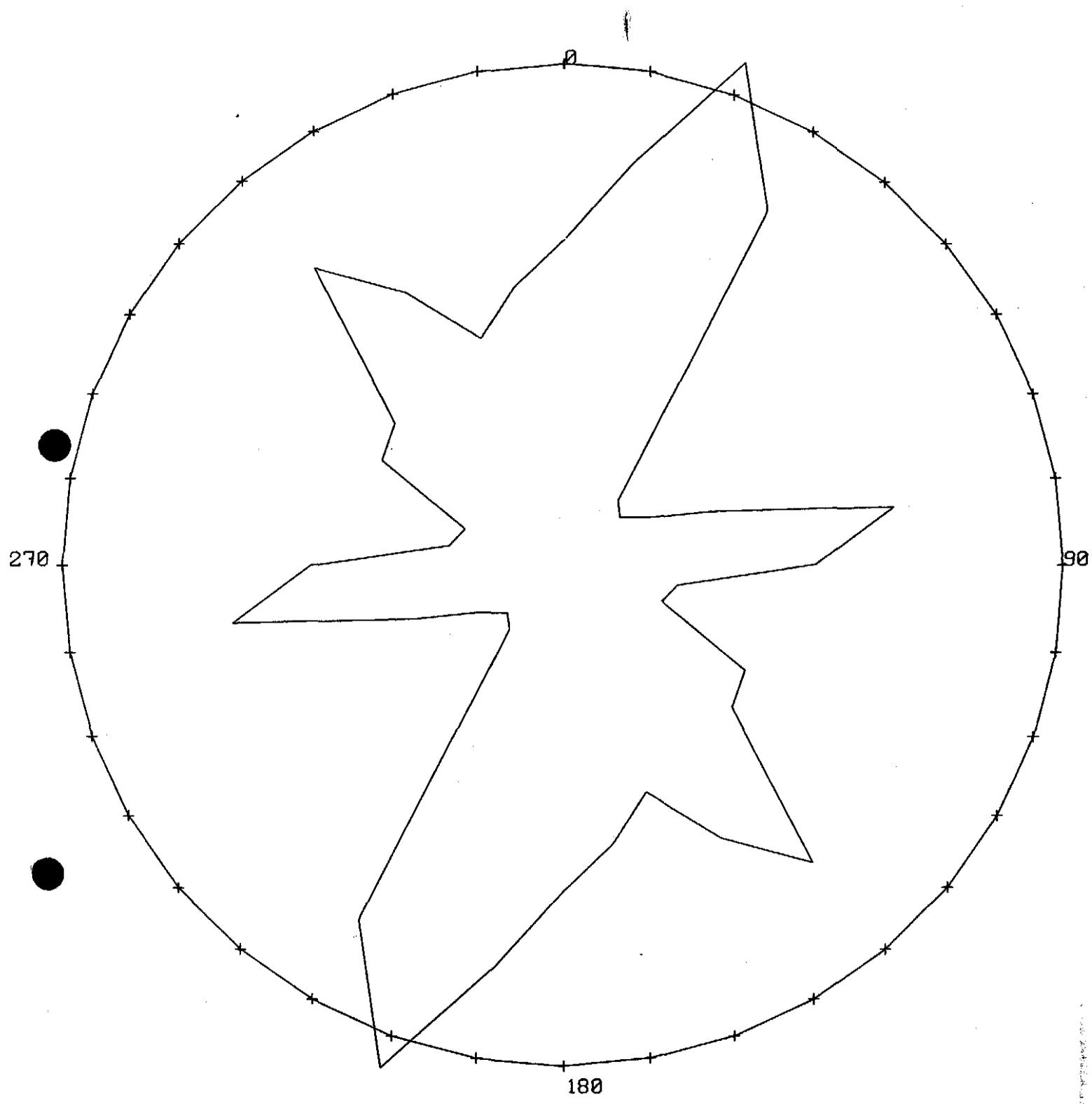
**RINGAROOMA PROJECT**

**TENEMENT LOCATION MAP**

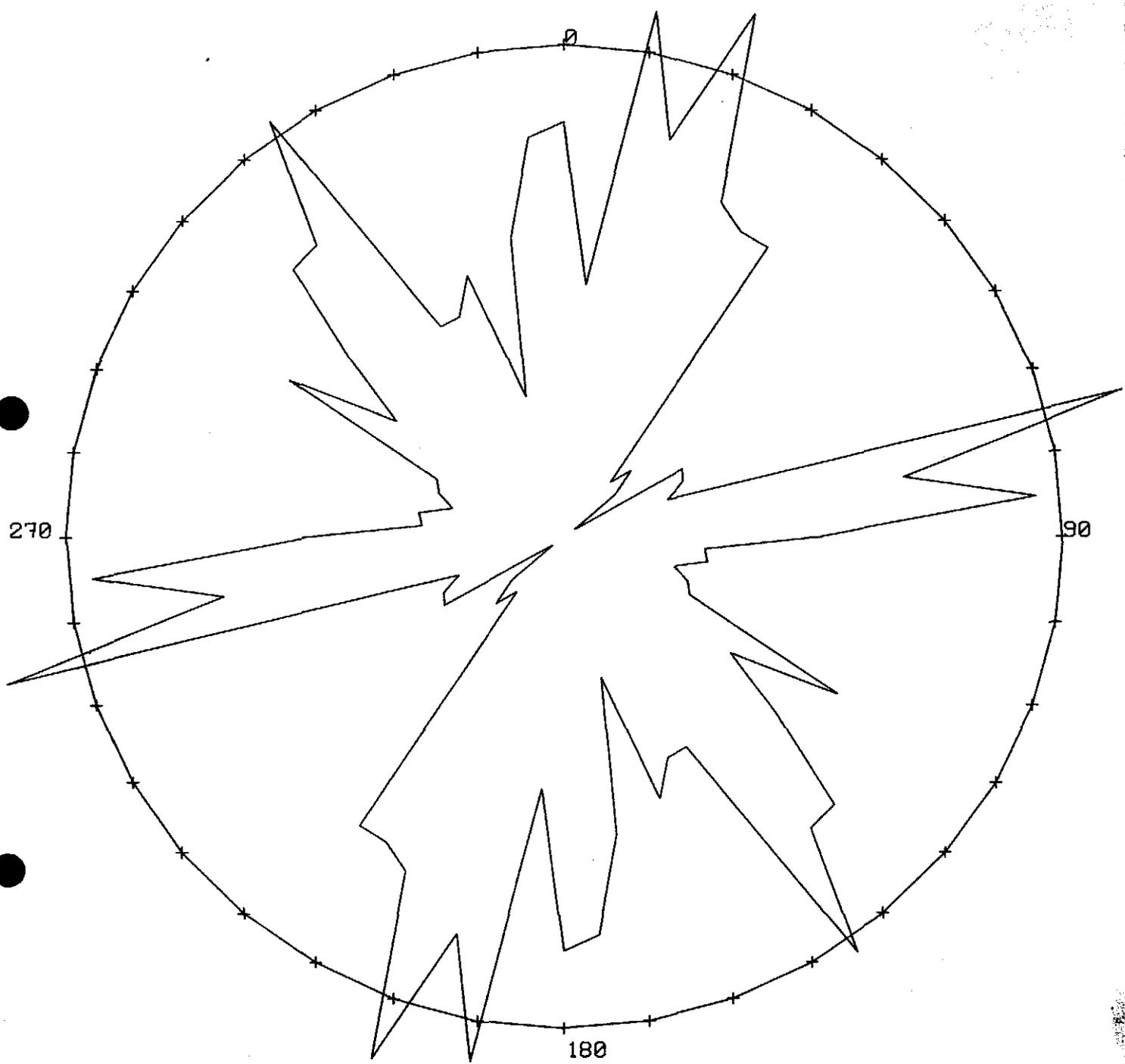
COMPILED	I.G.R.W.	DRAWN	April 1982	SCALE	1:250,000	TAS-10-72
