OM Manganese Ltd

Title holder (s): OM (Manganese) Ltd (100%)

Operator: OM (Manganese) Ltd

Tenement Manager: Australian Exploration and Mining Tenement Services Pty Ltd

EL26907
Bootu Creek Project

Annual Report for EL26907 for the period May 2011 to May 2012

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Target Commodity: Manganese

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250k mapsheet: Helen Springs SE 53-10
100k mapsheet: Muckaty 5660 & Brunchilly 5760

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Abstract

EL 26907 was granted to OM (Manganese) Limited on May , 2009.

The principal activity for year 3 was analysis, interpretation and ground checking of aeromagnetic and radiometric survey data (flown at the end of year 2), including levelling and integration with existing geophysical data on adjacent tenure, to resolve structural issues and assist in identifying favourable geological settings to host a manganese deposit, potentially occurring in the Morphett Creek Formation dolomitic units of the Lower Proterozoic Tomkinson Creek Group. No manganese mineralisation has been identified to date.

OMM is currently waiting on AAPA clearance for the western half of EL26907.

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Electronic file list

File Name	File type	Content
EL26907_2012_A_03_report.pdf	Pdf	This report
2450 GPX Survey	Zip	GPX Survey report and data

Introduction

1.1 Location and tenure

Exploration Licence (EL) 26907 was granted to OM (Manganese) Limited (OMM) on May , 2009 and comprises 167 blocks.

Stuart Highway runs through the centre of the tenement, entering the southern extent approximately 82 km north of Tennant Creek. Numerous station tracks extend either side of Stuart Highway (Figure 1).

1.2 Geology

The majority of EL26907 is covered by lithologies of the Lower Proterozoic Tomkinson Creek Group, representing the oldest rocks in the area. These are dominantly sandstones, mudstones and dolomites with lesser cherts and conglomerates. Stromatolites have been noted within the Morphett Creek Formation (Ptm), Mitty Member (Ptmm) and Whittington Range Member (Pthw), the later also containing basalt.

The Short Range Sandstone (Pts) is the youngest member of the group, occurring along the western edge and the south-western most corner of the tenement, while the Meerie Member (Pthe), the oldest stratigrahic unit, composed mostly of arenite, occurs along the southern boundary.

The Short Range Sandstone is seen again with what is thought to be the sandstone dominated Deagan Member (Ptsd) in the far eastern part of the tenement as the southern most exposure of the Bootu Syncline.

The Tomkinson Creek Group in the lower half of the tenement appears to be gently folding but is truncated by a 7-12 km wide, northwest trending, regional scale structural corridor containing not only the same stratigraphic units of the Tomkinson Creek sediments, but also units of the Mesoproterozoic Renner Group (the Powell Formation (Prp), Baralandji Formation (Prb) and Gleeson Formation (Prg)), Cambrian Helen Springs Volcanics (Cth) and Middle Cambrian Gum Ridge Formation (Cmg).

Undifferentiated, flat lying Early Cretaceous fine to course sandstones, siltstones, claystones and conglomerates (Kl) occur in the northwest part of the tenement.

Quaternary ferricrete (Qzf) occurs in patches mostly on the eastern half of the tenement while aeolian sand (Qs), soil (Qb), alluvium (Qa) and colluvium (Qc) occur are more widespread over the entire tenement, in particular occupying the intermittent Morphett and Kuerschner Creeks and their tributaries.

