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**ENCLOSURED**

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create that the value of the  
of the hole is as known by the work done  
by the hands which*

PRELIMINARY REPORT  
ON THE  
ARBA LEASE 160 P/M,  
COUNTY OF DORSET, BRANXHOLM  
TASMANIA

*As known by the work done  
by the hands which*

FOR

UNITED PETROLEUM RESERVES N.L.

BY

A.C.A. HOWE AUSTRALIA PTY. LIMITED

**OPEN FILE**

71-714

REPORT NO. 30  
JANUARY, 1971

SYDNEY N.S.W.

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FIGURE 3	
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FIGURE 5	

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SUMMARY

The property is located one half mile northeast of the township of Branxholm in northeast Tasmania. (Figure 1). The property consists of 151 acres in lease 160, P/M County of Dorset, Tasmania.

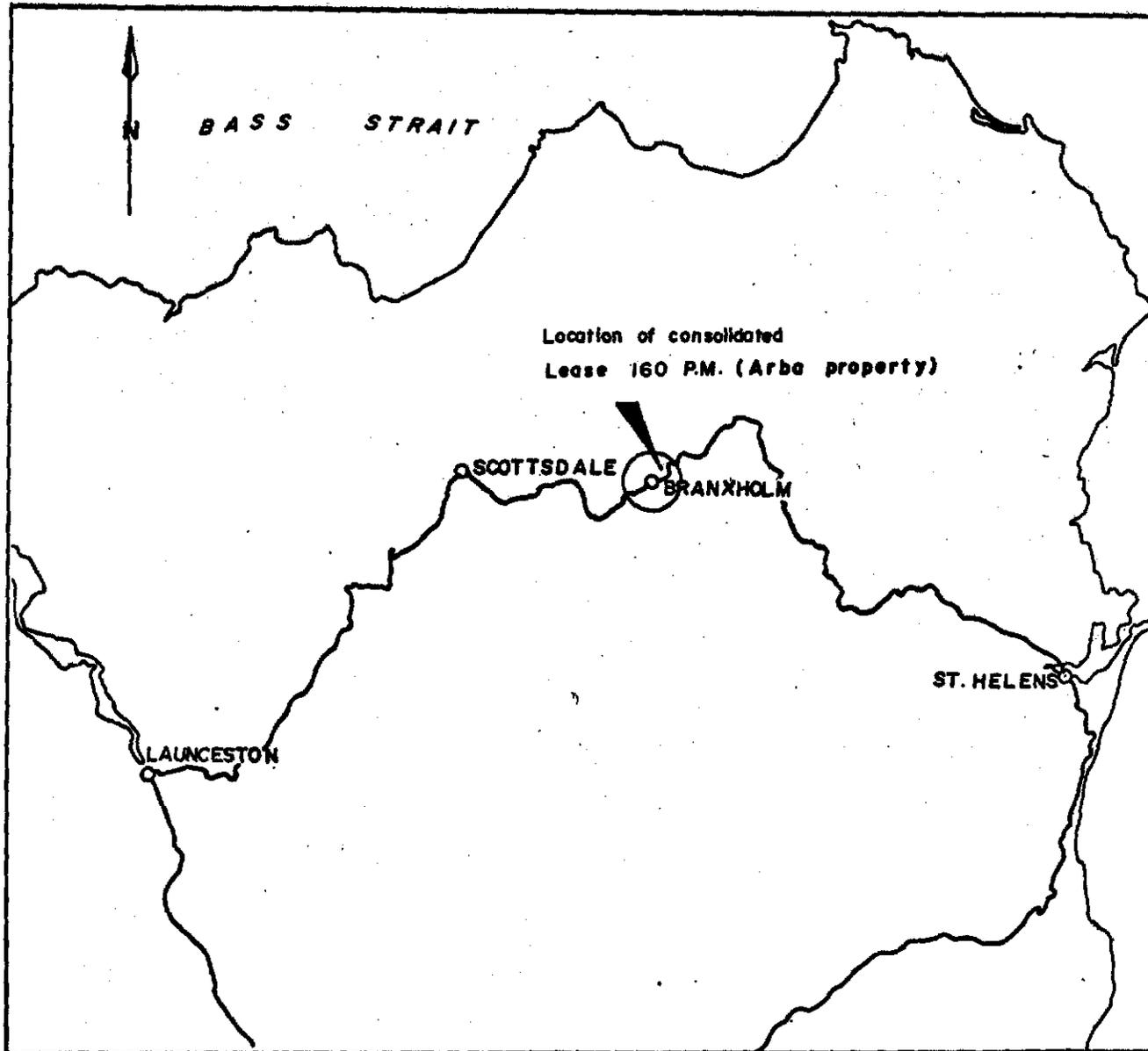
Access to the property can be made with ease from the main highway using one of two dirt roads. High voltage power lines and water are near the property. Facilities such as lodging, postal service and petrol can be obtained in Branxholm. Moderate temperatures and rainfall can be expected in the area.

The property is adjacent to the old Arba mine which was mined intermittently from 1876 to 1924. The present owner worked the property from 1950 to 1959 extracting 9.31 long tons of concentrate averaging 70.95% Sn.

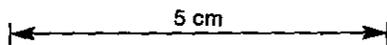
The property has been drilled several times. In 1931-1937 the Tasmanian Government drilled 2364 linear feet which gave an average value of 1.17 ounces of 70% concentrated tin per cubic yard. In 1938 Briseis Consolidated N.L. drilled 12 holes in the approximate location of the Government Holes but there are no geological records available for these holes. In 1965, Utah Development Company of Melbourne put down 2 bore holes in the northwest portion of the property. These holes gave an average value of 0.037 lbs tin/cu. yard over 93 feet and 0.029 lbs tin/cu. yard over 128 feet respectively. Utah Development ran two induced polarisation lines over the property but the results were inconclusive. Rio Tinto reviewed the property in 1957 but decided that no further work was warranted at that time.

The area is underlain by Mathinna metasediments which have been intruded by Devonian granites. Primary tin deposits are associated with these granites. Sand and gravel deposits were

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SCALE 1" = 10 miles



UNITED PETROLEUM RESERVES N.L.

FIGURE 1

Location Map

ARBA PROPERTY

TASMANIA

BY

A.C.A. HOWE AUSTRALIA PTY. LIMITED

developed in the old river system in Early Tertiary time. Late Tertiary erosion of these sediments has established the present Ringarooma River System. Tin minerals have accumulated in the original Early Tertiary sediments and in particular have been localised along "gutters" or buried channels in the lower portions of the gravel and sand deposits.

A section of sand and gravel 140 feet thick capped by 30 feet of basalt is developed in the lease area.

The basalt cap can be divided into three distinct types. The first consists of a nodular solid centre covered by a leached friable brown basalt. The second type is a laminar flow of leached basalt. The third, which occurs at the contact of the basalts and sediments, is highly leached.

The underlying sediments consist of 70% quartz grains with the remainder being feldspar and clay particles indicating a granite source. Two different samples taken in the area mapped as granite were identified as porphyritic aplite and the second as a biotite adamellite.

A sampling programme carried out on the visual portion of the old workings indicated a low grade (0.01% Sn) of tin present throughout. Sizing of a portion of these samples revealed that the highest tin values are in the -52 to +200 mesh range.

A topographic map made of the plateau adjacent to the old workings revealed two shallow linear depressions which may represent buried leads.

It may be possible to outline the exact position of these leads using a seismic refraction method. A preliminary seismic survey should be initiated to determine whether the method is

feasible. If feasible, a full survey should be completed. It is also recommended that a geologist be present during both surveys.

The total estimate of costs are \$3536 for the preliminary seismic survey and \$11,735 for the complete survey. No estimate of the cost of drilling, if warranted, can be made until after the completion of the seismic survey.

INTRODUCTION

An investigation of the property was conducted during the period November 8 - December 8, 1970 by D.W. Lovett and R. MacNeill. Mr. A.S. Edwards, owner of the property, showed the crew around the property.

The investigation was requested by United Petroleum Reserves N.L., based on the recommendations of A.C.A. Howe Australia Pty. Limited Report No. 2.

PROPERTY (Figure 2)

The property covers 151 acres and is a portion of Consolidated Lease 160 P/M in the County of Dorset, Tasmania. The present owner of the lease is Mr. A.S. Edwards of Branxholm, Tasmania.

Titles to the land surrounding the property are located on Figure 2.

Southeast of the property there is an area which would be suitable for a tailings dump. The area is held under a prospecting lease (E.L. 6/68) by Texans Development Pty. Ltd. The lease expires on February 23, 1971.

LOCATION AND ACCESS

The property is located  $\frac{1}{2}$  mile northeast of the township of Branxholm which is 55 miles northeast along Highway 3 from the city of Launceston.



R.G. Reitalack  
Roll No. 3036  
Plan 124

A.W. Parry  
424 A.C.  
Roll No. 1013

Plan 133

A.S. Edwards

231 A.C  
Roll 1012  
Plan 134

Plan 134

A.S. Edwards  
195 A.C  
Roll No. 407  
Plan 416

United Petroleum Reserves  
Arba Property.

A.S. Edwards  
190 A.C  
Roll No. 404

A.S. Edwards  
Roll No. 403

Plan 415  
160 P/M

Crown  
169 A.C.  
Plan 413

Plan 414

Town of  
Branxholm

BRANXHOLM

TASMAN HIGHWAY

DERBY ROAD

RINGAROOMA RIVER

TASMAN HIGHWAY

5 cm

UNITED PETROLEUM RESERVES N.L.

FIGURE 2

ARBA PROPERTY

MUNICIPALITY OF RINGAROOMA

PROPERTIES NORTH-EAST OF BRANXHOLM,  
TASMANIA

BY

A.C.A. HOWE AUSTRALIA PTY. LIMITED.

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The property is easily accessible by two roads from the main highway. The first access road is located on the west side of the main highway directly after crossing Branxholm Creek. This access road leads to the main portion of the property which is above the old working face.

The second access road is 1/8th mile north along the main highway from the first access road, past an old graveyard. This road leads to the old tailings dump and working face. A four-wheel drive vehicle is not necessary on either of the access roads.

