

# Quarterly Activities Report March 2016

## Highlights

- 6,000m diamond drilling campaign commenced at Juruena Gold Project
- JV company formed- Third Element Metals Ltd- with Lepidico Ltd to exploit Lithium in Brazil
- Samples from Manga Li, Sn, In project indicate significant Li<sub>2</sub>O results
- Investment in Borborema Gold Project re-initiated after internal review
- Veteran Fund Manager Jim Rogers joined Crusader Board
- \$6.25 million Capital Raising completed

## Juruena Gold Project – Mato Grosso State, Brazil (100% Crusader)

### Diamond Drilling Campaign

Crusader has initiated a diamond drilling program at its 100% owned, high-grade Juruena Gold Project.

The resource-infill and expansion program will comprise a minimum of 50 holes for approximately 6,000m over a period of approximately 90 days. The Company expects to convert a high percentage of the current Inferred resources at Dona Maria and Querosene to the Indicated category as well as seek to expand the size of the overall gold resources at Juruena.

The drill program will initially target the Querosene and Dona Maria prospects, which are both open at depth and along strike. Also planned are holes at several new targets, including Tomate, Mauro and Uiliam.



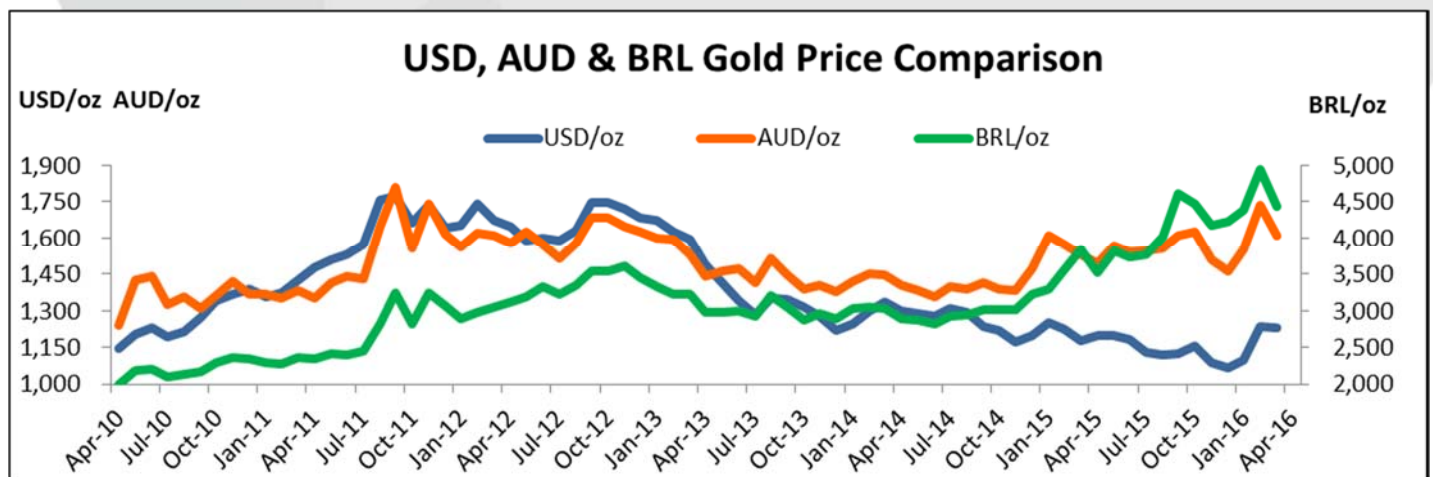
Figures 1 and 2: Drill rigs arriving on site and collaring the first hole at Querosene

Work on the Scoping Study for Jurueña has continued during the quarter with progress made on updated pricing for plant and equipment. Crusader managed to secure a purchase option for an appropriately sized, turnkey crushing and milling plant subsequent to the quarter end. The proposed plant, which will be rebuilt in partnership with Brazilian equipment supplier and foundry – GNA, (a group that has had a long association with Crusader), will be capable of treating up to 300tpd.

The Scoping Study is now also considering an open-pit option to start the project, which if feasible, could have significant initial capital and operating cost benefits. The current drilling program will collect important data that will be used in the Scoping Study.

Discussions are ongoing with potential financial partners to provide a funding facility to develop the Jurueña Gold Project. A final firm agreement is likely to be linked to the completion of the Scoping Study and a new resource statement following the completion of drilling and sampling.

The weakening Brazilian currency and recent strength in the gold price continues to have a positive effect on the economics for gold production in Brazil in a similar dynamic to that being experienced by Australian producers.



