000
81-1532.

UNION CORPORATION (AUSTRALIA) PTY. LIMITED

REPORT ON MAPPING

MOUNT PARIS TIN PROSPECT - E.L. 11/77
NORTH-EAST TASMANIA

CONTENTS

Plans

1. Mt. Paris Prospect - Geology & Geochemistry

AMG REFERENCE POINTS ADDED

2. " " - Cross Sections

001

993002

UNION CORPORATION (AUSTRALIA) PTY. LIMITED

REPORT ON MAPPING

MOUNT PARIS TIN PROSPECT - E.L. 11/77
NORTH-EAST TASMANIA

ATTACHED

Plan No.		Scale
1.	E.L. 11/77 : Mt. Paris Prospect. Geology and Geochemistry	1:2000
2.	E.L. 11/77 : Mt. Paris Prospect. Cross sections	1:2000

Appendix 1 : Petrographic Descriptions.

1. INTRODUCTION

The Mt. Paris tin prospect is centred on the old Mt. Paris tin mine located within E.L. 11/77 (see figure 1). The deposit consists of a small griesen cupola and greisen vein swarm, within a kaolinised tin-bearing alkali granite, situated just below the contact with the overlying sediments. The area was considered to have potential in two ways:-

1) That the kaolinised granite and greisen veins may bulk together to give a large tonnage, low grade deposit suitable for open cut mining

2) That there could be sheeted greisen deposits present either in the Mt. Paris mine area or concealed beneath the Mathinna Beds sediments in nearby areas of high topographic relief.

2. LOCATION AND ACCESS

The prospect is located approximately 4 kilometres south of Branxholm, north-east Tasmania (see figure 1). Access into the area is by a four wheel drive track from Branxholm.

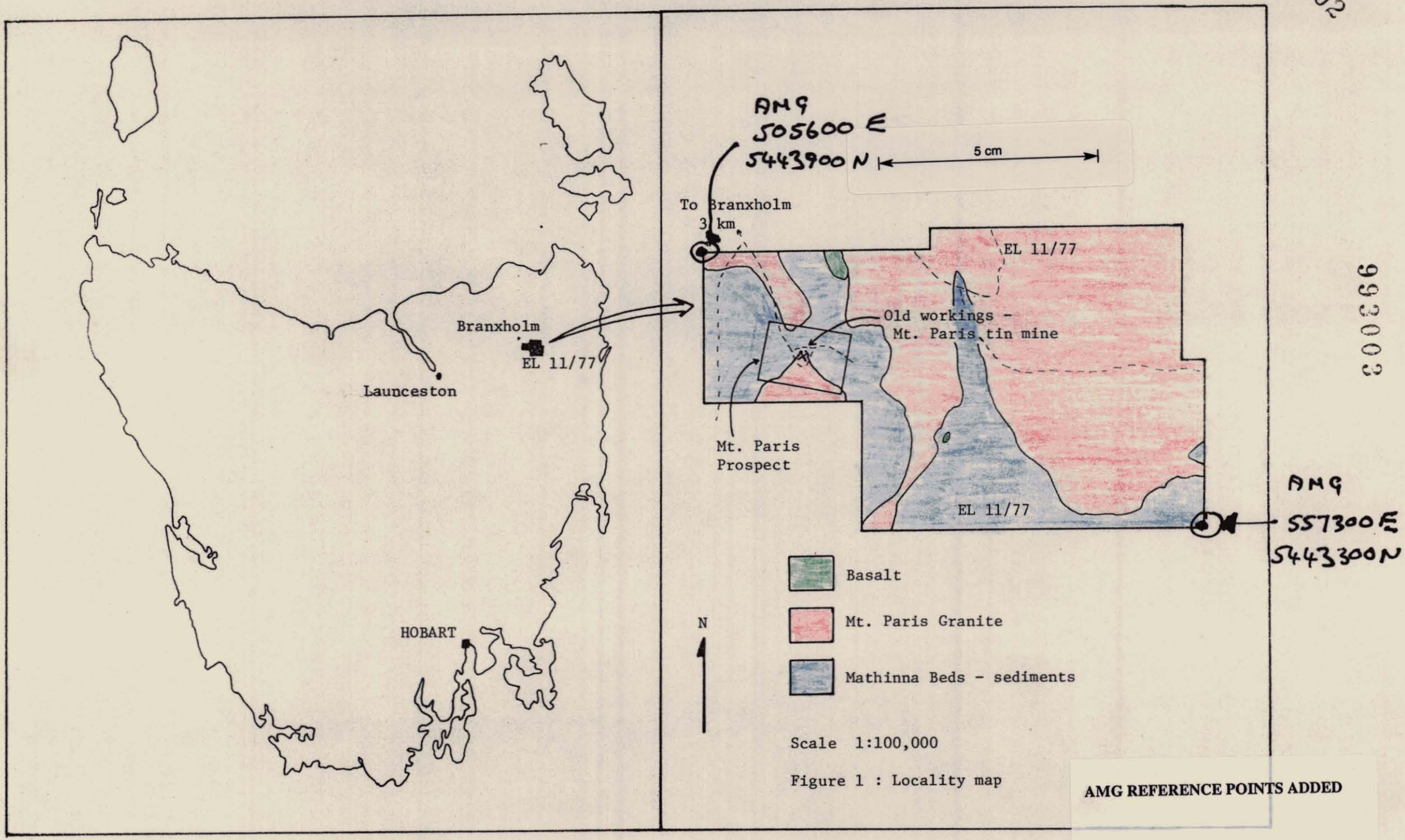
The topography is moderately steep, rising to 623 metres at Mt. Paris, with the main drainage to the south. The area is covered in rain forest type vegetation.