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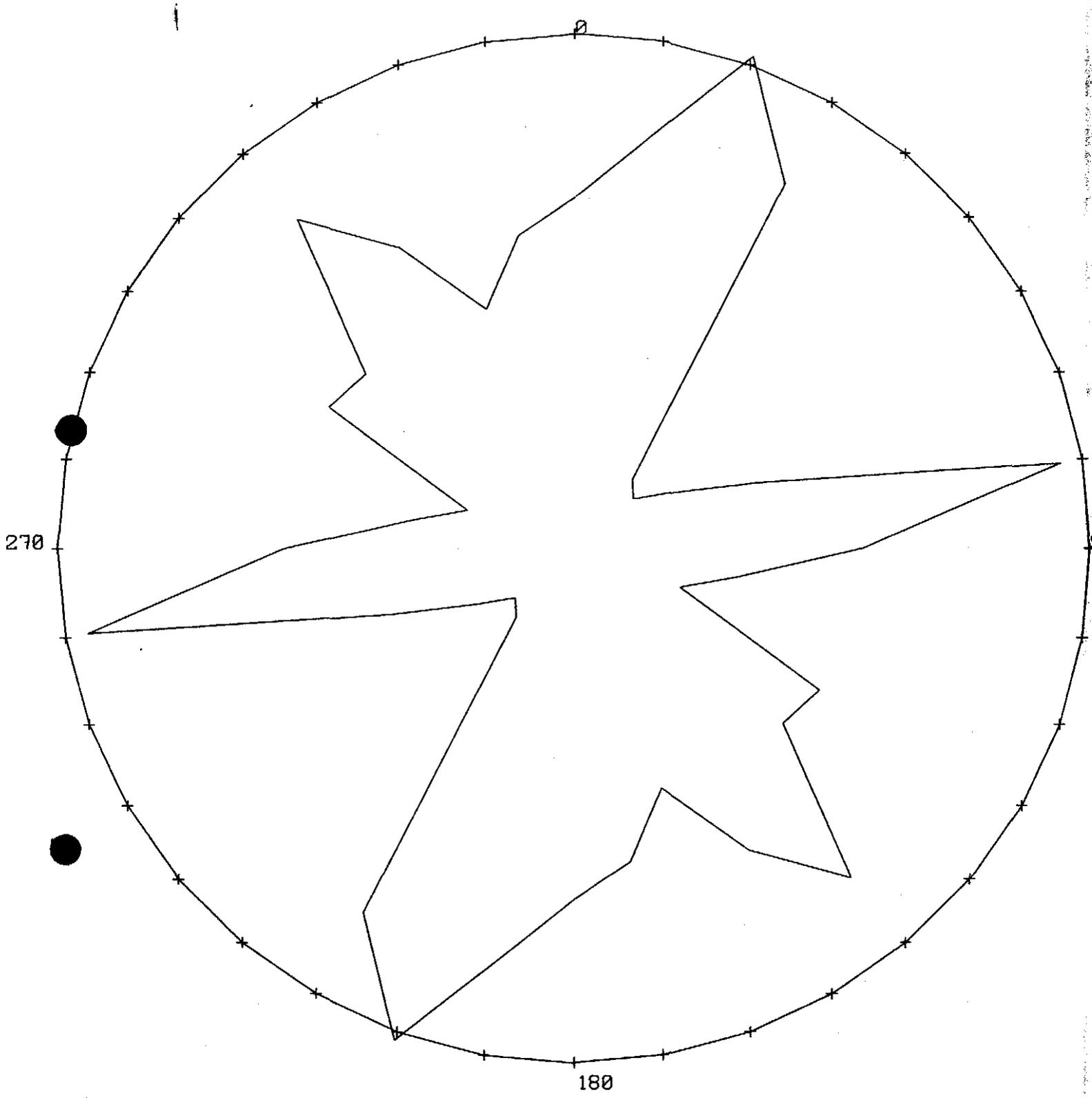
AREA ID. • BLUELN  
INTERVAL= 5 DEGREES  
CIRCLE RADIUS = 5 PERCENT  
BASED ON AZIMUTH/NUMBER  
TOTAL NUMBER OF LINAMENTS = 434.



