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FIELD INVESTIGATION
UNEXPLAINED VTEM ANOMALIES
AVEBURY DISTRICT
2011

Prepared for: MMG Pty Ltd

Tim Callaghan, April 2011

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COORDINATES IN THIS REPORT ARE RECORDED IN AMG66 ZONE 55

1 INTRODUCTION

A VTEM survey was completed over the Avebury deposit and surrounding EL's by the Min-Metals Group (MMG) in 2010. Prominent conductive anomalies were identified, the largest of which was located over the Viking and North Avebury deposits.

Several other satellite conductors identified from the survey require geological investigation to try and identify the potential cause of the anomalies.

MMG requested a brief field inspection and data review of the areas of interest in March 2011. A field trip to the anomalies was completed on 5th April.

Three JPEG images of the areas of interest were provided by Helen Williams, Geophysicist for MMG. These included the six conductors to be investigated over-layed on images of the VTEM survey, Total Magnetic Intensity (TMI) and an aerial photograph.

2 LOCATION AND ACCESS

The anomalies are located on an incised peneplain around the base of Mt Agnew which dominates the northern aspect of the area of investigation. Vegetation consists of either low button grass moorland on poor soils developed on quartzite and granite, or wet sclerophyll eucalypt and tea-tree re-growth in creek gullies and on richer soils associated with the Crimson Creek Formation and the volcanics of the McIvor Hill Ultramafic Complex. The area is accessed by the all weather unsealed Trial Harbour road. Numerous firebreak and exploration tracks are accessible by 4WD. Many of the anomalies required foot access of several hundred metres.

