



STELLAR RESOURCES LIMITED
Rubicon MinTech Ventures Pty. Ltd.

EL 49/2004 RAYNE

**ANNUAL REPORT FOR THE PERIOD
3 JANUARY 2007 – 2 JANUARY 2008**

Compiled by/Author: R.K. Hazeldene

DATE: January 2008

SUBMITTED TO: Executive Chairman

DISTRIBUTION:

**Mineral Resources Tasmania, a Division of the
Department of Infrastructure, Energy and Resources - Hobart
Stellar Resources Ltd - Melbourne**

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ABSTRACT

This Annual Report for EL 49-2004 Rayne covers the period 3 January 2007 to 2 January 2008.

The Rayne licence area is positioned to cover a large low order aeromagnetic anomaly (the Dunkley Magnetic Anomaly) located 8km to the NE of Zeehan. Allegiance Mining's Melba Flats/Cuni prospects are situated approximately 1.5km east of the northeast boundary of the Rayne licence, where massive sulphides of nickel and copper occur in thin lenses associated with gabbro dykes and amphibolites.

The source of the magnetic anomaly in the Rayne EL is conjectural but recent analysis indicates that it is due to hornfelsing associated with granite apophyses and potentially could host a Renison style sulphide/carbonate replacement tin deposit. Apart from one hole drilled by Renison in 1985, the magnetic anomaly remains untested.

The EL 49/2004 also contains historical occurrences of base metals, especially in the vicinity of the town of Zeehan, which abuts the southwest corner of the EL. Previous exploration in the area includes light to very sparse stream sediment sampling, geological mapping, a range of geophysical surveys and a few drill holes, more so in the south-west near Zeehan and in the north-east. The central and northern areas of the licence appear under-explored.

Work on the licence for the period has been undertaken mainly in Stellar's Melbourne office. The Melbourne work has included the continuing compilation of an open file literature review, development of an exploration chronology and the collection of existing regional geological, geochemical and geophysical data.

The geophysical targets have been modelled and defined from electromagnetic and aeromagnetic datasets. With reference to the existing regional geological, geochemical and geophysical data, and with further detailed ground testing, target prioritisation and drill hole siting is expected to proceed on the most prospective targets.

Expenditure on EL 49/2004 for 2007 totals \$19,005

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H Williams, PGN

INTRODUCTION

1.1. EXPLORATION RATIONALE & GEOLOGICAL SETTING

The licence area is positioned to cover a large low order aeromagnetic anomaly (the Dunkley Magnetic Anomaly [DMA]) located 8km to the NE of Zeehan. The magnetic anomaly is situated immediately south of the Renison Bell Mining Lease and also immediately west of Allegiance Mining's Melba Flats prospects where massive sulphides of nickel and copper occur in thin lenses associated with gabbro dykes and amphibolites. Further eastwards there is a significant outcrop of ultramafic rocks at Serpentine Hill.

The source of the DMA is conjectural but recent analysis suggests it may be due to hornfelsing associated with a granite apophyses. Renison traced the Renison Mine Sequence to this area prior to the 1984 collapse of the tin price. They drilled one drill hole, which intersected only Crimson Creek Formation sediments and no significant mineralization. The magnetic anomaly remains untested.

1.1.1. Geological Setting

The majority of the Rayne licence (SW segment) is underlain by Ordovician Gordon Limestone (including quartz sandstone and minor siltstone) and Silurian Eldon Group sediments comprising sandstone, siltstone and mudstone. These rocks strike NNW and comprise the eastern limb of a gently folded syncline.

The Gordon Limestone is overthrust on its eastern contact by Cambrian Crimson Creek Formation rocks along the Boodecker Fault. The Crimson Creek Formation is a thick sequence of tuffaceous siltstones, greywackes and clastic sediments. The base of the Crimson Creek is marked by a mixture of haematitic agglomerates, cherts, tuffs, sandstones and thin carbonates known as the Red Rock Member. This averages 20m thickness and is overlain by a dolomite horizon 5-15m thick called the No.1 at Renison Bell where it hosts replacement style pyrrhotite cassiterite mineralisation. A small section of the Lower Cambrian Success Creek Group abuts the Crimson Creek along the SW trending Dunkleys Fault in the northern part of the licence area. The Success Creek Group comprises sandstones and polymict conglomerate, quartz sandstone and siltstone. The upper part of the Success Creek Group in this region includes two major dolomite-siderite carbonate horizons, 10-20m thick, which are the Nos 2 and 3 dolomites at Renison Bell.

Immediately to the east of the licence at the Cuni prospect area and within the Crimson Creek Formation are a series of north trending Cambrian pyroxenite and gabbro sill/dykes over a 2-3km strike length. Thin lenses (1m) of massive nickel and copper sulphides generally occur along the footwall contact of the dykes or within the underlying sediments.

1.2. LICENCE

TENEMENT NUMBER: 49/2004

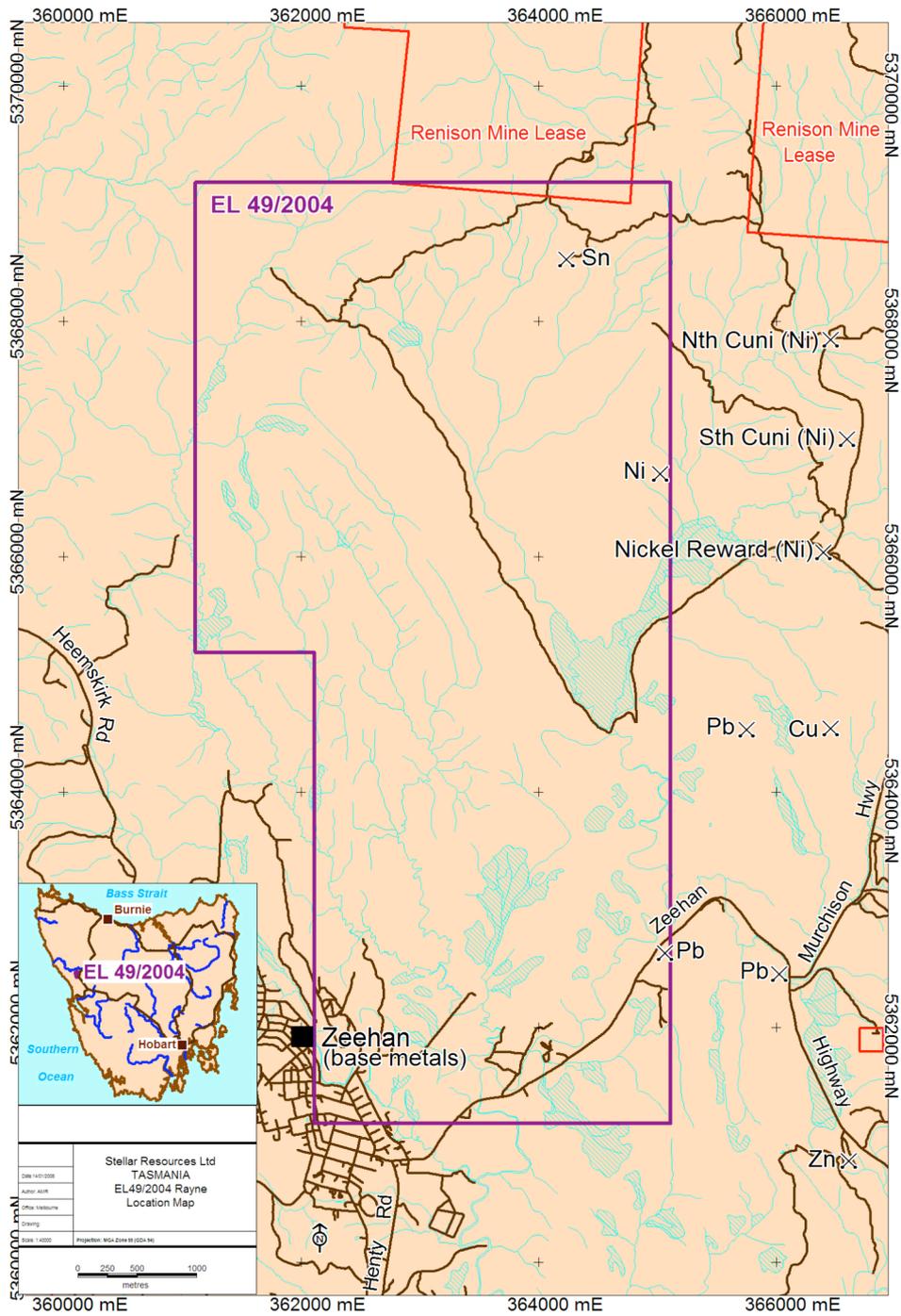
TENEMENT NAME: Rayne

TENEMENT LOCATION: Extends approximately 8km north of the town of Zeehan, which abuts the southwest corner of the licence. Main road access is from the Zeehan Highway, which passes through the southeast of the licence (Figure 1). The licence covers 28km² from 2km northwest of the Cuni nickel prospect, in the north, south to the town of Zeehan and the Zeehan Highway. Almost all of the EL area is Crown Land, and in accordance with the West Coast Planning Scheme 1999 is covered by "Natural Resources", private land is restricted to the Zeehan town site. The topography within the licence ranges from low/undulating to steep, being generally steeper in the west and northwest. Vegetation coverage by proportion high to low, is buttongrass moorland, ti-tree/acacia forest, nothofagus rainforest, wet eucalyptus forest and wet scrub. Access is provided by the Zeehan Highway in the south, Cuni area mineral exploration tracks via the Murchison Highway to the northeast, the disused Dunkley's Tramway along Parting Creek in the north, and tracks running east of the Heemskirk Road in the west. Much of the area is not well serviced by tracks and may at present only be accessible by foot.

REPORTING PERIOD: 3 January 2007 to 2 January 2008

TENEMENT HOLDER: Rubicon Min Tech Ventures Pty Ltd., a wholly owned subsidiary of Stellar Resources Ltd.

1.3. LOCATION OF LICENCE



• Figure 1. EL49/2004, Location Map.

1.4. LAND TENURE

SCHEDULE

LAND DISTRICT OF MONTAGU
VICINITY OF ZEEHAN
MUNICIPALITY OF WEST COAST
EXPLORATION LICENCE 49/2004 28km²
RUBICON MIN TECH VENTURES PTY. LTD.

Commencing at the northwest corner at grid coordinates 361 000 mE 5 369 000 mN thence grid east to 365 000 mE grid south to 5 361 000 mN grid west to 362 000 mE grid north to 5 365 000 mN again grid west to 361 000 mE aforesaid thence again grid north to the point of commencement.

Coordinate datum - AGD66AMG, Zone 55.

