

**OPEN FILE**

**QQQ**

826001

PROJECT NAME: AUSTRALIAN ANGLO AMERICAN PROSPECTING PTY LTD

TITLE: RINGAROOMA JOINT VENTURE  
RESOURCE REPORT TWO

*June 1984*

**MICROFILMED**  
**FICHE No.013490 -**

*ML 95m/74*

*ML 58m/73*

AREA NAME/S, STATE 1: 250,000 SHEET NO/S & COORDINATES: SK 55-4 Launceston  
5 84 000 m E  
54 70 000 m N

COMMODITY/IES: Tin

TEXT PAGES NO: 5

PLAN NOS: See List

TABLE NOS: 1

APPENDICES: -

AUTHOR/S: R W L Shaw, R A A Munro

DATE: June 1984

**95-3695.**

AUSTRALIAN ANGLO AMERICAN LIMITED

Incorporated in the State of Victoria

T A B L E O F C O N T E N T S

826002

1. INTRODUCTION
2. GEOLOGY
3. MINERALISATION
  - 3.1 Method of Calculation
  - 3.2 Mine Recovery
  - 3.3 Reserves Estimates Confidence Levels
  - 3.4 Mining Dilution
4. GENERAL REMARKS AND RECOMMENDATIONS

ACCOMPANYING MAPS

- TAS-10-155      Endurance and Pioneer Deposits - Geological Setting  
and Ore Reserve Locations.
- TAS-10-176(1) Pioneer Alluvial Tin Deposit. Reserve Blocks.  
TAS-10-176(2)
- TAS-10-177(1) Pioneer Deposit Basement Topography.  
TAS-10-177(2)
- TAS-10-49      Endurance Lead Drilling.
- TAS-10-163      Endurance Lead Drilling.

AUSTRALIAN ANGLO AMERICAN PROSPECTING PTY LIMITEDRINGAROOMA JOINT VENTURERESOURCE REPORT TWO

JUNE 15, 1984

1. INTRODUCTION

In terms of the Agreement and Supplemental Agreement between "Anglo" and "Triako" dated 27 October 1981 and 12 October 1982, a Prefeasibility Study, and its acceptance, marks the progression from Stage 1 to Stage 2 of the deal. This report constitutes a statement of geological reserves designed to provide the basis for the Prefeasibility Study. It updates that of 4 May 1983 by incorporating drilling results since that date.

The recent drilling achieved the following results:-

- (a) the limits of the Pioneer/Football Ground deposit were defined with a resultant increase in volume.
- (b) no substantial change to the Endurance Lead reserves were indicated from drilling results.
- (c) a significant area was identified as requiring additional drilling at Gilhams Creek Deviation (a selvage north of the old Pioneer Mine workings).
- (d) proven and probable category reserves total  $18.8 \times 10^6$  cu m at 241g cassiterite.
- (e) potential reserves at Gilhams Creek Deviation are  $6.15 \times 10^6$  cu m at 165g cassiterite.

It is recommended that:-

- (a) these new data be included in the indicative economic study formula of WKL (30.9.83) and a Prefeasibility Study be composed.
- (b) that drilling be resumed at Gilhams Creek Deviation.
- (c) that Stage 2 of the Agreement be entered into.
- (d) that negotiations, backed and supported by the Director of Mines, be initiated with the Department of Commerce and Industry to regain a quota for mining the tin within the shortest possible time frame.

## 2. GEOLOGY

The geological features of the deposits have been documented previously (JN-S 27.2.81, -.4.84, RWLS/RAAM 5.5.83). A detailed description here is superfluous to the objectives of the document. Suffice it to reiterate that two target systems exist - Endurance and Pioneer.

The Endurance Lead is a well defined, confined gutter. It was postulated (5.5.83) that a break in mid Lead had scope for additional reserves. Drilling to test this however proved that the break was a cascade or nick point in the lead profile and that the consequent local high energy environment was responsible for the distribution pattern of tin volumes. Basement to the lead is deeply weathered granite which, particularly in the cascade area, carried pockets of high grade tin in its irregular upper surface.

The Pioneer system is much broader than Endurance. In this report it is no longer sub-divided into the sub-reserve blocks known as Pioneer, Football Ground, Intermediate Area. The boundaries are re-defined on a specific cutoff grade. Drill density alone controls sub-division into Pioneer proven reserves and Pioneer probable reserves. Potentially economic holes peaking at (K241) 630g cassiterite permit the expansion of the former Football Ground reserve such that it links with the previously worked out portion of the Pioneer Lead. Thus definition of a Football Ground reserve is now artificial as it links both northwards and eastwards with the Pioneer Lead.

The Gilham Creek Deviation is part of the Pioneer system but will retain its name as an exploration target. Geologically it compliments the overall pattern of the "Football Ground Reserve" in the Pioneer Lead. The drill hole K261 (944 g/Cu m cassiterite) upgrades the exploration potential indicated by several old holes with greater than 100 g/Cu m cassiterite.

The resource pattern at Pioneer is arcuate or horseshoe shaped. It clearly represents a selvage of material which in the past has proven uneconomical. A number of reasons can be suggested for this including decreasing grade, increasing widths of overburden, lack of drill information outside the confines of the main channel and logistical difficulties in diverting natural drainages. A change in technology may overcome these deterrents.

3. MINERALISATION

The resource defined is as follows:-

LOCATION	CATEGORY	GRADE g/cu m SnO <sub>2</sub>	CUBIC METRES x 10 <sup>6</sup>
Pioneer	Proven	302	2.562
Pioneer	Probable	193	10.82
Endurance	Probable	308	5.4
	Sub Total	241	18.782
Gilhams Creek Deviation	Possible	165	6.15
	Total	222.2	24.9

## 3.1 Method of Calculation

(1) Drill Hole Values

(a) Analytical result of sample versus:-

(i) 80% of Theoretical Volume if Recovered Volume is less than 80% of the Theoretical Volume.

or (ii) Recovered Volume if it is greater than 80% of the Theoretical Volume.