#### TOPOGRAPHY VEGETATION AND CLIMATE

The property overlies a prominent hill which has a maximum relief of 130 feet. The hill is capped by a relatively level basaltic flow which provides excellent soil for pasturage.

The greatest change in relief is in the southeast portion of the property where the old workings are located. The area located below the working face is fairly open but some parts are covered with a variety of thorn bushes making access difficult.

Temperature in the area is moderate with February being the warmest month and June the coolest. The average maximum temperature recorded for February is 78°F and the average minimum temperature is 53°F. The average maximum and minimum for June are 54°F and 34°F respectively.

Rainfall for the area is moderate and variable. Records for total rainfall in the area are available for 1965 and 1967 and show 61 and 31 inches respectively.

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FACILITIES

High voltage power lines pass within a few hundred yards of the lease. Water is available either from the east or west side of the property. A licence for a water lease of an intake of 4500/gall/min is held on the west portion of the property but no water licence is presently held on the eastern portion. The Department of Mines in Launceston believe the Ringarooma River could yield more water even in the dry season and they would be sympathetic to a request for additional water rights.

In Branxholm, services such as post office, telephone, lodging, petrol and minor mechanical repairs can be obtained.

HISTORY

The lease is adjacent to the old Arba Mine which is situated a short distance east of the township of Branxholm. A resume of the history of the Branxholm Creek or Arba Deep Lead is quoted below: (From P.B. Nye).

"Alluvial tin ore was discovered in 1876 along Branxholm Creek south of the main road from Launceston to Derby. The tin-bearing deposit discovered was probably in Recent gravels along the Branxholm Creek. Deeper ground was found a year or so later and this was probably the southern and shallowest portion of the Branxholm Creek or Arba Deep Lead.

The lead was worked at first by a proprietary company (Arba T.M. Co). As the ground being worked got deeper, and costly equipment was required to work it, the Arba T.M. Co. N.L. was

010\*

formed in 1888. In the same year, the Ormuz T.M. Co. N.L. was formed to work ground on private property to the west. Operations were intermittent until 1898 or 1899 when the Arba and Ormuz companies were incorporated. Development and equipping at the mine were conducted between 1899 and 1902. Extensive operation began in 1902 and continued until 1920. From 1920 onwards for a few years, the mine was let on tribute, and in 1924, three tribute parties were working, one working the lead, one treating part of the tailings dump, and the third working the sands and gravels along Branxholm Creek."

In 1931-1937 the Tasmania Department of Mines drilled 17 exploratory holes immediately north of the property. A total of 2,364 linear feet were drilled and gave an average value of 1.17 oz of 70% concentrate tin per cubic yard. The granite sediment contact indicates a northeasterly trend. (See Figure 3).

In 1938, Briseis Consolidated N.L. drilled 12 holes in the approximate area of the Tasmanian Government holes. Unfortunately, geological records are not available for these holes.

Mr. A.S. Edwards worked the property from 1950 to 1959, extracting 9.31 tons of concentrate averaging 70.95% tin. The tonnage treated is not known.

Rio Tinto Australian Exploration Ltd. reviewed the property in 1957 and came to the conclusion that even a moderately-sized operation could not be justified. Their conclusions were based on old bore records.

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In 1965 Utah Development Company of Melbourne drilled 2 bore holes in the N.W. portion of the property. Bore Hole No. 20 averaged 0.037 lbs tin/cu. yard over 93 feet and Bore Hole No. 21 averaged 0.029 over 128 feet. The exact location of these holes is not known however they are reported to have been drilled on the northern portion of the property.

Utah Development also ran two induced polarisation traverses over the lease in 1965. One line was run through the central portion of the property in a north - south direction and the other was run at the north end of the property in an east - west direction. The results of the I.P. traverses are inconclusive and contain insufficient detail regarding the methods used.

#### GEOLOGY AND PALAEOGEOGRAPHY OF THE AREA

The oldest rocks in the region are the Lower Palaeozoic Mathinna slates and quartzites. These metasediments are intruded by granite rocks of Devonian age (Figure 4). The primary tin deposits of northeastern Tasmania occur within these intrusives.

A river system similar to the present Ringarooma River was developed in early Tertiary time.

A change in sea level in Lower Tertiary time resulted in deposition of gravels, sands and clays in the valleys of the Early Tertiary river system filled some channels to a maximum depth of about 400 feet. Basaltic lavas now overlie the Tertiary gravels and sands. Recent erosion has established the present Ringarooma River system.

The in-fillings of Tertiary gravels and sands are the drifts of the Ringarooma River system of deep leads. These sediments, and particularly the gravels in the "gutters" or buried channels, received the minerals from the erosion of primary tin deposits in the granitic rocks and to some extent in the intruded Mathinna metasediments existing in the ranges to the south of the Ringarooma Valley and extending from the hills south of Branxholm easterly to the Blue Tier Area.

#### CURRENT PROGRAMME

The current field programme consisted of a control survey, topographic survey, sampling and some geological mapping. The field crew consisted of a geologist and a surveyor.

#### GEOLOGY OF THE PROPERTY

A weathered basaltic flow approximately 30 feet thick overlies thick sections of Lower Tertiary sands and gravels. These unconsolidated sediments are reported to be up to 190 feet thick but only 70 to 90 feet is presently exposed.

The weathered basalts can be divided into three distinct types.

The first type have a nodular solid centre varying in diameter from 1" to 3" surrounded by several inches of leached friable brown basalt which crumbles upon impact. A sample of this material was examined in the laboratory and the following description was given:

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" Prisms of lilac-coloured titanite and rounded crystals of olivine with altered rims are the dominant constituents. Plagioclase is mostly interstitial and a dusty opaque phase (magnetite/ilmenite) is scattered throughout. The average grain size is 0.2 mm. The identification of this sample is an alkaline olivine basalt."

The second type is a laminar flow of leached basalt. No solid material was found in this zone. Fracturing has a horizontal attitude and occurs at intervals of 2 or 3 inches all the way up the face.

The third type occurs at the contact of the sediments and the basalts in a zone 2 to 3 feet thick, and is highly leached. This clay-like zone contains no quartz grains or other identifiable crystals and appears only in the northeast end of the old workings.

Fracturing and jointing are unreliable for use in geological interpretation of the basalts since they slump towards the old workings face. This slumping is caused by mining of the underlying sediments. The slumping appears to have caused slickensides around the larger more resistant basalts. The softer material appears to have passed the residuals and moved towards the old working face.

The sediments which underly the basalt consist of poorly sorted, sub-angular to sub-rounded 1 - 10 mm grains. Up to 70% of the mineral grains are quartz with the remainder being feldspar and clay particles. This indicates a granite source for the wash. Individual beds exist although minor lensing does occur.

Two hand specimens of typical granitic rocks occurring in the area were collected and identified in the laboratory.

The first specimen, a brown coloured rock with phenocrysts of quartz and feldspar set in a fine-grained saccharoidal matrix, was identified as a quartz-feldspar porphyry. A thin section of the rock shows the ground mass minerals form an interlocking, anhedral aggregate with an average grain size of 0.5 mm. The matrix minerals are quartz, plagioclase (albite), orthoclase and muscovite. Graphic intergrowths of quartz and feldspar are also present. The phenocrysts are quartz and perthitic orthoclase and are up to 1 cm in size. This rock could occur in the field either as a marginal phase to a granite body or as pods enclosed within it. The sample was taken from an outcrop near the Branxholm Creek Bridge.

The second specimen, a coarse-grained, weathered granite rock, was identified as a biotite adamellite. A thin section showed the rock consists of rounded quartz with undulose extinction, perthitic orthoclase feldspar and sericitised plagioclase laths. The perthite is more abundant than the plagioclase. Biotite flakes are scattered throughout and some secondary muscovite is present. This sample was taken from an outcrop located near the main highway half a mile northeast of Branxholm.

#### SAMPLING

An extensive sampling programme was carried out on the exposed 70 feet of sediments at the old workings, by the present field crew.

Two methods of sampling were used - channel and pit.

The first method used was channel sampling on the exposed 70 feet of sediments. Seven locations approximately 100 feet apart were marked on the face of the cliff (Figure 5). These channel sample lines varied in length depending on distance to the bottom of the cliff. The weathered surface was removed and then channel samples weighing 7 - 8 lbs over 5 foot intervals were taken. Fluorescent orange paint was used to mark the edges of the channels and to make the sample number for future identification.

All the samples were assayed for tin while two lines were sized and the fractions assayed for tin. In addition, one line was assayed in a 25 foot composite sample for gold and tungsten.

The second method used was pit sampling on the three old tailings dumps. Pits were dug to a depth of +18 inches and an 8 lb sample was taken. These samples were sized and assayed for tin.

#### ASSAY RESULTS

A total of 770 feet of channel samples were taken from the old working face and assayed for tin. The tin content varied from a trace to 0.03% but the majority of the results were 0.01% Sn. Using a price of \$1.44 per lb, 0.01% Sn gives a value of A\$0.32 per long ton. Sample No. 4036 showed a value of 0.05% Sn but this sample was taken from Branhholm Creek on the west side of the property, and was slightly concentrated by panning. It is also close to an old tailings dump which probably caused some contamination. Samples 4940 - 4947, 4034 - 4037, 4924 - 4939, 1193 - 1200 and 4901 - 4909

were sized from +7 to 200 mesh fractions and a portion of each fraction was assayed for tin. The purpose of this sizing was to determine if tin was concentrated in any particular size range. Also it was thought a portion of the tin was lost in the fines of the old tailings dump. The assays showed the highest values between 52 and 200 mesh. The average value for this portion is .05% Sn. The 52 to 200 forms an average of 18.6 weight percent of the total sample.

Samples 4910 and 5000 and 4034 to 4037 were used to make up 23 composite samples, and were assayed for gold and tungsten. There is no gold content and the tungsten results ranged from nil to 0.02%  $WO_3$ . The tungsten content is uneconomic.

#### SURVEYING

The object of the topographic survey was to determine any sinking trend in the basalt capping which may indicate the location of the Branxholm lead. The topographic results would also be required in any future seismic survey.

To achieve this objective, elevations were taken at approximately 50 foot centres in order that a contour map could be made up with detail contour intervals of 1 foot. (Figure 5).

