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RIO TINTO AUSTRALIAN EXPLORATION PTY. LIMITED
MELBOURNE, AUSTRALIA

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NOTES ON EDWARDS' ARBA PROPOSITION

(BRANXHOLM CREEK)

by

J. H. Rattigan

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NOTES ON EDWARDS ARBA PROPOSITION
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Edwards Arbas Proposition,
Branxholm Cr
J.H. Rattigan 27/11/57

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DATE:— 27/11/1957.

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NOTES ON EDWARD'S ARBA PROPOSITION

by

J. H. Rattigan**MICROFILMED**CONTENTS

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PLANSScale

Plate 1	Geological Sketch Branhholm Creek Lead and Environs	10 chains to 1 inch.
Plate 2	Cross Section X - X' (see Plate 1) along Branhholm Creek Lead	Hor: 1" to 660' Vert: 1" to 220'
Plate 3	Plan showing positions and values of bores drilled by Briseis Consolidated for Burma-Malay.	
	A. Edwards Mineral Lease, Branhholm Creek (Arba) Lead, N.E. Tasmania	1 inch to 200 ft.

J. H. Rattigan

1. ACCESS AND FACILITIES

The Edward's property lies close to the Tasman Highway 55 miles by road from Launceston, and within 1½ miles of the Branxholm Railway Station on the Launceston Herrick Road.

The Ringarooma Water Race (carrying a great volume of water) which is not used to any great extent though kept in repair passes close to the property. Electric Power supply from the H.E.C. system is available.

2. LAND AND MINING TENURES

A. Edwards apparently holds 151 acres of private land and the boundaries of his mineral lease 160P/H coincides with those of the purchased land (outlined in green on attached sketch).

To the east of Edwards property W.A. Walsh, a son of a director of the present Briseis and Endurance Companies, holds mineral leases which he is currently working.

Along Branxholm Creek west of Edwards property and on the Ringarooma flats north of Edwards property, the ground is apparently not held under mineral lease as of this date, but this needs checking. It is also probable that these areas are on purchased land.

To the N.E. lies the S.W. corner of our S.P.L. 323 and the extension of our southern boundary of S.P.L. 323 formed a boundary of the area I pegged recently and which was rejected previously because of a prior application by another syndicate. The aim I had in pegging this ground was to cover Ringarooma Flats extending from Derby to Branxholm which might be investigated for a possible dredging project.

If we do become interested in Edward's Property I suggest we take early steps to cover the open ground between Edward's Northern Boundary and the McDermott Syndicates southern Boundary.

3. COMMENTS ON PROSPECTS: THE BRANXHOLM LEAD

1. The history and production of the Branxholm Creek Lead was summarized by Nye in Tas. Dept. of Mines Bulletin 35 "The Sub-Basaltic Tin Deposits of the Ringarooma Valley". Since the time this Bulletin was written no major developments have taken place though there has been (local prospecting?) of several areas (mainly by?) trenches. Edwards and Walsh (are reported as?) producing something of the order of 19 tons of Cassiterite per year.

2. Past Workings

Tin was originally discovered and worked from the Branxholm Creek Lead south of the Tasman Highway, where shallow stanniferous drifts occur on a granite bottom.

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Operations on a bigger scale later took place in deep Tertiary drifts developed south of the present working face of Edwards.

This ground is now covered with tailings and it is probable that some bottom ground was not worked, due to limitations of the steam plant operating at that time.

Quaternary stanniferous deposits along Branxholm Creek (Easement Lease of Nye) were worked in quite a big way for these parts. The bottom was Tertiary drifts and in one place Silurian? sediments.

Other workings exist on the Ringarooma Flats near the confluence of the present Branxholm Creek with the Ringarooma River and in areas of Quaternary and Tertiary Ground along Beach Creek.

3. Prospects on Edwards Property

Edwards farm and mineral lease covers a basalt capped hill of Tertiary drifts filling the Branxholm Creek head. In plan the lead is clearly shown as an embayment of Tertiary deposits in older rocks (granite and Silurian sediments). This valley of the old Branxholm Creek probably had an undulating surface and the deepest gutters observed in the old and present working can be referred to the old stream beds of Branxholm Creek and at least two tributaries entering from the east.

The whole valley filling is apparently stanniferous and richest values can be inferred as being localized in and adjacent to the gutters. To the north of Edwards property the Branxholm Creek lead is inferred to meet the Main Ringarooma lead. It is possible that deeper and more rich drift is present at the north end of the property due to a greater volume of Tertiary alluvial material being deposited in the old Ringarooma Valley.

