

31 MARCH 2017 QUARTERLY REPORT

HIGHLIGHTS

- Pre-Feasibility Study on target for completion by June 2017
- Metallurgical testwork demonstrates substantial increase in recoverability of uranium
 - Resin identified with over 100% higher loading capacity than previously tested resins
 - Positive impact indicates a lowering of upfront project CAPEX and reduction in key reagent consumptions
- Combined Honeymoon Project Resource increased to 43.5Mt @ 660ppm eU₃O₈ (for 63.3Mlb eU₃O₈) - 10% increase in total metal endowment
 - Promising potential for resource expansion over Combined Honeymoon Project
 - Only 3km drilled at Jasons Deposit out of the 12km prospective trend
 - Sonic core holes at Jasons Deposit confirm high grade mineralisation in coarse to very coarse sands and therefore expected to be highly leachable
- Preparatory work for a Field Leach Trial now underway
- Two new gold discoveries made by Joint Venture partner, Teranga, with very encouraging assay results at the Golden Hill property in Burkina Faso
- Appointment of Mr Duncan Craib as CEO to lead development of Honeymoon Project
- \$6,800,000 capital raising completed
 - Oversubscribed with placement made to sophisticated and institutional investors
 - Funds to be used to complete PFS, drill programs and for general working capital

HONEYMOON URANIUM PROJECT

During the quarter, Boss was pleased to announce an updated JORC 2012 Mineral Resource at the Jasons Deposit following the completion of a successful drill program across the area which included two sonic core holes. The Jasons Deposit is located in the northern end of the Yarramba palaeochannel, which hosts the Honeymoon Deposit (Figure 1). The 2017 Inferred Resource update shows an endowment of 6.2 Mt with an average grade of 790 ppm eU₃O₈ for 10.7 Mlb (4.9 Kt) of contained U₃O₈ reported using a 250ppm U₃O₈ lower cut-off. This represents a 107% increase in metal endowment to the 2016 resource.

The global resourced for the combined eastern and western tenement holdings now totals 43.5Mt @ 660ppm eU₃O₈ for 63.3Mlb of contained U₃O₈ - representing a 10% increase in metal to previous estimates.

Jasons Deposit Drill Program

On 15 November 2016, Boss confirmed the commencement of drilling at the Jasons Deposit, which is approximately 12 km north of Boss's Honeymoon Uranium Mine Site. Boss used experienced South Australian based drilling and geophysical contractors (Watsons Drilling and Borehole Wireline) who have extensive experience with the



Honeymoon Uranium Project. Additionally, Boss used its own Prompt Fission Neutron (PFN) tools to assist in the determination of radioactive disequilibrium in the area.

Results received and released to the ASX on 3 February 2017 included assay results together with two sonic core holes. This drilling positively confirms the trend extent of the southern high-grade region. The drill program was designed to enable further delineation and expansion of the known resource.

The two sonic core holes confirmed that the high-grade mineralisation in this region is associated with medium to coarse sand units, considered to be highly amenable to the ISR process. High grade mineralisation is seen along the reduction/oxidation ('redox') boundary of coarse to very coarse and pebbly sands, medium to coarse grained well sorted sands; very coarse to pebbly poorly sorted sands and minor black silty clay carbonaceous/graphitic interbeds.

The sonic core hole program had a twofold purpose of obtaining fresh core samples for metallurgical testwork and to further confirm the PFN pU_3O_8 calibration profile. This is an important validation step prior to potentially using the PFN data in Resource estimates.

The 2017 drilling program commenced 9 January with 12 mud rotary holes drilled for 1,358m. The mud rotary drilling results confirm a northerly trend extent of the high-grade, sandstone related mineralisation (e.g. BMR056 and BMR065) and confirmed a narrower trend in the north (BMR058). Considering these positive results 6 additional mud rotary holes will be drilled to test further trend extents.

The mineralisation trend directly south is closed off by holes BMR061 to BMR064; however, interpretation of the basement contacts indicate that this may be due to a local feature associated with a short-scale basement high. Historical drilling indicates further uranium mineralisation to the south-east within the paleo channel and further work will be required to test for suitable mineralisation between the current drill region and the distal eastern mineralisation.

