

Assessment of geophysical datasets around Mt Cleveland, being the "North Eastern Block" within EL50/2011 for Tin potential (and associated metals) for



View of Mt Cleveland from Whyte River Lookout

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Scope: The North Eastern Area within EL50/2011 is relatively inaccessible and as such has been periodically downgraded in terms of recognisable metal potential. The object of this short desktop study is to highlight any areas of outstanding potential that require field reconnaissance . In particular recently updated higher resolution gravity data is available and a stitched 100m cell size Total Magnetic Intensity grid has been acquired for the assessment. Potential targets are to be assessed and if prioritised may be submitted for a work program to do a field check.

Executive Summary: There is potential for lode style Tin and Tungsten or skarn at shallow to moderate depths in the vicinity of the NW slopes of Mt Cleveland. Mt Cleveland itself has an all weather forestry access road that is steep and passable in 4WD in all but the very wettest conditions. The area of interest would require up to six days field reconnaissance, however if grid lines or access track were cut over the area in question an orientation soil survey or a simple rock chip reconnaissance and mapping exercise may determine if the lithologies and faults were suitable as hosts to mineralisation in the style of Renison Bell, Mt Lindsay, Cleveland, Mt Bischoff, Kara or Shepherd and Murphy (Albeit the host lithologies for Kara and S&M do not allow direct analogues involving the transition beds of the Gordon Limestone if the current geology is understood correctly).

Method: The Gravity data within the EL is a fairly poor coverage, similarly the modern geophysics including magnetics completed by Bass Metals only partially extends from the limits of the Eastern boundary of the Heazlewood Ultramafic Sequence. This survey also involved EM coverage which terminated 'prematurely' to the West of the potentially magnetically anomalous area within the Crimson Creek formation due to Bass Metals' intention to specifically assess the Nickel potential of the known Ultramafic units using an Avebury style model.

Gravity: With regard to the gravity data, there has been a recent re-interpretation that places the granite at ~4km depth. This potentially would allow magnetite or pyrrhotite responses that could be seen in the magnetic data within the Crimson Creek formation to correspond to an indication of Skarn potential in the overlying pendants or fault blocks.

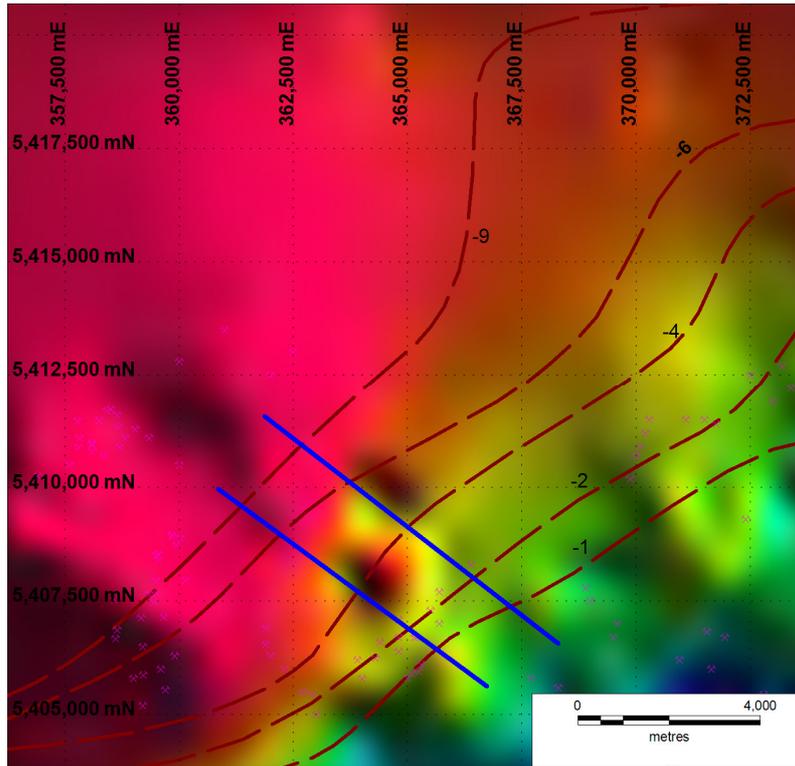


Figure 1 - Regional interpreted trends in gravity data, note data displayed is lower quality than currently available

