



MT BLOCK EL48/2003

ANNUAL REPORT 2021 NORTH WEST TASMANIA

Prepared for: Pieman Resources Pty Ltd

AN NQ MINERALS PLC COMPANY

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1. EXECUTIVE SUMMARY

Pieman Resources Pty Ltd is a fully owned subsidiary of NQ Minerals. Pieman purchased EL48/2003 off Bass in January 2020. Before this the company in 2018 had an option over the tenement and provided the funding to Bass to undertake a drilling program on EL48/2003 which comprised a single diamond hole.

Diamond drill hole HED28 was completed to 309.3m testing the HBS. The drillhole confirmed the synclinal structure but did not intersect any significant alteration or mineralisation. While there is a commitment to undertake further drilling, it is anticipated that this year the company will initially apply further Geophysical approaches to the lease to determine drill targets. The Amoeba zone (general area) where the diamond hole was located is one location that is showing potential and the company will undertake further review of the area.

During 2020, given the implications of COVID 19, the company undertook some significant and successful desktop work, based on rerunning previous Seismic and down the hole EM data. The results from this work has provided the company with increased knowledge in relation to potential locations of VMS pods. Further to this the EM review has located several significant conductors. Pieman plans to follow these up with DTHERM in existing cased diamond holes.

The seismic work has also provided some detail around the basalt cover thickness to the North of Lease where there are potential deeper extensions to the Que River corridor of VMS mineralisation

2. INTRODUCTION

This report is a summary of exploration activities completed on the Mt Block exploration license EL48/2003 between 11th January 2020 and 10th January 2021.

EL48/2003 surrounds the Hellyer Mine Lease (103M/1987) and the Que River Mine Lease (68M/1984). The Hellyer and Que River Mines are examples of world class poly metallic VHMS deposits. The Que River and Hellyer deposits are particularly enriched in precious metals Au and Ag as well as base metal sulphides Cu, Pb, Zn. As such the tenement package is regarded as highly prospective for this style of mineralisation.

3. TENURE

EL48/2003 Mt Block is held by Bass Metals Ltd (Bass) after acquisition from Saracen Metals Pty Ltd in October 2006. During the tenure of the EL it has undergone several reductions in land area as well as a merger with the former adjacent EL24/2004, Bulgobac River. The current tenement comprises a total of 46km² after the last partial relinquishment in 2016.

The Tenement was transferred to Pieman resources from Bass in February 2020.

EL48/2003 is a mature exploration license and as such requires ongoing term of extension applications and associated work commitments to maintain tenure. This tenement has potential to provide future feed to the Hellyer Mill. The company is motivated to explore and develop the lease over the next few years

4. LOCATION AND ACCESS

The tenement is located approximately 15 km's north-northeast of the township of Tullah, on the west coast of Tasmania (Figure 1). Access to the area is via the Murchison Highway and tracks which access via the 220kv power line which traverses the area. Access within the tenement is via a limited number of 4WD tracks and ATV- only tracks. The license area lies on the Sophia (#8014) 1:100,000 map sheet and Charter (#3839) and Block (#3838) 1:25,000 topographic map sheets.

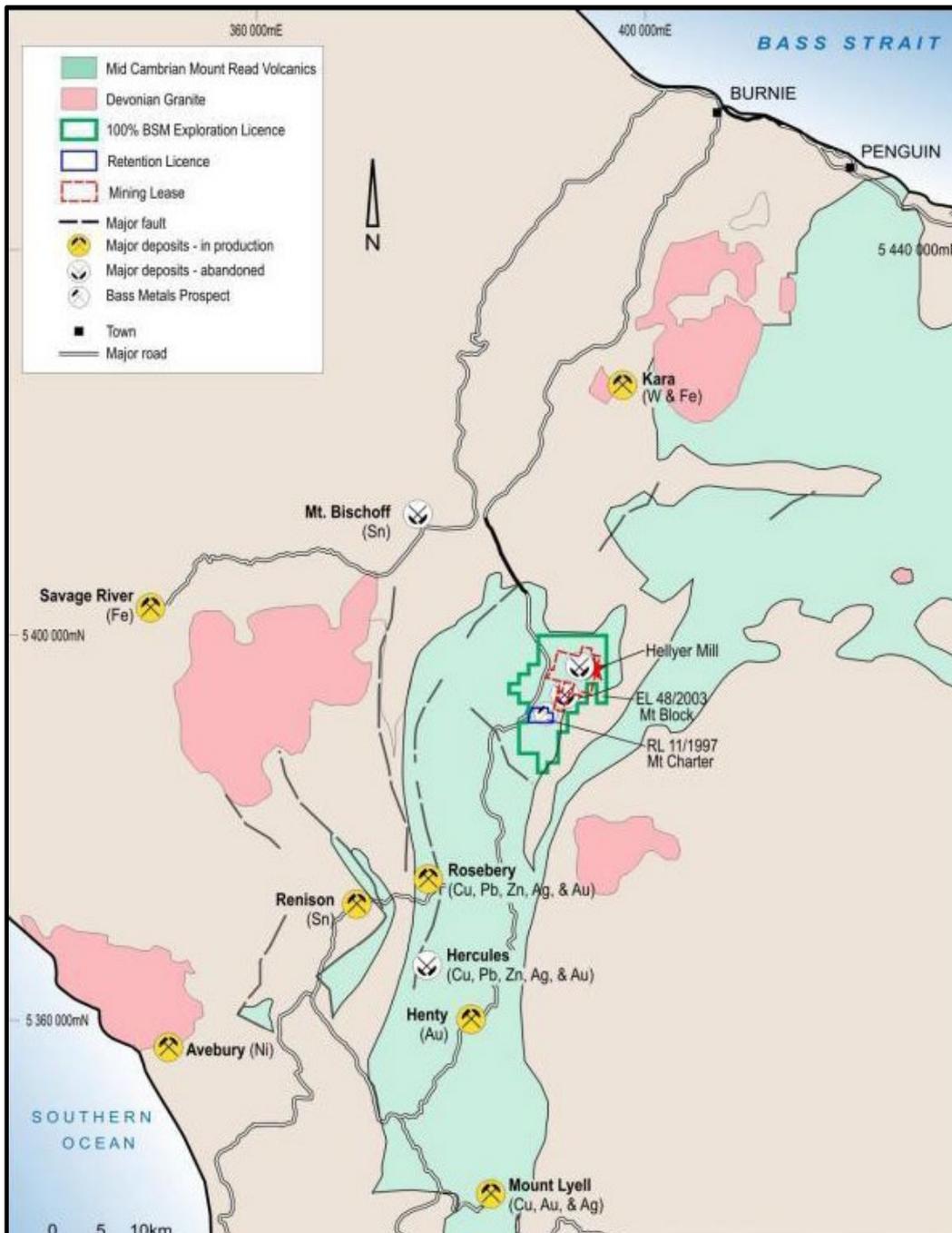


Figure 1 Location of EL48/2003

5. REGIONAL GEOLOGY

The Que River, Hellyer and Fossey poly-metallic base metal sulphide and Mt Charter barite- precious metal deposits are hosted in the Que-Hellyer Volcanic (QHV) sequence within the Mt Charter Group of the Cambrian Mt Read Volcanics.

