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### 1. INTRODUCTION

This report summarizes the results of exploration carried out by Billiton Australia on behalf of the Golden Ridge Joint Venture within the recently relinquished portion of EL 58/88.

### 2. LOCATION & ACCESS

The licence is situated in the north-east of Tasmania approximately 20kms west of St. Helens and 70kms east of Launceston. (Fig. 1). Access to the tenements is obtained via well maintained Forestry roads (eg Hogans Road) and thence by tracks in varying states of disrepair.

The topography is steep with numerous linear spines and deep gullies. Vegetation consists of dry sclerophyll forest, eucalypt regeneration and pine plantations.

### 3. LAND TENURE

Exploration licence 58/88, of 189 km<sup>2</sup>, was granted on 7th April 1989 to a consortium consisting of:

Federation Resources N.L.                      20% equity

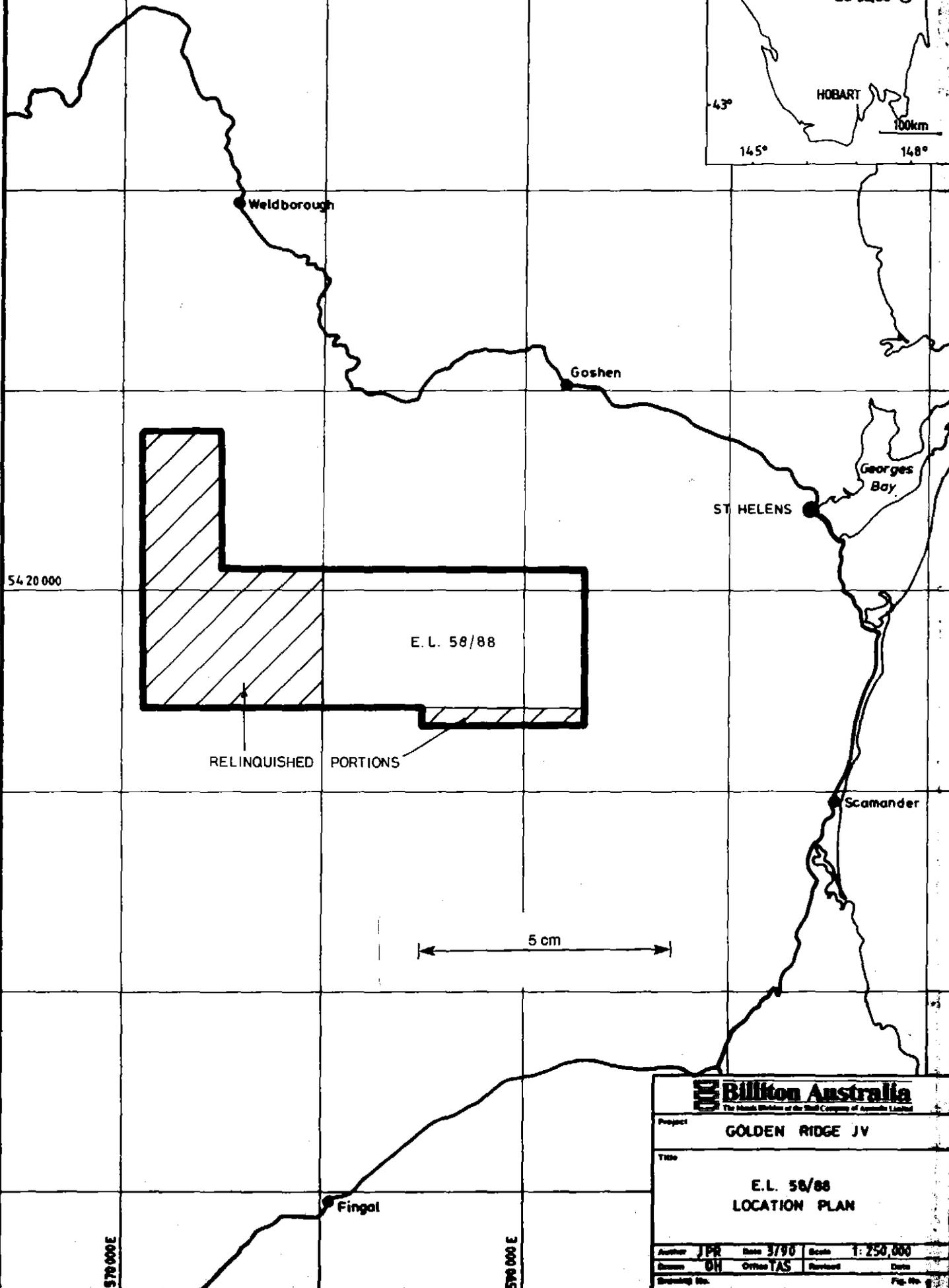
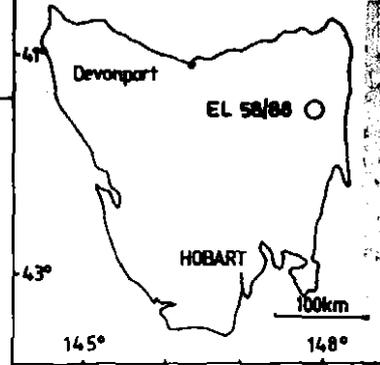
American Horizon Resources Inc.              30% equity

