## Brazilian Metals Group Limited

BMG

25 January 2013

The Listing Manager
Australian Stock Exchange Ltd
Exchange Plaza
2 The Esplanade
PERTH WA 6000

## Brazilian Metals Group Limited ("the Company") - SRK Consulting (Australasia) Pty Ltd Report on the Treasure Projects, Cyprus

Brazilian Metals Group Limited (ASX Code: BMG) has agreed to acquire Treasure Development Limited ("TDL") as detailed in the Company's announcement of 10 December 2012 and the Board are pleased to now release an independent geologist's report prepared by SRK Consulting (Australasia) Pty Ltd's on TDL's copper and gold assets the in the Republic of Cyprus (the Treasure Projects).

The SRK Report provides an extensive review of the Treasure Projects and verification of BMG's proposed exploration program. SRK conclude that the Treasure Projects, including Black Pine, Kambia and Vrechia, have high potential and immediate drill-ready targets.

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The information to which this statement is attached that relates to Exploration Targets, Exploration Results, Mineral Resources or Ore Reserves is based on information compiled by Dr Louis Bucci, Principal Consultant (Project Evaluations) employed by SRK Consultants (Australasia) Pty Ltd ond reviewed by Malcolm Castle, a competent person who is a Member of the Australasian Institute of Mining and Metallurgy ("Aus/MM"). Malcolm Castle is a consultant geologist employed by Agricola Mining Consultants Pty Ltd and is the Executive Technical Director of Brazilian Metals Group Limited. Malcolm Castle has sufficient experience that is relevant to the style of mineralisation and type of deposits under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Malcolm Castle consents to the inclusion in this statement of the matters based on his information in the form and context in which it appears.

# Independent Geologist's Report on the Base and Precious Metal Assets of Treasure Development Limited in the Republic of Cyprus 

Report Prepared for

## Brazilian Metals Group Limited



Report Prepared by
$\rightleftharpoons$ srk consulting
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BMG001
January 2013

# Independent Geologist's Report on the Base and Precious Metal Assets of Treasure Development Limited in the Republic of Cyprus 

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## Executive Summary

This report is an Independent Geologist's Report (IGR) regarding the mineral assets of Treasure Development Limited (TDL) on behalf of Brazilian Metals Group Limited ('BMG' or the 'Company'). The TDL mineral assets are located in the Republic of Cyprus. The Report is provided for release to the ASX.

The Company has entered into an agreement to acquire $100 \%$ of Treasure Development Limited, a privately owned Cypriot company with a portfolio of Copper - Gold projects, and targets considered prospective for other metals such as Zinc, Nickel and Cobalt. The TDL mineral assets host a number of strong exploration targets with Copper and Gold mineralisation identified across major target areas identified through previous exploration work (including drilling) and previous mining operations.

The portfolio includes submitted applications to acquire twenty three (23) Prospecting and Reconnaissance Permits and Licences, respectively. Eleven (11) Permits have been granted, seven (7) have been approved with the rents paid and five (5) are still under application. The grantedapproved Permits / Licences cover an area of $\sim 133.7 \mathrm{~km}^{2}$, with over $\sim 71.9 \mathrm{~km}^{2}$ of Permits / Licences still under application.

TDL has focussed on exploring and developing base metal and gold systems in the prospective Troodos Ophiolite Complex, which is a large fragment of relict ocean floor and associated underlying crust. TDL has based its ground acquisition strategy and exploration model on the fact that ophiolite sequences are host to Volcanic Hosted Massive Sulphide (VHMS) deposits, globally. No JORC classified Resource has been defined on any of the properties presented in this report, and as such, the properties are speculative by nature and involve varying degrees of exploration.

The Projects cover the highly prospective Lower and Upper Basalts, sheeted dyke Complex and Basal gabbro unit of the Troodos Ophiolite Complex, which has produced over 75 Mt of copper ore historically. TDL's ground selection was based on field investigation and data reviews which indicate the occurrence of favourable geology and multiple styles of base metals and gold mineralisation within the Troodos Ophiolite Complex, which is aerially extensive and relatively poorly tested using modern exploration practices.

In terms of granted and approved tenure, TDL has three (3) main Projects:

1. The Black Pine Project which includes the Pevkos - Laxia tou Mavrou and Kalavassos prospects;
2. The Kambia Project which includes the Kambia-Mathiatas-Sha, Arakapas, Pano-Lefkara and Stavrovouni prospects; and
3. The Vrechia Project.

The Black Pine Project includes the Laxia tou Mavrou and Pevkos prospects which represents TDL's most advanced Project area, albeit still considered by SRK as an early stage exploration play. Historic exploration (1950's to 1970's) has identified pyrrhotite-dominated massive sulphide mineralisation with anomalous to high grade Cu and Au reported in drilling, adits, and surface mapping / sampling. When collectively modelled, historic and more recent exploration data define a potentially mineralised zone approximately 1 km long and up to 150 m wide. SRK considers Pevkos - Laxia tou Mavrou to have "walk up" drill targets for copper, and BMG intends to drill-test these targets in their Year 1 exploration programme. SRK considers the prospectivity potential of the area as high. The Kalavassos prospect reports a number of abandoned copper mines associated waste dumps and exposed gossans.

There is a long mining history at the Kambia Project at the Kambia-Mathiatas-Sha prospects, with six abandoned copper mines within 500 m of the tenement boundary; two historic mines are located within the Project area, with historic production records indicating large tonnage movements, although reported copper grades are either low or unknown. TDL also report elevated Au values at the Project, which has not been previously tested in the area. Although an early stage Project, SRK considers the prospectivity potential of the area as high. Limonite-hematite gossans with pyrite $\pm$ chalcopyrite at the Arakapas prospect, favourable geology with nearby high-grade exploration results from other explorers at the Pano Lefkara prospect, and anecdotal reports of anomalous surface geochemistry at the Stavrovouni prospect, have been reported.

Records for the Vrechia Project area report numerous slag dumps and copper-sulphide localities, and the historic Vrechia open pit (historic production of 80 kt of ore at $0.55 \% \mathrm{Cu}$, and 120 kt of ore at $0.45 \% \mathrm{Cu}$ ). Again, no Au grades are historically quoted for the area, which contrasts with TDL's sampling, and exploration results from Northern Lion in similar rocks approximately 2 km northwest and along strike of the Vrechia Project. This suggests that the area may be equally prospective for precious as well as base metals.

The Company plans to implement an exploration strategy to minimise exploration risk and cost. The approach involves utilising the extensive geological databases available at the Cyprus Geological Survey, which documents mining and exploration activities in the country for the past 100 years. BMG's exploration approach across all Projects will be to review this data for each area (Stage 1), ground truth and verify the data whilst refining targets (Stage 2), and then follow up with detailed sampling through drilling (Stage 3).

The Company recognises that all exploration Stages will be immediately possible to implement for their granted tenure, whilst Stages 1 and 2 will only be possible for their application areas, in the short term. As such, TDL's portfolio of Projects represent a balanced mix of advanced early stage Projects where focussed drill-testing of defined targets is immediately possible (Pevkos - Laxia tou Mavrou, Kambia-Mathiatas-Sha, and Vrechia), and very early stage reconnaissance / verification assets (the application areas).

In summary, SRK is of the view that the Projects are sufficiently prospective to warrant exploration at the budgetary levels indicated by the Company, and it is SRK's opinion that the objectives of the Company are closely aligned to their proposed exploration budgets and programmes.

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## Disclaimer

The opinions expressed in this Report have been based on the information supplied to SRK Consulting (Australasia) Pty Ltd (SRK) by Brazilian Metals Group Limited (BMG). The opinions in this Report are provided in response to a specific request from BMG to do so. SRK has exercised all due care in reviewing the supplied information. Whilst SRK has compared key supplied data with expected values, the accuracy of the results and conclusions from the review are entirely reliant on the accuracy and completeness of the supplied data. SRK does not accept responsibility for any errors or omissions in the supplied information and does not accept any consequential liability arising from commercial decisions or actions resulting from them. Opinions presented in this Report apply to the site conditions and features as they existed at the time of SRK's investigations, and those reasonably foreseeable. These opinions do not necessarily apply to conditions and features that may arise after the date of this Report, about which SRK had no prior knowledge nor had the opportunity to evaluate.

## 1 Introduction

Brazilian Metals Group Limited ('BMG') commissioned SRK Consulting (Australasia) ('SRK') to prepare an Independent Geologist's Report (IGR) on the exploration assets of Treasure Development Limited (TDL) located in the Republic of Cyprus (Figure 1-1).

The target mineralisation style is base and precious metals systems associated with the Troodos Ophiolite. Specifically, TDL are targeting copper-gold $\pm$ zinc ( $\mathrm{Cu}-\mathrm{Au}( \pm \mathrm{Zn})$ ) in volcanic-hosted massive sulphides, and copper-nickel-cobalt-gold (Cu-Ni-Co-Au) in hydrothermal veins within ultramafic rocks. These mineralisation styles are the basis of the TDL's ground acquisition strategy and current portfolio of Projects.

TDL has submitted applications to acquire twenty three (23) Prospecting and Reconnaissance Permits and Licences, respectively. As of 31 December 2012, eleven (11) Permits have been granted, seven (7) have been approved with the rents paid and five (5) are still under application (Table 1-1). The granted-approved Permits / Licences cover an area of $\sim 133.7 \mathrm{~km}^{2}$, with over $\sim 71.9 \mathrm{~km}^{2}$ of Permits / Licences still under application.

SRK has not undertaken any legal due diligence on the status of the Permits / Licences, and has relied on BMG to confirm their standing.


Figure 1-1: Location of BMG Licences in the Republic of Cyprus
SRK Consulting


### 1.1 Purpose and Reporting Standard

The purpose of this Report is to provide an independent technical assessment of the Permits / Licences applied for and currently held by TDL. SRK's Scope of Work (SOW) for the IGR was to:

- Undertake a desktop review of available geological data;
- Review documentation of exploration history, and comment on the prospectivity potential of the Permits / Licences;
- Complete a site inspection of the Permits / Licences;
- Evaluate the proposed exploration programme and budget of BMG; and
- Report the findings of the review.

This Report has been prepared to the standard of, and is considered by SRK to be, a Technical Assessment Report under the guidelines of the VALMIN Code. This Report presents the findings and recommendations of SRK's review, which focussed on the aforementioned SOW.

The VALMIN Code is the code adopted by the Australasian Institute of Mining and Metallurgy and the standard is binding upon all AusIMM members. The VALMIN Code incorporates the JORC Code for the reporting of Mineral Resources and Ore Reserves.

This Report is not a Valuation Report and does not express an opinion as to the value of mineral assets. This Report is dated January, 2013.

### 1.2 Work Programme and Project Team

Dr Louis Bucci (Principal Consultant, Project Evaluations) undertook a site visit to the Permit $/$ Licence areas between the $10^{\text {th }}$ and $13^{\text {th }}$ of July 2012, and held discussions with local geological survey personnel. Dr Bucci was accompanied by Dr Mike Green, now a Director of BMG.

Data acquired during the site visit was largely compiled by Dr Green, and reporting was undertaken by SRK during August and September 2012. The site visit findings and geology review have been compiled into this Report.

The SRK team members and their primary area of responsibility are summarised below.

- Project Management, Site Visit and reporting:

Dr Louis Bucci;

- Geology, literature review and reporting:

Dr Gavin Chan; and

- Peer Review:

Dr Bert De Waele

### 1.3 Statement of SRK Independence

Neither SRK nor any of the authors of this Report have any material present or contingent interest in the outcome of this Report, nor do they have any pecuniary or other interest that could be reasonably regarded as being capable of affecting their independence or that of SRK.

SRK has no prior association with BMG in regard to the mineral assets that are the subject of this Report. SRK has no beneficial interest in the outcome of the technical assessment being capable of affecting its independence.

SRK's fee for completing this Report is based on its normal professional daily rates plus reimbursement of incidental expenses. The payment of that professional fee is not contingent upon the outcome of the Report.

### 1.4 Representation

BMG has represented in writing to SRK that full disclosure has been made of all material information and that, to the best of its knowledge and understanding, such information is complete, accurate and true.

### 1.5 Indemnities

As recommended by the VALMIN Code, BMG has provided SRK with an indemnity under which SRK is to be compensated for any liability and/or any additional work or expenditure resulting from any additional work required:

- which results from SRK's reliance on information provided by BMG, or in BMG not providing material information; or
- which relates to any consequential extension workload through queries, questions or public hearings arising from this Report.


### 1.6 Consents

SRK consents to this Report being included, in full, in BMG's marketing material and public offer, in the form and context in which the technical assessment is provided, and not for any other purpose.

SRK provides this consent on the basis that the technical assessments expressed in the Summary and in the individual sections of this Report are considered with, and not independently of, the information set out in the complete Report.

## 2 Geological and Metallogenic Setting of the Republic of Cyprus

### 2.1 Geological Setting

The island of Cyprus is located in the eastern part of the Mediterranean Sea along the southern margin of the Anatolian Tectonic Plate (Figure 2-1A). The area of interest for mineral exploration is a geological feature known as the Troodos Ophiolite, which is a large fragment of ocean floor and associated underlying crust (collectively referred to as oceanic crust) that has been physically abducted to become emergent as the island of Cyprus (Figure 2-2).


Figure 2-1: Geological setting of the Republic of Cyprus
A. Schematic tectonic map of the Eastern Mediterranean showing the location of Cyprus. NAFZ: North Anatolian fault zone; EAFZ: East Anatolian fault zone; DSFZ: Dead Sea fault zone; FBFZ: Fethiye-Burdur fault zone; IA: Isparta angle; SF: Sultan Dağ fault. Source: Verhaerta et al., 2006.
B. Geological map of Cyprus showing the distribution of the Troodos Ophiolite and associated mineralisation (see Mosier et al., 1983).

The fragment of oceanic crust that forms the Troodos Ophiolite was erupted in the Tethys Ocean about 91 million years ago (see Blome \& Irwin, 1985; Staudigel et al., 1986; Mukasa \& Ludden, 1987). Spreading of the Tethys Ocean separated Gondwana (southern continents) from Laurasia (northern continents), and approximately 184 million years ago the Tethys Ocean closed (Robertson, 2004). Most of the Tethys seafloor was subducted beneath Laurasia, but some fragments became trapped such that there are mountain belts containing ophiolite fragments from western Europe to southeast Asia. The northward migration of the Gondwanan continents and the closure of the Tethys Ocean are still ongoing.

The Troodos Ophiolite forms an anticlinal dome such that the deepest formed intrusive units (basal oceanic crust) are now the highest central hills, and the seafloor volcanic rocks and overlying sedimentary rocks are exposed around the flanks (Figure 2-1B). There is evidence that the Troodos Ophiolite is still rising (see Poole et al., 1990), with recent and historic earthquakes showing the area to be tectonically active. Definitive lithostratigraphic zones within the overall ophiolite sequence are identified, in order from youngest to oldest (Figure 2-2B), as:

- Cover Sequence Sedimentary Rocks: Two discrete sedimentary sequences:
- Recent (<3Myo) coarse-grained alluvial sediments; and
- Cretaceous to Miocene (<100Myo) sedimentary sequence (<2km thick) composed mainly of limestone, chalk and marl. This sequence conformably overlies the volcanic-intrusive ophiolite sequence.
- Extrusive Sequence Rocks: Two discrete sequences of basaltic pillow lavas are identified, which comprise an Upper Pillow Lava ("UPL") and Lower Pillow Lava ("LPL") as follows:
- UPL ( $200-400 \mathrm{~m}$ thick) contains abundant olivine crystals and rare dykes. The top of the sequence is marked by a thin ( $<20 \mathrm{~m}$ thick), Mn-rich chemical sediment known locally as "umber"; and
- LPL ( $\sim 500 \mathrm{~m}$ thick) lacks olivine and contains abundant dykes.

The UPL and LPL are also differentiated by their very distinct geochemical compositions, and both units contain thin, discontinuous sedimentary units within and between the volcanic units.

- The Sheeted Dyke Complex: $\sim 2 \mathrm{~km}$ thick, and chiefly composed (50-100\%) of steeply dipping mafic dykes (each dyke $\sim 0.5$ to 1.0 m thick) which intrude either gabbro (lower part of unit) or basalt lava flows (upper part); and
- The Plutonic Complex: Comprising a lower, ultramafic ("Harzburgite") unit, and an upper mafic ("Gabbro") unit, separated by an interlayered mafic/ultramafic unit. The lower unit represents the uppermost mantle, and middle and upper units lower oceanic crust components. Thickness of the overall unit is estimated to be at least 5 km . Minor, more evolved (e.g. granite, plagiogranite) intrusive rocks are also recognised as part of this sequence.


### 2.2 Metallogenic Setting and Exploration Model

### 2.2.1 Metallogenic Setting

Modern seafloor volcanic centres are areas of intense hydrothermal activity and are associated with massive sulphide deposits (referred to as Volcanic-Hosted Massive Sulphide (VHMS) deposits; see Large et al., 1992). The basic ore-forming processes of these hydrothermal systems are well understood, and research indicates that sulphides can also be deposited in the intrusive units beneath the volcanic rocks, associated with sheeted dike and ultramafic complexes.

Figure 2-2A shows a schematic cross-section through a typical ophiolite sequence, and Figure 2-2B presents the distribution of various mineralisation styles expected within that lithostratigraphic sequence. Mineralisation can also develop during uplift and deformation of oceanic crust to form the ophiolite fragment.


