



**Annual Report**  
**for EL40/2011 George River**  
**for the Period 4 July 2012 to 3 July 2013**

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## **ABSTRACT**

This report describes the exploration activities completed within EL40/2011 during the period 4 July 2012 to 3 July 2013. This is the first annual report for the first year of grant of the Tenement.

The Tenement is located west of the town of St Helens, and (directly) about 85 km east of Launceston.

The Tenement covers a major past producer alluvial tin mine, and a number of known tin and tungsten deposits in the basement.

There has been a long history of prospecting since the mid 1870s, and mining for alluvial tin was carried out between 1874 and 1962, with a production of about 2400 tonnes of metallic tin. Production of tin and tungsten from the known basement deposits is minor.

In the district the original sources of tin and tungsten were phases of the Devonian tin-bearing granites of the Blue Tier Batholith. Tin occurs as cassiterite in quartz and greisen vein systems in the roof zone of the granites near the contact with overlying Silurian Mathinna Beds.

The company's main focus is exploration for tin and tungsten, in alluvial deposits and in bedrock.

Work completed during the period comprised compilation of past investigations and review of the data to assess the prospectivity. A reconnaissance field visit was carried out.

One key area at Pyengana was found to be highly prospective for alluvial tin, and several areas in the Loila Tier region were found to be highly prospective for large vein systems of Aberfoyle/Storeys Ck style within Mathinna beds above granite cupolas.

**KEYWORDS**

NE Tasmania  
 Geology  
 Mineralisation  
 Alluvial  
 Paleochannel  
 Leads  
 Primary Deposits  
 Granite  
 Mathinna Group  
 Tin  
 Tungsten  
 Past production  
 Resources

**SUMMARY OF ACTIVITIES for EL40/2011 George River  
for the Period 4 July 2012 to 3 July 2013**

Compilation of

- previous company exploration and mining activities, and any previous relevant investigations by for example MRT
- past geochemical exploration survey data
- geophysical datasets such as airmagnetics, radiometrics, and gravity surveys.
- satellite remote sensing datasets such as Aster and Landsat.

This data was then reviewed to

- determine the distribution and nature of known mineral deposits
- compile past production
- assess the prospectivity of the areas for untested or undiscovered alluvial tin and basement tin and tungsten mineralisation.

A reconnaissance field visit was undertaken. The history room at St Helens and the Mining Museum at Derby were visited to check for relevant historical records.

**CO-ORDINATES**

All lat/long co-ordinates in this report refer to the GDA94 Datum, unless stated otherwise.

All AMG co-ordinates in this report refer to the GDA94 - Zone55, unless stated otherwise.

**FILE SUMMARY LIST**

File name	Format	Contents
El402012_2013_01_report.pdf	pdf	Annual Report

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## 1.0 INTRODUCTION

This report describes the exploration activities completed within EL40/2011 (The 'Tenement') during the period 4 July 2012 to 3 July 2013. This is the first annual report for the first year of grant of the Tenement.

For Tin Dragon's convenience the project is named "Mt Echo", rather than the MRT designator of Georges River.

The Tenement is located west of the town of St Helens, and (directly) about 85 km east of Launceston, in north-east Tasmania, Fig.1.

Table 1 – Tenement Details

Tenement	Holder	Date Applied	Date Granted	Size
EL40/2011 Georges River	Tin Dragon Pty Ltd 100%	7 July 2011	4 July 2012 (Categories 1 and 5)	180km <sup>2</sup>

Excluded from the grant of the tenement are one small mining lease for stone and gravel near Girdy's Hill, small private land holdings at Ericksons Road and Pyengana, and a State Reserve downstream of St Columba Falls, as illustrated on Fig 2.

Much of the land within the south and east parts of the Tenement, where the bulk of known mineralisation occurs, is logged state forest, timber plantation and timber reserves. Private farming land, particularly for diary cattle, is concentrated in the western parts of the Tenement.

The project lies within the Tasmania NE (SK55-21) 1:250,000 map sheet, and the 1:25,000 map sheets of Ringarooma, Blue Tier, Victoria, Pyengana, St Helens, Brilliant and Beamauris, as shown on Fig 3.

Access is via the Tasman Highway and several sealed roads. Formed local roads and logging tracks and other rough tracks provide further access.

The tenement covers past producer alluvial tin mines and several small tin and tungsten deposits in the basement. The most significant past production of an estimated 2400 tonnes of metallic tin was from alluvials of Thureau's lead. Only minor production of tin and tungsten from basement deposits is recorded.

The company's main focus is exploration for tin, in alluvial deposits and in bedrock, and for tungsten deposits in bedrock.

Work completed during the period comprised compilation of past work and remote sensed datasets and assessment of the potential for tin and tungsten deposits in alluvial and basement deposits.

## 2.0 GEOLOGICAL SETTING and MINERALISATION

Basement rocks are dominantly Silurian-Devonian Mathinna Group metasimentary rocks (Beds), intruded by various phases of Devonian granites.

The Mathinna Beds typically consist of an alternating sequence of bedded sandstones up to 10m thick and siltstones and shales up to 5m thick. The arenaceous members are the dominant lithological types and in part they have suffered low grade contact metamorphism to quartzites and slates. The succession was folded during the Tabberabberan Orogeny into open folds trending NNW. Major faults and shear zones also trend NNW and the centres of mineralisation are often located on major shears.

Several phases of the Devonian Blue Tier Batholith occur in this area. Some phases, especially the Constable Creek sheet of the Mt Pearson (Mt Pierson in Groves GSB55) phase are tin-bearing biotite muscovite granites. The Constable Creek sheet is described by Groves (1977) as rarely fresh, flat lying composite body of microgranites, biotite granites and adamellites, with miarolitic cavities, pegmatitic patches, tourmaline veins. In the sheet at the Echo Mine there is a mineralised greisen.

Judging by the location of the main alluvial tin deposits in the area, the source of cassiterite is likely to be the eroded parts of the Constable Creek sheet.

There is a metal zonation of mineral deposits in the area, (Groves, Baker, 1969). Adjacent to the outcrop of the Constable Creek sheet is a tungsten zone followed to the SE by a tin zone containing the major Great Pyramid deposit (outside the Licence area). A strong N-S copper zone is then followed to the east by a silver-lead-zinc zone.

Basement mineralisation, of tin, tungsten and copper is typically hosted in quartz veins/fractures/ shears in the Mathinna Beds and scattered greisen-altered fractures in the granites. The largest known deposit is Great Pyramid, to the south of the Tenement. A resource, potentially open-pittable from surface, of 3.3Mt @ 0.2% Sn (0.1% cut-off) has been previously estimated by Shell. Mathinna Group quartzites are the main host rock and cassiterite occurs in sheeted micro-veinlets along joints.

The main basement mines and prospects in the Tenement are reviewed separately in Section 6.0.

The Tertiary alluvial history is complex and not well studied. Stanniferous alluvium is present in a number of places, and the main such deposit is the Thureau's Lead.

The relevant placer history of the region is better known further north in the Pioneer-Gladstone area, and is likely to be similar here. It commenced in Permo-Triassic time (ca 250Ma) with the unroofing and erosion of the granitic rocks. In late Jurassic time (ca 150Ma) further uplift occurred with intrusion of extensive igneous dolerite sheets followed by a long period in the Late Cretaceous (ca 75Ma) of widespread and intense erosion. Deep weathering of the granites during this period resulted in liberation of large amounts of

cassiterite from the granitic hosts and their deposition in alluvium of the streams draining the highlands.

During Middle Eocene time (ca 46Ma) volcanic activity commenced along the Blue Tier with the extrusion of the Older Basaltic lava flows. It is likely that these were emplaced along stream valleys incised into the pre-Eocene granitic land surface, and so buried the older alluvial cassiterite deposits.

From the Mid Eocene to Late Oligocene (ca 46 to 24Ma) uplift and a humid tropical climate resulted in rapid erosion of the basalts, and renewed liberation of cassiterite from granites and reworking and upgrading of the earlier pre Middle Eocene alluvial deposits. The Middle Miocene (ca 14Ma) saw a second period of basaltic volcanism with extensive lava flows down many of the larger valleys in the Derby area.

Post Middle Miocene to Recent alluvial deposits were then formed along the alluvial flats of the major rivers.

In areas closer to the present coast there were marine incursions which have reworked the earlier alluvials.

In summary there has been a complex history of placer formation involving reworking and reconcentration of cassiterite.

### **3.0 REVIEW OF PREVIOUS WORK**

This is the first report by Tin Dragon Pty Ltd in the first year of grant of the Tenement; thus there is no previous Tin Dragon activity to report.

Previous work by other organisations has to date only been briefly reviewed.

Shell, the latest significant explorer in the area compiled a list of past explorers, as below. Much of the work was done to the south of the Tenement and the main work in the Tenement has been carried out by Texins and CSR Exploration, including stream sediment soil sampling, geological mapping and limited drilling.

Mt. Lyell Railway Co. (Pre 1950s), Tasmania Mines Department (1910 on), Rio Tinto Zinc Co. (1956 -1958), Austminex (1960s), Utah Development Co (1963 -1966), Broken Hill Proprietary Ltd. (1960s 1980s), Aberfoyle Development Co (mid 1960s), New Consolidated Gold Fields (Australasia) Pty Ltd (late 1960s), Texins Development Pty. Ltd (Geophoto) (1968 -1970), CSR Exploration (1978-1983) and Shell (1983-1986).

Tin was discovered in the Blue Tier to the northwest of the Tenement and near St Helens in 1874, and by the 1890s workings for alluvial tin, especially at Thureau's Lead, had been well established. Thureau's was worked intermittently up until 1962. The last companies to operate here were the Siamese Tin Syndicate Ltd from 1933-1939 and the Goshen Tin Mines NL from 1939 to 1962.

Aided by good outcrop exposure in this area, primary basement mineralisation was progressively discovered by prospectors, so that by 1900 most of the known deposits had been found, but few to the present day have been worked to any significant extent.

#### **4.0 EXPLORATION COMPLETED DURING THE REPORT PERIOD**

Work done by Tin Dragon during the period consisted of compilation of

- previous company exploration and mining activities, and any previous relevant investigations by for example MRT
- past geochemical exploration survey data
- geophysical datasets such as airmagnetics, radiometrics, and gravity surveys.
- satellite remote sensing datasets such as Aster and Landsat.

