SCOTIA PROJECT

EL 32 / 2001 – TASMANIA

ORE RESOURCE

AND

GEOLOGICAL ASSESSMENT

VOLUME 1

PREPARED FOR:	Mineral Holdings Australia Pty Ltd
PREPARED BY:	Niugini Resources Pty Limited P.O. Box 62, HAWKER 2614 ACT, Australia
DATE PREPARED:	September 5, 2003

EXECUTIVE SUMMARY

The Scotia Resource is located within Exploration Licence 32 / 2001 on the southern edge of the Great Northern Plain just north of the township of Gladstone in north eastern Tasmania.

Mining first commenced at Scotia in 1891 with the development of workings in the section of the lead exposed by and adjoining the Ringarooma River. The area was worked consistently until around 1908 when most production ceased. In 1938 the area was designated as a Special Reserve, exempt from mining, the exemption finally being lifted in 1965.

The area has been intensively drilled by a number of parties using a variety of techniques from traditional "Banka" type drilling to modern percussion drilling and augering. Unfortunately not all of those data are available and an effort is now underway to correlate old logs to vague locations plotted on various generations of mapping. A reorganisation and electronic formatting of archives by the Department of Mineral Resources has meant much data has been misplaced and is only now coming to light.

During the tin boom of the late 1960's to 70's various groups including Storey's Creek Tin, B.M.I Mining, Anglo Australia and Amdex Mining undertook work on the deposit including assessments of previous and their own current drill data. A summary of the various group's individual results appears as a tabulation in this summary. In more recent years the area has become part of a portfolio comprising all the significant alluvial areas in the north east.

TABLE 1

SUMMARY OF PREVIOUS RESOURCE ASSESSMENTS

	AMDEX *	**B.M.I ***	**STOREY'S CREEK ***	**TAS MINES ***
Overburden m^3	10,748,615	18,009,726	7,062,250	3,353,150
Ore m^3	1,347,243	1,108,044	1,202,380	
Grade g/m^3	1,222.15	Not Given	1216.22	288.48
SnO_2 tonnes	1,620	Not Given	1,439	952
Ore : O/burden	45^o	30^o	60^o	90^o

NOTE: * - Values converted from cubic yards

The current reassessment has relied on limited access to old data, many of the Departmental holes drilled during the period 1935 to 1944 were available only as summaries while later drilling included full assay intersections. The resource has not been designated a category of reliability because of the intermixing of various levels of drill result reliability and is thus subdivided into two categories by reliability, specifically:

1. MAIN RESOURCE AREAS

MEASURED MINERAL RESOURCES

7,320,695 m^3 at an average grade of 351.03 g / m^3 SnO_2 (70% Sn)

2,570 tonnes of SnO_2 concentrate.

INDICATED MINERAL RESOURCES

14,990,963 m^3 at an average grade of 289.93 g / m^3 SnO_2 (70% Sn)

4,346 tonnes of SnO_2 concentrate.

246 drill holes define these resources that are quoted for the total intersection, "Surface to Basement" and thus include barren overburden. Lack of data for some holes precludes the dissection of the resource into ore and overburden.

2. RESOURCE EXTENSIONS

INFERRED MINERAL RESOURCES

21,347,000 m^3 at an average grade of 348.31 g / m^3 SnO_2 (70% Sn)

7,435 tonnes of SnO_2 concentrate.

Lack of data and drill coverage reduce resource reliability however the historical data, general geological trends and data in adjoining sections indicate high prospectivity levels. These resource extensions include areas immediately adjoining and within the Lochaber, Scotia Feeder and Scoloch sections of the Main Resource plus a number of tributary leads including the Newhaven, Mallinson's, Doone and Stinking Creek areas.

This assessment has resulted in the delineation of resources totalling some 43,658,658 m^3 containing 14,351 tonnes of tin concentrate at 70% Sn.

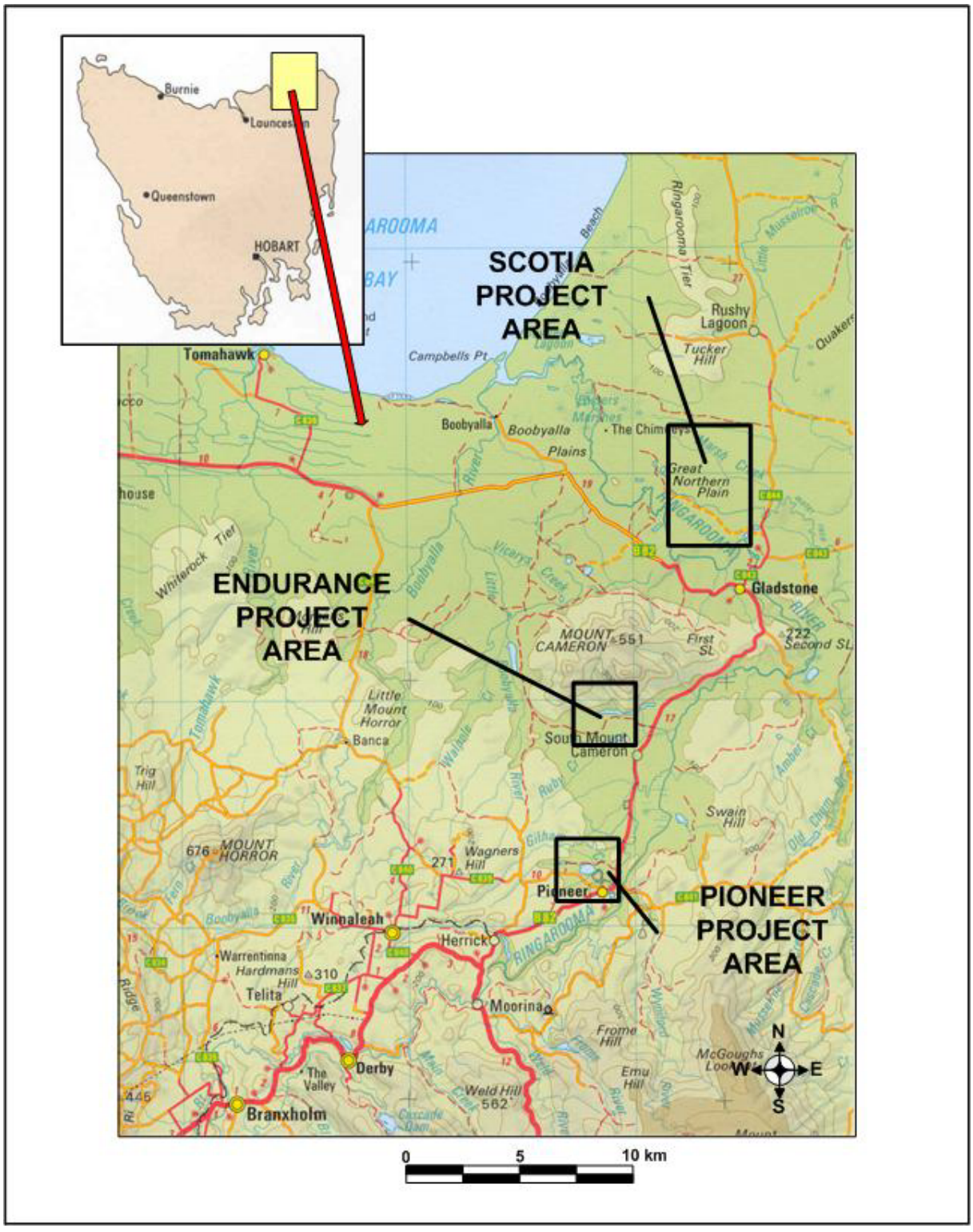

FIGURE 1 - LOCATION PLAN

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ELECTRONIC REPORTING FORMAT
LIST OF FILES

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2. EL322001_200308_02_appendix.xls
3. EL322001_200308_03_appendix.xls
4. EL322001_200308_04_appendix.xls
5. EL322001_200308_05_appendix.xls
6. EL322001_200308_06_appendix.xls
7. EL322001_200308_07_appendix.xls
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15. EL322001_200308_15_section.tiff
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17. EL322001_200308_17.map.tiff

1. SCOPE OF THIS ASSESSMENT

During year 2002 the tenement holder, as part of its expenditure obligations to Mineral Resources Tasmania, commissioned a preliminary "Assessment Report" in relation to the "Scotia Lead". This was the first review of this deposit since that by Gibson, 1976. The Gibson study was oriented toward defining the lead as a "dredgeable" target for the Dorset Dredge which was at the time lying idle just west of the Scotia in the Ringarooma River.

The year 2002 assessment indicated that the deposit required a thorough reappraisal in light of improved mining and treatment techniques that have since become industry norm.

The current assessment encompasses:

- Collation of all available data ex Department and ex tenement holder archives;
- Conversion of all "Imperial" based data to "Metric" base;
- Determination of data reliability;
- Definition of resource boundaries at defined mining cut-off grade and pre-defined grades;
- No assumption of mining boundaries or mine batter; and
- A review of prospectivity of both the Main Lead and Tributary and other Leads.

2. THE TENEMENT

2.1 THE TENEMENT

The following is reproduced from the results of a current title search in the Mineral Resources Tasmania database.