An arbitrary origin indicated by Stn. N is located approximately in the centre of the property using 10,000N and 10,000E as the latitude and departure. The elevation of this point was assumed to be 705 feet above mean sea level and was established using an altimeter. A base line was

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established from the origin N, for 1,300 feet northwards and 900 feet to the south. The bearings of the baseline, used for survey calculations, were N  $26^{\circ}50'50''$  E and S  $106^{\circ}50'50''$  W. These bearings are arbitrary and were measured with a Brunton compass.

A grid was laid out from the base line in an east-west direction over the interesting portion of the property. Stakes were placed every 100 feet on the grid.

Control points were surveyed where required. The grid points and control points were established by traversing using a theodolite and steel chain. Five control points (L, M, N, O and P) were made permanent by having them cemented into place. They may be used for reference in the future.

A traverse to a boundary post on the western edge of the property was completed to assist in location. This boundary post is called "A" on the enclosed map but the geographic co-ordinates for this post could not be found on Government maps.

The elevations of the points which were used in making 1 foot contours were determined by tacheometry and levelling using the control points and grid points as reference.

The co-ordinates and elevations for the topographic survey may be found in Appendix.

The topographic map shows a generally flat area with a series of rolling knolls on the mid-western edge. The highest point on the plateau is 710 feet above mean sea level and the lowest point is 655 feet. The average elevation is approximately 690 feet. The perimeter of the plateau slopes gently down

except for the area adjacent to old working face which is an almost vertical cliff. The area immediately west of old working face is relatively flat.

#### CONCLUSIONS AND RECOMMENDATIONS

A primary exploration programme consisting of topographic surveying, sampling and limited geological mapping was carried out over the property from November 8 - December 8, 1970.

Bedrock geology in adjacent areas indicates that the property is underlain by acid intrusive rocks of Devonian age. These rocks in the Blue Tier and Branxholm areas are a source of the alluvial tin on the property. A series of Lower Tertiary sands and gravels up to 190' thick overly the granites. These unconsolidated sediments represent large scale in-fillings of an earlier (Lower Tertiary) river system in which relatively high grade alluvial tin leads have been developed.

On the property the top 70-90 feet of the unconsolidated sands and gravels are exposed along a cliff 900 feet in length. During the present programme channel samples were obtained every 100 feet along the cliff face. Assay results returned values between trace and .03% Sn. Most of the results averaged .01% Sn. The size analysis indicated that most of the tin is carried in the -52 +200 mesh fraction but there does not appear to be any increase in the grain size of the tin with depth. It was not possible to determine any relative increase in tin values in any particular area along the cliff face, the tin values being uniformly distributed.

These tin values are not economic at today's prices. Because the tin values are very low and tin minerals are concentrated

*Most of the tin is  
in the bottom wash  
(not included in  
the recovery)*

in the fine fraction, potential tin recoveries would also be extremely low.

In interpreting these results it is important to note that only the top portion of the unconsolidated sediments have been sampled and that samples could only be obtained from the small cliff exposure of the area and that the purpose of the sampling programme was to determine if any special trends in tin values existed.

Unfortunately, no spacial relationships can be determined from the sample results obtained to date.

A detailed topographic survey was carried out to determine if there were any topographic trends on surface which may indicate the location of deep tin-bearing leads. A detailed topography plan at a scale of 1" = 100' with contour intervals of 1 foot has been prepared.

The topography is generally flat with a series of small hills near the western portion of the property. Two shallow depressions have been developed in a generally northwestern direction on the northern portion of the property. These depressions appear to join together at approximately 11100N; 10400E. The leads interpreted by Rio Tinto in 1957 appear to follow the general pattern outlined by the present topographic survey but with a displacement of approximately 200 feet to the southwest.

Neither of the present trends outlined intersects the cliff face which was sampled during the present programme and there is no exposure available for sampling anywhere along the projected trends.

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Limited information about the position of the projected tin-bearing deep leads on the property was obtained during the present programme and it is necessary to obtain further and more accurate information on the configuration of the bedrock surface below the unconsolidated sediments. This information can only be obtained by seismic survey or drilling.

A seismic survey in this area can only be carried out if the overlying basalts are sufficiently weathered to allow pick up of the reflected seismic waves at surface. If the velocity of seismic waves within the basalt is substantially higher than the velocities within the underlying unconsolidated sands and gravels almost complete loss of the return seismic wave occurs at the basalt-sediment interface. On this basis a preliminary seismic survey will be necessary to determine wave velocity in the basalts. If this information is obtained it will be possible to determine the feasibility of doing a complete seismic survey.

A geologist should be present during this programme in order that any geological problems can be overcome.

If warranted after completion of the seismic survey, a drilling programme can be implemented.

ESTIMATE OF COSTS

1. Preliminary Survey

Preliminary seismic testing (per Wimpey bid)	2220.00
Geologist ( 5 days @ \$85/day)	425.00
Return air fare Sydney - Launceston	200.00
Accommodation	30.00

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Direct office costs and supervision	200.00
	<u>3075.00</u>
Contingency 15%	461.00
Total estimated cost	<u><u>\$3536.00</u></u>

### 2. Full Seismic Survey

Seismic survey (per Wimpey bid)	6590.00
Estimated cost of additional items on Wimpey bid	1000.00
Geologist (19 days @ \$85/day)	1615.00
Return air fare Sydney - Launceston	200.00
Accommodation	200.00
Direct office costs and supervision	600.00
	<u>10205.00</u>
Contingency 15%	1530.00
Total estimated cost	<u><u>\$11735.00</u></u>

### 3. Drilling

No estimate of costs for drilling, if warranted can be made until completion of the earlier phases.

Respectfully submitted,

A.C.A. Howe Australia Pty. Limited,

*C.W. Amstrong*

APPENDIX

023

SUMMARY OF GROUND ELEVATIONS  
AT TURNING POINT

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<u>Turning Point</u>	<u>Elevation</u>
BL 5+00N	697.65
5+00N, 2+00E	683.67
BL 7+00N	687.98
BL 13+00N	687.86
0+00N , 5+00W	701.27
BL 2+00S	693.18
BL 4+00S	690.20
6+00S, 2+00E	691.45
BL 5+00S	687.69
BL 7+00S	681.13

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ARBA PROJECT SURVEYING  
SUMMARY OF CO-ORDINATES AND ELEVATIONS OF SURVEY  
CONTROL STATIONS

<u>STATION</u>	<u>LAT. (N)</u>	<u>DEP. (E)</u>	<u>ELEVATION</u>
A	11,048.55	8,472.36	550.28
B	11,021.60	8,481.64	549.68
C	10,996.49	8,567.13	550.93
D	10,898.89	8,707.47	550.75
E	10,784.86	8,871.43	547.20
F	10,717.75	8,967.94	558.15
G	10,626.25	9,099.50	596.30
H	10,519.84	9,252.51	614.57
I	10,448.29	9,355.39	670.72
J	10,400.73	9,423.78	689.00
K	10,313.56	9,549.12	703.58
L	10,192.79	9,722.92	701.81
M	10,095.86	9,862.46	705.81
N	10,000.00	10,000.00	705.00
O	9,769.05	9,883.10	692.24
P	10,233.05	10,117.96	696.58

025

926026

ARBA TIN PROSPECT

BRANXHOLM

REVIEW OF GRAVITY DATA.

TASMANIA

May 1971.

ARBA TIN PROSPECT : TASMANIA.1. Introduction.

The Arba Tin Prospect has been examined in the following report:

Preliminary Report on the ARBA Lease 160/P/M  
County of Dorset, Branxholm, Tasmania,  
by A.C.A. Howe, Australia, Pty. Ltd.,  
January 1971.

The area is underlain by Silurian Mathinna metasediments which have been intruded by Devonian granites. Copious gravel deposits up to 140 feet thick were developed in old Early Tertiary river systems with possible concentrations of tin minerals in deep leads at bedrock level.

A basalt flow, probably late tertiary, about 30 feet thick, covers the present area of interest and has protected the immediately underlying gravels from any resorting processes. Around this protected area, however, Late Tertiary to Recent erosion has cut deeply into the gravels and has re-concentrated the tin minerals into creeks and new river channels. The new channels have been extensively worked over the past 100 years, and it seems at first sight that the only unworked overburden now available must lie underneath the basalt capping.

A belief has grown up that the basalt hides early Tertiary deep leads - a 'deep lead' being pictured as a channel in the basement filled with original undisturbed Early Tertiary overburden.

Such a channel should be detectable by a gravity meter.

The following conditions for a preliminary gravity meter survey were stated:

basalt ?

- assumed overburden density 1.8 gm/cc.
- ✓ - assumed basement density 2.6 gm/cc (possibly too high)
- ✓ - meter traverse to be as close to an elevation contour as possible to eliminate large elevation corrections,

- ? - meter traverse to be about 500 feet away from the basalt capping to avoid errors inherent in terrain corrections,
- gravity stations to be at 50 foot intervals around the periphery of the prospect area.

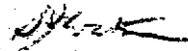
In these conditions, a basement variation of 25 feet should produce a gravity Bouguer anomaly of the order of 0.2 to 0.3 milligal.

## 2. Results

There was considerably more disturbed overburden than had been anticipated, and the elevation differences were much greater than originally planned. Therefore many of the Bouguer irregularities must be attributed to these factors, and ~~are~~ therefore must be regarded as near-surface effects.

But there are three anomalous regions that could be due to basement undulations, and should be followed up with further gravity meter reconnaissance to investigate their size and direction.

