

**LOYETEA PROJECT  
BLACK BLUFF RANGE GROUP  
TASMANIA  
EL52/2004**

**FINAL REPORT  
8<sup>TH</sup> AUGUST 2008 TO 7<sup>TH</sup> AUGUST 2009**

**Tenement Holder/Manager**  
Bass Metals Ltd.  
Suite 5, 2 Richardson St  
West Perth, WA, 6005

**Geologist:**

Travis Murphy, *B.App.Sc (Geol.), PhD*  
Senior Exploration Geologist  
Hellyer Exploration Base, TAS

**Prepared By:**

Sally Bates, *B.App.Sc (Geol)*  
Tenement Geologist  
Hellyer Exploration Base, TAS

**Distribution:**

Mineral Resources Tasmania  
Bass Metals Ltd  
Clancy Exploration Ltd

**Note: All figures and grids are according to the GDA94, Zone 55 datum.**

**Disclaimer**

The conclusions and recommendations expressed in this report / table represent the opinions of the Authors based upon the data available and provided to them. The opinions and recommendations provided from this information are in response to a request from the client and no liability is accepted for commercial decisions or actions resulting from them.

**LOYETEA PROJECT  
BLACK BLUFF RANGE GROUP  
TASMANIA  
EL52/2004**

**FINAL REPORT  
8<sup>TH</sup> AUGUST 2008 TO 7<sup>TH</sup> AUGUST 2009**

**ABSTRACT**

Bass Metals Ltd (BSM) commenced management of the Loyetea exploration licence (EL52/2004) on 8 August 2005. Work conducted on this tenement for the year ended 7/08/2009 has included:

- Manipulation of the VTEM data (LOY#2) was undertaken to give the position of this VTEM target at depth.
- A consultant was employed to review previous work and the geology in the northern part of this tenement.
- Design of drill program to test LOY#2 VTEM target.
- Reviewed for relinquishment

**Expenditure** – Reporting period \$34,596.51

Total to date \$229,251.71

The Loyatea tenement is part of the Black Bluff Range Group; the total expenditure up to the 31<sup>st</sup> May 2009 for this group is \$836,065.16 against a required group expenditure of \$650,258.31.

## TABLE OF CONTENTS

	<b>Page</b>
<b>1. INTRODUCTION</b>	<b>1</b>
1.1 Location and Access	1
1.2 Geology Overview	3
1.2.1 The Burnie and Oonah Formation	3
1.2.2 The Mount Read Volcanics	3
1.2.3 The Owen Group	4
1.2.4 The Housetop Granite	4
1.2.5 Tertiary Basalts	4
1.3 Exploration Rationale	4
<b>2. REVIEW OF PREVIOUS WORK – Prior to current tenement</b>	<b>7</b>
2.1 Historical Mining	7
2.2 Previous Exploration	7
<b>3. DURING CURRENT TENEMENT;</b>	<b>10</b>
3.1 2005 – 2006 (BSM)	11
3.2 2006 – 2007 (BSM)	12
3.3 2007 – 2008 (BSM)	12
<b>4. CURRENT WORK</b>	
<b>Exploration completed during the report period</b>	<b>16</b>
<b>(8<sup>th</sup> Aug 2008 – 7<sup>th</sup> Aug 2009)</b>	
<b>6. ENVIRONMENT</b>	<b>22</b>
<b>7. EXPENDITURE</b>	<b>24</b>
<b>8. REFERENCES</b>	<b>25</b>
<b>APPENDIX 1 – Review (Wally Hermann)</b>	
<b>LIST OF FIGURES</b>	
Figure 1. Loyatea licence (EL52/2004) location.	2
Figure 2. Regional Geology and licence boundary.	6
Figure 3. Plan of Loyatea EL with completed VTEM survey area	13
Figure 4. Plan of contoured VTEM data & autogenerated anomalies	14
Figure 5. Plan of Redwater Creek – Laurel Creek area	15
Figure 6 VTEM Data with LOY#2	17
Figure 7 Cross-section through anomaly	18
Figure 8 Map illustrating VTEM (Ch20) anomaly ‘LOY#2’ & planned drill-hole	19
Figure 9 Map illustrating airborne magnetic	20
Figure 10 Map illustrating topography & fact geology	21
Figure 11 Environmental Activity Map	23
<b>LIST OF TABLES</b>	
Table 1. Expenditure 8 August 2006 to 7 August 2007.	24

## **1. INTRODUCTION**

This final report is a summary of the exploration activities conducted on the Loyetea exploration licence (EL), EL52/2004 (Figure 1), for the period 8 August 2008 to 7 August 2009, and for the time that BSM has managed the licence. The Loyetea licence is subject to an exploration joint venture agreement between Bass Metals Ltd (BSM) and Geoinformatics. BSM is currently managing exploration of the EL from a base at the Hellyer Mine site.

The licence is located in northern Tasmania and is dominated geologically by the Proterozoic Burnie Oonah Formation, interpreted Mt Read Volcanics (MRV), Cambro-Ordovician Owen Group sediments, the Devonian Husetop Granite and Tertiary basalts.

A diverse range of mineral deposits occur in the vicinity of the Loyetea licence and include the Kara Fe-W skarn deposit (5.2Mt @ >30% Fe, by-product WO<sub>3</sub>), the Dial Range Cu-Ba prospect, the Penguin base metal prospect along with numerous other occurrences. The MRV belt is also known to host a number of large volcanic-hosted massive sulphide (VHMS) deposits in Tasmania, including, Hellyer (Pb-Zn-Ag-Au) and Que River (Pb-Zn). Exploration potential at Loyetea is for Cambrian VHMS deposits and Devonian granite and hydrothermal related deposits .

### **1.1 Location and Access**

The Loyetea licence covers a total area of 186 km<sup>2</sup> and extends for some 30km to the southwest from Penguin to the Leven River, south of Mt Husetop (Figure 1). The tenement encompasses the localities of Loyetea, Ferndene and West Pine and is shown on the Forth & Inglis 1:100,000 scale LTIS map sheets.

The Loyetea tenement area is easily accessed from the north coast via a network of secondary roads covering largely open farmland and forest reserve. Topographically the EL is variable from undulating farmland to steep hill slopes of the Dial Range, south of Penguin, and Loongana Range, southern licence area.

