

23 JUL 1982

# Exploration Department

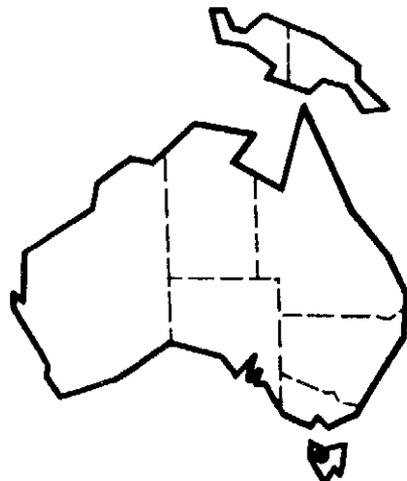
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EXPLORATION LICENCE 23/79

WYNYARD, TASMANIA

REPORT FOR THE SIX MONTHS ENDED  
1st JUNE, 1982

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Received	23 JUL 1982			E & IL
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DEPT. OF MINES				
REF. No. 5073/82				

EXPLORATION LICENCE 23/79

WYNYARD, TASMANIA

REPORT FOR THE SIX MONTHS ENDED 1ST JUNE, 1982

This report is submitted to the Mines Department as required by Schedule A of Exploration Licence 23/79.

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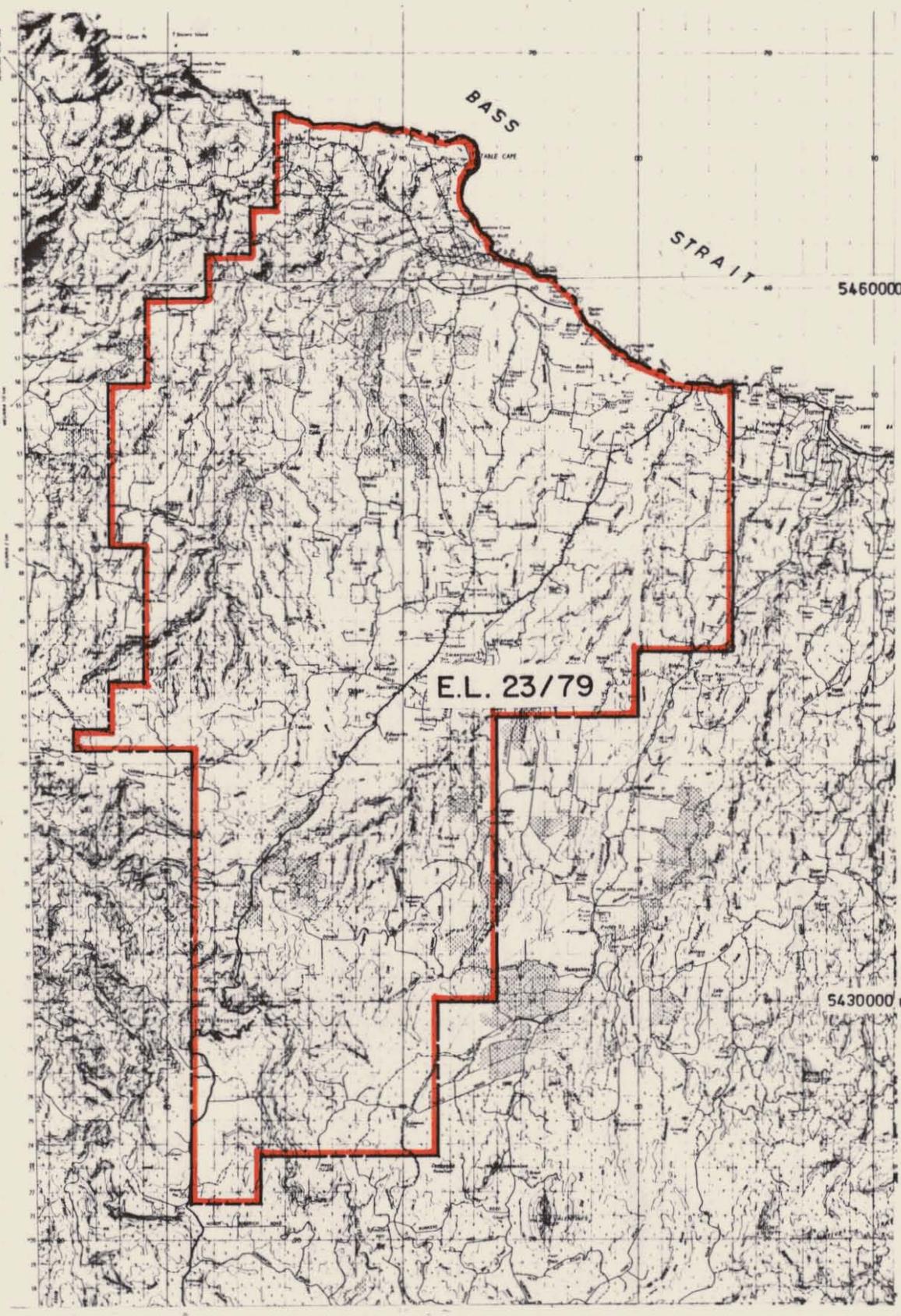
- 1. EL 23/79 Wynyard, Tasmania  
Location Map A4-1995
- 2. Geology 1:100,000 AO-23/79-1
- 3. Total Magnetic Intensity Contours
- 4. Sample Locations AO-23/79-3