The QHV is a sequence of calc-alkaline mafic to felsic volcanics filling a northeast trending Cambrian submarine extensional basin. The basin depth varies dramatically from up to 1000m thickness near Que River and Hellyer but thins to 50m northwest of the Hellyer mine.

The QHV has been subdivided into several stratigraphic elements summarized below:

Hellyer Basalt (Upper Basalt) - consisting of massive to pillowed amygdaloidal basalt lava and associated volcanoclastic rocks. An associated andesite is located in the Mt Charter region to the south.

Mixed Sequence - host to the Que River, Hellyer and Mt Charter deposit is comprised of epiclastics, dacitic lavas and breccias.

The Feldspar Phyrlic Andesite consisting of a porphyritic andesite lava in the footwall of the Hellyer and Que River deposits.

The Lower Basalt, a sequence of basaltic pillow lavas and volcanoclastics, which form the immediate footwall at Que River and Hellyer.

The QHV are overlain by the Que River Shale which is in turn overlain by the Southwell Subgroup consisting of felsic volcanoclastics, greywacke and shale. The Southwell subgroup is overlain by the Mt Cripps subgroup (a correlate of the Tyndall beds at the Henty mine) which is a sequence of volcanoclastics, siltstones and conglomerates only outcropping along the eastern boundary of the Hellyer area tenements

The Cambrian deposits have been subjected to the Mid Devonian regional deformation event resulting in folding, faulting, development of a regional foliation and prehnite- pumpellyite to lower greenschist metamorphism. Open, early NW trending folds and associated foliation has been overprinted by a later shallow NE-SW folding event.

Cambrian syn-depositional faults have been reactivated and later brittle faulting is associated with rheology contrasts between earlier alteration facies. Cambrian basin architecture has been a control on volcanism, mineralisation and subsequent deformation.

In the south of the area covered by EL48/2003, the QHV are bound to the east by the northeast trending Henty Fault. The Geology east of the Henty Fault is dominated by Cambrian to Silurian siliciclastic and calcareous sediments of the Wurawina Supergroup.

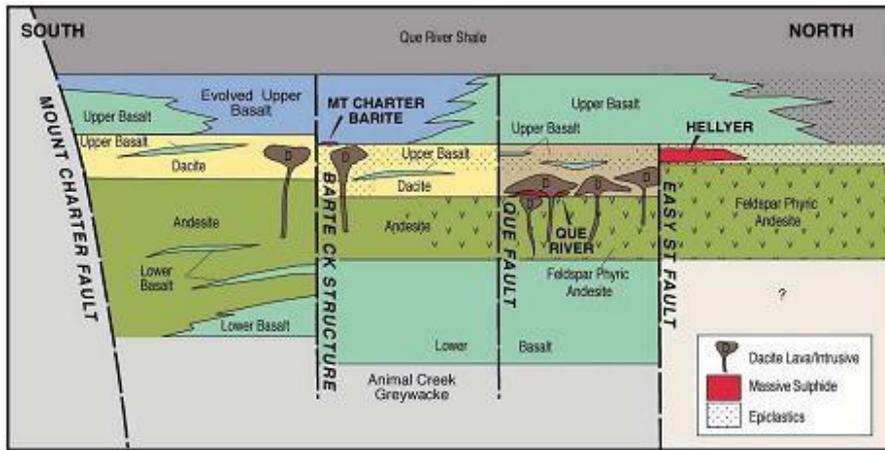


Figure 2 Schematic cross section of Que-Hellyer Stratigraphic sequence.

Much of the geology to the north of the EL is dominated by Tertiary basaltic lavas forming a thick plateau. The Tertiary basalts cover the underlying prospective volcanics making exploration expensive and difficult in the northern EL.

6. EXPLORATION HISTORY

Work carried out in the Mt Block area prior to 2011 is summarised in the 2011 annual report (Denwer, 2011).

2013-2014 Work completed since 2011 included a geochemical review of prospective alteration zones within the QHV. The review was completed by external consultants and Bass Geological staff. Two zones of interest were identified on EL48/2003, the Amoeba Zone and the Barite Creek Fault.

2015 Compilation and digitization of petrographic reports and photographs (Richardson, 2015).

2016 Exploration on EL48/2003 during 2016-17 involved a review of historic data and target generation in the Que River area (Callaghan, 2017).

2018 Drilling one diamond Drillhole HED28 for 309.3m. The drillhole intersected unmineralised and unaltered mixed volcanics below the hangingwall basalt.

2019 Exploration on EL48/2003 during 2019 involved a review of historic data and target generation in the Que River area by the Company and independent parties.

2020 Pieman re ran a number of Historic DTH electromagnetic Data. The company also undertook a re run of the 1995 Seismic Data

