



**MT CHARTER PROJECT  
TASMANIA  
RL11/1997**

**ANNUAL PROGRESS REPORT  
6<sup>TH</sup> JUNE 2010 TO 5<sup>TH</sup> JUNE 2011**

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

## **ABSTRACT**

Bass Metals Ltd (BSM) commenced management of the Mt Charter Retention Lease (RL11/1997) during 2005.

Work conducted on the lease during the current reporting period has included:

- Aeromagnetics
- IP
- Diamond Drilling
- North Charter Soil Sampling

**Expenditure** - Reporting period \$45,274.56

Total to date \$1,216,227.80

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## **1. INTRODUCTION**

This report is a summary of the exploration activities conducted on the Mt Charter retention licence RL11/1997, for the period of 6th June 2010 to 5th June 2011. The licence covers a total area of 4 km<sup>2</sup>.

The licence is situated in the northwest corner of Tasmania and was acquired as part of a package of tenements in the Hellyer-Que River area purchased from Intec Ltd. The tenement comprises a 6.1 Mt resource of low to moderate grade gold-silver mineralisation at the Mt Charter Prospect. BSMs aim is to grow this resource and assess whether an economic mining opportunity exists within the Au-Ag mineralisation.

### **1.1 Location & Access**

The tenement is located 13 km north-northeast of the township of Tullah, on the west coast of Tasmania (Figure 1). Access to the area is via the Murchison Highway and tracks which access the 220kv transmission lines which traverse the area. Access within the tenement is via a limited number of 4wd tracks and ATV-only tracks.

The licence area can be found Charter 1:25,000 topographic map sheet and the Sophia 1:100,000 LTIS map sheet.

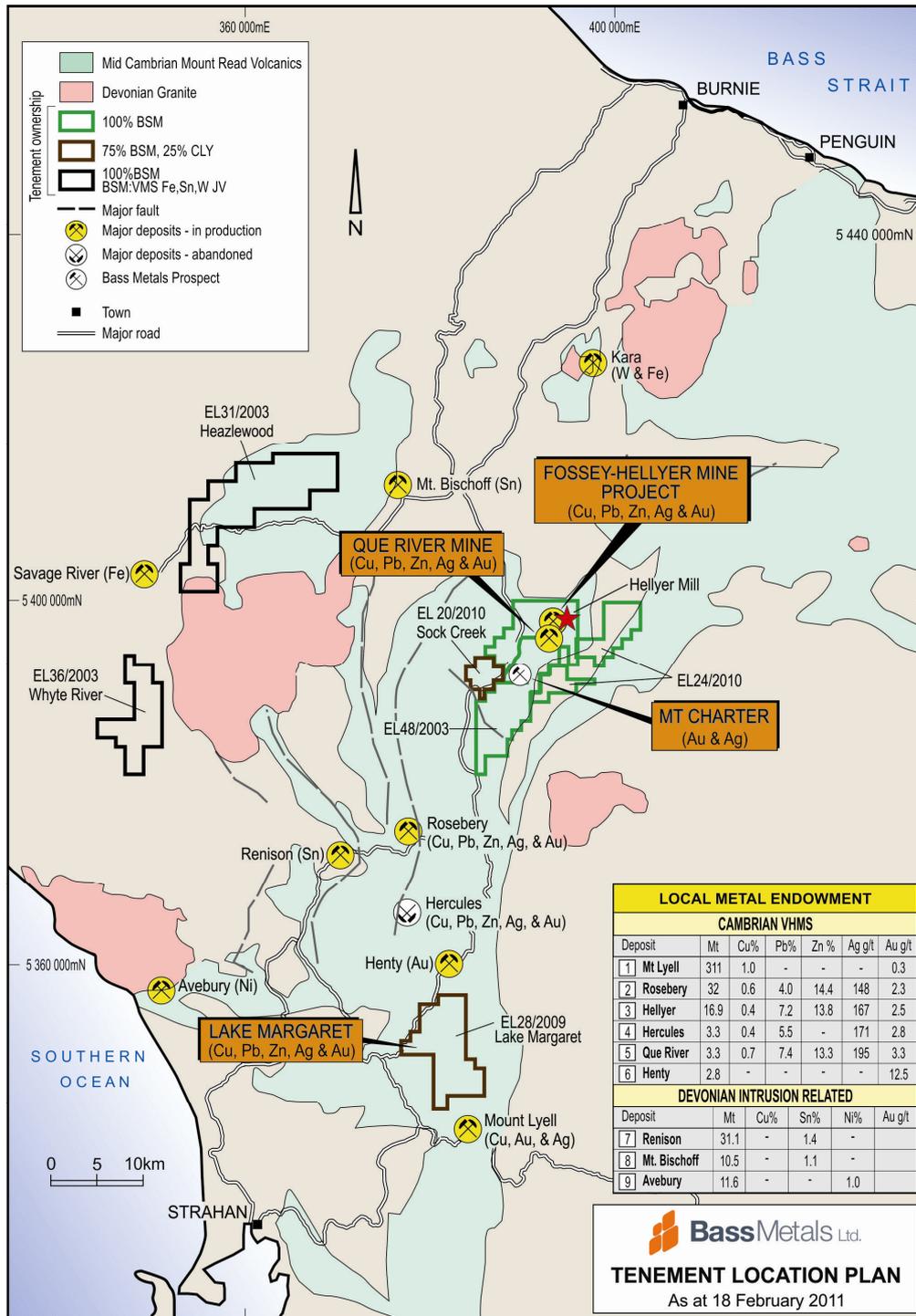


Figure 1. Mt Charter Retention Licence (RL11/1997) location plan

## 1.2 Geological Overview

The base and precious metal deposits of the Hellyer-Que River-Mt Charter area lie above the main Central Volcanic Complex of the Mt Read Volcanics which near Hellyer and Que River is called the Mt Charter Group. Within the Mt Charter Group is a volcanic package, the Que Hellyer Volcanics (QHV) comprising a group of andesitic to dacitic volcanics and sediments (Figure 2). Que River, Hellyer and Mt Charter are hosted by the highly variable 'Mixed Sequence', sandwiched between basaltic to andesitic volcanics. Volcanic-related and marine sediments cover the volcanics.

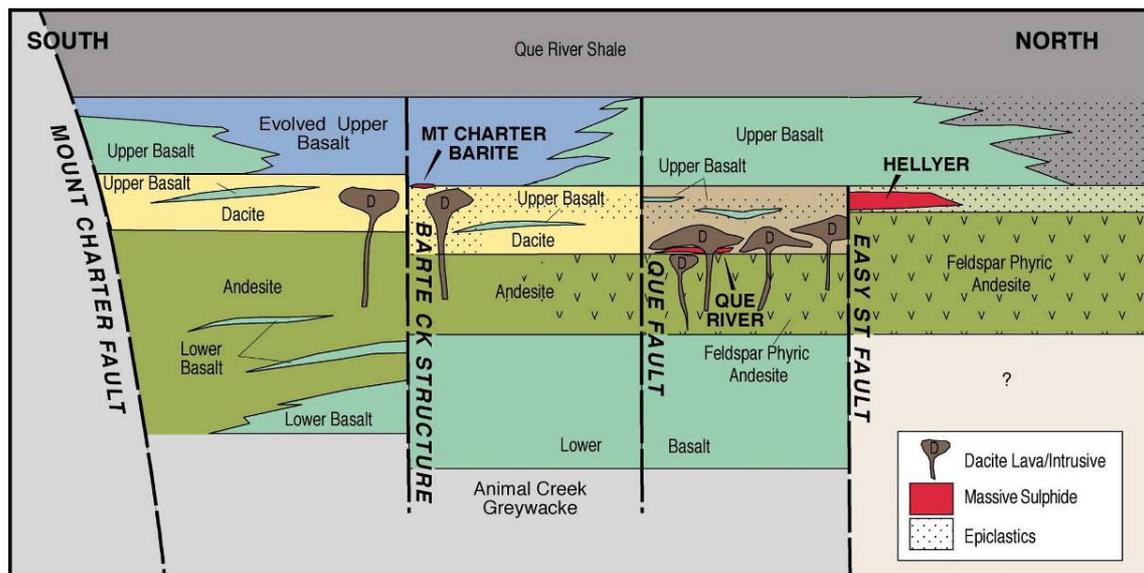


Figure 2. Schematic stratigraphic long-section of the Mt Charter - Hellyer area

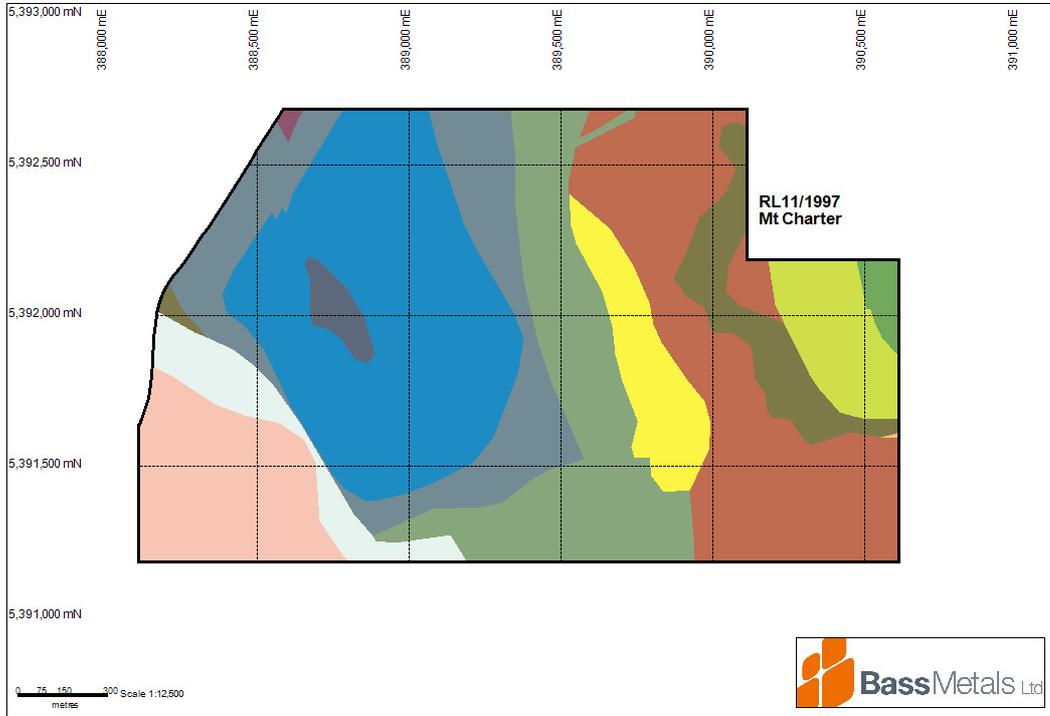
The QHV is up to 1000m thick near Que and Hellyer, but wedges out to less than 50m to the North West of Hellyer. The units of the QHV are summarized below:

- The Upper or Hellyer Basalt consists of massive to pillowed amygdaloidal basalt lava and volcanoclastic rocks.
- The Mixed Sequence host to the Que River, Hellyer and Mt Charter systems is comprised of epiclastics, dacitic lavas and breccias.
- The Feldspar Phyric Andesite, a porphyritic andesite lava which is the footwall unit to the Hellyer and Que River deposits and subsequently altered to Silica-Sericite-Pyrite mineralogy at these locations, which in turn is underlain by
- The Lower Basalt, a sequence of basaltic pillow lavas and volcanoclastics, which form the immediate footwall at Que River and Hellyer.

