Partial Surrender report for EL26562 for the period 2\(^{nd}\) September 2008 to 1\(^{st}\) September 2011

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Target Commodity: Manganese

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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 and the raw data acquired during that survey was later reprocessed. Interpretation of the geophysical data indicates the western half of the licence area probably host rocks belonging to the Helen Springs Volcanics, however that area is entirely covered by recent alluvium. A program of detailed aerial photography was conducted over the eastern half of the original licence area which is dominated by outcropping units belonging to the Renner Group.
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<td>gdf</td>
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<td>Appendix 2 – Renner Springs Orthophoto 2009</td>
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1 Introduction

1.1 Location and tenure

Exploration Licence (EL) 26562 was granted on September 2nd, 2008. The licence is held jointly by OM (Manganese) Ltd (50%) and Neil Henry Scriven (50%).

The original licence covered 73 blocks and comprises the western most licence of OMM’s ‘Renner Springs Project Area’, as shown in Figure 1.

At the end of Year 2 a parcel 49 blocks (67% of original blocks) was surrendered from the western side of EL26562.

At the end of Year 3 a second parcel of 12 blocks (50% of remaining blocks) was surrendered from the western side of the remaining licence area.

The retained portion of the licence is 12 blocks.

Access to the licence is by station tracks and the Amadeus Gas Pipeline tracks.

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![Figure 1](image-url)  
*Figure 1: Plan showing area of partial surrender and retained blocks for EL26562*
2 Geology

The exploration licence hosts outcropping rocks of the Powell Formation, which is dominantly a sandstone unit belonging to the Mesoproterozoic aged Renner Group. As shown in Figure 2, the western half of the licence is covered by recent fluvial sediments with minor outcrop of mapped sandstone.

Figure 2. Geological map showing the location of known outcrop and the extent of recent cover in EL26562. Geological data is taken from the published Helen Springs 1:250,000 geology mapsheet (Hussey et al, 2001)
3 2008-2009 Exploration Activity

Exploration activities conducted during the three year period included:

- an aerial geophysical survey
- reprocessing of the new aeromagnetic data.
- a program of detailed aerial photography

3.1 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. EL26562 falls in the northern survey area and comprises 11.6% (1226 line km) of the total survey area.

All data captured during this survey was submitted as part of the EL23459 2008/2009 annual report.

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<th>Aeromagnetics and Radiometrics</th>
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Table 1. OMM 2008 Geophysical survey parameters

3.1.1 Radiometric data

GPX Surveys supplied the final dataset as a located data file (.dat) as well as several ER mapper grids (.ers) and located image files (.tif) for K, U, Th, total count and ternary image.

Elevated potassium signatures are associated with the traces of both Hunter and Burke Creeks while minor occurrences of Jangirulu Formation are coincident with elevated uranium and Thorium signatures. There is also a large area of elevated U and Th immediately west of the central exposure of the Jangirulu Formation however the DTM shows the ground to be quite flat in that area and it is unlikely that the response is due to a colluvial fan.

The ternary radiometric image is included as Figure 3.
Figure 3. Ternary image compiled from the K, U, and Th radiometric data acquired in 2008
3.1.2 Aeromagnetic data

The aeromagnetic data was supplied as a located data file (.dat) as well as several ER mapper grids (.ers) and located image (.tif) files for TMI, TMI1VD, TMI2VD, TMI RTP, and RTP1VD.

The dominant feature observed in each of the native and reprocessed datasets is the ‘noisy’ magnetic high which occurs in the western part of the licence as shown in Figure 4. This signature is the same as that observed in data collected over EL25593 near the Bootu Creek manganese mine (Figure 5). The feature in EL25593 has been drill tested and was shown to be a volcanic rock of fine to medium grain size and of peraluminous intermediate composition (andesite?) and thought to represent the volcanic lithofacies of the Helen Springs Volcanics.

![Figure 4. 1VDRTP magnetic image over EL26562. The ‘noisy’ signature dominating the western half of the licence is thought to represent the extent of buried Helen Springs Volcanics.](image-url)
The sandstone units within the licence are magnetically ‘quiet’ with only major boundaries between formations identifiable.

3.2 Reprocessing of geophysical data.

The data collected during the reporting period was sent to Vector Research for reprocessing using the TargetMap algorithms. The reprocessing produced several interesting datasets and plots.

3.3 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 6 shows the extent of the imagery over EL26562. The data was collected only over the area where outcrop had been identified within the licence.
4 References