The gamma eU_3O_8 probing for holes BMR001 to BMR066 was undertaken by Borehole Wireline. The tool used has been calibrated in the South Australia Glenside test pits. The geophysical probing for the remaining holes was undertaken using Boss's own logging truck with both gamma eU_3O_8 and PFN pU_3O_8 readings to be collected.

For full details of all drill results from this campaign, please see ASX announcements dated 6 December 2016, 8 December 2016, 14 December 2016 and 3 February 2017.

Jasons Deposit Resource Upgrade

Resulting from the successful drill program, the Company was pleased to advise the 2017 Inferred Resource update with an endowment of 6.2 Mt of an average grade of 790 ppm eU_3O_8 for 10.7 Mlb (4.9 Kt) of contained U_3O_8 reported using a 250ppm U_3O_8 lower cut-off, representing a 107% increase in metal endowment to the 2016 resource. The global resource for the combined eastern and western tenement holdings now totals 43.5Mt @ 660ppm eU_3O_8 for 63.3Mlb of contained U_3O_8 - representing a 10% increase in metal to previous estimates.

The Jasons drill program covered 3km of the 12km trend that makes up the Jasons region on a nominal 200 x 100 drill pattern, which locally was tighter.

In addition, the Jasons region has a further Exploration Target of between 1.5 to 6Mt at between 600 to 1,500ppm eU_3O_8 for between 7 to 18Mlb of contained U_3O_8 (see announcement 8 December 2015), which forms part of a combined Exploration Target in excess of 100Mlbs. The Exploration Target is conceptual in nature and there is insufficient exploration to estimate a Mineral resource. It is uncertain if further exploration will result in the estimation of a Mineral Resource.

The Resource is based on all available drillhole data including the results of drilling by the Boss Resources undertaken during December 2016 – January 2017. The database used for estimation of the 2017 Jasons Resource consists of 274 drillholes, including 77 new drillholes which were analysed using either the PFN tool (69 drillholes)

or by natural gamma (8 drillholes) and 197 historical drillholes which were analysed by a combination of natural gamma (191 drillholes) or PFN (6 drillholes).

For full details including resource estimation methodology, see ASX announcement dated 15 March 2017.

Table 1: Jasons Deposit 2017 Resource

(Ordinary Kriged estimate reported using a 250 ppm eU₃O₈ as a lower cut-off and density of 1.75 t/m³. Other deposits included in the Honeymoon Project are shown for reference)

Classification	Million tonnes	eU3O8 (ppm)	Contained metal (U ₃ O ₈ , K t)	Contained metal (U ₃ O ₈ , M lb)
Jasons (March 2017)				
Inferred	6.2	790	4.9	10.7
Goulds Dam (April 2016)				
Indicated	4.4	650	2.9	6.3
Inferred	17.7	480	8.5	18.7
TOTAL	22.1	510	11.3	25.0
Honeymoon* (January 2016)				
Measured	1.7	1720	3.0	6.5
Indicated	1.5	1270	1.9	4.2
Inferred	12.0	640	7.6	16.8
TOTAL	15.2	820	12.5	27.6
Project Total (All deposits)				
Measured	1.7	1720	2.95	6.5
Indicated	5.9	810	4.80	10.6
Inferred	35.9	586	21.0	46.7
GRAND TOTAL	43.5	660	28.8	63.3

* Quoted resources have been adjusted to exclude previous production of approximately 335t of U₃O₈.

