

EL5/2020
Little Henty River

2023-2024 Annual Report

R Lockley



Tenement Holder: Mallee Tas (Misc) Pty Ltd (Receivers and Managers Appointed)

Tenement Operator: Avebury (Operating) Pty Ltd (Receivers and Managers Appointed)

Address: PO Box 62 Zeehan TAS AUS 7469

Datum for all listed coordinates: GDA94

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ABSTRACT

This Annual Report for EL5/2020 Little Henty River, covers the period from 12 June 2023 to 11 June 2024. The tenement is currently held as a combined tenement package by Mallee Tas (Misc) Pty Ltd, (Subject to Deed of Company Arrangement) (Receivers and Managers Appointed)

The area is prospective for narrow, but in some cases extremely high-grade Ni-Cu-Au-PGE mineralization hosted in and around gabbro dykes and sills. It is theorised that there may be a deeper, undiscovered source of the gabbro and extensive mineralization at depth. A possible area of the source is the vicinity of the Dunkley Magnetic Anomaly (DMA), further south and deeper than previous drilling, in the centre of EL5/2020.

A large proportion of proposed expenditure during 2024 was to be attributed to regional exploration with an airborne gravity (AGG) survey proposed to cover all Avebury tenements as a critical tool to increase lithological understanding and progress target generation. The gravity survey will be conducted at the earliest opportunity following budget approval.

In November 2023, reconnaissance was conducted for future work programs planned to define a new potential prospect identified on the eastern boundary of EL5/2020 trending south-easterly into EL43/1992. Proposed exploration incorporates verifying the structures extrapolated from reviews of historic data, georectification of mapping, 2023 aerial photography and Mitre Geophysics compilation of magnetic data, and possibility of Passive Seismic Survey (PSS). Comprehensive interpretation of all geophysical data is pending on completion of the proposed airborne gravity (AGG) survey.

An application for exemption from the conditions of exploration on EL5/2020 was submitted on 21 February 2024, incorporating the period 26 February 2024 to 11 June 2024 and is currently pending approval. The exemption was requested due to prolonged administration and subsequent move of Avebury Nickel Mine into Care and Maintenance and reduced department staffing and resources. As a result, many work programs have been suspended pending further budget approvals.

Total expenditure on EL5/2020 for the reporting period was \$16,745.

Expenditure for proposed work programs for the 2024 – 2025 period total \$60,000.

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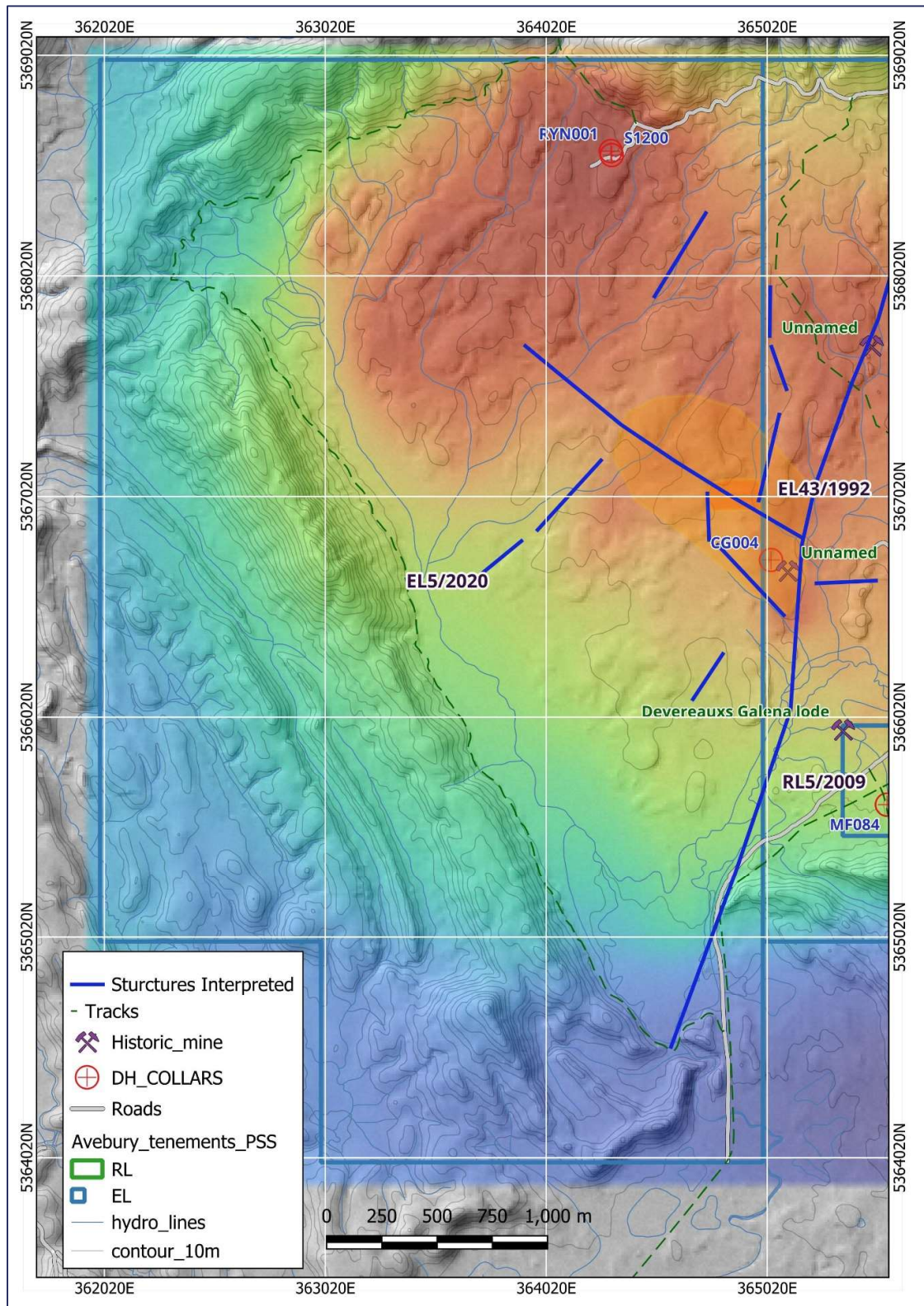