This data was then reviewed to

- determine the distribution and nature of known mineral deposits
- compile past production
- assess the prospectivity of the areas for untested or undiscovered alluvial tin and basement tin and tungsten mineralisation.

A reconnaissance field visit was undertaken. This was to check the nature of the terrain and degree of outcrop (in a search for mineralised basement) and extent of private land restrictions, in the Thureau's Lead area and the Pyengana area.

The history room at St Helens and the Mining Museum at Derby were visited to check for relevant historical records.

For convenience in the text of the report, references to the company reports have usually been merely as the MRT report number, for example [66-0430].

## 5.0 REVIEW OF ALLUVIAL DEPOSITS

The known alluvial deposits, including those worked for tin, are plotted on Fig 8. There are large areas of alluvium where no workings are recorded. The largest, potentially containing cassiterite derived from the Blue Tier to the north-west, is in the Pyengana area. The main historical workings have been at Thureau's Lead, the upper portions of which are in the tenement.

Patches of Quaternary and Recent alluvium southwest of Thureau's Lead contain alluvial cassiterite, namely Powers Rivulet, Steele's Marshes, Transit Flat, Charters Marsh etc. The Groom River close to Goshen and Bell Marsh Creek, Albion Creek, Saxelby Creek, Hunt Mine Creek etc also contains cassiterite.

Note that Argonaut is plotted within Thureau's Lead on MRT maps and in MRT databases, probably correctly, whereas on Groves' geological map in GSB55 it is shown as the alluvial area to the west of Thureau's in the area designated as Hunt Mine Creek in MRT data.

### Thureau's Lead

Cassiterite is concentrated in Quaternary/Recent deposits which attain a maximum thickness of 5m, and overly 85m (maximum) of barren Tertiary (?Eocene) sediments. Large areas of gravel on Thureau's Lead have been sluiced –such as at the Boggy Creek, Clio Hill, Argonaut and Ruby Creek workings, some of which lie east of the Tenement. The distribution of Quaternary alluvials is generally patchy and most of the upstream portions have apparently been eroded away. Only locally does the lead follow the current main drainages.

Production figures are unknown before 1902, and from 1902 to 1962 are about 1830 tonnes of metallic tin, or about 2614 tonnes of cassiterite, (McClenaghan et al 1992). I have attempted to calculate production from within the total area known to be worked, using an estimated average thickness of 1.5m thick and a conservative cassiterite concentrate grade of 400g/m<sup>3</sup>. This means that Thureau's Lead yielded 2,780t cassiterite from 7Mm<sup>3</sup>. This clearly is an under-estimate of cassiterite production because it approximates only the post 1902 production, and the pre 1902 production was probably substantial. By adding a reasonable guess of 600 tonnes of metallic tin produced before 1902, a total production from 1884 to present of around 2400 tonnes of metallic tin can be estimated.

Government drill traverses of the main parts of the Tertiary paleochannel of Thureau's Lead indicate between 60 to 90m of sediment accumulation. Elsewhere upstream drilling showed that the lead thins. A basalt of Lower Tertiary age was intersected at the base of the channel –overlain by clays, mudstones, siltstones, sandstones and conglomerates. The extent of the basalt can be gauged from its airborne magnetic signature, as shown on Fig 12.

Cassiterite is concentrated only within Quaternary and Recent deposits in this area. No significant tin occurs in the Tertiary suggesting exposure of stanniferous granite- possibly the Constable Creek sheet- took place only in Quaternary times, and/or there was substantial reworking of some Tertiary alluvium.

Two types of cassiterite are recognized -predominately fine grained rounded black cassiterite and a coarse angular red cassiterite. Gold, sapphires, zircon, and wolframite occurred with the cassiterite. Enough gold was reputedly present in the alluvium to pay the wages of the workers in the old workings. The coarse grained cassiterite and the presence of soft easily abraded wolframite suggests that nearby bedrock sources must exist, as yet undiscovered.

Sampling of parts of the remaining Quaternary unconsolidated sediments by C.S.R. and in drill holes of the Mines Department indicate low tin values up to a maximum of 100g/m<sup>3</sup>.

### **Potential for undiscovered alluvial deposits**

Thureau's Lead based on a literature review seems to offer little remaining potential, but elsewhere in the licence there are large alluvial areas where there are no records of any subsurface testing. Possibly the best targets are the Pyengana area, where cassiterite could have accumulated in paleodrainages sourced in the heavily mineralised Blue Tier to the north-west, and the Hunt Mine Creek area where there is already known cassiterite in a large alluvial area.

No recorded exploration has been done here, so testing by auger or RAB drilling is justified.

## **6.0 REVIEW OF BASEMENT DEPOSITS**

### **Silver Echo aka Nephele Creek Copper Mine**

In the bed of Nephele Creek an irregular mass of quartz outcrops carrying rich pockets of pyrrhotite, pyrite and some chalcopyrite and arsenopyrite. The joints in the surrounding sediments strike approximately 135 and 50 degrees. The quartz does not appear to have followed either of these features and mining has failed to follow the mineralisation any distance.

No significant exploration is reported to have been carried out. The possibility of a breccia pipe comes to mind. High copper values at surface can be expected to pass downward into high tin concentrations.

### **Baden Powell area aka Wolfram Creek**

In the Wolfram Creek area, veins of quartz carry wolframite, and in some cases also molybdenite. At the Baden Powell mine the vein quartz follows a fracture plane which strikes 30 degrees and dips 70 degrees NW. It has been mined for 150m along its length. Several small adits have been placed on parallel quartz veins but no mineralisation encountered. Approximately 1000 bags (?40t) of wolframite were removed from the mine. North of Baden Powell, near the contact zone with granite, Texins [72-0907] carried out mapping and soil sampling and scattered shallow percussion drilling. No specific target could be generated.

The potential of this area is high, given that there are a large number of small quartz veins carrying wolframite, and an extensive stream sediment tungsten anomaly exists. A desirable target would be sheeted veins above a granite cupola, as occurs at the major Aberfoyle Mine near Rossarden.

### **Echo Wolfram aka Constables Ck**

Tungsten and minor molybdenite occurs in quartz veins of varying thickness along joints in a granite cupola. The cupola is regularly jointed along directions 105 to 115 degrees. The veins are mineralised to different degrees. Wolframite and molybdenite are the main minerals; scheelite and bismuthinite also occur, with some arsenopyrite and pyrite. The host rock is greisen altered granite and aplite.

Previous production was probably nil to negligible though a company was floated to explore the area in the 1880s:



Texins carried out soil sampling, generating a molybdenum anomaly. The area was drilled with 5 scattered diamond holes [70-0701, 71-0818], which although intersecting greisen and other alteration, failed to intersect any significant mineralisation. It was concluded that given the current level of exposure of the cupola any sizeable previous mineralisation had been eroded away.

The general area contains as yet unexplained tungsten stream sediment anomalies, and so remains prospective for tungsten above unexposed cupolas.

**Loila Tier Tin [69-0547]**

Small veins of quartz and cassiterite occur along shear planes in the Loila Tier area. The cassiterite occurs as disseminated crystalline aggregates, or encrustations in cavities in a shear zone, with a preferred quartzite host. Other excavations in the area have proved small quantities of tin in breccia zones.

## **7.0 ASSESSMENT OF PROSPECTIVITY**

The prospectivity of the area, especially for basement tin and tungsten mineralisation, has been reviewed utilising various remote sensed datasets and previous stream sediment geochemical surveys.

The Boggy Creek workings were visited in a search of basement sources of tin in Thureau's Lead; the area is covered by extensive sand rendering assessment of the basement here difficult.

The known basement deposits are small and production from them is probable negligible, and exploration of them to date is very restricted, yet the potential for large vein systems of the style known to occur at Aberfoyle/Storeys Ck is rated high.

### **LANDSAT and GOOGLE SATELLITE IMAGES**

NASA Landsat imagery is shown on Fig 8, with known basement deposits shown. No features to aid prospectivity were recognized. The areas covered by forest and by cleared private land are readily discerned.

Google satellite imagery is an excellent tool to define disturbed previously mined areas, particularly old alluvial workings.

### **ASTER**

Images produced by MRT of various band ratios (468RGB, 231RGB, greyscale) were examined with Mapinfo but no correspondence of features with known deposits could be established, and no other features to aid prospectivity were recognized. Also no alteration features, as interpreted by MRT from those datasets, exist in the tenement area.

### **DEM**

A digital terrain image generated for NE Tasmania by MRT is shown on Fig 10. Known deposits on the trend from Great Pyramid northwards into the tenement at Baden Powell lie on a ridge which does not exactly correspond to mapped harder sandstone units. It is possible that the Mathinna beds on this ridge are resistant to erosion because they are hydrothermally altered and silicified; such alteration may reflect an elongate granite cupola below, and so defines zones of high prospectivity for extensions of known vein deposits and for new unexposed deposits, (Fig 11).

### **MAGNETICS**

Images of MRT processed airborne TMI data were obtained and studied. Fig 12 shows a NE illuminated image. MRT's magnetic data was downloaded from Geoscience Australia and processed in Ermapper to produce a vertical sun image, (not illustrated here), but it shows poor contrast compared to the NE sun illumination.

There is little correspondence of magnetic features with known mineralisation. A magnetic high at Great Pyramid is probably due to a local boss in a NE trending dolerite dyke. Elsewhere on the Great Pyramid to Baden Powell trend there are no corresponding magnetic anomalies, so magnetics cannot be expected to be a targeting tool.

Some units of the Mathinna beds have a relatively high magnetic response and clearly show folding of the beds, not evident in the geological mapping. Based on its magnetic signature there is one area as illustrated on Fig 12 that may contain unmapped Mathinna beds, though high responses in radiometric data suggest that granite is more likely to exist here.

A basalt flow within the Tertiary Thureau's Lead is clearly outlined, helping to define the deep sections of the Lead in an area of extensive sand cover.

Granodioritic phases of local granitoids, such as the Pyengana phase are clearly distinguished on the magnetics.