1-50000 in  
 Vert. plan -  
 83-2026

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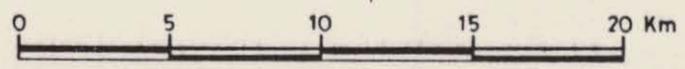
FIG. 1

400000.m.E.



5 cm

Scale 1:250,000.



This map photo copied from reduction of  
1:100,000 Sheets : Table Cape, Hellyer

Centre Melbourne	<b>THE BROKEN HILL PROPRIETARY CO. LTD.</b> <b>E.L.23/79, WYNYARD, TAS.</b> <b>LOCATION MAP.</b>	Project No.
Date 10.8.79		Drawing No. A4-1995

EXPLORATION LICENCE 23/79WYNYARD, TASMANIAREPORT FOR THE SIX MONTHS ENDED 1ST JUNE, 1982.1. GENERAL

Exploration Licence 23/79 of 715 square kilometres was granted to The Broken Hill Proprietary Company Limited on 1st December, 1979. The current expiry date is 1st December, 1982.

2. EXPLORATION PHILOSOPHY

The principal target within the licence area is a skarn or massive sulphide hosted tin-tungsten deposit of the Renison or Moina type. Deposits of this type may be present in Cambrian or Precambrian sediments which, in the licence area, are overlain by an extensive cover of Permian sediments, Jurassic dolerite and Tertiary basalt.

3. SUMMARY OF PREVIOUS WORK

Prior to the six months under review, the following work was completed:

1. Literature study and evaluation of relevant exploration and other geological data pertaining to the area;
2. Reconnaissance geological mapping at 1:50,000 scale;
3. Forty-seven line kilometres of Dighem II airborne EM surveying to evaluate the technique in deeply covered terrain;
4. Preliminary photogeological study and interpretation of Landsat image of the area;
5. Orientation stream geochemical sampling.

4. GEOLOGY

Within the area, extensive flows of Tertiary basalt and Permian sediments overlie a basement consisting largely of Precambrian and Cambrian rocks which form a major structural extension of sequences in the Mt. Bischoff, Cleveland area to the south west.

The oldest rocks present are the Precambrian Keith Metamorphics which occur in a belt 8-15 km wide trending north east from Savage River to Wynyard. Rocks in this belt include pelitic schist, quartzite and minor amphibolite. Younger Precambrian rocks of the Burnie Quartzite and Slate Formation flank the

4. GEOLOGY (Cont.)

Keith Metamorphics in the lower Cam River. Dolomite has not been recorded in the Precambrian rocks of the Wynyard area.

Cambrian sediments are exposed in a large window in Tertiary basalt, in the Hellyer River upstream from the Murchison Highway crossing. Rocks in the area include red-brown lithicwacke, red shale and pyrite bearing chert.

Ordovician sediments have not been located within the area. They flank a major anticline at Companion Hill to the east of the southern portion of the licence area.