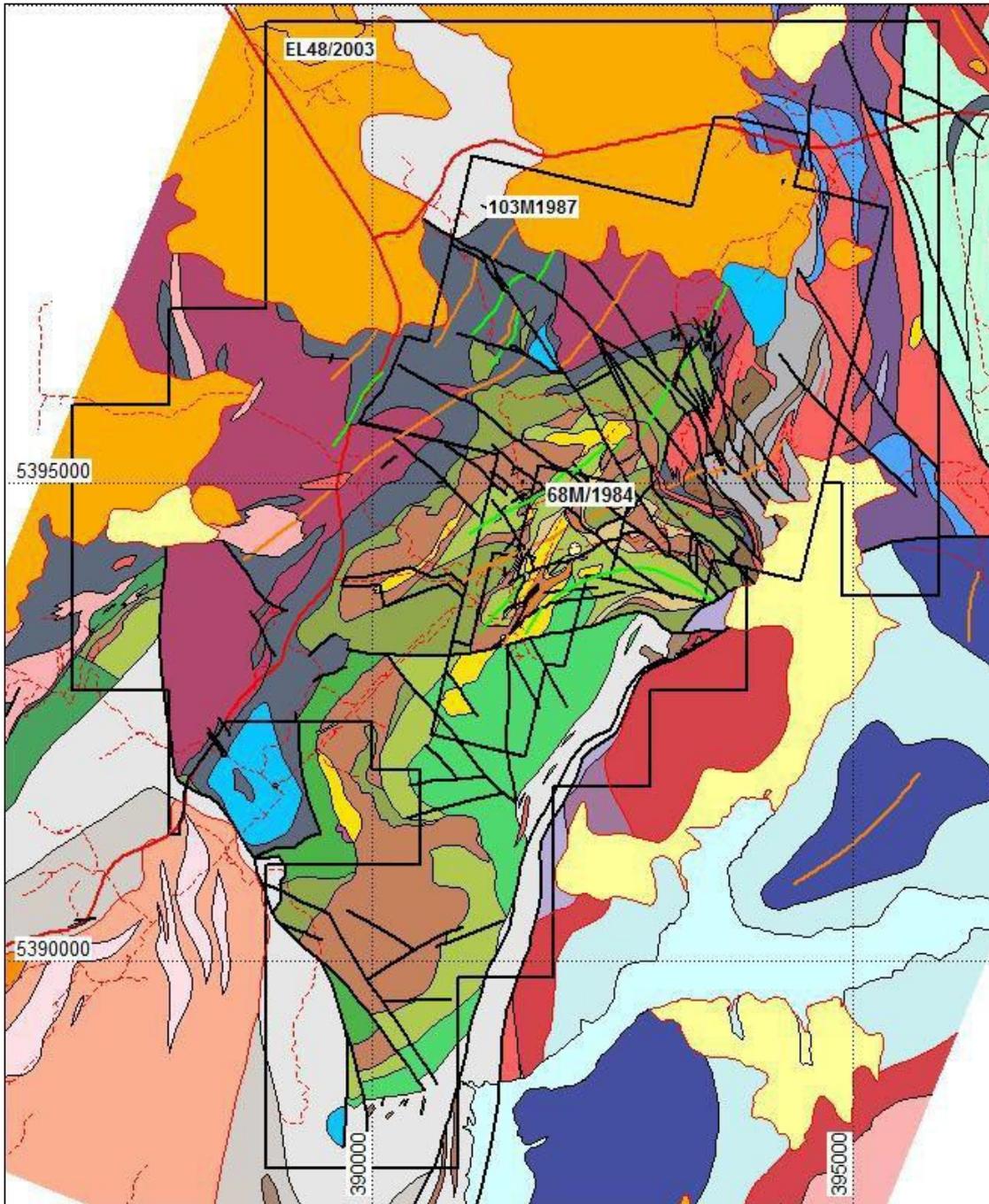


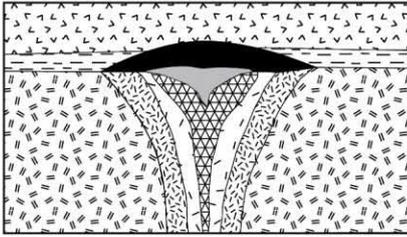
Figure 3 Regional Geology of the Que-Hellyer Volcanics

7. VMS DEPOSITS

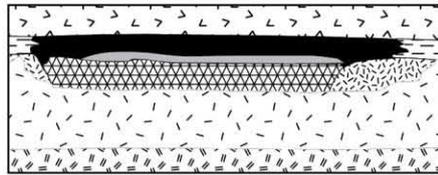
They are genetically related to volcanic activity

- The current black smokers of the deep oceans are VMS deposits in the process of formation
- They can form on surface as per smokers or in the near subsurface
- They tend to occur broadly in groupings: more so within a stratigraphic sequence rather than a specific stratigraphic level *note Aberfoyle in their exploration work were super-focused on one stratigraphic position they referred to as the Hellyer Ore Position (HOP)*
- They tend to form in periods of quiescence when the volcanic activity is waning or developing; during strong volcanic activity the detritus would dilute the volume of sulphidic material
- However, the formation conditions are also dynamic, being associated with active volcanics systems – *this makes the rock types highly varied, often with only short-range continuity – therefore geo interps difficult, especially using traditional sectional and plan projections.*
- Archean deposits tend to be copper and zinc rich, lead silver and gold tend to increase as deposits get younger
- Broadly there are 2 forms, proximal and distal; proximal is obviously on the source area and distal means displaced from the source, downslope.
- A particular group known as “Kuroko” based on type examples in Japan are very barite rich and Hellyer appears a version of these
- A neglected point is that the deposits are about fluid flow and fluid flow from depth requires structures
- The volcanic activity either waning or developing provides the heat source to generate fluid flow so logic suggests they are more likely to form when the volcanic activity is developing; i.e. the magma is rising.

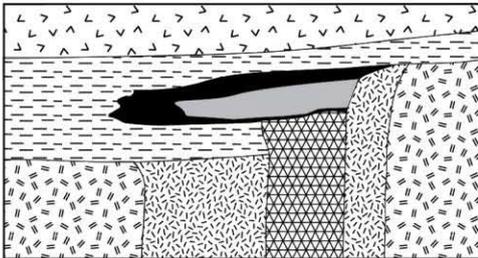
A. Classic mound (e.g., Hellyer)



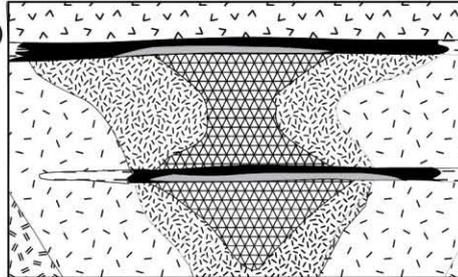
F. Layered (e.g., Scuddles)



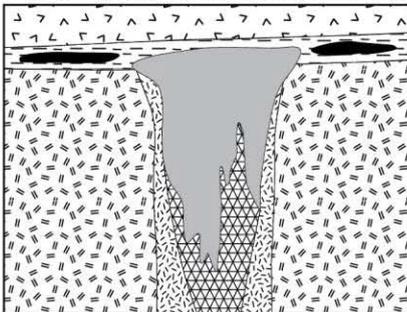
B. Asymmetric mound (e.g., Mt Chalmers)



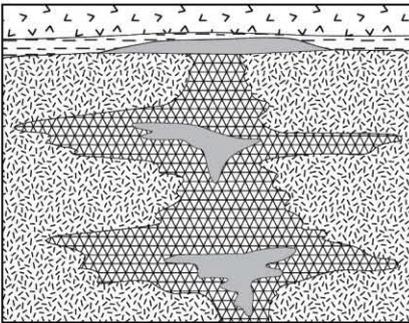
G. Stacked (e.g., Que River)



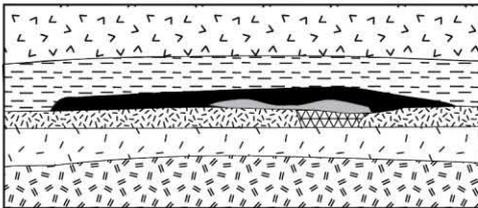
C. Pipe (e.g., Mt Morgan, Reward)



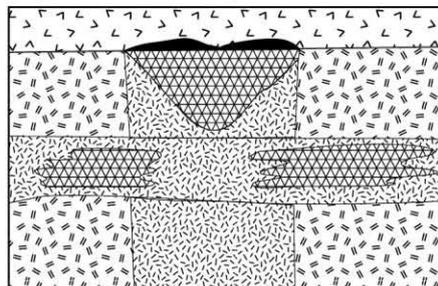
H. Cu stockwork/disseminated (e.g., Mt Lyell)



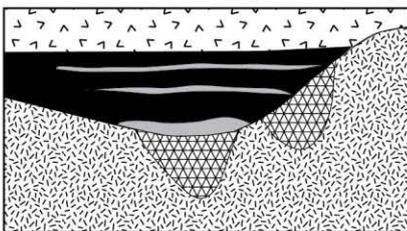
D. Sheet (e.g., Rosebery, Thalanga)