Figure 2-2: Schematic cross-section through a typical ophiolite
A. Schematic cross-section through a typical sea floor volcanic spreading centre, which is obducted to form an ophiolite.
B. Schematic cross-section through a typical ophiolite sequence, showing rock types and the location of different mineralisation styles within the stratigraphic sequence.
Source: Constantinou and Govett, G.J.S., 1973; Constantinou, G., 1980.
Globally, mineralisation of a VHMS affinity hosts significant sized base metal deposits (Table 2-1). A sub-set of the VHMS classified deposits are the "Cyprus-Style" deposits (see Hutchinson and Searle, 1971, Franklin et al., 1981, and Galley and Koski, 1999), which are associated with the seafloor spreading process and ophiolite / ocean floor stratigraphy and structure. Academic literature indicates that the Troodos Ophiolite hosts base metal deposits of a similar size to those identified in VHMS settings globally (see Constantinou and Govett, G.J.S., 1973; and Constantinou, G., 1980; (Table 2-2). Specific to "Cyprus-style" VHMS systems is a structural control along one or both margins, as well as a mantling of the deposit by a broader zone of characteristic alteration that decreases away from the deposit (Franklin et al., 1981). The alteration is dominated by chlorite, quartz, pyrite and epidote, and silicification is commonly sufficiently intense in the stockwork zone to be detected as a resistivity anomaly in geophysical data (Galley and Koski, 1999).
Table 2-1: Metal content and distribution of VHMS deposits globally

| Area | Metal Association | N\# of Deposits | Average Grade and Tonnage |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | Cu <br> (\%) | Zn <br> (\%) | Pb <br> (\%) | $\begin{gathered} \mathrm{Ag} \\ (\mathrm{ppm}) \end{gathered}$ | $\begin{gathered} \mathrm{Au} \\ (\mathrm{ppm}) \end{gathered}$ | Mt |
| Abitibi Belt, Canada | $\mathrm{Cu}-\mathrm{Zn}$ | 52 | 1.47 | 3.43 | 0.07 | 3.19 | 0.8 | 9.2 |
| Norwegian Caledonides | $\mathrm{Cu}-\mathrm{Zn}$ | 38 | 1.41 | 1.53 | 0.05 | - | - | 3.5 |
| Bathurst, N.B., Canada | $\mathrm{Zn}-\mathrm{Pb}-\mathrm{Cu}$ | 29 | 0.56 | 5.43 | 2.17 | 62.0 | 0.50 | 8.7 |
| Green Tuff Belt, Japan | $\mathrm{Zn}-\mathrm{Pb}-\mathrm{Cu}$ | 25 | 1.63 | 3.86 | 0.92 | 95.1 | 0.90 | 5.8 |
| Iberian Pyrite belt | $\mathrm{Cu}-\mathrm{Zn}$ | 85 | 0.80 | 2.00 | 0.70 | 26.0 | 0.50 | 20.8 |
| Australian Palaeozoic | $\mathrm{Cu}-\mathrm{Zn}$ | 24 | 1.13 | 4.10 | 1.62 | 42.95 | 1.78 | 10.7 |

[^0]Table 2-2: Production data for mines in the Republic of Cyprus

| Name | Company | Operation | Cu (\%) | S (\%) | Tonnes Produced | Operation Period | Lithostratigraphic Position |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| NICOSIA DISTRICT |  |  |  |  |  |  |  |
| Mavrovouni | CMC | Underground | 4.5 | 47 | 16,508,755 | 1929-1974 | UPL |
| Phoukasa - Skouriotissa | CMC | Underg/ Surface | 2.5 | 48 | 6,784,604 | 1921-1974 | Top UPL |
| Phoukasa - Skouriotissa | HMC | Leaching | - | - | 9,597 | 1979-1996 | Top UPL |
| Fenix - Skouriotissa | CMC | Surface | 0.8 | - | 1,019,597 | 1973-1974 | Top UPL |
| Fenix - Skouriotissa | HMC | Leaching | 0.8 | - | 598,323 | 1979-1996 | Top UPL |
| Fenix - Skouriotissa | HCM | Surface - Leaching | 0.46 | - | 20,500,000 | 1996-to day | Top UPL |
| Apliki | CMC | Surface | 1.8 | 36 | 1,064,493 | 1968-1971 | UPL faulted into LPL, and LPL |
| Lefka A | CMC | Surface | 2.0 | 30 | 1,151,048 | 1968-1974 | Top UPL |
| Memi | HMC | Surface | - | 26 | 2,028,898 | 1954-1971 | TBC |
| Memi | HMC | Surface | - | 26 | 95,901 | 1987-1990 | TBC |
| Alestos | HMC | Surface | 0.9 | - | 660,515 | 1971-1972 | LPL |
| Kokkinopezoula | HMC | Surface | - | 24 | 5,486,035 | 1953-1966 | UPL |
| Kokkiniyia | HMC | Underground | 2.0 | 30-40 | 481,008 | 1973-1979 | UPLLPL contact |
| Agrokipia A | HMC | Surface | 1.0 | 30-44 | 332,838 | 1952-1971 | TBC |
| Agrokipia B | HMC | Underground | 4.0 | 40 | 74,074 | 1958-1964 | TBC |
| Kokkinonero | HMC | Surface | - | 25-35 | 658,354 | 1953-1960 | UPL/LPL contact |
| Peristerka-Pytharochoma | KM | Surface | 1.5 | 25-47 | 557,540 | 1970-1977 | Base LPL |
| Kapedes | HMC | Surface | - | 30-35 | 54,666 | 1955-1958 | TBC |
| Mathiati | HMC | Surface | 0.2 | 30-35 | 2,100,000 | 1965-1984 | LPL/UPL |
| Sia | HMC | Underg/ Surface | 0.5-1.2 | 25-30 | 334,179 | 1950-1959 | LPL/UPL |
| LARNACA DISTRICT |  |  |  |  |  |  |  |
| Troulli | Berdy | Surface | 1.0 | - | 91,355 | 1955-1974 | UPL/LPL contact |
| Kalavasos | HMC | Underground | 1.0-2.5 | 33 | 1,910,000 | 1937-1966 | UPL |
| Petra | HMC | Underground | 1.0-2.5 | 25-46 | 226,000 | 1953-1957 | UPL |


| Name | Company | Operation | Cu (\%) | $\mathbf{S}(\%)$ | Tonnes Produced | Operation Period | Lithostratigraphic Position |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Mousoulos | HMC | Underground | $1.0-2.5$ | 40 | $1,660,000$ | $1964-1976$ | UPL/LPL contact |
| LIMASSOL DISTRICT |  |  |  |  |  |  |  |
| Mavridia | HMC | Surface | 1.5 | $30-40$ | 400,000 | $1971-1977$ | TBC |
| Mavri Sykia | HMC | Underg/ Surface | $1.5-2.5$ | $25-45$ | 376,000 | $1954-1977$ | LPL |
| Landaria | HMC | Underground | 0.5 | $35-45$ | 65,500 | $1963-1964$ | LPL |
| Platies | HMC | Surface | $2.5-3.0$ | 46 | 43,900 | $1955-1958$ | UPL/LPL contact |
| Maghaleni | HMC | Surface | 0.7 | 3 | 142,707 | $1976-1977$ | UPL |
| PAPHOS DISTRICT |  |  |  |  |  |  |  |
| Limni | CSCC | Surface | 1.11 | 15 | $8,143,460$ | $1937-1979$ | Base of UPL |
| Kinousa | CSCC | Surface | 2.23 | 47 | 228,896 | $1952-1960$ | Top UPL |
| Kinousa | CSCC | Underground | 2.88 | 42 | 270,608 | $1952-1960$ | Top UPL |
| Evloimeni | CSCC | Surface | 0.68 | 19 | 63,724 | $1970-1971$ | LPL |
| Vretsia | Maconda | Surface | - | 43 | 3,600 | 1988 | TBC |
| Note: | Most of the mining operations started underground continued at the surface. |  |  |  |  |  |  |

CMC: Cyprus Mines Corporation; HMC: Hellenic Mining Company; KM: Kambia Mines; Berdy: Berdy Mining Company; CSCC: Cyprus Sulphur and Copper Corporation; HCM: Hellenic Copper Mines; Maconda: Maconda Mining Company; CMD: Cyprus Development Co. Source: Mines Services Division. 2011
Page 9 Source: Mi, Maconda. Maconda Mining Company; CMD: Cyprus Development Co.

### 2.3 Tenure Types in the Republic of Cyprus

The Cyprus Geological Survey (CGS) is highly active in promoting the region to the mining and exploration industry globally, as demonstrated by the national coverage of geological information that they generate (see Mines Services Division, 2011). BMG will use this data as part of its first-pass exploration efforts on its Permits / Licences.

## There are two types of tenure in Cyprus:

- Standard Permits (prefix EA): Allow all typical exploration work, including surface sampling, geophysics and drilling. Permits are valid for a 5 year period, and then renewable for a further 5 years; and
- Reconnaissance Licences (prefix AE): Allow reconnaissance work only, including basic surface sampling and geophysics. These Licences were only legislated in 2011, and are currently being reviewed.

Table 1-1 lists TDL's Permits / Licences that have been granted-approved, and those that are still under application.

### 2.3.1 Antiquities

All Permit / Licence applications are reviewed by the Department of Antiquities to ensure that ground disturbing work does not encroach on areas of historical significance. From the Permits / Licences so far granted-approved, a few historically significant sites have been excised from the areas, and are not part of the current tenure. SRK is informed that the Reconnaissance Licences are not reviewed as strictly, because this type of tenure does not allow ground-disturbing work.

### 2.3.2 Nature 2000

Nature 2000 is the centrepiece of European Union nature and biodiversity policy (see ec.europa.eu/environment/nature/natura2000). This European Union-wide network of nature protection areas was established under the 1992 Habitats Directive. The aim of the network is to assure the long-term survival of Europe's most valuable and threatened species and habitats. It comprises Special Areas of Conservation (SAC) designated by Member States under the Habitats Directive, and also incorporates Special Protection Areas (SPA) which they designated under the 1979 Birds Directive.

Nature 2000 is not a system of strict nature reserves where all human activities are excluded. Whereas the network will certainly include nature reserves, most of the land is likely to continue to be privately owned and the emphasis will be on ensuring that future management is sustainable, both ecologically and economically.
Forestry land is also part of a Nature 2000 Habitat Directive, and the coverage of Nature 2000 areas in the Republic of Cyprus are shown in Figure 2-3.

The identification and delimitation of SPAs must be entirely based on scientific criteria, such as " $1 \%$ of the population of listed vulnerable species" or "wetlands of international importance for migratory waterfowl". Member States have a margin of discretion in determining the most appropriate criteria. However, they must then fully apply those criteria in a way that ensures that all the 'most suitable territories', both in number and surface area, are designated. On the basis of information provided by the Member State, the European Commission determines if the designated sites are sufficient to form a coherent network for the protection of vulnerable and migratory species.


Figure 2-3: Distribution of Nature 2000 areas in the Republic of Cyprus

Under the Habitats Directive, there are three stages in the selection of Special Areas of Conservation (SAC) for the Nature 2000 network:

1 The responsibility for proposing sites under the Habitats Directive lies with the Member States. They carry out comprehensive assessments of each of the habitat types and species present on their territory. The choice of sites is a purely scientific process, based on standard selection criteria specified in the directive;

2 On the basis of the proposed national lists, the Commission, in agreement with the Member State, must adopt the lists of "Sites of Community Importance (SCl)". Scientific seminars are then convened by the Commission for each biogeographic region in order to analyse the Member States' proposals in a transparent way. They are open to the Member States concerned and to experts representing relevant stakeholder interests, including owners, users and environmental NGOs; and

3 Once the lists of SCls have been adopted, it is for the Member States to designate all of these sites as "Special Areas of Conservation (SCA)", as required by the Habitat Directive, as soon as possible and within six years at most. They should give priority to the sites that are most threatened and/or that are of most importance in conservation terms. During this period, Member States must take the necessary management or restoration measures to ensure the favourable conservation status of those sites.

SRK notes that a number of the TDL Permit / Licence areas are covered by the Nature 2000 Habitat Directive and the Nature 2000 Birds Directive. SRK is informed that no SAC or SPA's are currently classified with TDL's current ground holding or Application areas.

### 2.4 Public Domain Data Available to BMG

### 2.4.1 Geological / Mineral Prospects / Mines

The geology of the Republic of Cyprus has been mapped at various scales since the 1960's, with most of TDL's Permit / Licence areas covered at 1 inch to 2 mile ( $1: 31,680$-scale). These maps were produced with eight (8) accompanying Memoirs, which include detailed records of the geology and descriptions of the mines and mineral prospects within their respective areas. In 1994, Memoir 9 was produced in conjunction with the British Geological Survey and covered the southern Troodos Ophiolite and the Arakapas Transform Fault at 1:25,000-scale.

A basic Geographic Information System (GIS) comprising the geology polygons and faults from these Memoirs has been produced by the CGS. The CGS has also compiled the geology of the entire island at $1: 250,000$-scale, and combined with current and historic mineral prospects and mines in a Mineral Resources Map of Cyprus (Cyprus Geological Survey, 2007). BMG has acquired all this geological data as part of its ground acquisition strategy.

The CGS maintains an archive of historic exploration reports in hard copy. SRK has inspected the archive facilities during the site inspection. This archive contains all the historical maps, drilling and adit data for some of TDL's Project areas, and is yet to be reviewed in detail by BMG.

### 2.4.2 Remotely Sensed Data

BMG has acquired satellite images from SPOT (Système Pour l'Observation de la Terre), covering all of the Project areas. The data were obtained as rectified geotiffs, and provide a good background for mapping. Where more detail was required, such as around mines / prospects, images have been obtained from GoogleEarth and rectified into the GIS. All roads and tracks in the GIS have been digitised from the SPOT imagery and correlate well with data collected by BMG using a handheld Geographic Positioning System (GPS).

Advanced Spaceborne Thermal Emission and Reflection Radiometer (ASTER) imagery has not yet been obtained by BMG, although SRK considers it to be a useful tool for target generation and reconnaissance exploration targeting. Unprocessed ASTER images have been used as background beyond the Licence areas, but these contain parallax stretching and so are not accurately located. Topographic contours currently being used by BMG are from the ASTER Global Digital Elevation Model (GDEM) Version 2. These data are processed and have a nominal accuracy of less than 10 vertical metres.

## 3 TDL Projects

### 3.1 Introduction

As presented in Section 2, TDL has focussed on compiling a portfolio of Permits / Licences located in the Republic of Cyprus, due to the island being composed of oceanic volcanic and sedimentary rocks considered prospective for base and precious metals, with a demonstrative base metal production history (Table 2-2).

### 3.1.1 Exploration Model of BMG

The best known prospects in Cyprus are the massive pyrite deposits hosted in the volcanic part of the Troodos Ophiolite. All significant known VHMS mineral deposits occur within the extrusive volcanic sequence, and most of the mined copper was hosted either at the base of or within the UPL (Galley and Koski, 1999). The grade and size of these deposits is quite variable, but in general, they have low to moderate abundances of $\mathrm{Cu}(<2.5 \%$; Table 2-2). Nevertheless, some deposits report much higher grades, such as at Mavrovouni, where $\sim 16 \mathrm{Mt}$ was mined at $\sim 4.5 \% \mathrm{Cu}$ (Table 2-2).

BMG will largely focus on identifying the position of the UPL and LPL in their Permits / Licences, as these units are known to host small deposits and mineralisation throughout Cyprus. In particular, given that the majority of the mined Cu in Cyprus has come from deposits whose massive sulphide or upper stockwork zones are located within the UPL (Table 2-2), the UPL will form BMG's primary targeted lithological unit. To a lesser degree, the upper parts of the Sheeted Dyke Complex will be targeted, as rare occurrences of stockwork and disseminated mineralisation are documented in this part of an ophiolite sequence, globally.

Massive pyrrhotite veins and breccias also occur along fault zones within the serpentine units below the gabbro unit. They are associated with accumulations of $\mathrm{Cu}, \mathrm{Ni}, \mathrm{Co}$ and Au , and probably formed by hydrothermal replacement during tectonic uplift of the ophiolite (see Thalhammer et al., 1986). The faults that host this mineralisation are subsequently displaced by later faults, and so mineralisation may have occurred any time during the early stages of oceanic crust transport. Targeting these structural zones is also a priority for BMG.

### 3.2 Black Pine Project

### 3.2.1 Pevkos - Laxia tou Mavrou Prospects

The Pevkos - Laxia tou Mavrou Prospects comprise nine (9) Permits / Licences, of which four (4) Permits have been granted and four (4) approved (Table 3-1; Figure 3-1). The residual Permit / Licence remains under application. The Permits / Licences cover a geological setting that BMG considers prospective for massive sulphide mineralisation. The Project area covers Forestry land, and SRK is informed that this is not an impediment to access, completing the required exploration programme or mining.


Figure 3-1: Location of the Pevkos - Laxia tou Mavrou Prospects in the Black Pine Project area

Table 3-1: Permits and Licences for the Black Pine Project

| Licence | Licence Name | Area km2 | Status | Rent, A\$ | Expenditure, <br> A $\$$ |
| :--- | :---: | :---: | :---: | :---: | :---: |
| AE4461 | Pevkos extra | 24.45 | Approved | 19,687 | 12,600 |
| AE4464 | Laxia1_central | 19.63 | Approved | 15,750 | 12,600 |
| AE4465 | Laxia2_W | 21.36 | Approved | 17,325 | 12,600 |
| AE4467 | Kalavassos | 21.70 | Application |  |  |
| EA4314 | Laxia tou Mavrou | 5.52 | Granted | 4,725 | 63,000 |
| EA4316 | Kalo Khoria | 1.00 | Granted | 787 | 63,000 |
| EA4317 | Louvaras | 1.88 | Granted | 1,575 | 63,000 |
| EA4318 | Pevkos | 1.37 | Granted | 1,575 | 63,000 |
| EA4456 | Laxia south | 4.35 | Approved | 3,937 | 63,000 |
|  | Subtotal | 101.04 |  | 65,361 | 352,800 |

## Geology

The Laxia-Pevkos Prospects area covers a significant portion of the Troodos Ophiolite south of the Arakapas Transform Fault (Gass et al., 1994). This area has been referred to as the Southern Troodos Ophiolite and predominantly comprises ultramafic rocks with a much narrower volcanic fringe than the main Troodos Ophiolite (Gass et al., 1994). The Southern Troodos Ophiolite also appears to comprise less gabbro and sheeted dyke complex rocks (Cyprus Geological Survey, 2007).

Pantazis (1967) and Bear \& Morel (1960) covered the Southern Troodos Ophiolite at 1:31,680-scale and showed most of the ultramafic units to be hydrothermally altered and metamorphosed to serpentinite. Subsequent mapping by Gass et al. (1994) at 1:25,000-scale showed serpentinite
limited to near fault zones and they divided the ultramafic areas into magmatic units (harzburgite, peridotite, wehrlite). Both maps are likely correct, but with a different emphasis, as Thalhammer (1986) describes the area as " $90 \%$ tectonized harzburgite" that has been "highly serpentinized ( 80 $\%$ to $100 \%$ )". Pyrrhotite-dominant mineralisation enriched in $\mathrm{Ni}-\mathrm{Cu}-\mathrm{CO}-\mathrm{Au}$ has been identified in breccia zones along some serpentinised fault zones within the ultramafic units. Such zones are only known in the Southern Troodos Ophiolite and include the Pevkos and Laxia tou Mavrou prospects. Such mineralisation has been interpreted to be emplaced by metal-rich hydrothermal fluid mobilised during post-magmatic tectonic activity, such as uplift of the ophiolite (see Foose et al., 1985; Thalhammer, 1986).


Figure 3-2: Geology of the Pevkos - Laxia tou Mavrou Prospects

## Exploration History - Laxia tou Mavrou Area

## Drilling and Adits

Laxia tou Mavrou is located 5.5 km northwest of Pevkos, in mountainous terrain. Pyrrhotitedominated Cu -Co-Ni-Au mineralisation is reportedly localised along a fault-fracture corridor within massive serpentinite, with outcropping gossan mappable for $\sim 1.4 \mathrm{~km}$.

The historic maps and sections show the locations; geology and assays for sixteen (16) drillholes, of which twelve (12) were drilled by the Hellenic Mining Company in 1951 / 52, and four (4) were drilled by Noranda Exploration in 1977. Some drill collars have been located by TDL, but most drill sites can be approximated from the maps and where tracks have been cleared. Given the detail of some of the geological logs, it would appear that most of the drilling was cored, although the logs fail to present any structural information. It is also unclear whether the assays were derived from the core directly or from drill chips.

Most drillholes intersected mineralisation, but the assays and logs suggest narrower intersections than mapped in the adits (see Table 3-2 and Table 3-3). Importantly, the drillholes confirm the
down-dip continuity of sulphide mineralisation, and provide useful information as to the dip of the bodies (broadly NE-dipping). SRK is informed that no drill core has been preserved.

Approximately 880 m of exploratory adits are recorded in historic maps of Laxia tou Mavrou (Figure 3-3). Villagers from nearby Prastio apparently worked these adits in the early 1950's, and report that copper-rich material was shipped to Kalavasos for trial processing. As was the case for Pevkos, the material was apparently incompatible with the existing processing plant.