EXCLUSIONS

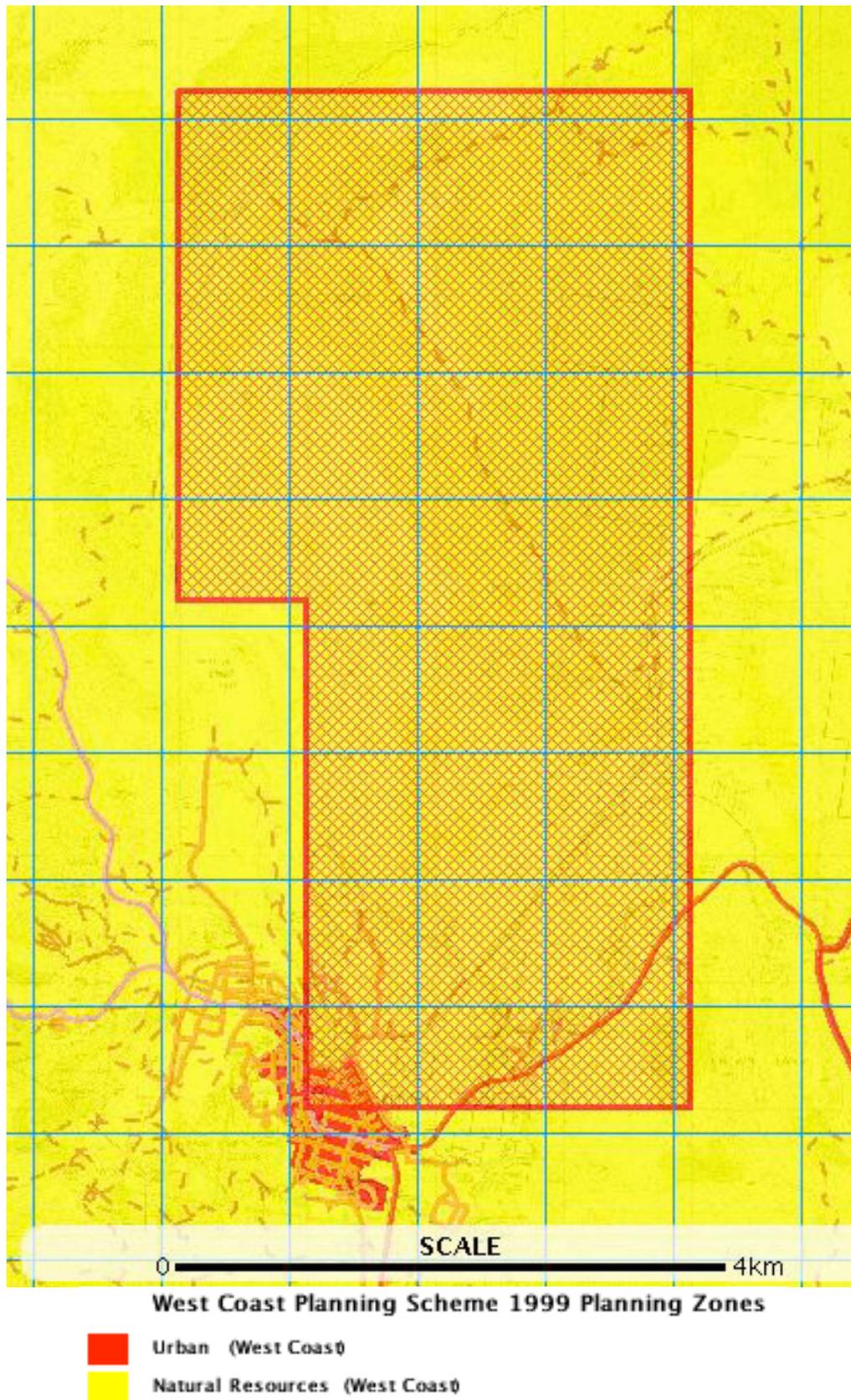
- (a) Any land owned or leased by the Commonwealth of Australia.
- (b) Mining Leases amounting to 20 ha (more or less) which were applied for or in force prior to the date of application for this licence: viz Renison Mine Lease.
- (c) Crown reservations or other land amounting to 19 ha (more or less) set apart or dedicated for any public purposes such as public reserves, municipal reserves or roadways unless such areas have been brought under the provisions of the *Mineral Resources Development Act 1995*.
- (d) Areas of private land which either have been, or are in the process of being, purchased by the Crown under the Regional Forest Agreement - Private Forests Reserves Program and / or private land over which the landowners have agreed, or are in the process of agreeing, to place a covenant or management agreement for conservation purposes under the Regional Forest Agreement - Private Forests Reserves Program.

LAND TENURE

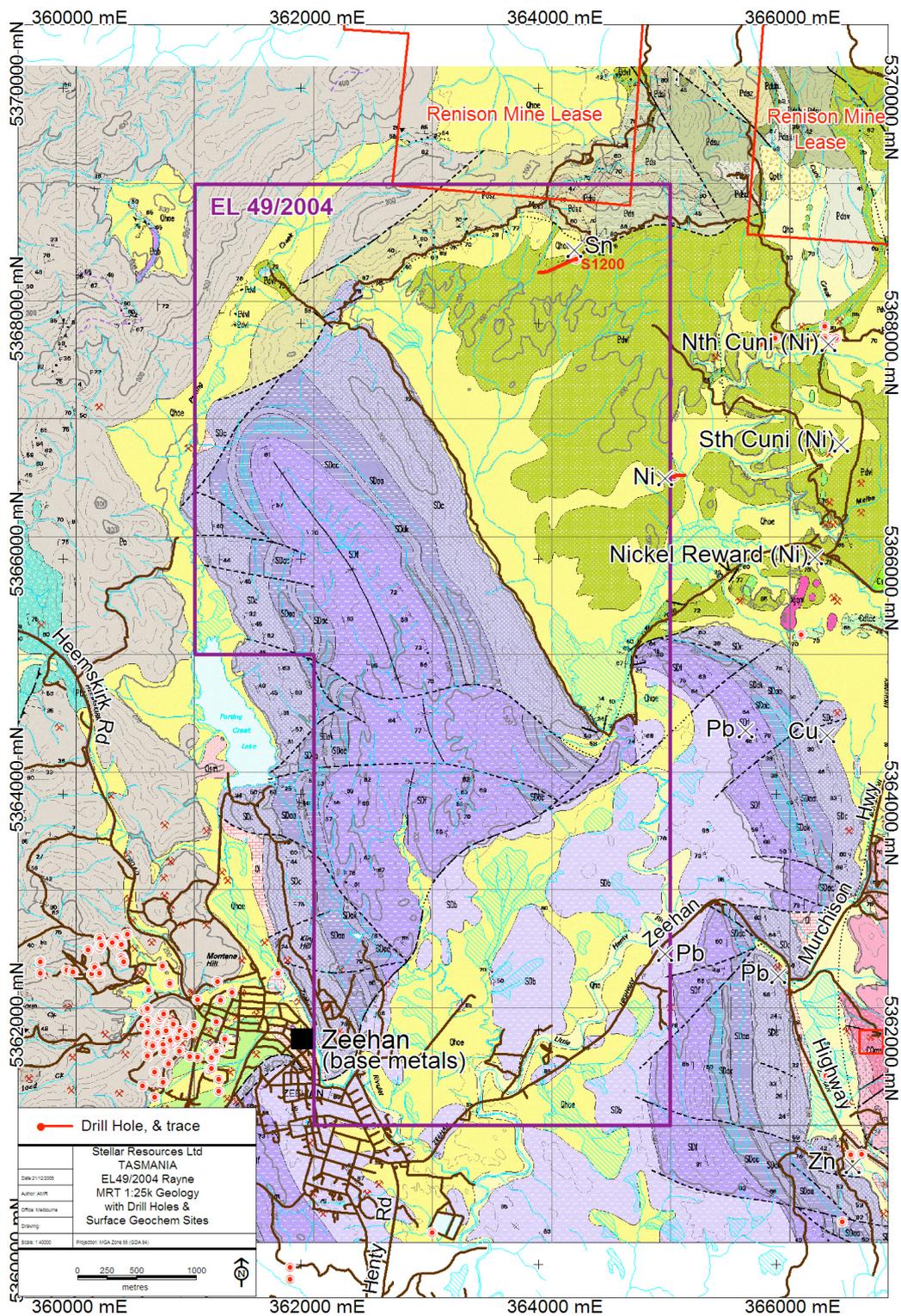
The area comprises:

Private Property
Crown Land
Crown Land (Subject to DPIWE approval)
Multiple Use State Forest
Parting Creek Regional Reserve

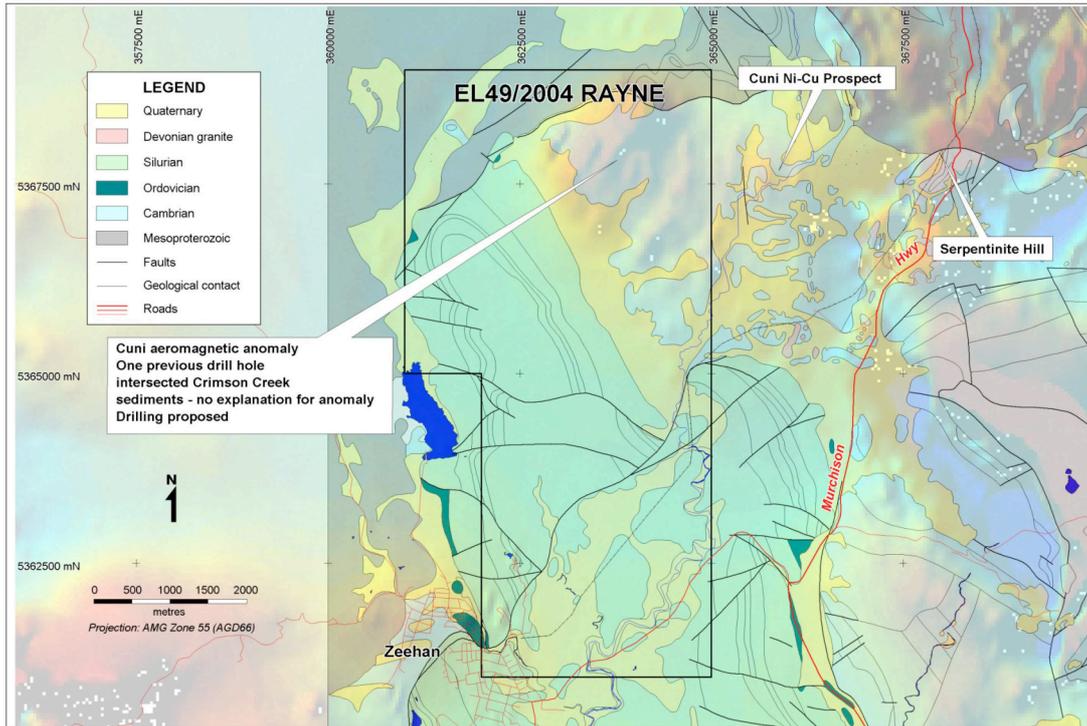
The licence area contains Forest Communities Managed by Prescription.



• Figure 2. EL49/2004, Land Tenure Map



• Figure 3. EL49/2004, MRT Geology Plan.



• Figure 4. EL49/2004, MRT Geology draped over aeromagnetics.

2. REVIEW OF PREVIOUS WORK

The Rayne licence is focussed on a deep-seated magnetic anomaly located to the west of the Cuni Ni deposits at Melba Flats and SW of the Renison Bell mining lease. Early ground based magnetic work by Rio Tinto defined the anomaly in 1960 and it was named the Cuni aeromagnetic anomaly. *“The gradual increase in magnetic values from over 2,000 feet from the anomaly, and the occurrence of the major part of the anomaly over a width of 1,100 feet indicated a source of considerable size and depth extent”*. Geochemical work indicated *“a few low mineralised zinc zones. One of them is at the peak of the aeromagnetic anomaly”*. Rio Tinto undertook no follow-up work.

Nickel-copper mineralisation was first discovered in the Cuni area in 1893 and a series of prospects and mines worked intermittently up to 1959. Prior to 1914 only 710 tons of ore had been shipped to Europe. One bulk sample in 1911, assayed 17% Ni and 6.45% Cu. Overall it is estimated that historical production from the 3km strike of prospects and workings totals 10,000 tonnes at 9.5% Ni and 3.5% Cu. The old workings were generally less than 50m from surface. The mineralisation forms two types: pentlandite–chalcopyrite in the area of the Genets Shaft to the Vaudeau Shaft and millerite–chalcopyrite-pyrite at Nickel Reward and Devereaux’s Prospect.

The Tasmanian Mines Department investigated the area by drilling between 1939-1940. The Vaudeau workings were opened in 1938 by Australian Nickel NL and in 1948 by the Lead Nickel Mining Company. Geophysical surveys were undertaken by the Imperial Geophysical Experimental Survey in 1928 and the Bureau of Mineral Resources in 1952-53.

In 1952-53, Eagle Mines NL drilled four holes following the BMR geophysical surveys. Between 1955 and 1957, 18 holes were drilled by the Tasmanian Mines Department for the Montana Silver-Lead company NL.

Early modern exploration in the Cuni area was undertaken by EZ in their EL2/62 directed at Ni/Cu mineralisation associated with amphibolite and gabbro dykes. EZ completed geochemical sampling, geophysical surveys (ground magnetics and TURAM) and drilling of the Cuni lodes.

Within the SW part of its EL42/71 Renison Limited (Renison) identified the Cuni Aeromagnetic Anomaly (*The Dunkley Magnetic Anomaly*) as a potential target for Renison style tin mineralisation and in 1972 established the Dunkley Grid. Labour shortages are reported and Renison did not complete its proposed program of exploration. In 1983 a new grid (Dunkley Fault Grid) was established and Renison completed ground magnetics and bedrock geochemical sampling. The geochemical sampling had defined a linear trend parallelling the faulted contact (Boodecker Fault) between Crimson Creek Formation sediments and Eldon Group sediments (Gordon Limestone). The northern end of the trend included a modest Sn anomaly. A 598.6m drill hole (S1200) was completed to test the local peak of the magnetic anomaly. The hole intersected Crimson Creek Formation sediments throughout its whole length and failed to explain the anomaly. The presence of increasing calcite veining in the lower part of the hole is interpreted as an encouraging sign that the hole approached a zone of replacement mineralisation. Subsequent EM geophysics (UTEM) failed to delineate any significant anomalies.