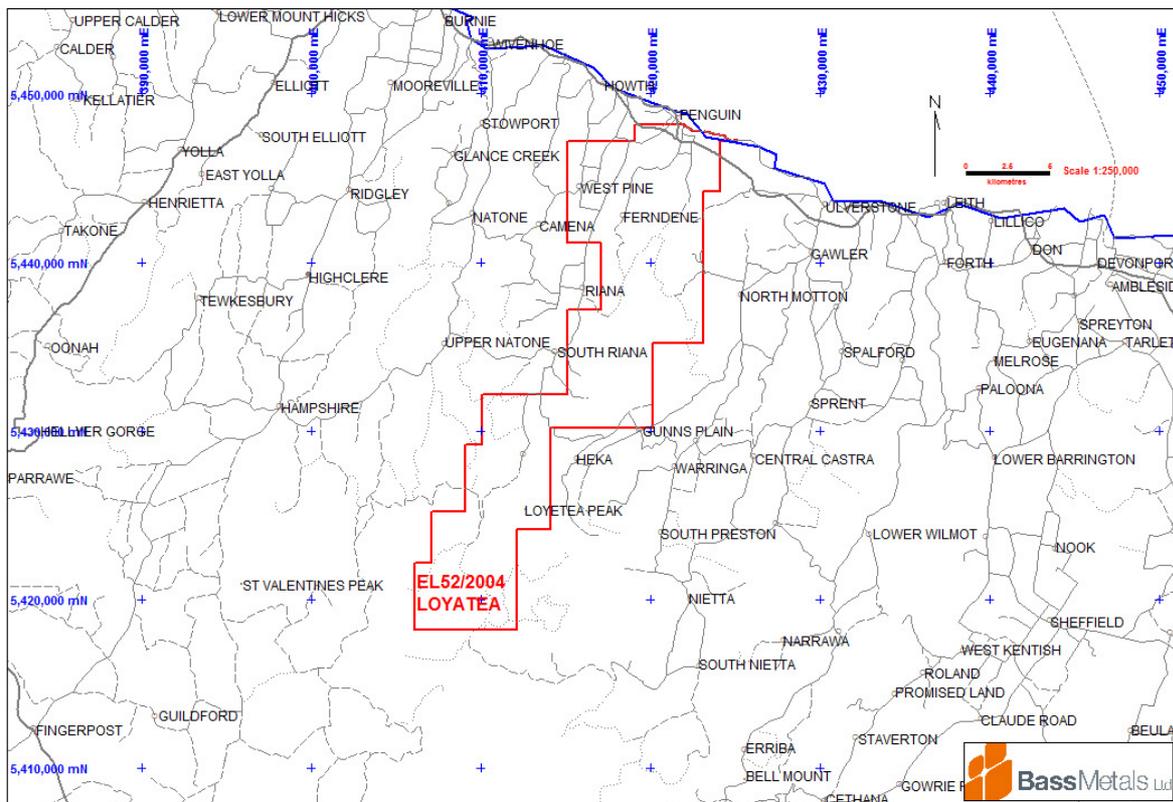


Figure 1. Loyetea Exploration Licence (EL52/2004) is located in north-western Tasmania.

## 1.2 Geology Overview

Geologically the licence contains the Proterozoic Burnie Oonah Formation, interpreted MRV, Cambro-Ordovician Owen Group sediments, the Devonian Husetop Granite and Tertiary basalts.

Large parts of the Loyetea tenement are covered by a veneer of Tertiary basalt while the Husetop Granite occurs along the western licence boundary. The Tenth Legion Fault is interpreted to bisect the northern half of the tenement thrusting the Proterozoic Burnie and Oonah Formation over Cambrian and Ordovician sediments of the MRV and Owen Group. The northern extension of the Hellyer Fault also passes through the tenement area. Refer to the Regional Geology Map in Figure 2.

### 1.2.1 Burnie and Oonah Formation

The Burnie and Oonah Formation is a thick, polydeformed Proterozoic quartzwacke turbidite succession, widespread in western Tasmania. The formation comprises of two lithological associations. The dominant quartzwacke turbidite association, which includes minor alkaline dolerite intrusions and lavas, consists of interbedded quartz sandstone, quartzwacke, siltstone and pelite. The secondary lithological association is predominately pelite and/or carbonate including mafic volcanics and conglomerate in some places. Near Zeehan this association is host to a number of Devonian vein, skarn and replacement-tin deposits, and at Mt Bischoff a dolomitic unit hosted major Devonian tin lodes (Seymour *et al*, 2006)

### 1.2.2 The Mount Read Volcanics

The MRV are a belt of volcanic, volcanoclastic and sedimentary rocks of Mid- Cambrian age. The belt is famous for hosting Tasmania's world-class polymetallic (VHMS) deposits (eg. Rosebery, Hellyer and Que River).

The Loyetea EL is mapped as having outcrops of Western Sequence volcanoclastics, andesites and Tyndall Group. The andesite may indicate the presence of a new or equivalent cycle of volcanism to the Hellyer-Que River Volcanics or it may be of less significance belonging to the basal beds of the Tyndall Group.

#### *Western Volcano-Sedimentary Sequence*

The northern portion of the Loyetea EL is mapped as belonging to the Western Volcano-Sedimentary Sequence. This unit is coeval with the Central Volcanic Complex of the MRV though older than the Tyndall Group. It is described as including beds of lithicwacke turbidite, mudstone (commonly rich in shards), siltstone and shale. It also contains subordinate intrusive and volcanic rocks, which are commonly andesitic (Seymour *et.al.*, 2006).

Tyndall Group

The Tyndall Group is a unit of quartz-bearing volcanoclastic sandstone and conglomerate. It also contains minor volcanic, intrusive and ignimbritic rocks of mixed felsic and andesitic provenance (Seymour *et.al.*, 2006).

### **1.2.3 The Owen Group**

The Owen Group is Cambrian to Ordovician in age and sits unconformably on the MRV. The unit typically includes large volumes of coarse siliclastic conglomerate composed dominantly of metaquartzite clasts derived from the Tyennan Metamorphics. It also includes turbidite and shallow marine sandstone units (Seymour *et.al.*, 2006). It is not likely to host any exhalative styles of mineralisation such as Taylor and Mathison (1990) report for the younger Gordon Group. However, it could potentially host mineralisation associated with intrusion of Late Devonian–Early Carboniferous granitoids.

### **1.2.4 The Housetop Granite**

World-class tin and tungsten ore bodies, as well as many lead, silver, gold, zinc, copper and bismuth deposits of different styles, are genetically and spatially related to the emplacement of high-level Middle Devonian to Early Carboniferous granitoids in Western Tasmania. The major bodies are the Housetop, Granite Tor, Grassy, Dolcoath, Meredith, Heemskirk and Interview granites, and these include both I and S types. Styles of mineralisation associated with the Devonian granitoids include stratabound carbonate replacement cassiterite-massive sulphide, silicate and magnetite skarns, and disseminated and vein deposits.

Economically, the stratabound carbonate-replacement cassiterite-massive sulphide mineralisation forms the most important Devonian ore type, with major deposits at Renison Bell and Mt Bischoff, (MRT Report, 2005).

### **1.2.5 Tertiary Basalts**

Radiometric dates from basalts across Tasmania indicate an age range of between 16.4Ma and 64.5Ma (Everard *et al.*, 2004 - not in reference list. These basalts cover a significant amount of the central tenement area. The thickness of these basalt units may potentially vary significantly.

## **1.3 Exploration Rationale**

EL52/2004 contains over 40 known minor mineral occurrences including Sn, W, Fe & Cu occurrences hosted within the Housetop Granite, Fe, Cu & Mn occurrences hosted by interpreted Burnie and Oonah Formation and Pb, Zn, Cu, Fe, Ag, Mn & Ba occurrences within interpreted MRV. Large scale regional structures including the northern extension of the Hellyer Fault and also possibly the Tenth Legion Fault cross the licence area.

The Loyetea licence was originally acquired due to the interpreted extension of the Que-Hellyer corridor structures through the area. Based on the geology of the licence area, identified mineral occurrences and exploration targeting by Geoinformatics a number of intrusive-related targets and VHMS style targets have been identified.



## 2. REVIEW OF PREVIOUS WORK – Prior to current tenement;

### 2.1 Historical Mining

As well as the 40 known mineral occurrences, historic copper production of limited quantity is recorded from the Walloa Creek Mine located 15km south of Penguin (Jennings, 1979). Historic Fe production is also recorded from the Penguin Creek Iron Mine located immediately north of the tenement which were worked between 1897 and 1909 (Smith, 1960). Major mineralisation has not been identified within the actual area of the licence but significant granite-related skarn mineralisation has been identified to the west of the tenement in the Kara area (5.2Mt @ >30% Fe, by-product WO<sub>3</sub>; Seymour et al., 2006).

### 2.2 Previous Exploration

Modern exploration activity in the area of Loyetea EL52/2004 commenced in the 1960's by BHP Pty Ltd. Companies have variably been targeting either VHMS style base metal deposits, sediment hosted Cu-Pb-Zn deposits, iron deposits, bauxite deposits or granite-related skarn (Fe-Sn-W-F) mineralisation similar to the Kara and Moina deposits. Historic government reports indicate widespread mineral occurrences of interest including gold occurrences at the Penguin Mine and Sullocks Lode (Montgomery, 1895). A summarised version of the exploration history on the licence is given below:

**Date:** 1968

**Company:** BHP Company Pty Ltd

**Exploration Philosophy:** Use magnetics to identify sulphide mineral occurrences.

**Work Completed:** Magnetic, EM & radiometric surveying.

**Results and Conclusions:** Surveying hampered by cultural features including power lines.

**Author:** Hewitt, W.K., 1968

**Date:** 1975 - 1976

**Company:** CRA Exploration Pty Limited

**Exploration Philosophy:** Originally targeting stratiform Cu-Pb-Zn mineralisation.

**Work Completed:** Stream sediment sampling, soil sampling, auger sampling, geological mapping, airborne EM, magnetics and IP survey and diamond drilling at Loyetea South (2 holes) and Crosby Creek (3 holes) prospects.