EXPLORATION LICENCE 32 / 2001

HOLDER:	Mineral Holdings Australia Proprietary Limited 11 Kent Court, Toorak, VIC, 3142
OPERATOR:	Mineral Holdings Australia Proprietary Limited 11 Kent Court, Toorak, VIC, 3142
STATUS:	Granted
FINAL DATE:	12/04/2007
PRODUCT:	Category 3 – Construction Minerals Category 5 (a) – Industrial Minerals Category 1 – Metallic Minerals
CURRENT AREA:	42 sq. km / blocks

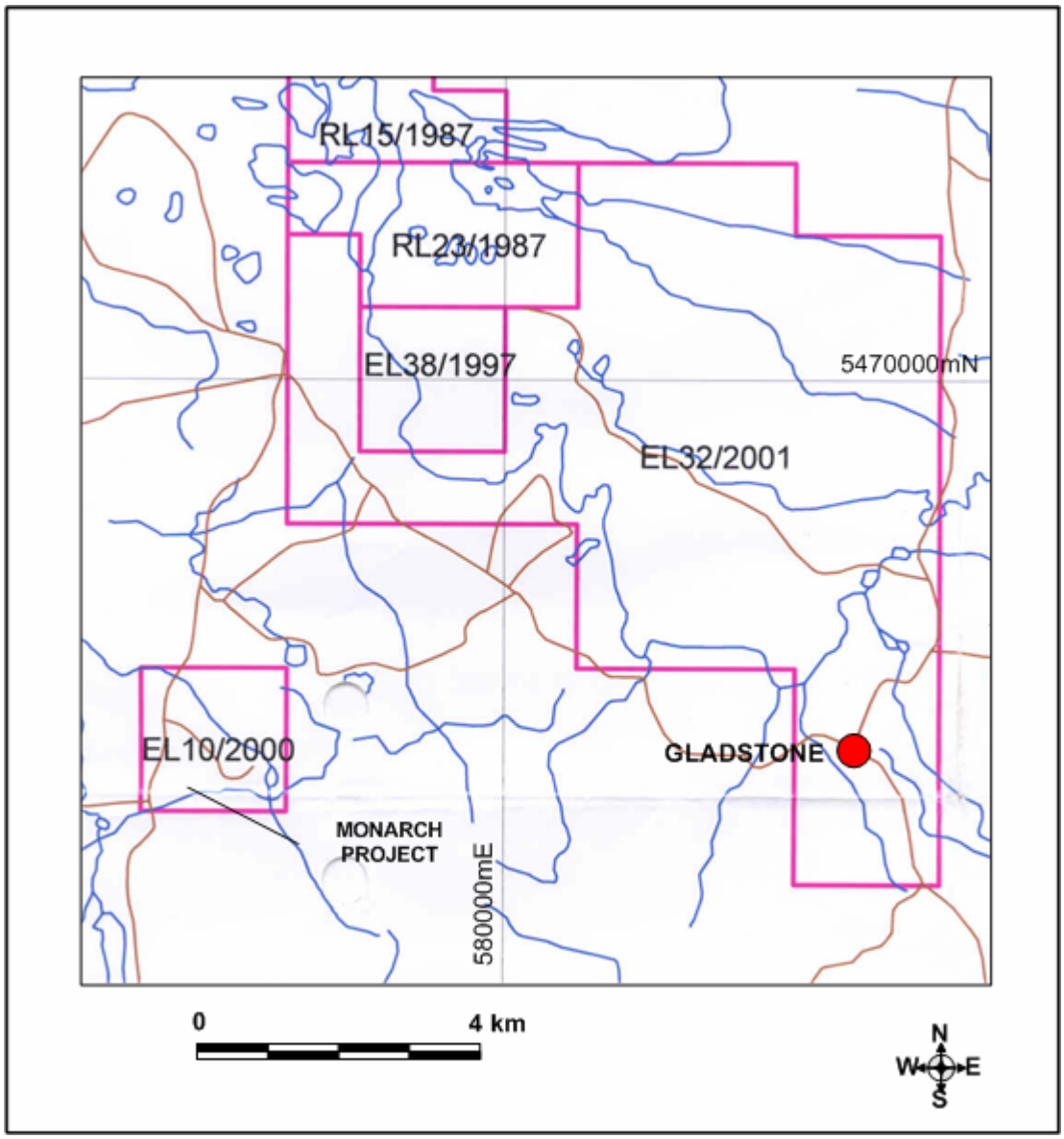

FIGURE 2 - TENEMENT MAP

2.2 LOCATION, ACCESS AND INFRASTRUCTURE

The Scotia Project area is located in north east Tasmania, centrally within an Exploration Licence, Number 32 / 2001, Mineral Resources Tasmania,. More specifically the tenement and Project are centred approximately 4 km north of the township of Gladstone. See Figure 1.

Access is excellent. All weather bituminized roads service Gladstone from the regional centres of Launceston, Scottsdale and St Helens. Locally gravel tracks access the tenement from these regional roads.

Gladstone is a small township of no more that 300 people. It hosts a general store and hotel. Power is available to within 200 metres of the old Scotia workings as 3 Phase, 415 Volt, and adequate and abundant water is readily available with required permitting from the Ringarooma River also adjacent to site.

2.3 ENVIRONMENTAL CONSIDERATIONS

Old alluvial workings are dotted throughout the tenement and more particularly along the edge of the alluvial terraces adjoining the Ringarooma River., the Scotia, Lochaber, Newhaven and Doone's workings are probably the most significant of those areas.

The eastern section of the tenement within which the Scotia Project is located encompasses a large tract of significant "Inland Heath" plains environment. In this area open heath land occurs in dispersed with eucalypt, banksia, leptospermum and melaleuca open forest and scrub patches.

The northern extension of the Scotia Lead falls within the southern section of the "Fosters Marsh RAMSAR Site". Such sites fall under Commonwealth jurisdiction, specifically the:

"Environment Protection and Biodiversity Conservation Act, 1999"

Ongoing feasibility and mine planning will require to take the implications of this Act and similar State Acts into consideration.

3. HISTORICAL BACKGROUND

The Scotia deposit was one of the first located in the north-east. The Scotia Tin Mining Company was formed in 1881 to develop the rich, exposed and reworked section of the Scotia lead adjacent to the Ringarooma River north of Gladstone, little information is available on that groups activities.

By 1891 the Scotia Company and T.W. Brown had opened six working faces on what is now the southern end of the old workings close to the Ringarooma River. The workings were 3 to 5 metres in depth and bottomed on slate. The basement was generally flat lying with a very gentle north–west slope. During the 1890's production gradually declined.

In 1901 exploration located deeper ground on the northern section of the workings and under the management of Mr. Galloway, the Scotia became a leading producer in the north-east region. As the workings developed it became apparent that the Scotia deposit was in the form of a deep lead with a narrow, high-grade gutter developed at its base. Mining continued until 1905 but during the period 1906 to 1908 production declined and eventually ceased in 1908.

Production from the Scotia Lead was not accurately recorded. The Scotia Company is reported to have produced 500 tonnes and J. Galloway 500 tonnes. No records of the Scotia Company production are available however for the period 1901 to 1908 production of 188.4 tonnes is reported with 95.5 tonnes being produced in 1904.

Following the cessation of production by the Scotia Company, C.G. Ryan of the Pioneer Tin Mining Company bored three east-west lines of holes ahead of the northern face, specifically 12 holes each in Lines 1 and 2 and 4 holes in Line 3.

Nye in his 1936 report mentions other boring programs, specifically:

- Departmental drilling (Griffin) in 1902;
- Departmental drilling (Carey) in 1902 ?;
- Departmental drilling (Roach) in 1916;
- Ryan (date uncertain, probably 1916, see Nye 1932);
- Alluvial Tin (date uncertain see Nye, 1932); and
- Groves (probably 1920)

During the period 1935 to 1944 the Tasmanian Department of Mines carried out an extensive drilling program using two power boring plants. In all a total of 855 holes were drilled to an average depth of 27.7 metres for a total of 23,827 metres.

In 1938 the Department declared the area a “Special Reserve” exempt from mining.

The Department reported that the tin is confined to narrow gutters ranging in width from 30 to 80 metres with richer concentrations being contained in a 0.3 to 10 metre thick basal section overlying slate and sandstone basement. Importantly they also reported that only a small proportion of tin occurs in the 15 to 25 metre upper section of the deposit.

The Department further reported that the basal tin bearing section consisted of gravels and coarse grits while the upper sections consisted of siliceous sands and grits interbedded with clay horizons. The average depth of the sediments in the “Lead“ itself is quoted as being 33 metres and with the exception of some thin cemented zones near surface the sediment profile is on the whole unconsolidated.

The Department tested some 6.5 kilometres of the “Lead”. Six blocks were defined by 185 closely spaced holes, these blocks, generally covering narrow sections of the ‘Lead” have an aggregate length of 2.2 kilometres. The Department quoted a reserve for these blocks of 3.35 million m^3 averaging 288 gm / m^3 SnO_2.

Interest in the “Lead” was renewed in 1958 when Rio Tinto carried out further drilling. They did not proceed with further exploration.

In 1965 the Tasmanian Government cancelled the Special Reserve status and Storey’s Creek Tin Mining Company took up Special Prospecting License No. 8 over the area. Storeys Creek immediately commenced a drilling program to check and confirm the Departmental work. In particular they concentrated on Departmental Blocks 3, 4, 5 and 6. While the results of their drilling were generally lower than that of the Department the relative distribution of values was very similar and Storey’s staff made special mention that they considered the Departmental drilling more reliable.