Note: Figures have been rounded

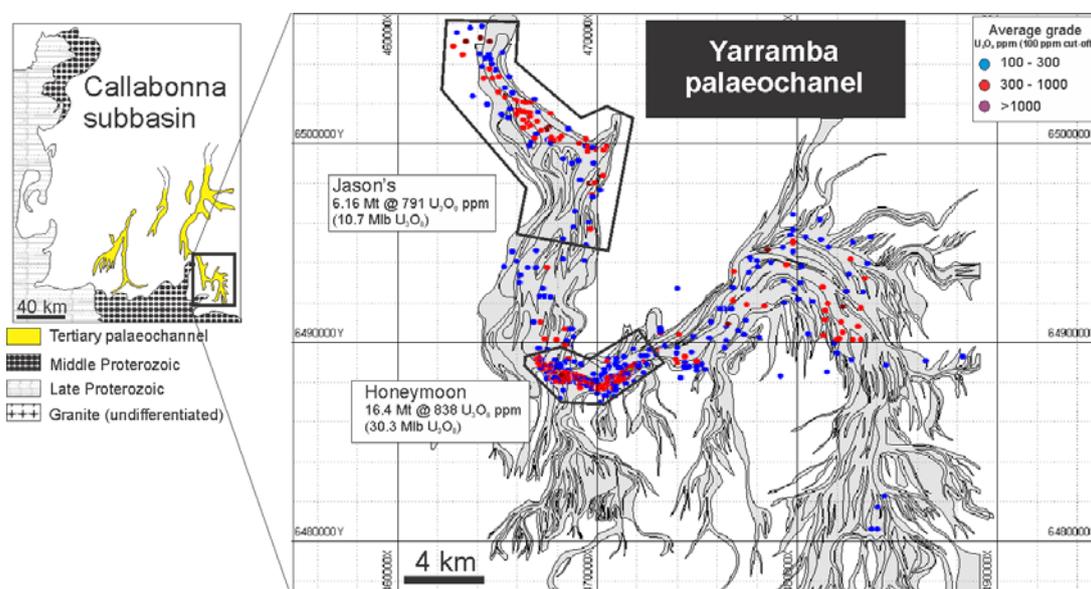


Figure 1: Location of the Jasons Deposit within the Yarramba palaeochannel.

Coloured dots are the average grades of the drillhole intercepts estimated using 100 ppm U₃O₈ as a lower cut-off.

Jasons Deposit Exploration Targets

Analysis of the drilling and revised geological interpretation at the Jasons Deposit indicates good potential for further increasing the prospect's endowment. There are high grade intersections of uranium mineralisation approximately 1 km to the south from the currently drilled area suggesting that uranium roll-fronts occur in this



region. Large distances between the drillholes drilled in this part of the palaeochannel do not allow for adequate delineation of the mineralisation, thus the area remains a high-priority exploration target.

Similarly, clusters of the high grade intersections are also present toward the north from the drilled area, suggesting that mineralisation can be also extended to the north.

BURKINA FASO GOLD ASSETS

Golden Hill

Ma/Ma Breccia Prospect

During the first quarter of 2017, farm-in Joint Venture partner, Teranga Gold Corporation, completed a field exploration program consisting of geological and structural mapping as well as an initial drilling program at the Ma/Ma Breccia prospect. Analytical results from the Ma/Ma Breccia drill program arrived early in the second quarter, confirming the field observations. Positive grade and width intervals were returned along the entire 1,300-metre strike extent of the primary Ma structure, as well as a parallel structure and cross structures. A complete table of results for all thirteen drill holes can be found on Teranga's website at www.terangagold.com.

Nahiri Prospect

Teranga's first round of exploration at the Nahirindron (Nahiri) Prospect(s) included a series of auger drill profiles to complement previous geochemical results and earlier auger drilling campaigns. Subsequent to receiving positive results from detailed auger profile sections; a seventeen-hole heel-to-toe RC drill program was completed across four individual sections. Three of the four section lines returned encouraging results, of which the central two section show a very broad, highly anomalous gold zone. Within this highly anomalous, broad halo of gold mineralization that measures upwards of 50-80 metres in three of the drill holes, a number of very positive higher-grade intersections are present.

Other Golden Hill Prospects

A limited 2-hole diamond core-drilling program was completed at the Jackhammer Hill prospect in order to assess the structural controls of mineralization. During the same drill campaign, four diamond core holes were drilled at the Pourey-Peksou Prospects to follow-up on some previously obtained auger and RC results suggesting that a structurally controlled mineralized trend is present within this volcanic, sedimentary and intrusive complex.

FENNOSCANDIAN NI-CU PROJECTS

Due to the Company's focus on the Honeymoon Project during the quarter, no material work was undertaken on the Company's assets in Sweden.