**Results and Conclusions:** Soil anomalies defined. Loyetea South anomaly with peak 400ppm Pb. Loyetea North anomaly with peak 2,100ppm Pb & 400ppm Zn. Drill holes DD76 LS1 & DD76 LS2 at Loyetea South tested IP anomalies and soil anomalies. Minor chalcopyrite and sphalerite mineralisation intersected but holes not assayed. Downhole geophysics suggested the main targets were not intersected.

**Author:** Porter, T.M., 1976.

**Date:** 1977 - 1979

**Company:** Comalco Ltd

**Exploration Philosophy:** Targeting fluorite-tin-tungsten skarn deposits.

**Work Completed:** Stream sediment geochemistry, reconnaissance mapping, rock chip sampling, geophysics and diamond drilling.

**Results and Conclusions:** Minor stream sediment anomalies. Three diamond drill holes at Redwater Creek intersected skarn mineralisation but at low grades.

**Author:** Weste, G., 1979.

**Date:** 1980 - 1984

**Company:** Shell Company of Australia Ltd (some JV with Comalco)

**Exploration Philosophy:** Targeting granite-related skarn mineralisation.

**Work Completed:** Work included stream sediment geochemistry, gravity surveying and aeromagnetic and radiometric surveying. Diamond and percussion drill testing.

**Results and Conclusions:** Airborne magnetics delineated numerous magnetite-skarn targets. Several low-level stream sediment W, Pb & Zn anomalies defined. Shell stated that economic mineralisation unlikely and relinquished licence.

**Author:** Ruxton, P.A., 1984.

**Date:** 1974 - 1985

**Company:** Geopeko (joint venture with Pennzoil)

**Exploration Philosophy:** Initially targeting VHMS base metal deposits and later Renison-style Sn deposits.

**Work Completed:** Significant part of work assessing potential at the historic Dial Mine south of Penguin. Geological mapping, rock chip sampling, various geophysical surveys & 10 diamond drill holes.

**Results and Conclusions:** Soil sampling defined anomalous areas with peaks of 1,000ppm Cu, 150ppm Pb and 120ppm Zn. Drill hole Dial Range 10 intersected 20m @ 0.68% Cu from 117m.

**Author:** Herrmann, W., 1985.

**Date:** 1986 - 1987

**Company:** Jervois Mining NL

**Exploration Philosophy:** Targeting granite-related skarn mineralisation.

**Work Completed:** 4 reverse circulation drill holes completed targeting EM & gravity anomalies.

**Results and Conclusions:** Best results from drilling were 20m @ 0.17% Zn (including 8m @ 0.29% Zn) from 52m within limestones. Variable amounts of pyrrhotite and pyrite intersected. No significant Sn or W assays returned.

**Author:** Anonymous, 1997.

**Date:** 1988 - 1989

**Company:** Placer Exploration Limited (Purchased from CSR Pty Ltd)

**Exploration Philosophy:** Explore around the Husetop Granite for Sn and Au deposits.

**Work Completed:** Stream sediment geochemistry, rock chip sampling & geological mapping.

**Results and Conclusions:** Stream sediment gold anomalies defined in tributaries of Laurel Creek/Puffer Creek & Blythe River/Hollway/Creek. No Sn anomalies located.

**Author:** Ellis, P.D., 1989.

**Date:** 1988 - 1990

**Company:** Pasminco Ltd & Geopeko

**Exploration Philosophy:** Targeting VHMS and low sulphide Au deposits

**Work Completed:** Geological mapping, soil sampling, rock chip sampling & Pb isotope studies.

**Results and Conclusions:** At Loyetea South two anomalous Pb-Zn zones (peak 680ppm Pb) identified over andesite by CRAE were rock chipped returning a peak of 2,100ppm Pb and 1,450ppm Zn. CRAE drilled diamond hole DD76LS2. Previous anomalies at Crosby Creek prospect (peak 725ppm Pb & 1,200ppm Zn) identified by CRAE and a new anomaly to the west identified this report. Previous CRAE drilling (DD75CC1, CC2 & CC3) intersected thin sphalerite-galena veins. Pb isotopes indicate Cambrian age.

**Author:** Virgoe, K.J., 1990.

**Date:** 1995 - 1996

**Company:** CRA Exploration Pty Limited

**Exploration Philosophy:** Targeting Irish-style Pb-Zn deposits in Gordon Group limestones.

**Work Completed:** Literature review only.

**Results and Conclusions:** No field work completed.

**Author:** Menpes, S.A., 1996.

### **3. DURING CURRENT TENEMENT;**

#### **3.1 2005 – 2006 (BSM)**

This section reports on exploration conducted between 8 August 2005 and the 7 August 2006 by BSM and Geoinformatics. Initial work undertaken has consisted of collating previous exploration information in the area as well as acquiring datasets that may be of assistance in targeting VHMS and intrusion-related mineral deposits. The MRT topographic, geophysical and 1:100,000 scale digital geological map series were used as base maps for presenting other historical company datasets. Previous exploration company reports in PDF format were downloaded from the Mineral Resources Tasmania website.

##### *TERRA Satellite (ASTER Data)*

Still interested in the idea of using a remote sensing system to map wall rock alteration on a more regional basis, BSM managed to source some ASTER data over the northwest corner of Tasmania. It was decided that the data would be used in a more regional sense than had originally been anticipated.

ASTER is an acronym for 'Advanced Spaceborne Thermal Emission and Reflection Radiometer' and it is an instrument that flies on the Terra Satellite. It collects a similar radiation spectrum to the HyMap instrument but at a lower resolution (4x4m pixels versus 30x30m pixels). BSM had this ASTER data forwarded to Bob Agars at Australian Geological & Remote Sensing Services. A report describing the interpretation methodology utilised was included as Appendix 1 in the report for the period (8/8/05-7/8/06).

BSM realised that because of the lower resolution of the ASTER data and the issue of vegetation shielding radiation reflected from the ground surface that the data would be more useful for targeting 'active zones' rather than providing the bulls-eye targets that had originally been hoped for from the HyMap data.

Areas of the Loyatea licence (EL52/2004) that are considered to have anomalous alteration types have been marked using a green ellipse outlining their extent (Figure 4).

Three broad areas of potentially significant alteration are evident on ASTER images of the Loyatea licence. Area 1 covers a 5km x 5km area around the contact zone between the Housetop Granite and interpreted Mt Read Volcanics – Owen Group. This area is marked by silica zones and phyllic (sericite) and argillic (alunite) alteration. Areas 2 & 3 occur in the northern tenement area over interpreted MRV units and are marked by propylitic (chlorite) zones with silica and carbonate alteration over a 5km x 5km area and 5km x 3km area respectively (Figure 4).

##### *Geoinformatics Geological Modelling & Targeting -*

BSM utilised Joint Venture partners, Geoinformatics to compile a 3-dimensional spatial database (GIS).

The Geoinformatics process involves the efficient capture of historical data in proprietary Geoinformatics database and software systems (eg IFS & FracSIS). Proprietary software and methods are then used to generate 3-dimensional geological models and targets (Monte Carlo Ranking). The Loyatea work is part of a larger 'Intervention

Project' called the MRVIP (Mount Read Volcanics Intervention Project - Stage 1b). The Stage –1b Project focuses on all of BSM 13 regional exploration licences.

The Stage 1b Project attempts to incorporate Geoinformatics understanding of the three dimensional controls on world class VHMS mineralisation to provide BSM with high-quality targets in the Loyatea tenement for rapid drill testing and other areas for follow-up field work including soil type geochemistry. Models were also developed for the targeting of intrusive related tin systems (e.g. Renison and Mt Bischoff) and intrusive related nickel skarn systems (e.g. Avebury). Targets were identified and ranked according to probabilistic Monte Carlo analysis of best-available 2D and 3D geoscientific data and allowed an assessment of exploration risk and uncertainty.