Figure 1. EL5/2020 Reporting Period Activities Overview Map

1 INTRODUCTION

1.1 Exploration Rationale

The primary objective of Mallee Resources (Avebury (Operating) Pty Ltd (Voluntary Administrators Appointed, Receivers and Managers Appointed)), is to add to their nickel inventories as part of the Avebury Nickel Mine re-start project. This objective has not changed despite the Mine being placed in Care and Maintenance. A secondary objective, now of increasing importance given the low price of nickel, is to extend the resource to other commodities. The Melba Flats area is prospective for narrow, but in some cases extremely high-grade Ni-Cu-Au-PGE mineralization hosted in and around gabbro dykes and sills. It is theorised that there may be a deeper, undiscovered source of the gabbro and extensive mineralization at depth. A possible area of the source is the vicinity of the Dunkley Magnetic Anomaly (DMA), further south and deeper than previous drilling, in the centre of EL5/2020.

1.2 Regional Geology

Rocks in the general area consist of Precambrian - Cambrian sediments with Cambrian basic intrusive overlain by Upper Palaeozoic sediments. Precambrian Quartzites and Shales of the Oonah Quartzite Formation are conformably overlain by rocks of the Crimson Creek Formation (Cambrian shales, quartzites and minor Volcanics). During the Cambrian, basic igneous rocks were intruded, and partly altered to serpentinites by subsequent regional deformation. Silurian and Devonian sediments unconformably overlie the older rocks. Recent alluvium occurs along the river valleys.

Rocks in the area show evidence of structural deformation folding and faulting. Several faults occur in the area, the major one being the Dunkley Fault.

1.3 Prospect Geology

The south-west half of EL5/2020 is underlain by Silurian-Devonian Eldon Group meta-sediments (interbedded sandstone, siltstone, and mudstone). These rocks comprise the eastern limb of a gently folded syncline, and dip east north-east. Throughout the central, lower lying areas of the tenement are alluvium, eluvium and marsh deposits of Quaternary age overlying the Eldon Group meta-sediments. These surround the major hydrological features on the tenement (generally trending south-east) and may cover a major structure, informally named the Boodecker Fault.

It is interpreted from drill hole data and that beneath the quaternary sediments, the Eldon group is overthrust on its eastern contact by Cambrian Crimson Creek Formation tuffaceous siltstones, greywackes, and clastic sediments along the Boodecker Fault.

Along the far north-east section of the tenement, the Lower Cambrian Success Creek Group abuts the Crimson Creek along the south-west trending Dunkley Fault. The Success Creek Group comprises sandstones and polymictic conglomerate, quartz sandstone and siltstone.

In the northern part of the tenement is a large magnetic anomaly, known as the Dunkley Magnetic Anomaly (DMA). The Geology of the area surrounding DMA is similar to the Renison Bell Mine sequence.

