Title holder(s): OM (Manganese) Ltd (100%)
Operator: As above
Tenement Manager: Bichard Exploration Administration Services Pty Ltd

EL23698
Helen Springs Project

Annual report for EL23698 for the period
6th August 2008 to 5th August 2009

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Target Commodity: Manganese
Date of report: 25/08/2009
Datum/zone: GDA94 MGAz53
250k mapsheet: Helen Springs SE 53-10
100k mapsheet: Helen 5661

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Abstract

A regional aeromagnetic and radiometric survey was flown in September/October 2008. The data acquired during that survey and the data acquired through the 2006/2007 SkyTEM survey were reprocessed by Vector Research. Interpretation of the reprocessed data has generated some new exploration drilling targets however the 2009 exploration budget was significantly reduced due to the economic downturn and no drilling was completed during the reporting period. A program of detailed aerial photography was conducted to support a detailed mapping program which began in May 2009 and continues to this date.
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1 Introduction

1.1 Location and tenure

Exploration Licence (EL) 23698 was granted on August 6th, 2003. A request for renewal without reduction was lodged on May 5th 2009.

The licence covers 19 blocks and forms part of OMM’s ‘Helen Springs Project Area’ tenements, being contiguous with EL23495 as shown in Figure 1.

Access to the licence is by station track either from Helen Springs homestead.

Figure 1. Plan showing the location of EL23698 in relation to other OMM tenements and Helen Springs Station.
2 Geology

The exploration licence hosts rocks of the Palaeoproterozoic aged Namerinni Group and Mesoproterozoic aged Renner Group, with minor occurrences of Cambrian aged Helen Springs Volcanics (both the volcanic lithofacies and the Muckaty Sandstone Member) and Cretaceous sediments. The published geological map for the licence comprises Figure 2.

The prospective Proterozoic rocks are also covered in part by Cenozoic alluvium, colluvium and aeolian sand. There are no identified manganese outcrops on the exploration licence.

Figure 2. Geological map showing the location of known outcrop and the extent of recent cover in EL23698. Geological data is taken from the published Helen Springs 1:250,000 geology mapsheet (Hussey et al, 2001)
3 Previous Exploration Activity

3.1 Exploration Activity 2003/2006

Early work on the licence was limited to desktop studies and research into appropriate geophysical techniques for use in exploration on this licence.

3.2 Exploration Activity 2006/2007

A program of ASTER spectral data acquisition and interpretation was the main activity in 2006/2007.

3.3 Exploration Activity 2007/2008

An extensive airborne EM survey (SkyTEM) was conducted over all licences comprising the Helen Springs Project Area in mid-late 2007.

4 2008-2009 Exploration Activity

Exploration activities conducted during the past year included:

- an aerial geophysical survey, and.
- reprocessing of the new aeromagnetic data.
- A program of detailed aerial photography
- A regional field mapping program

The OMM exploration budget for 2009 was significantly reduced due to the economic downturn and as such no intrusive work in EL23698 was possible during the reporting period.

A program of integration of the SkyTEM, radiometric and magnetic data continues and once the field mapping is complete the full dataset will allow for a more detailed exploration program to be generated. Preliminary targets have been generated as described in section 4.4 of this report.

4.1 Aerial Geophysical survey

GPX Geophysical Exploration Services were contracted to acquire both radiometric and aeromagnetic data across all of OMM’s tenement holdings. The total survey parameters are shown in Table 1.

The total survey area was divided into two sections covering the grouped tenement holdings. EL23698 falls into the northern survey area.

All data captured during this survey was submitted as part of the EL23459 2008/2009 annual report.
<table>
<thead>
<tr>
<th>Type of Data</th>
<th>Aeromagnetics and Radiometrics</th>
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<tr>
<td>Survey datum</td>
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<td>Survey line spacing</td>
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</tbody>
</table>

Table 1. OMM 2008 Geophysical survey parameters

### 4.1.1 Radiometric data

The gridded data for each channel of the radiometric data has proved very useful in characterizing each rock unit. This has increased the production rate for the mapping program currently underway (described below). A ternary image of the radiometric data from EL23698 comprises Figure 3.

### 4.1.2 Aeromagnetic data

While several linear magnetic features occur within this licence it is thought that they represent faulted contacts between different units. Small “bulls-eye” features have been field checked and are either basalt or small iron oxide filled hydrothermal breccias. The latter rocks provide for great encouragement in exploration for manganiferous systems.

In general, rocks belonging to the Namerinni Group exhibit an intermediate magnetic signature while those mapped as Renner Group are non-magnetic. As this observation is not entirely consistent, magnetic signatures have not been used as much in the mapping as the radiometric data however the data do allow for delineation of individual units.
Figure 3. Ternary radiometric image over EL23698. Cyan=Thorium, Pink=Potassium. Yellow=Uranium. Dark area=aeolian sand.
4.2 Reprocessing of aeromagnetic data.

The data collected during the reporting period and the SkyTEM data acquired during the 07/08 reporting period were sent to Vector Research for reprocessing using the TargetMap algorithms.

The reprocessing produced many complicated datasets and the analysis of that data continues to date.

Figure 4. RTP 1VD magnetic image over EL23698
4.3 Aerial photography.

In April 2009 United Photo and Graphic services collected aerial photography over selected OMM tenement areas at a nominal scale of 1:20,000 (approximately 0.5m pixel size).

The data was passed on to Survey Graphics in Perth for processing. Alternative frames were orthorectified using 50 metre DEM and the frames were colour balanced and mosaicked seamlessly. Figure 5 shows the imagery over EL23698.
4.4 Regional mapping.

The photography collected in April formed the base maps for an extensive mapping project across several project areas. The mapping is being undertaken (continuing at the time of writing this report) by two contract field geologists and consisted of 6 weeks work during the reporting period.

The aim mapping project is to locate any alteration and manganese mineralization. Several zones of hydrothermal brecciation have been identified and these zones typically contain abundant hematite and goethite within the matrix of the breccia. Pit mapping at Bootu Creek has shown that iron and manganese mineralization is likely part of the same hydrothermal event. Accordingly these zones are considered prospective.

5 References