## **GRAVITY**

The database of Bouguer gravity for NE Tasmania was acquired, plotted and hand contoured, so as to honour all values, (rather than use a computer algorithm which tends to smooth data and create artifacts). Results are plotted on geology as Fig 13.

A regional gravity low corresponds broadly to granites, but there are distinct gravity lows around the known mineralisation at Loila Tier and on the DEM trend from Baden Powell to East Pinnacle, supporting the concept of granite cupolas controlling mineralisation.

The density of gravity stations is poor in places, and stations are absent in the generally prospective zone between Loila Tier and Silver Echo, so future gravity surveys are recommended as a prime targeting tool for new mineralisation.

## **RADIOMETRICS – K channel**

MRT imagery from airborne surveys in NE Tasmania was examined, but high tenor K responses tend to swamp the whole area, so MRT's magnetic data was downloaded from Geoscience Australia and processed in Ermapper to produce a vertical sun exponential stretch image, Fig 14.

It was hoped that potassic alteration of the Mathinna beds may be associated with the known tin and tungsten deposits but there is little correlation evident on the image, so the K channel cannot be relied upon as a direct targeting tool. All granitoids have a distinct K response so this may perhaps be useful in future mapping. It is interesting that the base of the Constable Creek granite sheet, on the west side, has a low K response.

## **RADIOMETRICS – Th and U channels**

These datasets were similarly downloaded and processed as for the K channel data.

Again no correlation of distinct signatures with the known mineralisation is apparent, so these also cannot be relied upon as a direct targeting tool.

### **STREAM SEDIMENT GEOCHEMISTRY**

The MRT database of stream sediment sample analyses was obtained to check the extent and usefulness of samples which have been analysed for tin and tungsten. Samples where no tin or tungsten were analysed were screened out, but the dataset contains a very mixed array of different sample types, for example panned concentrates, and various mesh sizes, collected at different parts of a stream bed at different times of the year by different companies with doubtless varying competence, and there is a mixed array of analytical techniques.

The data requires filtering into like groups for detailed processing and this has not yet been done.

Unfiltered data is shown for tin on Fig 15, and for tungsten on Fig 16.

For tin fairly dramatic anomalies are generated in large areas of the eastern part of the tenement. The large area will need filtering to better target discrete zones which have the best prospectivity and check where past exploration to examine these anomalies has been done effectively.

The area around the northern parts of the known Thureau's lead has surprisingly little anomalism. Whether this is a function of poor sampling or whether the basement in the area is genuinely poorly mineralised needs further investigation.

The area of alluvium around Pyengana is distinctly anomalous supporting the concept that significant untested alluvial tin deposits could occur here.

For tungsten some very promising clustering of anomalism occurs around Baden Powell which is to be expected, but there is distinct anomalism west of Echo, in areas which are likely to be poorly explored, and also another grouping occurs 4km east of Baden Powell. This latter group is south of the known Loila Tier deposits and suggests that unexplored deposits occur here.

## **8.0 GENERAL CONCLUSIONS**

A review of various datasets to determine the prospectivity of the area for alluvial tin deposits and for basement tin and tungsten deposits has been carried out.

Thureau's Lead, the only significant past producer, is likely to have been essentially worked out, leaving a poor potential for unmined resources.

In the Pyengana area there is a large untested area with high potential for alluvial tin derived from the Blue Tier to the north

Although known basement deposits are small the extent of quite dramatic geochemical anomalism suggests that more deposits are to be found, and the likely presence of granite cupolas suggests that and there is a high potential for large tin and tungsten vein systems of the style known to occur at Aberfoyle/Storeys Ck. Breccia pipe targets such as may occur at Silver Echo could also be attractive. Some prime exploration target areas are identified especially with the aid of DEM, gravity and stream sediment geochemistry.

## **9.0 RECOMMENDATIONS FOR FUTURE WORK**

A more detailed compilation of past company exploration is necessary, especially in the prime target areas already identified, to establish the veracity of that past work and to refine target areas for further exploration.

Field visits would be necessary to further appraise the targeted areas, and to collect surface rock, stream sediment and soil samples.

Gravity surveys of selected targets will aid planning of drill test holes.

## **10.0 EXPENDITURE**

Expenditures have been reported via MRT Quarterly Returns.

## **11.0 REFERENCES**

[A full reference list has not been attempted. Below are some key references used].

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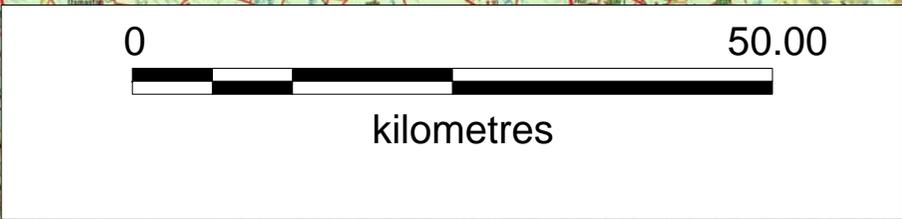
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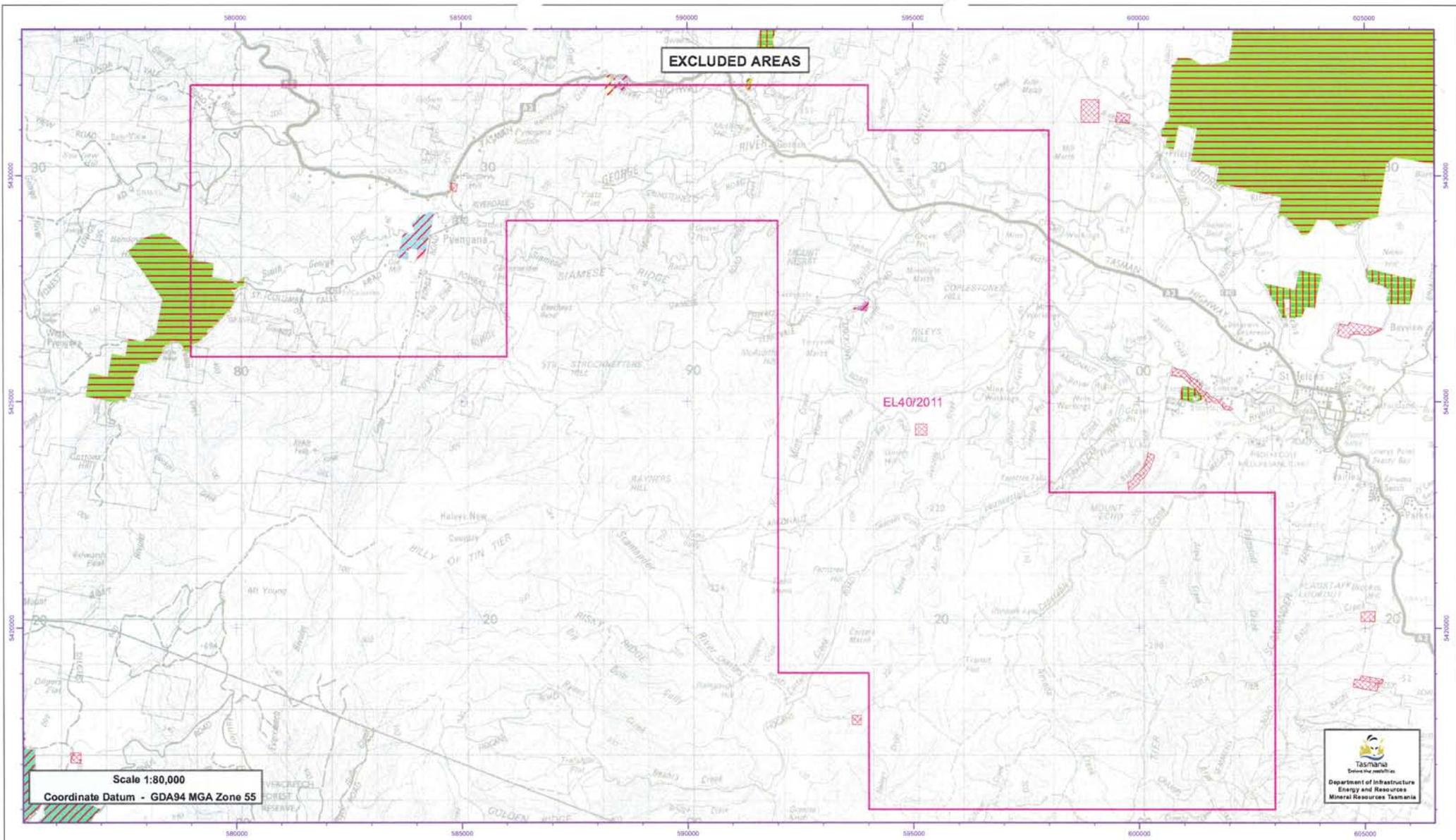
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**EL40/2011 Location FIG1**



**EXCLUDED AREAS**

EL40/2011

Scale 1:80,000  
Coordinate Datum - GDA94 MGA Zone 55



**Excluded Areas**

- |   |  |
|---|--|
| <ul style="list-style-type: none"> <li> Exempt Area</li> <li> Mining Lease</li> <li> Retention Licence</li> <li> Fossicking Area</li> <li> Fossil Site</li> <li> Administratively Excluded Areas</li> <li> RAMSAR Site</li> <li> Gas Pipeline Corridor</li> <li> Wellington Park</li> <li> Indigenous Protected Areas</li> <li> Commonwealth Land</li> <li> Private Reserve - Unavailable under MRDA</li> <li> State Reserve</li> </ul> | <ul style="list-style-type: none"> <li> Nature Reserve</li> <li> National Park</li> <li> Historic Site</li> <li> Game Reserve</li> <li> Conservation Area - Unavailable under MRDA</li> <li> Forest Reserve - Unavailable under MRDA</li> <li> Private Land (Woodsong)</li> <li> Private Land (Correy)</li> <li> Private Land (Taylor)</li> <li> Private Land (Booth)</li> <li> Private Land (Healey)</li> <li> Private Land (Healey)</li> </ul> |
|---|--|

**Relevant tenement land tenure / land management area indicated \***

Note: Land Tenure is derived from the LIST and other sources and may be incomplete. Not all Land Tenure depicted in legend may appear on the map.



