



Geotech International Pty Ltd

ABN 59 057668 434

**214 YORK ST
SUBIACO
WA 6008**

tel/fax: (08) 9380 9382

paskins@westnet.com.au

**Scottsdale Project
Relinquishment Report
and
First Annual Report for EL69/2007
for the Period 04 March 2008 to 03 March 2009**

Date: February 2009

Author:- Paul W. Askins, MSc., CP Geo., MAusIMM



**PAUL W ASKINS
GEOLOGY**

SUMMARY OF ACTIVITIES FOR THE SCOTTSDALE PROJECT
for the Period 04 March 2008 to 03 March 2009

- Compile previous work
- Interpret remote airborne geophysical and other digital datasets
- Assess prospectivity

CONTENTS

- 1.0 Introduction/Abstract
- 2.0 Tenement Details
- 3.0 Location and Access
- 4.0 Geology
- 5.0 Mineralisation
- 6.0 Previous Exploration
- 7.0 Work Carried Out During the Period
- 8.0 Prospectivity
- 9.0 Selected References

APPENDIX 1

APPENDIX 2

Figures 1 to 9

Tables 1 and 2

KEYWORDS

Geology/Mineralisation:

Scottsdale granite batholith, Mathinna Supergroup, greisen, alluvial tin, deep leads

Minerals/ Commodities:

Molybdenum, Tin, Tungsten, Monazite, Kaolin

Deposits/Occurrences:

Mt Stronach molybdenite, Ruby Creek alluvial tin

Exploration:

Stream sediment anomalies, data review, prospectivity

COORDINATES

All lat/long co-ordinates in this report refer to the AGD66 Datum

All AMG co-ordinates in this report refer to the AGD66 Datum - Zone55

1.0 Introduction/ Abstract

This report details the exploration activities conducted by Geotech International Pty Ltd within EL69/2007 at Scottsdale (The 'Tenement'), for the period 04 March 2008 to 03 March 2009.

The Tenement covers an area with a known molybdenum deposit, kaolin occurrences, scattered alluvial tin/monazite occurrences, and sand/gravel deposits.

Geotech's two primary exploration targets were molybdenum and hard rock tin/tungsten, and a lesser target was deep lead alluvial tin/zircon/monazite/gems.

During the period all available previous work was evaluated and the prospectivity was appraised.

The area has been assessed as having limited prospectivity, and the current world-wide commodity downturn makes such low ranking exploration targets unattractive, so it has been decided to surrender the Tenement.

2.0 Tenement Details

Tenement details are shown in Table 1.

Table 1 – Scottsdale Project Tenement Details

Tenement	Holder	Date Applied	Date Granted	Area	Two Year Expenditure Commitment
EL69/2008	Geotech International Pty Ltd	Nov 2007	04 March 2008	155km ²	\$80 000

3.0 Location and Access

The Tenement is located just east of the town of Scottsdale in NE Tasmania. The location is shown on Fig 1.

4.0 Geology

Granites of Devonian age are intrusive into a folded and faulted package of Cambrian/Ordovician to Devonian turbidites belonging to the Mathinna Supergroup, Figs 2, 3 and 5. Some Tertiary (?Eocene) basalts occupy paleovalleys. Much of the area is covered by sand of late Tertiary to Recent age: much is presumably reworked dunal sands and some is reworked Tertiary river alluvium.

The terrain is hilly and dissected by a network of streams, the largest being the Great Forester River.

A prominent hill just east of Scottsdale is Mount Stronach, Fig 4, a granitic body being part of the upper Devonian Scottsdale batholith. Recently released airborne radiometrics show that several phases of the granites at and north of Mount Stronach occur, and so it is not wise to rely on published descriptions of the granite here as being representative of all phases. Taheri and Bottrill (2005) state that the granite is “light coloured, pink, equigranular, coarse to fine-grained, and consists of quartz, perthitic K-feldspar, plagioclase and iron-rich biotite. In the Mt Stronach Pluton the plagioclase is close to pure albite and the biotite is annite.” Westhoff in open file report 82-1863 stated that it is “a generally uniform pink, medium-grained biotite adamellite with very minor finer-grained aplitic and pegmatitic phases”. But he also states that “An area of outcrop bounded roughly by.....contains an abundance of finer grained biotite-poor granitic and aplitic phases together with minor pegmatite (quartz-microcline-biotite) veins”, and that “The granitic rocks are notable for their lack of well developed jointing”.

I believe that the terrain has been rejuvenated by faulting in the Eocene and later in the Miocene as evidenced by the presence of prominent hills such as Mt Stronach, by the basalts/deep leads in the region occupying old drainages, and by the general dissection of the terrain. This has important implications for prospectivity when trying to find the bedrock sources of alluvial tin in the area north of Mt Stronach and for assessing the area for hidden deep leads.

5.0 Mineralisation

The Tenement covers an area with a known molybdenum deposit, kaolin occurrences and scattered alluvial tin/monazite occurrences.

Molybdenum

At Mt Stronach, mainly at the peak and to the west of the peak, molybdenite mineralisation occurs as platy crystals up to 5cm in diameter and as irregular "splashes" which often show no obvious relationship to joints, fractures or veins. Traces of pyrite and chalcopyrite have also been noted. The mineralisation is described in several reports including Loftus Hills (1916) and UR1958_037 and TR5_73_75 by Hughes.

Westhoff in open file report 82-1863 stated that "The molybdenite mineralisation is not closely associated with any marked development of fractures, joints or quartz/pegmatitic veining, although low concentrations of subvertical joints and thin quartz veins have been observed in the general vicinity of some molybdenite occurrences", and that the mineralisation occurs "in fresh grey, equigranular biotite adamellite which shows no evidence of hydrothermal alteration". I believe however that it is likely that the granite is extensively highly altered because the feldspar is almost pure albite, (Taheri and Bottrill (2005)).

Tin

Scattered alluvial tin occurrences have been worked, mainly north of Mt Stronach. No production records are available.

Monazite

A creek named Monazite Creek drains north from Mt Stronach. Mining of alluvial monazite was attempted about 1900, see Appendix 1.

Kaolin

There are several kaolin occurrences in the district; these are probably a combination of hydrothermally altered granite modified by Tertiary weathering. Appendix 2 refers to the biggest known and worked deposit at Tonganah.

6.0 Previous Exploration

A summary of previous exploration activities for all commodities apart from kaolin and sand/gravel is presented in Table 2. All reports covering kaolin and sand/ gravel within the Tenement were read to determine if information on tin or other mineralisation was included, but none exists.

Table 2 – Scottsdale Project Previous Exploration Summary

Year/Company	REPORT No	Activities
Pre 1916 Tas Geol Survey	Hills, 1916	Prospecting Mt Stronach
1951 Tas Geol Survey	Keid UR1951_064-67	Boring for alluvial tin, monazite Ruby Ck area
1960 Tas Geol Survey	Hughes TR5_73_75	Diamond drilling Mt Stronach
1970 Aminco & Associates	70-0638	Inspection Mt Stronach
1971 Australian Hanna Limited	71-0724	Grid soil and rock dust Mt Stronach
1970, 1971 International Mining Corporation N.L.	70-0647 71-0796	Auger drilling/costeaning alluvials Ruby Ck area
1971 Oceanic Exploration Company	71-0826	Stream sediment sampling
1981 Hellyer Mining & Expln	82-1752 82-1763	Stream sed sampling Grid soils One diamond drill hole Rock Rb/Sr analyses Mt Stronach
1981 Union Corp	81-1582 81-1650 82-1694	Stream sediment sampling Rock chip sampling

7.0 Work Carried Out During the Period

Work during the period has consisted of

- Compile all past company exploration data, government reports, research data.
- Compile recent NE Tasmanian airborne magnetic and radiometric data, process and interpret.
- Assess prospectivity for molybdenite and tin and for deep leads.