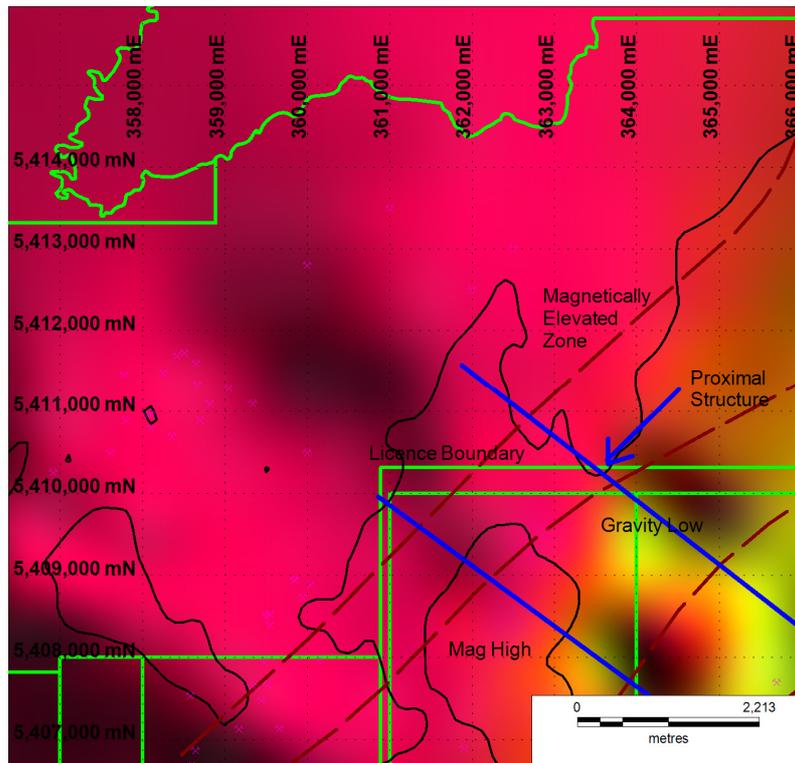


Figure 2 - Gravity trends with respect to licence boundaries and magnetic anomalous outlines, note EL50/2011 is the Central licence area.

Magnetics: From the magnetic data there is an indication of a major "Devonian trend" fault that appears to crosscut the main Eo-Cambrian boundary. This appears as a subtle break in the magnetic boundary arc-linear by a straighter more distinct 330/345 degree trending magnetic low. This

feature is potentially a high angle fault of the Federal Basset Style or Foley Zone style that may act as a suitable conduit/feeder for granitic fluids ascending from the cooling (and Fractionating?) Meredith granite or it's pyritic bearing dykes similar to those implied as the mineralising source within the Mt Bischoff lodes. It is a feature of local significance with an indicated strike length of approximately 4km which may indicate a long lived feature with potential for openings (dilatational zones) at kink points created by brittle-ductile rock boundaries and contacts within the Crimson Creek Sequence.