### **Manga Li, Sn, & In Project – Goiás State, Brazil (100-50% Crusader)**

In February 2016, Crusader signed a Memorandum of Understanding with Lepidico Ltd (“Lepidico”) for the establishment of a 50:50 strategic joint venture company. Lepidico is an Australian exploration and mineral processing technology company that owns “L-Max”, a patented technology to extract lithium from mica ores.

Subsequent to the end of the quarter, Crusader and Lepidico have signed a shareholders agreement and formed a JV company called Third Element Metals Ltd. The JV will have the exclusive right to use the L-Max technology in Brazil with the strategy to develop and hold a portfolio of royalty interests from sub-licensing the technology in addition to deploying it for Crusader’s Manga prospect.

The primary assets of the JV will be:

- (i) the Manga Lithium Project
- (ii) all other lithium projects as identified, licensed and/or acquired within Brazil after the date of signing of the MOU; and
- (iii) an exclusive licence of Lepidico’s lithium extraction technology for any new projects in Brazil.

The Manga Li Project (previously explored for tin and indium) is located in the NE of Goiás state, Central Brazil. Crusader explored the ground for tin, indium and gold mineralisation in the region during 2007 and later mapped, soil sampled, rock chipped and drilled 15 reverse circulation holes.

Crusader has recently conducted a reconnaissance field trip to the area and collected a number of new rock chips. During this trip, the historic RC drill chips (previously thought lost) were found and re-logging and sampling of these are underway.

The previous rock-chip program conducted by Crusader was assayed for multi-elements and includes some significant  $\text{Li}_2\text{O}$  results.  $\text{Li}_2\text{O}$  grades of up to 1.3% were returned, within a zinnwaldite-rich greisen zone, proximal to the anomalous tin and indium bearing greisen. The rock chip-sampling program was undertaken targeting tin and indium and returned results up to 5% tin and 750ppm indium, noting that the tin and indium mineralisation was hosted in a different greisenised zone from the proximal zinnwaldite-rich and Li-rich muscovite greisen zones.

#### **Lepidico and the L-Max technology**

Lepidico developed its L-Max technology for the recovery of lithium from lithium bearing micas including lepidolite, zinnwaldite and polylithionite. The process technology has been rapidly developed including a continuous mini plant test treating >350 kg of lepidolite to produce >99.5% lithium carbonate. The market price of lithium carbonate (~99% purity) is well in excess of the lithium concentrate typically targeted by other hard rock producers. The process also produces a range of valuable by-products including potassium sulphate (SOP), a fertiliser for application in the agricultural sector.

#### **Borborema Gold Project, Rio Grande do Norte, Brazil (100% Crusader)**

Following ongoing internal reviews into the size and project scope and the recent capital raising, the Company has re-initiated investment into Borborema project development. The metallurgical drilling campaign previously completed and stored on site is being prepared for dispatch to an independent laboratory in Australia. Approximately 6 tonnes of drill core will be sent in order to complete extensive metallurgical and comminution testing.

This testing will consider several opportunities identified through independent and internal reviews and define the project flowsheet to a feasibility level. It is anticipated that the new flowsheet and refined project scope will form the basis for an updated feasibility study.

The project scope has been modified to maximise the fundability and licensing of the project. Significant changes to the project scope includes,

- The open-pit optimisation has respected the locations and buffer zones of the BR 226 highway, the existing high voltage power lines and the current Crusader owned farmland. These restrictions mean that neither the highway nor the powerlines will need to be moved and additional surface rights will not need to be negotiated.
- Tailings testwork has indicated that dry stacking is a viable option and in an attempt to recycle additional water, which is a critical part of the Borborema project, dry stacking has been adopted. No tailings dam will therefore need to be constructed, saving initial and sustaining capital as well facilitating the licensing process. This has minimal operational cost impact.
- The Study has considered a 2mtpa throughput rate, which mines the upper lens only (final pit depth of ~ 180m, in pit resources of ~18-23Mt). This pit-size optimises the resource at current prices, minimises waste movement, reduces capital and operational costs and does not sterilise the future development of the deeper reserves.