3. SUMMARY OF PREVIOUS EXPLORATION

The Mt. Paris (or Nugget) tin mine has been worked at various times from 1882 to the 1930's. The earlier workers were only interested in mining the greisen lodes and were responsible for the numerous adits in the area. From 1925, all the mining activity was concentrated on the soft, kaolinised granite which was found to be tin bearing. The sluicing operations carried out formed the large open pit.

More recent exploration has been carried out by the Tasmanian Mines Department (1962) and Newmont (Pty.) Ltd. (1978). Newmont drilled a series of shallow percussion drill holes just to the north of the Mt. Paris Mine to test for the presence of a hidden greisen cupola under the sediments.

002



Scale 1:100,000

Figure 1 : Locality map

AMG REFERENCE POINTS ADDED

993003

4. SUMMARY OF WORK CARRIED OUT BY UNION CORPORATION (AUSTRALIA) PTY. LIMITED

Tracks, major streams and topographic highs were surveyed initially for base control. Geological mapping and further surveying was then carried out using compass, chain and clinometer. Spot height readings were taken every 50 metres along the survey traverses using an aneroid barometer, corrected for daily fluctuations, and converted to true height above mean sea level.

Rock samples for assay were taken from greisen and granite near the granite/sediment contact. Some sediments containing quartz - muscovite - tourmaline veins were also sampled. All greisen veins were chip sampled and three rock chip sample traverses carried out over the greisen cupola. A suite of the various rock types were submitted for thin section examination.

5. GEOLOGY AND MINERALISATION

Sediments of the Siluro-Devonian Mathinna Beds have been intruded by granitic rocks belonging to the Upper Devonian - lower Carboniferous Mt. Paris mass granite complex. Contacts between the sediments and granites are relatively flat lying except in the vicinity of the Mt. Paris tin mine where a domal irregularity in the roof of the granite is present. The granite/sediment contact here dips radially at about 40°. A greisen cupola and associated greisen vein swarm have formed in the apical portions of the dome. Granites in the vicinity of the dome structure have differentiated into three types; muscovite adamellite, porphyritic muscovite adamellite and muscovite granite (see section 5.2).

Thin section descriptions and comments on the various rock types are contained in appendix 1.

5.1 Mathinna Beds

The Mathinna Beds consist of siltstones and fine to medium grained quartz sandstones which are barely affected by metamorphism. However weak hydrothermal alteration, presumably related to the nearby granites, has formed an interstitial assemblage of muscovite-sericite-tourmaline together with veins and fracture fillings, of quartz-muscovite $\pm$ tourmaline. There appears to be no correlation between intensity of alteration with distance from the granite contact except in the immediate vicinity of the contact where the sediments may be slightly more recrystallised and muscovitic.

Bedding in the area strikes northerly with westerly dips of 62°-80°. Joints are poorly developed and variable in strikes and dip.

5.2 Granitic Rocks

Three granitic rock types are recognised:-

i) medium to coarse-grained hypidiomorphic-granular muscovite adamellite with minor biotite

ii) porphyritic muscovite - biotite adamellite

iii) medium grained allotromorphic-granular muscovite granite with minor biotite.

These appear to be differentiates of common plutonic source, the muscovite adamellite representing the central part of the intrusion, with the porphyritic adamellite being developed at a higher level within the intrusion near the contact with the sediments. The muscovite granite is a further differentiate within a domal irregularity in the roof of the intrusion. A small greisen cupola and greisen vein swarm is found within the muscovite granite. These greisens are almost entirely composed of quartz and muscovite.

The greisen cupola occupies the highest part of the dome structure. The contact with the underlying granite is apparently flat lying, though the contact with the overlying sediments dips at about 40°.

Underlying the cupola is a greisen vein swarm consisting of veins from a few centimetres up to 4 metres wide. These veins trend at about 100°M (range 078°-126°M) with steep northerly or vertical dips (range 57° - vertical).