AREA ID. : BLUELN  
INTERVAL=10 DEGREES  
CIRCLE RADIUS = 11 PERCENT  
BASED ON AZIMUTH/NUMBER  
TOTAL NUMBER OF LINAMENTS = 434.



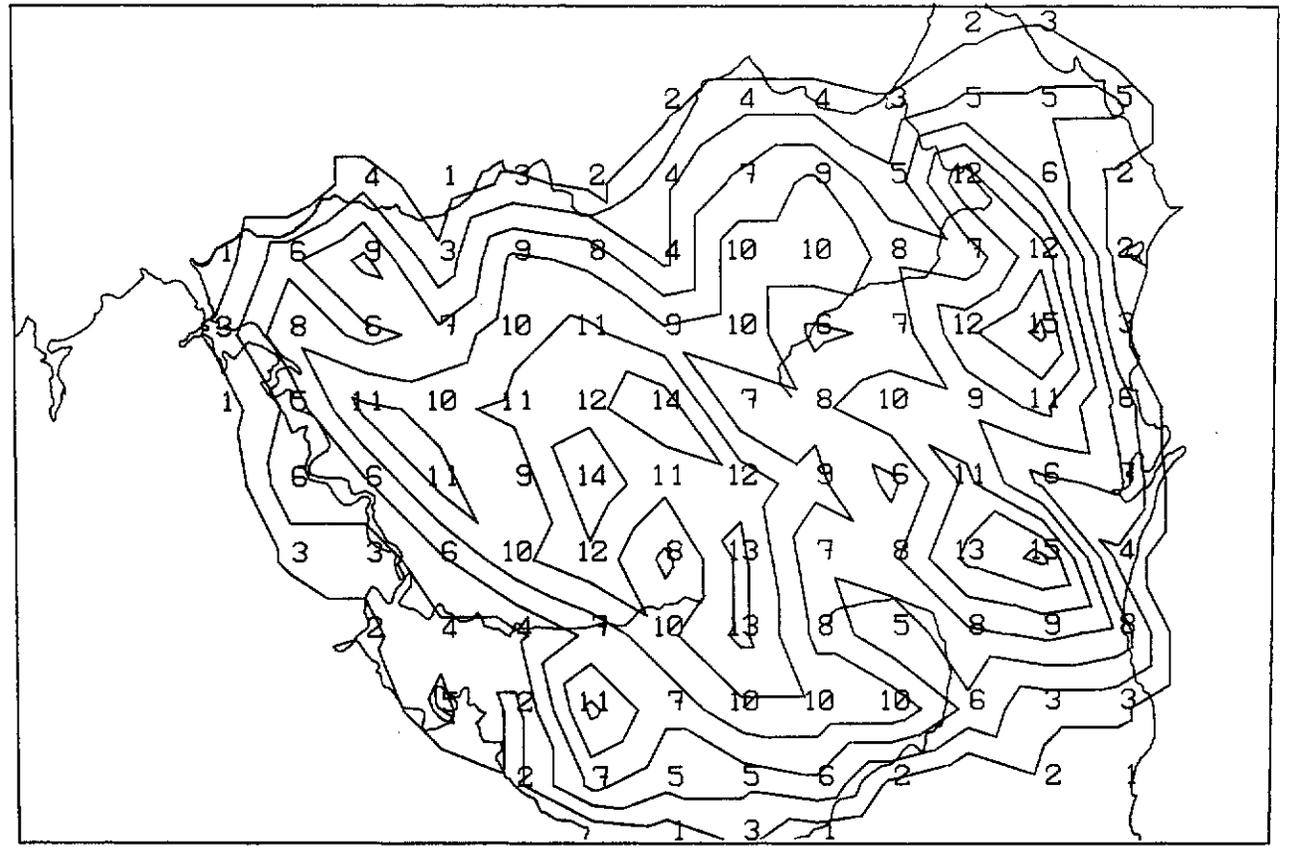
AREA ID. : BLUELN  
INTERVAL= 5 DEGREES  
CIRCLE RADIUS = 5 PERCENT  
BASED ON AZIMUTH/LENGTH  
TOTAL LENGTH OF LINAMENTS = 135. KMS.



