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**COMBINED ANNUAL TECHNICAL REPORT
SORELL PROJECT
EL6/2013 & EL7/2013**

SORELL PENINSULA, TASMANIA

For the period 22nd October 2014 to 21st October 2015

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01 OCTOBER 2015**

ABSTRACT

The Sorell Project comprises two exploration licences, EL6/2013 & EL7/2013, located on the Sorell Peninsula in western Tasmania, approximately 30km south of the township of Strahan. Exploration is being undertaken for

- Massive sulphide mineralisation hosted within the Cambrian Mount Read Volcanic equivalent strata which are host to all of Tasmania's significant base and precious metal mines with accumulated resources of > 350 Mt of ore.
- Porphyry / Intrusive -style copper gold mineralisation at the Thomas Creek Prospect.
- Nickel-sulphide and platinum-group element mineralisation associated with middle Cambrian mafic and ultramafic rocks of the Hibbs Ultramafic Belt.

Work completed during the period included:

- Compilation and review of open-file geological, geochemical and geophysical datasets; target generation
- Track and line cutting
- Soil and rock chip geochemical sampling
- Field reconnaissance mapping
- Processing of L8 Satellite Imagery to identify alteration and faults
- Petrological studies
- Partial relinquishment of none core licence areas.

At Thomas Creek, ore grade copper and gold mineralisation has been identified at the surface as a result of follow-up of anomalously high copper values in soils. It comprises a massive pyrite zone approximately 5 metres wide containing abundant sulphides of copper hosted within highly weathered saprolitic bedrock, beneath peaty soil cover. Geochemical analyses of the mineralised saprock zone returned values ranging between 0.8% to 3.8% copper and 0.7 g/t to 1.3 g/t gold. The mineralisation occurs above a significant chargeability IP anomaly approximately 300 m wide (open) and 500 m long at 100-200m depth and is a priority for drill testing.

At Henrietta (Nickel) Prospect, portable XRF and geochemical sampling of soils and rare rock outcrops has confirmed highly elevated nickel geochemistry along previously identified

1.4 km long late time EM anomaly, ranging between 0.1 and 0.6% Ni. The results will assist in targeting later ground EM surveys and drilling at the Henrietta prospect.

At the end of the current reporting period a significant land reduction was made. Future exploration is to be focused on core prospect areas identified in the first 2 years of tenure. Proposed works for year three comprise infill and extension geochemical sampling over the Thomas Creek Prospect and shallow diamond drilling across identified shallow copper mineralised areas and over the broader area of alteration. A Ground EM survey is planned for Henrietta prospect to accurately locate the source of the late time conductor to upgrade this prospect to drill ready status.

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Appendix 2: Niton XRF analyses (digital file only)

Appendix 3: ICP geochemical analyses (digital file only)

Appendix 4: Petrological reports

1. BACKGROUND

1.1 Location and access

Exploration Licences 6/2013 and 7/2013 are located on the Sorell Peninsula in western Tasmania, approximately 30km south of the township of Strahan. The tenements fall entirely within the Southwest Conservation Area and are abutted to the east by the Franklin Gordon Wild Rivers National Park, and to the northeast by the Macquarie Harbour Historical Site (Figure 1). The Southwest Conservation Area has been proclaimed by the Tasmanian Government as a Strategic Prospectivity Zone in recognition of the mineral potential of the area.

The area has a high annual rainfall of approximately 1750 millimetres. The natural vegetation is dominated by rainforest and related scrub, most dominantly *Nothofagus* rainforest. Additionally there are areas of wet eucalypt forest and woodland flora types, heathland and coastal vegetation complexes. *Bauera* scrub areas are very thick and generally impenetrable without prior line cutting work. Where tree canopy is high, undergrowth is significantly less and access over the ground can be achieved with some effort.

Access to the project area can be achieved via a coastal landing by boat or by helicopter from Strahan. Access within the project areas is achieved on foot via historical exploration tracks (all of which are currently unsuitable for vehicular egress) and cut lines. All maps and locational data provided in the report uses the GDA 94 reference datum.

1.2 Authority history

The Sorell Project tenure comprises two granted Exploration Licences with a combined area of 394 km² (Figure 1). Exploration Licence EL7/2013 is held by Sherlock Minerals Pty Ltd, and Exploration Licence 6/2013 is held by Thylacine Resources Pty Ltd, a 100% owned subsidiary of Sherlock Minerals. Sherlock Minerals acquired Thylacine Resources through a share purchase agreement after the award of EL6/2013. Both tenements were awarded through an Exploration Release Area competitive bid process, and have been granted for a period of five years. In September 2015 Sherlock made a 43 % voluntary reduction in total tenement holdings, details are provided in Table 1 and the reduced area is shown on Figure 2.

TENEMENT	GRANT DATE	SIZE AT GRANT(km ²)	SIZE AFTER REDUCTION (km ²)	% REDUCTION
EL 6/2013	2/10/2013	225	135	40
EL 7/2013	22/10/2013	169	91	46
TOTAL		394	226	43

Table 1: Sorell Project tenement particulars

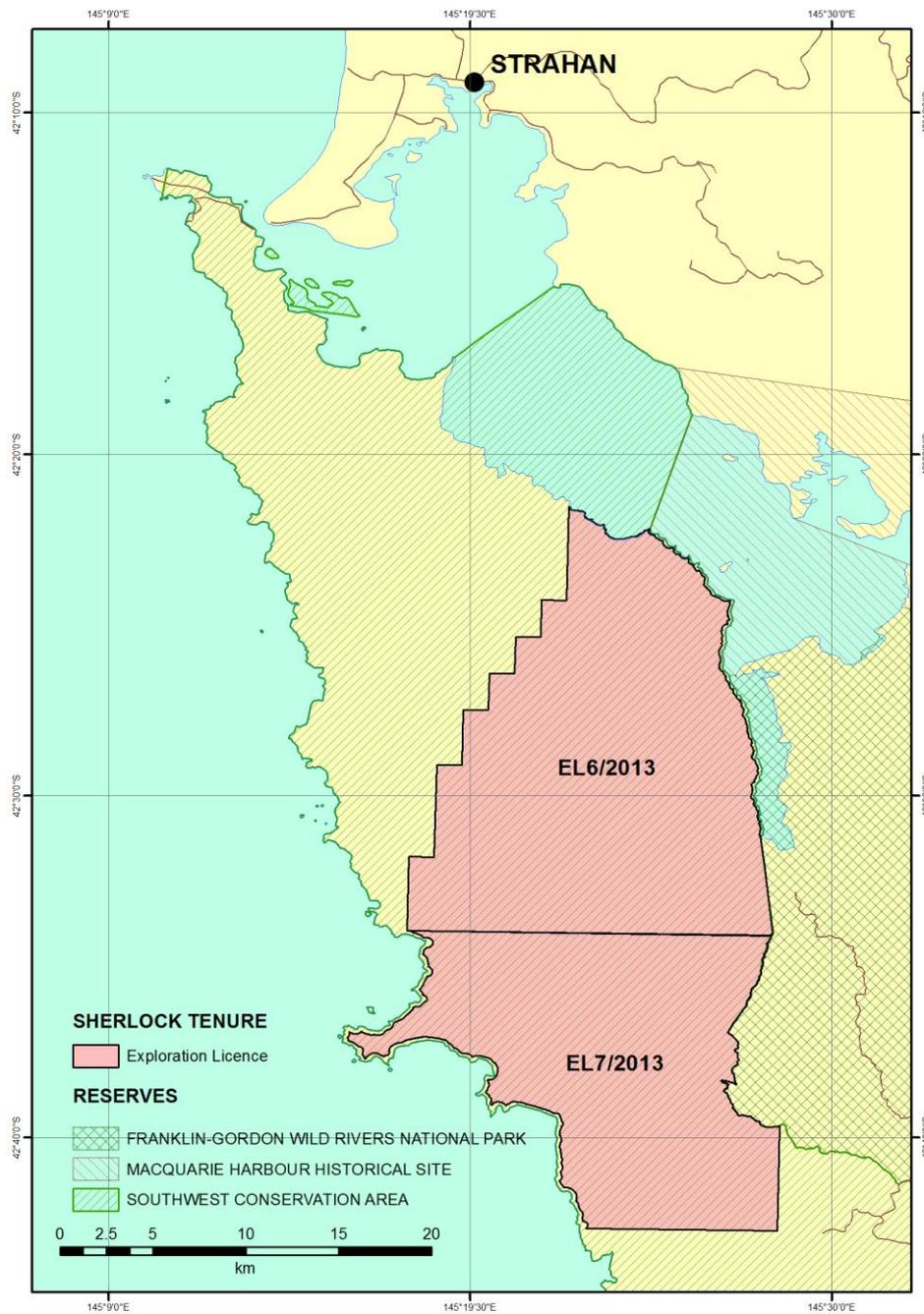


Figure 1: Sorell Project location plan

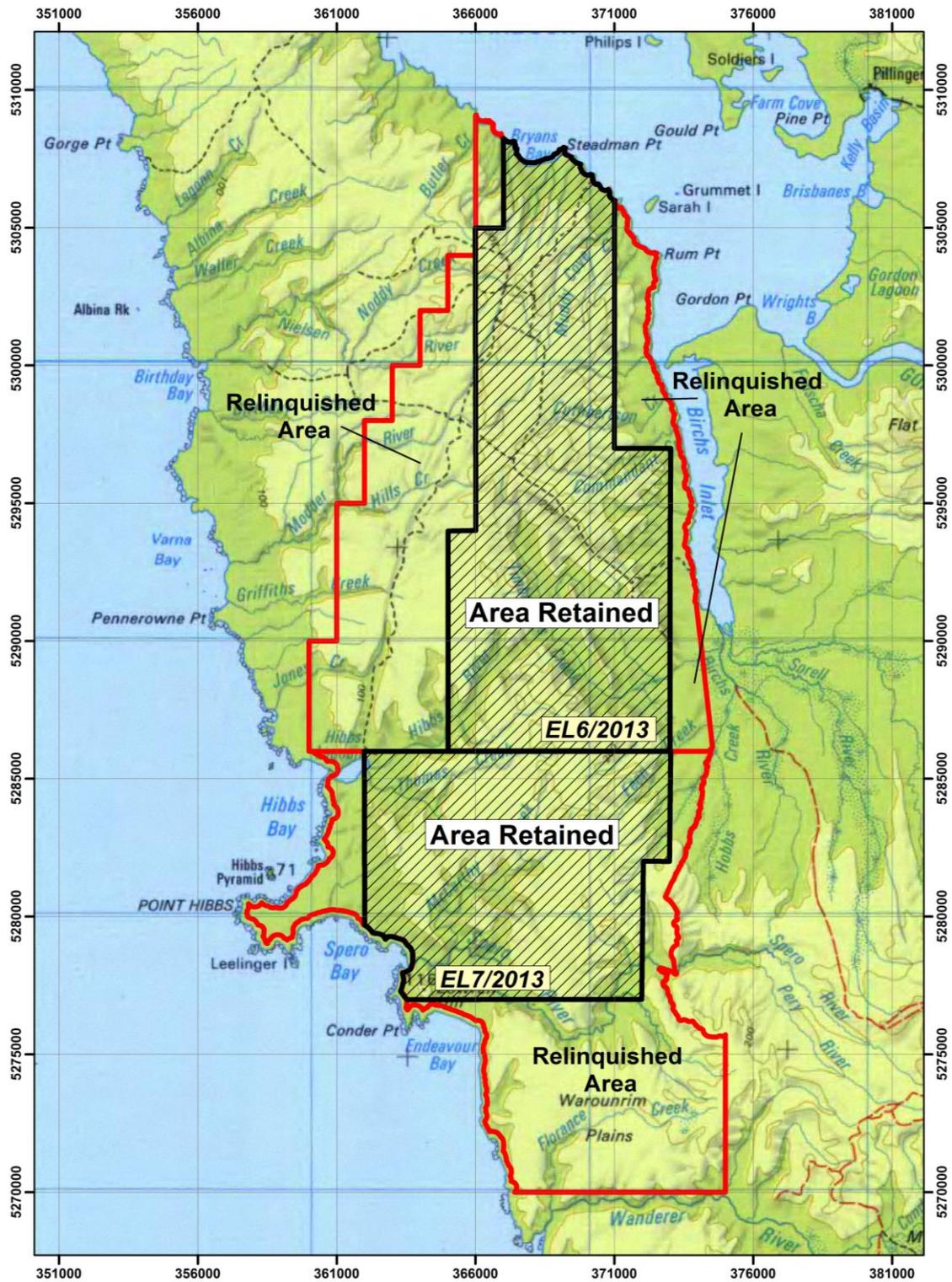


Figure 2: Sorell Project partial surrender areas

1.3 Regional geology

The Sorell Peninsula Project covers a broad swathe of Cambrian Mount Read Volcanic equivalent strata, which are host to all of Tasmania's significant base and precious metal mines and mineral occurrences (Figure 3). The Mount Read Volcanics have been a significant producer of base metals for most of the 20th Century, hosting five major deposits with accumulated resources of > 350 Mt of ore (McNeill, 2013).

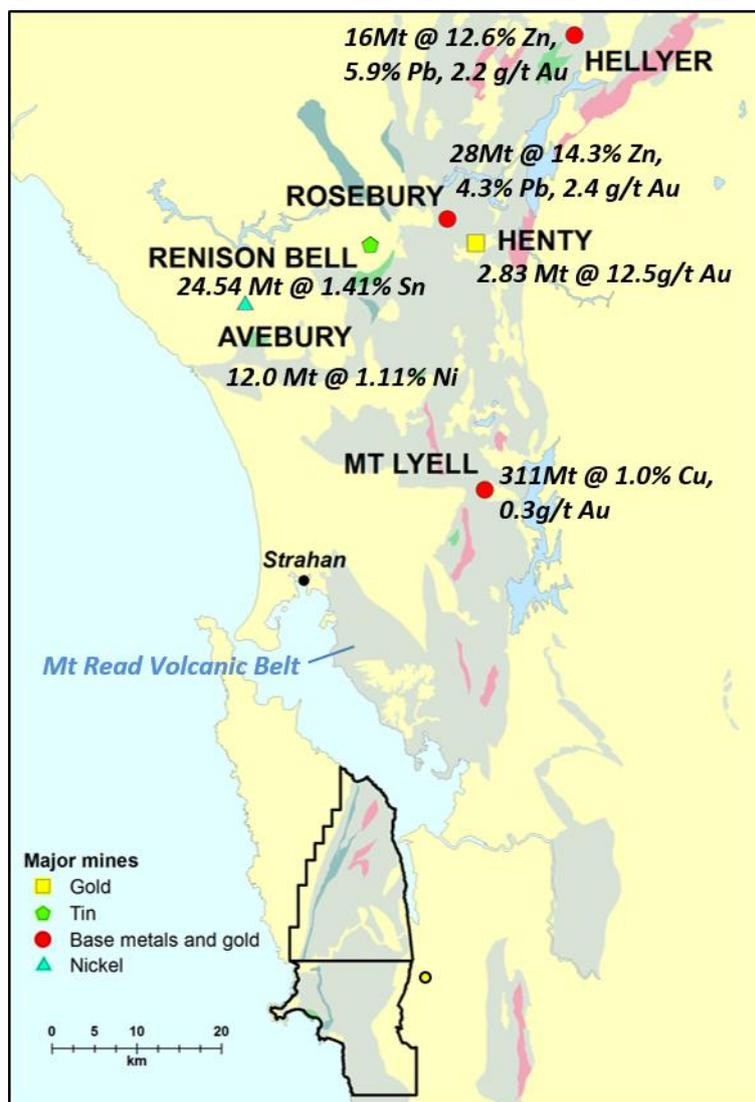


Figure 3: Pre-Permian published geology and major mineral deposits

The geology of the Sorell Peninsula has been described in unpublished company reports of BHP and Amoco/Cyprus, and in White's (1975) PhD thesis. Mapping in the late 1960's by BHP was largely based on coastal exposures and a few inland traverses, with a large

component relying upon aerial photo interpretation. Subsequent explorers have relied heavily upon BHP's initial mapping, with a re-interpretation provided by Close and Reid (1995). Limited description of the regional geology is given in Corbett and Solomon (1989).

Regional mapping by the Mines Department at 1:50,000 has covered the area to the north of Varna Bay ("Macquarie Harbour" map sheet; McCleneghan and Findlay, 1989) and to the south of High Rocky Point ("Montgomery" map sheet; Brown, 1988). The Hibbs 1:50,000 sheet, encompassing the Thomas Creek area, lies between these and has been partially mapped but remains incomplete due to lack of funding. A report by Brown et al. (1991) supplements this mapping and provides the most extensive discussion and interpretation of the Sorell Peninsula geology thus far. Brown et al. (1991) recognised two Precambrian rock successions and six Eocambrian-Cambrian volcano-sedimentary associations in the region (Figure 4). These multiple-deformed associations are bounded by a series of NE to NNE-trending faults and the distribution of these associations is interpreted by Brown et al (1991) to result from thrust sheet stacking. Their structural model of "thin skinned tectonics" probably incorporates a pre-Ordovician thrusting event, reworked by late (Devonian?) thrusting. Thrusts are interpreted as eastward dipping with west/north-west thrust direction. Younger transcurrent faulting further disrupted the Point Hibbs Melange Belt.

The Cambrian andesites and rhyolites of the Noddy Creek Volcanics crop out in the southern portion of the Sorell Peninsula and are inferred to extend further south past Point Hibbs (Brown et al., 1991; Close and Reid, 1995). A series of diorite intrusions, and an extensive intrusive complex of diorites occurs within the southern portion of the Noddy Creek Volcanics, south west of the Timbertops Syncline.

The relationship of the Noddy Creek Volcanics to the Mt Read Volcanics is somewhat enigmatic. The Mt Read Volcanics crop out in a N-S trending belt to the east, and extends from Mount Darwin, disappearing beneath a Tertiary Graben to re-emerge further south in the D'Aguillar Range area. Corbett and Solomon (1989) have correlated the Noddy Creek Volcanics with the Mt Read Volcanics based on similar calc-alkaline composition, and suggest the Noddy Creek Volcanics could be a smaller, separate arc or sub-arc west of the main Mt Read Belt. More recent work by Brown et al (1991) has suggested a more direct

correlation based on geochemical similarities of the southernmost Noddy Creek Volcanics to volcanics of the Que River-Hellyer area.