Aureole N.L.                                      50% equity

Aureole N.L. was elected operator of this group.

003

097004



**Billiton Australia**  
 The Mining Division of the BHP Company of Australia Limited

Project: **GOLDEN RIDGE JV**

Title:  
**E.L. 58/88  
 LOCATION PLAN**

Author: JPR	Date: 3/90	Scale: 1:250,000
Drawn: OH	Office: TAS	Revised:
Drawing No.:		Fig. No.:

The Shell Company of Australia Ltd., through its subsidiary Billiton Australia, farmed into the project on 9th October 1989 as manager of the joint venture.

Within the tenement, mining lease 43M/88 (100ha, Oceania Tas P/L) is current and was included within the joint venture from the period 11th July 1990 to 11th July 1991.

Relinquishment of 98 km<sup>2</sup> of EL 58/88 has been carried out in two parts (see Fig. 1) viz Part 1 of 91 km<sup>2</sup>, Part 2 of 8 km<sup>2</sup>. The AMG co-ordinates of the relinquished portions is described in Table 1.

#### 4. REGIONAL SETTING

The licence covers the southern ends of the Pyengana and Poimena Plutons (biotite-hornblende granodiorite and granite) of Upper Devonian age that have intruded Siluro - Devonian Mathinna Beds sediments (see Fig 2). Around the margins of these plutons, a contact metamorphic zone characterized by moderate hornfelsing of the sediments occurs as a band up to 1km wide.

A mineralization zonation is well known in the Scamander area and from east to west a gradation from Cu-Pb to Sn-W to Au-As is noted. The Golden Ridge locality defines this latter category and is represented by numerous shafts, adits and pits over a 4km strike length wrapping around the margin of the Poimena Pluton.

TABLE 1Relinquished Portions E.L. 58/88

## PART 1

Datum	5414000N	571000E	thence	14 kms	north	to
	5428000N	571000E	thence	4 kms	east	to
	5428000N	575000E	thence	7 kms	south	to
	5421000N	575000E	thence	5 kms	east	to
	5421000N	580000E	thence	7 kms	south	to
	5414000N	580000E	thence	9 kms	west	back to datum

## PART 2

Datum	5414000N	585000E	thence	8 kms	east	to
	5414000N	593000E	thence	1 km	south	to
	5413000N	593000E	thence	8 kms	west	to
	5413000N	585000E	thence	1 km	north	back to datum