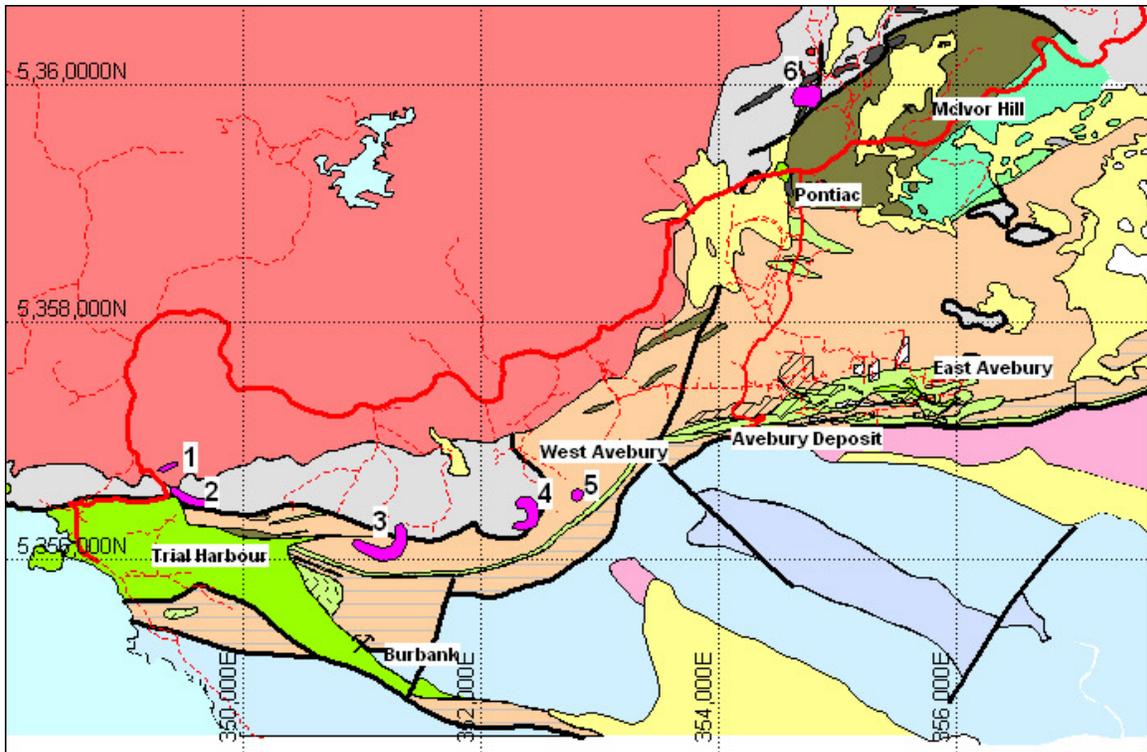


Figure 1. Avebury District Geology Map with unexplained VTEM conductor locations

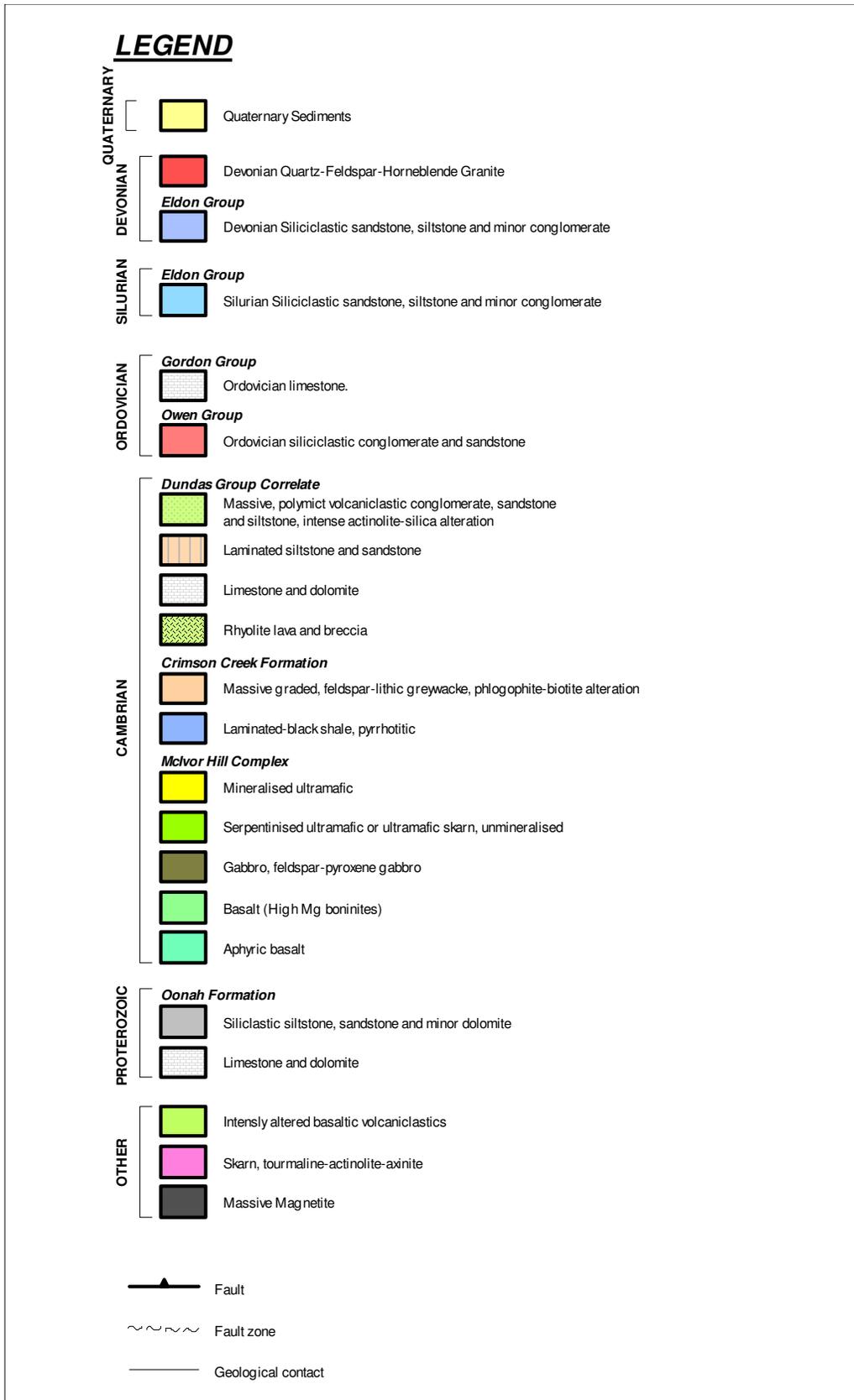


Figure 2. Legend for Figures 1, 3, 5 and 7.

3 GEOLOGY

The Avebury Nickel Sulphide deposits are hosted in moderately to steeply dipping Middle Cambrian ultramafic intrusives belonging to the McIvor Hill Mafic-Ultramafic Complex located on the western margin of the Late Precambrian to Early Devonian Dundas Trough on the West Coast of Tasmania.

The ultramafics are hosted in volcanoclastic sediments of the Early Cambrian Crimson Creek Formation and possibly the Cambrian Lower Dundas Group. The host sequence strikes east-west and has a dip of 60-70 degrees to the north. Facing criteria suggest the sequence is overturned and facing consistently south. The Crimson Creek Formation is dominated by voluminous well bedded feldspar-lithic greywacke and lesser pyrrhotitic black shale. The thick greywacke sequence transgresses conformably into a complex sequence of polymictic basaltic to rhyolitic conglomerate, basaltic volcanoclastic sandstone, greywacke, siltstone and limestone that may possibly represent the Cambrian Lower Dundas Group. The conglomerates include sub-rounded to angular clasts of feldspar phyric basalt and andesite, quartz phyric rhyolite, siltstone, chert and quartzite in a dominantly basaltic matrix. The Crimson Creek and Dundas Group are in unconformable and possibly faulted contact with the siliciclastics and carbonates of the Late Cambrian-Ordovician Wurrawina Supergroup to the south.

The ultramafic intrusives consist of serpentinised and metasomatised peridotite or dunite cumulates (Fander, 2000, Radke 2005) intruding both the Crimson Creek Formation volcanoclastic greywacke and the complex sequence of polymictic conglomerate, carbonate and sandstone. The intrusive is both concordant and discordant to bedding.

The whole sequence was moderately hornfelsed during the intrusion of the Heemskirk biotite-adamellite batholith at the end of the Devonian Tabberabberan Orogeny. The Heemskirk batholith is located 1-2km northwest of the Avebury Deposit. Pervasive phlogopite-biotite alteration of the greywacke and actinolite alteration of basaltic rocks has resulted from contact metamorphism. Locally intense metasomatism of the host sequence has formed an actinolite-diopside dominated assemblage with zones of intense boron metasomatism characterized by veins and nodules of axinite and tourmaline.