Other small occurrences of greisen are found elsewhere in the area. At Bakhaps Lode a large north-westerly trending greisen vein is found within a greisenised porphyritic adamellite. Scattered greisen float is found near Hilltop summit and may indicate a greisen vein swarm or cupola immediately below. Two small greisen veins and scattered areas of greisen float are also found within the adamellites south of the Mt. Paris mine (see Plan 1).

Three joint sets are recognised in the granite rocks. The prominent set strikes at between 85° and 99° with steep dips to the north and south; lesser sets strike at 160° with vertical dips, and at between 035 and 057° with steep northerly to vertical dips.

5.3 Mineralisation

The greisen veins, cupola and parts of the muscovite granite are tin bearing. This tin is present as visible cassiterite within some greisen veins but is usually too fine grained to be seen. Muscovite in these rocks also appears to contain significant amounts of tin. For example, quartz-muscovite greisen samples UCT 494 and 495 contained no visible cassiterite in thin section but assayed 540 p.p.m. tin and 0.11% tin respectively. UCT 495 contained roughly twice as much muscovite as UCT 494.

Chalcopyrite, with minor pyrite and arsenopyrite, has been reported from the greisen veins (Nye, 1933). Bakhaps Lode is said to contain minor cassiterite and blebs of molybdenite (Nye, 1927).

6. GEOCHEMISTRY

6.1 Mt. Terror greisen cupola

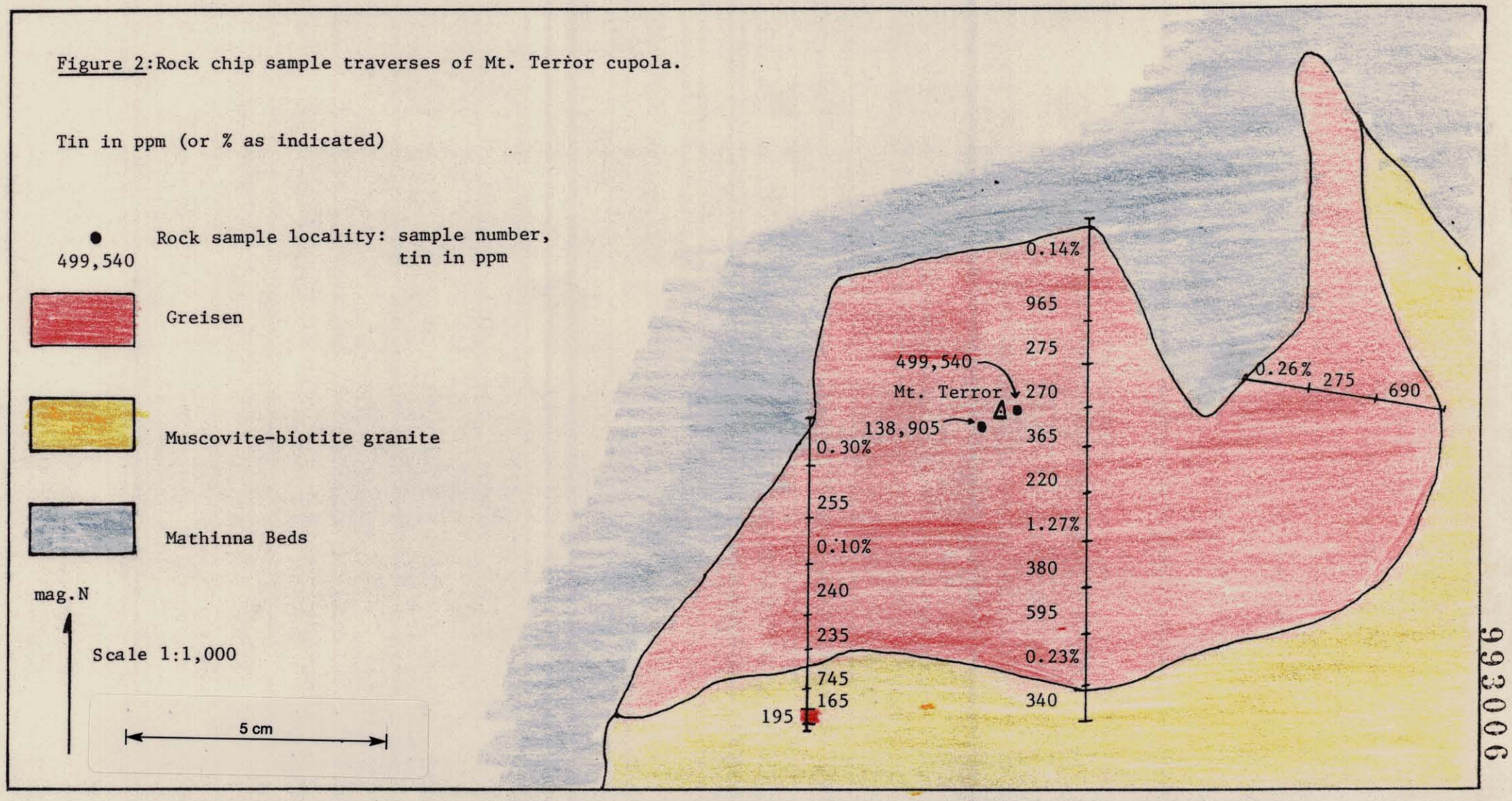
Three continuous rock chip sample traverses were carried out over the cupola (see figure 2). Tin values ranged from 0.024% to 1.270% with an overall weighted average value of 0.14% tin. Two other rock chip samples of greisen taken from near the Mt. Terror summit contained 905 and 540 p.p.m. tin (see figure 2).

