

**PETER H. STITT & ASSOCIATES PTY. LTD.**

MINING AND GEOLOGICAL CONSULTANTS

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**OPEN FILE**

**E.L. 41/87 TASMANIA**

**RELINQUISHMENT REPORT ON EXPLORATION COMPLETED  
IN THE WATERHOUSE POINT - RINGAROOMA BAY  
AREA OF NORTH - EASTERN TASMANIA**

**MICROFILMED**

Prepared for Bach Holdings Pty. Ltd  
and Pennant Holdings Ltd.

A. Dove  
December, 1989

AMG REFERENCE POINTS ADDED

**90-3072**

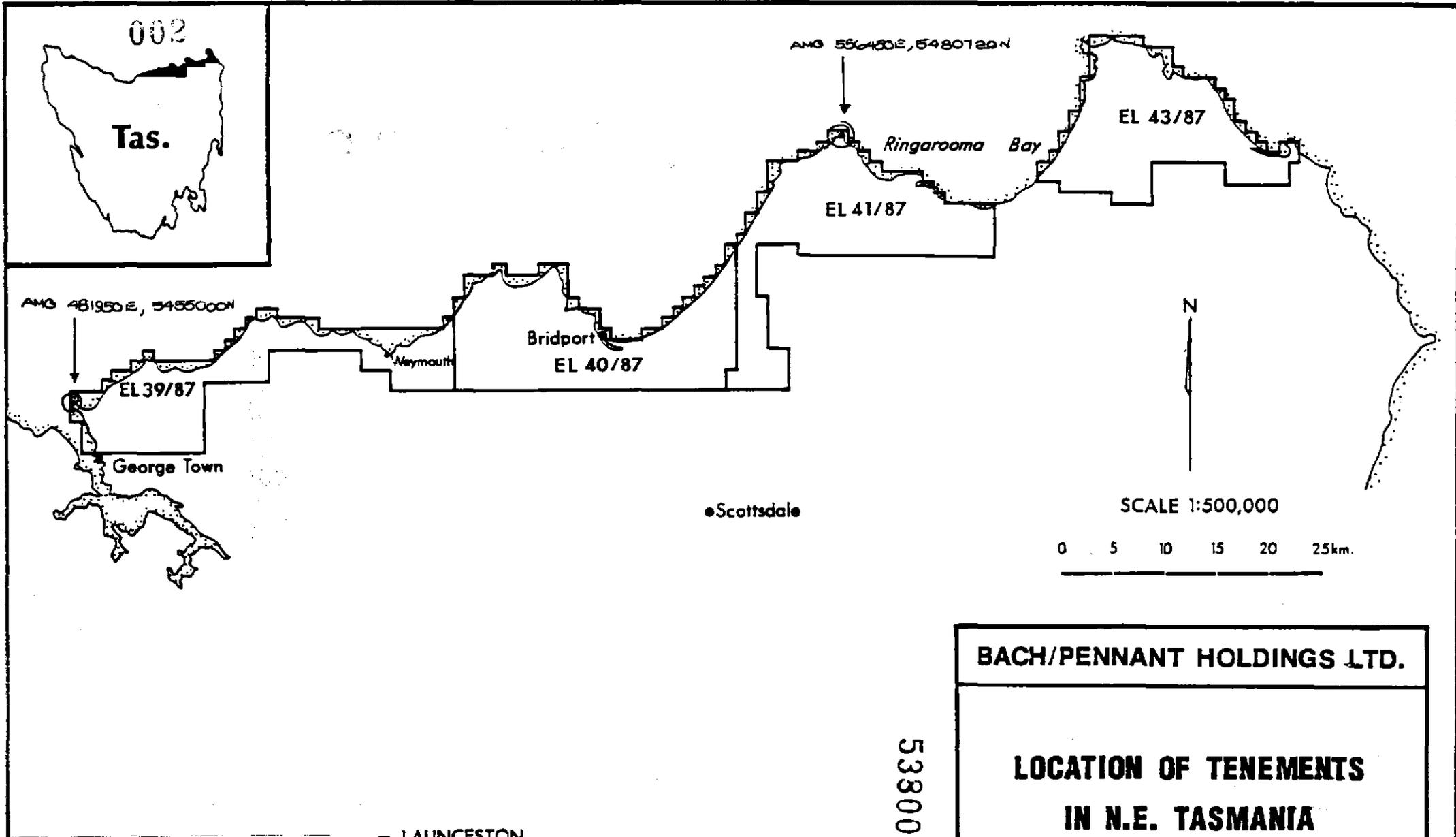
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AMG REFERENCE POINTS ADDED

5 cm

538003

**BACH/PENNANT HOLDINGS LTD.**

**LOCATION OF TENEMENTS  
IN N.E. TASMANIA**

(as originally granted)

Author: A. DOVE | Date: MAR. '89 | Fig.No.: 1

## SYNOPSIS

1. AIM

To examine the Tasmanian north coast around Waterhouse Point and Ringarooma Bay for economic heavy mineral sand occurrences.