8.0 Prospectivity

8.1 General

The two main exploration targets were molybdenum and hard rock tin/tungsten, and a lesser target was deep lead alluvial tin/zircon/monazite/gems.

8.2 Airborne Magnetic and Radiometrics

The imaged magnetic data show that some of the granite is weakly magnetic, and basalt is delineated clearly, Fig 6.

The potassium, uranium and thorium channel images, Figs 7, 8 and 9, show that the granite at Mt Stronach has at least two phases; the north east sector with lesser K_U_Th response is the part with known Mo and Sn mineralisation and the southern part, possibly separated by a fault apparent on topographic/DEM imagery has a lesser K_U_Th response. The greater K response in the south suggests a more altered phase which could perhaps be more prospective than the known mineralised area; an alluvial tin occurrence south of Mt Stronach is shown in the Mirloch database, however this is probably a minor occurrence and furthermore the limited stream sediment sampling in the southern area shows no anomalies, (See below).

Surrounding the Mt Stronach granite body the Mathinna Beds show distinct elevated K_U_Th responses, which I interpret to be unmapped contact metasomatic haloes. These could be prospective zones for tin, molybdenum, copper or gold, but unfortunately there are no supporting geochemical stream sediment anomalies.

8.3 Granite intrusive level

The granite outcrop pattern to the north-east of Mt Stronach in many places follows topographic contours, with Mathinna Beds lying above, Fig 5. In many places there are (?)steep faulted contacts. The contour hugging contacts strongly suggest that the granite has a flat top here and has only just been unroofed. This is an ideal environment for the presence of mineralised systems such as greisens, however unfortunately none are mapped, and no extensive stream sediment anomalies exist. There are local stream sediment anomalies and tin bearing alluvials in the Ruby Creek area which could have greisen sources, but these are likely to be small.

The faulted contacts I believe are not all primary; many are distinct topographic features, Figs 4 and 5, strongly suggestive of Tertiary tectonism.

8.4 Mt Stronach molybdenum

All investigations show the limited prospectivity of the area for molybdenum.

- Prospecting/mapping/rock chip sampling all show low grades, with little apparent vein/joint or other control on the mineralisation.
- Soil sampling shows that the Mo anomalous area is very restricted
- Diamond drilling failed to find significant mineralisation
- Stream sediment sampling around the edges of Mt Stronach failed to generate new anomalous areas.

8.5 Prospectivity for tin

Despite the apparent prospectivity of the top zone of a granite as discussed in 8.3 above, no extensive stream sediment anomalies exist in the surveys by Oceanic Exploration Company and Union Corp; these surveys cover prospective areas reasonably well. The alluvial tin around Ruby Creek is small and so reflects a probable small unattractive bedrock source.

The source of a stream sediment tin anomaly just north of Mt Stronach, Fig 3, is not known but it can be traced upstream to a NE trending fault. This could be an exploration target but probably not a significant one because of the lack of supporting known alluvial tin.

8.6 Prospectivity for tungsten

No stream sediment anomalies occur and no tungsten is reported from the alluvials so prospectivity is poor.

8.6 Prospectivity for deep lead tin/monazite/zircon/gems

Previous workers have recognised large paleodrainages to the north-west and north-east of this area, (Jetsonville; and Ringarooma-Boobyalla) and Leaman (1971)(TR16_83_85) has speculated on the basis of gravity data that a paleodrainage runs north from about the Ruby Creek area (from the “North Scottsdale Basin and Lead”). There is no evidence for this on the geological maps, nor on DEM imagery, nor on topographic contours, and no evidence of basaltic filled paleovalleys on the recent magnetic data, and the radiometric data do not show any paleodrainages here. Only the current Great Forester River system shows any, for example, Th anomalies, suggesting that it and its terraces have been the dominant drainage from the Tertiary to present. It is thus concluded that no significant buried deep leads exist.

9.0 SELECTED REFERENCES

- Hills, L, 1916. Tungsten and molybdenum , *Mineral resources (Geological Survey of Tasmania) ; no. 1.*
- McLenaghan, M. P. 2006. The geochemistry of Tasmanian Devonian–Carboniferous granites and implications for the composition of their source rocks. *Tasmanian Geological Survey Record 2006/06.*
- TAHERI, J, AND BOTTRILL, R,S. 2005. Devonian granites and associated mineralisation in northeast and northwest Tasmania. *Tasmanian Geological Survey Record 2005/03.*
- BOTTRILL, R. S. 2001. Rare earth, tantalum and niobium minerals reported in Tasmania. *Tasmanian Geological Survey Record 2001/07.*

APPENDIX I

Alluvial monazite
Extract from BOTTRILL, R. S. 2001

Florenceite-(Ce) – (Ce, La, Nd)Al₃(PO₄)₂(OH)₆

This uncommon rare earth mineral is mostly white and is usually found in a fine-grained or earthy state.

Florenceite is found as fine-grained aggregates in pyrite-chalcopyrite-siderite-quartz ores at the Prince Lyell mine at Queenstown (Bottrill, 1992) and also occurs as fine-grained aggregates in sub-basaltic kaolinitic clays near Legerwood. Small grains were reported in heavy mineral concentrates from the Savage River area (Shannon *et al.*, 1985).

Ilmenorutile – (Ti,Nb,Fe)₂O₆

This rare black mineral was reported from microscopic studies of the Cleveland tin skarn, near Luina (Kwak and Jackson, 1986).

Monazite-Ce – (Ce,La,Nd)PO₄

Analyses recorded by the Tasmania Department of Mines (1969) indicate that the 'monazite' tested is mostly the Ce-dominant species, although it is possible other members of the group also occur (i.e. Th, La or Nd-dominant). Monazite is a common mineral in many granitic and metamorphic rocks and most tin deposits, particularly alluvial deposits.

Monazite was first recorded from Tasmania by Professor Stelzner of the Freiberg Mining Academy, Saxony, in lode material from the West Bischoff tin mine at Waratah around 1893. It has since been noted in lode occurrences in other mines of the Mt Bischoff district and also from mines of the Moina district and the nearby Mt Claude and Lorinna areas.

Notable primary occurrences include the Shepherd and Murphy mine (Barrie, 1965) and the All Nations mine (relatively coarse crystals) at Moina. It is also common as a trace constituent in many granites.

Detrital monazite has been recorded from most of the streams draining outcrops of Devonian granite and tin-tungsten fields in Tasmania; the mineral commonly occurs with cassiterite in placers. Tourmaline, topaz, corundum and zircon accompany the monazite and cassiterite along the Ringarooma River and in the Scottsdale district. The Briseis, Pioneer, Endurance and Echo alluvial tin mines all contain monazite, as does Fraser River (Naracoopa) on King Island (Barrie, 1965). In 1945, 32.5 t of monazite concentrates were produced from the Endurance alluvial tin workings at South Mt Cameron (Barrie, 1965).

