



## QUARTERLY ACTIVITIES REPORT

For the period ended 30 June 2012

**FOR THE QUARTER TO 30 JUNE 2012**

### HIGHLIGHTS

- During the quarter BMG commenced its evaluation and due diligence on the Carrapato Iron Project in the state of Minas Gerais, Brazil.
- The Company announced the agreed terms to acquire 100% of the Carrapato Project, subject to a due diligence review, in Q1, 2012. The acquisition of Carrapato will be contingent upon the Company raising sufficient capital to progress the project. The Company is currently seeking to engage with the vendors to review the acquisition terms commensurate with the current challenging market conditions.
- The Carrapato Project is situated in the iron quadrilateral region close to Belo Horizonte:
  - it is an extension of the Itaminas Sarzedo mine and adjacent to Vale's Corrego do Feijao mine, with continuity of the mineralisation and delineation of a significant iron ore deposit; and
  - has proximity to domestic steel mills and rail infrastructure to provide future domestic or export options for early development of a low cost iron ore operation.
- The acquisition is part of BMG's strategy to complement its existing large scale iron projects in Brazil with smaller, high grade projects with near term production potential.
- BMG is also continuing to evaluate other opportunities in the region that meet these key criteria, either to complement or replace Carrapato in the event it does not proceed.

The Company commenced its evaluation and due diligence on the Carrapato Iron Project during the quarter, in line with the terms of the acquisition (see ASX announcement of 28 March 2012).

The Carrapato acquisition is consistent with the Company's strategy to complement its large scale Iron projects in Northern Minas Gerais with smaller scale, high grade projects with near term production potential. The company is also reviewing some other opportunities in the region that meet these criteria. Subject to satisfactorily completing its due diligence and raising sufficient capital, BMG plans to progress the feasibility assessment and an application for mining and environmental permits to allow an early commencement of production.

From a corporate perspective, the company has continued to closely manage and evaluate its capital requirements to meet its key business objectives. The Company is currently operating with the financial support of a significant shareholder, the Transcontinental Resources Group, while it progresses its capital raising options.

## CARRAPATO PROJECT

The Carrapato Project is located in the Iron Quadrilateral near Belo Horizonte, the capital city of the state of Minas Gerais State, in south eastern Brazil.

It adjoins, and is an extension of, the Sarzedo mine currently operated by Itaminas. The Sarzedo mine has a reported resource of 1.3 billion tonnes and was recently sold to Chinese state-backed East China Mineral Exploration and Development Bureau (ECE), for \$1.2 billion. The Carrapato Project is also immediately adjacent to Vale's Corrego do Feijao Mine which produced direct ship iron ore at a grade of 66.6% Fe. Continuity of the mineralisation from the Sarzedo and Corrego do Feijao Mines into the Carrapato Project is confirmed and a significant iron ore deposit delineated.

The Project has an Exploration Target\* of 53 to 62 million tonnes at 35.2% to 41.1% Fe, including a high grade zone at surface of 3.7 to 4.3 million tonnes at 51.1% to 59.7% Fe.



**Figure 1:** Location of Carrapato Project, showing Itaminas' Sarzedo Mine to the east and Vale's Corrego do Feijao mine to the south. The Carrapato tenement is about 1000 metres wide east-west.

\*The potential quantity and grade is conceptual in nature. There has been insufficient exploration to define a Mineral Resource and it is uncertain if further exploration will result in the determination of a Mineral Resource.

### Previous Diamond Drilling

Twenty eight diamond drill holes have been completed on the project for a total of 2,393.5 metres (mainly drilled on 100 metre sections to an average depth of 85 metres). Four holes were drilled into the Caue Formation from elevated sites approximately 100 metres above the lower canga and detritals. There is scope to extend the drilling in the southern part of the tenement to test this zone at depth. Ten other holes were completed in good grade mineralisation at the end-of-hole.

Every hole in this program intersected high grade mineralisation, mostly from surface. The weighted average grade for the 28 drill holes was: **44.0% Fe, 23.4% SiO<sub>2</sub>, 5.1% Al<sub>2</sub>O<sub>3</sub>, 0.06% P and 6.6% LOI**

A zone of higher grade iron mineralisation at surface is present on the eastern side of the tenement which may be suitable for start-up production.

### **Due Diligence**

BMG has until mid-October to complete its due diligence evaluation, with a further month (until mid-November) to finalise the transaction documentation if it elects to proceed with the acquisition.

Work thus far has included extensive re-logging of the diamond drill core to form the basis of a geological interpretation and wire frame model. This effectively was an audit of the earlier logging by Vortice Consultoria aimed at better discrimination of the detrital ore zone (canga and unconsolidated “rollada” ore from the underlying friable itabirite).

Re-assaying of critical sections of the drill core and sampling for size analysis test work was undertaken to assist with the planned estimation of resource and process design.