2. REASON

Increases in the price of mineral sand commodities, particularly rutile and zircon, over recent years has resulted in a resurgence of exploration activity for these mineral commodities. The price rises, combined with technological advances in processing mineral sands have given impetus to the examination of areas previously considered to be unattractive.

3. SUMMARY AND CONCLUSIONS

- 3.1 Exploration Licence 41/87 originally covered an area of 230 km<sup>2</sup> in the Waterhouse Point - Ringarooma Bay area of northern Tasmania.
- 3.2 Upon licence renewal in 1989 the area was reduced to 144 km<sup>2</sup> following aerial photography studies and ground reconnaissance.
- 3.3 Exploration activities were confined to an Aeolian dune system at West Tomahawk Beach.

- 3.4 One north - south traverse line containing ten (10) drillholes was drilled using hand auger and hand operated cased sludging techniques.
- 3.5 All samples were tested by the Tasmanian Department of Mines Laboratory in Launceston.
- 3.6 No heavy mineral grades of 1.0% or greater were recovered in any sample interval, with only one interval WT 12, 2-3.5m recording a grade of greater than 0.5%.
- 3.7 Drilling confirmed that the sand thickness is too thin and the heavy mineral grades too low for the area to be a prospective target.

#### **4. RECOMMENDATIONS**

It is recommended that this exploration licence be relinquished since:

- results obtained to date have indicated that a higher grade than is likely to occur would be needed to achieve economic viability.
- the prevailing uncertain situation with respect to future exploration and subsequent mining within reserves, protected and conservation areas mitigates against continued expenditure on projects which depend upon significant resources within such land categories.

REPORT

5. INTRODUCTION

A preliminary programme of exploration was carried out by Peter H. Stitt & Associates on behalf of Pennant Holdings Ltd. and Bach Holdings Pty. Ltd on their jointly held Exploration Licence 41/87 located on the north east coast of Tasmania. The work is recorded in Report No. 6/89, prepared by Peter H. Stitt & Associates Pty. Ltd.

The exploration was principally directed at testing the coastal dunes for heavy mineral sand deposits, containing economic minerals: particularly rutile, leucoxene, ilmenite (TiO<sub>2</sub> raw materials), zircon and monazite. In addition exploration was carried out to recognize any other detrital minerals if they occurred in economic quantities.

During the past four years the world market has been dominated by a short fall in supply, particularly for the TiO<sub>2</sub> pigment minerals, zircon and the rare earth heavy minerals. As a consequence the price for these minerals has risen to historically high levels.

This combined with technological advances and the greater understanding of heavy mineral deposits has resulted in a re-evaluation of prospective areas.

006

## 6. TENEMENT INFORMATION

Exploration Licence 41/87 was originally granted to Bach Holdings Pty. Ltd. and Minproc Mining (Tasmania) Pty. Ltd. The licence covered an area of 230 square kilometres in the Land District of Dorset in the vicinity of Waterhouse Point (see figure 1). Pennant Holdings Ltd. later replaced Minproc Mining as joint title holder with Bach Holdings.

Upon licence renewal on the 22/3/89 an area of only 144 square kilometres was retained. The area relinquished generally represented hard rock basement outcrop with no or little development of coastal sand dunes or shore lines. These areas were recognised following aerial photography studies and ground reconnaissance.

## 7. FIELD INVESTIGATIONS

Exploration activities within the licence were confined to the area known as West Tomahawk Beach located to the south east of Waterhouse Point.(see figure 2)

Ten (10) drillholes were drilled on one north-south traverse line, located in the middle of the beach. All drilling was carried out by hand auger and hand operated cased sludging, using Dormers Engineering equipment. Holes were hand augered to water table using a 50mm. diameter hand auger. When water table was reached 50mm. casing was inserted into the hole and the hole advanced by sludging using a whistle top sludger on aluminium extension rods. Samples were logged and bagged at two metre intervals and delivered to the laboratory for heavy mineral test work.

