



**EXPLORATION LICENCE 30/2002  
ANNUAL REPORT**

**DECEMBER 2008 – DECEMBER 2009**

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## **FOREWORD**

### **Function of the Annual Report**

This Annual Report has been prepared as a public document for submission to Mineral Resources Tasmania (MRT). The report provides a summary of the exploration activities undertaken by ZZ Exploration Pty Ltd (ZZE is a 100% owned subsidiary of Creart Resources Holdings Limited) within Exploration Licence 30/2002 (EL 30/2002) during December 2008 - December 2009.

### **Role in the Regulation Process**

This document fulfils the role of an Annual Report for EL 30/2002 during December 2008 - December 2009, as required under Section 28 of the *Mineral Resources Development Act 1995*.

### **Datum**

Geodetic Datum AGD66 has been used throughout for this report.

## **ABSTRACT**

ZZ Exploration Pty Ltd (ZZE) currently holds exploration licence 30/2002 (EL30/2002), which is primarily of interest to the company for the potential to host economic lead-zinc carbonate replacement deposits, and for remobilised nickel skarn deposits akin to Avebury.

During the period December 2008 – December 2009 Zeehan Zinc has had a company name change to Creat Resources Holdings Limited (CRHL). This name change follows the Chinese Creat Group acquiring approximately 70% ownership of CRHL, and better reflects the Company's business interests in a wider array of commodities and locations, both in Australia and overseas.

The exploration highlight of the year was a \$350,000 airborne SkyTEM geophysical survey, flown in January 2009, covering the entire licence area. The airborne survey produced a large number of strong responses which have been split into six levels of interest. The Tenth Legion prospect was selected as the focus of our exploration efforts in 2009.

Also of note was the completion of a \$75,000 geological interpretation by SRK Consultants of the seismic survey undertaken by the Company in 2007. One of the seismic lines (Line ZF) transects EL30 (please refer to EL20/2002 2009 Annual Report for details).

Field work undertaken as part of the SkyTEM follow-up has largely involved soil geochemistry carried out over resultant areas of interest, focussed at Tenth Legion.

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## **1 INTRODUCTION**

### **1.1 Purpose of This Document**

This document fulfils the role of an Annual Report for EL 30/2002 during December 2008 – December 2009 as required under Section 28 of the Mineral Resources Development Act 1995.

### **1.2 The Proponent**

ZZ Exploration Pty Ltd is a wholly owned subsidiary of Creat Resources Holdings Limited (CRHL). ZZE currently holds Exploration Licence 30/2002, which includes numerous diverse historic mineral occurrences. CRHL's long term objective is to grow through success in nickel exploration within the Zeehan area, and through mineral acquisition opportunities both in Australia and overseas.

### **1.3 Exploration Licence Location and Operations**

#### **1.3.1 Site Location and Mineral Exploration Area**

Exploration Licence 30/2002 (EL 30/2002) covers 8 square kilometres and is located directly west of Zeehan, western Tasmania (Figure 1).

The main access to EL 30/2002 is via Trial Harbour Road and a 4WD is required to negotiate the numerous partially overgrown former tramways that cross the area.

EL 30/2002 is dominated by flat open button grass plains, rolling hills, swamps, tea-tree scrubland and dense eucalypt regrowth. The latter is particularly dense along creek beds and in other low-lying areas.

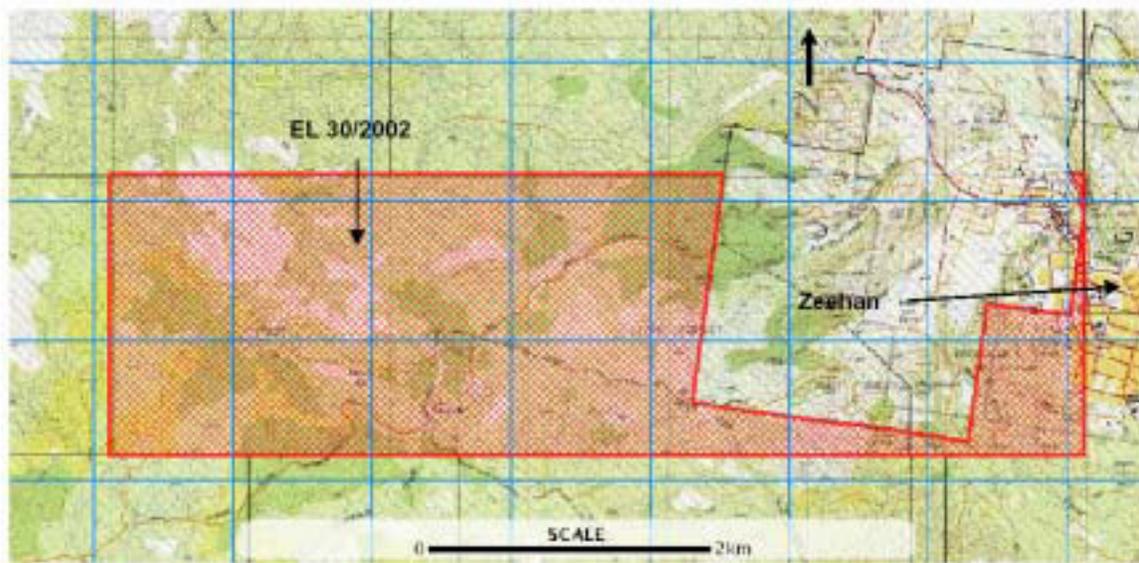


Figure 1: Location of EL 30/2002

### **1.3.2 Exploration Licence Tenure**

EL 30/2002 was granted to ZZE on the 7 February 2003 for a period of five years and applies to all Category 1 minerals. The licence covers 8 square kilometres and excluded areas include:

- Any land owned or leased by the Commonwealth of Australia;
- Mining Leases;
- Retention Licences; and
- Crown reservations.

The current land tenure in and around EL 30/2002 is provided in Figure 2. The area within EL30 constituting the Comstock Mine Lease, ML 5M/2007, has been applied for as a Retention Licence, and at the time of writing (December 2009), notification has been received from MRT by the Company that the licence will be recommended for granting by the Minister.