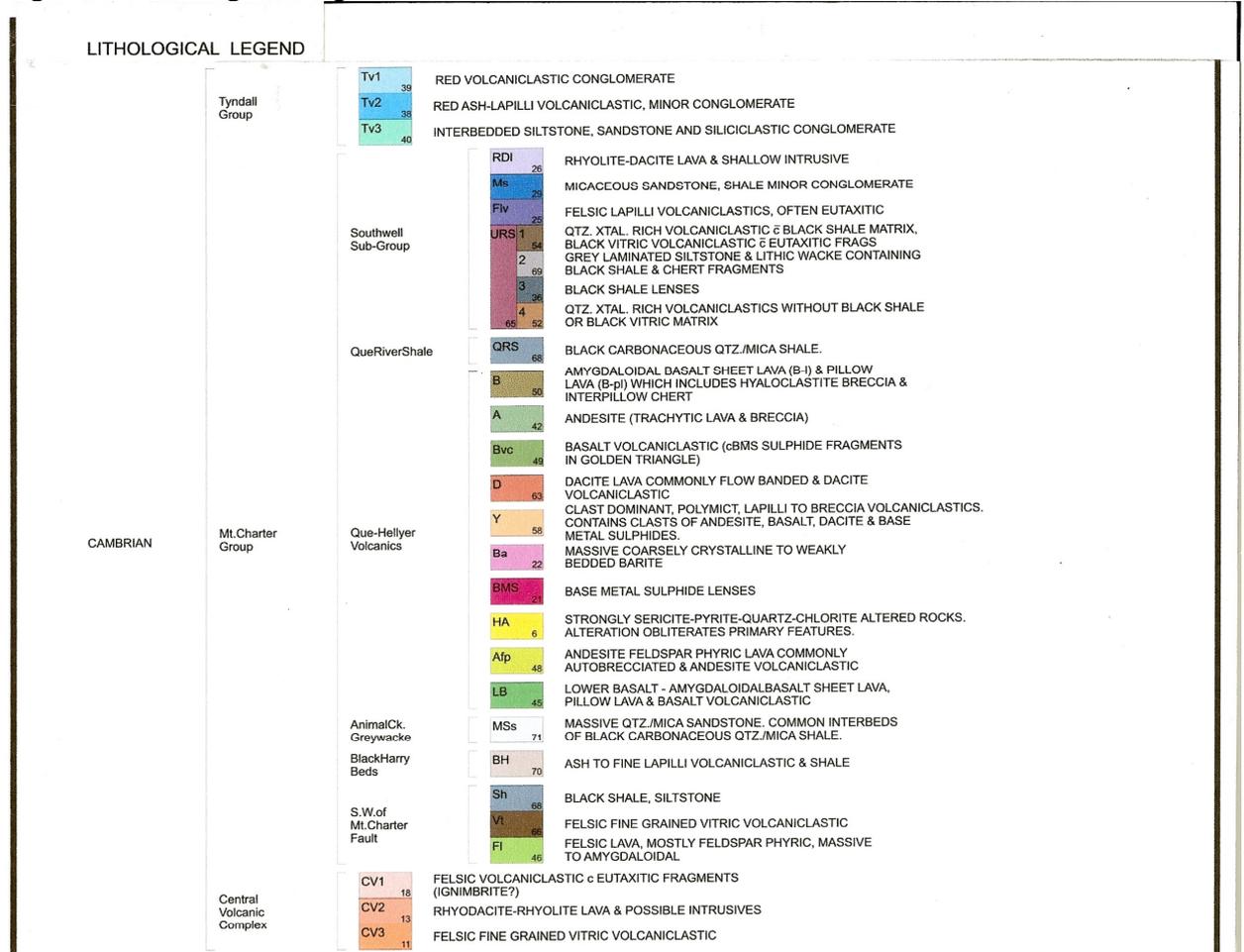
The QHV is overlain by the Que River Shale (Figure 2), which is in turn overlain by rhyolite, felsic volcanoclastics, greywacke and shale of the Southwell subgroup (Figure 3). The Southwell subgroup is overlain by the Mt Cripps subgroup (a correlate of the Tyndall beds at the Henty mine) which is a sequence of volcanoclastics, siltstones and conglomerates only outcropping along the eastern boundary of the Hellyer area tenements.

Beneath the QHV are the Animal Creek Greywacke and Black Harry Beds (Figure 3), a sequence of sediments defining the base of the Mt Charter Group.

**Figure 3. Regional Geology showing geology within Licence Area boundary**



**Figure 4. Lithological Legend**



### 1.3 Exploration Rationale

The Mt Charter area has been a focus of exploration since the 1970's due to the extensive Silica-Sericite-Pyrite-(Barite) alteration exposed at surface. This alteration is similar to the footwall alteration associated with the nearby Hellyer and Que River Volcanogenic Hosted Massive Sulphide (VHMS) Zn-Pb-Ag-Au deposits.

Given this, early work at Mt Charter aimed at testing the lower contact of the altered Dacite to test the equivalent of the Que River orebody stratigraphic position. In doing so, significant Au-Ag-Ba mineralisation was intersected from surface.

Bass Metals Ltd intends to fully evaluate the shallow gold-silver mineralisation while also testing any deeper Hellyer/Que River style VHMS targets.

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

### **2.1 History**

Modern exploration of the Que Hellyer Volcanics (QHV) was carried out almost exclusively by Aberfoyle Resources Ltd (Aberfoyle). Only deep QHV beneath Southwell Subgroup cover, west of the Murchison Highway, have been explored by other companies (CSR, Placer, BHP, Pasmenco).

Aberfoyle's involvement began in 1970 with the granting of EL 2/70 and in 1971 the prospectivity of "acid volcanic belts" in the west of the exploration licence was recognised. At this time a regional mapping and stream sediment sampling programme covering west of the Mackintosh River was carried out. In early 1972 a combined airborne electromagnetic (EM) and magnetic survey was flown and one of the six anomalies recommended for follow up was coincident with anomalous stream sediment geochemistry. A follow up ground EM and soil sampling survey in 1973 discovered the outcropping S Lens mineralisation at Que River. The first diamond drill hole (QR1) in April 1974 intersected 11m of massive sulphide mineralisation and was followed by 25,000m of ore resource delineation drilling, which defined the main PQ lens and the P North, QR32 and S lenses. The Que River reserve was defined as containing 3.3Mt @ 13.6% Zn, 7.4% Pb, 0.7% Cu, 3.3 g/t Au and 195 g/t Ag.

The Que River lenses were mined mainly underground, using a shaft, with small opencuts, from February 1981 until 1990, with 2.46Mt of material trucked to and processed at Rosebery. The S lens was the final orebody mined, with its relatively lower grade Pb/Zn material blended with and processed at Hellyer.

Following the discovery at Que River, exploration was heavily focused on testing along strike from the known mineralisation. This led to step out diamond drill testing, on approximately 100m centres, for about 1.5km north and 1km south of the orebody. These holes were relatively shallow (< 500m) and resulted in definition of the linear (footwall) alteration zone which hosts the Que River orebodies and extends north to eventually underlie the Hellyer orebody.

The period from the mid 1970's to the discovery of Hellyer in 1983 was one in which the main surface geological, geochemical and geophysical programmes were carried out over the QHV. The prospective stratigraphy was mapped at 1:2500 scale and covered with -80# C-horizon soil sampling on 50 or 100m spaced lines.

Geophysical programmes during this period were heavily influenced by the fact that surface EM testing at Que River failed to detect the main PQ lens, which came close to surface at the southern end of the orebody. This ultimately would be shown to be due to lack of electrical connectivity owing to the disrupted nature of the southern end of the orebody. At the time, this feature was taken to indicate that surface EM was not the best geophysical technique for application to the surrounding volcanics.

Induced Polarisation (IP) however did provide a strong anomalous response at Que River and IP was chosen as a drill targeting tool and widely applied throughout the QHV.

However, IP was responding to the strongly pyritic footwall alteration zone enclosing the Que River orebodies rather than the ore itself. During this period, many drill holes were targeted at coincident soil geochemical and IP anomalies, only to intersect geochemically anomalous alteration.

Failure of IP to discover new deposits led to trialling of a new fixed loop time domain EM system - UTEM, at Que River mine in 1983. This time UTEM detected PQ Lens and it was therefore decided to completely cover all prospective volcanics with this system. Only one conductor as strong as Que River was detected; on the most northern line of the survey. The survey was extended to the north and indicated a deep moderately conductive body over a strike length of 400m, open to the north, where it plunged under conductive Que River Shale. The UTEM anomaly was coincident with weakly anomalous soil geochemistry, barite veining and fuchsite alteration.

In August 1983 the first hole intersected 24m of massive sulphide in the Hellyer orebody. By November 1984 approximately 22,000m of delineation drilling had been completed and in June 1986 a 1.3km adit was driven to intersect the orebody. The Hellyer reserve was defined as 16.9Mt @ 13.8% Zn, 7.2% Pb, 0.4% Cu, 167 g/t Ag and 2.5 g/t Au.

Production commenced in December 1986, using underground methods, with production peaking at around 1.3mt pa until the orebody was mined out in June 2000. Material was processed at the newly constructed 1.3Mtpa Hellyer mill, purpose built to accommodate the fine grinding necessary to liberate the sulphides via flotation.

## **2.2 Exploration Prior to Current Licence Area**

The earliest known exploration in the Hellyer area was prospecting carried out around 1920 leading to the discovery of alluvial gold and boulders containing zinc and lead sulphides in a creek draining the area of Que River S lens.

Exploration of the Mt Charter area by Aberfoyle Resources Ltd occurred over a 20 year period from the mid-1970's. The significant surface alteration zone comprised of barite+silica+pyrite has been an alluring exploration target for Hellyer and Que River style VHMS mineralisation.

Of the drilling to test the VHMS ore positions, six historic holes (MAC and MC prefix) intersect the Mt Charter Au-Ag-(Zn) mineralisation. These holes are drilled on varying orientations and are generally deeper than recent drill-programs. The holes were systematically assayed for the same suite of metals as the BSM recent programs however, as the focus was not on gold at the time, a core-grind method was employed over intervals ranging from 4 to 10 metres to obtain indicative geochemical data only. Bass Metals Ltd have cut and sampled sections of these earlier holes to obtain valid and representative geochemical information. The attached database includes a field indicating whether the sample represents a core-grind or half-core sample.

Some of the intercepts from the early phases of drilling, pre-BSM, at Mt Charter have included:

- 56.4m @ 1.6g/t Au, 38g/t Ag
- 64m @ 0.8g/t Au, 7g/t Ag
- 22m @ 1.0g/t Au, 46g/t Ag

A significant amount of quality mapping, rock-chip sampling, and soil sampling was conducted by Aberfoyle Resources over the Mt Charter area. This has been integral in focusing BSM exploration efforts. Aberfoyle geologists recognized several major structures in the area and interpreted these as growth faults due to changes in thickness of stratigraphic units across the structures. The Barite-silica-pyrite alteration was interpreted as strongest at the intersection of these Cambrian faults. It was also recognized that the Mt Charter Au-Ag Barite-associated mineralisation was located in the upper part of the Mixed Sequence as opposed to the Hellyer and Que River deposits which are located at the base of this unit.

Knowledge gained from the Hellyer drillout showed that a clear relationship exists between the orebody and the stratigraphic contact between footwall andesite and hangingwall basalt. This horizon, the Mixed Sequence, became a key target throughout the QHV. Comparison with Que River indicated the similar stratigraphic position of the Que River orebodies within a thicker Mixed Sequence. The Mt Charter mineralisation is also hosted by this unit.

From 1984 to around 1992 exploration focussed on drill testing three styles of target:

1. continued drill testing of surface EM anomalies
2. testing of targets at the Hellyer ore position at various prospective structural locations and in some cases a slightly deeper Que River ore position and
3. testing of the Hellyer ore position, on top of the Hellyer footwall alteration zone, down plunge, north of the Hellyer orebody.

Generally, targets of the first and second categories intersected barren ore positions with no significant alteration. All holes were surveyed with downhole EM. North of Hellyer, a barren ore position underlain by strong footwall alteration and overlain by thick strongly fuchsite-carbonate altered basalt was followed north to 11400N in step-outs of up to 200m.

By 1992 it became clear that surface EM had effectively sterilised the QHV down to 200m for a Que River sized target and 400m for a Hellyer sized target. Exceptions to this were unusually oriented targets (eg steeply plunging) that could still remain undetected by the largely out-of-loop surveys that had been conducted. Any future discovery would be deep and a new method of target generation was required.