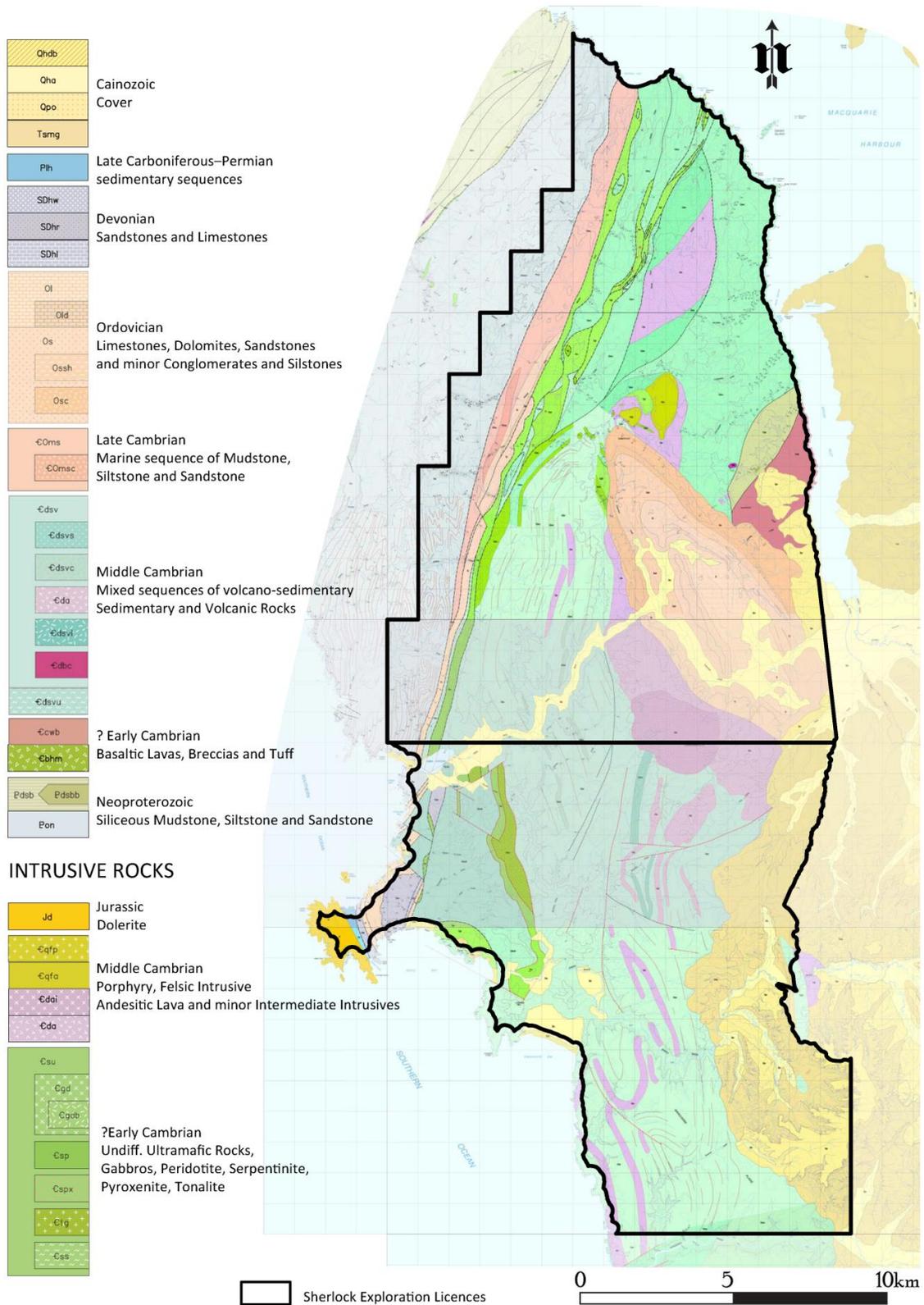


Figure 4: Sorell Peninsula published geology

1.4 Previous Investigations

Mineral exploration in the Sorell Peninsula area has been undertaken by numerous explorers, with significant work including:

- 1956–1962 Lyell-EZ Explorations (LEE).
- 1964–1972 BHP Exploration.
- 1983-88 Amoco Minerals Australia Company (and JV partners).
- 1992-1998 Plutonic Operations limited
- 1998-2001 - Pacific-Nevada Mining Pty Ltd
- 2007 – 2012 MHM Metals

This work, alongside mapping undertaken by the state geological survey, has greatly improved the geological understanding of the area and has identified numerous area of interest including the Thomas Creek copper-gold prospect, the Hibbs ultramafic belt and the Hill 99 prospect.

Since the mid 80's explorers have undertaken numerous detailed airborne magnetic and electromagnetic surveys covering significant portions of tenements held by Sherlock (Figure 5). Reprocessing and reinterpretation of this data has greatly aided Sherlock in target identification. A detailed description of work undertaken by previous explorers is provided in the previous annual report (Reid et al, 2014).

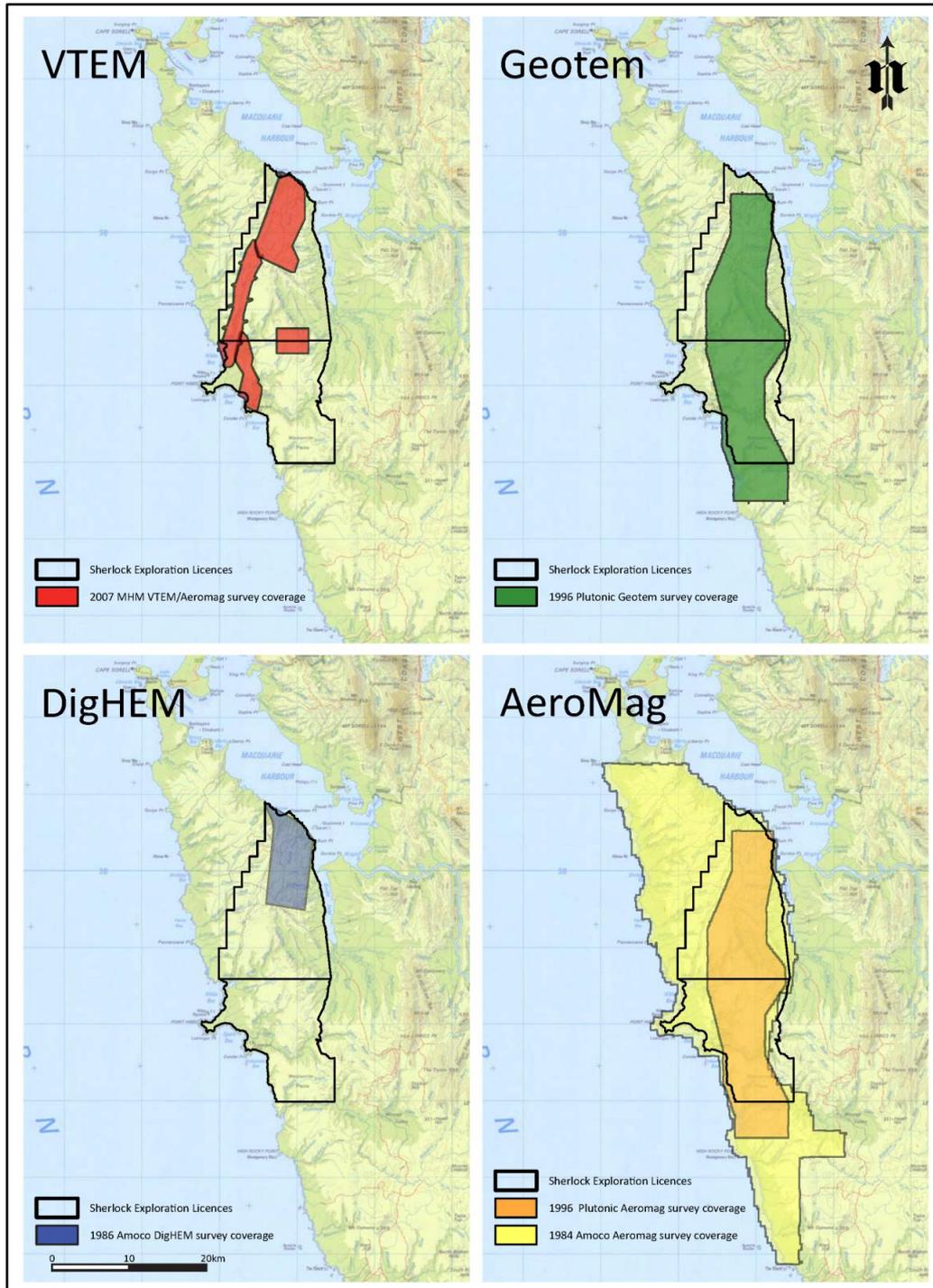


Figure 5: Summary of airborne geophysical surveys

1.5 Exploration completed during the first year of tenure

Exploration undertaken during the first year of tenure (Reid et al, 2014) included:

- Compilation and review of previous exploration
- Reprocessing of open-file airborne geophysical datasets; target generation
- Access line cutting (total 15 line-km)
- Dipole-dipole induced polarisation surveys (total 7.3 line km)
- Field reconnaissance
- Soil and rock chip geochemical sampling (total 97 samples)
- Geophysical modelling
- Petrological studies

At the Thomas Creek Prospect IP surveys revealed the presence of a significant chargeability anomaly approximately 300 m wide (open) and 500 m long at 100-200m depth. This does not appear to have been tested by historical exploration drill holes and is strongly recommended for drill testing (Figure 6).

Soil geochemical work at Thomas creek indicates highly weathered sap rock occurs below dark soils generally at 40 centimetres to 60 centimetres depth. It is interpreted the high rainfall environment may have leached much of the surface copper mineralisation. Narrow zones with higher copper values are always associated thicker sets of remnant vein material. This may explain why the chargeable anomaly starts at 100-200m depth indicating the depth of oxidation.

Within the Hibbs Ultramafic Belt, reprocessing and interpretation of historical airborne electromagnetic survey data identified a high amplitude conductive target, 'Henrietta', approximately 1.4 km in strike length (Figure 7). Preliminary field investigations at Henriettea located gossanous material with elevated nickel and platinum assays. A program of rock chip sampling and ground EM surveys is recommended for this prospect ahead of drill testing.

Within the Mount Read Volcanic equivalent strata, reprocessing and interpretation of historical airborne electromagnetic survey data has identified numerous conductive targets warranting field reconnaissance and ground EM follow-up.

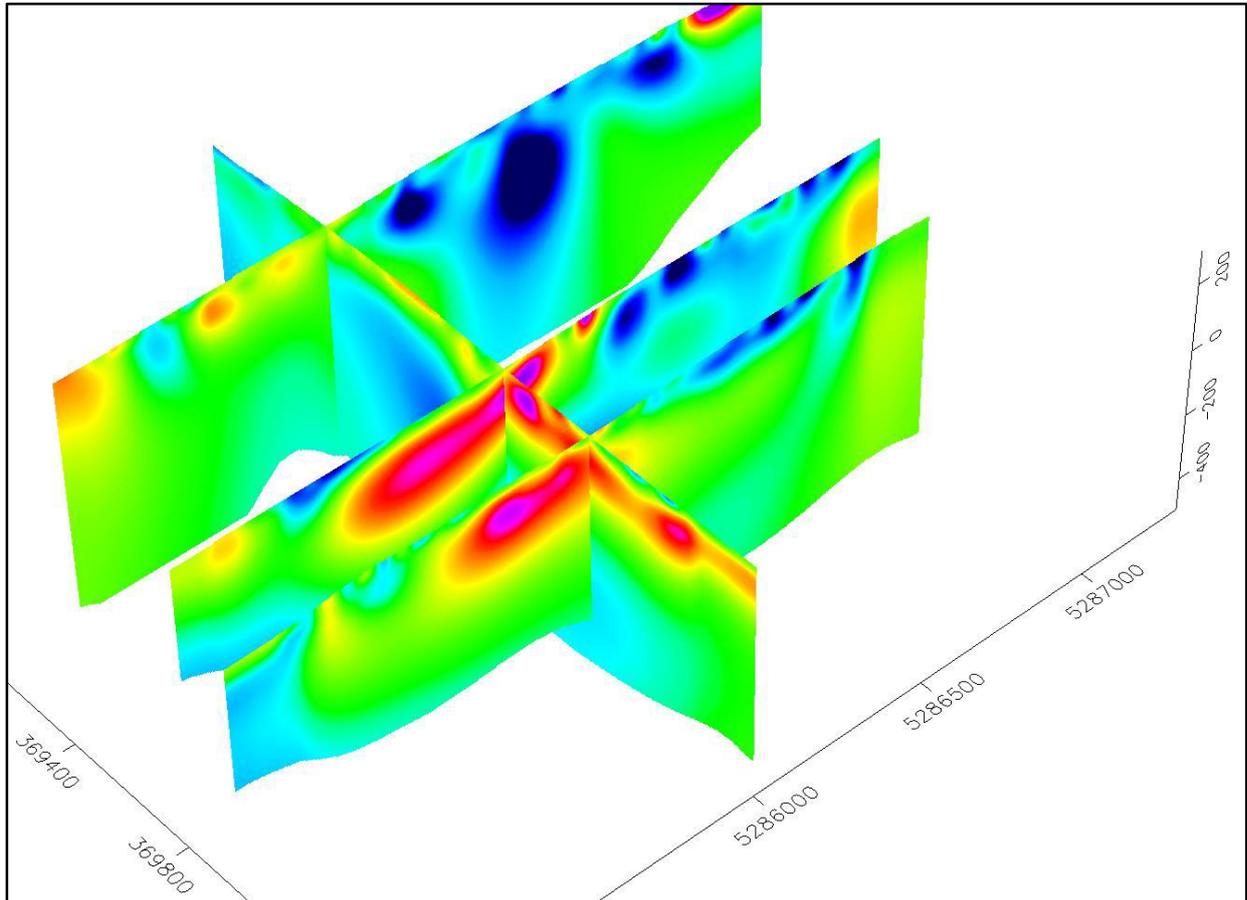


Figure 6: Thomas Creek - IP inversion model showing large chargeable target (red and magenta colours)

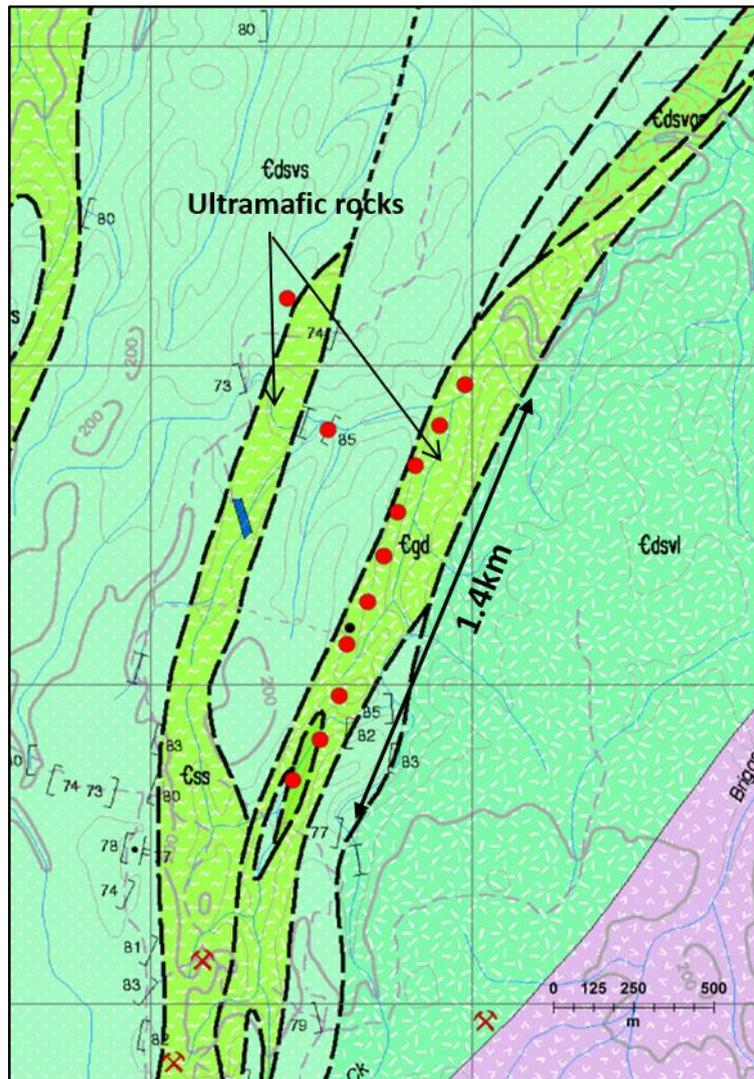


Figure 7:Henrietta Nickel Target - Geological map with priority EM targets (red circles)

1.6 Exploration rationale

Exploration is being undertaken for a variety of commodities and styles of mineralisation commensurate with the variety of mineralisation found in western Tasmania. This includes:

- Massive sulphide mineralisation hosted within the Cambrian Mount Read Volcanics and its equivalents (i.e. Noddy Creek Volcanics) which are host to all of Tasmania's significant base and precious metal mines with accumulated resources of > 350 Mt of ore.
- Porphyry / Intrusive-style related copper gold mineralisation at the Thomas Creek Prospect.

- Nickel-sulphide and platinum-group element mineralisation associated with middle Cambrian mafic and ultramafic rocks of the Hibbs Ultramafic Belt.

2. EXPLORATION COMPLETED DURING THE REPORTING PERIOD

Exploration undertaken during the period has included:

- Compilation and review of compiled geological, geochemical and geophysical datasets; target generation
- Track and line cutting
- Helicopter supported, geological reconnaissance of Birch's Inlet, Thomas Creek, Noddy Creek and Hill 99 areas.
- Soil and rock chip geochemical sampling
- Field reconnaissance mapping
- Processing of L8 Satellite imagery to identify potential areas of alteration and faults localising higher grade mineralisation
- Petrological studies
- Partial relinquishment of none core licence areas.
- Report compilation

2.1 Data compilation and review

Government databases were interrogated to identify work undertaken by previous explorers and government officers. Digital compilation of historical geochemical, geological and geophysical data into ArcGis format was undertaken. Particular focus was given to identifying high quality regional geophysical surveys in order to identify potential targets not investigated previously. In particular this review identified the Thomas Creek Prospect as having significant potential for economic copper-gold mineralisation and consequently field work during the year focussed largely on this area. A second focus area, accessed by boat, involved field mapping, soil and rock chip sampling of airborne EM targets at the Henrietta (Ni-PGE) Prospect and the Hill 99 (Cu-Zn-Au) Prospect areas in the north of the tenement group (Figure 8).

2.2 Field reconnaissance, soil and rock chip sampling.

Field reconnaissance visits were undertaken to priority geophysical and geological targets in the Thomas Creek, Henrietta and Hill 99 areas. To assist with target evaluation XRF analysis of rock chip and in-situ soil samples was undertaken using a portable Niton XRF analyser. For soil sampling, at each location the upper 10-30cm of material was excavated and any remaining large rock chips removed. An XRF analysis was undertaken through a protective thin plastic sheet at the exposed soil horizon for thirty seconds. The hole was then backfilled. The Niton reported assays for Mo, Zr, Sr, U, Rb, Th, Pb, Se, As, Hg, Zn, Cu, Ni, Co, Fe, Mn, and Cr at varying detection limits depending on factors including soil moisture content and soil matrix. Results are provided in Appendix 2 (digital file only).