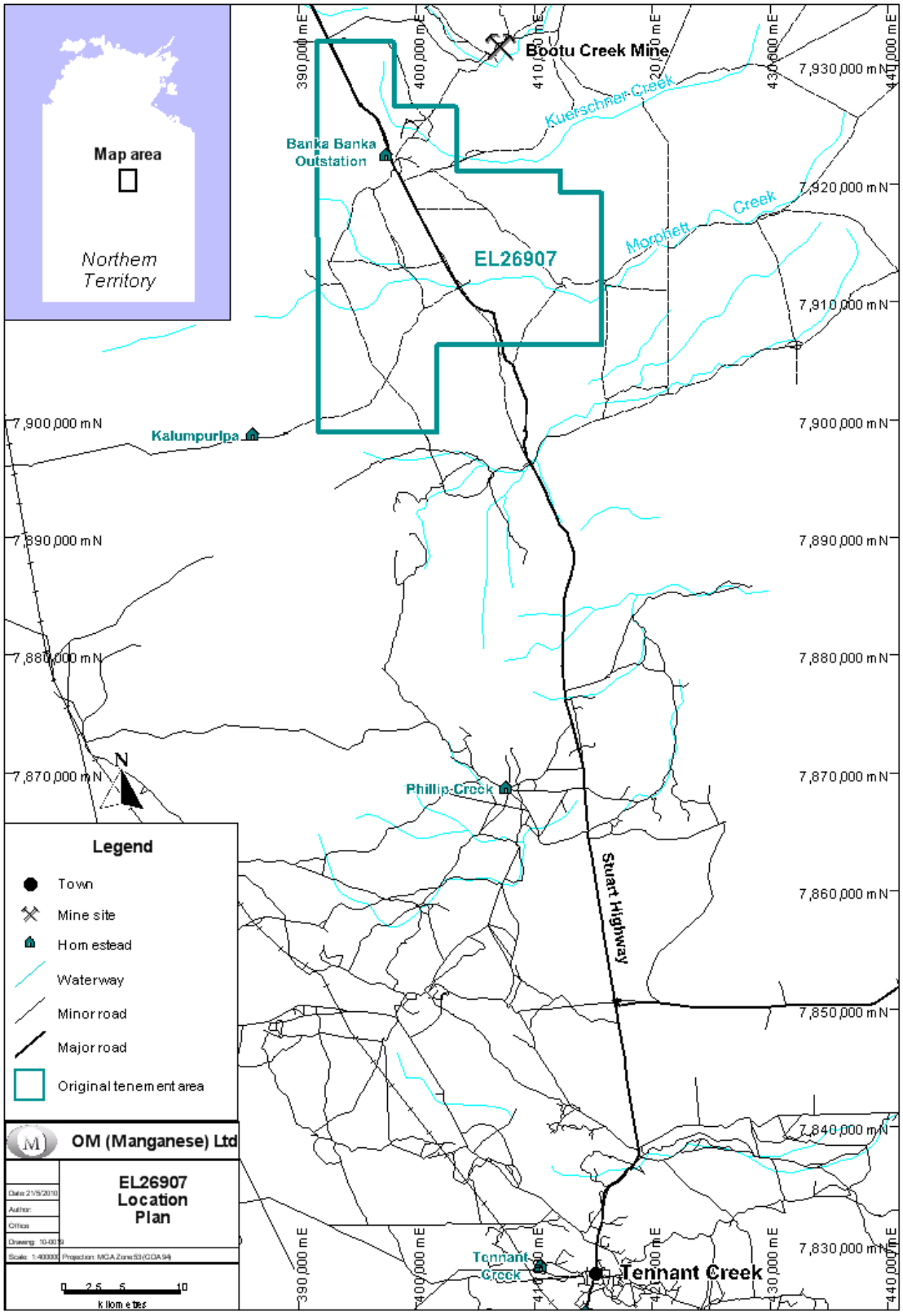

Figure 1. Plan showing the location of EL26907 in relation to Tennant Creek.

