



Australian Ilmenite Resources Pty Ltd

Exploration Licence 26522

Relinquishment Report

2012

By

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BSc (Hons) MSc MAusIMM

GDA94 - Zone 53

Target Commodities: Heavy Minerals, Iron Ore and Uranium

1:250,000 Urapunga

1:100,000 Flying Fox, Moroak

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SUMMARY

This report covers exploration work conducted on the portions of EL 26522 which were relinquished in 2012 as part of a statutory reduction of the licence at the end of year 4. The EL was granted to Exploration and Resource Development Pty Ltd (now Australian Ilmenite Resources Pty Limited) on 23/7/2009 for a period of 6 years.

The Project lies in the Urapunga Fault Zone within the Bauhinia Shelf of the Proterozoic McArthur Basin. The area is underlain by sedimentary rocks of the Maiwok Subgroup of the Mesoproterozoic Roper Group. The Kyalla Formation in the area has been extensively intruded by sills of the Derim Derim Dolerite.

The area has previously been explored for heavy minerals, iron ore, base metals, uranium and diamonds.

In year 1 (2008-2009), geophysical data sets were acquired and the uranium potential of the area was assessed. An assessment of the area for diamonds was also undertaken and concluded that there was no potential.

In year 2 (2009-2010), further assessment of the uranium potential was undertaken and an airborne survey was planned. Negotiations took place with another company for a joint venture to explore for uranium in the tenement.

In year 3 (2010-2011), an airborne radiometric/magnetic survey was flown over one area within the relinquished portion of the EL.

A reconnaissance helicopter-supported mapping and sampling program was carried out in the tenement for iron ore, however no samples were taken in the relinquished portions of the EL. One of the uranium anomalies within the relinquished blocks was field checked at the same time.

No exploration was carried out during year 4 (2011-2012) due to other commitments in the area.

The relinquished blocks were considered to have lower prospectivity for the target commodities than those blocks which were retained.

INTRODUCTION

Background

The Roper HM Project originally included Exploration Licenses 22478, 23048, 24655, 24986, 26412, 26522, 26523, 26524 and 26525, and covered an area in excess of 10,000 sq km centred on heavy mineral deposits associated with dolerite intrusives of the Roper River region.

The area was originally applied to target insitu and in some instances remobilised heavy minerals shedding from eroding dolerite sills which had been intruded into the Mesoproterozoic Roper Group. The area may also be prospective for oolitic iron ore and uranium.

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Location and Access

The exploration licence is located about 60km northeast of Mataranka in the Roper River region of the Northern Territory.

EL 26522 is located south of the unsealed Central Arnhem Road which provides dry weather access to the tenement, see figure 1. Further internal access within the EL is provided by unsealed station tracks. There are sealed airstrips at Ngukurr to the east and Minyerri to the south providing all weather access to the tenement to support helicopter flying operations.

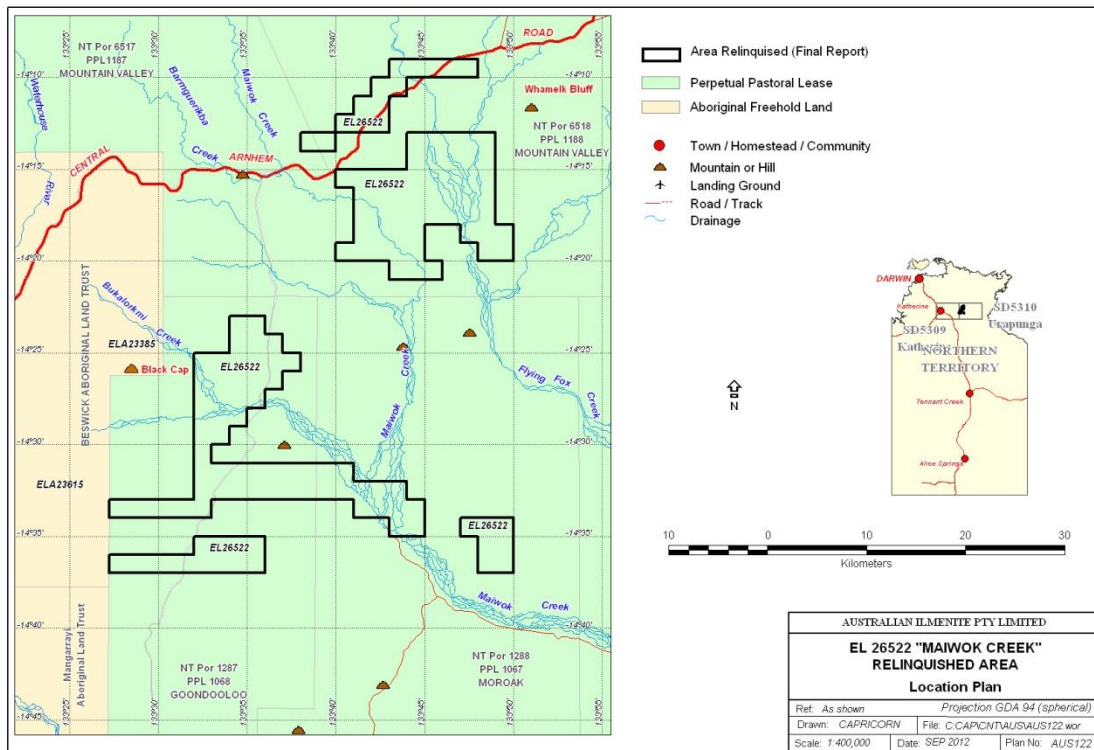


Figure 1: Tenement Location Plan

Climate

The project area has a humid monsoonal climate, with mild dry winters and hot humid summers often with heavy monsoonal rains associated with tropical cyclones. The average annual rainfall is 700 millimetres with most falls between November and April. The wet season renders portions of the area inaccessible for exploration activities.

Topography and Vegetation

The EL is within the Gulf Fall physiographic province where dissected Proterozoic sediments have produced an undulating topography of low hills and rubble covered ridges with broad areas of alluvial and colluvial plains.

Vegetation consists of open savannah Eucalyptus woodland with Spinifex common in sandy and higher ground. The creek beds and water holes of the

tributaries of the Roper River (Flying Fox Creek and Maiwok Creek) extend through the area and are associated with paperbark and larger Eucalyptus trees. Dense thickets of lancewood occur in higher ground particularly on the steep slopes adjacent to Cretaceous mesas and sandstone plateaus.

TENURE

Mining/Mineral Rights

Exploration Licence 26522 was granted to Exploration and Resource Development Pty Ltd (now Australian Ilmenite Resources Pty Limited) on 23/7/2009 for a period of 6 years. The tenement originally covered 499 sub blocks and was partially reduced in July 2012.

Land Tenure

The tenement is located on PPL1167 (Moroak Station), PPL1168 (Goondooloo Station), PPL1187 (Conways Station) and PPL1188 (Mountain Valley Station).

Native Title

There are four Native Title claims which affect the EL:

- DC 01/11 Mountain Valley
- DC 01/14 Goondooloo/Moroak 1
- DC 01/66 Goondooloo/Moroak 2
- DC 01/63 Mountain Valley/Mainoru

Aboriginal Sacred Sites

There are no known aboriginal sacred sites within the tenement. No archaeological surveys have been carried out during the current tenure

GEOLOGY

Regional Geology

The Project lies in the Urapunga Fault Zone within the Bauhinia Shelf of the Proterozoic McArthur Basin (see Figure 3). The basin consists of several northerly trending rifts separated by northwest-trending faults and transverse ridges, and was subject to repeated cycles of clastic and marine carbonate sedimentation interspersed with volcanic extrusion and sill emplacement in response to reactivation of older basement structures.