In 1966 J.K. Couper of Storeys Creek re-assessed the reserves within the six blocks. Couper quoted a resource of 8.26 million m^3 with an average grade of 177 gm / m^3 SnO_2 containing 1,463 tonnes of SnO_2. He quoted this resource assuming a 60^O mine batter and an overburden ration of 5.9 : 1. It is thought that the Storeys Creek work was aimed at providing additional reserves for the Dorset Dredge.

In 1970 B.M.I Mining acquired the exploration rights to the Scotia area. During the period 1970 to 1973 B.M.I carried out a major two stage exploration program, specifically:

- Stage 1 consisted of drilling of four test lines of holes across known tin-bearing sections of the Lead within zones of intense Departmental drilling. B.M.I results confirmed the Departmental work as accurate and reliable enough to be used in resource calculations.
- Stage 2 consisted of drilling of auger holes on widely spaced lines to test areas where the channel was poorly defined. Results of this work defined a 9 kilometre long channel but unfortunately did not provide any grade information.

B.M.I's assessment of the reserves for only four of the blocks totaled 19 million m^3 but did not include a calculation of grade. A mine batter of 30^O was used.

In 1976 Amdex Mining acquired the exploration rights to the Scotia area when B.M.I failed to renew their License. In 1976 Gibson re-calculated the resource quoting reserves as.

TABLE 2
AMDEX MINING RESOURCE STATEMENT

CLASS	VOLUME M^3	Wt. Av Grade G SnO_2 / m^3	CONTAINED (tonnes)	ORE TO O/B RATIO
Proven	7,233,221	178.4	1,291	! : 6.35
Probable	4,855,598	73.3	356	1 : 12.42
TOTAL	**12,088,819**	**136.2**	**1,647**	**1 :7.98**

Amdex subsequently undertook a program of check drilling and concluded that the Departmental drilling was reliable and of sufficient accuracy on which to base resource estimations.

In 2000 Mineral Holdings commissioned a review of the tin resources in the north east. At that time they did not hold title to Scotia however they quickly added the area to their tenement portfolio when the general potential and prospectivity became known. During 2001 a preliminary assessment of the resource indicated that given application of modern mining practice and a positive view of the upside of long term tin prices the Scotia Project was highly prospective and warranted adding to the company's portfolio of tenements. Since 2001 Niugini Resources have begun to accumulate a data package of archival information and while incomplete, this package forms the basis of this current assessment.

4. GEOLOGICAL OVERVIEW

Traditionally the geological view of the alluvial tin deposits of the north east has been of a tin component being, in the main, derived from the tin bearing granites of the Blue Tier, Scottsdale and Mt Cameron Batholiths. Dramatic uplift, and a northwards shedding erosional profile, related to tropical or semi tropical environments during the Tertiary, resulted in rapid denudation of these areas and the formation of blanket and reworked tin bearing alluvials over a wide area of the north east.

It is unfortunate that geomorphological processes during this period are not well researched as clearly they control the economic deposition of alluvial tin. One of the foremost geologists, P.B. Nye (1932) has much to offer in general background in the north east and many of his personal notes and letters (Archived) and his published works provide an insight to the setting of Scotia and its satellite deposits. Information has also been obtained from work by Rattigan, 1958, Yim, 1991 and recent communication from D. Duncan. The following text is intended to provide a broad, but by no means complete, background to the formation of the cassiterite bearing alluvial and estuarine deposits.

The history of the region commenced in the Permo-Traissic with the unroofing, and commencement of erosion of, the cassiterite bearing granitic rocks of the Blue Tier and Scottsdale Batholiths.

The Late Jurassic saw a period of uplift accompanied by the intrusion of extensive dolerite sheets followed by widespread and intense erosion. Deep weathering during this period assisted in liberation of heavy minerals from the granitic hosts.

The Middle Eocene period saw the commencement of volcanic activity along the Blue Tier with the extrusion of the Older Basaltic flows. It is likely that these were emplaced along stream systems incised into the pre-Eocene granitic land surface.

Subsequent or contemporaneous uplift and a humid tropical climatic regimen resulted in rapid erosion of the basalts resulting in the introduction of a zircospilic suite of heavy minerals into the basal sediments of the deep lead deposits. Cassiterite rich pre-Eocene leads may still exist beneath the remnants of these flows.

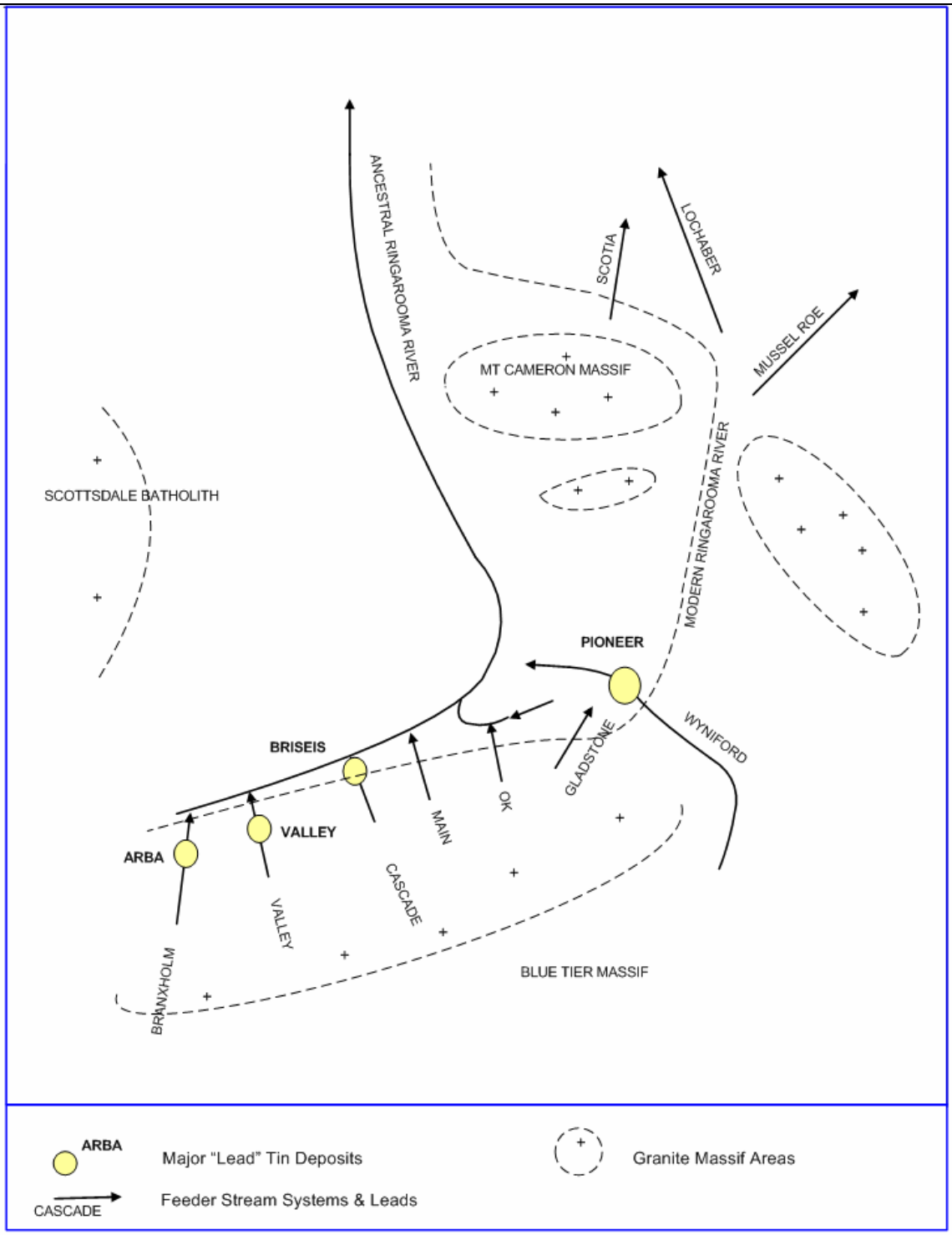

FIGURE 3A - POSTULATED PALAEO HISTORY OF THE SCOTIA LEAD

(Diagrammatic Only – Not to Scale)

Pre-Middle Eocene alluvial deposits were mixed and reworked with these younger basalt derived sediments giving rise to extensive flood plain alluvial deposits across the northern plains and southwards towards the present site of St Helens. No source vents for these rocks have as yet been located. The Mid Eocene to Late Oligocene appears to have been the dominant erosional and alluvial depositional period.

The Middle Miocene saw a second period of basaltic volcanism with extensive lava flows down many of the larger valleys in the region. These caused the diversion of the generally north west flowing streams of the Blue Tier; Black Creek, Cascade River, Main Creek, Weld River and the Wyniford River and the capture of those streams by the Ringarooma River. The capture of those streams created a broad shallow lake in the Mount Cameron Basin (south of the present mountain, the Dorset Flats). The Endurance deposit is considered to represent the northern expression of the ancestral Ringarooma River where it became entrenched immediately adjacent to the Mt Cameron massif and represented the westerly shedding outlet for the “Dorset Lake”. Subsequently the lake overflowed into the sea via Garfield Creek and the Musselroe River reversing the river flow of the Ringarooma to the east.

During the post Oligocene a period of uplift and/or marine regression resulted in the lateritization and silicification of much of the land surface and probably saw the commencement of the deep incision of some streams into the Tertiary conglomeratic land surface (Scotia and Lochaber Leads). Subsequent rises in sea level saw the development of broad marine embayments at Boobyalla and in the lower Ringarooma River area and the development of cassiterite bearing blanket type deposits derived from proximal cassiterite bearing alluvial deposits, from some proximal cassiterite bearing hard-rock deposits and from larger streams such as the Scotia Lead.

