

## 30 JUNE 2018 QUARTERLY REPORT

### HIGHLIGHTS

- Investor site visits to Honeymoon Uranium Project in June and July to demonstrate the Project's established infrastructure and detail program of works to return to production, assuming a specified global uranium price is achieved
- Launch of Re-Start Strategy for Honeymoon
- Honeymoon progressively being de-risked both technically and commercially
- Further high-grade gold confirmed at C-Zone prospect, Golden Hill, Burkina Faso

**Boss Resources Limited (ASX: BOE)** ("Boss" or the "Company") is pleased to provide shareholders the following quarterly activities report for the three-month period ending 30 June 2018.

Most notably, post-period, the Company announced it has launched a Re-Start Strategy for the Company's Honeymoon Uranium Project in South Australia. Since Boss Resources' acquisition of Honeymoon in December 2015, it has progressively de-risked the Project both technically and commercially to the point where on completion of the Re-Start Strategy, the Company will be ready to execute the programs of work required to restart Honeymoon, assuming a specified uranium price has been achieved.

### HONEYMOON URANIUM PROJECT



## HONEYMOON SITE VISITS

In June and July, Boss Resources hosted investor site visits to Honeymoon where the Company demonstrated both the established infrastructure at the Project and a detailed explanation of work programs required to bring Honeymoon back into production.

To coincide with site visits, the Company released an updated investor presentation, which can be viewed at: <https://bossresources.com.au/reports-announcements/#investor-presentations>

- Few uranium projects ready to participate in the early stages of a new bull market
- Located in South Australia, the premier Australian uranium jurisdiction
- Fully permitted uranium operation with annual uranium export licence of 3.3M lbs
- Heritage and Native Title mining agreements in place
- JORC Resource of 63.3Mlb U3O8
- Significant resource expansion upside in excess of 100M lbs<sup>1</sup>
- \$170M of established infrastructure - power, roads, airstrip, camp and water - that has history of uranium production and exportation
- Plant under care and maintenance in good condition
- Solvent Exchange ("SX") plant can be fast tracked into production in a short 9 - 12 months
- Increased production through addition of an Ion Exchange ("IX") plant in 24 months
- CAPEX debt mandate for up to US\$65M with Tribeca

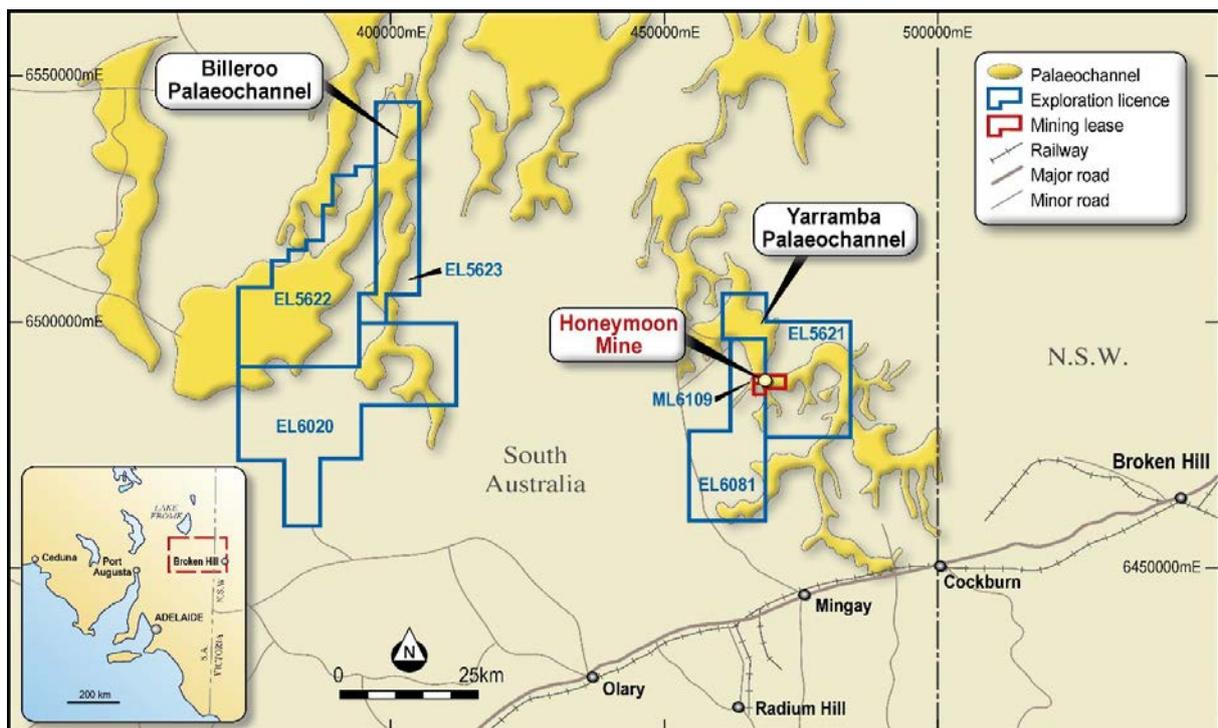


Figure 1: Honeymoon Uranium Project. The yellow shaded regions represent paleochannels which have potential to host uranium mineralisation and are the focus of exploration efforts.

