

# **SHREE MINERALS LIMITED**

## **ACN 130 618 683**

**FINAL REPORT ( FINAL REPORTING PERIOD 18.11.2015 to 17.11.2016)**  
**Mt SORELL - EL42/2008**



**NOVEMBER 2016**

**Authors : S. Loyalka  
And  
Robert Reid  
Shree Minerals Limited  
ACN 130 618 683  
Unit 2, Pine Business Centre, 88 Forrest Street  
Cottesloe WA 6011**

**SUMMARY**

The Mt Sorell tenement (EL42/2008) is located 20 km south of Queenstown in the west coast of Tasmania.

The tenement lands and environs are considered prospective for structurally controlled gold mineralisation, similar to that occurring at the Henty Gold Mine and for Cambrian VHMS style mineralisation of Hellyer-Rosebery type.

Overall, the geology and geochemical vectors identified on the Clark Valley are highly encouraging, highlighting potential for volcanic-hosted massive sulphide (VHMS) style mineralisation in the tenement.

## **1. RESUME OF THE EXPLORATION PHILOSOPHY**

The Mt Sorell tenement (EL42/2008) is located 20km south of Queenstown and covers the Middle to Upper Clark River catchment from the eastern slopes of Mount Sorell to the western slopes of the Darwin Plateau.

The tenement covers a significant portion of the highly prospective Cambrian rocks assigned to the Central Volcanic Complex and the 'Western Sequence' of the Mount Read Volcanics (MRV). The MRV rocks along with the overlying Tyndall Group host a variety of significant mineral occurrences in the region:

1. Zinc - volcanogenic-hosted massive sulphide deposits, e.g. Hellyer, Que River, Rosebery, Hercules and Tasman Crown; the Clarke valley part is considered potential for VHMS Pb/Zn mineralisation
2. Copper - Mt. Lyell style mineralization; and
3. Gold - Henry style mineralization hosted by the Tyndall Group units at Mt Sorell.

AIM : Exploration for VHMS style base metals and structurally controlled gold resources.

