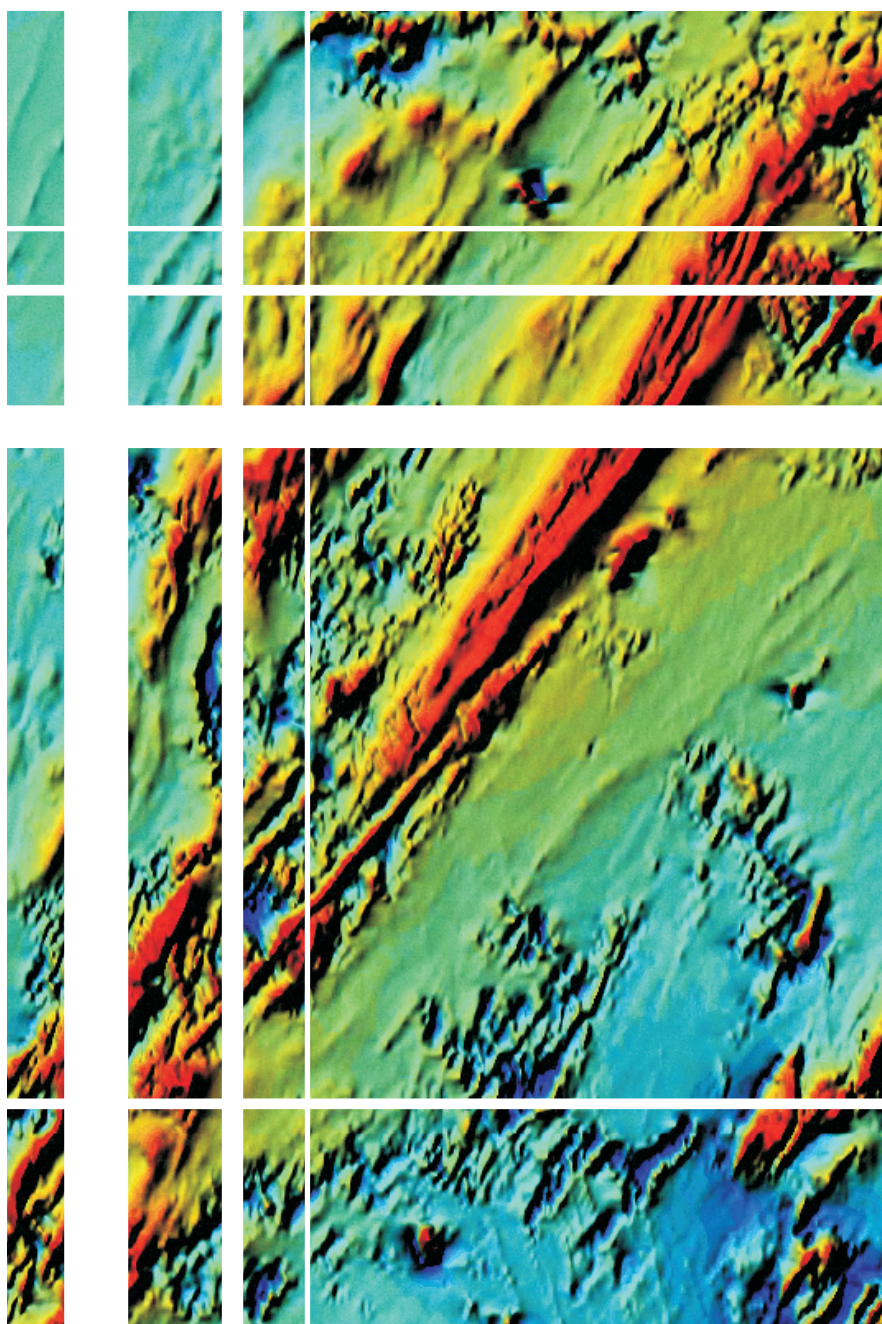


Literature Study and Geological Interpretation for the Mt Bertha Licence EL42/2004, NW Tasmania

March 2006

Prepared for :

Zelos Resources NL



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APPENDICES

Appendix 1 Open File Listing of Competitor Reports

Appendix 2 Selected Maps from Open File Reports

Appendix 3 Selected Maps from the Geophysical Report (Hungerford 2005)



1. INTRODUCTION

The purpose of this report is to undertake a literature review of all relevant data for the Mt Bertha area, held under licence by Zelos Resources NL as EL 42/2004. The review will include searching and summarising previous competitor activity in the general area from reports digitally available online from the Mineral Resources Tasmania (MRT) Library. In addition government data in the form of digital datasets will also be used to formulate a geological synthesis of the area. From the data synthesis a series of exploration targets and target types will be created, including the identification of potential drill targets.

All figures in this report have the same projection of AGD66, Zone 55.

2. LOCATION

The centre of this large exploration licence (224km²) is located 20km northeast of the Savage River Iron Ore Mine and about 50km southwest of the port of Burnie in North West Tasmania (Figure 1).

Main road access to the property is limited to the Savage River roads, whilst parts of the licence can be accessed by the Savage River pipeline forestry road (Figure 2). Off-road access is potentially very difficult, possibly requiring helicopter-supported access. Previous explorers have created some 4WD tracks, which may require refurbishment for access to possible target areas.

Vehicular access to the licence will be limited; permission has been given, subject to conditions, by Australian Bulk Minerals to access to the main Savage River pipeline road that runs through the 'backbone' of the area. Access to the north of the tenement will be by unsealed roads constructed for previous magnesite exploration.

3. PHYSIOGRAPHY & VEGETATION

The licence area has considerable relief with a major increase in average height occurring south east of a major geological line, the NE-striking structural line (Figure 2). This raised area occurs throughout the SE half of the licence and will present a considerable challenge to exploration. The digital elevation model is supplied by Hungerford (2005) constructed from geophysical data gathered as part of MRT's West Tasmanian Regional Minerals Program (WTRMP).

Vegetation comprises dense forestry (temperate rainforest) making access very difficult, necessitating substantial track cutting in order to reach target areas.

Climate is temperate with substantial annual rainfall typical of Western Tasmania. Temperature ranges from just above freezing in winter to a likely maximum of 30°C in summer.

Figure 1 – Mt Bertha: Location Map

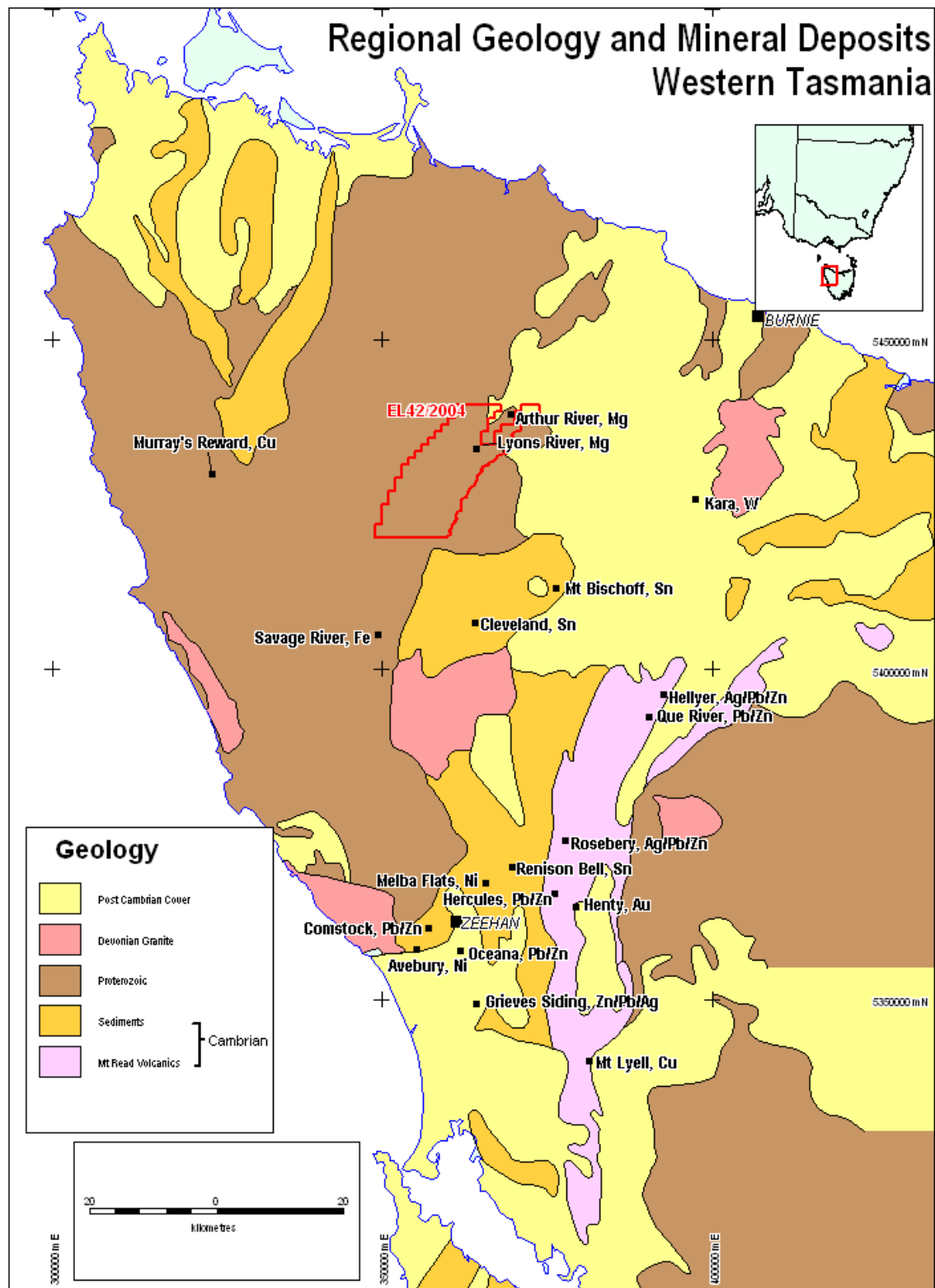
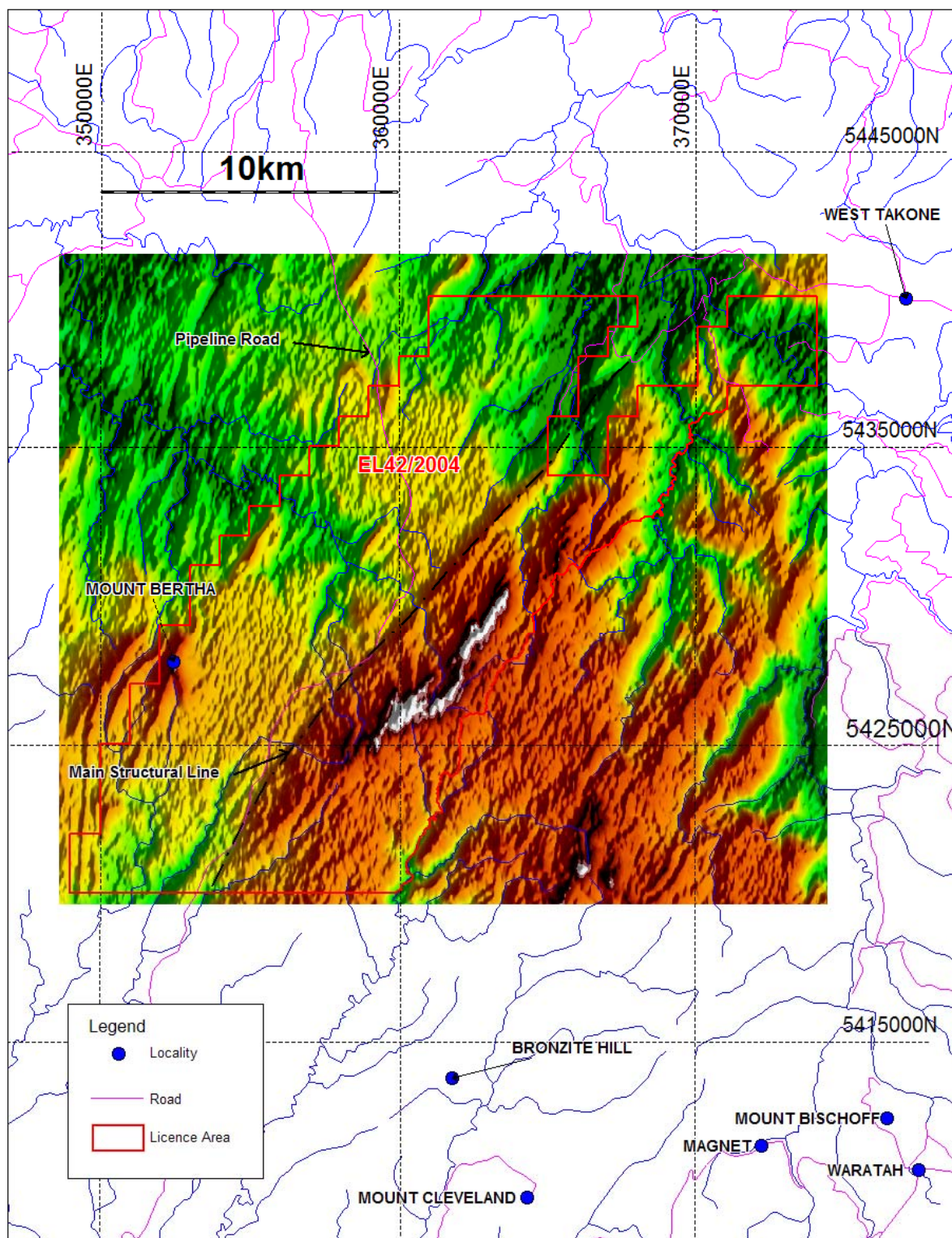


Figure 2 – Mt Bertha: Licence Map with Digital Elevation Model

4. TENURE

The land tenure situation in Tasmania is based on a series of classifications that have resulted from the Regional Forestry Agreement (RFA). This act established, in conjunction with other stakeholders interests, which land is available for exploration and mining e.g. State Forest. Some of the main land use categories that are covered by the RFA, and which allow for mineral exploration and mining subject to a project activities review, are Nature Recreation Areas, Regional Reserves and Conservation Areas. These three categories can be regarded as the same for mineral exploration purposes; they have different objectives for other land users e.g. hunting, forestry etc. An exploration work programme that is planned within any of the above three categories triggers the Mineral Exploration Working Group (MEWG) which reviews the planned work programme, making recommendations and/or modifications to the plan. This group is convened by MRT on behalf of any applicant with the review process undertaken in a timely manner. Other land categories which allow mineral exploration/exploitation include a Forest Reserve which is not available for forestry use; and an MDC Informal Reserve which is a forestry-related category that has a very minor impact on mineral exploration. The main areas where mineral exploration is not permitted are Nature Reserves, State Reserves and National Parks.