In 1992 Etheridge and Henley (now SRK) were approached and a regional structural model was devised to generate conceptual, deep, structural/stratigraphic targets. The aim was to integrate geological, geophysical and geochemical data to develop a three-dimensional structural model of the entire QHV basin and to delineate the synvolcanic fault network within the basin.

The structural study proposed a syndepositional fault network of linked NE trending normal faults and NW trending transfer faults. In addition, important NNE trending structures such as the Que - Hellyer structure (reflected by the Que River to Hellyer footwall alteration zone) were recognised and seen as reactivated basement faults, which had undergone oblique extension.

Localised dilation and subsidence, at or near structural intersections, were thought to allow focussed hydrothermal fluid flow, which could lead to orebody formation. Prospective stratigraphy, adjacent to these structures, below surface EM range, was seen as a valid deep drill target. A total of 26 target areas were defined and these were prioritised for drilling using geophysical, alteration, geochemistry and stratigraphic indicators.

During the period 1992 to 1994 supporting data was gathered, such as close spaced aeromagnetics and additional gravity data. The structural / stratigraphic targets began to be tested from 1993 as the structural model evolved and targets became evident.

At this time reinterpretation of Mount Read Volcanics raised the possibility that the Rosebery orebody may be younger than Hellyer (rather than older as previously thought) and hosted by correlates of the Southwell Subgroup. Prospectivity of felsic volcanic sequences north of Hellyer was increased and these rocks were surveyed with surface EM. Only one anomaly worthy of follow up was located and drill tested. It was found to be due to Tertiary sediment.

The main period of drill testing from 1995 to 1996 identified structural / stratigraphic targets, with nine of the highest ranked areas being tested by at least one hole. Some targets provided sufficient encouragement for further drilling which was also carried out during this period. Of note was the "rediscovery" of the Hellyer alteration system down-plunge from the orebody on section 12000N, where from earlier drilling it was thought to have died out. Although deep, the system remains open to the north.

Partial digest or Mobile Metal Ion (MMI) geochemistry was used in the Hellyer area in 1996. In-house research showed that partial digest soil geochemistry detected an anomalous response 300m above the Hellyer orebody. Given this potential it was decided to survey approximately 10km along strike north from Hellyer mine to the exploration licence boundary. The aim of the survey was to detect a body of massive sulphide buried beneath barren cover rocks. The target body could be hosted by deep QHV or overlying felsic sequences.

The survey only detected one coherent anomaly, which coincided with the highly ranked Mayday structural target, 4km north of Hellyer which was drill-tested in 1997 with a 1500m vertical diamond hole but it failed to intersect the QHV or a source for the anomalous soil geochemistry.

Western Metals took ownership in late 1998 and drilled four holes prior to the completion of mining at Hellyer. The Tasmanian Government (MRT), together with AMIRA completed a regional seismic traverse in 1996, with data available in 1998, across the Hellyer area to improve regional understanding. This was complemented in 2002-03 when the MRT flew close spaced airborne magnetics, radiometrics and EM across the entire Mt Read Volcanics belt.

### **3. REVIEW OF PREVIOUS WORK – During current tenement**

#### **3.1 Bass Metals Ltd - 2005 to 2006**

A 362 sample infill soil-sampling program was conducted and results indicated the broad geometry and orientation of the mineralized zone. The highest soil sample assay returned was 4669ppb Au and the highest Ag assay was 87.6ppm. The defined soil anomaly is continuous at grades of ~1g/t Au.

Bass Metals Ltd completed a five hole diamond-drilling program in late 2005 which totalled 541.9m. This program was designed to follow-up on the successful soil sampling campaign. The program was successful in delineating significant mineralisation including:

- 56.4m @ 1.6g/t Au, 38g/t Ag
- 64m @ 0.8g/t Au, 7g/t Ag
- 22m @ 1.0g/t Au, 46g/t Ag

A follow-up program was underway at the end of the 2005-06 reporting period and seven diamond-drillholes had been completed for a total of 929.9m. Results have shown the mineralisation to be laterally and vertically continuous and some of the better results returned include:

- 113m @ 1.4g/t Au, 49g/t Ag
- 49.4m @ 1.4g/t Au, 22g/t Ag, and 2.6% Zn

Mineralisation was found to be closely associated with barite ± quartz veins which are found to be sub-vertical and NNW striking. The veins are hosted within the 'Mixed Sequence' of felsic volcanic rocks including dacitic lava and volcanoclastic sediments. The vein package has an enveloping surface which is steeply west-dipping to sub vertical and strikes NNE.

The barite-rich veins also host sphalerite and galena mineralisation. The single vein set was therefore interpreted to host Au, Ag, Zn, and Ba mineralisation at Mt Charter. Pre-existing sericite-pyrite VHMS-style alteration of the dacitic rocks upon which the barite vein package is superimposed, does not host mineralisation.

#### **3.2 Bass Metals Ltd – 2006 to 2007**

##### **Modelling and targeting**

Bass Metals Ltd engaged Geoinformatics Exploration Inc to undertake geological modelling and targeting work over all of the Bass Metals Ltd tenements as an initial phase to the exploration effort in Tasmania. This work involved integration of all historic data plus new interpretation of the data so as to give BSM geologists the most robust database to use as a platform for exploration work. Monte Carlo Analysis targeting exercises were run in order to focus geologists' attention on areas where there is higher probability of finding mineralisation. This process was summarized in Appendix 3 for the prior reporting period. The Mt Charter deposit was 're-discovered' using this process during the Hellyer-Rosebery VHMS run of the analysis

### **Soil Geochemistry Program**

An approved sampling program to better define the extents of a surface Pb-Zn-Au-Ag-Ba soil anomaly and to infill the existing work conducted by Aberfoyle was completed.

The assay results returned a gold maxima of 4669ppb and the highest Ag assay was 87.6ppm. The soil anomaly was both contiguous across grid lines and gave a representation of the NNE strike of the mineralisation (Figure 5).

The soil anomaly justified a five hole diamond-drilling program later in 2005 which systematically tested the +1ppm soil anomaly while also attempting to gain an understanding on the geometry and orientation of the mineralisation.

#### **Phase 1 - Diamond drilling**

The 2005 program aimed to test the near surface Au-Ag mineralisation and 5 diamond-drill-holes were completed for 541.9m on sections ~4640mN and 4740mN on the local grid (Grid Nth is 10 degrees east of Mag Nth and 22 degrees east of AMG Nth). These holes were named MCD020-24. This program was successful and intersected wide zones of mineralisation spatially associated with zones of intense barite-quartz veining. The barite veins are generally in the order of 2cm to breccia zones of ~3m and also carry sphalerite and galena.

Mineralisation was interpreted to be related to the upper stratigraphic contact of the Dacite and a sub-vertical feeder zone was hypothesized. Some of the intercepts obtained included:

- 113m @ 1.4g/t Au, 49g/t Ag; and
- 49.4m @ 1.4g/t Au, 22g/t Ag, and 2.6% Zn

Higher Zn grades in the Au-Ag system correspond with increased amounts of sphalerite in the host barite-rich vein set as opposed to the more typical VHMS pyrite-sericite-silica alteration assemblage.

#### **Phase 2 - Diamond drilling**

A more aggressive approach to the evaluation of the Mt Charter resource occurred in mid-2006 when a twelve hole program was initiated. At the end of this reporting period, seven holes were completed for 929.9m. The holes completed to date were named MCD025-31. This program reduced the drill-hole spacing to approximately 50mx50m and aimed to extend the area of known mineralisation as well as to establish continuity of the system through drilling of infill sections.

Consistent with the initial program, Au-Ag-(Zn) mineralisation was observed to be associated with barite-dominant veins. The enveloping surface of the vein package is sub-vertical to steeply west-dipping and strikes NNE with respect to the local mine-grid. The zone of veining was found to be continuous over approximately 225m of strike and 200m down-dip also. Grade variation in intersections was directly proportional to the frequency of barite +sphalerite + galena veins.

Some of the intersections obtained during this program included:

- 51m @ 1.1g/t Au, 32.9g/t Ag, and 1.25% Zn
- 92m @ 1.3g/t Au, 32.8g/t Ag

- 51.7m @ 1.1g/t Au, 22g/t Ag
- 78m @ 1.7g/t Au, 70g/t Ag

The initial interpretation of the results to date suggest that the mineralisation occurs as a NNE-striking, sub-vertical package of en-echelon Barite ± Galena ± Sphalerite veins and the Gold-Silver mineralisation is not intrinsically related to the Mixed Sequence/Hellyer Basalt (equiv.) contact. The drill-hole MCD025 was designed to test this contact at a deeper level to intersect contact-related mineralisation in MCD020 and 021. MCD025 intersected the pyrite-sericite-silica alteration but no veining was observed and no significant assay results were returned from the hole. This indicates that the mineralisation is associated with the east-west and north-northeast faults, and particularly where these intersect.

Based on the results of the first phase of drilling and initial results of this current program, metallurgical testwork is ongoing to establish whether technical advancements can be made which will improve on historical recoveries of the Mt Charter mineralisation.

### **3.3 Bass Metals Ltd – 2007 to 2008**

#### **Geological Map**

Preparation was underway to produce a modified geological map of Mt Charter based on the surface mapping/verification work and drill hole data. Once complete this map is to be incorporated in the ongoing geological interpretation work.

#### **Drill Program**

Preliminary drill hole planning to test the northern extension of the Mt Charter Au-Ag-Ba system is underway. Topographic features extending 500m north of the limits of drilling at Mt Charter suggests a NNE trending structural corridor. This is consistent with geological models and warrants testing to grow the existing Mt Charter Resource. A reconnaissance site visit was made to assess access and site preparation requirements for drill-testing. Old access track utilized by Aberfoyle Exploration are generally still in good condition.

#### **Water Sampling Regime**

A monthly water sampling regime has been designed to cover a number of BSM's exploration areas taking into consideration the environmental factors whilst drilling in remote areas. A total of 2 areas were sampled around the Mt Charter retention licence (access permitting).

Sample localities –

MC1 Once the locked gate is opened, travel along the road for 700m and you will come across a fork in the road, take the left branch and travel for another 300m where upon you will come across a small pond like water system on your right hand side. On approaching the system you will discover that two small creeks (one on the left and one on the right hand side) from this water chamber. Sample is taken from the exit trench. Extremely high in Myrtle re-growth. GPS Co-ordinate 53922023 mN, 389217mE.

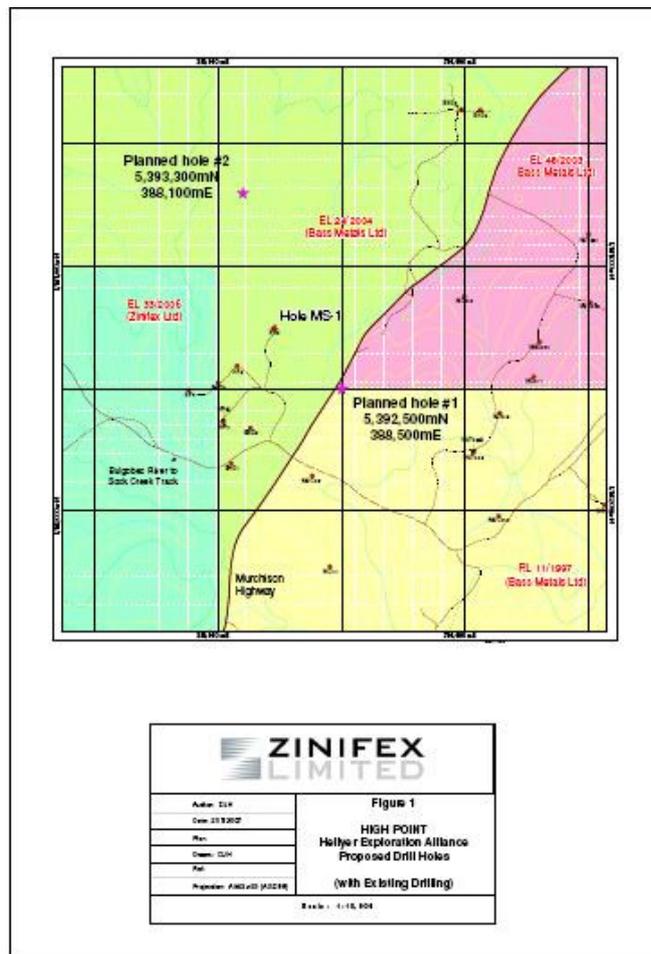
MC2 South Mount Charter, the location point is a further 700m down the Murchison Highway (Towards Tullah from the 'Highest Point' sign). You will find a TRANSEND gate on the eastern side. Once through the gate, drive for 1.4kms and you will come across a steep down-hill section of the road, park the vehicle and proceed on foot 100m

to the sampling station. Vegetation abundantly thick in this area, Native Laurel plants at base of sampling spot. GPS Co-ordinate 5390965mN, 389051mE.