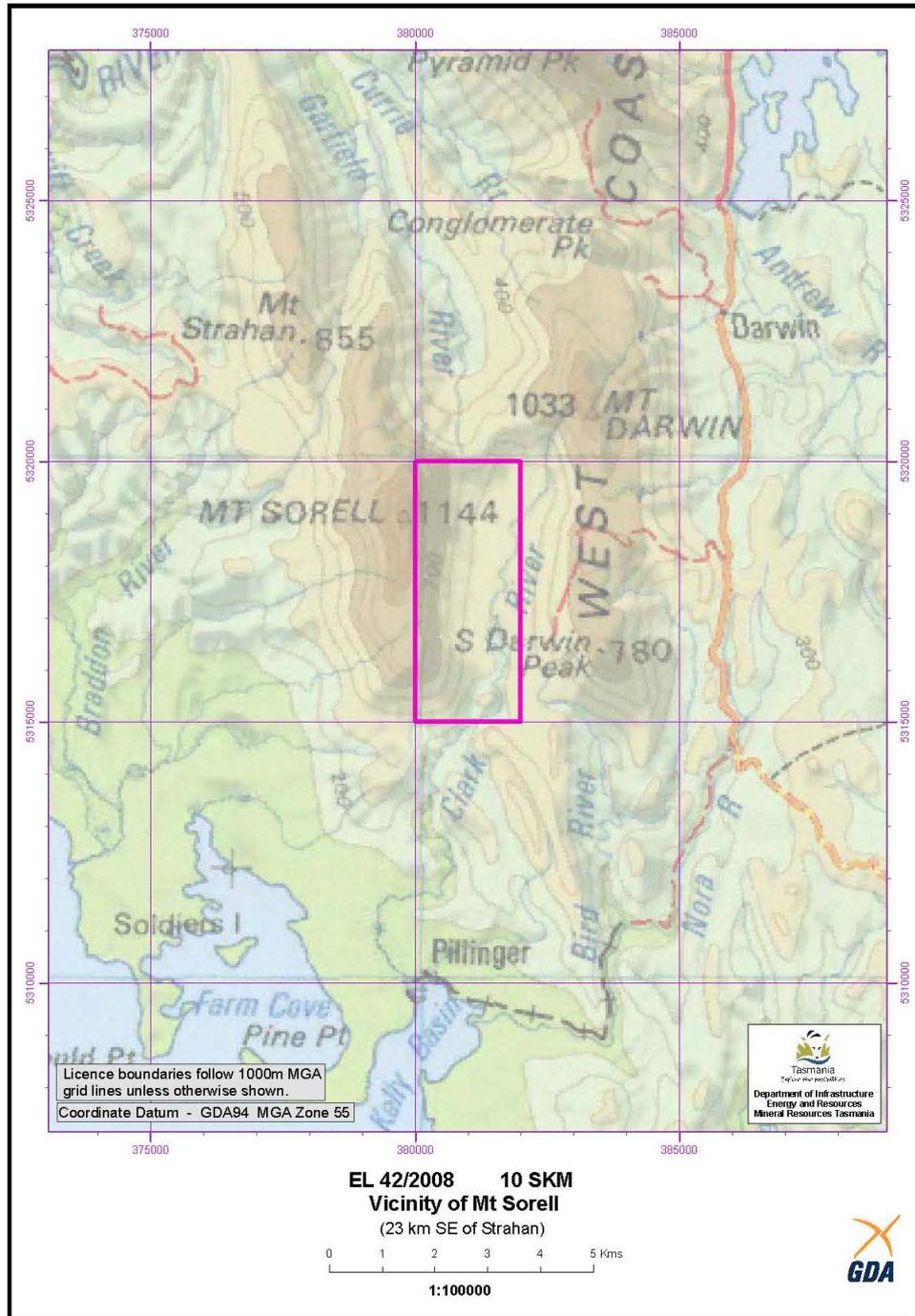
## **2. MAPS ( LOCATION , ACCESS)**

The tenement covers an area of 10 km<sup>2</sup> and is located along the Clark River between the eastern slopes of Mt Sorell and the western slopes of Darwin Plateau about 20 km South of Queenstown and 23 km SE of Strahan, NW Tasmania.

From Hobart the tenement can be accessed by road to Queenstown via the Lyell Highway (260 km) or via the Murchison Highway, extending south from Burnie (176 km). The topography of the tenement is rugged and is covered with thick forest, making access tracks clearance difficult.

From Queenstown access to the tenement is via the new HEC road from Lynchford over Jukes Saddle to Crotty, or from the Crotty Road, 10 km east of Queenstown on the Lyell Highway. The Kelly Basin Road (unsealed) continues south from Crotty. 6 km south of Crotty a 4WD track heads west with one branch going to East Darwin and the other up to Intercolonial Spur. This route was used to access the Intercolonial Spur to Upper Lake Jukes section of the tenement area in 1987. The nearest 4WD track passes 3km to the east (Figure 1).

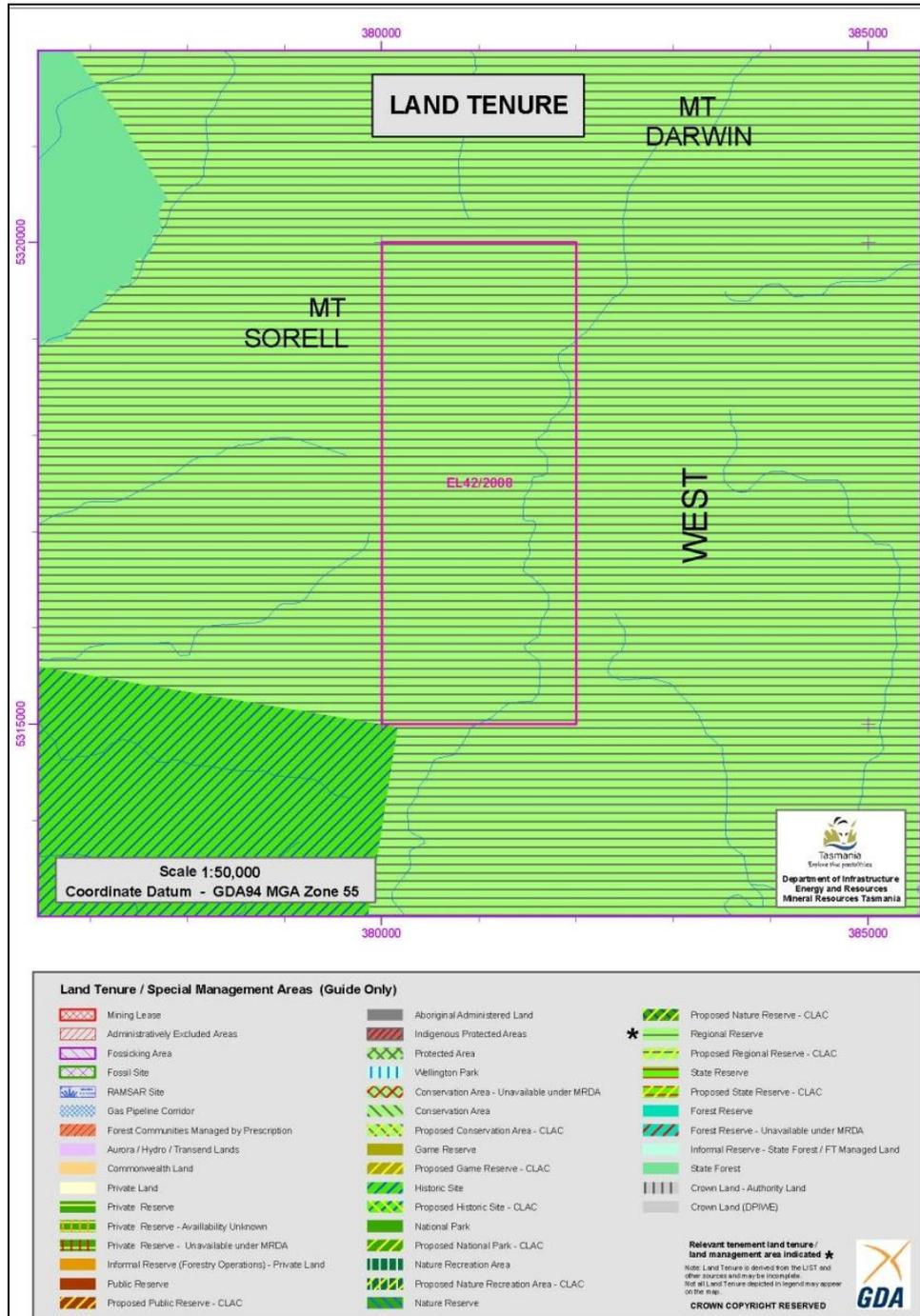
Due to the relative remoteness of the area and its distance from infrastructure initial access by helicopter will be the easiest route to adapt.