Nye, 1932 reports that estuarine sediments can be recognized throughout the Scotia Project area and while the author believes this may be the case in the northern end of the area, the Scoloch Lead, the southern section takes the form of a deeply incised active terrestrial stream system.

In the Great Northern Plain deposits north of Scotia, marine concentration possibly by wave action in shallow waters or by current movement during periods of heavy terrestrial flood outflow and complicated by stream influx into an active estuarine environment are almost certainly the major controls on tin deposition. Locally around this marine embayment marine processes appear to have resulted in the development of some cassiterite bearing strand line deposits.

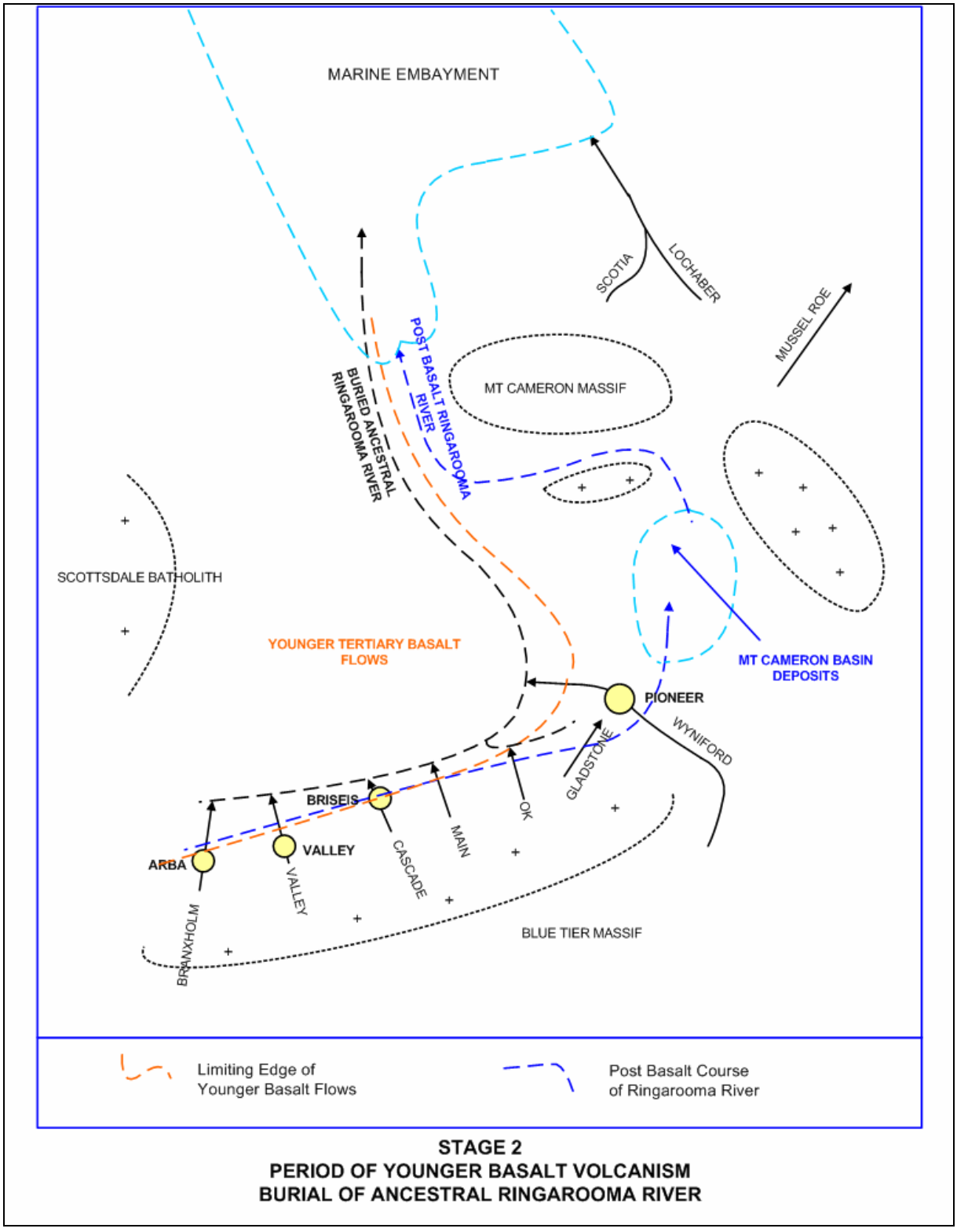

FIGURE 3B - POSTULATED PALAEO HISTORY OF THE SCOTIA LEAD

(Diagrammatic Only – Not to Scale)

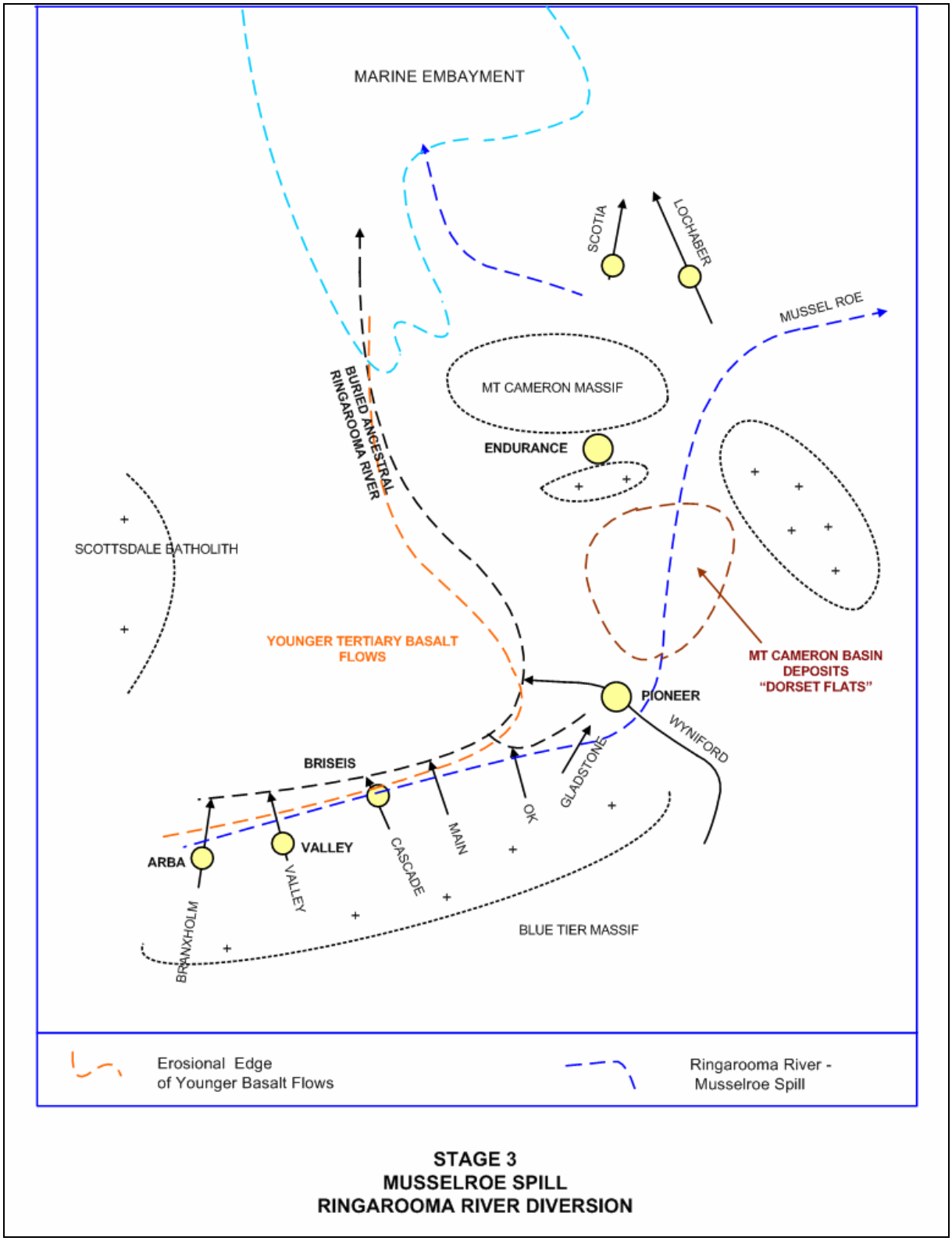

FIGURE 3C - POSTULATED PALAEO HISTORY OF THE SCOTIA LEAD

(Diagrammatic Only – Not to Scale)