Variable metasomatism of the ultramafics has formed two distinctly different gangue mineral assemblages. Essentially unmetasomatised ultramafic is a fine grained black rock composed predominantly of antigorite with minor disseminated chromite, magnetite and sulphides. Metasomatised ultramafics have been converted to pale grey or green, coarsely crystalline tremolite/actinolite and diopside with minor magnetite, chromite and sulphides. Both gangue mineral assemblages may host ore grade nickel sulphide mineralisation.

Nickel sulphide mineralization is largely concentrated within the ultramafic immediately adjacent to its margins with nickel grades diminishing toward the interior of the intrusions. Some internal zones of nickel sulphide mineralisation are present.

Petrographic studies (Fander, 2000, Fander, 1999) indicate the main sulphide minerals to be pentlandite and pyrrhotite with lesser pyrite, chalcopyrite, millerite and nickel arsenides.

Pentlandite occurs as coarse disseminations and stringer veins associated with secondary magnetite. Most of the sulphides are coarse grained and re-crystallised post foliation due to the thermal and metasomatic effects of the Devonian granite intrusions. Sulphide contents are generally low with mineralised ultramafic comprising between 0.5 to 3% sulphides although massive pentlandite does occur in some drill intersections.

4 VTEM ANOMALIES

4.1 VTEM Anomalies 1 and 2.

VTEM anomalies 1 and 2 are located immediately east of the Trial Harbour road approximately 1km from the township of Trial Harbour. Geologically the area is complex with the Heemskirk batholith intruding the overthrust Precambrian Oonah Formation immediately north of outcropping metasomatised ultramafic. The ultramafic consists of diopside-magnetite alteration and massive magnetite in the road cutting immediately west of Anomaly 2.

Anomaly 1 is located over outcropping granite. Again the conductor is associated with a strong magnetic response. This target is probably of a lower priority with respect to nickel but may be a valid Sn-WO₃ target in griesenised granite.

Drilling and mapping in the vicinity of Anomaly 2 suggests it is hosted either within the overthrust Oonah Formation or within the underlying Crimson Creek Formation if near surface. However the associated large magnetic anomaly and proximal ultramafic outcrop suggests it may well be associated with a conductor within metasomatised ultramafic hosted within the Crimson Creek Formation. It is recommended this anomaly be followed up with additional geological and geophysical modeling and possible diamond drilling. The target is located within the Trial Harbour water catchment and care should be taken during drilling to avoid contamination.

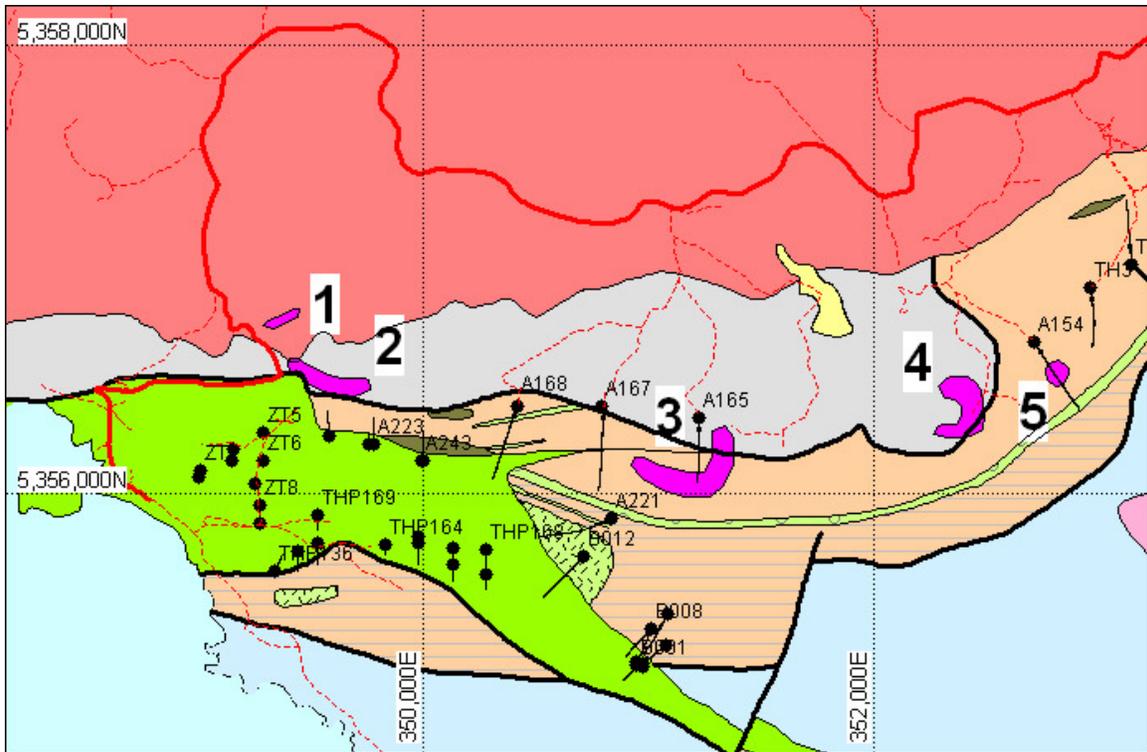


Figure 3. VTEM anomalies 1 -5 and geology. Legend as per figure 2.