Source: MRT

**Figure 1: Tenement (EL42/2008) location and access**

The tenement, EL42/2008 (Figures 1) covers an area of 10 sq kms ( 5315000 – 5320000 mN to 380000 – 382500 mE) and was granted on 18 November 2008 for 5 years. The tenure was extended by one year till 17 November 2014. The tenement is 100% owned by the Shree Minerals Ltd. The tenement Land Tenure is shown in Figure 2.



Source: MRT  
**Figure 2: Tenement (EL42/2008) Land Tenure**

The coordinate datum for the licence is based on AGD 1994, AMG Zone 55.

The tenement boundary points are defined as follows:

Commencing at the north west corner at grid coordinates 380 000 mE/5 320 000 mN thence grid east to 382,500 mE grid south to 5,315,000 m N grid west to 380,000 m E aforesaid thence grid north to the point of commencement.

### 3. SUMMARY OF EXPLORATION

While we opt for previously submitted annual reports to be released from confidential files, we are providing a summary as following:

The area is within the southern extremity of the Cambrian-aged Mount Read Volcanics ((MRV), a world class base metal province containing the Hellyer, Rosebery and Mt Lyell deposits. The MRV lie within the Dundas Stratotectonic Element whereby the initial, post-collisional, subduction-related sedimentation occurred in the Middle to early Late Cambrian and was dominated by substantial amounts of felsic to intermediate volcanics and associated volcanoclastic sedimentation. This was followed in the Late Cambrian by a phase of rift-related coarse siliciclastic sedimentation, which led into a long period of stable marine carbonate/clastic sedimentation that was terminated by the Middle Devonian Tabberabberan Orogeny. There is a strong Devonian structural overprint for this element compared to the Rocky Cape Element due in part to Devonian-aged granitic intrusions.