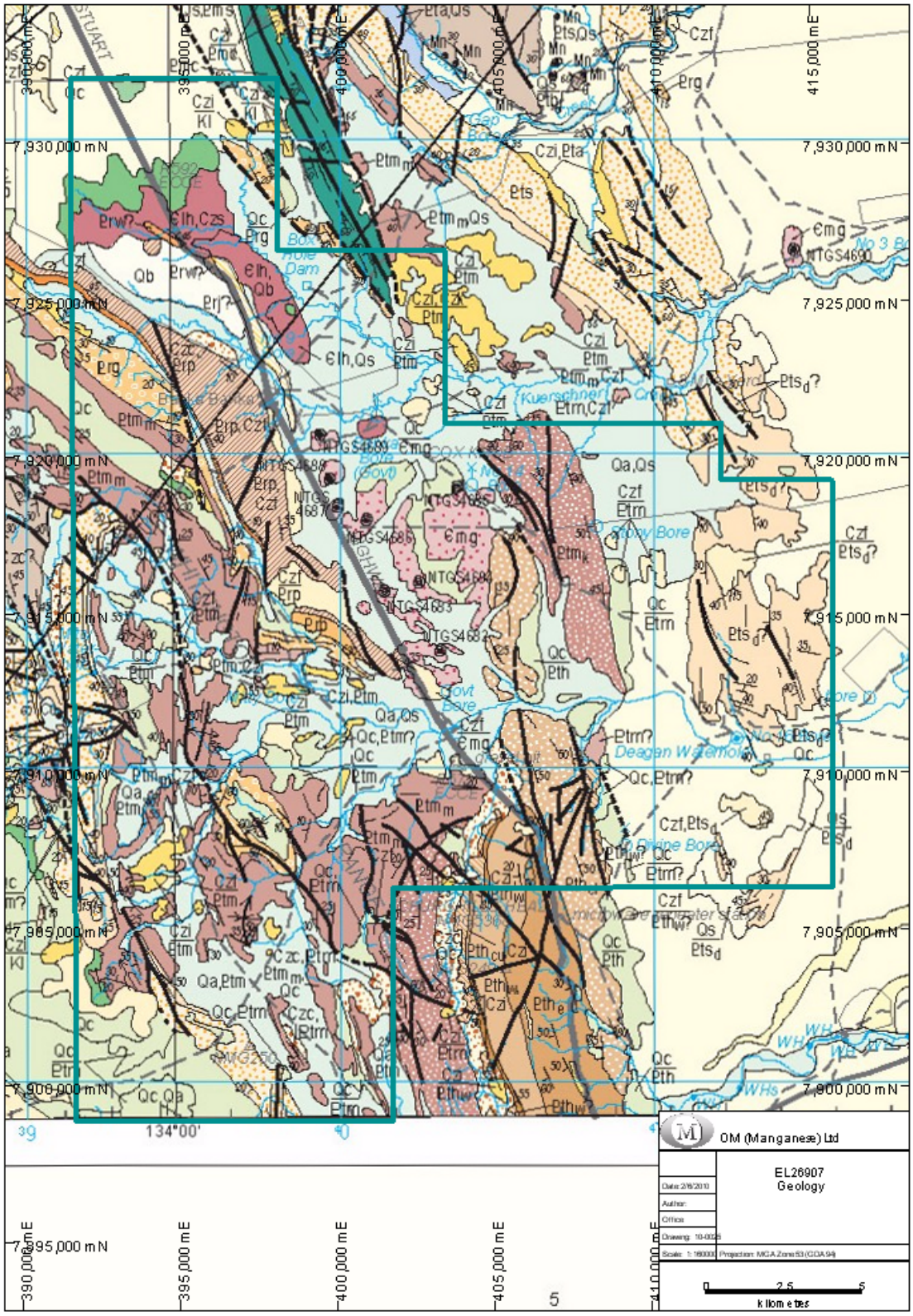

Figure 2. Geology map of EL26907, NTGS Helen Springs 1:250,000 (*Hussey et al, 2001*)

2 2011 – 2012 Exploration Activity

Work completed on 26907 during its third year comprised:

- Interpretation, integration and ground checking of airborne geophysical data flown at the end of Year 2.
- Reconnaissance field inspection.

2.1 Aeromagnetic Survey

GPX Surveys were contracted to fly a fixed wing airborne magnetic and radiometric survey for OM (Manganese) Ltd over EL26907 covering an area of approximately 526 sq km.

The survey details are listed in Table 1.

Type of Data	Aeromagnetic and Radiometric
Survey Datum	GDA94, MGA Zone 53
Survey line spacing	150 metres
Survey line direction	090-270 degrees
Tie line spacing	1,500 metres
Tie line direction	0-180 degrees
Nominal ground clearance	60 metres
Survey distance	4,093.7 line kilometres
Survey Date	30-3-2011 to 6-4-2011
Survey by	GPX Surveys

Table 1. OMM EL26907 Geophysical Survey Parameters

The airborne survey was completed in April 2011 (end of Year 2) and interpretation, integration with contiguous surveys on adjacent tenure, and ground checking was undertaken in Year 3.

The Survey and Logistics Report prepared by GPX Surveys covers the survey parameters in more detail and is attached in digital form.

2.2 Geophysical Interpretation

The aeromagnetic and radiometric data has been levelled and integrated with adjacent surveys, flown by GPX Surveys in 2008, to provide a more continuous image with the adjacent Bootu Creek manganese project area.

The aeromagnetic survey data clearly outlines areas covered by valley basalts beneath overlying Palaeozoic sediments and recent alluvium, and in combination with the radiometric data outlines areas of dolomitic sediments and areas covered by outcropping sandstone. Several structural features are also evident in the data.