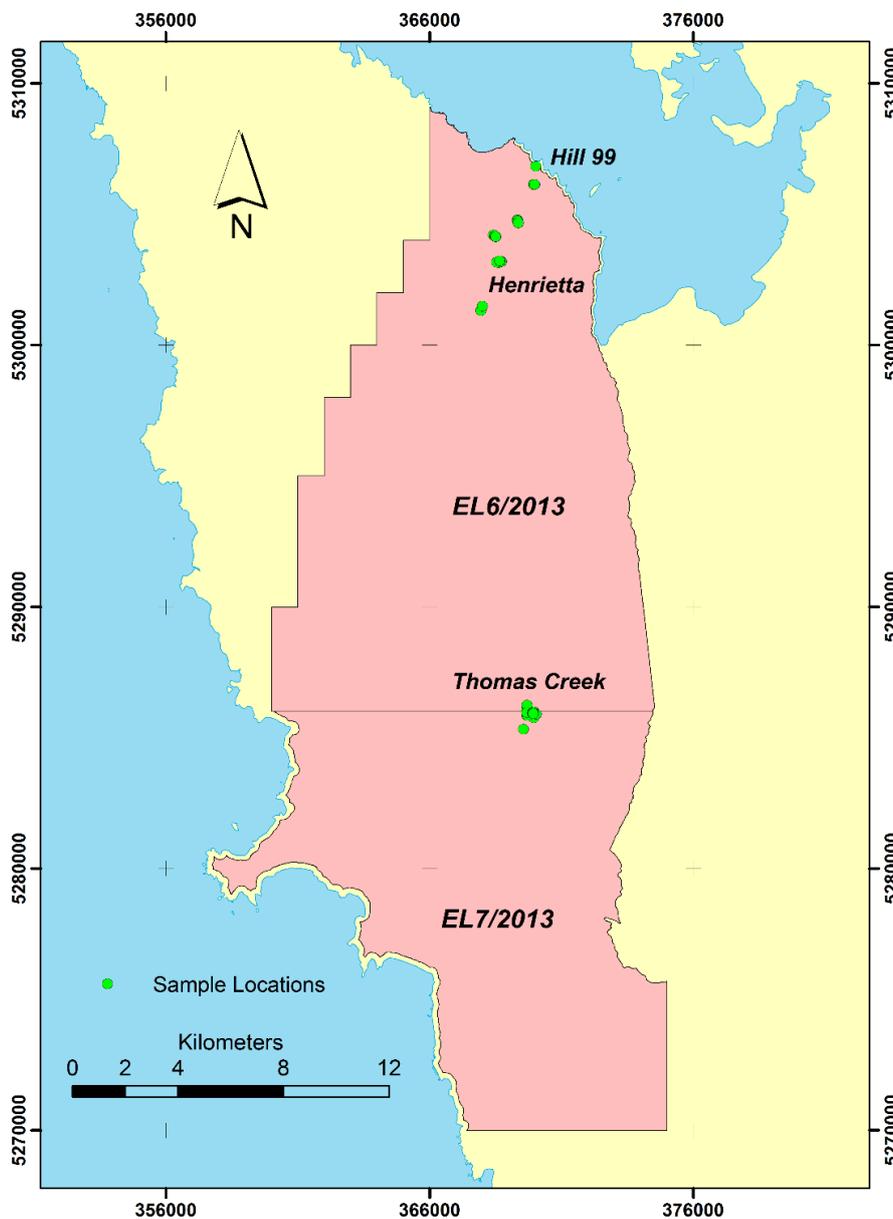


Figure 8: Sample locations – regional

2.2.1 Thomas Creek area.

XRF readings were taken from the Thomas Creek area, generally along lines cut for IP survey work (Figure 11). Soil samples were undertaken to verify high copper in soils noted by previous explorers. As part of the geochemical compilation into a GIS format, it was recognised that the historical soil sample and drill locations were in error (15-35 metre error) to that original recorded. Some of the historical Thomas Creek drill collars have been relocated on the ground and these control points were used to estimate the error and update historical soil survey data and drill locations accordingly.

At Thomas Creek the soil profile generally ranges from 30 cm to a metre thick and below this highly weathered, saprolitic clay occurs. Soil sampling undertaken by previous explorers defined an in-situ copper +/- gold anomaly approximately 1000 m long and 700 m wide using a 100ppm copper cut off, roughly coincident with the demagnetised zone. The soil geochemical responses are highly varied over short (10m) distances and it is interpreted that this represents a remnant geochemical profile, following deep vertical leaching due to the high rainfall. High copper values are interpreted to be attributed to remnant copper mineralisation.

Historical high grade copper was re-discovered and sampled by Sherlock during the period. Below 50cm of peaty soil, fresh massive pyrite and abundant sulphides of copper over a 6 metre wide zone within weathered saprolitic bedrock were located. Geochemical analyses of the mineralised saprock zone returned values ranging between 0.8% to 3.8% copper and 0.7 g/t to 1.3 g/t gold.

Petrological analysis of panned concentrate of the sulphides identified copper ores comprising predominantly of chalcopyrite but also include bornite, covellite and some chalcocite, with ubiquitous pyrite (Figures 9&10). Highly weathered host rock samples indicate the mineralisation occurs as a coarse stockwork of veins. The copper mineralisation under microscope show evidence of extensive leaching and it is postulated this high grade zone is a remnant, and may indicate why the chargeable IP geophysical response becomes strong at about 100-200 metres where leaching is absent and primary copper mineralisation may still be present.



Figure 9: Legendary Track Cutter, Ian Rogers, with a pan of copper and iron sulphides from a Thomas Creek saprock sample.

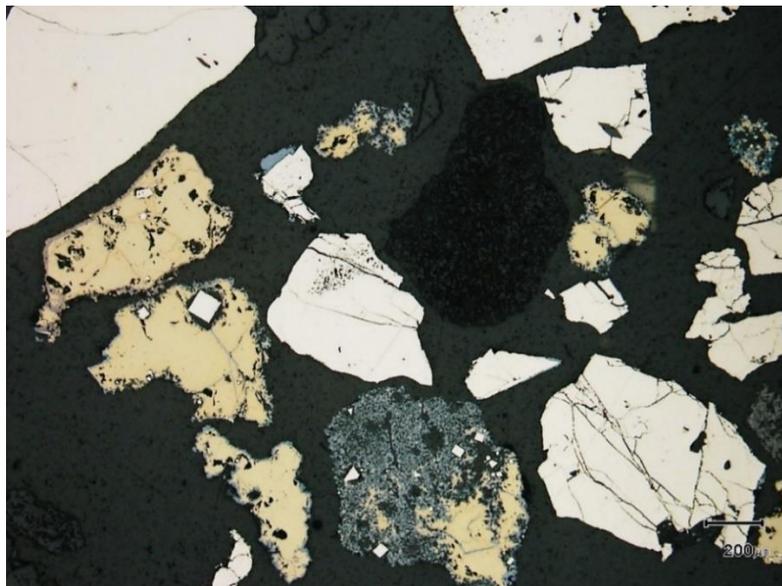


Figure 10: Pyrite (clear) and chalcopyrite (yellow) from panned concentrate sample at Thomas Creek. One chip of chalcopyrite (bottom, centre) largely oxidised to goethite. Note how fresh the pyrite is relative to the chalcopyrite.

2.2.2 *Henrietta/Hill 99 area.*

Access to the sites required a 4.5 km of line cutting to establish a walking track along an old BHP exploration road which starts near the coast at Asbestos Point and continues southwards through to the Noddy Creek area. Access to this new trail was made by boat and a fly camp was erected about 100m inland from a small beach on the western side of Asbestos Point.

Portable XRF sampling of soils and rare rock outcrops has confirmed highly elevated nickel geochemistry along the 1.3 km late time EM anomaly at Henrietta Prospect ranging between 0.1 and 0.6% Ni. Spot sampling of rocks for lab analysis (Appendix 3) returned elevated Ni in line with XRF readings, but did not return elevated PGE's or copper. XRF readings taken from the Hill 99 area, following up on targets generated from the reprocessing of historical airborne EM surveys failed to detect significant base metal anomalism (Figure 12).

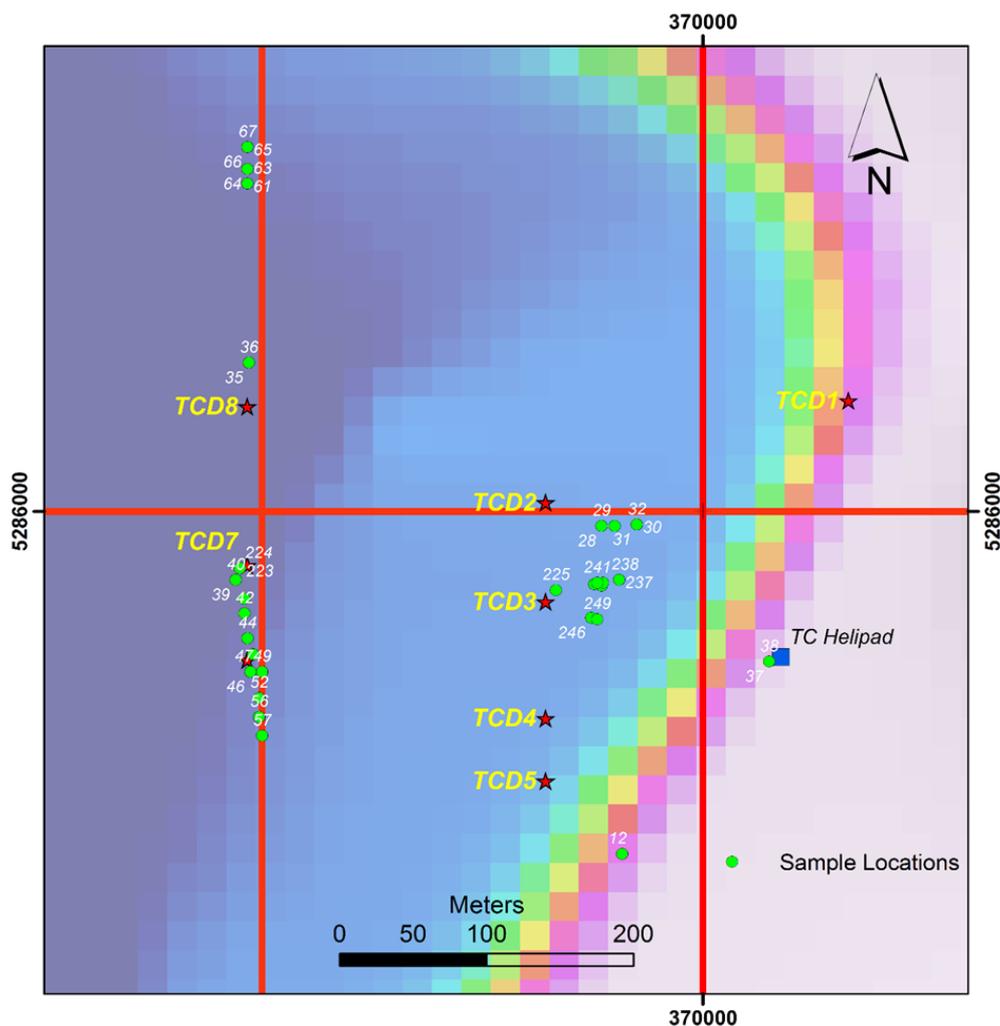


Figure 11: Thomas Creek Prospect, IP traverse and geochemical sample locations over IVD aeromagnetic image

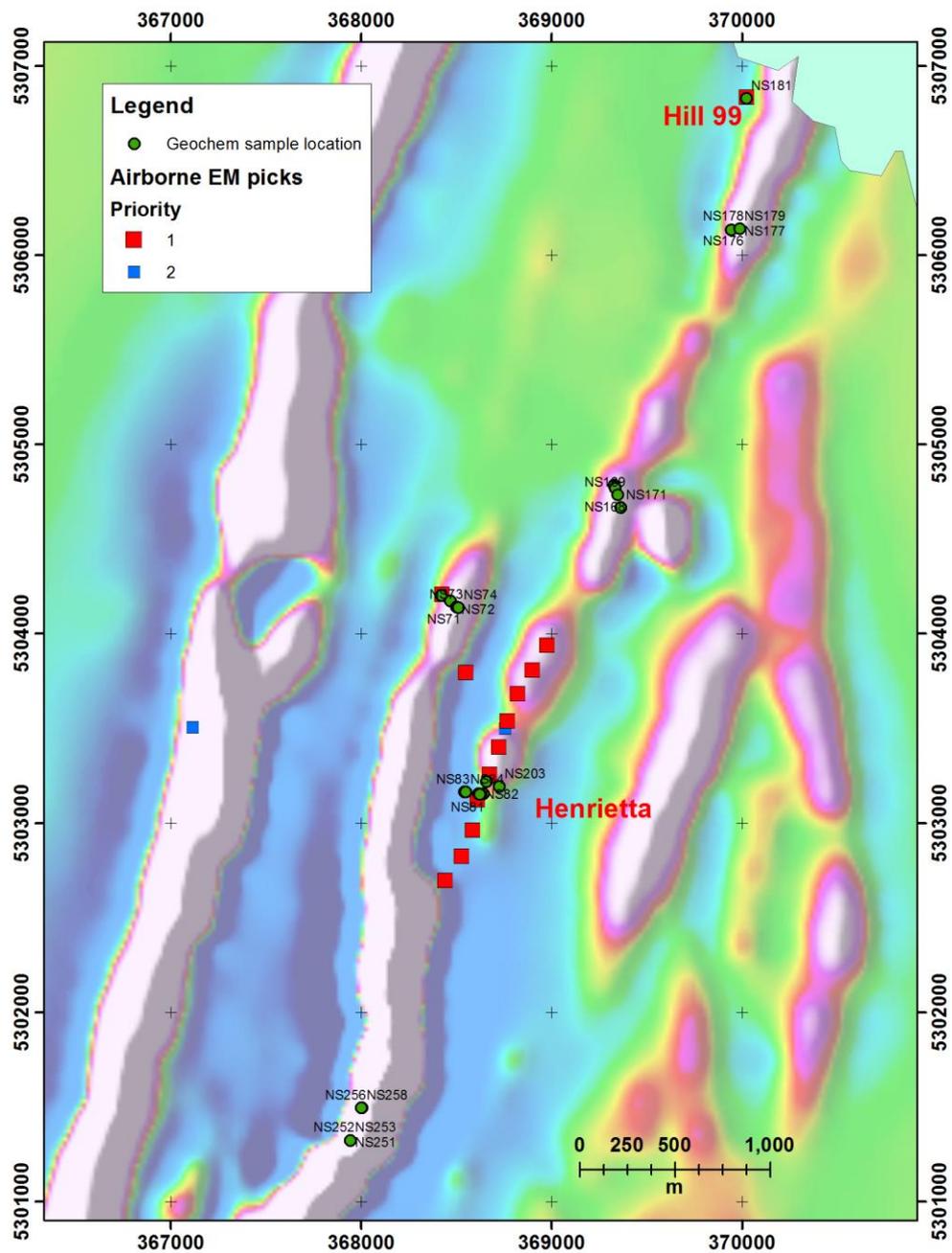


Figure 12: Henrietta / Hill 99 area, geochemical sample locations and airborne EM targets over IVD aeromagnetic image

2.3 Petrological studies.

Drill core from Plutonic Resources' shallow drill campaign in the mid 1990's at Thomas Creek was re-logged at the Hobart Core Storage Facility. Selected quarter core sampling was

undertaken to analyse goethitic and haematitic stock-work veins with respect to copper mineralisation. The prevalence of these vein sets may correlate with better copper assays yet previous explorers have not focused on them with other historical petrological work. The author notes that haematitic vein systems have also been noted in the Mt Lyell Mining District (ie. Corbett 2001).

The petrography indicated that all samples represent various (but partly similar) volcanics, with low temperature alteration of plagioclase to albite \pm clouded sericite, and of mafic crystals (pyroxene \pm rarer olivine) to actinolite and chlorite \pm chloritic – clays, \pm limonite. Carbonate veins (? siderite) and stringers are notably altered /oxidised to dark brown limonite-goethite. These veins comprised carbonate + pyrite $>$ magnetite \pm chalcopyrite, and appear to be the main source of copper contained within the core.

As described in section 2.41 of this report, primary sulphides containing copper ores and gold were located in sap-rock material below the soil cover at Thomas Creek. Full Petrological Reports provided in Appendix 4 provided extra detail on the vein material from drill core and sulphides.

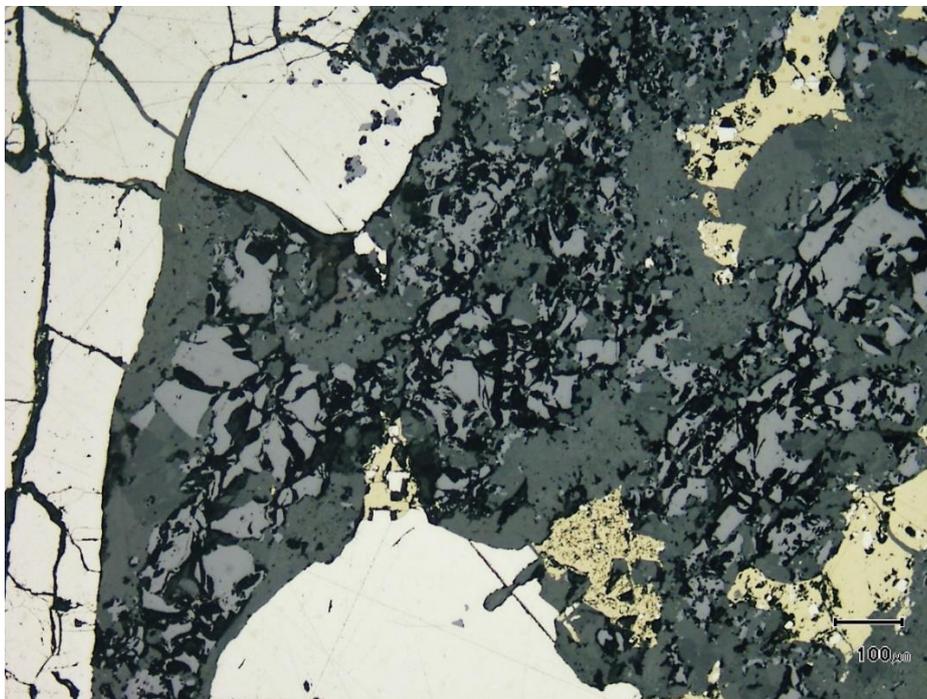


Figure 13: PS, (X20). Coarse white pyrite (fractured), minor yellow chalcopyrite, together with patchy micro brecciated, grey corroded-looking patches of vein-magnetite, all within goethite-altered carbonate gangue.

2.4 Thomas Creek - Regional Geophysical Assessment

Thomas Creek forms a major demagnetised zone with an ovoid magnetic rim clearly visible in Reduced-to-Pole (RTP) regional aeromagnetic datasets (Figure 14). Such demagnetised zones are often characteristic of porphyry copper-gold deposits. The aeromagnetic data also highlight a major north-south, conjugate north-east trending and more subtle west-northwest structural features defining the location of the intrusive body. The north south structure is clearly identifiable on regional gravity data (Figure 15) and is interpreted to represent a major crustal fault. Intersecting conjugate rift and transfer fault systems provide the potential dilational trap sites for magmatic activity and associated mineralisation. Thomas Creek is also clearly visible on regional radiometric data and is defined by a distinct potassium anomaly coincident with the ovoid magnetic feature (Figure 16).