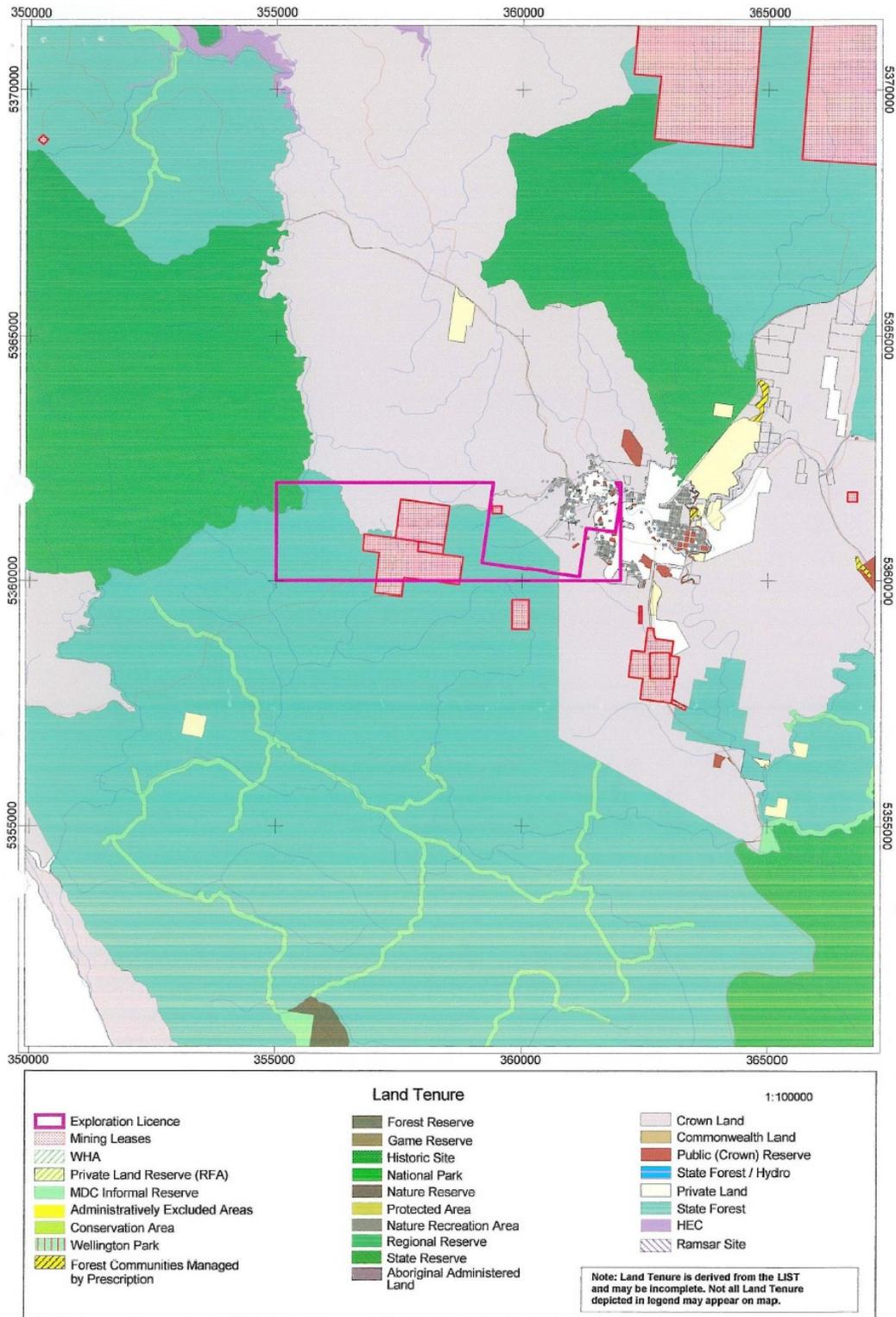


Figure 2: Land tenure for EL30/2002

## **2 SUMMARY OF PREVIOUS WORK**

### **2.1 Previous Mining and Exploration within EL 30/2002**

#### **2.1.1 Regional Exploration Activities**

EL 30/2002 is considered to be geologically complex, dominated by deformed turbidites, carbonates and volcanics of the Neoproterozoic Oonah Formation (Tear 2005). Sediments and volcanics of the Crimson Creek Formation and Dundas Group occupy the central and eastern portions; while gabbros, basalt flows and massive serpentinite of the McIvor Hill Complex (bounded by the Tenth Legion Fault) crop out in the SW portion of EL 30/2002. Siluro-Devonian sediments of the Zeehan Sub-basin including the Crotty Quartzite, Amber Slate, Keel Quartzite, Austral Creek Siltstone, Florence Quartzite and Bell Shale are exposed in the eastern portion of EL 30/2002. An E/NE-trending Devonian granitoid spine associated with the Heemskirk Granite is shown to extend beneath EL 30/2002 (Leaman & Richardson, 1989).

The Oonah Formation, south of the Balstrup Fault, comprises the main target sequence for lead and zinc mineralisation. These units are thought to form a complexly folded, flat lying sequence in this area (Tear 2005). At greater depths, some carbonates in the Oonah Formation have been intruded by serpentinitised ultramafic units, thereby producing mineralised skarn lithologies (Tear 2005).

A high resolution helimag survey conducted in 1998 identified and defined several anomalies within the area now covered by EL 30/2002. Allegiance Mining NL conducted research into the evaluation of these anomalies to determine their potential to host nickel sulphide deposits in the 'Avebury style', with one anomaly considered to potentially host a nickel deposit (Newnham 2000).

#### **2.1.2 Previous Exploration over the Balstrup Fault Prospect**

Exploration into the mineral deposit associated with the Balstrup Fault have been previously carried out by Renison Goldfields Consolidated Ltd (RGC) and Western Metal Resources Ltd (WMR), including resource estimation based on limited drilling operations (Cotlco 2005a).

Research conducted by Farrell (2001) investigated the structural relationships and development of the Comstock Zn-Pb-Ag deposit host rocks. This study also provides a summary of past exploration activities and results of exploration within the Comstock mine area.

#### **2.1.3 Previous Exploration over the Tenth Legion Fault Prospect**

Exploration over the Tenth Legion Fault area previously known as EL2/96 was conducted by Newnham Exploration and Mining Services for report to Allegiance Mining NL.

A high resolution aeromagnetic survey was flown over EL2/96 in 1998 to detect similar magnetic anomalies to the Avebury nickel deposit situated to the immediate south. Several substantial anomalies were defined by this survey and it was decided to extend exploration through detailed

mapping and litho-geochemical sampling and re-examination of core from previous drilling by C.R.A Exploration Pty. Limited. Following this, further exploration was confined to zinc-rich zones in the far south west corner adjacent to a nickel enriched structural zone on the contiguous EL22/97 (Newnham 2000).

## **3 EXPLORATION UNDERTAKEN DURING 2009**

### **3.1 Summary**

A summary of exploration activities undertaken is presented below.

- Airborne electromagnetic (EM) and magnetic survey
- Geochemical Soil survey completed over areas of interest in EL 30/2002
- Completion of 2007 seismic survey geology interpretation report by consultant



Figure 3: Airborne electromagnetic survey being flown with EM and Magnetics unit in sling below

### **3.2 Airborne electromagnetic (EM) and magnetic survey**

From the 20th to the 31st of January 2009, a helicopter borne time-domain electromagnetic (EM) survey was flown for Creat Resources Holdings Limited (CRHL). The survey was centred on the town of Zeehan, and included the entire area held under tenements EL18/2003, EL30/2002, and EL20/2002 (Figure 5).

The EM data acquisition system was SkyTEM, with a Scintrex CS-2 magnetometer attached to the frame. The survey was flown by Geoforce Pty Ltd for CRHL. The aim of the survey was to detect anomalous conductive response in the EM data that could be directly targeted for base metal and nickel mineralisation.

The primary advantage of airborne EM is that it enables rapid, systematic coverage over large areas for relatively low cost (certainly when compared to surface exploration), without causing ground disturbance. Two qualifications, however, must be applied when interpreting the results. First, the airborne platform means that airborne EM has trade-off in spatial resolution, near surface vertical resolution, and depth of penetration against the best possible ground based data. Secondly, not all styles of economic sulphide mineralisation give a recognisable EM response (e.g. broadly disseminated deposits can give no response), and some geological conditions produce anomalous EM responses that are not associated with economic sulphides. In this area particularly, economic mineralisation may be dominated by sphalerite, a sulphide mineral unresponsive to EM.