The DEM image below has been extended to include the Bootu Creek mine site.

The Bootu manganese deposits wrap around the Bootu Syncline and are shown in the Geology map (Figure 2) for comparison.

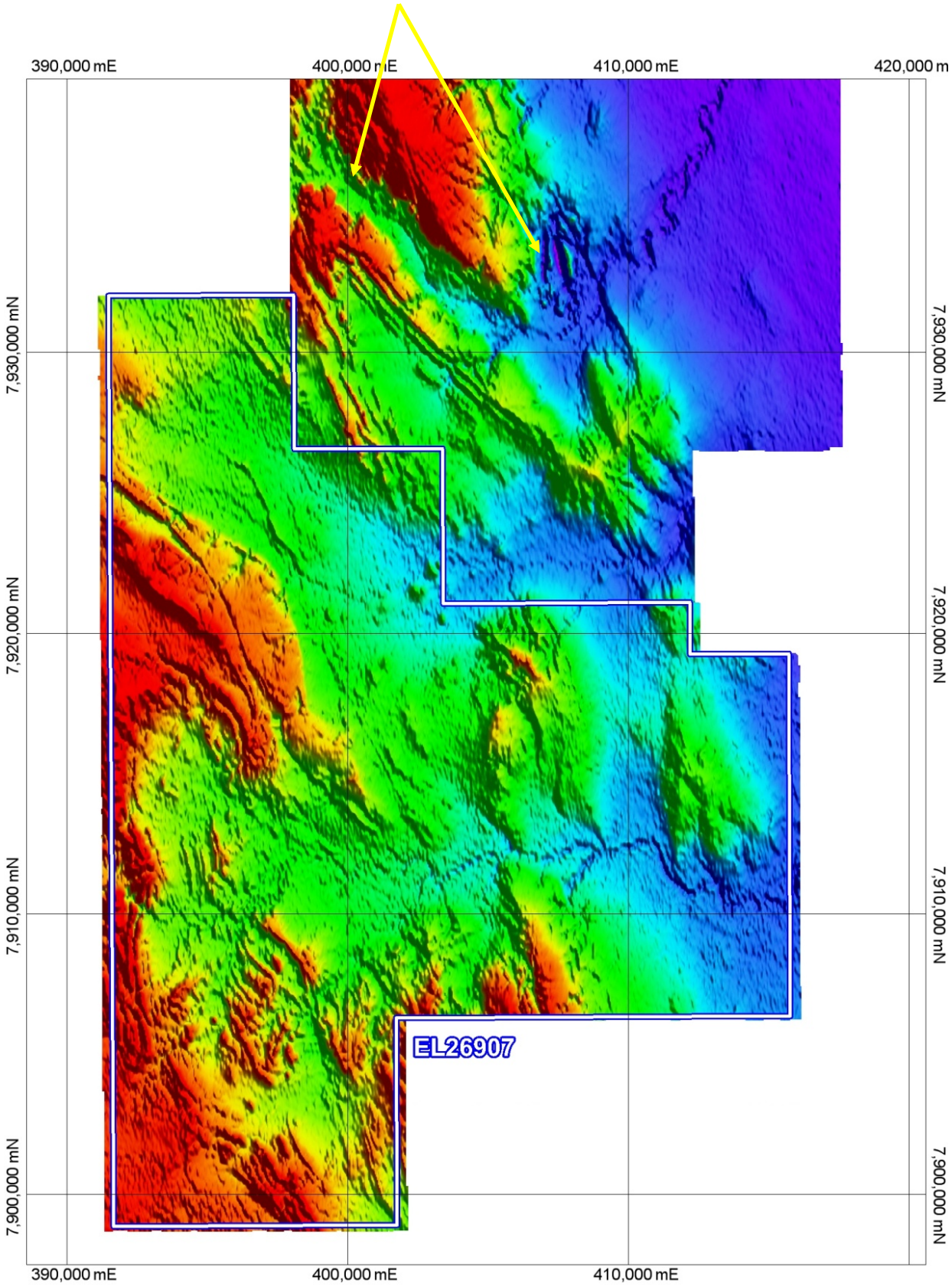

Figure 3. Digital elevation image

The TMI image below shows a strong underlying regional magnetic gradient (trend) extending SE from the NW corner of the image.

The high frequency magnetic features are related to Cambrian basalt flows.