AREA ID. : BLUELN  
INTERVAL=10 DEGREES  
CIRCLE RADIUS = 10 PERCENT  
BASED ON AZIMUTH/LENGTH  
TOTAL LENGTH OF LINAMENTS = 135. KMS.

146 30 0

148 30 0

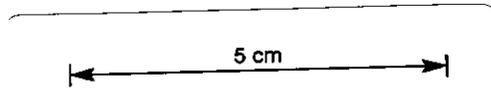


40 45 0

41 45 0

762016

LINAMENT DENSITY



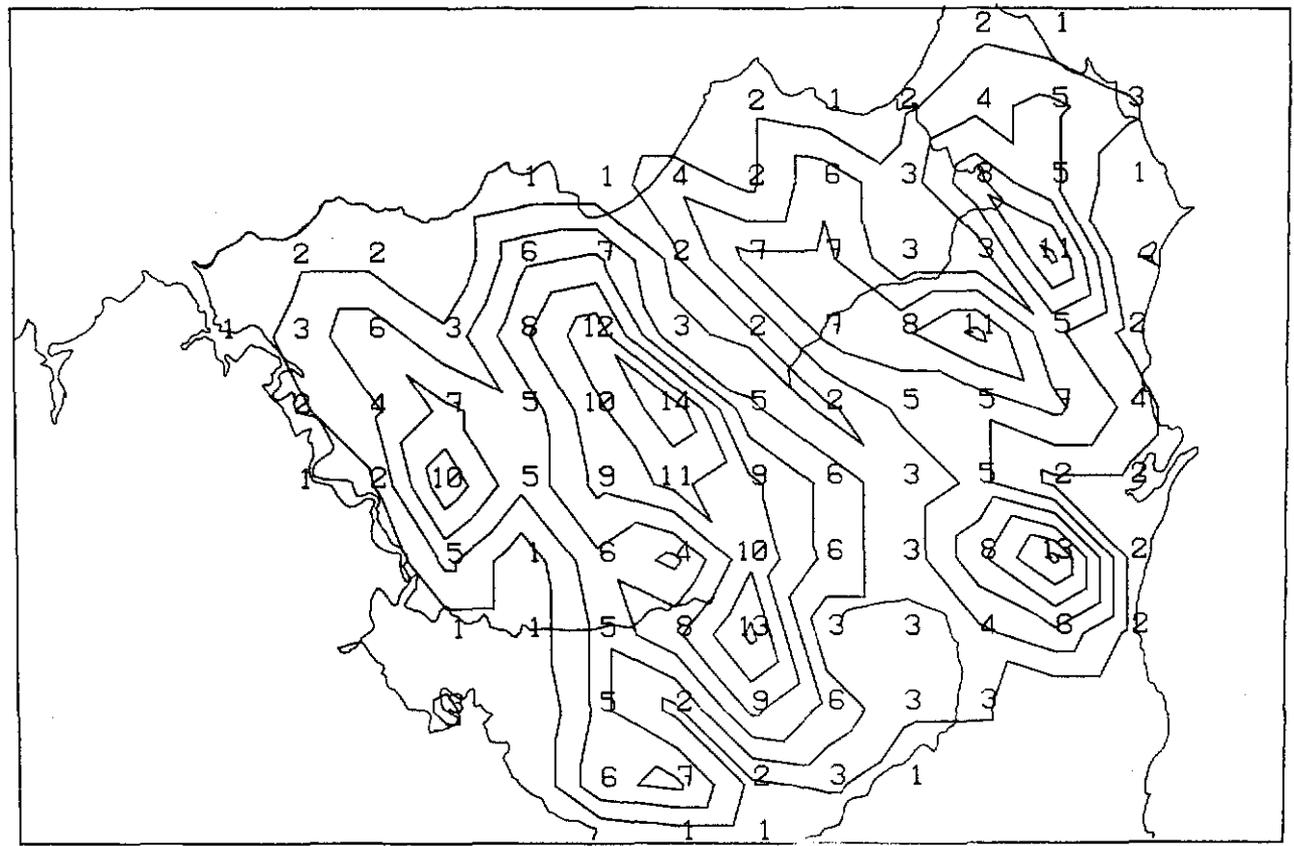
PALEO GEOMORPHOLOGICAL STUDY RINGAROOMA JOINT VENTURE (N/E TASMANIA 11-FEB-82

SCALE 1 TO 100000. GRID SIZE = 1000. METRES (A.M.G. PROJECTION)