Figure 4: Geoforce support/data-logging vehicle and SkyTEM coils – note the generator at the top of the sling

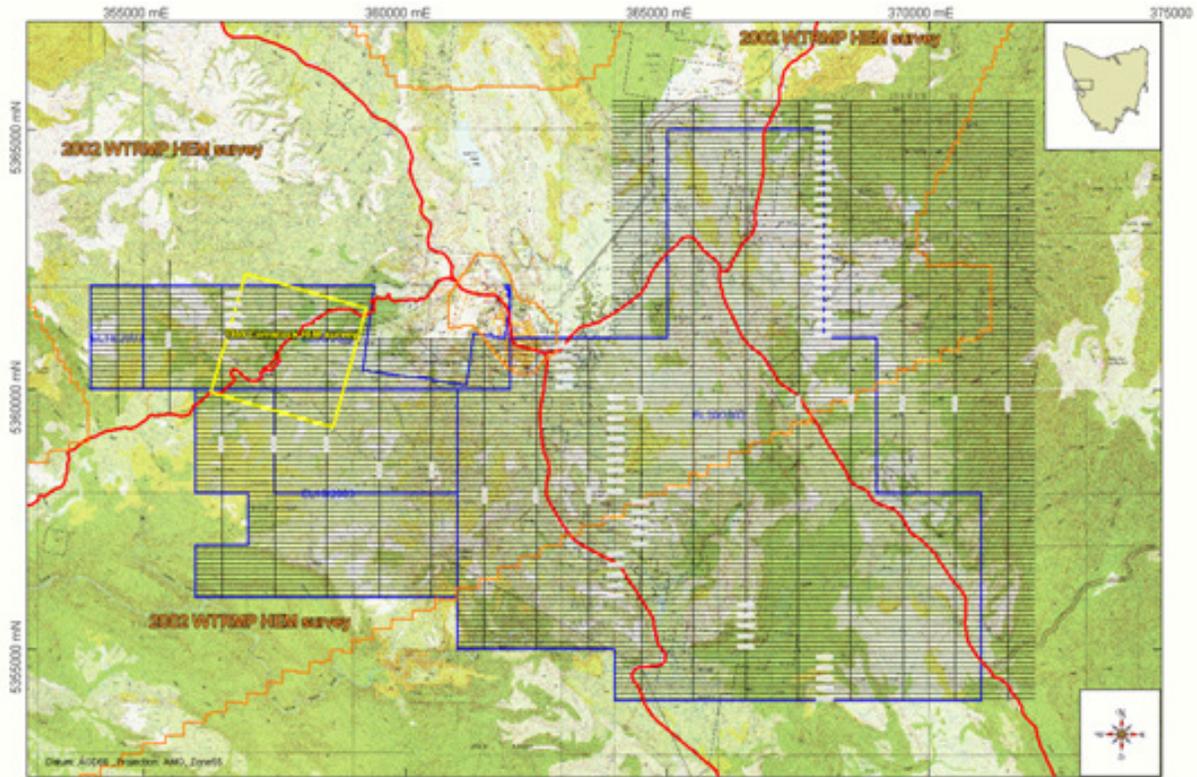


Figure 5: Map of Crear Resources tenements showing east-west lines flown by Geoforce

The reported improvement in detection capabilities over the last five years, and ease of application led to the decision to fly helicopter time-domain EM (HTEM) over CRHL's tenements.

The region features rugged topography and difficult weather patterns which impeded the logistical aspects of data acquisition. The town of Zeehan, isolated buildings, power lines and the railroad caused strong cultural anomalies that were easily identified and accounted for. A total of 1572 kilometres were flown at 100m line spacing and 30m nominal terrain clearance, with 1000m spaced north-south tie lines (required to level the magnetic data). Data were sampled at 4Hz equating to 4-10m interval dependent on the helicopter ground speed. Total cost for data acquisition and processing was approximately \$175/line kilometre.

The average depth of penetration was 150-250m in area with moderate ground conductivity, and up to 350m in the most resistive zones. Depth of penetration was only significantly degraded below very strong near surface conductors such as the Comstock Conductor.

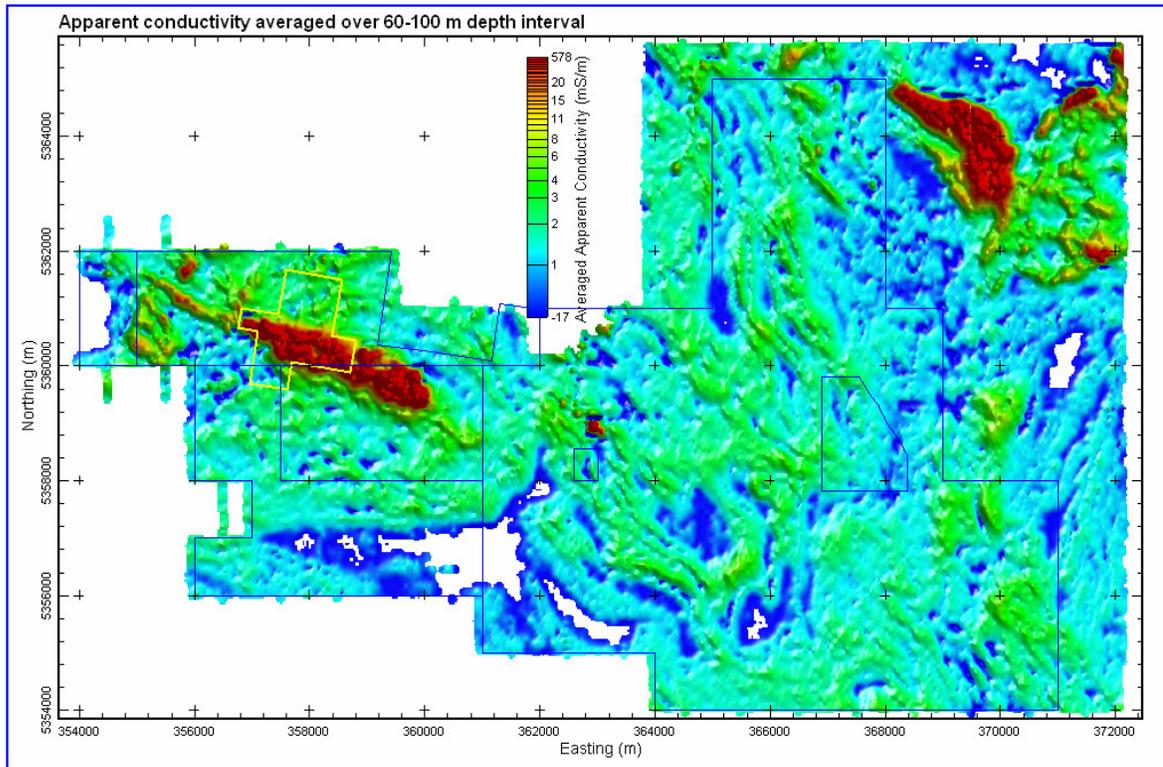


Figure 6: Overall plot of averaged EM conductivity data

The airborne survey produced many strong responses, but none of these could be attributed unequivocally to economic sulphides due to the confounding effects of highly conductive stratigraphic units. The main conductors fell into six areas named after local prospects: Tenth Legion, Comstock, Razorback, Evendine, East and Ainslie. The latter four are immediately east of CRHL's tenements, but have many very interesting features worthy of further investigation. EL21/2004 Dundas was acquired from Stellar Resources in response to the results of the survey during the reporting period.

