EL 15/2011 ‘Betts Creek’ Final Relinquishment Report

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This report details all development work and expenditure undertaken on Exploration License 15/2011 (“Betts Creek”) for the purpose of relinquishing the tenure in full.

There has been no historical exploration completed on this license area.

Rockwell Minerals (Tasmania) Pty Ltd (“Rockwell”) has completed limited work on the tenure, due in part to the significant expenditure on its neighbouring Cleveland Project and depressed market conditions.

Rockwell’s limited work and related expenditure have failed to justify any significant field based expenditure to be warranted. Rockwell considers the area to be low to non-prospective for economic mineralisation.
CONTENTS

ABSTRACT ............................................................................................................. 2

CONTENTS ............................................................................................................. 3

FIGURES .................................................................................................................. 3

1.0 INTRODUCTION .............................................................................................. 4
  1.1 Scope ................................................................................................................. 4
  1.4 Location ............................................................................................................. 4

2.0 PREVIOUS EXPLORATION ........................................................................... 6
  2.1 Past Exploration ............................................................................................... 6
  2.2 History of the Cleveland Province ................................................................. 6
  2.3 Geology .............................................................................................................. 6
    2.3.1 Regional Geology ....................................................................................... 6
    2.3.2 Local Geology ............................................................................................ 7
    2.3.3 Betts Creek Geology .................................................................................. 10

3.0 EXPLORATION COMPLETED ....................................................................... 11
  3.1 Activities ......................................................................................................... 11
  3.2 Expenditure ...................................................................................................... 11

4.0 DISCUSSION OF RESULTS ............................................................................ 12

5.0 CONCLUSIONS ............................................................................................... 12

6.0 ENVIRONMENT ............................................................................................... 12

FIGURES

Figure 1: Map showing the surrendered area EL 15/2011 ...................................... 5
Figure 2: Cleveland Mine Development .................................................................. Error! Bookmark not defined.
Figure 3: Regional geological setting ...................................................................... 7
Figure 4: Historically mined, tin and copper bearing, semi-massive sulphide mineralisation in cross-section ................................................................. 8
Figure 5: Surface geology near the Cleveland Mine ............................................. 9
Figure 6: Betts Creek tenure demonstrating the dominance of the Meredith Granite (pink with white crosses) within the tenure boundary ................... 10
1.0 INTRODUCTION

1.1 Scope
This report details all development work and expenditure undertaken on Exploration License 15/2011 ("Betts Creek") for the purpose of relinquishing the tenure in full.

1.2 Ownership
The licence was granted to Rockwell on 13th September 2011 for a period of 5 years.

1.2 Datum
The datum used in this report is GDA94.

1.3 Exploration rational
The exploration rational was to ascertain the prospectivity of the tenure for mineralisation styles similar to the near-by Cleveland tin-copper-tungsten deposits and the related lead-zinc-silver mineralisation in the region.

1.4 Location
Betts Creek, an area of 34 km², is located 8 kms south of Lunia in northwest Tasmania. Betts Creek is contiguous with EL 7/2005, which covers the Cleveland mine redevelopment, held by Rockwell, a wholly owned subsidiary of Elementos Ltd.

The license area is currently inaccessible, with the terrain dominated by steep shrub and tree covered slopes. There has been minimal work on the tenement during the term of tenure.
Figure 1: Map showing the surrendered area EL 15/2011
2.0 PREVIOUS EXPLORATION

2.1 Past Exploration
There has been no historical exploration completed on this license area. The exploration rational for Rockwell’s application for this license was to explore for similar mineralisation as the adjacent Cleveland deposit and potential silver, lead, zinc mineralisation as that found at Godkin to the northwest of Betts Creek.

2.2 History of the Cleveland Province
Situated adjacent to Betts Creek is the historic Cleveland tin and copper underground mine, operated by Aberfoyle Limited between 1968 and 1986. The mine was one of the largest underground tin operations in the world and produced approximately 23,000 tonnes of tin and 10,000 tonnes of copper in 18 years of operation. The mine closed in 1986 due to a rapid decline in tin prices caused by the collapse of the International Tin Council. At the time, Aberfoyle was a major operator in the tin and tungsten mining industry with four operating mines in Australia.

The Cleveland mine was operated successfully due to its low-cost mining method. When in operation, Cleveland was considered ‘state of the art’, being one of the first tin mines to utilise trackless mining and tin flotation technologies.

Mine development extends to 400 metres below the surface with the underground decline and drives still in place. This provides low cost access for the company to the existing tin-copper and tungsten mineralisation.

2.3 Geology
2.3.1 Regional Geology
In the Late Precambrian-Early Cambrian, dolomitic and clastic sediments were deposited in the Dundas Trough, a passive rift basin in Proterozoic continental crust. This Trough was then intruded by metal bearing Devonian granitoids, which intruded in an east-west orientation across the north-south axis of the Trough. The resultant thermal metamorphism of these shallow intruding granitoids provided a brittle deformation environment resulting in major faulting, which acted as conduits for metal bearing magmatic hydrothermal fluids. When fluid bearing, volatile-rich offshoots from these granitoids intruded the Cambrian Crimson Creek Formation or its stratigraphic equivalent, they tended to deposit minerals in economic amounts such as
the Renison, Cleveland and Mt Bischoff deposits. These offshoots (or deposits) demonstrate metal zonation, with proximal to distal zonation (Sn, W > As > Cu > Pb, Zn, Ag > Sb). To date, Renison has produced ~200,000 tonnes of contained tin, Mt Bischoff ~60,000 tonnes and Cleveland ~36,000 tonnes.