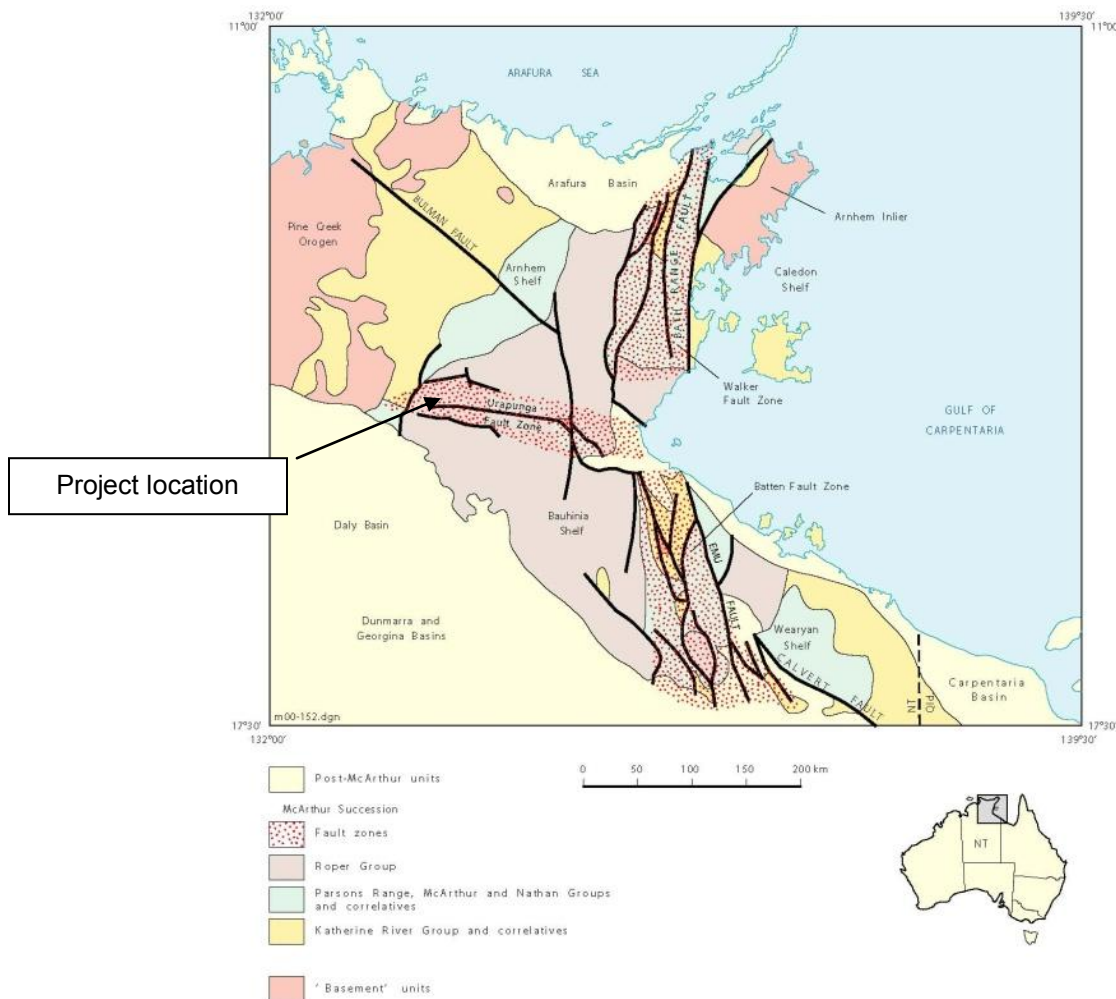


Figure 2: Regional Geological Setting

A later, more passive series of sedimentary cycles in response to western basin subsidence occurred with the deposition of suites of blanket quartz sandstones, micaceous siltstones, black shales and glauconitic sandstones of the Roper Group. Ironstones are prominent on a local stratigraphic level within this succession. Tholeiitic dolerite and gabbro sills were emplaced throughout the Roper Group soon after deposition ceased and before regional deformation.

Local Geology

The tenement is predominantly underlain by rocks of the Mesoproterozoic Roper Group. The oldest rocks in the area are from the Collara Subgroup and consist mainly of sandstones with some mudstone and minor limestone. The Maiwok Subgroup overlies the Collara Subgroup and contains mudstones, siltstones and sandstones. The Sherwin Formation occurs close to the top of this succession and contains oolitic ironstones which are the focus for current exploration for iron ore in the area. Sills of Derrim Derrim Dolerite intrude the upper parts of the Maiwok Subgroup including the Sherwin Formation.

The Sherwin Formation consists of up to four separate layers of hematitic oolitic sandstone (individually up to 4m thick) within a sequence of sandstone, siltstone and mudstone, which is up to 100m in thickness. The unit is underlain by the Moroak Sandstone which usually forms a prominent scarp. The Sherwin Formation is overlain by the Kyalla Formation, a sequence of siltstones and fine sandstones. The strata are generally flat lying although faulting has resulted in steepening of dips and stratigraphic dislocation in places.

The absence of Cambrian flood basalts (Antrim Plateau Volcanics) and only remnant outliers of Cretaceous sandstone suggest that significant uplift and erosion has occurred within the area permitting exposure of the underlying Proterozoic sediments and dolerite sills. Extensive deposits of Quaternary to Recent sediments comprising alluvium, colluvium, unconsolidated gravel and sand overlain by mud-rich soils are mapped in the project area and reflect material derived from prolonged weathering and erosion during the Tertiary. EL

26522 contains significant areas of these recent valley fill / floodplain deposits which are associated with the Flying Fox and Maiwok Creeks and their tributaries.

The Kyalla Formation in the area has been extensively intruded by sills of the Derim Derim Dolerite, which may be up to 100 thick. The dolerite outcrops as low-relief hills strewn with rounded boulders. The dolerites are fine to coarse grained and composed of plagioclase (40%), clinopyroxene (40%), amphibole (7%), opaques (ilmenite & magnetite 5%) and clay (7%).

The dolerite is generally deeply weathered and forms soils which are deep red-brown in colour, clay-rich and contains abundant liberated ilmenite, titanomagnetite, magnetite and haematite grains. The heavy mineral deposits present in the residual soils and in associated coluvial and alluvial concentrations form the primary exploration target in the area. In areas of higher elevation the dolerite sills have only been recently exposed, and soil development and erosion are limited. In lower lying areas the dolerite has been exposed for a longer geological time resulting in pisolitic laterite formation and attendant erosion. These latter areas are considered to have the best potential for higher in-situ ilmenite grades in both colluvial and alluvial terrain.

PREVIOUS EXPLORATION

Mining History

There has been no mining carried out in the region.

Exploration by Previous Companies

The project area has attracted companies in exploration campaigns for iron ore, base metals, diamonds and uranium.

Evaluation of the oolitic ironstones of the Sherwin Formation by BHP in the 1950's identified potential for large tonnage (>400Mt) low to moderate grade (30%-60% Fe) iron deposits largely to the south and southeast of the Project Area. Recently further exploration has been undertaken by Sherwin Iron Ltd.

Exploration of the area for uranium was undertaken by Kratos Uranium NL in the early 1970's with little success.

Normandy/Poseidon explored the area for base metals (Pb, Zn and Cu) culminating in the discovery of a number of small low grade deposits of sandstone-hosted base metals (disseminated galena in Roper Group arenites at Galena Cliffs and Wongalara Prospects).

Intensive diamond exploration occurred in the 1980's with large scale stream sediment sampling, loam sampling, airborne magnetic surveys and drilling programs conducted by Stockdale Prospecting and Ashton Mining. While a few kimberlitic indicator minerals including micro and macro diamonds were reported, most could not be traced to a source with the exception of two thin (<2m) steeply dipping kimberlitic dykes (Packsaddle and Blackjack 1) located by Stockdale south of the Project area.

CRA Exploration undertook a reconnaissance evaluation of the heavy mineral content of the extensive dolerite sill (and lateritic soil) horizons. Eight hand-held auger holes were completed to test the upper soil profile at scattered localities. A

best assay of 1.0m grading 3.0% ilmenite was reported and the tenements were subsequently surrendered in 1996.

Exploration and Resource Development Pty Ltd (now Australian Ilmenite Resources Pty Limited) explored the area between 2001 and 2004 for heavy minerals associated with the Derim Derim dolerite.

A comprehensive summary of all past exploration can be found in the Explanatory Notes for the Roper Region: Urapunga and Roper River Special Sheet (Abbott, S.T., et al. 2001).

EXPLORATION COMPLETED BY AIR

In year 1 (2008-2009), geophysical data sets were acquired and a consultant geophysicist (GeoDiscovery Group) undertook an assessment of the uranium potential of the area. A number of anomalies were identified. An assessment of the area for diamonds was also undertaken and concluded that there was no potential.

In year 2 (2009-2010), further assessment of the uranium potential was undertaken and an airborne survey was planned. Negotiations took place with another company for a joint venture to explore for uranium in the tenement.

In year 3 (2010-2011), an airborne radiometric/magnetic survey was flown over one area within the relinquished portion of the EL (Regions 3). The survey was flown at a nominal height of 60m with north-south lines 200m apart. GeoDiscovery Group undertook processing of the data and the processed images can be found in Appendix 1.

A reconnaissance helicopter-supported mapping and sampling program was carried out in the tenement for iron ore, however no samples were taken in the relinquished portions of the EL. One of the uranium anomalies within the relinquished blocks was field checked at the same time.