The gutters of the Branxholm Creek Lead and also tributary gutters are believed to lie beneath Edwards farm. Exploration would involve boring to depths of 200 feet to fully test the ground. The bulk of important production is recorded in Nye's Bulletin. Nye estimates values of approximately 1 lb. cassiterite per yard of actual drift treated from production records prior to 1923. The present operators suggest a figure of $\frac{1}{2}$ lb. of cassiterite per yard for ground currently being treated but have no reliable records.

I have made the following rough calculations using a mean figure of $\frac{1}{2}$ lb. of actual metallic tin to the yard which, I think is very optimistic but can be used to see the order of things.

Volume of Drifts beneath Edwards property = 30,000,000 yards (assuming 150' of Tertiary).

Possible Tin content (assuming $\frac{1}{2}$ lb. Sn per yard) = 6,500 tons.

Possible volume of barren overburden to be treated 7,000,000 yards (assuming 45 feet over 100 acres).

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I think the figure of 6,500 tons of metallic tin is the most optimistic figure we could expect from Edwards actual mineral lease, for though the yardage may be more than estimated due to deepening of the ground northwards, the values would be expected to decrease.

There are however some prospects of stanniferous ground on the Ringarooma Flats north of Edwards. Here basalt and a considerable upper section of Tertiary drifts have been stripped. Shallow alluvium, recent shingle and tailings occur in the area, but actual depth of Tertiary and any idea of values cannot be given. It is possible that ground is deep but poor, as it forms the southern flanks of the deposits in the old Ringarooma Valley. I did have in mind considering it as part of possible dredging prospects over the flats from Derby to Branhholm.

CONCLUSION:

The large scale operations by the Arba Company ceased by virtue of high costs of treatment (Refer Nye's figures of 18,84 pence per yard in 1920) with the steam plant then available.

At present water and power are readily available and the overburden of basalt and basaltic soil should be amenable to sluicing but the economics may still be doubtful, particularly as the possible tonnage is not spectacularly large and exploration costs would be high.

J.H. Rattigan

(.....?) Indicates original copy indecipherable.

FURTHER NOTES ON THE ARBA (BRANXHOLM CREEK)
LEAD.

1. BORING:

I have discovered records of 3 different sets of boring in the Branxholm Area. These are:-

- (1) Briseis Consolidated boring for Burma Malay on Edwards Property near the present workings. Localities of holes are shown on plate 3 but levels of collars are not known and positions cannot be re-established in the field partly because of recent working of part of ground. Values quoted on the plan of Plate 3 are as quoted on an original chart.

- (2) Government boring on flats north of Edwards boundary aimed at testing these flats and if possible to intersect the Arba (Branxholm Creek) lead, which is inferred as passing in a northerly direction from the old and present workings, to merge with the Main Ringarooma Lead somewhere near the present junction of Branxholm Creek with the Ringarooma.

8 bores totalling 1447 feet were put down, 6 being disposed in one line over a total length of 20 chains, north of Edwards boundary.

The positions of the holes are not known to me yet but I am sending to Hobart for a boring plan if available.

The bores all gave low values and I have calculated a mean value of 0.03 lb. cassiterite per cubic yard, over an average depth of 180' for this boring.

The inference drawn by P.B. Nye on the boring was that the Arba lead was not intersected but passes to the west of the boring line. The bores may be said to be a test of the southern flanks of the Main Ringarooma Lead.

- (3) A number of bores (14) in 3 north trending lines put down on the flats north of Edwards property (See plate 1). These are generally shallow and probably did not reach bottom and were perhaps designed to test the flats for alluvial tin for either sluicing or dredging. It is not known at present whether these are government bores or not. Values are not part. good, the best being recorded in the eastern line (Nos. 1-4).

2. COURSE OF ARBA LEAD:

The position of the Arba Lead seems fairly well outlined near the present workings by the Burma Malay boring. Its course under the basalt hill of Edwards farm and across the flats to the north is not known and may have been missed in all boring on the flats as the main gutter may only be of the order of 200' wide.

*This is the
1931 boring.
A further 9 holes
bored in 1937*

The section line xx' (plate 2) shows the surface and bedrock profiles in along the general trend of the lead. The section line passes along the gutter of the lead near the Burma Malay bores 2 and 25, but there is no evidence to prove that the lead does not trend away from the section line in its northern course. In this respect the poor values shown in the No. 10 Branhholm bore and the government bores as contrasted with values approaching $\frac{1}{2}$ lb. at the old working face, may not be significant.