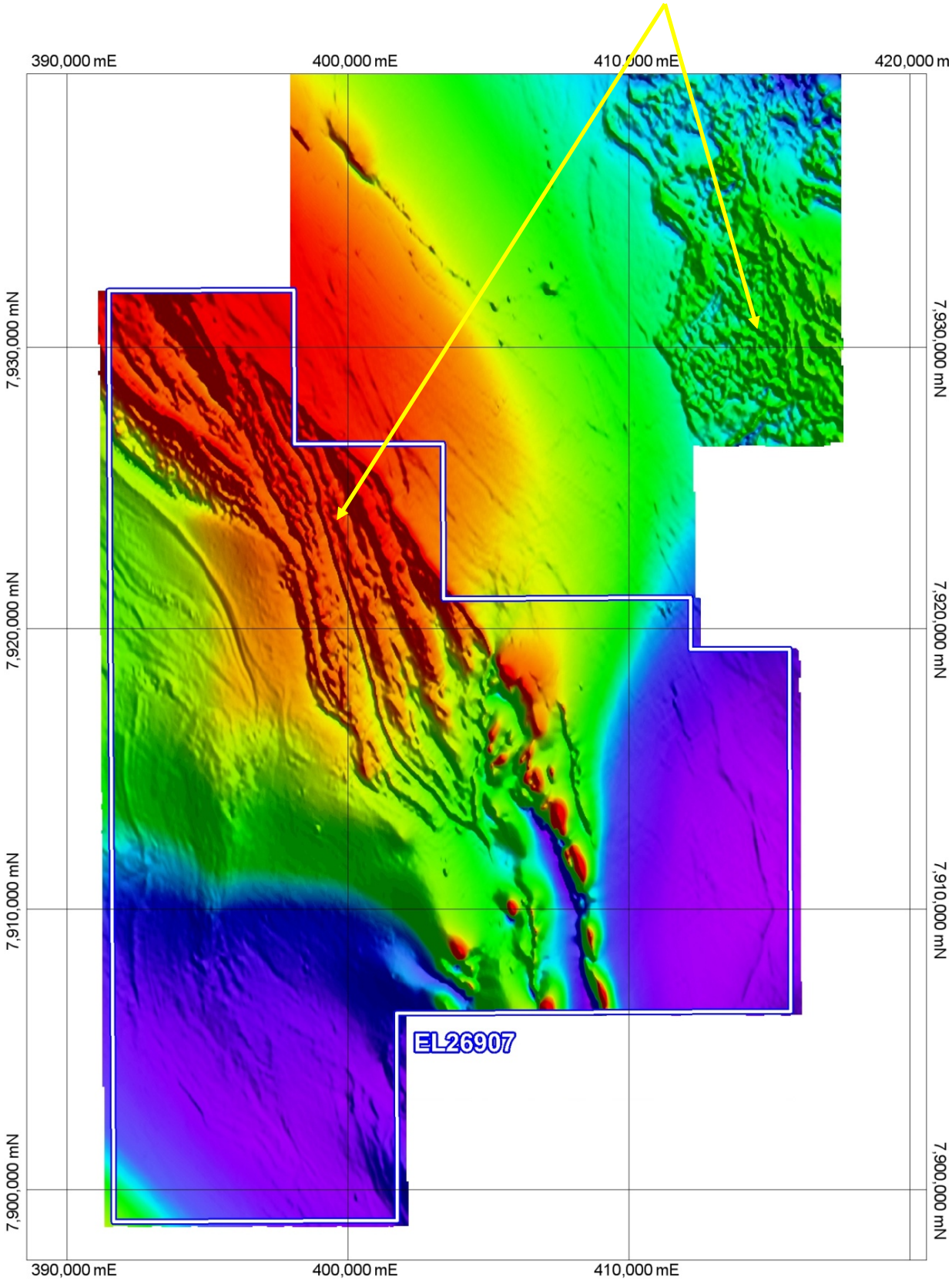

Figure 4. TMI

The TMI 1VD image reduces the effect of the underlying regional magnetic gradient and helps highlight more subtle magnetic features. The Bootu manganese deposits can be clearly seen wrapping around the Bootu syncline.