This sampling ceased during February 2009 due to a decrease in drilling activity.

**Deep diamond hole – Zinifex**

Zinifex proposed the drilling of two deep (+1000m) diamond drill holes to test targets at High Point, approximately 6 kilometres southwest of the Hellyer mine; one of which will fall on the boundary of the Mt Charter RL. This drilling is part of a series of holes in a Joint Venture between Bass Metals Ltd and Zinifex Ltd (Hellyer Exploration Alliance, HEA) throughout the Hellyer-Que River-Mt Charter corridor. (See figure 5)



**Figure 5. Proposed drill hole locations – Zinifex**

### 3.4 Bass Metals Ltd – 2008 to 2009

#### Metallurgical Testwork

Metallurgical testwork has been undertaken to gain a preliminary understanding of the metallurgical characteristics of the Mt Charter mineralisation and its response to possible processing routes. Testwork included head assay, mineralogy, direct cyanidation and sulphide flotation followed by cyanidation then barite recovery by gravity and barite flotation.

A composite sample representing variable depths, gold, silver, zinc and copper contents was submitted for testwork. The Bond ball mill work index was determined to be 14.7kW/tonne. Summary results for cyanidation and flotation testwork are presented in Table 1 below.

**Table 1: Summary of Metallurgical Testwork Results**

Testwork	Elements				
	Au	Ag	Cu	Zn	Ba
Head Assay	1.6 ppm	34.2 ppm	594 ppm	1.50%	17.60%
	Recovery (%)				
Direct Cyanidation	48	10	12	0.2	-
Flotation	86	92	93	98	2
Cyanidation of Float Tails	60	34	13	4	-
Overall recovery for float followed by cyanidation	95	95	-	-	-
Barium Recovery by Flotation (%)					84

The objective of the flotation testwork was to assess the flotation behaviour of Au, Cu, Ag Pb and Zn mineral species and to float a bulk sulphide concentrate. These preliminary, bench scale test results show encouraging recoveries using a flotation stage followed by a cyanidation process route. The low recovery of precious metals by direct cyanidation is consistent with historic results reported previously and appears to be attributable to approximately 50% of the gold being present within the sulphide mineral grains. Direct cyanide recovery was relatively insensitive to grind size over a 45 to 75 micron size range.

Metals recovery to a bulk flotation concentrate is summarised in Table 2. Overall the recoveries obtained were good considering the simplicity of the flotation circuit. The objective of the next phase of testwork is to determine the upgrade potential of these concentrate grades to commercial levels. A separate test was undertaken for barite to assess flotation as a possible process for upgrading barite into a potentially saleable product. The barite concentrate produced had a barium grade of 50.2 % which is equivalent to 85.3% barite which, at first pass, exceeds the 65% barite standard generally adopted in the drilling and chemical industries.

With the recent purchase of the Hellyer Mill and Hellyer tailings Bass Metals Gold inventory has increased significantly. A concerted effort will be completed to “crack” the metallurgy.

**Table 2: Flotation recovery and grade**

	Au	Ag	As	Cu	Fe	Pb	S	Zn
	g/t	g/t	%	%	%	%	%	%
Rougher Conc. Grade	8	183	0.4	0.30	20.9	3.8	30.1	8.6
% Recovery to Conc.	86	92	70	93	80	87	54	98

**Deep diamond hole – Zinifex**

One of the 2 proposed diamond drill holes that Zinifex were drilling to test targets at Highpoint was pushed North which shifted it from falling within the Mt Charter Licence. The collar position was constrained by both distance to the Mt Charter fault (with expected drilling problems) and distance from existing drilling (too close to existing drilling that has already tested the mixed sequence, yet not too far to step outside the inferred sub-graben hosting best development of this mixed sequence close to the bounding Mt Charter Fault)

**3.5 Bass Metals Ltd – 2009 to 2010**

During this year the alliance and Joint Ventures, which covered prospective targets in the Hellyer region with OZ Minerals (Zinifex) was terminated by mutual agreement but initiated by Oz Minerals due to exploration budget constraints. The target areas reverted to 100% Bass control and ownership with Oz retaining no residual rights of any kind.

***2 year extension of term***

A 2 year extension of term of licence was granted during this period.

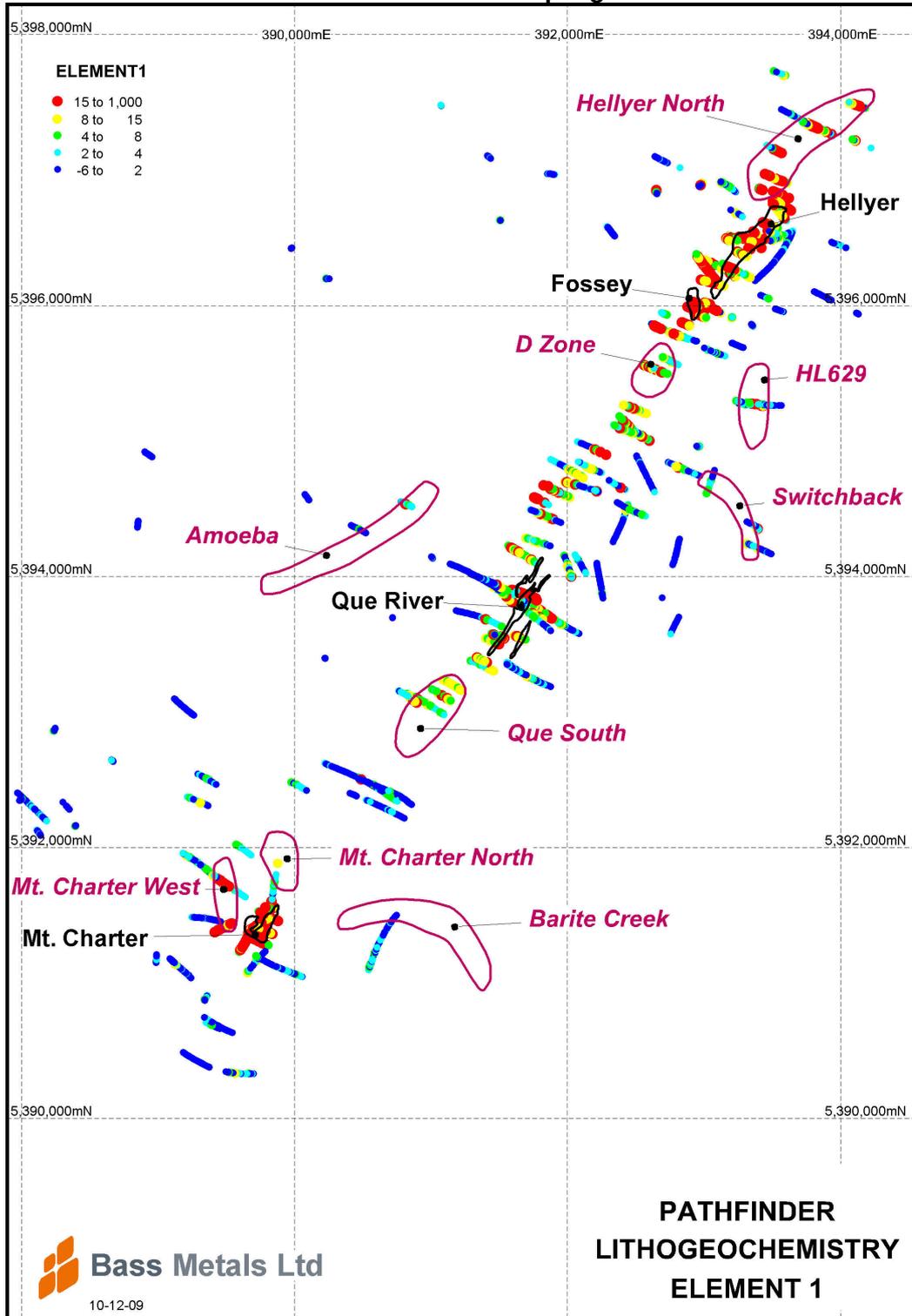
***Systematic analysis of diamond drill core with SWIR/trace element litho geochemistry***

The Mt Charter retention licence is included in the Hellyer-Mt Charter Corridor (HMCC) which also covers EL24/2004 Bulgobac River, EL48/2003 Mt Block, EL24/2007 Southwell River, CML103M/1987 Hellyer Mining Lease and ML68M/1984 Que River Mining Lease. A combined short wavelength infra-red (SWIR) spectral study utilising ASD, and trace element litho geochemical study utilising ICPMS/OES analysis, was carried out on drillcore from rocks in the footwall (predominantly) part of the stratigraphic sequence in the HMCC with spectra collected over a total of 66,270 SWIR samples and 3451 geochemical samples from 186 drill holes.

SWIR (ASD) spectral and trace element litho geochemical data were analysed and interpreted with assistance from Dr Scott Halley, an expert in VMS systems and interpretation of this type of data. This research has highlighted nine high quality targets including a number ready for immediate drilling. Major exploration programmes are currently being designed to follow up these targets.

Mt Charter North and Mt Charter West are 2 of the nine target areas identified by alteration facies and pathfinder elements combined to highlight further work including a number ready for immediate drilling.

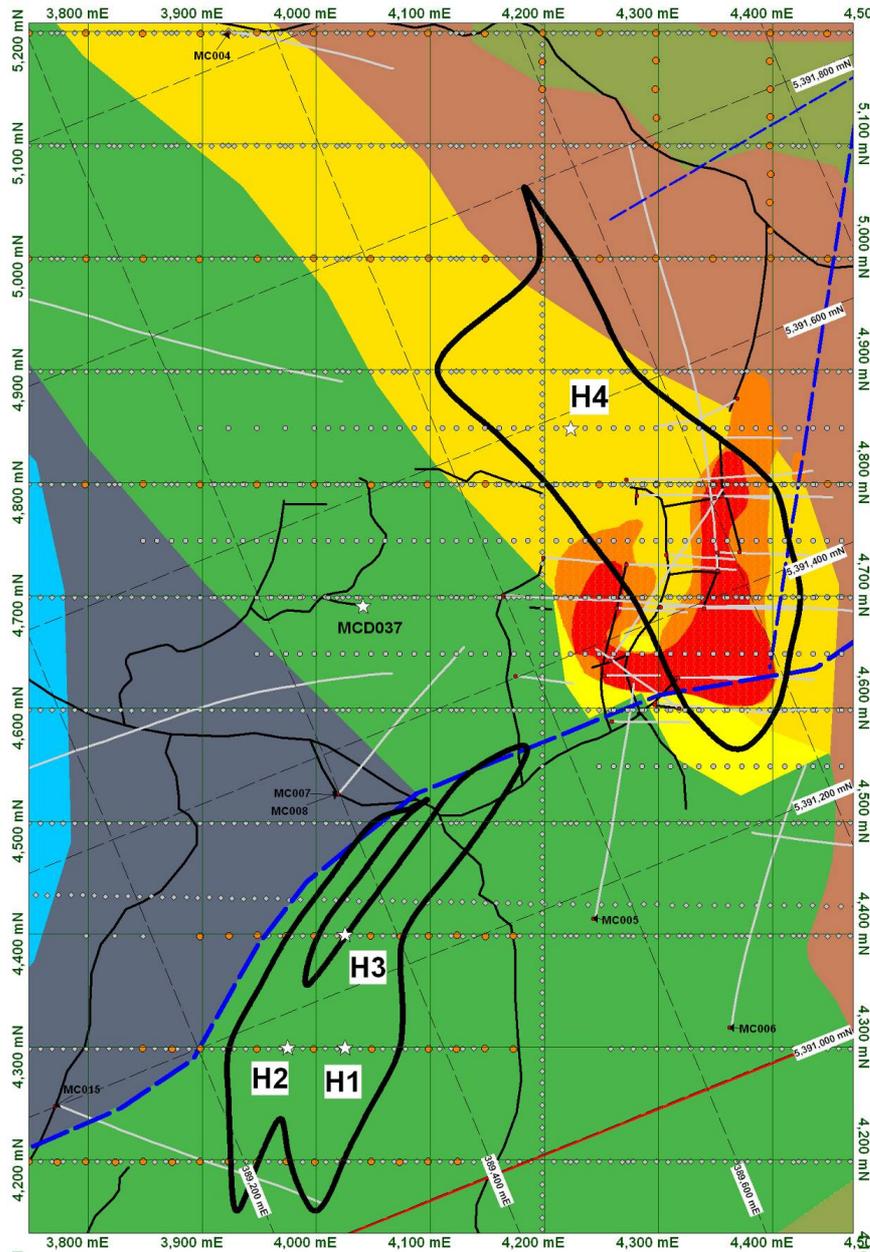
**Figure 6. Trace element pathfinder element distribution and prospects recognised from short wavelength infra red (ASD) and trace element lithogeochemical study of footwall rocks where drillcore was the sampling media. AGD84**