Detrital monazite (<10.22% ThO₂) occurs in the Stanley River tin field north of Zeehan, although the mineral has not been observed in the cassiterite veins. It is pale yellow, transparent-translucent, sub-crystalline and waterworn. Monazite is abundant in the North Heemskirk tin field as fine-grained, brown alluvial grains in alluvial tin drifts, but is rare in the South Heemskirk placers. At Yellowband Plain, about 16 km south of Mt Cleveland, monazite carrying 20–30% rare

earths and 5–6% ThO₂ is widespread in stream placers. Other reported occurrences, probably alluvial or eluvial, include near St Valentines Peak; at the Cleveland Tin mine (in tin drift) at Luina; at Lottah (coarse specimens); and at the Salisbury mine near Beaconsfield (nearly white).

Attempts to mine the **Mt Stronach placers** (in the Scottsdale district) around 1900 failed because the concentrates yielded only 2% ThO₂, the only valuable extractable commodity at the time (used for making incandescent gas mantles). The composition of monazite from Mt Stronach is given in Table 1.

Monazite is stated to be rich in extensive ilmenite-rich deposits in beach sand near the Fraser River at Naracoopa, on King Island, where it occurs with cassiterite and other heavy minerals. Samples yielded the analysis in Table 1 (from Wylie, 1950). Black sand reported to contain monazite with titaniferous minerals, zircon, cassiterite and gold were mined at Low Head, northeast of Beaconsfield, in 1941. Other important monazite occurrences in beach sand include Badger Head (near Beaconsfield, reportedly abundant), Cape Barren Island, Rheban, Marrawah, Port Davey and Ocean Beach (Strahan).

Pyrochlore – (Na,Ca)₂Nb₂O₆(OH,F)

This mineral was tentatively reported by Twelvetrees (1903) in alkaline porphyry at Cygnet but remains unverified.

Perovskite – (Ca,Na,Fe,Ce)(Ti,Nb)O₃

This rare mineral occurs as an abundant accessory in the melilite-fasinite and melilite-basalt at Shannon Tier as microscopic yellowish-red grains and crystals (Edwards, 1950).

Some samples, supposedly found by a miner in the Hellyer or Que River mine between Waratah and Rosebery, were found to contain perovskite. This occurs as lustrous, mid-dark caramel-brown pseudo-cubes on a matrix of diopside and clinocllore. It seems an unlikely mineral in this geological environment, but closely resembles some perovskite from Italy.

Wt. %	Naracoopa	Mt Stronach
Ce ₂ O ₃	28.3	26.7
La ₂ O ₃	16.8	14.4
Nd ₂ O ₃	11.0	11.0
Pr ₂ O ₃	3.12	3.23
Sm ₂ O ₃	2.72	2.72
ThO ₂	6.09	7.29

APPENDIX 2

Tonganah Kaolin

Extract from TAHERI, J, AND BOTTRILL, R,S. 2005

within the stanniferous zone. The lenses occur immediately beneath the roof contact and are associated with a cupola-like structure approximately 200 m in diameter. Cassiterite occurs as erratic disseminations and aggregates.

Other workers have shown that the alkali granite is probably derived from a peraluminous magma (porphyritic adamellite) by fractional crystallisation. Field relationships and other data support this view.

Many features of the Anchor tin deposit are consistent with magmatic and post-magmatic processes of rare-element (Sn, W, Nb, Ta, Be, Mo, U, REE) formation described elsewhere in the literature. Typically, these deposits are formed in the apical zones of the last intrusives from polyphase intrusive complexes.

Field observations

The adits have been closed and the area partly rehabilitated, but good exposures of granite and mineralisation are apparent. At the mouth of some of the adits the contact between the mineralised Lottah Granite and overlying Poimena Pluton can be observed. Mineralised greisens near the adit mouths exhibit cassiterite, chalcopyrite, bornite, topaz, fluorite, siderite, molybdenite and other ore and alteration minerals.

Stop 2.4 (time permitting)

Derby Museum

The old Derby school, which was built in the late 1800s, has been converted into a museum. The museum exhibits historic records, relics and photographs of the well known tin mines which operated around northeast Tasmania from 1876 to 1940. Revel Munro, the manager of the museum, will provide a short talk on the history of tin mining in northeast Tasmania. The museum overlooks the Briseis mine, one of many mines which worked the Cainozoic alluvial tin deposits, including sub-basaltic deep leads, along the Ringarooma River valley early last century. The area has produced about 24 000 t of Sn metal and has an estimated resource of 0.85 Mt @ 1.4 kg/m³ tin.

Stop 2.5 (time permitting)

Alkali-feldspar granite, Tulendeena: Mt Stronach Pluton (553 700 mE, 5 441 300mN)

This granite body is a part of the Scottsdale Batholith, and here is a medium-grained, pink, alkali feldspar granite, poor in plagioclase and mafic minerals and locally miarolytic, with medium to large cavities (to 200 mm), containing quartz, orthoclase and minor biotite crystals to 50 millimetres. The pluton hosts some molybdenum mineralisation at the Mt Stronach mine, some six kilometres to the west, and is probably

the source of cassiterite and monazite-rich alluvial sediments in the area.

Stop 2.6 (time permitting)

Tonganah clay deposit, Tonganah road cutting (549 250 mE, 5 440 400 mN)

Kaolin was reported in railway cuttings at Tonganah in 1922 and a five acre reward lease was granted to the finder (C. Lutwyche). It was also observed in alluvial tin workings on the lower slopes of Mt Stronach and in cuttings on the Tasman Highway. A proline auger survey was conducted through the northeast of Tasmania in 1966 and several areas of leached, decomposed granite of potential filler clay quality were noted. This information was supplied to the Associated Pulp and Paper Manufacturers (APPM) geologist D. Dickinson, which led to a systematic drilling program in the area and ultimately to the Tonganah operation.

The mine produced about 765 kt of refined kaolin product from about 4.5 Mt of clay mined between about 1980 and 1998. The inferred resource in 1977 was 7.25 Mt (Dickinson, 1977), so nearly three million tonnes of resource may remain. The mine was closed in 1998, as the parent company changed from using kaolin as a filler in its paper production to calcium carbonate. The site has now been rehabilitated.

The Tonganah product

The plant produced a kaolinite filler clay. The particle shape and grain size would appear to be the principal causes of the Tasmanian kaolin being unsatisfactory as coating clay (see mineralogy, below). The 2 µm fraction constitutes only 30% of the product and electron micrographs show that the kaolin crystals occur as stacks measuring in excess of 10 µm rather than as the more desirable single pseudo-hexagonal crystals.