Much of the data for the project was obtained from open file reports. A data audit of 1,300 reports was completed by Dan Core, Graeme Cameron, Neville Panizza and Helen Ly. Work on the Stage 1b Project commenced in early February 2006 and was largely complete by July 2006. A target workshop with alliance personnel was held at Hellyer in July 2006 and final targets were delivered in August 2006. A summary Geoinformatics report was included in the report for the period (8/8/05-7/8/06)

At Loyatea, Geoinformatics exploration targeting generated two Rosebery-Hellyer VHMS style targets on the tenement and two intrusion-related targets.

### **3.2 2006 – 2007 (BSM)**

#### *Program planning for geological mapping and rock chip sampling -*

Program planning for geological mapping and rock chip sampling of identified magnetite skarns, Geoinformatics generated VHMS style targets and Geoinformatics intrusion-related targets. The VHMS targets occur over interpreted MRV rock units and initial geological mapping will confirm if this interpretation is correct. The interpreted positions of the Hellyer Fault and Tenth Legion Fault will also be mapped.

### 3.3 2007 – 2008 (BSM)

#### *Geological Mapping –*

A mapping trip to Loyetea Peak identified a number of fine-grained sedimentary facies sitting directly below easily identifiable Owen Conglomerate. The provenience of the sediments is questionable as the possibly represent Tyndall Group or Owen Group.

#### *VTEM Program-*

The Soil geochemistry program planned for the Loyetea peak was foregone and replaced with 455.8 line-km of Versatile Time Domain Electro Magnetic surveying. (Figure 3) The main target types in this tenement are for HR-VHMS deposits and intrusion-related base-metal deposits hosted within the prospective Cambrian stratigraphy. This area was not flown with the MRT-funded Hummingbird Electromagnetic Survey (EM) and as a result there is no regional EM coverage of this tenement. The tenement comprises a considerable proportion of agricultural land residential land. An airborne method of exploration was there for ideal in this situation so as to prevent the need to obtain permission to enter and potentially disturb private land.

Interpretation of the data identified many anomalies, most of which occur as single line anomalies (Figure 4). Several anomalies are due to cultural features in this more populated tenement however 'unexplained' anomalies are recognised and short (3km); infill VTEM lines were flown to better define one of these anomalies.

The Southern area of the tenement comprising Cambrian sequences and dominated by granite was devoid of anomalies.

The identified targets will be systematically field checked/mapped to ascertain whether cultural features are implicated in the VTEM response or if they represent valid exploration targets.

Thus far, field reconnaissance of VTEM anomalies 17, 18, 1 and 2 initiated however, no ground observation due to thick vegetation, lack of outcrop or cover sequences such as the Tertiary basalt flows. Target 2 is in an area of prior exploration. (Figure 5) The Redwater Creek – Laurel Creek area has been explored for skarn mineralization due to outcropping magnetite skarn. A grab sample taken from this area was analyzed with the Niton FPXRF and gave 60.1% Fe, 1200ppm Zn, 193ppm Sn and was located near the granite contact where previous drilling has confirmed the presence of Gordon Group Limestone sequences immediately below Tertiary Basalt and in contact with the Housetop Granite.

**Figure 3. Plan of the Loyetea EL with completed VTEM survey area (light blue) and 1:100k geology. Numbered stars represent anomalies detected in the analysis of the VTEM data.**

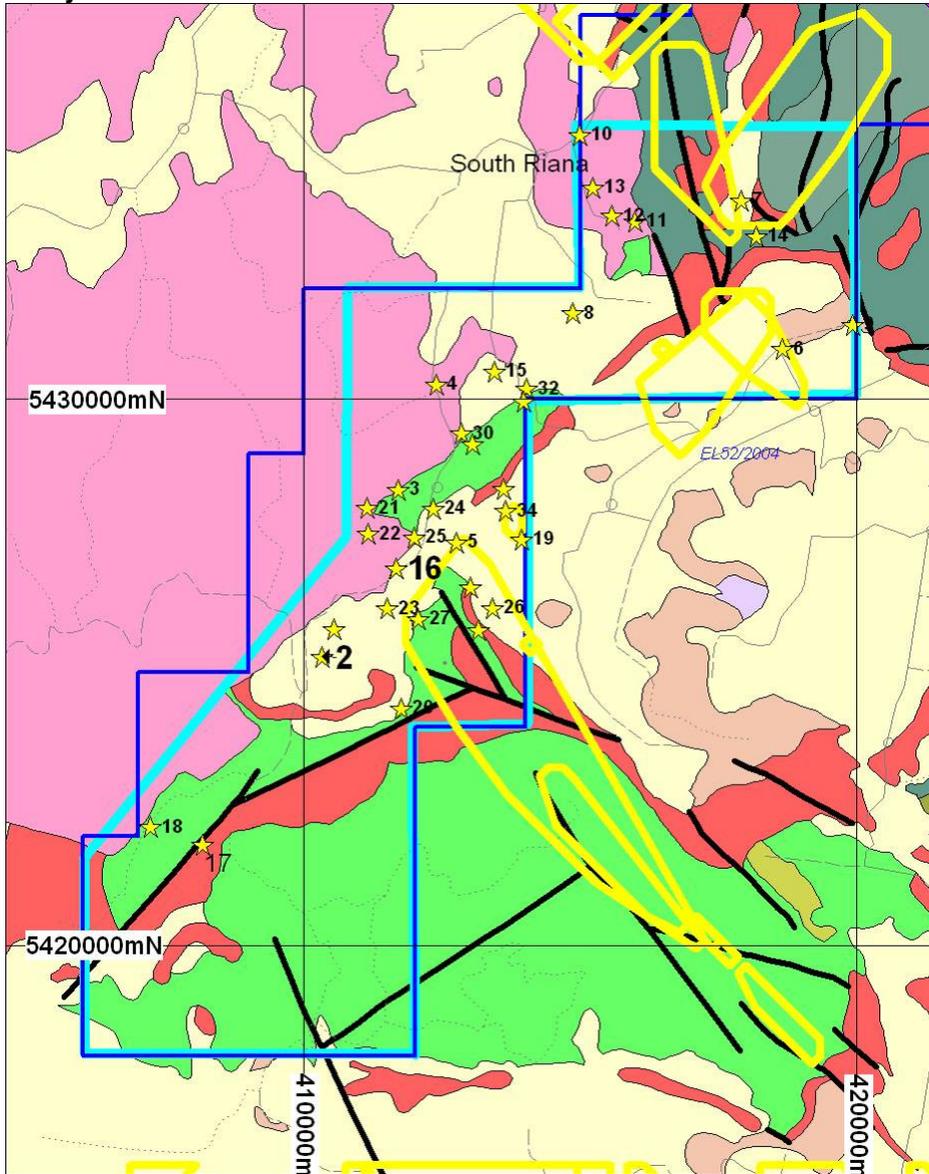


Figure 4. Plan of the contoured Loyteya VTEM data and autogenerated anomalies.