CORPORATE

Appointment of Mr Duncan Craib

On 9 January 2017, the Company was pleased to announce the appointment of Mr Duncan Craib to the position of Chief Executive Officer to lead the next stage of development of the Honeymoon Uranium Project.



Over the past 4 years Mr Craib served as Finance Director to Swakop Uranium (Pty) Ltd and was heavily involved in the US\$2.5 billion development and construction of its world class Husab uranium mine in Namibia. Its principal shareholder, China General Nuclear Power Corporation (CGN), is the largest nuclear power operator in China and largest nuclear power constructor world-wide. Husab is currently being commissioned and once in production will be one of the largest mining and processing uranium projects in the world, mining 150 Mt on an annual basis and generating 15 Mt of ore to produce 15 Mlbs of uranium oxide.

During his time in Namibia Mr Craib also chaired a Namibian Uranium Association committee to address key power and water risks affecting all uranium mines and exploration projects operating in the Erongo region, including Rio Tinto's and Paladin's regional uranium mines.

Prior to 2012, Mr Craib served in London as CFO to Kalahari Minerals Plc under the Chairmanship of Mr Mark Hohnen. The company's key investment was a 42.74% shareholding in Extract Resources Ltd and its subsidiary Swakop Uranium (Pty) Ltd, which was ultimately the subject of a corporate transaction in 2012 valued at US\$2.2 billion.

Capital Raising

On 20 January 2017, the Company announced an oversubscribed placement of approximately 104.6 million new ordinary shares (Shares) to raise \$6.8m (before issue costs) (Placement) which completed on 30 January, 2017.

The Shares were issued at \$0.065 per share, representing a discount of:

- 7.7% to BOE's 5 trading day VWAP of \$0.070 per share as at 17 January 2017
- 13.3% to BOE's closing price of \$0.075 per share on 17 January 2017

The Placement was made to new and existing domestic and international institutional and sophisticated investors, and within the Company's existing 15% placement capacity pursuant to ASX Listing Rule 7.1.

Funds raised from the Placement will be applied to costs associated with the Pre-Feasibility Study of the Company's Honeymoon Uranium Project in South Australia, and to general working capital.

Euroz Securities Limited and Patersons Securities Limited served as Joint Lead Managers to the Placement.

POST QUARTER SIGNIFICANT EVENTS

Metallurgical Testwork Progress

On 27 April 2017, the Company announced interim results from the metallurgical testwork program being undertaken with the Australian Nuclear Science and Technology Organisation as part of the Pre-Feasibility Study. As announced previously, the metallurgical program is to further define and optimise the selected flowsheet, with such work focussing on:

- Leaching test work on drill core samples (batch and continuous column leaches);
- Water quality assessments;
- Ion exchange test work; and
- Solvent extraction test work.

The selected flowsheet is based on the work of the Expansion Study which identified an expanded processing plant facility based on ion exchange technology as the most viable option to pursue for the Project (see ASX: 28 September 2016). The process considers operating the existing solvent extraction plant in parallel with the new ion exchange plant and combining products post uranium precipitation. This configuration allows the maximum benefits of the ion exchange process to be realised. In addition, any improvements in pregnant leach solution

tenors that may be achieved as a result of the leaching optimisation can be easily managed within the process plant.

This testwork was a key validation step, of which there are several, in de-risking the Honeymoon Project as highlighted by the positive outcomes achieved, including:

- Ongoing ion exchange testwork identified a resin, with over 100% higher loading capacity than previously tested resins, appropriate for Honeymoon type liquors with high chloride
- Positive impact indicates a lowering of upfront project CAPEX and reduction in key reagent consumptions
- Preliminary bench scale leach testwork shows a modified leach liquor improves recovery in the ores
- Metallurgical testwork confirms conventional processing for recovery of uranium at Honeymoon

THIRD QUARTER OBJECTIVES

The results from the metallurgical testwork are being used by GR Engineering Services for the PFS process design criteria on which the plant design, sizing and costing are based. Such work is well progressed and the preliminary results are expected shortly.

Other major activities associated with the PFS, most noticeably the updated resource and the wellfield design, are either complete or nearing completion. All inputs required for the study will be available in the next few weeks with the final reporting to occur shortly thereafter.