This method applies to holes K170 on.

Prior to K170 analytical results of samples were treated against 80% of the Theoretical Volume if Recovered Volume was less than Theoretical Volume.

\*See next section for further comment.

(b) An assumption Sn in cassiterite is 70%.

- (2) Area Value: polygonal areas of influence around each drill hole.
- (3) Resource Boundary: defined on the basis of a cutoff grade of 100g/cu m cassiterite.
- (4) Proven Reserve: drill density closer than 100m centres.
- (5) Probable Reserve: drill density = 100m centres equivalent.
- (6) Possible Reserve: drill holes spaced at greater than 100m centre equivalent.

- (7) Geological Reserves: no account for batter dilution is incorporated.

### 3.2 Mine Recovery

Insufficient data exists to establish a categorical relationship between drill indicated tin content and mine recovered tin. However, during the Amdex mining period June '81 to March '82, 134 tonnes of cassiterite were recovered which was 90% of that thought to be present. The remaining 10% escaped in tailings. From this limited exercise and from the precedent of historical acceptance of grade computation techniques it is considered that 90% of the stated geological reserves of cassiterite would be recoverable without improving Amdex's mining and plant techniques.

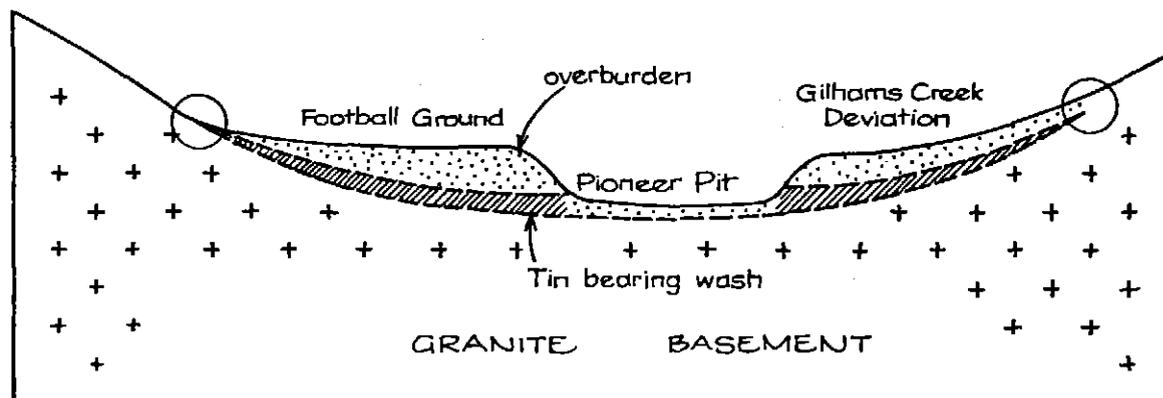
### 3.3 Reserves Estimates Confidence Levels

The "conservative" approach to likely reserves estimates adopted in the 5.5.83 report have been borne out by subsequent drilling. In no areas have reserves been reduced. It is now confidently asserted that the Pioneer resource has been defined to a  $\pm 10\%$  accuracy. The possible resource at Gilhams Creek Deviation has a lower confidence level on both the absolute volume and grade likely to be present.

### 3.4 Mining Dilution

The configuration of the deposits against natural slopes, which in certain areas are quite steep ( $>30^\circ$ ), will significantly reduce the diluent effect of cutting batters to the dredge pond. Areas of saving of this nature are marked on the accompanying plans.

#### SCHMATIC SECTION PIONEER



○ Area of natural batter - minimal mining dilution

4. GENERAL REMARKS AND RECOMMENDATIONS

WKL's evaluation of the Ringarooma Tin (30.9.83) indicates the potential for the district hinges primarily upon the economics of Pioneer/Endurance. Based on our previous resource statement using geological reserves of  $13.8 \times 10^6$  cu m from Pioneer and Endurance a 9 to 10% DCF return was indicated (WKL). A "theoretical" distal resource (Great Northern Plains), was added to the equation to provide a more attractive 12% DCF (WKL).

Our recent work has substantially improved the "anchor" project to the extent that it may not be necessary to build in the Great Northern Plains occurrence to achieve satisfactory returns. Should the economic studies demonstrate this to be the case the recent endeavours to persuade Santos to part with their G.N.P Retention Licence can be allowed to die. Longer term overtures to the Department of Mines for acquisition of the ground would be appropriate. The aim would be the protection of that resource under the umbrella of a resumed alluvial tin mining industry in NE Tasmania by our J.V.

Other tin occurrences are known which fall within our Licences including the Scoloch Lead, Dam Reserve, Monarch, Arba etc. they would require re-consideration in an active mining environment. They have not been included in the statistics presented in this report.

In the short term the following action is recommended:-

- (1) Rapidly substitute the new resource data for the old in WKL's 1983 economic computer programme to ascertain their effect on the Case A, B DCF returns.
- (2) Compose a thorough Prefeasibility Study document to advance the JV to Stage 2.

If the results of (1) are encouraging then:-

Release a special budgetary provision to permit immediate resumption of drilling, for the remainder of the 1984/85 year, at Gilham Creek Deviation.

Armed with a favourable Prefeasibility Study further discussion with the Director of Mines, Tasmania should take place to prepare formal application to the Department of Commerce and Industry for a tin quota in order that mining may resume during this period of elevated I.T.C. controlled prices.

  
Report prepared and written  
by RWLS/RAAM  
for: June 1984