

**ASF RESOURCES PTY LTD**

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**TASMANIA**  
**MOUNT DUNDAS PROJECT**

EXPLORATION LICENCE: EL14/2007

**3rd ANNUAL TECHNICAL REPORT**

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1. Department of Mineral Resources, Tasmania 1 copy
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## 1. Summary

During the third year of grant for EL 15/2007 (Lake Pieman Project) ASF Resources finalised the initial geological and mineralisation overview of the project and compiled all currently available GIS data. A small stream sediment sampling program was planned.

## 2. Introduction

The tenement is located in the highly mineralized Paleozoic Dundas Trough on the West Coast of Tasmania. The region is host to a number of significant Cambrian age volcanogenic base metal and gold deposits (Hellyer, Que River, and Henty (?)), porphyry associated copper-gold deposits (Mt. Lyell) and numerous epigenetic deposits associated with Devonian granite intrusions including tin, lead - silver and skarn tin/zinc deposits (Mt. Bischoff, Cleveland, Renison Bell, Razorback, and Oceana).

The region has been subjected to extensive exploration in the past with exploration based primarily on a volcanogenic model for base metal mineralisation in the Mt. Read Volcanics. “Modern” exploration has been undertaken from the late 1950’s to the mid to late 1990’s and includes a large amount of ground and airborne geophysics.

ASF Resources will be actively exploring for precious, base metals and iron in the south-west of Tasmania in the vicinity of the Zeehan, Queenstown and Roseberry Mining Centres.

## 3. Location and Access

The Mount Dundas Project is located approximately 7km east of Zeehan and access to the centre of the tenement is via gravel road from the Murchison Highway to the mining centre of Dundas. The eastern area of the Mount Dundas Project is heavily vegetated and access is limited (Figure 1).

## 4. Tenure

The Mount Dundas Project comprises one granted exploration licence (Table 1) which was granted to ASF Resources on the 23/07/2007.

**Table 1 Tenement Register**

Tenement	Area (km2)	Grant Date	Final Date	Expenditure Commitment
EL14/2007	23	23/07/207	23/07/2012	\$16,000

## 5. Regional Geology and Mineralisation

### 5.1 Regional Geology

The oldest rocks in the region are the Meso to Neoproterozoic quartzitic rocks of the Tyennan Block which provide basement to the younger sequences in western Tasmania. IN the area of interest the Tyennan Group is overlain by the quartzwacke turbidite rocks of the Oonah Formation (100-750Ma) which were deposited in an N-S trending basin which was probably the precursor to the later Dundas Trough. The upper sequence of the Oonah Formation is dominated by pelites and/or carbonates with some mafic rocks and conglomerates. This part of the sequence provides an important host to vein, skarn and replacement tin deposits at Zeehan and Mt Bischoff.

The Oonah Formation is disconformably or unconformably overlain by the Success Creek and Crimson Creek Groups of the Togari Group of Neoproterozoic to Cambrian age (750-520Ma). Within the project area these rocks tend to comprise a lower sequence of dolomitic shallow water sediments resting on basal conglomeratic sandstone followed by upper mafic rift volcanic and associated volcanoclastic sediments. The lower dolomitic sequence is an important host to the tin replacement deposits of Renison Bell.

The above sequence was subjected to a number of major deformations during the Tyennan Orogeny commencing with the south directed compression (515-510Ma) followed by E-W compression from Middle Cambrian which produced the linear narrow Dundas Trough. The Dundas trough was an important depositional site for the Mount Read Volcanics and associated sediments and their polymetallic mineralisation.

The Mount Read Volcanics (MRV) is divided into three sequences. The Central Volcanic Sequence (CVS) is comprised of marine, proximal volcanics consisting of rhyolite and dacite domes and cryptodomes, massive pumice breccias, andesites and rare basalts. The CVS is host to most of the polymetallic volcanogenic hosted mineralisation in the Dundas Trough ie Hellyer, Que River and Rosebery. The CVS interfingers with the Western Volcano-Sedimentary Sequence to the west comprised of lithicwacke, turbidites, mudstones, siltstones, shale with subordinate intrusive rocks and lavas. The CVS inter fingers with the Eastern Quartz Phyric Sequence (EQPS) to the east, comprised of quartz phyric lavas, intrusive porphyries and volcanoclastics intruded by magnetite series granite.

The MRV on the Western side of the Dundas Trough is overlain by the Tyndall Group of quartz bearing volcanoclastic sandstone and conglomerates of mixed felsic and andesitic provenance. Some workers (Seymour et al 2007) have suggested that the Tyndall Group is a time correlate of the EQPS to the east.

In the late Cambrian – Lower Ordovician, a period of E-W compression caused basin inversion of the Dundas Trough, resulting in uplift of the Tyrennan Block to the west and subsequent deposition of the Owen Group conglomerate in a half graben on the western side of the Dundas Trough. Basin inversion also caused reactivation of the major faults in the Dundas Trough.

In the Middle Devonian, Tasmania was affected by polyphase deformation, attendant folding and intrusion by major I-type granite batholiths. In the west most of the intrusions post date the folding event and are represented by reduced, moderately to strongly fractionated I-type granite.

## 5.2 Regional Mineralisation

The rocks of the Dundas Trough are host to significant polymetallic (Pb,Zn,Cu,Sn,Ag,Au) mineralisation including:

- Mt Lyell - 311Mt @ 0.97%Cu and 0.31g/t Au
- Rosebery - 34.03Mt @ 13.8%Zn, 4.1%Pb, 0.57%Cu, 143g/t Ag and 2.2g/t Au
- Hellyer - 16.5Mt @ 13.9%Zn, 7.2%Pb, 169g/t Ag and 2.55g/t Au

Mineralisation can be broadly classified into two associations.