*My comments on the survey have obviously  
been ignored D. E. T.*

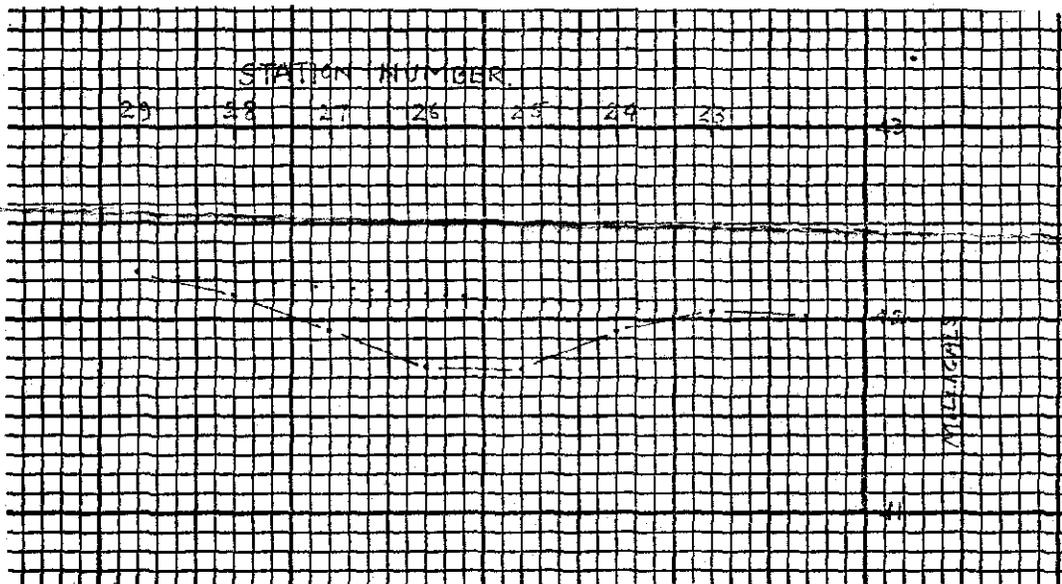
  
S.J. Watson.  
29 March 1971.

ANOMALY 1.

This anomaly between stations 23 and 29 is very close to the ideal model that was used to justify the use of the gravity meter in the original discussions.

Its overall width is 300 feet. The Bouguer anomaly is 0.35 milligal, and this, on the basis of the assumed densities of overburden and basement, represents a channel in the bedrock of about 35 to 40 feet.

The depth to bedrock can not be estimated.



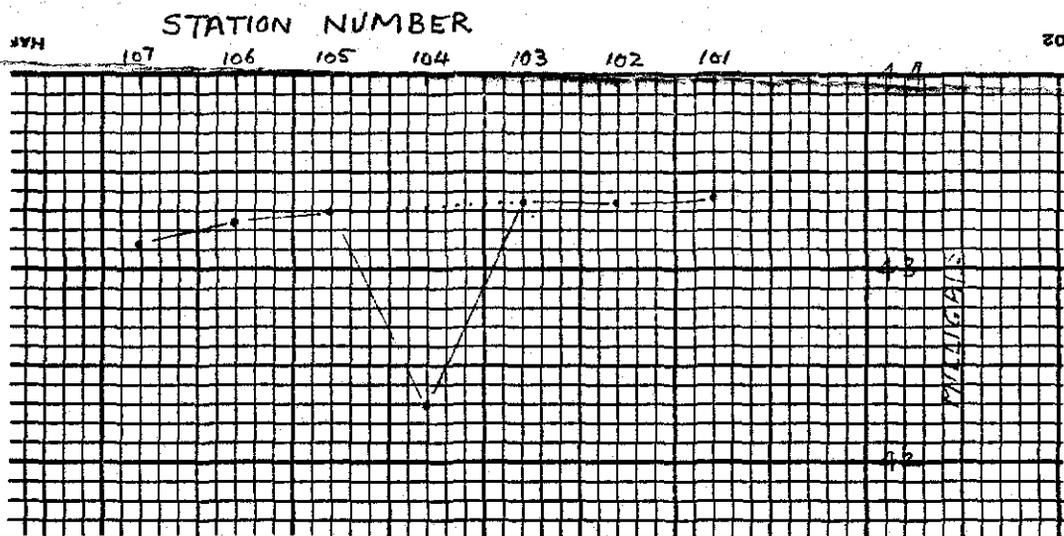
5 cm

ANOMALY 2

This anomaly is at gravity station 104.  
It represents a mass deficiency equivalent to  
1.0 milligals. The reading is legitimate.

It is unusually sharp, and can be interpreted  
as a channel 100 feet wide and 100 feet deep.  
The bedrock lies at a very shallow depth.

The sharpness of the anomaly is a puzzling  
feature, and the picture is not the ideal  
upon which the original model was made.  
It is such a strong anomaly that it should  
be included in further investigation.



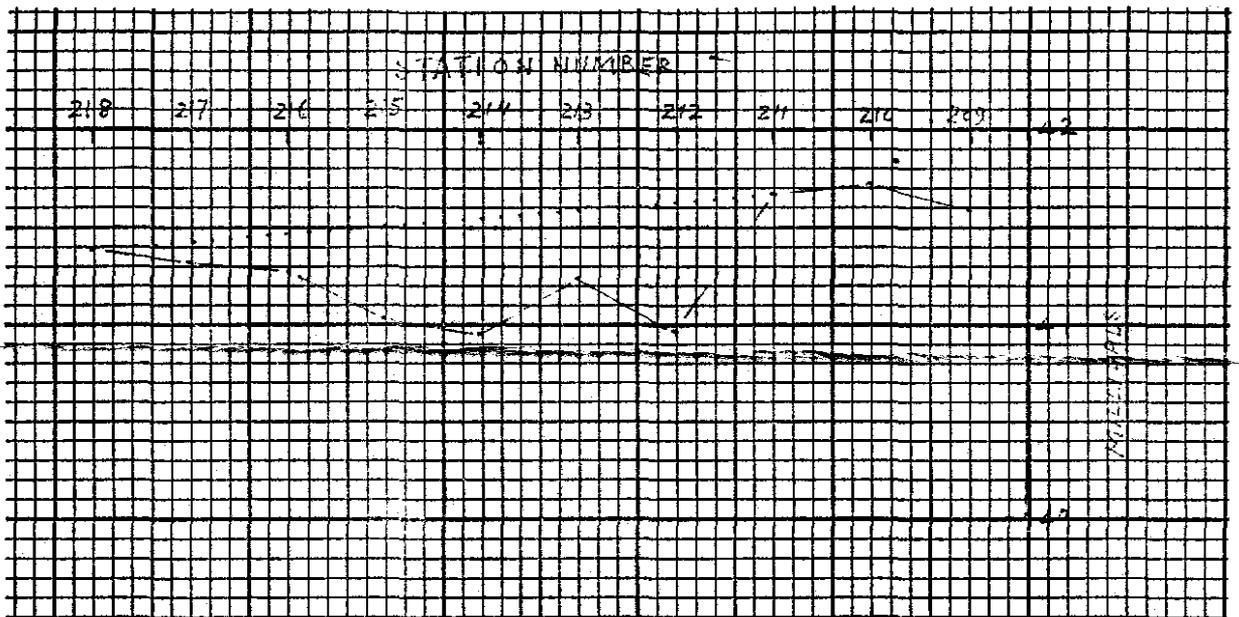
030

926031

ANOMALY 3

This anomaly lies between gravity stations 211 and 218, and apart from the value under 213 represents a channel 200 feet across and about 50 feet at its greatest depth.

The depth to bedrock can not be computed.



5 cm



TELEPHONES

METALLURGICAL RESEARCH..... } 42491-2  
 LABORATORY..... } 2 LINES  
 MINES INSPECTION..... }  
 EXPLOSIVES AND INFLAMMABLE LIQUIDS... }  
 REGISTRAR OF MINES..... 22457

LAUNCESTON OFFICES,

287 WELLINGTON STREET,

SOUTH LAUNCESTON. 23rd December,  
1970.

A.C.A. Howe Australia Pty. Limited,  
171 Clarence Street,  
Sydney, N.S.W. 3000

Attention: Mr. McNeill

Dear Sir,

Arba Tin Mine

Herewith further results on samples received from  
you on 1st December 1970.

<u>Reg. No.</u>	<u>Sample No.</u>	<u>% Sn</u>
703483	1158	Nil
703484	1159	Nil
703485	1160	Nil
703486	1161	<0.01
703487	1162	<0.01
703488	1163	<0.01
703489	1164	<0.01
703490	1165	<0.01
703491	1166	0.02
703492	1167	0.01
703493	1168	0.01
703494	1169	<0.01
703495	1170	0.01
703496	1171	0.01
703497	1172	0.01
703498	1173	0.01
703499	1174	<0.01
703500	1175	<0.01
703501	1176	<0.01
703502	1177	Nil
703503	1178	0.01

932

FROM Department of Mines Laboratory,  
Launceston, Tasmania.

TO..... A.C.A. Howe Aust. Pty. Limited.

<u>Reg. No.</u>	<u>Sample No.</u>	<u>% Sn</u>
703504	1179	0.01
703505	1180	Nil
703506	1181	<0.01
703507	1182	0.01
703508	1183	<0.01
703509	1184	0.01
703510	1185	0.01
703511	1186	0.01
703512	1187	0.01
703513	1188	0.01
703514	1189	(0.05) TAILINGS
703515	1190	Nil
703516	1191	<0.01
703517	1192	0.02

Analyses by..... *J. Furt*

Yours faithfully,

*H.K. Wellington*

(H.K. Wellington),  
Chief Chemist & Metallurgist.

Fee: \$35.00



## TELEPHONES:

Metallurgical Research ..... } 4 2431 - 2  
 Laboratory ..... }  
 Mines Inspection ..... } 2 Lines.  
 Explosives and Inflammable Liquids }  
 Registrar of Mines ..... 2 2457

Tasmania 926034

Department of Mines,

Launceston Office,

287 Wellington Street,

South Launceston 8th January  
1971.

A.C.A. Howe Australia Pty. Ltd.,  
 171 Clarence Street,  
 Sydney, N.S.W. 3000

Attention: Mr. McNeill

Dear Sir,

Arba Tin Mine

The following are results on samples received from  
 you on 1st December 1970.

<u>Reg. No.</u>	<u>Sample No.</u>	<u>% Sn</u>
703535	4910	Nil
703536	4911	< 0.01
703637	4912	< 0.01
703638	4913	< 0.01
703639	4914	< 0.01
703540	4915	0.01
703541	4916	0.01
703542	4917	< 0.01
703543	4918	0.01
703544	4919	0.01
703545	4920	< 0.01
703546	4921	0.01
703547	4922	< 0.01
703548	4923	0.01
703549	4824	< 0.01
703550	4925	< 0.01
703551	4926	< 0.01
703552	4927	< 0.01
703553	4928	< 0.01

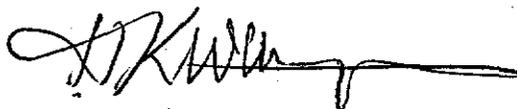
FROM Department of Mines Laboratory,  
Launceston, Tasmania.