146 30 0

148 30 0

40 45 0

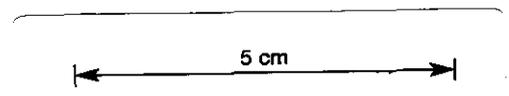


41 45 0

146 30 0

148 30 0

262017



INTERSECTION DENSITY

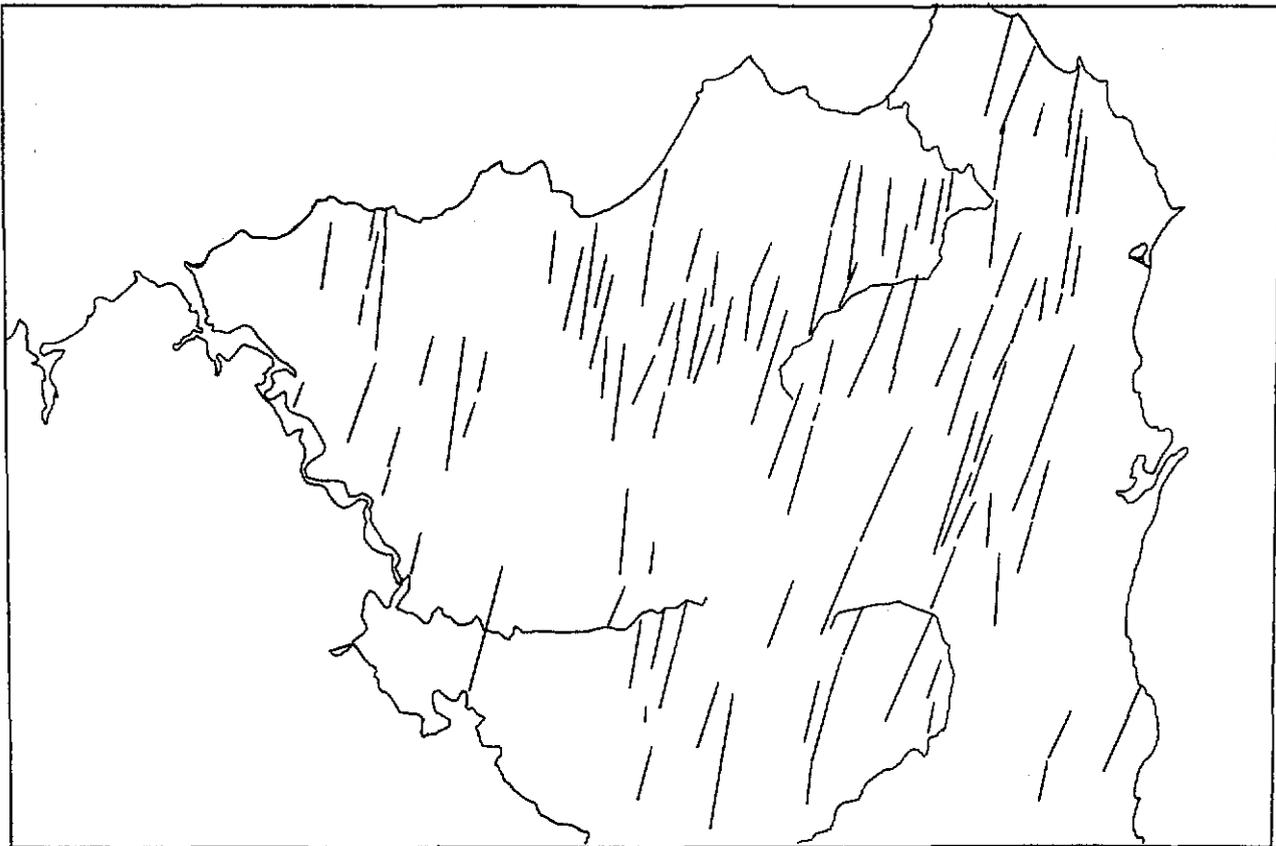
PALEO GEOMORPHOLOGICAL STUDY RINGAROOMA JOINT VENTURE (N/E TASMANIA 11-FEB-82

SCALE 1 TO 100000. GRID SIZE = 1000. METRES (A.M.G. PROJECTION)

146 30 0

148 30 0

40 45 0



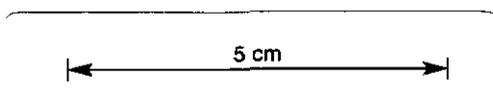
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146 30 0