All holes were shallower than expected due to the shallow nature of the frontal dune system and the coarse gravel and pebbles encountered in these holes. Drilling behind the frontal dune was terminated at a thick dark clay layer or when gravel and pebbles impeded drilling operations. The drilling completed a total of 35.2 metres over a traverse length of 360 metres.

A brief descriptive log for each drillhole showing heavy mineral assay data is included as Appendix 1 of this report.

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## 8. LABORATORY INVESTIGATIONS

All samples were treated by the Tasmanian Department of Mines, Metallurgical Laboratory in Launceston. The test procedure adopted is as follows:

1. Dry sample as recieved.
2. Screen on a coarse sieve (say 2mm.) to break up agglomerated lumps.
3. Riffle split to obtain an approximately 100 gm. working sample.
4. Re-pack balance of sample.
5. Weigh working sample.
6. Screen on a 1mm. seive and weigh plus 1mm. fraction.
7. Using TBE, seperate heavy minerals.
8. Dry and weigh heavy minerals.
9. Calculate heavy minerals as a percentage of the sample weighed in step 6 above.
10. Package heavy mineral for despatch.

Copies of the laboratory result certificates are included as Appendix 2 of this report.

## 9. DISCUSSION

As previously mentioned the drilling was confined to a north south traverse line crossing an Aeolian dune system at West Tomahawk Beach.

All sample intervals returned low heavy mineral grades, with only one sample interval WT 12, 2-3.5 metres returning a grade of greater than 0.5%. The remaining intervals returned 0.5% or less, with the average approximately 0.3%.

Owing to the shallow sand thickness and the very low mineral content, mineralogical investigations were not carried out on the heavy mineral samples. Mineralogical work carried out during previous preliminary investigations revealed concentrations of economic minerals, 9% rutile and 6.5% zircon. (see Report No. 6.89 ,Peter H. Stitt & Associates Pty. Ltd.)

Despite the favourable geomorphology, the sand thickness over the target area examined was found to be too thin to be a priority target and the heavy mineral grades and concentrations of economic minerals were not sufficiently encouraging to warrant continued exploration.

Additionally, the prevailing uncertain situation with respect to future exploration and subsequent mining within reserves, protected and conservation areas mitigates against continued expenditure on projects which depend upon significant resources within such land categories.

533011

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APPENDIX 1

DESCRIPTIVE DRILLHOLE LOGS

011

CLIENT : BACH/PENNANT HOLDINGS

TITLE No. : EL 41/87

AREA : TOMAHAWK BEACH

LINE No. : 1

LOGGED BY : A. DOVE

HOLE No. : WT-0

METHOD : HAND

DRILL DATE: 12.4.89

INTERVAL (m)	DRY Wt. (kg)	DESCRIPTION	SLIMES %	+1000um %	H.M. %
0 - 2.0		SAND, medium to coarse grained, amber. Coarse to very coarse grained, dark brown pebbles present. Hit WT. Started sludging.  Sluddging gear would not go down due to gravel and pebbles.  E.O.H. 2.0m.		13.7	0.5
DOWN HOLE AVERAGE					0.5

533012

012

CLIENT : BACH/PENNANT HOLDINGS

TITLE No. : EL 41/87

AREA : TOMAHAWK BEACH

LINE No. : 1

LOGGED BY : A. DOVE

HOLE No. : WT-4

METHOD : HAND

DRILL DATE: 12.4.89

INTERVAL (m)	DRY Wt. (kg)	DESCRIPTION	SLIMES %	+1000um %	H.M. %
0 - 2.0		SAND, medium to coarse grained, grey, organic. Grades to light grey. Hit dark brown clay at 1.4m. WT 1.5m. Started sludging		1.4	0.2
2.0 - 4.0		SAND, fine grained, grey, clay rich, gravel present at 3.0m then into fine to medium grained sand.		2.3	0.4
4.0 - 5.7		SAND, fine to medium grained, grey. Clay rich. Silty pebbles and gravel at 5.7m.  E.O.H. 5.7m. Gravel		2.1	0.5
DOWN HOLE AVERAGE					0.4