### **Conceptual Development Plan and Start-up**

The conceptual plan for the development of Carrapato will be based on a lower cut off of 25% Fe. Significant elements for the Project include the following:

- The mineralisation extends from the surface with no overburden waste.
- Internal waste within the mineralised envelope represents about 10% of the volume at grades of 10% to 20% Fe and could be blended with the mineralised zones.
- Elevated zones of manganese contamination in the Gandarela Formation will be regarded as internal waste and stockpiled separately.
- Half the holes drilled in the deposit were completed with strong mineralization at the end-of-hole suggesting further mineralisation will be available beneath the current envelope.
- The high grade zone represents a coherent unit with sufficient capacity and consistency to support early mining.
- Parts of the high grade zone at surface are considered to be DSO grade in the current market.

BMG’s plan is to complete a pre-feasibility study and enter a pre development phase as soon as possible with an application for a ‘Special Mining Permit’ based on a Mineral Resource estimated in accordance with the JORC code and preliminary feasibility test work. While this proposal is conceptual in nature the target start-up parameters will allow BGM to commence production within 12 to 18 months if the current assumptions are verified. The following staged approach represents a corporate target and it is emphasized that a Mineral Resource has yet to be estimated. There has been insufficient exploration to define a Mineral Resource and it is uncertain if further exploration will result in the determination of a Mineral Resource. Projected production capacity is estimated on reasonable assumptions on conversion of resource and exploration targets to ROM feed and mass recovery of the processing facility.

### **Stage 1**

- First 29 months – Production of 22.3 ktpm of High Grade Ore in line with the DNPM Special Mining Permit Requirements which allows ROM production of 300 ktpa under special Authorisation. Mass Recovery is expected to be 85% to 90%. Product available to domestic market anticipated to be at 64.5% Fe with moderate processing with crushing and wet

screening. Total ROM delivery will be 0.73 million tonnes. This material will be detrital ore derived from the Caue Formation.

## **Stage 2**

- The remaining mine life of 13.5 years will see an expansion to 4.0 mtpa ROM delivery commencing with the remaining material when full Mining Concession granted. Mass Recovery is expected to be 50% to 55%. Product available to domestic market anticipated to be 2.16 million tonnes per annum at 64.5% Fe. This material will be detrital ore derived from the Caue Formation followed by blended material from the Caue and Gandarela Formations.

Export options will be considered when the full Mining Concession is granted. The DNPM may grant a Special Authorisation Mining Permit prior to the granting of the full Mining Concession with a gross production (ROM) of up to three hundred thousand tonnes per year to allow detailed feasibility studies to continue and marketing of test parcels to prospective off take partners.

A review of the publicly available NI43-101 report on the MMX mine 20 km to the south west, ASX releases from Centaurus Metals and recent broker reviews of the SAFM project suggests the operating costs for Stage 1 of the Carrapato deposit will be in the range of \$15 to \$16 per tonne of product and \$16 to \$18 for stage 2 at the mine gate.

The Serra Azul area has been in production for many years and treatment plants may be available for toll treatment of both high grade and lower grade material. This will significantly reduce the need for high capital expenditure. Most of the activities will be carried out by contract miners and transport companies. Capital requirement at start-up is anticipated to be restricted to mine infrastructure and access roads

## **Conceptual Mining Operations and Process Design**

### ***Mine Infrastructure***

The Carrapato Project is an undeveloped site with access roads from the Itaminas Sarzedo Mine and from a private landholding to the north of the deposit. Access can also be gained from the Vale's Corrego do Feijao mine. Current access roads will need to be upgraded for heavy machinery.

No issues are envisaged with water and power supplies to the mine. The deposit is in a well-established mining area with available water and power. Stand-alone power facilities may be required for the processing plant. These issues will be reviewed as part of the feasibility study work.

### ***Mining Operations***

Mining operations currently envisaged for the Carrapato mine will be characterized by a low stripping ratio, multiple pit extraction of canga/detritals and friable itabirite located initially within the saddle which does not present a challenging topographical mining environment.

The mining operations will cover approximately 1.0km from east to west, 500m from north to south with pit depths limited to the detrital material and friable/compact itabirite boundary that covers most of the tenement.

Mining is proposed to be carried out by a combination of several local mining contractors. Mining equipment is generally small with excavators used as the primary loading units and 20m<sup>3</sup> highway trucks for hauling around the site. Blasting operations are limited to compact itabirite ores that intrude within the friable itabirite which is free-digging. The mining fleet will be owned by third party contractors.

Iron ore sales to domestic steel mills are usually at the mine gate and transport is the responsibility of the purchaser. The main haul units are converted highway trucks popular in small Brazilian mining operations. As the sinter feed rock types are friable, drill and blast operations will be limited to compact itabirite within the pit and will be required on an ad-hoc basis.

Main ancillary operations relate to product movement between stockpiles and process plants on site. This equipment will be also suitable for environmental earthworks and site maintenance.