N.B.: An adit driven into the cupola prior to 1925 was reported to have intersected 78 feet (24 metres) of greisen containing 0.4% tin. The adit terminated in greisen. In a rise off this adit a 50 feet (15 metre) vertical section of greisen was reported to contain 0.57% tin.

6.2 Greisen veins in the Mt. Paris Mine

The greisen veins in the mine area contain tin values ranging from 10 p.p.m. to 1.78%. The rich patches, however, are very limited in extent and the weighted average mean values of all these veins is around 250 p.p.m. The higher values are found in the vicinity of the greisen cupola.

Figure 2: Rock chip sample traverses of Mt. Terror cupola.



Just outside the immediate mine area a large greisen vein system, known as the Appalachian Lode, can be traced over a strike length of 300 metres. This vein ranges from a few centimetres to 4 metres wide and contains an average of 0.19% tin (values range from 685 p.p.m. to 0.48%). N.B. A quarterly production report dated September, 1898, on lodes in the area recorded tin values of 0.79% in the ore treated.

6.3 (Kaolinised) muscovite granite in the Mt. Paris Mine

Samples collected in this programme and by Newmont (1978) contained between 70 p.p.m. and 0.13% tin. The highest values were obtained in the vicinity of the greisen cupola and greisen veins. Values dropped off rapidly away from these areas.

An adit driven into the granite near the cupola prior to 1925 intersected 358 feet (109 metres) of granite containing 0.102% tin. This same adit intersected 24 metres of greisen containing 0.4% tin (see section 6.1). Test drill holes drilled in the late 1920's and early 1930's prior to the commencement of sluicing operations, gave average tin values for the granite of 790 p.p.m.

Tin values in granitic rocks away from the mine area range from 10-50 p.p.m. with greisenised samples containing 70 to 170 p.p.m. tin.

6.4 Bakhaps Lode

Greisen samples from this vein contain 115 to 740 p.p.m. tin. A sample of greisenised adamellite nearby assayed 170 p.p.m. tin. Newmont (1978) reported 400 p.p.m. tin in the greisen though granites north of the lode were said to contain between 0.01% and 0.23% tin.

6.5 Other Greisen Occurrences

Greisen is found as float on sediments at Hilltop. These assayed 130-450 p.p.m. tin.

Areas of greisen float and two small greisen veins located within the adamellites were found to contain up to 385 p.p.m. tin though most values were less than 150 p.p.m.

6.6 Hydrothermally veined Mathinna Beds sediments

These samples contained veinlets of quartz-muscovite ± tourmaline. All the values are considered anomalous, ranging from 10 p.p.m. to 220 p.p.m tin. Values of 50-220 p.p.m. at Hilltop and 75-150 p.p.m. on Mt. Paris may be significant in indicating proximity to a tin-bearing granitic source.

7. DISCUSSION

A dome structure or cusp on the granite intrusion is present in the Mt. Terror - Mt. Paris mine area. This is indicated by:-

(i) steepening of the granite-sediment contact from generally flat lying to around 40^{o}

(ii) the greater degree of differentiation of the granite rocks in this area

(iii) a small greisen cupola deposit at Mt. Terror with an underlying greisen vein swarm within mineralised granite.

The granite and greisens within the cusp contain variable amounts of tin. Tin values generally increase towards the apical parts of the dome structure.

The known mineralisation in the greisen cupola, greisen vein swarm and mineralised granite is too low in grade and tonnage to be economic. However, lateral extensions of the mineralisation to the west and vertical extensions under the greisen cupola remain untested. These may bulk together to form a moderate tonnage low grade tin deposit. Unconfirmed reports of 24 m of greisen grading 0.4% Sn and 15 m grading 0.57% Sn in the deeper part of the cupola are significant in this light.

Similar cusps may be hidden under sediments at Hilltop and Mt. Paris. Areas of greisen float near Hilltop summit are especially encouraging. Quartz-muscovite veined sediments in these areas contain anomalous tin values, up to 220 p.p.m.