Renison concluded the large “circular” magnetic response extending from the Boodeker Fault east to the Cuni area (the Cuni Aeromagnetic Anomaly / *Dunkley Magnetic Anomaly*) is consistent with hornfelsing above a granite cupola. However they were unable to explain the “intense anomaly” as defined by ground magnetics.

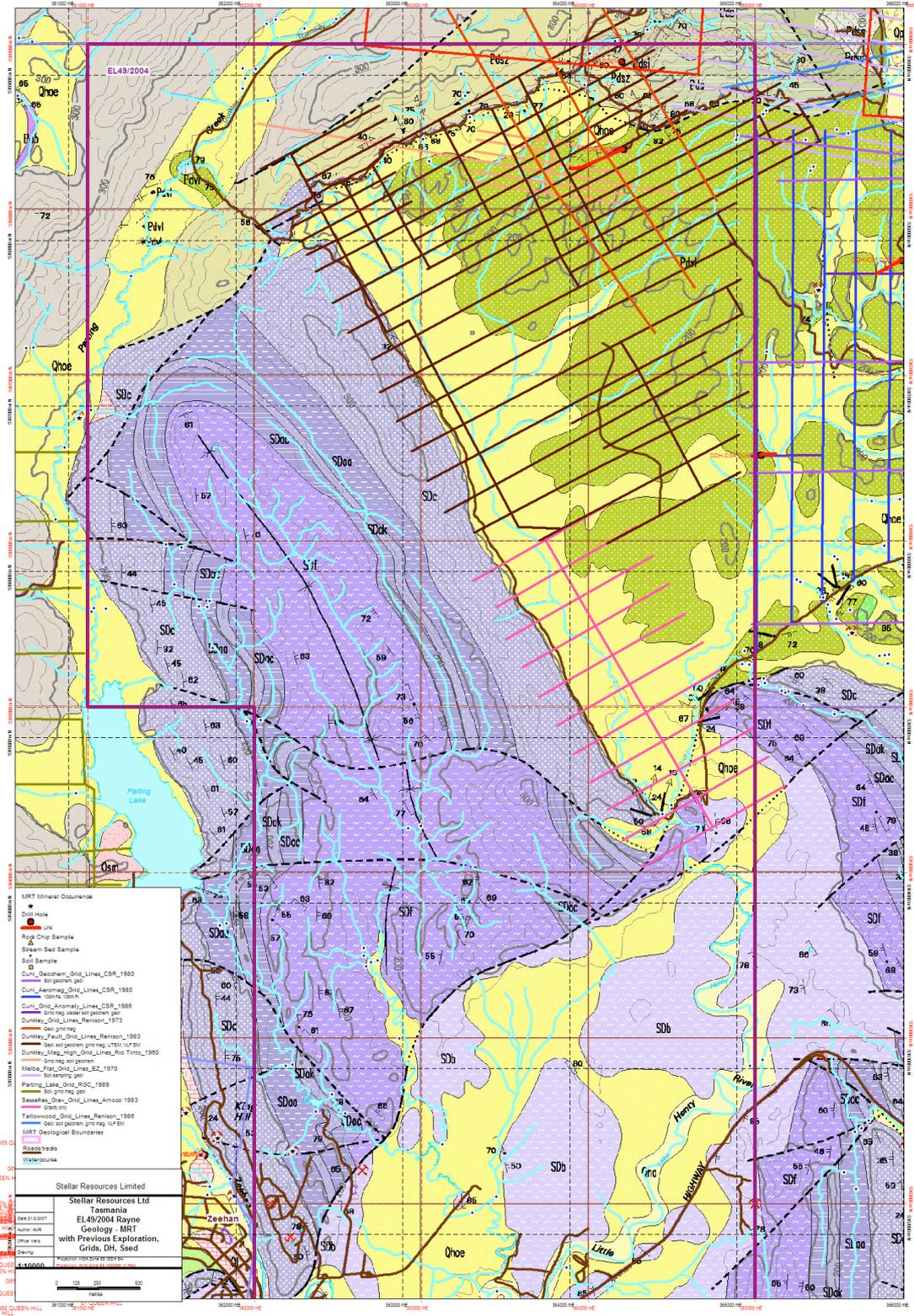
Within its EL 15/76, CSR completed low-level aeromagnetics over the Cuni area adjacent to the Rayne tenement. Follow-up ground magnetics was undertaken in 1985. CSR interpreted a deep, magnetic, possibly granitic body (700-800m beneath surface). At the western boundary of its tenement, a 226.7m diamond drill hole (CG4) was completed in 1986 to test for the source of a magnetic anomaly. The hole intersected a series of lithic sandstones and tuffs with one zone of shale (116.3-164.9m) containing fine disseminated pyrite, minor pyrrhotite and traces of chalcopyrite and sphalerite. Magnetic susceptibility measurements at 0.2m intervals gave no magnetic readings. It is

reasonable to conclude that the source of the magnetic anomaly lies at greater depth than tested by the drill hole.

CRAE explored the area for Irish style Zn-Pb deposits during the 1990's. At their Gordon Limestone Sassafras prospect NE of Zeehan CRAE completed 130 'Wacker' geochemical holes for an average depth of 5.9m. Assay results for zinc peaked at 2,590ppm with lead values up to 441ppm. These anomalous values are associated with the basal contact of the Gordon Limestone. No follow up work was undertaken.

Parts of the licence have been subject to intensive exploration programmes over the prior 30 years – in the north-east and south-west especially. Stellar is working its way through the recorded data, checking and capturing data where relevant. There is only one recorded drill-hole (MRT database) within the licence. S1200 appears to be incorrectly sited in the MRT database, and has been moved approximately 1km south into Stellar's licence. This hole was drilled into a geochemical/geophysical anomaly. The rocks are largely unaltered CCF, with a basic dyke intersected at 390m. The geophysical target was not explained by the drilling and was not further tested.

MRT digital geology and geophysics datasets, DPIWE topographic data as well as data captured from open-file company reports have been reviewed and significant data summarised and tabulated in spreadsheet form. Information from reports of previous tenement holders has been captured from MRT open-file reports. The result of this work is presented in Appendix 1.



• Figure 5. EL49/2004, MRT Geology with previous exploration grids.

3. EXPLORATION COMPLETED DURING THE REPORTING PERIOD

3.1. REGIONAL EXPLORATION ACTIVITIES

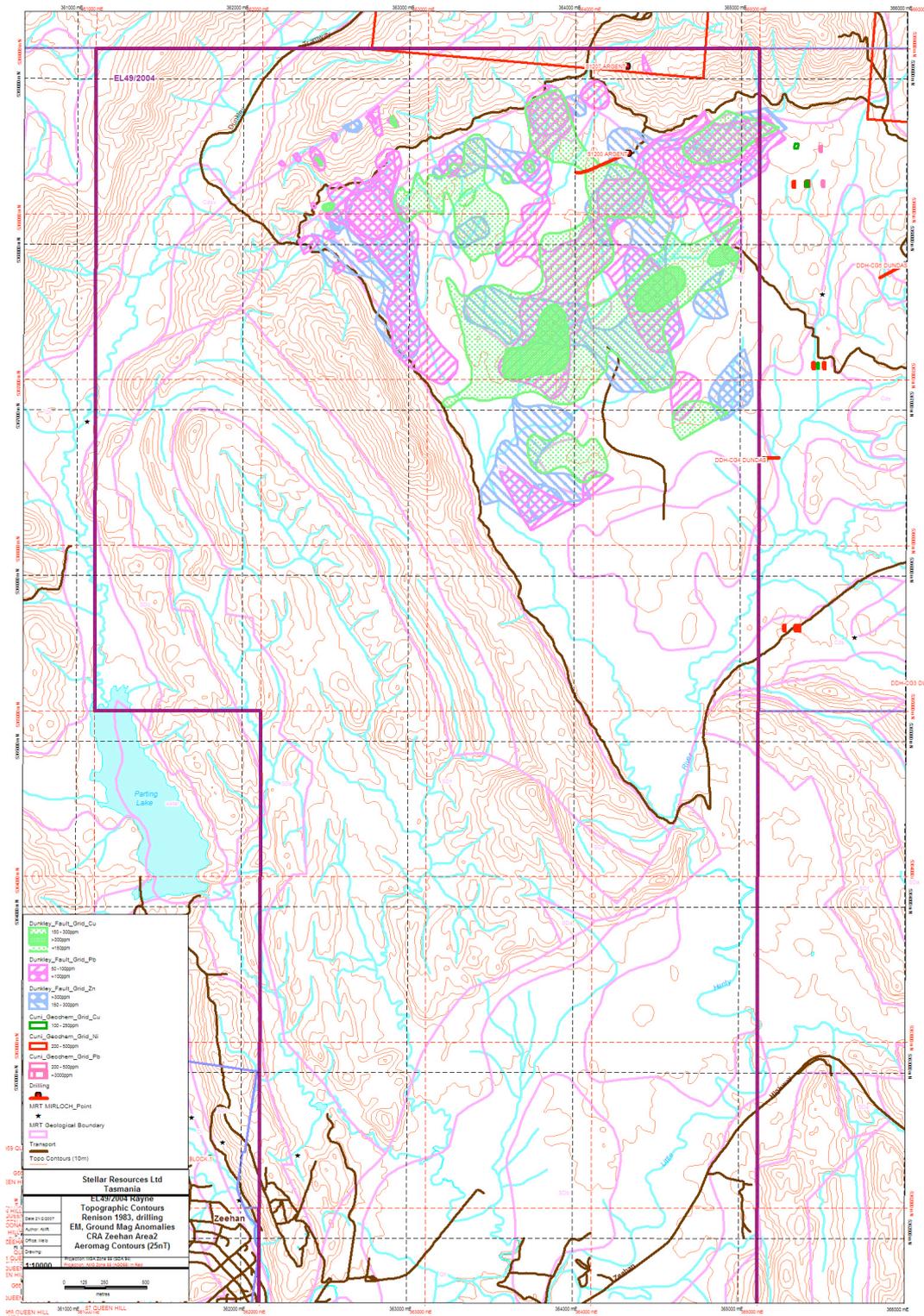
3.1.1. Data Acquisition, Mapping & Analysis

MRT digital geology and geophysics datasets, as well as DPIWE topographic data have been purchased and imported into MapInfo, from which further maps have been produced. Selected previous exploration data from EZ, Renison, CSR and CRAE has been digitised and captured from MRT open-file reports. MRT open-file geochemical and drilling data has been downloaded from the MRT website. This work proceeds. The data is tabulated in Appendix 1.

3.2. DUNKLEY MAGNETIC ANOMALY

The Dunkley Magnetic Anomaly is a positive magnetic anomaly which covers an area of about 6km² in the northeast corner of EL 49/2004. The anomaly has a series of ridges running north-south which are coincident with historic geochemical anomalies. These may reflect deep-seated faulting and /or geological structures in the basement rocks. There is also a small "peak anomaly" within the DMA.

Stellar Resources commissioned H. Williams, of Post Graduate Niche Geoscience, to review the available magnetic data and characterise the Dunkley Magnetic Anomaly (formerly the Cuni Magnetic Anomaly) through forward modelling of the magnetic data. The report on this work is presented as Appendix 2.