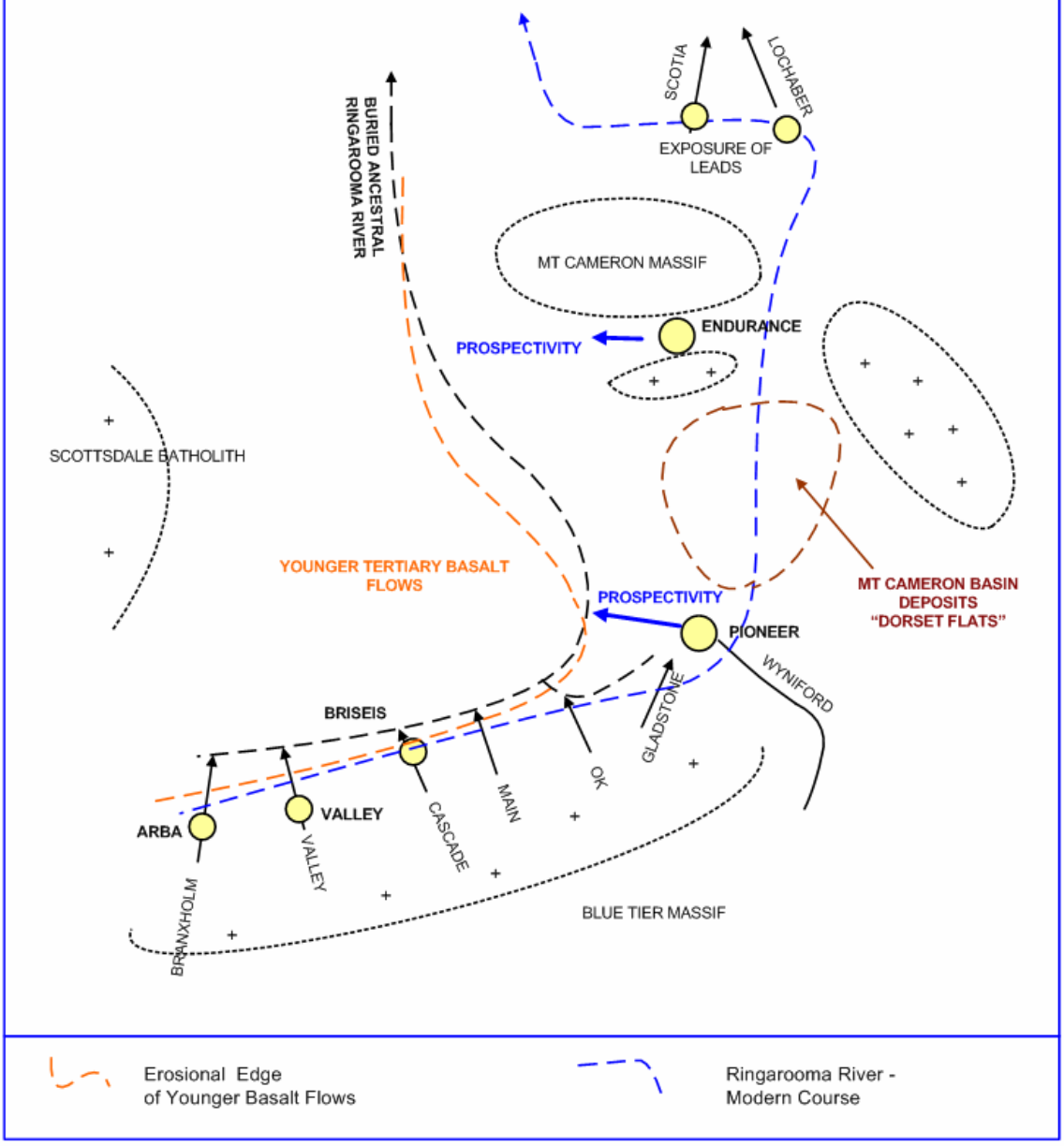

FIGURE 3D - POSTULATED PALAEO HISTORY OF THE SCOTIA LEAD

(Diagrammatic Only – Not to Scale)

The capture of the tributary of the Musselroe River in this Post Oligocene period saw the development of the modern Ringarooma River and the reworking of many of the alluvial cassiterite bearing deposits proximal to the stream. It is unclear if this period saw the river add to the sediment pile in the marine embayment or if the embayment was even active during this time.

A THE SCOTIA DEPOSIT AND LEAD

This partly worked deposit located on the north bank of the Ringarooma River consisted of:

- The southern workings, an area of "Lead" deposits that had been reworked by the Ringarooma River; and
- The northern face developed on the narrow gutter comprising the north trending deep lead proper.

There is strong evidence to suggest that this deposit derived a moderate proportion of its mineral load locally; gold from the Gladstone Goldfield and quartz stockwork veining in the Mathinna Beds basement sequence and tin from the quartz greisens and massive tin bearing quartz veins on the northern flank of the Mt Cameron Batholith.

Nye, 1932 reports the "Lead" to consist of alternating layers of clayey sand and granitic quartz sand. Gravels are absent except in surface layers. On the sides of the gutter the "Basal" wash consists of angular quartz pebbles associated with brownish sandy clay. Nye also reports that the un-worked sections of the "Lead" consist of lignitic clayey sands with some large quartz boulders.

These observations agree with logs of the drill logs with angular quartz wash being noted in many holes flanking the high grade channel. Drilling suggests that the "Lead" from the face trends through the old group of bores of Roach and Ryan then trends northwards toward the Lochaber workings. The Channel appears to widen just north of Newhaven until its apparent sharp bend westward just near Mallinson's workings. Most workers appear to have the lead trending north westwards however evidence for such trend is based on a few drill holes.

The direction taken by the Lead north of the old workings is problematical, two alternatives are considered possible, specifically:

- ❖ The "Lead" takes a sharp bend westward and then flows north west as depicted on Figure 6; or
- ❖ The "Lead" continues roughly northwards through Mallinson's workings and joins the Lochaber Lead just west of the old worked face (an unlikely alternative).

The former postulated course does seem however to fit in with drill results as old Departmental drilling (1902) Figure 4 appears to have intersected the edge of the "Lead" near bore hole 6B.

From its intersection with the Lochaber tributary, the "Lead" is well defined by drilling for a distance of around 1.5 km. As the "Lead" nears Stinking Creek it again makes a sharp diversion to the west, this is apparently associated with the entry of an east bank tributary "Lead" from the Stinking Creek marsh area. From this point north and north westwards the course of the "Lead " is ill defined, few drill holes if any appear to have intersected the main channel, most appear to have been drilled on the flanks of the channel.

B LOCHABER DEPOSIT AND LEAD

Historical information indicates that this deposit has a profile more consistent with data obtained from drilling and is unlike the Scotia deposit in that the profile contains more gravelly material and the basal wash consists of gravelly and pebbly material with more boulders. Nye, 1932, reports that the coarse gravels near the base are the richest, with exceptionally rich values being consistently obtained at or just above basement.

The "Lead" trends north westward from the old workings although the course is problematical and based on a limited number of drill intersections.

C MALLINSON'S DEPOSIT AND LEAD

This Lead is located between the Scotia and Lochaber deposits. The deposit contains predominantly fine sandy granitic material however the wash is reported to contain large boulders and pebbles of white quartz reef material. The presence of this material supports the concept of local derivation from Mt Cameron.

Previous drilling indicates the “Lead” trends westward from the workings and appears to join the Scotia Lead at or near the first main westerly diversion. In fact the entry of what was probably a very active tributary lead caused the diversion of the Scotia to the west.

D NEWHAVEN DEPOSIT AND LEAD

This deposit appears similar to the Scotia Lead and bore holes put down ahead of the old face indicate that the “Lead” trends north-west however its presence and actual location remain problematical. Drilling and shaft sinking have failed to accurately locate the lead although information detailed during the 1902 drilling suggest it joins the Doone Lead and crosses the 1902 drill section before entering the Scotia Lead.

E DOONE DEPOSIT AND LEAD

These workings are located well west of the Scotia Lead but previous drilling appears to have established that the Doone Lead trends eastward. Departmental drilling 1902 and work by Roach, 1916 establish this trend and further, a number of shallow workings apparently developed on the edge of the “Lead”, east of Richard’s & Murray’s face, also support the extension in this direction. It is postulated that the “Lead” is joined by the Newhaven Lead and then in turn joins the Scotia Lead north west of the Lochaber – Scotia junction.

F OTHER POTENTIAL TRIBUTARY TARGETS

In addition to the deposits and “Tributary Leads” detailed above there are a number of other prospective areas immediately adjacent to the main Scotia Lead. West of the Lead in the Stinking Creek region a number of old shafts have been located. It is unclear what type of deposit these were sunk on however it is probable a shallow west bank tributary is located in this region.

In addition, any major deviations in the direction of flow of the main Scotia and Lochaber Leads should be considered as being caused by the influence of tributary palaeo-streams and feeder systems. Whether all these tributary feeder streams contain economic tin grades is problematical however they should be considered as prospective exploration targets.

G SUMMARY

The Scotia Project encompasses a series of “Lead” type deeply buried cassiterite bearing alluvials, generally these deposits:

- Trend north to north westwards and finally enter the Great Northern Plain estuarine environment via the Scoloch section;
- The “Leads” are narrow deposits (50 to 150 metres in width) deeply incised into a dominantly terrestrial and in part marine unconsolidated sedimentary sequence probably of Eocene age;
- Basement is irregular and varies from hard indurated sandstones to quartz veined slates and soft slates;
- The entry of tributary “Leads” into the Main “Lead” is seen as the cause of sharp and marked alterations in the direction of flow Most of these tributary “Leads” comprise the economic prospectivity of the deposit over and above the drilled resource base;
- The tin bearing horizons are predominantly basal and usually consist of gravely and pebbly wash that becomes more angular along the flanks of the channel. Large boulders and angular quartz blocks are common in the sections nearest to the old Scotia and Lochaber workings but become progressively more uncommon downstream within the “Lead”; and
- The basal layers are consistently high grade with exceptionally high grades being located in a thin section immediately above and resting on basement;

5. DATA PACKAGE

Data concerning the Scotia and its associated deposits are available from several sources, specifically:

- Mineral Resources Tasmania, archival records, company reports and Departmental Technical Reports;
- Tasmania Government State Archives;
- Australian Government Archives;
- Mineral Holdings Australia Pty Limited private records; and
- Niugini Resources Pty Limited.