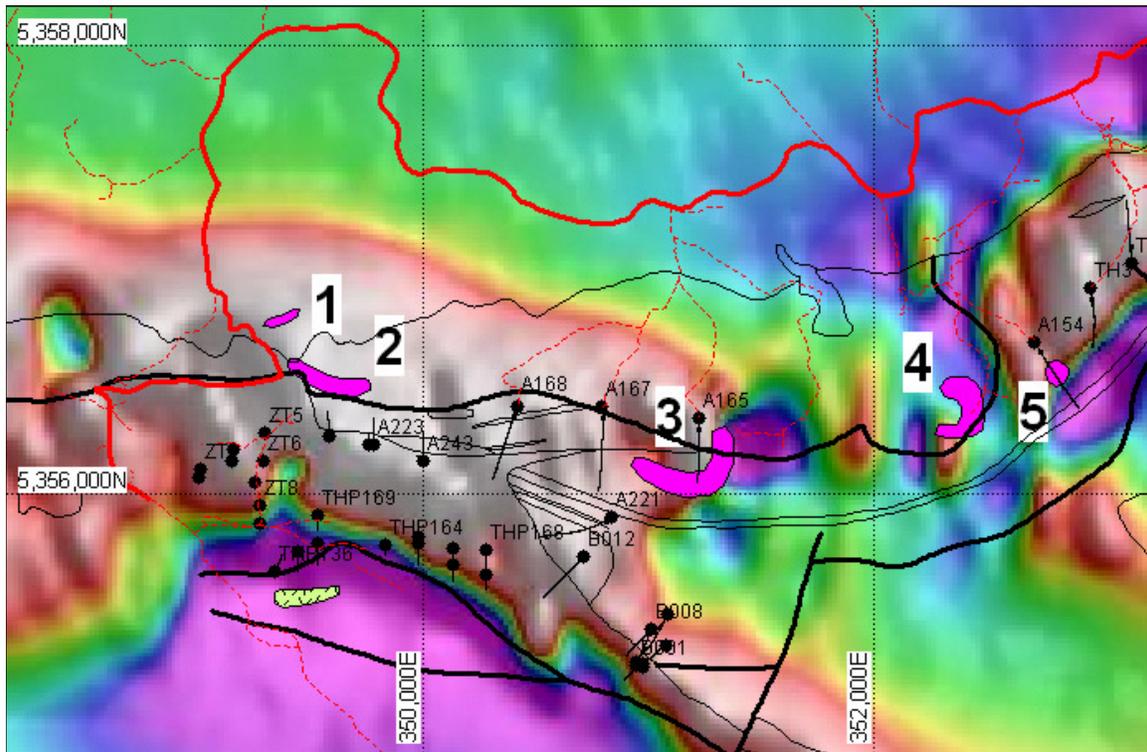


Figure 4. VTEM anomalies 1 - 5 and TMI Image.

4.2 VTEM Anomaly 3.

VTEM Anomaly 3 is coincident with a prominent magnetic high hosted in serpentinised ultramafic intruding steeply north dipping hornfelsed Crimson Creek Formation. The ultramafic was drilled in the summer of 2007 by DDH's A165, A167 and A168. The drillholes all successfully intersected Cambrian ultramafic rocks identical to those hosting the Avebury deposit.

Drillhole A165 passes directly under the surface projection of the VTEM anomaly (Figure 3 and 4). DDH A165 was collared in what was interpreted to be a thin thrust sheet of Precambrian siliciclastics. The hole passed into typical phlogopite altered feldspar-lithic basaltic volcanoclastic greywacke of the Crimson Creek Group. A thin, strongly sheared and tectonised ultramafic was intersected between 211.0m and 216.9m. The ultramafic was comprised of 50% massive magnetite with black serpentinite gangue and minor tremolite altered skarn veins. Ni and Cr assays were typical of background dunite values (0.2% Ni, 900ppm Cr). The hole successfully identified the attenuated western margin of the Trial Harbour ultramafic, however no significant nickel sulphides were identified.

The Crimson Creek Formation greywackes were intensely actinolite altered on either side of the ultramafic. Abundant pyrrhotite was associated with actinolite altered Crimson Creek Formation from 186m downhole and also within the serpentinite-magnetite altered ultramafic. The pyrrhotite mineralisation is the likely cause of the observed conductivity anomaly from the VTEM survey.

No further work is recommended.