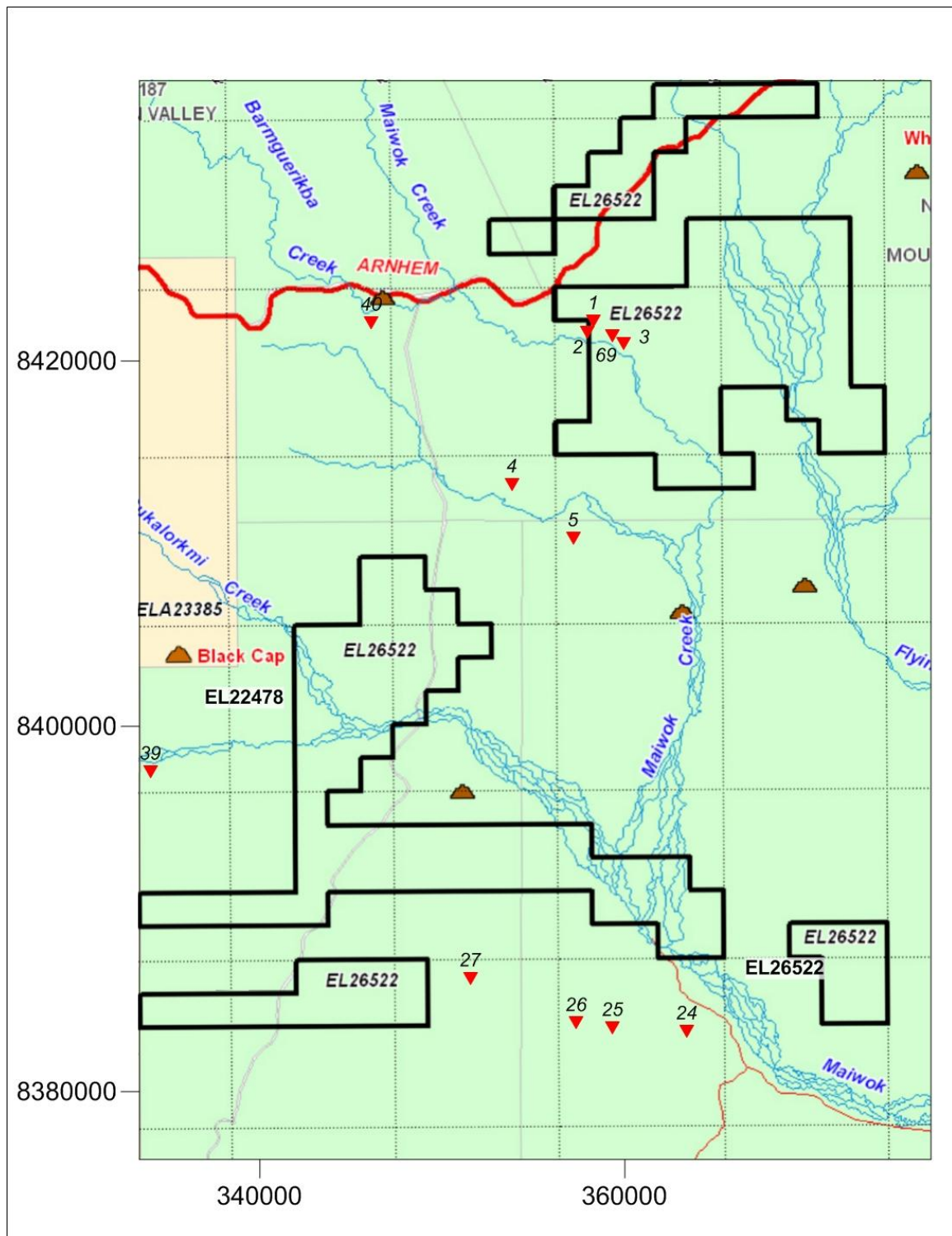


Figure 3: Relinquished portions of EL26522 and uranium anomalies

Radiometric anomaly 1 is located to the east of Conways Station. The area is underlain by sandstones of the Munyi Member of the Corcoran Formation. The anomaly was described as a "NW-SE trending U high in sediments" by GeoDiscovery and has a rank of 1. Outcrop in the vicinity of the highest radioactivity readings consisted of laterised ferruginous sandstone (Figure 8). The highest readings obtained on the scintillometer were 170-180 cps which was about 2.5x background. It appears likely that the anomalous radioactivity is associated with the laterised sandstone and is not indicative of bedrock uranium mineralisation.



Figure 4: Ferruginous sandstone – Radiometric anomaly 1.

No exploration was carried out in year 4 (2011-2012) due to other commitments in the area.

The relinquished blocks were considered to have lower prospectivity for the target commodities than those blocks which were retained.

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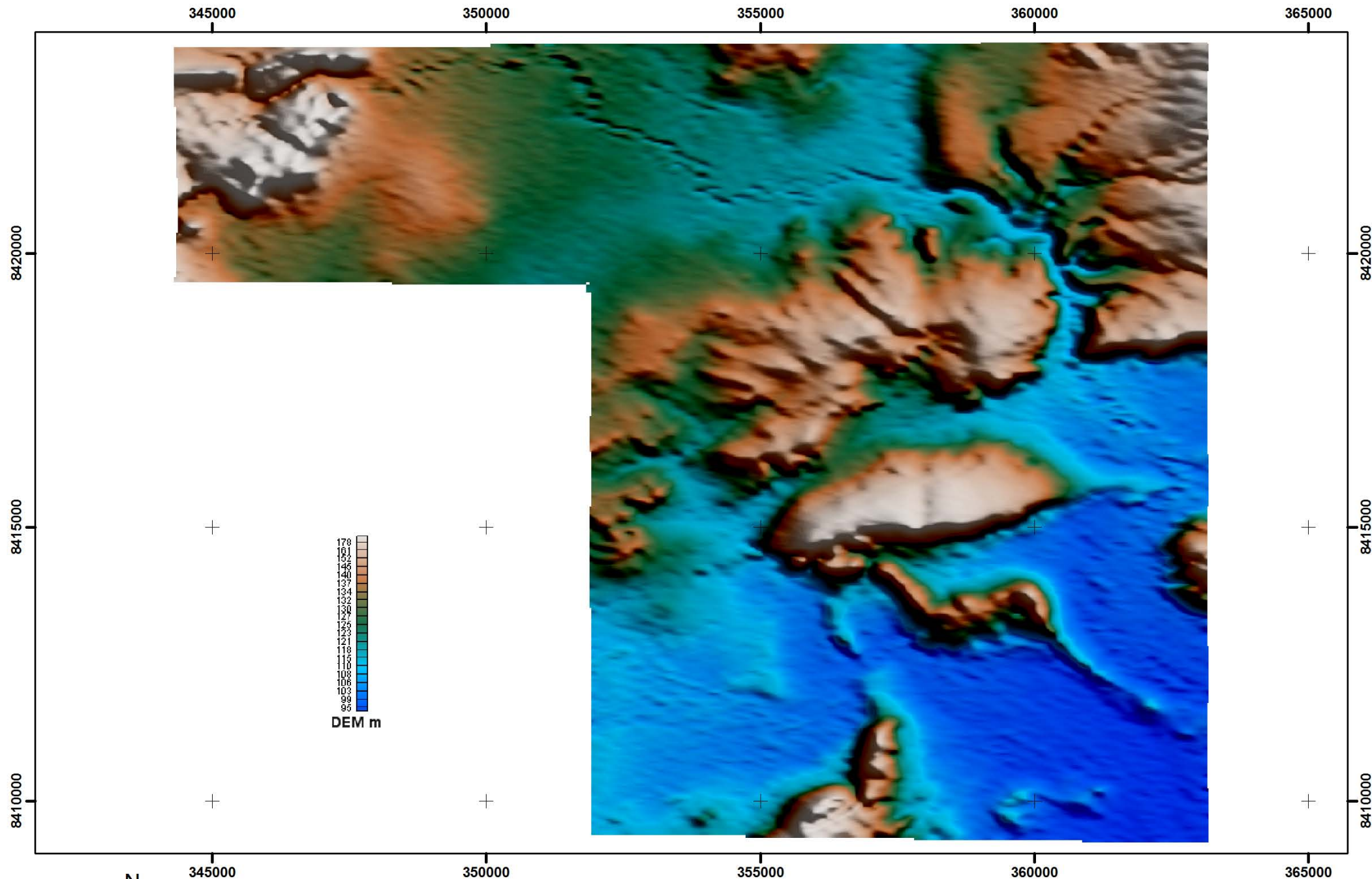
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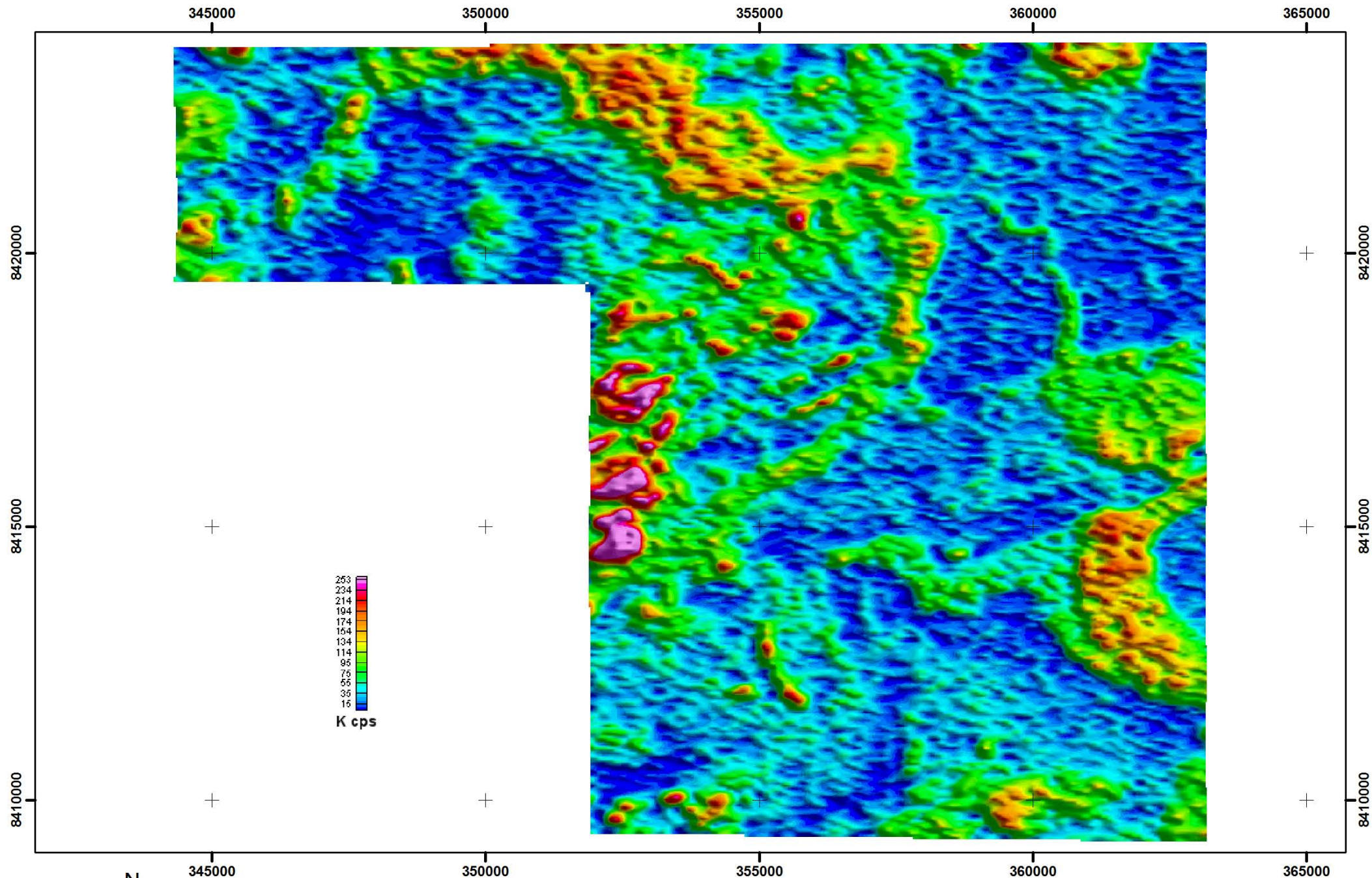
Appendix 1