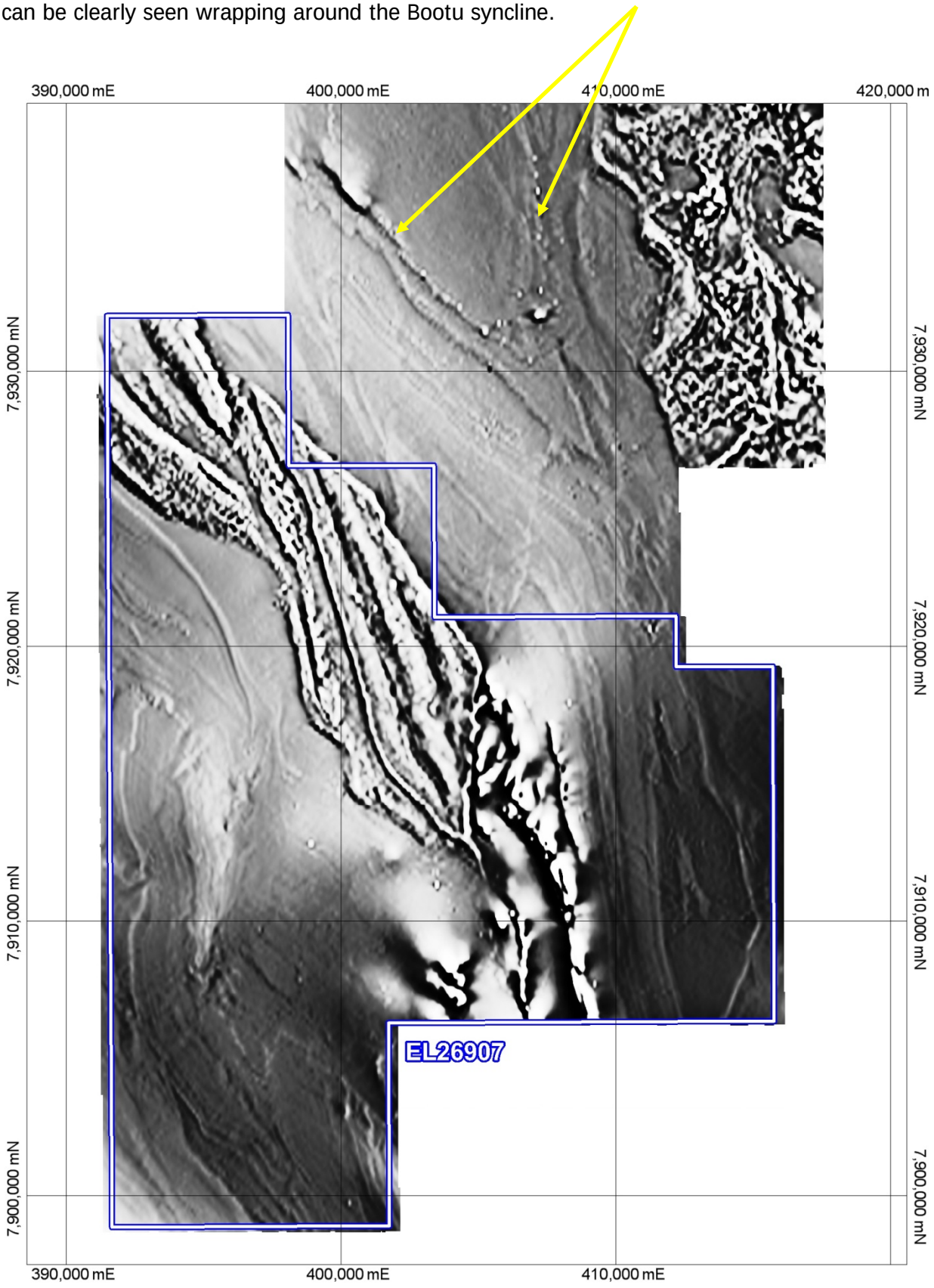

Figure 5. TMI FVD

The ternary radiometric image below highlights the dolomitic/shale rock lithology of the Attack Creek and underlying Morphett Creek Formations (pink-white) in contrast to the sandstone of the Bootu and Short Range Sandstone Formations (light blue).