For the Mt Bertha licence 70% of the tenement is State Forest (Figure 3) with 15% classified as a Regional Reserve (on the east side of the licence adjacent to the National Park). The remaining 15% is split between MDC Informal Reserve (4%), Nature Recreation Area (7%) and Forest Reserve (4%).

MRT have informed Zelos NL that there is one mining lease within the property. This is the Savage River Iron Ore Pipeline which transects the licence from Savage River, 16km to the south, to Port Latta on the northern coast of Tasmania. This pipeline has an accompanying road and the mine owners at Savage River have given Zelos permission to use this road, subject to certain conditions.

MRT have also supplied a map showing exclusion areas, this is included as Figure 4. The main exclusion area is the National Park immediately east of the licence.

Figure 3 – Mt Bertha: Land Tenure and Use Map

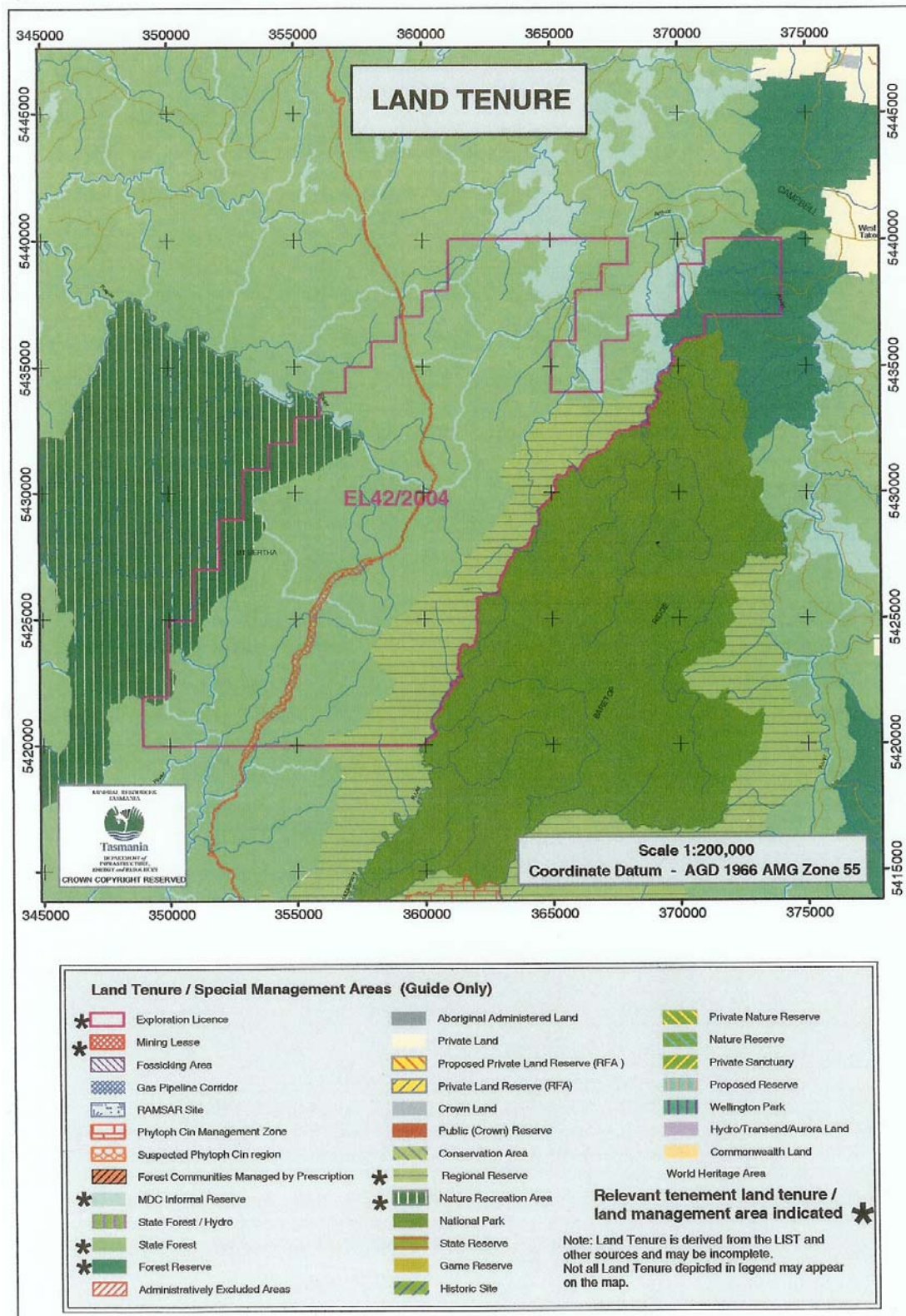
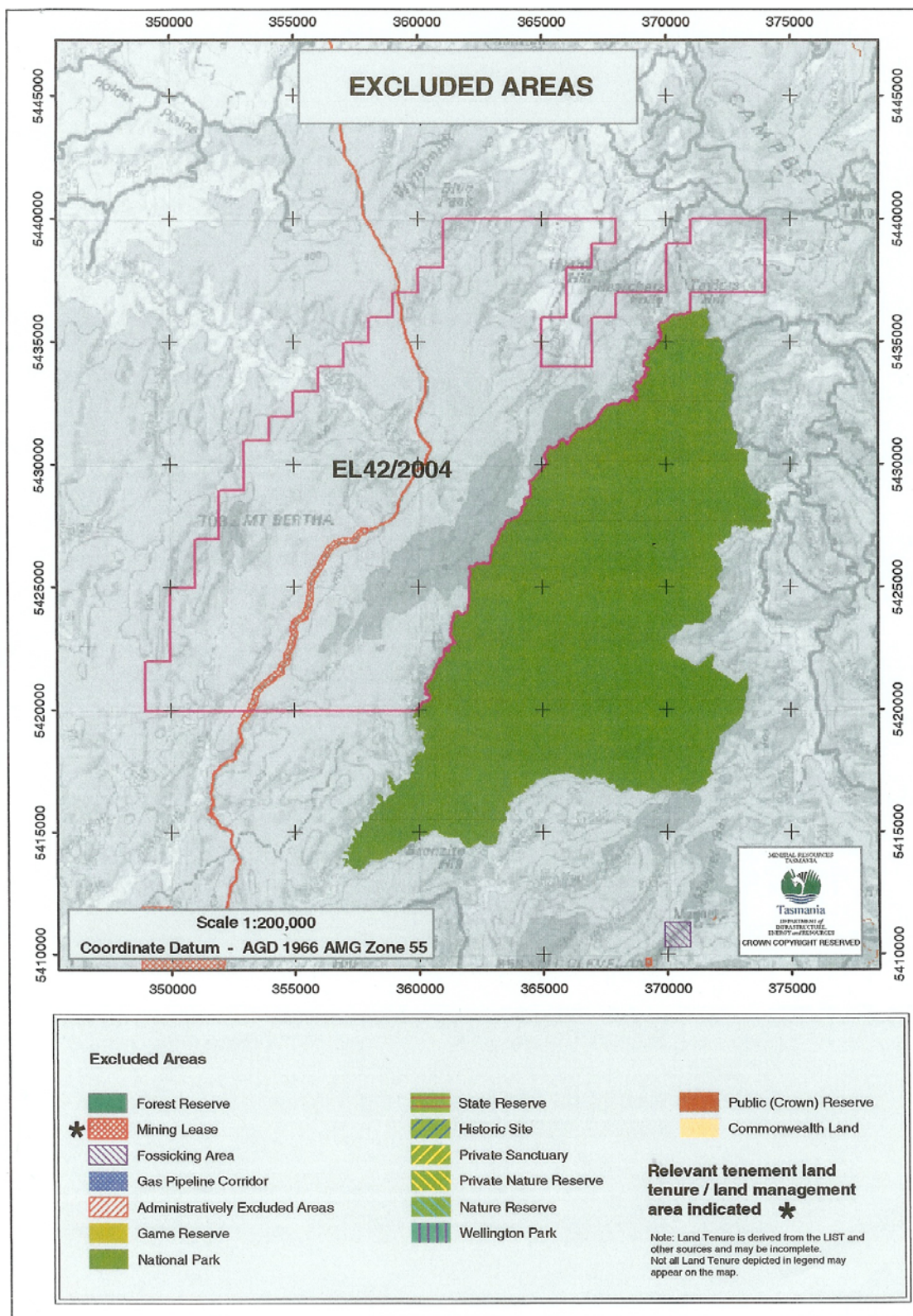


Figure 4 – Mt Bertha: Exclusion Areas



5. GEOLOGICAL SETTING AND MINERALISATION

5.1 REGIONAL GEOLOGY

Tasmania has been geologically divided by MRT into seven Proterozoic-Lower Palaeozoic regions or “Stratotectonic Elements”, each with a different geological history and economic mineral associations. As a result of multiple subduction episodes these elements or terranes were welded together during geological history, which has produced the current geological framework for Tasmania. An abbreviated stratotectonic history of Tasmania is detailed below:

- Formation of basement as Early Neoproterozoic-aged shelf clastic sedimentation with an age range of 900-1000 million years ago (ma) followed by a major orogenic event at 760ma, which included granite intrusions. This produced the Rocky Cape Element.
- A failed rift episode then followed with its associated clastic sedimentation and volcanic inputs ensued by a second, successful rift event that happened in the Late Neoproterozoic to Early Cambrian. This added an assortment of units including mafic lavas to the Rocky Cape Element i.e. the Togari Group (and its equivalent Ahrberg Group).
- An island arc-continent collision east or northeast of Tasmania occurred in the late Early Cambrian and the emplacement of a series of allochthonous slices across Tasmania, including oceanic assemblages (ultramafics and associated mafic lavas) and other units. This formed the Dundas, Sheffield, Tyennan and Adamsfield-Jubilee Elements.
- A series of Mid to Late Cambrian clastic basins developed post-collision and were concomitant with major calc-alkaline volcanism – the Mt Read Volcanics which contain a world class volcanogenic hosted massive sulphide (VHMS) province.
- This was followed by Late Cambrian orogenesis comprising fold belt-style tectonics at 500-510ma and includes some thrust stacking of units.
- The establishment of a state wide clastic basin began in Late Cambrian times with initial basal conglomerates overlain by limestone lithologies followed by a gradually deepening marine clastic sequence up to Mid Devonian times. At the same time the Northeast Tasmanian Element developed as a turbiditic basin quite distinct from the other elements and lies east of an inferred subduction suture zone.
- Cessation of sedimentation was caused by uplift and erosion associated with the Tabberabberan Orogeny (Mid-Devonian) and with a subsequent Late Devonian to Early Carboniferous phase of major granitic intrusions. This included the Heemskirk, Meredith and the Northeast Tasmanian Granites, with the first two causing modifications to the Cambrian morphology via structural overprints and hydrothermal alteration effects. These granite intrusions resulted in the formation of many skarn and vein deposits for tin, nickel, lead/zinc etc. The tectonism also resulted in the structurally controlled Henty gold deposit. In Northeast Tasmania the Devonian-aged intrusions and deformation are associated with gold mineralisation.
- Minor sedimentation including glacial deposits occurred in the post-Devonian Tasmania Basin. Substantial amounts of dolerite and basalt were formed as a result of continental break up associated with Jurassic and Tertiary global events. Continental extension and rifting began in Mid Jurassic times with separation occurring in the Mid Cretaceous. Major Jurassic dolerites related to a Gondwana event occur as sills across Tasmania and are similar to the Karoo series in Africa.

The Arthur Metamorphic Complex (AMC), or the Arthur Lineament as it is also known, is an elongate (100km by 10km), NE/SW striking, high metamorphic grade geological belt/tectonic boundary that occurs in NW Tasmania. It lies between the Rocky Cape and Dundas/Sheffield stratotectonic elements and has a metamorphic grade of upper greenschist to amphibolite with localised blueschist facies. The eastern boundaries of the complex are transitional into less deformed and less metamorphosed rocks whereas the western boundary is thought to be an east-dipping thrust contact. The rock sequences within the complex are rich in industrial mineral deposits e.g. iron ore at Savage River, silica sand at Corinna, magnesite at Keith River etc.

Current theory for the AMC suggests that it is an allochthonous unit of strongly metamorphosed Rocky Cape Group of sediments i.e. the Neoproterozoic Togari Group. These sediments include mafic volcanics that have been strongly deformed across a major fault/suture zone i.e. a klippen. Offshore seismic data across the AMC indicates a relatively shallow level of penetration for the unit implying that the rock sequences became detached from source, were substantially folded by thrust tectonics and placed into their current position by an east-dipping thrust system. The west margin of the AMC and further west are believed to have been emplaced by west dipping thrusts.