### ***Processing***

There is a clear distinction between older banded iron formations such as the Hamersley Ranges or the Carajas deposits where production has focused on high grade direct ship ore and the friable itabirite deposits of the Iron Quadrilateral where grades are often between 35% and 50% Fe and sometimes lower.

Older banded iron formations in Australia generally consist of very fine grained (colloidal) chert or highly weathered siltstones and iron rich layers which required very fine grinding or desliming to release the valuable material.

The itabirite ores in Brazil are easily upgraded because of their coarse sedimentary structure where iron minerals and deleterious rock fragments, mainly quartz and clays, can be separated by crushing and wet screening followed by beneficiation processes including spirals and magnetic separation at relatively low cost.

It is proposed that the processing and mine infrastructure will be located to the north of the tenement on private land. There is a provision in the Mining code for an Easement of Access which allows mining companies to be granted access to the tenement and to provide space for mine operations. This is subject to agreement and compensation of the landowner which cannot be refused.

Based on experiences of other iron ore companies in the region and in the geological surveys so far undertaken, it can be expected that the concentration process will be similar to the processes of those companies.

### **Processing Plant Visits**

Three processing operations in the vicinity of Carrapato were visited in June as part of the due diligence process. One was the SAFM site with the spread of ore types from detritals (which they are currently treating) to Caue Formation on the eastern boundary with the Vale tenement and ore in the Gandarela Formation. SAFM have just installed a LIMS circuit to remove magnetic minerals such as martite and plan to install a WHIMS circuit to remove haematite minerals and other low

magnetic iron ore. The products generated are Small Lump (~25%), Sinter Feed (~35%) and concentrate (~40%). It is not clear how effective the circuit will be for the primary ores at this stage.

The second operation is the small Mineracao Ibirite Ltda (MIB) operation adjacent to Corrego do Feijao and about a kilometre from Carrapato. It is a small family business mining detrital deposits similar to SAFM. They have just installed a bank of spirals to follow the crushing and wet screening and this was being commissioned by MinTech. They produce small lump and sinter feed from the wet screening and are now reclaiming the fines (<2mm) to be fed through the spirals. They intend to install magnetic separation units to follow the spirals and recover a concentrate. Their test work (by MinTech) indicated high recovery rates will be achieved. Distribution of products is similar to the SAFM operation.

The third operation is at Itaminas Sarzedo which is adjacent to Carrapato. They are mining the Caue Formation but they have a large component of Gandarela on the tenement and usual practice is to blend this with the Caue material. Their circuit has been operating for several years. The flow sheet closely resembles the other two operations. The ROM is fed to a crusher and then to wet screens to separate small lump (+10-28mm) and sinter feed (+2-10mm). Undersize (<2mm) is delivered to a WHIMS circuit (though a LIMS unit may also be used for magnetic minerals) to produce a concentrate. The approximate product distribution is 20% small lump 40% Sinter feed and 40% concentrate.

Flotation as a beneficiation method is often avoided because of the cost and the environmental permitting is quite stringent and a lengthy process. Spirals take the place of desliming units in removing light, fine grained waste which contains much of the SiO<sub>2</sub> and Al<sub>2</sub>O<sub>3</sub> present as weathered rock material. This waste is largely flushed out during screening and all of the fines including clays etc are sent through the spirals and/or LIMS/WHIMS.

The conceptual processing model has been adopted from similar operations at Itaminas, SAFM and MIB which are currently treating Caue Formation and detritals.

## **BMG's NORTHERN MINAS GERAIS IRON PROJECTS**

Interim reports for all certain tenements in the Rio Pardo and Gema Verde projects were finalised and submitted to the DNPM. The requirement for reporting at the end of the first three years is quite stringent and required detailed preparation which takes considerable time and input by project geologists and field staff. All the required reports have now been presented to the DNPM and BMG is evaluating the next phase of feasibility work.

ENDS

### **For further information please contact:**

Bruce McCracken, Managing Director  
Malcolm Castle, Technical Director  
Brazilian Metals Group  
Ph: +61 8 9424 9390  
Email: [info@bmg.com.au](mailto:info@bmg.com.au)  
Website: [www.bmg.com.au](http://www.bmg.com.au)

James Moses  
Media and Investor Relations  
Mandate Corporate  
Ph: +61 420 991 574  
Email: [james@mandatecorporate.com.au](mailto:james@mandatecorporate.com.au)

## **Competent Persons Statement**

*While the Company remains optimistic that it will report resources and reserves in the future, any discussion in relation to exploration targets or resource potential is only conceptual in nature. There has been insufficient exploration to define a Mineral Resource and it is uncertain if further exploration will result in the determination of a Mineral Resource.*

*The information in this report that relates to Exploration Results, Mineral Resources or Ore Reserves is based on information compiled by Malcolm Castle, who is a Member of the Australasian Institute of Mining and Metallurgy ("AusIMM"). Mr Castle is a director of Brazilian Metals Group Limited. He has sufficient experience relevant to the style of mineralisation and type of deposits under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2004 edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Mr Castle consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.*