000

097007

570000 E

580000 E

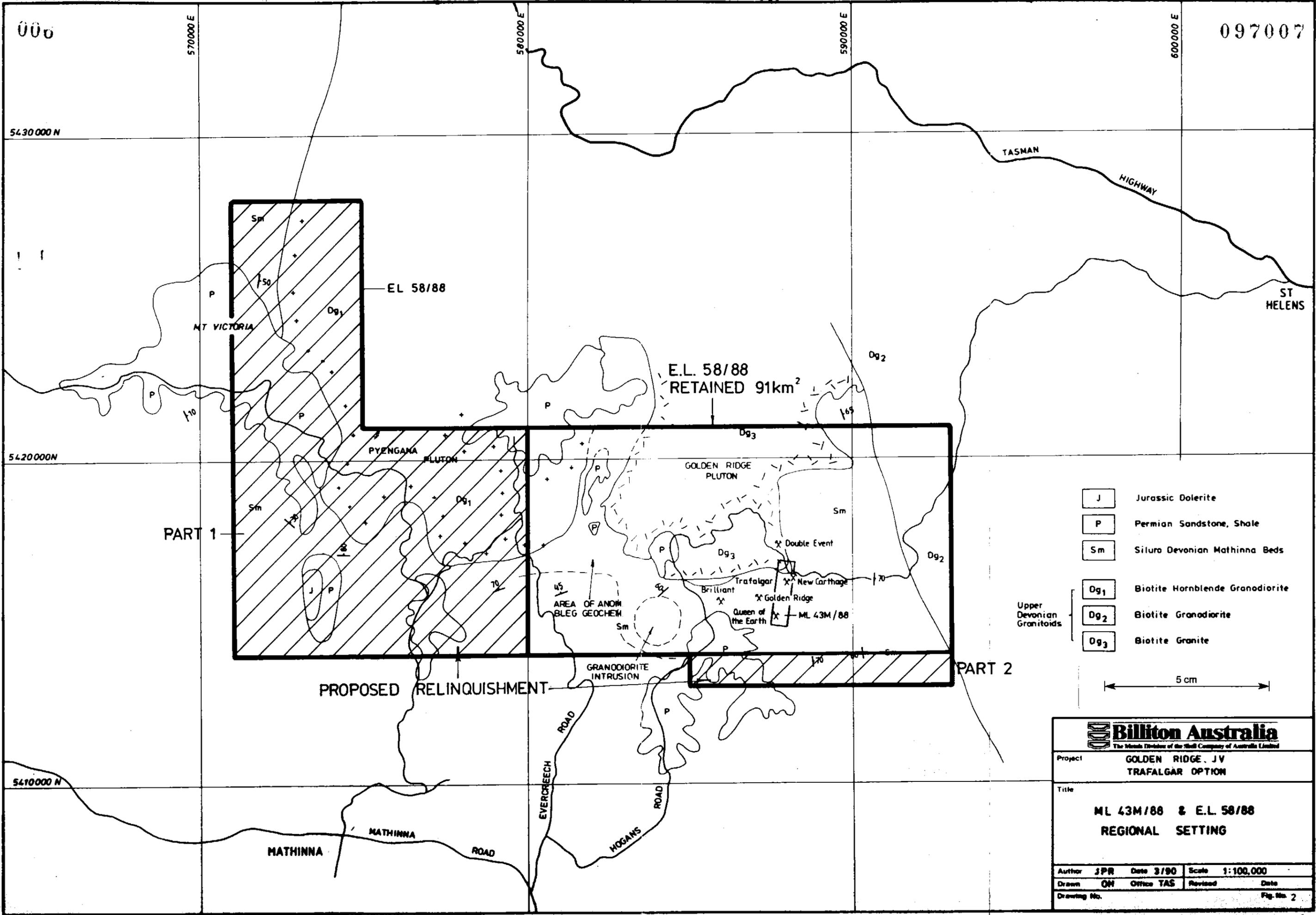
590000 E

600000 E

5430000 N

5420000 N

5410000 N



- J Jurassic Dolerite
  - P Permian Sandstone, Shale
  - Sm Siluro Devonian Mathinna Beds
  - Dg1 Biotite Hornblende Granodiorite
  - Dg2 Biotite Granodiorite
  - Dg3 Biotite Granite
- Upper Devonian Granitoids