A list of Tasmanian mineral deposits is provided in Table 1.

Table 1 – Major Mineral Deposits of Tasmania (Source MRT 2004)

Mine or Deposit	Mineral Style	Commodity	Tonnages (production + reserves)
Mt Lyell	Volcanic hosted disseminated	Cu, Au	135Mt @ 1.2%Cu and 0.4g/t Au
Rosebery	Volcanic hosted massive sulphide	Zn, Pb, Ag, Cu, Au	28Mt @ 0.6%Cu, 14.3%Zn, 4.3%Pb, 145g/t Ag & 2.4g/t Au
Hellyer	Volcanic hosted massive sulphide	Zn, Pb, Ag, Cu, Au	15.5Mt @ 0.4%Cu, 14.3%Zn, 5.9%Pb, 140g/t Ag & 2.2g/t Au
Que River	Volcanic hosted massive sulphide	Zn, Pb, Ag, Cu, Au	2.5Mt @ 0.45% Cu, 7.5%Pb, 13.6%Zn, 172g/t Ag and 2.8g/t Au
Hercules	Volcanic hosted massive sulphide	Zn, Pb, Ag, Cu, Au	2.6Mt @ 0.4%Cu, 16.7%Zn, 5.2%Pb, 159g/t Ag & 2.7g/t Au
Henty	Structurally controlled/vein	Au	0.5Mt @ 29g/t Au
Beaconsfield	Structurally controlled/veins	Au	1.085Mt @ 24.5g/t (production); 0.67Mt @ 24g/t (resource 1990)
Renison Bell	Skarn	Sn	28Mt @ 1.5% Sn approx
Cleveland	Skarn	Sn	10.3Mt @ 0.78% Sn and 0.45%Cu
Mt Bischoff	Skarn	Sn	10.32Mt @ 1.13% Sn
Queen Hill	Skarn	Sn	3.6Mt @ 1.2% Sn
Savage River	Massive magnetite	Fe	>330Mt @ 35%Fe
Main Creek	Magnesite	Mg	47.4Mt @ 43.4% MgO
Keith River	Magnesite	Mg	29Mt @ 42.8% MgO
King Island	Skarn	W	16.9Mt @ 0.78% WO ₃
Kara	Skarn	W	2.2Mt @ 0.8% WO ₃
Avebury	Skarn	Ni	4Mt @ 1.5% Ni
Melba Flats	Mafic hosted massive sulphide	Ni	7400t of ore @ 10% Ni & 5% Cu
Oceana	Carbonate hosted	Pb, Ag, Zn	4Mt @ 18%Pb and 4%Zn
Zeehan Field	Lode/veins	Ag, Pb	0.19Mt Pb, 26Moz Ag, 71t Zn, 945t Cu & 5.3t Sn
Balfour	Structurally controlled	Cu	6177t of Cu Ore at 20-30% Cu
Grieves	Carbonate hosted and oxidised	Zn oxides	Small resource <1Mt

5.2 LOCAL GEOLOGY

The geology of the Mt. Bertha licence comprises a variable volcano-sedimentary package of Neoproterozoic-aged rocks including part of the Arthur Metamorphic Complex (Figure 5). In detail the Proterozoic group strikes generally northeast-southwest, is steeply dipping to the east and youngs from west to east across the licence.

The oldest units occur west of the licence and comprise siltstones and pyritic mudstones of the Early Neoproterozoic Cowrie Siltstone. These are overlain by a mixed siliciclastic package of siltstones, quartzites and sandstones with minor pelitic shales (Detention Quartzite, Jacobs Quartzite, Irby Siltstone etc). Subsequent units of the Neoproterozoic Ahrberg Group occur in the southern, central and eastern part of the property and comprise carbonates, clastics (including the basal Forest Conglomerate), volcanic turbidites (mafic detritus) and tholeiitic basalts (Bernafai Volcanics). The Ahrberg Group is believed to be an equivalent to the Togari Group, which exists further to the west and northwest of the licence. Within the north and northwest of the property Neoproterozoic phyllites occupy the Togari/Ahrberg positions. The Timbs Group is a more strongly metamorphosed version of the Ahrberg Group, within which lies a chloritic schist unit, called the Bowry Formation, which contains the Savage River Iron ore deposit further south. This formation also has dolomites which host the magnesite deposits to the north east of the property. The youngest unit in the complex is the Keith Schist, which comprises quartz mica schists, quartzite and phyllite and is thought to be a more deformed and metamorphosed version of the east bounding Burnie and Oonah turbiditic siltstone packages (both Late Neoproterozoic in age).

There is a very narrow (2km by >25km) Permian sequence that strikes roughly parallel with the AMC structural grain along the centre of the lease. It appears to be fault bounded in a graben-like structure against the various Neoproterozoic sequences. The Permian rocks consist of a lower glaciomarine clastic sequence with limestones and includes the Tasminite Oil Shale. Overlying these rocks are coal measures followed by an upper glaciomarine sequence. At the northeast corner of the tenement it appears that the Permian is unconformable on the underlying Neoproterozoic schists.

A subsequent Tertiary basalt eruptive phase resulted in extensive coverage of the tenement (about 60%) masking the underlying Proterozoic and Permian units. A review of the data from the recently flown airborne magnetic WTRMP data indicates that the basalt cover may be quite thin in several instances, as demonstrated by the interpreted continuity of the Neoproterozoic-related magnetic signatures beneath the basalt outcrop (Figure 6).

The air magnetic data also indicates a substantial structural complexity with potentially several major NE-SW, NW-SE and ENE structures transecting the licence. There are likely to be some differences between the new geologic deductions from this air magnetic data and the published geology, which may create exploration opportunities. The dominant NE-SW structure, the Pieman Fault, matches to some extent the Permian eastern boundary, which can be seen in the WTRMP data as a very narrow, >14km long, unbroken magnetic feature (figure 6)

The dominant structural grain is parallel to the NE-SW striking AMC. In the past there have been suggestions of major NW trending transform faults cutting across stratigraphy, but not necessarily across the AMC. The structural picture is complicated by the thrust faulting overprint associated with subduction.

Legend

- Tenement Boundary
- Mineral Occurrence
- Creek
- Road; Track
- Fault
- Quaternary Cover
- Tertiary Basalt
- Jurassic Dolerite
- Permian Sediments
- Cambrian Mafics & Ultramafics
- Neoproterozoic Oonah & Burnie Formations
- Neoproterozoic Keith Schist
- Neoproterozoic Bowry Formation
- Neoproterozoic Sediments
- Neoproterozoic Dolerite Dykes
- Early Neoproterozoic Sediments

10km

Pipeline Road

EL42/2004

Arthur Metamorphic Complex

EL42/2004 Mt Bertha Geology Map

Legend

- Tenement Boundary
- Mineral Occurrence
- Road; Track
- Fault

EL42/2004

EL42/2004 Mt Bertha Total Magnetic Intensity Map

5.3 MINERALISATION

Reported mineral occurrences on the property are limited. The Lyons River Magnesite #3 exists on the licence peripheral to the main magnesite leases that occur just beyond the northeast corner of the tenement (Lyons/Arthur River magnesites - held by competitors). Two small gold occurrences, Pikes Diggings and Campbell's Creek, can be found at the extreme northeast end of the licence, both for alluvial gold. In that general north east area, gold occurs as numerous small scale hard rock and alluvial deposits which were mainly worked in the 19th Century. There are minor copper occurrences immediately north east of the tenement e.g. the Victory Mine, Lyons River A and B and Blue Peak.

The Mt Bertha quarry located in the centre of the licence is presumably a roadstone quarry in basalt, used for the Savage River Pipeline Road. However there is no known road that goes to it and thus its location is questionable.

Magnesite exploration in the AMC has been a dominant exploration feature for the licence, particularly around its north east margin. The following extract is from MRT:

"Magnesite deposits of high purity and substantial size are known at Arthur River, Lyons River, north of Savage River and Main Creek to the south and there is a significant body to the east of the Northern deposit at Savage River. Frost (1982) has considered the Main Creek body to be a metasomatic replacement of dolomite, but oxygen and carbon isotope analyses of the Savage River deposit and magnesite at Long Plains indicate a diagenetic origin, probably in a hypersaline environment (Matzat 1984), and it is likely that all of the deposits share a common origin."

Information supplied by David Seymour of MRT indicates that the dolomites in the equivalent Togari Group are probably diagenetic in origin e.g. preserved ghost textures of original oolites in the Smithton Dolomite. Pictures of magnesite textures and deposit details are included in Dickson 1983 and 1984.

The information on Lyons River Magnesite #3 is limited to a map location from Dickson 1984.

The Lyons R(iver) A and B copper occurrences have been referred to as chalcopyrite with pyrite occurring in brecciated and silicified dolomitic slate of the Keith Schist (Porter 1971). They are part of a sequence that included pyritic beds and magnesite and were explored for on the basis of a stratabound/sediment hosted copper mineralisation model. These units strike onto the Mt Bertha licence but disappear beneath basalt cover.

The Victory Cu Mine lies 2km north of the north eastern corner of the licence. It comprises malachite and chalcopyrite with dolomite gangue in a N-S trending contact zone between dolomite and quartz mica schist. Reports of high grade copper 22.4% exist along with "8ozs 3dwts 8grs of silver and 10dwts 4grs of gold". A calcareous amphibolite with quartz-carbonate-pyrite-chalcopyrite veins and an irregular body of magnetite (with 900ppm Cu) occurs 1.5km west of the Victory Mine and corresponds to an airborne magnetic anomaly.

The Blue Peak mineral occurrence is a series of narrow quartz veins with chalcopyrite (& gold & pyrite), 1.64%Cu and 2.8dwt/ton Au. It was located by Murchison Nickel within the north western corner of the Zelos licence (Anon 1971), but later reports including the MRT mineral occurrence database, have placed it 1km north of the licence.

The Keith River Gossan lies 1.5km north east from the Mt Bertha licence boundary, in an excised embayment to the licence. It is hosted by amphibolite and pyritic siltstones on the western flank of the Keith Schist adjacent to the main NE structural line, which has Permian downthrown on its NW side. This unit has been postulated as a correlate of the Savage River magnetite-pyrite unit.

The nearby Savage River Iron Ore Mine (15km south west of the southern boundary) consists of concordant massive pyrite-magnetite lenses hosted by greenschist grade tholeiitic metabasalts of the Bowry Formation.

6. PREVIOUS COMPETITOR ACTIVITY

The following table summarises work completed on the area represented by the current Mt Bertha licence EL42/2004 (Table 2). Exploration has been inhibited by the terrain, extensive Tertiary basalt cover and a lack of geological information. Airborne surveys have led the way in the past with a series of anomalies being identified, some of which have been followed up. No drilling has been undertaken on the licence area but in the past, pre-1985, only one or two holes were sunk peripheral to the licence area e.g. Comstaff in the 1980's. To date no one has used the recent WTMRP airborne geophysical data to assist with geological interpretation and target selection. A map detailing previous exploration is included as Figure 7 with additional details in Table 2 and a full listing of previous explorer's reports relevant to the area is included in Appendix 1.

Table 2 – Summary of Previous Competitor Activity for EL42/2004 & Environs

Company	Year	Licence No	Drilling	Other Work
ESSO	1974	EL2/73	None	Airborne Magnetic and EM INPUT survey
Mineral Holdings Australia	1978	EL43/70	None on the licence	Mainly deals with the Lyons River and Arthur River magnesite deposits
Comstaff Pty	1981	EL1/68	None on the licence	Partially covered the licence with DIGHEM; drilling completed south of current licence; multi-commodity search including Sn, PGE, Cr and base metals
BHP	1982	EL18/80	None on the licence	Photogeology, re-evaluation of surveys, stream sediment surveys; heavy mineral search
CRAE	1983	EL1/79	None; except on magnesite	Airborne mag and radiometric survey; localised testing of anomalies; assessment of magnesite potential
Petrecon Australia	1988	EL24/87	None	Completed a new geology map
Geopeko	1992	EL40/89 EL41/89 EL42/89	None	Water sampling and stream sediment sampling
Allstate	1996	EL35/94 EL36/94	None	Geophysical report on anomaly assessment; no other work mentioned
Titan Goldstream	1998	EL37/96 EL38/96	None	Minor stream sediment sampling
Pacific Nevada	1999	EL24/97	None	Geophysical reprocessing and minor stream sediment sampling

Extracts including maps from some of the open file reports are included in Appendix 2.

Modern exploration of the area began in the mid 1970's but the current Mt Bertha licence was always divided between explorers e.g. ESSO, BHP, and Comstaff (Anglo American). Work undertaken by these companies comprised flying or interpreting airborne EM, magnetic or radiometric surveys with some ground follow up testing identified anomalies.

ESSO's work in 1974 identified 63 airborne EM anomalies from a survey much larger than EL42/2004, of which 36 were not explained due to access problems; some of these anomalies are within the current Zelos licence, see Figure 8. Most of these anomalies appear to be formational features associated with the Cowrie Siltstone and associates from the Rocky Cape Group. CRAE, who held the complete licence, also identified a series of magnetic anomalies from their own airborne survey within the general licence area, some of which were followed up with seemingly negative results i.e. the Rapid and Rapend series of prospects located near the Rapid River (Appendix 2).

Geopeko in 1992 tried water sampling, as a new geochemical sampling method, which relied on accurate, low level detection of anomalous elements. Unfortunately there were analytical problems such that the programme was suspended initially and then cancelled. Some minor stream sediment sampling work was completed with no anomalies identified.

Target concepts have changed over the years, ESSO's exploration target was base metal massive sulphides whilst Geopeko (in the 1980's) originally intended to look for stratabound tungsten of the Mittershill-type but results were not encouraging. CRAE initially held a large area searching for tin deposits but the focus changed when it considered the AMC for shale hosted Pb/Zn (Faro-type deposits from the Yukon) based on the assumptions that the pyrite-magnetite mineralisation at Savage River continued northwards along a 'volcanic rise' to the 'Keith River Gossan'. CRAE also pondered on the possibility of gold and platinum group element mineralisation.