Tenth Legion is distinguished by a large number of strong anomalies in a structurally complex area. Ignoring the effect of the power line (labelled in Figure 7), second and third class anomalies cluster in the area of the Tenth Legion/Kynance mineral occurrences. Detailed examination of the CDI's shows large easterly dipping conductive layers are the source of some of these, others are deep confined conductors, and the remainder have features similar to the Comstock Conductor.

A good example of a dipping stratigraphic conductor is shown on Figure 8 between 355800mE and 356400mE on line 10840, anomaly reference ID# 1241 and 1234. The interpreted source is an N-S striking, shallowly easterly dipping carbonaceous shale which extends continuously under lines 10820 to 10900. Surface magnetic data obtained over the Comstock Prospect by RGC in 1991 identified four large, tabular, magnetic bodies with an approximate strike of 285° dipping 75° north (coincident with major regional fault trends). These bodies were identified as sulphide bearing magnetite+pyrrhotite that Deakin (1992) interpreted as being associated with the Balstrup Fault. The bodies were found to vary from moderately to non-conductive by later down-hole Transient Electro-Magnetics (TEM).

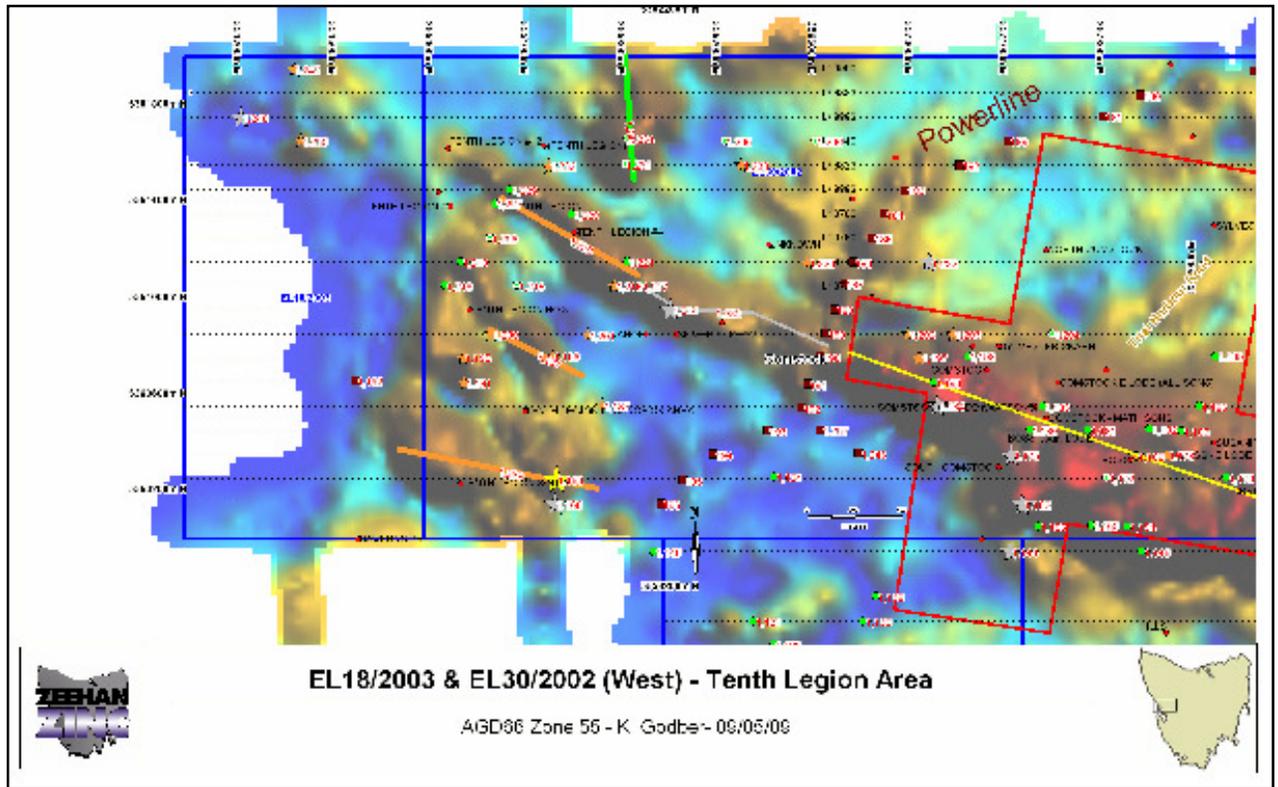


Figure 7: High moment channel Z20 EM response showing interpreted conductors, conductive trends, power line, and Comstock Conductor

Three distinct WNW-trending stratigraphic conductors have also been delineated in the Tenth Legion area, shown as orange lines on Figure 7 (reference anomaly ID# 1239, 1237, 1220 and 1241), these lie directly along strike from Deakin's Comstock pyrrhotite+magnetite bodies, giving reasonable geophysical and geological reasons to infer a similar origin. Such a concentration of sulphide and magnetite is commonly an indicator of nearby mineralisation in other geological terrains, and accordingly worthy of further investigation here.

The clearest basement conductor and top priority anomaly recognised in the Tenth Legion area is anomaly ID number 1166 and 1167, on line 10640 (Figure 9). This anomaly plots on the CDI as a confined conductor which does not appear to be strike extensive.

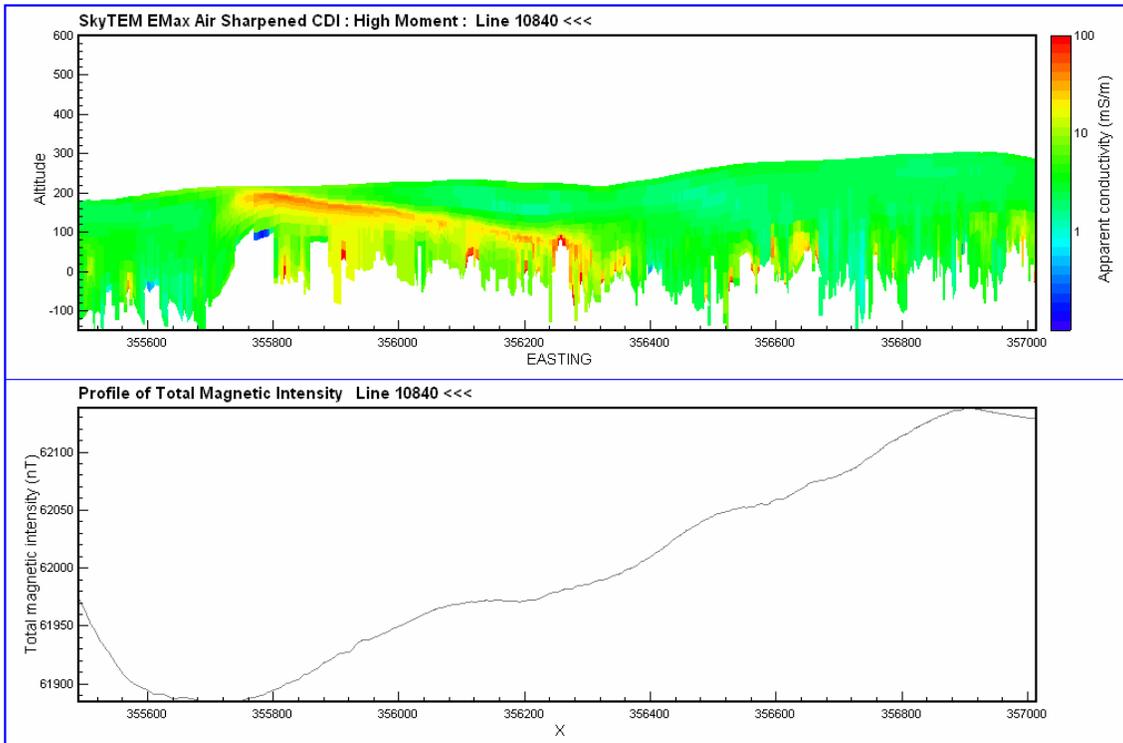


Figure 8: Example of CDI showing a conductive stratigraphic unit. In this case the conductor corresponds to anomaly ID # 1241 & 1243, strikes north-south, and is clearly visible on lines 10820 through to 10900