• Figure 7. EL49/2004, Geochemistry on Topography Plan

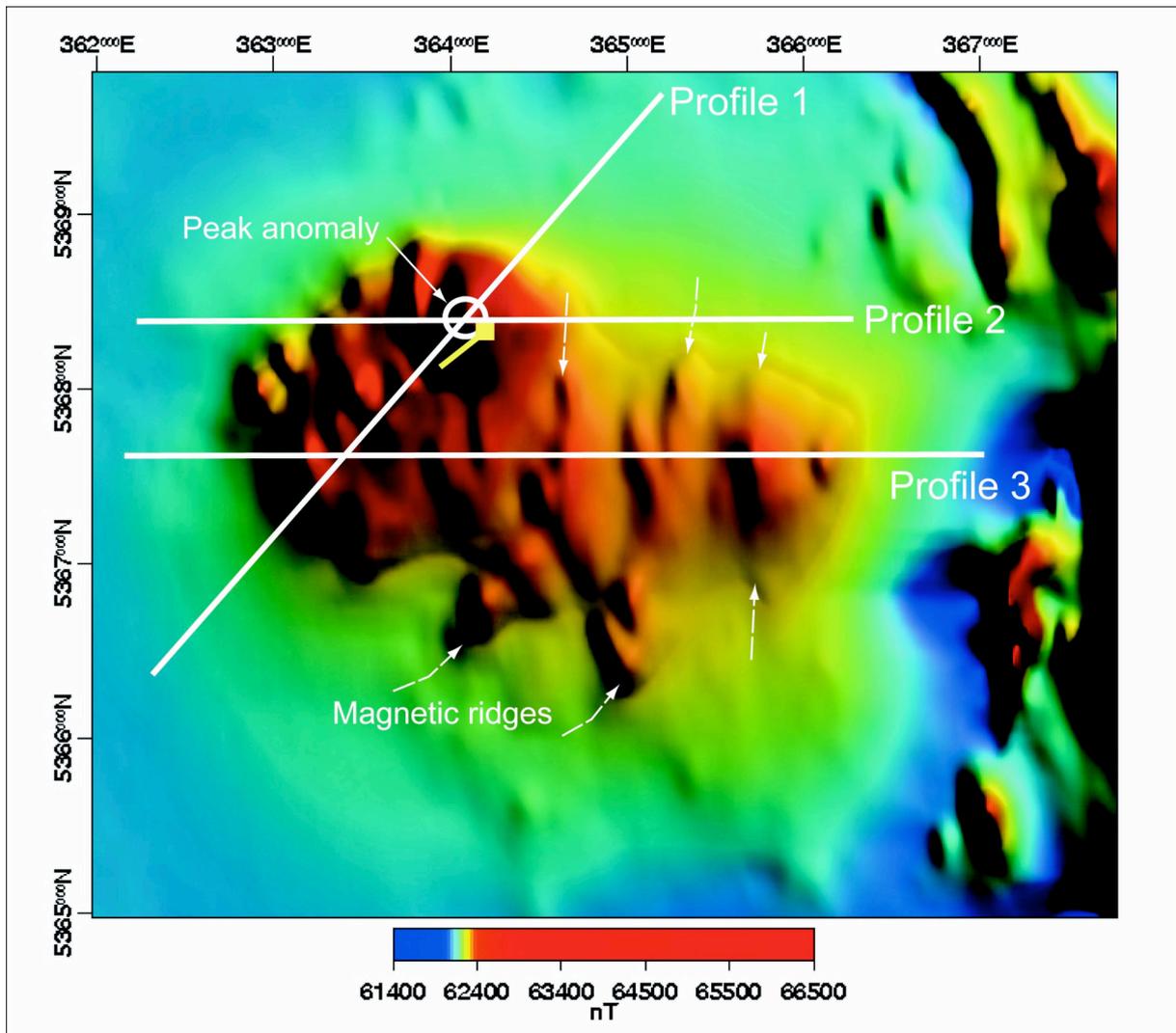
4. DISCUSSION OF RESULTS

Renison's interpretation of the Dunkley Magnetic Anomaly and the geology was of a magnetic body at about 350 metres depth. Based on this they drilled diamond drill hole S1200 which did not explain the anomaly.

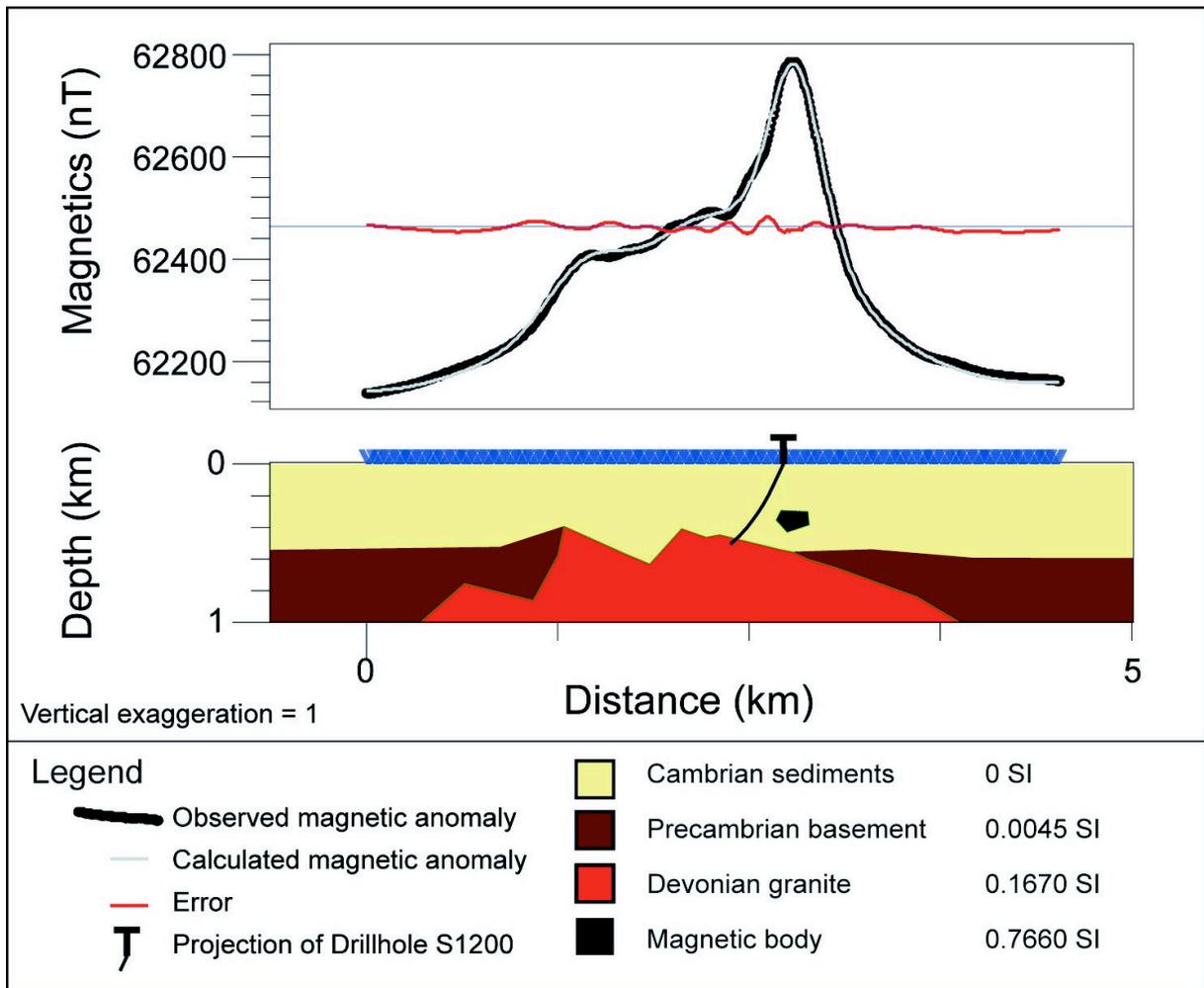
Helen William's study suggests that the Precambrian basement is at depths of greater than 500 metres; that the source of the anomaly is a magnetic body within the basement which is about 2.5 km north-south x 2.9 km east-west and that it is probably an intrusive magnetic Devonian granitoid.

The "peak anomaly" has been modelled as a 100m x 100m x 100m magnetic body at a depth of about 300 – 400 metres but it could also be a flat body at a depth of 600 – 700 metres below surface. This deep body would correspond with the interpreted depth of the Renison Mine Sequence. Based on this reinterpretation of the magnetic data it appears that historic drill hole S1200 did not test the target. It was too shallow.

The Dunkley Magnet Anomaly is a prime target for Renison style mineralisation.



• Figure 8. EL49/2004, Dunkley Magnet Anomaly with profile lines & DDH S1200.



• Figure 9. EL49/2004, Dunkley Anomaly, Profile 1 with drill hole S1200

5. CONCLUSIONS

Review of the historic exploration data suggests that the Dunkley Magnetic Anomaly is a very good Renison style sulphide / carbonate replacement tin target, which has not been effectively tested by past work. The recent increase in the tin price on international markets gives encouragement to explore for tin and review targets which have been neglected since the 1980's.

The investigation by Helen Williams supports the historical data interpretation and confirms the view that the EL could host a Renison style deposit at depth under the Dunkley Magnetic Anomaly in the northeast corner of EL 49/2004. Future work will concentrate initially on refining the target prior to commencing a deep (expensive) drilling program.

5.1. RECOMMENDATIONS

- ground truth the historic field data: locate the collar of ddh S1200;
 locate the old geochemistry grid;
 locate and inspect the S1200 core,
- reassess the historic UTEM data,
- conduct a large loop UTEM survey directly over the magnetic target,
- design a drilling program to test the Dunkley Magnetic Anomaly
- drill the target.

6. ENVIRONMENT

There has been no substantive field activity in the licence and therefore no environmental impact to report and rehabilitation work has been required.

7. EXPENDITURE

Code	Description	Actual 01/01/2007 to 31/12/2007
Job Code: 6503	EL 49/2004 Rayne	
Phase Code: 105	STAFF COSTS	
1051	Administration Management	3,187.50
1053	Technical	2,465.00
Phase Totals for: 105		5,652.50
Phase Code: 106	CONTRACT PERSONNEL	
1061	Professional Technical	4,501.90
Phase Totals for: 106		4,501.90
Phase Code: 107	CONSULTANT PERSONNEL	
1071	Administration & Computing	0.00
1072	Geoscientist	7,150.00
Phase Totals for: 107		7,150.00
Phase Code: 120	DATA ACQUISITION	
1202	Purchases of existing data	0.00
1204	Other	0.00
Phase Totals for: 120		0.00
Phase Code: 130	DATA PROCESSING	
1304	Drafting and Presentation	506.00
Phase Totals for: 130		506.00
Phase Code: 150	TENEMENT COSTS	
1505	Rents/ Other Utilities	508.33
Phase Totals for: 150		508.33
Phase Code: 155	TRAVEL	
1551	Meals and Accommodation	228.86
1552	Airfares	268.80
1553	Vehicle Hire	102.86
1554	General Expense	85.55
Phase Totals for: 155		686.07
Job Totals for: 6503		19,004.80

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Keywords

Location: Zeehan, Cuni, Melba Flats
Mineralisation environment: Carbonate replacement, skarns,
Minerals: Cassiterite, Arsenopyrite, Magnetite
Exploration methods: Geochemistry, Aeromagnetics, UTEM, Drilling
Mine/prospect name: Dunkley Magnetic Anomaly
Stratigraphic name: Oonah Formation, Success Creek Group, Crimson Creek Formation,
Eldon Group
Lithology: quartzite, slate, dolomites, sandstone, conglomerate, siltstone ,
greywacke, granite
Geological Province: Dundas Trough
Geological age: Precambrian, Cambrian, Ordovician, Devonian, Tertiary

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January 2008

EL49/2004 Rayne – Report on 2007 program

APPENDICES

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January 2008

EL49/2004 Rayne – Report on 2007 program

Appendix 1: Rayne Project Exploration Summary (A. Rigg)