533013

013

CLIENT : BACH/PENNANT HOLDINGS

TITLE No. : EL 41/87

AREA : TOMAHAWK BEACH

LINE No. : 1

LOGGED BY : A. DOVE

HOLE No. : WT-8

METHOD : HAND

DRILL DATE: 12.4.89

INTERVAL (m)	DRY Wt. (kg)	DESCRIPTION	SLIMES %	+1000um %	H.M. %
0 - 2.0		SAND, fine to medium grained, orange brown mottle, hit clay at 1.8m. Started sludging.		1.0	0.5
2.0 - 4.0		SAND fine to medium grained, grey. Hit coarse pebbles and gravel at 2.6m.		2.0	0.4
4.0 - 5.3		SAND, fine to medium grained, grey, gravel rich. Hit pebbles at 5.0m.  E.O.H. 5.3m.		14.1	0.4
DOWN HOLE AVERAGE					0.44

533014

014

CLIENT : BACH/PENNANT HOLDINGS

TITLE No. : EL 41/87

AREA : TOMAHAWK BEACH

LINE No. : 1

LOGGED BY : A. DOVE

HOLE No. : WT-12

METHOD : HAND

DRILL DATE: 12.4.89

INTERVAL (m)	DRY Wt. (kg)	DESCRIPTION	SLIMES %	+1000um %	H.M. %
0 - 2.0		SAND, medium grained, dark grey. Hit WT at 0.5m. Started sludging 1.0m. Hit gravel at 1.0m. Silty, clay rich. Hit very coarse gravel at 2.0m.		3.1	0.2
2.0 - 3.5		SAND, medium grained gravel rich, hit coarse gravels and pebbles at 3.5m.  E.O.H. 3.5m.		11.4	0.8
DOWN HOLE AVERAGE					0.46

533015

015

CLIENT : BACH/PENNANT HOLDINGS

TITLE No. : EL 41/87

AREA : TOMAHAWK BEACH

LINE No. : 1

LOGGED BY : A. DOVE

HOLE No. : WT-16

METHOD : HAND

DRILL DATE: 12.4.89

INTERVAL (m)	DRY Wt. (kg)	DESCRIPTION	SLIMES %	+1000um %	H.M. %
0 - 0.8		SAND fine to medium grained, grey. Hit dark brown clay layer. Hit gravel at 9.7m.  Sludger wouldn't go down, casing jammed.  E.O.H. 0.8m.		4.1	0.2
DOWN HOLE AVERAGE					0.2

533016

018

CLIENT : BACH/PENNANT HOLDINGS

TITLE No. : EL 41/87

AREA : TOMAHAWK BEACH

LINE No. : 1

LOGGED BY : A. DOVE

HOLE No. : WT-20

METHOD : HAND

DRILL DATE: 12.4.89

INTERVAL (m)	DRY Wt. (kg)	DESCRIPTION	SLIMES %	+1000um %	H.M. %
0 - 2.0m		SAND, fine to medium grained, grey, amber brown mottle, organic at top.		0.6	0.3
2.0 - 3.1		SAND, medium grained, grey. Hit WT. Started sludging 2.1m. Hit gravel at 2.1m.  E.O.H. 3.1m.		13.8	0.1
DOWN HOLE AVERAGE					0.23

533017

016

CLIENT : BACH/PENNANT HOLDINGS

TITLE No. : EL 41/87

AREA : TOMAHAWK BEACH

LINE No. : 1

LOGGED BY : A. DOVE

HOLE No. : WT-24

METHOD : HAND

DRILL DATE: 12.4.89

INTERVAL (m)	DRY Wt. (kg)	DESCRIPTION	SLIMES %	+1000um %	H.M. %
0 - 2.0		SAND, fine to medium grained, grey. Hit clay layer then brown coarse to very coarse abundant gravel.  Started sludging		3.8	0.1
2.0 - 2.25		Casing jammed, sludger would not go down.  E.O.H. 2.25m.		35.3	0.1
DOWN HOLE AVERAGE					0.1