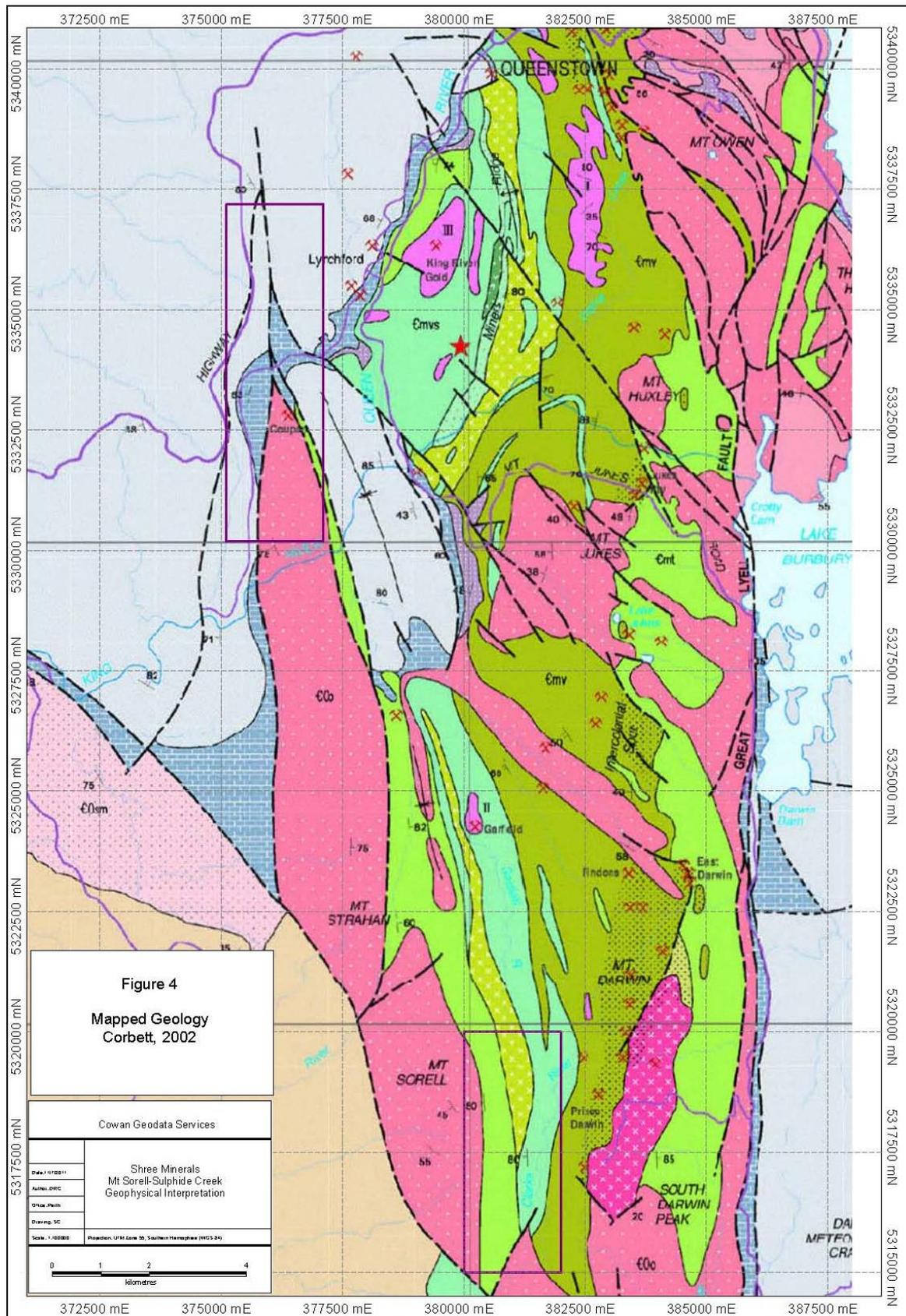
#### 3.1. Regional Geology

The oldest rocks in the area are Central Volcanic Complex (CVC), feldspar phyric rhyolitic-dacitic lavas, which are interbedded with narrow bands of black siltstone and are locally intruded by the Cambrian Darwin Granite. Hematite-magnetite veining is present and the sequence has been sheared and metamorphosed to lower greenschist facies. Disseminated copper mineralisation is associated with this sequence on the crest of the West Coast Range, adjacent to the Darwin Granite.

To the west, the CVC interfingers with and largely overlain by the Western Sequence. The Western Sequence is composed of a succession of quartz feldspar phyric rhyolitic lavas, mica-bearing sub-volcanic sills, epiclastics, and mass flow crystal-rich volcanoclastics.

Tyndall Group volcanoclastic conglomerates conformably overly the Western Sequence on the lower slopes of Mount Sorell. Minor volcanoclastic sandstone and siltstone are present in this sequence to the north. The conglomerates form a distinctive magnetic unit with magnetic intensity apparently decreasing to the south.

Regional geology of the tenement area is shown in Figure 3.



Source: MRT

Figure 3: Regional geology map

### 3.2. Local Geology

The geology of the Mt. Sorell licence is made up of north-south striking, west facing, conformable Cambrian volcanics and volcanoclastics overlain by a Cambro-Ordovician sequence of coarse siliciclastics (Figures 3 and 4). The main Cambrian volcanic components include the felsic volcanics of the Central Volcanic Complex ("CVC"), quartz feldspar porphyry of the 'Western Sequence' and volcanic derived sediments of the Tyndall Group. A major north-northwest striking fault in the southwest of the property abuts Ordovician conglomerates against Tertiary sediments. A small patch of Quaternary cover occurs in the centre of the licence masking the contact between the Tyndall Group and the underlying quartz feldspar porphyry of the 'Western Sequence'. There is a dominant north-northwest fabric attributed to the regional Devonian cleavage and a major northeast striking fault, the Clark Fault, occurs in the southeast corner of the licence. This fault is believed to separate two distinct stratigraphic regimes and may be indicative of a syndepositional fault which has relevance to the mineral exploration model for a Hellyer-type deposit as well as having potential to be part of a major structural system that can host gold and/or gold/copper mineralisation. The Darwin Granite intrusion lies 2km to the east of the licence.

Siliciclastic conglomerate and sandstone of the Owen Conglomerate conformably overlies the Tyndall Group on the lower slopes of Mount Sorell. In the southeast of the licence, Owen Conglomerate and Gordon Limestone form a south plunging anticline and appear to directly overlie the CVC.