The bibliography appearing with this report details those data that are currently available through Niugini Resources and have formed the background for the compilation of this assessment.

Included as Appendices are details of all drilling results currently available, those data have been converted, where required, from old “Imperial” measurements into current metric format. The most comprehensive plot of drill hole locations is considered to be that produced by Standard for B.M.I. Mining in 1971 and that plan has been used in preparation of this assessment without amendment or alteration.

5.1 RELIABILITY OF DATA

There have been a total of ten different drilling campaigns conducted at Scotia and its environs, the first commencing in 1902 and the last being conducted in 1980. Clearly these programs are highly variable in their reliability having been carried out using different rigs and drill techniques, different staff and sampling techniques and different reporting methodology. Early reporting was in Imperial units the latter programs metric.

All the above variables compound to confuse and diminish the value of the data. The general consensus is that drilling conducted by the Department of Mines (Now Mineral Resources Tasmania) is the most reliable data available. This is specifically the 23,827 metre, 1935 to 1944 program of holes. It is unfortunate that only part of this is available in its entirety, that is, drill logs, assay intervals and final grade compilations. All those data are included here as Volume 2, Part 1 Appendices.

The “B” Series of holes and the Non-Prefixed numerical series are to all intents and purposes complete. It is the “A” to “Z” Series holes that are incomplete. The latter series are available only as “Surface to Basement” depth / grades and “best” intersections. Given the overall reliability of these data the assessed resource is thus quoted as “Surface to Basement”. In Block 6 a full suite of data are available and in this area, assumptions as to overburden removal and stripping ratios have been made based on various depth / grade scenarios.

The most recent work by Anglo, B.M.I and Amdex are far from satisfactory. Attempts to quantify the resource fail due to incomplete detail of source of data, detail of the data used, confusion in resource definitions and conflicting volumes and grades.

This assessment is an attempt to draw together all generations of data, to create a geological model to explain both emplacement and to substantiate prospectivity projections. In itself this attempt has deficiencies, poor data retrieval from Archives, poor correlation between various exploration programs and lack of a composite base map have made quantification of this resource within AusIMM “JORC Code guidelines impossible **at this time.**

Work is ongoing and the degree of reliability will improve as data is accumulated, converted to metric units and mapping updated.

6. ASSESSMENT PARAMETERS

The aim of this assessment was to determine the overall tenor and volume of the Scotia Project. Available drill hole data were highly variable. In some instances the total depth of the hole had been sampled, analysed and reported, in others only the recognizable "wash" intersections were sampled and analysed. In many cases the only grade available was "Surface to Basement" of holes with the highest grade intersection being noted.

This assessment provides grade as a "Surface to Basement" grade for each hole as this conforms with the bulk of detail available. Thus the resource quoted here contains a considerable volume of overburden; sands, pug and sandy clays that contain little or no cassiterite.

The resource has been divided into a number of sections or blocks. These are selected on the basis of the amount and reliability of drill data and associated geological information. The "Main Resource" is contained within three Blocks, Scotia – Scotia Feeder, Block 6 – Lochaber and Block 7 – Scoloch.

6.1 CONVERSIONS

All historical drilling data that pre-dated implementation of the metric scheme was converted from "Imperial" to "Metric" using the following factors:

LENGTH:	Foot	=	0.3048 metres
	Chain	=	20.117 metres
	Link	=	0.2012 metres
GRADE:	oz/cubic yard	=	37.07978 gm/m^3
	Lb/cubic yard	=	593.2763 gm/m^3
VOLUME:	cubic yard	=	0.765 cubic metres
Where required	Weight of Sn x 1.27	=	weight of SnO_2

6.2 DRILL HOLE LOCATIONS

A number of generations of plots of drill hole locations are available. The most comprehensive is that of Standard, 1971. Some errors in his plotting have been noted and where applicable his plot has been amended to reflect the corrected locations. The Standard, 1971 map forms the background location plan for this assessment.

While many Mineral Resources Tasmania drill logs are annotated with AMG co-ordinates they are of a general nature and are not site specific. Where AMG co-ordinates have been determined these have been added to converted drill logs.

6.3 CUT-OFF GRADES

It is unclear as to what cut-off grades were used in the previous assessments undertaken by The Department of Mines (1955), Storey's Creek Tin (1966), Standard, 1971 and Gibson, 1976. A study of the ore outlines suggests that a figure of 2 oz / cu yard was used however as actual grade was not quoted this is problematical.

The general ore outline of Standard, 1971 and Gibson, 1976 has been used as a guide as to location of the main channels. In addition the plan accompanying this text depicts the centre line of the channel, the position being taken from a "Bedrock Topographic Plan" also by Standard (1971). Within the channel a cut-off grade of 100 gm / m^3 has been used and the general resource is contained within this grade outline.

In several places, grades lower than the cut-off, occurring along the edge of the channel have been included to provide a more consistent ore outline. Any holes with grades below cut-off occurring within the ore outline are included in grade calculations. It should be noted that where logs were not available holes were not included in the calculations.

Drill hole data within the Block 6 is the most comprehensive and includes all assay information. Within this Block two additional calculations were prepared, specifically this Block has been treated as follows:

- The principal calculation for all holes is "Surface to Basement", that is the average grade for the hole includes barren to low grade overburden, taken to contain zero values, mid grade upper tin bearing wash and high grade basal wash;

- The second calculation involves only the assayed section of each hole, excluding barren overburden and being the average of the mid grade upper wash and high grade basal layer; and
- The third calculation is for the basal section calculated by applying the 100 gm / m^3 cut-off.

These calculations allow some idea of stripping ratios for the "Lead" to be determined.

6.4 RESOURCE BOUNDARIES

The resource is contained within a 100 gm / m^3 boundary except in one or two instances where for the sake of continuity of the outline lower grade holes have been included. The boundary thus defined varies slightly from that of Standard, 1971 and Gibson, 1976 in that it defines a slightly smaller areal outline. Where drill hole information is sparse or absent the outline of Standard, 1971 has been used.

6.5 RESOURCE BLOCKS

The "Resource" has been subdivided into seven sections sections, the main "Measured Mineral Resource" comprising three blocks, the associated extensions comprising an additional three zones, the "Indicated Mineral Resource" and the areas of prospectivity or "Inferred Mineral Resources".

Specifically the sections include:

A MAIN RESOURCE AREA

This is a "Measured Mineral Resource" comprising the following blocks:

- BLOCK 7 - The most northern block, intensively drilled by the Department of Mine, 1935 to 1944, 83 holes were used to compute the resource. Two groups of data are available, the "B" series holes in which all assay intersections are provided and the "A" to "Z" series where only "Surface to Basement" values are available. This section of the resource has been treated as "Surface to Basement" of hole;

- BLOCK 6 - Well drilled, the "B" series holes, 32 holes used to compute the resource; and

- SCOTIA MAIN - Well drilled, "A" to "Z" series of the Department of Mines. 99 holes used to compute the resource. Values only "Surface to Basement" of holes.

B RESOURCE EXTENSIONS

This is an "Indicated Mineral Resource" comprising the following blocks:

- LOCHABER LEAD - Lies between the old Lochaber workings and Block 6, Scotia. Only 7 holes define the resource however the general trend and tenor are known from old drilling and workings. Extensions in both depth and areal extent to the resource base are postulated;

- SCOTIA FEEDER - A zone of prospectivity defined by 12 holes exists down Lead from the heavily drilled Scotia Mine section between that point and the confluence of the Scotia and Lochaber Leads; and

- SCOLOCH LEAD - Is located north of Block 7 and is lightly drilled, 12 holes define the resource. Most of the ore boundary is problematical and ill defined, few holes define or penetrate the main "Lead" channel.

C PROSPECTIVITY

In addition to the above resources there are a number of highly prospective tributary feeder systems that are included as "Inferred Mineral Resources". Prospectivity is based on geological models, geological continuity and historical drill records and commentary. Included are:

- MALLINSONS - A short "Lead" extending from the old Mallinson's open cut to the Scotia Feeder section of the "Lead";
- NEWHAVEN - Deeper ground extending north westwards from the old Newhaven workings and postulated to join the Doone Lead south of Block 6;
- DOONE - A poorly defined lead running north eastward from the vicinity of the old Doone workings and joining the Scotia Feeder; and

- STINKING CREEK - Inferred from drilling, a tributary entering the main lead in Block 7.

6.6 IMPLICATIONS OF THE AusIMM "JORC" CODE

The "Australasian Code for Reporting of Mineral resources and Ore reserves" (the "JORC" Code) sets out minimum standards, recommendations and guidelines for **Public Reporting** of exploration results. This code was developed by the Joint Ore Reserves Committee of the Australasian Institute of Mining & Metallurgy, the Australian Institute of Geoscientists and the Minerals Council of Australia.

The "JORC" Code is fully set out in Monograph 9, AusIMM and for the sake of brevity is not repeated in this text. The resource definitions used in this assessment comply with that set of reporting standards.

7. THE RESOURCE

Historical information suggests that their have been four significant previous attempts to define the Scotia resource. These are summarized in the following text and where applicable comment is provided.