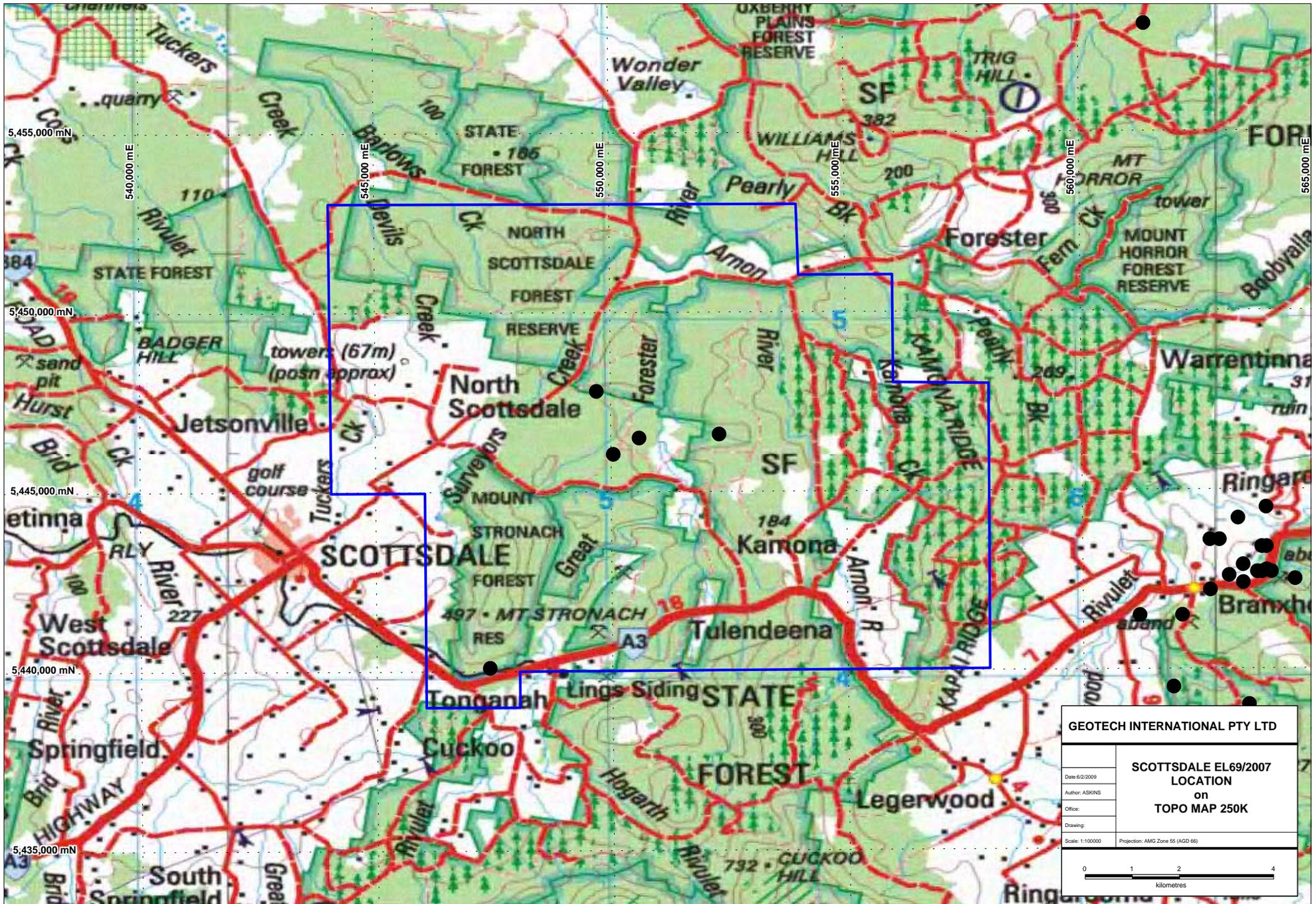
The production of coating clay in Tasmania may be possible by specialised treatment to disaggregate these stacks but it is unlikely that it would compete with the discovery of a higher quality naturally occurring kaolin. This latter possibility cannot be definitely excluded until all potential deposits have been examined.

Mineralogy of Tonganah clay

One sample of the filler clay (G400344) analysed by X-ray diffraction indicated a composition of 92 wt.% kaolinite, 5% mica, 2% quartz and 1% (orthoclase?) feldspar.

No halloysite was detected in the filler clay, but X-ray diffraction analysis of the clay fraction of a sample from the quarry floor indicated about 50% halloysite, 45% kaolinite and 5% illite.

A small sample of the filler clay was examined by Scanning Electron Microscopy. The kaolinite varies from very poorly crystalline through poorly crystalline to moderately crystalline, ragged and



GEOTECH INTERNATIONAL PTY LTD	
SCOTTSDALE EL69/2007 LOCATION on TOPO MAP 250K	
Date: 6/2/2009	
Author: ASKINS	
Office:	
Drawing:	
Scale: 1:100000	Projection: AMG Zone 55 (AGD 66)

FIG 1

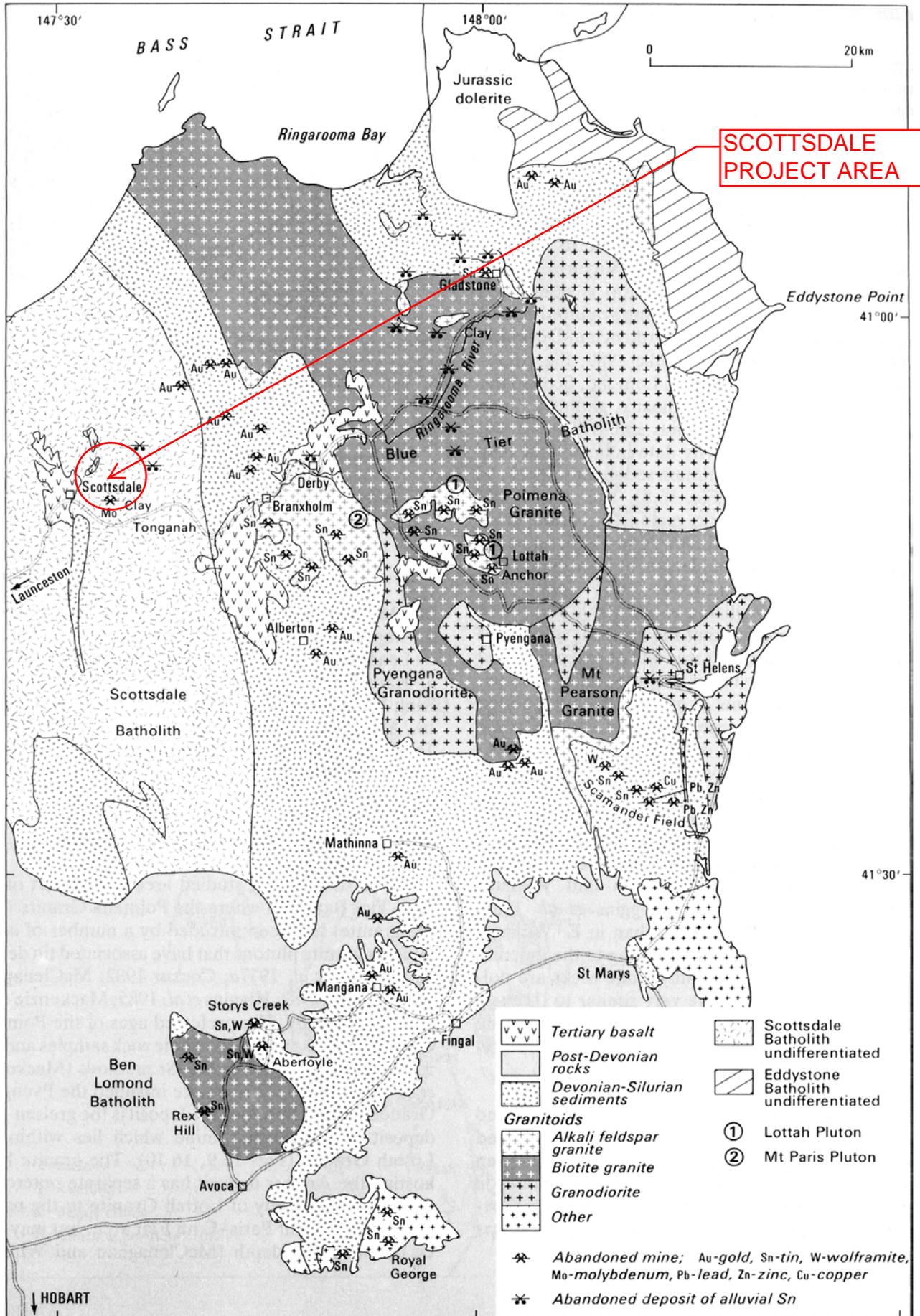


Figure 14

Simplified geological map of northeast Tasmania, showing the major batholiths, tin-tungsten and clay deposits (from Solomon and Groves, 1994).

