



**EL31/2003 HEAZLEWOOD  
TASMANIA  
CONTACT CREEK PROJECT**

**ANNUAL REPORT  
25<sup>th</sup> March 2013 – 26<sup>th</sup> March 2014**

**Venture Minerals Ltd – Bass Metals Ltd Joint Venture**

Venture Minerals  
181 Roberts Road  
Subiaco, WA 6008

Bass Metals Ltd  
Suite 7, 186 Hay Street  
Subiaco WA 6008

**Authors:**  
S Joughin  
S Owen

**Distribution:**  
Mineral Resources Tasmania  
Bass Metals Ltd  
Venture Minerals Ltd

**All figures and grids MGA Zone 55 GDA94.**

## **CONTENTS**

### **SUMMARY**

#### **1 INTRODUCTION**

##### **1.1 Location**

##### **1.2 Geology Overview**

##### **1.3 Exploration Rationale**

#### **2 REVIEW OF PREVIOUS WORK**

#### **3 EXPLORATION COMPLETED DURING THE 2013-2014 REPORTING PERIOD**

#### **4 CONCLUSIONS**

#### **5 EXPENDITURE**

#### **6 PROPOSED EXPLORATION**

#### **7 BIBLIOGRAPHY**

### **LIST OF FIGURES**

Figure 1: EL31/2003 location plan

Figure 2: Mt Youngbuck – Interpretive Geology

Figure 3: Venture's Sn-W skarn exploration targets within EL31/2003

### **LIST OF TABLES**

Table 1: Expenditure 26<sup>th</sup> March 2013 to 28<sup>th</sup> February 2014

### **APPENDICES**

Appendix A: EL31/2003 Venture Minerals Soil Sample Locations and Assays

Appendix B: Mt Youngbuck Prospect Aberfoyle Soil Sample Locations and Assays

Appendix C: EL31/2003 Venture Minerals Stream Sediment Sample Locations and Assays

Appendix D: EL31/2003 Venture Minerals Geological Locations

Appendix E: EL31/2003 Venture Minerals Rock Sample Locations and Assays

Appendix F: List of Abbreviations and Codes

## SUMMARY

Exploration Licence 31/2003 located in NW Tasmania is currently held in joint venture by Venture Minerals Ltd (“Venture”) and Bass Metals Ltd (“Bass”). Exploration activities during the 2013-2014 tenement year included digitising of historic soil sample data, prospecting of the Mt Youngbuck skarn, and stream sediment sampling (3 samples) of the Contact Creek area, followed by a review of the exploration results to date which shows four main target areas for Sn-W mineralization within EL31/2003:

- Mt Youngbuck, a previously identified and drilled (Aberfoyle, 2 drill holes) amphibole+pyrrhotite+magnetite skarn with patchy scheelite mineralization. Venture’s activities in 2013 indicate the surface extent of the deposit is just outside of the eastern boundary of EL31/2003 although it is quite likely the skarn dips into EL31/2003.
- Contact Creek Sn & W Anomaly 1, low-level (up to 47 ppm Sn & 38 ppm WO<sub>3</sub>) stream sediment may reflect presence of contact skarn(s), but follow-up sampling suggest small veins and greisens within the Meredith Granite are the most likely sources.
- Cu Anomaly 1, a north trending c. 500 m by 100 m +120 ppm Cu soil anomaly, peaking at 249 ppm, which coincides with an interpreted fault between the Success Creek Group and Crimson Creek Formation immediately adjacent to the Meredith Granite just north of the Whyte River. The anomaly is closely associated with calc-silicate (mainly pyroxene) alteration, and the copper anomalism may indicate the presence of a more constrained Sn and/or W skarn.
- Cu Anomaly 2, a small cluster of Cu (up to 308 ppm) and V (up to 560 ppm) anomalous soils within the Success Creek Group c. 1.5 km north of the Meredith Granite. The V association is not considered encouraging for Mt Lindsay type Sn-W mineralization.

Venture significantly reduced its exploration budget in 2013 and has chosen to withdraw from the joint venture with Bass on EL31/2003.