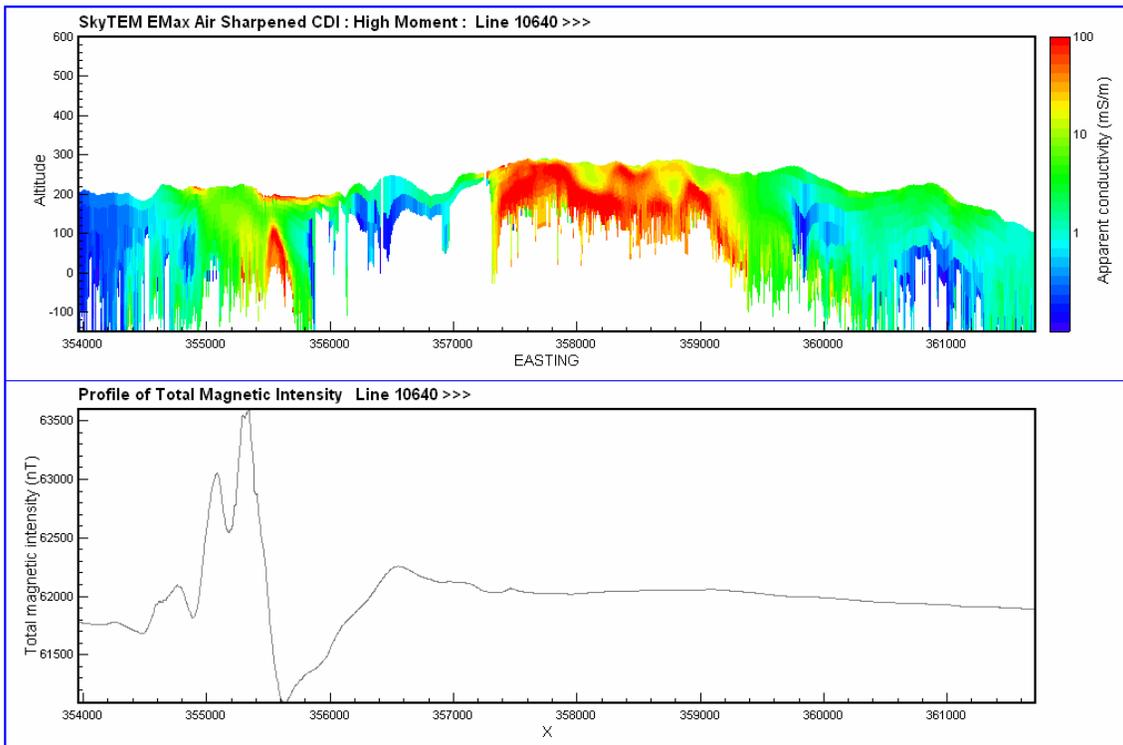


Figure 9: Line 10640 showing anomaly 1166 and the Comstock Conductor. Anomaly ID# 1166

### **3.3 Geochemical Soil survey completed over areas of interest in EL 30/2002**

#### **3.3.1 Geochemical Soil Sampling**

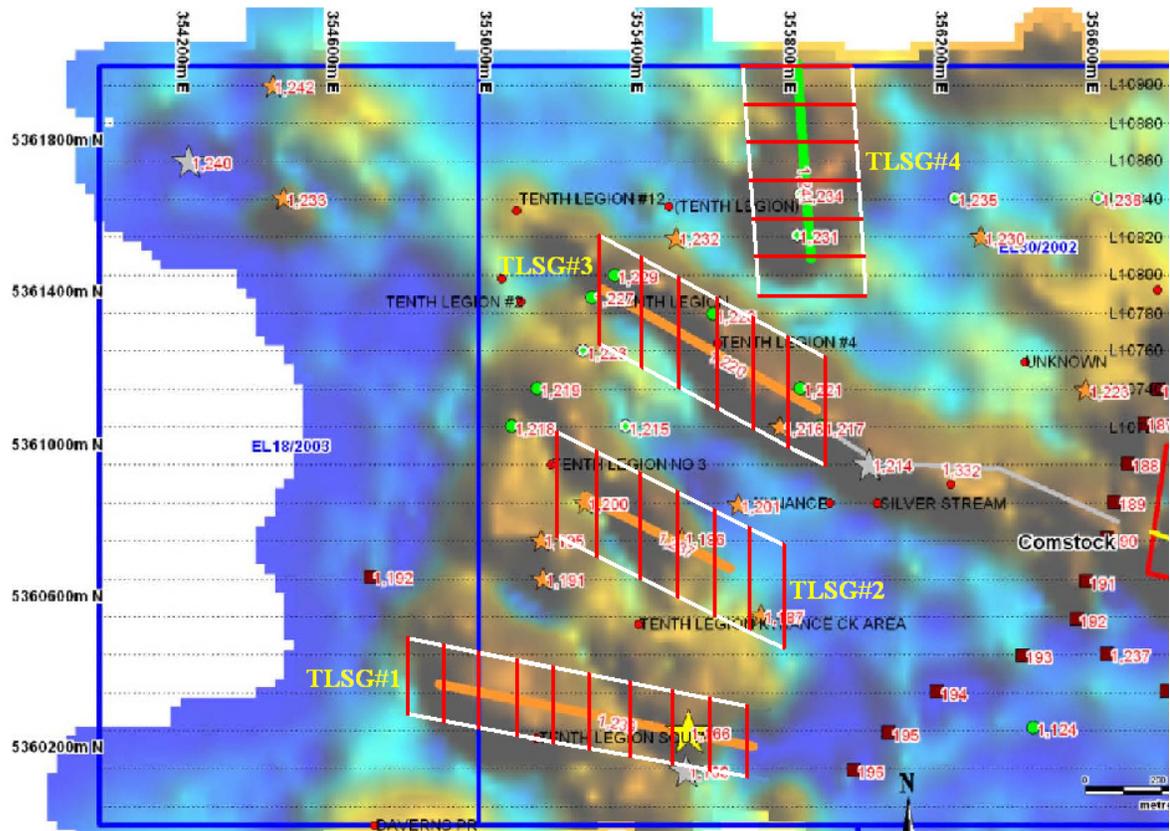
In July 2009, following the final geophysics interpretation completed by Mitre Geophysics consultant Kate Godber, it was determined that CRHL would investigate the indicated anomalies in priority order, the first decided upon was the three distinct WNW-trending stratigraphic conductors in Tenth Legion area shown as the orange line in Figure 7, as well as the North-trending conductor shown as the green line in the same figure.