**Review of historic IP data for identifying areas of prospectivity in the immediate area.**

The digital capture of IP data comprising 100m spaced W-E lines with 50m spaced dipoles covering Mt Charter and surrounds was done. This data suggested that the area immediately to the north west of the Mt Charter deposit is prospective and may represent extensions of the western shoot illustrated in figure 7.

**Figure 7. Geological map for the Mt Charter area and SCP**



The red line represents the Mt Charter RL11/1997 – EL48/2003 boundary (Mt Charter RL to the north of the line). Orange and red polygons represent the Mt Charter Au resource contours at >0.5g/t Au and >1.0g/t Au respectively. Heavy black polygons

represent the PFE=5 contour. Grey dots are historic soils and orange are planned lithochem soil sample locations. White stars annotated H1-H4 indicate proposed drill-hole locations. ENE trending dashed blue line represents the Barite Creek Fault.

Diamond drill hole MC004 had a best intersection of 10m @ 0.69g/t Au and 2.5g/t Ag. The interpreted IP data in the above image suggests that there is less pyrite in the alteration at this location and therefore weakened prospectivity.

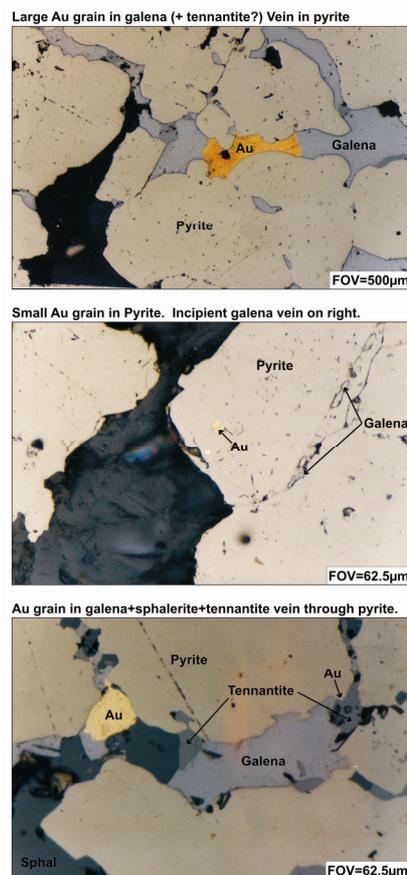
### ***Preliminary review of geo-metallurgy***

The review of the geo-metallurgy will follow on from observations of Sven Rand (1988 Honours Project) that some of the gold, as shown in figure 8, occurs interstitial to pyrite and in contact with galena, whereas some gold is locked within pyrite grains and is therefore refractory.

Importantly there are two distinct types of pyrite in the paragenesis of the Mt Charter mineralisation. This has been confirmed by analysis of drill hole assay data where two populations of iron are recognised, one Au-bearing and the other not. It is likely that non-gold bearing pyrite would therefore dilute a sulphide-concentrate possibly to the detriment of the metallurgical evaluation of the deposit.

This study may overcome some of the metallurgical issues which currently downgrade this project.

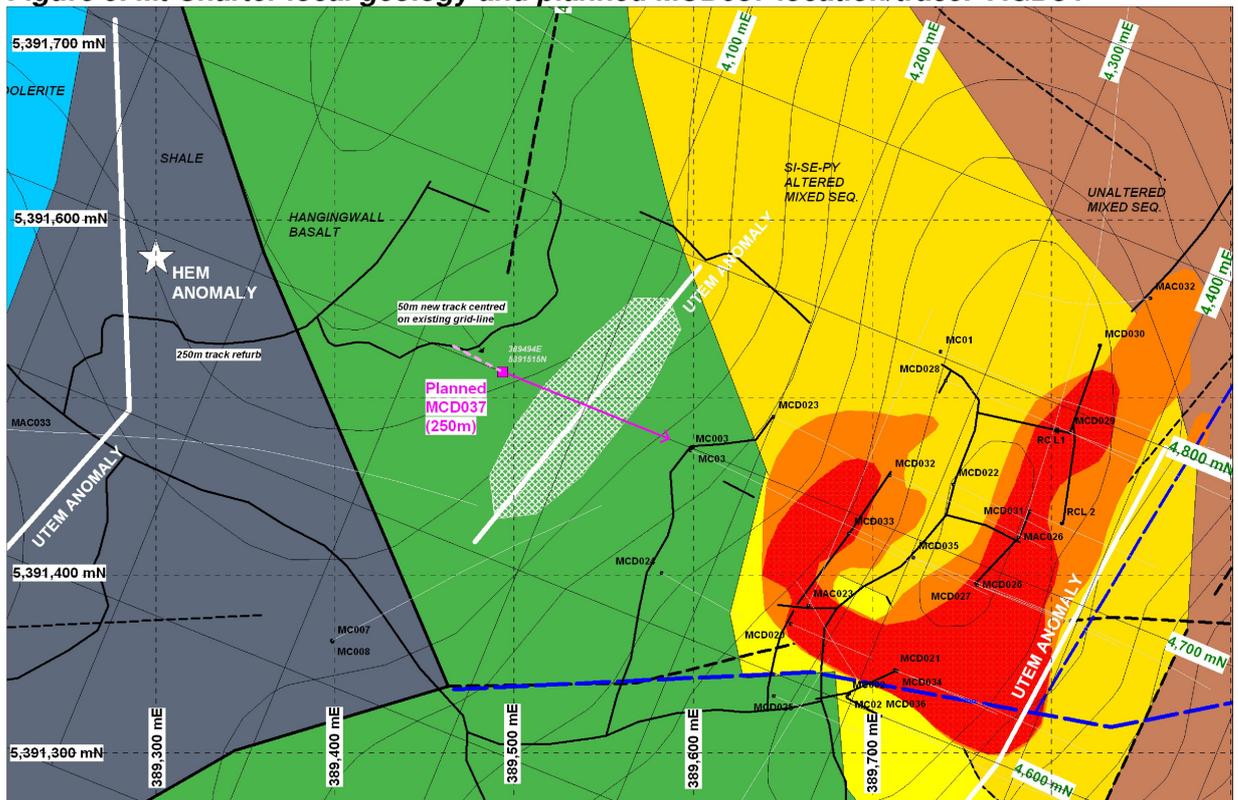
**Figure 8. Photomicrographs of Au-bearing rock from Mt Charter (after Rand, 1988)**



### Re-evaluation of UTEM anomaly, target identification

This has enabled recognition of a target to the west of the Mt Charter deposit comprising a subtle UTEM anomaly under ~50-100m of Hellyer basalt/andesite cover (Figures 9 & 10). This anomaly is considered similar in type to the existing Mt Charter UTEM anomaly but this has not been resolved in terms of 50-100m of resistive cover. Immediately underlying the basalt are the silica-sericite-pyrite altered rocks of the Mt Charter alteration corridor and represent feeder/footwall alteration similar to the alteration immediately underlying the Hellyer/Fossey and Que River deposits.

**Figure 9. Mt Charter local geology and planned MCD037 location/trace. AGD84**



The orange polygon represents Mt Charter block model at 800mRL (top of Mt Charter is 837m) contoured at >0.5g/t, and red is >1.0g/t Au. White cross-hatched shape represents a target body of Fossey dimensions. Heavy white lines represent UTEM anomaly trends comprising linked points on 200m spaced lines.

The UTEM anomaly/conductive source at ~4100mE extends over 2x 200m spaced lines (Figure 9). Interpreted by geophysicists of the time as a 'very poorly conductive trend that is not well understood' (Eadie, 1984). It is important to note that the depth to the Mixed sequence/Hangingwall Basalt is interpreted at ~100m in this location and that, according to forward modelling by Dan Core, 'it is unlikely that a Fossey-sized body will be seen below 100m and even at 100m the signature approaches the noise envelope of most of the surveys collected in the Hellyer Corridor. Given the fairly wide line spacing that was used, it is possible that Fossey-sized bodies were missed with the current ground EM coverage.' (Core, 2009). The location of this conductor projected to the top of the Mixed Sequence host rocks is the primary target of MCD037 (see Figure 9).

A conductive trend exists at ~4400mE extending over 3x 200m spaced lines (Figure 9). This conductor is spatially coincident with the eastern edge of the Mt Charter Au-Ag system (Figure 8& 9). Interpreted by geophysicists of the time as '*correlating with sulphide veining encountered in the earlier Mt Charter drilling*' (Eadie, 1984). Note that in MCD027 (Figure 9) at 24m, a ~20cm band of massive BMS is observed in the core. It is unknown as to whether this represents a very high tenor vein or a relict piece of a stratiform sulphide accumulation (i.e. Que River type lense). Interestingly, there are no 'veins' of this type in the drilling beneath MCD027 and the Au and Zn grades are generally higher near surface at the peak of Mt Charter. It is interpreted that if a massive BMS deposit existed above the Mt Charter vein/alteration system at the Mixed Sequence/Hangingwall Basalt contact, it has been eroded from the top of Mt Charter.