## 1. INTRODUCTION

This report is a summary of the exploration activities conducted on the Heazlewood Exploration Licence 31/2003 for the period of 26 March 2013 to 25 March 2014. The tenement originally covered c. 135 km<sup>2</sup> and was claimed by Pioneer Nickel Ltd (“Pioneer”) because it encompasses a large ultramafic complex considered prospective for Auebury-style nickel mineralisation. Pioneer joint ventured EL31/2003 to Bass Metals Ltd (“Bass”) in 2005 who continued to focus exploration efforts on Ni-sulphide mineralisation. A 34 km<sup>2</sup> partial relinquishment was conducted during the 4<sup>th</sup> year of tenure reducing the licence area to 101 km<sup>2</sup>, then in 2009 Bass joint ventured the iron, tin and tungsten rights within EL31/2003 to Venture Minerals Ltd (“Venture”). Pioneer’s interest in EL31/2003 has reduced to a 2% Net Smelter Royalty. Venture has focussed on finding Sn-W-magnetite skarn and carbonate replacement deposits adjacent to the margin of the Meredith Granite. EL31/2003 was reduced to 22 km<sup>2</sup> in 2011, and then reduced again in 2013 to 14 km<sup>2</sup> as it now stands.

### 1.1 Location

Exploration Licence 31/2003 is located approximately 25 km west of the township of Waratah in the north-west of Tasmania (Figure 1). The licence area can be found on the Savage River 1:25,000 topographic map sheet and the Arthur River 1:100,000 map sheet.

The terrain is hilly with deeply incised Whyte and Heazlewood river gorges, elevation ranges from c. 100 m AHD in the depths of the Whyte River gorge at the western edge of the licence to 631 at Mt Youngbuck in the east and c. 700 m in the southeast at the northern end of the Meredith Range. The licence area is heavily vegetated with widespread *Nothofagus* rainforest with lesser zones of *Eucalyptus nitida* and *Eucalyptus obliqua* especially in fire regrowth areas.

Ground access to the eastern part of the licence can be made via the sealed Waratah Road to the start of the Mt Stewart 4WD track approx. 6 km west of Luina, then by ATV for >10 km past Mt Stewart and across the Whyte and Castray rivers to the base of Mt Youngbuck, then on foot. The western part of the tenement is most efficiently accessed by helicopter, and three helicopter landing pads were established north of the Whyte River in 2011.