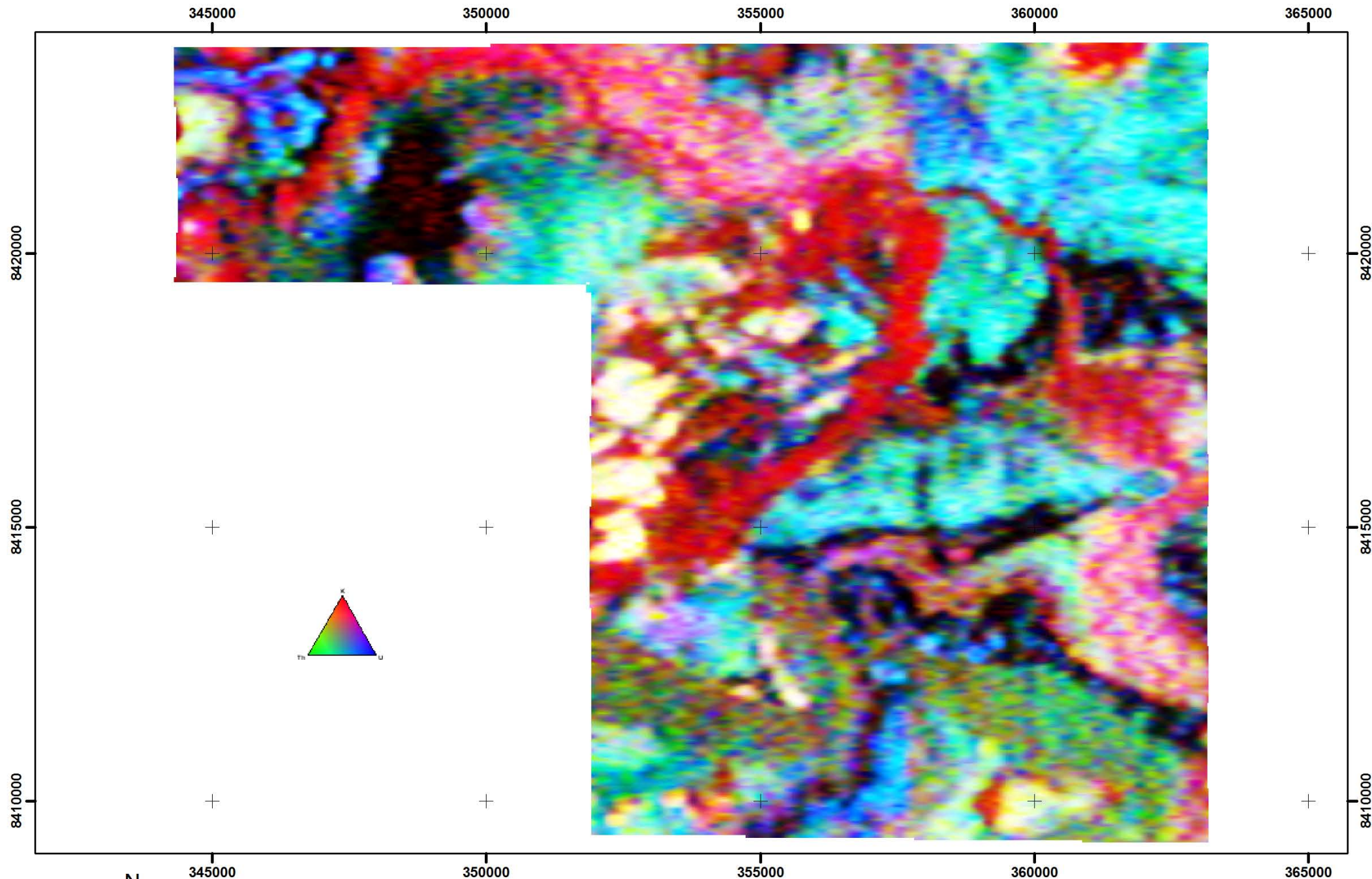
Geophysical images.