This geological setting is similar to those of the tin deposits of Cornwall and Devon, which are also associated with granitoids of Devonian-Carboniferous age and hosted in older sedimentary and metamorphic rocks.

Figure 2: Regional geological setting

2.3.2 Local Geology

The Cleveland deposit is a series of tin and copper bearing semi-massive sulphide lenses (pyrrhotite-cassiterite-stannite-chalcopyrite) within a series of sedimentary rocks belonging to Hall’s Formation of Cambrian age. Having
undergone intense deformation from thrust faulting, the tin and copper lenses are steeply dipping and have strike lengths of up to 500 metres, an across strike thicknesses of up to 30 metres and down-dip extents of up to 800 metres.

Figure 3: Historically mined, tin and copper bearing, semi-massive sulphide mineralisation in cross-section


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The semi-massive sulphide mineralisation was formed by the hydrothermal replacement of limestone beds by mineralizing solutions associated with the emplacement of the Devonian-Carboniferous Meredith granite. The deposit is geologically similar to the tin bearing semi-massive and massive sulphide stratiform mineralisation at Renison.

These semi-massive sulphide lenses have traditionally been referred to as lodes, and outcrop from east to west. These are:

- Battery, Smithy and Luck’s Lodes,
- Khaki Lode
- Hall’s Lodes,
- Henry’s Lode

**Figure 4: Surface geology near the Cleveland Mine**

Within the semi-massive sulphide mineralization, the cassiterite is fine grained with grains generally being in the range 0.02mm to 0.07mm across. The fine grain size dictates the extent to which the ore must be ground to release the cassiterite from the other minerals present, so that it can then be recovered. As the grind size becomes finer, the cassiterite becomes more difficult to
recover in a traditional processing plant, which uses gravity and flotation methods to recover the cassiterite. During the Aberfoyle operations at Cleveland, tin and copper recovery both averaged about 60%.

### 2.3.3 Betts Creek Geology

Betts Creek has similar geology to the Cleveland deposit with the Meredith Granite outcropping. The shallow nature of the Meredith Granite appears to limit the prospectively of the tenure due to a modest correlation of mineralisation within the region with the 4 km depth of the Meredith Granite.

**Figure 5:** Betts Creek tenure demonstrating the dominance of the Meredith Granite (pink with white crosses) within the tenure boundary.
3.0 EXPLORATION COMPLETED

3.1 Activities
Limited work has been carried out on the tenure, due in part to the significant expenditure on the neighbouring Cleveland Project and depressed market conditions.

2011 -2012
- Helicopter flyover
- Desktop review of exploration history and geology
- No field based activities undertaken
- No reports or digital information was produced

2012 – 2013
- LiDAR survey flown, with copy provided to MRT
- Limited desktop review of exploration potential
- No field based activities undertaken
- No reports were produced

2013 – 2014
- Desktop review of exploration potential
- No field based activities undertaken
- No reports or digital information was produced

2014 – 2015
- No reports or digital information was produced
- Recommendation to relinquish due to poor prospectivity
- Preparation for relinquishment

3.2 Expenditure
Expenditure over the license area totalled $35,808 during the period the tenure was held. The expenditure by year is tabled below:

<table>
<thead>
<tr>
<th>EL15/2011 Betts Creek</th>
<th>Year 1 to 19/9/12 $</th>
<th>Year 2 to 19/9/13 $</th>
<th>Year 3 to 19/9/14 $</th>
<th>Year 4 to 02/09/15 $</th>
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</thead>
<tbody>
<tr>
<td>Yearly Estimate</td>
<td>60,000</td>
<td>60,000</td>
<td>60,000</td>
<td>60,000</td>
</tr>
<tr>
<td>Cumulative Estimate</td>
<td>60,000</td>
<td>120,000</td>
<td>180,000</td>
<td>240,000</td>
</tr>
<tr>
<td>Actual</td>
<td>3,300</td>
<td>1,982</td>
<td>22,404</td>
<td>8,122</td>
</tr>
<tr>
<td>Cum Total</td>
<td>3,300</td>
<td>5,282</td>
<td>27,686</td>
<td>35,808</td>
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<td>Shortfall in spending</td>
<td>-56,700</td>
<td>-114,718</td>
<td>-152,314</td>
<td>-204,192</td>
</tr>
</tbody>
</table>
4.0 DISCUSSION OF RESULTS

Rockwell’s desktop review and before mentioned activities and related expenditure have failed to justify any significant field based expenditure to be warranted. Rockwell considers the area to be low to non-prospective for economic mineralisation, primarily due to the Meredith Granite’s dominance of the geology in the area.

5.0 CONCLUSIONS

Rockwell’s limited work and related expenditure have failed to justify any significant field based expenditure to be warranted. The Company has concluded to relinquish in full EL15/2011 and to concentrate its activities and funding into developing the Cleveland Project.

6.0 ENVIRONMENT

No field-based activities were undertaken on the tenure other than a helicopter flyover in 2012. There are no environmental disturbed areas within the tenure caused by activities undertaken by the Company.