7.1 SUMMARY OF PREVIOUS ASSESSMENTS

A DEPARTMENT OF MINES

During the period 1935 to 1944 the Department conducted a comprehensive drilling program, a total of 855 holes. The Department appears to have computed a resource, Blake, 1955; results provided in Table 3 have been taken directly from his report and have been converted to metric units.

TABLE 3

SCOTIA ORE RESOURCE

DEPARTMENT OF MINES, TASMANIA – BLAKE, 1955

BLOCK	HOLES	AVERAGE DEPTH metres	VOLUME m^3	AVERAGE GRADE g / m^3	Tonnes SnO_2 70% Sn
1	25	26.82	240,975	261.04	62.9
2	46	31.29	443,461	270.68	120.04
3	25	36.78	1,059,161	333.72	353.46
4	10	32.06	198,107	388.59	76.98
5	57	36.06	963,801	247.69	238.72
6	22	35.66	447,644	257.70	115.36
TOTALS	**185**	**33.46**	**3,353,149**	**288.48**	**967.46**

Results are averages over entire depth of hole

Blake notes that the Department tested only about 1/3 of the total “Lead”

B STOREYS CREEK TIN MINING COMPANY

This group conducted drilling and associated test work during the period 1964 to 1966. In 1966, J. K. Couper of that Company calculated the resource, his report and data were not available at the time of preparation of this assessment. Table 4 provides a summary of the Storey's Creek results, all data has been converted to metric units.

TABLE 4
STOREYS CREEK TIN RESOURCE ASSESSMENT
AFTER COUPER, 1966

BLOCK	VOLUME m^3	AVERAGE GRADE gm / m^3 SnO_2 at 70% Sn	TONNES CONCENTRATE 70% Sn
1	380,524		58
2	1,347,225		265
3	1,847,618		582
4	474,017		32
5	1,638,982		298
6	1,469,213		204
TOTAL	**7,155,284**	***201.11***	**1439**

NOTE #: ***This figure is higher than that quoted by Storey's Creek; lack of a supporting report does not enable checking of results.***

C B.M.I MINING

In 1970 B.M.I. Mining commenced test work within the Scotia – Lochaber area. In 1971 Standard produced a report detailing his assessment of the resource. Summarised results of his work appear as Table 5.

TABLE 5
B.M.I. MINING – AFTER STANDARD, 1971

BLOCK	VOLUME OVERBURDEN m^3	VOLUME ORE m^3	TOTAL ORE PLUS OVERBURDEN m^3
1	2,264,115	201,808	2,465,923
2	3,209,798	102,215	3,312,013
3	3,173,565	152,996	3,326,561
4	3,612,403	327,407	3,939,810
5	5,673,344	323,619	5,996,963
6	NO CALC	NO CALC	NO CALC
TOTAL	**17,933,225**	**1,108,045**	**19,041,818**

NOTE #: B.M.I. Did not attempt to quantify the grade of the resource

D AMDEX MINING (KIBUKA / GIBSON, 1976)

Amdex Mining took control of the area in 1976 following relinquishment by B.M.I. Mining. The Amdex / Kibuka reserves appear to be based on the report by Gibson, 1976. Some confusion exists within their reporting as to what constitutes actual reserves and the following tabulation, Table 6, details the three versions of their resource assessments.

Where possible, Gibson appears to have selected resource blocks corresponding closely to those selected by previous workers, that is, the Blocks 1 to 6 criteria used originally by the Department of Mines in their calculations.

All figures given in Table 6 have been converted to metric units where applicable

TABLE 6

AMDEX / KIBUKA / GIBSON RESOURCE ASSESSMENTS 1976

BLOCKS	GIBSON 1 SEPARATE ORE / O/B	GIBSON 2 ORE + O/B	AMDEX (Neale, 1980) VOLUMES	AMDEX (Neale, 1980) GRADE
ALL, O/BURDEN m^3	10,748,615			
ALL, ORE m^3	1,347,243			
GRADE g/m^3	1,222.15			
1		1,819,602		
2		1,405,709		
3		2,094,834		
4		3,322,996		
5		2,807,550		
6		NOT CALC		
PROVEN m^3			7,233,221	178.4
PROBABLE m^3			4,855,598	73.3
TOTAL VOLUME	12,095,858	11,450,691	12,088,819	
TOTAL SnO_2 Tonnes	**1,646.5**	**1,540.0**	**1,647.0**	

Although the figures quoted by Neale, 1980 agree closely with those quoted by Gibson (1), it is unclear as to:

- How Gibson derived his two sets of figures given a 100 tonne difference in contained SnO_2; and
- Where Neale, 1980 derived his Proven and Probable status reserves from the previous calculations by Gibson, 1976.

It is also apparent that Gibson had access to all the drill records and was able to select the high grade basal sections and thus define the resource into overburden and ore blocks.

7.2 SUMMARY OF RESULTS OF THIS ASESSMENT

In preparing this assessment all available drill hole data was assembled and where required converted from old “Imperial” units to metric equivalents using the factors as set out in Section 6.1. These conversions appear as Volume 2 of this assessment, specifically as Appendixes. These are in Excel format.

The lack of complete analytical data for most of the drill holes necessitated quoting the resource for “Surface to Basement”, that is for overburden plus ore. In only one section, Block 6 was it possible to assess the grades of the various horizons as in this section all the “B” series holes were available with complete assay information.

A RESOURCE “SURFACE TO BASEMENT”

The most reliable data is encompassed within three sections, specifically Scotia Main, Blocks 6 and 7. Drill data and geological information within these blocks is classified as reliable to very reliable. In addition to these sections three areas, the Scotia Feeder, Lochaber and Scoloch have less drill coverage and reliability and are classified as only fair.

Results are provided as tabulations, specifically Tables 6 and 7

TABLE 6

SCOTIA RESOURCE CALCULATOR

SUMMARY TOTAL INTERSECTIONS - SURFACE TO BASEMENT

ORE BLOCK	AVERAGE DEPTH m	AVERAGE GRADE g/m^3 SnO_2	WEIGHTED D x G	NUMBER HOLES	AREA m^2	VOLUME m^3
MEASURED MINERAL RESOURCE						
SCOTIA MAIN	28.60	301.85	8,632.91	99	87,020	2,488,772
BLOCK 6	37.78	404.16	15,269.16	32	50,720	1,916,202
BLOCK 7	35.71	334.21	11,934.64	83	81,650	2,915,722
	102.09		35,836.71	214	219,390	7,320,695
AVERAGE	34.03	351.03		214		7,320,695
INDICATED MINERAL RESOURCE						
SCOTIA FEEDER	42.57	422.78	17,997.74	12	68,320	2,908,382
LOCHABER	37.03	274.03	10,147.33	8	87,950	3,256,789
SCOLOCH	38.24	157.44	6,020.51	12	230,800	8,825,792
	117.84		34,165.58	32	387,070	14,990,963
AVERAGE	39.28	289.93		32		14,990,963

Data used to produce this summary sheet can be viewed in Volume 2

Areas were computed by direct measurement of ore outline from the plan after that of Standard, 1971. Ideally the methodology should have followed Simpson's Modified Rule however insufficient "Depth V's Assay" data precluded the use of this technique. Doubt exists as to the validity of the average depth of the Scotia Feeder area; the depth should lie between that quoted for Scotia Main and Block 6.

TABLE 7
INFERRED MINERAL RESOURCE

SCOTIA RESOURCE CALCULATOR

SUMMARY TOTAL INTERSECTIONS - SURFACE TO BASEMENT - PROSPECTIVITY

RESOURCE DATA BASED	NUMBER HOLES	AVERAGE DEPTH m	AVERAGE GRADE g/m³ SnO_2	AREA m²	VOLUME m³	CONTAINED SnO_2 Tonnes
PROSPECTIVITY						
SCOLOCH	12	36.78	350.00	300,000	11,034,000	3,862
LOCHABER	7	37.03	350.00	100,000	3,703,000	1,296
MALLINSONS	NIL	35.00	350.00	30,000	1,050,000	367.5
NEWHAVEN FEEDER	NIL	28.00	350.00	40,000	1,120,000	392
DOONE FEEDER	NIL	30.00	350.00	100,000	3,000,000	1,050
STINKING CREEK FEEDER	NIL	36.00	325.00	40,000	1,440,000	468
TOTALS					21,347,000	7,435

Data used to compile this summary sheet can be viewed in Volume 2.

Grade information based on few holes; in both Scoloch and Lochaber it is doubtful if any holes intersected the central zone of the main channel. Historical information and data from adjoining Block 6 would indicate that the average grade for the Lochaber Block would be expected to be in the order of 350.0 to 400.0 gm / m^3.

B BLOCK 6 - SELECTED RESOURCE SECTIONS

The drill data within Block 6 was complete with respect to drill logs and assayed sections. This additional information enabled the following calculations to be completed, specifically:

- Surface to basement calculation;
- Basal tin bearing section at 100 gm / m^3 cutoff; and
- Sampled intersection (Conventionally lower wash horizon less overburden, no cut-off applied).

Tabulation of the various calculations is provided in Volume 2. Two calculations were made, one for the same resource outline as set out in Section "A" in the preceding text and the second for a broader areal zone specifically where high grade basal layers could be recognized, the calculation including zones where "Surface to Basement" values did not meet the 100 gm / m^3 cut-off criteria.