Australian Ilmenite Resources
Region 3 - Digital Elevation Model

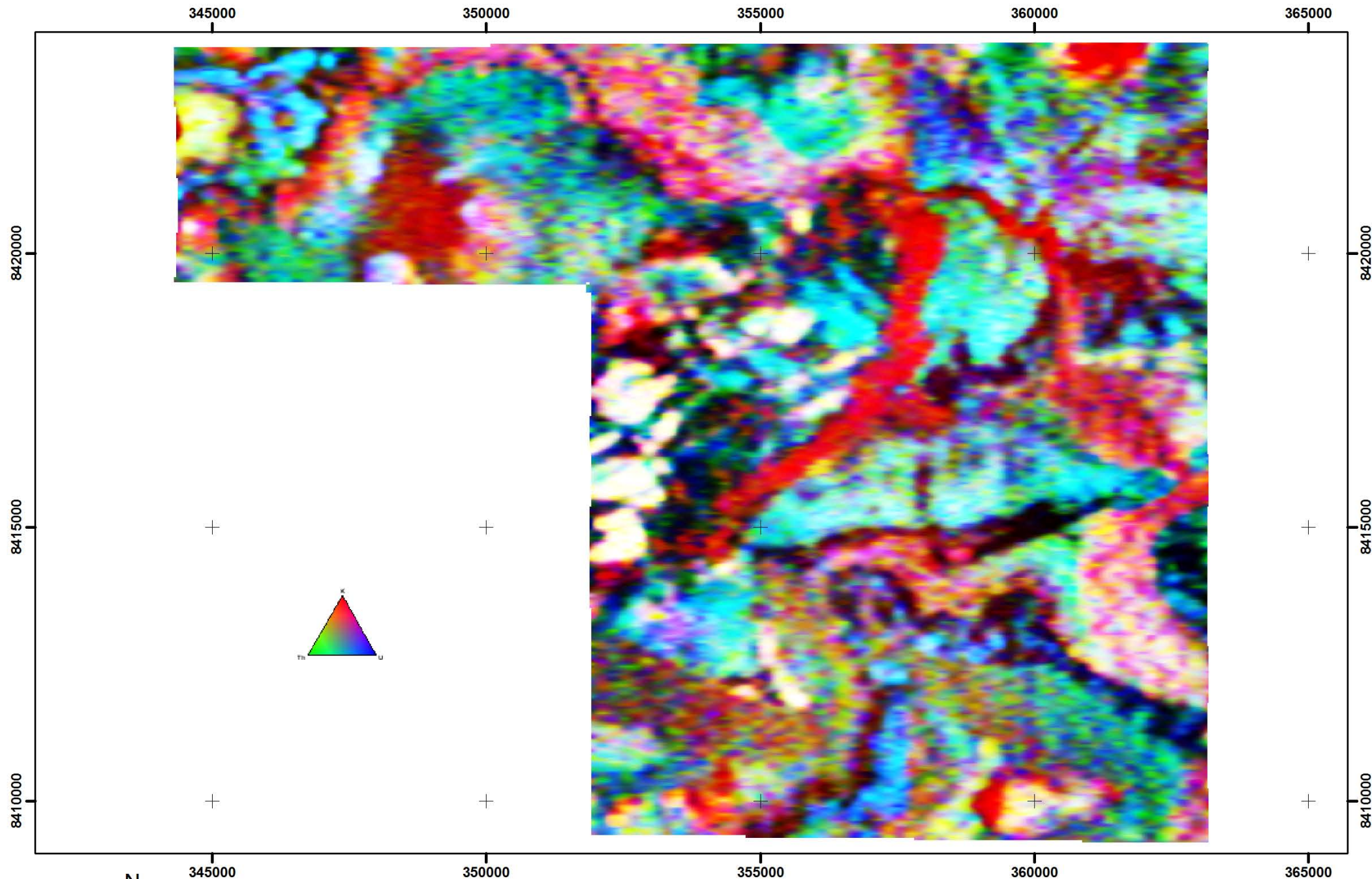


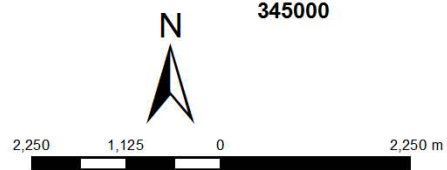
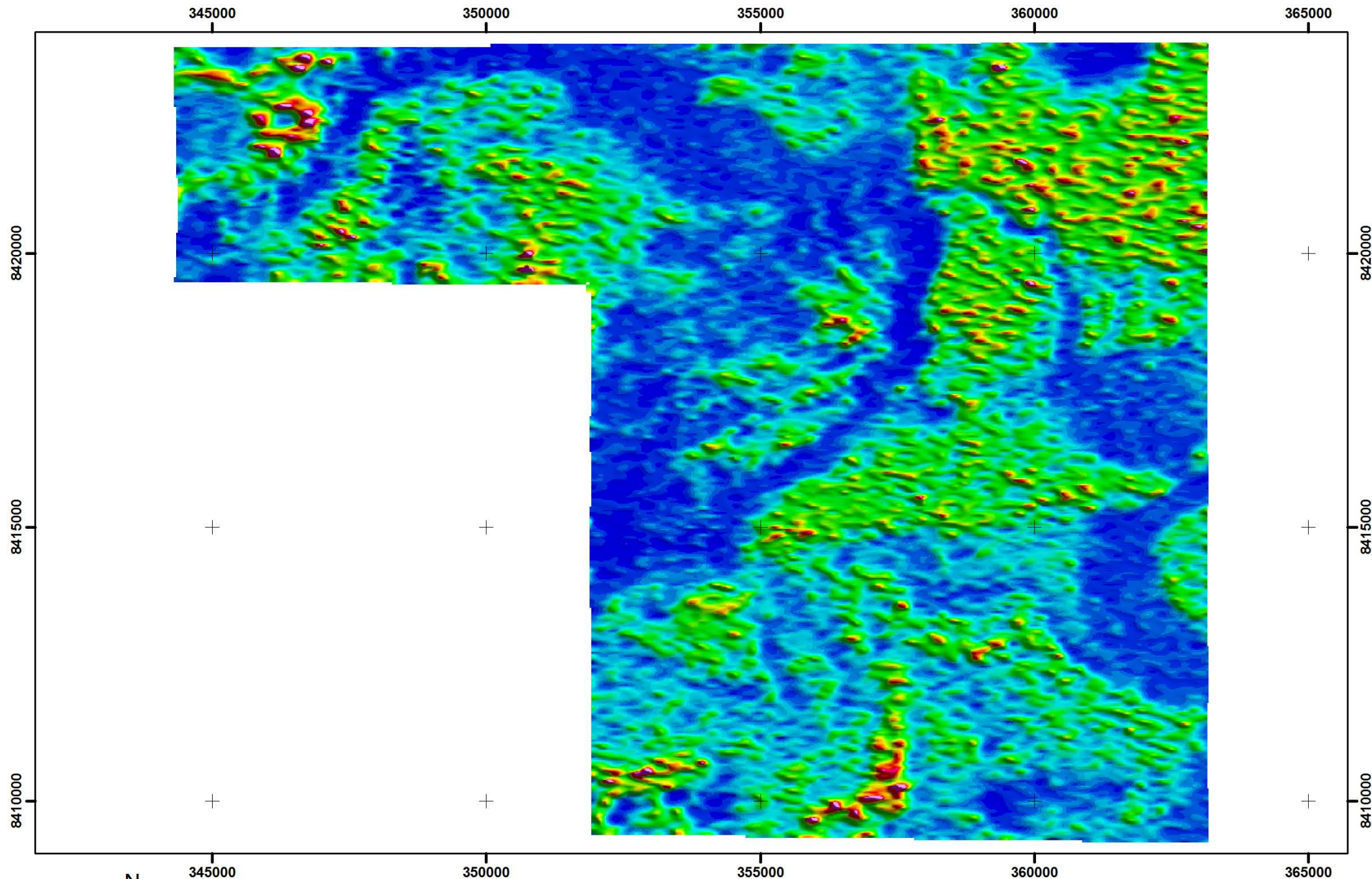