RINGAROOMA

BLUE TIER

BINALONG

VICTORIA

PYENGANA

ST HELENS

SADDLEBACK

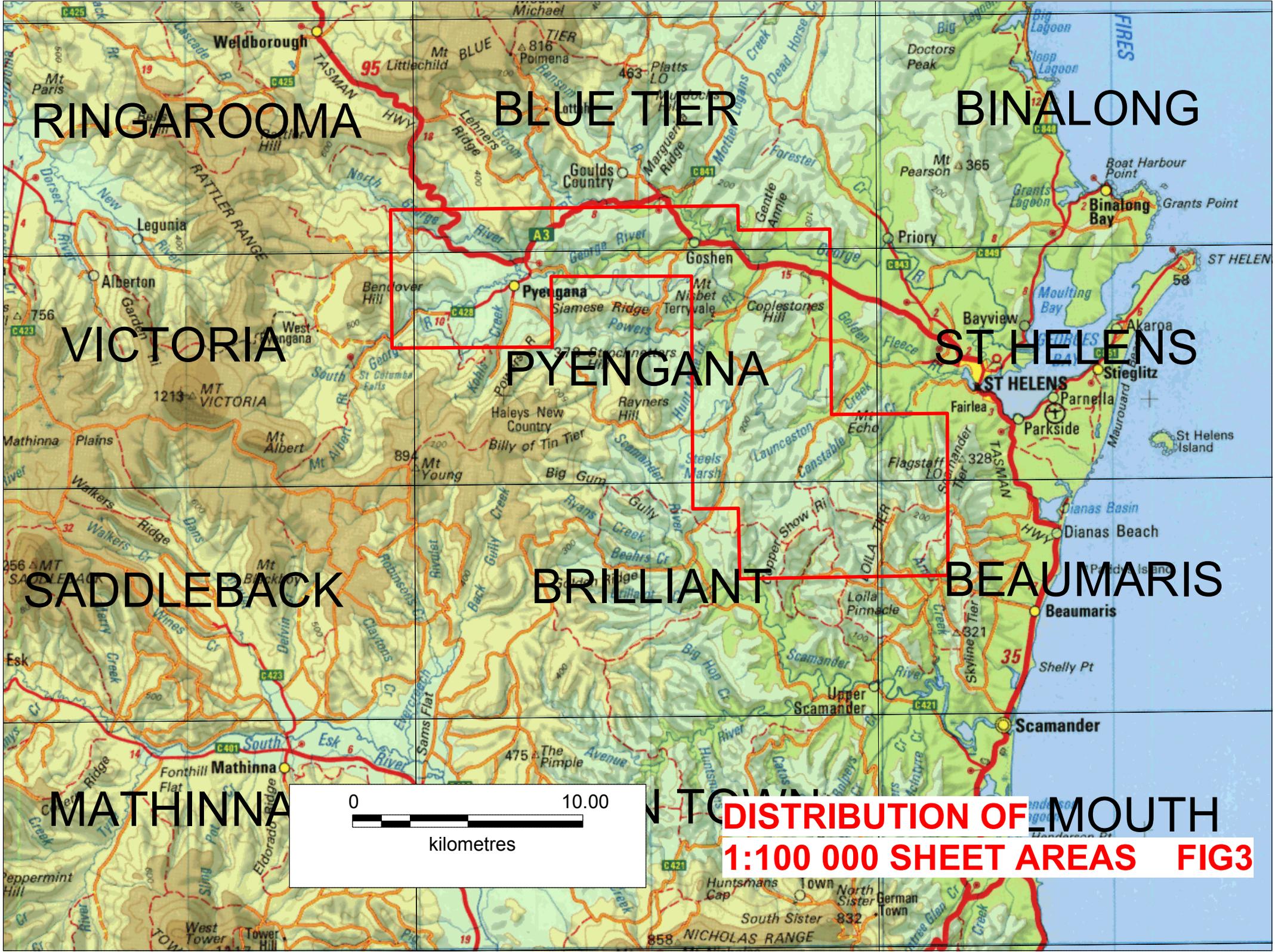
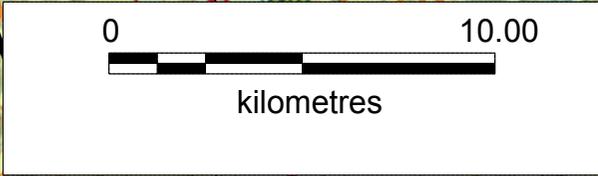
BRILLIANT