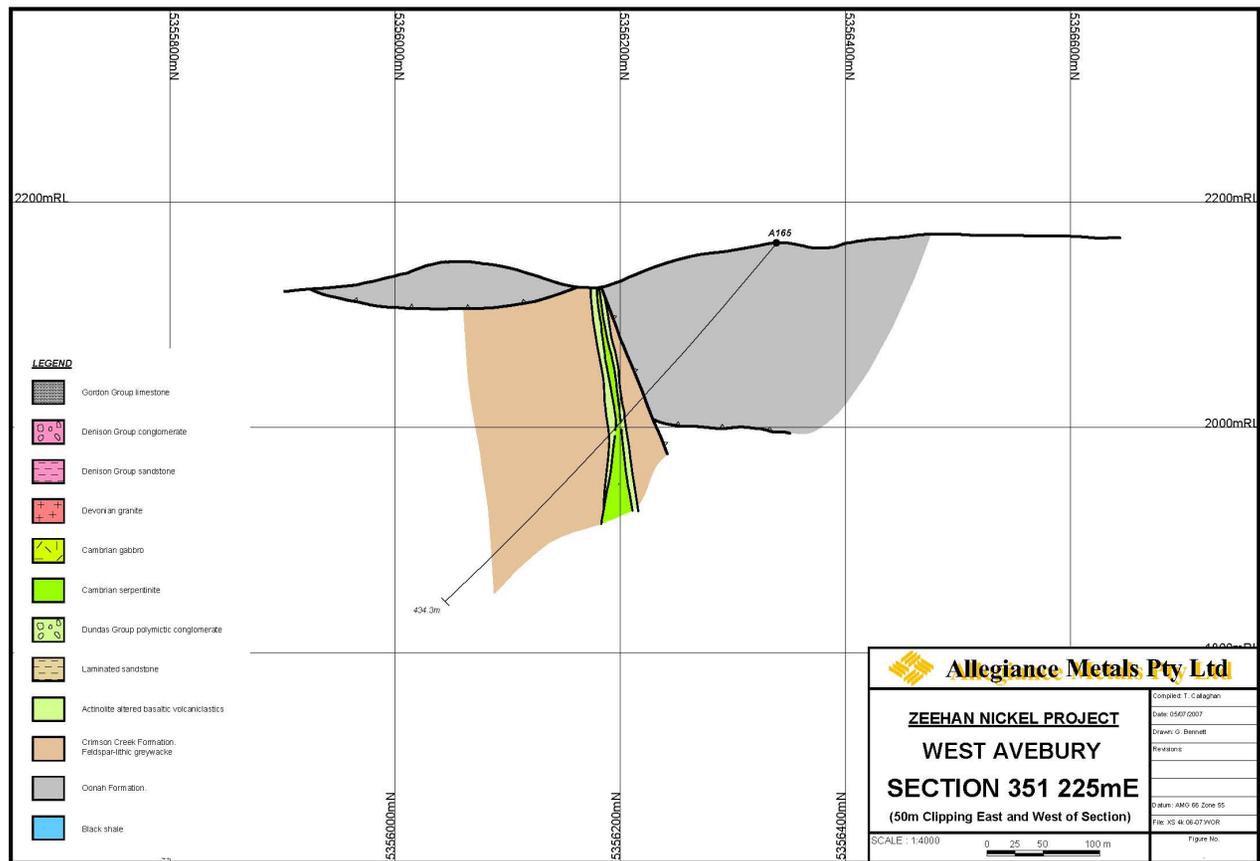


Figure 5. Section 351 225mE through VTEM anomaly 3. Drillhole A165 intersected serpentinite-magnetite altered ultramafic with a metasomatic halo of actinolite altered Crimson Creek Formation Greywacke. The alteration contained abundant Po probably responsible for the observed conductivity anomaly.

4.3 VTEM Anomaly 4 and 5

VTEM anomalies 4 and 5 are located 2km west along strike of the known western edge of the Avebury mineralisation (Figure 3 and 4). The area has been mapped and there is limited drilling data available.

Drillhole A154 was targeted on a discrete magnetic anomaly along strike from the Avebury deposit in what was regarded as a favorable stratigraphic position.

The hole intersected a pyrrhotitic black shale within the Crimson Creek Formation volcanoclastics between 89.9 and 93.3m and again at 128.2 and 133.3m which is coincident with the observed conductivity high (Figure 6). The hole passed through the Crimson Creek formation before intersecting polymict conglomerates of the Dundas Group. The hole ended in granite, suggesting the granite dips at a low angle of 30-40 degrees below surface. Minor tin mineralisation to 0.16% was associated with sericite-tourmaline-silica altered granite with minor disseminated pyrite. The pyrrhotitic shale is probably responsible for the observed conductivity anomaly. The magnetic anomaly was not resolved from the drilling. A downhole magnetic survey may be warranted on this hole to verify the location of the aeromagnetic high.

Anomaly 4 is located along the same stratigraphic position within the Crimson Creek Formation and is probably associated with the same pyrrhotitic shale horizon. There is no associated magnetic anomaly suggesting the conductor is unlikely to be associated with a mineralised ultramafic.