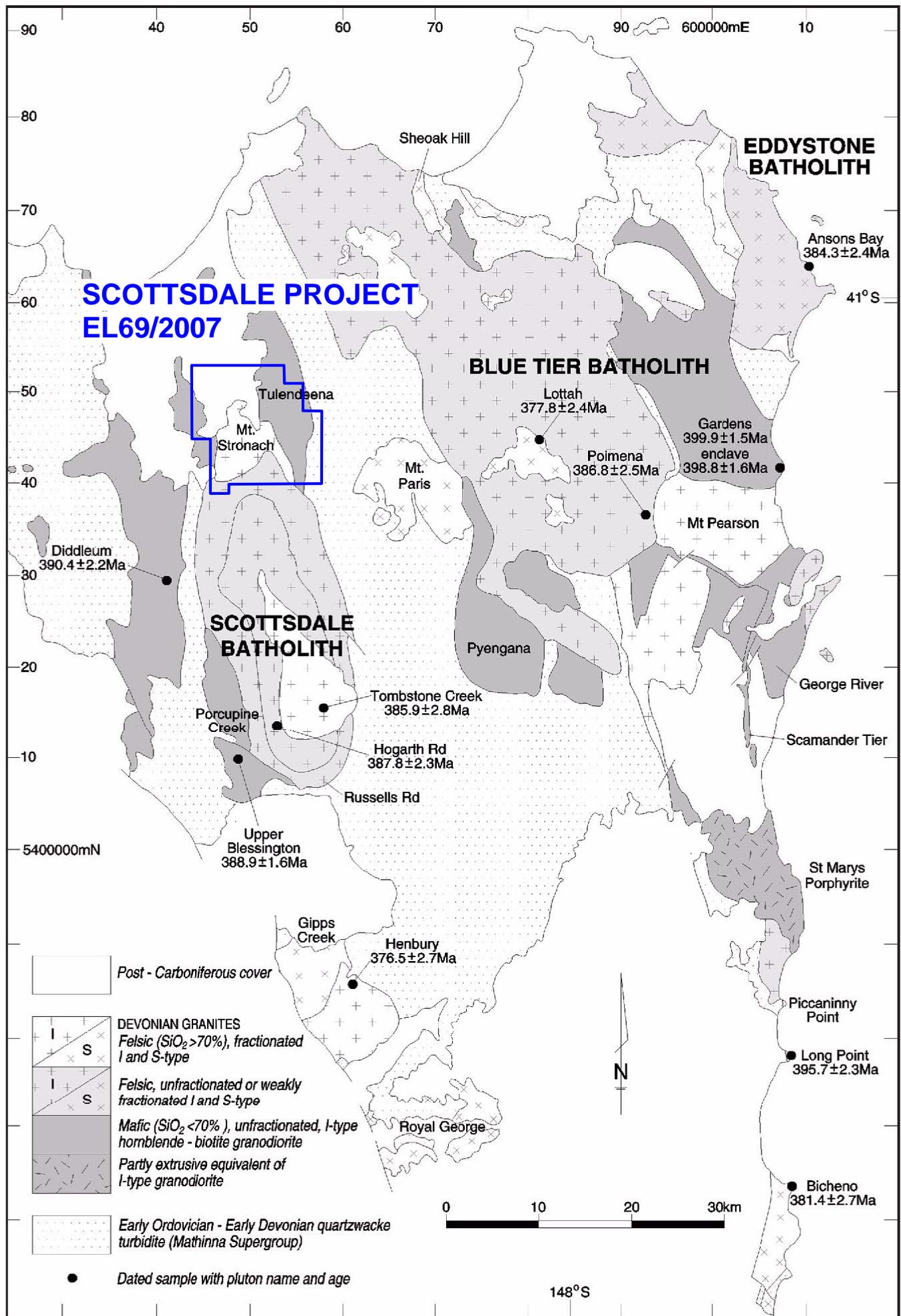


Figure 7a. Detail of northeast Tasmanian Devonian granites.