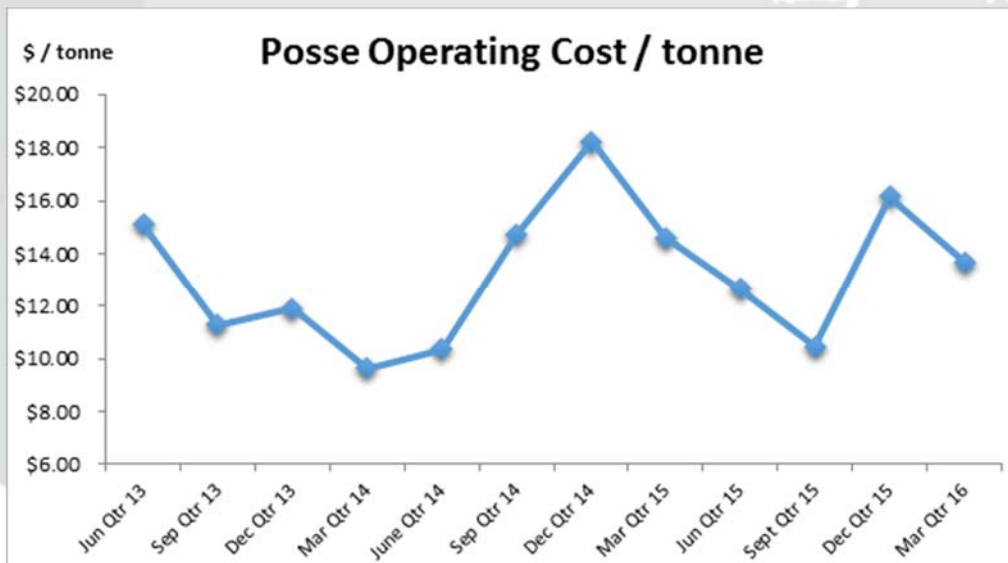
#### **Posse Iron Ore Mine – Minas Gerais, Brazil (100% Crusader)**

The Company observed a steady increase in demand for all products following a difficult period at the end of 2015 and the first months of 2016. Sales are recovering and the mine should be back to strong profitability in April after breaking even in March.



A pick up in NPO (coarse lump) sales has been particularly encouraging as this product requires minimal beneficiation and achieves the highest margin of all products sold at Posse. Crusader maintains an optimistic outlook for 2016 and anticipates the mine will operate profitably for the remainder of the year.

The Company continues to respond to sales opportunities in niche markets and changing requirements from existing customers. Cost containment and cost reductions remain key areas of focus in underpinning ongoing profitability. Over the quarter, average production costs were \$13.69/t compared to \$16.16/t for the December 2015 quarter (see figure below).



## Health & Safety / OHS

Posse Iron Ore operation suffered its first ever lost time injury (LTI) on the 17<sup>th</sup> of March when a maintenance worker suffered a cut to his jaw which required several stitches and two days' rest. The injury was sustained when a tool he was using broke, and hit his jaw. The maintenance procedure he was completing has since been modified as a result of this accident. The LTI is the first since Posse commenced operations in April 2013 (1,074 days).

No accidents or incidents were recorded at Juruena, Borborema or Manga projects.

## Corporate

### New Board Appointment – Jim Rogers

In March, Veteran fund manager James Beeland "Jim" Rogers Jr, was appointed a non-executive director of the Company.

Mr Rogers was the co-founder of the highly successful Quantum Fund, which during 1970 - 1980 gained 4200% while the S&P advanced approximately 47%. The Quantum Fund was recognised as one of the first truly international funds.

In 1998, Mr Rogers founded the Rogers International Commodity Index. In 2007, the index and its three sub-indices were linked to exchange-traded notes under the banner ELEMENTS. The notes track the total return of the indices as an accessible way to invest in the index.

In addition to his unparalleled success in funds management, Mr Rogers has also written numerous best-selling investment focused books and is a highly respected financial commentator.

Mr Rogers has a Bachelor degree in History from Yale University and a BA degree in Philosophy, Politics and Economics from Oxford University. Since 1980, he has been an occasional guest Professor of Finance at the Columbia Business School.

### Capital Raising

The Company announced a placement of \$5.5 million (before costs) in March 2016 with Patersons Securities Limited acting as Lead Manager.

The Placement, to sophisticated investors, funds and High Net Worth individuals globally, exceeded the expectations of the Company and reinforced its view that its Brazilian assets have the opportunity to realise significant value to shareholders. Subsequent to the initial placement the company received significant interest from existing shareholders and accepted \$750,000 in oversubscriptions. The additional funds increased the total capital raising to \$6.25 million which is being completed in two tranches:

- Tranche 1 – 13,625,000 shares at \$0.10 per share, issued under the Company's existing capacity; and
- Tranche 2 – 48,875,000 shares at \$0.10 per share, issued following shareholder approval which was obtained at a General Meeting held on 22 April 2016.

During the period, Crusader also agreed with its financiers Macquarie Bank to reduce the Company's debt position by \$1 million, strengthening the balance sheet and reducing interest cost.