EL49/2004 Rayne - NE of Licence - adjacent to the Cuni/Melba Flats Area							
Company	Year	Location	Activity	Results	Conclusions	Comments	Report
Rio Tinto	1960	Dunkley Mag High	Ground mag, soil geochem, Cu, Pb, Zn (32 samples)	Grnd mag profile, uninteresting soil assays, Cu to 125ppm, Zn to 250ppm			60-0311
EZ	1965	Melba Flat Grid, east of licence	Soil geochem			CRA notes that EZ geochem data is probably lost/destroyed.	68-0537, 71-0811, 73-0965
Renison	1973	Dunkley Grid, nth of EL	Ground mag, geol mapping, IP			no geochem	74-1047, 80-1491
Renison	1975	Argent grid, just NE of licence	Geochem, IP, grnd mag, geol				77-1234
CSR	1980	NE of Zeehan, Melba Flats/Cuni area, abutting EL49/2004 eastern boundary.	Four lines of soil geochem	Patchy/isolated minor geochem anom's for Cu, Pb, Zn, Ni.			82-1684, 80-1417
CSR	1983	NE of Zeehan, Melba Flats/Cuni area.	Melba Flats/Cuni area stream sed survey				84-2157
Amoco	1983	Sassafras area, central east of licence	Gravity survey				83-1998
Renison	1983	Dunkley Fault area, in ne of licence	Grnd mag	Area A, mag anom defined			85-2450
Renison	1983	Dunkley Fault area, in ne of licence	EM	Anom definition			85-2450
Renison	1983-85	Dunkley Fault area, in ne of licence	Geol mapping, soil geochem grid (C hor bedrock), grnd mag, UTEM, VLF EM.	Geochem anomaly B defined, A on the NW of the Dunkley Fault Grid. Cu, Pb, Zn, As; anomaly C defined, Pb, Zn, Cu; Cu to 950ppm, Pb to 430ppm, Zn to 1680ppm, Ni to 470ppm.		N. Poltock, power auger & wacker bedrock (C hor).	85-2450
Renison	1984	Anomaly B. NW side of Dunkley Fault grid	Infill and extension of gridding. Geochem, grnd mag. Drill testing proposed	Weak erratic geochem trends north	Potential exists for carbonate replacement min, sim to RMS.	A proposed drill hole on geochem anomaly B was never drilled.	85-2450
Renison	1984	Anomaly C, in NE of Dunkley Fault Grid	Geochem infill over weak mag anom.	Anomalous in Pb, Zn and lesser in Cu, low Sn	Junction of Success and Crimson Ck rocks		84-2204, 85-2450
Renison	1984	Dunkley Fault area, 750m south of north boundary of licence.	Diamond drilling, S1200 Argent (598m, -64 to -39 dip, 262 az), to test ultrabasic body magnetic target. Anomaly A.	Unaltered CCS rocks, interbedded arenaceous greywacke, tuff, siltstone. Some chloritisation below 300m, some sparce py min. At 390m 1.3m breccia, poss basic dyke, no mag sus. No signif mag sus dh. No EM response over mag.	Geophysical model did not match, intersected geology. A narrow pyrr source may have been missed. Source 150m below dh eoh, 600 - 700m below surface, for stratabound carbonate orebody. Mag anom due to hornfelsing over granite cupola, 400 - 500m below	IP over site, 1985. No further work was undertaken. No geochem assays on core. No record of where core is stored. S1200 is shown incorrectly in MRT db as being north and	85-2450, 86-2584

					surface. Prom mag bulge may be 20m below surface.	outside of EL. No DHEM data found.	
Renison	1985	Dunkley Fault area, 750m south of north boundary of licence.	Diamond drilling, S1200 Argent (598m), DHEM (EM37)	Disappointing. Solo Geophysics did DHEM to in Dec 1985 to 528m (of 598.7m) where the hole was blocked.	In-hole source, prob sparse pyrr min at 219-222m.	No detailed report or data found.	87-2686
CSR	1985	NE of Zeehan, Melba Flats, Cuni	Cuni mag survey, (100m fls, 105m fh), mag, rad	Targets defined			86-2584
Renison	1985	Dunkley Fault area, in Renison Bell ML, 300m nth of licence	Follow-up of DH S1200, ground EM (UTEM)	Failed to define cause of mag anomaly.	Complex geophysics with three sources. Source of mag 'bulge' not known. Source if pyrr, >250m below surface, beyond EM penetration		85-2450
Renison	1985-86	Tallowood and Cheesewood grids area, abuts Dunkley Fault grid in ne of licence	Geol mapping, soil geochem grid (C hor bedrock), grnd mag, VLF EM, grnd mag.				87-2686
CSR	1986	6km NE of Zeehan, west of Melba Flats/Cuni, on the eastern boundary of EL49/2004	DDH CG4 (226.7m) to test mag anom	Sandstone, tuff, siltstone, shale; 116m to 165m fine dissem py, pyrr, tr chalco, sphal; no mag sus evident. Assays for Cu, Pb, Zn, Ni, Bi, Ba, As, Sn, W (& some Au), No assays of interest.	East dipping shale unit has suffic pyrr to explain mag anom.	Hole drilled eastward from the east side of EL boundary	86-2584
CSR	1986	East of site of DDH CG4	Ground mag, wacker soil sample line 6550N	Assays for Cu, Pb, Zn, Ni, Bi, Ba, As, Sn, W, No encouraging results. Max: Cu 120ppm, Zn 195ppm, Ni 190ppm.			86-2584
CSR	1986	7km NE of Zeehan, west of Melba Flats/Cuni, 900m east of eastern boundary of EL49/2004	DDH CG5 (256m) to test mag anom, with follow-up e/w wacker soil geochem.	Shale, siltstone; py common, 110-139m dissem pyrr, in sandstone, tr chalco, sphal, with weak mag sus response. Isolated higher assays only, max Cu 120ppm, Pb 2200ppm, Zn 3900, 3500, 5800, 1100ppm.			86-2584
RGC	1989	Zeehan Area, whole of licence	Zeehan Area helimag survey, (150m fls, 117m fh), mag only	Targets defined			
CRA	1993	NE of Zeehan, Melba Flats	Zeehan Area mag survey, (100m fls, 100m fh), mag, dtm, EM	Targets defined			
CRA	1994	Melba Flats incl east 1km of EL	Geol mapping	Map			96-3884
CRA	1995	Melba Flats area 1km east of EL	Ground mag, EM	Targets defined			96-3884
CRA	1995	Melba Flats area 1km east of EL	Rock chip & soil geochem				96-3884

CRA	1995	Melba Flats area 1km east of EL	DH plots				96-3884
CRA	1995	NE of Zeehan	Zeehan Area 2 Helimag survey, (80m fls, 32m fh), mag only	Targets defined			
CRA	1995	NE/west of Zeehan	Zeehan Area 4 Helimag survey, (80m fls, 32m fh), mag only	Targets defined			
MRT	2002	Western Tas	WTRMP Mt Read Volcanics helimag survey (200m fls, 79m fh), mag, dtm, EM	Regional targets defined			

EL49/2004 Rayne - Parting Lake Area

Company	Year	Location	Activity	Results	Conclusions	Comments	Report
RGC	1989	Zeehan Area, whole of licence	Zeehan Area helimag survey, (150m fls, 117m fh), mag only	Targets defined			
RGC	1989	South-western side of Parting Lake, just outside of EL	Soil geochem grid, grnd mag, geol mapping	Weak Sn-base metal anomaly with no coincident mag anomalism.	Sn-base metal replacement or skarn min potential, pyrr retrograde replacement.		90-3200, 91-3309
RGC	1990-91	Zeehan Area	MRT Gravity data interp by Leaman	Deep seated granite cupolas inferred, one near south end of Parting Lake grid	Any mineralisation would be deeper than Queen Hill	Lower order target	91-3309
RGC	1992	Parting Lake area nr Tasman-Crown Mine, just outside of EL	Diamond drilling, PL001 (673m), strat hole to test weak geochem and gravity target	Carbonates, trace sphal/galena at 492m			92-3386
MRT	2002	Western Tas	WTRMP Mt Read Volcanics helimag survey (200m fls, 79m fh), mag, dtm, EM	Regional targets defined			

EL49/2004 Rayne - EL General

Company	Year	Location	Activity	Results	Conclusions	Comments	Report
CSR	1985	NE of Zeehan, Melba Flats, Cuni	Cuni mag survey, (100m fls, 105m fh), mag, rad	Targets defined			
MRT	1988	Rayne to Dundas EL area	Gravity survey				
RGC	1989	Zeehan Area, whole of licence	Zeehan Area helimag survey, (150m fls, 117m fh), mag only	Targets defined			
CRA	1993	NE of Zeehan, Melba Flats	Zeehan Area mag survey, (100m fls, 100m fh), mag, dtm, EM	Targets defined			
CRA	1995	NE of Zeehan	Zeehan Area 2 Helimag survey, (80m fls, 32m fh), mag only	Targets defined			
CRA	1995	NE/west of Zeehan	Zeehan Area 4 Helimag survey, (80m fls, 32m fh), mag only	Targets defined			
MRT	2002	Western Tas	WTRMP Mt Read Volcanics helimag survey (200m fls, 79m fh), mag, dtm, EM	Regional targets defined			

STELLAR RESOURCES LTD

January 2008

EL49/2004 Rayne – Report on 2007 program

Appendix 2: Aeromagnetic investigation of the source to the Dunkley Magnetic Anomaly, Western Tasmania. H Williams, PGN



Aeromagnetic investigation of the source to the Dunkley Magnetic Anomaly, Western Tasmania

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Report for Stellar Resources
Jan 2008
PGN Report 2/2008

1. Introduction

This project involves the characterisation of the source to the Dunkley Magnetic Anomaly in the Rayne Tenement of Western Tasmania through forward modelling of magnetic data.

The **Dunkley Magnetic Anomaly (DMA)** (Figure 1) is a positive magnetic anomaly, located in the northeast of the Rayne Tenement. The anomaly covers an area of approximately 6 km² and has a relative maximum amplitude of ~1000 nT above regional magnetic values, the lowest of which form an arcuate magnetic trough to the southeast (Figure 1).

Superimposed on the DMA is a small-scale circular magnetic anomaly, labelled as “**peak anomaly**” (Figure 1), that measures approximately 500 m in diameter and has an amplitude of up to 650 nT (relative to regional magnetic values). It has been made clear to me that this anomaly is currently of keen interest as having economic potential and as such the nature of the source to this small-scale anomaly is also a focus of this project (Tom Whiting, Pers. Comm.).

The DMA comprises a series of magnetic ridges (Figure 1) which are oriented approximately north-south but at their southern ends appear to be slightly folded towards the west. These ridges may be the magnetic expressions of structural undulations of the surface of a magnetic source body, e.g. hinges of gentle, open upright folds or fault slices or may be due to discrete linear magnetic source bodies.

1.1 Local geology and previous exploration

Kilpatrick (1985) describes the local stratigraphy, structure and mineralisation, which can be summarised as follows:

Basement (>700 m thick), comprises Precambrian Oonah quartzites and slates, later mudstones, siltstones, dolomites with minor lava and volcanic breccias. Basement is overlain by the (>820 m thick) **Lower Cambrian Success Creek Group (SCG)** sandstones and polymict conglomerate, quartz sandstones and siltstones and later black mudstone, siltstone and sandstone. Conformably overlying the SCG is the Cambrian **Crimson Creek Formation (CCF)**, a thick (i.e. >1000 m) sequence of tuffaceous siltstones, greywackes and clastic sediments. The Ordovician-Silurian **Eldon Group** is locally faulted against the CCF but does not occur in the vicinity of the Dunkley Magnetic Anomaly, where only the SCG and CCF outcrop and are likely to be in fault contact with each other.

Local structure is dominated by gentle to moderate open folding (Devonian Tabbarabbaran Orogeny) of flat-lying stratigraphy which is overprinted by

widespread steep to moderately-dipping normal faults, juxtaposing CCF against the SCG in outcrop at the surface. Granite bodies which intruded during the Tabbarabbaran Orogeny occur at basement depths (i.e. 500-1200 m depth). Elsewhere locally, these granite bodies have been interpreted as sources to positive magnetic anomalies in the area (Adrian Rigg, Pers. Comm.).

Economic mineralisation is believed to have been produced by mineralising hydrothermal fluids associated with orogenic granite emplacement. Mineralisation occurs as thin (<20 m thick) stratabound dolomite-siderite-carbonate horizons which occur at the top of the SCG and at the base of the CCF, through carbonate replacement and skarn-derived deposits. This mineralisation is also thought to occur along associated feeder faults.

1.2 Rock properties and other modelling constraints

Drilling was previously undertaken to test the source to the “peak anomaly” (Kilpatrick (1985); Figure 1). This drillhole (S1200) was drilled to a depth of 598.6 m and penetrated only non-magnetic Cambrian CCF rocks from collar to end of hole. The drillhole begins ~120 m to the east of the maximum amplitude of the peak anomaly and has an average westward dip of ~60°, therefore intersects rocks directly beneath the peak anomaly at a depth of approximately 200 m (Kilpatrick, 1985). Hence, the source to the peak anomaly of the DMA must occur at depths greater or less than ~200 m (i.e. this magnetic source was not penetrated by drillhole S1200). The geological log of Drillhole S1200 is honoured in forward modelling of magnetic profiles for this project.