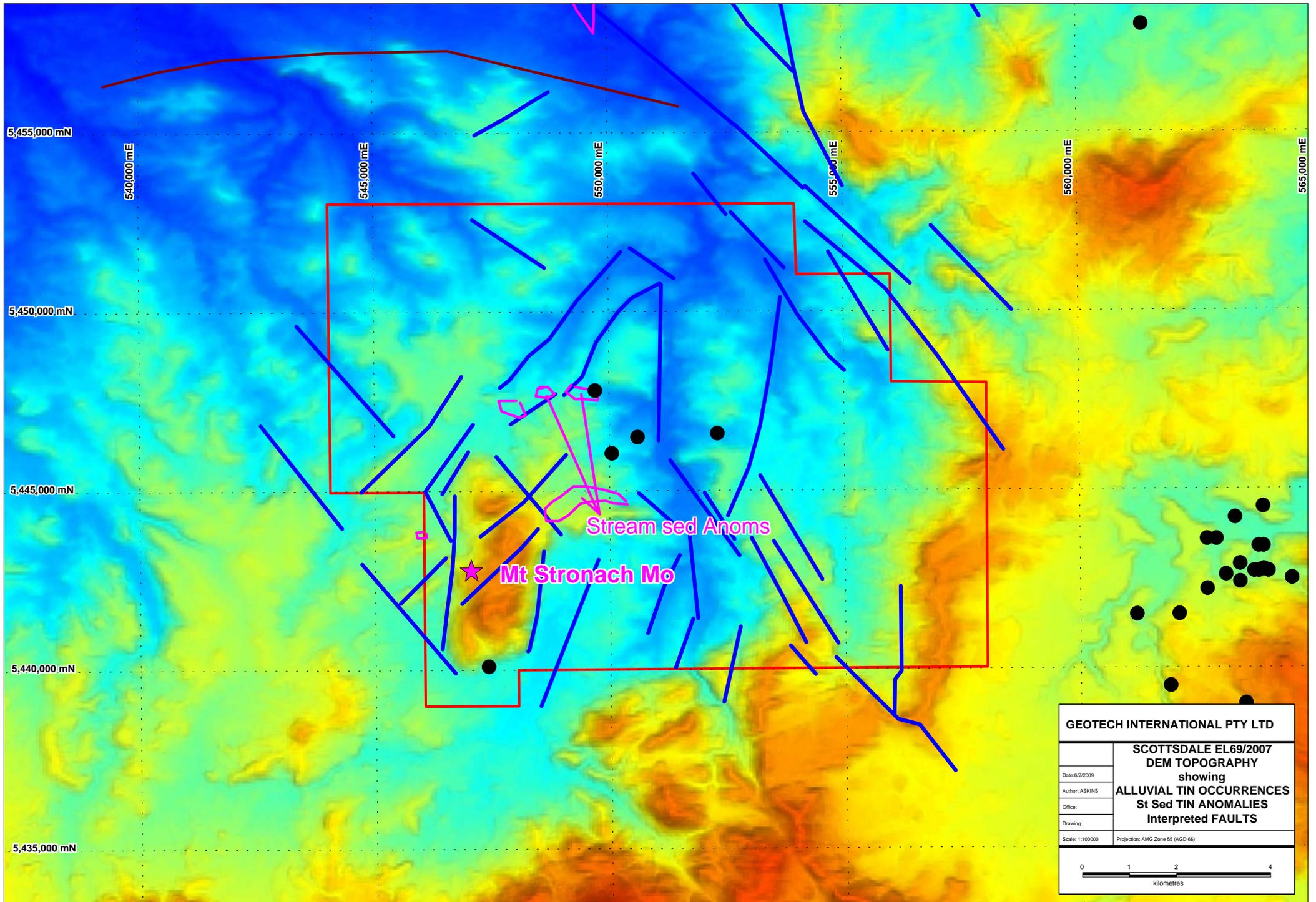


FIG 4

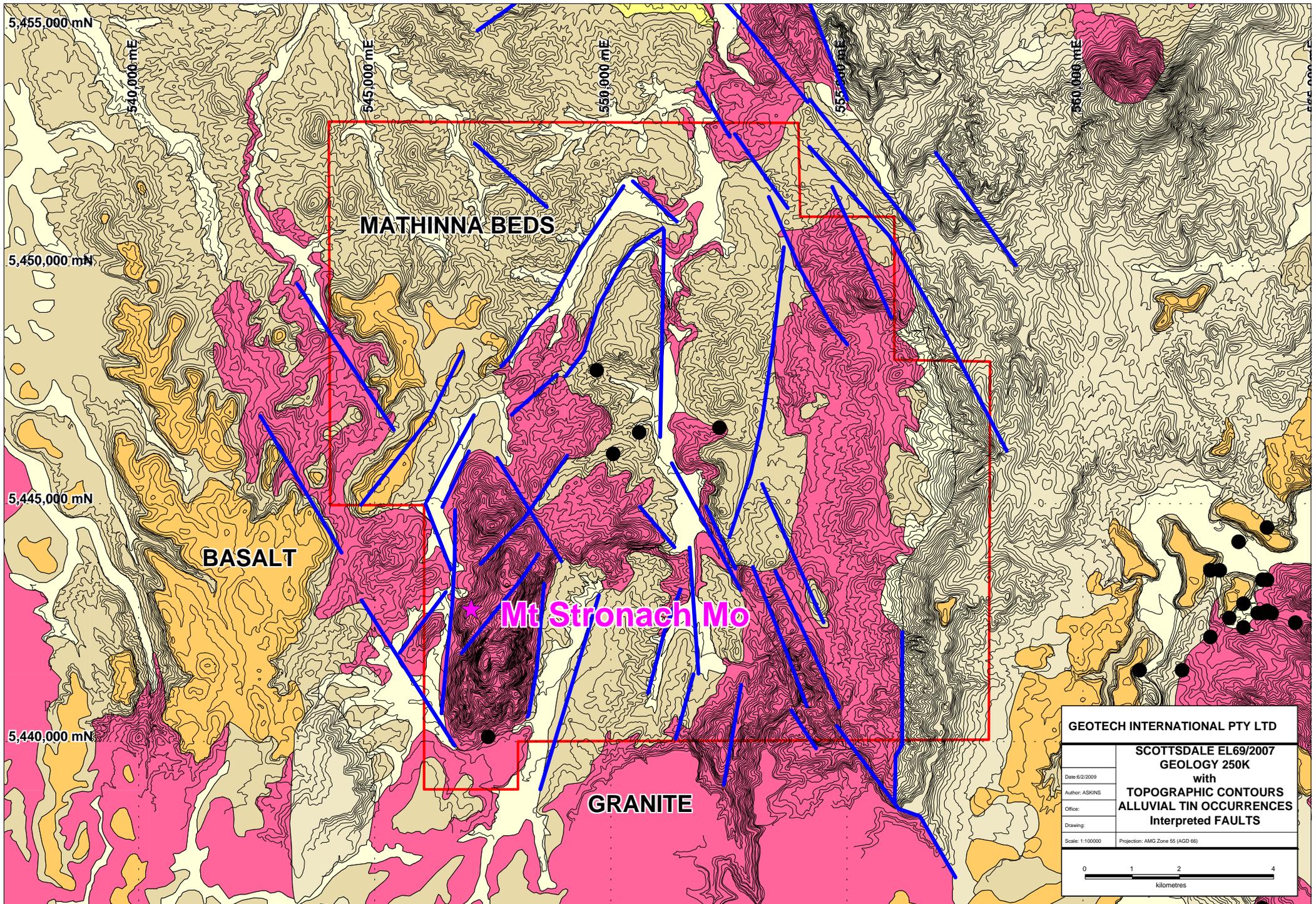