Petrecon completed a geological map for the general area at the behest of Pasadena Projects Pty Ltd, Betoota Pty Ltd and Echelon Pty Ltd. The exploration focus was for base metal, gold and platinum group mineralisation associated with magnetic features in the AMC, gold quartz reefs, and any derived alluvials from such mineralisation. The Petrecon work also highlighted a vegetation anomaly in dolomite (Appendix 2 – from a CRAE report TCR85_2341) towards the southern margin of the licence (Cromer et al 1988).

Allstate held the licence in 1996, with an exploration target of low grade, fine grained gold in close association with ironstone-carbonate-mafic volcanics. They also included Besshi-type targets. The company completed a geophysical study on a recently flown AGSO magnetic survey and identified a variety of anomalies based on inferred structural intersections coinciding with magnetic features. There appears to be AMG coordinate discrepancies between maps presented by the geophysicist in his report and CRAE's airborne magnetic maps (Appendix 2). The CRAE targets are common to both maps and indicate a coordinate shift of some 6km on a 190° bearing.

The final recorded work on any part of the licence was by Titan Goldstream in 1999 who had a Homestake-style Proterozoic ironstone exploration model. They completed a minor stream sediment sampling programme with no success.

In summary the area has had minimal exploration completed, mainly comprising 1970's airborne EM and magnetic surveys in conjunction with some minor stream sediment sampling. As a result the area is under explored.

7. EXPLORATION POTENTIAL

Zelos's exploration strategies for this tenement recognise that the tenement's large expanse provides a variety of opportunities for grassroots exploration. Very little previous geochemical exploration has been undertaken, mainly due to the remoteness and the Tertiary basalt cover. The initial strategy will comprise reviewing and assessing the recent airborne magnetic data with some data reprocessing and 3D modelling in order to identify significant anomalies in relation to their geology. Prompt field testing of discrete magnetic features associated with major structures will follow, possibly with helicopter support. Encouraging outcomes will result in detailed geochemical sampling (if feasible ie no basalt cover) and ground geophysical surveys e.g. ground magnetic, ground EM and/or IP, aiming to delineate drill targets.

Drilling will initially be of a reconnaissance style moving to a detailed diamond drilling campaign whenever results are favourable.

The area contains a variety of geological elements that could result in several different types of target commodity. The principal targets are:

1. Fe-Ox copper-gold orebodies associated with brecciation zones along a major fault.
2. Gold-magnetite lodes similar to the Tennant Creek area.
3. Structurally related gold, both high grade veins and low grade disseminated deposits.
4. Possible iron ore deposits similar to Savage River.

A secondary level of targets might include:

1. Besshi-style copper mineralisation is a possible target with the geologic setting similar to the Japanese Sambagawa Metamorphic Belt which hosts the 'Besshi-type' deposit (Botterill et al).
2. Higher grade magnesite bodies similar to the deposits occurring just beyond the north east corner of the licence.
3. Nickel of the Noril'sk-type associated with the linear magnetic feature (see Figure 6) marking the main structural line of the AMC, with the former inferred to be a Jurassic feeder to the dolerites that cover large parts of Tasmania.
4. Sedimentary Hosted/Breccia Copper similar to Balfour in NW Tasmania; disseminated (locally massive) mineralisation in veins proximal to a major fault zone (?thrust/reverse fault)

The third item of the secondary targets is in recognition of the remarkably straight magnetic feature, some 14km long that occurs within the AMC. There is no apparent subsequent faulting that offsets the feature, implying that it is late structure e.g. possibly Permian, Jurassic or Tertiary. It is also more magnetic than the Tertiary basalts and has an intensity signature similar to the nearby Jurassic dolerites.

8. RECENT WORK

Zelos's exploration philosophy is to apply innovative geophysical reprocessing to existing airborne geophysical data in order to identify potential drill targets. In addition this data will be correlated with improved geological maps in order to further refine the targets, making the process more geologically driven. To this end Zelos commissioned a geophysical interpretation of the recent WTRMP airborne magnetic and radiometric data (Hungerford 2005). This interpretation included the creation of a series of magnetic images:

1. TMI (reduced to pole, RTP): defines the variably magnetic units, generally sediment/volcanic and/or mafic packages.
2. First and second vertical derivatives: helps to elucidate structure.
3. Low pass filter: highlights deeper magnetic sources reducing any near surface effect of the Tertiary basalts.

Part of this report is to review the reprocessed images from Hungerford 2005 in order to relate the magnetic data to the geology. As a result a new Proterozoic geological map has been generated with the Tertiary basalts removed (Figure 9). The map has resulted from the identification of geological units with distinctive magnetic signatures. Added to the map is the Author's knowledge of the geological understanding acquired whilst working in the area for CRAE during the mid-1990's.

Two main geological areas have emerged from this work, with one area covering the central, eastern and southern parts of the licence and another covering a north west section of the licence. The definitions of the interpreted geological units for both areas are listed below in Tables 3 and 4:

Table 3 – Lithological Units for Central and SE Area from Magnetic Interpretation

Unit Name	Unit Code (MRT)	Description
Keith Schist	Lat	Quartz-mica-schist, quartzite, phyllite and rare dolomite; youngest unit
Arthur Metamorphic Complex	Lac	Chloritic schist with minor phyllite, dolomite and magnesite; correlates with the Timbs Creek Group; includes sub-units called Lac_b, Lac_c and MgFe
	Lac_b	Moderately magnetic unit within the Lac sequence; chloritic schist with minor phyllite, dolomite and magnesite
	Lac_c	Magnetic chloritic schist and phyllite with amphibolite
	MgFe	A strong magnetic unit hosted by the Lac_c unit; possibly skarn-type.
	Laa	Amphibolite; found on the NW side of the main structural line
Ahrberg Gp	Lsv	Turbiditic mudstone, siltstone, lithicwacke and diamictite with dominantly mafic detritus.
Bernafai Volcanics	Lsb	Tholeiitic basalt (part of the Ahrberg group).
Togari & Ahrberg Gps	Ls	Undifferentiated sequences including carbonate, clastic and volcanoclastic turbiditic rocks and tholeiitic basalt.
Togari Group	Lsm	Moderately magnetic unit in the Ls formation; source unknown
Forest Conglomerate	Lsc	Basal siliceous conglomerate and sandstone.
Cowie Siltstone	Lrc	Dominantly dark, laminated, commonly pyritic siltstone and mudstone

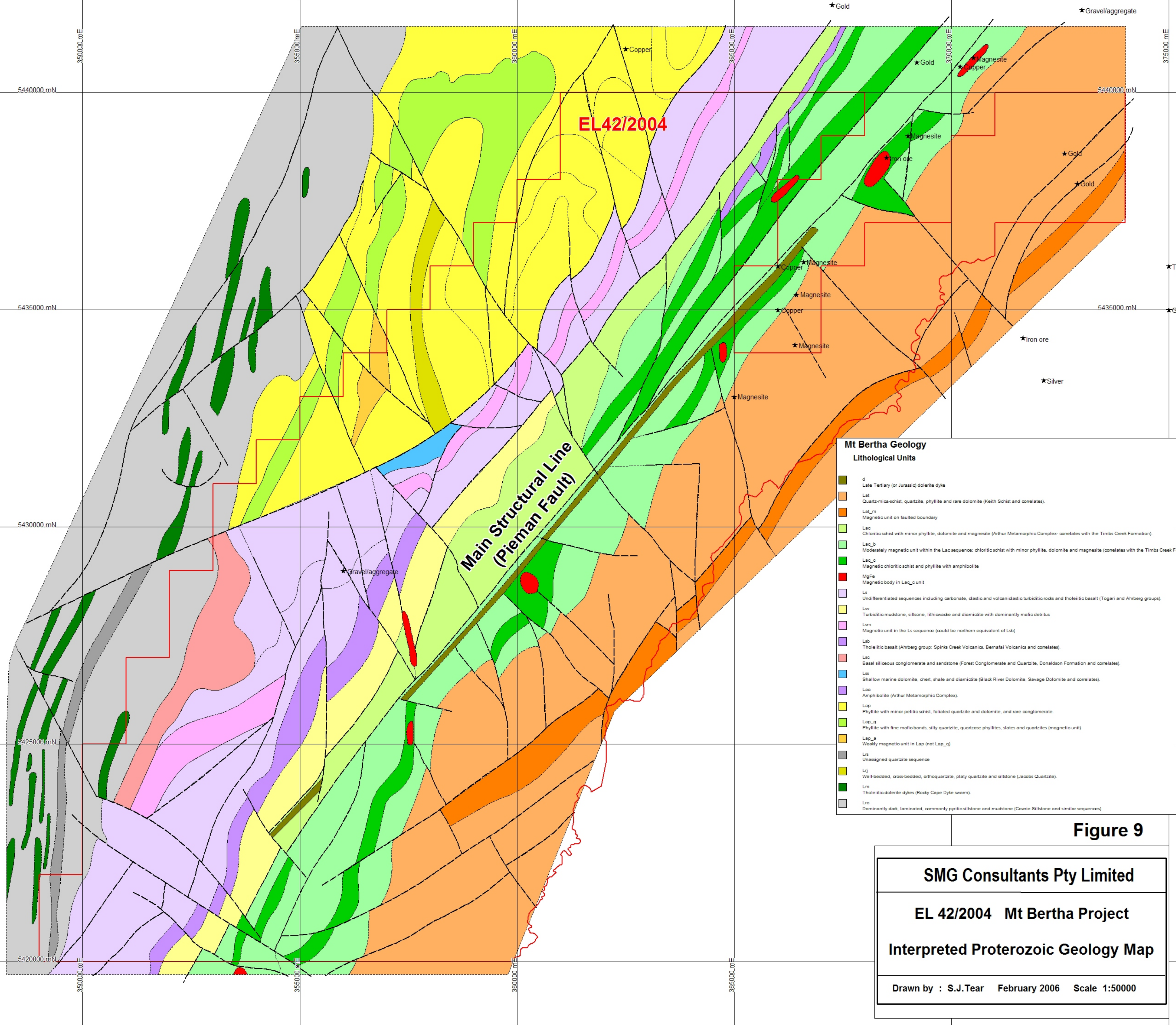
Table 4 – Lithological Units for the NW Area from Magnetic Interpretation

Unit Name	Unit Code (MRT)	Description
	Lap	Phyllite with minor pelitic schist, foliated quartzite and dolomite, and rare conglomerate
	Lap_q	Phyllite with fine mafic bands, silty quartzite, quartzose phyllites, slates and quartzites (magnetic unit)
	Lap_a	Weakly magnetic unit in Lap
Jacobs Quartzite	Lrj	Well-bedded, cross-bedded, orthoquartzite, platy quartzite and siltstone
Cowrie Siltstone	Lrc	Dominantly dark, laminated, commonly pyritic siltstone and mudstone

A series of geological observations from the interpretation are included below (see also Figure 9):

- The rocks for the Mt Bertha licence comprise a NE trending belt of Proterozoic sediments and mafic volcanics facing SE. Substantial chloritisation and amphibolite grade metamorphism is associated with a strong structural zone that strikes on a NE line through the centre of the licence i.e. The Arthur Metamorphic Complex (AMC). There is a school of thought that the metamorphic grade boundaries are slightly oblique to the structural (and lithological strike) and hence the metamorphism is transgressive.
- A major fault enters the central west part of the licence on an ENE bearing gradually bending to a NE strike i.e. parallel to the main structural line. This fault juxtaposes the NW lithological sequence (the 'Lap' rock unit and its associates) with the central and SE sequence (Ls, Lac and Lat plus associates). There is the possibility that the 'Lap' sequence may be a distant equivalent of the Ls and Lac package but with a much lower level of metamorphic overprint.
- A major NE structural line appears to coincide with the dominant lithological line in the central and SE sectors of the licence (within the AMC). This structural line comprises NE-SW faulting previously referred to as the Pieman Fault (McClenaghan & Seymour 1996). A second major fault, the Donaldson Fault, is referenced in the McClenaghan & Seymour report but the comparison of the interpreted location of this fault with the WTRMP magnetic data is not convincing.
- There is strong chloritisation of sediments within this central, north east and south east area possibly due to dynamic metamorphism associated with intense shearing within the structural zone. Blueschist grade metamorphism is recorded elsewhere in the Arthur Metamorphic Complex.
- There are indications of NW-SE 'transform' faults particularly in the central to northern part of the licence. These faults do not appear to have major offsets associated with them.
- A series of distinctive magnetic units occur that can be traced for the whole length of the licence. In particular:
 1. A central west line believed to be the mafic Bernafai Volcanics (Lsb). The Lsm unit north north east of the apparent termination of the Lsb unit may in fact be a more distal version of the 'Lsb' unit, but with decreasing levels of magnetism, possibly due to reduced levels of metamorphic grade or greater distance from the eruptive centre.