Magnetic susceptibility measurements were taken at one metre intervals along the length of drillcore extracted from drillhole S1200 (Kilpatrick, 1985). Results show that the bulk magnetic susceptibility of Cambrian sediments (CCF) is negligible. No magnetic rocks were intercepted by the drillhole.

In contrast, rock properties given by Leaman and Webster (2002) show that the Cambrian sediments (CCF and SCG) have a magnetic susceptibility of greater than 0.01 SI; that Precambrian basement (e.g. the Oonah Quartzites etc) has a bulk rock magnetic susceptibility of 0.0025-0.0060 SI; and that Devonian granites and granodiorites have a magnetic susceptibility of ~0.0025 SI. This magnetic susceptibility seems low however, given that the same report discusses the “magnetic” nature of Devonian granites in the Renison and Zeehan areas adjacent to the study area, especially with respect to associated magnetic metamorphic aureoles.

Local stratigraphy, depths to lithological contacts and structure as indicated by the stratigraphic column and summary of geology provided in Kilpatrick (1985) are honoured in forward models for this project. For the purposes of modelling, lithological units have been simplified into groups with similar magnetic susceptibilities.

1.3 Project aims

- 1) To characterise the source of the Dunkley Magnetic Anomaly in terms of geometry, depth and magnetic susceptibility.
- 2) To characterise the source of the “peak anomaly” superimposed upon the Dunkley Magnetic Anomaly.

2. Methodology

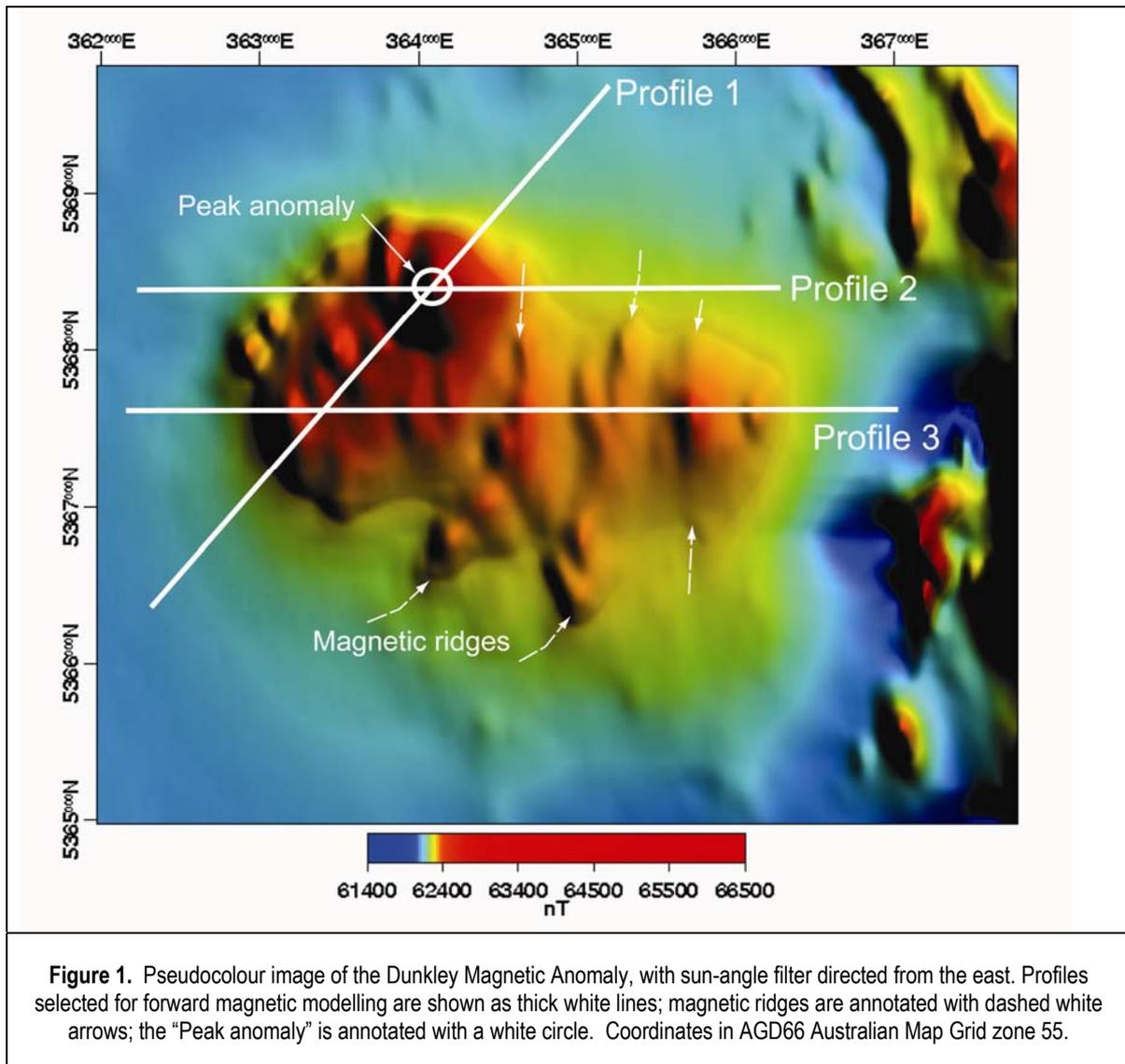
2.1 Gridding and grid stitching of magnetic datasets

The 2001 West Tasmania (WTRMP Area C) dataset with a flight line spacing of 200 m was used as a regional dataset onto which datasets of smaller area and generally higher resolution were stitched to form a composite grid. The final magnetic grid from which magnetic profiles were extracted is a composite of the following aeromagnetic grids:

- 2001 West Tasmania (WTRMP Area C) with a flight line spacing of 200 m
- 2002 WTRMP Mount Read Volcanics with a flight line spacing of 200 m
- 1985 CSR Cuni (relevelled dataset) with a flight line spacing of 100 m
- 1995 CSR Zeehan Area 2 with a flight line spacing of 80 m

This composite grid is imaged in Figure 1.

A fifth ungridded dataset, the 1993 CRA Melba Flats dataset was found to contain six bogus outlier data points (with E,N coordinates of (999999.0,9999999.0)) causing initial gridding problems. Each of these points was deleted before a successful grid could be made. However the final grid produced showed that the data had been poorly levelled and is therefore not sensible in its current form, for use in extracting profiles to forward model. Further, the Melba Flats grid was situated in the same location as the Cuni dataset. For these reasons, the Melba Flats dataset has not been used in this project.



2.2 Extraction of magnetic profiles

The location of Profile 1 (Figure 1) was selected to provide a northeast-southwest oriented perspective through the western-most part of the DMA as well as intersecting the “Peak anomaly”. The location of Profile 2 (Figure 1) was selected to provide an east-west oriented perspective through the northern-most part of the DMA as well as intersecting the “Peak anomaly”. The location of Profile 3 (Figure 1) was selected to provide an east-west oriented perspective through the central, widest extent of the DMA as well as passing orthogonally through the north-south oriented magnetic ridges.

Forward modelling was carried out using the following magnetic field specifications for Zeehan, Tasmania:

Magnitude H: 18 978 nT

Inclination I: -72.236°

Declination D: 13.030°

(Source: Geoscience Australia website)

Forward modelling of magnetic data along these profiles was initially conducted on the premise that the broader DMA may be the magnetic expression of a Devonian granite at basement depths (i.e. >500 m depth) and that the “peak anomaly” may be the magnetic expression of a discrete, smaller-scale magnetic body situated at depths shallower than basement. Interpretations of this smaller-scale magnetic body may include: a slice of ultramafic material or a skarn/dyke/flat-lying pyrrhotite body that may be associated with the contact between the CCF and the SCG or a fault structure. It has been indicated to me that this type of magnetic body may exist at depths of ~300 m (Tom Whiting, Pers. Comm.). Magnetic ridges evident in the pseudocolour image of the DMA (Figure 1) may be the magnetic expression of faulted or folded magnetic granite.

In order to obtain a three dimensional interpretation of the DMA, each profile is modelled to be consistent with where it intersects with the other two profiles.