3. DISCUSSION OF ORE RESERVES AND VALUES:

On plate 3 the position of the gutter of the lead and Burma Malay bore values are shown. Values have been calculated for the full section of drift and basalt overburden. It would appear from the poor values in an abandoned unbottomed hole No. 13 that values in the upper section of drifts is poor and the adjusted figures (in red) of bores No. 1 - 12 are apparently calculated making no allowance for any values in upper sections. (These figures are on an original chart.)

It appears therefore that values of the order of $\frac{1}{2}$ lb. cassiterite per yard are restricted to a relatively narrow gutter of width up to 200'. (Refer bores 23, 24, 25, 2 and 12). To the south west (bores 4 - 8) and north east (bores 26, 10 & 14) values appear to diminish. Bores 1 and 9 have relatively high values perhaps because of small thickness of basalt cover.

I have constructed a section AA' across the course of the lead (Inset plate 3). On averaging the values in this section over the full basalt drift section I calculated a mean figure of just less than 0.40 lb. cassiterite per yard. This section covers the main gutter and nearer flanks of the Arba lead. The ground to the south west (bores 6, 7 and 8) is very poor and this was confirmed by dish prospecting on the present face near No. 5 bore where I took a few grab samples of wash which gave very poor dish prospects (estimated at $\frac{1}{4}$ lb. to the yard.)

It appears likely that higher values will be restricted to area near the Arba gutter. On the inference that the Arba lead extends 32 chains through Edwards property, I have calculated the following figures.

Length	32 chains
Breadth: (AA')	5 chains
Area of block:	16 acres
Average depth:	160 feet
Total yardage =	4,130,000 (proportion of basalt to drift)
(drift & basalt)	= $\frac{1}{8}$.

Assume values maintain as in Section AA' i.e.
0.40 lb. cassiterite throughout section.

Total concentrates in block 2,060,000 lb. =
980 tons cassiterite, say 1,000 tons.

As I see it another 20,000,000 yards may exist on Edwards property but it would be optimistic on the information available to expect this to reach 0.2 lb. concentrates to the yard overall, though tributary gutters may help boost the values. This other ground if workable might contain another 1,800 tons of cassiterite. There also is the possibility of some values in the extension of the lead under the flats though judging by boring the gutter would be narrow and all we might reasonably hope for would be say 200 tons of concentrates.