5 cm

<b>Billiton Australia</b> <small>The Metals Division of the Shell Company of Australia Limited</small>			
Project		GOLDEN RIDGE, JV TRAFALGAR OPTION	
Title		ML 43M/88 & E.L. 58/88 REGIONAL SETTING	
Author	JPR	Date	3/90
Scale	1:100,000		
Drawn	ON	Office	TAS
Revised		Date	
Drawing No.			Fig. No. 2

Throughout the North-East Province there is good evidence of a strong structural control to the emplacement and grade of the auriferous mineralization. At both regional and local scales a favoured NNW-SSE orientation is evidently the major directional control and this can be identified on all scales from Landsat imagery analysis to "walking the outcrop".

#### 5. PREVIOUS EXPLORATION

The licence area was previously held as EL 24/82 by Oceania Tasmania but very little exploration has been carried out or at least reported. Their work appeared to be limited to minor rock chip and soil sampling around the old workings but no systematic work is evident.

Union Corporation (Aust) Pty. Ltd. carried out some stream sediment sampling within EL 21/80 during 1981 but apparently analysed the samples for Sn, W, Mo, Cu, Pb, Zn only.

Texins Development Pty. Ltd. through Geophoto Resources Consultants also completed a stream sediment survey with some follow up rock chip and soil sampling.

Other recorded work within the area relates to the initial mining activity surrounding the Hogans Track or Brilliant Creek Goldfield. viz

"Report on the Queen of the Earth Gold Mine and Neighbourhood"  
by W.H. Twelvetrees, 1900.

"Report on Gold Mines near Hogans Track". by W.H. Twelvetrees,  
1899.

"Notes on the Trafalgar Leases - Upper Scamander District". by  
Q.J. Henderson, 1935.

"Report on the Geological Survey of the Country between  
Scamander and Mathinna". by Q.J. Henderson, 1939.

Unnamed Report by Q.J. Henderson, 1935.

## 6. EXPLORATION COMPLETED BY BILLITON

### 6.1 1989-90

Within the relinquished area no field work was completed as most activity was confined to the Brilliant Creek Goldfield.

### 6.2 1990-91

During this time and within the relinquished portion of the tenement, a total of 92 samples were collected from streams draining Mathinna Beds sediments and Devonian granite margins. (Fig. 3) Sample sites were selected in the planning phase to give a coverage of 1 sample per 1-2km<sup>2</sup>.

At chosen sites samples were collected from active zones within the flow regime and a bulk sample (5-7kg wet) sieved to -1/4" collected in toto in large plastic bags. Samples were assayed for Au by the Bulk Leach Extractable Gold (BLEG) technique at Classic Laboratories, Adelaide.

The programme was completed in two phases: an initial regional programme of 70 samples (18109-57, 18032-37, 18047-49, 18067-69, 18087-95) and a follow up programme of 22 samples (19248-57, 19264-65, 19270-72, 19282-88). Assay results are presented in Appendix 1.

A basic statistical treatment of all data indicated a threshold of 1.4ppb Au whilst samples with >2.5ppb Au were regarded as strongly anomalous.

The Queen of the Earth Creek anomaly resulted from a 4.2ppb Au value (sample 18067) which was later duplicated by sample 19288 (3.1ppb Au) and traced upstream (sample 19287, 6.5ppb Au). Reconnaissance in this area indicated that the anomalous creek drains the unconformity between flat lying Permian siliciclastics and Mathinna Beds sediments. It is possible therefore that the anomaly represents minor reconcentration of auriferous mineralization at this unconformity.

No other anomalous values were recorded from samples within the relinquished portion of the tenement.

6.3 1991-92

No field work was completed within the relinquished portion of the tenement.

7. CONCLUSIONS & RECOMMENDATIONS

The western relinquished portion of EL 58/88 covers the contact of the Devonian Pyengana Pluton with Ordovician Mathinna Beds sediments. Permian inliers obscure 30-40% of this contact zone. Regional stream sediment sampling failed to produce any geochemically anomalous responses (Au only).