Permian sediments, up to 300 metres thick, consist of a basal tillite unit, siltstone with thin oil shale and coal horizons, and sandstone.

Jurassic dolerite is exposed in the central part of the licence area where it invades both tillite and siltstone.

Tertiary rocks include basalt of highly variable thickness (locally believed to be up to 350 metres), as well as marine sediments, lacustrine clays, sands and gravels up to 60 m in thickness.

5. FIELD INVESTIGATIONS

5.1 GEOPHYSICS

5.1.1 AEROMAGNETICS

An aeromagnetic survey covering the entire E.L. with east-west lines spaced at 250 metres and a sensor terrain clearance of 90 metres was flown in January, 1982.

The total magnetic intensity plots are shown on Figures 3 (to 7). Interpretation is in progress.

5.2 GEOCHEMISTRY

5.2.1 STREAM SEDIMENT SAMPLING

Seventeen stream sediment samples were collected from streams draining basement rocks in the area. Samples were sieved to minus 40 mesh and analysed for tin, tungsten, copper, lead and zinc. None of the samples are anomalous with respect to any of the elements analysed. Sample sites are shown on Figure 4 & and results are in Appendix 1.

### 5.2.2 WATER SAMPLING

Ten water samples were taken from E.L. 23/79 to test for anomalous sub-basaltic water seepages. The samples were analysed for copper, lead, zinc, iron, calcium, magnesium, potassium, sodium, arsenic,  $\text{Cl}^{-1}$ ,  $\text{CO}_3^{2-}$ ,  $\text{HCO}_3^{-}$ ,  $\text{SO}_4^{2-}$ , pH and conductivity. The sample sites are shown on Figure 4 and results are in Appendix 2. One sample from a tributary of the Cam River was anomalous with respect to zinc (0.084 ppm).

## 6. SUMMARY OF WORK IN PROGRESS

- 1) Interpretation of aeromagnetic survey data.
- 2) Evaluation of sites for stratigraphic drilling.

## 7. WORK PROPOSED

- 1) Follow-up of the anomalous water sample.
- 2) Follow-up of aeromagnetic anomalies.
- 3) Drill any selected targets revealed by the aeromagnetic survey interpretation and follow-up.

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APPENDIX 1

ANALYSIS RESULTS

STREAM SEDIMENT SAMPLING

E.L. 23/79, WYNYARD, TASMANIA  
STREAM SEDIMENT SAMPLING RESULTS

SAMPLE LOCATIONS

WYN 50	Lockwood Creek ~400 metres from end of Basils North Road
WYN 51	Creek ~2km up the Hellyer River from Lockwood Ck.
WYN 52	" ~3.5km " " " " " " "
WYN 53	" ~4.5km " " " " " " "
WYN 54	" ~5km " " " " " " "
WYN 55	Flowerdale River off Ten Foot Track near Lapoinya
WYN 59	Coopers Creek Ten Foot Track
WYN 60	Maynes Creek off Lapoinya Road
WYN 61	Borradale Creek - off Lapoinya Road
WYN 62	Creek beside Lapoinya Road
WYN 63	Creek beside Lapoinya Road running into above
WYN 64	Flowerdale River, Lapoinya Road
WYN 65	Inglis River, track from Preolenna Road to Calder Road
WYN 66	Inglis River, off Calder Road
WYN 67	Creek running into Inglis River at above
WYN 68	Seabrook Creek, Seabrook Road
WYN 69	Creek ~5.5km upstream from Lockwood Creek running into Hellyer River

ANALYSIS RESULTS

	Sn	W	Cu	Pb	Zn
WYN 50	-	-	10	5	85
WYN 51	-	-	5	5	40
WYN 52	-	-	5	5	30
WYN 53	-	-	-	5	35
WYN 54	-	-	-	-	20
WYN 55	-	-	10	5	30
WYN 59	-	-	10	20	-
WYN 60	-	-	5	35	5
WYN 61	-	-	5	25	-
WYN 62	-	-	10	40	10
WYN 63	-	-	5	20	-
WYN 64	-	-	15	45	5
WYN 65	-	-	5	15	5
WYN 66	16	-	10	60	15
WYN 67	-	-	-	10	-
WYN 68	-	-	25	45	30
WYN 69	-	-	10	70	5