TO.....A.C.A. Howe Australia Pty. Limited.....

<u>Reg. No.</u>	<u>Sample No.</u>	<u>% Sn</u>
703554	4929	<0.01
703555	4930	<0.01
703556	4931	Nil
703557	4932	<0.01
703558	4933	<0.01
703559	4934	0.01
703560	4935	0.01
703561	4936	0.01
703562	4937	0.02
703563	4938	0.01
703564	4939	0.01

Analyses by.....*J. Furt*.....

Yours faithfully,



(H.K. Wellington),  
Chief Chemist & Metallurgist.

Fee: \$30.00

Department of Mines,  
Tasmania



## TELEPHONES

METALLURGICAL RESEARCH..... } 42431-2  
 LABORATORY..... } 2 LINES  
 MINES INSPECTION..... }  
 EXPLOSIVES AND INFLAMMABLE LIQUIDS..... }  
 REGISTRAR OF MINES..... 22487

## LAUNCESTON OFFICES,

287 WELLINGTON STREET,

SOUTH LAUNCESTON 8th January  
1971

A.C.A. Howe Australia Pty. Limited,  
171 Clarence Street,  
Sydney, N.S.W. 3000

Attention: Mr. McNeill

Dear Sir,

Arba Tin Mine

Herewith further results on samples received from  
you on 8th December 1970.

<u>Reg. No.</u>	<u>Sample No.</u>	<u>% Sn</u>
703639	4940	0.01
703640	4941	0.01
703641	4942	<0.01
703642	4943	0.01
703643	4944	<0.01
703644	4945	<0.01
703645	4946	<0.01
703646	4947	0.01
703647	4948	<0.01
703648	4949	<0.01
703649	4950	Nil
703650	4951	0.01
703651	4952	<0.01
703652	4953	<0.01
703653	4954	<0.01
703654	4955	0.01
703655	4956	0.01
703656	4957	0.01
703657	4958	0.02

13508  
036

FROM Department of Mines Laboratory,  
Launceston, Tasmania.

TO A.C.A. Howe Australia Pty. Limited.

<u>Reg. No.</u>	<u>Sample No.</u>	<u>% Sn</u>
703658	4959	0.02
703659	4960	0.01
703660	4961	0.01
703661	4962	0.01
703662	4963	< 0.01
703663	4964	0.01
703664	4965	< 0.01
703665	4966	Nil
703666	4967	< 0.01
703667	4968	< 0.01
703668	4969	< 0.01
703669	4970	Nil
703670	4971	0.01
703671	4972	Nil
703672	4973	< 0.01
703673	4974	< 0.01
703674	4975	< 0.01
703675	4976	0.01
703676	4977	0.01
703677	4978	0.03
703678	4979	0.02
703679	4980	< 0.01
703680	4981	Nil
703681	4982	0.01
703682	4983	< 0.01
703683	4984	< 0.01
703684	4985	< 0.01
703685	4986	Nil
703686	4987	Nil
703687	4988	< 0.01
703688	4989	Nil

037

FROM Department of Mines Laboratory,  
Launceston, Tasmania.

TO A.C.A. Howe Australia Pty. Limited.

<u>Reg. No.</u>	<u>Sample No.</u>	<u>% Sn</u>
703689	4990	<0.01
703690	4991	<0.01
703691	4992	<0.01
703692	4993	Nil
703693	4994	Nil
703694	4995	<0.01
703695	4996	0.01
703696	4997	0.01
703697	4998	<0.01
703698	4999	<0.01
703699	5000	<0.01
703700	4018	<0.01
703701	4019	<0.01
703702	4020	<0.01
703703	4021	<0.01
703704	4022	0.01
703705	4023	0.03
703706	4024	<0.01
703707	4025	<0.01
703708	4026	<0.01
703709	4027	Nil
703710	4028	<0.01
703711	4029	<0.01
703712	4030	<0.01
703713	4031	0.01
703714	4032	0.02
703715	4033	0.02
703716	4034	0.02
703717	4035	0.02
703718	4036	0.05
703719	4037	0.01

Analyses by *J. Funnell*

*H. K. W. ...*  
Chief Chemist & Metallurgist



TELEPHONES:

44 2431

Metallurgical Research .....  
 Laboratory .....  
 Mines Inspection .....  
 Explosives and Inflammable Liquids .....  
 Registrar of Mines ..... 2 2457

4-4431-2  
2 Lines

Tasmania

926039

Department of Mines,

Launceston Offices,

287 Wellington Street,

South Launceston 14th January,  
1971.

A.C.A. Howe Australia Pty. Limited,  
 171 Clarence Street,  
 Sydney, N.S.W. 3000

Attention: Mr. McNeill

Dear Sir,

Arba Tin Mine

Further to your telephone advice, herewith results of analyses on composite samples. Please note: results of W assays will follow.

<u>Reg. No.</u>	<u>Sample No.</u>	<u>% Au</u>
703719	4037	Nil
703736	4910 - 4914	Nil
703737	4915 - 4919	Nil
703738	<del>4920 - 4924</del>	<del>Nil</del>
703739	4925 - 4929	Nil
703740	4930 - 4934	Nil
703741	4935 - 4939	Nil
703742	4940 - 4944	Nil
703743	4945 - 4949	Nil
703744	4950 - 4954	Nil
703745	4955 - 4959	Nil
703746	4960 - 4964	Nil
703747	4965 - 4969	Nil
703748	4970 - 4974	Nil
703749	4975 - 4979	Nil

....2.

R E I V E D

15 JAN 1971

Ans'd...

039

926040

Sheet No. 2.

FROM Department of Mines Laboratory,  
Launceston, Tasmania.

TO..... A.C.A. Howe Australia Pty. Ltd. ....

<u>Reg. No.</u>	<u>Sample No.</u>	<u>% Au</u>
703750	4980 - 4984	Nil
703751	4985 - 4989	Trace
703752	4990 - 4994	Trace
703753	4995 - 5000	Nil
703754	4018 - 4022	Nil
703755	4023 - 4027	Trace
703756	4028 - 4033	Trace
703757	4034 - 4036	Trace

Analyses by.....*K. Austen*.....

Yours faithfully,

(H.K. Wellington),  
Chief Chemist & Metallurgist.

Fee: \$23.00



## TELEPHONES:

Metallurgical Research ..... }  
 Laboratory ..... } 4 2481-2  
 Mines Inspection ..... } 2 Lines  
 Explosives and Inflammable Liquids ..... }  
 Registrar of Mines ..... 2 2457

Department of Mines,

Launceston Offices,

287 Wellington Street,

South Launceston 21st January 1971

A.C.A. Howe Australia Pty. Limited,  
 171 Clarence Street,  
 Sydney, N.S.W. 3000

Attention: Mr. McNeill

Dear Sir,

Arba Tin Mine

Herewith results of analyses on composite samples.  
 Previous results on these samples were forwarded 14th  
 January 1971.

<u>Reg. No.</u>	<u>Sample No.</u>	<u>% WO<sub>3</sub></u>
703719	4037	0.01
703736	4910 - 4914	0.01
703737	4915 - 4919	0.01
703738	4920 - 4924	0.01
703739	4925 - 4929	0.01
703740	4930 - 4934	0.01
703741	4935 - 4939	0.01
703742	4940 - 4944	0.01
703743	4945 - 4949	0.01
703744	4950 - 4954	0.01
703745	4955 - 4959	0.01
703746	4960 - 4964	0.02
703747	4965 - 4969	0.01
703748	4970 - 4974	0.01
703749	4975 - 4979	0.01

041

926042

Sheet No. 2.

FROM Department of Mines Laboratory,  
Launceston, Tasmania.

TO.....A.C.A. Howe Australia Pty. Limited

<u>Reg. No.</u>	<u>Sample No.</u>	<u>%WO<sub>3</sub></u>
703750	4980 - 4984	0.01
703751	4985 - 4989	0.01
703752	4990 - 4994	0.01
703753	4995 - 5000	0.01
703754	4018 - 4022	0.01
703755	4023 - 4027	0.01
703756	4028 - 4033	0.01
703757	4034 - 4036	0.01

Analyses by.....*J. Furr*.....

Yours faithfully,

*H. K. Wellington*  
(H.K. Wellington),  
Chief Chemist & Metallurgist.

Fee: \$23.00

Department of Mines,  
Tasmania



## TELEPHONES

METALLURGICAL RESEARCH.....  
LABORATORY..... } 42431-2  
MINES INSPECTION..... } 2 LINES  
EXPLOSIVES AND INFLAMMABLE LIQUIDS.....  
REGISTRAR OF MINES.....22457

LAUNCESTON OFFICES,

287 WELLINGTON STREET,

SOUTH LAUNCESTON 8th January,  
1970.

A.C.A. Howe Australia Pty. Limited,  
171 Clarence Street,  
Sydney, N.S.W. 3000

Attention: Mr. McNeill

Dear Sir,

Arba Tin Mine

Herewith results of sizing analyses on samples  
from the above mine at Branxholm.

Reg. No. 703556 - No.4931

Fraction (B.S.S.)	Per Cent	
	Weight	Wght.Cum.
+7#	5.1	5.1
-7#+14#	11.0	16.1
-14#+25#	17.0	33.1
-25#+52#	18.3	51.4
-52#+100#	14.8	66.2
-100#+200#	8.0	74.2
-200#	25.8	100.0

Reg. No. 703557 - No.4932

Fraction (B.S.S.)	Per Cent	
	Weight	Wght.Cum.
+7#	12.3	12.3
-7#+14#	14.4	26.7
-14#+25#	14.2	40.9
-25#+52#	12.3	53.2
-52#+100#	13.8	67.0
-100#+200#	12.4	79.4
-200#	20.6	100.0

Reg. No. 703559 - No.4934

+7#	10.1	10.1
-7#+14#	21.2	31.3
-14#+25#	19.5	50.8
-25#+52#	12.5	63.3
-52#+100#	10.7	74.0
-100#+200#	8.0	82.0
-200#	18.0	100.0

Reg. No. 703560 - No.4935

+7#	10.8	10.8
-7#+14#	13.9	24.7
-14#+25#	15.4	40.1
-25#+52#	15.3	55.4
-52#+100#	10.9	66.3
-100#+200#	8.0	74.3
-200#	25.7	100.0

FROM Department of Mines Laboratory,  
Launceston, Tasmania.