Each of the four points of interest had a grid placed over it, consisting of 300m lines extending 150m either side of the intersect of the conductor and placed 100m apart, due to budget constraints line cutting was not carried out as such lines were navigated by GPS and compass, with thick scrub impeding the progress of the field team. Samples for the soil survey were taken every 25m approximately by shovel, first removing the organic layer so as to sample the B horizon in the soil. Where rock outcrop was intersected at a sample point appropriate rock chips were taken. In areas swampland was a problem for retrieving samples, for now these areas remain untested however recent acquisition of a wet auger sampler has made it possible for these points to be tested at a later date.

All samples were bagged and labelled and taken back to our exploration shed where they were dried and crushed and then analysed in-house using the Company's Thermo Niton hand-held XRF unit. For quality assurance, Standards were analysed at the beginning and end of each line, all up 301 samples were collected.



Figure 10: Thermo Niton hand-held XRF unit with accessory lead-lined analysis table for mounting unit vertically



Ni Soil Geochemistry (ppm) Tenth Legion TLSG-1

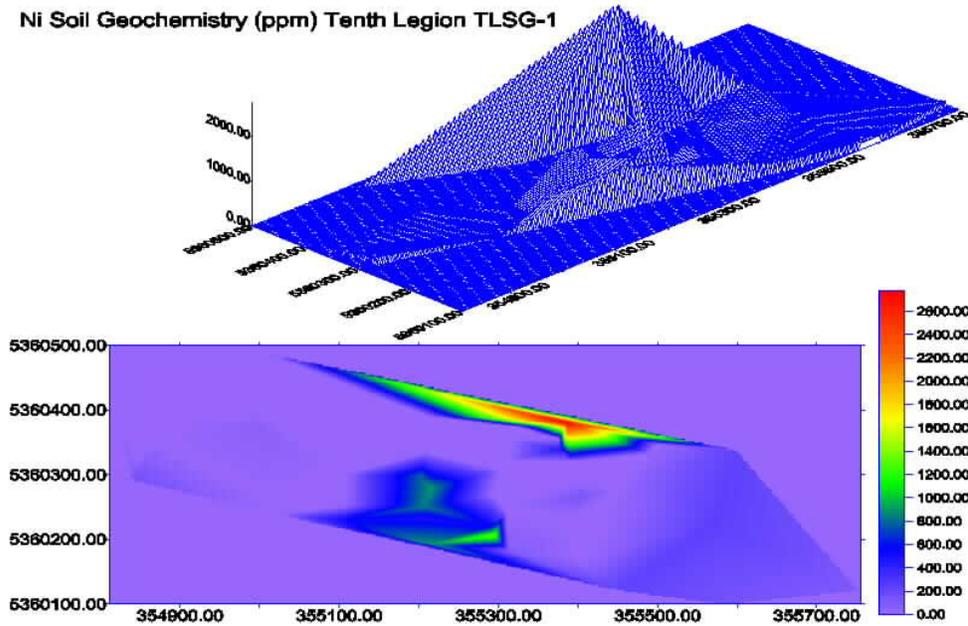


Figure 12: Nickel results for TLSG#1

Grid 1 was also heavily affected by swamplands and surface water. As such it is also planned to return to these areas and extract further samples to complete the grid.

Grid TLSG-2 also has no strong correlations to the stratigraphic conductor of interest, however there is a high nickel reading corresponding to the similar location roughly following the 355375 line to the Grid TLSG-1 high reading. This warrants further investigation as seen below in Figure 13.

Ni Soil Geochemistry (ppm) Tenth Legion TLSG-2

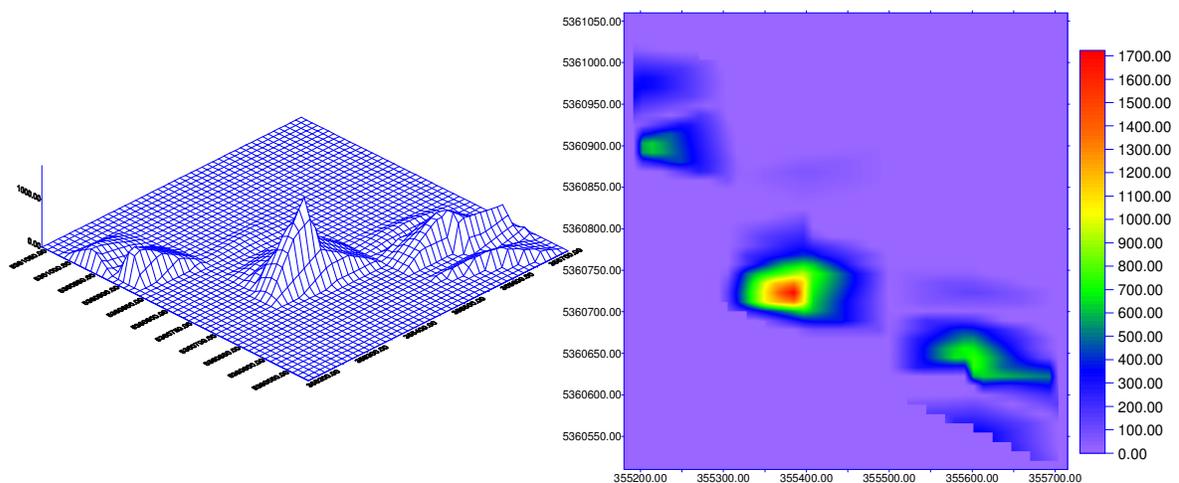


Figure 13: Nickel results for TLSG#2

Grid TLSG#3 has an interesting correlation between the Ironstones of the region and the nickel readings as seen below in Figure 14 and Figure 15; however the relationship to the ironstone is unclear at this stage. These readings warrant extending Grid TLSG#3 further west.