TABLE 8

BLOCK 6 RESOURCE REVIEW

SCOTIA RESOURCE CALCULATOR

SCOTIA RESOURCE CALCULATOR BLOCK 6 AREA

SUMMARY ALL INTERSECTIONS

BLOCK CRITERIA		AVERAGE DEPTH m	AVERAGE GRADE g/m^3 SnO_2	WEIGHTED D x G	NUMBER HOLES	AREA m^2	VOLUME m^3	CONTAINED SnO2 Tonnes	STRIPPING RATIO
100 gm / m^3 CUT-OFF OUTLINE									
SURFACE TO BASEMENT		37.78	404.16	15,269.16	32	50,720	1,916,202	774.45	ZERO
ASSAY SECTION									
	OVERBURDEN	20.01				50,720	1,014,907		
	ORE	16.68	913.43	15,236.01	32	50,712	845,876	676.30	1.2 : 1
100 gm / m^3 CUT-OFF									
	OVERBURDEN	30.58				50,720	1,551,018		
	ORE	6.12	2,365.29	14,475.57	32	50,720	310,406	639.65	5.0 : 1
UNRESTRICTED OUTLINE									
SURFACE TO BASEMENT		35.25	321.26	11,324.42	44	54,700	1,928,175	619.45	ZERO
ASSAY SECTION									
	OVERBURDEN	19.35					1,058,445		
	ORE	15.90	712.27	11,325.09	44	54,700	869,730	619.48	1.2 : 1
100 gm / m^3 CUT-OFF									
	OVERBURDEN	29.56					1,616,932		
	ORE	5.53	1,963.93	10,860.53	44	54,700	302,491	594.07	5.3 : 1

The above tabulation clearly indicates that the application of strict assay selected cut-off grades results in an improved tin return. Using the 100 g / m^3 cut-off example a very tenuous relationship can be achieved between grades achievable by partial stripping to the top of recognizable was or to the higher grade basal section, specifically:

- Surface to Basement:

Grade	404.16 gm / m^3

- Assay Section Overburden Removed:

Grade	913.43 gm / m^3
Enhancement	2.3 X
Stripping Ratio	1.2 : 1

- Basal High Grade Overburden Removed:

Grade	2,365.29 gm / m^3
Enhancement	5.9 X
Stripping Ratio	4.8 : 1

These factors indicate that in relation to the Scotia Main "Measured" Resource:

a. Stripping of the barren overburden to the top of the wash horizon would result in an amended resource of:
3,993,106 m^3 Overburden
3,327,589 m^3 of wash at an average grade of 807.37 gm / m^3 SnO_2 at 70% Sn.

b. Stripping Overburden to top of high grade basal wash would result in an amended resource of:
6,058,506 m^3 of overburden
1,262,189 m^3 of wash at an average grade of 2,071.08 gm / m^3 SnO_2 at 70% Sn

The above calculations assume continuity of the resource away from and similar to that exhibited by Block 6. The similarity between the grades of the various Blocks comprising the Main Resource would indicate that this assumption and such calculation have merit. Clearly the availability of data enabling thorough calculation such as that conducted for Block 6 would be more accurate however until those data are located the above will serve as a guide to the amenability of the resource to pre-stripping of overburden.

7.3 THE RESOURCE

The following are quoted as "Resource" and are for the main Scotia Lead comprising:

- **The Main Area - High Reliability:**

  "Measured Mineral Resource"

  Scotia Main

  Block 6

  Block 7

A "Surface to Basement" Resource comprising 7,320,695 m^3 of wash plus overburden containing an average of 351.03 gm / m^3 of SnO_2 as concentrate at a grade of 70% Sn

2,570 tonnes of SnO_2 concentrate

- **Resource Extensions – Low to Medium Reliability:**

  "Indicated Mineral Resource"

  Lochaber

  Scoloch

  Scotia Feeder

A "Surface to Basement" Resource comprising 14,990,963 m^3 of wash plus overburden containing an average of 289.93 gm / m^3 of SnO_2 as concentrate at a grade of 70% Sn

4,346 tonnes of SnO_2 concentrate

8. PROSPECTIVITY

Sufficient historical geological information exits to indicate that the resource quoted in the previous section of this text does not represent the full potential of the Scotia Project. The outline of the "Lead", and the relationship of tributary feeder stream systems to dramatic changes of direction of that main "Lead ", suggest that tin bearing tributary feeder palaeo-stream systems are a potential major contributors to the tin load in the main "Lead". Table 8 details the prospective extension zones or blocks.

8.1 THE MAIN CHANNEL

The main channel has been reasonably well drilled however there are several areas where the boundaries have not been accurately defined. Further drilling in these sections may well increase the dimensions of the resource however given the level of drill coverage such extensions may not add dramatically to either volume or grade, overall contained tones of concentrate would however increase.

8.2 TRIBUTARY CHANNELS

A SCOLOCH EXTENSION AREA:

Few drill holes appear to have intersected the main channel, 12 holes have been used to compute the resource figure. Extrapolation of data from the adjoining well drilled block, Block 7, indicates that the average grade of 213.93 gm / m^3 quoted in previous tabulations is conservative. Further the "Lead" appears to broaden in this zone, possibly due to some marine influences as Scoloch enters the marine embayment of the Great Northern Plain just north west of the map sheet.

B LOCHABER EXTENSION AREA:

This is again a lightly drilled area with many holes failing to intersect the "Lead". Historically the Lochaber was one of the highest grade producers in the Scotia region and the average grade quoted in Table 8 is considered conservative. Extrapolation from adjoining Blocks and from data related to the old workings suggests a "Surface to Basement" grade of in excess of 400 gm / m^3 for this extension zone.

C MALLINSONS EXTENSION AREA:

The deviation of the main Scotia Lead north of the old Newhaven workings suggests that a right bank tributary enters the system just west of the old Mallinson's workings. This has been tentatively named Mallinson's Lead. Grade may be substantially higher than that used to estimate the prospectivity, +400 gm / m^3 may be achieved in this zone.

D NEWHAVEN FEEDER EXTENSION:

Drilling ahead of the old Newhaven workings suggests that this deposit forms a channel trending westward towards the postulated location of Doone's Lead. Grades are expected to be in the range of those in the adjoining Scotia Main Block that is between 350 and 400 gm / m^3.

E DOONE FEEDER EXTENSION:

Drilling ahead of the Doone face and a line of old Departmental drill holes (1902 Series) has delineated the presence of this tributary "Lead" trending north east and entering the system just south of the Lochaber – Scotia confluence.

F STINKING CREEK FEEDER EXTENSION:

Departmental drilling, circa 1935 – 1944 indicates a tributary feeder entering the Scotia Lead from the east in the Stinking Creek area. A sharp westward deviation in the main lead at this point supports the presence of such a feeder.

Geological evidence suggests that other feeder tributary leads may also be present along the main "lead". Several areas in the Scoloch section and one further area in Block 7 have marked deviations or widening of the main lead suggestive of the influence of such feeder alluvial systems.

9. CONCLUSIONS

This assessment has enabled the following conclusions to be made, specifically:

a. The current resource base at the Scotia project is considered to be:

- The Main Channel

"Surface to Basement", a Measured Mineral Resource comprising 7,320,695 m^3 of wash plus overburden containing an average of 351.03 gm / m^3 of SnO_2 as concentrate at a grade of 70% Sn, 2,570 tonnes of SnO_2 concentrate.

- Resource Extensions:

Encompassing the Lochaber, Scotia Feeder and Scoloch Blocks.
"Surface to Basement", an Indicated Mineral Resource comprising 14,990,963 m^3 of wash plus overburden containing an average of 289.93 gm / m^3 of SnO_2 as concentrate at a grade of 70% Sn, 4,346 tonnes of SnO_2 concentrate.

b. In addition to the resource contained within the Main Channel and the Resource Extensions the Scotia Project is also considered to have the following prospectivity:
A further "Surface to Basement" Inferred Mineral resource comprising 21,347,000 m^3 at an average grade of 348.31 gm / m^3 of SnO_2 or 7,435 tonnes of tin concentrate contained within major tributary feeder systems.

c. Studies of fully reported assay and sample intersections within Block 6 of the resource indicate that the main tin bearing alluvial wash zone is overlain by barren or near barren sand, clay and puggy drift. Application of specific cut-off grade parameters indicates that this overburden material can be selectively removed from the resource at stripping ratios of 1.2 : 1 "overburden to ore".

d. It has been also recognized that the Main Channel contains a consistent high grade basal layer, around 5 metres in thickness, grades of up to 40 kg / m^3 have been reported from this zone. Further this zone exhibits consistency "Line to Line" and appears from information extrapolated from Block 6 to have an "Overburden to ore" ratio of in the order of 4.8 : 1.

10. RECOMMENDATIONS

The bulk of the historical data has now been converted from Imperial to Metric units. These conversions were made assuming original computations and calculations were correctly undertaken thus actual calculations and conversions from raw field data to quantitative results have not been checked in detail. Spot checks have been undertaken.

In order to upgrade the resource to "JORC" Code standard the following are recommended:

a. All location information should be digitized and transferred to a metric mapping compilation. Tabulation of this data should take the form of Arcinfo or Mapinfo format tabulations and include AMG hole locations, topographical levels, surface contours and other geographical features, assay intersections and grades, depths to basement.

b. The new resource outlines re-plotted and accurate geological and assay cross sections constructed.

c. Various ore grade cut-of grades applied to those data and an assessment of various stripping ratios and mine batters applied to the data.

d. On the basis of this current assessment application be made to Mineral Resources Tasmania to convert part of EL 32 / 2001 into a Retention License.

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