I. Au-Ag-Pb-Zn stockwork/disseminated (e.g., Que River PQ)



E. Cyclic zoned (e.g., Woodlawn)



J. Distal reworked

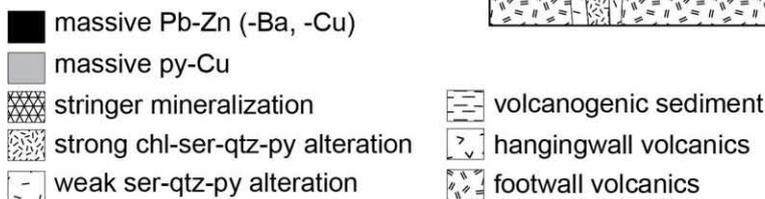
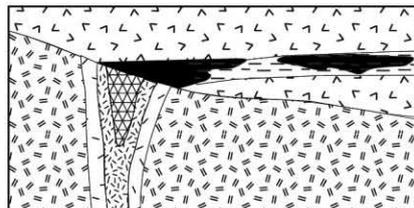


Figure 4 Schematic representing (not to scale) the 10 styles of VMS deposits represented in Australia (Stack 2009)

8. WORK COMPLETED 2020

a. Seismic

In September 2020, Internode Seismic reprocessed the eastern half of 2D seismic line 95AGS-T2 because it intersected Pieman Resources Ltd’s EL48/2003 tenement. For comparison, the original 1995 processed stack section was depth converted. The location map is shown in Figure 1.

The reprocessing objectives were to:

1. Generate a shallow sub-surface image that could be linked to the mapped Hellyer geology
2. Generate a deep structural image of the area beneath the Tertiary basalts
3. Obtain stratigraphic information for understanding the geological evolution of the area
4. Delineate any potential areas for more detailed mineral exploration targeting

Acquiring new seismic lines would have been costly, whereas reprocessing the vintage seismic offered better value to Pieman Resources’s mineral exploration program because new techniques can improve old data so that structural and stratigraphic details become much more evident.

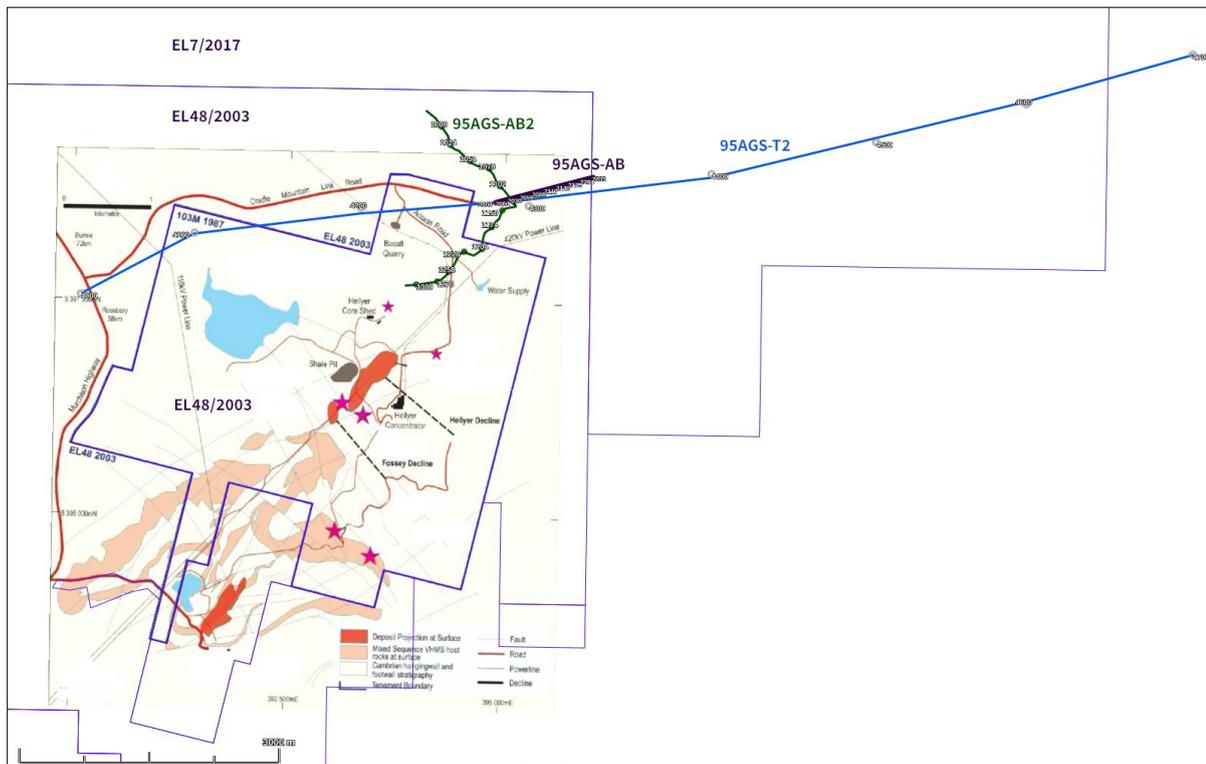


Figure 5 Seismic line 95AGS-T2 (blue) and high-resolution lines AB2 and AB (green/purple).

i. Reprocessing the 1995 Seismic Data

Commencing with field data, an advanced 2D land imaging sequence comprising 23 stages (listed below) was applied in 2020. Seismic reprocessing involved pre-stack data enhancement and post-stack migration with optimised parameterisation designed to ensure that reflections observed on shot records were preserved in the final section. Pre-stack dip move-out (DMO) followed by post-stack migration is well known to be more useful in hard-rock reprocessing than pre-stack migration. Pre-stack algorithms were tested however pre-stack DMO and post-stack migration were applied

during production.

The 2020 full reprocessing flow is summarised here:

1. Reformat field data
2. Geometry crooked line profile/binning
3. Spherical divergence compensation
4. Refraction statics
5. Shot domain noise attenuation, dip filter
6. Surface consistent amplitude compensation
7. Velocity analysis (1st pass)
8. Surface consistent static correction (1st pass)
9. Velocity analysis (2nd pass)
10. Surface consistent static correction (2nd pass)
11. Offset domain noise attenuation
12. Surface consistent deconvolution
13. Spectral balancing
14. Dip Move Out (DMO)
15. Offset noise attenuation
16. NMO/Mute/Stack
17. Coherency filter
18. Post-stack Finite-Difference migration
19. TVF 0-300ms 16-70Hz and 600-5000ms 7-50Hz
20. Velocity model building
 - DMO and PSTM velocity analysis
 - First arrivals used to generate refraction inversion velocity model (T2 only)
 - Interval velocity model build using refraction velocities for the shallow and PSTM velocities deeper. Interval velocities used for depth (VintZ).
21. Time to depth conversion using VintZ
22. Datum from floating to fixed 1000m AHD

SEG-Y format output

b. DTHEM Repossessing

Mineralisation on the Hellyer Mine Lease comprises massive base metal sulphide lenses within the core of a broadly folded volcanic-sedimentary sequence which plunges to the north-northeast. As the mineralisation generally does not outcrop, geophysics has played a vital part in mineral discoveries in the Hellyer region and down-hole electromagnetics (DHEM) is a core technique. NQ has now completed a first pass review of historical DHEM data for 8 surveyed drill holes in the priority-1 area. Remodelling work of the DHEM undertaken by Southern Geoscience, with input from former Hellyer geologists, has highlighted the significant enhancement in modelling software, and has identified four high priority targets/zones (Target 1 to 3B), which warrant follow-up exploration work, as presented in Figure 6, and represent significant potential for further base metals discoveries.