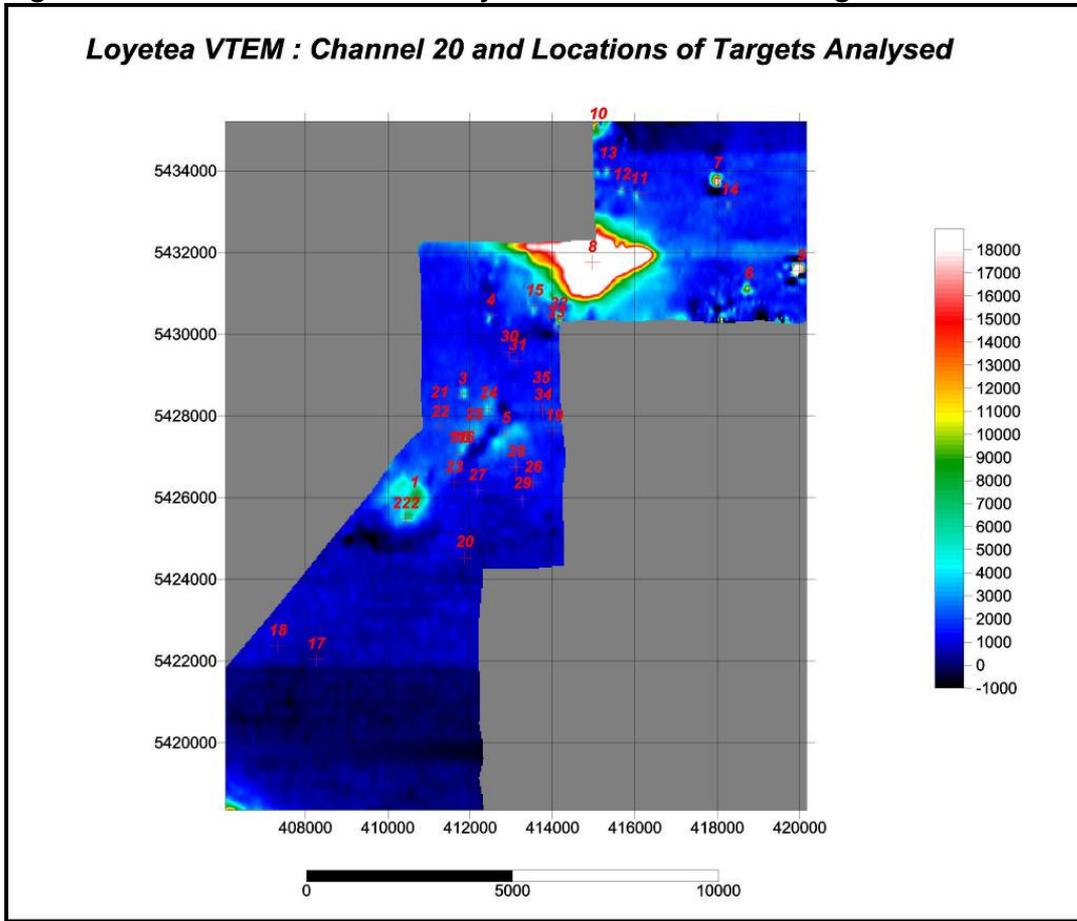
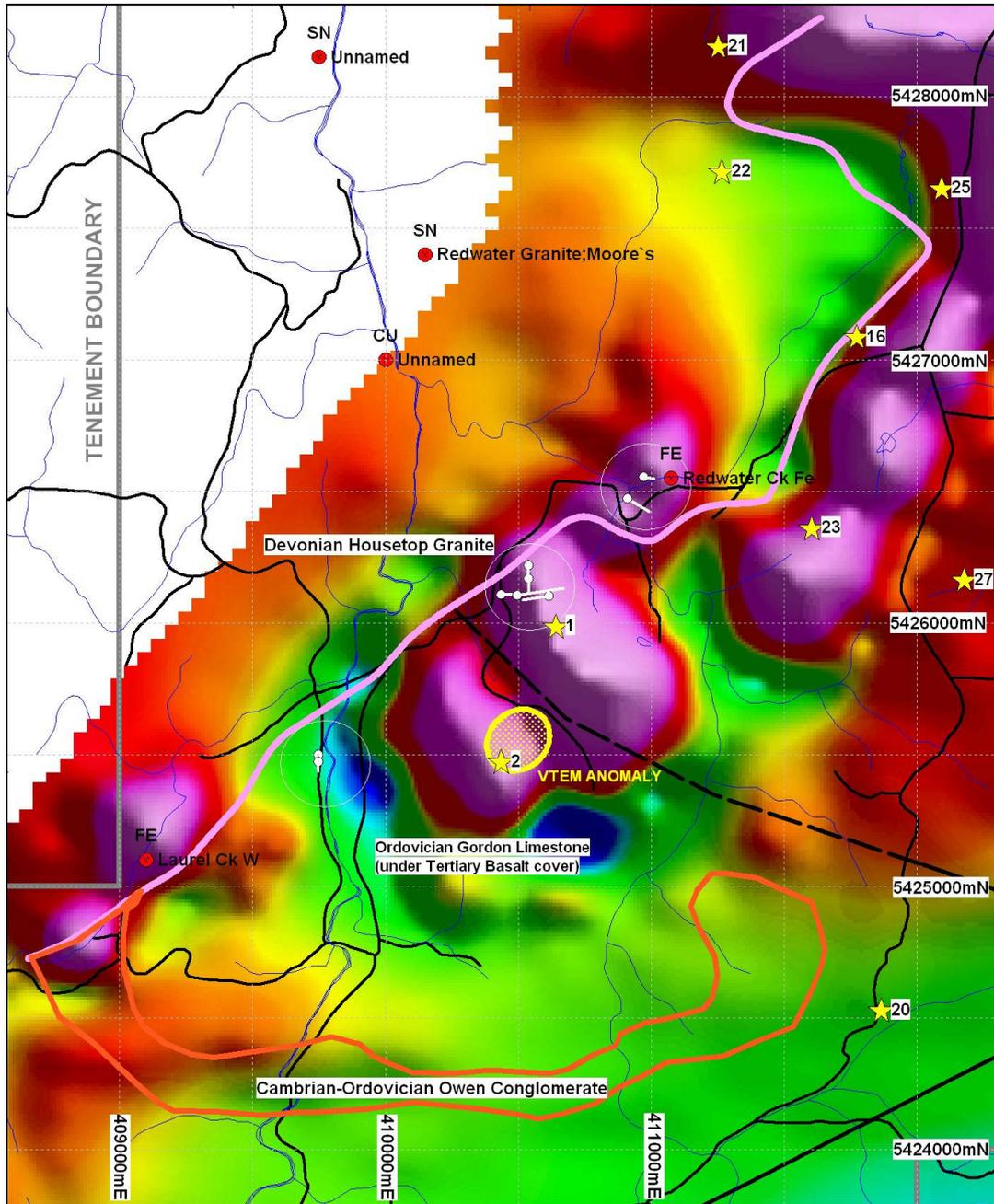


Figure 5. Plan of the Redwater Creek - Laurel Creek area of the Loyetea tenement. Background image is magnetics (TMI), pink line represents the granite contact, historic drilling indicated within white circles, yellow stars indicate VTEM anomalies.