The southern relinquished portion of EL 58/88 covers a thin strip of Mathinna Beds sediments with some Permian cover. An anomalous stream sediment zone was delineated and has been interpreted as due to leakage/reconcentration at the Permian-Ordovician unconformity.

No further work is recommended within the relinquished portions of the tenement.

APPENDIX 1

1. Stream Sediment Sample Results



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Osman Place, Thebarton, South Australia 5031  
Telephone: (08) 43 5722 Facsimile: (08) 234 0321

097013

Mr. Jeff Randell  
Billiton Australia Ltd  
PO Box 860  
DEVONPORT  
TAS 7310

F I N A L   A N A L Y S I S   R E P O R T

Your Order No: 11724/LJ30/JPR

Our Job Number : 0AD1362

Samples received : 11-MAY-1990

Results reported : 04-JUN-1990

No. of samples : 236

Report comprises a cover sheet and pages 1 to 6

This report relates specifically to the samples tested in so far as that the samples as supplied are truly representative of the sample source.

No results available for samples 18016, 18053 and 18055 as brackets split during rolling and all solution was lost.

Note:

If you have any enquiries please contact Mr David Eardley-Harris quoting the above job number.

Approved Signatory:

John Waters  
Technical Manager - Adelaide

*18201-80 Soils on Ridge  
18001-157 Soils on Ridge*

Report Codes:

N.A. - Not Analysed.  
L.N.R. - Listed But Not Received.  
I.S. - Insufficient Sample.

Distribution Codes:

CC - Carbon Copy  
EM - Electronic Media  
MM - Magnetic Media

"RELIABLE ANALYSES AT COMPETITIVE COST"

013



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Job: 0AD1362

O/N: 11724/LJ30/JPR

ANALYTICAL REPORT

Sample Au

097014

↓ 18032	0.15
18033	<0.05
18034	<0.05
18035	0.30
18036	0.05
↑ 18037	0.05

↓ 18047	0.20
18048	<0.05
↑ 18049	0.05

Units ppb  
 Detn L 0.05  
 Scheme BLEG2



014

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Job: OAD1362

O/N: 11724/LJ30/JPR

ANALYTICAL REPORT

097015

Sample Au

↓ 18067	4.2
18068	1.10
↑ 18069	0.35

↓ 18087	0.05
18088	<0.05
18089	<0.05
18090	2.0
18091	1.80
18092	0.55
18093	<0.05
18094	0.10
↑ 18095	<0.05

Units ppb  
 Detn L 0.05  
 Scheme BLEG2

010



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Job: OAD1362  
O/N: 11724/LJ30/JPR

## ANALYTICAL REPORT

097016

Sample Au

18109	<0.05
18110	<0.05
18111	0.05
18112	<0.05
18113	0.05
18114	0.20
18115	<0.05
18116	<0.05
18117	<0.05
18118	<0.05
18119	0.10
18120	0.10
18121	0.10
18122	0.05
18123	0.10
18124	<0.05
18125	<0.05
18126	0.05
18127	0.20
18128	0.30
18129	0.25
18130	<0.05
18131	<0.05
18132	<0.05
18133	0.05
18134	0.40
18135	0.45
18136	1.50
18137	0.25
18138	0.15
18139	0.55
18140	0.25
18141	0.25
18142	0.10
18143	0.55
18144	0.10
18145	0.45
18146	0.20

Units ppb  
Detn L 0.05  
Scheme BLEG2

010

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Job: OAD1362

O/N: 11724/LJ30/JPR

ANALYTICAL REPORT

097017

Sample	Au
18147	<0.05
18148	<0.05
18149	<0.05
18150	0.10
18151	0.10
18152	0.20
18153	0.10
18154	0.10
18155	0.10
18156	<0.05
18157	<0.05