8. PROPOSALS FOR FUTURE EXPLORATION

It is proposed that:-

a) four angled percussion holes be drilled to test possible lateral and vertical extensions of the existing greisen cupola at Mt. Terror (see plan 2). Locations of these drill holes are shown on plan 1. The proposed specifications are as follows:

	Inclination	Bearing	Length (metres)
MT-1	-60°	077°m	50
MT-2	-60°	180°m	100
MT-3	-60°	180°m	100
MT-4	-60°	180°m	100

b) one angled percussion hole, HT-1, be drilled at Hilltop to locate the source of the greisen float. The location is shown on plan 1. The specifications are:-

inclination:	-60°
bearing:	215m
length:	100 metres

c) One 100 metre vertical percussion drill hole be drilled at Mt. Paris to locate and test the underlying granite/sediment contact

d) the feasibility of carrying out a gravity suvery over both Hilltop and Mt. Paris prior to the commencement of drilling should be considered. This may give better control on drill hole locations and specifications.

9. CONCLUSIONS

(i) A dome structure or cusp on the granite intrusion is present in the Mt. Terror - Mt. Paris mine area

(ii) The granite and greisens within the cusp contain variable amounts of tin

(iii) The known mineralisation is too low in grade and tonnage to be economic However, lateral and vertical extensions of the mineralisation are possible and are as yet untested.

(iv) Similar cusps may be hidden under sediments at Hilltop and Mt. Paris.

10. RECOMMENDATIONS

(i) The drilling programme as outlined in section 8 should be carried out.

(ii) Consideration should be given to a gravity survey over Hilltop and Mt. Paris prior to the commencement of drilling.

(iii) Re-examination of other known tin occurrences in the area should be carried out in the light of the results obtained in this programme.

P Edwards.

P.W. EDWARDS

009

993010

REFERENCES

Clarke, N.G., 1978: Exploration Rpt. for February, 1978, Mt. Paris Project. Unpubl. Rpt. for Newmont Pty. Ltd.

Clarke, N.G., 1978: Final Rpt. E.L. 11/77, Mt. Paris Project. Unpubl. Rept. for Newmont Pty. Ltd.

Jack, R., 1962: Tin Deposits, Branxholm. Tech. Rpt. No. 6. Tas. Dept. of Mines.

Nye, P.B., 1927: Rpt. on Bakhap Lode, Branxholm. Geol. Surv. Typed Rpts. Tas. Dept. Mines.

Nye, P.B., 1933: Report on the Mt. Paris Mine. Geol. Surv. Typed Rpts. Tas. Dept. Mines.

APPENDIX 1 : PETROGRAPHIC DESCRIPTIONS

011

COMMENTS

Each thin section offcut is treated with HF and sodium cobaltinitrite; K-spar is accordingly highlighted by an intense yellow stain on the thin section offcuts of 489, 490, 491. In response to questions raised in your covering letter, the following comments are made -

1. The gross adamellitic composition of 489 and 490, gradational to the more potassic, and thus granitic 491, suggests that a common plutonic source is quite feasible, with variations in texture being due to specific physical/spatial positions in the pluton. Conceivably 489 is characteristic of the central undifferentiated part of the intrusion. Sample 490 may be a marginal, high-level or dyke-like differentiate, and 491 conceivably an incipiently pegmatitic cupola.

The same accessory phases and their similar peculiar mode of occurrence in 490 and 491 certainly suggests common genesis.

2. Samples 493 and 494 both consist entirely of muscovite and quartz; however there is substantially more muscovite in 494; and texturally 493 is substantially coarser than 494.

These characteristics are consistent with the reported occurrences of greisen cupola (493) and greisen vein (494).

**

UCT 489 : medium grained, leucocratic, muscovite adamellite; essentially unaltered; only accessory is biotite

This rock has a homogeneous hypidiomorphic granular texture, composed of intricately interlocking, evenly disposed,, allotriomorphic quartz and subhedral to euhedral felspars; with minor irregular micas.

Quartz (30%) is quite coarse (1 - 2 mm) and some is incipiently poikilitic. Potash felspar (30%) is orthoclase, flecked by incipient sericite alteration, and contains rare inclusions of muscovite and plagioclase. Average size is about 1 mm.

Plagioclase (30%) has a composition of about Ab_{72} as also flecked with trace sericite.

Muscovite flakes (7 - 10%) are particularly ragged and more or less intergranular; accessory very pale-brown (leached) biotite is also present.

UCT 490 : fine to medium grained, mesocratic and porphyritic adamellite, essentially unaltered; includes muscovite, biotite; very localised accessory sphene/rutile, lesser apatite zircon xenotime ?cassiterite

This rock has an irregular porphyritic texture. Phenocrysts have an uneven size from 1 - 6 mm, and consist mainly of quartz (10 - 15% of the rock), but rare phenocrysts of perthitic and/or sericitised plagioclase, of muscovite and lesser leached biotite are also present.