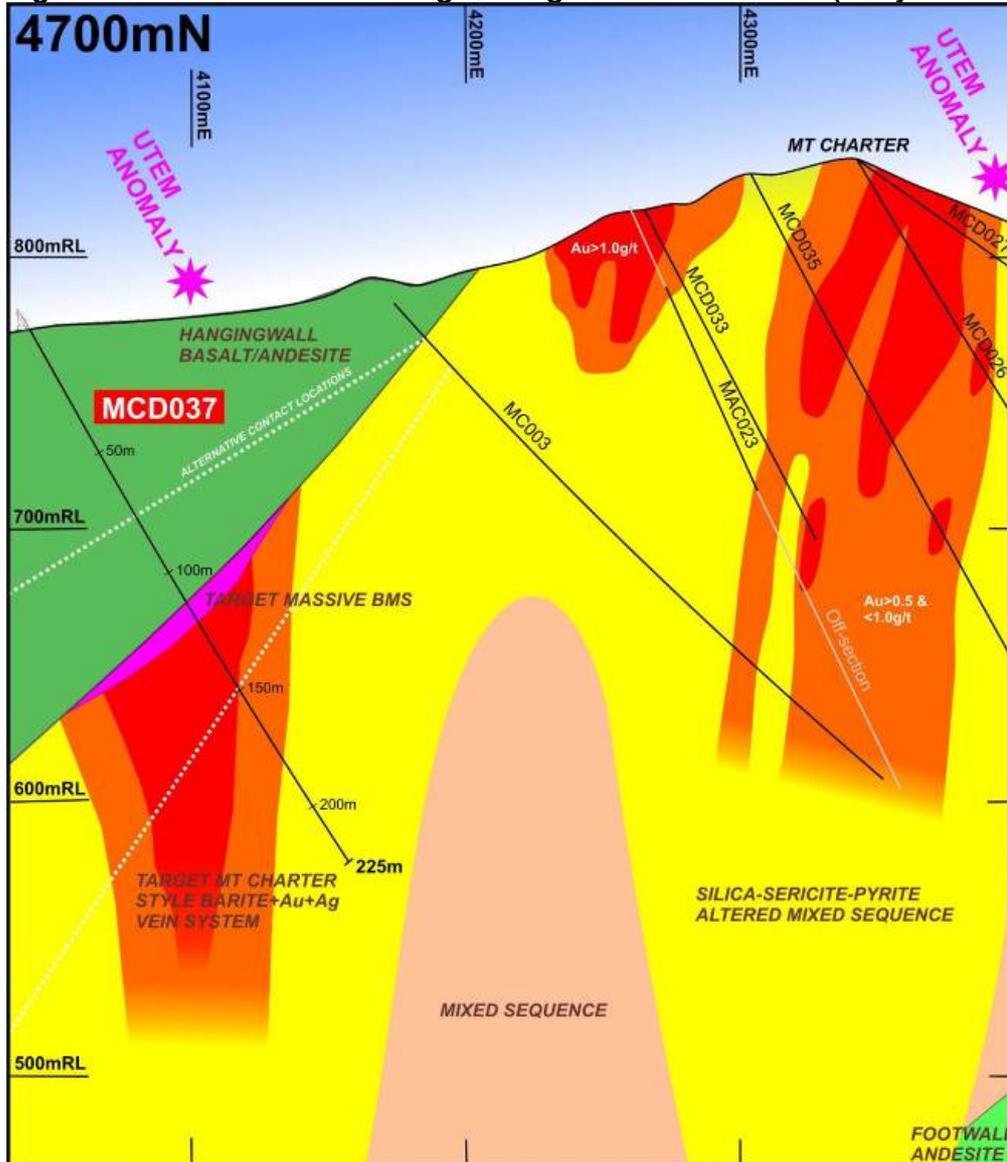
#### ***Diamond-drilling site preparation and drilling***

MCD037 (Figure 9) is designed to be drilled from a short track extending existing tracks and will drill toward mine grid east testing the conductive trend. The dip of the hangingwall basalt/mixed sequence contact has been derived from mapping and intersection of the contact in MC003 but this remains a variable. If the contact is more gently-dipping than interpreted the drill hole has been designed to still be effective in targeting the prospective zone, and likewise if the contact steepens. The target zone will therefore be in the order of 75-150m down hole.

Drilling is currently complete at 149.6m and no significant mineralisation was intersected. A breccia unit with pyritic matrix is considered (ca. 28-42m downhole) is considered the most likely source of the UTEM anomaly and the anomalous As within the hangingwall basalt (Figure 10). The mixed sequence stratigraphy at the end-of-hole position was largely unaltered and the hole was terminated earlier than the designed depth of 225m.

The hole has only just been completed at the time of writing this report and accompanying geological and geochemical data will be included in the report of the following period.

Figure 10. Cross Section looking looking north on ~4700mN (Hellyer-mine grid)



### Completion of 2 soil programs

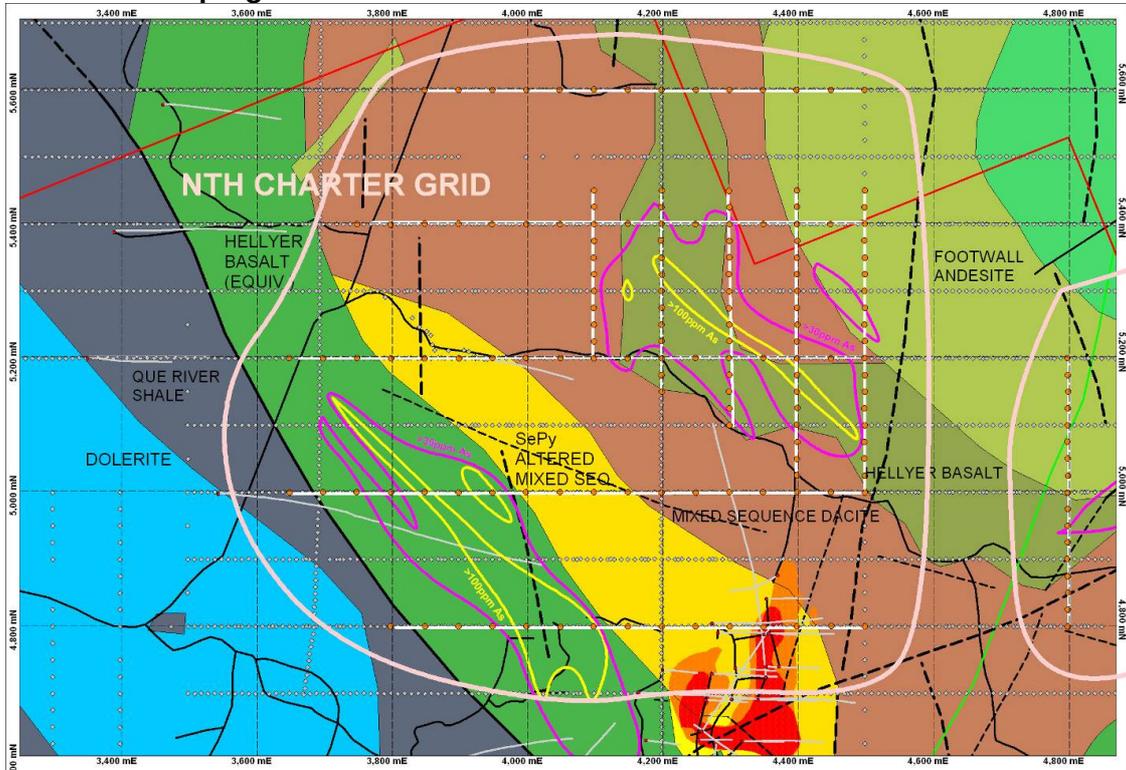
Two soil programs designed to test the North Charter arsenic anomaly was completed with a total of 146 samples collected covering an area of 0.8km x 0.8km and 47 samples in a zone of the Barite Creek fault with prospective IP characteristics covering 0.4km x 0.2km.

The North Charter grid encompassed the Hellyer Basalt-equivalent rocks overlying the Mt Charter alteration corridor (Figure 10). The hangingwall basalt in this locality has significant arsenic anomalism. It is unknown at this stage whether this represents:

- Bleeding up/along structures
- In situ alteration post deposition of the basalt
- Assimilation of altered material during flow of the basalt over altered rock.

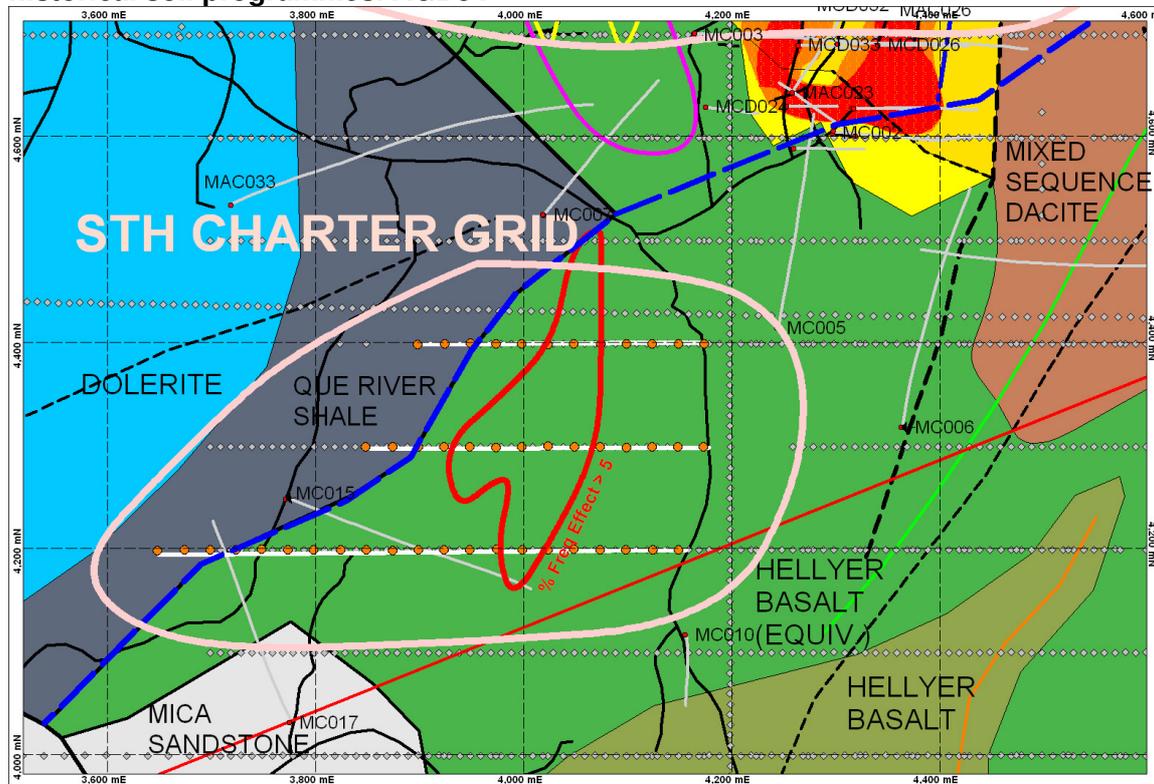
Assay results are still awaited.

**Figure 11. North Charter As anomaly and soil grid. Grey diamonds indicate historical soil programmes. AGD84**



The South Charter grid (Figure 11) was planned to traverse a recently identified IP anomaly with chargeability characteristics similar to Mt Charter.