Australian Ilmenite Resources
Region 3 - Radiometric Ternary Diagram

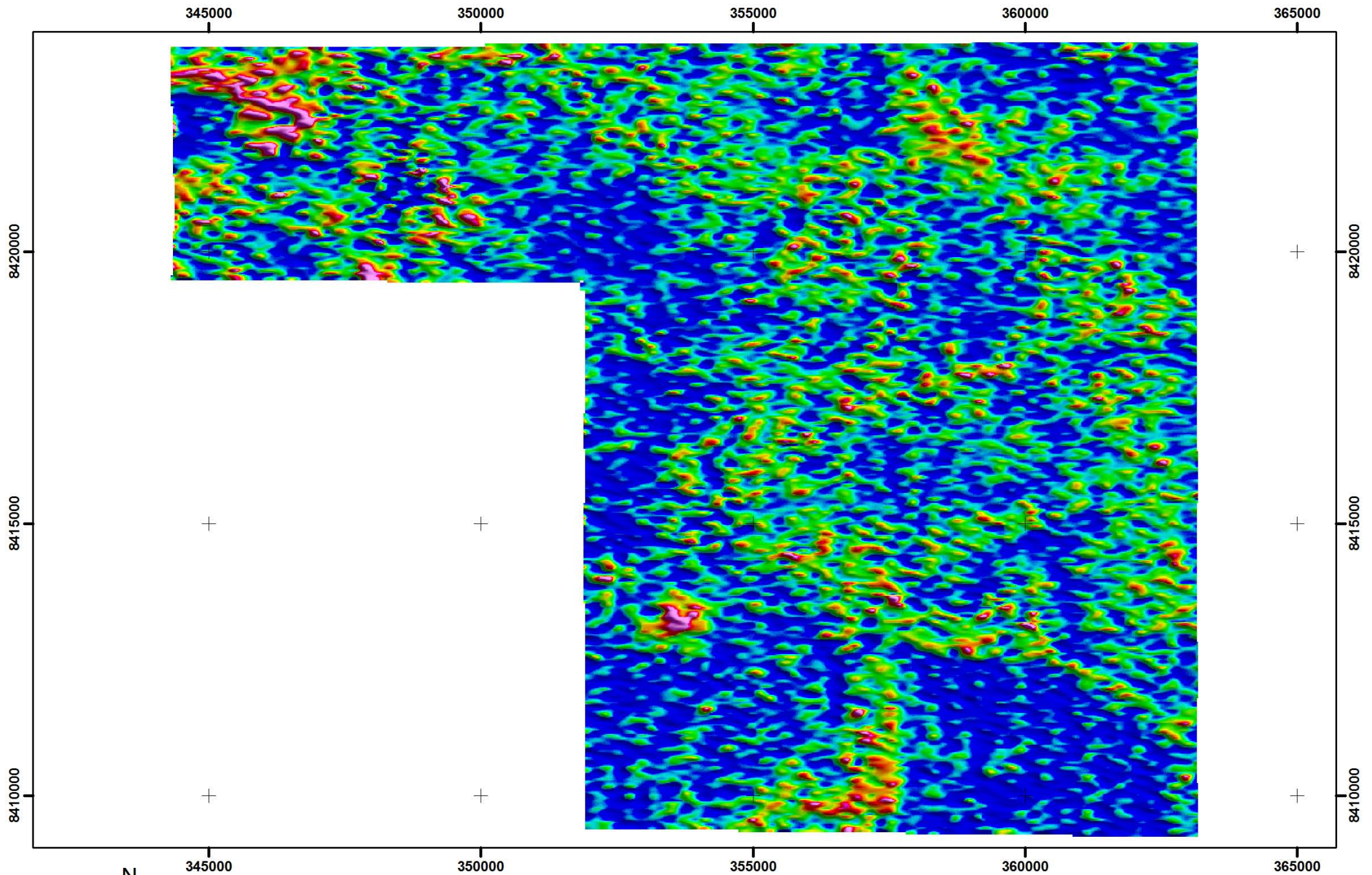






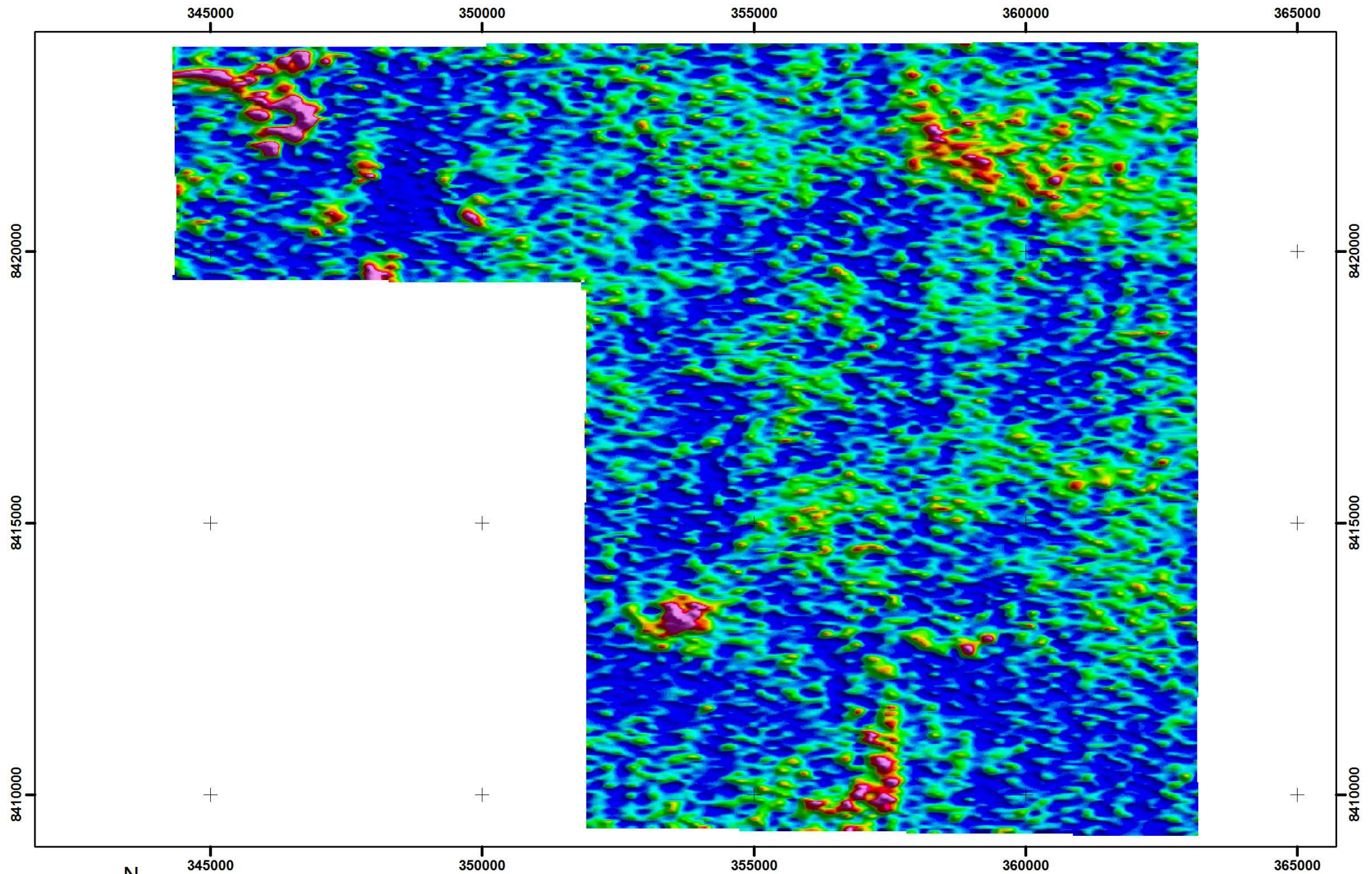
Australian Ilmenite Resources
Region 3 - Ratio of Uranium to Potassium





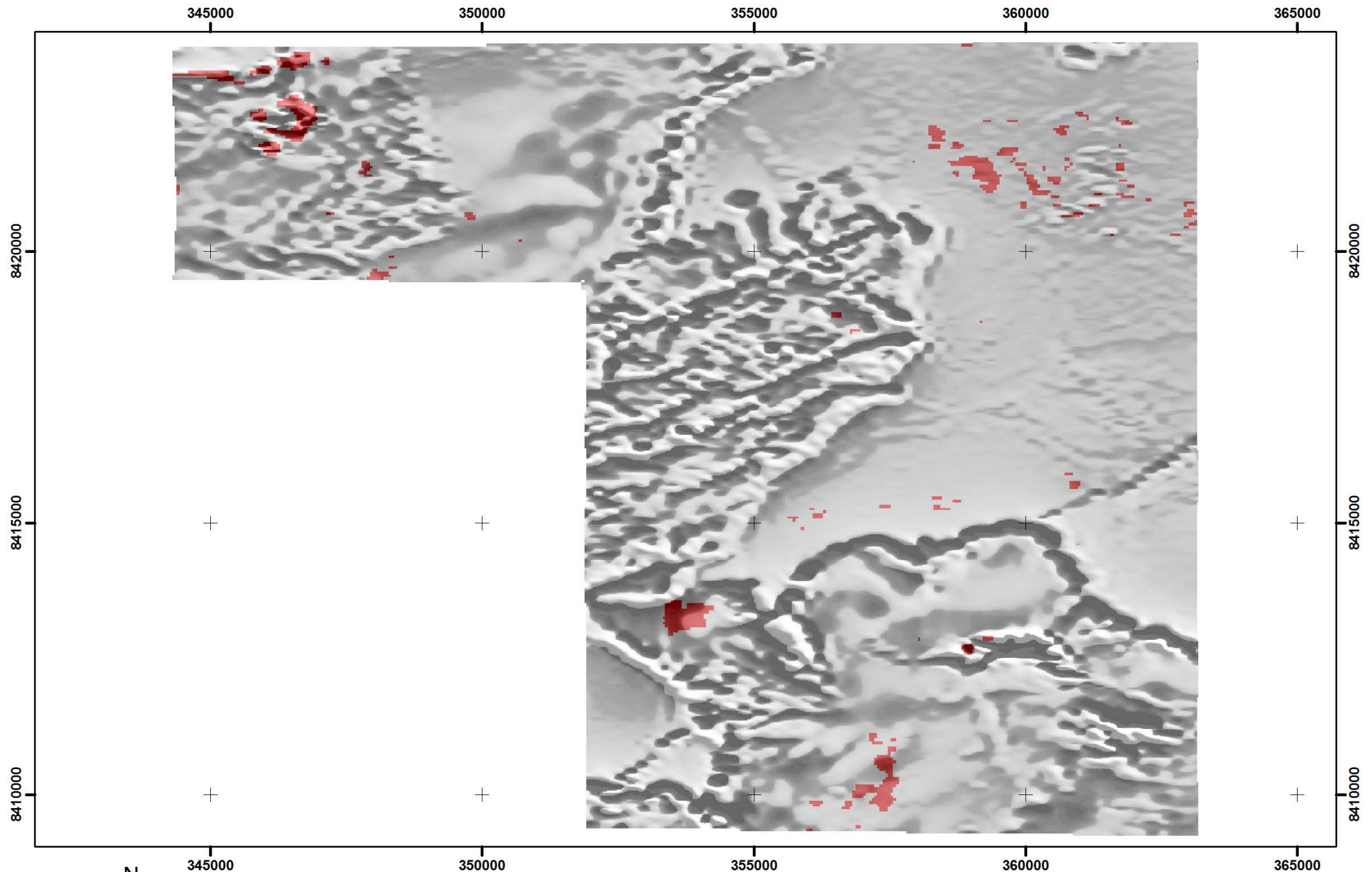
Australian Ilmenite Resources
Region 3 - Ratio of Uranium to Thorium