1.4 Prospect Mineralisation

The base of the Crimson Creek Formation is marked by a mixture of haematitic agglomerates, cherts, tuffs, sandstones, and thin carbonates known as the Red Rock Member. The Red Rock Member averages 20m thickness and is overlain by a 5-15m thick dolomite horizon. This is known as the No.1 dolomite at Renison Bell where it hosts replacement style pyrrhotite

cassiterite mineralisation. Similarly, the upper part of the Success Creek Group in this area includes two major dolomite-siderite carbonate horizons, 10-20m thick. These are known at Renison Bell as the No. 2 and No. 3 dolomites.

Immediately to the east of the licence at the Cuni prospect area, within the Crimson Creek Formation, are a series of north trending Cambrian pyroxenite and gabbro dykes with 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. There is evidence that these dykes may extend further west, continuing beneath the younger cover sequences.

2 LICENCE

2.1 Regional Exploration Licence Package

EL5/2020 is a category 1 exploration licence, held by Mallee Tas (Misc) Pty Ltd, a subsidiary of Mallee Resources, owner of the Avebury Nickel Mine, held by Allegiance Mining Pty Ltd, which was acquired by Mallee Resources in 2022. Since September 2023, Allegiance Mining Pty Ltd has been operating under Voluntary Administrators Appointed, Receivers and Managers Appointed. Currently Avebury Nickel Mine is in a period of Care and Maintenance effective since 28 March 2024.

The tenement was originally granted to D & B Mining Pty Ltd in June 2021, then acquired by Mallee Resources as part of shareholder negotiations in June 2022. The tenement is the western most, and largest of Avebury's four Melba tenements.

2.2 Exploration Licence Summary

Tenement number:	EL5/2020
Tenement name:	LITTLE HENTY RIVER
Tenement area:	14km ²
Tenement location:	EL5/2020 covers 14 square kilometres and is located approximately 5km to the northeast of Zeehan. The main access to the license area is a series of gravel roads and forestry tracks from the Murchison Highway four kilometres to the east (through the Cuni mineral fields on EL43/1988 and RL5/2009). In dry weather, the tenement can also be accessed from the Zeehan township via Robinson Street, then along a four-wheel drive track and fords adjacent to the southmost section of the old Melba Line railway, recently converted into a cycle path with foot bridges across Parting Creek and the Little Henty River (Figure 2).
Tenement land status:	Land usage within the tenement area is classified as wholly on publicly owned landed. The north-eastern half of the tenement is classified as Permanent Timber Production Land Zone managed by Sustainable Timbers Tasmania. The south-western half of the tenement is the Parting Creek Regional Reserve, managed by the Tasmanian Parks and Wildlife Service. Two small sections in the south-west and south-east corners of the tenement are crown land (Figure 3).
Reporting period:	12 June 2023 to 11 June 2024
Tenement holder:	Mallee Tas (Misc) Pty Ltd (Receivers and Managers Appointed)