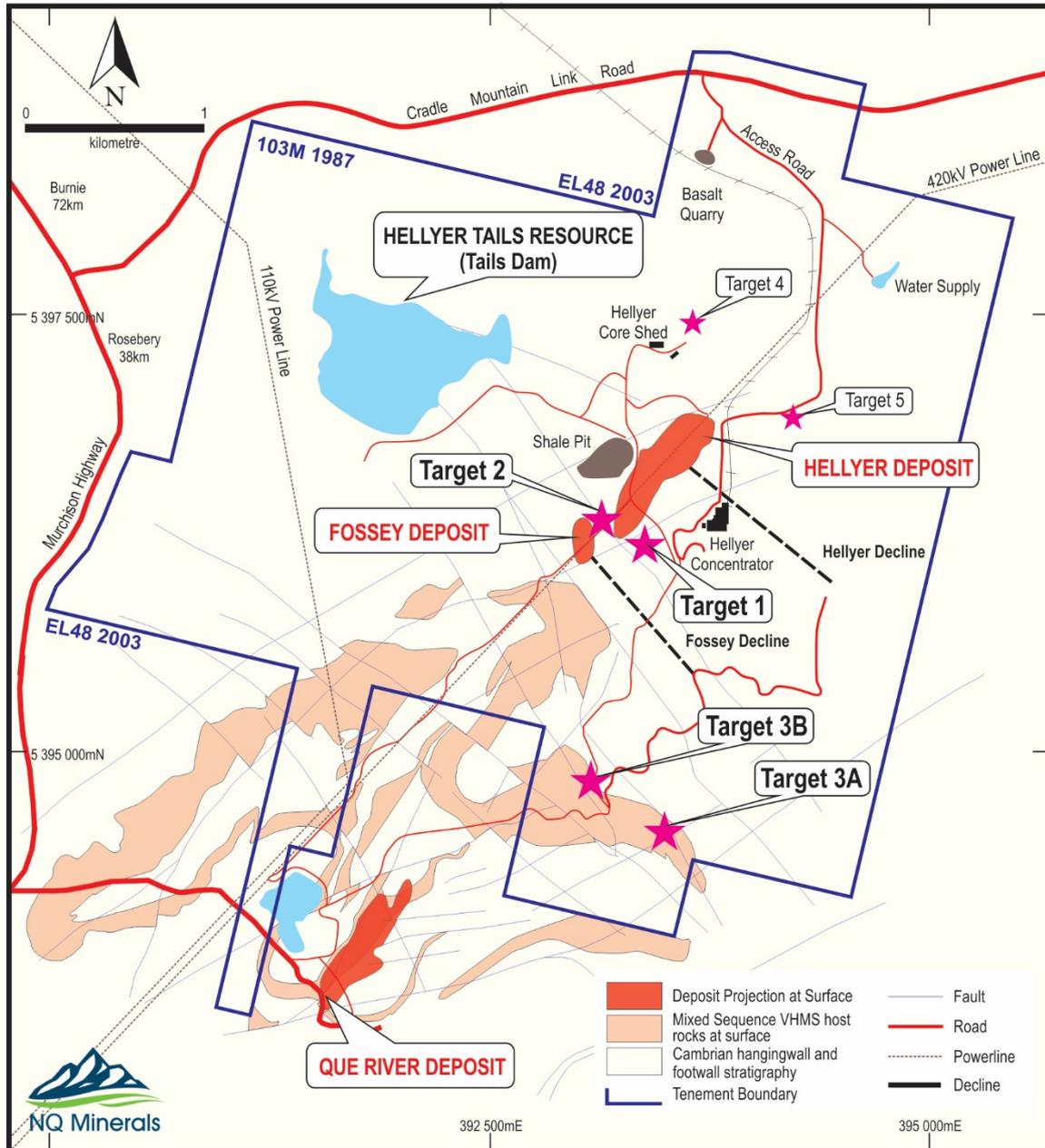


Figure 6 Modelled DHEM Target Locations and Schematic Geology – Hellyer Mine Lease

c. Geophysical Modelling Outcomes

The four high priority target zones to be followed up were identified in areas of known mineralisation and or significant alteration near the prospective ‘ore-forming’ stratigraphic horizon adjacent to the Hellyer underground mine envelope.

The modelled targets comprise ‘plates’ representing modelled conductive bodies, potentially massive base metal sulphide lenses. Due to constraints imposed by the data from historical surveys, the modelled plates are not well ‘constrained’ in terms of 3-D spatial co-ordinates, which is essential for efficient follow up drill testing. A number of potential model scenarios are presented, and spatial/geometry variance is currently high without further modern, high

powered DHEM surveying efforts and re-modelling.

The following notes provide a summary overview of the high priority targets modelled:

- **Target 1** – is associated with an extensive zone of alteration which hosts the McKay Prospect discovered in July 2011 – 7 metres at 22.3% Zn, 9.9% Pb, 0.7% Cu, 181 g/t Ag and 3.4 g/t Au. This intercept was in HLD 1030, which is the drill hole utilised for the DHEM which generated the modelled target-plates illustrated in Figure 2, as well as an ‘in-hole’ conductor representing the mineralisation intersected. Follow-up drilling at the time around this intercept failed to significantly extend this very high-grade massive base metal sulphide lens but did extend the zone of prospective alteration. The modelled plates, within the extensive alteration zone, highlight the potential for a significant mineralised body associated with this McKay zone mineralisation (refer figure 2).
- **Target 2** is a high priority target located immediately southwest of the Hellyer deposit. The modelled plates based on DHEM survey of HLD975, occur within prospective stratigraphy with anomalous geochemistry and strong alteration – in close proximity to both the Fossey and Hellyer mine development (Refer Figure 3).
- **Targets 3A and 3B** both occur within the historical Switchback Prospect where a large-scale alteration system and several mineralised intercepts were recorded. This area has also yielded highly encouraging trace element and isotope data indicating the presence of volcanogenic massive sulphide (VMS) mineralisation. Due to structural complexities, the original source for high-grade VMS clasts intersected previously such as in HED012 (4.85 metres at 1.6% Zn, 1.2% Pb, 18 g/t Ag and 0.9 g/t Au) has never been found; if preserved this represents an exciting base metal sulphide target.
- **Targets 4** is a lower priority target zone occurring in the interpreted hanging wall to the main Hellyer ‘ore-position’ at depth to the north of the Hellyer deposit.
- **Target 5** is also a lower priority target to the north of Hellyer – requiring additional interpretive work prior to any further assessment of this deep target zone.