Figure 3-3: Location of the Laxia tou Mavrou lodes

Table 3-2: Mineralisation intersections in historic drilling at Laxia tou Mavrou

| Drillhole | Location |  | From | To | Interval <br> (m) | Cu <br> (\%) | Ni <br> (\%) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Easting | Northing |  |  |  |  |  |
| PR1 | 510193 | 3852691 | 0 | 5 | 5 | 0.45 | 0.16 |
|  |  |  | 5 | 10 | 5 | 1.13 | 0.19 |
| PR2 | 510169 | 3852726 | 30 | 35 | 5 | 0.23 | - |
|  |  |  | 35 | 40 | 5 | 0.21 | - |
|  |  |  | 40 | 45 | 5 | 0.22 | - |
|  |  |  | 45 | 50 | 5 | 0.23 | - |
|  |  |  | 50 | 55.3 | 5.3 | 0.25 | - |
| PR4 | 510221 | 3852703 | 27 | 28 | 1 | 0.69 | 0.23 |
|  |  |  | 28 | 29 | 1 | 2.98 | 0.5 |
|  |  |  | 29 | 30 | 1 | 0.37 | 0.58 |
|  |  |  | 30 | 31 | 1 | 0.24 | 0.11 |


| Drillhole | Location |  | From | To | Interval <br> (m) | Cu <br> (\%) | Ni <br> (\%) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Easting | Northing |  |  |  |  |  |
|  |  |  | 33 | 34 | 1 | 0.10 | 0.12 |
| PR6 | 510088 | 3852745 | 15 | 16 | 1 | 0.24 | 0.23 |
|  |  |  | 16 | 17 | 1 | 0.05 | 0.14 |
|  |  |  | 17 | 18 | 1 | 0.05 | 0.2 |
|  |  |  | 18 | 19 | 1 | 0.02 | 0.16 |
|  |  |  | 20 | 21 | 1 | 0.05 | 0.085 |
|  |  |  | 21 | 22 | 1 | 1.22 | 0.19 |
|  |  |  | 22 | 23 | 1 | 0.18 | 0.085 |
| PR7 | 510096 | 3852766 | 28 | 29 | 1 | 0.21 | - |
|  |  |  | 29 | 30 | 1 | 0.53 | - |
|  |  |  | 53 | 54 | 1 | 0.64 | 0.16 |
|  |  |  | 54 | 55 | 1 | 1.15 | 0.22 |
|  |  |  | 55 | 56 | 1 | 0.33 | 0.25 |
| PR8 | 510027 | 3852825 | 25 | 26 | 1 | 0.33 | - |
|  |  |  | 26 | 27 | 1 | 0.34 | - |
|  |  |  | 49 | 50 | 1 | 0.11 | 0.13 |
|  |  |  | 50 | 51 | 1 | 0.47 | 0.26 |
|  |  |  | 51 | 52 | 1 | 1.46 | 0.23 |
|  |  |  | 52 | 53 | 1 | 1.73 | 0.23 |
|  |  |  | 53 | 54 | 1 | 0.56 | 0.16 |
| PR10 | 509956 | 3852915 | 79 | 80 | 1 | 0.11 | 0.05 |
|  |  |  | 80 | 81 | 1 | 0.28 | 0.1 |
|  |  |  | 81 | 82 | 1 | 0.36 | 0.13 |
|  |  |  | 82 | 83 | 1 | 0.33 | 0.16 |
|  |  |  | 83 | 84 | 1 | 0.29 | 0.17 |
|  |  |  | 84 | 85 | 1 | 0.32 | 0.16 |

Table 3-3: Results from historic and TDL adit sampling at Laxia tou Mavrou

| Adit | Location |  | From | To | Interval <br> (m) | Cu <br> (\%) | $\begin{gathered} \mathrm{Ni} \\ (\%) \end{gathered}$ | $\begin{gathered} \text { Co } \\ \text { (ppm) } \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Easting | Northing |  |  |  |  |  |  |
| BE1 | 510276 | 3852632 <br> (striking $345^{\circ}$ for 51m) | 45 | 46 | 1 | 0.90 | 0 | 0.08 |
|  |  |  | 46 | 48 | 2 | 0.76 | 0 | 0.11 |
| BE1b | 510280 | 3852667 | 3 | 5 | 2 | 0.12 | 0 | 0.12 |
|  |  |  | 5 | 6 | 1 | 9.58 | 0 | 0.07 |
|  |  |  | 6 | 7 | 1 | 3.36 | 0.45 | 0.15 |
|  |  | (striking $295^{\circ}$ for 28m) | 7 | 8 | 1 | 8.30 | 0.41 | 0.11 |
|  |  |  | 9 | 11 | 2 | 0.68 | 0.18 | 1.13 |
|  |  |  | 12 | 13 | 1 | 16.38 | 0.13 | 0.10 |


| Adit | Location |  | From | To | Interval <br> (m) | $\begin{aligned} & \hline \mathrm{Cu} \\ & \text { (\%) } \end{aligned}$ | $\begin{gathered} \mathrm{Ni} \\ (\%) \end{gathered}$ | $\begin{gathered} \text { Co } \\ (\mathrm{ppm}) \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Easting | Northing |  |  |  |  |  |  |
|  |  |  | 14 | 15 | 1 | 19.06 | 0.61 | 0.80 |
|  |  |  | 15 | 16 | 1 | 17.66 | 0.17 | 0.70 |
|  |  |  | 17 | 18 | 1 | 16.80 | 0.14 | 0.08 |
|  |  |  | 18 | 19 | 1 | 2.54 | - | - |
|  |  |  | 19 | 20 | 1 | 16.78 | 0.3 | 0.13 |
| BE3 | 510278 | 3852656 | 13 | 14 | 1 | 1.58 | 0 | - |
|  |  |  | 14 | 14.25 | 0.25 | 14.62 | 0.26 | - |
|  |  |  | 14.25 | 15 | 0.75 | 18.08 | 0.29 | 0.11 |
|  |  |  | 15 | 16 | 1 | 18.16 | 0.2 | 0.13 |
|  |  |  | 16 | 17 | 1 | 16.86 | 0.24 | - |
|  |  | (striking $310^{\circ}$ for 76 m ) | 17 | 18 | 1 | 16.34 | 0 | - |
|  |  |  | 18 | 19 | 1 | 3.24 | 0.28 | - |
|  |  |  | 26 | 27 | 1 | 0.38 | - | 0.10 |
|  |  |  | 27 | 27.5 | 0.5 | 8.34 | - | 0.99 |
|  |  |  | 27.5 | 28 | 1 | 0.40 | - | - |
|  |  |  | 34 | 35 | 1 | 15.70 | 0.15 | 0.07 |
| 「 $\Sigma 1 \mathrm{a}$ | 510048 | 3852775 <br> (striking $350^{\circ}$ for 102m) | 0 | 1 | 1 | 1.30 | - | 0.21 |
|  |  |  | 1 | 2 | 1 | 1.80 | - | - |
|  |  |  | 2 | 3 | 1 | 1.02 | - | 0.10 |
|  |  |  | 3 | 4 | 1 | 1.00 | 0.34 | 0.16 |
|  |  |  | 5 | 7 | 2 | 0.78 | - | 0.13 |
|  |  |  | 7 | 8 | 1 | 1.16 | 0.4 | 0.13 |
|  |  |  | 8 | 9 | 1 | 0.86 | 0.2 | 0.20 |
|  |  |  | 9 | 10 | 1 | 0.62 | 0.25 | 0.14 |
|  |  |  | 10 | 11 | 1 | 1.22 | - | 0.15 |
|  |  |  | 11 | 12 | 1 | 0.40 | - | 0.18 |
|  |  |  | 12 | 13 | 1 | 1.84 | 0.36 | 0.08 |
|  |  |  | 13 | 14 | 1 | 2.20 | - | 0.18 |
|  |  |  | 18 | 20 | 2 | 0.14 | - | 0.11 |
|  |  |  | 20 | 22 | 2 | 0.12 | - | 0.10 |
|  |  |  | 22 | 24 | 2 | 0.28 | - | 0.03 |
|  |  |  | 24 | 26 | 2 | - | - | 0.08 |
|  |  |  | 26 | 28 | 2 | 0.82 | - | 0.65 |
|  |  |  | 28.5 | 29.5 | 1 | 5.76 | - | 0.07 |
|  |  |  | 29.5 | 30.2 | 0.7 | 4.14 | - | 0.10 |
|  |  |  | 43 | 44 | 1 | 8.54 | 0 | 0.07 |
|  |  |  | 44 | 45 | 1 | 4.38 | 0.38 | 0.14 |
|  |  |  | 45 | 46 | 1 | 5.22 | 0.3 | 0.14 |
|  |  |  | 46 | 47 | 1 | 2.42 | 0.2 | 0.15 |
|  |  |  | 47 | 48 | 1 | 5.00 | 0.3 | 0.09 |


| Adit | Location |  | From | To | Interval <br> （m） | Cu <br> （\％） | Ni <br> （\％） | Co （ppm） |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Easting | Northing |  |  |  |  |  |  |
|  |  |  | 48 | 49 | 1 | 3.26 | 0.15 | 0.11 |
|  |  |  | 51 | 52 | 1 | 0.78 | 0 | 0.10 |
|  |  |  | 52 | 53 | 1 | 2.56 | 0.15 | 0.07 |
|  |  |  | 53 | 54 | 1 | 1.02 | 0.28 | 0.11 |
| 「23 | 509804 | 3852947 <br> （striking $240^{\circ}$ for 20m） | 5.6 | 7.2 | 1.6 | 0.40 | － | 0.21 |
|  |  |  | 7.2 | 9 | 1.8 | 0.52 | － | 0.18 |
|  |  |  | 9 | 11.8 | 2.8 | 2.58 | － | 0.18 |
|  |  |  | 11.8 | 13.7 | 1.9 | 2.16 | － | 0.21 |
| 「E3a | 509791 |  | 0 | 1 | 1 | 2.84 | － | 0.10 |
|  |  |  | 1 | 2 | 1 | 2.02 | － | 0.09 |
|  |  |  | 2 | 3 | 1 | 1.46 | － | － |
|  |  |  | 3 | 4 | 1 | 1.84 | － | － |
|  |  |  | 4 | 5 | 1 | 2.50 | － | 0.12 |
|  |  | $3852943$ <br> （striking $060^{\circ}$ for 13m） | 5 | 6 | 1 | 1.08 | － | － |
|  |  |  | 6 | 7 | 1 | 1.14 | － | 0.12 |
|  |  |  | 7 | 8 | 1 | 0.70 | － | － |
|  |  |  | 8 | 9 | 1 | 0.62 | － | － |
|  |  |  | 9 | 10 | 1 | 1.32 | － | 0.13 |
|  |  |  | 10 | 11 | 1 | 0.90 | － | － |
| 「54a | 509831 | 3852910 <br> （striking $313^{\circ}$ for 59m） | 4 | 5 | 1 | 4.70 | － | 0.15 |
|  |  |  | 5 | 6 | 1 | 3.68 | 0.2 | 0.09 |
|  |  |  | 6 | 7 | 1 | 1.46 | 0.48 | 0.18 |
|  |  |  | 7 | 8 | 1 | 1.15 | － | 0.08 |
|  |  |  | 8 | 9 | 1 | 1.30 | － | 0.12 |
|  |  |  | 9 | 10 | 1 | 0.87 | － | 0.10 |
|  |  |  | 10 | 11 | 1 | 0.78 | 0.28 | 0.16 |
|  |  |  | 11 | 12 | 1 | 1.00 | 0.28 | 0.03 |
|  |  |  | 12 | 13 | 1 | 1.38 | 0.2 | 0.14 |
|  |  |  | 13 | 14 | 1 | 1.36 | 0.2 | 0.11 |
|  |  |  | 14 | 15 | 1 | 1.06 | 0.16 | 0.07 |
|  |  |  | 15 | 16 | 1 | 1.36 | 0.08 | 0.05 |
|  |  |  | 16 | 18 | 2 | － | － | 0.13 |
|  |  |  | 19 | 20 | 1 | 1.52 | － | 0.11 |
|  |  |  | 20 | 21 | 1 | 1.00 | － | 0.07 |
|  |  |  | 24 | 25 | 1 | 0.44 | － | － |
|  |  |  | 28 | 29 | 1 | 0.48 | 0.2 | 0.11 |
|  |  |  | 29 | 30 | 1 | 0.40 | － | － |
|  |  |  | 30 | 31 | 1 | 0.42 | － | － |
|  |  |  | 31 | 32 | 1 | 0.76 | － | $\cdot$ |
|  |  |  | 32 | 33 | 1 | 6.66 | － | － |
|  |  |  | 33 | 34 | 1 | 5.04 | － | － |


| Adit | Location |  | From | To | Interval <br> (m) | Cu <br> (\%) | $\begin{gathered} \mathrm{Ni} \\ (\%) \end{gathered}$ | $\begin{gathered} \text { Co } \\ (\mathrm{ppm}) \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Easting | Northing |  |  |  |  |  |  |
|  |  |  | 34 | 35 | 1 | 4.90 | - | 0.10 |
|  |  |  | 35 | 36 | 1 | 1.46 | - | 0.08 |
|  |  |  | 36 | 37 | 1 | 3.14 | - | 0.10 |
|  |  |  | 37 | 38 | 1 | 0.82 | - | 0.09 |
|  |  |  | 38 | 39 | 1 | 1.12 | - | 0.10 |
|  |  |  | 39 | 40 | 1 | 2.32 | - | 0.12 |
|  |  |  | 40 | 41 | 1 | 3.28 | - | - |
|  |  |  | 41 | 42 | 1 | 1.76 | - | 0.11 |
|  |  |  | 42 | 43 | 1 | 0.96 | - | 0.07 |
|  |  |  | 46 | 47 | 1 | 1.12 | - | 0.10 |
|  |  |  | 47 | 48 | 1 | 0.68 | - | - |
|  |  |  | 48 | 49 | 1 | 0.80 | - | - |
|  |  |  | 49 | 50 | 1 | 0.60 | - | - |
|  |  |  | 50 | 51 | 1 | 0.42 | - | - |
|  |  |  | 51 | 52 | 1 | 0.62 | - | - |
|  |  |  | 52 | 53 | 1 | 0.60 | - | - |
|  |  |  | 53 | 54 | 1 | 0.61 | - | - |
|  |  |  | 54 | 55 | 1 | 0.64 | - | - |
|  |  |  | 55 | 56 | 1 | 0.62 | - | - |
|  |  |  | 56 | 57 | 1 | 0.76 | - | - |
|  |  |  | 57 | 58 | 1 | 0.64 | - | - |

Adit entrances have been located for all adits except $\Gamma \Sigma 5$, but only $\Gamma \Sigma 3$ is currently accessible. Historic adit sections generally show steeply northeast-dipping mineralisation up to 5 m wide, that is continuous along the drives. It is reported as massive, stringer and disseminated pyrrhotite mineralisation. Numerous outcrop locations along the track between Pevkos and Laxia tou Mavrou also exhibit strong gossan development with malachite staining (Figure 3-4A) and sheared gossan with malachite staining (Figure $3-4 \mathrm{~B}$ ). The location of the outcrops align with the overall strike geometry of the mineralisation observed in the adits, with the overall gossan zone up to 25 m wide as exposed in outcrop (Figure 3-4A).

In adit 「 $\Sigma 3$, a 4.7 m wide (true width) tabular body of massive pyrrhotite-chalcopyrite is hosted within strongly foliated serpentinite (Figure 3-4 C \& D). The massive sulphide body dips $\sim 50^{\circ} / 050^{\circ}$, subparallel to the foliation, but does not appear to be dismembered within the foliation. In the hangingwall, there are stringers and disseminations of pyrrhotite-chalcopyrite that have been boudinaged. Gossan in a hangingwall position $\sim 600 \mathrm{~m}$ to the SE along strike of adit $\Gamma \Sigma 3$ (Figure $3-4 \mathrm{D}$ ) returned $17 \mathrm{~g} / \mathrm{t} \mathrm{Au}$. The basal contact of the massive sulphide body is sharp, with no sulphide disseminations or veins in the footwall. The footwall unit is comprised of massive serpentinite cut by a network of talc-asbestos-chlorite veinlets, suggesting that the massive sulphides may to be structurally above a significant fault or thrust.


Figure 3-4: Evidence for mineralisation observed during SRK's site inspection at Laxia tou Mavrou
A. Looking SE, Cu-stained (malachite) and sheared gossan outcrop $\sim 450 \mathrm{~m}$ from main Laxia tou Mavrou adit $\Gamma \Sigma 3$ ( $510198 \mathrm{mE}, 3852688 \mathrm{mN}$ ). The overall true width of this zone is $\sim 25 \mathrm{~m}$. B. Sheared gossan with malachite -320 m from main Laxia tou Mavrou adit 「 $\Sigma 3$ ( $510077 \mathrm{mE}, 3852760 \mathrm{mN}$ ). C. Massive sulphide in adit 「 $\Sigma 3$ ( $509822 \mathrm{mE}, 3852954 \mathrm{mN}$ ). D. Massive pyrrhotite $\pm$ chalcopyrite from adit $\Gamma \Sigma 3$. E. Gossan which returned $17 \mathrm{~g} / \mathrm{t}$ Au from TDL sampling ( 510326 mE , 3852728 mN ).

In November-December 2011, Northern Lion accessed the Laxia tou Mavrou Licence with the aim of evaluating any joint venture opportunities with TDL. Twenty-one (21) rock chip samples were collected along a strike length of 660 m , and covered part of the exposed mineralised area (Table $3-4$; Figure 3-5). Fourteen (14) of the samples returned $>1.0 \mathrm{~g} / \mathrm{t} \mathrm{Au}$ with a maximum of $13.45 \mathrm{~g} / \mathrm{t} \mathrm{Au}$. This sample and numerous others were collected from the eastern side of a north-trending fault, where TDL collected a sample with $17 \mathrm{~g} / \mathrm{A} \mathrm{Au}$ and $0.5 \% \mathrm{Cu}$. Four (4) samples returned greater than $1 \% \mathrm{Cu}$ with the best result at $3.55 \% \mathrm{Cu}, 6.99 \mathrm{~g} / \mathrm{t} \mathrm{Au}, 0.18 \% \mathrm{Co}$ and $0.15 \% \mathrm{Ni}$.

In the western area, the samples confirmed TDL's previous results with the best massive pyrrhotite sample returning $4.1 \mathrm{~g} / \mathrm{t} \mathrm{Au}, 1.24 \% \mathrm{Cu}, 0.14 \% \mathrm{Co}$ and $0.16 \% \mathrm{Ni}$. The results suggest the presence of Cu and Au mineralisation beyond the massive sulphide mineralisation. Assays were completed by ALS in Canada via Romania, and original ALS documentation has been obtained by TDL. TDL has verified Northern Lions sample locations, as marked by flagging tape by Northern Lion geologists at each site.
Table 3-4: Results from Northern Lion sampling at Laxia tou Mavrou

| Sample Number | Easting | Northing | $\begin{gathered} \mathrm{Au} \\ (\mathrm{~g} / \mathrm{t}) \end{gathered}$ | $\begin{gathered} \mathrm{Cu} \\ (\%) \end{gathered}$ | $\begin{gathered} \mathrm{Co} \\ (\mathrm{ppm}) \end{gathered}$ | $\underset{(\mathrm{ppm})}{\mathrm{Ni}}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Eastern Area |  |  |  |  |  |  |
| 21968 | 510400 | 3852700 | 1.84 | 0.518 | 839 | 1,730 |
| 21221 | 510330 | 3852728 | 4.59 | 0.318 | 108 | 91 |
| 21222 | 510333 | 3852731 | 0.153 | 0.955 | 332 | 1,150 |
| 21223 | 510326 | 3852746 | 2.33 | 0.122 | 6 | 5 |
| 21224 | 510316 | 3852755 | 6.19 | 0.342 | 79 | 91 |
| 21225 | 510323 | 3852747 | 13.45 | 0.504 | 108 | 99 |
| 21226 | 510319 | 3852759 | 1.12 | 0.873 | 224 | 453 |
| 21227 | 510304 | 3852744 | 5.09 | 0.610 | 132 | 356 |
| 21228 | 510324 | 3852735 | 0.202 | 0.394 | 164 | 225 |
| Central Area |  |  |  |  |  |  |
| 21969 | 510273 | 3852652 | 6.99 | 3.55 | 1,755 | 1,515 |
| 21229 | 510204 | 3852692 | 0.164 | 1.85 | 896 | 1,680 |
| 21230 | 510066 | 3852748 | 0.387 | 0.249 | 158 | 664 |
| 21231 | 510058 | 3852748 | 0.674 | 0.366 | 107 | 595 |
| 21232 | 510120 | 3852722 | 0.024 | 0.374 | 321 | 1,610 |
| Western area |  |  |  |  |  |  |
| 21233 | 509883 | 3852922 | 2.25 | 0.684 | 779 | 1,865 |
| 21234 | 509881 | 3852920 | 3.64 | 0.989 | 1,275 | 1,730 |
| 21235 | 509836 | 3852942 | 5.20 | 0.132 | 26 | 127 |
| 21236 | 509827 | 3852943 | 4.10 | 1.24 | 1,420 | 1,590 |
| 21237 | 509803 | 3852974 | 0.607 | 0.547 | 56 | 444 |
| 21238 | 509795 | 3852977 | 2.12 | 0.642 | 95 | 728 |
| 21951 | 509942 | 3852920 | 4.21 | 0.260 | 83 | 358 |

Source: Provided by Northern Lion to BMG


Figure 3-5: Location of Northern Lion rock chip samples

## Geophysics

Noranda Exploration reports that they completed a number of geophysical surveys prior to drilling in 1977. Unfortunately, there are no maps or sections showing the results, despite there being reference to such figures in their report. Geophysical methods used by Noranda, include:

- Pulse EM - Noranda interpreted that this technique potentially delineated a steeply north-dipping conductor of limited strike length, but in general no significant anomalies;
- Computational EM - Noranda experienced configuration problems, probably due to presence of shears and slip planes; some conductors identified;
- Magnetics - Noranda report that the pyrrhotite is non-magnetic, but this is not consistent with the samples collected in adit $\Gamma \Sigma 3$. The report suggests that magnetics did map the gross geological structure; and
- Induced Polarisation - dipole-dipole survey picks up entire shear zones without delineating the mineralisation within. No results presented.