The groundmass has an average grain size of 0.5 mm and consists of a fairly homogeneous allotriomorphic granular aggregate of quartz, orthoclase and plagioclase, in equal abundance, and each forming about 25% of the whole rock. Minor fine ragged flakes of muscovite and of pale brown biotite (commonly chloritised) are randomly disposed.

Yellowish-brown tourmaline forms a skeletal intergranular network over two areas about 3 mm across.

Two ill-defined 'clots' about 1.5 mm across, consist of microcrystalline quartz-felspar mosaic incorporating coarse, skeletal, optically continuous biotite, and studded with small (0.25 mm) stumpy prisms of turbid sphene/rutile; lesser zircon, apatite, ?xenotime; trace fluorite and possible cassiterite. (The sphene/rutile may be stanniferous.)

014

UCT 491 : medium to coarse (?incipiently pegmatitic) leucocratic muscovite granite; minor biotite; trace rutile and zircon mainly in localised cluster

This rock has a medium to coarse generally allotriomorphic granular texture. It is composed of evenly intergrown allotriomorphic quartz (30%); much coarser, prismatic orthoclase (35 - 40%) which commonly contains irregular skeletal intergrowths of plagioclase (i.e. perthitic); also of small and large prismatic crystals of plagioclase (20 - 25%). Some felspars are flecked by and contain clusters of sericite.

Muscovite (7 - 10%) is intergranular and forms fine primary networks within some felspars. Accessory pale brown (? leached) biotite flakes carry minute inclusions of rutile.

A single 'clot' 2 mm across has essentially the same composition as those in 490, including small prisms of rutile, and zircon (but without the other accessories).

015

UCT 493 : coarse, massive quartz-muscovite rock;
greisen (or pegmatitite);
no accessory phases

This rock consists of a homogeneous mass of medium to coarse allotriomorphic quartz, with subordinate (25 - 30%) coarse muscovite, randomly disposed as single flakes and in clusters.

By definition this is a greisen, however there are no accessory minerals, and no evidence of a former rock which may have been pervasively, pneumatolytically replaced.
(Is it simply a quartz-muscovite pegmatite?)

016

UCT 494 : fine grained massive aggregate of quartz and muscovite; (greisen)

This sample consists of a homogeneous massive aggregate of allotriomorphic quartz mosaic (50%), crowded with somewhat more irregular, similarly fine mosaics of randomly interlocking muscovite (50%). Average grain size is about 0.5 mm.

Some of the micas and intergranular spaces are lined by limonite. There are no accessory minerals, and no evidence of a former rock being replaced.

UCT 495 : greisen of massive allotriomorphic quartz incorporating a similar amount of muscovite; minor relict quartz and felspar phenocrysts; rare crystals of rutile and zircon in a cluster

A relict porphyritic texture is manifest in this rock by cairly discrete phenocrysts about 5 mm across, of subrounded quartz grains (10%), and leached clay replicas after felspar crystals (7 - 10%) of similar size.

These are randomly scattered through a finer crystalline (0.5 mm) aggregate of allotriomorphic quartz with intimately intergrown, more or less intergranular muscovite, commonly as poikilitic flakes, optically continuous over areas of about 1 mm. Quartz and muscovite occur in subequal abundance in this groundmass.

There is no evidence of existing or pre-existing felspar in the groundmass, thus presumably some of the quartz and muscovite has replaced (or substitues for) primary felspar. Several small prismatic crystals of sphene/rutile and lesser minute zircon crystals are clustered in a muscovite flake 2 mm across.

It is possible, but not conclusive that these are a relict of the 'clots' described in 490 and 491.

018

COMMENTS

The main aim of this investigation was to establish variations in the grade of metamorphism of sediments, including variations in the degree of hydrothermal alteration, in the sediments, at different distances away from granite contact.

The evidence indicates that the sediments are variably very fine through to medium grained quartz sandstones. Very fine muscovite (including sericite) is virtually ubiquitous throughout intergranular areas. These micas are quite randomly disposed and accompanied by accessory to minor tourmaline, lesser titaniferous oxides and trace zircon.

This interstitial (intergranular) assemblage is basically of hydrothermal origin, albeit probably, partly derived from and/or replacing original intergranular pelitic material.

Veins in most samples consist of hydrothermal quartz, generally carrying muscovite (except in 392). Tourmaline also occurs in veins in 384, it is marginal to veins in 391, absent from veins in 392.

The sandstones generally show metamorphic compaction, and only incipient 'quartzitic' textural development, but the original clastic grains are not really recrystallised. This development is slightly more advanced in 383 (1 m from the contact), also muscovite is coarsest in this sample, and muscovite-rich bands, along incipient fissures occur only in this 383 sample.

cont...2

Comments cont...