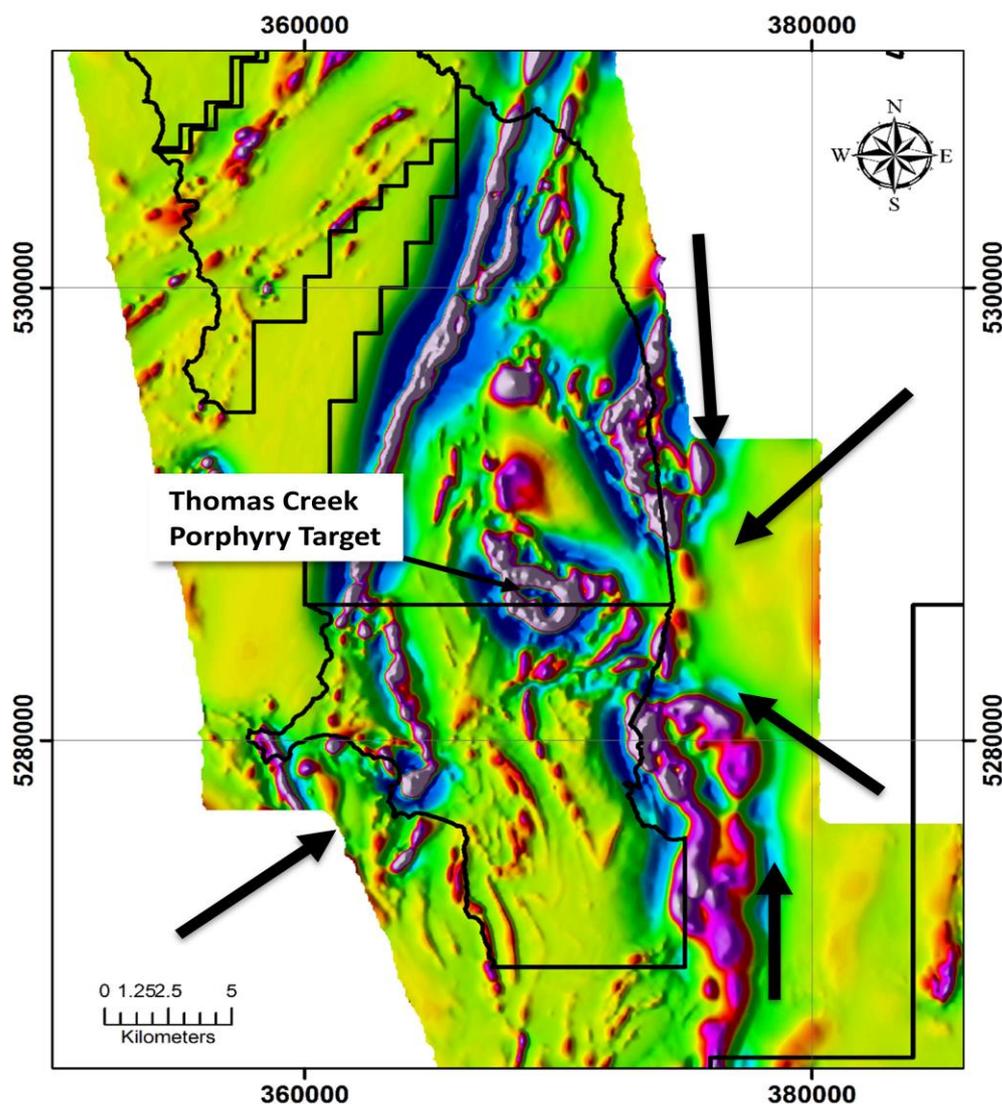


Figure 14: Sorell Project RTP aeromagnetic data showing Thomas Creek

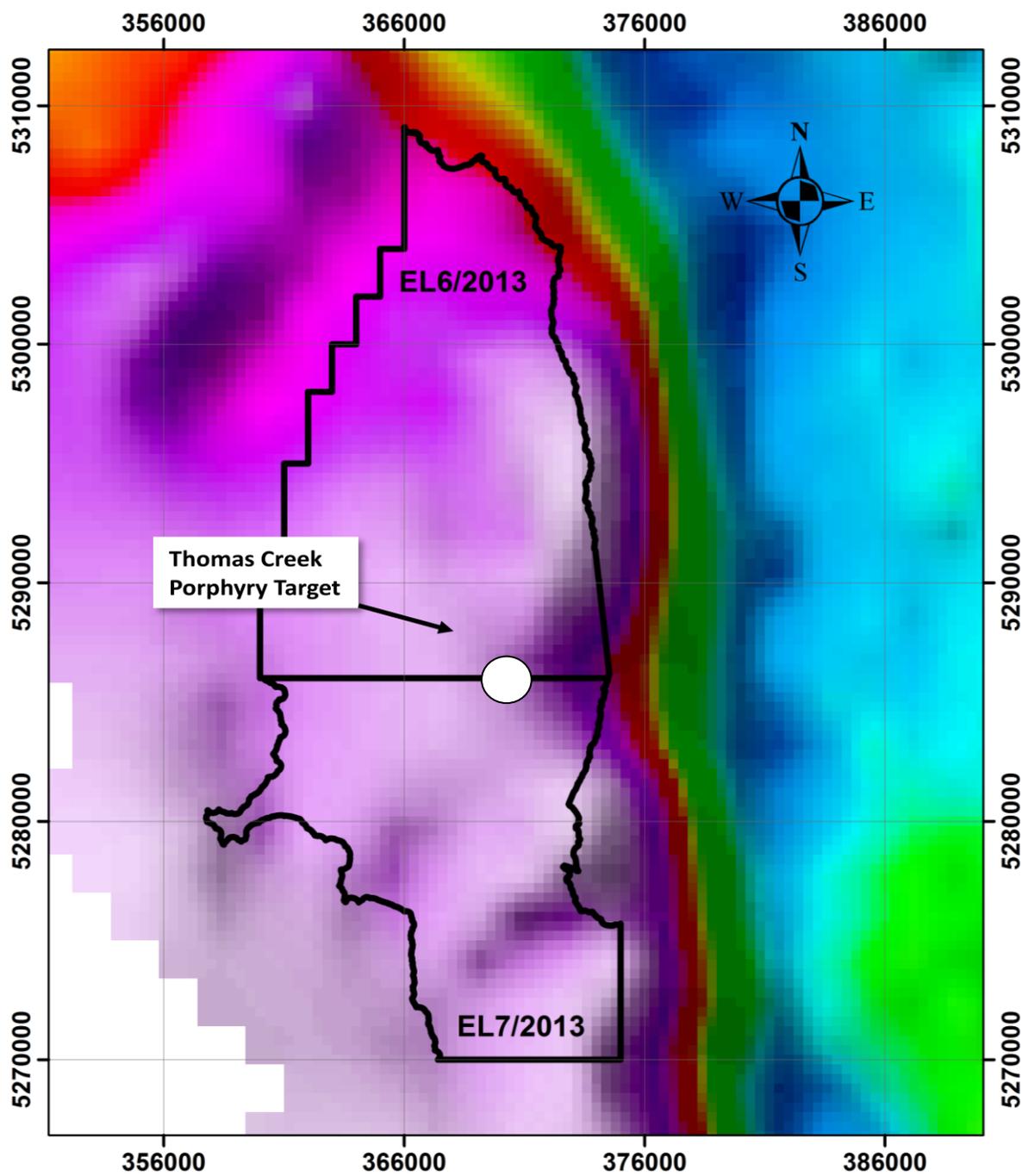


Figure 15: Sorell Project gravity data showing Thomas Creek

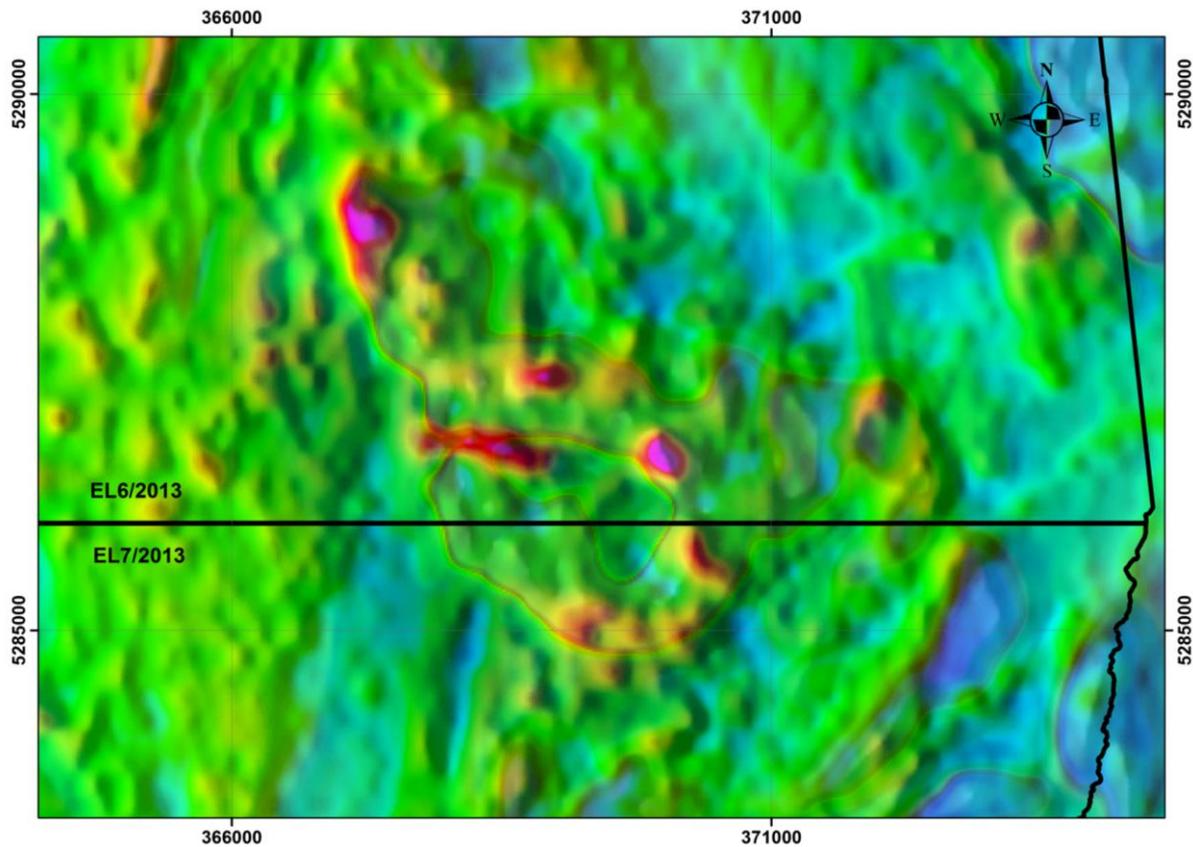


Figure 16: Thomas Creek area, radiogenic potassium data overlain by transparent aeromagnetic image.

2.5 Thomas Creek – Satellite Mapping

The highest copper and gold grades at the world-class Mt Lyell Copper-Gold Deposit 55 kilometres north of Thomas Creek are found to occur where orthogonal faults intersect Mt Lyell fault structure. The Mt Lyell fault may have originally been a major extensional basin edge fault controlling the deposition of younger Ordovician-Devonian aged strata found along its eastern side and similarly a fundamental conduit for the high sulphidation event generating the mineralisation. A similar juxtaposition occurs in the Thomas Creek area where Ordovician aged sediments form a prominent NW trending syncline (Timbertops syncline) and appear to be in faulted contact along the Northern edge of the Thomas Creek Prospect.

Recent alteration mapping research at Mt Lyell too has highlighted mineral alteration halos around the mineralisation detectable by hymap imagery, with mineralisation associated with detectable pyrophyllite, muscovite, chlorite, topaz, jarosite, and phengite alteration.

Appraisal of Landsat 8 satellite imagery over Thomas Creek has highlighted a number of major fault intersections and possible mineral alteration zones in the vicinity of known surface mineralisation (Figure 17). As described in section 2.4 the Thomas Creek Prospect occurs at the intersection of major crustal faults. The Thomas Creek Prospect itself comprises as complex array of smaller conjugate faults and the intersection points may indicate where higher copper grades could occur (Figure 17). The prospect forms a prominent vegetation anomaly lacking taller tree canopy perhaps indicative of acid waters associated with the mineralisation. These new areas of interest will be followed up with further geochemistry and geophysical targeting ahead of drill testing.

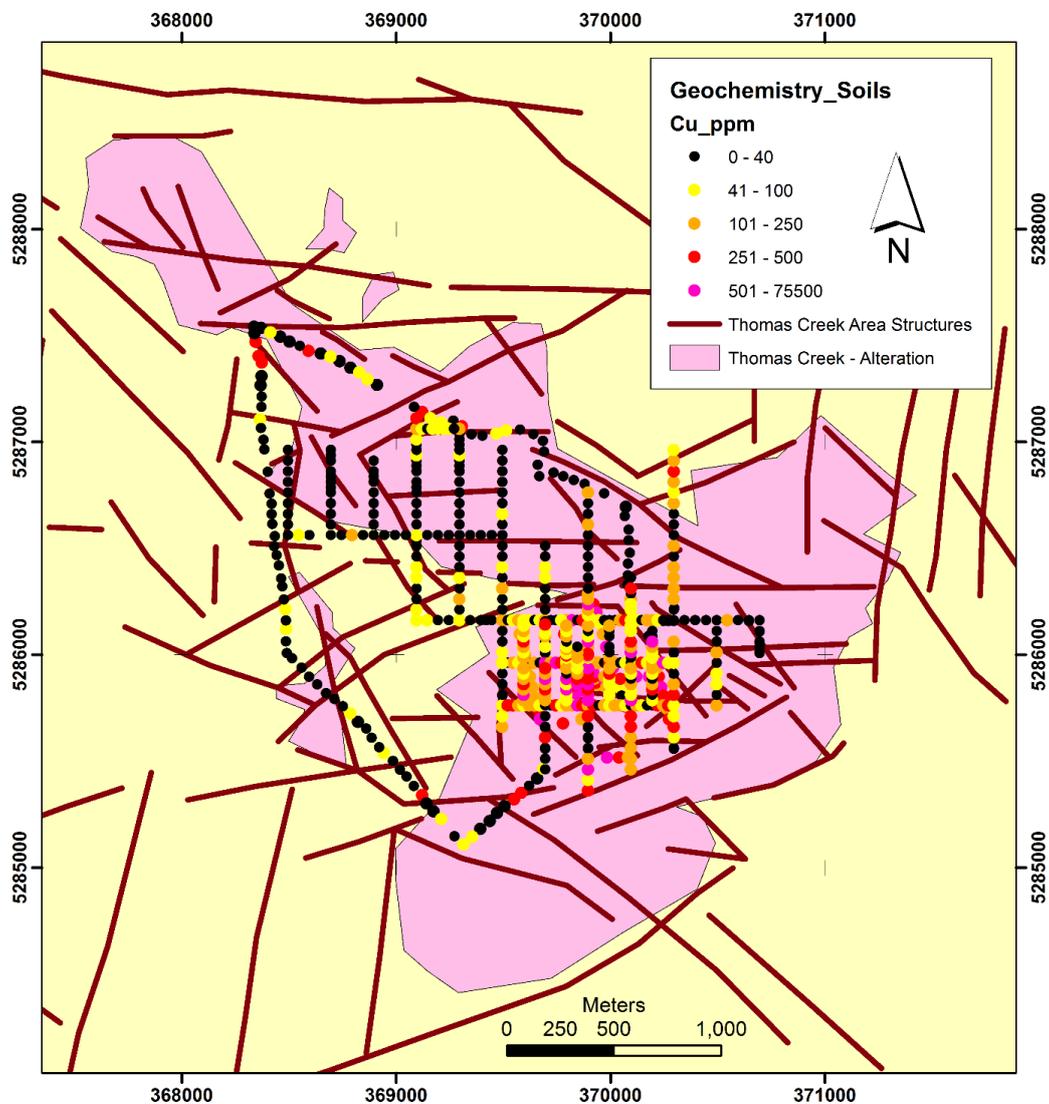


Figure 17: Alteration and fault architecture interpretation of Landsat 8 data over the Thomas Creek Area

3. CONCLUSIONS

High grade copper mineralisation has been identified as a result of follow-up of high copper values in soils identified by previous explorers at Thomas Creek. Geochemical analyses of the mineralised saprock zone returned values ranging between 0.8% to 3.8% copper and 0.7 g/t to 1.3 g/t gold.

Petrological analysis of panned concentrate of the sulphides identified copper ores comprising predominantly of chalcopyrite but also include bornite, covellite and some chalcocite, with ubiquitous pyrite. Highly weathered host rock samples indicate the mineralisation occurs as a coarse stockwork of veins. The copper mineralisation under microscope show evidence of extensive leaching and it is postulated this high grade zone is a remnant, and may indicate why the chargeable IP geophysical response identified in the previous year becomes strong at about 100-200 metres where leaching is absent and primary copper mineralisation may still be present. The target is a priority for drill testing.

At Henrietta (Nickel) Prospect, portable XRF and geochemical sampling of soils and rare rock outcrops has confirmed highly elevated nickel geochemistry along previously identified 1.4 km long late time EM anomaly, ranging between 0.1 and 0.6% Ni. The results will assist in targeting later ground EM surveys and drilling at the Henrietta prospect.

With the ongoing protracted negative investment climate for early stage mineral exploration in Australia, the Company will focus future exploration efforts on key advanced exploration target areas. It consequently applied to relinquish 43 % of the total licence area near the end of the licencing period. In addition the Company will apply to combine EL6/2103 with contiguous EL7/2013 to consolidate the land holding and ensure the Company's key project, Thomas Creek, which currently straddles both tenements is wholly contained in one new licence entity.

Over the 2015/16 summer field period, line cutting and geochemical sampling is planned for the Thomas Creek Prospect. In addition, shallow diamond drilling using a light weight portable drill corer is proposed across identified shallow copper mineralised areas and over the broader area of alteration. The drilling aims to map alteration styles to assist vectoring of

drill targets in this large porphyry style system. Twenty holes are currently scheduled at an average depth of 15 metres per hole which will produce about 300m of core.

Pending results of the drilling further limited Ground IP and/or EM Geophysics may be undertaken at Thomas Creek. A Ground EM survey is planned for Henrietta prospect to accurately locate the source of the late time conductor to upgrade this prospect to drill ready status.

4. ENVIRONMENT

Prior to any field-based activities being undertaken, the appropriate PEWPS were submitted to Mineral Resources Tasmania for approval. A species search was undertaken via the online Natural Values Atlas. The search identified observations of six threatened species within the Exploration Licences, including the white-bellied sea-eagle, tasmanian devil, swift parrot, orange-bellied parrot, azure kingfisher, and the tasmanian wedge-tailed eagle. The most significant of these is the orange-bellied parrot which is listed as critically endangered. None of the identified observations were within areas of proposed field activities.