FIG 5

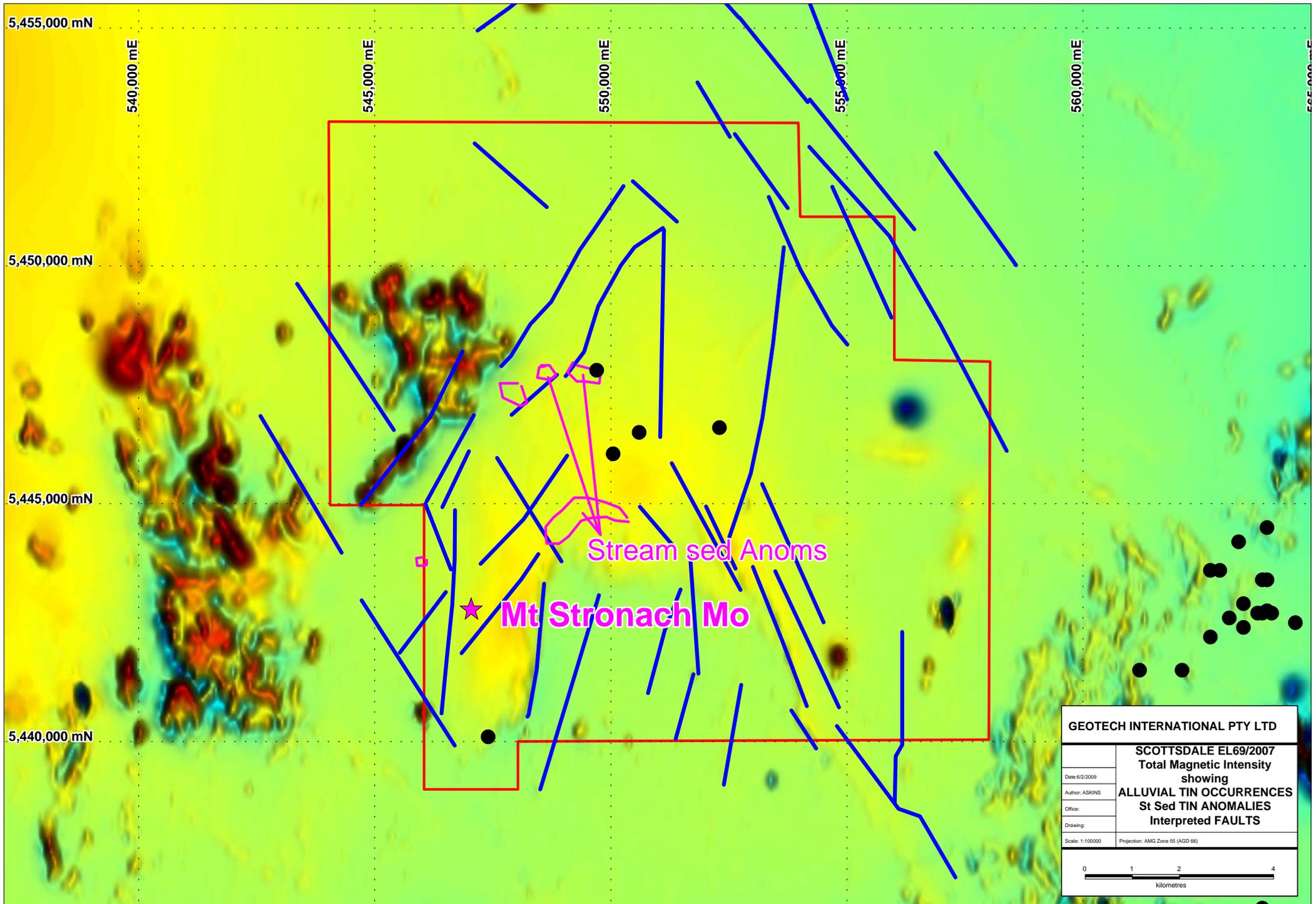
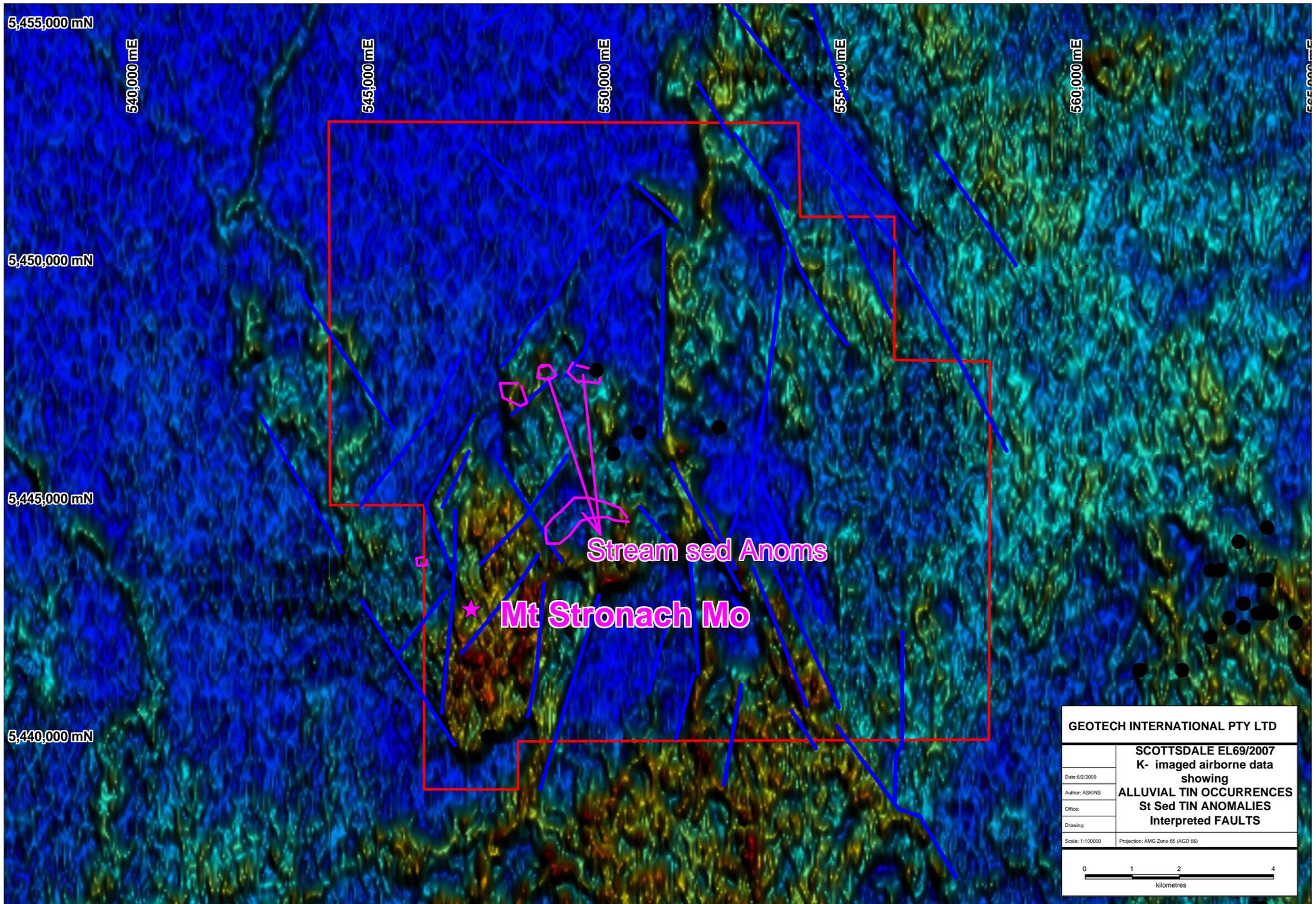