4. RECENT WORKINGS OF THE LEAD:

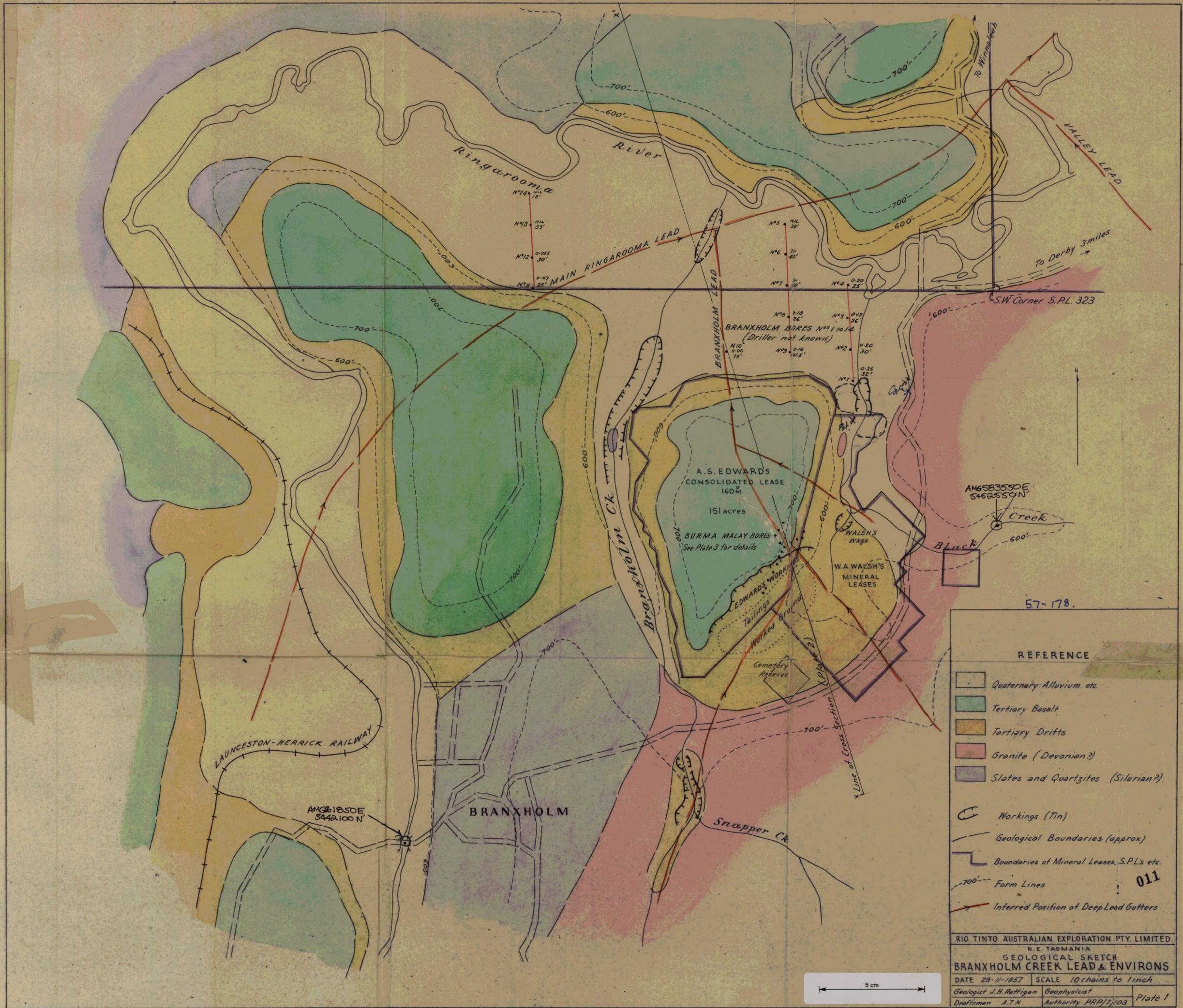
The Edwards Bros. in operations on the nearer flanks of the Arba lead have won about 64 tons of cassiterite concentrates from August 1949 to October 1957. In doing this they say they have stripped 3 to 4 acres of basalt covered farm land though they have no proper records or plans to base yardage treated on. Assuming 3 acres of ground were treated the values calculated on tin recovered would be of the order of 0.3 lb. per yard.

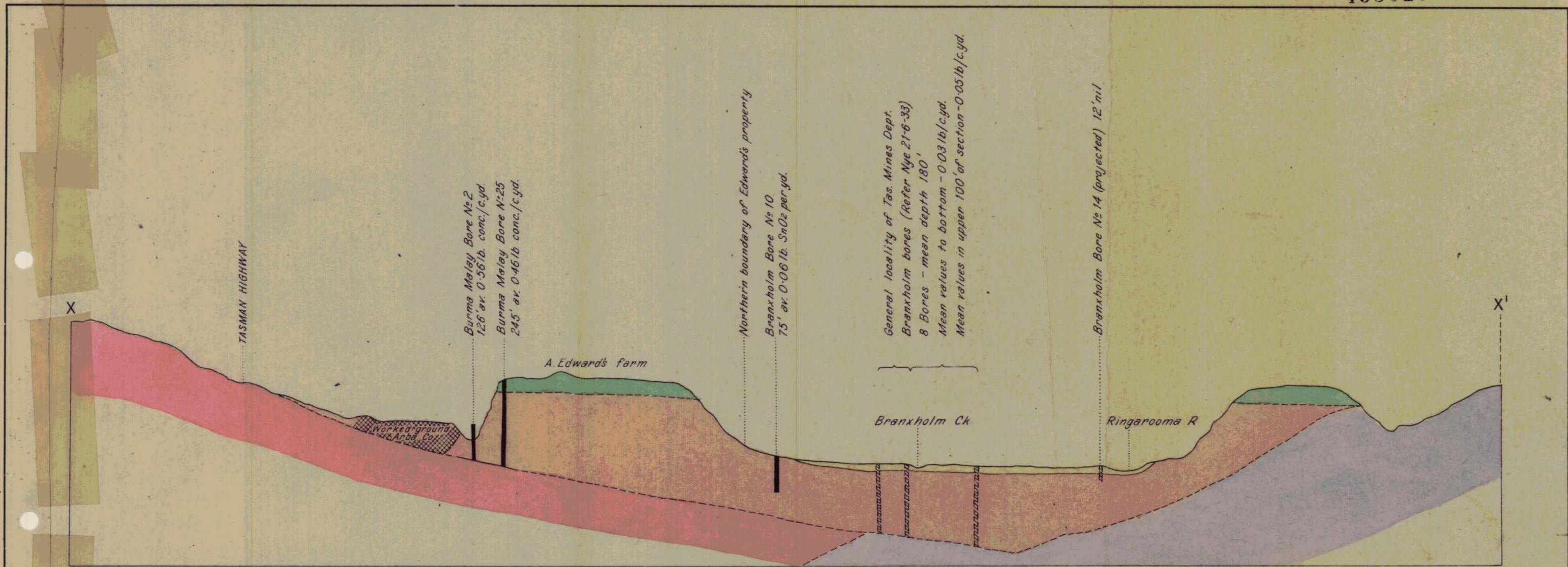
The cassiterite they are working is not particularly coarse and a good proportion of fines are probably lost. A sample of material recovered in the first sluice box is attached.