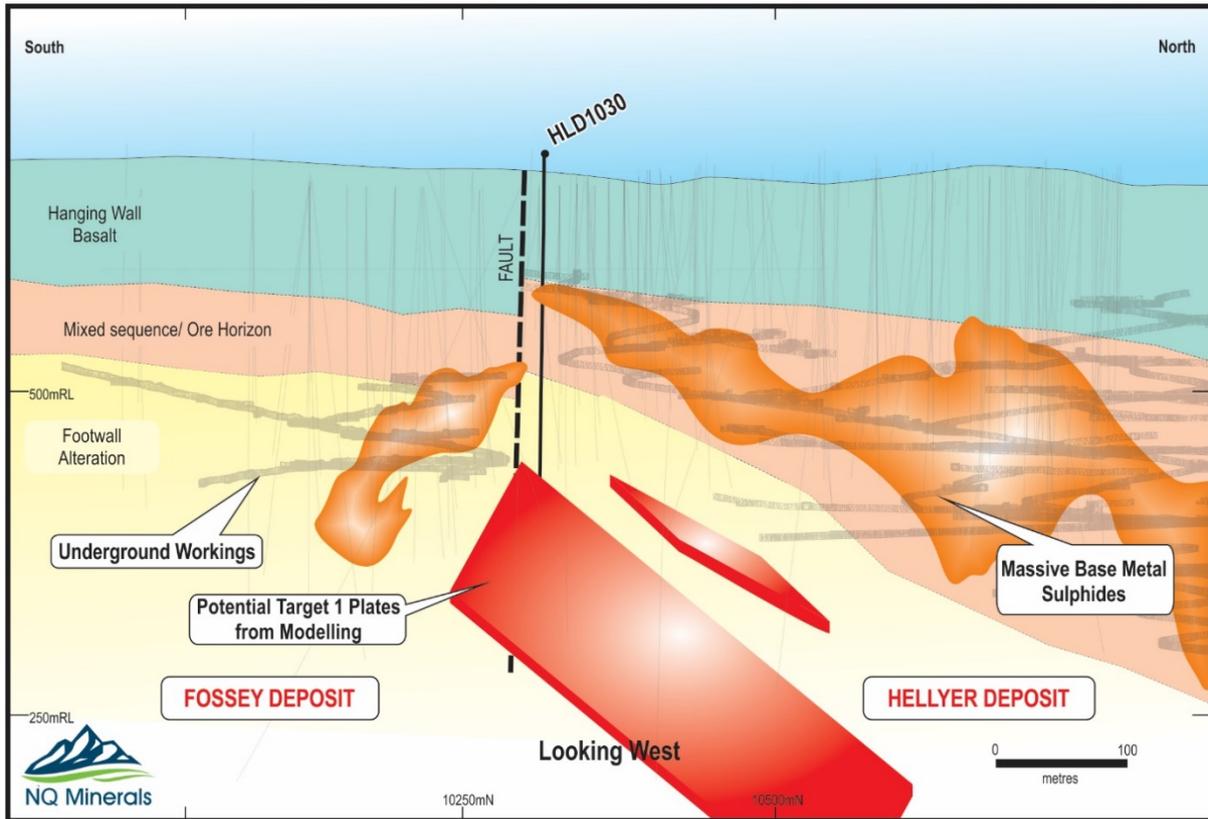


Figure 7 Schematic Long section – Looking West with Modelled Target 1 Plates Illustrated

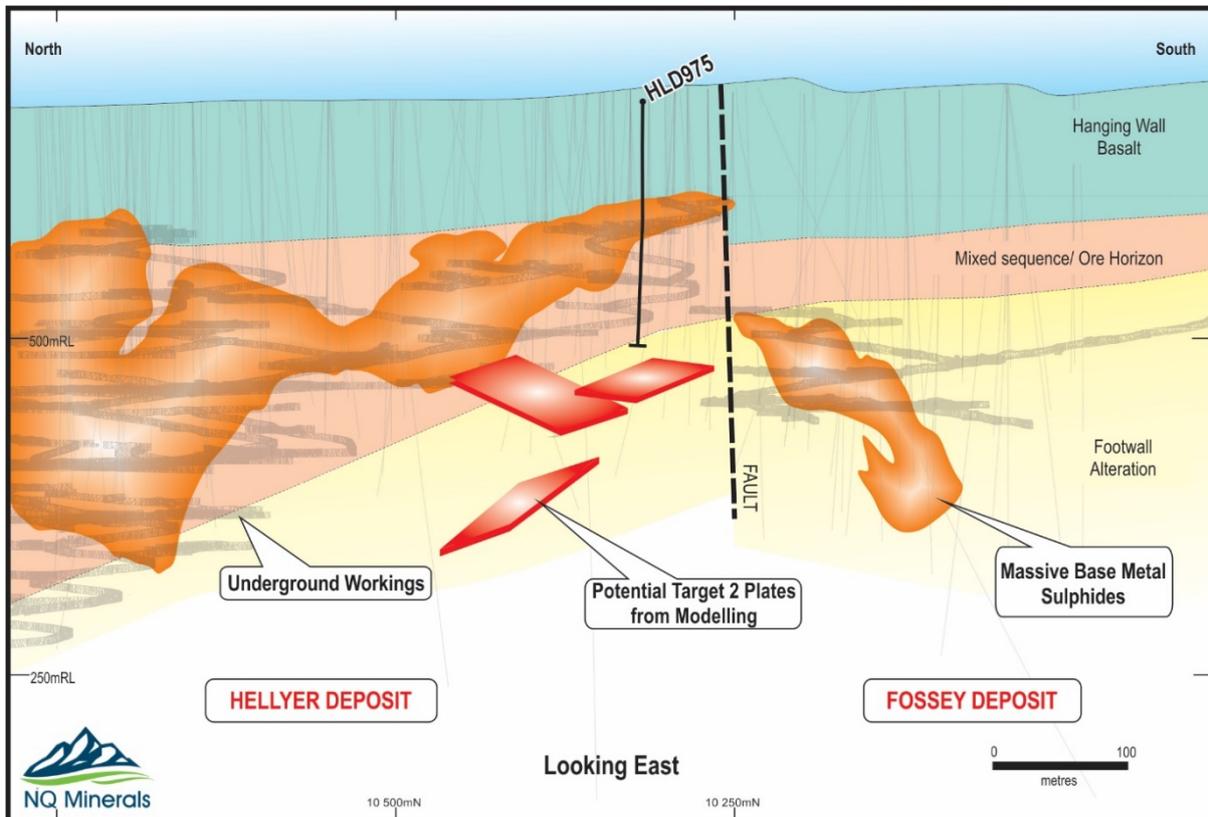


Figure 8 Schematic Long section – Looking East with Modelled Target 2 Plates Illustrated

9. 2021 PROPOSED EXPLORATION

a. DTHEM

- Assessing the condition of each of the DHEM surveyed drill holes and possibly neighbouring holes to be able to re-enter and case with PVC to the required depth.
- As required, clear the drill hole utilising a small drill rig and case with PVC pipe.
- Resurvey and clear lines at surface to enable wire loop arrays (several kilometres in length) to be laid out on the ground as part of the new DHEM survey – for each target zone.
- Mobilise geophysical contractor to Hellyer to undertake the DHEM surveys.