FIG 6



5,455,000 mN

540,000 mE

545,000 mE

550,000 mE

555,000 mE

560,000 mE

5,450,000 mN

5,445,000 mN

5,440,000 mN

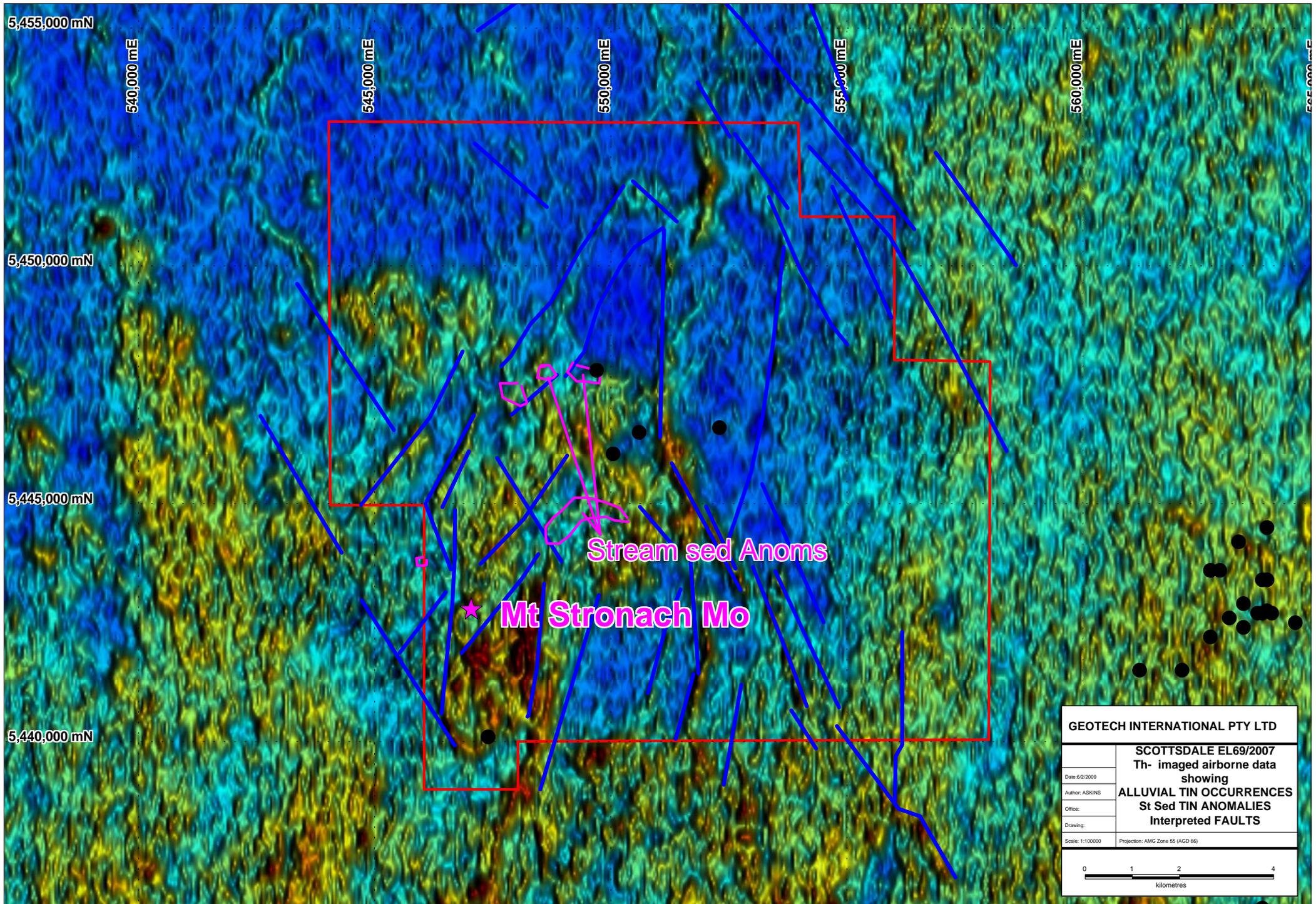
Stream sed Anoms

★ Mt Stronach Mo

GEOTECH INTERNATIONAL PTY LTD	
SCOTTSDALE EL69/2007 K- imaged airborne data showing ALLUVIAL TIN OCCURRENCES St Sed TIN ANOMALIES Interpreted FAULTS	
Date: 6/2/2009	
Author: ASKINS	
Office:	
Drawing:	
Scale: 1:100000	Projection: AMG Zone 55 (AGD 66)

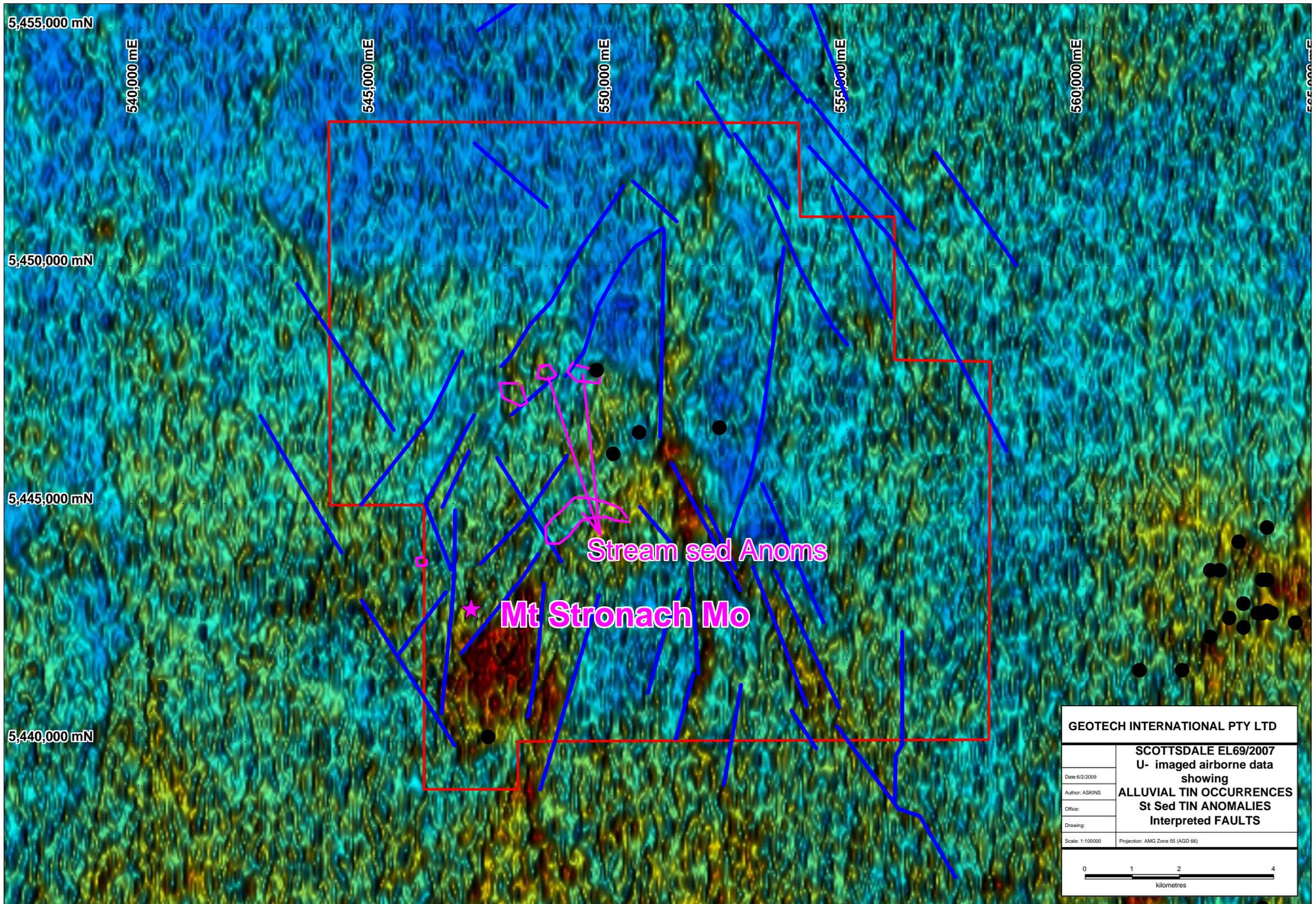
0 1 2 4
kilometres

FIG 7



GEOTECH INTERNATIONAL PTY LTD	
SCOTTSDALE EL69/2007	
Th- imaged airborne data showing	
ALLUVIAL TIN OCCURRENCES	
St Sed TIN ANOMALIES	
Interpreted FAULTS	
Date: 6/2/2009	
Author: ASKINS	
Office:	
Drawing:	
Scale: 1:100000	Projection: AMG Zone 55 (AGD 66)

FIG 8



5,455,000 mN

540,000 mE

545,000 mE

550,000 mE

555,000 mE

560,000 mE

5,450,000 mN

5,445,000 mN

5,440,000 mN

Stream sed Anoms

★ Mt Stronach Mo

GEOTECH INTERNATIONAL PTY LTD	
SCOTTSDALE EL69/2007 U- imaged airborne data showing ALLUVIAL TIN OCCURRENCES St Sed TIN ANOMALIES Interpreted FAULTS	
Date: 6/2/2009	
Author: ASKINS	
Office:	
Drawing:	
Scale: 1:100000	Projection: AMG Zone 55 (AGD 66)

FIG 9