148 30 0

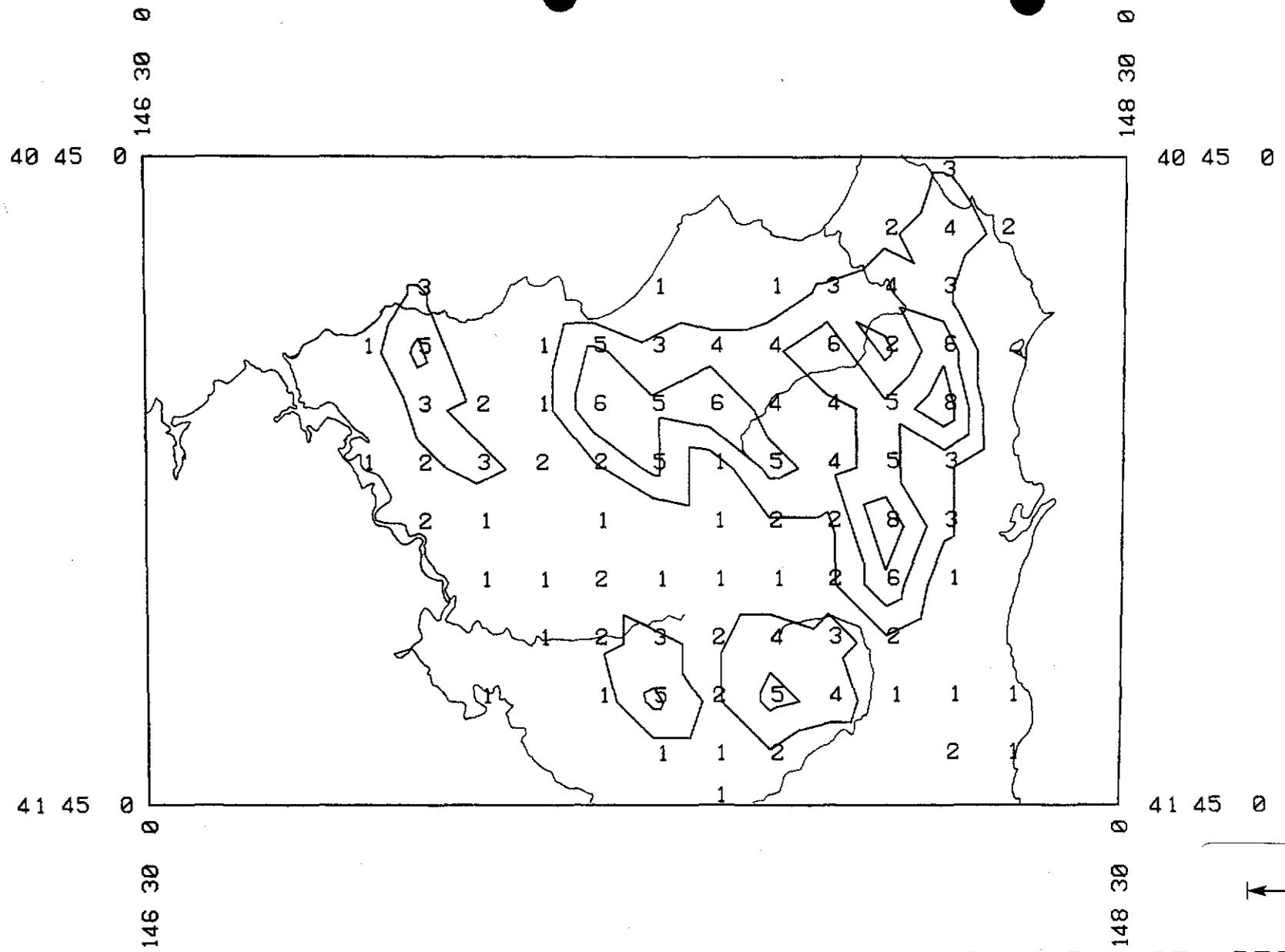
762018

DIRECTIONAL LINAMENT BETWEEN 4. AND 26. DEGREES



PALEO GEOMORPHOLOGICAL STUDY RINGAROOMA JOINT VENTURE (N/E TASMANIA 11-FEB-82

SCALE 1 TO 100000. GRID SIZE = 10000. METRES (A.M.G. PROJECTION)