2. A wider and more loosely defined central east line containing Lac, Lac_b and 'Lac_c' units, occurs both sides of the main structural line, possibly indicating some dextral movement. These units are quite complicated in the north east of the licence where the Lac units appear shear bounded with interspersed amphibolites (Laa) and small localised strong magnetic highs (MgFe units). There is the possibility of multiple faulting/thrusting in this north eastern area.
- The metamorphic overprint hampers the delineation of the original protolith sub-units within the main magnetic formations.
 - North west of the ENE fault lies a complexly folded series of sediments/phyllites, the 'Lap' unit, with moderately discrete magnetic sub-units (?quartzites). This unit is believed to be older than the main AMC units for the licence and overlie the Cowrie Siltstone, which is the oldest formation in the area, and occurs west of the licence.
 - A major, uninterrupted, strongly magnetic linear unit is seen in the airborne data (>14km long) and matches the main structural and topographical line (Hungerford 2005). The geophysical belief at this stage is that the feature is a dolerite dyke, younger than the Tertiary basalts. This feature corresponds to a topographical feature but seems to extend beyond the extent of the Tertiary basalts in the north east of the licence. Hence the feature may be older than the Tertiary, possibly a Jurassic dolerite 'feeder', which can have implications for Noril'sk-type nickel sulphide mineralisation.
 - The Proterozoic rocks are locally overlain by a narrow unconformable Permian basin(s) or the remains thereof. There are two main parts to the basin, one in the central part of the licence and another at the NE end of the licence. It is possible that these basins are united as a single feature as the Tertiary basalt cover is quite extensive over these units. The Permian rocks comprise fluvioglacial sediments and minor coal seams. In areas of Tertiary basalt cover care must be exercised when estimating depth to the Proterozoic as there may be some Permian sediments in between.
 - The Tertiary basalts cover 55-60% of the licence. Figure 10 shows the extent of the Tertiary basalts and the Permian sediments.
 - At this stage the main target sequence is the chloritic and moderately magnetic 'Lac_b' units in particular the magnetically intense 'Lac_c/MgFe' units.
 - Current speculation on the magnesite deposits is that they are the result of dynamic metamorphism on pre-existing carbonate rocks possibly equivalents to the Savage River Dolomite, rather than being metamorphosed amphibolite or ultramafic rocks.



Mt Bertha Geology

Lithological Units

- d Late Tertiary (or Jurassic) dolerite dyke
- Lat Quartz-mica-schist, quartzite, phyllite and rare dolomite (Keith Schist and correlates).
- Lat_m Magnetic unit on faulted boundary
- Lac Chloritic schist with minor phyllite, dolomite and magnesite (Arthur Metamorphic Complex- correlates with the Timbs Creek Formation).
- Lac_b Moderately magnetic unit within the Lac sequence; chloritic schist with minor phyllite, dolomite and magnesite (correlates with the Timbs Creek F
- Lac_c Magnetic chloritic schist and phyllite with amphibolite
- MgFe Magnetic body in Lac_c unit
- Ls Undifferentiated sequences including carbonate, clastic and volcanoclastic turbiditic rocks and tholeiitic basalt (Togari and Ahrberg groups).
- Lsv Turbiditic mudstone, siltstone, lithowacke and diamictite with dominantly mafic detritus
- Lsm Magnetic unit in the Ls sequence (could be northern equivalent of Lab)
- Lsb Tholeiitic basalt (Ahrberg group: Spinks Creek Volcanics, Bernafai Volcanics and correlates).
- Lsc Basal siliceous conglomerate and sandstone (Forest Conglomerate and Quartzite, Donaldson Formation and correlates).
- Lss Shallow marine dolomite, chert, shale and diamictite (Black River Dolomite, Savage Dolomite and correlates).
- Laa Amphibolite (Arthur Metamorphic Complex).
- Lap Phyllite with minor pelitic schist, foliated quartzite and dolomite, and rare conglomerate.
- Lap_q Phyllite with fine mafic bands, silty quartzite, quartzose phyllites, slates and quartzites (magnetic unit)
- Lap_a Weakly magnetic unit in Lap (not Lap_q)
- Lrs Unassigned quartzite sequence
- Lrj Well-bedded, cross-bedded, orthoquartzite, platy quartzite and siltstone (Jacobs Quartzite).
- Lm Tholeiitic dolerite dykes (Rocky Cape Dyke swarm).
- Lrc Dominantly dark, laminated, commonly pyritic siltstone and mudstone (Cowie Siltstone and similar sequences)

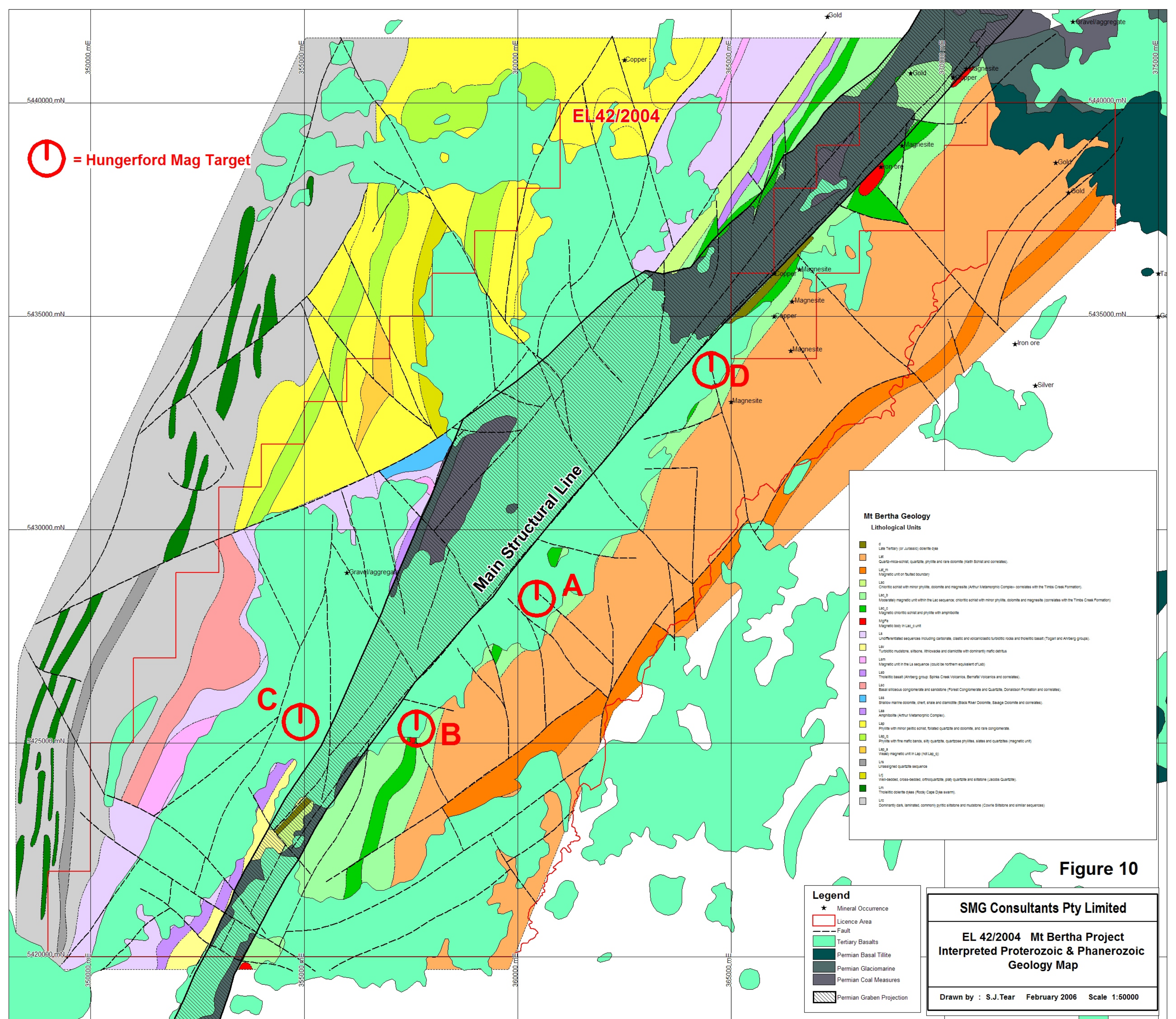
Figure 9

SMG Consultants Pty Limited

EL 42/2004 Mt Bertha Project

Interpreted Proterozoic Geology Map

Drawn by : S.J.Tear February 2006 Scale 1:50000



The work by Hungerford identified 4 main magnetic anomalies that were attributable to Proterozoic sources, three are on the periphery of the major Tertiary basalt body, SE of, but adjacent to the main structural line of the AMC. The remaining anomaly is located on the NW side of the structural line within the Bernafai Volcanics (Figure 11).

Table 5 – Mt Bertha: Magnetic Targets

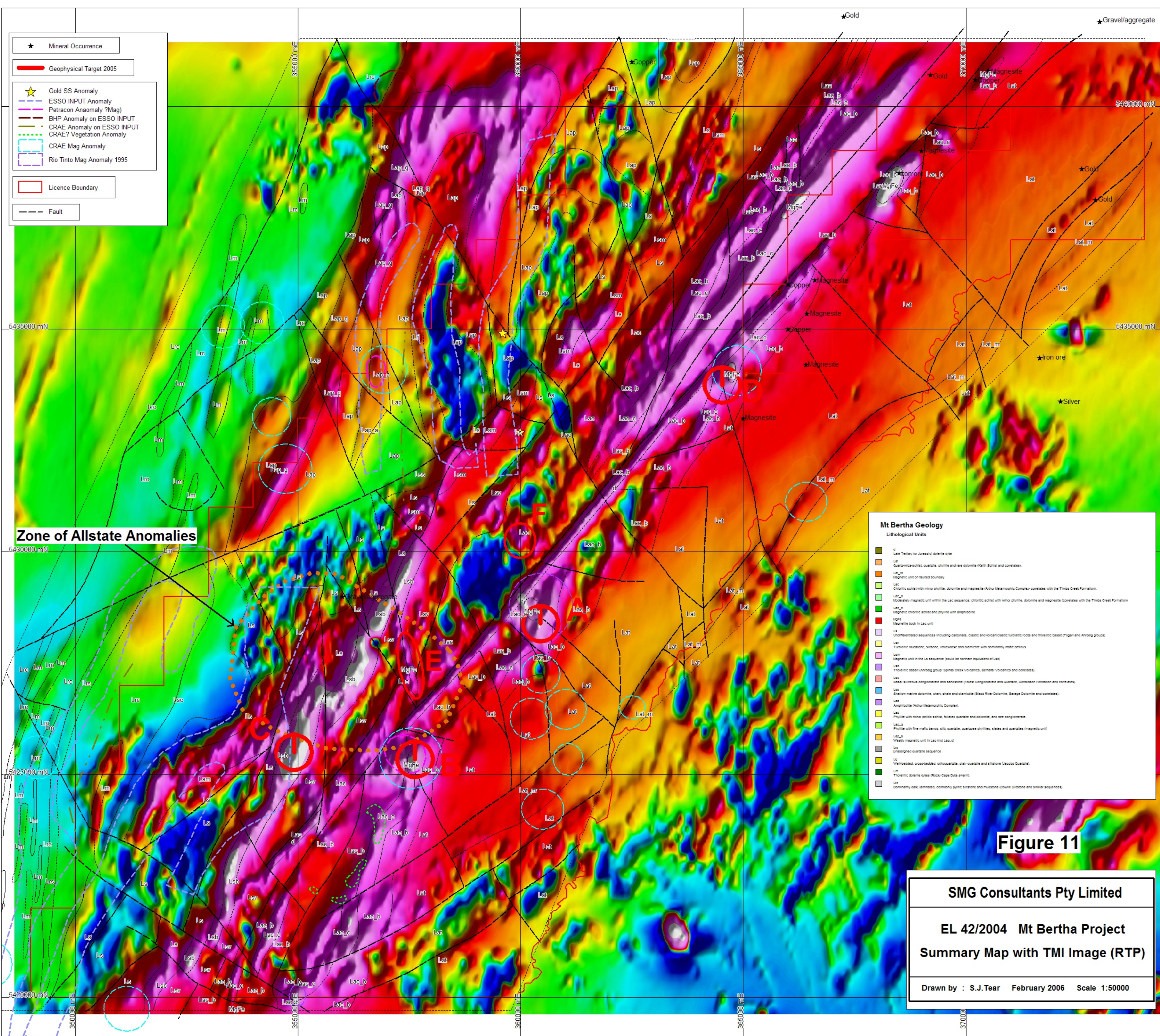
Target No.	East	North	Geology
A	360400	5428500	Proximal to an interpreted MgFe unit hosted by Lac_c unit i.e. magnetic chloritic schist and phyllite with amphibolite. Lies on an inferred NW striking fault 700m SE from the major NE striking 'dolerite dyke' feature.
B	357600	5425300	A strong magnetic feature interpreted to be hosted by the Lac_c unit i.e. magnetic chloritic schist and phyllite with amphibolite. Lies 700m SE from the projected end of the major NE striking 'dolerite dyke' feature.
C	354900	5425500	Hosted by tholeiitic basalts of the mafic Bernafai Volcanic Formation; anomaly represents the greatest magnetic intensity for this formation on the licence. About 1.5km NW of the main NE structural line.
D	364600	5433900	Proximal to an interpreted MgFe unit hosted by Lac_c unit i.e. magnetic chloritic schist and phyllite with amphibolite. Lies on an inferred NNW striking fault 500m SE from the NE striking main structural line and 'dolerite dyke' feature.

2 additional targets for consideration

E	357500	5427400	A modest 1.3km long magnetic feature thought to be on a NNW striking fault on the NW side of the main NE striking structural line. Cuts across stratigraphy and is hosted by Lac and Lsv rocks i.e. chloritic schist with minor phyllite, dolomite and magnesite and turbiditic mudstone, siltstone, lithicwacke and diamictite with dominantly mafic detritus respectively.
F	360000	5430400	Target is a NW striking cross feature just NW of the main NE structural and lithological line. It is a small magnetic ridge between two magnetic lows, one much more distinct than the other. Host unit is the Lac i.e. chloritic schist with minor phyllite, dolomite and magnesite. The feature cross cuts this unit and passes into the Lsv i.e. turbiditic mudstone, siltstone, lithicwacke and diamictite with dominantly mafic detritus.