### Ni Soil Geochemistry (ppm) Tenth Legion TLSG-3

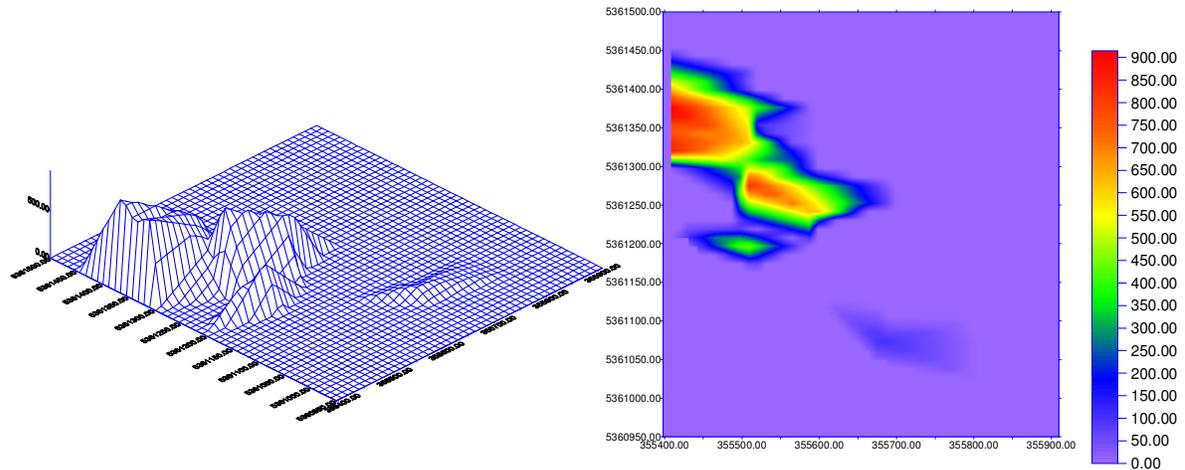


Figure 14: Nickel results for TLSG#3

### Fe Soil Geochemistry (ppm) Tenth Legion TLSG-3

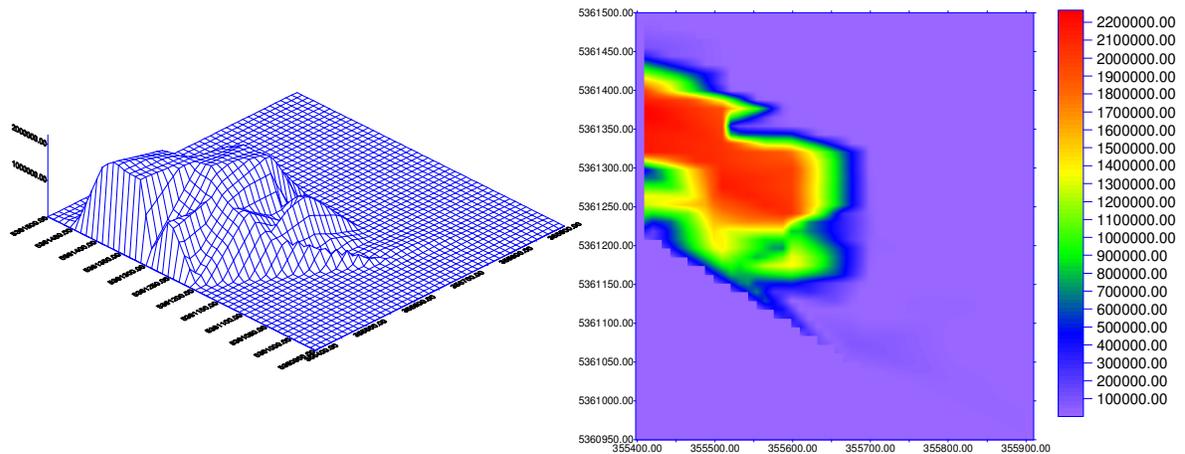


Figure 15: Iron results for TLSG#3

For TLSG-4 the results were disappointing, this was almost certainly due to the high amount of sandstone/quartzite present in the samples, greatly reducing the readings obtained from the soil tests. This has resulted in no obvious correlations to be made at this time.

Throughout the testing and collection of the samples the regions many ironstone/magnetite outcrops were often sampled given the lack of soil development over these areas. It is planned to continue these grids to cover the areas that have come up with interesting readings in 2010, it is also planned to continue further mapping to build on the understanding already obtained from Newnham Exploration and Mining Services reports.

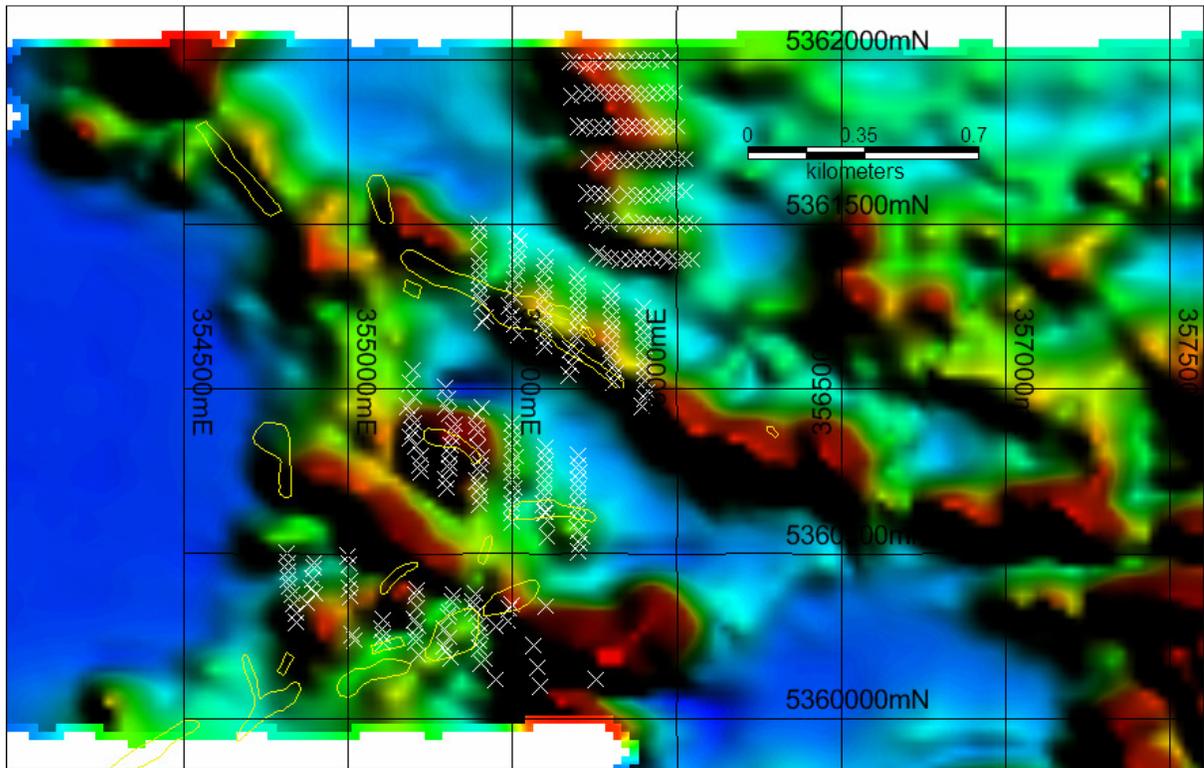


Figure 16: EM Z10 High Moment with soil sample locations and magnetite occurrences\* (gold polygons) \*taken from TCR 00\_4424