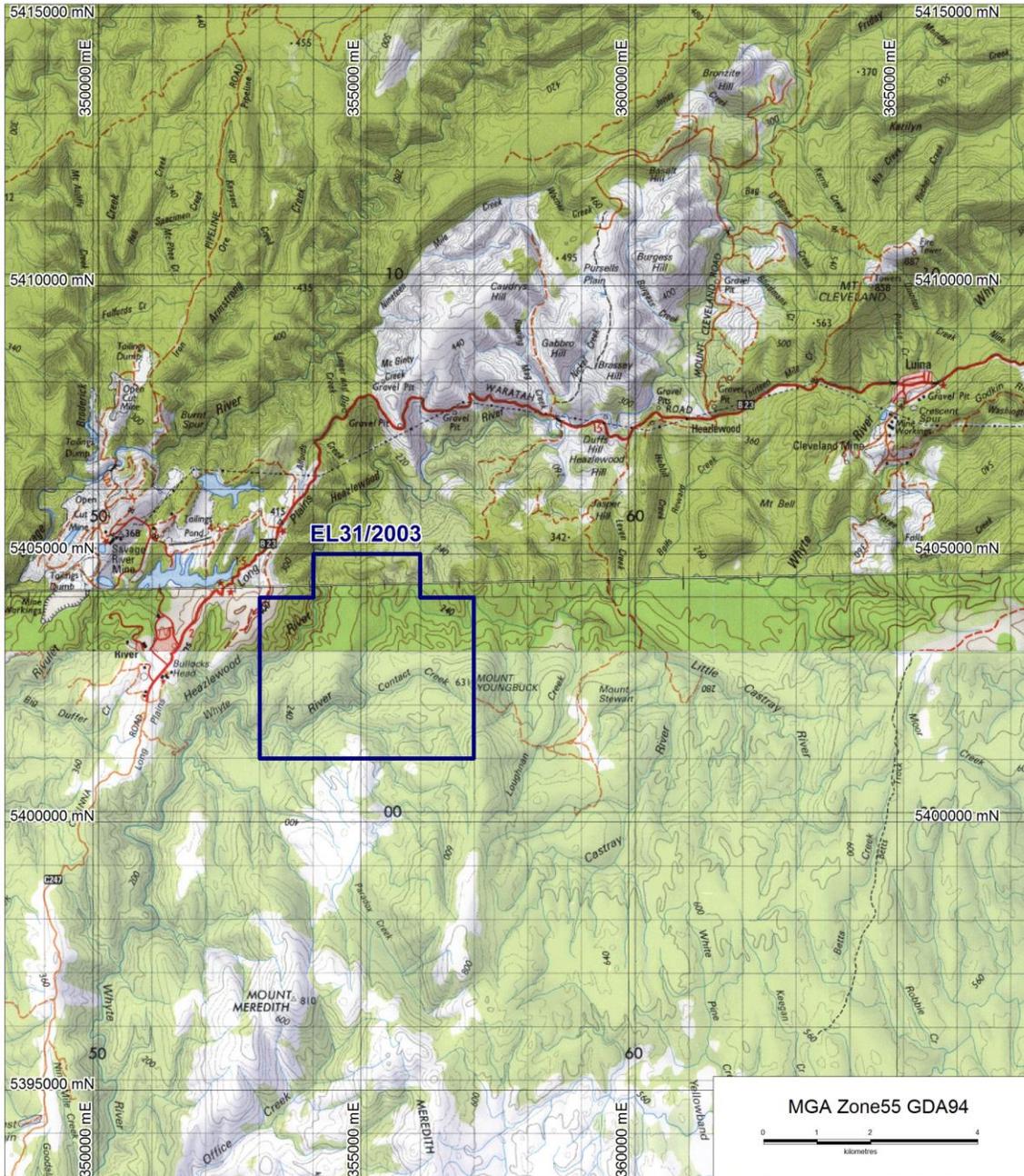


Figure 1: EL31/2003 location plan

### 1.2 Geology Overview

From west to east the basement geology of EL31/2003 consists of three main geological units the Onah Formation, overlain by the Success Creek Group followed by the Crimson Creek Formation; the units are intruded by the dolerites and later intruded by the Meredith Granite (Figure 3). In the north-east of the tenement the basement consists of the Heazlewood

Ultramafic Complex. This interpretation is based on a combination of historic and VMS geological mapping.

### **Heazlewood Ultramafic Complex, Early Cambrian Ultramafics**

In the early phases of the Tyennan Orogeny, the east-facing Tasmania passive margin collided with an oceanic arc, resulting in the obduction of mafic-ultramafic complexes across much of Tasmania. The original shallow-dipping geometry of the allochthonous sheets has been substantially disrupted by later Cambrian and Devonian deformation, so that the present surface occurrences are typically steeply dipping and fault bounded. Three ultramafic-mafic rock associations are commonly in fault juxtaposition within the complexes: layered Pyroxenite-Dunite, layered Dunite-Harzburgite and layered Pyroxenite-Peridotite and associated Gabbro (Seymour *et al*, 2006).

### **Crimson Creek Formation**

The Crimson Creek Formation represents a correlate of the Upper Neoproterozoic-Lower Cambrian Togari Group sedimentary and mafic volcanic succession. The group can be subdivided into four main phases of sedimentation; a lower dolomitic succession with basal siliceous conglomerate-sandstone, a phase of mafic rift volcanism and associated volcanoclastic sedimentation, renewal of shallow-marine carbonate sedimentation, and at the top, a Cambrian phase of deep-water siliciclastic sedimentation (Seymour *et al*, 2006).

### **Success Creek Group**

The Neoproterozoic – Early Cambrian Success Creek Group is not as conspicuously deformed as the Oonah Formation, and four formations are generally recognised, comprising a basal conglomerate with sandstone lenses, overlain by quartz sandstone with minor siltstone and conglomerate (Dalcoath Formation), then black mudstone, siltstone and minor quartz sandstone, and finally siliceous siltstone, red chert and mudstone with minor quartz sandstone, conglomerate and dolomite (Renison Bell Formation, Brown, 1962).

### **Oonah Formation**

The Oonah Formation is a thick, polydeformed Proterozoic quartz wacke turbidite succession, widespread in western Tasmania. The formation comprises of two lithological associations. The dominant quartz wacke turbidite association, which includes minor alkaline dolerite intrusions and lavas, consists of interbedded quartz sandstone, quartz wacke, 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).