533018

CLIENT :BACH/PENNANT HOLDINGS

TITLE No. :EL 41/87

AREA :TOMAHAWK BEACH

LINE No. :1

LOGGED BY :A. DOVE

HOLE No. :WT-28

METHOD :HAND

DRILL DATE:12.4.89

INTERVAL (m)	DRY Wt. (kg)	DESCRIPTION	SLIMES %	+1000um %	H.M. %
0 - 2.0		SAND, medium grained, amber. Hit coarse gravel and pebbles at base. Started sludging.		12.2	0.2
2.0 - 4.0		SAND, fine to medium grained, grey, gravel present Gravel layer at 3.0m., gravel rich beyond 3.0m.		7.5	0.5
4.0 - 6.0		SAND, medium grained, grey. Abundant gravel present.		3.7	0.2
6.0 - 7.5		SAND, medium grained, grey, silty. Hit hard dark brown clay at 7.5m.  E.O.H 7.5m.		0.4	0.3
DOWN HOLE AVERAGE					0.3

533019

CLIENT <sup>019</sup> : BACH/PENNANT HOLDINGS

TITLE No. : EL 41/87

AREA : TOMAHAWK BEACH

LINE No. : 1

LOGGED BY : A. DOVE

HOLE No. : WT-32

METHOD : HAND

DRILL DATE: 12.4.39

INTERVAL (m)	DRY Wt. (kg)	DESCRIPTION	SLIMES %	+1000um %	H.M. %
0 - 2.0		SAND, medium grained, grey, organic then light brown to amber. Hit WT. Started sludging.		8.7	0.2
2.0 - 2.3		Coarse gravel and pebbles jammed casing. E.O.H. 2.3m.		23.8	0.2
DOWN HOLE AVERAGE					0.2

533020

CLIENT : BACH/PENNANT HOLDINGS

TITLE No. : EL 41/87

AREA : TOMAHAWK BEACH

LINE No. : 1

LOGGED BY : A. DOVE

HOLE No. : WT-36

METHOD : HAND

DRILL DATE: 12.4.89

INTERVAL (m)	DRY Wt. (kg)	DESCRIPTION	SLIMES %	+1000um %	H.M. %
0 - 2.0		SAND, medium grained, grey, organic then light grey/amber mottle. Gravel at base.  Started sludging.		24.0	0.1
2.0 - 2.75		SAND, medium grained, grey, abundant gravel. Coarse gravel and pebble layer 2.4m. Jammed in rock.  E.O.H. 2.75m.		20.5	0.1
DOWN HOLE AVERAGE					0.1

533021

021

533022

APPENDIX 2

LABORATORY RESULT CERTIFICATES



TASMANIA

Launceston Office:

Chemical and Metallurgical  
Laboratory,  
287 Wellington Street,  
LAUNCESTON 7249

Enquiries: Peter H. Stitt Pty Ltd  
5th Floor  
Phone: 32 York Street  
Your ref.: Sydney 2000  
Our file:

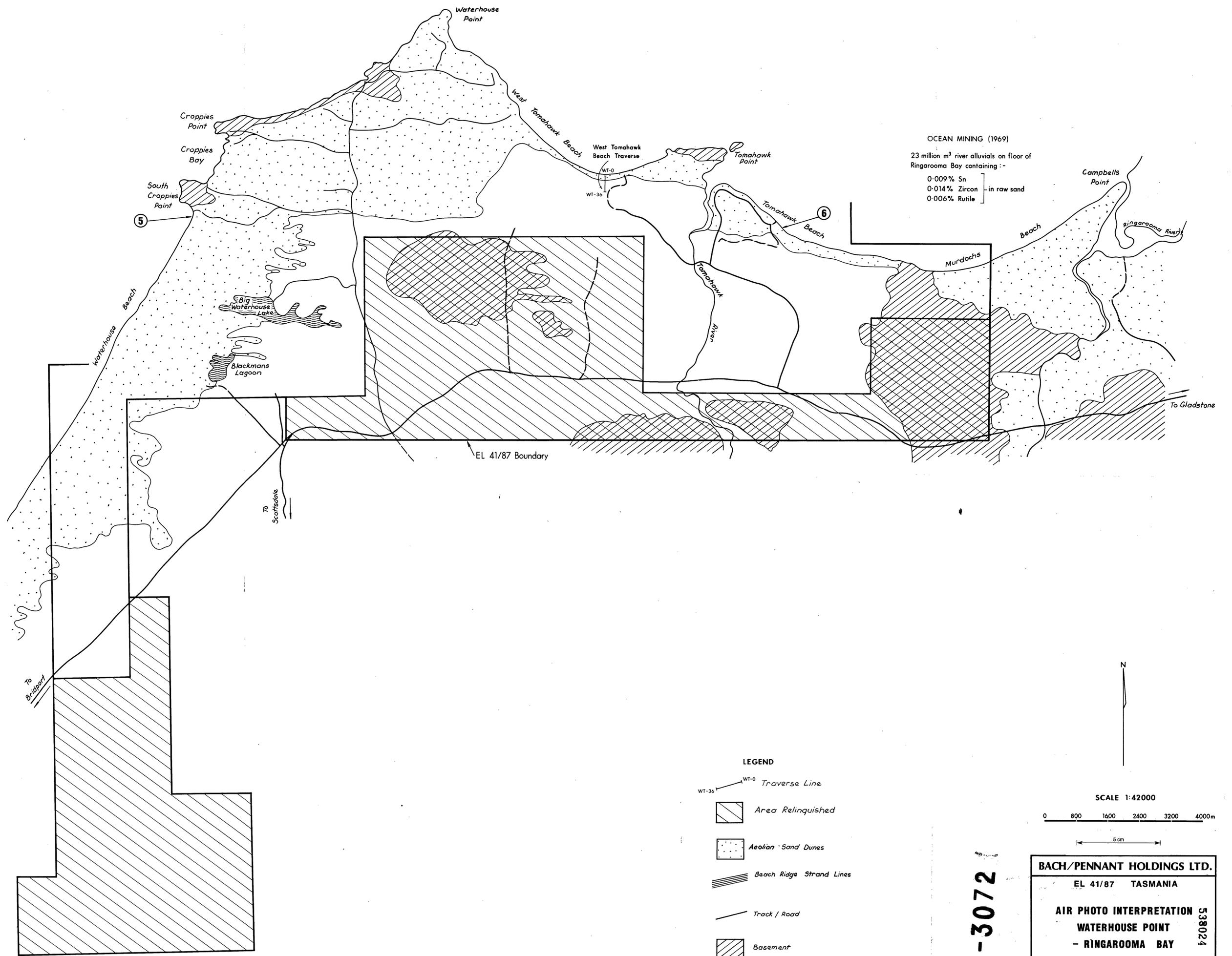
4.7.89

Reg. Nos 893056-154 & 893262-280

Dear Sir,

Please find below results of samples submitted to  
this laboratory.

<u>Reg. No</u>	<u>Desc.</u>	<u>% + 1.00mm</u>	<u>% Heavy Minerals</u>
893100	WT 0 0 - 2.0	13.7	0.5
101	WT 4 0 - 2.0	1.4	0.2
102	2.0 - 4.0	2.3	0.4
103	4.0 - 5.7	2.1	0.5
104	WT 8 0 - 2.0	1.0	0.5
105	2.0 - 4.0	2.0	0.4
106	4.0 - 5.3	14.1	0.4
107	WT 12 0 + 2.0	3.1	0.2
108	2.0 - 3.5	11.4	0.8
109	WT 16 0 - 0.8	4.1	0.2
110	WT 20 0 - 2.0	0.6	0.3
111	2.0 - 3.1	13.8	0.1
112	WT 24 0 - 2.0	3.8	0.1
113	2.0 - 2.25	35.3	0.1
114	WT 28 0 - 2.0	12.2	0.2
115	2.0 - 4.0	7.5	0.5
116	4.0 - 6.0	3.7	0.2
893117	WT 28 6.0 - 7.5	0.4	0.3
118	WT 32 0 - 2.0	8.7	0.2
119	2.0 - 2.3	23.8	0.2
120	WT 36 0 - 2.0	24.0	0.1
121	2.0 - 2.75	20.5	0.1



OCEAN MINING (1969)  
 23 million m<sup>3</sup> river alluvials on floor of Ringarooma Bay containing :-  
 0.009% Sn  
 0.014% Zircon  
 0.006% Rutile  
 } - in raw sand

LEGEND

- WT-0 Traverse Line
- WT-36
- Area Relinquished
- Aeolian Sand Dunes
- Beach Ridge Strand Lines
- Track / Road
- Basement

6 1988 SAMPLING SITE

SCALE 1:42000

0 800 1600 2400 3200 4000m

5 cm

**BACH/PENNANT HOLDINGS LTD.**  
 EL 41/87 TASMANIA  
 AIR PHOTO INTERPRETATION 538024  
 WATERHOUSE POINT  
 - RINGAROOMA BAY  
 Author: A.DOVE Date: DEC. '89 Fig.No.: 2

90-3072