**Figure12. South Charter IP anomaly and soil grid. Grey diamonds indicate historical soil programmes. AGD84**



### ***Airborne EM survey***

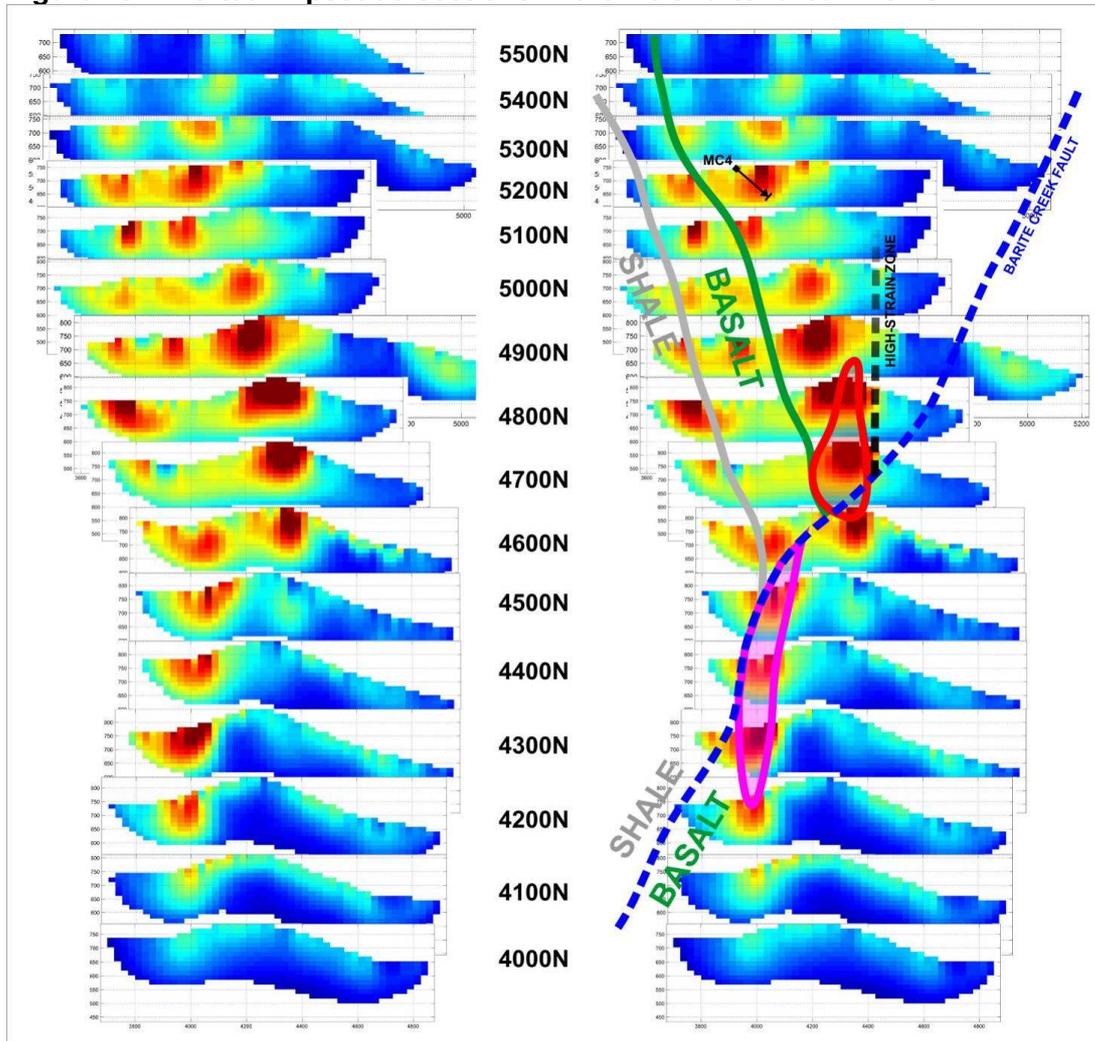
The Hellyer Mt Charter Corridor was flown with a new generation high power airborne EM survey. The 600km flight line helicopter borne VTEM survey covered approximately 50km<sup>2</sup>. 34.9 line-km was flown over Mt Charter; and after interpretation there was a strong IP effect over the South Charter anomaly but no conductive response identified.

### ***Re-working of 1978 IP data***

Reworking IP data collected in 1978 over the Mt Charter area has enabled delineation of a chargeable anomaly with characteristics similar to Mt Charter and totally covered by Hellyer Basalt equivalent rocks, and approximately 400m SW of Mt Charter. It is possible that this anomaly, known as the South Charter Prospect (SCP) represents Mt Charter style Au-Ag mineralisation with the overlying Hellyer-BMS position preserved (unlike on Mt Charter itself) which has been offset along the Barite Creek fault (Figure 13). It is also interpreted that the Basalt cover is only a thin veneer in this area and that the IP survey has 'seen' through this. Observations of the magnetic data over the area support this interpretation.

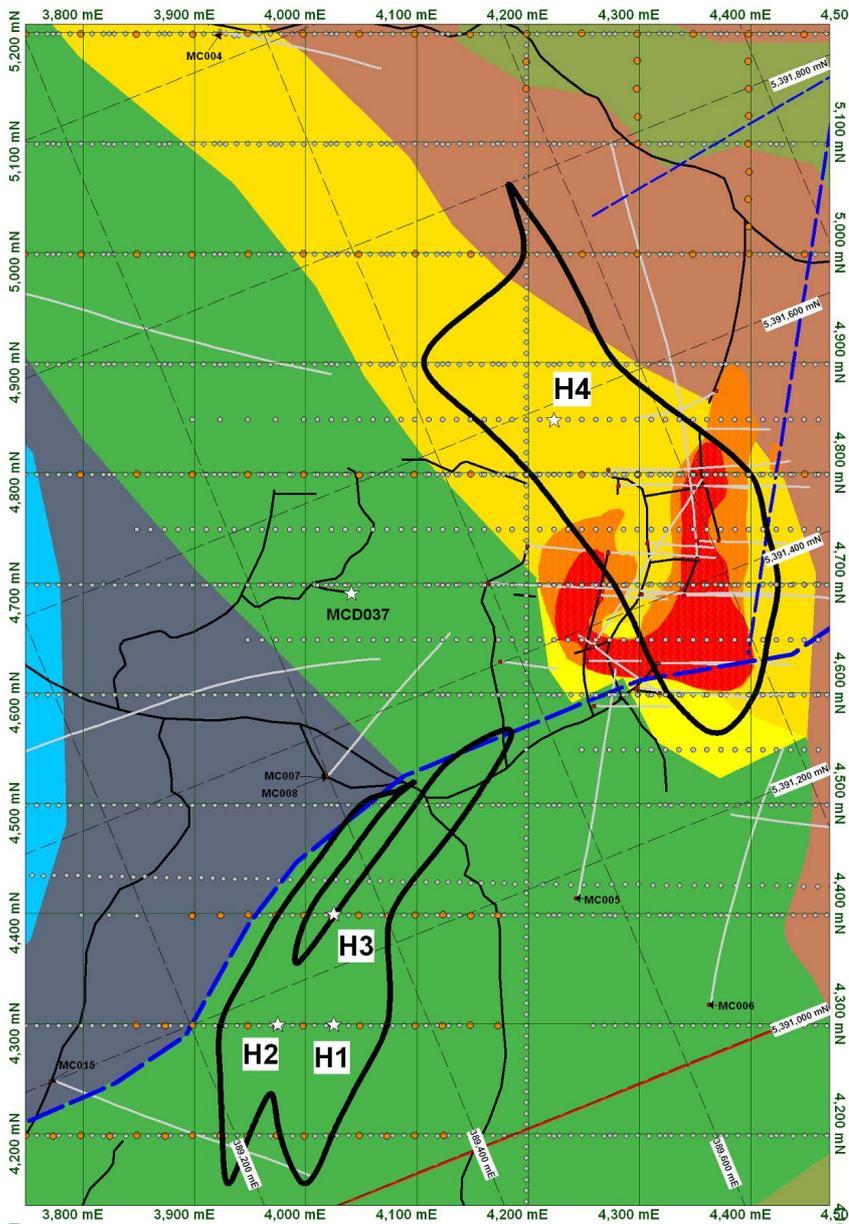
Some disseminated pyrrhotite and pyrite has been observed in Hellyer Basalt-equivalent float rock in the target area and it is possible that this is the cause of the IP anomaly. The sulphide is not the same tenor as the Mt Charter system and the interpreted target under the thin veneer of basalt cover is still considered valid.

**Figure 13. Inverted IP pseudo sections in the Mt Charter area. AGD84**



Sections are every 100m. Images on the left and right are the same, right hand side has geological information appended. Red polygon indicates the approximate outline of the Mt Charter resource and the magenta polygon indicates the South Charter IP anomaly. The red/orange transition in the contouring represents a percent frequency effect (PFE) of ~5 and higher than this is indicative of disseminated sulphides. Note that the apparent lower intensity of the SCP anomaly as compared to Mt Charter may be due to the basalt cover estimated at 25-50m.

**Figure 14. Geological map for the Mt Charter area and South Charter Prospect. AGD84**



The red line represents the Mt Charter RL11/1997 – EL48/2003 boundary (Mt Charter RL to the north of the line). Orange and red polygons represent the Mt Charter Au resource contours at >0.5g/t Au and >1.0g/t Au respectively. Heavy black polygons represent the PFE=5 contour. Grey dots are historic soils and orange are planned litho geochem soil sample locations. White stars annotated H1-H4 indicate proposed drill-hole locations. ENE trending dashed blue line represents the Barite Creek Fault.

### ***Detailed Mapping***

Detailed mapping of the Mt Charter area was undertaken. This has shed further light on the controls on mineralisation in the deposit and indicates some areas where shallow drilling can increase the tonnage (~10%) and at the southern end, potentially add some higher grade material also.

An excellent correlation between the enveloping surface of mapped barite veining and the gold resource outlines is evident in Appendix 3. Some areas where extensional exploration opportunities occur have been recognised and may be subject to future drill-programmes to further define and upgrade the Mt Charter Au-Ag resource.

Measured vein orientations may also be fed directly into the resource modelling process to influence the interpolation of grades and further validate the model.

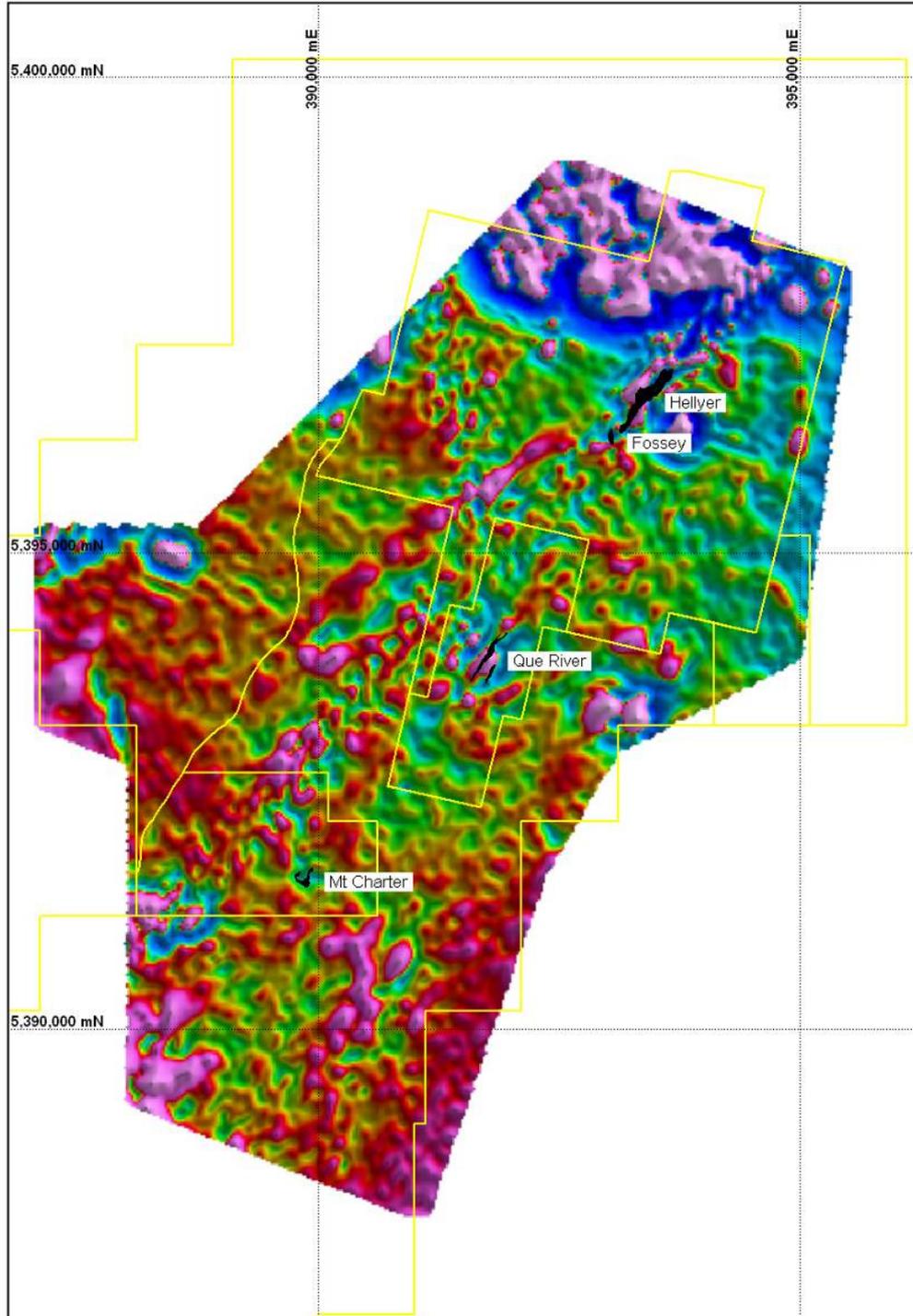
Refer to appendix 4 for interpretation map. Please note these maps have been produced at a scale of 1:500 on A0 page size.