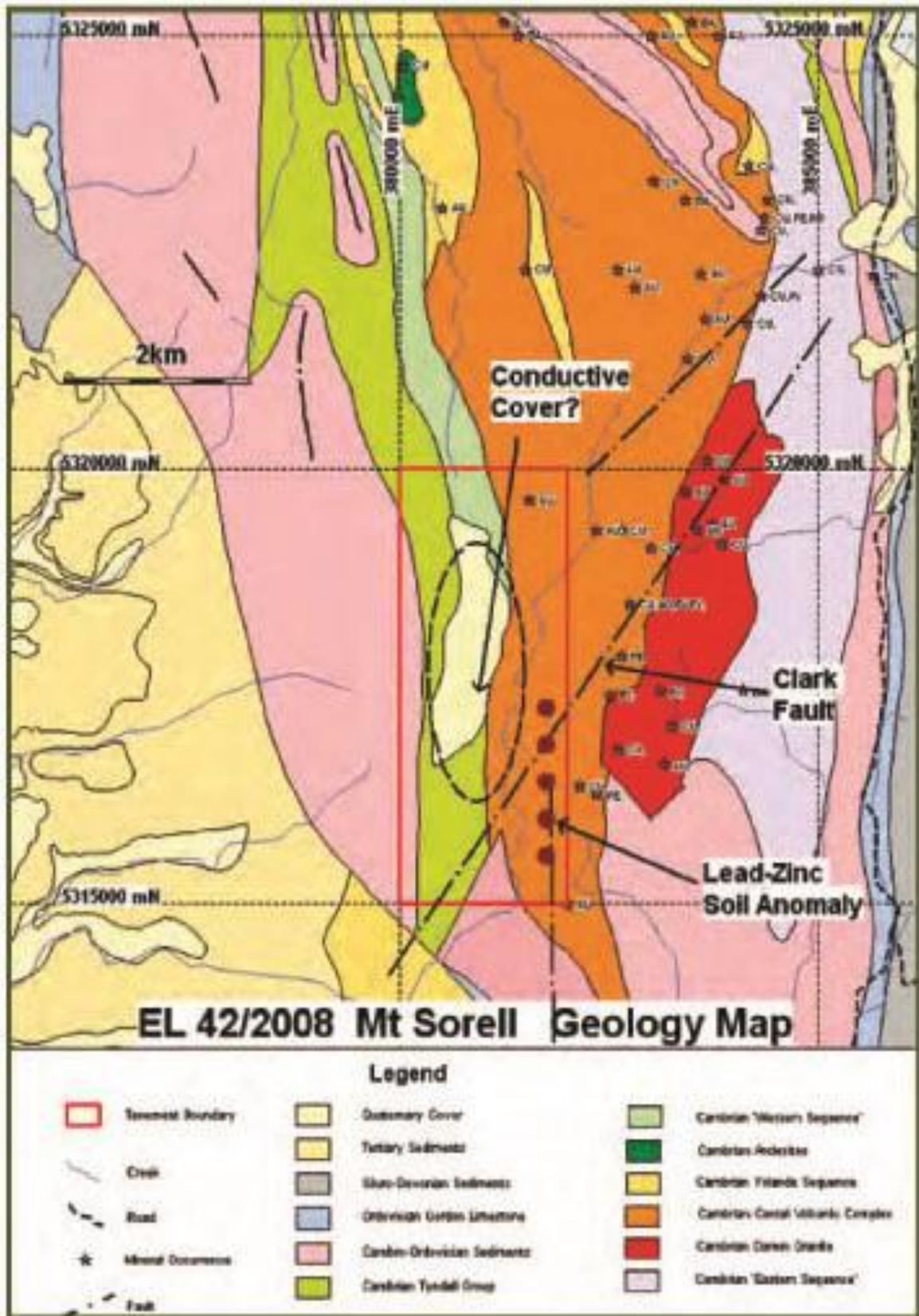
A poorly understood sequence of volcanoclastics/epiclastics is mapped in the Lower Clark Valley (Lewis 1995). This package has been correlated with the Western Sequence and is covered by Tertiary sediments to the southwest.

There are two gold mineral occurrences on the property, one is called Slate Spur and the other is unnamed. Just north and east of the tenement boundary is a series of gold and copper occurrences within the same CVC rocks.

A review of previous mapping, soil geochemistry and IP data indicates that a 50-100m thick black shale unit is present at the base of the Western Sequence from 5315600 mN to about 5317000 mN and marks the transition from feldspar phyric to quartz-feldspar phyric volcanics. Five soil geochemical samples over a strike length of 1000 m define a distinctive soil geochemical unit within this shale sequence (Figure 4).

The five samples are characterised by high  $\text{Fe}_2\text{O}_3$  (av. 17.8%), Ti (8500 ppm),  $\text{P}_2\text{O}_5$  (0.4%), V (374 ppm) and Co (30 ppm), high Ti/Zr (32.9) and moderate  $\text{P}_2\text{O}_5/\text{TiO}_2$  (0.30) which suggests that this may

be a geochemical Suite II type andesite or basalt (Figure 4). As per Lewis (1995) the package appears to be terminated to the south by a large dextral fault zone.



Source: MRT

Figure 4: Tenement (EL42/2008) and environs geology map

Modern exploration over the Mt Sorell tenement and environs began in 1956-57 when Mount Lyell flew a helicopter EM-magnetic survey over the Middle Clark Valley between 5315000 to 5317684 mN and 380210 to 382500 mE.

### **3.3. Previous exploration**

Modern exploration over the Mt Sorell tenement and environs began in 1956-57 when Mount Lyell flew a helicopter EM-magnetic survey over the Middle Clark Valley between 5315000 to 5317684 mN and 380210 to 382500 mE.

#### **3.3.1. BHP- EZ 1968-75**

Reconnaissance exploration for Rosebery style VHMS resources was conducted by BHP-EZ on EL13/65, which included a helicopter TURAIR magnetic survey, mapping and limited stream sediment sampling of the Upper Clark Valley.