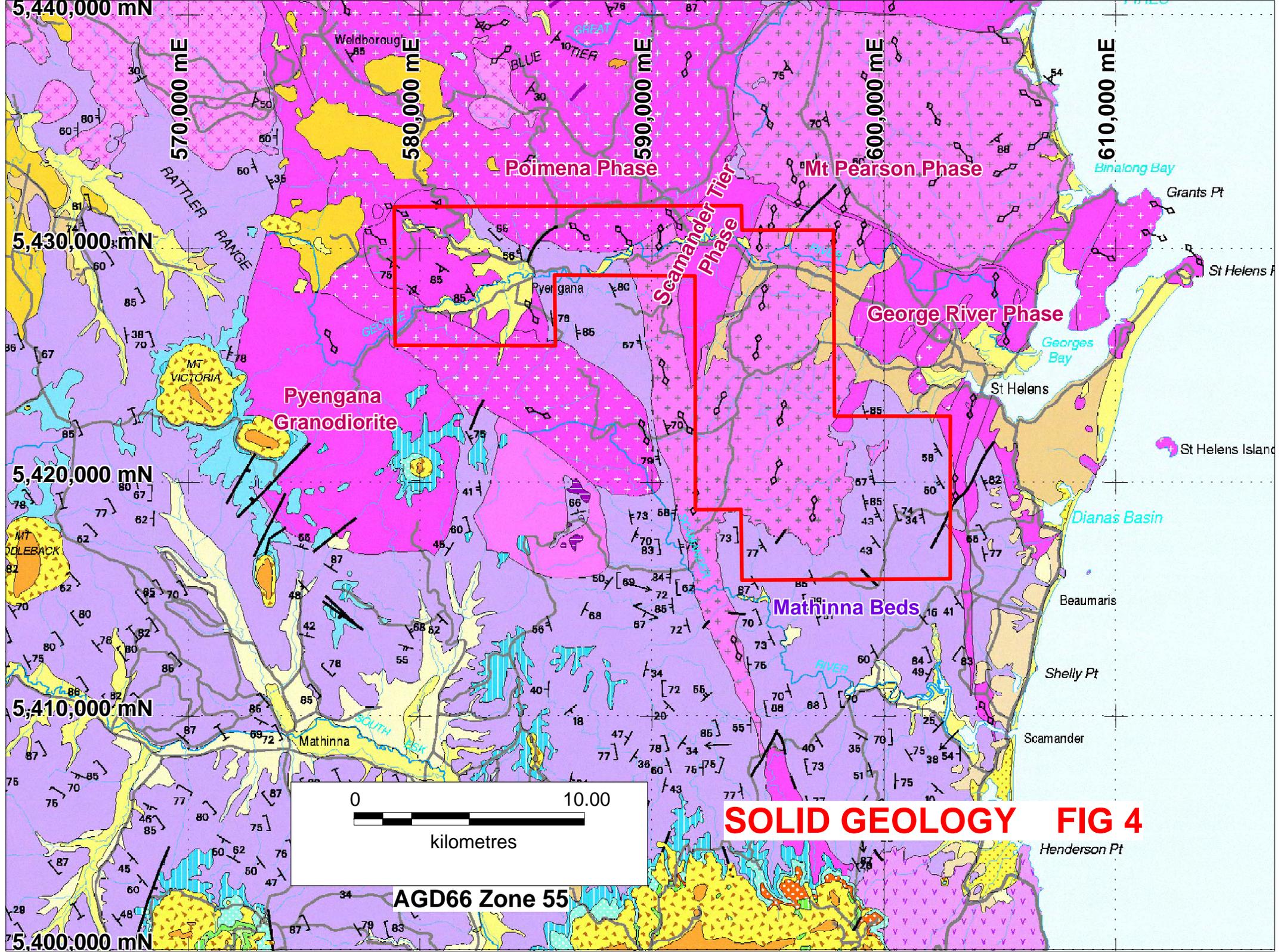
BEAUMARIS

MATHINNA

DISTRIBUTION OF MOUTH

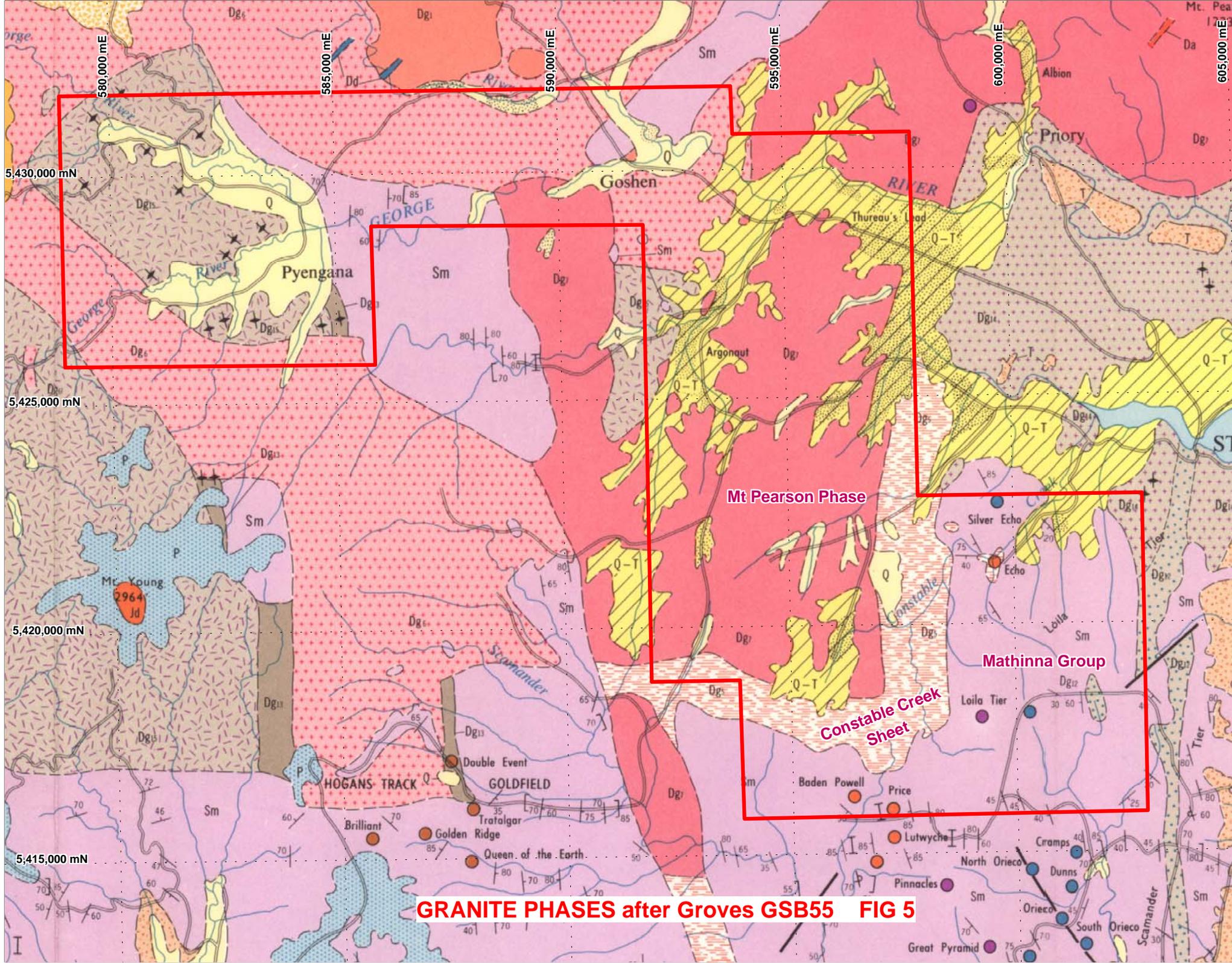
1:100 000 SHEET AREAS FIG3



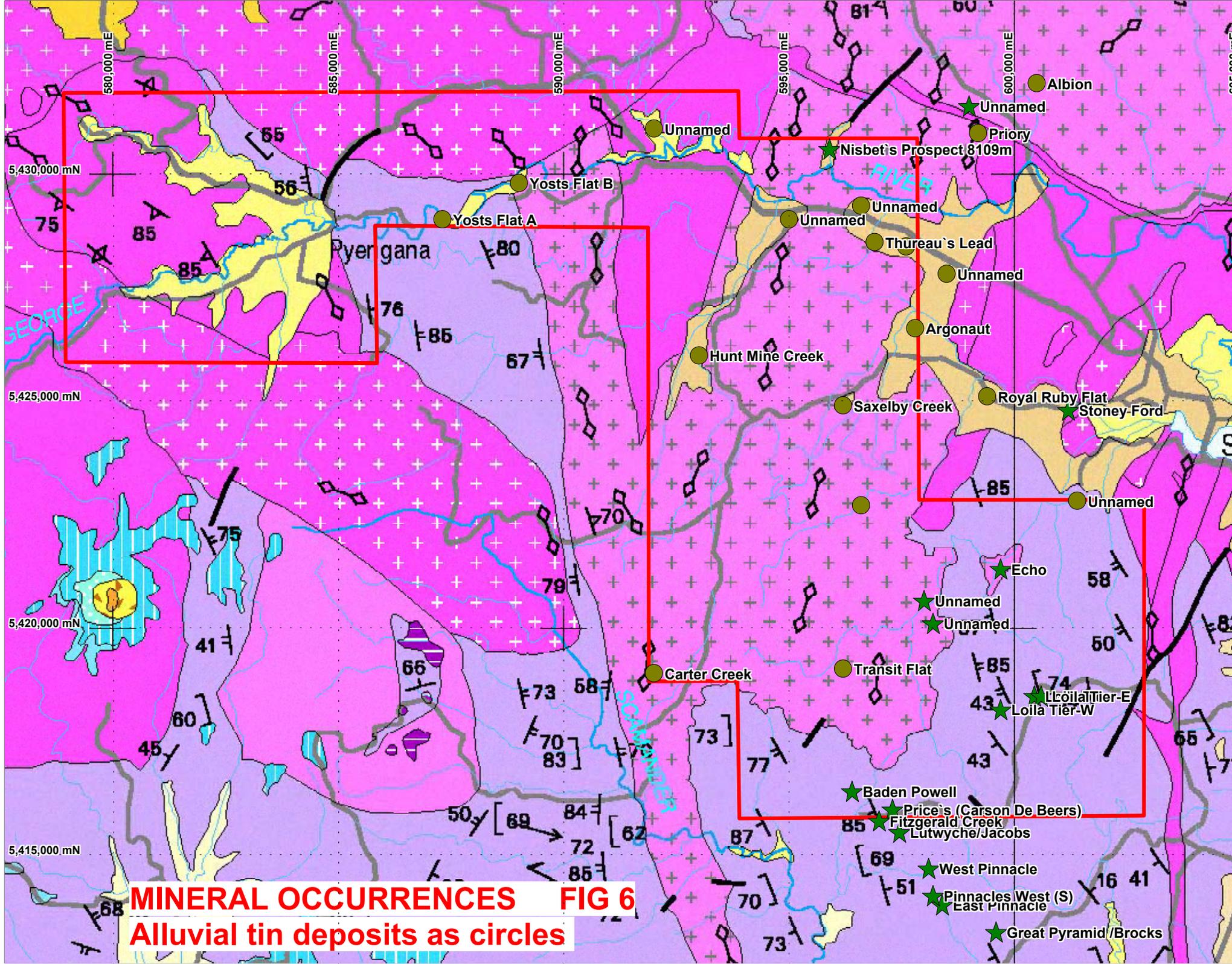


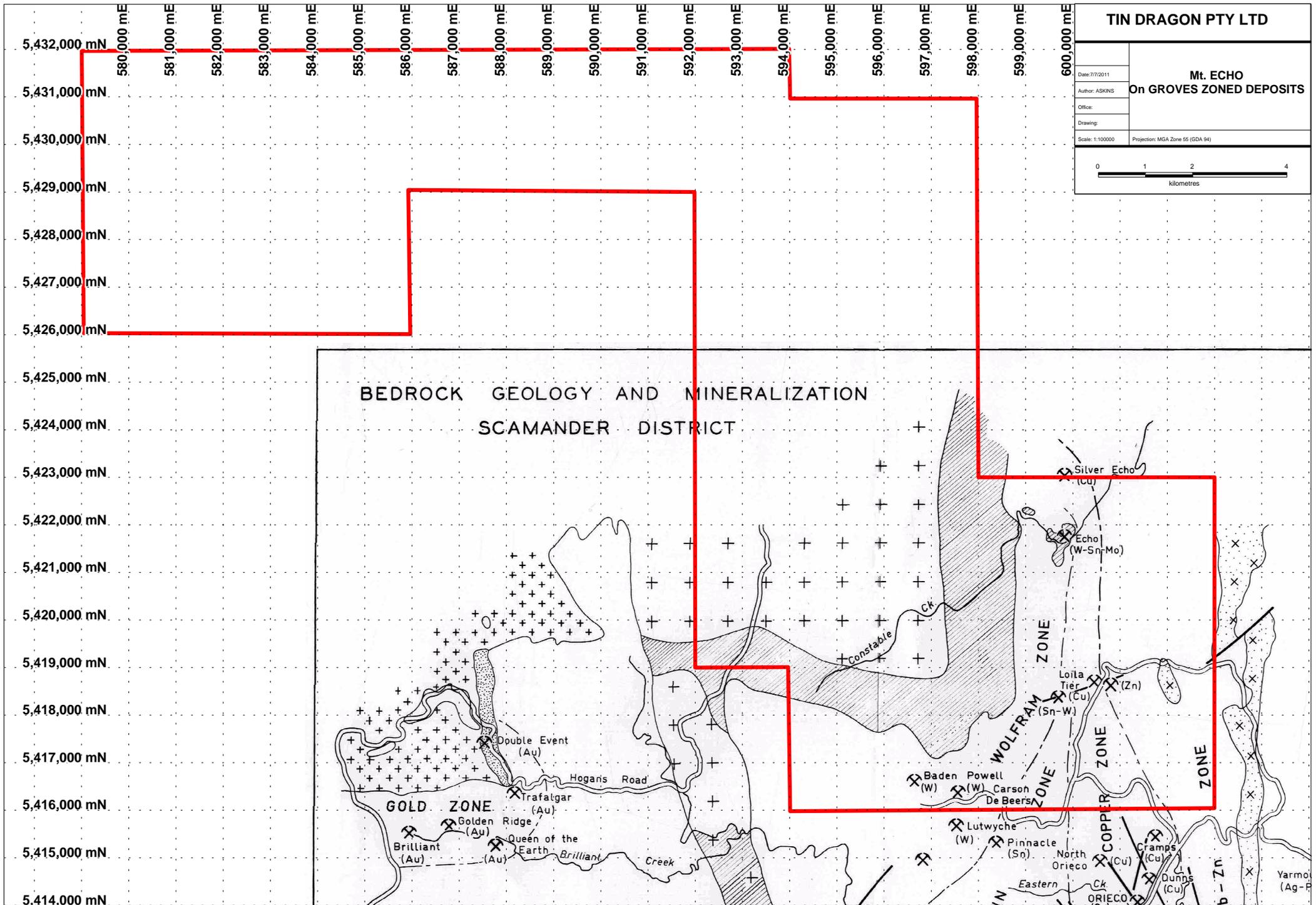