Exploration work for all the targets should comprise:

1. Use of ground magnetics to accurately locate the magnetic feature and model it.
2. Use EM to sound out the basalt thickness
3. Follow up with diamond drilling based on the conclusions of 1 and 2 accordingly.



9. CONCLUSIONS

The Mt Bertha Licence EL 42/2004 consists of a complexly deformed and metamorphosed sequence of Proterozoic sediments and mafic volcanics, part of which lie within the Arthur Metamorphic Complex.

60% of the licence is covered by Tertiary basalts and the terrain is remote and rugged. This has led to very small amounts of on-ground exploration having been undertaken in the past. Hence this project is very much a grassroots exploration play.

Mineral occurrences are restricted to some minor copper (& gold) shows north of the licence boundary and magnesite deposits located to the north east of the property. The Savage River Iron Ore mine is 16km south of the licence.

The recent airborne magnetic and radiometric survey carried by MRT as part of the WTMRP has shown substantial insights into the Proterozoic geology for the Mt Bertha licence. This new survey has shown that there is considerable continuity for the Proterozoic sequences which indicates that a substantial amount of the Tertiary basalt cover is relatively thin.

A recent geophysical interpretation of the magnetic data by Zelos has produced a series of maps for geological interpretation and has identified a collection of magnetic targets for further work including diamond drilling. These maps in conjunction with additional data sources including open file review have been used to re-define the Proterozoic geology for the licence and assess the prospectivity of the magnetic targets.

Exploration potential lies in using mineralisation models that have magnetic signatures in Proterozoic rocks. The favourable host sequence(s) are likely to be found in the AMC beneath the Tertiary basaltic cover.

Four main magnetic targets exist as discrete magnetic highs, generally near the periphery of the basaltic cover. Three of the targets are hosted by magnetic chloritic schists (Lac_b and Lac_c units) on the SE side of the major NE striking structural line for the AMC. The other target lies beneath the Tertiary basalt hosted by the mafic Bernafai Volcanics on the NW side of the structural line. Two other targets are outlined, based on cross cutting magnetic features presumed related to structures beneath the basalt cover.

It is recommended that these targets be visited in the field to assess the geology and logistics. Completion of ground magnetics to locate the airborne anomalies and EM soundings to give an indication of the basalt thickness is needed. This will give a measure of the likelihood of intersecting the magnetic target with a diamond drillhole.

Additional work should comprise of field checking the CRAE vegetation anomaly and the Mt Bertha Quarry.

10. EXPERT COMPETENCY

The resource statement contained in this report was prepared in accordance with the JORC Code by Simon Tear of SMG Consultants (SMGC). Simon Tear is a member of the AusIMM and has a minimum of five years experience in the estimation, assessment and evaluation of mineral resources of this style and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2004 Edition of the “Australasian Code for Reporting of Mineral Resources and Ore Reserves”. Simon Tear consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

Simon Tear, a Senior Geologist with SMGC, has a BSc (Hons) in Mining Geology from The Royal School of Mines, London, U.K. and has over 22 years worldwide experience in the mineral exploration industry. He is a member of the IMM (19 years), the AusIMM (8 years) and the Institute of Geologists of Ireland (PGEO and EurGeol, both 11 years). He was Team Leader for CRAE Pty Limited’s Tasmanian exploration program from 1995-1997. That program successfully explored Western Tasmania, accounting for nickel and lead/zinc discoveries.

The Author’s Tasmanian experience consists of:

- literature study for the Nelson Bay River licence for Zelos Resources including identification of a potential magnetite deposit,
- resource statement and block model report for Oceania Tasmania’s Allison’s Lode Zinc Project including geological interpretation,
- geological interpretation and block model reports for the Oceana Pb/Zn Deposit and the Mariposa Lodes for Zeehan Zinc Pty Ltd,
- literature study for the Catamaran Coal Project, SE Tasmania licence for Zelos Resources including identification of potential open pit coal resources,
- led the CRAE field team in the discovery of the Avebury Nickel deposit (now with Allegiance Mining NL) (1996/7),
- devised and executed CRAE’s and Noranda Pacific’s carbonate hosted base metal programme in the Gordon Limestone near Zeehan (1995-6 and 2001 respectively),
- undertook exploration on CRAE’s Balfour copper licences in NW Tasmania (1996/7),
- project generation for sediment hosted gold targets for CRAE in Northern Tasmania (1996/7),
- consulting geologist for the Zeehan Zinc Comstock project (1999-2003); and
- nickel project generation for Tasmania for Falconbridge (2002).

Other relevant experiences include:

- 3 years experience as a Senior Resource Geologist for base metals with the Birla Group’s Mt Gordon Operations,
- industry supervision of a MIRO sponsored research project into platinum group mineralisation in ultramafics,
- part of a resource evaluation team into vein-style gold mineralisation, and
- nine years exploration experience, mainly field related, in similar geological terranes to West Tasmania (Scotland and Ireland).

The above experiences and qualifications make Simon Tear adjudged to be a competent person under the JORC Code

11. LIMITATIONS AND CONSENT

The digital geological and geophysical information used in this report was supplied by the directors of Zelos. Additional open file information was sourced from the Mineral Resources Tasmania Library via its website and through personal communication. SMGC has relied upon and assumed without verification the accuracy and completeness of all information provided and cannot take any responsibility to guarantee its accuracy.

This assessment has been based on data, reports and other information made available by Zelos or otherwise obtained through publicly available sources. SMGC has no reason to believe that the information provided by Zelos is misleading or that any material facts have been withheld.

The opinions expressed herein are given in good faith and SMGC believes that any assumptions or interpretations are reasonable.

This report is provided to Zelos for the purpose of assessing exploration opportunities on the relevant licence and should not be used or relied upon for any other purpose. This report does not constitute a full technical audit but rather it seeks to provide an independent overview and technical appreciation of Zelos's exploration project. Neither the whole nor any part of this report, nor any reference thereto, may be included in, or with, or attached to any document or used for any purpose without SMGC's written consent to the form and context in which it appears.

12. REFERENCES

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2. Anon, 1971 Report on EL42/70 & EL12/71; TCR71_0772
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4. Dickson, T.W., 1983 EL43/70 Arthur River Area, Report on Exploration for the 12 months from 15th October 1982 TCR83_2036
5. Dickson, T.W., 1984 EL43/70 Arthur River Area, Report on Exploration for the 12 months from 15th October 1983 TCR84_2214
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7. Frost, M.T.; Matzat, H.W. 1984. A further large magnesite deposit along the Savage River in northwestern Tasmania. *Economic Geology* 79, 404-408.
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14. Neale, R.C., 1974 Exploration Licence 2/73, Pieman River, Tasmania, Completion Report; TCR74_0987
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17. Shaw, R.W.L., 1985 Final report to the Dept of Mines, Tasmania, Exploration Licence 1/68 Heazlewood; TCR85_2316



Appendix 1
Open File Listing of Competitor Reports

Downloaded **Report Details**

[26_0033 - Rio Tinto Ore Deposits - Tasmania Report for Period to 11th December 1926.](#)

Goode, E.N., Thomas, W., Westcott, S.M.

[49_0103 - Basalts of Tasmania](#)

Edwards, A.B.

[56_0124 - Preliminary Report of the Geology of North-Western Tasmania.](#)

Rattigan, J.H.

[57_0167 - R.T.A.E. and E.Z. Exploration Programme Geophysical Surveys in N.W. Tasmania to 31st May 1957 - Project PRP/7/100](#)

McCarthy, E.

[57_0183 - Field Work Magnet Quadrangle 35](#)

Anon

[58_0228 - The Davey and Carbine Groups of the Precambrian](#)

Anon

[58_0230 - Summary of Some Aspects of Precambrian Geology](#)

Anon

Yes

[58_0239 - Results of Investigations and Proposed Diamond Drilling on Savage River Iron Ore Deposits](#)

Jensen, H.E.

[65_0412 - I.P. Profiles](#)

Anon

[66_0438 - Report on Planet Mining Co Tasmanian Phosphate Leases](#)

Watts, T.R.

[67_0457 - Northwest Tasmania, Proposed Program of Exploration \(in Detail\)](#)

Anon

[67_0488 - Memorandum Report, Reconnaissance Structural Evaluation, Coastal Tasmania.](#)

Barton, R.H.

[71_0721 - Espea and Bald Hill Areas, E.L. 1/68, Winter 1970.](#)

Robison, H.R.

Downloaded **Report Details**

- Yes** [71_0767 - Report of Consulting Geologists, EL 11/71](#)
Morris, F.R.
- Yes** [71_0772 - Report on EL 42/70 and EL 12/71](#)
Anon
- [71_0803 - Mt Stewart Drilling, Exploration Licence 1/68.](#)
Everett, M.P.
- Yes** [71_0829 - 1970-71 Annual Report, E.L. 48/70 and E.L. 49/70, North-Western Tasmania.](#)
Newnham, L.A., Woodward, A.J.
- Yes** [72_0916 – Lyons River Copper Occurrence, EL43/70 NW Tasmania](#)
[Porter, T.M.](#)
- [73_0960 - Exploration Licence 1/68, Exploration Licence 5/63 and Authority to Prospect/ Authority to Mine No. 7. Regional Exploration](#)
[Heazlewood and Arthur River, 1972/1973 Summer Field Season Report](#)
Herrmann, W.
- [73_0964 - Pieman River, Exploration Licence 2/73 - Tasmania, Progress Report for the Period January 31 - July 31, 1973](#)
Neale, R.C.
- Yes** [74_0987 - Exploration Licence 2/73, Pieman River, Tasmania, Completion Report.](#)
Neale, R.C.
- Yes** [78_1243 - Progress Reports on Exploration on E.L. 43/70, Arthur River, Tasmania During 1974-1977 Part 1. April-Aug 1974](#)
Nye, P.B.
- [80_1500 - Report Accompanying Licence Renewal Application for Exploration Licence 1/68, Tasmania](#)
Pigott, G.F.
- [80_1500A - DIGHEM II Survey of Mt Cleveland Area, Tasmania](#)
Dvorak, Z., Fraser, D.C.
- [81_1517 - Exploration Licence 26/78 \(Tasmania\), Pieman, Precious Stones, Relinquishment Report.](#)
Hutton, M.J.

Downloaded **Report Details**

[81_1584 - Progress Report E.L. 1/79 1980 Season](#)

Large, R.R., Poltock, R.

Yes

[81_1605 - Report Accompanying Licence Renewal Application for Exploration Licence 1/68 Tasmania](#)

Pigott, G.F.

Yes

[81_1605A - Report on Exploration, Heazlewood Area, EL 1/68](#)

Anon

[81_1643 - E.L. Renewal Application for E L 1/68 Heazlewood Area.](#)

Pigott, G.F.

[81_1645B - Preliminary Report on Petroleum Potential - Onshore Tasmania](#)

Summons, T.G.

Yes

[82_1691 - Six Monthly Report to Tasmania Department of Mines for the Period Ended 30 December 1981, Exploration Licence 1/68](#)

Pigott, G.F.

Yes

[82_1722 - Exploration Licence 18/80 Arthur River, Tasmania, Progress Report to 31st January, 1982](#)

Anon

[82_1753 - Notes to Accompany the Photo-Interpretation of the Country between the Arthur and Pieman Rivers, Tasmania.](#)

Carey, S.W.

[82_1816 - Preliminary Report on An Airborne Geophysical Survey, Rapid River, E.L. 1/79, North-West Tasmania](#)

Flis, M.F.

[82_1818 - Exploration Licence 18/80 Arthur River, Tasmania Report for the Six Months Ended 31st July, 1982](#)

Anon

Yes

[83_1898 - Annual Report to the Department of Mines, Tasmania for the Period 1 January - 31 December 1982, Summary of Work Completed, in Progress and Proposed for E.L. 1/68](#)

Pigott, G.F.

[83_1899 - Progress Report on the Regional Exploration in Exploration Licence 1/68](#)

Pigott, G.F.

Downloaded **Report Details**

[83_1900 - Interim Report on Heazlewood Grid 19C, E.L. 1/68](#)

Jones, C.M.

Yes

[83_2001 - Exploration Licence 18/80 Arthur River, Tasmania. Final Report, June, 1983](#)

Anon

Yes

[83_2001A - Report on the Evaluation of Eight Geophysical Anomalies in EL 18/80 Arthur River, N.W. Tasmania.](#)

Steele, D.A.

Yes

[83_2030 - First Progress Report on the Follow-up of Aeromagnetic Anomalies, Rapid River E.L. 1/79 North West Tasmania, August 1982 to August 1983.](#)

Clementson, I.M., Flis, M.F.

Yes

[83_2036 - EL 43/70 Arthur River Area, Report on Exploration for Twelve Months from 15th October 1982
Dickson, T.W.](#)

Yes

[83_2060 - Annual Report to the Department of Mines Tasmania for the Period 1/1/83 to 31/12/83. Summary of Work Completed and Proposed for EL 1/68.](#)

Shaw, R.W.L.

Yes

[83_2060A - Interim Report on the Heazlewood Project, Exploration Licence 1/68](#)

Roberts, R.H.

[84_2082 - Exploration Licence E.L. 4/61 West Coast Tasmania. Quarterly Resume 23.8.83 to 22.11.83.](#)

Anon

[84_2082A - Statistical Study of Geochemical Sampling in I.M.I.'s EL 4/61 Tasmania.](#)

Hawley, D.L.

[84_2103 - Rapid River EL 1/79 North West Tasmania. Progress Report on Exploration August 1983 - February 1984.](#)

Clementson, I.M.

[84_2169 - The Lower Freshwater Sequence of the Parmeener Supergroup, Tasmania](#)

Summons, T.G.