Muscovite and tourmaline however are as abundant in 384 (300 metres from the same contact), and the fact that it is finer appears to be a function of the grain size of the host rock, rather than distance from the hydrothermal source. The intensity and abundance of muscovite alteration is similar in 385 (50 metres from the contact), and in 391 and 392. Tourmaline is less in 385, 391 and 392, than in 383 (1 m distant) but also less than in 384 (300 m distant).

The evidence suggests that there is no predictable variation in muscovite alteration, or tourmaline abundance, which may be confidently correlated with distance from contact. However thin muscovite-rich tracts along incipient fissures, seem to be confined to sediments immediately adjacent to the contact, also 'quartzitic' development may be slightly more advanced nearer the contact.

UCT 383 : massive, meta quartzite;
subordinate hydrothermal muscovite + accessory tourmaline,
wide spread/intergranular and along vague fissures.

Field note: One metre above granite contact.

This rock is dominated by a homogeneous, quite compact, more or less polygonal aggregate of subangular detrital quartz grains, ranging in size from 0.05 mm to 0.3 mm. This is essentially a metamorphic (quartzitic) aggregate.

Fine (0.3 mm) flakes of muscovite (10 - 15%) are randomly disposed throughout intergranular areas. Locally they are relatively more concentrated in ill-defined bands apparently along incipient fissures. Minor grains of greenish-brown tourmaline (5%) is also scattered, more or less intergranular (to 'poikiloblastic') associated with the muscovite. The micas are variably limonitised.

Given the field setting of this rock the muscovite and associated tourmaline are interpreted as manifestations of hydrothermal alteration, possibly developed from former intergranular (meta) clays within the original sandstone.

UCT 384 : massive quartz silt to very fine grained quartz sandstone; ubiquitous intergranular (hydrothermal) muscovite lesser biotite and tourmaline;
vein of coarser quartz, muscovite, tourmaline trace biotite.

Field note: 300 metres from granite contact.

About 65% of this rock consists of a vaguely bedded, albeit massive homogeneous and compact aggregate of subangular to subrounded quartz grains, average size about 0.1 mm.

The majority of intergranular contacts are occupied by randomly oriented, very fine muscovite (including sericite), (15 - 20%), lesser biotite (5 - 10%), and disseminated fine tourmaline (5 - 10%).

A vein of coarser quartz, subordinate muscovite tourmaline and lesser biotite cuts the rock.

UCT 385 : massive, silty, to medium grained quartz sandstone, minor hydrothermal sericite, lesser limonitised TiO and accessory tourmaline, fairly wide spread through intergranular areas.

Field note: 50 metres from granite contact.

This is a fine quartzose sediment, but less sorted than those above, and with a more or less discrete limonite phase.

It consists mainly of a fairly compact, incipiently quartzitic aggregate of subangular to subrounded quartz grains which range in size from 0.04 mm to 0.3 mm.

Fine muscovite, including sericite (10 - 12%) is almost ubiquitous along intergranular contacts. Accessory greenish-yellowish brown tourmaline crystals (1 - 2%), and more abundant fine granular limonite (5 - 10%) is also scattered, intergranular. Most limonite appears to permeate and replace titaniferous oxides.

UCT 391 : massive, fine to medium grained quartz sandstone; hydrothermal sericite trace tourmaline and Ti 'Os intergranular, veins of quartz-muscovite + marginal tourmaline.

Field note: Topographic high ? above granite.

This is a fairly homogeneous, compact but somewhat in equigranular metamorphic aggregate of quartz grains ranging from very fine sand to medium grained sand size.

Fine muscovite, including sericite (12 - 15%) is more or less ubiquitous throughout intergranular contacts. Individual flakes have a quite random disposition indicating the hydrothermal, (rather than metamorphic) origin.

Accessory very fine titaniferous granules, also accessory fine tourmaline crystals (1 - 2%) have a similar disseminated mode of occurrence.

Patchy veins of quite coarse quartz-muscovite. Ragged tourmaline occurs in the adjacent host rock, vaguely around the margins of these, but tourmaline does not occur within the actual veins.

024

UCT 392 : massive, fine to medium grained quartz sandstone, hydrothermal sericite, and accessory tourmaline extensive intergranular;
numerous veins of quartz and accessory biotite.

Field note: Topographic high ? above granite.

This is a vaguely bedded fine to medium grained and rather poorly sorted quartz sandstone, metamorphosed to produce an incipiently quartzitic texture. Fine, rather ragged flakes of hydrothermal muscovite (15%) are randomly disposed throughout virtually all intergranular areas.

Minor ragged grains of bluish-greenish-brown tourmaline and some greenish tourmaline (total 5%), also trace zircon and titaniferous granules have a similar, random intergranular mode of occurrence.

Numerous veins and stringers of hydrothermal quartz are roughly parallel, albeit coalescing through the rock. These contain more comb-like aggregates of relatively more euhedral quartz crystals than in veins in other samples. These veins carry accessory oxidised biotite, but no muscovite which is common in veins elsewhere.