#### **4. CURRENT WORK**

**Exploration completed during the report period  
(8<sup>th</sup> Aug 2008 – 7<sup>th</sup> Aug 2009)**

##### ***VTEM Data –***

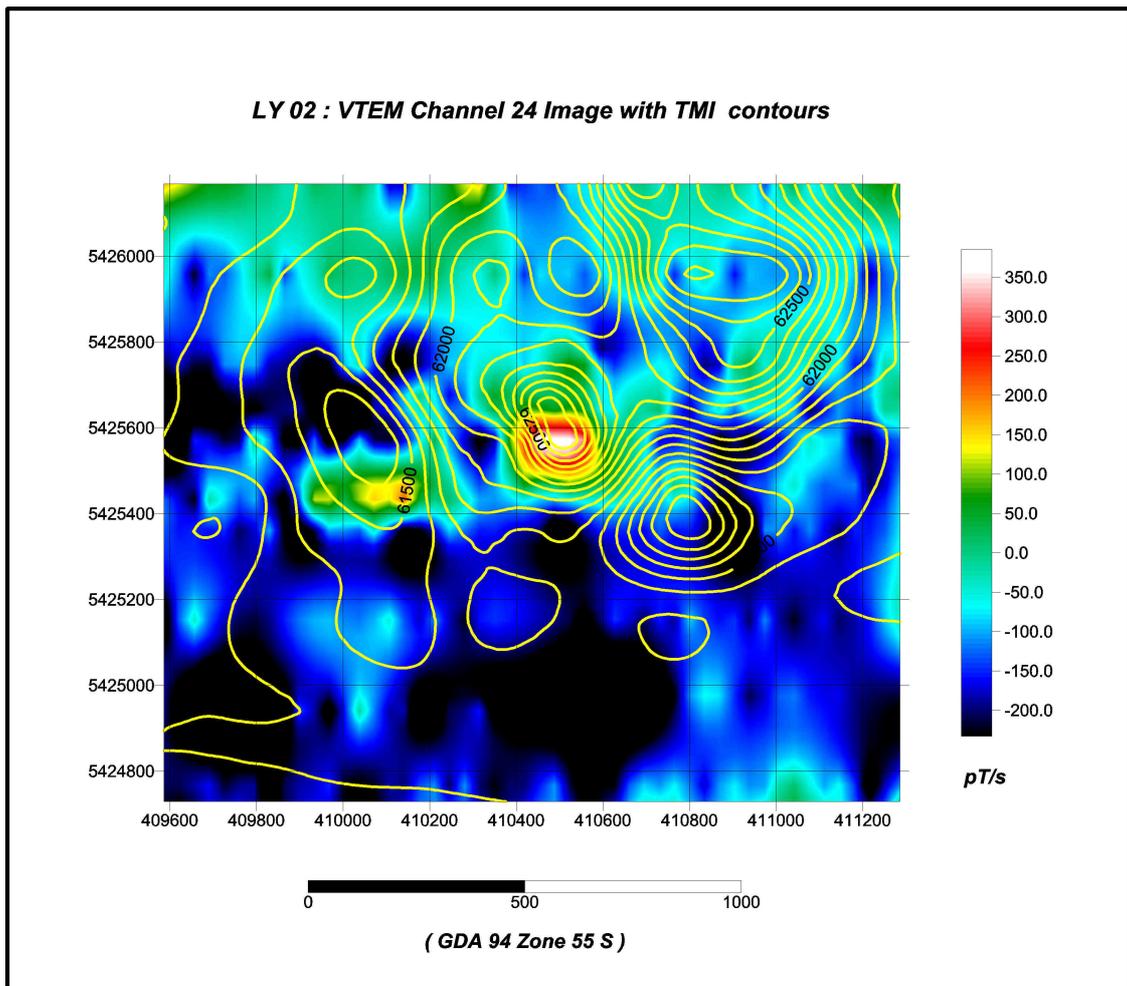
The LOY#2 VTEM anomaly represents the most prospective target on the Loyetea licence with a deep (~250m) conductor which is conductive through to the latest time recorded by the VTEM system (Figure 6). Dr Silic has commented that for a deep conductor to be conductive through to late-time it should represent a quality target, albeit of smaller dimensions.

The conductive target is spatially coincident with a distinct magnetic high (Figure 6). There is known magnetite and skarn alteration in the area and the host rock is the Gordon Limestone buried beneath Tertiary Basalt and in contact with the Housetop Granite. It is likely that the magnetic part of anomaly is associated with magnetite enrichment whereas the conductive part of the target may represent sulphides.

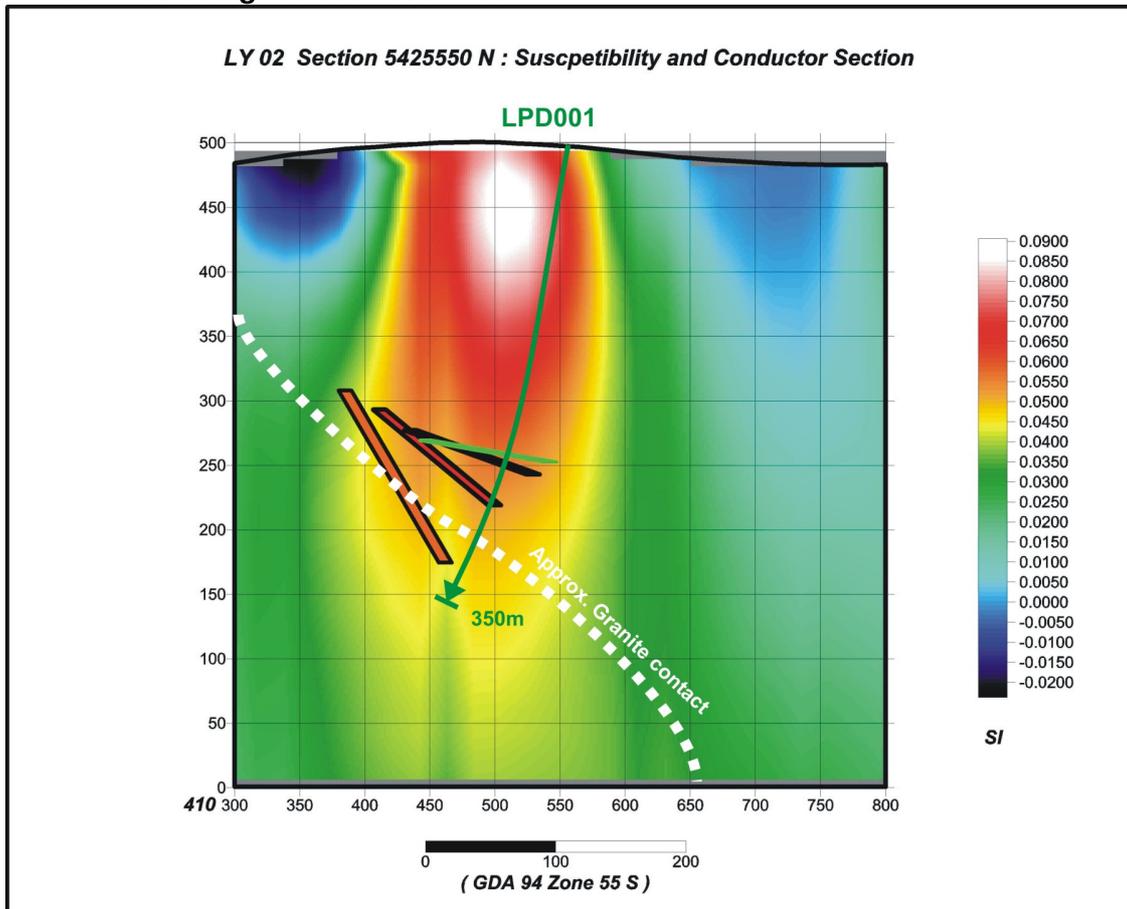
Inversion of the magnetic data is complete and while the results suggest that the EM conductor is below the magnetic anomaly (Figure 7), the granite contact is not discernible.

Discussion was held with Dr Jovan Silic regarding the range of possible dips and an interpretation to fit the VTEM response is of a sub-horizontal planar conductor (Figure 7) with dimensions 200x200m and at approximately 200-250m depth below surface.

Figure 6. Image illustrating contoured magnetics data with background image of VTEM Ch24 data. The LOY#2 or 'Peak Hill' target is the high in the centre of the image.



**Figure 7. Cross-section through the anomaly illustrating the magnetic anomaly located above the interpreted position of the conductor for which several dips can be modeled. The granite contact is represented schematically by the dotted line. LPD001 was designed but not drilled.**



### ***Northern Review***

Wally Herrmann was employed to review previous work and the geology in the northern part of this tenement. His report suggests that while the Loyetea tenement is still prospective for smaller Devonian Cu/Ag/Pb/Zn vein and fissure type deposits, there is still potential for VHMS deposits in the area but this will take concerted on-ground exploration as much of the more reconnaissance style has been undertaken by previous explorers namely Pasminco. (Herrmann, 2008. refer to Appendix 1 for full Report)

### ***Design of drill program to test LOY#2 VTEM target***

The inversion modeling cannot estimate the thickness of the conductor. A steep drill-hole (Figure 7) was designed to test this target which is now considered to be prospective as a copper-rich skarn target.

Mapping in the area of the VTEM anomaly has confirmed the Tertiary Basalt cover but an unusual magnetic anomaly (detected by a standard pencil-magnet) has been mapped which is consistent with the airborne magnetic measured during the VTEM survey.

The tertiary basalt is magnetic only in the immediate vicinity of the coincident VTEM/Magnetic anomaly (Figure 8, 9, 10). This can be explained either by:

- A more magnetic part of the basalt flow (too coincidental?)
- Induced magnetism in the cooling basalt by an underlying magnetite skarn (magnetite skarn known to occur in the area)
- Increased magnetite content of the basalt due to assimilation of a magnetite skarn in close proximity to the 'cooling location' of the basalt flow(s).