All results in ppm

Size Fraction: - 80#

Analyses by Analabs, Burnie

Methods:

Sn, W by XRF

Cu, Pb, Zn by AAS Code 101

APPENDIX 2

ANALYSIS RESULTS WATER SAMPLING

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# ALLISON LABORATORIES

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TELEPHONE: (002) 34 768

- APPLIED RESEARCH AND DEVELOPMENT
- INDUSTRIAL AND AGRICULTURAL ANALYSIS
- TANK AND CARGO SURVEYS
- EFFLUENT ANALYSIS

Our ref 29008/19

Dr G Watmuff  
BHP Minerals Ltd  
20 O'Connell Street  
SYDNEY .. NSW .. 2000

## ANALYSIS OF WATER SAMPLES

12 water samples contained in 1L (nominal) poly bottles and labelled as shown hereunder were received on 8/4/82. The contents were analysed by methods generally in accord with the APHA "Standard Methods for the Examination of Water and Wastewater" 14th Ed. (1975), details of which are available on request. The results of these analyses were as follows: (except for pH and conductivity, all figures are mgm/L)

	<u>Cu</u>	<u>Pb</u>	<u>Zn</u>	<u>Fe</u>	<u>Ca</u>	<u>Mg</u>
WO26A	0.001	∠0.01	0.005	0.39	1.4	3.7
WO27A	∠0.001	∠0.01	0.006	0.56	0.6	3.4
WO28A	0.001	∠0.01	0.004	1.3	1.4	4.3
WO29A	∠0.001	∠0.01	0.084	0.32	1.9	5.1
WO30A	∠0.001	∠0.01	0.004	0.50	1.8	4.2
WO31A	0.001	∠0.01	0.003	0.25	3.9	4.5
WO32A	0.001	∠0.01	0.004	0.59	5.3	5.7
WO33A	0.001	∠0.01	0.005	0.58	1.2	3.1
WO34A	0.001	∠0.01	0.002	0.55	2.3	3.8
WO35A	∠0.001	∠0.01	0.003	0.33	4.0	4.9
WO36A	0.001	∠0.01	0.006	0.32	3.5	4.9
WO37A	0.001	∠0.01	0.005	0.008	∠0.1	∠0.1

G F ALLISON  
CHARTERED CHEMIST (AUSTRALIA)



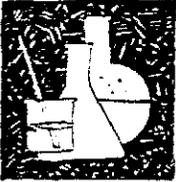
REPORT NO 8876

ISSUED 20 May 1982

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- APPLIED RESEARCH AND DEVELOPMENT
- INDUSTRIAL AND AGRICULTURAL ANALYSIS
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	<u>K</u>	<u>Na</u>	<u>Cl<sup>-</sup></u>	<u>pH</u>	<u>Cond</u> $\mu$ S	<u>HCO<sub>3</sub><sup>-</sup></u>
WO26	0.7	15.6	22	6.5 <sub>2</sub>	114	7.6
WO27	0.7	16.4	21	5.8 <sub>8</sub>	116	2.7
WO28	1.3	14.6	13	7.1 <sub>0</sub>	107	24.3
WO29	1.1	18.9	21	6.5 <sub>8</sub>	140	16.4
WO30	1.0	20.8	22	7.0 <sub>3</sub>	140	20.0
WO31	1.1	12.0	13	7.2 <sub>0</sub>	110	22.4
WO32	0.8	16.7	23	7.0 <sub>0</sub>	154	19.5
WO33	0.5	14.6	23	4.2 <sub>5</sub>	120	NIL ACIDITY 10.8
WO34	0.9	12.7	16	6.6 <sub>9</sub>	104	13.8
WO35	1.1	10.5	12	7.2 <sub>6</sub>	104	28.5
WO36	1.2	17.0	19	7.2 <sub>1</sub>	137	25.5