Yes

[84_2214 - EL 43/70 Arthur River Area, Report on Exploration for Twelve Months from 15th October 1983
Dickson, T.](#)

Downloaded **Report Details**

[84_2262 - Report on Field Investigations Within Exploration Licence 4/61, West Coast, Tasmania; Summer Field Season 1983-1984](#)
Penny, B.G., Shannon, C.H.C., Vanzino, L.

Yes [85_2316 - Final Report to the Department of Mines, Tasmania Exploration Licence 1/68 Heazlewood](#)
Shaw, R.W.L.

[85_2340 - Rapid River E.L. 1/79 Report on the Reduction of Licence Area.](#)
Clementson, I.M.

Yes [85_2341 - Rapid River E.L. 1/79, North West Tasmania. Progress Report on Exploration February 1984 - February 1985](#)
Clementson, I.M.

[85_2349 - The Lead Zinc Potential of the Younger Precambrian Rocks of North West Tasmania](#)
Legge, P.J.

[86_2593 - El 43/70 Arthur River Metallurgical Evaluation Studies](#)
Anon

[86_2614 - Exploration Licence No. 22/85, Savage River. Report on Exploration Activity 20th November, 1985 to 20th November, 1986.](#)
Mathison, I.J.

Yes [87_2643 - Rapid River EL 1/79 North West Tasmania, Progress Report on Exploration, February 1986 - February 1987](#)
Funnell, F.R.

Yes [87_2723 - Rapid River EL 1/79 North West Tasmania Final Report on Exploration](#)
Funnell, F.R.

[88_2779 - Relinquishment Report on Exploration Licence 4/61 Savage River. Tasmania](#)
Shannon, C.H.C.

Yes [88_2854 - Exploration Licence 24/87 - Rapid River, Annual Report : Year 1 \(September 1987 - September 1988\)](#)
Cromer, W.C., Davidson, J.K., Hofto, V.

[88_2865 - Exploration Licence 23/87 - Wynsmith Hills, Annual Report : Year 1 \(November 1987 - November 1988\)](#)
Cromer, W.C.

[88_2900 - Exploration Licence 21/87 - Balfour. Annual Report: Year 1 \(20 January, 1988 - 19 January, 1989\)](#)
Cromer, W.C.

Downloaded **Report Details**

[89 2959 - E.L. 37/82 Longback, Annual Report on Exploration Activity, April 1988 - April 1989.](#)

Mathison, I.J., Virgoe, K.J.

[90 3162 - E.L. 28/89 Little Donaldson River Annual Report](#)

Threader, V.M.

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Mathison, I.J., Virgoe, K.J.

[91 3212 - E.L. 41/89 Mt Bertha. Report on Exploration Activity January 1990 to November 1990.](#)

Mathison, I.J., Virgoe, K.J.

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Leaman, D.E.

[91 3215 - EL 43/89 Holder Rivulet Report on Exploration Activity January 1990 to November 1990](#)

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[91 3218 - EL 45/89 Savage River. Report on Exploration Activity January 1990 to November 1990.](#)

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[91 3219 - EL 40/89 Keith River Report on Exploration Activity January 1990 to November 1990.](#)

Mathison, I.J., Virgoe, K.J.

[91 3229 - EL 52/89 Balfour Report on Exploration Activity March 1990 to February 1991 Relinquishment Report.](#)

Mathison, I.J., Virgoe, K.J.

[91 3247 - EL 1/90 Meunna Report on Exploration Activity March 1990 to February 1991](#)

Mathison, I.J., Virgoe, K.J.

[91 3284 - E.L. 12/90 and E.L. 15/90 Waratah Annual Report 1990/91](#)

Halley, S.W.

Yes

[92 3328 - EL 40/89 Keith River Report on Exploration Activity December 1990 to November 1991](#)

Mathison, I.J.

Yes

[92 3329 - EL 41/89 Mt Bertha Report on Exploration Activity December 1990 to November 1991](#)

Mathison, I.J.

Downloaded **Report Details**

Yes

[92_3330 - EL 42/89 Rapid River Report on Exploration Activity December 1990 to November 1991](#)
Mathison, I.J.

[92_3333 - EL 45/89 Savage River Report on Exploration Activity December 1990 to November 1991](#)
Mathison, I.J.

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Gardner, D., Mathison, I.J.

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[93_3409 - Annual Report 1991-92](#)
Gardner, D.

Yes

[93_3428 - Partial Relinquishment Report June 1993](#)
Halley, S.W.

Yes

[93_3428A - Interpretation of Regional Aeromagnetic Data from Waratah-Mt Ramsay Area](#)
Wyatt, B.

Yes

[93_3428B - An Interpretation Form of Meredith Granite Waratah Area](#)
Leaman, D.E.

Yes

[93_3529 - EL 40/89 Keith River Relinquishment Report and Annual Report - December 1992 to December 1993](#)
Gardner, D.

Yes

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Gardner, D.

Downloaded **Report Details**

[94 3619 - List of Transparencies from Portions of EL 4/61 and EL 22/85.](#)

Anon

[95 3711 - Assorted Stream Sediment Geochemistry-Tasmania Wide](#)

Ellis, P.D.

[96 3822 - Summary Report on Activities in 1993 on EL 35/94 Savage River and EL 36/94 Mt Bertha.](#)

Ridge, K.J.

[96 3838 - Annual Report EL 35/94, EL 36/94 Savage River and Mt Bertha](#)

Ridge, K.J.

Yes

[96 3876 - Annual Report EL 35/94 Savage River and 36/94 Mt Bertha](#)

Ridge, K.J.

Yes

[97 4087 - Annual and Final Report - Heazlewood, EL 23/96](#)

Murphy, F.C., Weber, G.B.

Yes

[98 4218 - Combined Annual Report - EL`s 37/96 Rapid River, 38/96 Savage River, \(to 29/10/98\) and EL 46/96-Flowerdale River\(to 17/12/98\),West Tasmania](#)

Turner, N.J.

Yes

[99 4327 - Final Report - Detention River - EL 24/97](#)

Westbrook, S.

Yes

[99 4393 - Relinquishment Report - EL37/96 - Rapid River Area](#)

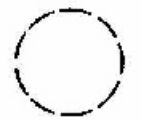
Newnham, L.A.

Appendix 2
Selected Maps from Open File Reports

LEGEND

- 6 Channel Anomaly with very slow decay
- 5
- 4
- 6 Channel Anomaly with slow decay
- 5
- 4
- 6 Channel Anomaly with fast decay
- 5
- 4
- 6 Channel Anomaly with very fast decay
- 5
- 4
- 3 Channel Anomaly
- 2

Decay rates are defined by the channel 1 to channel 4 ratio
 very slow decay ratio is less than 4
 slow decay ratio is between 4 and 8
 fast decay ratio is between 8 and 12
 very fast decay ratio is greater than 12

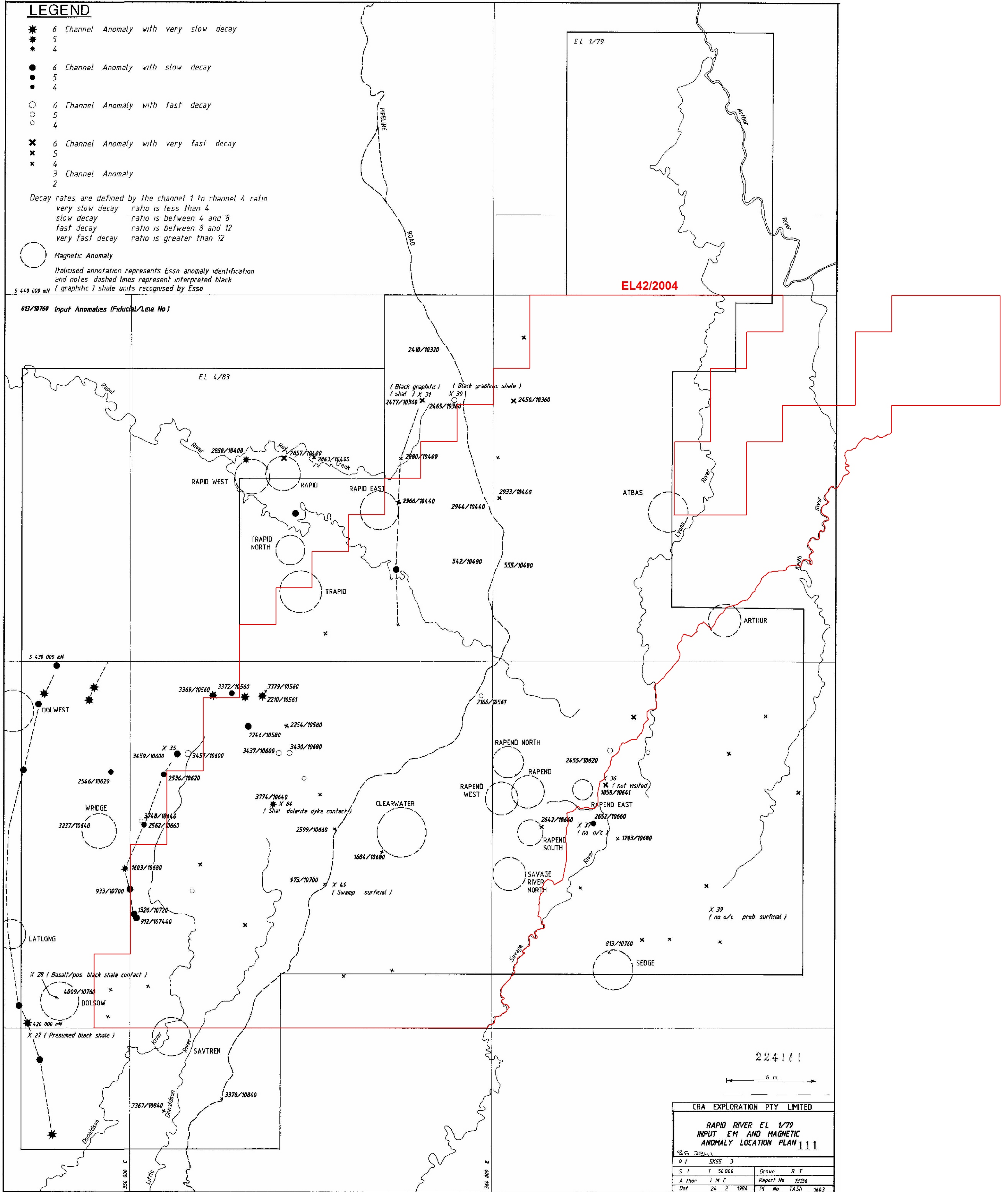


Magnetic Anomaly

Italicised annotation represents Esso anomaly identification and notes dashed lines represent interpreted black (graphic) shale units recognised by Esso

5 440 000 mN

013/10760 Input Anomalies (Fiducial/Line No)



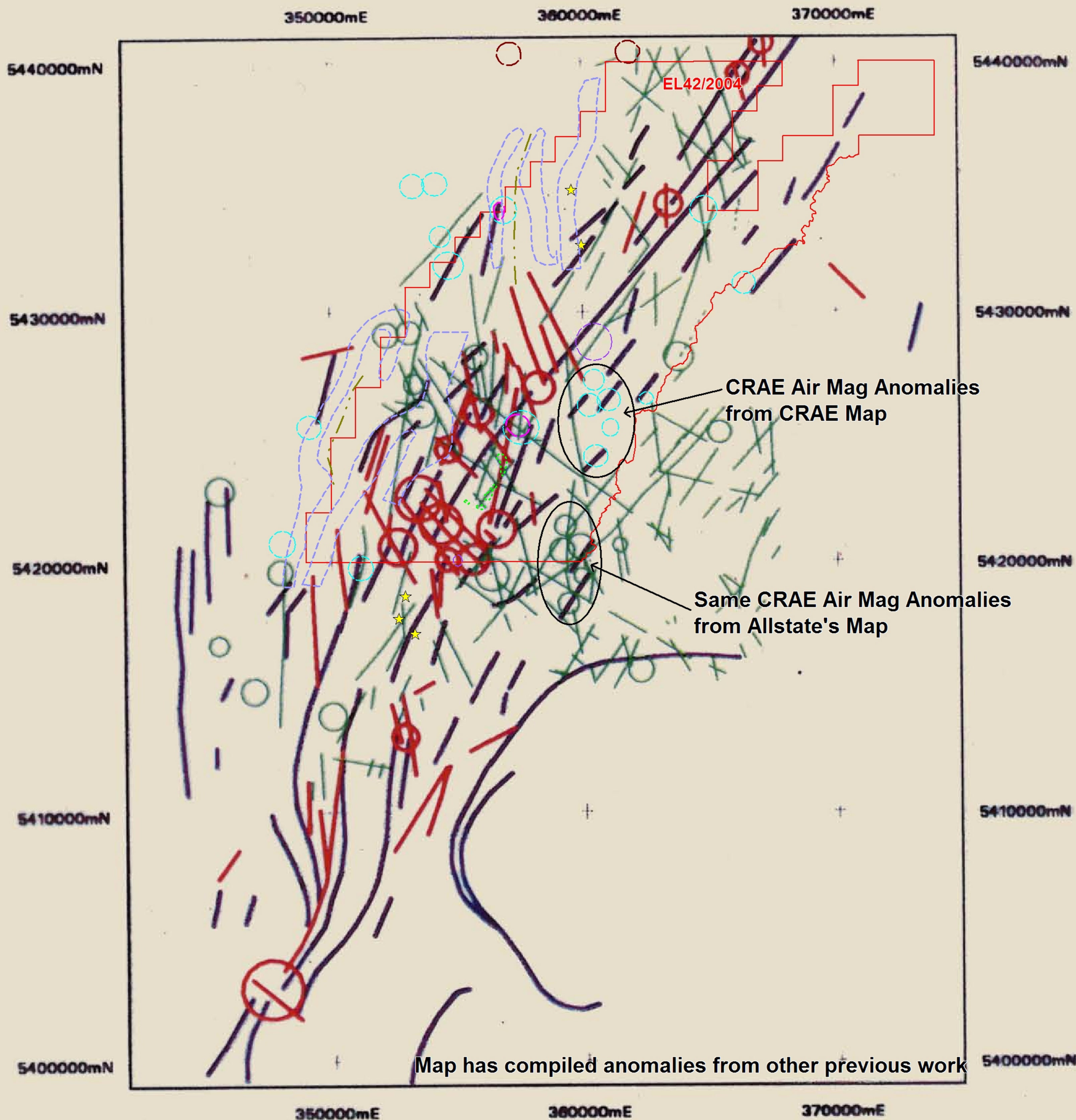
224111

5 m

CRA EXPLORATION PTY LIMITED

RAPID RIVER EL 1/79
 INPUT EM AND MAGNETIC
 ANOMALY LOCATION PLAN 111

R f	SK55	3
S l	1	50 000
A ther	1	M C
Dst	24	2 1984
Pl	No	TASH 1643
Drawn	R T	
Report No	13136	



ALLSTATE EXPLORATIONS ARTHUR LINEAMENT AEROMAGNETIC INTERPRETATION

Scale - 1 : 250000

Date 12/12/95

Drawn by: JRB

- 'Parallel' magnetic lineament.
- 'Cross cutting' magnetic lineament.
- Areas recommended for follow up
- CRAE air photo interpreted lineaments (1983).
- CRAE areas recommended for follow up (1983).