Units           ppb  
Detn L          0.05  
Scheme         BLEG2



**CLASSIC LABORATORIES LTD**

Incorporated in WA, a wholly owned subsidiary of Amdel Ltd  
Osman Place, Thebarton, South Australia 5031  
Telephone: (08) 43 5722 Facsimile: (08) 234 0321



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Mr. Jeff Randell  
Billiton Australia Ltd  
PO Box 860  
DEVONPORT  
TAS 7310

LJ30  
900  
097018

F I N A L   A N A L Y S I S   R E P O R T

Your Order No: 11732/LJ30/JPR

Our Job Number : 0AD2377

Samples received : 25-JUL-1990

Results reported : 27-AUG-1990

No. of samples : 88

Report comprises a cover sheet and pages 1 to 2

This report relates specifically to the samples tested in so far as that the samples as supplied are truly representative of the sample source.

19201-88  
BLEE  
HP 14 + 16 H...  
20/10

Note:

If you have any enquiries please contact Mr David Eardley-Harris quoting the above job number.

Approved Signatory:

John Waters  
Technical Manager - Adelaide

MM                      Mr J Randell                      Devonport

**Report Codes:**

- N.A. - Not Analysed.
- L.N.R. - Listed But Not Received.
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Job: OAD2377  
O/N: 11732/LJ30/JPR

ANALYTICAL REPORT

097019

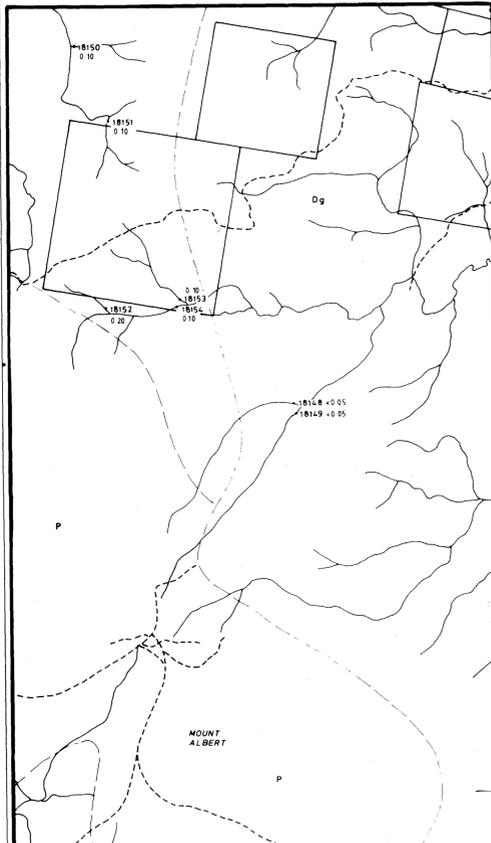
Sample	Au
↓ 19248	<0.05
19249	<0.05
19250	<0.05
19251	0.05
19252	0.25
19253	0.05
19254	2.2
19255	0.20
↑ 19256	1.45
↑ 19257	0.50