#### **3.3.2. Mount Lyell 1978**

The area was taken up by Mount Lyell as EL21/76. In the same year this was merged into an enlarged EL9/66. Exploration work included gridding, geochemical sampling of stream sediments, soil and rock chips, and IP and ground magnetic surveys. From this work anomalies were defined and attributed to black shales (Hutton 1978).

#### **3.3.3. Cyprus-Amoco 1983-1989**

Parts of the area were held as EL31/83, EL6/85 and EL30/87 by Cyprus- Amoco, EZ and New Holland Mining NL respectively, but no exploration work was carried out.

#### **3.3.4. BHP 1989**

With the grant of EL55/89, BHP returned to the area. This was combined for reporting purposes with an adjacent EL102/87 covering the Garfield Valley and areas to the north. Exploration was primarily directed towards the VMHS style Pb/Zn mineralisation, with particular emphasis on the Western Sequence. A large 200 m spaced grid was established over the Garfield Valley and Upper Clark Valley areas and geological mapping and some rock chip sampling was carried out.

#### **3.3.5. 1990**

A blanket UTEM survey covering the CVC Western Sequence - Tyndall Group interval as far south as 5317600

mN grid was carried out. No anomalies attributable to massive sulfides were recognised in the Clark Valley (Cameron & Read 1991).

### **3.3.6. RGC Exploration - BHP 1991**

RGC Exploration (RGCE) re-entered the area as joint venture partners to BHP on EL55/89 and EL102/87. RGCE focus was on establishing a detailed understanding of the geology through a multi-disciplinary approach, with the aim of recognising particular stratigraphic targets and extended the Clark Valley grid south to 5315000N and carried out soil and rock chip sampling and mapping (Halley 1994).

### **3.3.7. Zinico Resources 2004 – 2006**

An area of 23 sq kms area (as EL38/2004) in the vicinity of Mt Sorell was explored by Zinico Resources; Zinico changed its name to Zelos Resources NL and later on to Gujarat NRE Resources NL on 23 November 2006.) The licence was granted on 1st March 2004 for a five year term. The Company carried out geophysical interpretation, gridding of 21 cross lines of 500m spaced at 100m apart off a 2km long N-S baseline, 'ground truthing' of airborne electromagnetic anomalies and geochemical sampling. The work provided no positive results.

### **3.3.8. Australian Consulting Group Pty Ltd 2008**

In the vicinity of Mt Sorell 10 square kilometers area, as EL42/2008, was granted to Indo Australian Consulting Group Pty Ltd (IACG Pty Ltd) for a 5 years period. Due to hard land access (i.e. requiring costly helicopter support), unavailability of experienced technical staff willing to camp out under difficult conditions and limited weather window (summer) for work, in 2008-9 no fieldwork was carried out. In 2009 the area was transferred to Shree Minerals Ltd. Shree due to its commitments to its advanced Nelson Bay River Iron Project and earlier given reasons during 2009/10 did not do any exploration work at the tenement.

### **3.3.9. Shree Minerals Ltd - 2010 - 2011**

Study of public domain aeromagnetic and radiometric data covering Sulphide Creek (EL43/2004) and Mt Sorell (EL42/2008) tenements in northwest Tasmania was undertaken; the two areas are clearly located along the Harvey Creek Fault and thus have been interpreted together to set the regional picture. The Harvey Creek Fault system can be

traced along strike for at least 35 km and is clearly a major fault.

The study involved enhancement of magnetic signatures utilising the latest data enhancement and analysis techniques, estimation of magnetic source depths and mapping of major magnetic elements and lineaments.

Both aeromagnetic and radiometric data were used in the study, as both play an important role in the interpretation. The aeromagnetic data provide definitive structural information, showing the continuity of the Harvey Creek Fault system from Sulphide Creek to Mt Sorell and highlighting a linear magnetic high in the west of the Mt Sorell tenement which is considered as a potential gold target. The radiometric data provided better lithological information than the magnetics, especially at Sulphide Creek where there is limited response from the sediments.

### **3.3.10. Shree Minerals Ltd - 2011 - 2012**

During the reporting period work was focused on soil sampling on 100 m apart grid lines to characterise and extend the zinc (Zn) anomaly identified by earlier explorers. Additionally, geological mapping of cropping-out rocks on and near grid lines, as well as limited rock chip sampling (8) was undertaken. Rock outcrops in the area worked were scarce. However, cropping-out rocks were encountered in creeks and areas in between grid lines, which were sampled.

### **3.3.11. Shree Minerals Ltd - 2012 – 2013**

During 2012/13 planning of field program, "Desk Top Study" of all available information relating to VHMS style mineralisation from the North West Tasmania was carried out.

### **3.3.12. Shree Minerals Ltd - 2013 – 2014**

Exploration on EL42/2008 (Mt Sorell) by Shree Minerals Ltd. during March and April 2014 further refined the positive vectors to VHMS basemetal mineralisation identified during 2012. Re-interpretation of new field data, combined with revision of the 2012 work, suggests there is wrench fault stacking of an inferred VHMS horizon, centered around a mafic volcanic and hydrothermal fluid focus in the Clark Valley grid's centre. Potential for folded repeat of the inferred VHMS host horizon to the west was also identified.