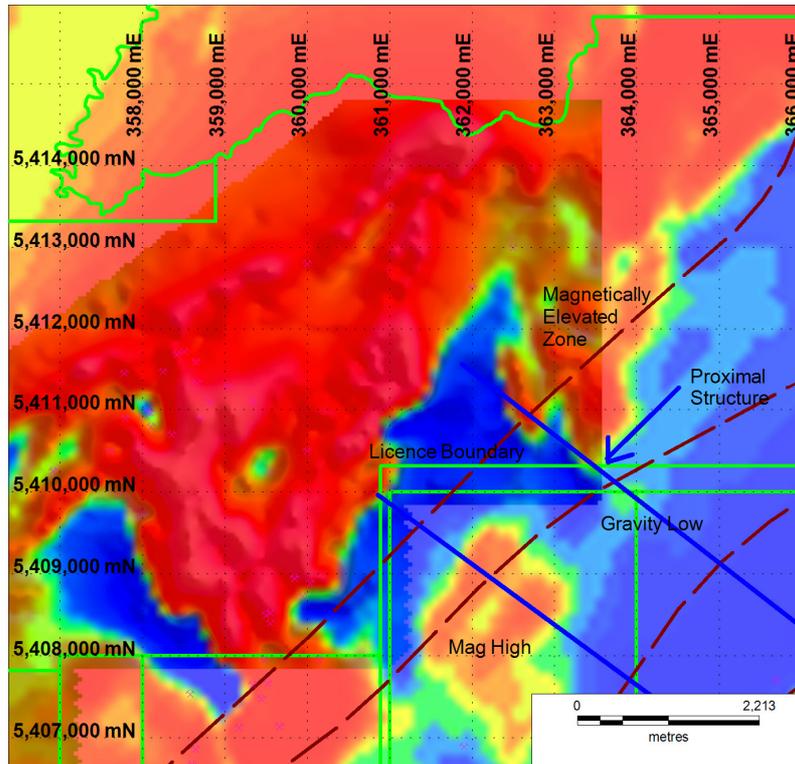


Figure 3 - Regional magnetics overlain by the regional gravity trend and most recent granite isobaths

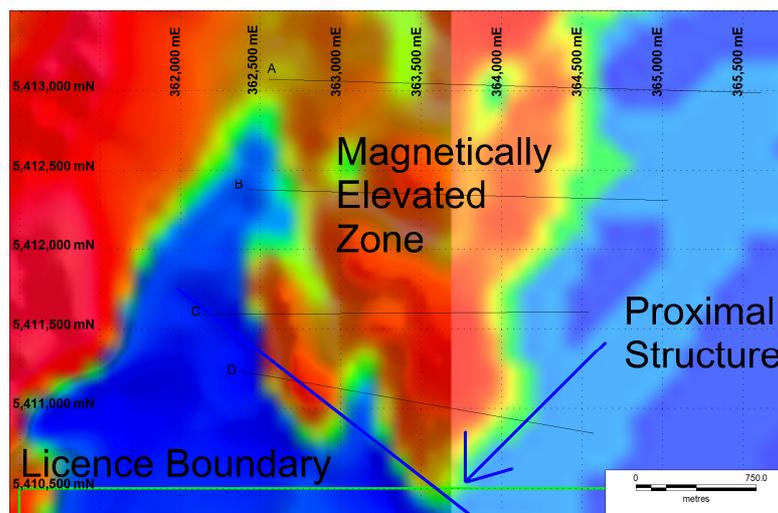


Figure 4 - Magnetic image with respect to the interpreted fault trend in gravity data and section lines for magnetic profiling

Electromagnetics: The Bass Metals VTEM data although only of limited coverage with respect to the anomalies tends to suggest that the anomalies on lines A,B,C & D have a negligible conductivity response. A ground EM survey could be done to the east as a definitive test, however a better approach would be a short field reconnaissance in the first instance.

Potential Mineralisation Analogues: The Crimson Creek formation in the vicinity of the Mt Lindsay deposit is known to be a repetitive thrust stack sequence, this is similar to the repeated magnetic highs in the fault block. The fault block has two sub parallel 400-600nT peak magnetic highs suggestive of sub vertical beds replaced with a potential magnetite skarn assemblage. Such anomalies may contain up to 6-8% magnetite by weight and depending on the thickness and extent of "skarnification" of the host unit may be at a shallow depth. Using a half wavelength rule of thumb for each body suggest burial depth would be in the order of 200-400m. The magnetic profiles are shown below:

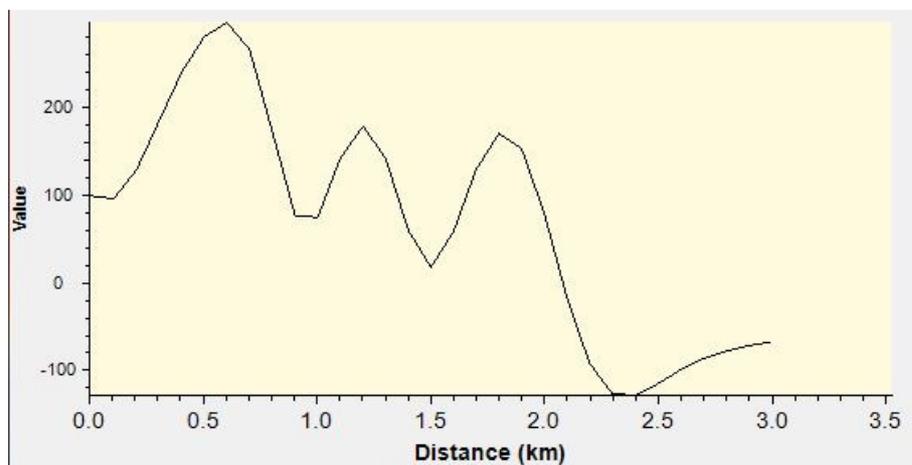


Figure 5 - Line A

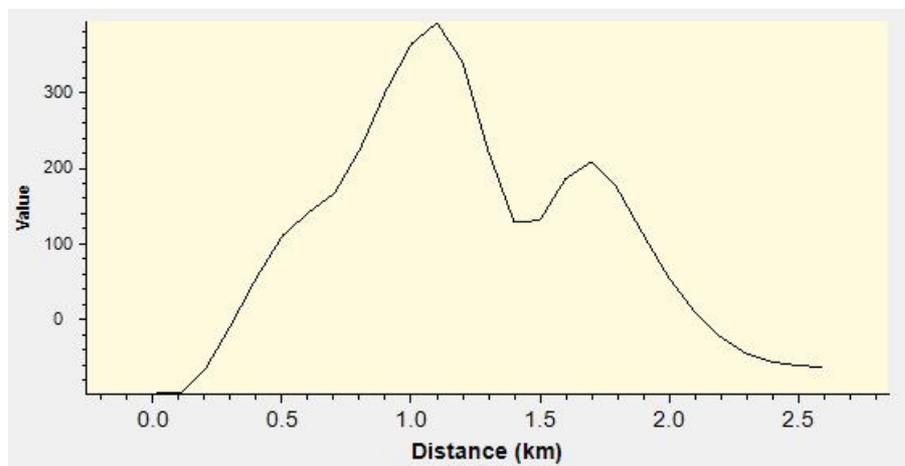


Figure 6 - Line B

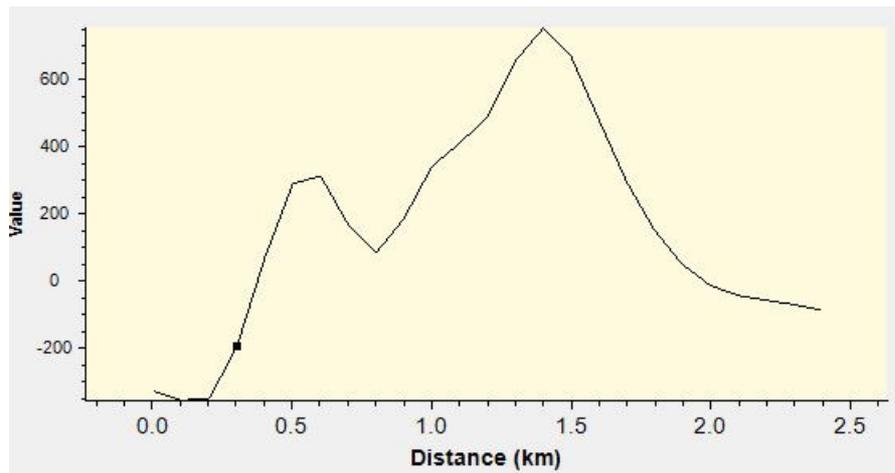


Figure 7 - Line C

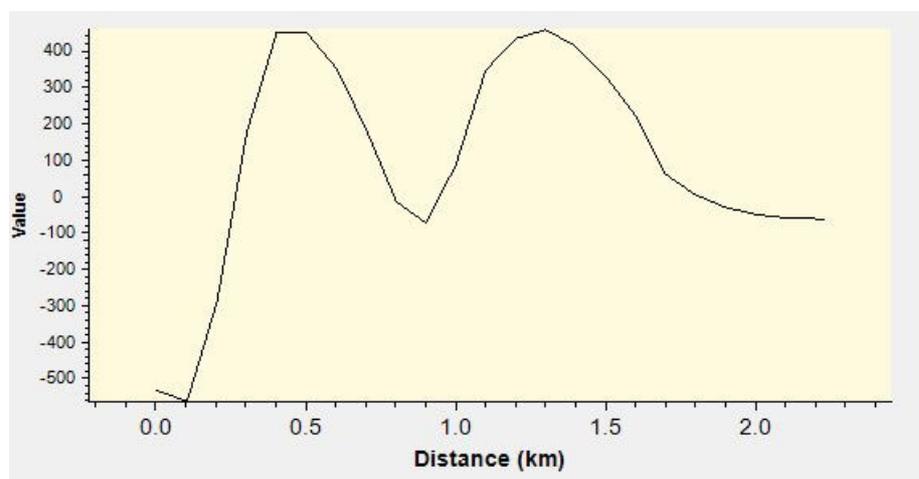


Figure 8 - Line D

Line D and C are not without potential for Mt Bischoff style mineralisation based on the magnetic intensity. Mt Bischoff has a magnetic signature with an approximately 400nT peak. However, the intruding granite is in fact proximal to the mineralisation at Mt Bischoff ie: <200m in places and some greisen mineralisation is present. This downgrades the potential of the eastern magnetic highs on each of the lines

On the other hand Mt Lindsay skarns have an ~ 600 nT peak Magnetite-Silicate-Cassiterite Skarn even on the " steep sloping" southern edge of the Meredith Granite the depth to granite is considered to be only 1-2 km deep. As such the sulphide poor systems such as at Mt Lindsay are a more consistent target style as the EM data (below) suggests.