The information generated in the PFS will form the basis for the licence and permit applications for the increased production at Honeymoon and the mining licence for Jasons. The documentation, meetings and approvals for these applications will be undertaken through to H1 2018 for completion in time for the proposed Definitive Feasibility.

As the next step in the development of the Honeymoon Project a Field Leach Trial (FLT) will be undertaken at Honeymoon. The FLT will consider running two leach patterns over a number of months to validate the leaching process and produce “real” PLS for testing in an onsite ion-exchange pilot plant that will run in parallel with the FLT. Planning for this is underway and it is anticipated that the onsite work could start as early as June, running until September/October 2017.

For further information please contact:

Duncan Craib

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Appendix 1

The following information is provided pursuant to Listing Rule 5.3.3 for the quarter ended 31 March 2017.

SCHEDULE OF MINING TENEMENTS

Tenement Name	Location	Licence Number	Interest
Boutouanou	Burkina Faso	2011/11/410	49% (TGZ farming in)
Diabatou	Burkina Faso	2011/11/409	49% (TGZ farming in)
Tyara	Burkina Faso	2011/11-159	49% (TGZ farming in)
Foutouri	Burkina Faso	2011/11-160	49% (TGZ farming in)
Baniri	Burkina Faso	2009/09-060	49% (TGZ farming in)
Intiedougou	Burkina Faso	2009/09-061	49% (TGZ farming in)
Mougue	Burkina Faso	2009/09-062	49% (TGZ farming in)
Kankandi	Burkina Faso	10/142/MCE	49% (TGZ farming in)
Tyabo	Burkina Faso	10/144/MCE	49% (TGZ farming in)
Skogtrask Project	Sweden	Skogtrask nr.3	100%
		Palange nr.1	100%
Nottrask Project	Sweden	Norrtrask nr.9	100%
Lilltrask Project	Sweden	Lilltrask nr1, 2 and 3	100%
Yarramba	South Australia	EL5621 (previously ELA2014/00228)	80% (Right to acquire 100%)
South Eagle	South Australia	EL5215	80% (Right to acquire 100%)
Goulds Dam	South Australia	EL5623 (previously ELA2014/00240)	80% (Right to acquire 100%)
Katchiwilleroo	South Australia	EL5622 (previously ELA2014/00239)	80% (Right to acquire 100%)
Ethiudna	South Australia	EL5043	80% (Right to acquire 100%)
Goulds Dam	South Australia	RL83-90	80% (Right to acquire 100%)
Honeymoon Mine	South Australia	ML6109	80% (Right to acquire 100%)

There were no acquisitions or disposals during the quarter.



Competent Person's Statements

The information in this document that relates to the Exploration Data is based on information provided by Mr. Neil Inwood, who is a Fellow of the AUSIMM. Mr Inwood is a consulting geologist and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity undertaken to qualify as Competent Persons as defined in the 2012 edition of the "Australasian Code for Reporting of Mineral Resources and Ore Reserves". Mr. Inwood has consented to the inclusion of this information in this document in the form and context in which it appears and confirms that the form and context in which the Competent Person's findings are presented have not materially changed since initial release to the market on 6 December 2016, 8 December 2016, 14 December 2016 and 3 February 2017. An entity associated with Mr Inwood has shares in Boss Resources.

The information in this report that relates to the Mineral Resources is based on information compiled by Dr Marat Abzalov, who is a Competent Person according to the JORC 2012 Code. Dr Abzalov is a Fellow of Australasian Institute of Mining and Metallurgy. He has sufficient experience in estimation Resources of uranium mineralisation, and have a strong expertise in the all aspects of the data collection, interpretation and geostatistical analysis to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting Exploration Results, Mineral Resources and Ore Reserves'. Dr Abzalov is employed as a director of Boss Resources and is also working as an independent consultant and Director of MASSA Geoservices (Australia). Dr Abzalov has consented to the inclusion of this information in this document in the form and context in which it appears and confirms that the form and context in which the Competent Person's findings are presented have not materially changed since initial release to the market on 14 June 2016 (Honeymoon and Goulds Dam Resources) and 15 March 2017 (Jasons Resource).