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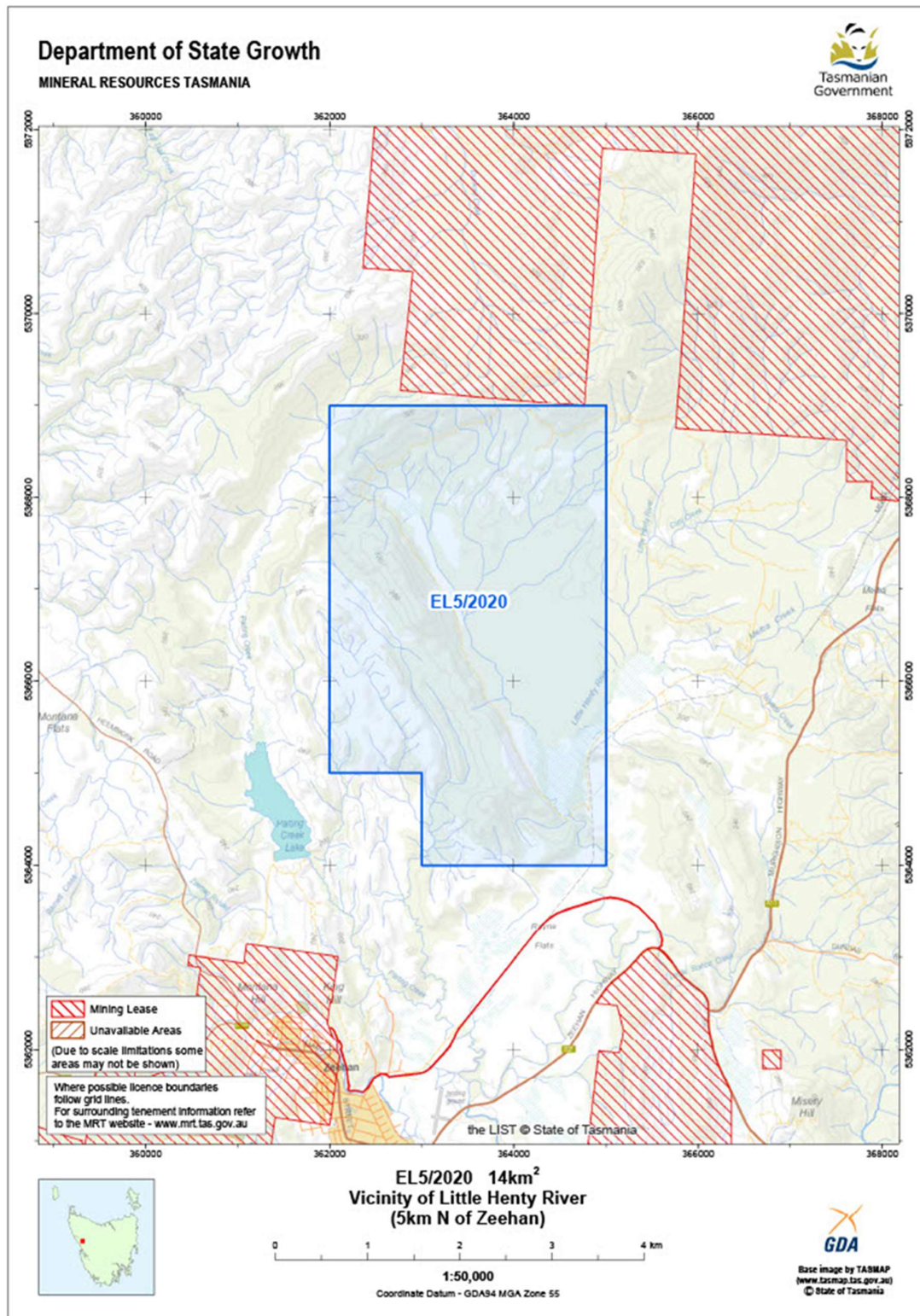


Figure 2. EL5/2020 Location Plan (MRT issue)