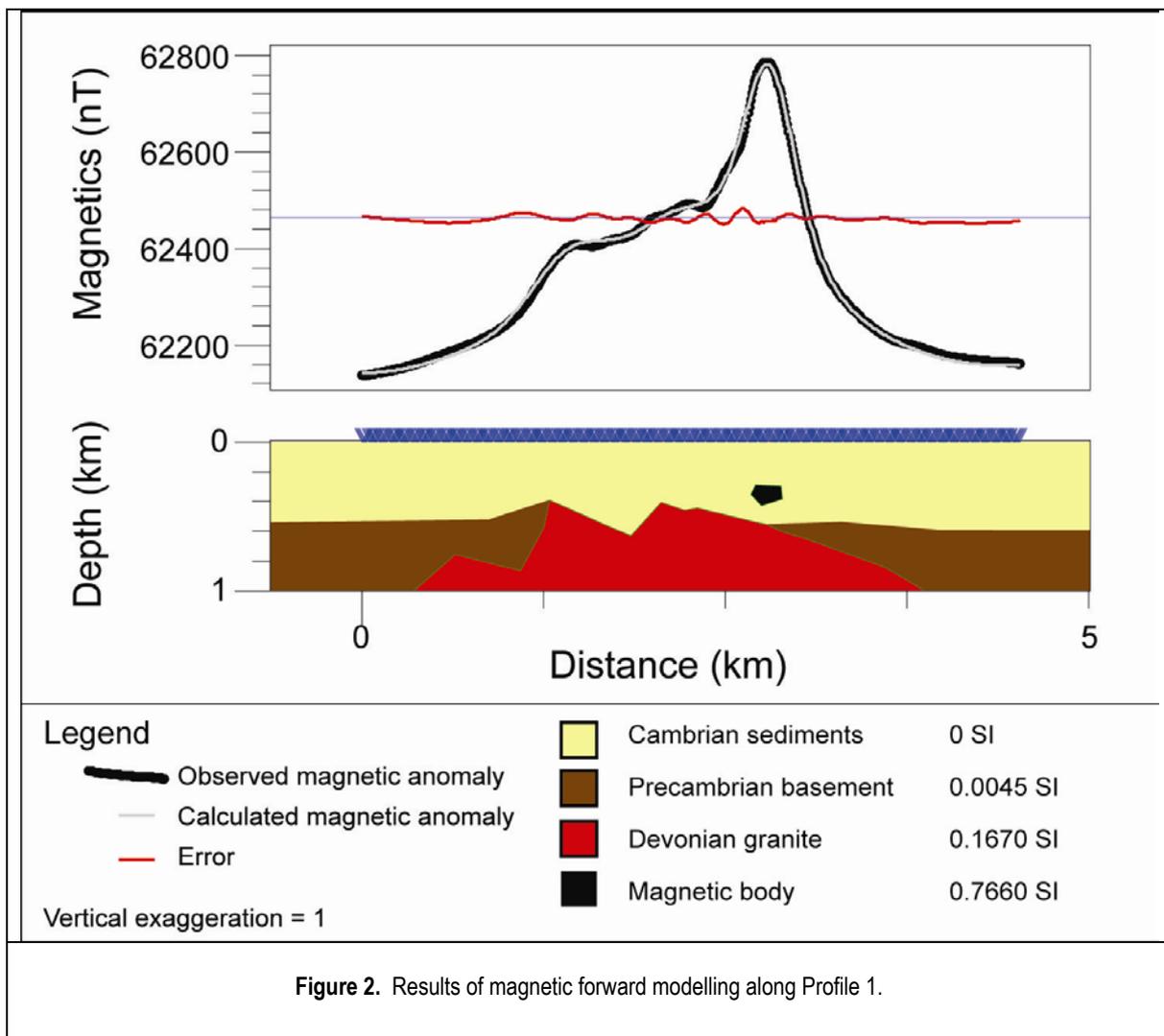
3. Results of forward modelling

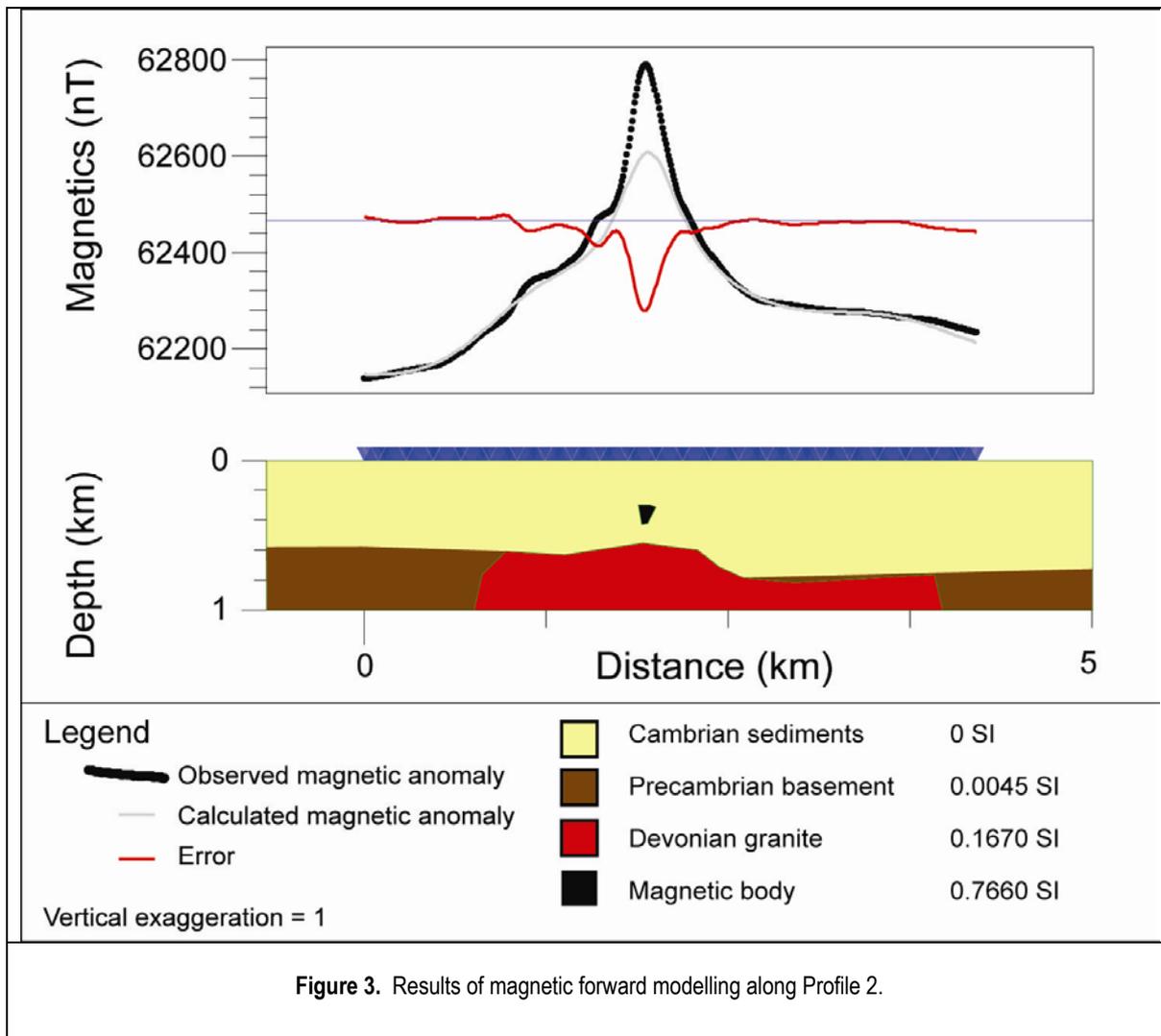
In all three modelled profiles (Figures 2-4), Precambrian basement at depths of greater than 500 m and having relatively low (0.0045 SI) magnetic susceptibility is responsible for the regional magnetic field. The source to the DMA is a body of higher magnetic susceptibility (0.1670 SI), which is enclosed within basement. This basement body is modelled to be ~2.5 km wide in a northeast-southwest direction along Profile 1, ~2.9 km wide along east-west Profile 2 and ~3.5 km wide along east-west Profile 3 and is interpreted as an intrusive, magnetic (relative to basement) Devonian granitoid.

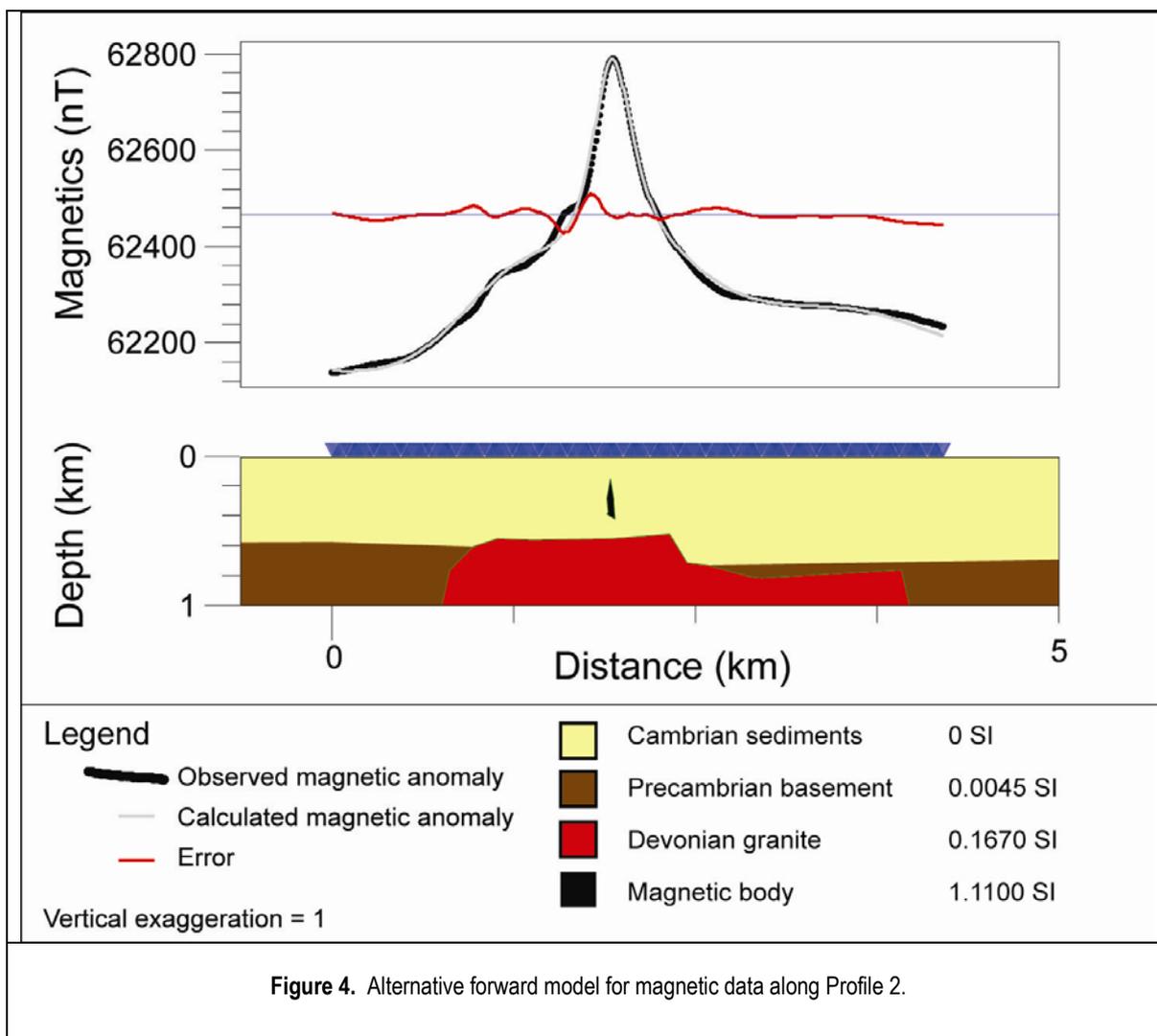
The source to the “peak anomaly” is modelled in Profiles 1 and 2 (Figures 2 and 3) as being ~100 m wide in both the NE-SW direction (Profile 1) and the E-W direction (Profile 2). This body is also modelled to be just over 100 m in depth extent (extending from ~300 to ~400 m deep) and is therefore relatively symmetrical in three dimensions. This modelled body possesses an unrealistically high magnetic susceptibility of 0.7660 SI. However when modelled to have a lower susceptibility, the body must be much shallower and wider, therefore contradicting geological information given by Drillhole S1200. As such, this shallow option is rejected and it is concluded that the unreasonably high magnetic susceptibility modelled for the source to the peak anomaly may be due to the bulk regional susceptibilities of surrounding rocks being underestimated. For Profile 2 (Figure 3), the calculated effect of the same magnetic source body (e.g. modelled to have the same susceptibility and geometry as in Profile 1) is not

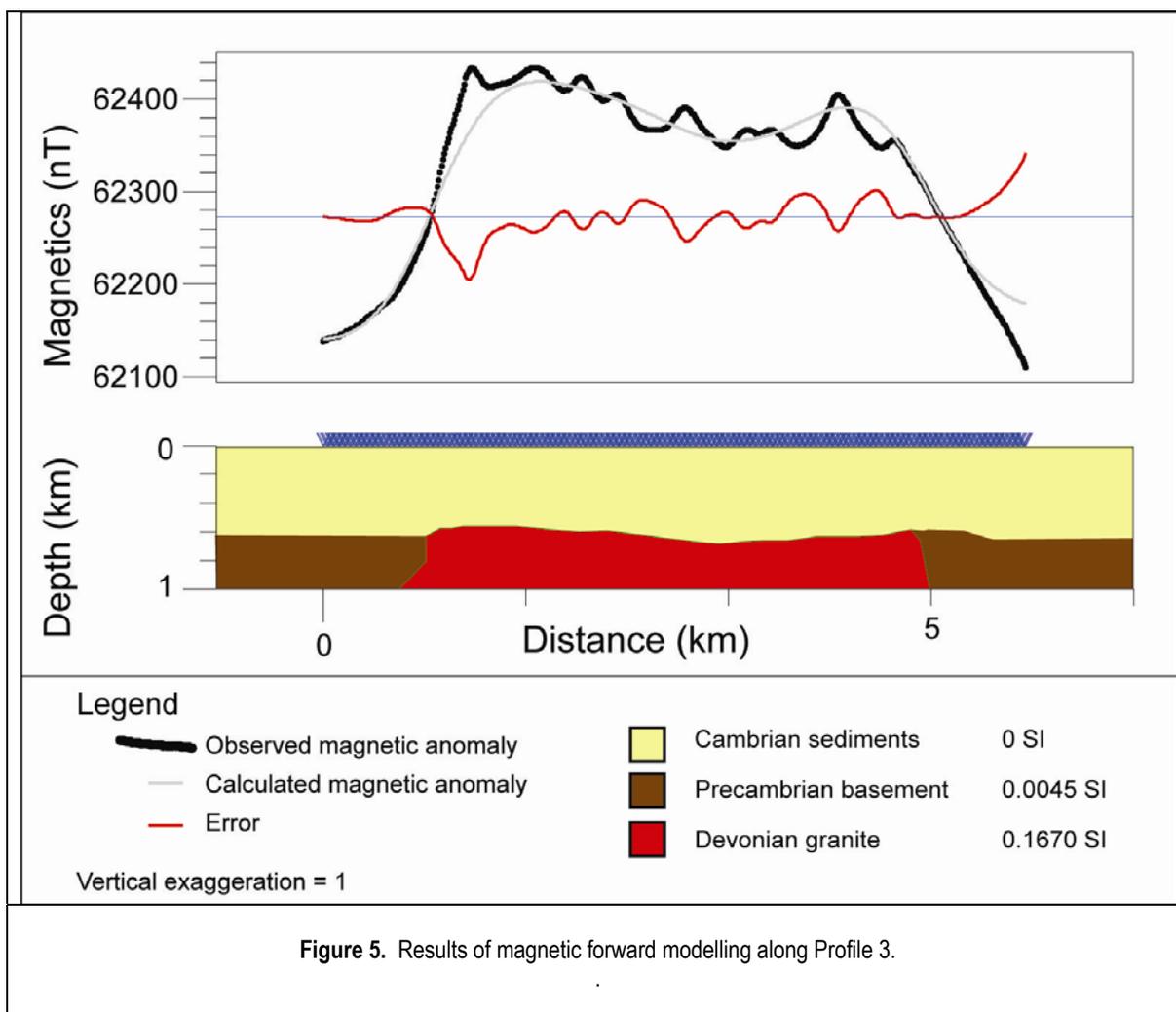
high enough in amplitude to honour the observed magnetic data. An alternative model for Profile 2 (Figure 4) shows the magnetic source body of the “peak anomaly” to extend from ~150 to ~400 m depth and is only about 500m in width. Moreover, this alternative body has an even higher magnetic susceptibility of 1.1100 SI. This model has a calculated effect that matches the amplitude of the “peak anomaly”, however given that Drillhole S1200 did not penetrate a magnetic body of any kind (at a depth of ~200 m), this alternative model should be rejected on the grounds that it contradicts existing geological data.