5. CONCLUSIONS:

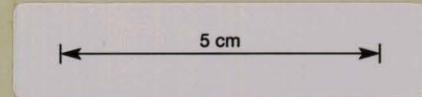
I am not particularly impressed with the proposition on the information available. The attached plans should allow you to confirm this view or otherwise. I cannot see that even a moderately sized operation would be justified. However the above comments are based on old bore records and these as regards assays may be unreliable.

J. H. Rattigan,
Geologist.





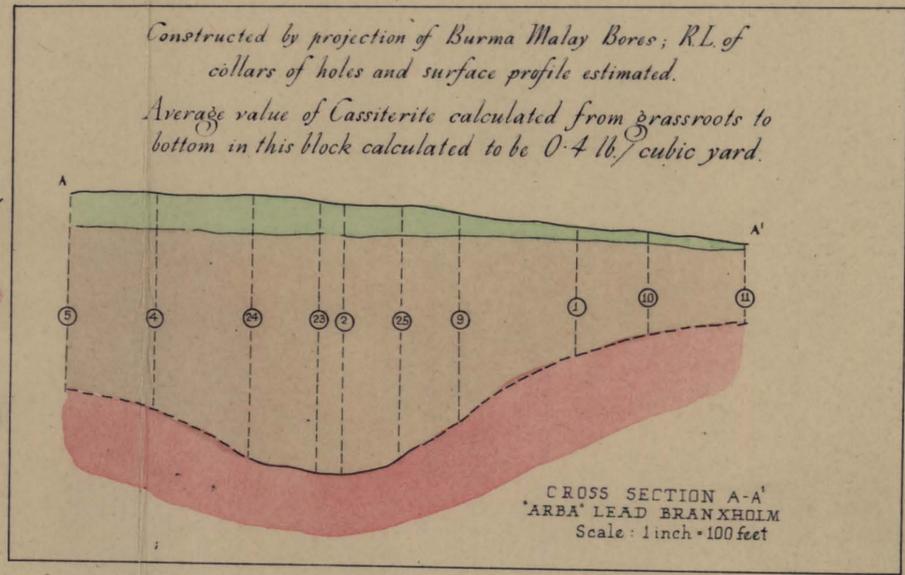
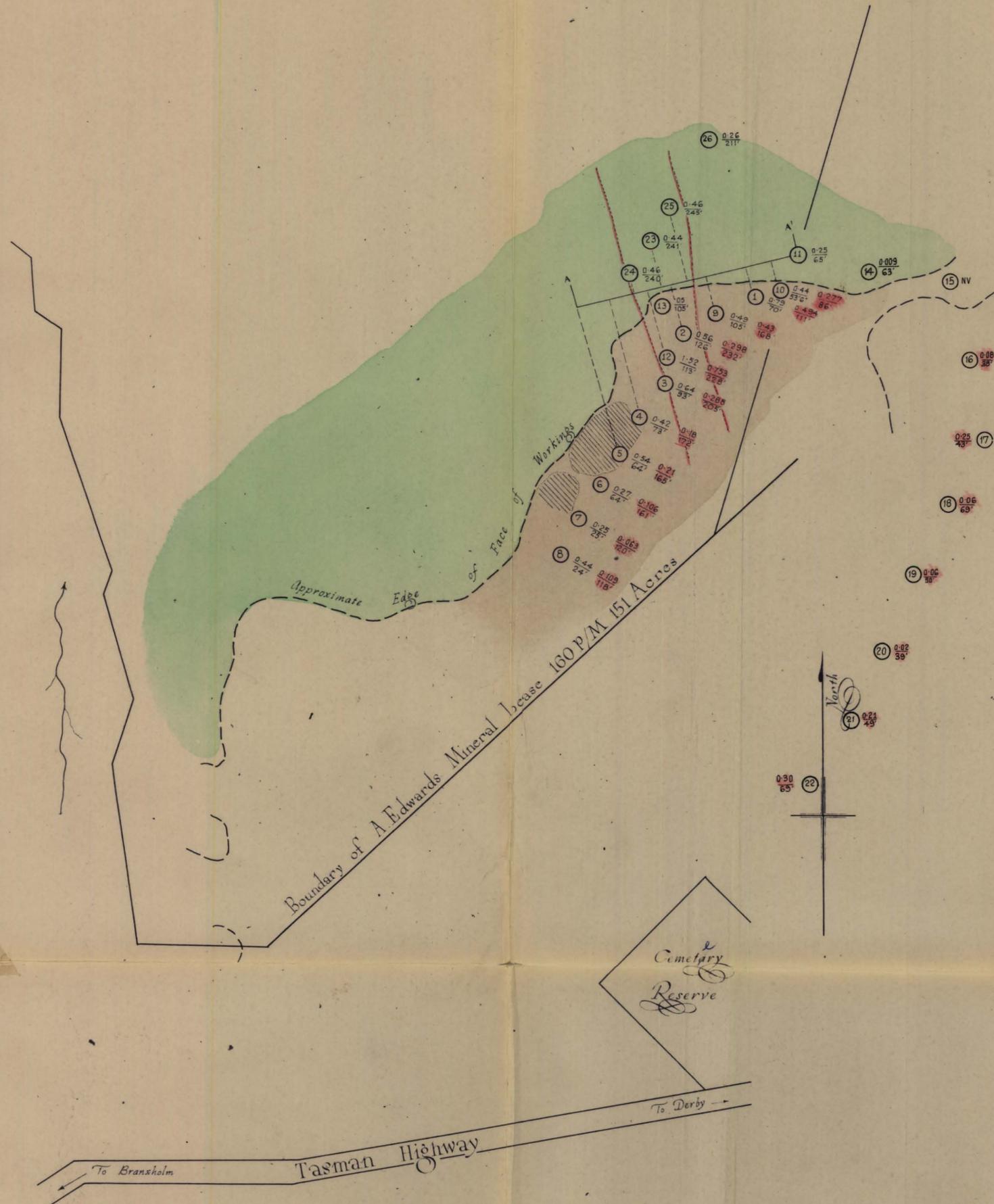
- Recent Alluvial deposits and Tailings
- Tertiary Basalt
- Tertiary Drifts
- Granite
- Silurian? slates and quartzites



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RIO TINTO AUSTRALIAN EXPLORATION PTY. LIMITED		
CROSS SECTION X-X' (See Plate 1)		
ALONG BRANXHOLM CREEK LEAD		
Date: 27-11-1957	Geologist: J.H. Rattigan	PRP/7/103
Scales: Hor. 1" to 660'; Vert. 1" to 220'		Plate 2

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LEGEND

- ① No. of Bore.
- $\frac{0.56}{126}$ Values (considered to be lbs. cassiterite concentrate/yd. averaged over Actual depth of hole.)
- $\frac{0.298}{232}$ Values meaned from bottom to surface level of high face. Depth of ground from bottom of bores to surface level of high face.
- Locality of recent workings by Edwards.
- Position of gutter of Branxholm Ck. Lead and inferred extensions.
- Tertiary Basalt.
- Tertiary Drifts.
- Granite.

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RIO TINTO AUSTRALIAN EXPLORATION PTY. LIMITED		
PLAN SHOWING POSITIONS AND VALUES OF BORES DRILLED BY BRISEIS CONSOLIDATED FOR BURMA - MALAY A. EDWARDS MINERAL LEASE, BRANXHOLM CREEK (ARBA) LEAD, N. E. TASMANIA.		
SCALE 1 inch = 200 feet		
DATE	December 1957	PLATE 3
Geologist	J. Rattigan	
Draftsman	D.J. Lawford	
		Authority PRP/7/103