↓ 19264	0.05
↑ 19265	0.05

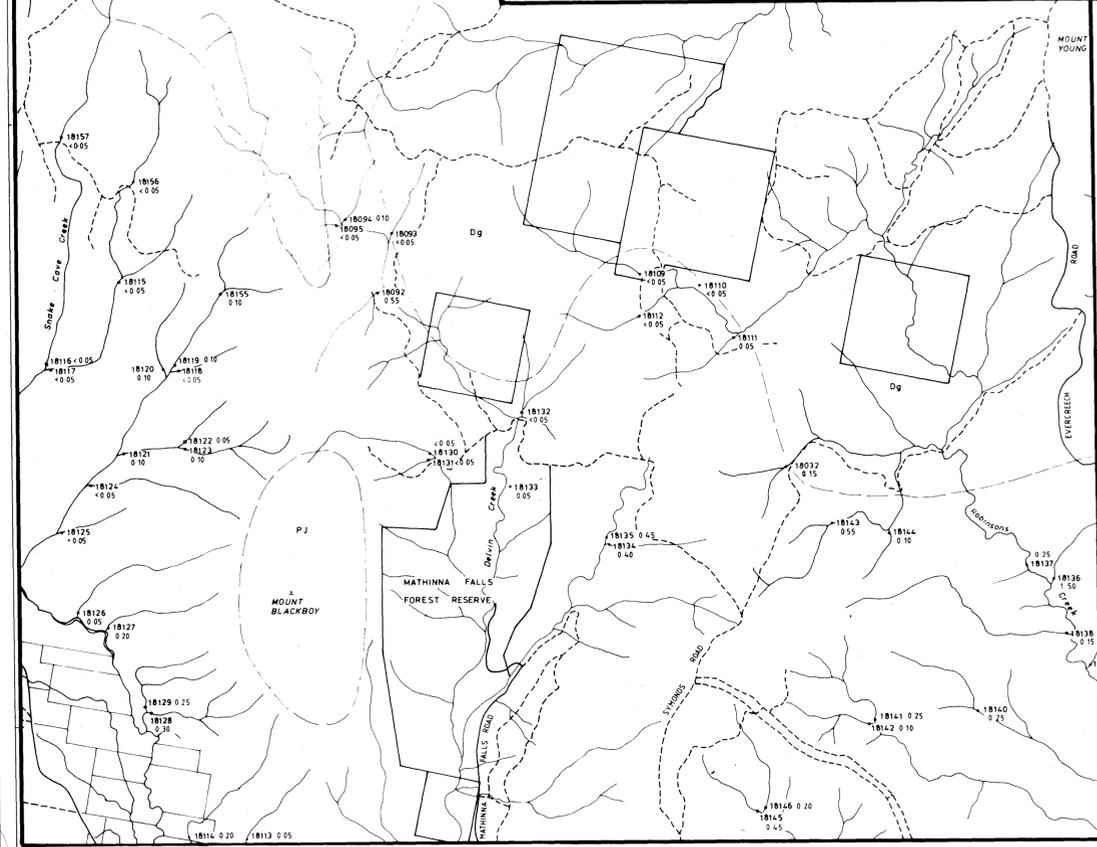
↓ 19270	1.85
19271	0.05
↑ 19272	0.05

↓ 19282	0.55
19283	0.30
19284	<0.05
19285	0.75
19286	1.65
19287	6.5
↑ 19288	3.1

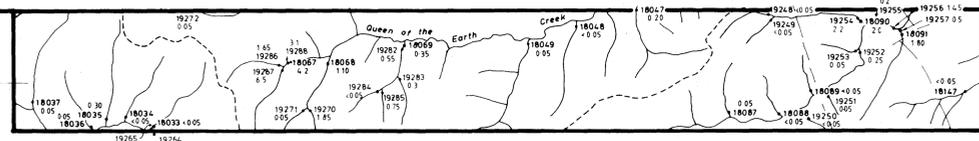
Units           ppb  
DL               0.05  
Scheme         BLEG2



E.L. 58/88  
RELINQUISHED PORTION  
PART 1



E.L. 58/88  
RELINQUISHED PORTION  
PART 2



5425000 N

5420000 N

5415000 N

LEGEND

- Road/track
- Creek
- 1800 Sample number
- 0.05 BLEG Assay (ppb)
- Dg Devonian Granite
- PJ Permian Jurassic Cover

Geochemical Statistics

background < 1ppb Au  
mildly anomalous > 1.4ppb Au  
strongly anomalous > 2.5ppb Au

097020

92-3342.

**Billiton Australia**  
The Metals Division of the BHP Company of Australia Limited

Project E.L. 58/88  
GOLDEN RIDGE JV

Title  
BLEG STREAM SEDIMENT SURVEY  
SAMPLE LOCATION  
AND ASSAY RESULTS

Author	Dept	Scale	1:25000
Drawn	DH	Date	5/90
Checked	Date	Revised	Date
Sheet No	FIG. 3	Drawing No	D/J/L/30/007