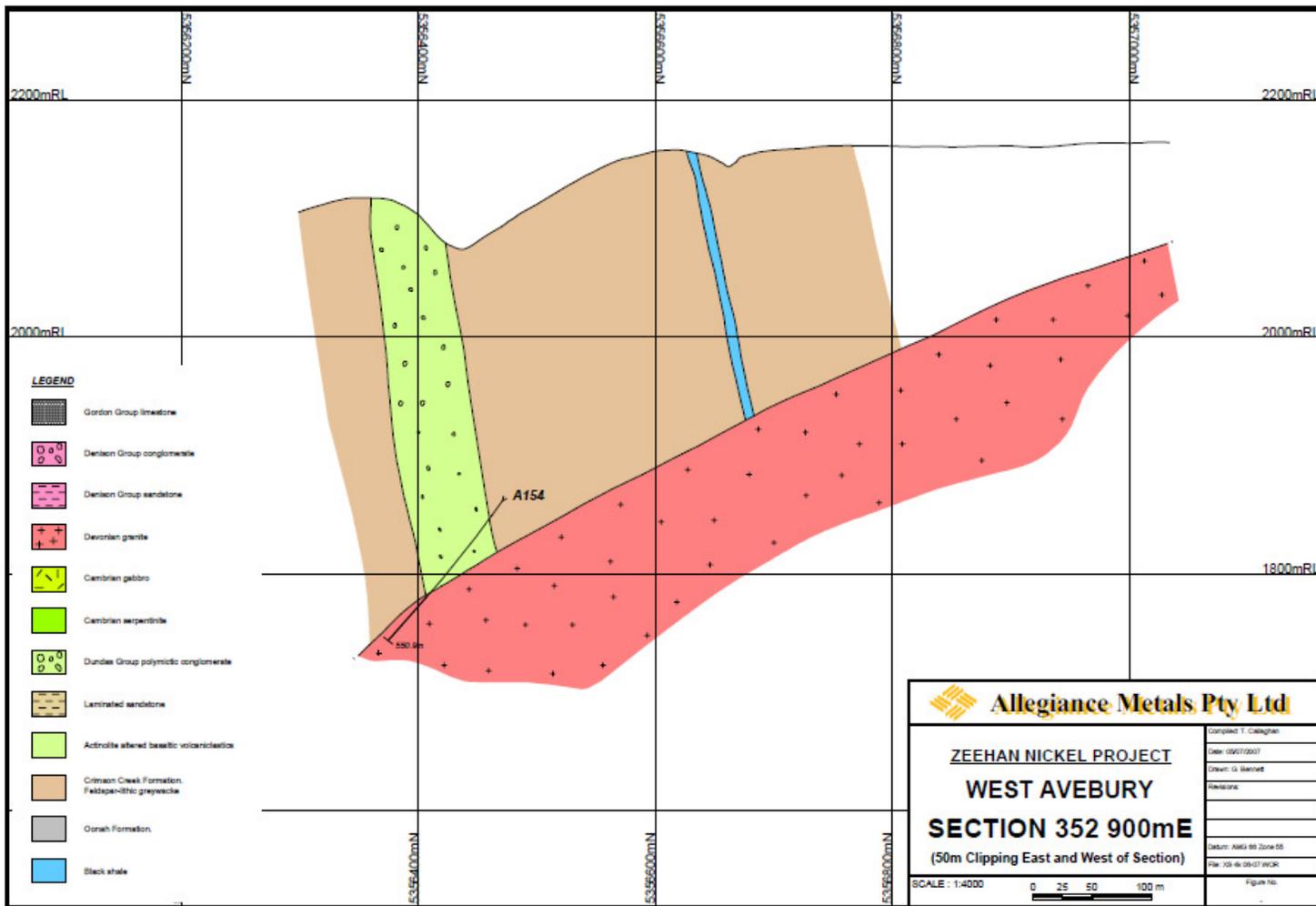


Figure 6. Section 352900 with DDH A154. A154 passed through the interpreted location of the VTEM anomaly. A pyrrhotitic black shale (blue) is located on the anomaly position and probably accounts for the observed response.

4.4 VTEM Anomaly 6.

VTEM anomaly 6 is located approximately 2km north of Avebury. The area is on the boundary of what is known as the Pontiac Prospect and the Tenth Legion Prospect to the north. The geology of the area is dominated by a complex sequence of Cambrian gabbro to the west. The eastern part of the prospect is in fault contact with the Precambrian Oonah Formation which has been intruded by the Heemskirk Granite further east (Figure 7). There are numerous serpentinite-massive magnetite bodies in the district extending to the northeast which are part of the Tenth Legion and Sylvester prospects. These two prospects have associated Sn-WO₃ and Pb-Zn mineralisation..

Several drillholes are located around the observed conductive anomaly. Drillholes P010 and P011 are located just south of the anomaly. These holes intersected massive gabbro, followed by a massive magnetite body with coarse pyrrhotite-pyrite mineralisation and magnetite-serpentinite-pyrrhotite-pyrite. Minor chalcopyrite is associated with the sulphide mineralisation. Interestingly the serpentinites contained no chrome or nickel as would be expected from serpentinised ultramafic. The holes were not assayed for Sn or WO₃.

The conductive anomaly is most probably explained by the massive magnetite-sulphide mineralisation.

This area does not appear to contain appreciable nickel but is highly prospective for Kara or Mt Lindsay style magnetite-Sn-WO₃ mineralisation.