### **The Meredith 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 Husetop, Granite Tor, Grassy, Dalcoath, 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 (26 Mt at 1.46% Sn), Mt Bischoff (10.54 Mt at 1.1% Sn) and Cleveland (12.4 Mt at 0.62% Sn, 0.25% Cu) (MRT Report, 2005).

### **Tertiary Basalts**

Radiometric dates from basalts across Tasmania indicate an age range of between 16.4Ma and 64.5Ma (Everard *et al.*, 2004).

## **1.3 Exploration Rationale**

EL31/2003 was initially claimed for Ni-sulphide exploration in the Heazlewood ultramafic complex which made up the central third of the original tenement. Due to the close proximity of the Meredith Granite to the ultramafic complex the potential for Avebury-style metasomatic Ni mineralisation was considered high. Unfortunately, efforts to discover significant Ni-mineralisation were unsuccessful.

In recent years exploration has been largely directed towards finding Mt Lindsay-style skarn mineralisation around the Meredith Contact, and EL31/2003 has been reduced to reflect this exploration focus. The dolomite units within the Success Creek group and the calcareous

sandstones within the Crimson Creek Fm adjacent to the Meredith Granite are the targets for skarn or carbonate replacement Sn, W and magnetite mineralisation.

During the 1980s Aberfoyle identified a scheelite bearing magnetite-pyrrhotite-amphibole skarn at Mt Youngbuck on the south-eastern margin of EL31/2003. The Mt Youngbuck skarn is exposed at surface and shows up as a conspicuous north-trending high on magnetic imagery. The six north trending magnetic ridges situated to the west of Mt Youngbuck could also represent magnetite and/or pyrrhotite bearing skarns although mapping stream and soil sampling of the Contact Creek area indicates mineralisation does not reach the surface in any significant way.