As for Pevkos, TDL recently (2010) completed a fixed-loop EM, and a ground magnetics survey, at Laxia tou Mavrou. However, the extremely steep terrain meant that positioning the loop and receivers was in places uncontrolled or impossible. Two loop configurations were tried for the EM; an initial large loop was positioned to encompass most of the known mineralisation, whereas a second smaller loop covered the northern adits only. The large loop provided some partial anomalies, but the steep topography prevented completion of some lines, and so these anomalies were not defined properly. The smaller loop defined a robust conductor in the line crossing adit $\lceil\Sigma 3$. This conductor corresponds well with the known mineralisation.

The ground magnetic survey showed that the mineralised corridor has an overall low magnetic response relative to the host serpentinite (Figure 3-6). This supports the concept that the
mineralisation is associated with emplacement by hydrothermal fluid, and that the fluids destroyed the magnetite in the serpentinite. The magnetic survey also shows some as yet unexplained contrasting magnetic features which may be different geological units and faults.


Figure 3-6: Results of the Laxia tou Mavrou ground magnetics survey

## Exploration History - Pevkos Area

## Sampling

Pevkos is located within serpentinite units immediately north of a large gabbroic body, and contains two main pyrrhotite-dominated sulphide lodes (the eastern and western lodes), both of which reportedly dip moderately southwest. A significant part of the prospect is covered by the mill and waste related to the nearby gabbro aggregate quarry (Figure 3-7A). There are numerous outcrops of gossan and malachite-stained serpentinite throughout the prospect and along the contact with the gabbro (Figure 3-7B\&C).

SRK visited the Pevkos area, and traversed from Pevkos to Laxia tou Mavrou to validate the location of adits, and reports of gossan outcrop. Numerous gossans were observed, some with malachite staining (Figure 3-7B\&C). In 1991, Brady (Brady, 1991) sampled gossan at the entrance of flooded adit T2 (Figure 3-7D), which returned $2.33 \% \mathrm{Ni}, 0.34 \% \mathrm{Cu}, 0.18 \% \mathrm{Co}, 4.65 \mathrm{~g} / \mathrm{t} \mathrm{Au}$.

## Drilling and Adits

Historic maps and cross-sections show the location and some assay results for twenty two (22) drillholes drilled by Hellenic Mining Company in 1951 (see Panayiotou, 1975.). Seven (7) holes were drilled in the eastern area, and fifteen (15) drilled in the western area (Figure 3-8). No drill collars have been located to date, and SRK is informed that no drill core has been preserved. Detail in some of the geological logs indicate that most of the drilling was diamond drilling, although the logs fail to present any structural information. It is also unclear whether the assays reported were derived
from sampling of the core directly, or from drilling chips. Massive sulphide zones are shown in drill log records as very narrow ( $<1 \mathrm{~m}$ ) intersections, though there is no information regarding core recoveries. Intersections of mineralisation as recorded in historic holes are presented in Table 3-5. These results are yet to be validated by BMG.

Up to 640 m of adits are recorded at Pevkos ( 330 m western lode; 310 m eastern lode; Figure 3-8, Panayiotou, 1975). The adit entrance at the eastern lode has been located by TDL, and although it is flooded, there is a large gossan outcrop at the entrance. Geological records from the eastern adits show that the mineralisation is comprised of massive pyrrhotite equivalent to the width of the adit (up to 3 m ), plus numerous thin sulphide veins containing pyrite, chalcopyrite, galena and sphalerite.
This is in contrast to the thin intervals of sulphide mineralisation recorded in the drilling. The adit records note continuous massive pyrrhotite mineralisation for 160 m along strike in adits T3 \& T4 (Figure 3-8). Little data is available for the western lode, where geological records indicate a maximum lode strike length of 25 m , though there may be multiple lodes. The mineralisation is shown to comprise a few thin pyrrhotite veins, which in total may be half the width of the adit (unpublished adits maps; Cyprus Geological Survey archive). Results from historic adit sampling are presented in Table 3-6.

SRK is informed that the material removed from the adits was apparently processed at the Kalavassos copper mine ( $\sim 20 \mathrm{~km}$ northeast), but was incompatible with the existing processing plant. SRK is further informed that there was no historic testing for Au ; however, recent resampling by TDL has consistently returned between 2 and $5 \mathrm{~g} / \mathrm{t} \mathrm{Au}$ (Table 3-6).


Figure 3-7: Evidence for mineralisation observed during SRK's site inspection at Pevkos
A. View of the gabbro quarry from Pevkos ( $514240 \mathrm{mE}, 3849716 \mathrm{mN}$ ). B. Cu-stained (malachite) gossan at Pevkos ( $513787 \mathrm{mE}, 3850020 \mathrm{mN}$ ). C. Gossan with malachite staining between Pevkos and Laxia tou Mavrou ( 510277 mE , 3852642 mN ). D. T2 Adit entrance at Pevkos ( $2.33 \% \mathrm{Ni}, 0.34 \% \mathrm{Cu}, 0.18 \% \mathrm{Co}, 4.65 \mathrm{~g} / \mathrm{t} \mathrm{Au} ; 514003 \mathrm{mE}, 3850076 \mathrm{mN}$ )


Figure 3-8: Location of the Pevkos lodes

Table 3-5: Mineralisation intersections recorded in historic drilling at Pevkos

| Drillhole | Location (WGS84) |  | From | To | Interval <br> (m) | Cu <br> (\%) | $\begin{gathered} \mathrm{Ni} \\ (\%) \end{gathered}$ | Co <br> (\%) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Easting | Northing |  |  |  |  |  |  |
| P2 | 513981 | 3849959 | 83.5 | 84.4 | 0.9 | - | - | 0.07 |
|  |  |  | 84.4 | 84.5 | 0.1 | - | 0.43 | 0.07 |
|  |  |  | 84.5 | 84.7 | 0.2 | 1.25 | 3.05 | 0.27 |
|  |  |  | 84.9 | 85 | 0.1 | - | - | 0.09 |
|  |  |  | 85 | 85.4 | 0.4 | - | 0.26 | 0.16 |
|  |  |  | 86 | 87 | 1 | - | - | 0.15 |
|  |  |  | 87 | 88 | 1 | - | - | 0.12 |
|  |  |  | 88 | 88.4 | 0.4 | - | 1.21 | 0.18 |
|  |  |  | 88.4 | 88.8 | 0.4 | - | - | 0.14 |
|  |  |  | 88.8 | 89 | 0.2 | - | 1.75 | 0.1 |
|  |  |  | 89 | 89.2 | 0.2 | $\checkmark$ | 8.1 | 0.38 |
|  |  |  | 89.2 | 89.3 | 0.1 | $\cdot$ | 1.19 | 0.09 |
|  |  |  | 89.3 | 89.5 | 0.2 | - | 0.24 | 0.2 |
| P4 | 513691 | 3850011 | 60 | 61 | 1 | - | - | 0.12 |
|  |  |  | 61 | 62 | 1 | - | - | 0.13 |
|  |  |  | 62 | 63 | 1 | - | - | 0.14 |
|  |  |  | 63 | 64 | 1 | - | 0.25 | 0.17 |
|  |  |  | 64 | 65 | 1 | - | 0.62 | 0.14 |
|  |  |  | 65 | 65.5 | 0.5 | 0.86 | 0.39 | 0.17 |
|  |  |  | 65.5 | 65.8 | 0.3 | 6.02 | 0.69 | 0.2 |
|  |  |  | 65.8 | 66 | 0.2 | 5.28 | 1.05 | 0.2 |
|  |  |  | 66 | 66.1 | 0.1 | - | - | 0.16 |
|  |  |  | 66.1 | 66.2 | 0.1 | - | - | 0.17 |
|  |  |  | 66.2 | 66.5 | 0.3 | 0.42 | 0.46 | 0.29 |
|  |  |  | 66.5 | 67 | 0.5 | - | - | 0.14 |
|  |  |  | 67 | 67.5 | 0.5 | - | - | 0.34 |
|  |  |  | 67.5 | 68 | 0.5 | - | - | 0.17 |
|  |  |  | 68 | 68.5 | 0.5 | - | - | 0.18 |
|  |  |  | 68.5 | 69 | 0.5 | 0.42 | - | 0.15 |
| P9 | 513693 | 3849939 | 98 | 98.25 | 0.25 | 0.74 | 0 | 0 |
|  |  |  | 98.25 | 98.5 | 0.25 | 8.75 | 0.88 | 0.08 |
|  |  |  | 98.5 | 98.75 | 0.25 | - | 0.25 | 0 |
|  |  |  | 99 | 99.3 | 0.3 | 2.60 | - | 0 |
| P12 | 513957 | 3850011 | 95 | 95.4 | 0.4 | 0.38 | 1.39 | 0 |
|  |  |  | 95.4 | 96 | 0.6 | - | 0.26 | 0 |
| P12 | 513957 | 3850011 | 96 | 96.1 | 0.1 | 6.36 | 0.28 | 0 |
|  |  |  | 95 | 95.4 | 0.4 | 0.38 | 1.39 | 0 |
|  |  |  | 95.4 | 96 | 0.6 | - | 0.26 | 0 |

Table 3-6: Results from historic and TDL adit sampling at Pevkos

| Adit | Adit Entrance Location |  | From | To | Interval <br> (m) | Cu <br> (\%) | Ni <br> (\%) | $\begin{gathered} \text { Co } \\ (\mathrm{ppm}) \end{gathered}$ | Comment |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Easting | Northing |  |  |  |  |  |  |  |
| T1 | 513979 | 3850072 | 0 | 1 | 1 | 0.27 | 0.37 | - |  |
|  |  |  | 1 | 2 | 1 | 0.17 | 0.3 | - |  |
|  |  |  | 2 | 3 | 1 | 0.38 | 0.32 | - |  |
|  |  |  | 3 | 4 | 1 | 0.71 | 0.86 | 1.16 |  |
|  |  |  | 4 | 4.5 | 0.5 | 0.26 | 0.81 | - |  |
|  |  |  | 4.5 | 5.5 | 1 | 0.69 | 0.28 | - |  |
|  |  | (striking$\left.211^{\circ}\right)$ | 5.5 | 6.5 | 1 | 0.22 | 0.23 | - |  |
|  |  |  | 6.5 | 7 | 0.5 | 0.19 | 0.32 | - |  |
|  |  |  | 7 | 8 | 1 | 0.20 | 0.26 | - |  |
|  |  |  | 8 | 9 | 1 | 0.20 | 0.31 | - |  |
|  |  |  | 9 | 10 | 1 | 0.17 | 0.22 | - |  |
|  |  |  | 10 | 12 | 2 | 0.42 | 0.23 | - |  |
| T3 | 513979 | 3850072 <br> (striking <br> $143^{\circ}$ for <br> 13.5 m ) | 0 | 1 | 1 | 0.74 | 0.86 | 0.64 | A |
|  |  |  | 2 | 2.5 | 0.5 | 0.52 | 0.19 | 0.30 | A |
|  |  |  | 2.5 | 3 | 0.5 | 0.54 | 0.43 | 0.33 | A |
|  |  |  | 8.5 | 9 | 0.5 | 0.78 | 0.28 | 0.12 | A |
|  |  |  | 12.5 | 13 | 0.5 | 0.62 | 0.28 | 0.16 | A |
|  |  |  | 13 | 13.5 | 0.5 | 0.60 | 0.27 | 0.14 | A |
|  | 513987 | 3850062 | 13.5 | 14 | 0.5 | 1.22 | 0.4 | 0.12 | A |
|  |  |  | 14.5 | 15 | 0.5 | 1.10 | 0.6 | 0.08 | A |
|  |  |  | 33 | 34 | 1 | 2.04 | 0.21 | 0.20 | A |
|  |  |  | 34 | 35 | 1 | 0.20 | 0.43 | 0.32 | B |
|  |  |  | 34 | 35 | 1 | 2.28 | 0.67 | 0.27 | A |
|  |  |  | 35 | 36 | 1 | 1.20 | 0.61 | 0.32 | B |
|  |  | (striking <br> $109^{\circ}$ for <br> $25.3 \mathrm{~m})$ | 35 | 36 | 1 | 0.32 | 0.54 | 0.28 | A |
|  |  |  | 36 | 37 | 1 | 1.26 | 0.81 | 0.12 | B |
|  |  |  | 36 | 37 | 1 | 1.02 | 0.42 | 0.27 | A |
|  |  |  | 37 | 38 | 1 | 1.54 | 0.9 | 0.13 | B |
|  |  |  | 37 | 38 | 1 | - | 0.34 | 0.10 | A |
|  |  |  | 38 | 39 | 1 | 1.04 | 0.73 | - | B |
|  |  |  | 38 | 39 | 1 | - | 0.33 | 0.12 | A |
|  | 514011 | 3850053 | 39 | 40 | 1 | 0.73 | 1.12 | 0.14 | B |
|  |  |  | 39 | 40 | 1 | - | 0.25 | - | A |
|  |  |  | 41 | 42 | 1 | 0.46 | 0.73 | 0.16 | B |
|  |  | (striking $122^{\circ}$ for 32m) | 41 | 42 | 1 | - | 0.19 | 0.08 | A |
|  |  |  | 42 | 43 | 1 | 1.69 | 0.57 | 0.08 | B |
|  |  |  | 42 | 43 | 1 | 0.80 | 0.29 | 0.12 | A |
|  |  |  | 43 | 44 | 1 | 1.00 | 1 | 0.12 | B |
|  |  |  | 43 | 44 | 1 | - | 0.24 | 0.20 | A |


| Adit | Adit Entrance Location |  | From | To | Interval <br> (m) | Cu <br> (\%) | Ni <br> (\%) | $\begin{gathered} \text { Co } \\ (\mathrm{ppm}) \end{gathered}$ | Comment |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Easting | Northing |  |  |  |  |  |  |  |
|  |  |  | 44 | 45 | 1 | 1.60 | 0.31 | 0.29 | B |
|  |  |  | 44 | 45 | 1 | 0.28 | 0.3 | 0.19 | A |
|  |  |  | 45 | 46 | 1 | 3.08 | 0.6 | 0.29 | B |
|  |  |  | 45 | 46 | 1 | 0.30 | 0.75 | 0.22 | A |
|  |  |  | 46 | 47 | 1 | 3.00 | 0.29 | 0.35 | B |
|  |  |  | 46 | 47 | 1 | 0.28 | 0.34 | 0.25 | A |
|  |  |  | 47 | 48 | 1 | 0.34 | 0.34 | 0.02 | B |
|  |  |  | 47 | 48 | 1 | 0.40 | 0.3 | 0.01 | A |
|  |  |  | 48 | 49 | 1 | 1.04 | 0.85 | 0.30 | B |
|  |  |  | 48 | 49 | 1 | 0.34 | 0.76 | 0.58 | A |
|  |  |  | 49 | 50 | 1 | 1.46 | 1.5 | 1.00 | B |
|  |  |  | 49 | 50 | 1 | 0.16 | 0.48 | 0.60 | A |
|  |  |  | 50 | 51 | 1 | 0.36 | 0.68 | 0.42 | B |
|  |  |  | 50 | 51 | 1 | 0.68 | 0.25 | 0.16 | A |
|  |  |  | 51 | 52 | 1 | 1.04 | 1.46 | 0.23 | B |
|  |  |  | 51 | 52 | 1 | 0.20 | 0.28 | 0.17 | A |
|  |  |  | 52 | 53 | 1 | 2.28 | 0.69 | 0.20 | B |
|  |  |  | 52 | 53 | 1 | - | 0.3 | 0.16 | A |
|  |  |  | 53 | 54 | 1 | 1.60 | 0.54 | 0.19 | B |
|  |  |  | 53 | 54 | 1 | - | 0.28 | 0.19 | A |
|  |  |  | 54 | 55 | 1 | 1.30 | 1.03 | 0.23 | B |
|  |  |  | 54 | 55 | 1 | 0.52 | 0.37 | 0.22 | A |
|  |  |  | 55 | 56 | 1 | 1.28 | 0.81 | 0.21 | B |
|  |  |  | 55 | 56 | 1 | 0.30 | 0.32 | 0.29 | A |
|  |  |  | 56 | 57 | 1 | 1.10 | 0.49 | 0.34 | B |
|  |  |  | 56 | 57 | 1 | 0.28 | 0.16 | 0.22 | A |
|  |  |  | 57 | 58 | 1 | 1.08 | 0.66 | 0.22 | B |
|  |  |  | 57 | 58 | 1 | 0.18 | 0.32 | 0.16 | A |
|  |  |  | 58 | 59 | 1 | 1.04 | 0.46 | 0.20 | B |
|  |  |  | 58 | 59 | 1 | 0.52 | 0.26 | 0.12 | A |
|  |  |  | 59 | 60 | 1 | 3.28 |  | 0.28 | B |
|  |  |  | 59 | 60 | 1 | 1.58 | 0.32 | 0.26 | A |
|  |  |  | 60 | 61 | 1 | 3.08 | 0.45 | 0.24 | B |
|  |  |  | 60 | 61 | 1 | 1.14 | - | - | A |
|  |  |  | 61 | 62 | 1 | 0.38 | - | $\checkmark$ | B |
|  |  |  | 62 | 63 | 1 | 1.26 | 0.44 | 0.18 | A |
|  |  |  | 62 | 63 | 1 | 0.64 | 0.18 | - | B |
| T4 | 513979 | 3850072 <br> (striking $287^{\circ}$ for | 1.5 | 3 | 1.5 | 0.62 | 1.02 | 0.45 | A |
|  |  |  | 3 | 5 | 2 | 0.44 | 0.89 | 0.32 | A |
|  |  |  | 5 | 7 | 2 | 0.74 | 1.56 | 0.32 | A |


| Adit | Adit Entrance Location |  | From | To | Interval <br> (m) | Cu <br> (\%) | Ni <br> (\%) | $\begin{gathered} \text { Co } \\ (\mathrm{ppm}) \end{gathered}$ | Comment |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Easting | Northing |  |  |  |  |  |  |  |
|  |  | 22m) | 16 | 17 | 1 | 0.30 | 0.5 | 0.14 | B |
|  |  |  | 16 | 17 | 1 | - | 1.7 | 0.24 | A |
|  |  |  | 17 | 18 | 1 | - | 0.29 | 0.33 | B |
|  |  |  | 17 | 18 | 1 | 1.24 | 1.4 | 0.16 | A |
|  |  |  | 18 | 19 | 1 | - | 0.36 | 0.10 | A |
|  |  |  | 20 | 21 | 1 | 0.10 | 0.64 | 0.24 | A |
|  |  |  | 21 | 22 | 1 | - | 0.4 | 0.16 | A |
| TW3C | 513741 | 3850007 <br> (striking $360^{\circ}$ for 7.6 m ) | 2.5 | 3 | 0.5 | 0.62 | 0.78 | 0.17 | A |
|  |  |  |  |  |  |  |  |  |  |
|  | 513741 | $3850014$ <br> (striking $360^{\circ}$ for 7.6 m ) | 7 | 9 | 2 | 0.62 | 3.17 | 0.13 | A |
|  |  |  | 9 | 10 | 1 | 2.60 | 0.65 | 0.07 | A |
|  |  |  | 11 | 13 | 2 | 0.98 | 3.71 | 0.95 | A |
|  |  |  | 13 | 15 | 2 | 0.25 | 3.23 | 0.32 | A |
|  |  |  | 15 | 17 | 2 | 0.64 | 4.68 | 0.34 |  |
|  |  |  | 17 | 18 | 1 | 1.62 | 7.5 | 0.62 | A |
|  |  |  | 18 | 19 | 1 | 3.46 | 3 | 3.39 | A |
|  |  |  | 20 | 21 | 1 | 1.10 | 1.23 | 0.19 | A |
|  |  |  | 22 | 23 | 1 | 1.26 | 11.56 | 0.64 | A |
|  |  |  | 24 | 25 | 1 | 1.08 | 1.32 | 0.10 | A |