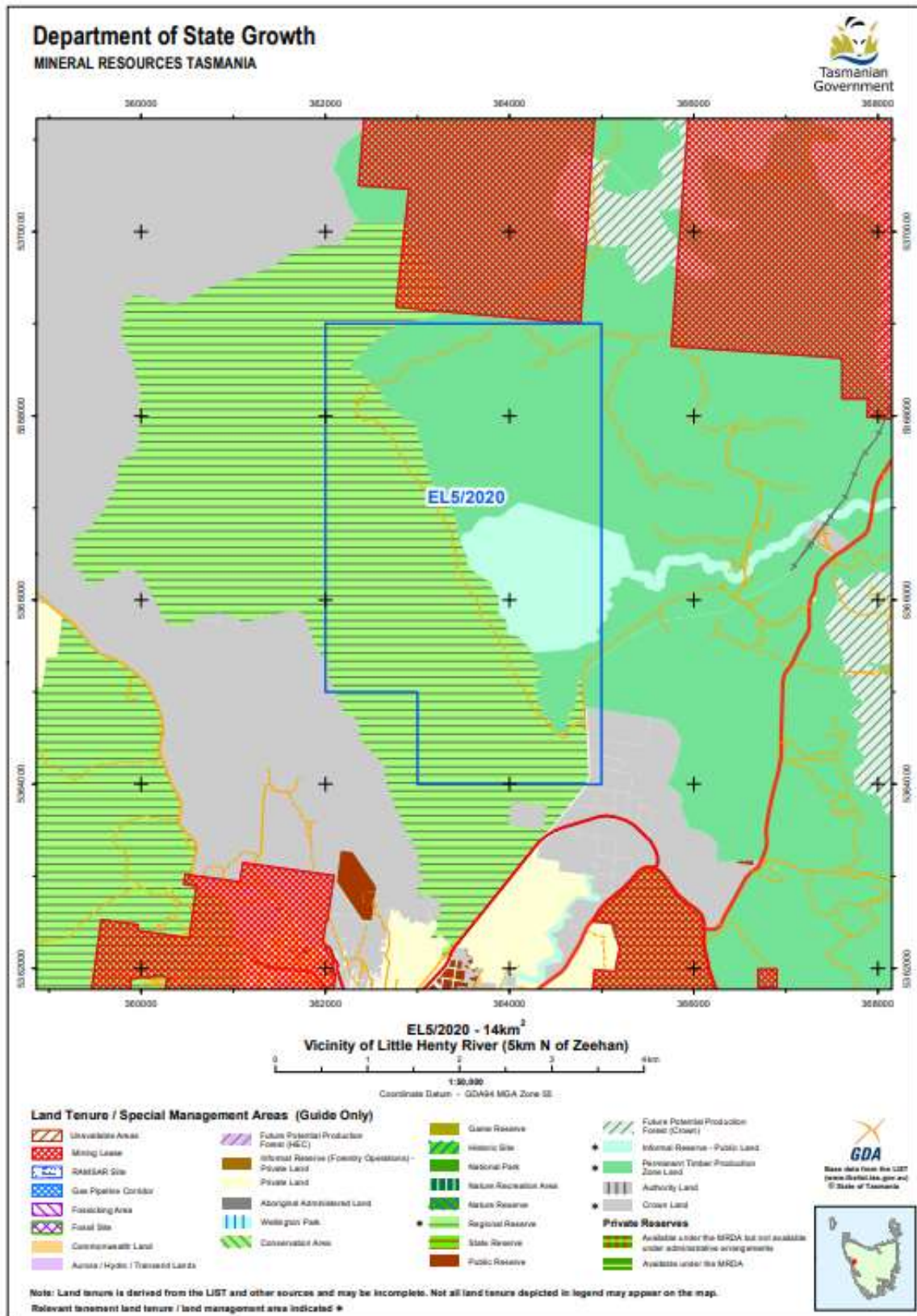


Figure 3. EL5/2020 Land Tenure Map (MRT issue)

3 EXPLORATION EXEMPTIONS

3.1 Applications Pending

The following exemptions have been requested due to prolonged administration and subsequent move of Avebury Nickel Mine into Care and Maintenance and reduced department staffing and resources. As a result, many work programs have been suspended pending further budget approvals.

An application for exemption from the conditions of exploration on EL5/2020 was submitted on 21 February 2024, incorporating the period 26 February 2024 to 11 June 2024 and is currently pending approval.

An application for exemption of commitments outlined in the Grant of Extension of Term for Retention Licence No. RL5/2009 was submitted 21 February 2024. The exemption was submitted to cover the period 1 March 2024 through to 1 December 2024. The application remains pending.

An application for exemption of commitments for the application of Extension of Term for Exploration Licence EL28/1988 was submitted 20/5/2024. The exemption was submitted to cover the period 31 May 2024 through to 9 December 2024. The application for Extension of Term and exemption from conditions remains pending.

An exemption from the conditions of exploration on EL43/1992 was granted on 14 March 2024 incorporating the period 24 January 2024 to 16 April 2024. An application was submitted 18 May 2024 for exemption from the conditions of exploration and is pending for the extended year of term under application, for the period 20 May 2024 to 16 April 2025.

4 REVIEW OF PREVIOUS WORK

4.1 Historic Summary

Complete examinations of the historic work carried out on the tenement area have been outlined in previous reports and is summarised in Table 1 below.

Table 1. Historic Exploration Summary

Year	Company	Tenement	Activities
1890	George Renison Bell		Discovery of the nearby Renison-Bell Tin Deposit
1893			Discovery of the nearby Cuni Mineral fields (Melba Flats)
1912 - 1948	Dundas-Cuni Mining Company Copper-Nickel Prospecting Syndicate (various iterations)		Intermittent mining of the Cuni Mineral Fields (North Cuni, South Cuni, Blowfly, Mosquito, Vaudeau and others)
1926	Department of Mines & Explosives		Investigation of prospectivity of the Melba – Dundas area
1933	Government Department		Summary Report
			Work Proposal
			Economic Evaluation
1957	Bureau of Mineral Resources		EM Survey
1958	Rio Tinto	SPL302	Regional Mapping
1960	Rio Tinto	SPL302	Drilling Review
			Magnetometer Survey
			Aerial Magnetics
			Soil Sampling

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			Self-Potential Survey
1965	Aberfoyle Tin N.L.		Airbourne magnetometer survey
1972	Renison Limited	EL42/1971	Stream Sediment Sampling
			Reconnaissance mapping
1983	Renison Limited	EL42/1971	Ground Magnetics (transient EM, VHF-EM) Bedrock Geochemical Sampling
1983	Renison Limited	EL42/1971	Infill Soil Sampling
1985	Renison Limited	EL42/1971	Diamond Drilling – S1200
1987	Renison Limited	EL42/1971	Relinquishment of Tenement
1988	Tasmania Department of Mines		Gravity Survey
1995	University of Tasmania		Honours Project
1995	Allegiance Mining NL	EL14/1994	Geo electrochemical Survey
1996	Allegiance Mining NL	EL14/1994	Relinquishment of Tenement
2001	Mineral Resources Tasmania		Northwest Tasmania regional airborne electromagnetic survey
2007	Stellar Resources Ltd	EL49/2004	Modelling of DMA aeromagnetic data
2008	Stellar Resources Ltd	EL49/2004	Digitisation and Interpretation of Geophysical and Geochemical Data
2010	MMG / Stellar Resources Ltd JV	EL49/2004	Diamond drilling – RYN001 Flora and Fauna Survey
2011	MMG / Stellar Resources Ltd JV	EL49/2004	Assay of Diamond drilling – RYN001
2014	Stellar Resources Ltd	EL49/2004	Relinquishment of Tenement