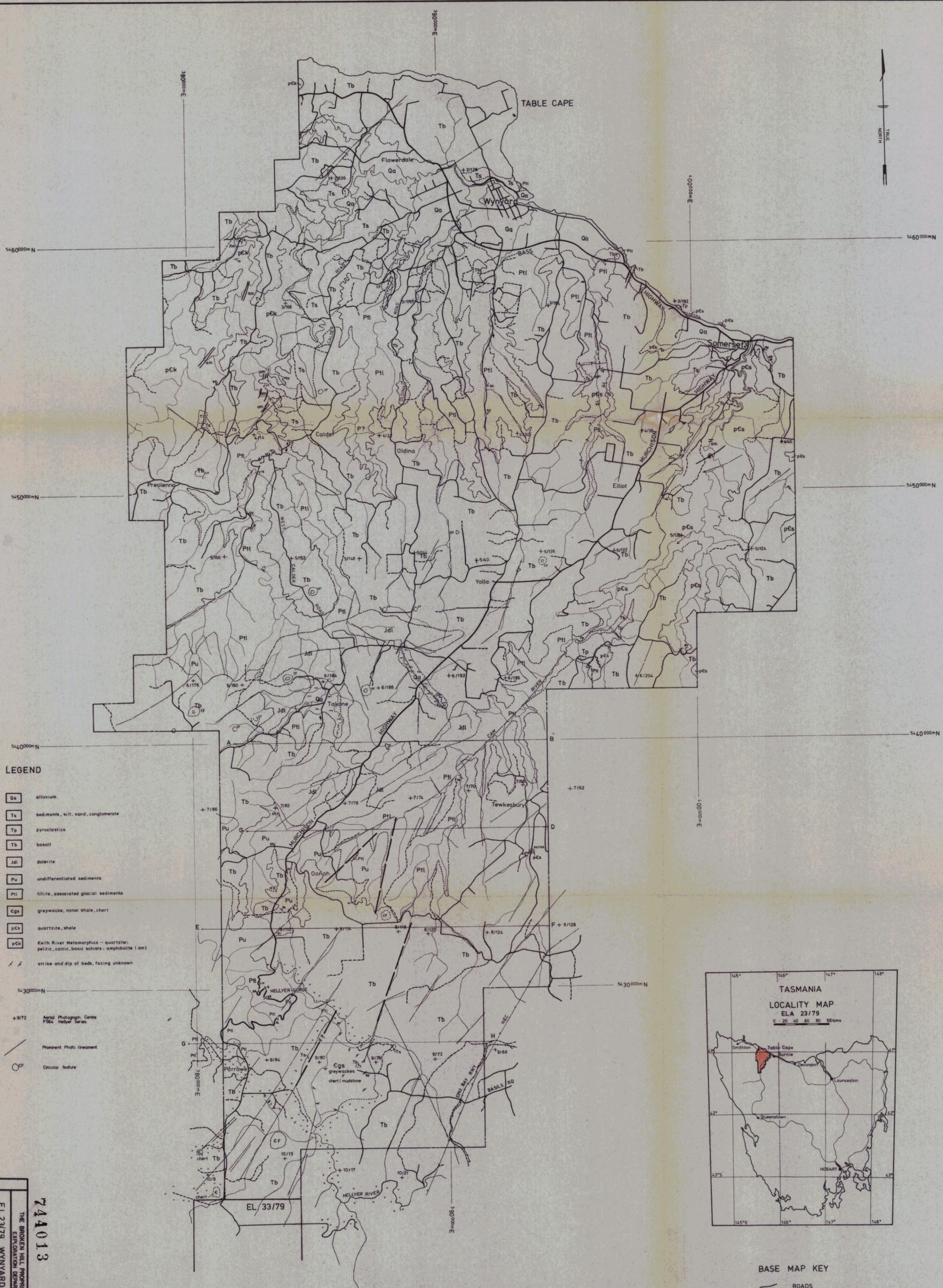
G F ALLISON  
CHARTERED CHEMIST (AUSTRALIA)