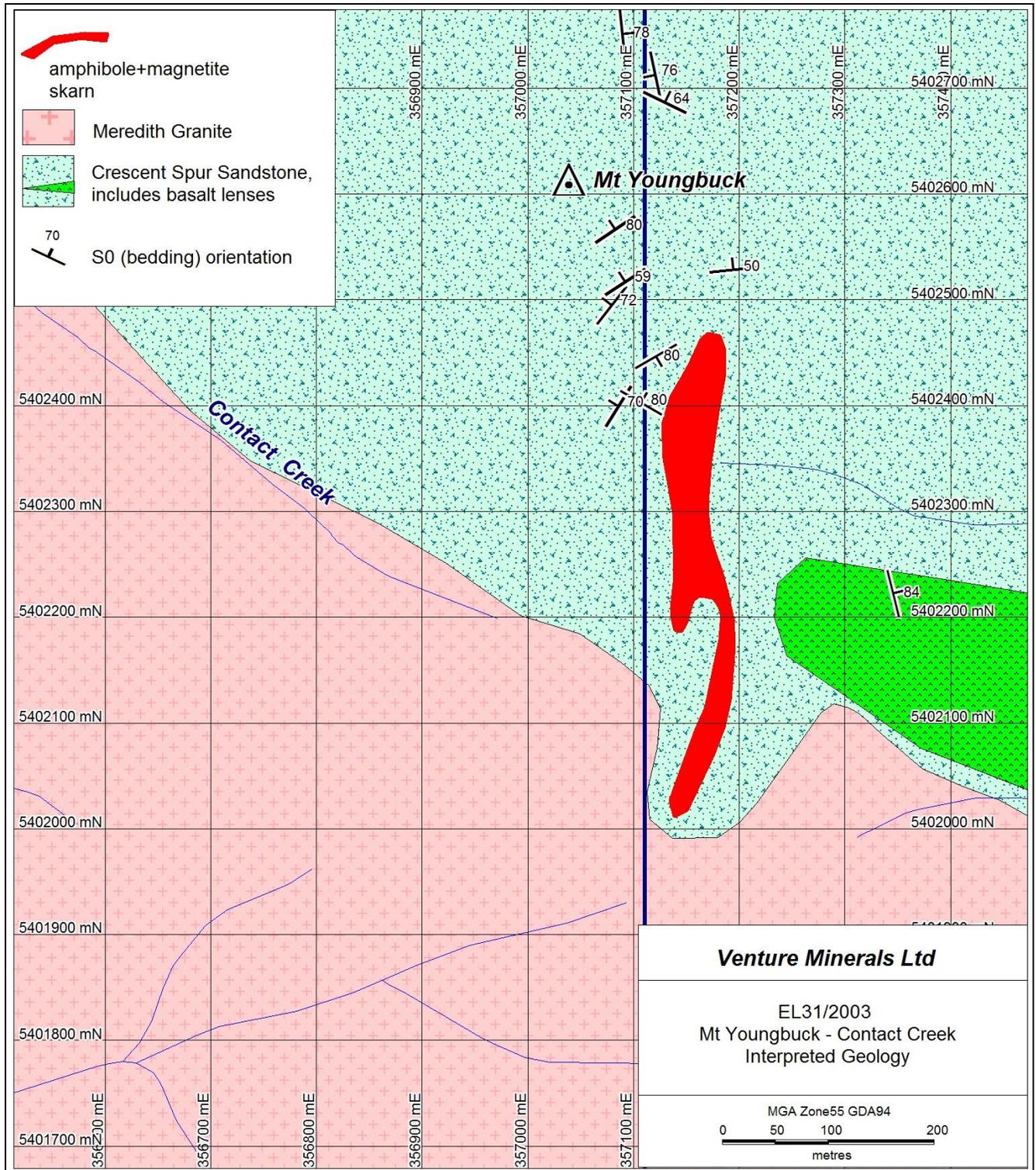
## **2. REVIEW OF PREVIOUS WORK**

The reader is referred to previous annual reports, see Bibliography.

## **3. EXPLORATION COMPLETED DURING THE 2013-2014 REPORTING PERIOD**

Exploration activities during the 2013-2014 anniversary year were focussed on the previously (Aberfoyle) identified skarn at Mt Youngbuck. The Aberfoyle soil sample locations for Mt Youngbuck were digitised (see Appendix B). Venture personnel then carried out geological mapping at Mt Youngbuck, including a search for exposed skarn and the collars of Aberfoyle drill holes MY1 and MY2. The collars for MY1 and MY2 were not relocated but exposures of amphibole and magnetite skarn were identified confirming acceptable location of the Aberfoyle soil samples. Venture's prospecting and location of the Aberfoyle soil anomaly indicates most or all of surface extent of the Youngbuck skarn is situated just east of EL31/2003. Mapping and interpretation of Aberfoyle's drilling data suggest the Youngbuck skarn could dip steeply (c. 70° to 80°) through the tenement boundary at depth into EL31/2003. An interpretive geology map is shown on Figure 2 and geological locations are given in Appendix C. Three panned stream sediment samples (SHSS001, 2 & 3, see Appendix C) were collected from the Contact Creek area in April 2013 before slow progress in dense vegetation and poor weather conditions cut the field programme short. The best result of 85 ppm and 214 ppm WO<sup>3</sup> (panned concentrate SHSS002) was obtained from a drainage well within the Meredith Granite (>1 km from the

margin) suggesting the source of the Contact Creek stream sediment anomalism may be largely or entirely attributable to veins and greisens within the granite.



**Figure 2:** Mt Youngbuck – Interpretive Geology map

#### 4. CONCLUSIONS

Surface exploration activities (rock, stream sediment and soil sampling, geological mapping, remote sensing interpretation) by Venture Minerals over the 2009 to 2013 period has led to the identification of four main target areas for Sn-W mineralization within EL31/2003, as shown in Figure 3:

1. Mt Youngbuck, a previously identified and drilled (Aberfoyle, 2 drill holes) amphibole+pyrrhotite+magnetite skarn with patchy scheelite mineralization. Venture's activities in 2013 indicate the surface extent of the deposit is just outside of the eastern boundary of EL31/2003 although it is quite likely the skarn dips into EL31/2003.
2. Contact Creek Sn & W Anomaly 1, low-level (up to 47 ppm Sn & 38 ppm WO<sub>3</sub>) stream sediment may reflect presence of contact skarn(s), but follow-up sampling suggest small veins and greisens within the Meredith Granite are the most likely sources.
3. Cu Anomaly 1, a north trending c. 500 m by 100 m +120 ppm Cu soil anomaly, peaking at 249 ppm, which coincides with an interpreted fault between the Success Creek Group and Crimson Creek Formation immediately adjacent to the Meredith Granite just north of the Whyte River. The anomaly is closely associated with calc-silicate (mainly pyroxene) alteration, and the copper anomalism may indicate the presence of a more constrained Sn and/or W skarn.
4. Cu Anomaly 2, a small cluster of Cu (up to 308 ppm) and V (up to 560 ppm) anomalous soils within the Success Creek Group c. 1.5 km north of the Meredith Granite. The V association is not considered encouraging for Mt Lindsay type Sn-W mineralization.