### **4.CURRENT WORK – Exploration completed during the report period (6<sup>th</sup> June 2010 – 5<sup>th</sup> June 2011)**

#### **Aeromagnetics**

The VTEM survey that was conducted last reporting period also collected high resolution aeromagnetic data. This data has been processed and a series of derived images with the effects of the power line subtracted has been prepared. As an example figure 15 shows the 1vd image. VTEM data package in Appendix 4 (digital only)

**Figure 15 Aeromagnetics image – 1<sup>st</sup> Vertical Derivative**



**IP**

A large volume of processed, enhanced and modelled IP data was received. This data has been beneficial in helping define drill targets, and further more will be important in

defining footwall alteration zones and thus supporting further drilling. Refer to appendix 5.

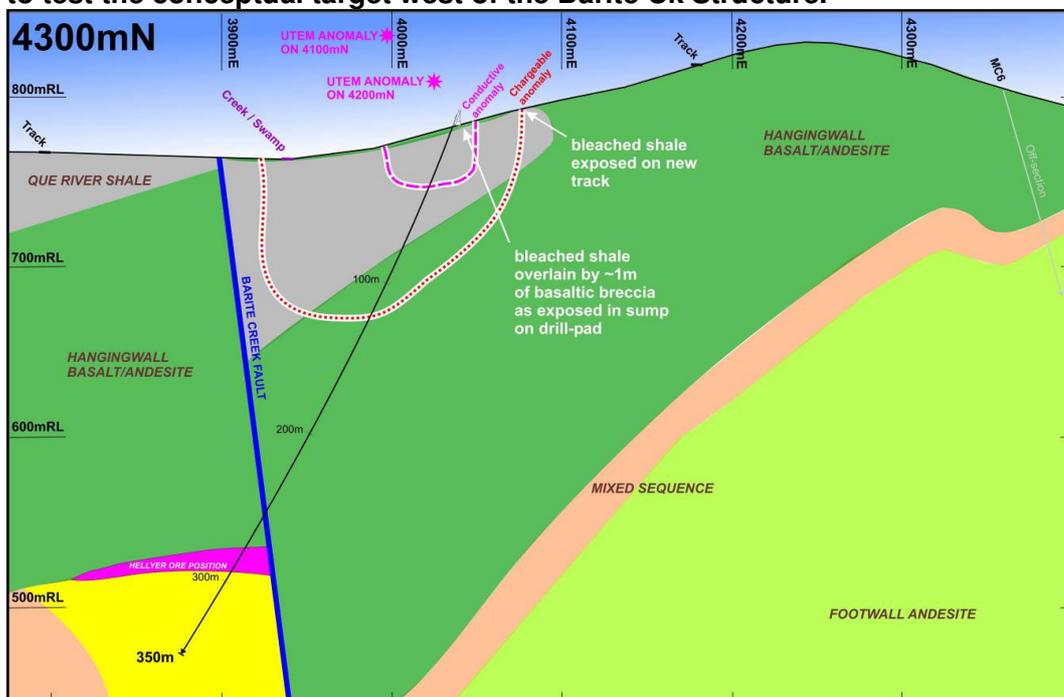
### Diamond Drilling

MCD037 (Figures 9-10) was designed to be drilled from a short track extending existing tracks and will drilled towards mine grid east testing the conductive trend. The dip of the hanging wall basalt/mixed sequence contact was derived from mapping and intersection of the contact in MC003.

Drilling was complete at 149.6m and no significant mineralisation was intersected. A breccia unit with pyritic matrix is considered (ca. 28-42m downhole) is considered the most likely source of the UTEM anomaly and the anomalous As within the hanging wall basalt (Figure 10). The mixed sequence stratigraphy at the end-of-hole position was largely unaltered and the hole was terminated earlier than the designed depth of 225m. Refer to Appendix 1 for all assay results and Appendix 2 for lithology log.

A further hole was planned to test an IP anomaly and a drill pad was completed. During the establishment of the drill pad shale was observed on the track and in the . This occurrence of shale at this location significantly affects the interpretation of the IP target constituting this prospect (Figure 16) and it is possible that the IP anomaly is derived solely from the concealed Que River Shale. The hole has not been drilled to date.

**Figure 16 Schematic cross-section on 4300mN illustrating the possible sub-surface extent of the shale in order to explain the IP anomaly. Drill-hole designed to test the conceptual target west of the Barite Ck Structure.**



## **North Charter Soil Sampling**

Preliminary observations of the data suggest that the program has confirmed the presence of coincident Sb and Tl with the As anomaly in the Aberfoyle soil dataset. The distinct lack of an IP response in the area (IP re-interpretation returned after sampling of the area was complete) down-grades the prospect. Ground EM anomalies in the north of the prospect require follow-up, but again, unless 'rooted' to an IP response these are likely to be formational responses. Refer to appendix 3 for assay results.

## **5. PROPOSED EXPLORATION**

Bass Metals proposed exploration over the next year includes;

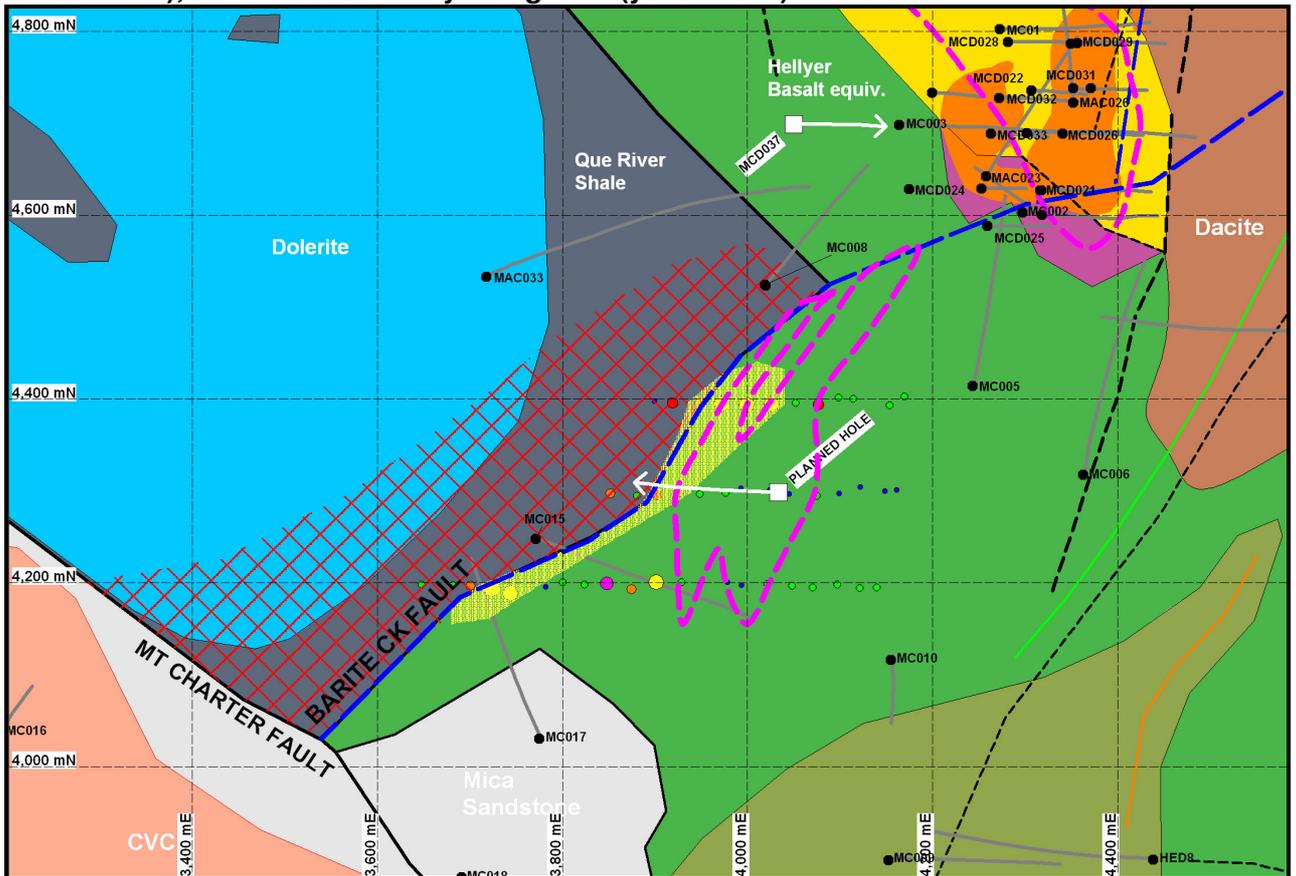
The area of prospectivity beneath the Que River Shale and Hellyer Basalt-equivalent rocks is indicated by the red cross-hatched area in Figure 17. There is Bi and Sb anomalism coincident with the interpreted location of the Barite creek Fault (Figure 17). This may indicate bleeding along the fault zone. More work is required to understand the nature and significance of these anomalies.

The drill-access and pad have been established for this drill-hole and drilling has not yet been scheduled.

A single rock chip sample assaying 3.9g/t Au, 103g/t Ag, and 44% Ba was taken by Aberfoyle geologists ~350m east of the Mt Charter resource. Soil sample data in the area indicates an anomaly associated with this occurrence but has minor dimensions compared to the Mt Charter soil response. Further work will need to be undertaken to determine whether there is potential for a significant 'semi-blind' Mt Charter-style system.

The top of andesite ("Que River and Hellyer position?") has not been tested at Mount Charter. A deep hole is planned to test this position.

**Figure 18: Plan view of the South Charter Prospect and planned hole with IP anomalies as magenta dashed lines, target area adjacent to Barite Ck Fault (red cross-hatch), and Bi+Sb anomaly along fault (yellow fuzz). AMG66**



## 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 minimise the impact on the environment during track-development and how to reduce the risk of spreading plant diseases and weeds as a result of day-to-day exploration tasks.

## 7. EXPENDITURE

June 2010 to June 2011		
Geoscientific Costs	Geology	14,850.39
	Geochemistry	6,140.21
	Geophysics	1,846.60
	Remote Sensing	
Drilling & Gridding Costs	Gridding	
	Drilling	22,010.69
	Land Access Costs	
	Rehabilitation Costs	
	Feasibility Study Costs	
	Other Costs	426.67
	Admin Costs	
	<b>Total - eligible</b>	<b>\$45,274.56</b>

Table 1. Expenditure 6th June 2010 to 5th June 2011  
*\*Expenditure reported is up to and including 31<sup>st</sup> March 2011*

## **8. REFERENCES**

**Core, D. 2009.** Review of Hellyer corridor Ground Electromagnetic Data. Unpublished.

**Eadie, E.T. 1984.** Report on the Detailed UTEM work on the Zone (J3) South of Mt Charter. Aberfoyle Exploration internal report.

**Hespe, A.M. 2000.** Annual Report to 5 May 2000 – RL11/1997 Mt Charter.

**Hespe, A.M. 2000.** Annual Report to 5 May 2001 – RL11/1997 Mt Charter.

**Rand, S.W. 1988.** Geology and Mineralisation at Mt Charter. Unpublished Honours Thesis. UTAS

**Richardson, S. 1992.** Diamond Drill Proposal - DDH MAC32, Mt Charter. Unpublished internal company report (Aberfoyle Resources Ltd).

**APPENDIX 1**

**MCD37 Diamond Drill Hole  
Assay Results**

**APPENDIX 2**  
**MCD37 Diamond Drill Hole**  
**Lithology**

**APPENDIX 3**

**North Charter Soil Sampling  
Assay Results**

**APPENDIX 4**  
**Aeromagnetic Dataset**  
**(Digital Copy Only)**

**APPENDIX 5**  
**IP Dataset**  
**(Digital Copy Only)**