5 EXPLORATION COMPLETED DURING REPORTING PERIOD

5.1 Regional Exploration Activities

5.1.1 Proposed Gravity Survey

A quote was received from Xcalibur Multiphysics in August 2023, to conduct an airborne gravity (AGG) survey. The survey is planned to utilize the HeliFalcon® AGG with a flight path east – west at 50m line spacing, conducted over 2 areas incorporating all Avebury tenements as a critical tool to increase lithological understanding and progress target generation. The survey areas are shown in Figure 4 with the flight paths highlighted red.

The exploration rationale for the survey and Xcalibur Multiphysics recommendations to utilize the HeliFalcon® being that there is evidence that Avebury mineralisation may have been sourced from a hydrothermal ‘plumbing system’ leaching minerals from sources at depth, and there is potential that there may be significant magmatic Ni-Cu- (PGE) sulphide mineralisation at depth beneath the current Avebury Ni deposit. Falcon AGG will detect the density variation associated with mafic/ultramafic lithologies and intrusives in the area and the proposed 50m line-spacing will have high enough resolution to map key structure (the plumbing system) within the survey area. Gravity (and gradiometry data) need to be measured as close to the source of the gravity anomaly as possible. Using a helicopter platform allows Xcalibur to drape the terrain accurately and provide high quality gravity gradient data in quick time and in any terrain.

In early April 2023, the proposed regional exploration goals and rationale gained support from investors and the board for this program, and the survey was planned for summer 2023 – 2024. In September 2023, Avebury Nickel Mine was moved into voluntary administration and receivership, following which the prolonged administration and subsequent move of into Care and Maintenance at the beginning of 2024 has resulted in reduced department staffing and resources.

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A large proportion of proposed expenditure during 2024 was to be attributed to regional exploration with the airborne gravity (AGG) survey which has currently been suspended pending budget approval. The survey remains as a very high priority work program with the intention to gain budget approval to conduct the works during the calendar year of 2024.