Highly encouraging was the return of a 0.6g/t Au composite rock chip sample from north of an inferred mafic volcanic centre. This weakly oxidised and siliceous felsic volcanoclastic siltstone also contained appreciable Zn (1570ppm), Pb (259ppm), Ag (5.8ppm) and Ba (2170ppm), suggesting the metals are likely Volcanic Hosted Massive Sulphide (VHMS) related; possibly a proximal exhalite deposit.

Field work during early 2014 aimed to better define and extend known Zn, Pb and Cu soil anomalism. The base metal anomalous zone was extended northwards and whilst no strong anomalies were located, the zone remains open. Work undertaken comprised gridding, soil sampling, ground magnetics, geological mapping and rock chip sampling on the Clark Valley grid. Grid cutting was required to re-open ~8600m of the existing grid and access track to facilitate the field work, as well as planned future geophysical surveys to generate more focused drill targets. Soil sampling was completed on three consecutive lines to the north (6600 to 6800N) of the work undertaken in 2012 and also on one infill line (6200N).

The ground magnetic survey covered an aeromagnetic anomaly, identified by the WTRMP (Western Tasmanian Regional Minerals Program), which defines the rough inferred distribution of mafic volcanics in the Clark Valley. The survey aimed to provide a higher resolution insight into structure and mafic volcanic distribution to aid VHMS targeting. The ground magnetic survey identified a magnetic high zone coincident with the high Ti/Zr interpreted mafic volcanic intrusive centre, as well as demonstrating a number of narrow discrete highs that are continuous between grid lines and interpreted to result from thin basalt lava flows.

The sequence has previously been considered to dip steeply west along the identified “host horizon”, but mapped lithology and alteration distribution inferred from soil geochemistry suggest the stratigraphy is folded. Further work including geological mapping and rock chip sampling, followed by IP and drilling (incl. down hole EM) is clearly warranted.

### **3.3.13. Shree Minerals Ltd - 2014 – 2015**

Significantly enhanced VHMS (Volcanic Hosted Massive Sulphide) prospectivity has resulted from recent field work and GIS interpretation. Geological mapping and rock chip

sampling (No.=42) focused on a large IP (Induced Polarisation) chargeability anomaly and previously sampled 0.6g/t Au in rock chip vicinity. Composite re-sampling returned a highly significant 15.5g/t Au, accompanied by 7.7ppm Ag and minor Zn (0.1%).

This sample comes from the northern end of a zone of silica – sericite – iron oxide altered felsic volcanics extending ~150m along SSE strike toward the vicinity of an anomalous basemetal zone, bearing Zn to 0.15% in rock chip and soil samples. Notably, two strongly altered float boulders were located near the 15.5g/t Au rock chip. These rocks contain moderate intensity pervasive silica, bearing irregular iron oxide halo's to relict stringer pyrite veining in a weakly foliated sericitic matrix.

A coherent zone of anomalous basemetals (Cu, Pb, Zn, Ag & Au) in rock chip and soils is now better defined through the anomalous gold in rock chip area. VHMS prospectivity is further upgraded with presence of anomalous key pathfinder elements (Tl, Sb and As). Potential to find a Rosebery or Que-Helyer like VHMS in the grid area is considered high.

Re-evaluation of a 1970's gradient array Induced Polarisation survey in conjunction with Airborne EM has provided further interpretive vectors to a relatively focused VHMS prospective zone coincident with anomalous geochemistry. The black shales were found to commonly correspond with high chargeability and low resistivity. The investigated chargeability anomaly and black shale are not un-expectedly also coincident with significant WTRMP airborne EM cx980k and cx7k EM anomalies.

The black shales mapped extent thins considerably at the chargeability anomalies southern end, whilst chargeability remains high. This suggests that some component of the chargeability footwall to the Au in rock chip anomaly maybe mineralisation related. Immediately south of the shales termination and Au in rock chip anomaly is a relatively strong EM anomaly reflected in all channels. This is a VHMS target! Further supporting a VHMS focus in this area is a broad elevated chargeability zone coincident with Au and Zn in soils within the footwall to the EM anomaly and 15.5g/t Au rock chip. This feature is not evident footwall to other chargeability anomalies in the area. A significant resistivity high zone coincident with strong albite – silica alteration footwall to the Au in rock chip anomaly also supports potential VHMS fluid focus in this area.

An earlier WSW to WNW orientated cleavage disrupted and overprinted by the dominant NW aligned foliation was identified at several localities in the northern footwall. This may reflect earlier Cambrian deformation, possibly reactivating Cambrian rift faults active during VHMS formation.

#### **4. WORK PERFORMED DURING THE REPORTING PERIOD**

No work could be undertaken during the final reporting period , as the Company focused on preserving cash resources due to commodity price falls & consequent suspension of mining and care & maintenance of its flagship project Nelson Bay River Iron Project .

#### **5. CONCLUSIONS**

Please refer to para 3.3.13 of this report .