**SOLID GEOLOGY FIG 4**

AGD66 Zone 55

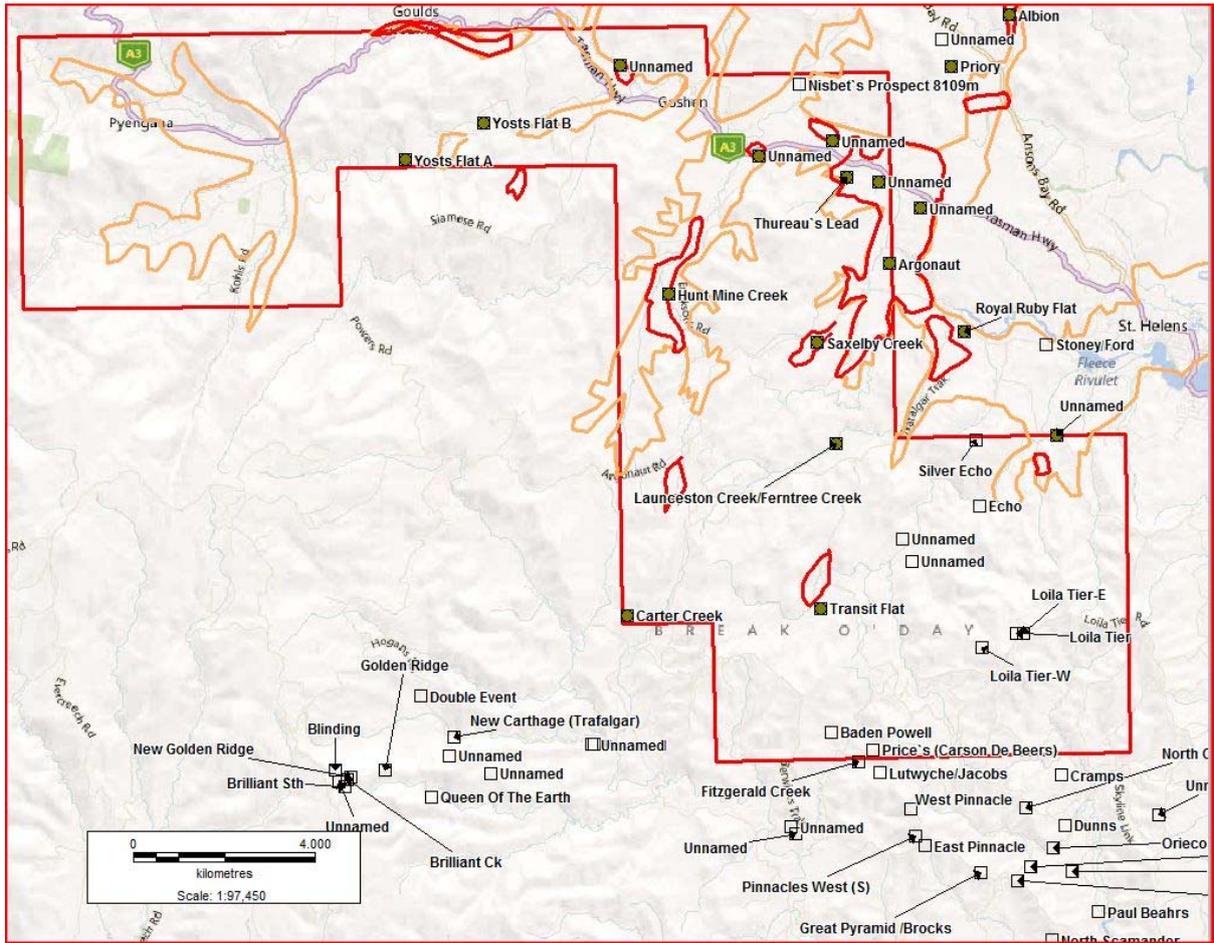


**GRANITE PHASES after Groves GSB55 FIG 5**

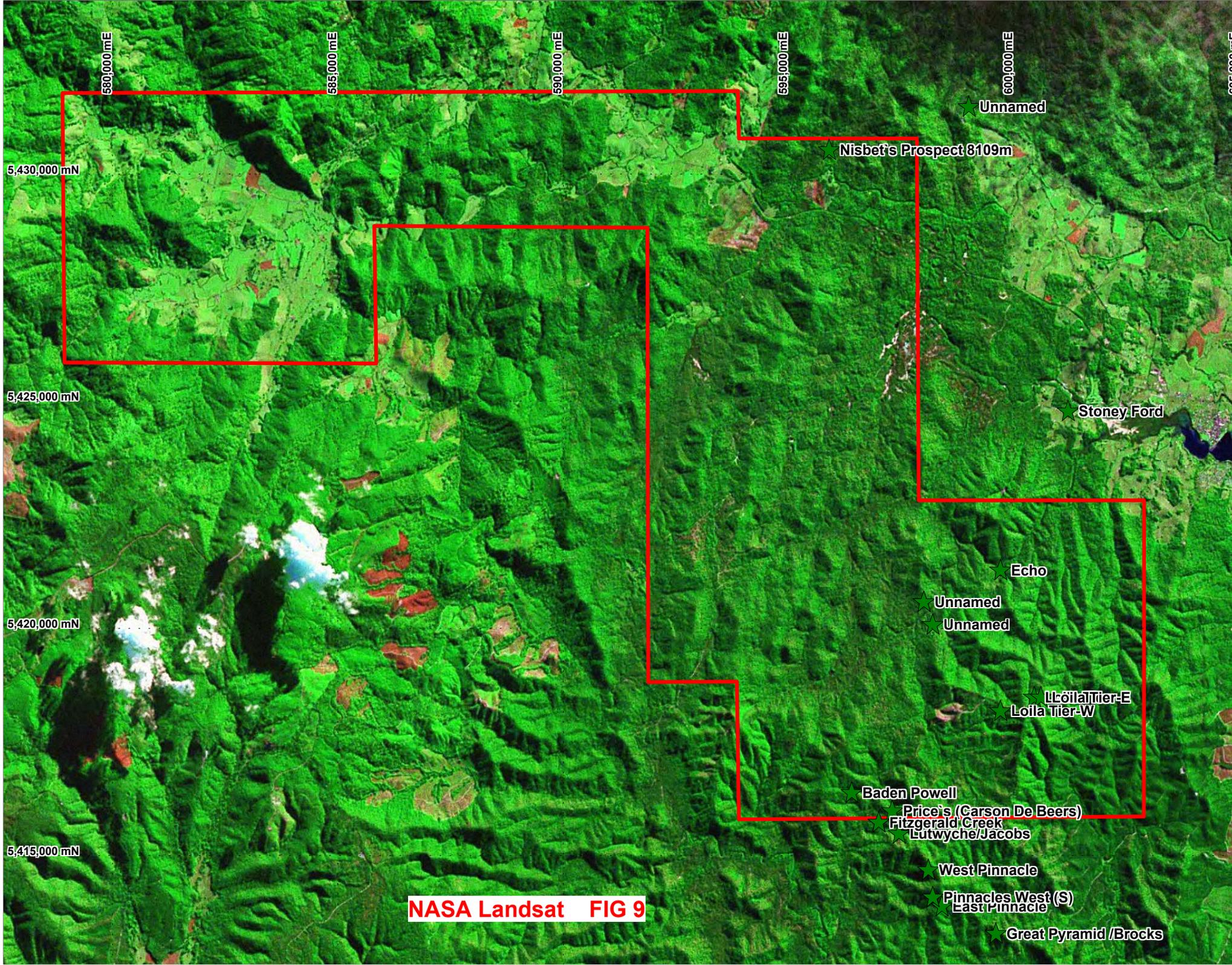




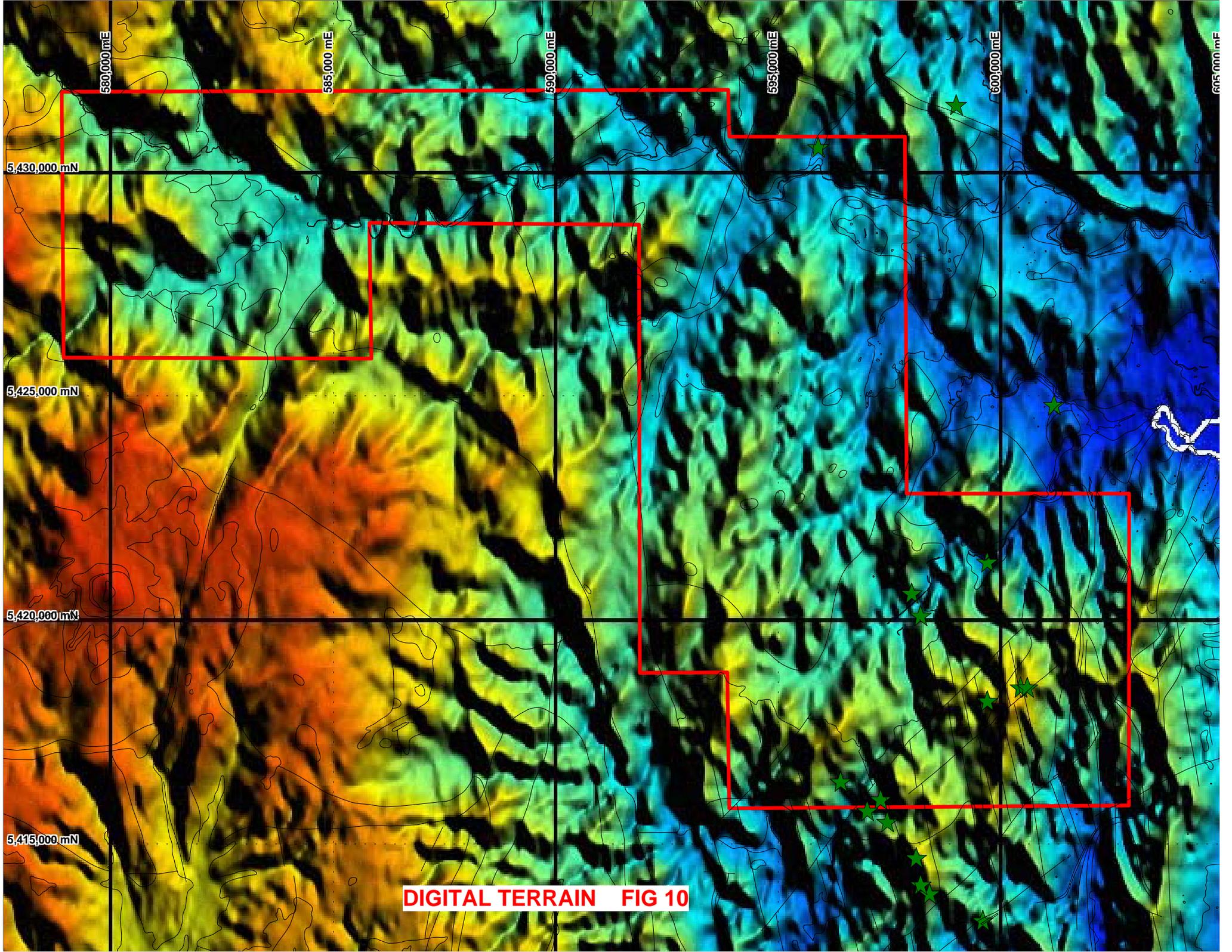