762019

DIRECTIONAL LINAMENT BETWEEN 3. AND 27. DEGREES

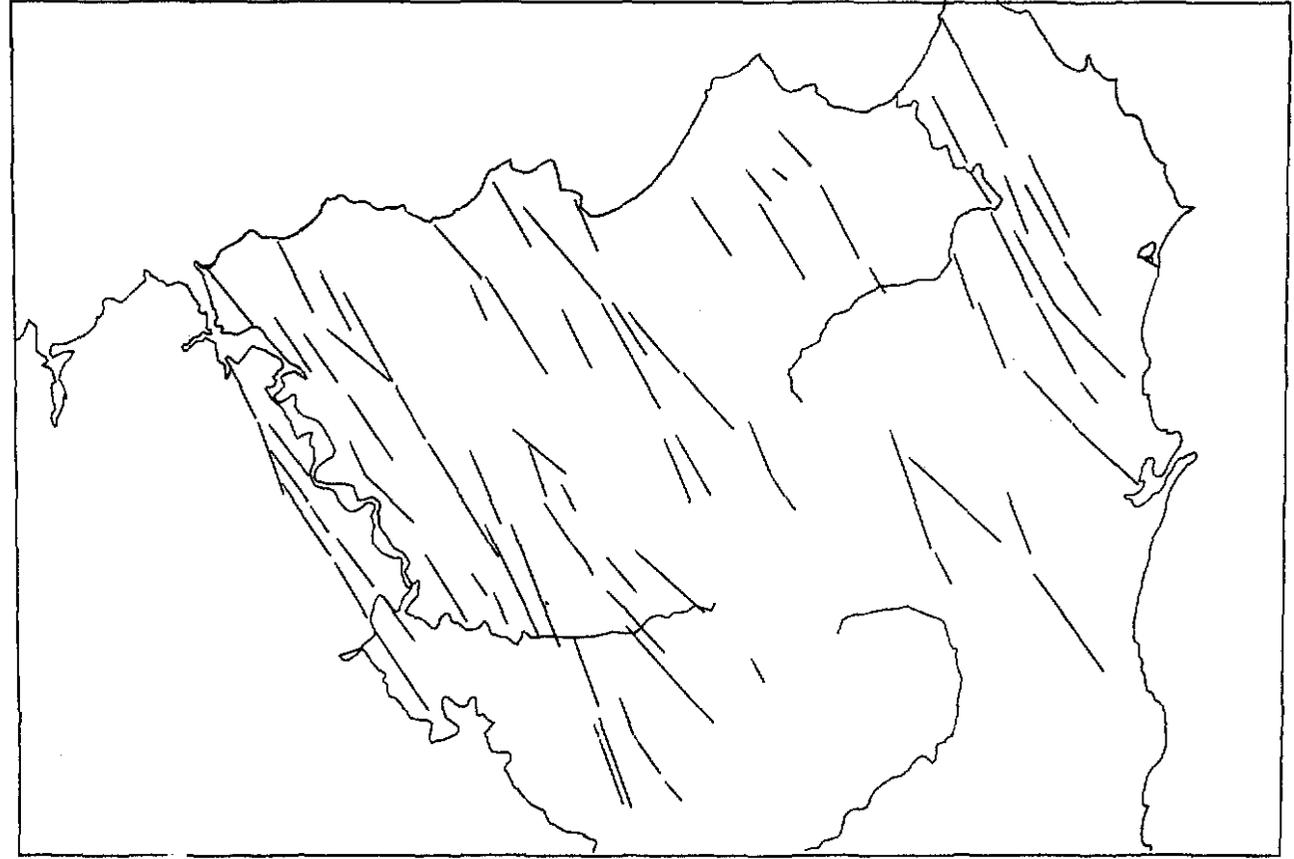
PALEO GEOMORPHOLOGICAL STUDY RINGAROOMA JOINT VENTURE

SCALE 1 TO 100000. GRID SIZE = 1000. METRES (A.M.G. PROJECTION)

TAS-10-68

146 30 0

148 30 0

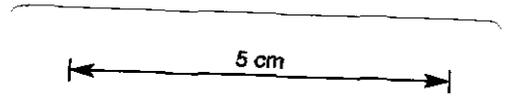


40 45 0

146 30 0

148 30 0

41 45 0



DIRECTIONAL LINAMENT BETWEEN 129. AND 161. DEGREES

PALEO GEOMORPHOLOGICAL STUDY RINGAROOMA JOINT VENTURE (N/E TASMANIA 11-FEB-82

SCALE 1 TO 100000. GRID SIZE = 1000. METRES (A.M.G. PROJECTION)