TO A.C.A. Howe Australia Pty. Limited

Reg. No. 703561 - No.4936

Fraction (B.S.S.)	Per Cent	
	Weight	Wght.Cum.
+7#	17.5	17.5
-7#+14 #	8.9	26.4
-14#+25#	14.5	40.9
-25#+52#	15.8	56.7
-52#+100 #	11.6	68.3
-100#+200#	8.3	76.6
-200#	23.4	100.0

Reg. No. 703562 - No.4937

Fraction (B.S.S.)	Per Cent	
	Weight	Wght.Cum.
+7#	27.3	27.3
-7#+14#	22.9	50.2
-14#+25#	18.0	68.2
-25#+52#	11.8	80.0
-52#+100#	7.8	87.8
-100#+200#	4.2	92.0
-200#	8.0	100.0

Reg. No. 703563 - No.4938

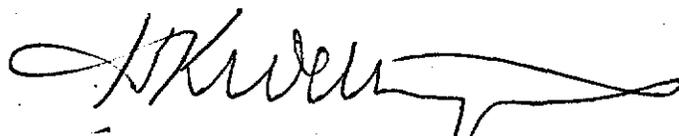
+7#	21.2	21.2
-7#+14#	18.2	39.4
-14#+25 #	19.4	58.8
-25#+52#	14.9	73.7
-52#+100#	8.9	82.6
-100#+200#	4.9	87.5
-200#	12.5	100.0

Reg. No. 703564 - No.4939

+7#	30.6	30.6
-7# +14#	25.7	56.3
-14#+25#	15.4	71.7
-25#+52#	8.2	79.9
-52#+100#	5.1	85.0
-100#+200#	3.5	88.5
-200#	11.5	100.0

Note: Results on Reg. No. 703558 - No.4933 were forwarded previously.

Yours faithfully,



(H.K. Wellington),  
Chief Chemist & Metallurgist.

Fee: \$16.00

FROM Department of Mines Laboratory, Launceston, Tasmania. TO A.C.A. Howe Australia Pty. Limited

Reg. No. 703639 - No. 4940

Fraction (B.S.S.)	Per Cent	
	Weight	Wght.Cum.
+7#	14.2	14.2
-7#+14#	15.4	29.6
-14#+25#	12.5	42.1
-25#+52#	6.5	48.6
-52#+100#	5.3	53.9
-100#+200#	5.9	59.8
-200#	40.2	100.0

Reg. No. 703640 - No. 4941

Fraction (B.S.S.)	Per Cent	
	Weight	Wght.Cum.
+7#	4.8	4.8
-7#+14#	5.6	10.4
-14#+25#	6.0	16.4
-25#+52#	2.8	19.2
-52#+100#	3.7	22.9
-100#+200#	6.1	29.0
-200#	71.0	100.0

Reg. No. 703641 - No. 4942

+7#	1.1	1.1
-7#+14#	2.1	3.2
-14#+25#	3.3	6.5
-25#+52#	2.3	8.8
-52#+100#	2.9	11.7
-100#+200#	7.1	18.8
-200#	81.2	100.0

Reg. No. 703642 - No. 4943

+7#	5.5	5.5
-7#+14#	12.4	17.9
-14#+25#	16.2	34.1
-25#+52#	10.1	44.2
-52#+100#	8.0	52.2
-100#+200#	7.6	59.8
-200#	40.2	100.0

Reg. No. 703643 - No. 4944

+7#	6.8	6.8
-7#+14#	9.0	15.8
-14#+25#	11.3	27.1
-25#+52#	9.0	36.1
-52#+100#	8.3	44.4
-100#+200#	9.9	54.3
-200#	45.7	100.0

Reg. No. 703644 - No. 4945

+7#	9.5	9.5
-7#+14#	20.8	30.3
-14#+25#	18.6	48.9
-25#+52#	14.0	62.9
-52#+100#	9.3	72.2
-100#+200#	5.7	77.9
-200#	22.1	100.0

FROM Department of Mines Laboratory,  
Launceston, Tasmania.

TO A.C.A. Howe Australia Pty. Limited

Reg. No. 703645 - No.4946

Fraction (B.S.S.)	Per Cent	
	Weight	Wght.Cum.
+7#	1.8	1.8
-7#+14#	2.6	4.4
-14#+25#	5.8	10.2
-25#+52#	6.9	17.1
-52#+100#	5.4	22.5
-100#+200#	11.8	34.3
-200#	65.7	100.0

Reg. No. 703646 - No.4947

Fraction (B.S.S.)	Per Cent	
	Weight	Wght.Cum.
+7#	9.6	9.6
-7#+14#	18.6	28.2
-14#+25#	24.3	52.5
-25#+52#	18.5	71.0
-52#+100#	11.7	82.7
-100#+200#	5.8	88.5
-200#	11.5	100.0

Reg. No. 703716, Sample No. 4034

Fraction (B.S.S.)	Per Cent		Sn
	Weight	Wght.Cum.	
+7#	38.0	38.0	Nil
<del>-7#+14#</del>	<del>24.2</del>	<del>62.2</del>	<del>&lt;0.01</del>
-14#+25#	16.5	78.7	<0.01
-25#+52#	11.3	90.0	0.01
-52#+100#	6.6	96.6	0.01
-100#+200#	1.7	98.3	0.41
-200#	1.7	100.0	0.15

Reg. No. 703717, Sample No. 4035

+7#	28.9	28.9	Nil
-7#+14#	31.8	60.7	Nil
-14#+25#	23.5	84.2	<0.01
-25#+52#	9.9	94.1	0.02
-52#+100#	3.1	97.2	0.09
-100#+200#	1.1	98.3	0.16
-200#	1.7	100.0	0.03

FROM Department of Mines Laboratory,  
Launceston, Tasmania.

TO A.C.A. Howe Australia Pty. Limited

Reg. No. 703718, Sample No. 4036

Fraction (B.S.S.)	Per Cent		Sn
	Weight	Wght.Cum.	
+7#	27.3	27.3	Nil
-7# +14#	14.7	42.0	<0.01
-14# +25#	18.0	60.0	0.01
-25# +52#	27.1	87.1	0.02
-52# +100#	10.6	97.7	0.22
-100# +200#	1.4	99.1	0.22
-200#	0.9	100.0	1.6

Reg. No. 703719, Sample No. 4037

+7#	12.3	12.3	<0.01
-7# +14#	18.1	30.4	Nil
-14# +25#	20.0	50.4	Nil
-25# +52#	19.3	69.7	<0.01
-52# +100#	17.2	86.9	0.03
-100# +200#	7.5	94.4	0.06
-200#	5.6	100.0	0.01

047  
13886

FROM Department of Mines Laboratory,  
Launceston, Tasmania.

TO A.C.A. Howe Australia Pty. Limited

Reg. No. 703549 - No. 4924

Fraction (B.S.S.)	Per Cent	
	Weight	Wght.Cum.
+ 7#	0.6	0.6
-7# + 14#	2.7	3.3
-14# + 25#	5.9	9.2
-25# + 52#	7.8	17.0
-52# + 100#	8.1	25.1
-100# + 200#	6.0	31.1
-200#	68.9	100.0

Reg. No. 703550 - No. 4925

Fraction (B.S.S.)	Per Cent	
	Weight	Wght.Cum.
+ 7#	0.1	0.1
-7# + 14#	0.4	0.5
-14# + 25#	0.6	1.1
-25# + 52#	0.6	1.7
-52# + 100#	0.9	2.6
-100# + 200#	5.9	8.5
-200#	91.5	100.0

Reg. No. 703551 - No. 4926

+ 7#	0.7	0.7
-7# + 14#	1.8	2.5
-14# + 25#	2.7	5.2
-25# + 52#	1.8	7.0
-52# + 100#	1.9	8.9
-100# + 200#	5.1	14.0
-200#	86.0	100.0

Reg. No. 703552 - No. 4927

+ 7#	5.7	5.7
-7# + 14#	10.3	16.0
-14# + 25#	12.3	28.3
-25# + 52#	9.4	37.7
-52# + 100#	6.6	44.3
-100# + 200#	10.4	54.7
-200#	45.3	100.0

Reg. No. 703553 - No. 4928

+ 7#	1.1	1.1
-7# + 14#	5.2	6.3
-14# + 25#	10.1	16.4
-25# + 52#	8.0	24.4
-52# + 100#	6.7	31.1
-100# + 200#	11.3	42.4
-200#	57.6	100.0

Reg. No. 703554 - No. 4929

+ 7#	2.7	2.7
-7# + 14#	5.3	8.0
-14# + 25#	6.4	14.4
-25# + 52#	4.7	19.1
-52# + 100#	5.5	24.6
-100# + 200#	11.6	36.2
-200#	63.8	100.0

FROM Department of Mines Laboratory,  
Launceston, Tasmania.

TO.....A.C.A. Howe, Australia Pty. Limited..

Reg. No. 703555 - No. 4930

Fraction (B.S.S.)	Per Cent	
	Weight	Wght. Cum.
+ 7#	3.6	3.6
-7# + 14#	4.5	8.1
-14# + 25#	6.9	15.0
-25# + 52#	7.5	22.5
-52# + 100#	10.0	32.5
-100# + 200#	14.0	46.5
-200#	53.5	100.0

Reg. No. 703558 - No. 4933

+ 7#	6.3	6.3
-7# + 14#	9.8	16.1
-14# + 25#	14.1	30.2
-25# + 52#	14.4	44.6
-52# + 100#	10.4	55.0
-100# + 200#	8.7	63.7
-200#	36.3	100.0

FROM Department of Mines Laboratory,  
Launceston, Tasmania.

TO A.C.A. Howe Australia Pty. Limited.