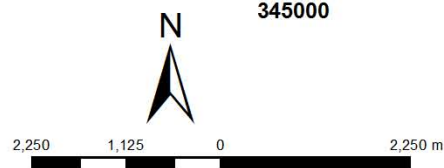
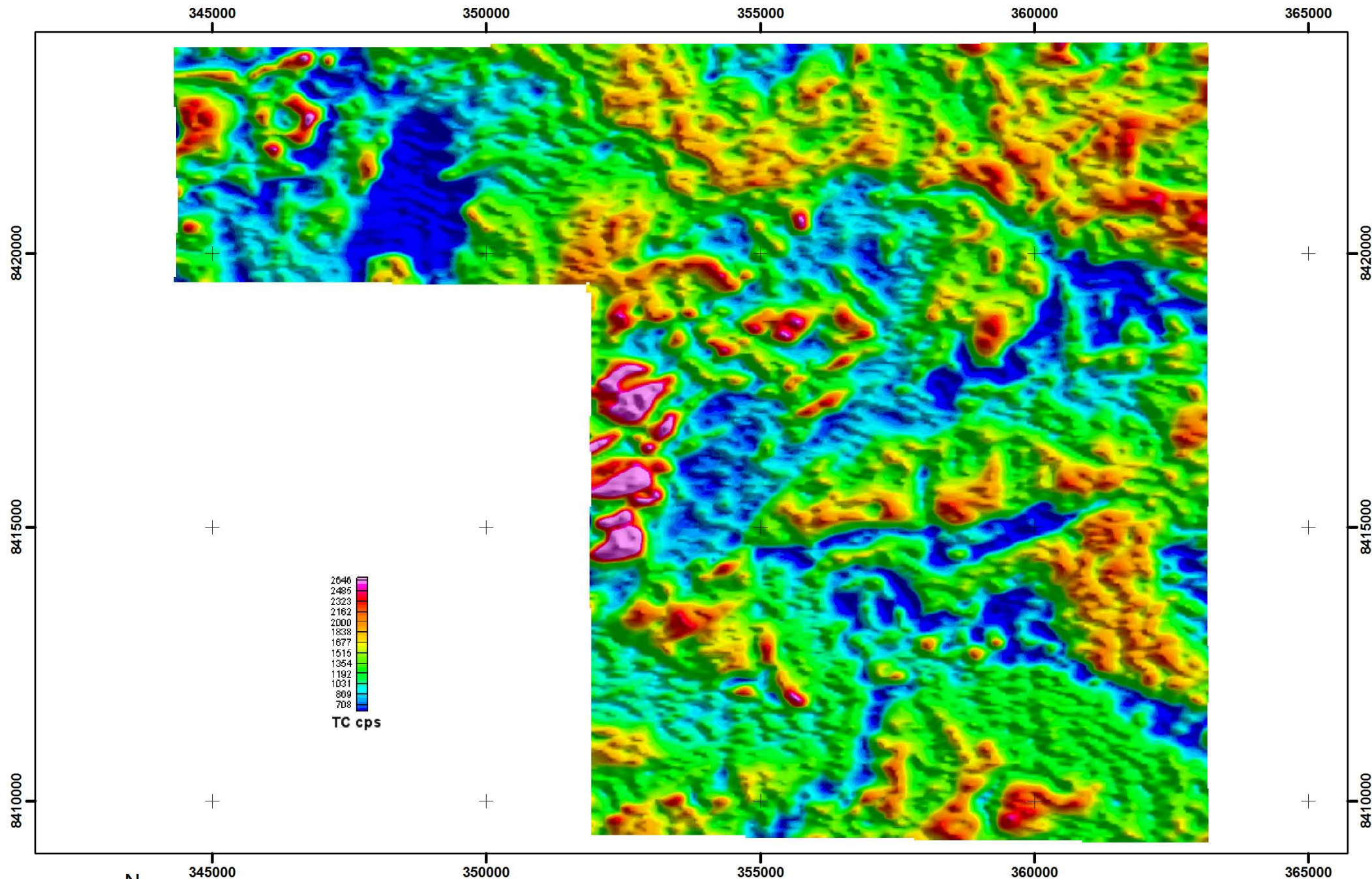
Australian Ilmenite Resources
Region 3 - Ratio of Uranium squared to Thorium





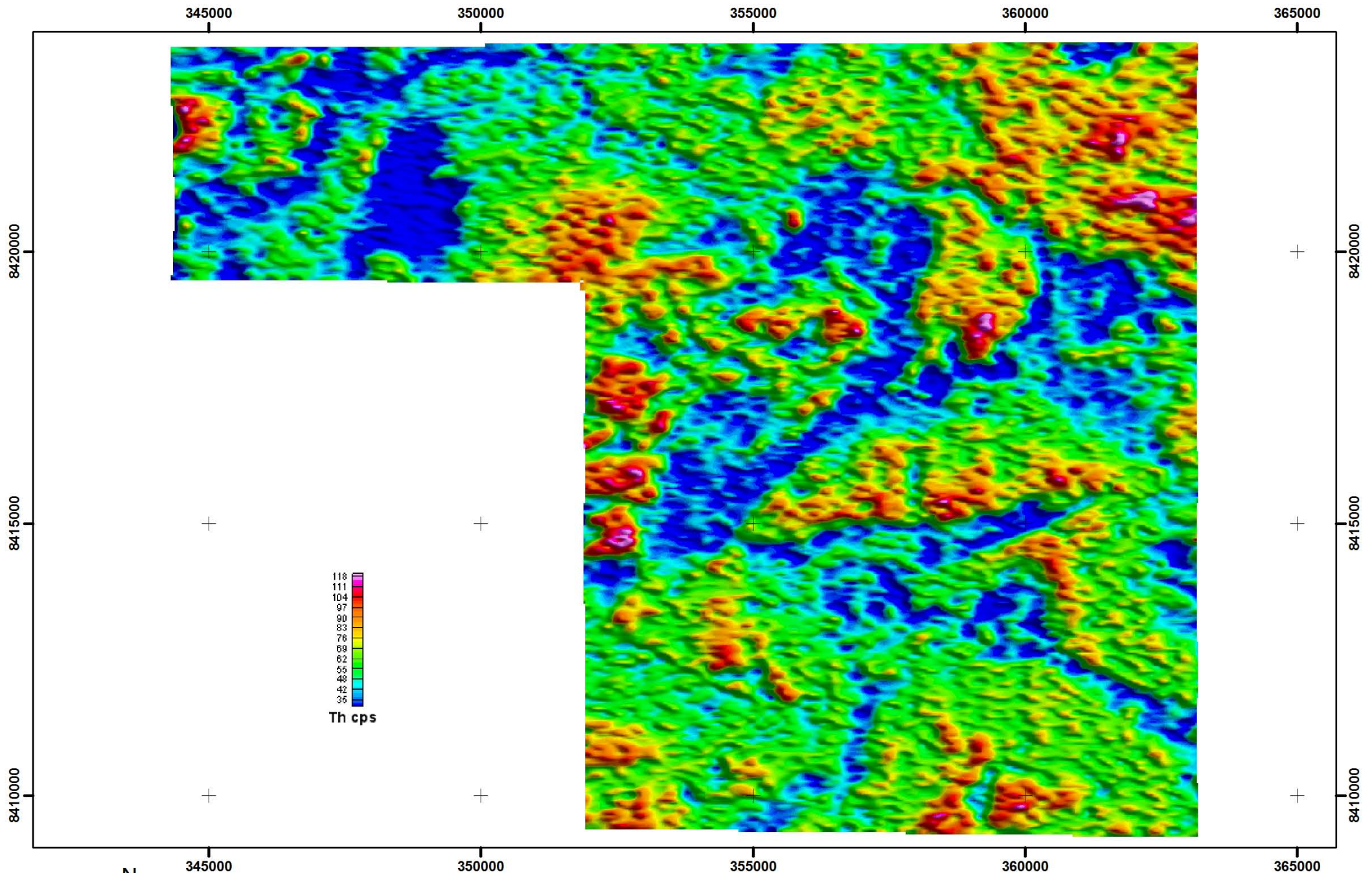
Australian Ilmenite Resources
Region 3 - High U from Scattergram Analysis
with TMI1VD

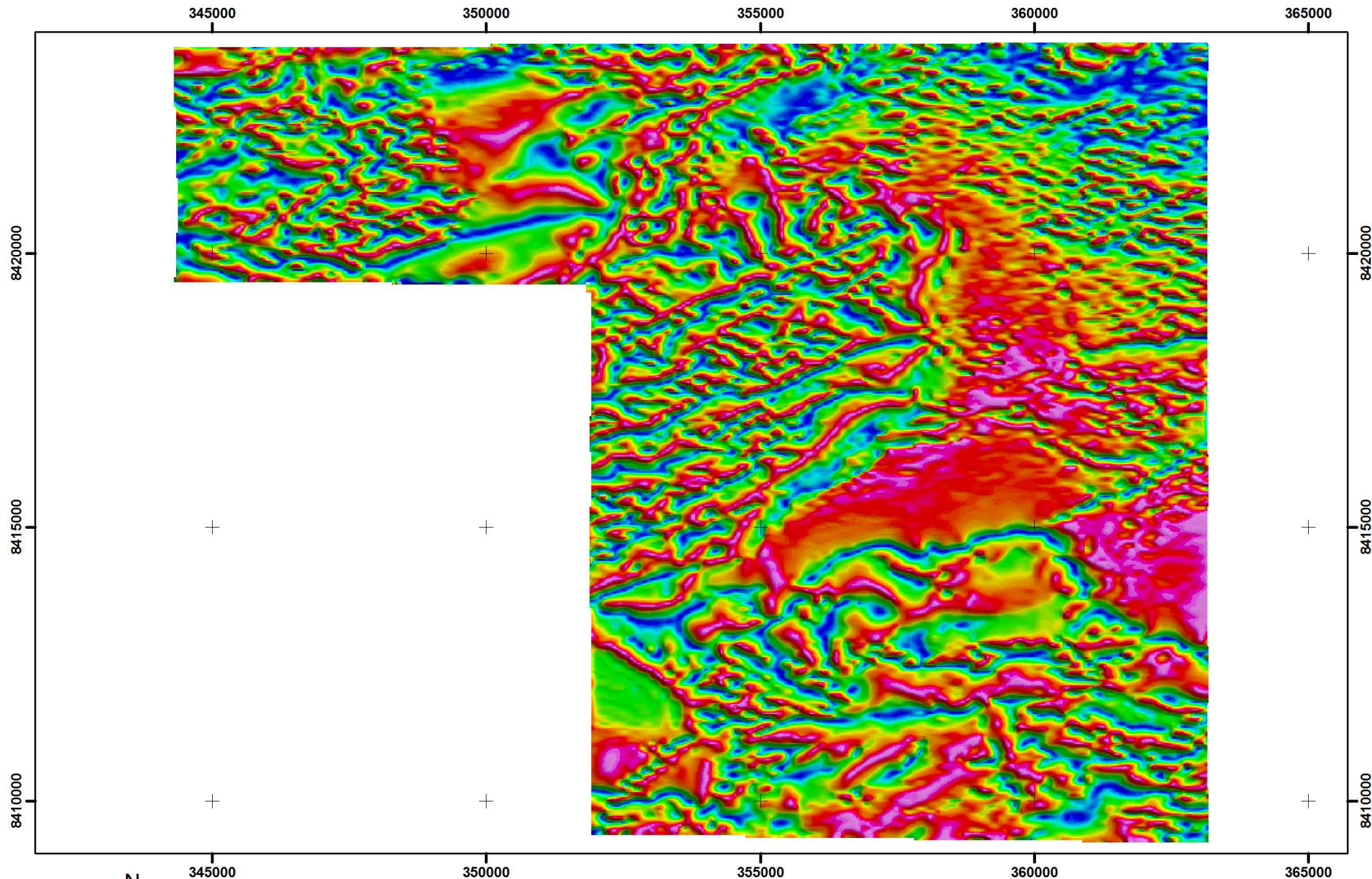




Australian Ilmenite Resources
Region 3 - Total Count channel
Linear Colour Stretch