There have been significant enhancements to DHEM equipment since the last DHEM surveys were run at Hellyer approximately 10 years ago. There has been major technical advances to better resolve spatially any potential targets and execute better targeted follow-up drilling if warranted. This includes:

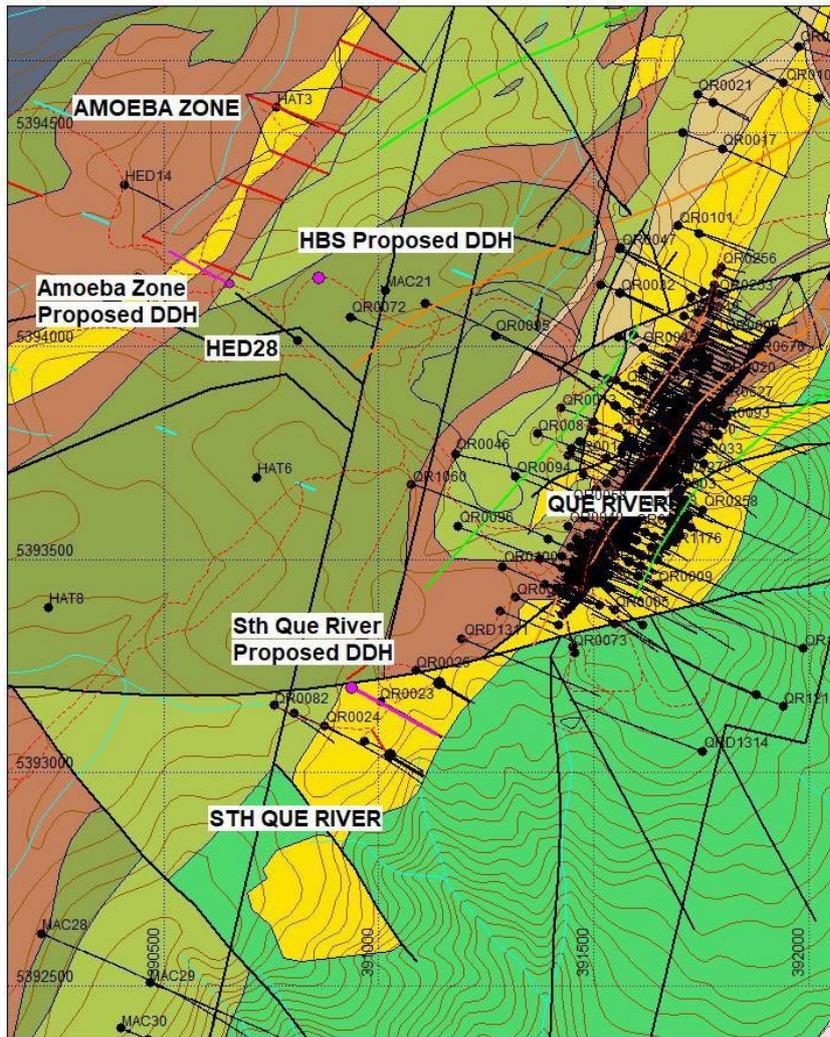
- Utilising much higher electrical power/current inputs to penetrate far deeper into the ground to detect any conductive bodies at greater distances from exploration drill holes;
- Optimised Electro-Magnetic (“EM”) loop arrays to get better 3-D resolution of any conductive units identified – through varied coupling scenarios;
- Access to significantly enhanced modelling software to also resolve the position and dimensions of any modelled plates; and
- Working in the context of an updated geological target model which extends deeper below the traditional ‘ore-horizon’ such as hosts the new Fossey and McKay discoveries.

b. Review 2018 Drilling

The Amoeba Zone has a strong coincident IP and geochemical anomaly associated with strong silica-sericite-pyrite alteration (Figure 4, 5 and 6). Historic drillhole HAT3 intersected the strongest zone of the anomaly with no significant mineralisation identified. Additional drilling could be conducted along strike testing the alteration to the south of HAT3. T

c. Other Geophysical undertakings

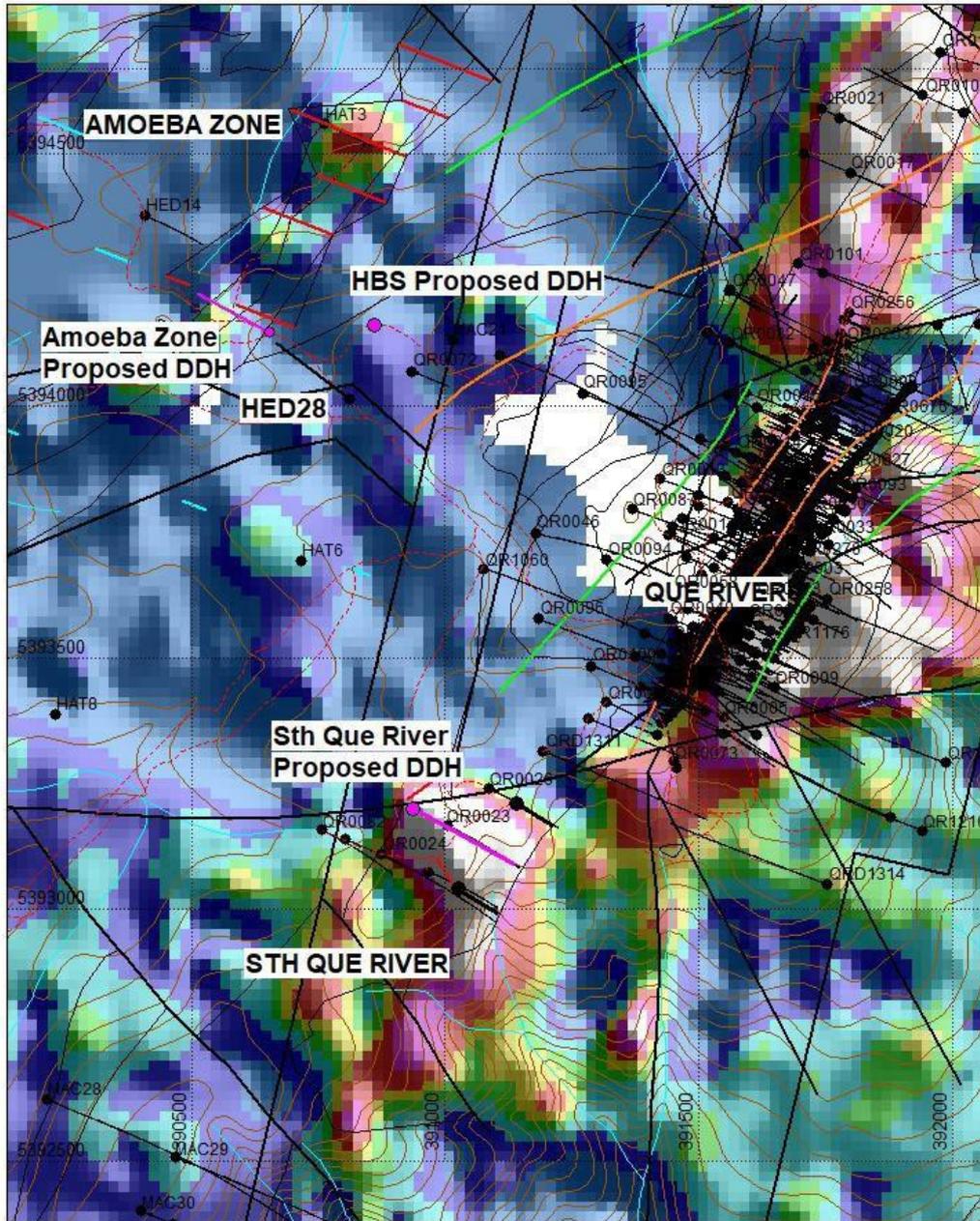
- relocate the TMI mag anomalies above their causative bodies via a matching set of 15 RTP aeromag (45m resolution)
- precision map faults and folds in the overlying basalt, beneath the forest canopy using (1m) LiDAR (coverage map attached)
- apply polarimetric radar imaging (12m) to penetrate the canopy and map geological texture and infer lithology
- map (10m) the iron mineralisation across the region (vegetation dependent) using hyperspectral indices