Reg. No. 703518, Sample No. 1193

Fraction (B.S.S.)	Per Cent		Sn
	Weight	Wght. Cum.	
+7#	14.6	14.6	<0.01
-7# +14#	22.3	36.9	<0.01
-14# +25#	17.5	54.4	<0.01
-25# +52#	10.1	64.5	0.01
-52# +100#	8.5	73.0	0.01
-100# +200#	7.3	80.3	0.02
-200#	19.7	100.0	0.01

*total  
sample % Sn  
.01*

*-52# + 200#  
% Sn .0146 % wt. 15.8*

Reg. No. 703519, Sample No. 1194

+7#	20.4	20.4	Nil
-7# +14#	26.7	47.1	Nil
-14# +25#	16.7	63.8	<0.01
-25# +52#	11.0	74.8	<0.01
-52# +100#	10.5	85.3	0.03
-100# +200#	6.0	91.3	0.01
-200#	8.7	100.0	<0.01

*sample 1*

Reg. No. 703520, Sample No. 1195

+7#	13.0	13.0	Nil
-7# +14#	15.2	28.2	<0.01
-14# +25#	16.3	44.5	Nil
-25# +52#	11.3	55.8	0.02
-52# +100#	7.2	63.0	0.01
-100# +200#	12.3	75.3	<0.01
-200#	24.7	100.0	<0.01

FROM Department of Mines Laboratory,  
Launceston, Tasmania.

TO.....A.C.A. Howe Australia Pty. Limited.....

Reg. No. 703521, Sample No. 1196

<u>Fraction</u> <u>(B.S.S.)</u>	<u>Per Cent</u>		<u>Sn</u>
	<u>Weight</u>	<u>Wght.Cum.</u>	
+ 7#	13.5	13.5	0.01
-7# +14#	15.5	29.0	<0.01
-14# +25#	20.7	49.7	<0.01
-25# +52#	13.1	62.8	0.01
-52# +100#	2.3	65.1	0.01
-100# +200#	12.7	77.8	0.02
-200#	22.2	100.0	0.01

Reg. No. 703522, Sample No. 1197

+ 7#	12.9	12.9	0.01
-7# +14#	15.3	28.2	<0.01
-14# +25#	16.7	44.9	<0.01
-25# +52#	12.8	57.7	0.01
-52# +100#	10.1	67.8	0.01
-100# +200#	7.6	75.4	0.01
-200#	24.6	100.0	<0.01

Reg. No. 703523, Sample No. 1198

+ 7#	10.9	10.9	Nil
-7# + 14#	17.1	28.0	Nil
-14# +25#	17.1	45.1	Nil
-25# + 52#	9.9	55.0	<0.01
-52# +100#	9.8	64.8	0.01
-100# +200#	11.2	76.0	0.01
-200#	24.0	100.0	<0.01

FROM Department of Mines Laboratory,  
Launceston, Tasmania.

TO.....A.C.A. Howe Australia Pty. Limited.....

Reg. No. 703524, Sample No. 1199

Fraction (B.S.S.)	Per Cent		Sn <sup>A</sup>
	Weight	Wght.Cum.	
+ 7#	6.0	6.0	0.01
-7# + 14#	8.6	14.6	<0.01
-14# + 25#	13.6	28.2	0.01
-25# + 52#	10.4	38.6	0.01
-52# + 100##	7.7	46.3	0.01
-100# + 200#	10.5	56.8	0.01
-200#	43.2	100.0	<0.01

Reg. No. 703525, Sample No. 1200

+ 7#	9.8	9.8	Nil
-7# + 14#	12.2	22.0	<0.01
-14# + 25#	10.9	32.9	Nil
-25# + 52#	13.6	46.5	<0.01
-52# + 100#	18.6	65.1	0.01
-100# + 200#	13.9	79.0	0.02
-200#	21.0	100.0	<0.01

Reg. No. 703526, Sample No. 4901

+ 7#	5.7	5.7	0.01
-7# + 14#	16.6	22.3	0.01
-14# + 25#	27.6	49.9	<0.01
-25# + 52#	17.5	67.4	<0.01
-52# + 100#	9.1	76.5	0.01
-100# + 200#	7.0	83.5	0.01
-200#	16.5	100.0	0.01

852-

926053

Sheet No. 5.

FROM Department of Mines Laboratory,  
Launceston, Tasmania.

TO.....A.C.A. Howe Australia Pty. Limited.....

Reg. No. 703527, Sample No. 4902

<u>Fraction</u> <u>(B.S.S.)</u>	<u>Per Cent</u>		<u>Sn</u>
	<u>Weight</u>	<u>Wght.Cum.</u>	
+ 7#	10.4	10.4	<0.01
-7# + 14#	18.7	29.1	0.01
-14# + 25#	19.2	48.3	0.01
-25# + 52#	15.7	64.0	0.01
-52# + 100#	4.7	68.7	0.04
-100# + 200#	12.3	81.0	0.02
-200#	19.0	100.0	0.01

Reg. No. 703528, Sample No. 4903

+ 7#	20.4	20.4	0.01
-7# + 14#	11.8	32.2	<0.01
-14# + 25#	9.6	41.8	0.01
-25# + 52#	8.8	50.6	0.01
-52# + 100#	9.1	59.7	0.02
-100# + 200#	10.7	70.4	0.01
-200#	29.6	100.0	0.01

Reg. No. 703529, Sample No. 4904

+ 7#	24.8	24.8	<0.01
-7# + 14#	14.8	39.6	Nil
-14# + 25#	13.5	53.1	<0.01
-25# + 52#	11.2	64.3	0.01
-52# + 100#	11.3	75.6	0.05
-100# + 200#	8.5	84.1	0.04
-200#	15.9	100.0	0.01

13808 053  
 FROM Department of Mines Laboratory,  
 Launceston, Tasmania.

TO A.C.A. Howe Australia Pty. Limited.

Reg. No. 703530, Sample No. 4905

<u>Fraction</u> <u>(B.S.S.)</u>	<u>Per Cent</u>		<u>Sn</u>
	<u>Weight</u>	<u>Wght.Cum.</u>	
+ 7#	29.2	29.2	0.01
-7# + 14#	21.5	50.7	<0.01
-14# + 25#	15.0	65.7	<0.01
-25# + 52#	9.4	75.1	0.01
-52# + 100#	3.0	78.1	0.01
-100# + 200#	10.6	88.7	0.02
-200#	11.3	100.0	0.01

Reg. No. 703531, Sample No. 4906

+ 7#	16.8	16.8	0.01
-7# + 14#	11.9	28.7	0.01
-14# + 25#	6.2	34.9	0.01
-25# + 52#	4.6	39.5	0.02
-52# + 100#	4.0	43.5	0.04
-100# + 200#	7.8	51.3	0.01
-200#	48.7	100.0	0.01

Reg. No. 703532, Sample No. 4907

+ 7#	0.9	0.9	0.01
-7# + 14#	0.9	1.8	<0.01
-14# + 25#	1.6	3.4	0.01
-25# + 52#	1.9	5.3	0.01
-52# + 100#	7.6	12.9	0.01
-100# + 200#	26.4	39.3	0.01
-200#	60.7	100.0	Nil

FROM Department of Mines Laboratory,  
Launceston, Tasmania.