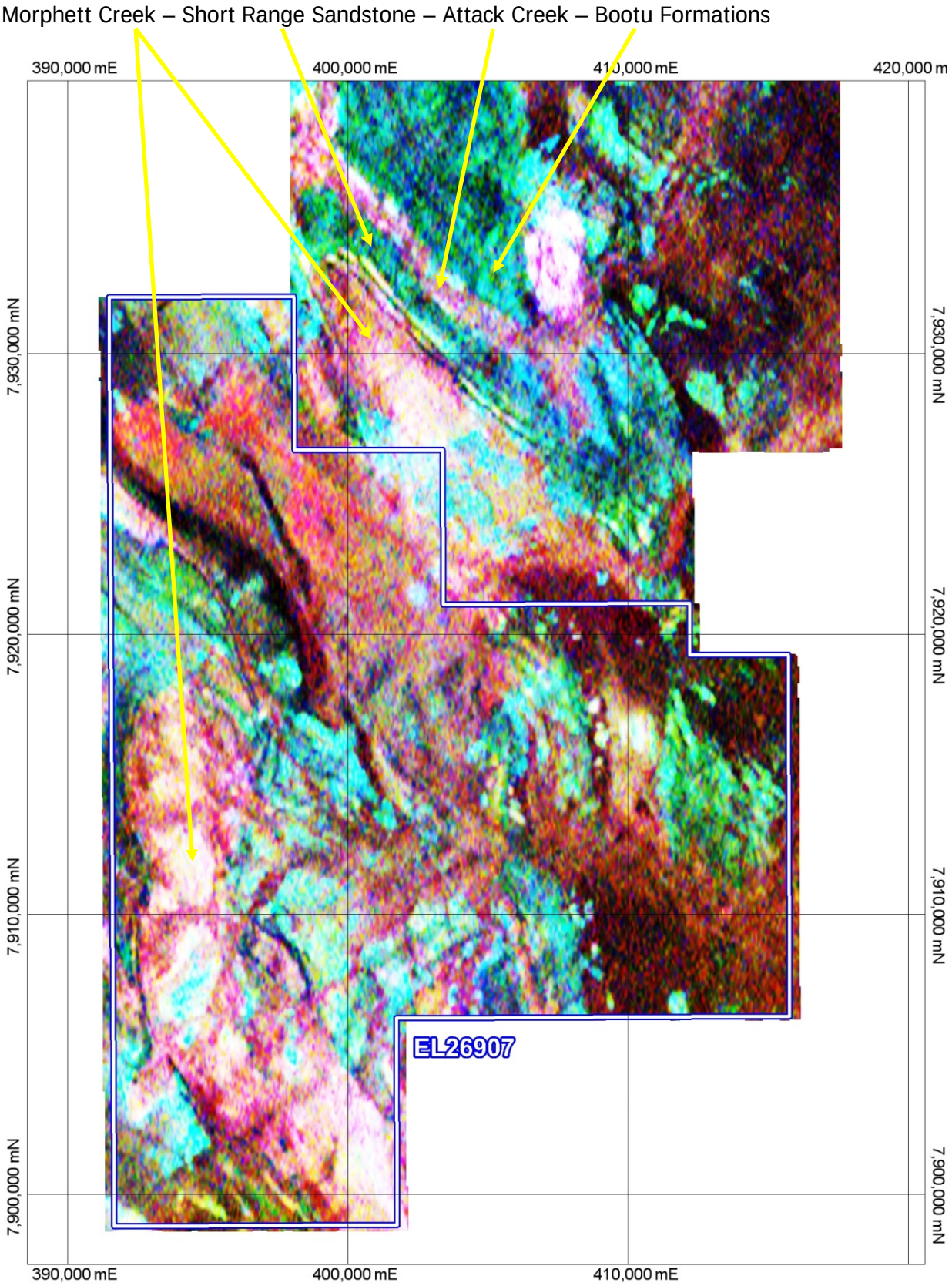

Figure 6. Radiometric Ternary RGB image

Ground reconnaissance has focussed on checking the Morphett Creek – Short Range Sandstone contact, an analogy of the Attack Creek – Bootu Formation contact, though no manganese outcrop or float has been observed to date. Ground checking of the more sensitive western boundary of EL26907 is waiting on prior AAPA clearance of that area.

References

Hussey, K.J., Beier, P.R., Crispe, A.J., Donnellan, N., and Kruse, P.D. (2001), Helen Springs, Northern Territory. 1:250,000 geological map series and explanatory notes, SE53-10 (Second Edition) *Northern Territory Geological Survey.*

GPX Surveys, GPX Project No: 2450, Survey Operations and Logistics Report for EL26907 Survey Area, April 2011.