Ground disturbing works during the period, comprised at the Thomas Creek Prospect an additional 200 metres of line cutting to allow geochemical sampling over a high grade copper zone. In the north of the tenement a walking track was cut starting 100 metres inland from the coast at Asbestos Point through to the Noddy Creek Prospect area approximately a further 4 kilometres inland. The track follows a historical road originally cut by BHP in the early 1970's but which is now overgrown. The new trail deviates around major trees and involved cutting of thin wooded undergrowth below the tree canopy, bauera and cutting grass regrowth areas. Access to this new trail was made by boat and a fly camp was erected about 100m inland from a beach landing site on the western side of Asbestos Point. Tracks were cut wide enough to allow free walking access in single file, carrying camping gear or survey equipment. No rehabilitation has been undertaken as all tracks cut are still in use.

5. EXPENDITURE

Total expenditure for activities on ELs 6/2013 & 7/2013 during the 2014-2015 period are provided in Table 4.

EL6/2013		EL7/2013	
Item	Total	Item	Total
Geology	\$74,982	Geology	\$71,424
Geochemistry	\$19,855	Geochemistry	\$17,648
Geophysics	\$8,880	Geophysics	\$9,620
Other	\$1,300	Other	\$1,300
Administration	\$10,473	Administration	\$9,971
Total	\$115,490	Total	\$109,962

Table 4: Summary of exploration expenditure, Year 2, Sorell Project.

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White, N.C. 1975 Cambrian Volcanism and mineralisation, south-west Tasmania. *PhD Thesis (unpublished), University of Tasmania*

APPENDICES

Appendix 1: Sample location data (digital file only)

Appendix 2: Niton XRF analyses (digital file only)

Appendix 3: ICP geochemical analyses (digital file only)

Appendix 4: Petrological reports

Appendix 4

Petrological reports

Pontifex & Associates Pty Ltd

MINERALOGY — PETROLOGY • SECTION PREPARATION

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MINERALOGICAL REPORT No. 10440

by Ian R. Pontifex MSc.

23rd October 2014

TO: Peter Reid
Sherlock Minerals
90 Statenborough Street
Erindale SA 5066

REFERENCE: Sample received 21/10/14

MATERIAL AND Panned concentrates of sulphides

IDENTIFICATION: SHTC-Cu

WORK REQUESTED: Polished section preparation, description and report

SAMPLES & SECTIONS: Returned to you with hard copy of this report

DIGITAL COPY: Emailed 23.10.14 to:
<peter@sherlockminerals.com.au>



PONTIFEX & ASSOCIATES PTY LTD

SUMMARY OF OPTICAL MICROSCOPE IDENTIFICATION OF PANNED CONCENTRATE OF SULPHIDES

A small sample of a panned concentrate of silt to sand size sulphide particles were received from Peter Reid of Sherlock Minerals 21/10/14, with a request to prepare a polished mount, then for a reflected light microscope identification of component grains.

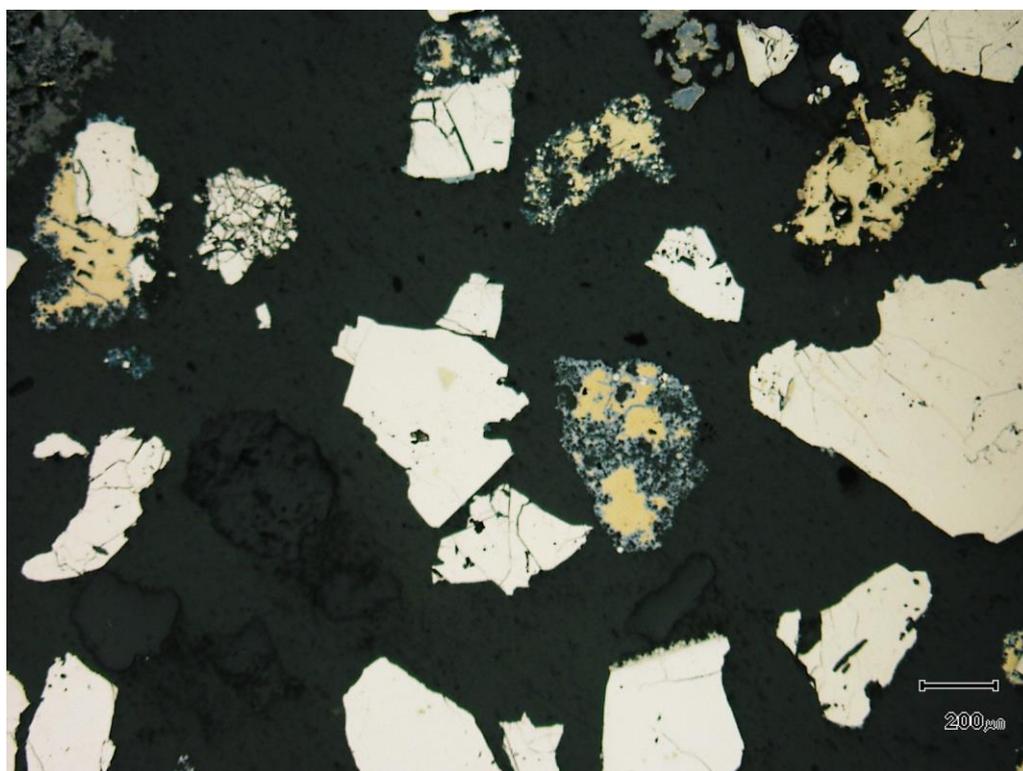
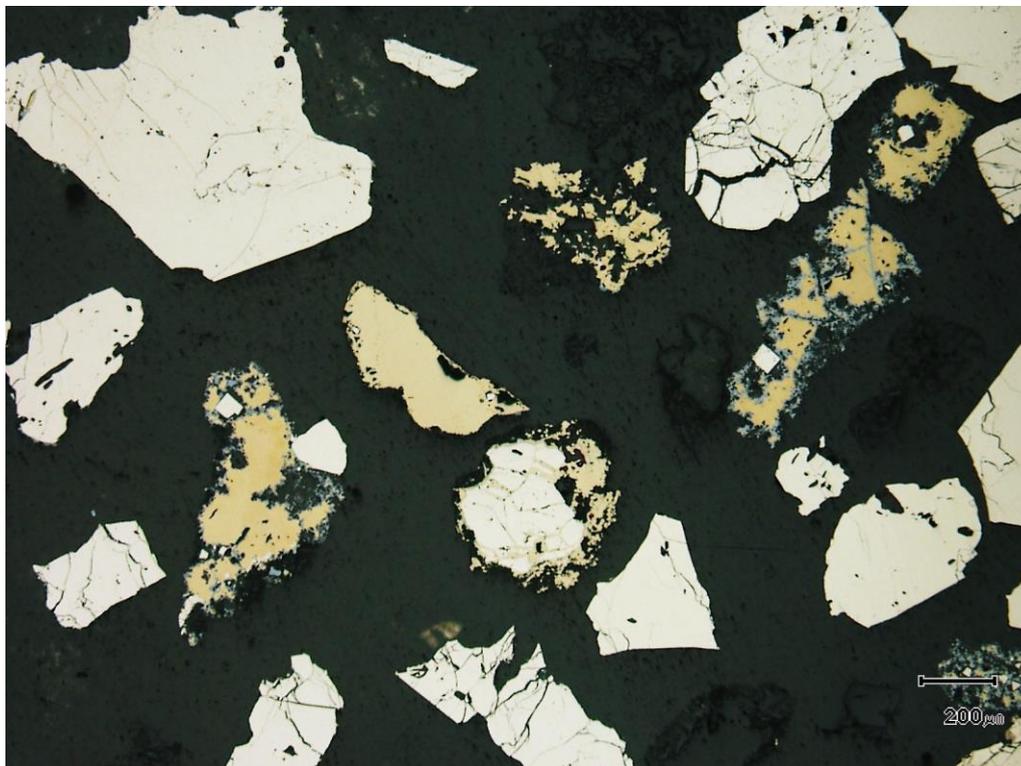
A detailed description was not required, but a series of photomicrographs was requested to illustrate the components. Grain size of individual grains is 0.5mm to rarely 10mm, average about 3mm.

An optical scan of this material confirmed a dominance of sulphides, variably as individual single species gains, and lesser composites of mostly two, but rarely three, sulphide species. Volume % visual estimates of these components (irrespective of size) are as follows:

* single whole grains of pyrite	~60%
* single whole grains of chalcopyrite ± small pyrites	5%
* composite grains of pyrite-chalcopyrite	10%
* composite grains of chalcopyrite and chalcocite (chalcocite is mostly porous, and rarely accompanied by covellite)	15%
* composite grains of chalcopyrite-pyrite bornite	<5%
* single grains of chalcocite	1–2%

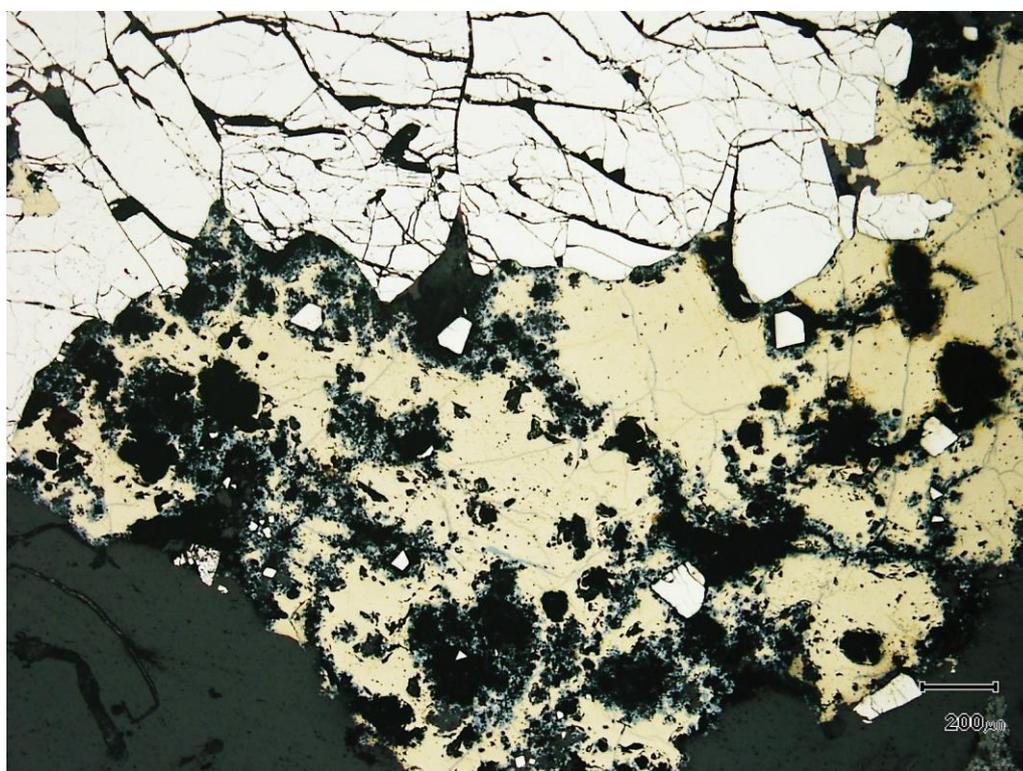
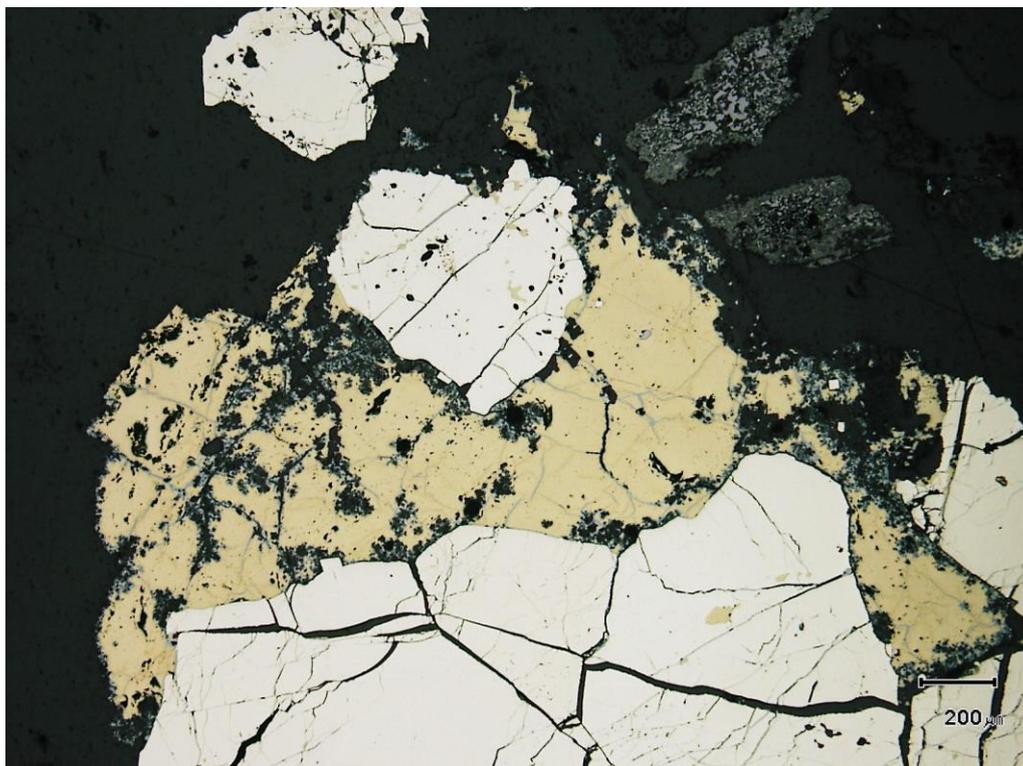
All of these categories are illustrated in the following twelve photomicrographs

PHOTOMICROGRAPHS, REFLECTED LIGHT, SULPHIDE CHIPS. PYRITE: WHITE TO VERY PALE YELLOWISH-WHITE. CHALCOPYRITE: YELLOW. CHALCOCITE: BLUE TO BLUISH-GREY.



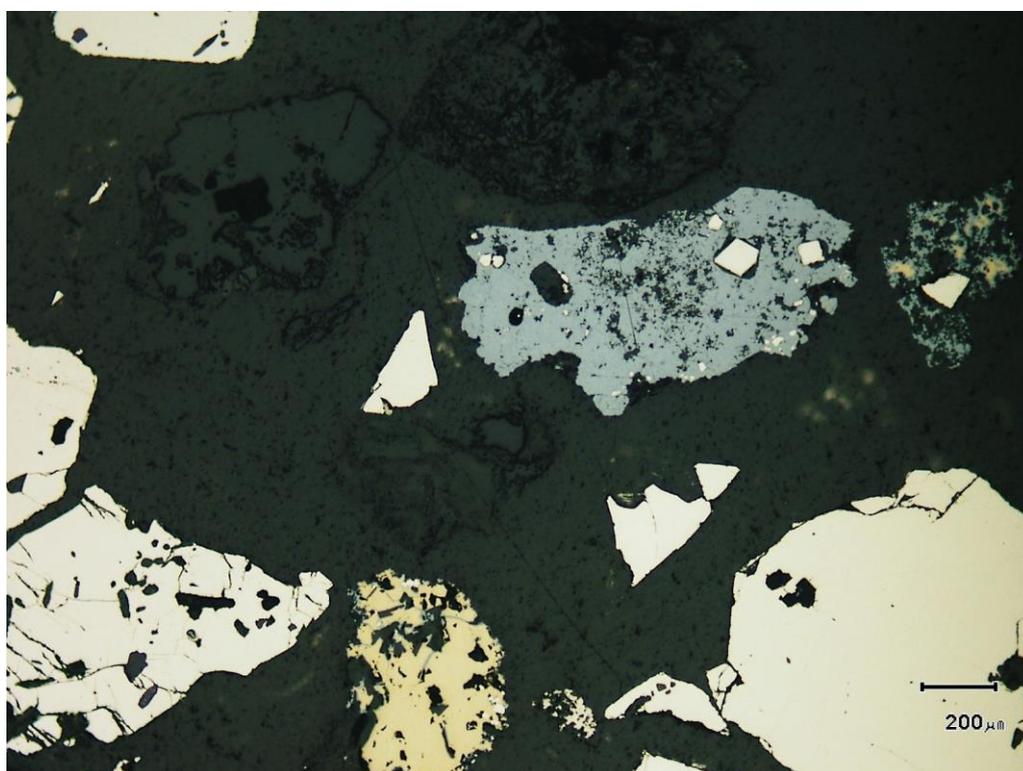
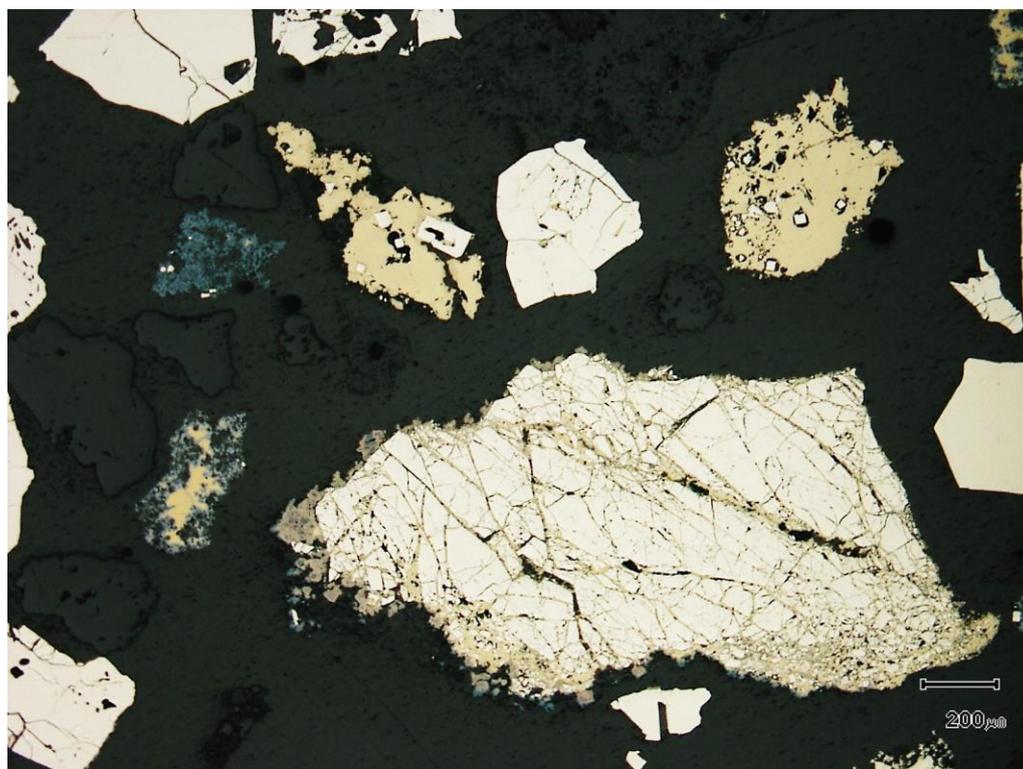
Figs 1 and 2

Magnification (X50), bar scale 10mm = 200. Examples of relatively small sulphide fragments of pyrite > chalcopyrite ± OXIDATION TO CHALCOTITE ± COVELLITE.