2917

BAKHAPS LODE

MT. PARIS
PM-1
623m

MT TERROR
560m

HILLTOP
526m

Appalachian lode

sediment/granite breccia float

NUGGETY CREEK

MP 1 MP 2 MP 3 MP 4 MP 5 MP 6 MP 7 MP 8 MP 9 MP 10 MP 11 MP 12 28-30(10) 30-32(15) 32-34(<10) MP 13 MP 14 38-40(50) MP 15 MP 16 34-36(15) 36-38(30) 38-40(50) MP 17 MP 18

A E B C D F

MN

0 10 20 100 200 m

LEGEND

- Four wheel drive track
- Track
- Stream
- Topographic high height in meters above sea level
- Survey point
- Bluff
- Topographic contour in metres
- Adit
- Shaft or rise
- Geological boundary
- Geological boundary - uncertain
- Float boundary
- Bedding: strike/dip
- Joint: strike/dip
- 467(190)0·1 or fl. — Sample locality: sample no.; tin in ppm unless otherwise specified; sample width in metres where measured; or float sample(fl.)
- 1 (637) — Rock chip sample traverse; tin in ppm unless otherwise specified
- MP 14 38-40(50) — Newmont Pty Ltd percussion drill hole with granite intersection indicated; tin in ppm, given in brackets
- 383 — Petrographic sample locality
- MT-1 — Proposed U.C.A. percussion drill hole
- Greisen
- Fine to medium grained muscovite granite
- Porphyritic muscovite adamellite
- Coarse-grained muscovite adamellite
- Mathinna Beds - quartz sandstones and siltstones
- Quartz ± tourmaline ± muscovite veins in Mathinna Beds

UNION CORPORATION (AUSTRALIA) PTY LIMITED

E.L 11/77

MT. PARIS PROSPECT

GEOLOGY AND GEOCHEMISTRY

PLAN 1

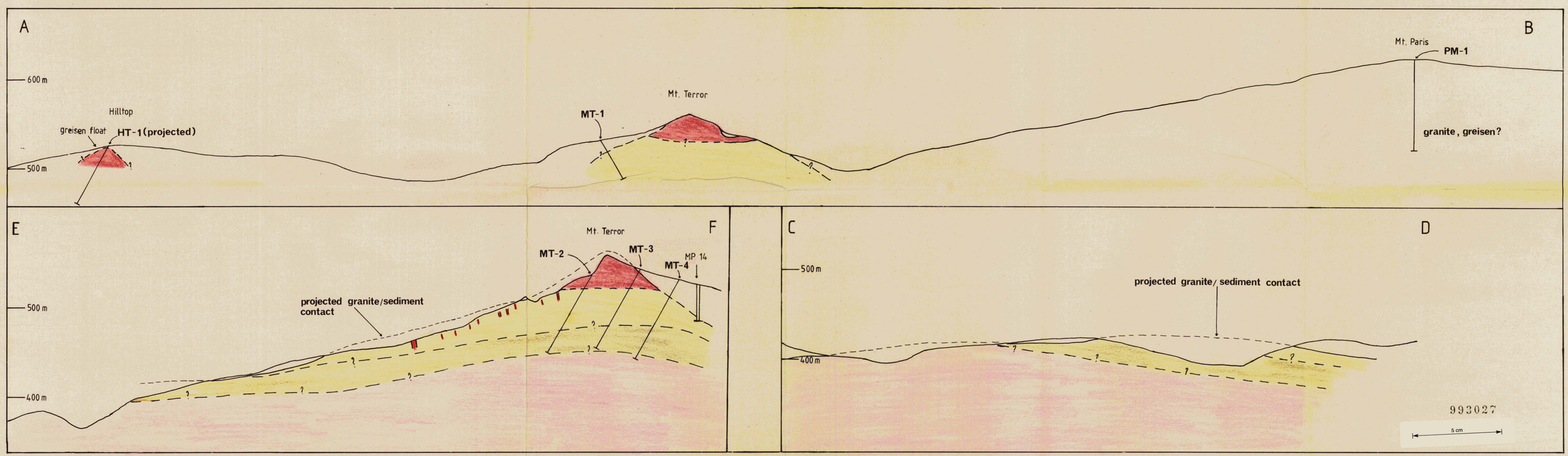
SCALE 1:2000	P.W.E	FEBRUARY, 1981

5 cm

2917

993026

81-1532



SCALE : 1:2000
V = H

Refer to geology plan for legend

Neumont percussion drill hole

proposed percussion drill hole

UNION CORPORATION (AUSTRALIA) PTY. LTD

E.L.11/77

MT. PARIS PROSPECT

CROSS SECTIONS

PLAN 2 2918

SCALE 1:2000	P.W.E	FEBRUARY 1981

81-1532