**FIG 7**



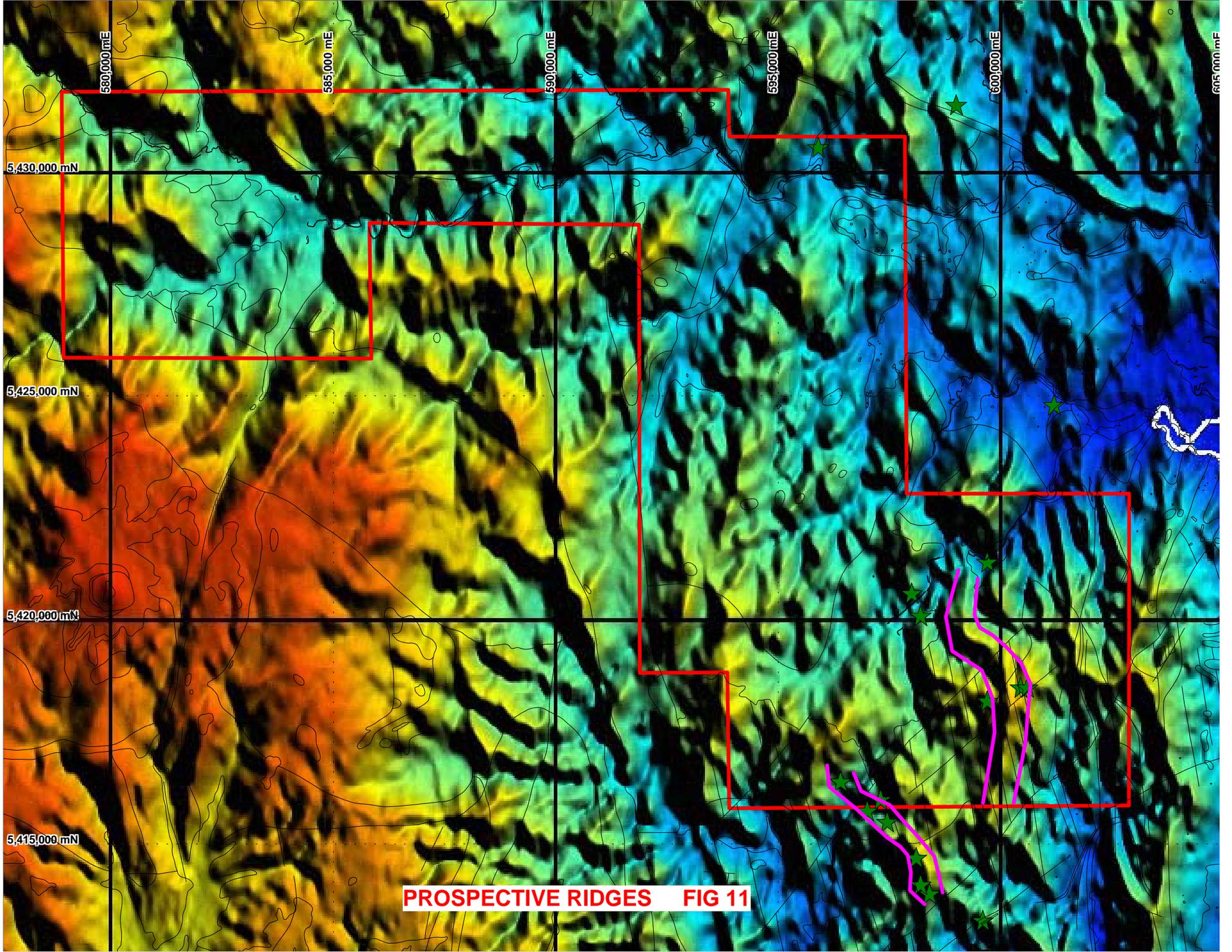
**FIGURE 8** Known mineral deposits (basement-open squares; alluvial-closed squares) red outlines-known areas worked for alluvial tin orange outlines-major alluvium areas.