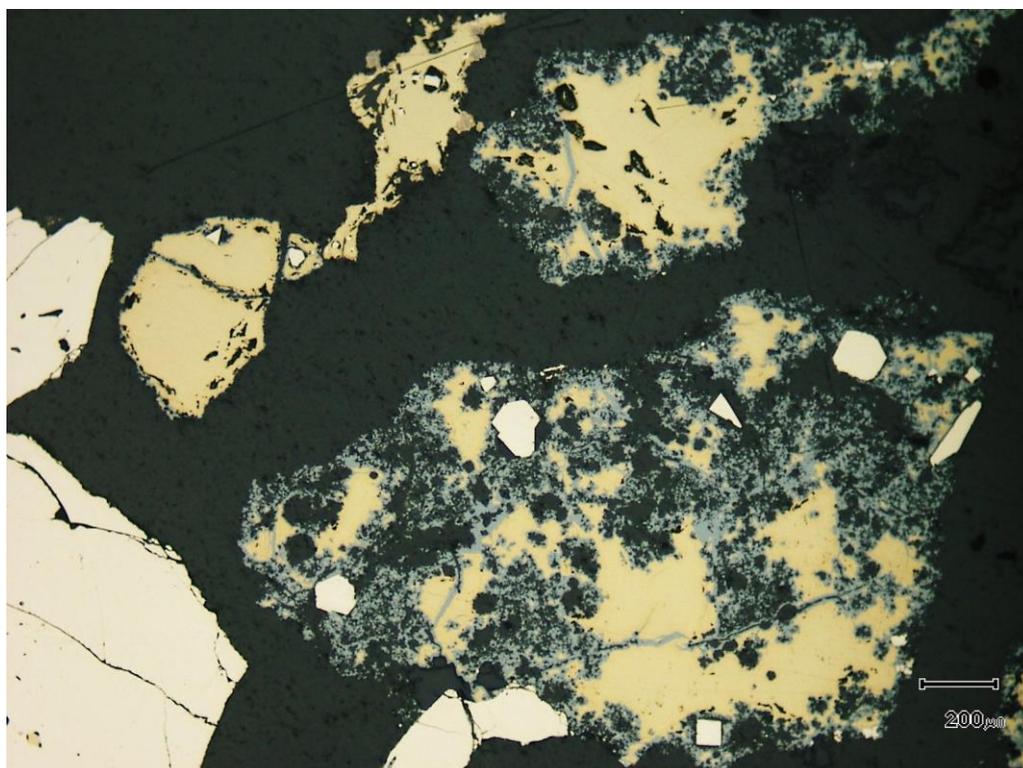
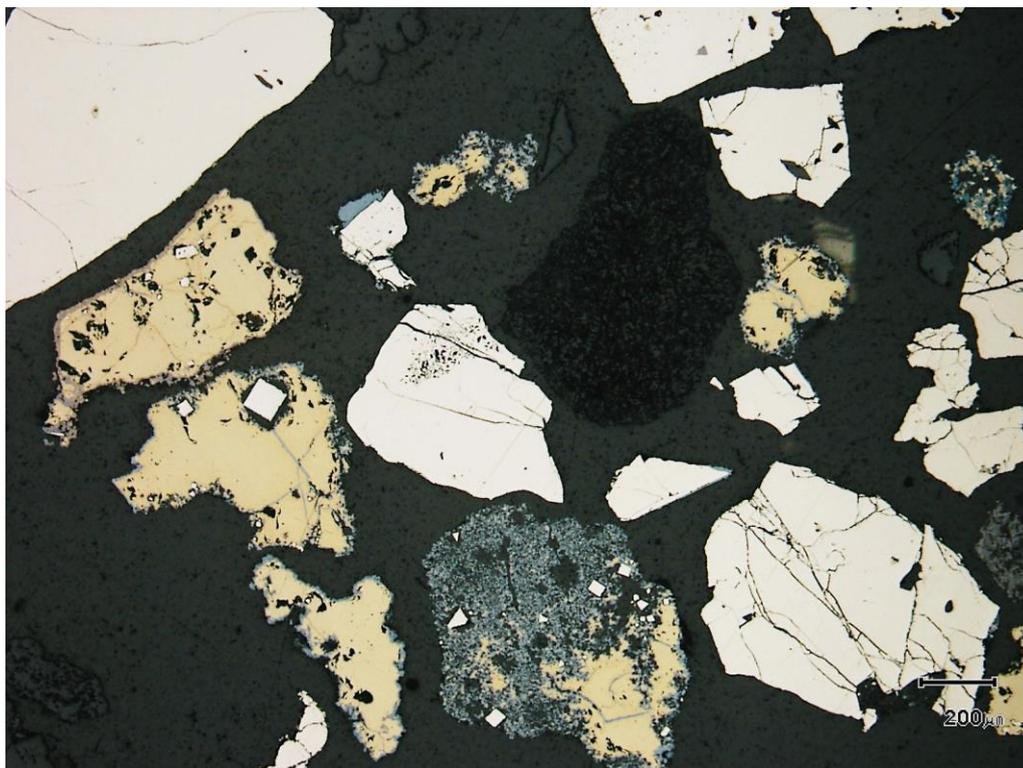
Figs 3 and 4

Same magnification as Fig 1 and 2, (X50). Coarser chips of pyrite composite with chalcopyrite.



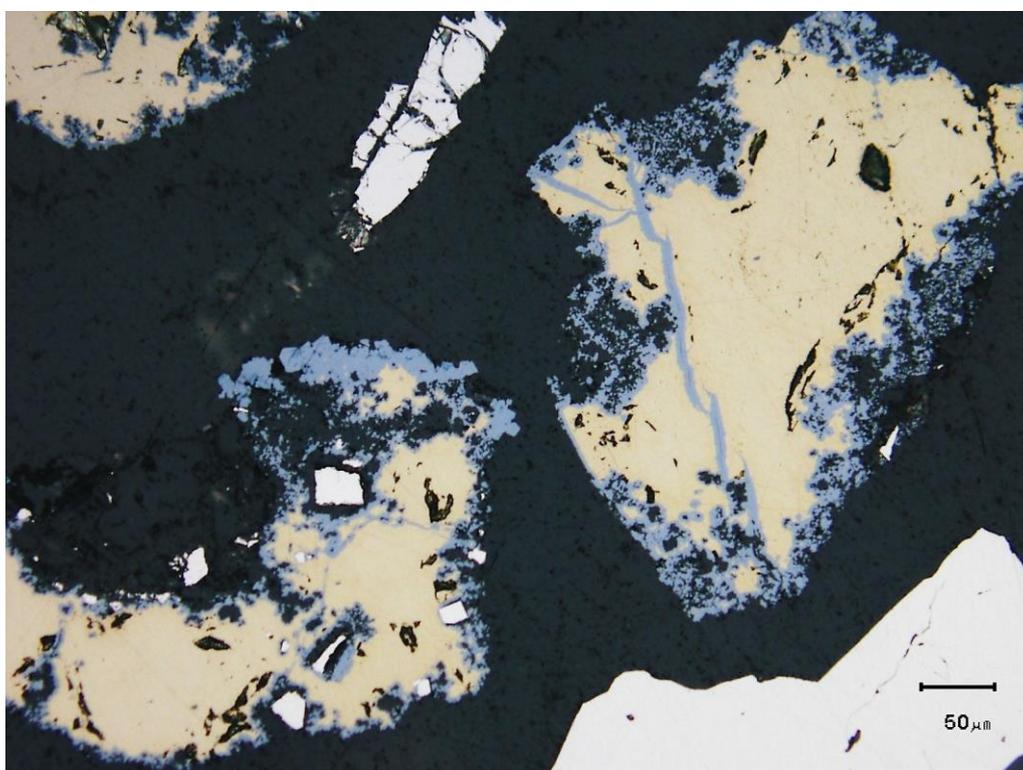
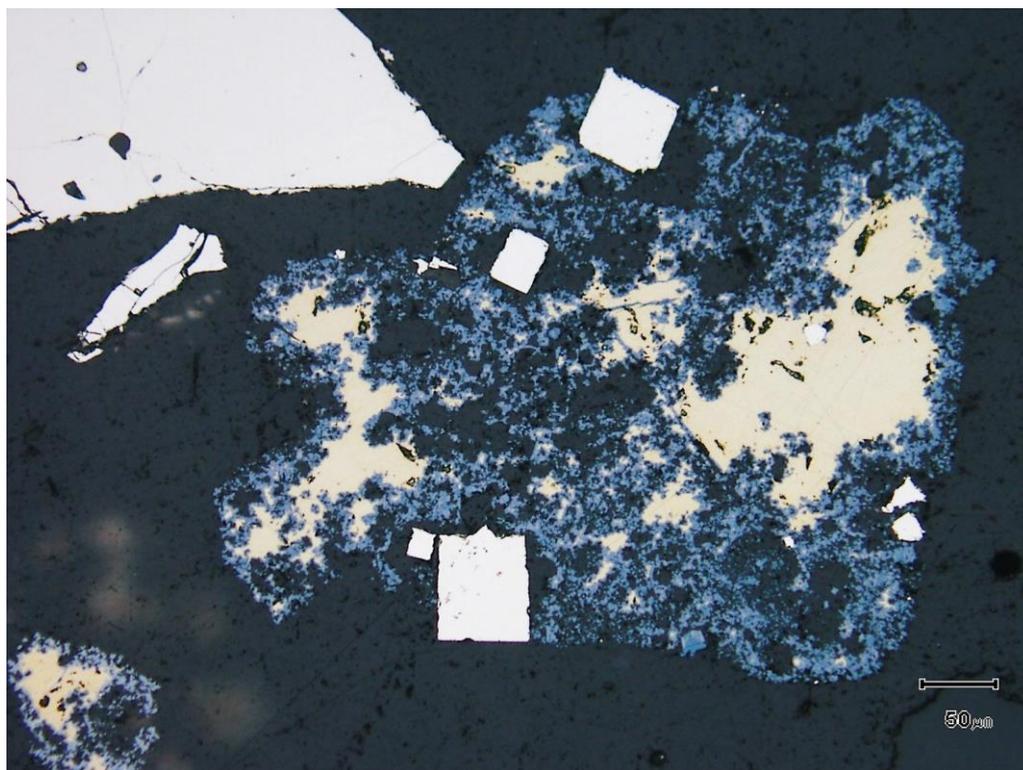
Figs 5 and 6

(X50). Note in fig 5 micro-fractures within pyrite heated by chalcopyrite. Fig 6 includes a grey fragment of chalcocite with inclusion of pyrite crystals.



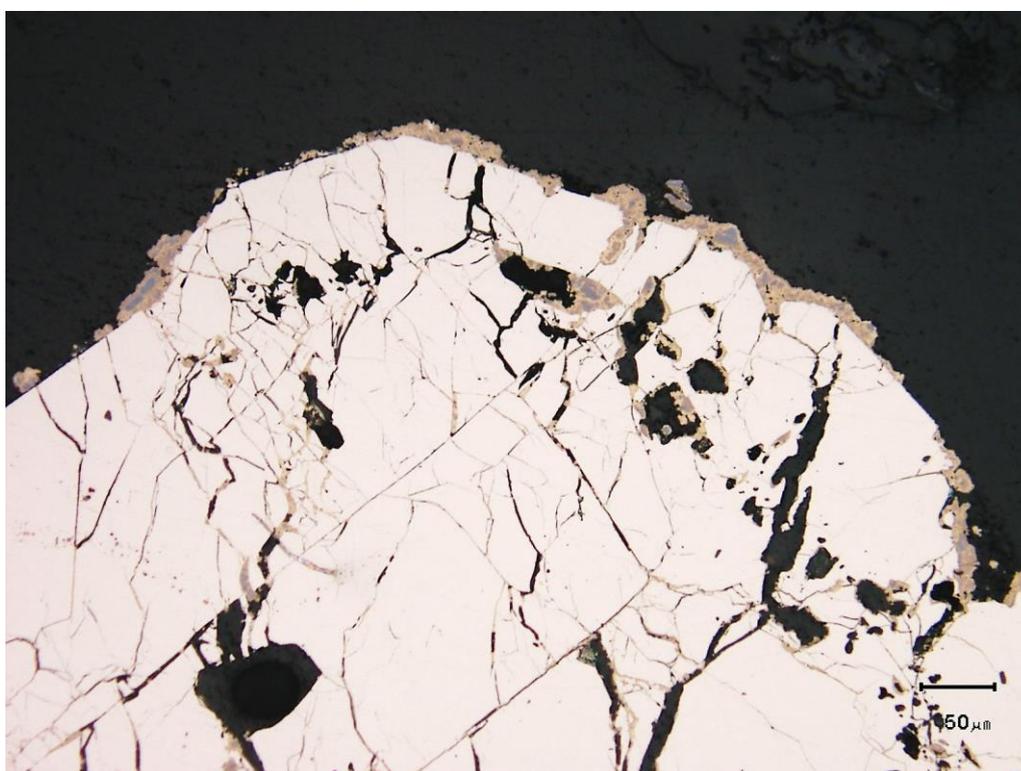
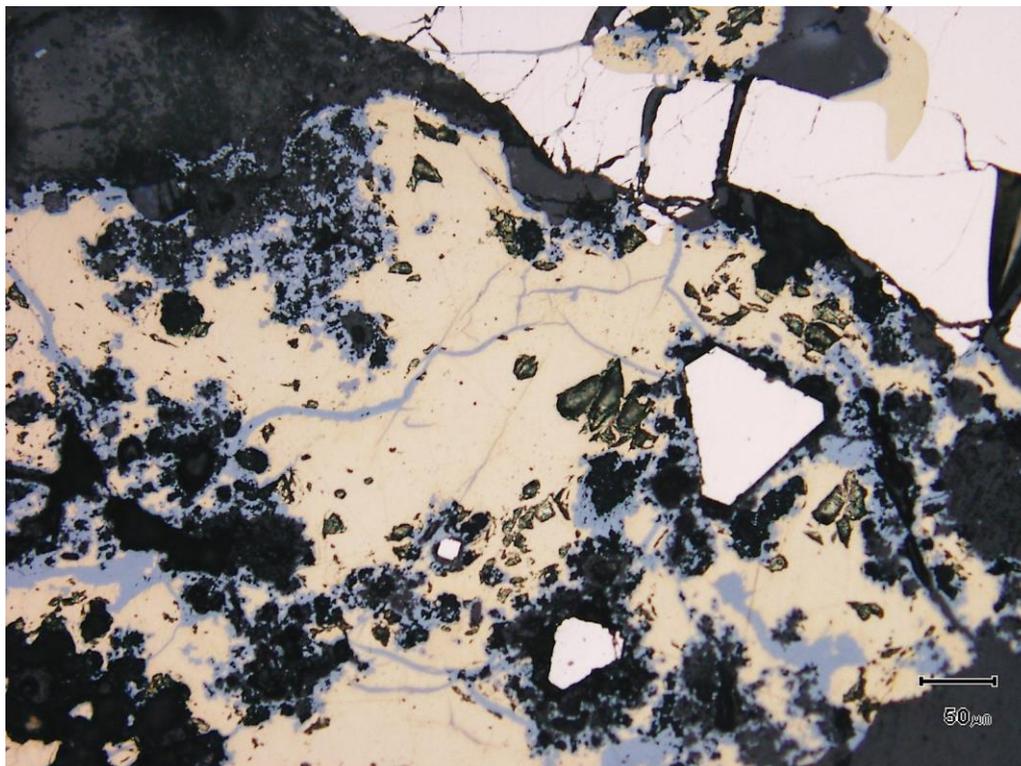
Figs 7 and 8

(X50). Further examples of pyrite and chalcopyrite. One chip of chalcopyrite in fig 7 largely oxidised to goethite. Chalcopyrite in fig 8 with extensive oxidation to porous chalcocite.



Figs 9 and 10

Higher magnification (X200) to show detail of chalcocite ± covellite oxidation, partly replacing chalcopyrite.



Figs 11 and 12

(X200). Fig 11, detail of chalcopyrite with pyrite inclusions, and oxidation to blue chalcocite ± covellite around margins. Fig 12 shows bornite as an alteration rim around pyrite, also permeating micro-fractures within the pyrite.

Pontifex & Associates Pty Ltd

MINERALOGY — PETROLOGY • SECTION PREPARATION

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MINERALOGICAL REPORT No. 10461 *by Alan C. Purvis, PhD and Ian R. Pontifex MSc.*

24th December 2014

TO: Peter Reid
Sherlock Minerals
90 Statenborough Street
Erindale SA 5066

REFERENCE: Four thin sections received November 2014

IDENTIFICATION: TCD2, 89.20, 90.20
TCD3, 77.20, 96.50

WORK REQUESTED: Petrographic descriptions

SAMPLES & SECTIONS: To be returned to you

DIGITAL COPY: Emailed 9/1/14 to:
peter@sherlockminerals.com.au



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SUMMARY COMMENTS

The four polished thin sections of drill core described in this report are understood to be from Sherlock's exploration area, Western Tasmania. Sample numbers are:

TCD2, 89.20 and 90.20m

TCD3, 77.00 and 96.50m

The petrography indicates that all samples represent various (but partly similar) volcanics, with low temperature alteration of plagioclase to albite \pm clouded sericite, and of mafic crystals (pyroxene \pm rarer olivine) to actinolite and chlorite \pm chloritic – clays, \pm limonite. Carbonate veins (? siderite) and stringers are notably altered /oxidised to dark brown limonite-goethite.

Samples TCD2, 89.2m and TCD3, 77.0m are homogenous basaltic lavas, relatively quite mafic. The other two samples TCD2, 9.20 and TCD3, 96.5m have a fine plagioclase-porphyrific andesitic composition, locally with quartz-rich matrix (dacitic), with patchy/fragmental textures in these two samples indicating volcanic breccias (or tuff).

Accessory primary magnetite crystals, some altered to hematite and lesser fine pyrite and chalcopyrite are variously disseminated. Veins/stringers of dark brown oxidised fine crystalline carbonate occur in TCD2, 90.20m, TCD3, 77.0 and 96.50m. Minor diffuse small patches of corroded-looking apparently secondary magnetite are scattered within the groundmass of TCD3, 77.0. Coarser (brecciated) carbonate + pyrite > magnetite \pm chalcopyrite occur in a major vein in TCD3, 96.50.

Individual descriptions with integrated photomicrographs follow.

INDIVIDUAL PETROGRAPHIC DESCRIPTIONS

TCD2, 89.20m

Petrographically identified as homogenous porphyritic basalt with plagioclase altered to albite-sericite and pyroxene > olivine altered to actinolite-chlorite ± limonite. Accessory disseminated primary magnetite crystals > sparse fine pyrite > chalcopyrite.

This polished thin section is seen to have abundant small largely sericitised plagioclase phenocrysts to 3mm long, also larger and smaller mafic phenocrysts of pyroxene and olivine variously altered to chlorite, actinolite ± porous limonite, some enclosing very small magnetite grains.

A whole-rock groundmass is dominated by randomly interlocking plagioclase microlites altered to albite and clouded sericite, with smaller interstitial pyroxene. Extremely fine 'dust-like' magnetite is dispersed throughout this groundmass.

Relatively more rounded to amoeboidal patches of mixed limonite, chlorite and actinolite may be altered amygdale fillings. Accessory small magnetite crystals, and trace smaller pyrite > chalcopyrite grains are scattered. Dispersed extremely fine magnetite throughout the groundmass, and accessory somewhat coarser magnetite would render this rock "magnetic", but the off-cut was not available to test this.