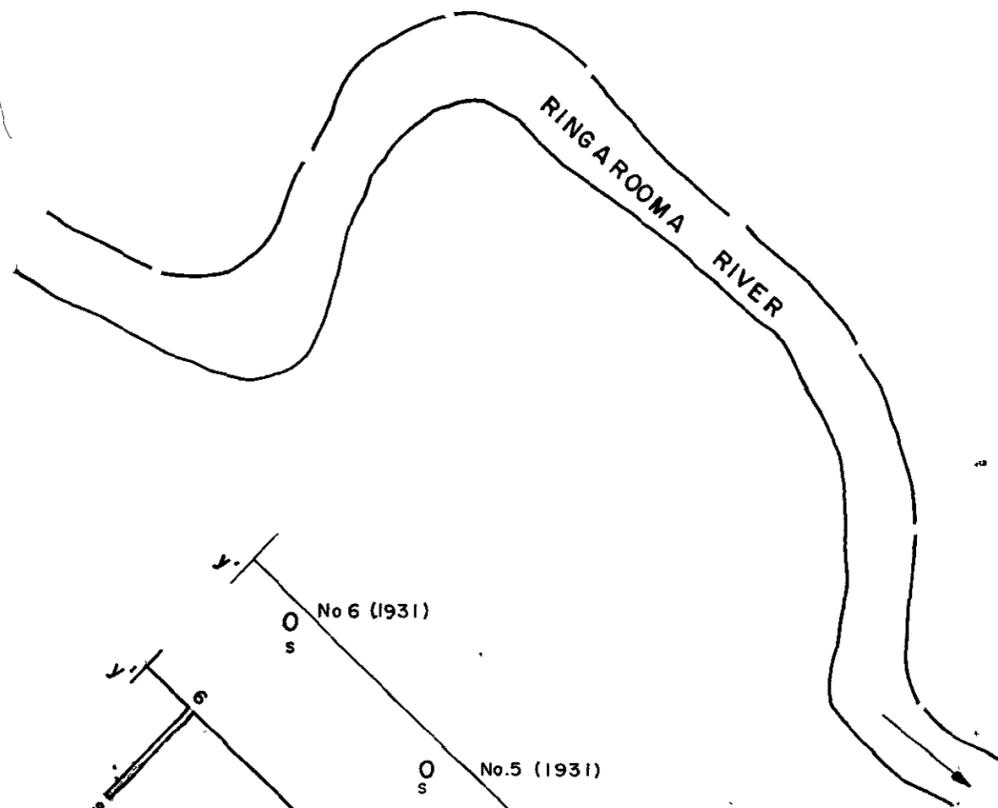
TO A.C.A. Howe Australia Pty. Limited

Reg. No. 703533, Sample No. 4908

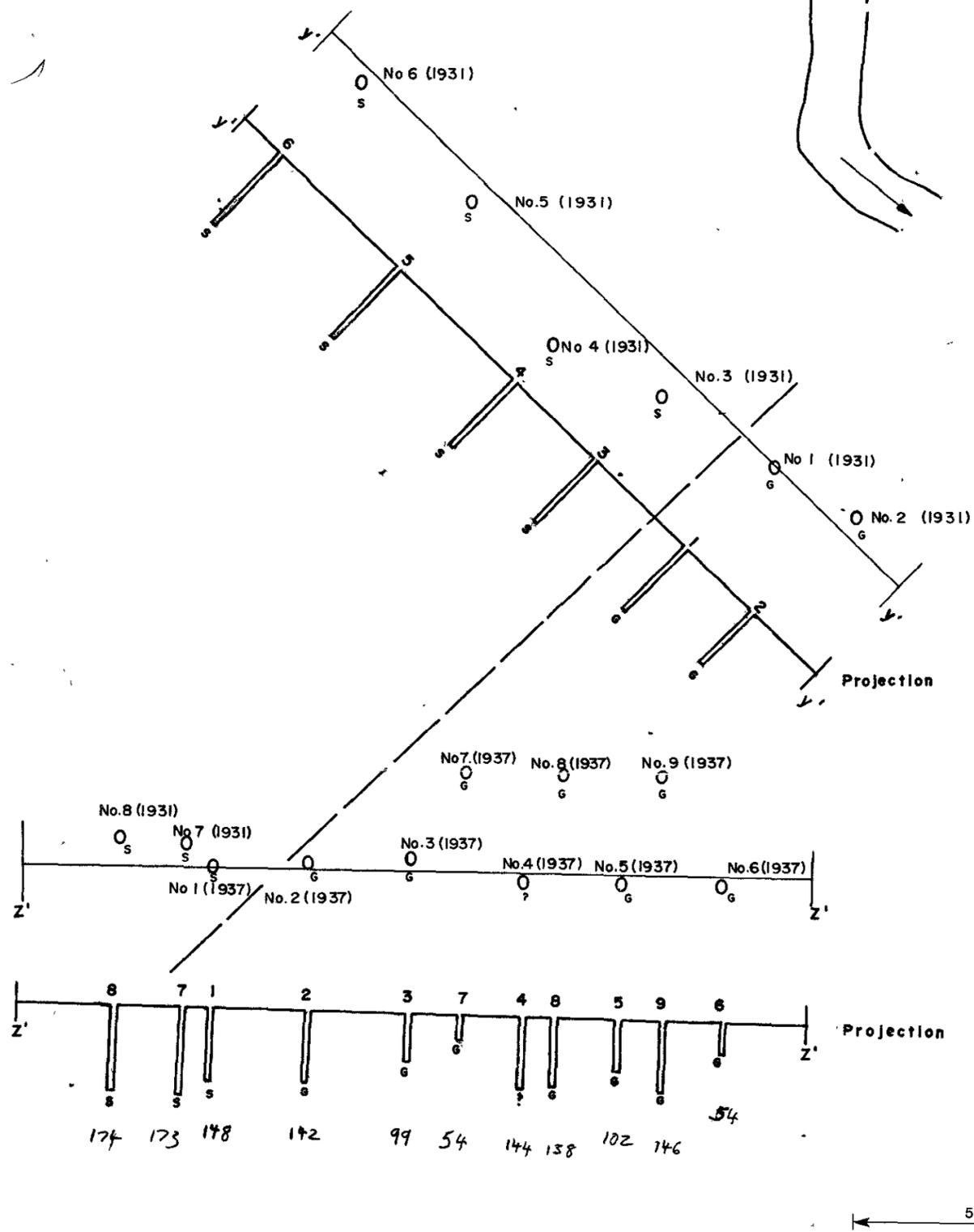
<u>Fraction</u> <u>(B.S.S.)</u>	<u>Per Cent</u>		<u>Sn</u>
	<u>Weight</u>	<u>Wght.Cum.</u>	
+ 7#	5.3	5.3	<0.01
-7# + 14#	6.6	11.9	0.01
-14# + 25#	8.1	20.0	<0.01
-25# + 52#	10.1	30.1	0.01
-52# + 100#	5.4	35.5	0.01
-100# + 200#	24.8	60.3	0.01
-200#	39.7	100.0	0.01

Reg. No. 703534, Sample No. 4909

+ 7#	14.9	14.9	Nil
-7# + 14#	21.8	36.7	<0.01
-14# + 25#	24.2	60.9	<0.01
-25# + 52#	16.4	77.3	0.01
-52# + 100#	8.0	85.3	0.06
-100# + 200#	5.0	90.3	0.06
-200#	9.7	100.0	0.01



NUMBER OF BORE	DEPTH TO BEDROCK	TIN CONTENT OZ. PER C.YD OF 70%
1 1931	170 FEET	0.45
2	149	0.52
3	180	0.76
4	190	0.47
5	198	0.44
6	203	0.20
7	173	0.51
8	174	0.34
1 1937	148	1.25
2	142	2.91
3	99	2.01
4	144	2.22
5	102	1.29
6	54	0.64
7	54	1.33
8	138	2.89
9	146	1.64



**LEGEND**

- G - Granite
- S - Sediments
- ? - Unknown
- - - Contact inferred

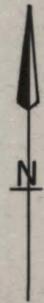
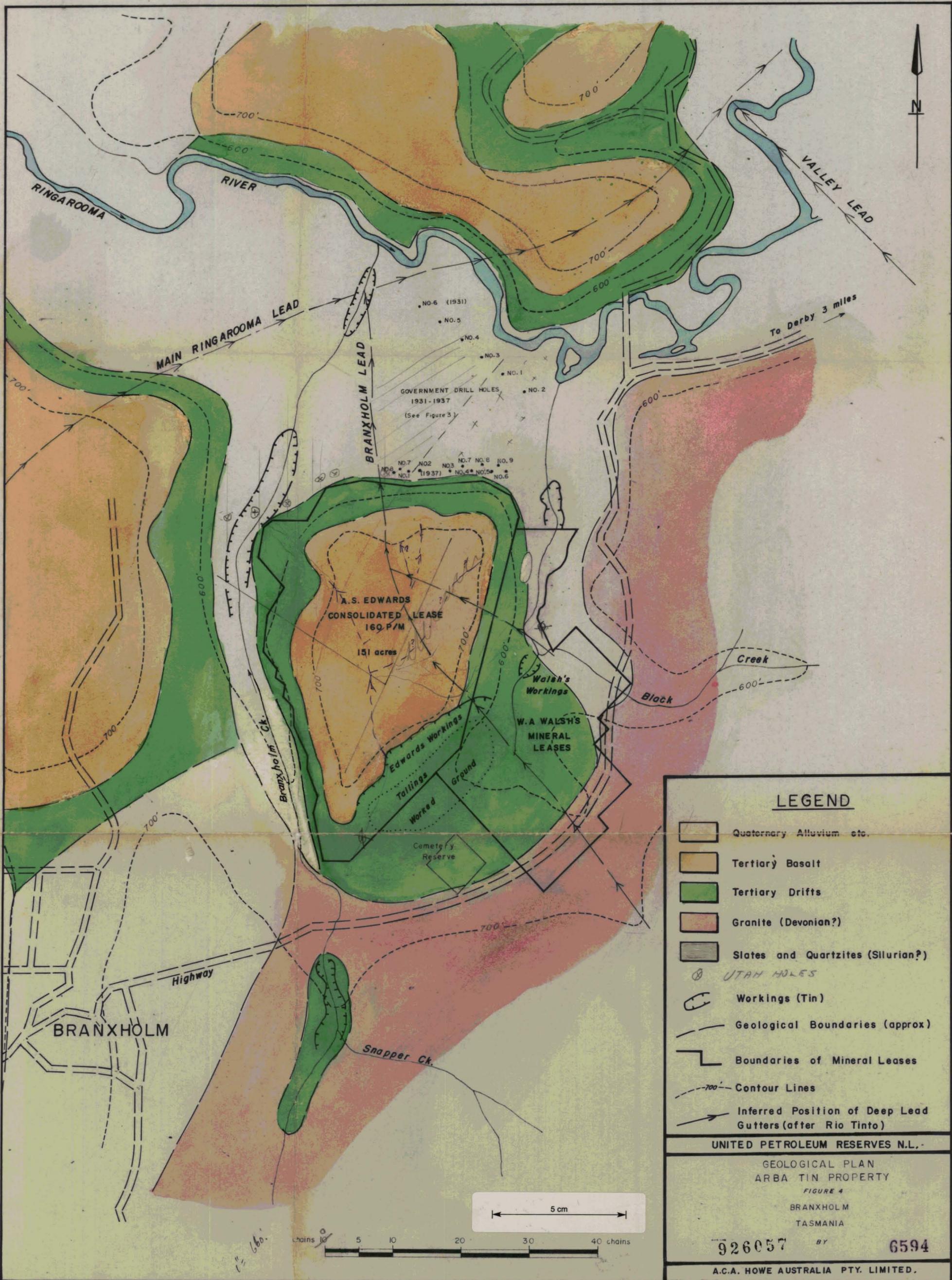
UNITED PETROLEUM RESERVES N.L.

FIGURE 3  
PLAN AND CROSS-SECTIONS OF GOVERNMENT DRILL HOLES  
1931-1937

926056

ARBA TIN 160 P/M  
BRANXHOLM TASMANIA.

BY



To Derby 3 miles

GOVERNMENT DRILL HOLES  
1931-1937  
(See Figure 3)

A.S. EDWARDS  
CONSOLIDATED LEASE  
160 P/M  
151 acres

Walsh's  
Workings  
W.A. WALSH'S  
MINERAL  
LEASES

Edwards Workings  
Tallings  
Ground  
Worked  
Cemetery Reserve

BRANXHOLM

5 cm

Chains 0 5 10 20 30 40



**UNITED PETROLEUM RESERVES N.L.**  
**TOPOGRAPHIC AND SAMPLE LOCATION MAP.**

ARBA TIN M.P. 160  
 BRANXHOLM TASMANIA

by  
**A.C.A. HOWE AUSTRALIA PTY LIMITED.**

SCALE 1 inch = 100 feet.  
 Fig. 5.  
 5cm

Azimuth Str. A towards Str. B is approximately 161° (S 19° E). Obtained from compass readings.