A: Sulphide and wall rock sampled; B. Sulphide only sampled
Only one float sample of Pevkos sulphide mineralisation has been assayed by TDL (CYP08074; Table 3-7), and this was probably washed from the western lode waste pile. In 1991, a previous explorer (Brady, 1991) collected four (4) samples, and used a perchloric digestion assay technique for analysis. This technique does not completely dissolve most rocks; as such, Brady compared Ni and Co for two samples using a 4 -acid digestion and determined that the perchloric digestion may under-estimate these elements by 30-40 \%.
Table 3-7: Results of massive sulphide material sampled at Pevkos

| Sample | Location |  | $\begin{gathered} \mathrm{Ni} \\ (\%) \end{gathered}$ | Cu <br> (\%) | Co(\%) | $\begin{gathered} \mathrm{Au} \\ (\mathrm{~g} / \mathrm{t}) \end{gathered}$ | As (ppm) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Easting | Northing |  |  |  |  |  |
| CYP08074 | 513863 | 3849951 | 3.67 | 3.09 | 0.28 | 8.02 | >10,000 |
| P101R | West Workings massive sulphide dump |  | 2.67 | 2.67 | 0.30 | 5.9 |  |
| P103R | West Workings massive sulphide dump |  | 1.89 | 3.90 | 0.160 | 4.75 | 14,600 |
| P109R | East Workings massive sulphide dump |  | 0.58 | 0.59 | 0.16 | 4.15 | 5,858 |
| P111R | East Workings massive sulphide dump |  | 2.33 | 0.34 | 0.18 | 4.65 | 32,700 |

## Geophysics

A ground magnetics survey was completed by TDL in 2010 over the Pevkos area (Figure 3-9). There were numerous technical issues with the survey mainly due to the steep terrain and the magnetometer moving out of horizontal alignment. Nevertheless, these data still provide some useful information, with the areas around known mineralisation appearing to be magnetically low despite the presence of pyrrhotite lodes. This may be due to the mineralising fluid destroying magnetite in the serpentinite, to form a non-magnetic alteration halo. The magnetic survey also differentiates the gabbro relative to the serpentinite, and so may be a very useful regional geological mapping tool.

A fixed-loop Electromagnetic (EM) survey was also completed by previous owners of the Project, in 2010. For EM to locate conductors, the position of the loop relative to the conductor is critical. A 250 m loop was used so that both the eastern and western sulphide lodes could be tested with a single loop. Three lines were sampled within the loop and one line sampled outside.

The EM survey detected a strong conductor along two adjacent lines with this conductor correlating with the approximate position of the eastern mineralisation. Forward modelling of these data indicate a southwest-dipping plane, which is consistent with the cross-section interpretation from the historic adit and drilling data. Further extensions of the eastern lode were not identified, and so the lode may be faulted, or just failed to couple with the line run outside the loop. There was no response from the western lode, possibly because its geometry was not favourable for the loop configuration, or because the lode is discontinuous. Importantly, this survey has demonstrated that these bodies are detectable utilising EM, which may be an appropriate tool for future targeting.


Figure 3-9: Results of the Pevkos ground magnetics survey

### 3.2.2 Kalavassos Prospect

The Kalavassos Prospect comprises one Reconnaissance Licence Application (AE4467) covering $21.7 \mathrm{~km}^{2}$ over the historic Kalavassos mine precinct (Table 3-1; Figure 3-10). The Project area is between the villages of Asgata and Vasa, approximately 6 km northwest of the Limassol to Larnaca Highway, and 9 km north of the port of Vasiliko, where historically the Kalavassos ore was treated and shipped (Pantazis, 1967).

The southern edge of the Kalavassos Reservoir is within the Licence Application (Figure 3-10). A small area of Forestry land is within the project area, but none of this falls under the Nature 2000 Directives. Parts of the old Kalavassos mine infrastructure are currently being used by the army, and so are not accessible.


Figure 3-10: Location of the Kalavassos Prospect

## Geology

The Kalavassos prospect covers the easternmost part of the volcanic units of the Southern Troodos Domain. The published geology map shows that the volcanic units here comprise olivine-phyric pillow lava and massive flows which are overlain by sediments of the Lefkara Formation (Figure 3-11). Differentiation between UPL and LPL is not clarified at this stage. Massive sulphide deposits (e.g., Petra) have been developed beneath these shallowly dipping sediments. The Kalavassos area also has significant structural complexity with faults mapped in various geometries. The greater prospect area includes gabbro, sheeted dykes and minor ultramafic units which are considered prospective for disseminated sulphide systems.


Figure 3-11: Geology of the Kalavassos Project area

## Exploration History

The Kalavassos prospect area includes a number of abandoned mines, associated waste dumps and exposed gossans. Widespread ancient mine workings and slag dumps remain from when the Romans worked various ore-bodies. From 1939-74, a total of 7 million tonnes at 0.5 to $3 \% \mathrm{Cu}$ is reported to have been removed from the various mines at Kalavassos (Mines Services Division, 2011). There are no reports of Au assays or detailed production for the area. Production at Kalavassos ceased when Cyprus was partitioned in 1974.

The only published data currently available to is Pantazis (1967), where the details of various mines are presented. Unfortunately, the accompanying map is not available and so the location of the named prospects is currently unknown. The locations from the 2007 Mineral Resources Map of Cyprus fail to distinguish between the deposits, although mines, gossans and waste dumps can be delineated on the satellite imagery (Figure 3-10).

According to Pantazis (1967), all ore mined in the Kalavassos region was from massive pyritedominated bodies. Most of the mines were located in the UPL, generally close to its contacts with the LPL or gabbro.

### 3.3 Kambia Project

### 3.3.1 Kambia - Mathiatas - Sha Prospects

The Kambia-Mathiatas-Sha Prospect area comprises eleven (11) Permits / Licences in the north eastern part of the Troodos Ophiolite (Table 3-8; Figure 3-12). At the time of reporting, the Project comprised five (5) granted Permits, two (2) approved Permits, with four (4) residual Permits / Licences under application. Three (3) additional permits are also under consideration by TDL in the area, but have not been detailed in this report.


Figure 3-12: Location of the Kambia-Mathiatas-Sha Prospects
The total Project area is approximately $22 \times 6 \mathrm{~km}$ and includes the Kappedhes Mine, the western end of the Mathiatas Mine, possible extensions of the Peristerka-Pytharochoma, Kambia (Kokkinonero), South Mathiatas (Psathas) and Sha Mines, and numerous recorded prospects (Mines Services Division, 2011).

The Permits / Licences are within 25 km of the Mitsero Processing Plant, which started operating in 1956 (Bear, 1960), and is where massive Cu sulphide ore from the mines in the area was reportedly processed. The status of this plant is unknown, but EMED Mining discussed using it to process material from its Klirou Project (EMED, 2006 Annual Report). The plant is owned by the Hellenic Mining Company.

Small parts of the Project area are forestry land and a small part of EA4449 is within a Nature 2000 Birds Directive area. SRK is informed that this is not an impediment to access, completing the required exploration programme or mining. Access is excellent with numerous towns and villages in the area.

Table 3-8: Permits and Licences for the Kambia Project

| Licence | Licence Name | Area <br> $\mathbf{k m}^{2}$ | Status | Rent, A\$ | Expenditure, <br> A\$ |
| :--- | :---: | :---: | :---: | :---: | :---: |
| AE4463 | Stavrovouni | 7.50 | Approved | 6,300 | 12,600 |
| AE4466 | Alambra | 24.20 | Application |  |  |
| AE4480 | Pano Lefkara | 5.70 | Approved | 4,725 | 12,600 |
| AE4492 | Arakapas | 19.20 | Application |  |  |
| EA4315 | Kappedhes_N | 1.86 | Granted | 1,575 | 63,000 |
| EA4447 | North Mathiatas | 4.94 | Granted | 3,937 | 63,000 |
| EA4448 | Kappedhes_S | 1.98 | Granted | 1,575 | 63,000 |
| EA4449 | Kappedhes East | 2.18 | Application |  |  |
| EA4450 | Kappedhes | 4.66 | Application |  |  |
| EA4452 | Kappedhes_EE | 4.64 | Granted | 3,937 | 63,000 |
| EA4453 | Katalionadas | 4.11 | Granted | 3,937 | $\mathbf{6 3 , 0 0 0}$ |
|  | Subtotal | $\mathbf{8 0 . 9 7}$ |  | $\mathbf{2 5 , 9 8 6}$ | $\mathbf{3 4 0 , 2 0 0}$ |

## Geology

The Kambia-Mathiatas-Sha Prospects covers the volcanic units along the northeastern flank of the Troodos Ophiolite Complex (Figure 3-13). According to Bear (1960), most of the Licences cover units of the LPL, with some tenure over the UPL and Basal Group gabbro. However, the geology in the $1: 250,000$-scale compilation re-interprets large areas previously mapped as LPL as UPL. It aiso shows the gross stratigraphic geometry to be more complex with a domain of UPL forming a southtrending belt through the middle of the Project area.


Figure 3-13: Geology of the Kambia-Mathiatas-Sha Prospect area

## Exploration History

There is little documentation on exploration works in the area; however, there has been extensive mining in the area, with two (2) abandoned mines within the Permit / Licences, and four (4) abandoned mines within 500 m of the Permits / Licences. Official production figures from the Mines Services Division, Ministry of Agriculture, Natural Resources \& Environment, are shown in Table 3-9.

Table 3-9: Production figures for historic mines in Kambia-Mathiatis-Sha area

| Area | Ore produced <br> (tonnes) | Cu Grade <br> (\%) |
| :--- | :---: | :---: |
| Mathiatas | $2,100,000$ | 0.2 |
| Sha | 334,179 | $0.5-1.2$ |
| Kappedhes | 54,666 | not quoted |
| Kambia (Kokkinonero) | 658,354 | not quoted |
| Peristerka-Pytharochoma | 557,540 | 1.5 |

Source: Mines Services Division, 2011
The area was covered by the 1965 airborne magnetic and electromagnetic surveys (Hunting Geology \& Geophysics Ltd, 1969), but given that the surveys were at 440 yard line-spacing and a 400 foot nominal flight height, and the data are only available as $1: 50,000$-scale contour maps, they are deemed to be of limited use.

## Kappedhes Area

Granted Licence EA4315 includes the Kappedhes Mine. It is recorded that 54,666 tonnes of Cu ore were mined at Kappedhes, but no Cu grades are quoted (Mines Services Division, 2011). The gossan at Kappedhes was considered very promising and was mined for Au and Ag prior to 1939 (Bear, 1960). Open-cut mining started in 1955, with treatment at Mitsero. Production was "disappointing" and mining ceased within 4 years. The mineralisation is reportedly hosted by intensely propylitised basalt lava, is lens-shaped and elongate to the northeast, and persists to a depth of 46 m (Bear, 1960). Limited sampling by TDL in 2007 of massive sulphide within the pit returned maximum values of $0.12 \% \mathrm{Cu}$ and $0.2 \mathrm{~g} / \mathrm{t} \mathrm{Au}$.

## Mathiatas

Granted Licence EA4447 covers the western end of the Mathiatas mine where 2.1 million tonnes of ore at 0.2 \% Cu were reportedly mined (Mines Services Division, 2011). Gass et al., (1994), who refers to the prospect as North Mathiati, explains that the massive pyrite body contained about $0.5 \%$ Cu , which at the time, was too low for economic recovery, and above the limit of pure pyrite ore ( 0.15 $\% \mathrm{Cu}$; Bear, 1960). Gass et al., (1994) also reports that between 1936 and $1938,26,691$ ounces of Au and 154,719 ounces of Ag were recovered from near-surface mining at Mathiatas and South Mathiatas combined.

In 2007, TDL collected five (5) samples across the 75 m wide massive sulphide at the base of the open pit, and returned consistent grades of 0.36 to $0.48 \mathrm{~g} / \mathrm{t} \mathrm{Au}$ and 0.06 to $0.19 \% \mathrm{Cu}$. In the altered volcanic rocks around the massive sulphide body, five (5) samples were assayed and returned up to $0.50 \mathrm{~g} / \mathrm{t} \mathrm{Au}$ and $0.11 \% \mathrm{Cu}$. Only one of these samples was collected within EA4447, but the mineralised zone clearly trends northeast beneath a northeast-dipping fault onto EA4447.

## Other Historic Massive Sulphide Mines

The Kambia-Mathiatas-Sha Prospect area also has four (4) other abandoned mines within 500 m of the Permits / Licences. Only limited information has been uncovered about these mines and some limited sampling has been completed.

At Sha, it is reported that 334,179 tonnes of massive pyrite ore at 0.5-1.2 \% Cu were mined (Mines Services Division, 2011). No Au was reported for the sulphide ore, but Gass et al., (1994) reported that 9,015 ounces of Au and 51,425 ounces of Ag were removed from the upper part of the deposit between 1937 and 1943. The Sha mineralisation has been interpreted to be an irregular mass roughly elongate northeast-southwest and that disseminated pyrite exists beneath to open pit (Gass et al., 1994). In 2007, TDL collected two samples of massive pyrite ore from the pit that returned $0.14 \% \mathrm{Cu}, 0.12 \mathrm{~g} / \mathrm{t} \mathrm{Au}, 2.47 \mathrm{~g} / \mathrm{t} \mathrm{Ag}$, and $0.15 \% \mathrm{Cu}, 0.70 \mathrm{~g} / \mathrm{t} \mathrm{Au}, 2.95 \mathrm{~g} / \mathrm{t} \mathrm{Ag}$ and $0.14 \% \mathrm{Zn}$, respectively.

At South Mathiatas (Psathas), there is a very small open pit, but no production figures are reported. The UN Revolving Fund (UN, 1983) completed five (5) lines of IP across the most interesting structures with anomalies recorded on three (3) lines coincident with surface gossan. Surface sampling produced numerous anomalous samples, but no significant grouping (UN, 1983). The project was considered prospective, but there were no drill targets defined (UN, 1983).

Four samples were collected by TDL in 2007. Massive pyrite samples returned:

- $0.21 \% \mathrm{Cu}, 0.45 \mathrm{~g} / \mathrm{t} \mathrm{Au}, 3.65 \mathrm{~g} / \mathrm{t} \mathrm{Ag}$; and
- $0.03 \% \mathrm{Cu}, 0.09 \mathrm{~g} / \mathrm{t} \mathrm{Au}, 1.77 \mathrm{~g} / \mathrm{t} \mathrm{Ag}$.

Iron-rich gossan material around the pit returned:

- $0.20 \% \mathrm{Cu}, 1.38 \mathrm{~g} / \mathrm{t} \mathrm{Au}, 3.47 \mathrm{~g} / \mathrm{t} \mathrm{Ag}$; and
- $0.04 \% \mathrm{Cu}, 4.98 \mathrm{~g} / \mathrm{t} \mathrm{Au}, 4.56 \mathrm{~g} / \mathrm{t} \mathrm{Ag}$.

At the Kambia (Kokkinonero) mine, 557,540 tonnes were reportedly mined, but the Cu grade is not reported (Mines Services Division, 2011). Bear (1960) reports that the massive pyrite body was defined at 1.5 million tonnes, and was mined for pyrite. Pockets rich in copper are reported along with a "somewhat larger area of copper mineralisation on the south side of the fault" (Bear, 1960). It is not known whether this copper was ever exploited. When visited by TDL in 2007, massive pyrite was sampled from the western open pit face, and the sample returned $0.03 \% \mathrm{Cu}, 0.12 \mathrm{~g} / \mathrm{t} \mathrm{Au}, 0.23$ \% Zn.

In 2005/06, Wilson Gewargis collected twenty four (24) samples up to 200 m from the Kambia mine. His results were mixed, but returned maximum values of $0.06 \% \mathrm{Cu}, 0.16 \mathrm{~g} / \mathrm{t} \mathrm{Au}, 29.4 \mathrm{~g} / \mathrm{t} \mathrm{Ag}$, and $0.30 \% \mathrm{Zn}$. At the Peristerka-Pytharochoma mine, it is reported that 658,354 tonnes at $1.5 \% \mathrm{Cu}$ was mined (Mines Services Division, 2011).

## Documented Prospects

There are a number of Cu sulphide prospects and ancient slag dumps shown on the 2007 Mineral Resources Map of Cyprus, which plot within the Prospect area. Two (2) of these prospects (Milepost 16 and Agrelloti) are mentioned in both the 1970 UN Special Fund and the 1983 UN Revolving Fund Report.
At Agrelloti, there are small, weak to moderate gossans in LPL. A sample of massive sulphide beneath a gossan returned $0.18 \% \mathrm{Cu}, 12.4 \mathrm{~g} / \mathrm{Au}, 59.3 \mathrm{~g} / \mathrm{t} \mathrm{Ag}$ and $9.32 \% \mathrm{Zn}$ (UN, 1983). Samples from two (2) gossans returned 10.0 and $4.17 \mathrm{~g} / \mathrm{t} \mathrm{Au}$, respectively (UN, 1983). Two IP lines were completed with minor anomalies defined. Two drillholes were completed with one (AG-1 drilled to 24 m ) intersecting 3 m at $0.02 \% \mathrm{Cu}, 0.6 \mathrm{~g} / \mathrm{t} \mathrm{Au}, 4.8 \mathrm{~g} / \mathrm{t} \mathrm{Ag}$ and $0.25 \% \mathrm{Zn}$ (UN, 1983). The sulphides occur as disseminations and cavity fillings. Another drillhole intersected 101 feet at $0.8 \% \mathrm{Cu}$ and 13 \% sulphur (UN Special Fund, 1970).

At Milepost 16, there is a small ridge of oxidised Basal Group or LPL fault-bounded in an area of predominantly UPL. Six (6) samples were collected from oxidised outcrops; three (3) samples
returned $>1 \mathrm{~g} / \mathrm{t} \mathrm{Au}$, with a maximum of $3.31 \mathrm{~g} / \mathrm{t} \mathrm{Au}$ (UN, 1983). Drilling to the southwest of Milepost 16 failed to intersect significant mineralisation (1970 UN Special Fund; 1983 UN Revolving Fund Report).

### 3.3.2 Arakapas Prospect

The Arakapas Prospect comprises the northern part of Reconnaissance Licence Application AE4492 (Table 3-8; Figure 3-14). The southern part of this Licence has been included in the Black Pine Project area, because it has contrasting geology and exploration targets.

The boundary between this contrasting geology is marked by the valley containing the towns of Arakapas and Eftagonia (referred to as the Arakapas Valley). There is no Forestry Land within AE4492, but a small area in the north is part of a Nature 2000 Birds Directive (Figure 3-14).