Fig 1 **TCD2, 89.20m**
Thin section (TS), crossed nicols (X nic). Magnification (X20), bar scale 500µm. Large mafic phenocryst of oxidised pyroxene, NW quadrant, and smaller lath-form plagioclase phenocrysts altered to sericite ± clays. Groundmass of random microcrystalline plagioclase with interstitial smaller colored pyroxene, and ubiquitous dispersed "dust-like" magnetite.

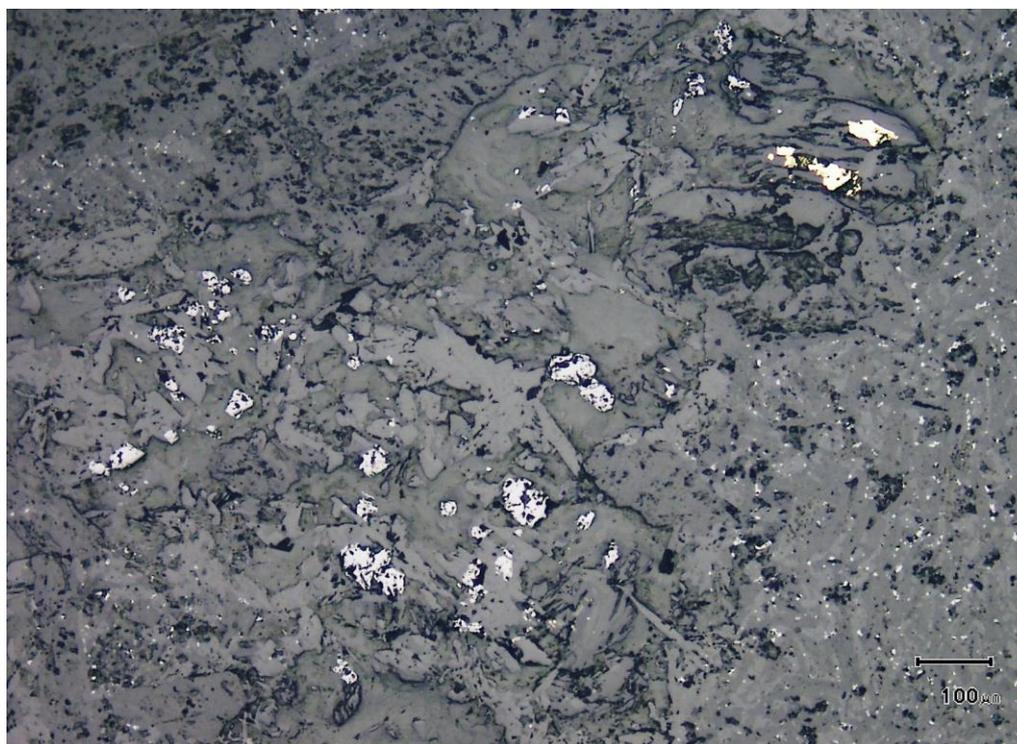


Fig 2 **TCD2, 89.20m**
Polished section (PS). Higher magnification (X100), showing example of disseminated small grains of magnetite, and smaller dust-like dispersed magnetite in SE quadrant. Two bright grains of chalcopyrite in NE corner.

TCD2, 90.20m

Heterogeneous, apparent volcanic breccia, with patches/fragments of altered plagioclase-porphyritic andesite (to dacite?), with fine quartz-feldspathic groundmass, within a whole-rock volcanic matrix of the same composition. Several threads and veinlets of dark-brown oxidised microcrystalline siderite. Up to 3% small skeletal grains of pyrite > chalcopyrite in matrix.

This polished thin section indicates a heterogeneous mass of poorly defined patchy areas of felsic volcanic, dominated by very small (<1mm) to larger (2mm) random plagioclase crystals, locally as phenocrysts in felsic finer groundmass. In some areas the crystals appear to be within micromosaic of fine quartz + feldspar perhaps late hydrothermal matrix, (rather than crystalline groundmass). Minor random 1mm ex-biotite flakes occur locally, completely altered to chlorite/chloritic clay. Most areas are permeated by interstitial limonite.

This composition indicates an andesitic to dacitic volcanic locally porphyritic, with the gross heterogeneity indicating a fragmental tuff or breccia, (rather than entirely lava).

Several threads stringers and veins/patches of carbonate micromosaic (probably siderite) have been selectively oxidised to dark-brown limonite-goethite.

Accessory grains of pyrite > chalcopyrite, less than 0.5mm size, are randomly scattered locally clustered, near but not specifically in the oxidised carbonate veining.



Fig 3 TCD2, 90.20m
TS, X nic, (X20). Poorly defined fragment dominated by felsic groundmass with rare small plagioclase phenocrysts, outlined by black line. Within an area of coarser plagioclase-porphyrific andesite.

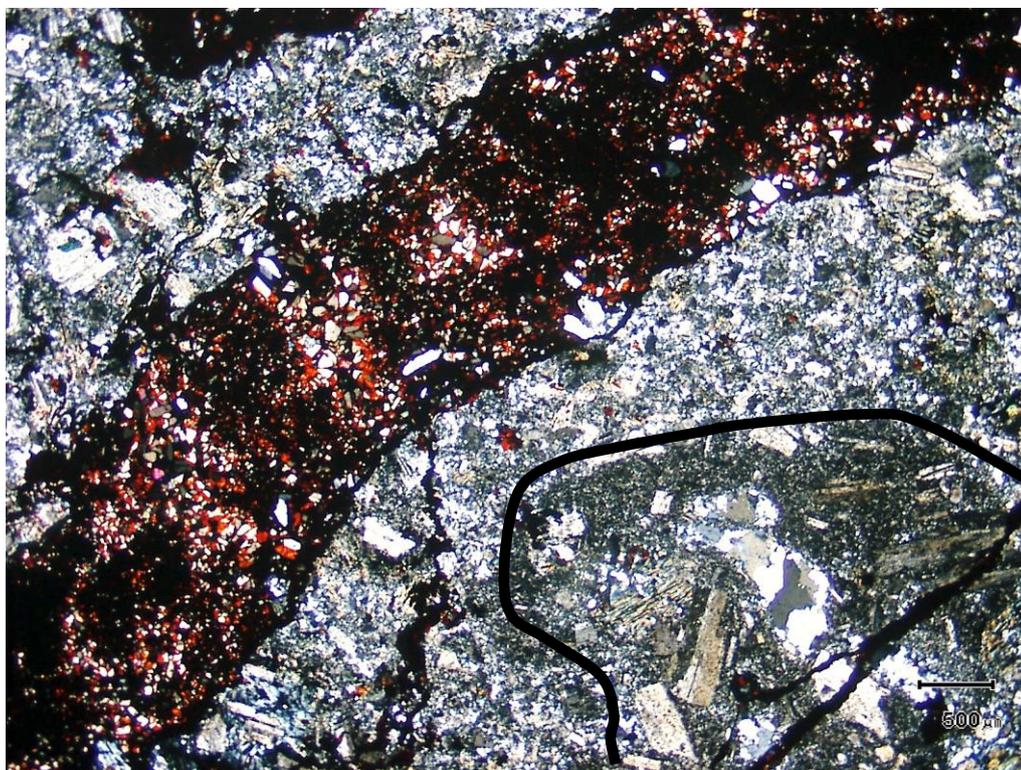


Fig 4 TCD2, 90.20m
TS, X nic, (X20). Rounded fragment of felsic lava, SE quadrant, within the larger area of host felsic lava. Cut by a dark-brown vein 1mm wide of oxidised fine crystalline carbonate mosaic.

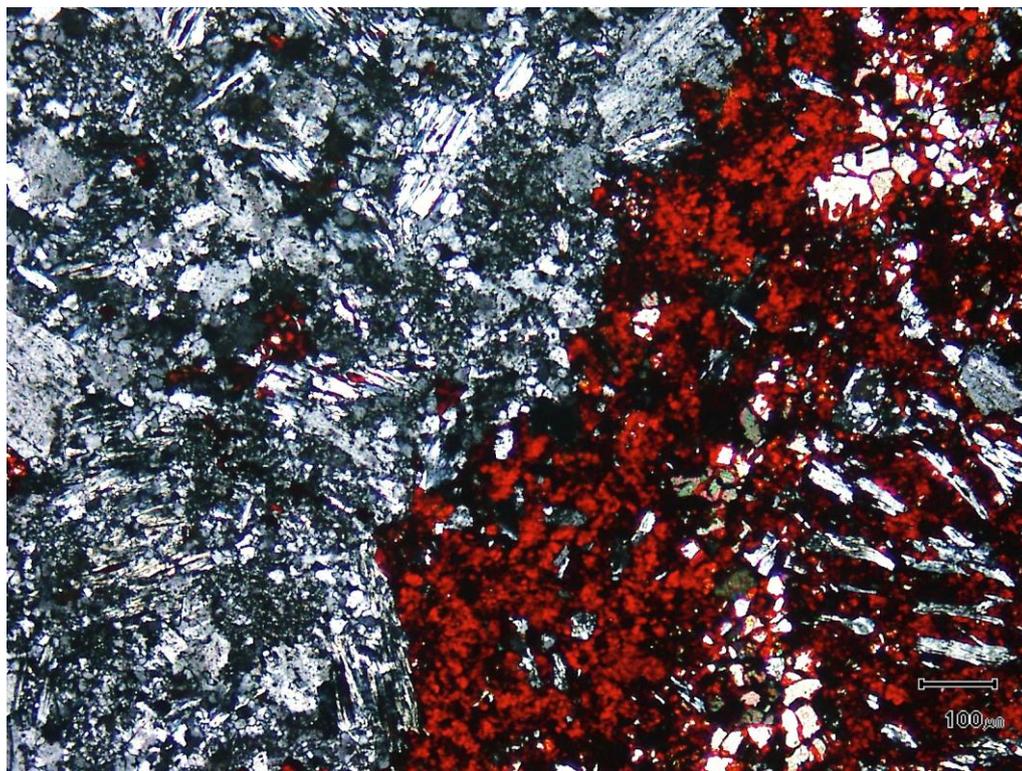


Fig 5 **TCD2, 90.20m**
TS, X nic, (X100). Detail of plagioclase-rich felsic lava, cut by a vein of fine carbonate mosaic, oxidised to reddened limonite.

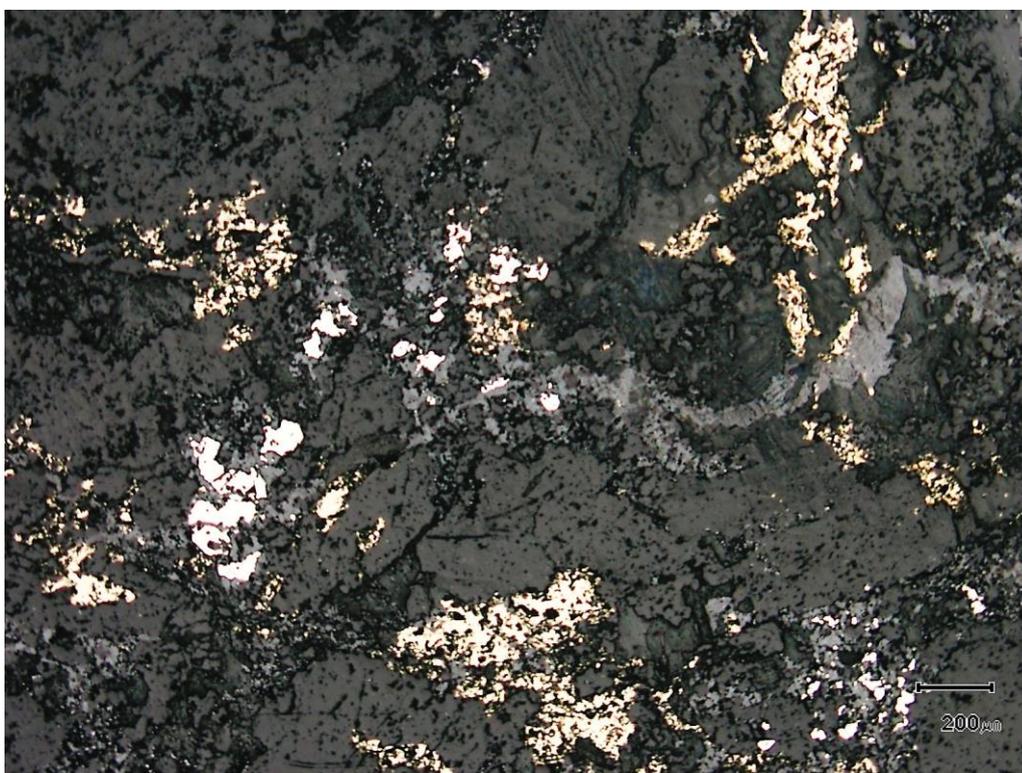


Fig 6 **TCD2, 90.20m**
Polished section (PS), (X50). Irregular skeletal patches of yellow chalcopryrite, some partly surrounding small crystals of white pyrite. Also discontinuous micro-skeletal grey goethite veinlets.

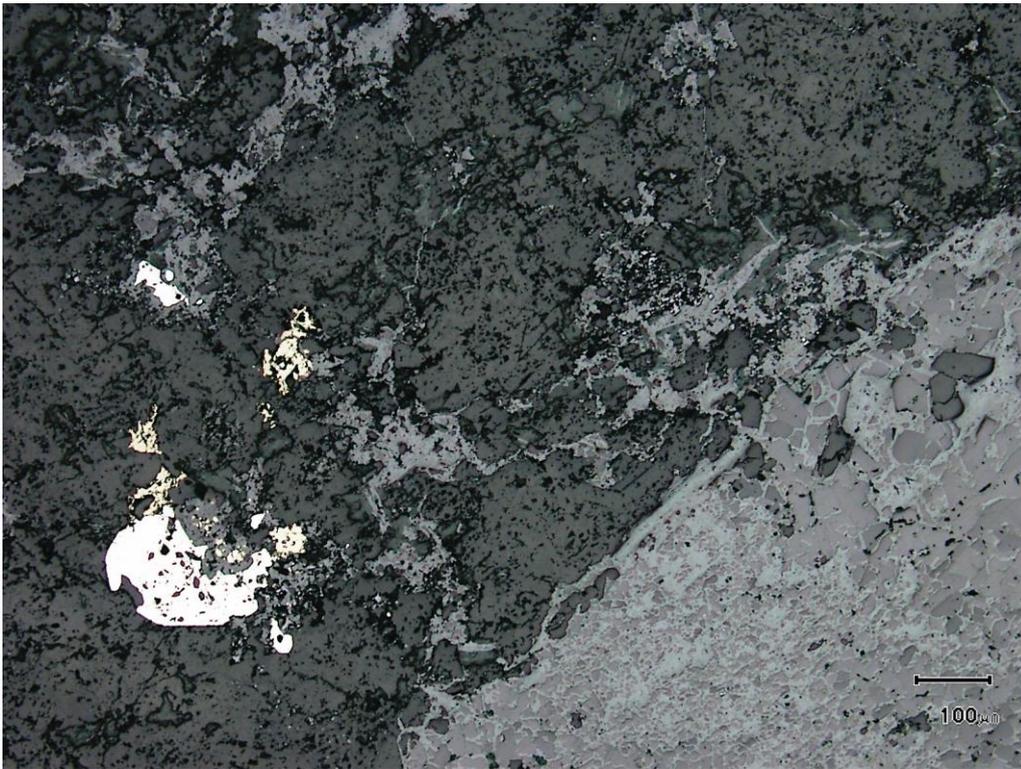


Fig 7

TCD2, 90.20m

PS, (X100). SE corner, fine crystalline mosaic of slightly pinkish grey siderite, with intergranular micro-networks of bluish-grey goethite. Adjacent white pyrite, small, sparse skeletal very small satellites of yellow chalcopyrite.

TCD3, 77.0m

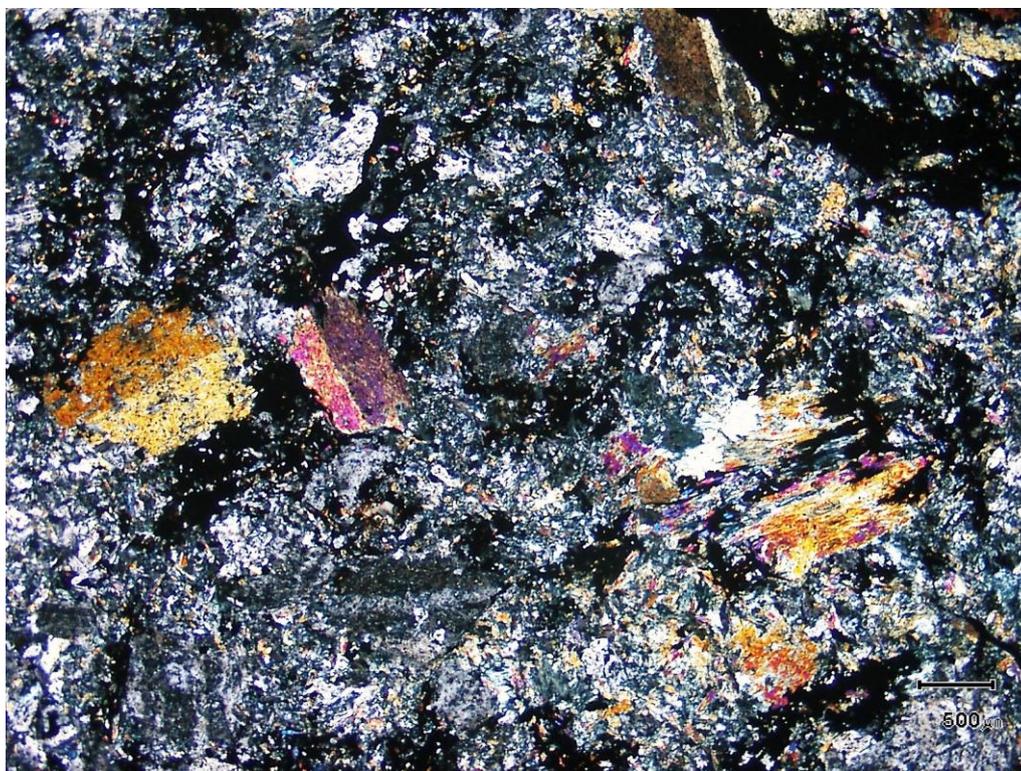
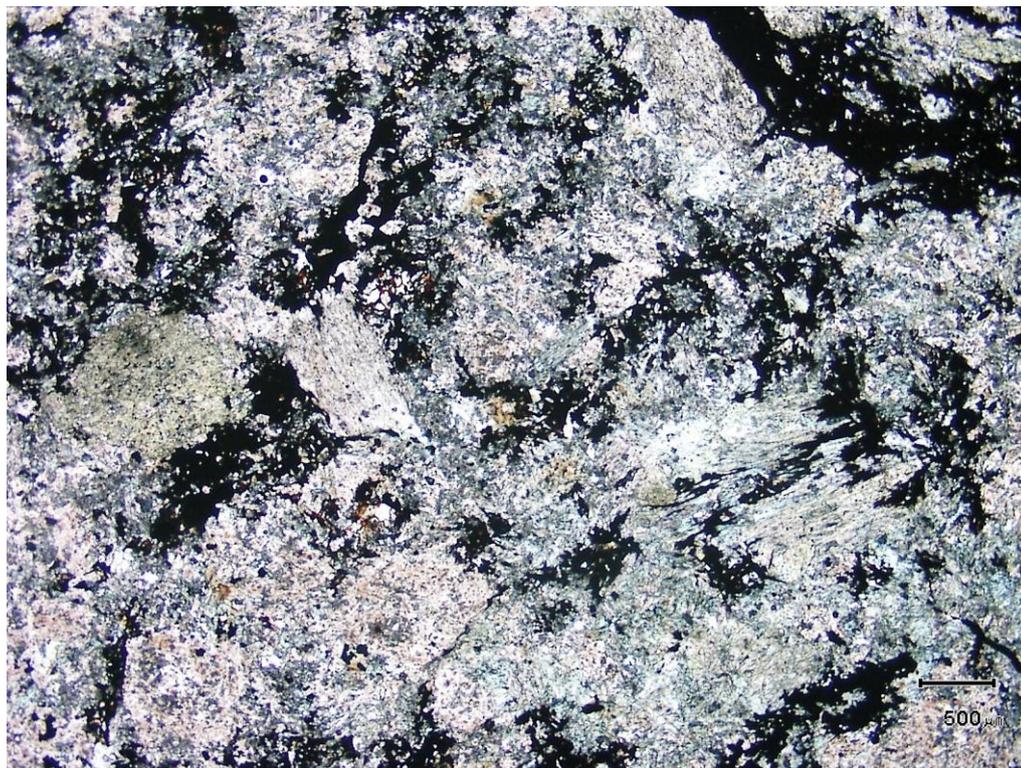
Altered and limonite-veined pyroxene-plagioclase, crowded porphyritic basalt or basaltic-andesite, with up to 5% small scattered magnetite grains partly oxidised to hematite. Pervasively altered to mixed actinolite, cloudy albite ± sericite. Also scattered patches of micro-skeletal magnetite as an apparent alteration mineral. Up to 3% very fine pyrite and 3% chalcopyrite grains commonly clustered within micro-networks of (secondary) magnetite and veinlets of oxidised carbonate.