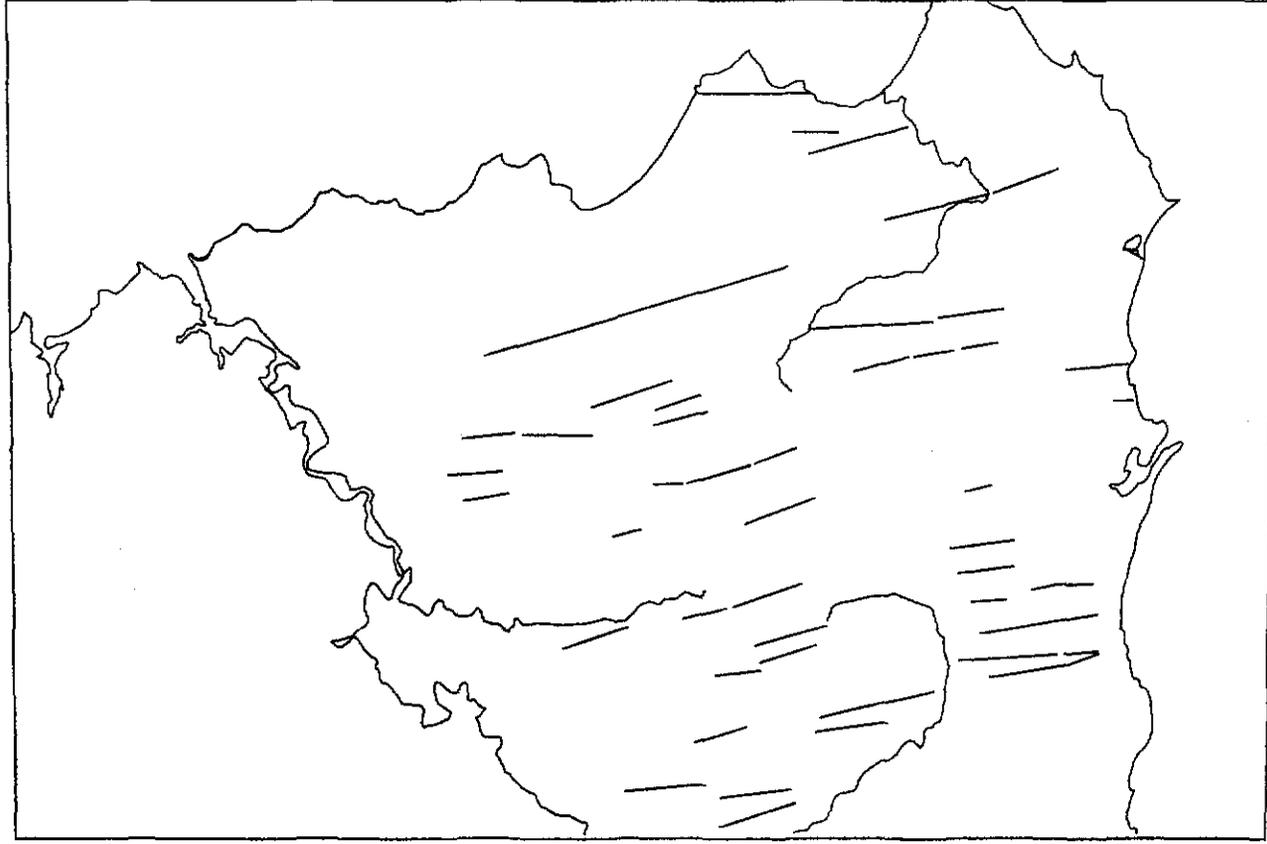
TAS-10-55

762020

146 30 0

148 30 0

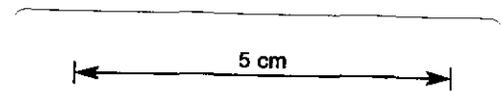
40 45 0



146 30 0

148 30 0

41 45 0



DIRECTIONAL LINAMENT BETWEEN 69. AND 91. DEGREES

PALEO GEOMORPHOLOGICAL STUDY RINGAROOMA JOINT VENTURE (N/E TASMANIA 11-FEB-82

SCALE 1 TO 100000. GRID SIZE = 10000. METRES (A.M.G. PROJECTION)

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Central Mineralogical Services



39 Beulah Road  
Norwood, S.A. 5067  
Telephone 42 5659

Mr. B.D. Mellor  
Senior Geologist  
Australian Anglo American Ltd.  
269, Wellington Street  
LAUNCESTON / TAS. 7250

23rd March, 1982

REPORT CMS 82/2/39

YOUR REFERENCE:	Purchase Order No. 1717
DATE RECEIVED:	22nd February, 1982
SAMPLE NOS.:	1 - 5
SUBMITTED BY:	B.D. Mellor
WORK REQUESTED:	Mineralogy

*H.W. Fander*

H.W. Fander, M. Sc.

Copy to:  
Mr. R. Munro  
Andex Mining-Ltd.  
PIONEER / TAS. 7254

REPORT CMS 82/2/39

Five samples of concentrates were received for mineralogical examination. Each sample was examined as received, under the stereobinocular microscope to detect gold and opaque grains; a portion was then mounted on a slide in an oil of R.I. = 1.63, and examined under the petrological microscope to identify non-opaque minerals. The results, expressed semi-quantitatively, are presented in the accompanying table. There would be little point in conducting more accurate analyses, as a) the samples are very small, b) concentrations of heavy minerals are low, and c) the samples are unsized.

Comments

1. All samples contain appreciable quartz and other light material, most in dominant amounts, i.e. > 60 %. Thus, bromoform separations were not very effective, and the use of TBE is preferable.
2. All samples contain cassiterite, mostly as small grains (< 300  $\mu$ ). Experiments have shown that small cassiterite grains are not affected by the Zn/HCl treatment even under ideal conditions, presumably because the surface area is too small to be effectively reduced by the nascent hydrogen. In addition, prior treatment with bromoform may have produced non-wettable grain-surfaces.  
  
The actual amounts of cassiterite present need to be verified by assay; the estimates given are approximate.
3. No gold was detected in any sample.
4. In most samples, cassiterite seems to have been derived from a nearby source; in one or two samples, there may have been two sources of different genesis.

H.W. Fander, M. Sc.