Figure 3-14: Location of the Arakapas Prospect

## Geology

Reconnaissance Licence Application AE4492 straddles the east-west-trending Arakapas Transform Fault (Arakapas Valley), which is a major geological structure in the Troodos Ophiolite (Figure 3-15; Gass et al., 1994). The main rock type in the Arakapas Valley is olivine-phyric pillow basalt, which has been classified as UPL. The hills either side of Arakapas Valley comprise mafic intrusive units of the Sheeted-dyke Complex and the Basal Group. There are rare plagiogranite bodies within the intrusive suite. Less than 1 km west of Melini is a small area of pillow lavas exposed within a larger area of Basal Group gabbro.


Figure 3-15: Geology of the Arakapas Prospect area

## Exploration History

Pantazis (1967) reports a number of prospects in the general area hosted in various rock types. The prospects are described as limonite-hematite gossans with pyrite and rare chalcopyrite; however, there is no reported sampling in Pantazis's report. Three (3) Cu prospects from the 2007 Mineral Resources Map of Cyprus plot within the Licence, with two (2) of these prospects corresponding with Melini West and Arakapas (Pantazis, 1967). The location of these prospects has not yet been confirmed by TDL.

In 2005/06, Wilson Gewargis, collected six (6) samples (113-118) west of Melini. Maximum assays were $0.037 \mathrm{~g} / \mathrm{t} \mathrm{Au}$ and $1.18 \% \mathrm{Cu}$ (Table 3-10). The exact location of these samples is unverified, and they do not appear to have been collected from the documented prospects. An ancient slag dump is reported within 500 m of the reported sample locations.

A single rock-chip sample taken by TDL from an iron-stained outcrop of massive basalt in the Arakapas Valley returned $0.37 \mathrm{~g} / \mathrm{t} \mathrm{Au}$ and $0.305 \% \mathrm{Cu}$ (Sample CYP07033D; Table 3-10). This sample site is near the Arakapas prospect (Pantazis, 1967) and plots adjacent to a northeasttrending fault.

Table 3-10: Sampling results from Wilson Gewargis in 2005 / 06

| Sample <br> Number | Easting | Northing | Au <br> $(\mathbf{p p m})$ | Ag <br> $(\mathbf{p p m})$ | Co <br> $(\mathbf{p p m})$ | $\mathbf{C u}$ <br> $(\mathbf{p p m})$ | Ni <br> $(\mathbf{p p m})$ | $\mathbf{Z n}$ <br> $(\mathrm{ppm})$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 113 | 513249 | 3857944 | 0.037 | - | 16 | 1,410 | 46 | 30 |
| 114 | 513236 | 3857954 | 0.019 | - | 3 | 1,275 | 14 | 24 |
| 115 | 513008 | 3857341 | 0.010 | 0.8 | 53 | 11,800 | 161 | 54 |
| 116 | 513078 | 3857808 | 0.037 | 0.4 | 23 | 731 | 53 | 25 |
| 117 | 513614 | 3858347 | - | 0.4 | 31 | 144 | 89 | 164 |
| 118 | 513724 | 3858284 | 0.027 | 0.3 | 23 | 2,250 | 62 | 74 |
| CYP07033D | 512917 | 3855739 | 0.370 | 2.35 | 12.3 | 3,050 | 20.1 | 154 |

Source: Samples 113-118 from Wilson Gewargis, internal data;
CYP07033D from Michael Green, internal data.

### 3.3.3 Pano Lefkara Prospect

The Pano Lefkara Prospect comprises one Approved Reconnaissance Licence (AE4480) immediately east of Pano Lefkara and Kato Lefkara (Table 3-8; Figure 3-16). The Prospect covers an area of $5.70 \mathrm{~km}^{2}$ and includes parts of the valley of the Syrgatis River, upstream from the Dipotamos Reservoir. No Forestry land is within the project area, but the Syrgatis River valley is within a Nature 2000 Birds Directive area. SRK is informed that this should not be a significant impediment to exploration or mining.


Figure 3-16: Location of the Pano Lefkara Prospect

## Geology

The 1:250,000-scale geology map of the area indicates that the Licence comprises gabbro, overlain by LPL, which in turn are overlain by Lefkara Formation sediments (Figure 3-17). Minor UPL is noted. Data from the 2007 Mineral Resources Map of Cyprus indicate that no Cu prospects are currently identified within the Licence area; however, two (2) copper-sulphide prospects and two (2) ancient slag dumps have been mapped within 800 m of the Licence area. Known mineral prospects in the area are within LPL, or near the contact with the gabbroic unit. Anomalous Au results have recently been reported by Northern Lion just west of Pano Lefkara, in similar geology to that of the Licence (in UPL/LPL and gabbro (Figure 3-17).


Figure 3-17: Geology of the Pano Lefkara Prospect

## Exploration History

No previous exploration reports for the area are available to BMG. However, Northern Lion recently reported surface sampling of a breccia zone within the LPL $\sim 3 \mathrm{~km}$ west of the Project area that returned 41 m @ $3.47 \mathrm{~g} / \mathrm{t} \mathrm{Au}, 25 \mathrm{~m}$ @ $1.1 \mathrm{~g} / \mathrm{t} \mathrm{Au}$ and $24.5 \mathrm{~m} @ 1.06 \mathrm{~g} / \mathrm{t} \mathrm{Au}$ (TSX release 25/04/2012).

In February 2011, TDL visited the area east of the Dipotamos Reservoir, where the copper-sulphide prospects and ancient slag piles are mapped. TDL noted that the carbonate sediments (Lefkara Formation) overlie very weathered and oxidised mafic volcanic rocks, but no gossan or sulphide mineralisation was observed. At the number 36 ancient slag pile location ( $530825 \mathrm{mE}, 3858079 \mathrm{mN}$ ), the slag is coated with malachite. The source of the mineralisation was not identified, but a prospect is mapped 400 m east in volcanic units. These areas are just outside the Licence area.

### 3.3.4 Stavrovouni Prospect

The Stavrovouni Prospect comprises a $7.50 \mathrm{~km}^{2}$ Approved Reconnaissance Licence (AE4463), approximately 15 km west of Larnaca (Table 3-8; Figure 3-18). Parts of AE4463 are covered by minor farm and agricultural holdings, but there is no Forestry land and only some edges of the Licence are covered by a Nature 2000 Birds Directive (Figure 3-18). SRK is informed that neither of these are impediments to exploration or mining.


Figure 3-18: Location of the Stavrovouni Project

## Geology

Licence AE4463 is wholly underlain by Lefkara Formation sediments (Figure 3-19). It is interpreted that the prospective volcanic units are beneath this Formation, as mapped on the recent 1:250,000scale geology map (Cyprus Geological Survey, 2007). An ancient slag dumps marked on the 2007 Mineral Resources Map of Cyprus (Cyprus Geological Survey, 2007) plots 3 km west of AE4463, but no copper-sulphide prospects are recorded. There is an abandoned pyrite mine $\sim 2 \mathrm{~km}$ southwest of the Licence, where $<500,000$ tonnes are reported to have been mined (Cyprus Geological Survey, 2007).


Figure 3-19: Geology of the Stavrovouni Prospect

## Exploration History

There has been very little exploration in the area. In 2005/06, Wilson Gewargis collected eight (8) samples from ophiolite units west of AE4463. The sample area was referred to as Anglisides. The exact locations of these samples are unverified, but do not appear to have been collected from recorded prospects. Seven (7) of the samples (53-59) appear to have been collected from outcrops of UPL, whereas the remaining sample (60) were collected from within the Lefkara Formation. The samples failed to return any elevated $\mathrm{Cu}, \mathrm{Au}, \mathrm{Ag}$, or Zn . The 1970 UN report describes a gossan at Stavrovouni in the UPL, not far from the overlying sedimentary unit contact.

### 3.4 Vrechia Project

The Vrechia Project comprises three contiguous Permits / Licences, $\sim 1 \mathrm{~km}$ northeast of the town of Vrechia (Table 3-11; Figure 3-20). The Permits / Licences cover an area of approximately $23.6 \mathrm{~km}^{2}$, and are cut by the Xeros River and the sealed road north of Pano Panagia.

The Vrechia Project covers a mix of Forestry and private land and most of the area falls under the European Union's Nature 2000 Birds Directive (Figure 3-20). SRK is informed that this is not an impediment to access, completing the required exploration programme or even mining, but may involve some work conditions depending on the specific conditions of the Directive.


Figure 3-20:Location of the Vrechia Project

Table 3-11: Permits and Licences for the Vrechia Project

| Licence | Licence Name | Area km2 | Status | Rent, A\$ | Expenditure, <br> A\$ |
| :---: | :---: | :---: | :---: | :---: | :---: |
| AE4462 | Vrechia SE | 17.23 | Approved | 14,175 | 12,600 |
| EA4313 | Vrechia | 4.42 | Granted | $3,937.5$ | 63,000 |
| EA4457 | Vrechia mine | 1.96 | Granted | 1,575 | 63,000 |
|  | Subtotal | 23.61 |  | 19,687 | $\mathbf{1 3 8 , 6 0 0}$ |

## Geology

The area is characterised by the contact between the volcanic and sedimentary units along the southern flank of the Troodos Ophiolite Complex (Figure 3-21). Published geological maps of the area define the volcanic units as aphyric pillowed to massive basalt flows belonging to the UPL and LPL. These volcanic units stratigraphically overlie gabbro of the Basal Unit, which in turn overlie the Sheeted Dyke Complex.

Numerous volcanic vents have been mapped in the area, which are considered to be highly prospective for VHMS systems. The area is cut by numerous northwest-southeast-trending faults, which may be important for hydrothermal fluid flow and deposition of potentially metal-rich fluids.


Figure 3-21: Geology of the Vrechia Project

## Exploration History

The Project area includes the historic Vrechia pyrite mine (pyrite; <500,000 tonnes; Mines Services Division, 2011) and one known prospect (2007 Mineral Resources Map of Cyprus; Figure 3-21). The area is along strike of Northern Lion's St Nikolas (southeast) and Asprogia (northwest) Projects, and their Vrechia (Panayia) prospect is $\sim 400 \mathrm{~m}$ west of AE4462.

## Historic Mining

The abandoned Vrechia pyrite mine is within granted Licence EA4457 (Figure 3-21). There is a $50 \times 50 \mathrm{~m}$ relict open pit which has been excavated to a depth of about 20 m , plus a southeasttrending access cutting. The open pit site comprised a crushing plant (now dismantled) and there is a waste dump to the southeast. Minor surface workings are located approximately 200 m northeast of the open pit. Production is recorded as 80,000 tonnes at $0.55 \% \mathrm{Cu}$ and $0.3 \% \mathrm{Zn}$, and 120,000 tonnes at $0.45 \% \mathrm{Cu}$ and $0.3 \% \mathrm{Zn}$ (Gass et al., 1994); no gold grades are quoted. It is unclear when mining ceased. Massive sulphide is still exposed in the open pit, which is located along a faulted contact between Basal Group gabbro and pillow and massive basalt flows of the LPL.

## Surface Sampling (2005/06)

In 2005/06, Wilson Gewargis, who is a part owner of TDL, collected (14) samples from the Vrechia pyrite mine area. All that exists of this work is an assay spreadsheet with co-ordinates and assay results. Assays were completed by ALS in Canada, but the analytical techniques used have not been specified. Location accuracy is unclear, but when validated by TDL, it is likely that samples were collected from waste dumps and tracks. No samples were collected from the open pit, with four (4) samples collected from each of the crusher area (63-66) and the waste dump (67-70), and
three (3) samples collected from the northeast workings (74-76). Three (3) samples were also collected from tracks near the mine (71-73).

Results for nine (9) of the samples are shown in Table 3-12. Massive sulphide samples (sulphur > $10 \%$ ) have the highest $\mathrm{Au}, \mathrm{Ag}$ and Cu values. The samples have consistent Au values from the crusher area, wastes dump and northeast workings, irrespective of the sulphur content. Samples collected from the roads were slightly anomalous in Cu and Au .

Table 3-12: 2005/06 rock chip assays from Vrechia open pit

| Sample Number | Easting | Northing | $\mathbf{A u}$ <br> $(\mathbf{g} / \mathbf{t})$ | $\mathbf{A g}$ <br> $(\mathbf{g} / \mathrm{t})$ | $\mathbf{C u}$ <br> $(\%)$ | $\mathbf{S}$ <br> $(\%)$ | $\mathbf{Z n}$ <br> $(\%)$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| $\mathbf{6 3}$ - crusher | 470427 | 3863895 | 0.692 | 2.7 | 0.424 | $>10.0$ | 0.034 |
| $\mathbf{6 5}$ - crusher | 470411 | 3863924 | 0.121 | 1.3 | 0.080 | 0.09 | 0.140 |
| $\mathbf{6 6}$ - crusher | 470399 | 3863946 | 0.504 | 1.8 | 0.270 | $>10.0$ | 0.010 |
| $\mathbf{6 7}$ - waste | 470717 | 3863820 | 1.635 | 6.3 | 0.317 | $>10.0$ | 0.010 |
| $\mathbf{6 8}$ - waste | 470763 | 3863831 | 0.110 | 1.3 | 0.038 | 1.79 | 0.148 |
| $\mathbf{7 0}$ - waste | 470774 | 3863811 | 0.104 | 1.6 | 0.047 | 1.21 | 0.039 |
| $\mathbf{7 4}$ - northeast | 470605 | 3864175 | 0.209 | 0.3 | 0.016 | 0.25 | - |
| 75 - northeast | 470590 | 3864230 | 0.275 | 1.7 | 0.073 | 0.29 | 0.014 |
| $\mathbf{7 6}$ - northeast | 470570 | 3864176 | 0.119 | 0.2 | 0.054 | 0.25 | 0.004 |

Source: Wilson Gewargis internal data

## Surface Sampling (2007)

Three (3) massive pyrite samples were collected by TDL in 2007; two from the open pit and one from the crusher waste pile immediately west of the pit (Table 3-13). The samples were collected to confirm the previous $\mathrm{Cu}, \mathrm{Zn}$ and Au results. Pit samples returned 0.21 ppm Au and $0.42 \% \mathrm{Cu}$, whereas the crusher waste sample returned 0.71 ppm Au and $0.52 \% \mathrm{Cu}$. Copper grades are consistent with the quoted mining grades; however, Zn grades were under-reported.

## 1983 UN Report

The United Nations Revolving Fund for Natural Resources Exploration completed mineral exploration within the Troodos Ophiolite Complex from April 1979 to July 1982, and released a report in April 1983 (UN, 1983). This report details work carried out immediately west of the Vrechia Project area, at a prospect called Vrechia (Panayia).

The prospect has not been identified on the ground by TDL, but the detailed map in the report places it approximately 450 m north of the Vrechia village, and 400 m west of Licence AE4462. The location broadly correlates with a prospect from the 2007 Mineral Resources Map of Cyprus that plots about 3 km south of the Vrechia open pit. This ground is currently not under tenure and will be included in an expanded application for Licence AE4462.

Table 3-13: 2007 rock chip assays from Vrechia open pit

| Sample <br> Number | Easting | Northing | Au <br> $(\mathrm{g} / \mathrm{t})$ | Ag <br> (g/t) | As <br> $(\mathrm{ppm})$ | Cu <br> $(\%)$ | Pb <br> $(\mathbf{p p m})$ | $\mathbf{S}$ <br> $(\%)$ | $\mathbf{Z n}$ <br> $(\mathbf{p p m})$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| CYP07040 <br> mine access | 470474 | 3863965 | 0.02 | 0.43 | 22.4 | 0.42 | 4.2 | 3.18 | 263 |
| CYP07042 <br> main pit | 470346 | 3864129 | 0.21 | 0.74 | 17.4 | 0.16 | 15.4 | $>10.0$ | 432 |
| CYP07044 <br> crusher <br> waste | 470404 | 3863937 | 0.71 | 4.25 | 107.5 | 0.53 | 74.7 | $>10.0$ | 198 |

Source: Michael Green, internal data
Work by the UN Project at Vrechia (Panayia) included eighty one (81) surface samples with maximum assays from diabase dyke core, inter pillow material and fault gouge, of 5420, 2560 and 700 ppm Cu, respectively. The geochemically anomalous zone at Vrechia (Panayia) was one of the best defined by the UN Project, and so was tested with two drillholes (VR1 to 150 m depth; and VR2 to 145 m depth). The drillholes did not penetrate to the most favourable LPL, but disseminated native copper was moderately abundant in the UPL throughout both holes (UN, 1983). No assays were reported. No significant work or mining is known to have been completed in the area, and satellite imagery suggests minimal disturbance.

## Northern Lion Announcements

Northern Lion has reported rock-chip and drill assays from two (2) prospects along strike and near the Vrechia Project. The Asprogia prospect is approximately 2 km northwest and along strike of the Vrechia Project. Northern Lion reported two TSX releases in 2009 (25/09/2009; 19/11/2009) with one rock-chip sample returning $4.1 \% \mathrm{Cu}$, and another returning $7.3 \mathrm{~g} / \mathrm{t} \mathrm{Au}$ and $17.6 \mathrm{~g} / \mathrm{t} \mathrm{Ag}$. Followup sampling at Asprogia in areas with no known workings also returned assays with anomalous Cu , $\mathrm{Au}, \mathrm{Ag}$ and Zn .

Drilling at the St Nikolas Project in 2011, approximately 800 m east of the Vrechia Project are presented in Table 3-14. There are numerous gossans in the area, and the 2007 Mineral Resources Map of Cyprus shows a series of ancient slag piles in the immediate vicinity.

Table 3-14: Best drilling results reported at the St Nikolas project by Northern Lion

| Hole_ID | Interval (m) | Au (g/t) | Ag (g/t) | $\mathbf{C u}$ (\%) | Zn (\%) |
| :---: | :---: | :---: | :---: | :---: | :---: |
| 11SN02 | 28.6 | 4.50 | 19.08 | 1.04 | 0.24 |
| 11SN03 | 47.0 | 0.56 | 7.81 | 0.10 | 0.22 |
| 11SN05 | 41.1 | 0.89 | 4.2 | 0.29 | 0.10 |
| 11SN06 | 5.6 | 0.72 | 21.47 | 0.10 | 0.19 |

Source: Northern Lion (reports 06/04/2011; 05/05/2011; 31/05/2011; 21/10/2011)

## 4 Proposed Exploration Program and Budget

### 4.1 BMG Exploration Approach - All Projects

BMG plan to undertake a systematic approach to exploration on all their Projects. Although some Projects are more advanced in terms of geological understanding, previous work and target definition, the Company have proposed to apply the following Stages of exploration on all Permits / Licences:

- Stage 1 - Public Domain Data Collection and Interpretation;
- Stage 2 - Ground Truthing and Target Refining; and
- Stage 3 - Detailed Sampling.

Exploration works subsequent to Stage 3 will be dependent on Stage 3 results.

### 4.1.1 Stage 1 - Public Domain Data Collection and Interpretation

As presented in Section 2.4, BMG has access to a large public-domain database which has been compiled by the CGS. The CGS informs that there is also a drill core archive containing material from historic drilling, such as that completed by the CGS and United Nations Projects. The archive is accessible with permission from the CGS, and permission has been granted to BMG to scan archival documents and review core when required. These data are yet to be fully compiled and interpreted by BMG for their Project areas, and will form part of the Company's first-pass exploration efforts.

ASTER data may be suitable for identifying alteration and gossan zones at the regional scale. Areas of known mineralisation and historic mining are identifiable with satellite imagery, and it is BMG's intention to cross-reference these areas with ASTER. Correlation of known mineralised areas with their ASTER signature is seen by BMG as a valid targeting tool to identify similar "mineralised footprints" within their Permit / Licence areas. On advice from Geoimage Pty Ltd, the Company has budgeted $A \$ 15,000$ to acquire, enhance and interpret six (6) ASTER scenes covering the entire Troodos Ophiolite, as part of their first-pass exploration programme.

### 4.1.2 Stage 2 - Ground Truthing and Target Refining

Although TDL has undertaken some limited ground truthing of the historic exploration data (e.g. investigated adits, verified drillhole locations, etc.), BMG expect to uncover additional localities from their review in Stage 1. These will require validation on the ground in order to understand the context of the reported occurrences / localities / geological information.