This polished thin section has abundant crowded original clinopyroxene phenocrysts to 3mm commonly in glomeroporphyritic aggregates. These are altered to secondary actinolite ± chlorite and extremely fine oxides. Fewer albitised plagioclase phenocrysts to 2mm long are poorly defined, interstitial and altered to sericite.

The whole-rock groundmass is a fine crystalline mass of cloudy albitised plagioclase microlites, incorporating 25% actinolite derived from interstitial fine-grained clinopyroxene. Irregular veins to 1mm wide and more patchy microscopic networks are filled with limonite probably replacing carbonate.

Reflected light microscopy reveals ~5% disseminated very small grains of ex-magnetite altered to hematite. Very small (50µm) to larger (300µm) chalcopyrite grains are locally clustered within the complex irregular microscopic network of goethite limonite, also within irregular patches of corroded partly porous magnetite which seem to be secondary.

Several pyrite grains are scattered independently in the bulk rock, also (smaller grains) within the veins.



Figs 8 and 9

TCD3, 77.0m

TS, OL and X nic, (X20). Host rock, with crowded phenocrysts of ex-clinopyroxene, largely altered to fine amphibole-chlorite, also albitised plagioclase altered to sericite. All in an altered groundmass with opaque disseminated crystals of magnetite, and patchy secondary skeletal magnetite.



Figs 10 and 11

TCD3, 77.0m

PS, (X50). Sub-parallel shredded veins of original carbonate mostly altered to goethite, cutting across local short stringers of bright chalcopyrite. In left half of fig 11, these veins cut across microporous skeletal patches of grey (secondary) magnetite enclosing sparse bright sulphide.

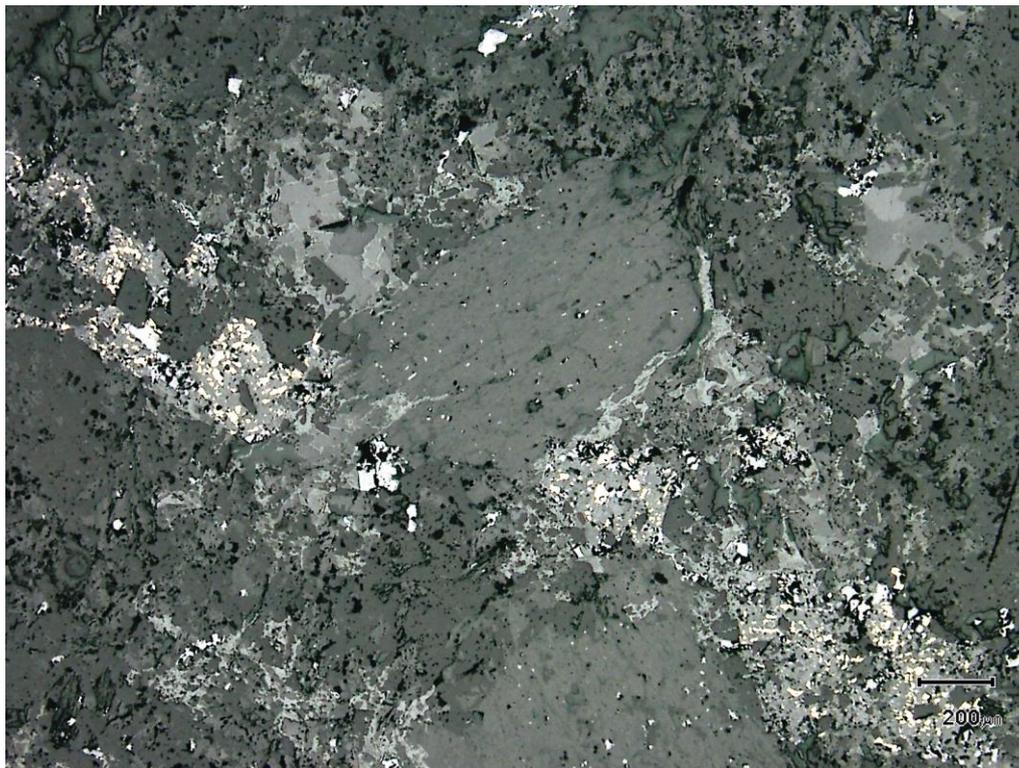


Fig 12 **TCD3, 77.0m**

PS, (X50). Two central phenocrysts in a groundmass crowded with patchy micro-skeletal apparently secondary magnetite together with goethite, locally incorporating extremely small grains of bright yellow chalcopyrite, slightly larger white pyrites.

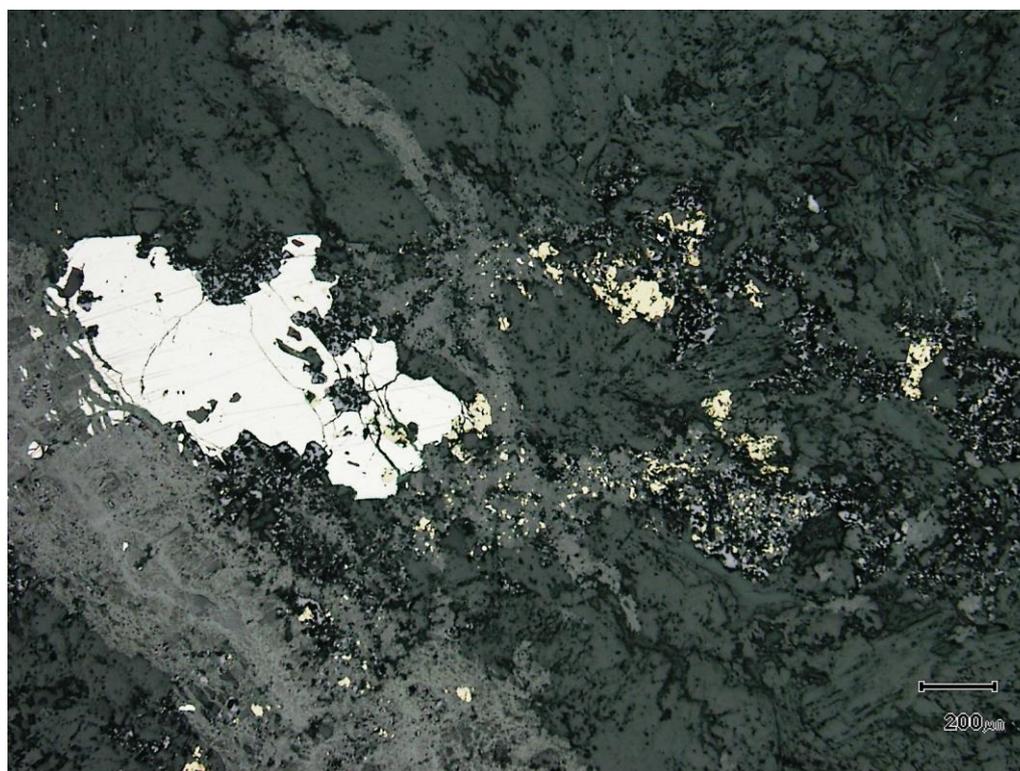


Fig 13 **TCD3, 77.0m**

PS, (X50). Further example oxidised carbonate veins, SW quadrant. Adjacent coarse pyrite, and subsidiary irregular veinlets of goethite ± magnetite carrying extremely fine chalcopyrite.

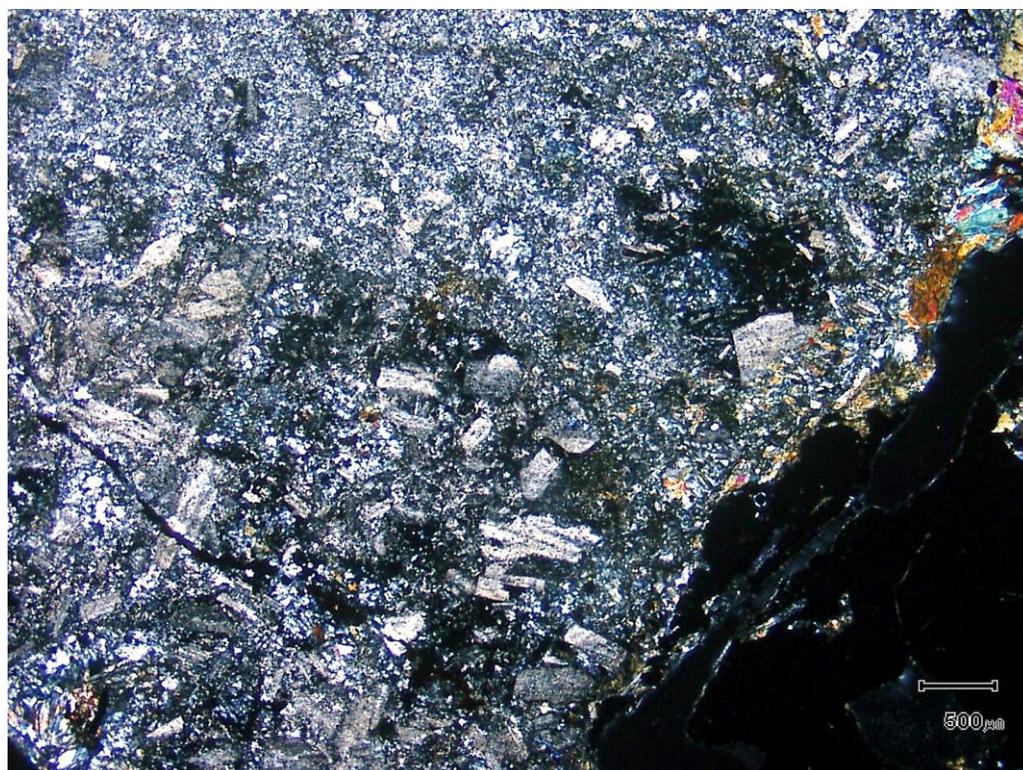
TCD3, 96.50m

Albite > actinolite-altered, plagioclase-rich andesitic breccia or tuff. Major vein of coarse micro fractured pyrite incorporating carbonate micro-mosaic, together with minor smaller grains of chalcopyrite, also corroded-looking (secondary) magnetite.

About 45% of this thin section consists of a branching vein of quite coarse fractured pyrite to 20mm wide. This includes and has dark gangue margins of extensively oxidised carbonate micromosaic, (the same as veinlets in TCD2 90.20m and TCD3, 77.0m). Local margins of this vein consist of actinolite alteration in the host rock.

The host rock is identified as a volcanic fragmental of fine plagioclase-porphyrific andesite, the same as in TCD2, 90.20m, similarly altered to secondary albite, scattered and clustered actinolite. Groundmasses in and between fragments seem to include extremely fine quartz as well as albite and fine actinolite, as a probable dacitic variant.

Reflected light microscopy of the main pyrite-carbonate vein, identifies minor chalcopyrite and extensive corroded-looking grains of magnetite between the dominant coarse brecciated pyrite. This may be vein-magnetite, (as well as the primary disseminated magnetite seen in the host volcanic rocks in this suite), and probably related to the small patches of corroded-looking porous magnetite incorporating fine sulphides in TCD3 77.0m.



Figs 14 and 15

TCD3, 96.50m

TS, OL and X nic, (X20). Examples of fragmental felsic volcanic, with altered small plagioclase phenocrysts, green actinolite + chlorite alteration (in fig 14). Top of fig 15 is siliceous groundmass (? primary-dacitic or alteration). Black-opaque area in SE corner of fig 15 is the main pyrite-rich vein as described.

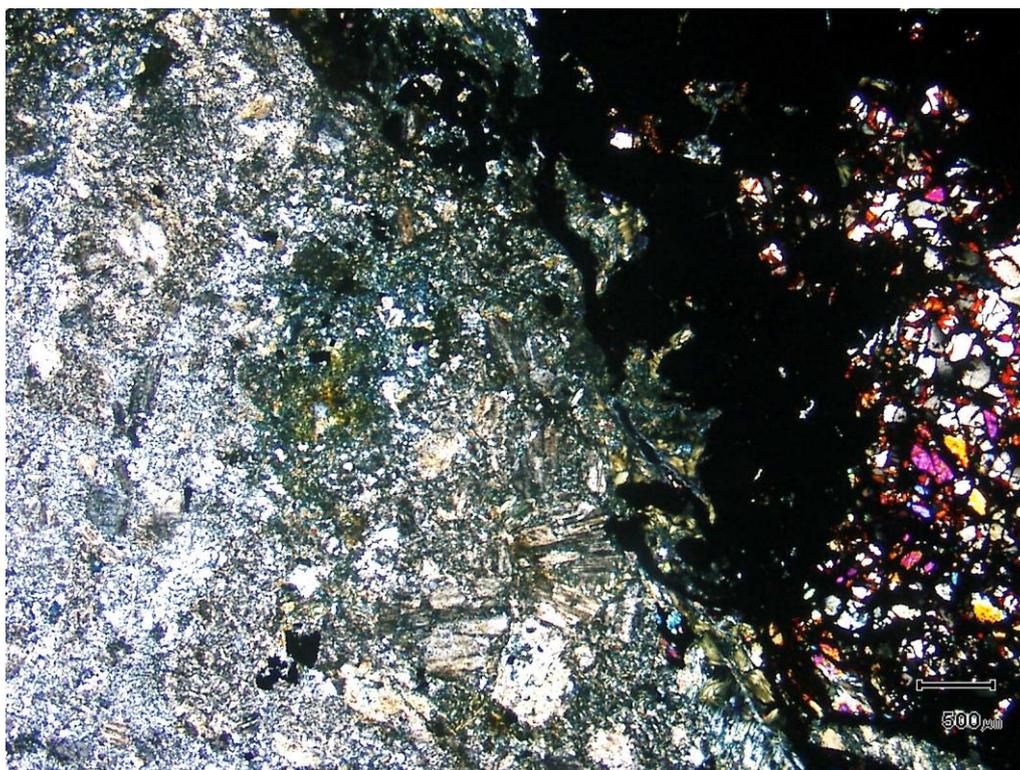


Fig 16 **TCD3, 96.50m**
TS, X nic, (X20). Contact between volcanic host rock, with green actinolite-chlorite alteration adjacent to the vein of intensely goethitic-oxidised carbonate micro mosaic + pyrite > chalcocite and magnetite.

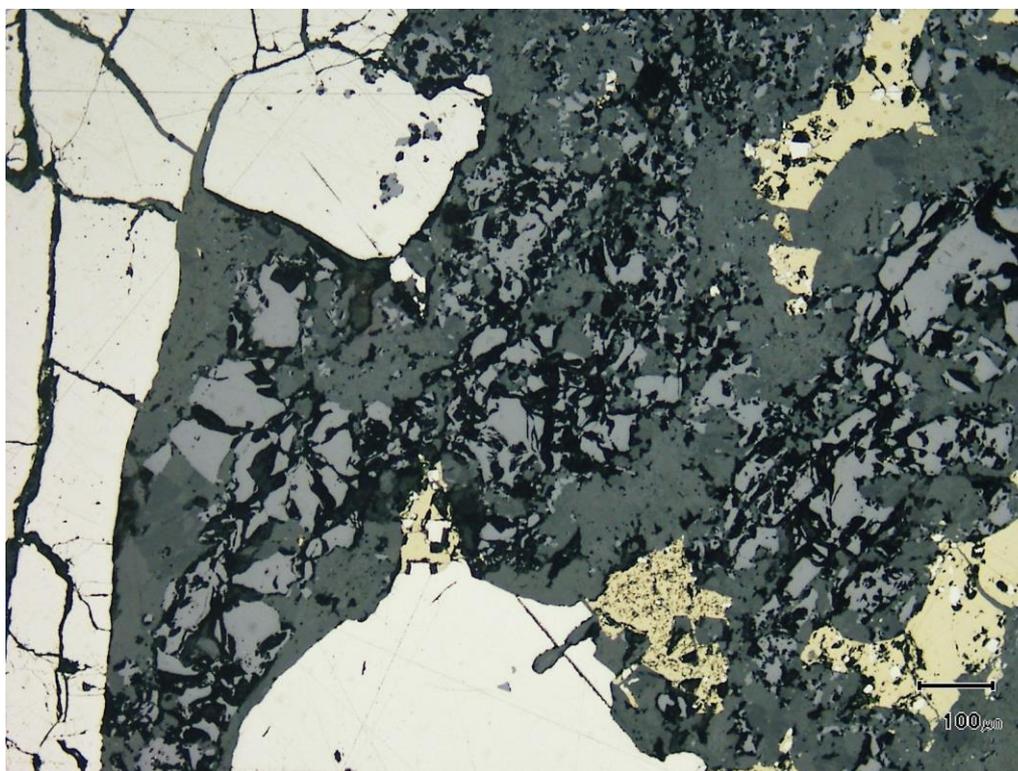


Fig 17 **TCD3, 96.50m**
PS, (X20). Coarse white pyrite (fractured), minor yellow chalcopyrite, together with patchy micro brecciated, grey corroded-looking patches of vein-magnetite, all within goethite-altered carbonate gangue.