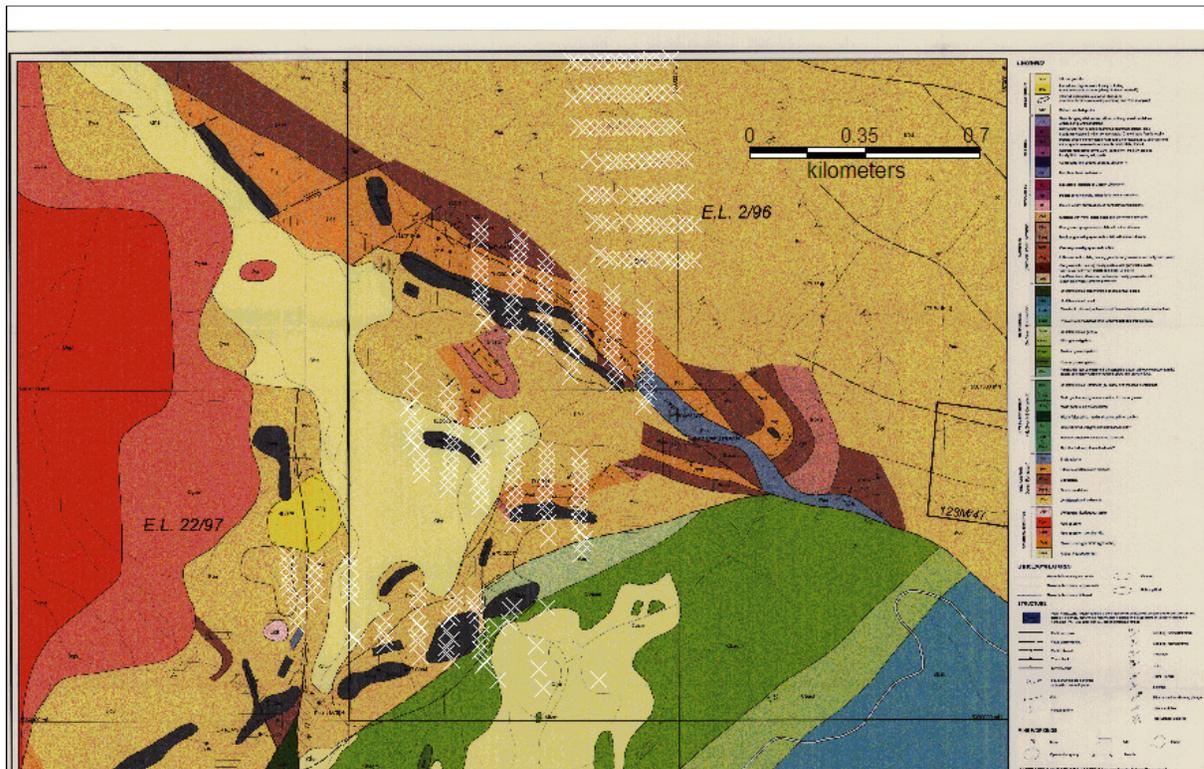


Figure 17: geological mapping and interpretation by R Reid, (TCR 00\_4424) was referred to

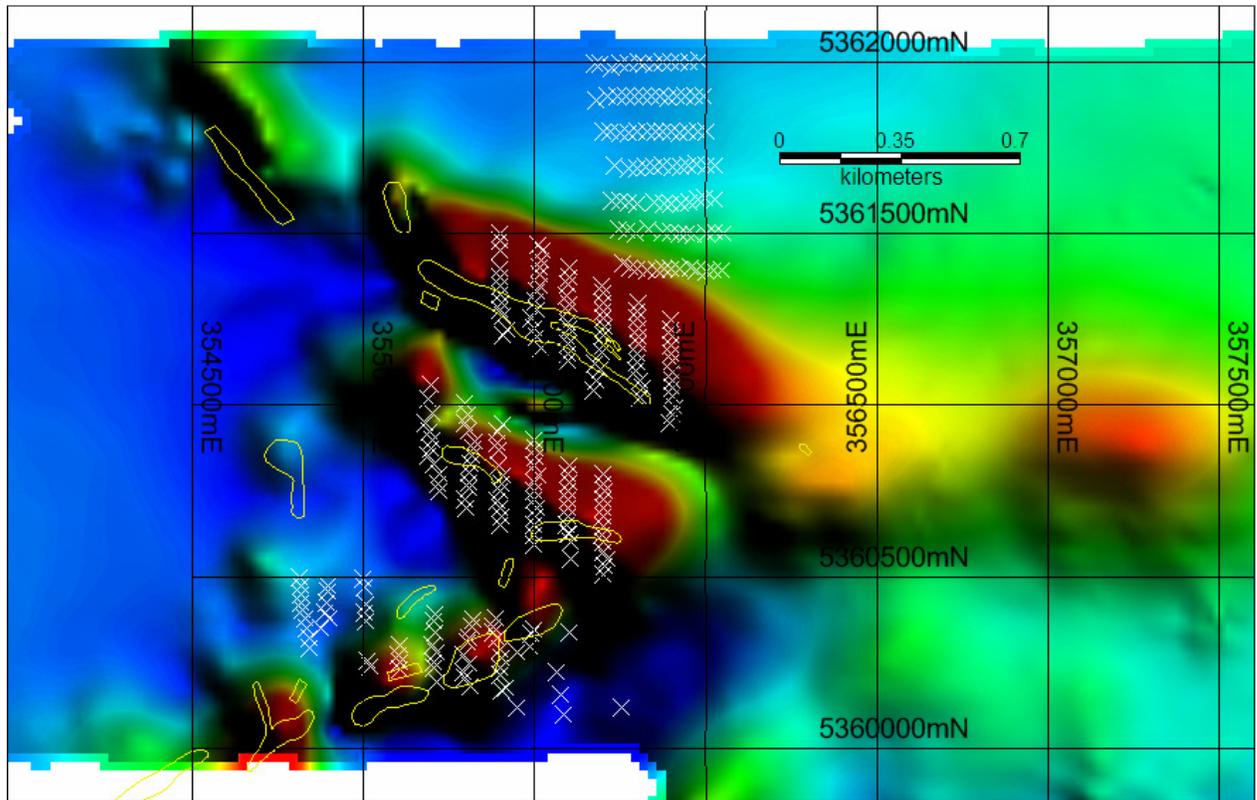


Figure 18: TMI with soil sample locations and magnetite occurrences\* (gold polygons) \*taken from TCR 00\_4424

### 3.4 2007 Seismic Survey Geological Interpretation

SRK Consulting completed the seismic interpretation of five seismic lines surveyed in 2007 in conjunction with MRT aeromagnetic datasets acquired in 2001, and gravity data collected by MRT. One seismic line previously processed by Fugro (TB02B-ZF) was reprocessed by CAS in Perth. The remaining lines were not reprocessed because the additional costs of \$25,000 quoted could not be justified by CRHL at that point in time. The SRK Interpretation Report is included as Appendix A in the CRHL 2009 Annual Report for EL20/2002.

## 4 CONCLUSIONS

Exploration work leading up to the drilling of targets in 2010 in EL30 will include:

- Detailed mapping of the ultramafic units in the area, their alteration zones due to the relationships of the alteration to the mineralisation seen at Avebury, and their relationship to the host rocks.
- Soil geochemistry surveys extended over the most prospective areas mapped in the region, to help further target possible mineralised horizons, and can be completed with the Company's hand-held XRF analyser.

Any targets produced from the above work can also then be further targeted through ground geophysics (Ground EM likely) and Ground Magnetics in some areas using the Company's magnetics equipment.

## **5 PROPOSED WORK PROGRAM**

CRHL has prepared a detailed proposed work program and budget for exploration during 2010. This program was provided to MRT recently as part of the renewal documents for the licence. It includes work as outlined in the 4 CONCLUSIONS section above.

## **6 ENVIRONMENT**

No environmental disturbance occurred in EL30 during the reporting period. All locations which were accessed for soil sampling were on un-cut lines – field staff accessed sample locations through untouched vegetation.

## **7 EXPENDITURE**

EL30 Expenditure for the four quarters for 2009 is presented below.

2008	Q4	\$ 8,386
2009	Q1	\$ 33,045
	Q2	\$ 24,403
	Q3	\$ 14,010
	Q4	\$ *

\*The figures for EL30/2002 Q4 2009 are currently being collated and will be presented in the next report.

## **8 REFERENCES**

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## **9 APPENDICES**

**Appendix A:** *Soil Geochemistry plots from Surfer software*

**Appendix B:** *Hand-held XRF readings from Tenth Legion soil grids TLSG-1 to TLSG-4*

**Appendix C (digital):** *Tenth Legion Soil Geochemistry and Locations (AGD66) Surfer format .csv files*

**Appendix D (digital):** *Soil Geochemistry plots from Surfer software in pdf format.*

**Appendix E (digital):** *Hand-held XRF readings from Tenth Legion soil grids TLSG-1 to TLSG-4 in pdf format.*