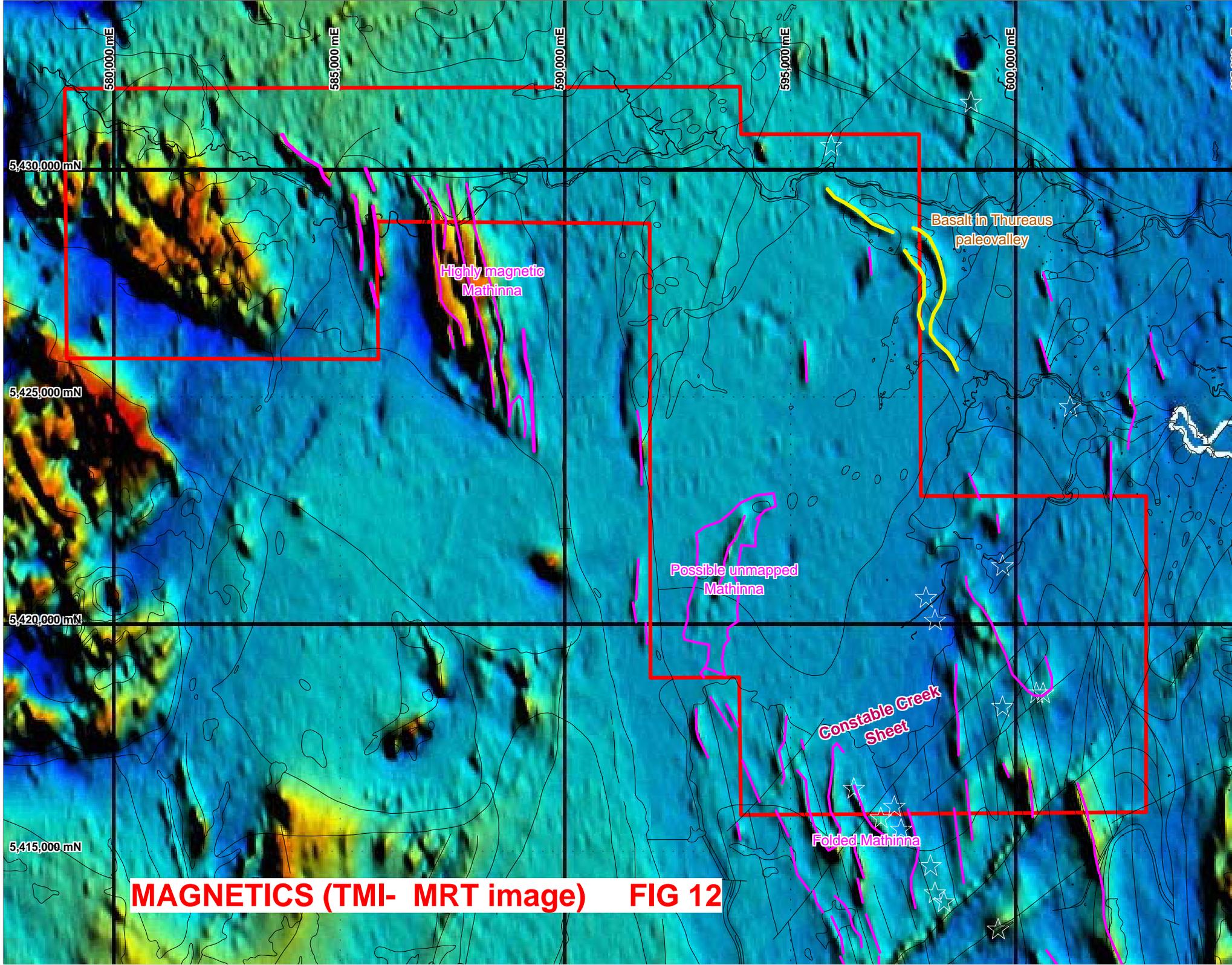


NASA Landsat FIG 9

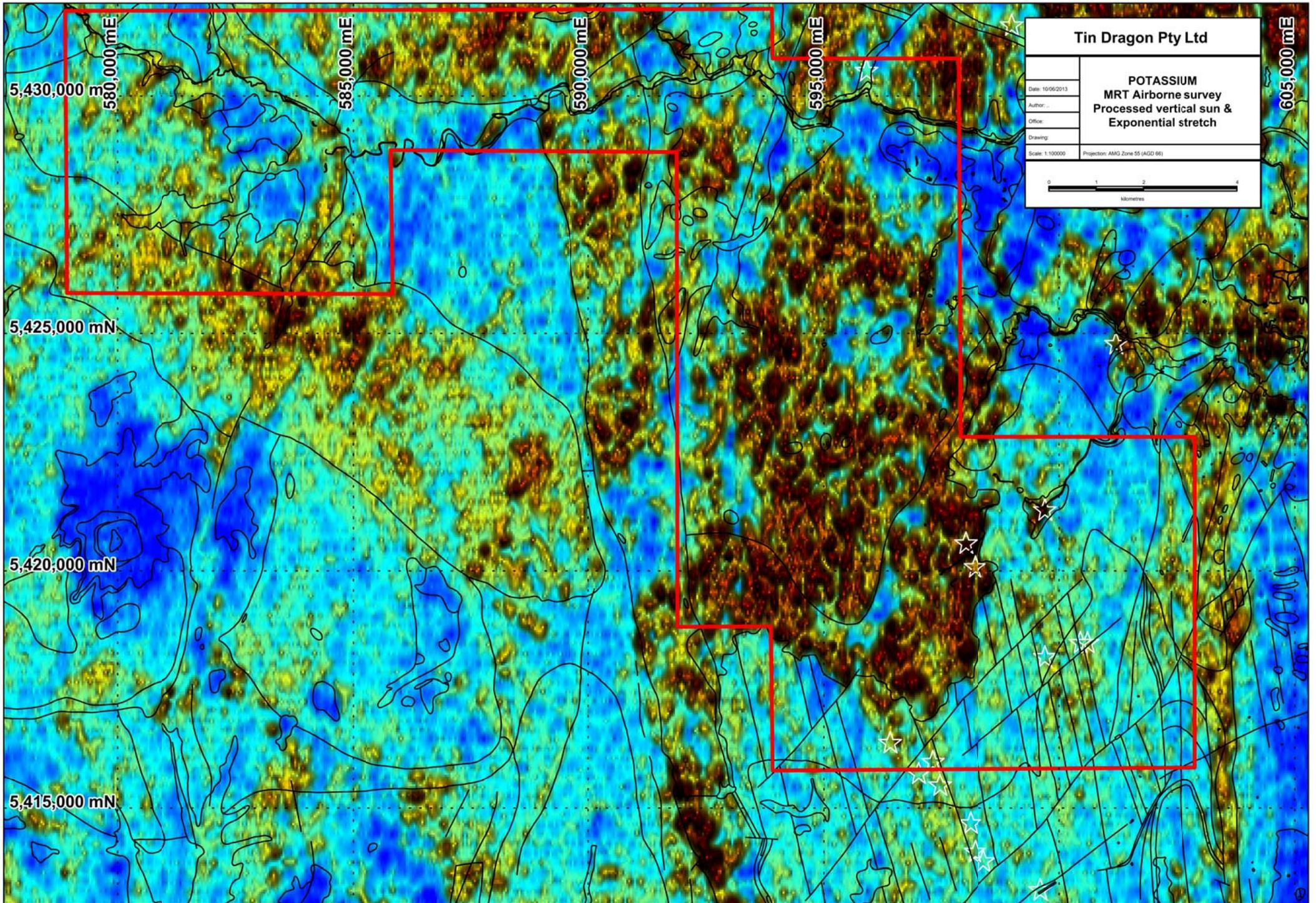


**DIGITAL TERRAIN FIG 10**

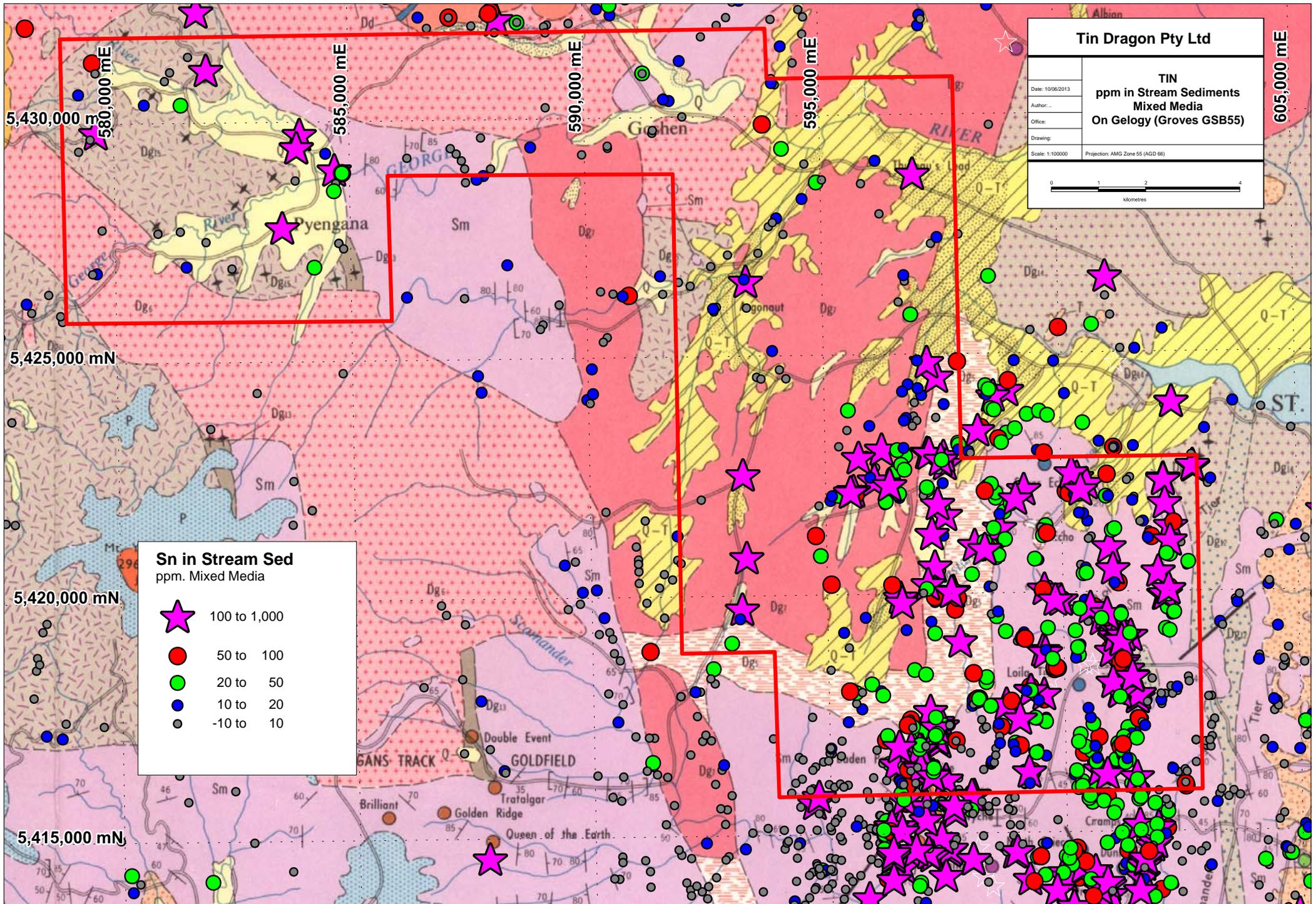




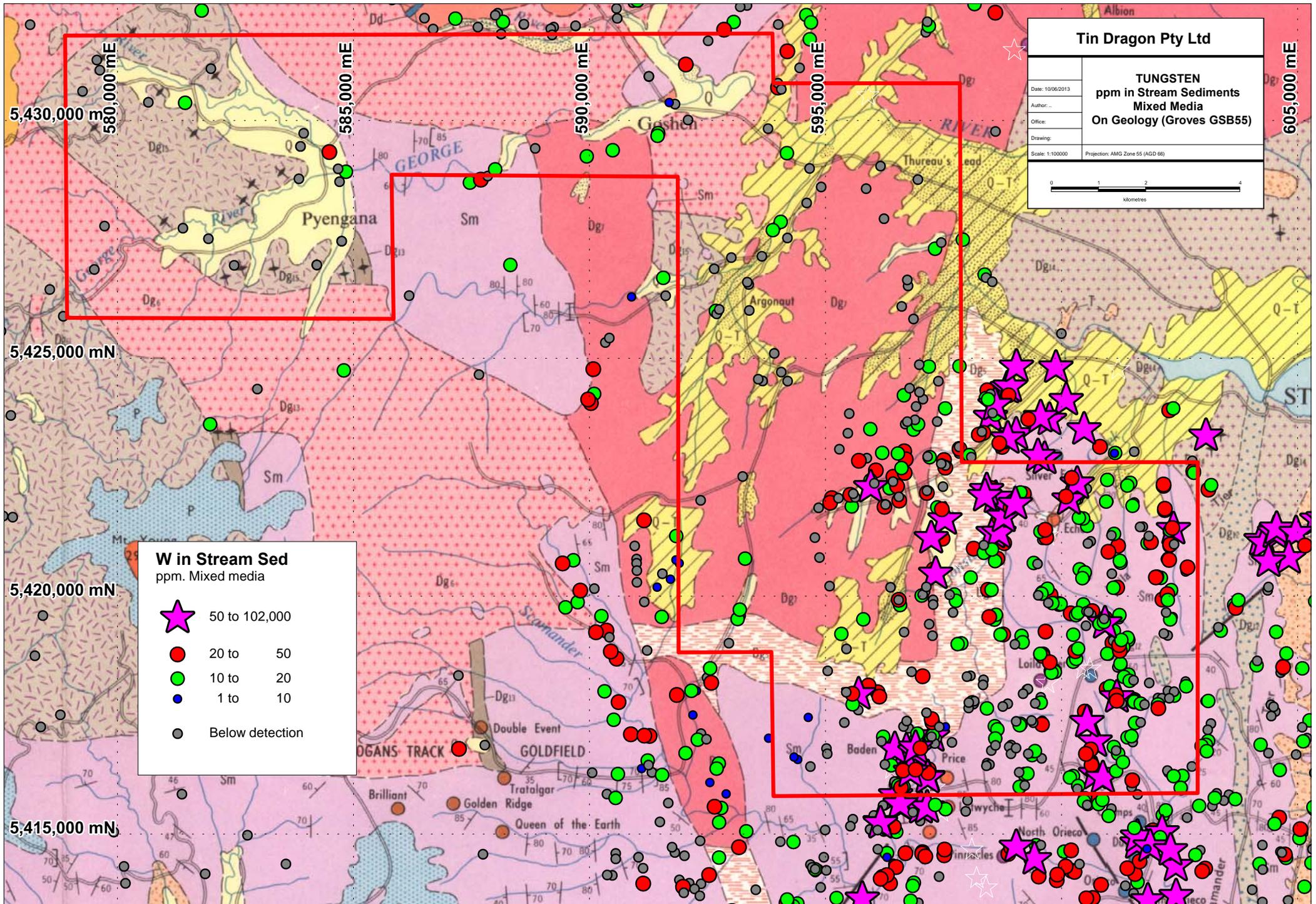




**FIG 14**



**FIG 15**



<b>Tin Dragon Pty Ltd</b>	
<b>TUNGSTEN</b>	
<b>ppm in Stream Sediments</b>	
<b>Mixed Media</b>	
<b>On Geology (Groves GSB55)</b>	
Date: 10/06/2013	
Author: .....	
Office: .....	
Drawing: .....	
Scale: 1:100000	Projection: AMG Zone 55 (AGD 86)

W in Stream Sed	
ppm. Mixed media	
★	50 to 102,000
●	20 to 50
●	10 to 20
●	1 to 10
●	Below detection

**FIG 16**