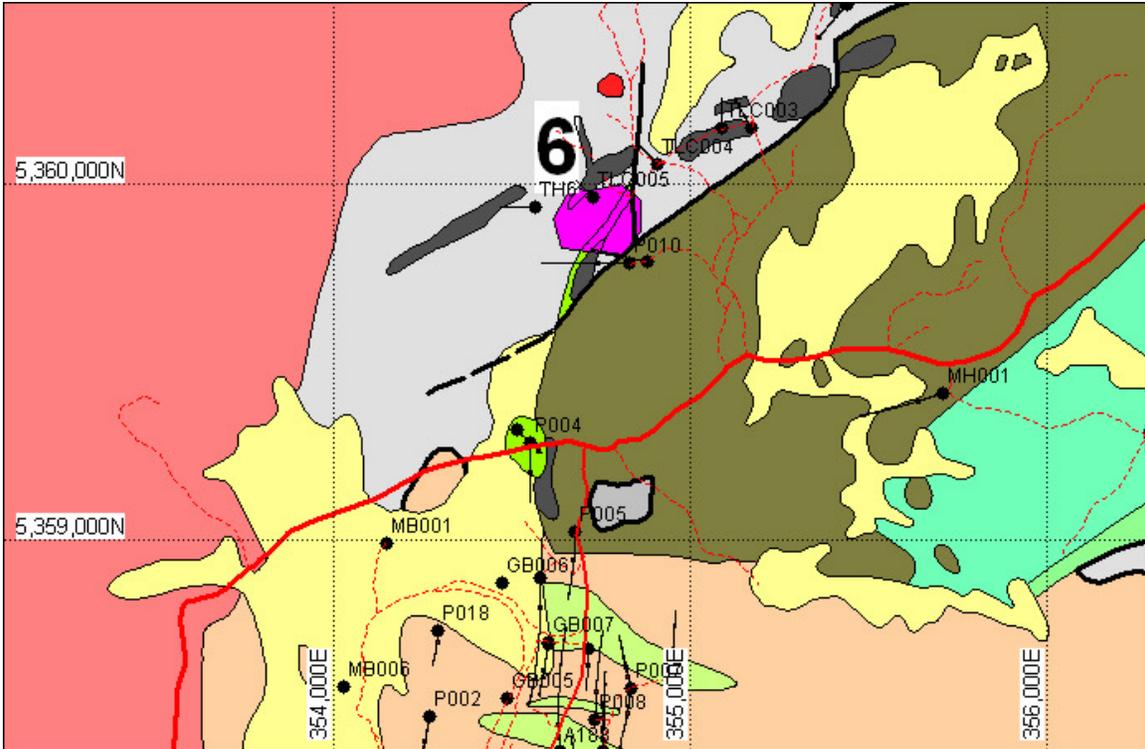


Figure 7. VTEM anomalies 6 and geology. Legend as per figure 2.

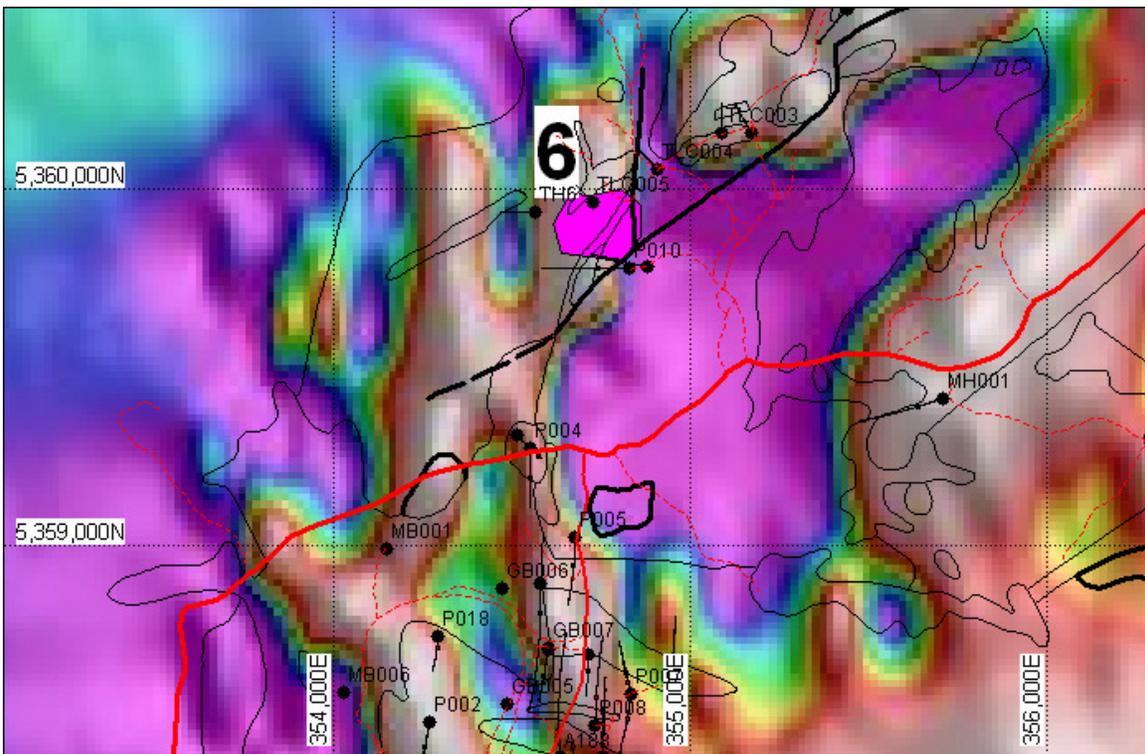


Figure 8. VTEM anomalies 6 and TMI.