Figure 5 shows the forward model of Profile 3. The magnetic ridges superimposed upon the DMA may not be reconciled by modelling undulations in the surface of the (interpreted) magnetic Devonian granite within basement rocks as the short wavelengths require a much shallower (probably near-surface) source. Further modelling may be undertaken to determine the sources to these magnetic ridges, if required.









4. Conclusions

The best-fit, constrained forward modelled results show that:

- Precambrian basement at depths of greater than 500 m has a relatively low (0.0045 SI) magnetic susceptibility and is responsible for the regional magnetic field.
- A possible source to the Dunkley Magnetic Anomaly is a magnetic (relative to basement) body enclosed within Precambrian basement at depths of greater than ~500 m. This modelled body is ~2.5 km wide in a northeast-southwest direction along Profile 1, ~2.9 km wide along east-west Profile 2 and ~3.5 km wide along east-west Profile 3 and is interpreted as an intrusive magnetic (relative to basement) Devonian granitoid.

- The source to the “peak anomaly” can be modelled as a body that is ~100 m wide in both the NE-SW and E-W directions as well as being just over 100 m in depth extent (extending from ~300 to ~400 m deep) and is therefore relatively symmetrical in three dimensions. This modelled body is extremely magnetic relative to all other lithologies modelled.
- ~N-S oriented magnetic ridges have short wavelengths that cannot be reconciled by magnetic bodies at basement depths but are probably the expression of near-surface magnetic bodies.

References and acknowledgements

Kilpatrick, D.J., 1985. Open file report book 85/2450, Renison Ltd.

Leaman, D.E. and Webster, S.S., 2002. Quantitative interpretation of magnetic and gravity data for the Western Tasmanian Regional Minerals Program. Tasmanian Geological Survey Record 2002/15.

All aeromagnetic data were obtained from the Department of Infrastructure, Energy and Resources, Tasmania (Mineral Resources Tasmania) website: <http://www.mrt.tas.gov.au>

Geomagnetic reference values were obtained from the Geoscience Australia website: <http://www.ga.gov.au/oracle/geomag/agrfform.jsp>

Tom Whiting and Adrian Rigg (Stellar Resources) provided useful background information concerning this project.

Supplementary notes to be appended to PGN Report 2/2008 for Stellar Resources, January 2008.

For the Dunkley Magnetic Anomaly project, I had assumed that the original modeling (undertaken for report 85-2450) had been done along an E-W profile (i.e. Line 600S, shown as roughly E-W oriented on page 22 of Report 85-2450).

However Drillhole S1200 was actually drilled along a WSW bearing and I now understand that Line 600S does not run E-W but is parallel with the drillhole (i.e. WSW).

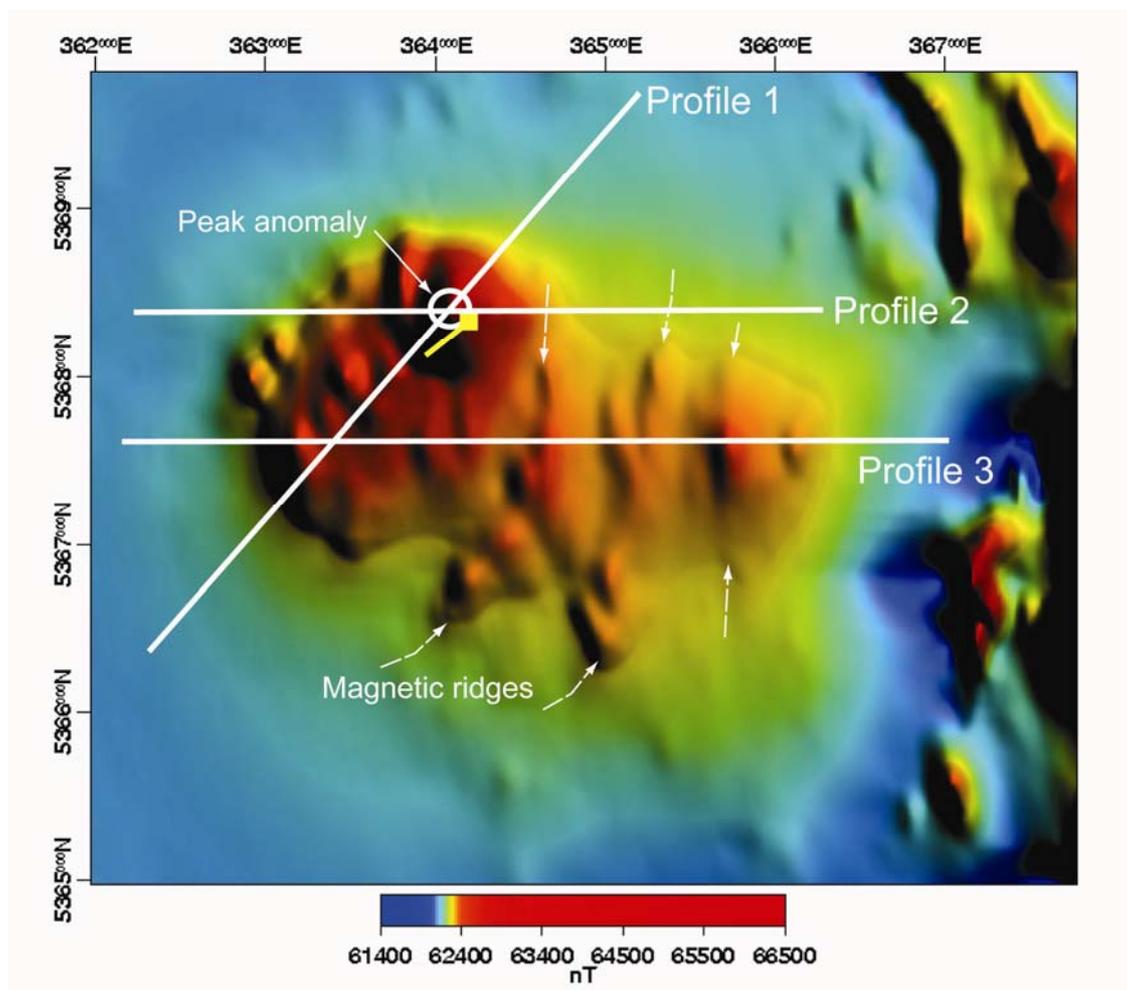


Figure 1: Dunkley Magnetic Anomaly with “peak anomaly” and profile locations relative to Drillhole S1200. Yellow square denotes where drillhole begins; yellow line denotes lateral trajectory of drillhole.

Drillhole S1200 (shown as yellow square while the lateral distance drilled is shown as a yellow line; Figure 1) actually begins at AGD66 (zone 55) coordinates of: 364208mE, 5368338mN and continues to the ~WSW for 324 m lateral distance (as shown in map view Fig 1) to a vertical depth of 496 m below the surface (equating to a downhole depth of 598 m). At this location the drillhole does not intersect with the peak anomaly (Fig. 1).

Therefore, Drillhole S1200 does not actually intersect with either of my models Profile 1 or Profile 2 but rather begins ~140 m southeast of Profile 1 and ~60 m south of Profile 2 (though Profile 1 does run approximately parallel with the bearing of the drillhole).

Figure 2 shows Drillhole S1200 if projected (140 m towards the NW) onto modeled Profile 1. The drillhole would begin at 2.72 km along Profile 1 and run along a bearing parallel to the profile. Drillhole S1200 would intersect with Profile 2 above the surface of the Earth.

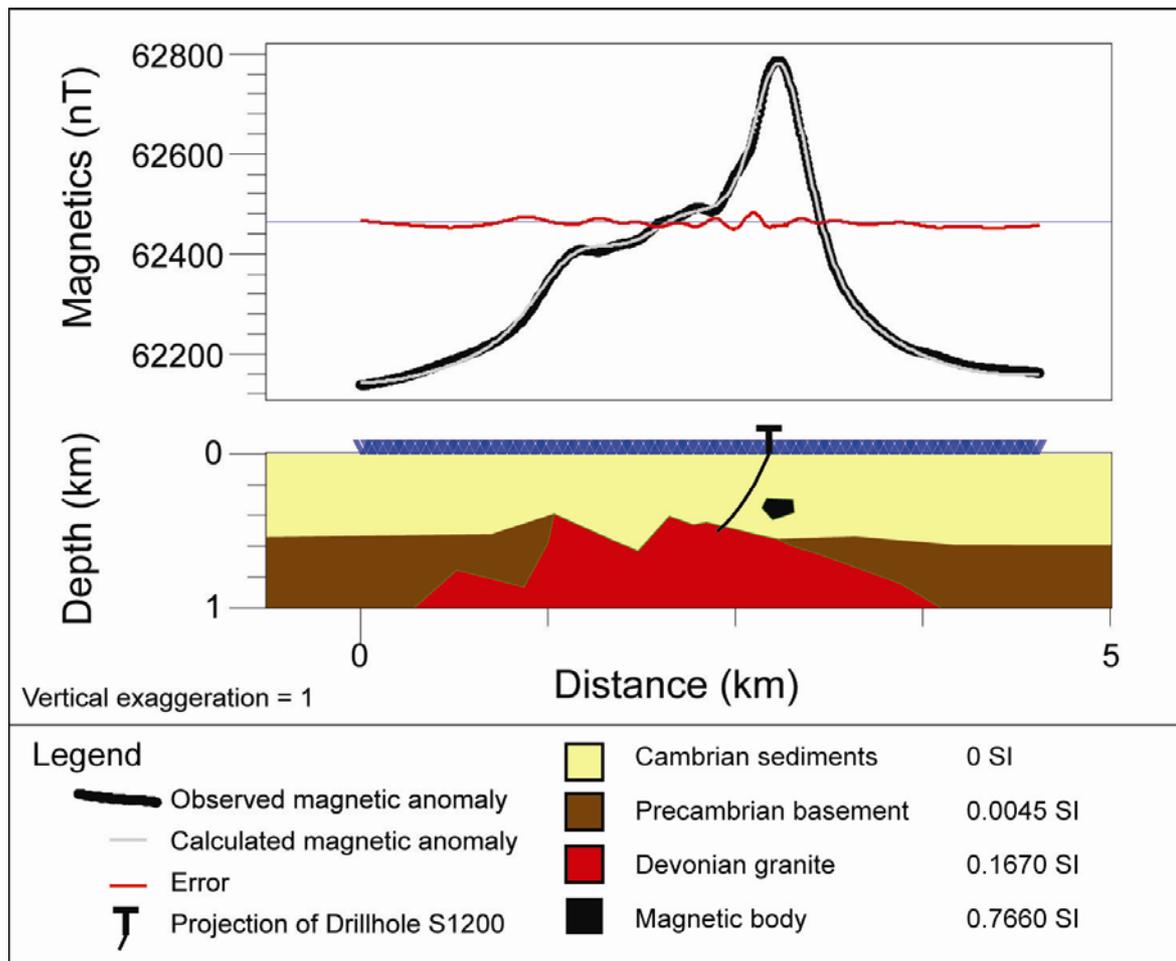


Figure 2: Results of forward magnetic modeling along Profile 1 with the projection (from ~140 m SE; parallel to the profile) of Drillhole S1200.

So if we were to honour the geological data interpolated from the drillhole, there would be obvious problems with Profile 1 (e.g. surface of the granite is too shallow) and this would need to be re-modelled.

As an alternative, I could model a new profile of data that runs exactly along the trajectory of Drillhole S1200 (NB: this would not intersect with the “peak anomaly” (Fig. 1) but may help to constrain the magnetic expression of any magnetic body that may exist directly beneath the new profile).

Helen Williams