**-ENDS-**

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**About Crusader**

Crusader Resources Limited (ASX:CAS) is a minerals exploration and mining company listed on the Australian Securities Exchange. Its major focus is Brazil; a country Crusader believes is vastly underexplored and which offers high potential for the discovery of world class mineral deposits.

Crusader has three key assets:

**Posse Iron Ore**

The Posse Iron Ore Mine is located 30km from Belo Horizonte, a city acknowledged as the mining capital of Brazil and the capital of Minas Gerais state. The project had an indicated and inferred Mineral Resource estimate of 36Mt @ 43.5% Fe when mining began in March 2013. Posse is currently selling DSO into the domestic market. With an experienced mining workforce amongst a population of over 2.5 million people, the infrastructure and access to the domestic steel market around the Posse Project is excellent.

**Borborema Gold**

The Borborema Gold Project is in the Seridó area of the Borborema province in north-eastern Brazil. It is 100% owned by Crusader and consists of three mining leases covering a total area of 29 km<sup>2</sup> including freehold title over the main prospect area.

The Borborema Gold Project benefits from a favourable taxation regime, existing on-site facilities and excellent infrastructure such as buildings, grid power, water, sealed roads and is close to major cities and regional centres. The project's Ore Reserve includes Proven and Probable Ore Reserves of 1.61Moz of mineable gold from 42.4Mt @ 1.18g/t (0.4 & 0.5g/t cut-offs for oxide & fresh).

The measured, indicated and inferred Mineral Resource Estimate of 2.43Moz @ 1.10 g/t gold, remains open in all directions.

**Juruena Gold**

The Juruena Gold Project is located in the highly prospective Juruena-Alta Floresta Gold Belt, which stretches east-west for >400km and has historically produced more than 7Moz of gold from 40 known gold deposits.

The Juruena Project has been worked extensively by artisanal miners (garimpeiros) since the 1980s, producing ~500koz in that time. Historically there is a database of more than 30,000 meters of drilling and extensive geological data.

**Manga Lithium**

The Manga Li Project (previously explored for tin and indium) is located in the NE of Goias state, Central Brazil. Crusader first applied for the ground when exploring for tin, indium and gold mineralisation in the region during 2007 and later mapped, soil sampled, rock chipped and drilled 15 reverse circulation holes for 1,001m. Manga forms part of the Third Element Metals a joint venture between Crusader and Lepidico Ltd, owner of the L-Max lithium mica treatment technology.

**Competent Person Statement**

The information in this report that relates to the Manga Li project exploration results, Juruena Gold Project exploration results, Posse Iron Ore Project exploration results and Borborema Gold Project exploration results released after 1 December 2013, is based on information compiled or reviewed by Mr. Robert Smakman who is a full time employee of the company and is a Fellow of the Australasian Institute of Mining and Metallurgy. The information in this report that relates to Mineral Resources at the Juruena Gold Project is based on information compiled or reviewed by Mr. Lauritz Barnes and Mr. Aidan Platel who are independent consultants to the company and Members of the Australasian Institute of Mining and Metallurgy. Each of Mr. Smakman, Mr. Barnes and Mr. Platel have sufficient experience that is relevant to the type of mineralisation and type of deposits under consideration 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. Mr. Smakman, Mr. Barnes and Mr. Platel consent to the inclusion in the report of the matters based on this information in the form and context in which it appears.

The information in this report that relates to:

- a) Borborema Gold Project and Posse Iron Ore Project Exploration Results released prior to 1 December 2013 is based on information compiled or reviewed by Mr. Robert Smakman who is a full time employee of the company;
- b) Borborema Gold Mineral Resources is based on information compiled by Mr. Lauritz Barnes and Mr. Brett Gossage, independent consultants to the company;
- c) Borborema Gold Ore Reserves is based on information compiled by Mr. Linton Kirk, independent consultant to the company;
- d) Posse Fe Mineral Resources is based on and accurately reflects, information compiled by Mr. Bernardo Viana who was a full time employee of Coffey Mining Pty Ltd,

and who are all Members of the Australasian Institute of Mining and Metallurgy (Rob Smakman and Linton Kirk being Fellows), and who all have sufficient experience that is relevant to the type of mineralisation and type of deposit under consideration, and to the activity which they are 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. Each of Mr. Smakman, Mr. Barnes, Mr. Kirk, Mr. Viana, and Mr. Gossage consent to the inclusion in the report of the matters based on their information in the form and context in which it appears.

The information was prepared and disclosed under the JORC Code 2004. It has not been updated since to comply with JORC Code 2012 on the basis that the information has not materially changed since it was last reported.