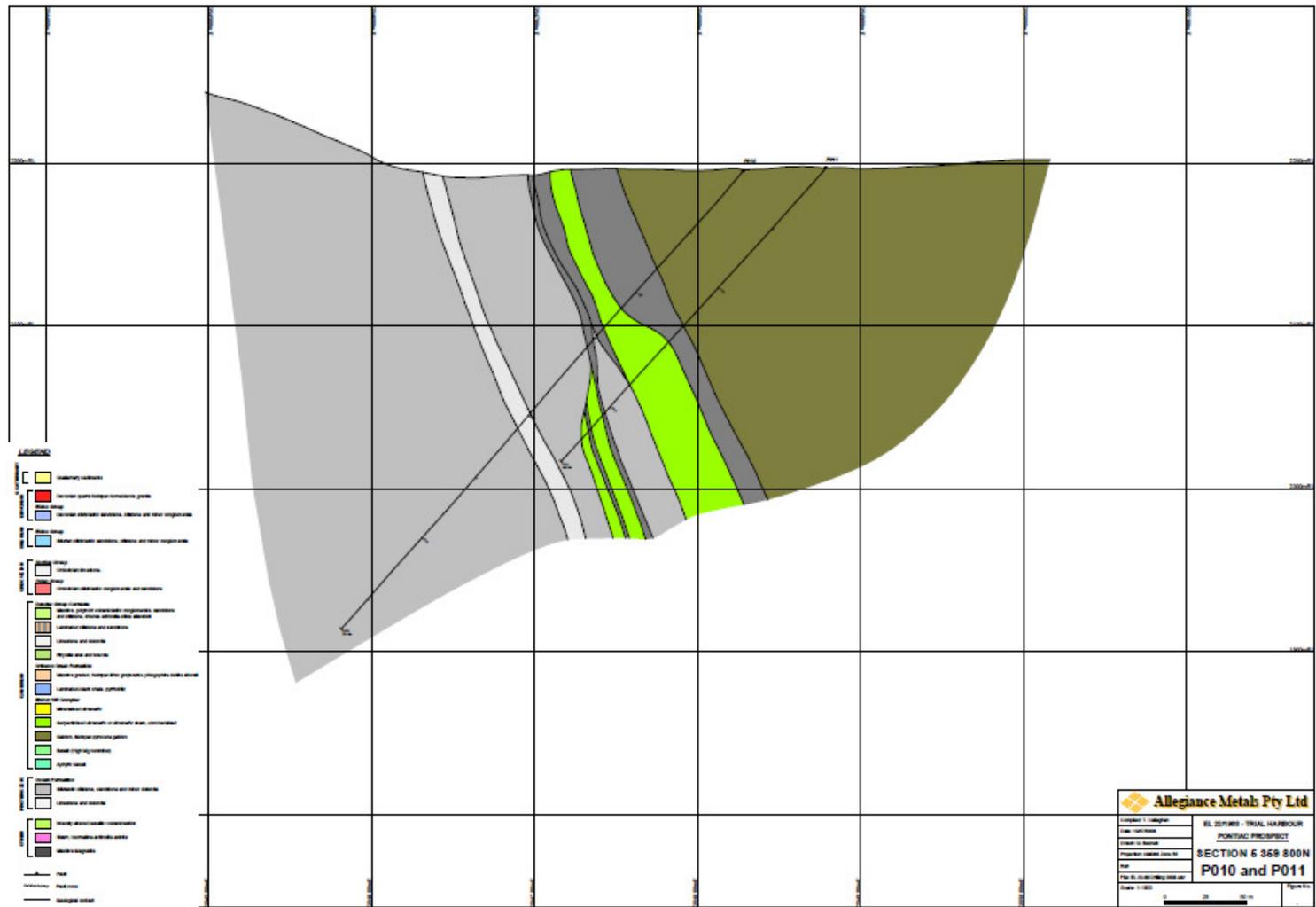


Figure 9. Section 5369800N. Drillholes P010 and P011. The holes intersected massive magnetite (dark grey) and serpentinite (bright green) with associated pyrrhotite-pyrite mineralisation. No appreciable Ni was observed. The holes were not assayed for Sn or WO₃.

5 RECOMMENDATIONS

Recommendations for follow up work include:

- **Anomaly 1 and 2. Geophysical and geological modeling possibly followed by drilling of anomaly 2 and possibly anomaly 1.**

These two targets have not been previously tested and are coincident with a prominent associated magnetic anomaly. Outcropping metasomatised ultramafic and massive magnetite is located a few hundred metres south along strike. The conductive anomaly may possibly be associated with nickel sulphide mineralisation or with Sn-WO₃ mineralisation. Further investigation is warranted.

- **Anomaly 3. No further work recommended.**

The conductive anomaly has been drill tested by A165 and is probably associated with pyrrhotite-pyrite mineralisation and massive magnetite associated with the top of an ultramafic body. No significant Nickel mineralisation was identified.

- **Anomaly 4. No further work recommended.**

Anomaly 4 is probably associated with the pyrrhotitic shale horizon identified in drillhole A154 to the south. There is no associated magnetic high and the anomaly is unlikely to be associated with a mineralised ultramafic body.

- **Anomaly 5. Possible downhole magnetic survey.**

Anomaly 5 has been drill tested by A154 and is probably associated with two pyrrhotitic shale horizons hosted in the Crimson Creek Formation. However the source of the aero-magnetic anomaly was not identified in the drill hole and a downhole magnetic survey may be warranted. The granite intersected in A154 had minor associated Sn mineralisation.

- **Anomaly 6. Possible magnetite Sn-WO₃ target.**

Anomaly 6 is associated with massive magnetite-pyrite-pyrrhotite mineralisation. Some of the drillholes in the area have intersected anomalous Sn and WO₃ and follow up exploration for Kara or Mt Lindsay style mineralisation may be warranted. No nickel mineralisation has yet been identified in this area.

References

Fander, H W, 1999. Central Mineralogical Services. *Unpublished petrological report for Allegiance Mining NL.*

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Radke F. Report 2060PE06. Petrology of 21 samples. *Unpublished petrological report for Allegiance Mining NL.*

STATEMENT OF INDEPENDENCE

Tim Callaghan has no material interest or entitlement in the securities or assets of MMG or any associated companies.

LIMITATIONS AND CONSENT

The report has been prepared for MMG using information available to the author at the time of writing. The opinions stated herein are given in good faith and with the belief that the basic assumptions are factual and correct and the interpretations reasonable.

This report is not intended for the use as a public document nor, in whole or in part, in a public document without written consent to the form and context in which it appears.