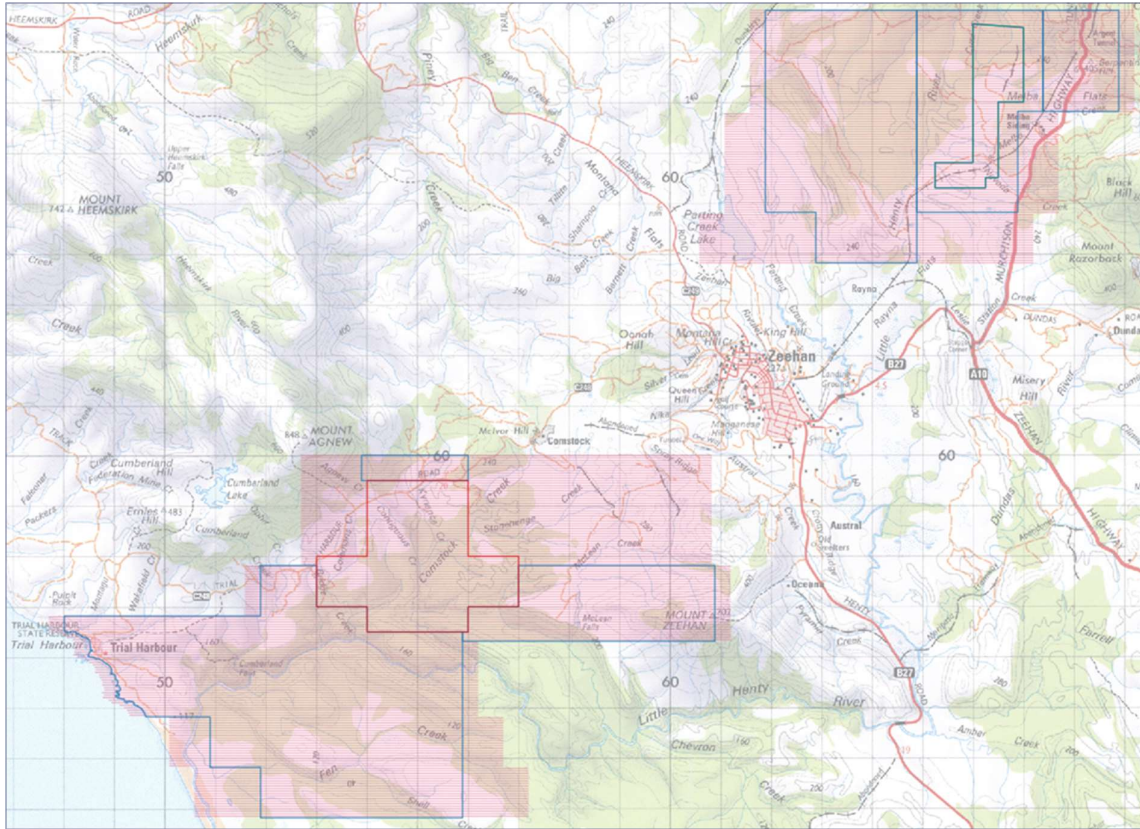


Figure 4. Regional AGG flight lines with Avebury Tenements, overlain topography.

5.2 Prospect Based Exploration Activities

5.2.1 Reconnaissance of New Prospects

Following an Avebury tenement desktop targeting project during 2022 – 2023, reviews of historic data, georectification of mapping, combined with the 2023 aerial photography, identified a new potential prospect (area of interest - AOI), on the eastern boundary of EL5/2020 trending south-easterly into EL43/1992. Comprehensive geophysical interpretation is pending on completion of the proposed airborne gravity (AGG) survey to be used in conjunction with the Mitre Geophysics compilation of magnetic data. Additionally proposed was a passive seismic survey (PSS) for the region as an alternative, however the AGG is the preferred option. The status of Care and Maintenance has resulted in all exploration activities on hold till further notice.

In November 2023, reconnaissance was conducted for access of a Passive Seismic Survey (PSS), proposed to be completed by Institute of Mine Seismology (IMS) planned for the Melba Flats region to assist in verifying the structures extrapolated from the above. Several track

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locations were confirmed prior to vegetation preventing further progress. None of the stream locations identified for potential surface geochemistry locations were able to be reached due to this vegetation density.

Ongoing work in this area is currently suspended pending budget approval. Figure 5 below shows the area of interest, interpreted structures and tracks traversed overlain MRT 25K Geology.