#### **6. BIBLIOGRAPHY**

1. Cameron, J. & Read, J., 1991. Joint Report on Exploration Licences 102187 Queenstown and 55/89 Mt Darwin, NW Tasmania for the year ending 21"March 1991. BHP-Utah Minerals Int. Annual Report.
2. \* CODES SRC, 1998. Studies of VHMS-related alteration:geochemical and mineralogical vectors to ore, Australian Mineral Industries Research Association Limited - P439-Final Report.
3. Corbett, K.D., and McNeill, A.W., 1987. Geological compilation map of the Mount read Volcanics and associated rocks, Hellyer to South Darwin Peak. Tasmanian Dept. Mines, Mount Read Volcanics. Project Map 6.
4. Crawford, A.J., Corbett, K.D., and Everard, J.L., 1992. Geochemistry of the Cambrian volcanic-hosted massive sulfide-rich Mount Read Volcanics, Tasmania, and some tectonic implications. *Econ. Geol.* 87:597-619.
5. \* Green, G.R., 1990. Palaeozoic Geology and Mineral Deposits of Tasmania, in *Geology of the Mineral Deposits of Australia and Papua New Guinea Volume 2 - Monograph No. 14* (Ed.F.E. Hughes), pp1207-1223 (The Australasian Institute of Mining and Metallurgy; Melbourne)
6. Harder, W. M., 2006. EL 38/2004 Mt Sorell Year 1 Annual Report, 1 July 2005 – 1 March 2006
7. Harder, W. M., 2007. EL 38/2004 Mt Sorell Year 2 Annual Report, 1 March 2006 – 1 March 2007
8. Halley, S.W., 1994. Exploration Licence No's 102187, 55/89 and 12/92. Partial Relinquishment Report March 1994. RGC Exploration.

9. Harder, W. M., 2009. EL 42/2008 Mt Sorell Year 1 Annual Report, 18 November 2008 – 18 November 2009
10. \*Hills, P.B., 1990. Mount Lyell Copper-Gold-Silver Deposits, in Geology of the Mineral Deposits of Australia and Papua New Guinea Volume 2 - Monograph No. 14 (Ed.F.E. Hughes), pp1257-1266 (The Australasian Institute of Mining and Metallurgy; Melbourne)
11. Hutton, M.J., 1978. EL21/76 Jukes-Darwin Annual Report 1977. Mount Lyell Co
12. \*Lees, T., Zaw Khin, Large, R.R. and Huston, D.L., 1990. Rosebery and Hercules Copper-Lead-Zinc Deposits, in Geology of the Mineral Deposits of Australia and Papua New Guinea Volume 2 - Monograph No. 14 (Ed.F.E. Hughes), pp1241-1247 (The Australasian Institute of Mining and Metallurgy; Melbourne)
13. \*McArthur, G.J. and Dronseika, E.V., 1990. Que River and Hellyer Zinc-Lead-Silver Deposits, in Geology of the Mineral Deposits of Australia and Papua New Guinea Volume 2 - Monograph No. 14 (Ed.F.E. Hughes), pp1229-1239 (The Australasian Institute of Mining and Metallurgy; Melbourne)
14. Pal, M., 2010. EL 42/2008 Mt Sorell Annual Report, 18 November 2009 – 18 November 2010
15. Pal, M., 2011. EL 42/2008 Mt Sorell Annual Report, 19 November 2010 – 18 November 2011
16. Pal, M., 2012. EL 42/2008 Mt Sorell Annual Report, 18 November 2011 – 17 November 2012
17. Pal, M., 2012. EL 42/2008 Mt Sorell Annual Report, 18 November 2012 – 17 November 2013
18. Loyalka, M., 2012. EL 42/2008 Mt Sorell Annual Report, 18 November 2013 – 17 November 2014
19. Loyalka & Reid, M., 2012. EL 42/2008 Mt Sorell Annual Report, 18 November 2014 – 17 November 2015
20. Shree Minerals Limited, 2010. Prospectus
21. Reid, K.O., Meares, R.M.D., & Walter, A.C., 1979. EL9166 Annual Report 1978-79. Mount Lyell Co.
22. Ruddock, I., 1974. Final Report EL13165 Jukes-Darwin. Int. Nickel Aust. Ltd.
23. \*Taylor, S. and Mathison, I.J., 1990. Oceana lead-Zinc-Silver Deposits, in Geology of the Mineral Deposits of Australia and Papua New Guinea Volume 2 - Monograph No. 14 (Ed.F.E. Hughes), pp1253-1256 (The Australasian Institute of Mining and Metallurgy; Melbourne)
24. Williams, R.E., 1975. Jukes-Darwin area (EL13165 and SPL 140). EZ Company.

**Note: Literature used in 2012/13 "Desk Top Study" shown with \***

**7. DETAILS OF TRACKS CONSTRUCTED ETC AND DETAILS OF REHABILITATION WORKS UNDERTAKEN**

No tracks etc were constructed nor any drilling undertaken by Shree Minerals.

For the field work / exploration undertaken , we cleared pre- existing tracks & Gridding & used pre- existing garden shed . Hence no Rehabilitation work is applicable .

**8. DIGITAL DATASETS**

We opt for previously submitted annual reports to be released from confidential files.