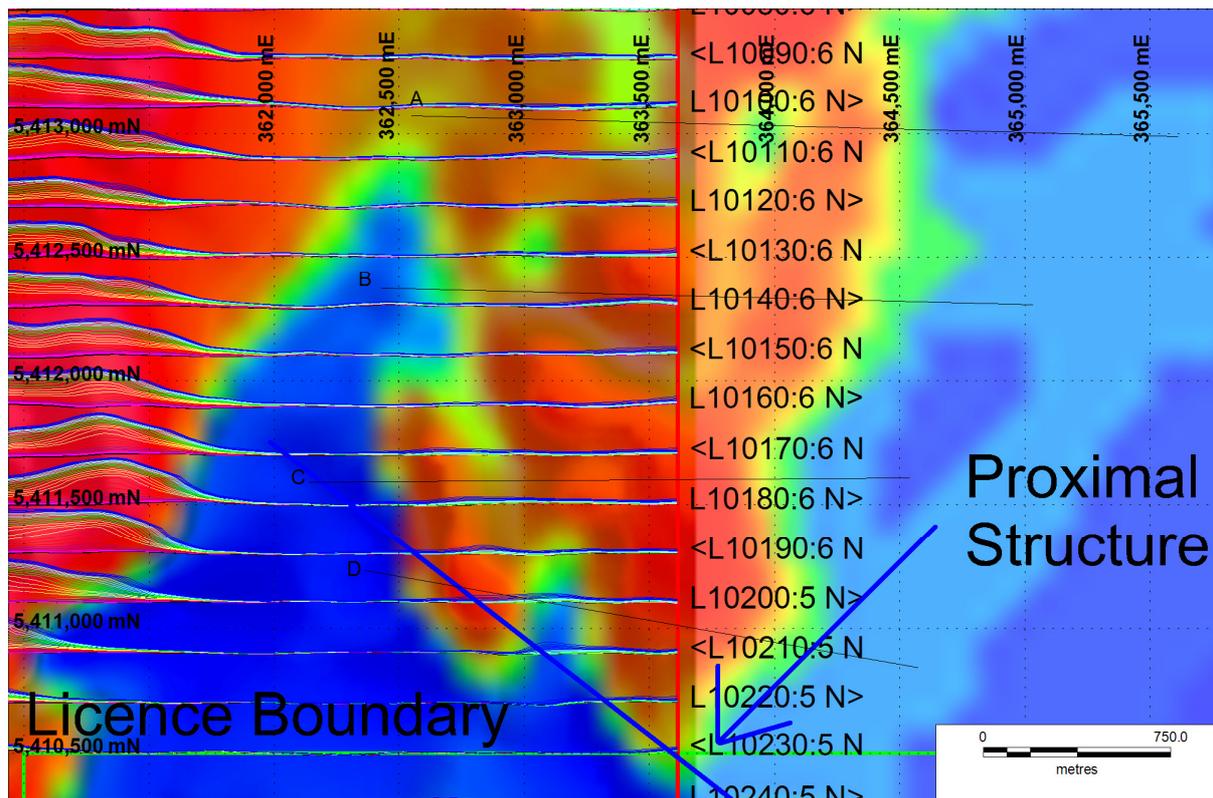


Figure 9 - EM lines (unresponsive conductors) with respect to magnetic highs (red)

Interpretation and Recommendations: The 'north-eastern block' of EL50/2011 is not without tin potential. It is quite likely that the following deposit styles are unlikely unless there is a cupola of fractionated granite as yet unrecognised nearer surface than currently understood in this area:

Mt Lindsay style Sn-Fe-W silicate skarn is a likely target style, however this does present as a 600m+ wide 600nT anomaly on a 100m cell size grid which although the Kerrin Creek zone (red area above) is not anywhere as wide, the unit presents as a 600nT anomaly, so a more distal style replacement that includes similar amounts of magnetite is possible.

Shepherd and Murphy style structurally controlled Wolframite (W) is still possible if the right brittle structures are present.

Kara Style roof pendant W-Mo-Fe is also a weak possibility, however a reactive rock type must be present and MRT's mapping has not been finalised in this area.

Discussion: Other Potential that is still present within the block remains to be recognised in the field but may include Foley Zone or Cleveland style "lode" tin or distal carbonate replacement style tin similar to the Renison Bell and Mt Bischoff deposits. These would need to be tested with a larger airborne VTEM style survey east of the existing coverage. It is currently thought unwarranted given the budgetary constraints to prioritise such a program.

Recommendations: With these deposit styles in mind is believed that the following areas are worth field checking:

- a) Bag 'O' Bones Creek

b) Kerrin Creek

c) Mt Cleveland Road and surrounds above Kerrin Creek

d) 'Overgrown' forestry road heading NE from Cleveland Road

This field program is likely to take a maximum of 6 full field days and half a day's travel either side. The requirement for this small amount of mapping and further correspondence with the MRT geologists has currently not yet been undertaken, however a draft map is to be received from John Everard in the near future to finalise any area for relinquishment where prospectivity appears to be downgraded.

There is potential for a new tin deposit. It is not without a level of uncertainty about the position of the granite or how far tin bearing fluids can migrate as to where the potential stops, however using known Tasmanian analogues it can be said that the best potential lies within a zone of approximately 2-3 km from the licence boundary. It is recommended that this area be prioritised for field work and the other areas be considered for surrender.