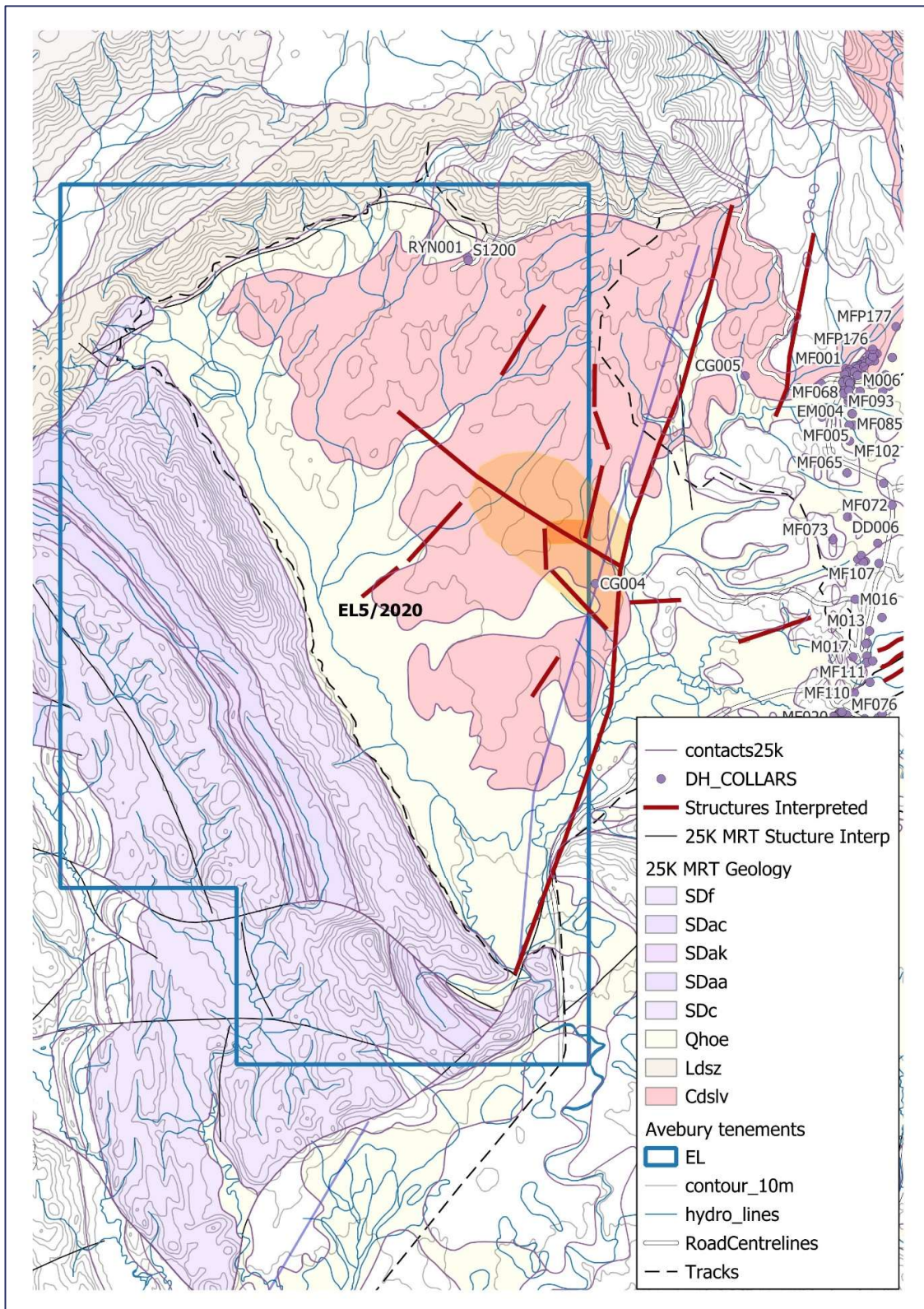


Figure 5. EL5/2020 Interpreted structures, AOI, tracks traversed, overlain MRT 25K Geology.

6 DISCUSSION OF RESULTS

Due to the Avebury Nickel Mine currently in care and maintenance with heavily limited exploration resources, additional reconnaissance is suspended pending budget approval. No results are available for discussion currently.

7 CONCLUSION

7.1 Additional Targeting

Project scope incomplete with no conclusions available at time of reporting.

7.2 Geophysics

The scope for this exploration project was for the aeromagnetic dataset to be interrogated in conjunction with the new gravity gradiometry of the same area, to define exploration targets. Pending budget approval and flying of the AGG survey (discussed section 5.1.1), current results are deemed inconclusive, with the project considered ongoing. Additionally, a passive seismic survey has been proposed as a possible exploration tool over established tracks north of the tenement.

The tenement is considered highly prospective for a large target at depth, and Avebury eagerly anticipates the acquisition and analysis of detailed geophysical data for this purpose.

8 RECOMMENDATIONS FUTURE WORK PROGRAMS

8.1 Proposed Work Program details 2024 - 2025

An application for exemption from the conditions of exploration on EL5/2020 was submitted on 21 February 2024, incorporating the period 26 February 2024 to 11 June 2024 and is currently pending approval. The exemption was requested due to prolonged administration and subsequent move of Avebury Nickel Mine into Care and Maintenance and reduced department staffing and resources. As a result, many work programs have been suspended pending further budget approvals.

Recommendations for the following year exploration includes the following with a proposed expenditure of \$60,000:

- Regional aerial gravity survey of Avebury tenements utilizing Xcalibur Multiphysics HeliFalcon®
- Continued interpretation of recently reprocessed and stitched regional aeromagnetic data. The scope of which requires completion of AGG for a combined dataset.
- Further Reconnaissance mapping, rock chip sampling and soil sampling of the potential new prospect identified on the eastern boundary of EL5/2020 and trending south-east into EL43/1992.

9 ENVIRONMENTAL MANAGEMENT

9.1 Recommendations

Environmental monitoring of weed management is ongoing during site visits with focus on the rehabilitated four-wheel drive track (Upper Little Henty Track).

10 EXPENDITURE

10.1 Exploration Licence Expenditure

Expenditure on EL5/2020 during the reporting period from 12 June 2023 to 11 June 2024 is detailed in Table 2 below.

Table 2. EL5/2020 Expenditure by MRT category for the reporting period

EL5/2020 2023 - 2024 Expenditure		
MRT Category	Description	Total
1.1	Geology	\$15,380
1.2	Geochemistry	
1.3	Geophysics	
1.4	Remote sensing	
2.1	Drilling - Gridding	
2.2	Drilling	
3	Land access	
4	Rehabilitation	
5	FS costs	
6	Other costs	\$1,365
7	Administration/overheads	
		\$16,745

11 REFERENCES

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