The EM anomaly has been interpreted as being located below the coincident magnetic anomaly by consultant geophysicist Dr Jovan Silic.

Note that magnetite does not necessarily give an EM response given that EM measures the time rate of decay of an induced magnetic field. The remnant magnetic field within a magnetite skarn can be considered constant in this sense.

**Figure 8. Map illustrating VTEM (Ch20) anomaly 'LOY#2' and planned drillhole at 410450mE/5425383mN (AMG66)**

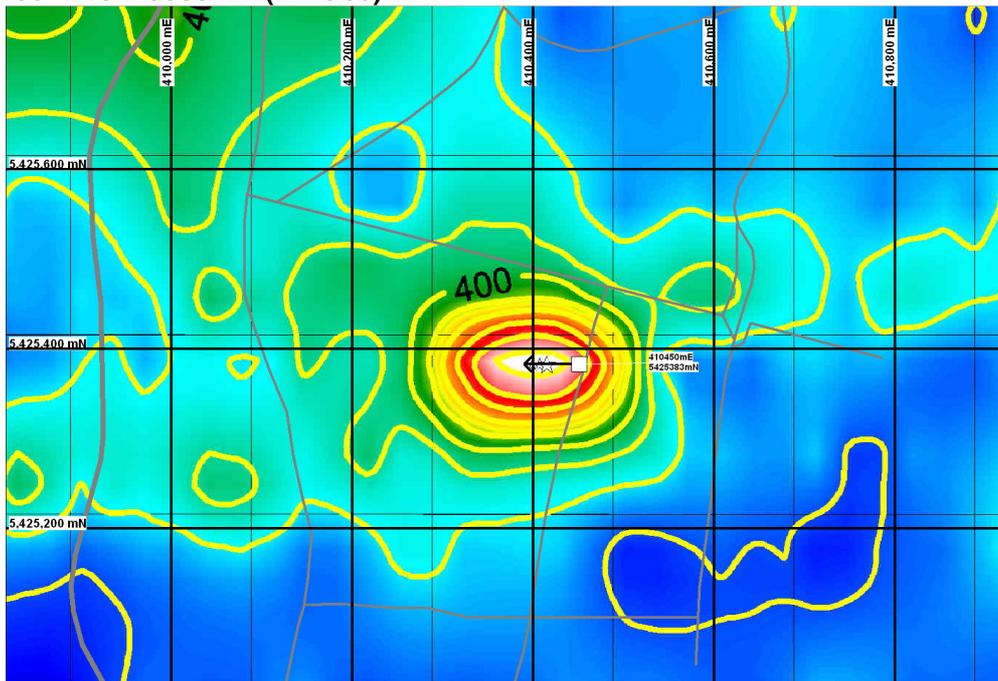
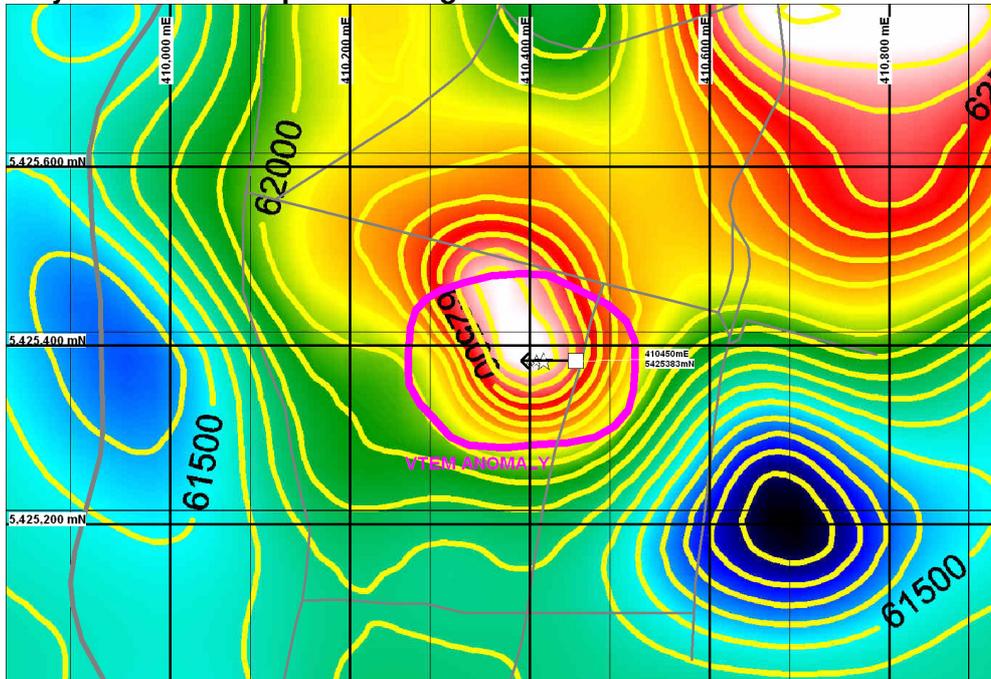
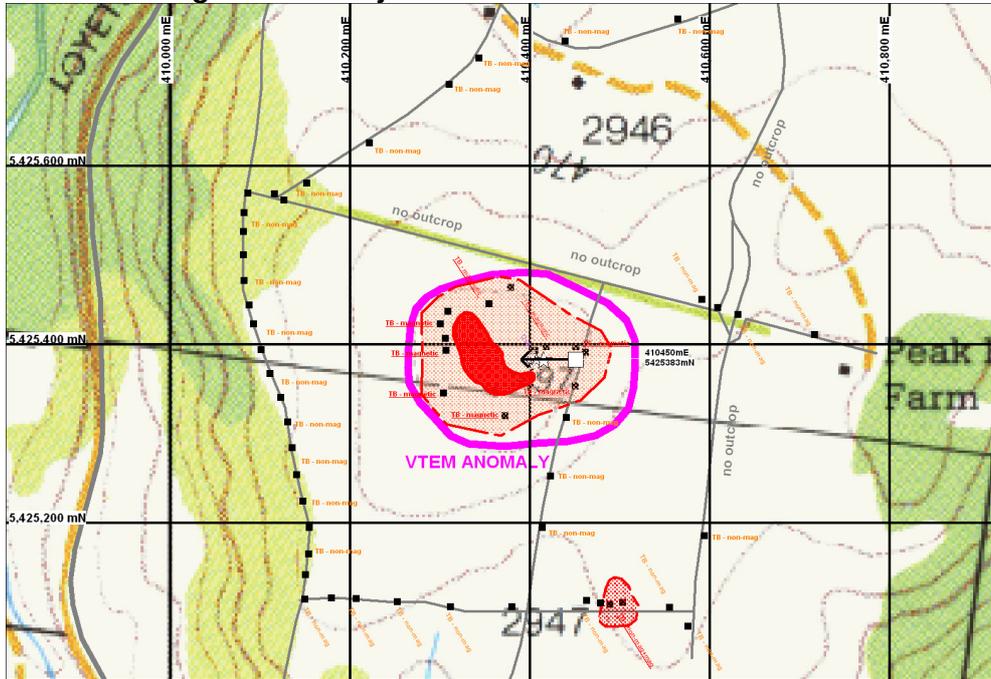


Figure 9. Map illustrating coincidence of airborne magnetic and the VTEM anomaly in the same map area as Figure 8.



**Figure 10. Map illustrating 25k topography and fact geology. Solid red polygon is outcropping basalt (magnetic) and the light red shaded polygons represent the distribution of magnetic Tertiary Basalt.**



This drill program was reviewed and the target does not meet Bass Metals Ltd's current exploration objective. It was therefore decided to fully relinquish the tenement.

## 6. ENVIRONMENT

The company has environmental policies in place that minimise the impact that exploration activities have on the environment. The policies include guidelines on how to reduce the risk of spreading plant diseases and weeds as a result of day-to-day exploration tasks.