Venture significantly reduced its exploration budget in 2013 and is now focused only on targets within a few kilometres of and/or with clear logistical synergies with its Mt Lindsay Sn-W-magnetite resources. Venture has chosen to withdraw from the joint venture on EL31/2003.

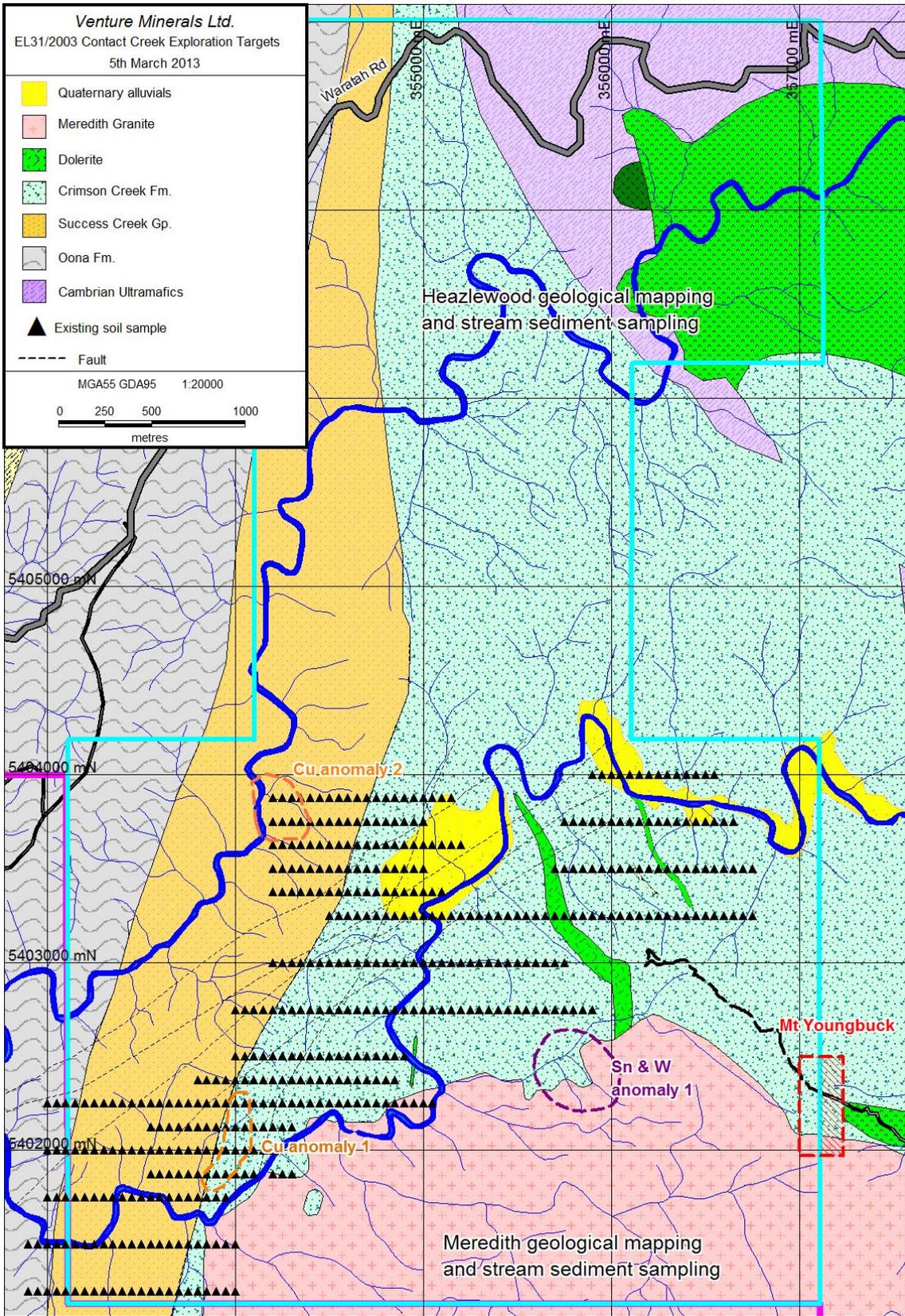


Figure 3: Venture's Sn-W skarn exploration targets within EL31/2003

## 5. EXPENDITURE

Table 1 Expenditure 26<sup>th</sup> March 2013 to 28<sup>th</sup> February 2014

March 2013 - February 2014		
Geoscientific Costs	Geology	\$39,215
	Geochemistry	\$983
	Geophysics	
	Remote Sensing	
Drilling & Gridding Costs	Gridding	
	Drilling	
	Land Access Costs	
	Rehabilitation Costs	
	Feasibility Study Costs	
	Other Costs	\$1,451
	Admin Costs	\$4,165
	<b>Total - eligible</b>	<b>\$45,814</b>

Note: Expenditure figures available up to February 28th 2014

## 6. PROPOSED EXPLORATION

Venture Minerals have now withdrawn from the Heazlewood Joint Venture but Bass Metals proposes to continue exploration and complete delineation of the target areas defined by Venture Minerals, to determine if drill testing is warranted. Field work would involve additional mapping and sampling. A new Joint Venture partner will also be sought.

## 7. BIBLIOGRAPHY

**Bates, S., 2008.** Heazlewood Project (Savage River Group), Tasmania EL31/2003. Annual Progress Report 23/03/2007 – 22/03/2008. Unpublished Bass Metals Ltd report to Mineral Resources Tasmania.

**Bates, S., 2009.** Heazlewood Project (Savage River Group), Tasmania EL31/2003. Annual Progress Report 23/03/2008 – 22/03/2009. Unpublished Bass Metals Ltd report to Mineral Resources Tasmania.

**Bates, S., 2010.** Heazlewood Project (Savage River Group), Tasmania EL31/2003. Annual Progress Report 23/03/2009 – 22/03/2010. Unpublished Bass Metals Ltd report to Mineral Resources Tasmania.