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**LEGEND**

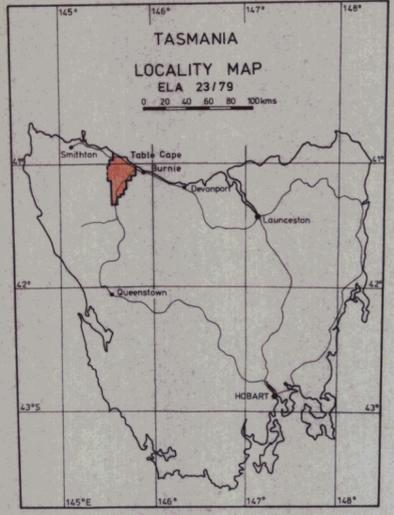
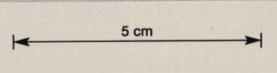
- QUATERNARY Qa alluvium
- TERTIARY Ts sediments, silt, sand, conglomerate
- Tp pyroclastics
- Tb basalt
- JURASSIC Jdl dolerite
- PERMAN Pu undifferentiated sediments
- Ptl tillite, associated glacial sediments
- CAMBRIAN Cgs greywacke, minor shale, chert
- PRECAMBRIAN pCs quartzite, shale
- pCk Keith River Metamorphics - quartzite, pelitic, calcic, basic schists, amphibolite (am)
- strike and dip of beds, facing unknown

- +972 Aerial Photograph Centre F54 Hellyer Series
- Prominent Photo lineament
- Circular feature

<p>Revisions</p> <p>Checked: J.E.H.</p> <p>Drawn: J.E.H.</p> <p>Project No: 1640</p> <p>Scale: 1:100,000</p>	<p>744013</p> <p>THE BROKEN HILL PROPRIETARY CO LTD</p> <p>EXPLORATION DEPARTMENT</p> <p>EL23/79 WYNYARD, N.W. TAS</p> <p>GEOLOGY 012</p>
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744013

SCALE 1:100,000



**BASE MAP KEY**

- ROADS
- VEHICULAR TRACKS
- STREAMS

Geology - R.Hine, R.Lockwood, A.Djakic with compilation from Tas Mines Dept. 1:63,360 Burnie sheet and unpublished maps (Hellyer area) by P.Williams & P.Lennox

145° 30' E

145° 45' E

41° 00' S

41° 15' S

41° 30' S

145° 30' E

145° 45' E

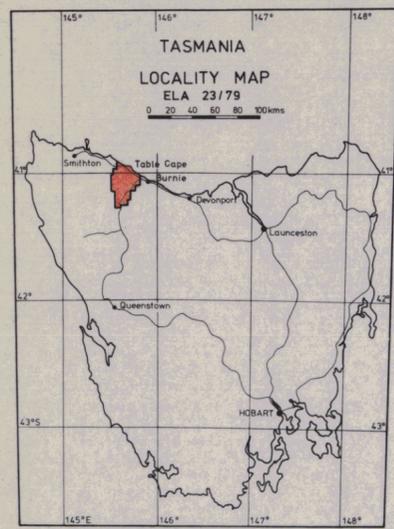
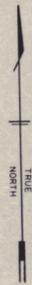
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0 5 10 Km

<p>REVISIONS</p> <p>NO. 1</p> <p>DATE</p> <p>BY</p> <p>REASON</p>	<p>REVISIONS</p> <p>NO. 2</p> <p>DATE</p> <p>BY</p> <p>REASON</p>
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E.L.s 33/79, 23/79 WARATAH, WYNYARD TAS  
TOTAL MAGNETIC INTENSITY CONTOURS

5 cm



**BASE MAP KEY**

- ROADS
- VEHICULAR TRACKS
- STREAMS

- HEL 16 STREAM SAMPLE LOCATIONS
- CP 3 ROCK CHIP LOCATIONS
- 029W WATER SAMPLE LOCATIONS

SCALE 1:100,000

5 cm

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Revisions:  
 Drawn: G.L.K.  
 Checked: J.E.H. / M.W.  
 O.T.C.

**744015**

THE BROKEN HILL PROPRIETARY CO. LTD.  
 EXPLORATION DEPARTMENT

**EL 23/79 WYNYARD N.W. TAS**  
**SAMPLE LOCATIONS**

Order: S.S. 52  
 Project No: T 640  
 Drawing No: AO-23/79-3