The attached Environmental Activity Map (Figure 11) shows the location of the Exploration Licence relative to conservation areas. It is a condition of the Licence that the Company observe the request by the Tarkine National Coalition Inc. to adopt strict entry protocols to prevent the spread of *Phytophthora Cinamomi* and/or Myrtle Wilt. BSM have appropriate hygiene measures in place to comply with these requests as outlined in the Mineral Exploration Code of Practice.

No disturbance was made during exploration of the licence area and therefore no rehabilitation has been required.

### Land Tenure

The Loyatea Exploration Licence comprises:

- Private Property
- Crown Land
- State/Multiple Use Forest
- MDC Informal Reserves
- Dial Range Forest Reserve
- Laurel Creek Forest Reserve
- Black Creek Forest Reserve
- Proposed North Motton Private Land Reserve

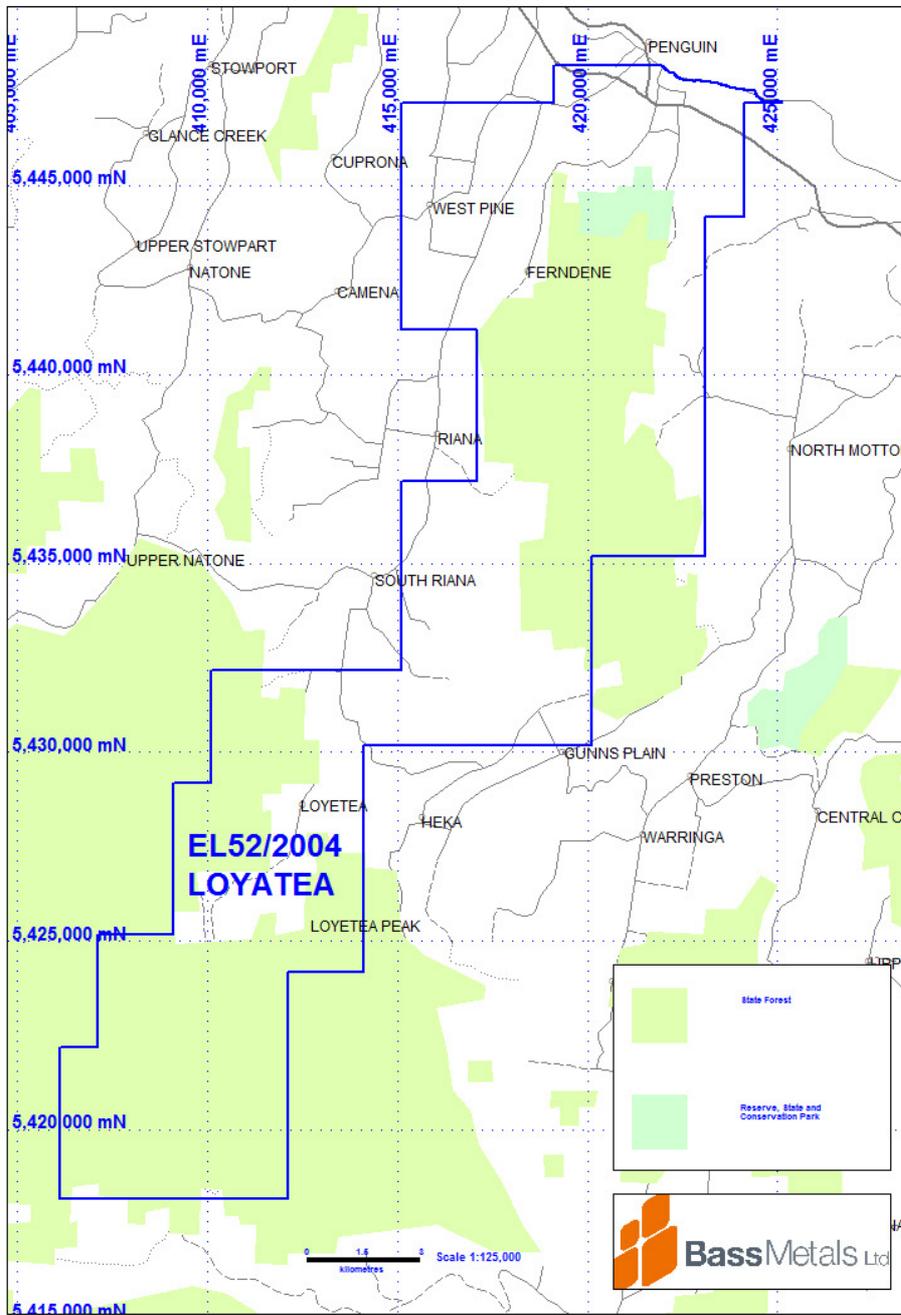


Figure 11 – Environmental Activity Map

## 7. EXPENDITURE

August 2008 - August 2009		
Geoscientific Costs	Geology	17,700.66
	Geochemistry	
	Geophysics	11,297.25
	Remote Sensing	
Drilling & Gridding Costs	Gridding	
	Drilling	
	Land Access Costs	
	Rehabilitation Costs	
	Feasibility Study Costs	
	Other Costs	5,598.60
	Admin Costs	
	<b>Total - eligible</b>	<b>\$34,596.51</b>

**Table 1. Expenditure 8 August 2008 to 7 August 2009**

*\*Expenditure reported is up to and including 31<sup>st</sup> May 2009*

The Loyatea tenement is part of the Black Bluff Range Group; the total expenditure up to the 31<sup>st</sup> May 2009 for this group is \$836,065.16 against a required group expenditure of \$650,258.31.

## 8. REFERENCES

**Anonymous, 1997.** Annual Report to 4<sup>th</sup> July 1997 on Exploration Licence 1/91. Jervois Mining NL. Report to the Tasmanian Mines Department. (97\_4012)

**Ellis, P.D., 1989.** Renewal report 1989. Exploration licences EL88/87 and EL15/88, Mt Housetop/Hampshire, Tasmania. Placer Exploration Limited. Report to the Tasmanian Mines Department. (89\_2939)

**Herrmann, W., 1985.** Final Report on EL24/73 Dial Range, Tasmania. Geopeko. Report to the Tasmanian Mines Department. (85\_2491)

**Hewitt, W.V., 1968.** Geophysical Survey, Penguin Beach EL15/65 Sheffield, Tasmania. BHP Company Pty Ltd. Report to the Tasmanian Mines Department. (68\_0521)

**Menpes, S.A., 1996.** First Annual Report for the period ending 23 January 1996, EL 55/94 Gunns Plains, Tasmania. Report to the Tasmanian Mines Department. CRA Exploration Pty Ltd. (96\_3901)

**Porter, T.M., 1976.** EL19/72 Nietta, North-west Tasmania. Progress Report No. 3. Report to the Tasmanian Mines Department. CRA Exploration Pty Ltd. (76\_1157)

**Ruxton, P.A., 1984.** EL8/77 Riana, Progress Report on Exploration during the period 2/9/83 – 1/3/84. The Shell Company of Australia Ltd. Report to the Tasmanian Mines Department. (84\_2412)

**Virgoe, K.J., 1990.** EL/96/87 Preston, Annual Report on Exploration Activity, April 1989 – March 1990. Report to the Tasmanian Mines Department. Pasminco Ltd (90\_3105)

**Weste, G., 1979.** EL8/1977 Riana, Report on all investigations to December 1979. Comalco Limited. Report to the Tasmanian Mines Department. (79\_1383)

**Seymour, D.B., Green, G.R., Calver, C.R., 2006.** The Geology and Mineral Deposits of Tasmania. Bulletin 72 Tasmanian Mines Department.

**Montgomery, A., 1895.** Report on the Mineral Fields of the Gawler River, Penguin, Dial Range, Mount Housetop, Table Cape, Cam River and Portion of the Arthur River Districts. Report to Mines Department. (UR1861\_1920\_052-91)

**Herrmann, W., 2008.** Review of Exploration Potential: EL52/2004 – Loyetea

**Jennings, I.B., 1979.** Sheffield 1:63,360 Geological Map Explanatory Notes. Tasmanian Department of Mines Report.

**APPENDIX 1 – Review (Wally Hermann)**