1. Base metal and gold mineralisation related to volcanogenic processes associated with the emplacement of the MRV rocks, particularly the CVS, during the middle to late Cambrian.
2. Epigenetic Zn, Cu, Sn, Pb and Ag mineralisation associated with the intrusion of the Devonian Granites.

While it is generally accepted that the polymetallic mineralisation in the MRV is volcanogenic in nature, this has been questioned on the basis of observations that much of this mineralisation (eg Rosebery, Hercules) was emplaced subsequent to the main cleavage forming event and controlled by the interplay of cleavage and bedding in pure shear zones associated with carbonate altered lithologies (Dr. M. Tomkinson per.com.). If true then this model implies that lithologies in such settings outside the CVS may be prospective. Prior exploration has concentrated on the CVS based on a volcanogenic model. The Henty Fault, reactivated during the Tyennan Orogeny tends to divide mineralisation of a Zn-Pb-Cu-Au volcanogenic association to the NW of the fault from a Cu-Au-Fe association to the SE of the fault. The Henty gold mine (2.83Mt @ 12.5g/t Au) is unusual for the region, being a gold only deposit located within the Henty Fault. The Devonian granites have mineralized a broad range of lithologies, generally close to and within the contact aureoles of the batholiths. Mineralisation is represented by simple high angle veins (Pb, Ag, Zn, Sn), skarn (Zn, Sn) and replacement bodies (Sn) which have resulted in some significant deposits such as Renison Bell (24.54Mt @ 1.41%Sn), Mt. Bischoff (10.54Mt @ 1.1%Sn)

and Ocean (2.6Mt @7.7%Pb, 2.5%Zn, 55g/t Ag). The larger granite related deposits tend to be associated with reactive and or replaceable host rocks, usually carbonates.

## 6. Previous Exploration

Parts of the area of EL 14/2007 have been held by at least 11 companies since 1959, generating many annual reports. The most comprehensive exploration appears to have been undertaken by RGC from 1987-1995 under EL's 101/87 and 13/88 (Crossing, 1992). Despite this considerable history of exploration, work has tended to be focused on known mineral occurrences to the north of the current ELA boundaries such as the Dundas, Razorback and Moore Pimple areas. No drilling appears to be undertaken in the tenement area. RGC explored parts of EL's 101/87 and 13/88 for replacement tin mineralisation similar to Renison Bell and also explored the southern continuation of the Rosebery Fault for Henty style gold mineralisation using grid soil geochemistry. Stream sediment geochemistry was also undertaken (-200# analysed by NAA) in the Moores Pimple area on streams draining the Rosebery Fault to the east. SRM is unsure of the location of the stream samples in relation to the EL but at least part of the soil grid appears to plot within the northern part of the EL. Soil results report up to 20ppb Au which SRM considers of interest, particularly with the analytical method used at the time. The stream sediment samples also report results to 13.5ppb Au, which may also be considered anomalous considering the mesh fraction and the analytical method used. Also of interest is a report of strong sericite-pyrite-carbonate alteration on the Rosebery Fault in the area around Moores Pimple - Mt Dundas area. It is not known if this reported occurrence is within the area of the EL.

## 7. Current Exploration

In the current reporting period a full review of the geological setting and mineralisation styles within EL14/2007 was carried out and it was decided to visit the northern margin of the project area where historical exploration has highlighted interesting base metal results. As a result a small stream sediment sampling program was planned.

## 8. Conclusions and Recommendations

Our initial exploration will be stream sediment sampling and geological mapping in the north and west of EL 14/2007 to follow up on historical elevated stream sediment geochemistry. To facilitate the stream sediment sampling in a 4km access track to the Adelaide Creek workings will need to be cleared of regrowth (see map) with access to the sampling area also from the sealed Zeehan Highway. Access to the northern area will be via the Montezuma access track which like the Adelaide Creek track will need to be cleared of regrowth for a distance of 2km. Access to both areas will be by quad bike clearing will be carried out to provide the minimal access for quad bikes.

Dependent upon results we envisage follow up stream sediment sampling and ridge and spur based soil sampling. Prior to the commencement of any soil sampling program a program of work with a map will be submitted to Mineral Resources Tasmania.

## 9. Expenditure

The annual expenditure incurred for EL 14/2007 for the year ending 22<sup>nd</sup> July 2010 was \$25,339 with a breakdown of expenditure shown below.

**Table 3 Expenditure Statement**

Cost Centres	Expenditure Incurred
Geoscientific (Geology)	\$22,393
Feasability Study	\$0
Other Costs(Rental)	\$1,002
Administration	\$1,955
<b>TOTAL</b>	<b>\$25,339</b>

Total expenditure since inception of EL14/2007 is \$76,813 (To 30<sup>th</sup> June 2010)

## 10. References

Crossing, D.J.F., E.L. 101/87 Dundas and E.L. 13/88 Moores Pimple Partial Relinquishment Report for the Period 1988 to 1992. RGC Exploration Report M.R.T. Open File Report 92-3358.

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Seymour, D.B., Green, G.R., Calver, C.R., 2007. The Geology and Mineral Deposits of Tasmania: a Summary. Geological Survey Bulletin 72, Mineral Resources Tasmania.