Previous studies in Cyprus have found that various electrical methods, such as IP and resistivity, can be used to detect VHMS systems (Maliotis, 1978). In addition, the IP method can also detect disseminated sulphides and discriminate such accumulations from massive sulphides (Maliotis \& Aftab Khan, 1981). The 2010 fixed-loop EM surveys completed by TDL at Pevkos and Laxia tou Mavrou showed that the massive pyrrhotite mineralisation can be detected directly by ground EM. Given the difficulty of moving loops in such steep terrain it is reasonable that all future ground surveys will use a similar fixed-loop configuration. Since IP is relatively inexpensive, it is recommended that it be used to evaluate all areas reported to have evidence of copper-sulphide mineralisation. It is important to note that such surveys cannot discriminate whether the mineralisation contains $\mathrm{Cu}, \mathrm{Ag}$ or Zn , but can define appropriate drill targets.

A recent airborne EM survey conducted by Northern Lion over the volcanic package to the northwest of Vrechia defined numerous conductive bodies interpreted to be related to massive sulphide
mineralisation. Given that ground EM at Pevkos and Laxia tou Mavrou produced robust EM responses, an airborne EM survey is considered a useful tool for target generation moving forward. The potential field magnetic data are also collected during EM surveys, and these data would assist in mapping the regional- and Project-scale geology.

In March 2011, TDL obtained a quote from Geotech Airborne Limited to fly 1,325 line kilometres of helicopter-borne EM and magnetics over various Projects. These surveys were quoted at a base charge of $€ 135(\mathrm{~A} \$ 168)^{1}$ per line-km. A total of $€ 200,775$ ( $\left.\mathrm{A} \$ 250,000\right)^{1}$ was quoted to undertake the survey. It is the opinion of SRK that such surveys may be useful for regional targeting during Stage 2. Reconnaissance rock chip sampling (see Section 4.1.3) is also scheduled as part of Stage 2 activities.

### 4.1.3 Stage 3 - Detailed Sampling

Detailed sampling includes both surface sampling (e.g. rock chip sampling, trenching, etc.) and drilling ("sub-surface" sampling). For surface sampling, the use of a handheld $X$-ray fluorescence (XRF) analyser will accelerate prospect assessment, as assay turn-around times for samples sent to a laboratory could be up to 4 weeks. In the programmes discussed herein, where handheld XRF analyses are proposed, a number of laboratory assays will also be completed for benchmarking purposes. BMG sought a quote for a Niton XL3t 950+ handheld XRF analyser from Portable Analytical Solutions Pty Ltd in March 2012. The analyser with integrated Trimble GPS receiver was A\$51,500 (ex-GST).
Although an excellent tool, the XRF analyser cannot detect Au , and any anomalous areas identified by the XRF analyser will need to be physically sampled (e.g. rock chip sampling) and sent to a laboratory for analysis. BMG has identified ALS Chemex as their internationally accredited laboratory to undertake this work. BMG envisage that samples will be sent to Romania for sample preparation, and then analysed in Canada. However, the use of sample preparation facilities in Cyprus will be explored to reduce freight costs. BMG expects the following costs ${ }^{2}$, based on the aforementioned sample preparation and analysis flow sheet:

- Standard exploration base-metal sample (includes $\mathrm{Au}, \mathrm{Ag}, \mathrm{As}, \mathrm{Bi}, \mathrm{Cd}, \mathrm{Co}, \mathrm{Cr}, \mathrm{Cu}, \mathrm{Fe}, \mathrm{Mg}, \mathrm{Mn}$, $\mathrm{Mo}, \mathrm{Ni}, \mathrm{Pb}, \mathrm{S}, \mathrm{Zn}$ ) $=\mathrm{A} \$ 29 /$ sample $+\mathrm{A} \$ 2$ freight; and
- Ore-grade base metal sample (includes $\mathrm{Au}, \mathrm{As}, \mathrm{Cu}, \mathrm{Ni}, \mathrm{Co}, \mathrm{Zn}, \mathrm{S}$ ) $=\mathrm{A} \$ 41 /$ sample $+\mathrm{A} \$ 2 /$ freight.


### 4.1.4 "Fixed Exploration Cost" Allocation

BMG recognise that there are numerous (largely fixed) costs associated with running an exploration programme (termed herein as "fixed exploration costs"). This applies to items such as capital costs (e.g. vehicles, exploration tools, etc.) and Administration overheads (office rentals, travel, etc.) that relate to all exploration Projects. Strictly speaking, the total operating costs should be pro-rata allocated between all Projects, dependant on the relative amount of work being completed on each Project. However, for the sake of simplicity, BMG has presented to SRK a total cost estimate to cover these cost items (Table 4-1). Salaries are allocated to each Project individually.

SRK has not considered any costs that relate to the administration of BMG in Australia (e.g. listing fees, registered office costs, insurances, etc.). BMG refer to these in their Annual Report. Projectspecific exploration costs as related to BMG's proposed exploration program for Years 1 and 2 are presented for each Project herein.

[^1]Table 4-1: Estimate of BMG "fixed exploration costs"

| Activity / Cost Centre | Year 1 <br> (A\$) | Year 2 <br> (A\$) | Total <br> (A\$) |
| :--- | ---: | ---: | ---: |
| Accommodation | 6,000 | $\mathbf{6 , 0 0 0}$ | 12,000 |
| Travel | 90,000 | 70,000 | 160,000 |
| Office Rent | 24,000 | 26,000 | 50,000 |
| Communications | 2,500 | 3,000 | 5,500 |
| Vehicle | 65,000 | 65,000 | 130,000 |
| NITON XRF | 51,500 | - | 51,500 |
| Regional Technical Datasets | 13,500 | - | 13,500 |
| TOTAL | $\mathbf{2 5 2 , 5 0 0}$ | $\mathbf{1 7 0 , 0 0 0}$ | $\mathbf{4 2 2 , 5 0 0}$ |

### 4.2 Black Pine Project

### 4.2.1 Proposed Exploration Program - Pevkos - Laxia tou Mavrou Prospects Stages 1 and 2

The primary focus at Black Pine will be on the Pevkos - Laxia tou Mavrou Prospects. In particular, the immediate strike extensions of known mineralisation require evaluation. The alteration associated with this mineralisation may be identified in the ASTER imagery, and will be interpreted in conjunction with basic field mapping and sampling to understand the geological context for mineralisation.

The priority for the Pevkos - Laxia tou Mavrou Prospect is to test the strike extent and down-dip continuity of the massive sulphide mineralisation intersected in the historic adits. Given the wide mineralised intersections reported for the adits (Table 3-6 and Table 3-2), and the occurrence of gossanous outcrop between the adits (see Figure 3-7 and Figure 3-4), SRK considers there to be "walk-up" drill targets at Laxia tou Mavrou. However, targeting could be improved with an updated geological and geochemical model, and as such, BMG are currently compiling all available data into a comprehensive 3D model for the area. An IP survey may further enhance any targets delineated by the 3D modelling.

## Stage 3

Based on SRK's site visit and the development of a preliminary 3D model incorporating outcrop locations and intersections of massive sulphide in adits, a potentially mineralised zone approximately 1 km long and up to 150 m wide is being targeted by BMG at Laxia tou Mavrou (Figure 4-1A).

The Company is planning to drill a series of eight (8) diamond drillholes on a 100 m spacing along the strike length of the interpreted mineralised zone (Figure 4-1B). Details of the proposed drilling program are presented in Table 4-2 The objective of the drilling program is to test the down-dip and strike extensions of the mineralised zone and to collect structural information to better understand the key controls to mineralisation.

In addition to the immediate drilling, BMG will implement a field mapping programme to sample locations identified in Stage 1 exploration at both Pevkos and Laxia tou Mavrou. Both XRF analysis and rock chip samples will be collected.

Table 4-2: Proposed drilling at Laxia tou Mavrou

| Hole ID | EastIng | Northing | Elevation <br> $($ (mASL) | Azimuth <br> $\left({ }^{\circ}\right)$ | InItial Dip <br> $\left({ }^{\circ}\right)$ | Total <br> Depth (m) |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| LP_1 | 510404 | 3852707 | 349 | 200 | 70 | 300 |  |  |  |  |  |
| LP_2 | 510321 | 3852736 | 325 | 200 | 70 | 300 |  |  |  |  |  |
| LP_3 | 510201 | 3852790 | 360 | 200 | 70 | 300 |  |  |  |  |  |
| LP_4 | 510103 | 3852838 | 327 | 200 | 70 | 250 |  |  |  |  |  |
| LP_5 | 510005 | 3852887 | 329 | 200 | 70 | 200 |  |  |  |  |  |
| LP_6 | 509922 | 3852940 | 350 | 200 | 70 | 200 |  |  |  |  |  |
| LP_7 | 509833 | 3852996 | 370 | 200 | 70 | 180 |  |  |  |  |  |
| LP_8 | 509731 | 3853055 | 408 | 200 | 70 | 150 |  |  |  |  |  |
| Total |  |  |  |  |  |  |  |  |  |  | $\mathbf{1 , 8 8 0}$ |



Figure 4-1: Preliminary 3D model and planned drillholes at Laxia
A. Oblique 3D view looking towards the NW showing SRK GPS tracks and waypoints from the SRK site visit, locations of gossan and outcrop, and the position of the massive sulphide intersected in adits.
B. Planned drillholes to test the strike and down dip continuity of the Laxia massive sulphide intersected in adits, and the gossan mapped in outcrop.

### 4.2.2 Proposed Exploration Budget - Pevkos - Laxia tou Mavrou Prospects

BMG has provided SRK with a proposed exploration budget and work programme for a two (2) year exploration schedule largely focussed on granted Permits EA4314 and EA4318 (Table 4-3). The Company proposes to spend $\mathbf{A} \$ 769,739$ on exploration activities in Year 1, and a further A $\$ 1,320,500$ in Year 2, dependant on Year 1 results. Rent payments for all Permits / Licences have been accounted for in BMG's budget.

The primary focus of Year 1 exploration will be to test the interpreted position of the mineralised zone on Permit EA4314, and follow up on any unexplained anomalous results as defined by BMG during Stage 1 and 2 exploration efforts (for both Permit EA4314 and EA4318). To this end, the Company plans to implement follow-up geological mapping and rock chip sampling, and a thorough assessment of available remotely sensed datasets (e.g. ASTER and Landsat).
The majority of the proposed budget for the Year 1 exploration programme is allocated to diamond drilling ( $1,880 \mathrm{~m}$ ) on Permit EA4314, with provision made for a geophysical survey (A $\$ 50,000$; likely IP) to test the interpreted strike extension of the mineralised zone. The Company anticipates that the majority of the Year 2 budget will be allocated to follow up diamond drilling ( $2,500 \mathrm{~m}$ ) on Permit EA4314, for infill drill testing and Resource evaluation. Up to $1,000 \mathrm{~m}$ of drilling is also anticipated for Permit EA4318 in Year 2.

Table 4-3: Proposed Exploration Budget for Pevkos - Laxia tou Mavrou

| Activity / Cost <br> Centre | Year 1 | Year 2 | Total |
| :--- | :---: | :---: | :---: |
|  | (A\$) | (A\$) | (A\$) |
| Assays | 16,250 | 55,500 | 71,750 |
| Drilling* | 564,000 | $1,050,000$ | $1,614,000$ |
| Geophysics - local | 50,000 | 25,000 | 75,000 |
| Salary (geologists) | 55,000 | 100,000 | 155,000 |
| Salaries (field staff) | 20,000 | 40,000 | 60,000 |
| Tenement Rent | 64,489 | 50,000 | 114,489 |
| Sub-total | $\mathbf{7 6 9 , 7 3 9}$ | $\mathbf{1 , 3 2 0 , 5 0 0}$ | $\mathbf{2 , 0 9 0 , 2 3 9}$ |

* Laxia tou Mavrou only


### 4.2.3 Proposed Exploration Program - Kalavassos Prospect Stages 1 and 2

There is currently only one application at Kalavassos (AE4467), which the Company expects to be granted in Year 1. An access agreement with the military may need to be negotiated for access to parts of the Kalavassos Prospect area. Although the military installation only covers a small area, it is unclear whether access is permissible beyond clearly fenced areas.
At Kalavassos, the geographical distribution of the numerous historic mines needs to be established in the context of the geological setting. Given the amount of information about each Kalavassos mine (see Pantazis, 1967); BMG will prioritise researching the archives at the CGS for any available data. The Company expect that this research will assist in prioritising which abandoned mines require immediate detailed geological and geochemical mapping. Beyond the known mineralisation, the ASTER data will be integrated with extensive surface sampling and mapping to define new prospects. BMG intends to undertake IP surveys over the best surface anomalies to better-define drill targets.

## Stage 3

Dependant on Stage 1 and 2 findings, BMG would need to make additional provisions to drill in Year 2.

### 4.2.4 Proposed Exploration Budget - Kalavassos Prospect

Given the amount of historic mining at Kalavassos, it is expected that there will be a large amount of data in the CGS archive. As such, all of Year 1's exploration budget ( $\sim A \$ 43,293$; Table 4-4) will be allocated to researching and ground truthing, so that geophysical surveys or drilling ( $A \$ 25,000$ ) can be undertaken in Year 2, which SRK's considers an appropriate prioritisation / allocation of funding.
Table 4-4: Proposed Exploration Budget for Kalavassos

| Activity / Cost <br> Centre | Year 1 | Year 2 | Total |
| :--- | :---: | :---: | :---: |
|  | (A\$) | (A\$) | (A\$) |
| Assays | 6,200 | 7,500 | 13,700 |
| Drilling | - |  |  |
| Geophysics - local | - | 25,000 | 25,000 |
| Salary (geologists) | 18,000 | 36,000 | 54,000 |
| Salaries (field staff) | 2,000 | 8,000 | 10,000 |
| Tenement Rent | 17,093 | 17,093 | 34,186 |
| Sub-total | 43,293 | $\mathbf{9 3 , 5 9 3}$ | $\mathbf{1 3 6 , 8 8 6}$ |

### 4.3 Kambia Project

### 4.3.1 Proposed Exploration Program - Kambia - Mathiatas - Sha Prospects <br> Stages 1 and 2

The initial focus at Kambia - Mathiatas - Sha will be to test the potential of the abandoned massive sulphide mines in the Project area. All historic data need to be compiled to provide an understanding of the distribution and variability of the mineralisation at the local scale, and the position of UPL and LPL. BMG proposes to map the geological and elemental ( Cu and Zn ) distribution in each open pit using a handheld XRF analyser and these data will be integrated with a geology-structure map to constrain the controls and surface geometry of the mineralisation.
There are numerous recorded prospects in the area and each of these requires a detailed geological and geochemical map to better understand their potential. Beyond the mines and recorded prospects, the ASTER imagery will be used to map the strike extensions of all known mineralisation and to identify new occurrences along geological contacts or faults. General reconnaissance exploration will also be undertaken throughout the Project area, though such work will be enhanced by using the ASTER imagery.

BMG also intend to undertake an IP survey to delineate any targets identified through the historic data review and ground truthing process. The objective of the IP survey is to identify mineralisation at depth and delineate its broad geometry.

## Stage 3

The Company are planning to drill at least two (2) scout drillholes at North Mathiatas (EA4447) and Kappedhes (EA4448) following a geophysical survey. The objective of the drilling program is to test the down-dip and strike extension to the relict open pits and to collect structural information to betterunderstand the key controls to the distribution of mineralisation.

### 4.3.2 Proposed Exploration Budget - Kambia - Mathiatas - Sha Prospects

At the Kambia - Mathiatas - Sha Prospects, BMG will focus on the five (5) granted Permits (EA4315, EA4447, EA4448, EA4452 and EA4453). Rent payments for all Permits / Licences have been accounted for in BMG's budget, under the assumption that the two (2) remaining applications will be approved in Year 1. BMG proposes to spend $A \$ 393,518$ on exploration activities in Year 1, and a further $\mathrm{A} \$ 710,000$ in Year 2, dependant on Year 1 results (Table 4-5). The primary focus of Year 1 exploration will be:

- Stage 1 and 2 exploration works:
- CGS archive search, ground truthing archival data, rock chip sampling, geological mapping, and ground geophysics at North Mathiatas and Kappedhes (IP). The majority of this work will be undertaken on Permits EA4447 and EA4448; and
- Stage 3 exploration works includes scout diamond drilling to test geophysical targets at North Mathiatas (EA4447) and Kappedhes (EA4448). Two (2) holes at each area for a total of 900 m are proposed. This may be adjusted dependant on the results of the proposed geophysical survey.

The company has allocated the majority of the Year 2 budget to follow up diamond drilling ( $1,800 \mathrm{~m}$ ) on Permits EA4447 and EA4448, for infill drill testing and potentially Resource evaluation. Additional geologist salaries and provision for a large assaying and sampling programme is accounted for in the Year 2 budget, under the assumption that Year 1 results will be positive.

Table 4-5: Proposed Exploration Budget for Kambia - Mathiatas - Sha

| Activity/Cost <br> Centre | Year 1 | Year 2 | Total |
| :--- | :---: | :---: | :---: |
|  | (A\$) | (A\$) | (A\$) |
| Assays | 12,000 | 40,000 | 52,000 |
| Drilling | 270,000 | 540,000 | 810,000 |
| Geophysics - local | 25,000 | 25,000 | 50,000 |
| Salary (geologists) | 35,000 | 55,000 | 90,000 |
| Salaries (field staff) | 15,000 | 25,000 | 40,000 |
| Tenement Rent | 36,518 | 25,000 | 61,518 |
| Sub-total | 393,518 | $\mathbf{7 1 0 , 0 0 0}$ | $\mathbf{1 , 1 0 3 , 5 1 8}$ |

### 4.3.3 Proposed Exploration Program - Arakapas Prospect <br> Stages 1 and 2

Given that the area is still under application, and that there are no abandoned mines in the Arakapas Project area, initial work will focus on locating and exploring the recorded prospects by reviewing the CGS archive. Detailed geological and geochemical maps will be generated and then IP surveys will be completed to test the depth extent of any identified sulphide mineralisation.

Beyond the known prospects, basic reconnaissance work using the ASTER imagery and travelling the existing network of roads looking for evidence of Cu -Au mineralisation (gossans, malachite) will be undertaken. BMG do not expect to undertake Stage 3 exploration for at least 12 to 18 months.

### 4.3.4 Proposed Exploration Budget - Arakapas Prospect

BMG's budget allocation for Arakapas (AE4492; Table 4-6) demonstrates the early stage of its evaluation and its priority relative to other Projects in the TDL portfolio. As such, the budget (Year 1; $\$ 22,540$ ) reflects BMG's intention to limit exploration on the Project to researching and ground
truthing, which SRK's considers an appropriate prioritisation / allocation of funding. Year 2 work ( $\sim \mathbf{A} \$ 2500$ ) is appropriately budgeted in the expectation that geophysics will assist in further delineating any identified targets in Year 1, but the tenement size has been reduced.

Table 4-6: Proposed Exploration Budget for Arakapas

| Activity / Cost Centre | Year 1 | Year 2 | Total |
| :---: | :---: | :---: | :---: |
|  | (A\$) | (A\$) | (A\$) |
| Assays | 1,000 | 1,000 | 2,000 |
| Drilling | - | - | 0 |
| Geophysics - local | 6,000 | 6,000 | 12,000 |
| Salary (geologists) | 5,400 | 8,000 | 13,400 |
| Salaries (field staff) | 600 | 800 | 1,400 |
| Tenement Rent | 15,540 | 10,000 | 25,540 |
| Sub-total | 22,540 | 25,800 | 48,340 |

### 4.3.5 Proposed Exploration Program - Pano Lefkara Prospect <br> Stages 1 and 2

Given that there are no abandoned mines listed in the area, initial work will focus on locating and exploring the recorded prospects and reviewing CGS archives. Detailed geological and geochemical maps will be produced and then IP surveys will be completed to test the depth extent of sulphide mineralisation.