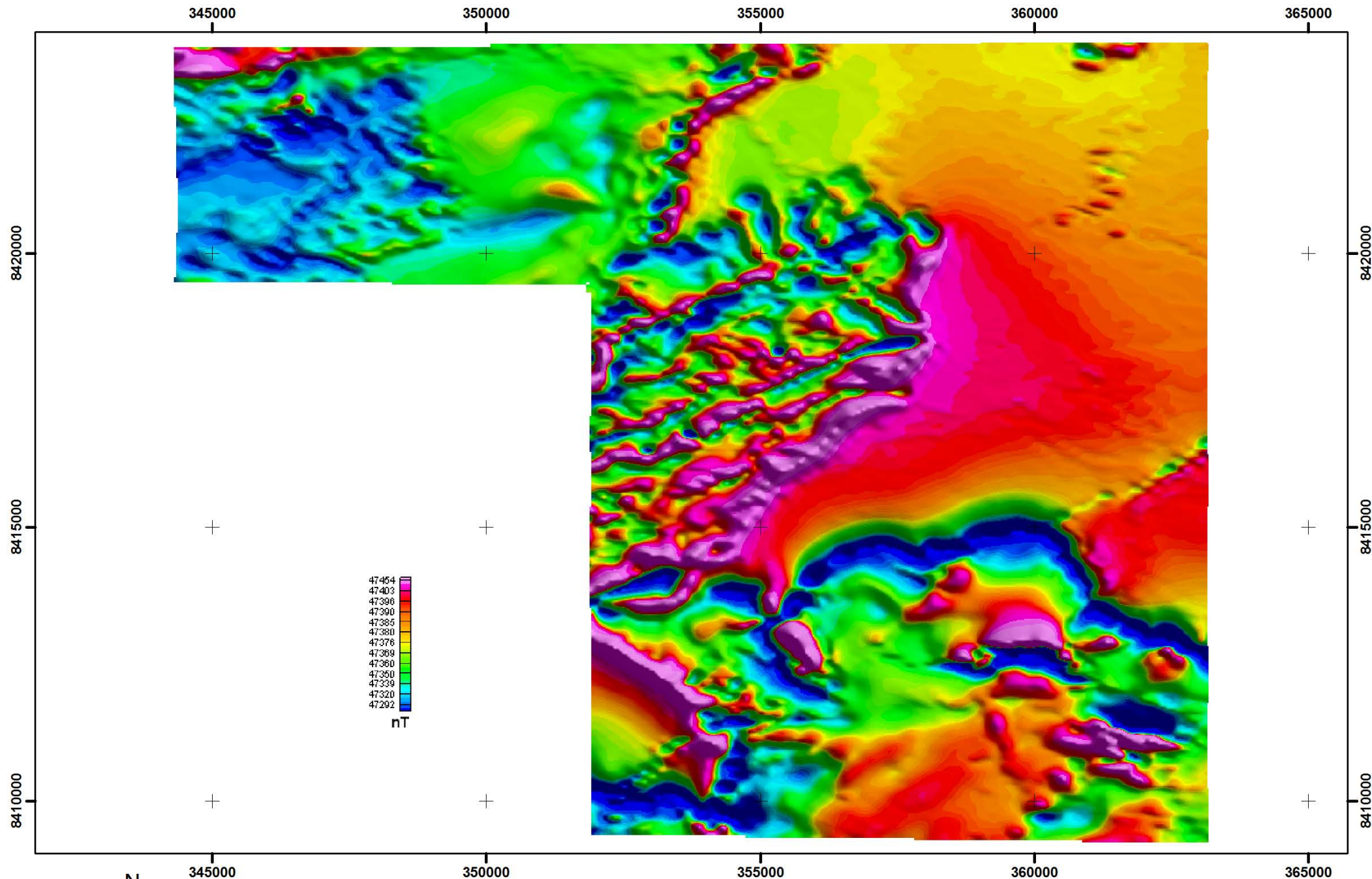






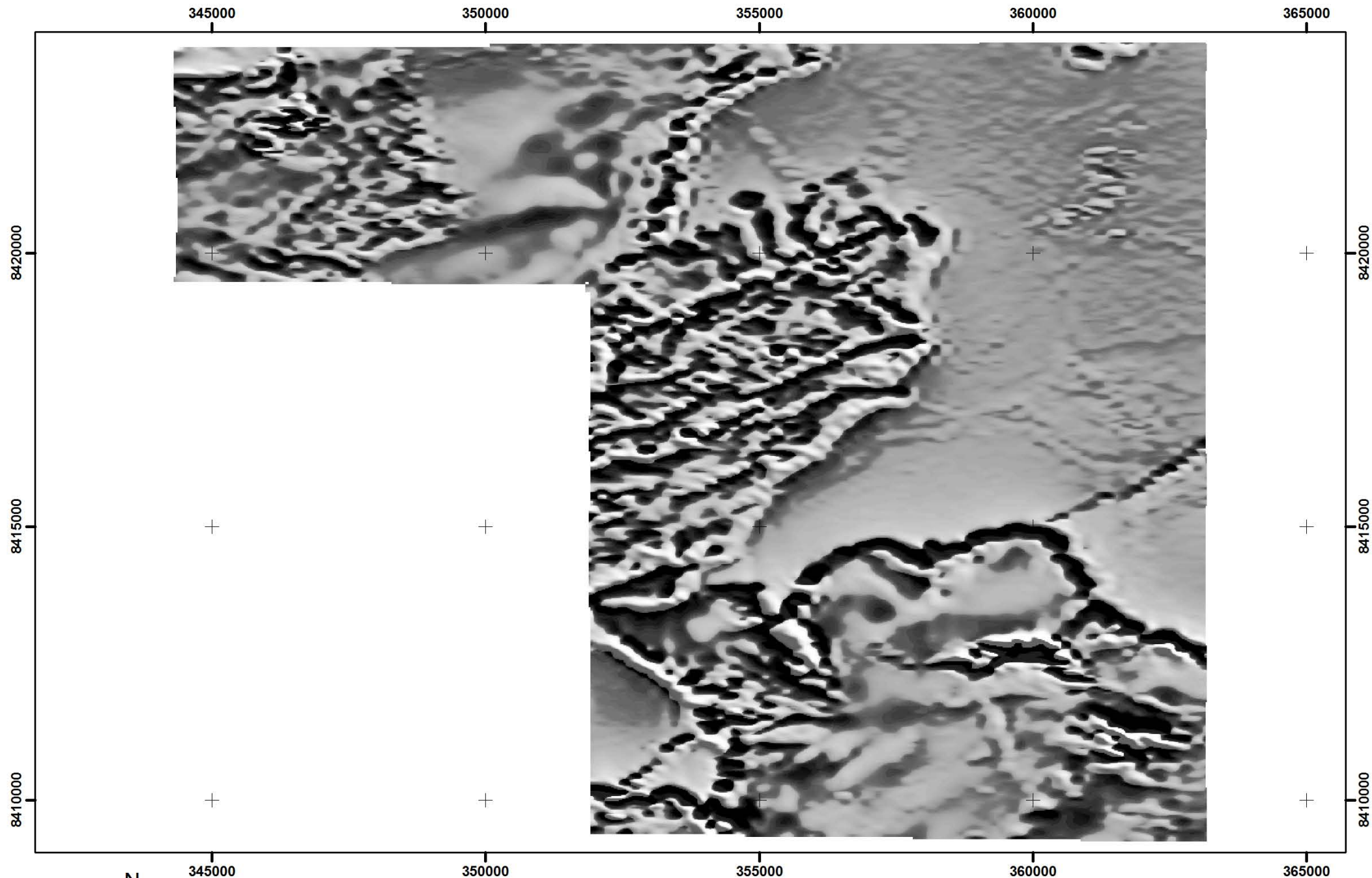
Australian Ilmenite Resources
Region 3 - Total Magnetic Intensity (TMI)
Tilt Derivative





Australian Ilmenite Resources
Region 3 - Total Magnetic Intensity (TMI)





Australian Ilmenite Resources
Region 3 - Total Magnetic Intensity (TMI)
First Vertical Dervative (1VD)