LEGEND

- | | |
|--|--|
|  Que River Shale |  Mixed Sequence |
|  Hangingwall Basalt |  Mineralised Zone |
|  Hangingwall Dacite |  Footwall Basalt |
|  Andesite |  IP Chargeability anomaly |

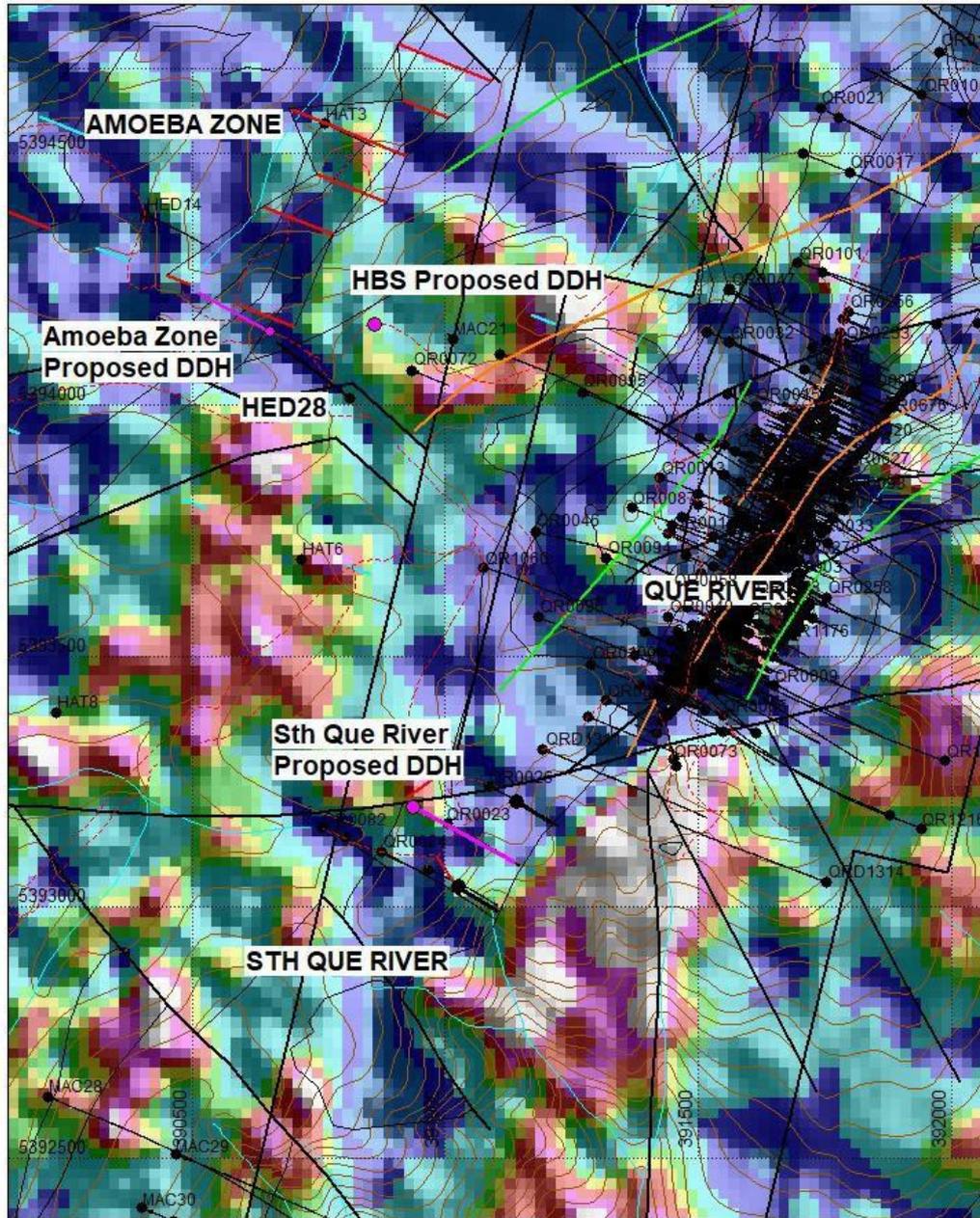
Figure 9 Que River geology map, Amoeba Zone Location



LEGEND

- | | |
|--|---|
|  Que River Shale |  Mixed Sequence |
|  Hangingwall Basalt |  Mineralised Zone |
|  Hangingwall Dacite |  Footwall Basalt |
|  Andesite |  IP Chargability anomaly |

Figure 10 As Soils image



LEGEND

- | | | | |
|---|--------------------|---|-------------------------|
|  | Que River Shale |  | Mixed Sequence |
|  | Hangingwall Basalt |  | Mineralised Zone |
|  | Hangingwall Dacite |  | Footwall Basalt |
|  | Andesite |  | IP Chargability anomaly |

Figure 11 Pb Soils Image

10. PROPOSED EXPENDITURE

Aud \$200,000 +

11. ENVIRONMENT

There was no physical undertaking on the lease in 2020 and therefore no environmental remediation required.

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Relevant AGSO reports relating to TASGO operations

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Surveying, 94/1086 Land Seismic Tasmania
94/1087 Land Seismic Tasmania –
Drilling 95/72 TASGO Seismic Survey
Operation Report