EL42/2004

34 7623

- Vegetation Anomaly

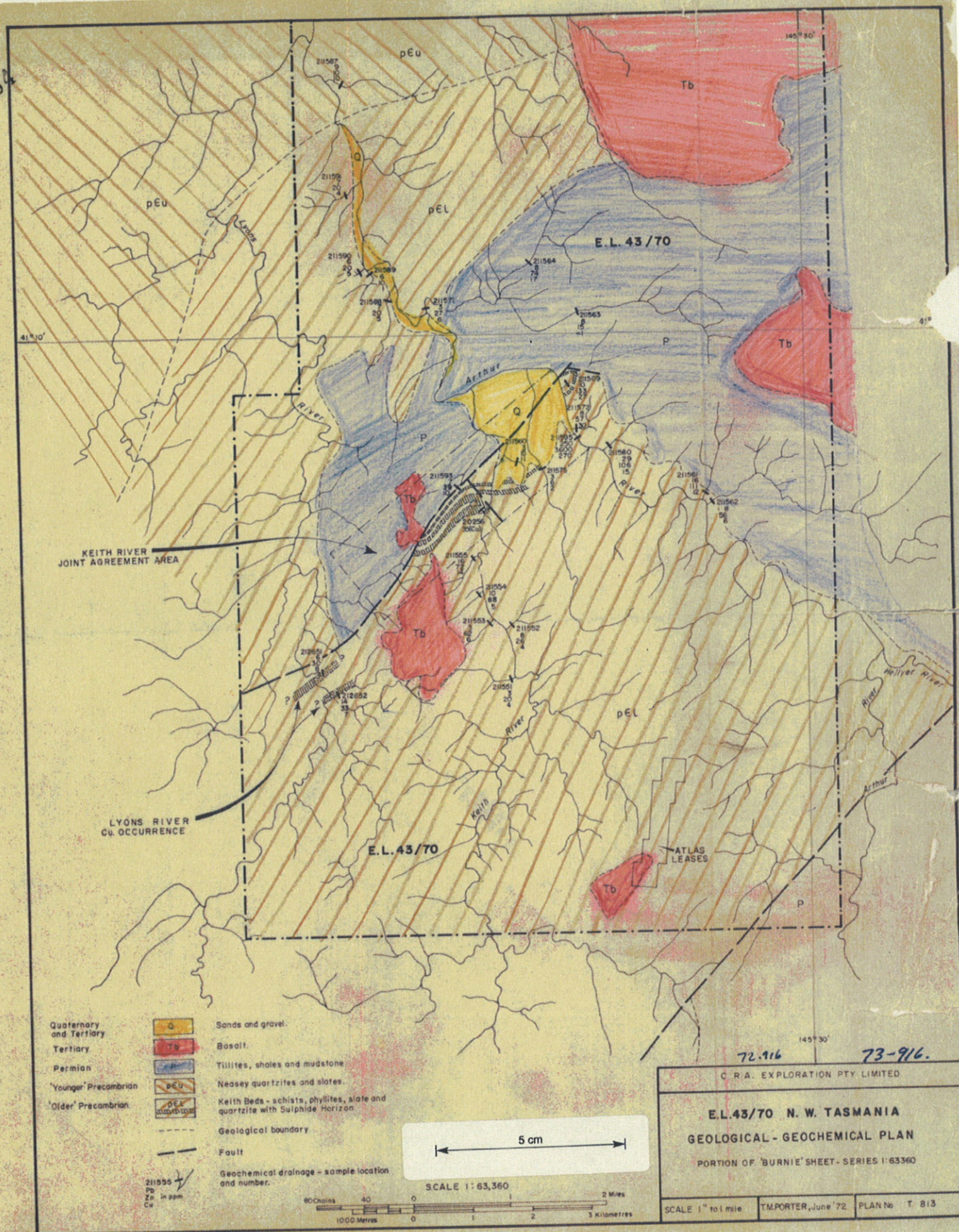
7623

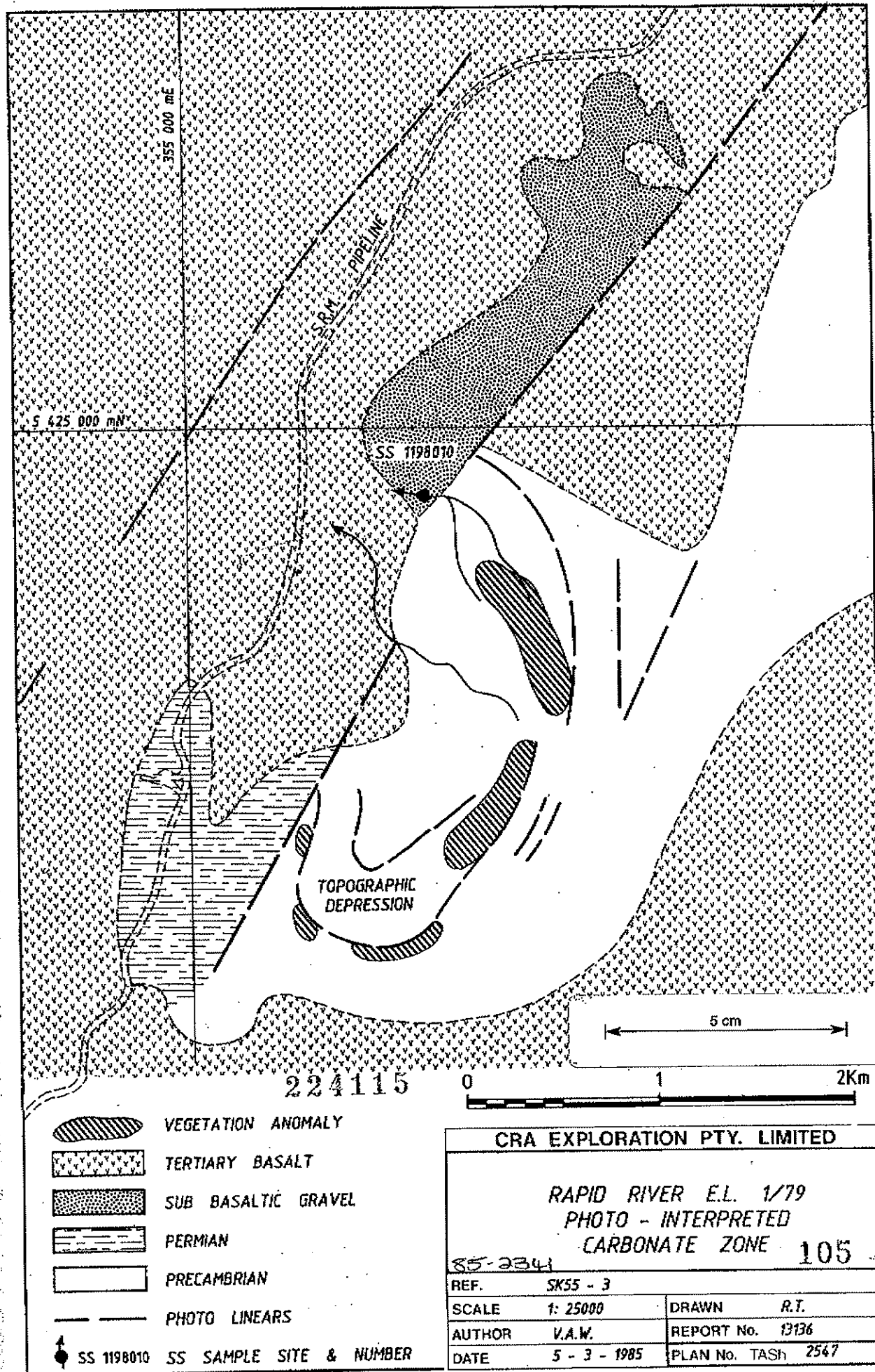
EL 24/87
159km²

LOCATION MAP

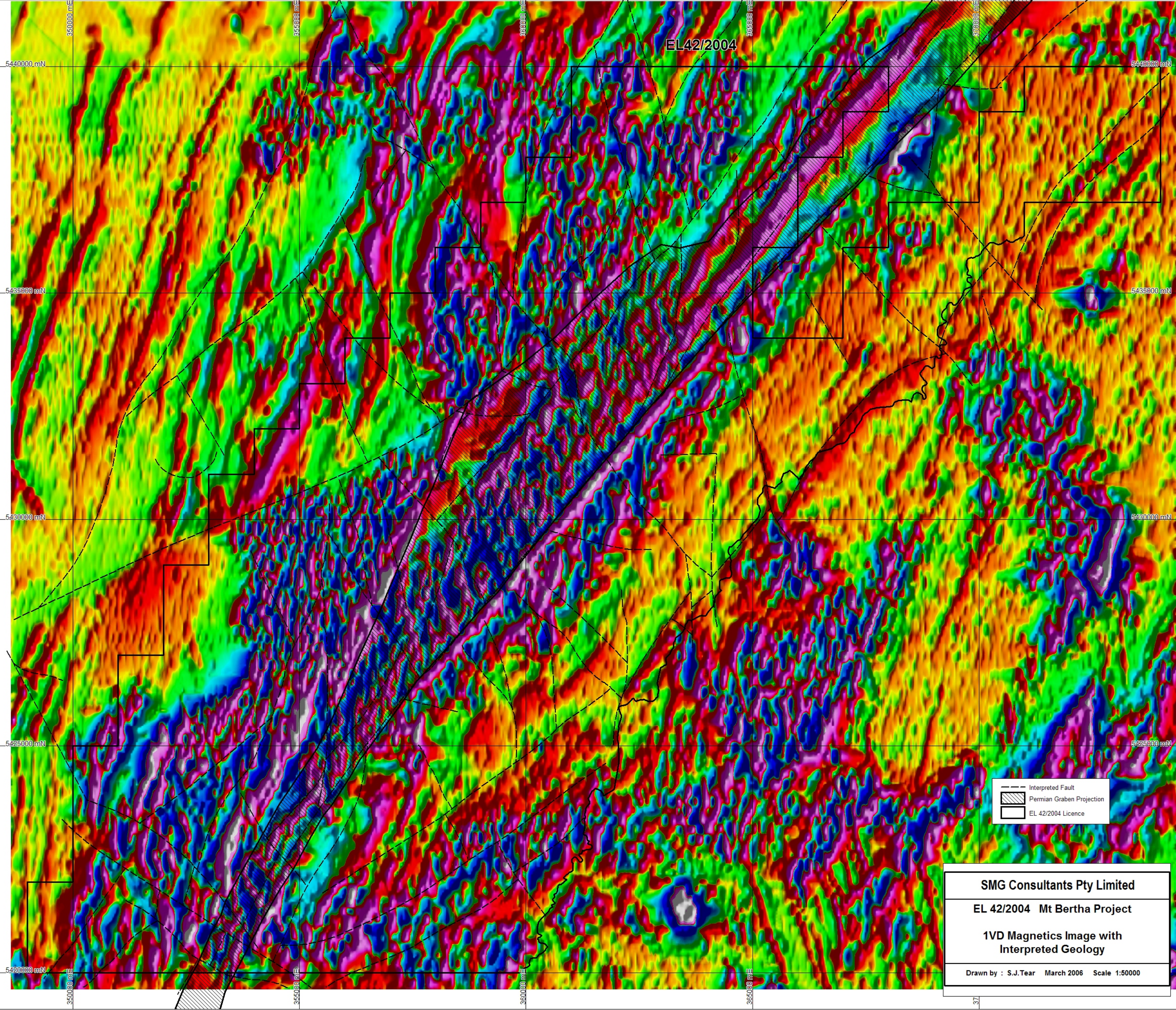
Extract of Map Petrecon Work 1988 Scale 1:50,000

0004







Appendix 3
Selected Maps from the Geophysical Report
(Hungerford 2005)



EL42/2004

- Interpreted Fault
-  Permian Graben Projection
-  EL 42/2004 Licence

SMG Consultants Pty Limited

EL 42/2004 Mt Bertha Project

**1VD Magnetics Image with
Interpreted Geology**

Drawn by : S.J.Tear March 2006 Scale 1:50000

EL42/2004

SMG Consultants Pty Limited

EL 42/2004 Mt Bertha Project

Low Pass Filter Magnetics
Image with Interpreted Geology

Drawn by : S.J.Tear March 2006 Scale 1:50000