Beyond the known prospects, basic reconnaissance work using the ASTER imagery will be undertaken. The ASTER signature over Northern Lion's gold project will be used to determine whether the mineralising system extends beyond their tenure. BMG do not expect to undertake Stage 3 exploration for at least 12 to 18 months.

### 4.3.6 Proposed Exploration Budget - Pano Lefkara Prospect

BMG's budget allocation for Pano Lefkara (AE4480; Table 4-7) demonstrates that Pano Lefkara is considered by the Company to be at an early stage of evaluation, and the proposed budget (Years 1 $\$ 11,662$ and Year $2 \$ 20,462$ ) reflects BMG's intention to limit exploration on the Project to researching and ground truthing.

Table 4-7: Proposed Exploration Budget for Pano Lefkara

| Activity / Cost <br> Centre | Year 1 | Year 2 | Total |
| :--- | :---: | :---: | :---: |
|  | (A\$) | (A\$) | (A\$) |
| Assays | 1,000 | 1,000 | 2,000 |
| Drilling |  |  | 0 |
| Geophysics - local |  | 6,000 | 6,000 |
| Salary (geologists) | 5,400 | 8,000 | 13,400 |
| Salaries (field staff) | 600 | 800 | 1,400 |
| Tenement Rent | 4,662 | 4,662 | 9,324 |
| Sub-total | $\mathbf{1 1 , 6 6 2}$ | $\mathbf{2 0 , 4 6 2}$ | $\mathbf{3 2 , 1 2 4}$ |

### 4.3.7 Proposed Exploration Program - Stavrovouni Prospect <br> Stages 1 and 2

BMG intend to undertake basic reconnaissance exploration using the ASTER and searching CGS archives. BMG do not expect to undertake Stage 3 exploration for at least 18 months.

### 4.3.8 Proposed Exploration Budget - Stavrovouni Prospect

Similar to Pano Lefkara, the budget for Stavrovouni (AE4463; Table 4-8) indicates that the Project is still at a reconnaissance stage of exploration, with BMG focussing mainly on desktop research and some ground truthing and targeting in Year 2.
Table 4-8: Proposed Exploration Budget for Stavrovouni

| Activity / Cost <br> Centre | Year 1 | Year 2 | Total |
| :--- | :---: | :---: | :---: |
|  | (A\$) | (A\$) | (A\$) |
| Assays | 1,000 | 1,000 | $\mathbf{2 , 0 0 0}$ |
| Drilling |  |  | 0 |
| Geophysics - local |  | 6,000 | 6,000 |
| Salary (geologists) | 5,400 | 8,000 | 13,400 |
| Salaries (field staff) | 600 | 800 | 1,400 |
| Tenement Rent | $\mathbf{6 , 2 1 6}$ | 6,216 | 17,250 |
| Sub-total | $\mathbf{1 3 , 2 1 6}$ | $\mathbf{2 2 , 0 1 6}$ | $\mathbf{3 5 , 2 3 2}$ |

### 4.4 Vrechia Project

### 4.4.1 Proposed Exploration Program

## Stages 1 and 2

The historic report archive will be searched by BMG for any information about the historic mining operation at Vrechia. However, immediate work at Vrechia will focus on assessing the potential of the abandoned Vrechia open pit. This will be undertaken by mapping the distribution of Cu and Zn using the handheld XRF analyser.

Extensive surface sampling and mapping will also be undertaken over the entire Project area, and these results will be integrated into an outcrop geology-structure map to constrain the surface geometry of the mineralisation. The Company intends to undertake an IP survey to delineate the mineralisation at depth, and define the best drill targets close to the historic Vrechia open pit.

## Stage 3

Dependant on Stages 1 and 2 findings, BMG intend to drill at least two (2) targets focussed on potential extensions to the historic Vrechia open pit.

### 4.4.2 Proposed Exploration Budget

Vrechia currently has two (2) granted (EA4313, EA4457) and one approved (AE4462) Permit. Rent payments for all Permits / Licences have been accounted for in BMG's budget.
BMG proposes to spend A\$55,425 on exploration activities in Year 1, and a further A\$204,500 in Year 2, dependant on Year 1 results (Table 4-9). Stage 1 and 2 exploration works will be the primary focus of Year 1 exploration, involving CGS archive search, ground truthing, rock chip sampling, geological mapping, and ground geophysics (IP). Understanding the geological context of
the historic exploration results will be a priority, which will be assisted by Northern Lions exploration results along strike to the northeast. Scout diamond drilling has been budgeted for Year 2 (Stage 3 works), and will test any IP anomalies and other targets identified in Year 1. The Company has planned for three (3) diamond drillholes totalling 450 m of core.

Table 4-9: Proposed Exploration Budget for Vrechia

| Activity / Cost <br> Centre | Year 1 | Year 2 | Total |
| :--- | :---: | :---: | :---: |
|  | (A\$) | (A\$) | (A\$) |
| Assays | 4,000 | 8,500 | 12,500 |
| Drilling |  | 135,000 | 135,000 |
| Geophysics - local | 25,000 | $\mathbf{2 5 , 0 0 0}$ | 50,000 |
| Salary (geologists) | 5,000 | 15,000 | $\mathbf{2 0 , 0 0 0}$ |
| Salaries (field staff) | 2,000 | 6,000 | $\mathbf{8 , 0 0 0}$ |
| Tenement Rent | 19,425 | 15,000 | 34,425 |
| Sub-total | $\mathbf{5 5 , 4 2 5}$ | $\mathbf{2 0 4 , 5 0 0}$ | $\mathbf{2 5 9 , 9 2 5}$ |

## 5 Conclusions and Recommendations

TDL has submitted applications to acquire twenty three (23) Prospecting and Reconnaissance Permits and Licences, respectively. At the time of reporting, for both Permits and Licences, eleven (11) have been granted, and seven (7) are approved. Five (5) Permits / Licences are still under application (Table 1-1). The granted-approved Permits / Licences cover an area of $\sim 133.7 \mathrm{~km}^{2}$, with over $\sim 71.9 \mathrm{~km}^{2}$ of Permits / Licences still under application.

Collectively, the twenty three (23) Permits / Licences are broken into three (3) Project areas, for which the Company has commenced reviewing historic exploration data, and undertaken limited data verification work.

TDL's target mineralisation style is base and precious metal systems associated with the Troodos Ophiolite, with a focus on $\mathrm{Cu}-\mathrm{Au}( \pm \mathrm{Zn})$ in volcanic-hosted massive sulphides, and $\mathrm{Cu}-\mathrm{Ni}-\mathrm{Co}-\mathrm{Au}$ in hydrothermal veins within ultramafic rocks. These mineralisation styles are the basis of the TDL's ground acquisition strategy and current portfolio of Projects, with prospective Troodos Ophioliterelated rocks identified on all Permits / Licences.

### 5.1 Black Pines Project

### 5.1.1 Pevkos - Laxia tou Mavrou Prospects

The broader Pevkos - Laxia area covers a significant portion of the basal unit gabbro and associated ultramafic rocks, most of which are reported to be hydrothermally altered and metamorphosed (Bear \& Morel, 1960). Mineralisation in the area, manifest as pyrrhotite-dominant sulphides rich in $\mathrm{Ni}-\mathrm{Cu}-\mathrm{Co}-\mathrm{Au}$, has been identified in breccia zones within structures hosted by the ultramafic units (see Foose et al., 1985; Thalhammer, 1986). Both Pevkos - Laxia are located within serpentinite units immediately adjacent to a gabbroic body, and both show evidence of structural disruption and pyrrhotite-dominated massive sulphide lodes.

Drilling, the development of adits, and completion of limited surface mapping / sampling in the Pevkos area, have returned both anomalous and high-grade results for Cu and Au (See Table 3-5, Table 3-6 and Table 3-7). In addition, an EM survey detected a strong conductor which correlates well with the approximate position of the eastern mineralisation as defined by historic drilling. During SRK's inspection of the Pevkos area, a number of adit locations and gossan outcrops, some with malachite staining, were observed.
At Laxia, pyrrhotite-dominated $\mathrm{Cu}-\mathrm{Co}-\mathrm{Ni}-\mathrm{Au}$ mineralisation is reportedly localised along a faultfracture corridor within massive serpentinite, with outcropping gossan mappable for $\sim 1.4 \mathrm{~km}$. Historic drilling at Laxia has intersected mineralisation in most holes (Table 3-2); with up to 880 m of adit development further intersecting large intervals of Cu-rich massive sulphide mineralisation (Table 3-3). In addition, recent rock chip sampling by Northern Lion (Table 3-4) indicates anomalous ( $>0.5 \mathrm{~g} / \mathrm{t}$ ) and high grade ( $13.45 \mathrm{~g} / \mathrm{t}$ ) Au in gossan covering an area consistent with the strike geometry of massive sulphide in adits (Figure 3-5). When collectively modelled, the historic and new data define a potentially mineralised zone approximately 1 km long and up to 150 m wide (Figure $4-1$ ), which SRK consider to be a "walk up" drill target.

The Pevkos-Laxia tou Mavrou Project represents a relatively early-stage exploration play, despite having had some previous exploration activities focussed within the Project area. Previous explorers have completed first-pass surface sampling and drilling, but in SRK's opinion, have not adequately followed up and satisfactorily explained significant exploration results.

BMG's proposed exploration programme presents a balanced mix of reconnaissance verification sampling, as well as focussed drill-testing of defined targets from previous workers. In SRK's opinion, the allocated budget and programme demonstrates BMG's commitment to immediately test defined targets, with a view to expediently discount or confirm historic exploration results in the shortest possible timeframe.

SRK considers that the objectives of the Company are closely aligned to the proposed exploration budget and programmes presented, and demonstrate an exploration strategy based on sound technical merit, given the current understanding of the geological and structural setting of the Project area.

### 5.1.2 Kalavassos Prospect

The Kalavassos Prospect is currently an application (AE4467), and covers the easternmost part of the volcanic units of the Southern Troodos Domain, although differentiation between the UPL and LPL is not currently clear. A number of abandoned mines, associated waste dumps and exposed gossans are identified within the application area (Figure 3-11), and up to $7 \mathrm{Mt} @ 0.5$ to $3 \% \mathrm{Cu}$ is reported to have been removed from the various mines (Mines Services Division, 2011). The ore is reported to have been of a massive pyrite style.

Although there is a rich mining history in the area, BMG are yet to fully compile all available data, and as such, they propose Year 1 exploration be largely restricted to data review and reconnaissance sampling / verification work. However, a budget allocation for drilling in Year 2 demonstrates the Company's confidence in the Prospect. This approach demonstrates the Company's strategy that extensive historic mine workings represent the potential for a large mineralising system. Again, SRK holds a similar view to BMG in this regard. SRK considers the allocated budget and programme as appropriate, albeit optimistic with drilling budgeted for Year 2. The overall Kalavassos Prospect is considered by SRK to be an early stage exploration play, and given its "application" status, warrants exploration work largely focussed on reconnaissance verification sampling and target-generation only, in the first instance.

### 5.2 Kambia Project

### 5.2.1 Kambia-Mathiatas-Sha Prospects

Most of the Permits / Licences within the Kambia-Mathiatas-Sha Prospects cover units of the LPL, with some exposure to the UPL and gabbro. The structural architecture of the area is complex (Figure 3-13), and previous mining (for Cu ) in the area has exploited mineralisation mainly located within the UPL and at the UPL / LPL contact (Table 3-4). Comments in UN reports (UN, 1983) further suggest structural complexity, and this has been considered in BMG's proposed Stage 2 and 3 exploration programs.

There has been extensive work in the area, with six (6) abandoned (Cu) mines within 500 m of the Project area; two (2) of which are located within TDL's ground (i.e. North Mathiatas mine on granted Licence EA4447 and Kappedhes mine on granted Licence EA4315). Historic production records from the mines indicate large tonnage movements, although reported grades are either unknown of low (Table 3-9). Of considerable interest are the sampling results of TDL in this area, as they record elevated Au values, which have not been previously reported for the area.

The Kambia-Mathiatis-Sha area is still at a very early stage of investigation by TDL. The Company has identified the potential of the area based on a limited review of historic mining in the district, and previous workers exploration results (e.g. UN, 1983). As such, in SRK's opinion, the area has not been adequately tested, given historic production records.

Although BMG will undertake a large amount of data review and reconnaissance surface sampling, their proposed exploration programme demonstrates a commitment to immediately drill test at least two (2) targets near historic mines on their granted Licences. This drilling will be preceded by a geophysical survey to test the down-dip and strike extension continuity of mineralisation mined from the old open pits. This approach demonstrates the Company's strategy that extensive historic mine workings represent the potential for an aerially extensive mineralising system. SRK holds a similar view to BMG in this regard.

As is the case for the Pevkos - Laxia Project, SRK's considers that the proposed exploration budget and programme demonstrates BMG's commitment to immediately follow up on previously untested extensions to known mines, with a view to expediently discount or confirm the defined anomalism in the shortest possible timeframe. Again, SRK considers the objectives of the Company to be closely aligned to the proposed exploration budget and programmes presented, and demonstrate a sound exploration strategy given the current understanding of the geological setting of the Project area.

### 5.2.2 Arakapas Prospect

The Arakapas Project is also currently only an application (AE4492) which covers UPL and sheeteddyke Complex and the Basal Group ultramafic rocks. A number of prospects in the general area, hosted in various rock types, are reported by Pantazis (1967). The mineralisation in outcrop was described as limonite-hematite gossans with pyrite $\pm$ chalcopyrite. Sampling in 2005 by Wilson Gewargis returned maximum assays of $0.037 \mathrm{~g} / \mathrm{Au}$ and $1.18 \% \mathrm{Cu}$ (Table 3-12), with a single rockchip sample taken by TDL returning $0.37 \mathrm{~g} / \mathrm{t} \mathrm{Au}$ and $0.305 \% \mathrm{Cu}$ (Sample CYP07033D; Table 3-12). Both samples were from gossanous material.

Given that the area is still under application, BMG's initial work will focus on locating and exploring the recorded prospects, and reviewing CGS archives. SRK considers this level of exploration works as appropriate given the early stage of investigation of the Project, and its application status. The overall Arakapas Project is considered by SRK to be an early stage exploration play.

### 5.2.3 Pano Lefkara Prospect

The Pano Lefkara Project (AE4480) is underlain by gabbro, which is subsequently overlain by LPL and Lefkara Formation sediments (Figure 3-17). Minor UPL is also noted, with mineral prospects and slag dumps in the broader area sited within LPL, or near the contact with the gabbroic unit. No Cu prospects are currently identified.

Anomalous Au results have recently been reported by Northern Lion just west of Pano Lefkara, in similar geology to that of the Licence (in UPL/LPL and gabbro (Figure 3-17)). The samples were in a breccia zone within the LPL, ~3km west of Pano Lefkara, that returned $41 \mathrm{~m} @ 3.47 \mathrm{~g} / \mathrm{t}$ Au, 25 m @ $1.1 \mathrm{~g} / \mathrm{t} \mathrm{Au}$ and 24.5 m @ $1.06 \mathrm{~g} / \mathrm{t} \mathrm{Au}$ (TSX release 25/04/2012).

Although interesting, this Project is at an early stage of evaluation, and this is reflected by BMG's proposed exploration programme and accompanying budget. SRK considers the Project to be at a reconnaissance stage of exploration, and a lower priority relative to TDL's other holdings.

### 5.2.4 Stavrovouni Prospect

The Stavrovouni Project (AE4463) is covered by Lefkara Formation sediments, which are underlain by the prospective volcanic units (Cyprus Geological Survey, 2007). There has been very little exploration in the area, limited to some unsuccessful sampling by Wilson Gewargis in 2005, and a reported gossan at Stavrovouni in the UPL, close to the contact with the overlying sedimentary unit contact (UN Special Fund, 1970).

As is the case for Pano Lefkara, this Project is at an early stage of evaluation. The presence of UPL is encouraging, and SRK agrees with BMG's proposed exploration programme and budget, which prioritises other areas in the short term.

### 5.3 Vrechia Project

The Vrechia Project area covers a large section of both UPL and LPL, with gabbro outcropping in the central eastern part of AE4462. As is the case for Kambia-Mathiatas-Sha, the area is structurally complex, with a broad NW-SE geometry for faults transecting the volcanic units (Figure 3-21). Numerous slag dumps and Cu-sulphide localities are documented in the Project area, as is the historic Vrechia open pit (located on granted Licence EA4457; Figure 3-21), which reportedly produced 80 kt of ore at $0.55 \% \mathrm{Cu}$ and $0.3 \% \mathrm{Zn}$, and 120 kt of ore at $0.45 \% \mathrm{Cu}$ and $0.3 \% \mathrm{Zn}$ (Gass et al., 1994). Mineralisation was located at a faulted contact between gabbro and LPL, further highlighting the structural complexity of the area.
As is the case for Kambia-Mathiatas-Sha, no Au grades are historically quoted for the area, which contrasts with TDL's sampling, and exploration results from Northern Lion (Table 3-14) in similar rocks approximately 2 km northwest and along strike of the Vrechia Project. This suggests that the area may be equally prospective for precious as well as base metals.

BMG have proposed an exploration programme for Year 1 to undertake mostly data review and verification work; however, the Company intend to drill any identified targets in Year 2. SRK therefore considers the Vrechia area to represent a balanced mix of reconnaissance verification sampling, as well as target-generation stage, Projects.

Given the previous mining in the area, and the current geological and structural understanding of the of the broader Vrechia area, BMG is presented with a significant opportunity to build on the prospectivity potential realised on Northern Lion's ground to the NW of the area, and define additional areas of gold and base metal mineralisation. SRK considers the allocated budget and programme as appropriate, and reflects BMG's commitment to immediately define drilling targets, with a view to expediently test those targets in the shortest possible timeframe.

### 5.4 Overall Project Budget

In terms of total exploration budget, including aforementioned "fixed costs", BMG have proposed A $\$ 4.13 \mathrm{M}$ over two (2) years for the Republic of Cyprus assets. Given the prospectivity potential of BMG's portfolio, SRK considers the proposed levels of expenditure as appropriate. In order to undertake the proposed Year 2 exploration activities, additional capital will need to be raised by the Company.

In summary, SRK considers that the Projects described within this report are sufficiently prospective to warrant exploration at the budgetary levels proposed by the Company. Further capital raisings will be required to fully fund Year 2 exploration. BMG has effectively used results from previous explorers to define a strong exploration-stage Project portfolio, which SRK considers to be based on sound technical merit.

Table 5-1: Annualised total proposed exploration budget for BMG in Years 1 and 2

| Activity <br> Centre | Year 1 | Year 2 | Total $^{*}$ |
| :--- | :---: | :---: | :---: |
|  | (A\$) | (A\$) | (A\$) |
| Fixed costs | 252,500 | 170,000 | 422,500 |
| Assays | 41,450 | 114,500 | 155,950 |
| Drilling | 834,000 | $1,725,000$ | $2,559,000$ |
| Geophysics - local | 100,000 | 118,000 | 293,000 |
| Salary (geologists) | 129,200 | 230,000 | 359,200 |
| Salaries (field staff) | 40,800 | 81,400 | 122,200 |
| Tenement Rent | 163,943 | 127,971 | $\mathbf{2 9 1 , 9 1 4}$ |
| Sub-total | $\mathbf{1 , 5 6 1 , 8 9 3}$ | $\mathbf{2 , 5 6 6 , 8 7 1}$ | $\mathbf{4 , 1 2 8 , 7 6 4}$ |

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All data used as source material plus the text, tables, figures, and attachments of this document have been reviewed and prepared in accordance with generally accepted professional geological evaluation practices.

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[^0]:    Source: Large et al., 1992

[^1]:    ${ }^{1}$ Exchange rate of 1.24316 AUD assumed (21st September, 2012)
    ${ }^{2}$ Quote from ALS Chemex to TDL (2010/11)