**Bates, S., 2011.** Heazlewood Project (Savage River Group), Tasmania EL31/2003. Annual Progress Report 23/03/2010 – 22/03/2011. Unpublished Bass Metals Ltd & Venture Minerals Ltd report to Mineral Resources Tasmania.

**Bates, S., 2012.** Heazlewood Project (Savage River Group), Tasmania EL31/2003. Annual Progress Report 23/03/2011 – 22/03/2012. Unpublished Bass Metals Ltd & Venture Minerals Ltd report to Mineral Resources Tasmania.

**Brown, A.V., 1962.** Geology of the Dundas, Mt Lindsay- Mt Youngbuck Region, Geological Survey Bulletin 62, Department of Mines.

**Joughin, S., 2013.** EL31/2003 Heazlewood Tasmania. Contact Creek Project. Annual Report 23<sup>rd</sup> March 2012 – 22<sup>nd</sup> March 2013. Unpublished Venture Minerals Ltd & Bass Metals Ltd report to Mineral Resources Tasmania.

**Kalla, J., 2006.** Exploration Licence EL31/2003 – Heazlewood, Tasmania. Annual Report for the Period Ended 26<sup>th</sup> March 2006. Unpublished Bass Metals Ltd report to Mineral Resources Tasmania.

**Seymour, D.B., Green, G.R., Calver, C.R., 2006.** The Geology and Mineral Deposits of Tasmania: a summary. Bulletin 72 Tasmanian Geological Survey, Mineral Resources Tasmania.

**Turnbull, K., 2007.** Heazlewood Project, Tasmania EL31/2003. Annual Progress Report for the Period Ended 25<sup>th</sup> March 2007. Unpublished Bass Metals Ltd report to Mineral Resources Tasmania.

**APPENDIX A**

**EL31/2003 VENTURE MINERALS SOIL SAMPLE LOCATIONS AND ASSAY RESULTS**

**APPENDIX B**

**MT YOUNGBUCK PROSPECT ABERFOYLE SOIL SAMPLE LOCATIONS AND ASSAYS**

**APPENDIX C**

**EL31/2003 VENTURE MINERALS STREAM SEDIMENT SAMPLE LOCATIONS AND  
ASSAYS**

**APPENDIX D**

**EL31/2003 VENTURE MINERALS GEOLOGICAL LOCATIONS**

**APPENDIX E**

**EL31/2003 VENTURE MINERALS ROCK SAMPLE RESULTS**

## **APPENDIX F**

### **LIST OF ABBREVIATIONS AND LOGGING CODES**