<sup>1</sup> See Exploration Update announcement released on ASX on 8 December 2015

## POST PERIOD

### HONEYMOON RE-START STRATEGY

The re-start strategy has commenced and is categorised into three key phases;

**Phase 1:** The generation of the final input data required for the Definitive Feasibility Study (“DFS”) including the drilling program to deliver the measured and indicated resource, an optimisation program to deliver further cost savings and/or process improvements and a preliminary execution plan, updated cost estimate and schedule for the re-start of the existing solvent extraction (“SX”) plant.

**Phase 2:** The second phase comprises the DFS and permitting updates.

**Phase 3:** The third phase covers the detailed execution planning, operational readiness inclusive of the SX plant recommissioning plan, in conjunction with the ion exchange plant detailed design.

The Company will provide ongoing updates as the re-start strategy progresses, with Phase 1 currently underway, Phase 2 planned to commence in early 2019 and Phase 3 starting later that year.

On completion of the three-phase strategy, Boss will be in a position to make a decision to proceed to mine, assuming a specified global uranium price has been achieved to satisfy the targeted IRR and NPV return to maximise shareholder value. Being an ISR mine in combination with IX production, the Honeymoon Uranium Project will operate in the lowest cost quartile of world-wide producers.

### RE-START PHASE 1

#### Drilling Program

Honeymoon comprises two main resource areas:

1. The Eastern Region (EL 6081 and 5621) which hosts the Honeymoon, Brooks Dam and East Kalkaroo Deposits (all on the existing Mining Licence); and
2. The Western Region (EL 6020, 5623 and 5622) which hosts the Gould’s Dam and Billeroo Deposits (**Figure 1**).

The proposed drilling will be conducted in two parts comprising infill (**Part A**) and step-out, exploratory drilling (**Part B**).

**Part A** of the drill program has been designed to infill existing drill holes based on the expected locations of the uranium roll fronts in the currently defined Mineral Resource area. Infilling of existing drill holes will obtain a drill spacing of approximately 80m x 40m which is required for the conversion of Inferred to Indicated resource, and 40m x 20m which is considered for the conversion of Indicated to Measured resource category.

The focus of the infill drilling program will be the Eastern Region located on the Mining Licence, targeting defined areas of the resource as well as areas extensional to the Brooks Dam and East Kalkaroo Deposits. The main objective of this phase of the drilling is to upgrade the existing Mineral Resources (JORC 2012) by:

1. converting the Inferred Resources to Indicated category;
2. upgrading a portion of the Indicated Resources to Measured category, with the ultimate purpose of converting Indicated and Measured Resources to Ore Reserves.

**Part B** of the program comprises step-out exploration drilling designed to define areas of likely extension following up on previously identified zones of high grade uranium mineralisation to the immediate northeast of the East Kalkaroo Deposit. The objective of this phase of drilling is to prove the continuation of the high-grade mineralisation and add to the Inferred Resource category of the currently defined Mineral Resource. If successful and of sufficient drill spacing, it is likely this data may be used to increase the size of the Global Mineral Resource

## Optimisation Program

### Ion Exchange

The piloting of the ion exchange process as part of the highly successful Field Leach Trial plant showed that there may be some opportunity to improve the uranium tenors in the eluate with alternative eluant solutions or elution strategies. A program of testwork is therefore being undertaken to investigate these alternatives to determine if an improved elution process can be identified. This work will be carried out by ANSTO Minerals.

### Nano-filtration

The Pre-feasibility Study assumed the incorporation of nano-filtration technology on the IX eluate stream. This was to recover the eluate reagent (sodium chloride), but also to increase the uranium tenor in the feed liquor to precipitation circuit. The benefits of this technology were primarily seen as a reduction in reagent consumption and therefore operating costs. The PFS assumed general operating parameters but was not specific to the Honeymoon process therefore a program of testwork has been planned provide data that can be used to more accurately define performance and costs of such as unit. The testwork will be carried out by ANSTO Minerals with the engineering and costing by the engineering consultant.

### Uranium Precipitation

The PFS considered minimal changes to the existing solvent extraction strip and precipitation circuit but would incorporate a new fluidised bed type reactor for the precipitation of the uranium produced from the IX plant, i.e. there would be two precipitation circuits running in parallel. After discussions with various parties, it has been agreed that it is possible to combine the SX strip liquors with the IX eluates (post nano-filtration) to produce one feed liquor for the precipitation process. The existing batch circuit should have sufficient capacity for the full stream and as such capital cost savings with regard to the second precipitation circuit can be made.

### Alternate Leach Oxidant

One of the major findings from the Field Leach Trial was the importance of oxidant and potentially the costs associated with maintaining a high oxidant concentration in the liquor. It is therefore proposed to undertake an investigation into alternative oxidants for the leaching process. Inception Group has a patented process for in-situ oxidant generation which would be ideal for the Honeymoon deposit and a joint testwork program to pursue this further is being considered.

## Trade-off Studies

### Ion Exchange Columns

The most significant capital cost items in the expanded plant proposed in the PFS are the Ion Exchange columns. NIMCIX columns were selected as the preferred equipment type due to their reduced resin inventory and higher eluate grades. Other ion exchange columns used in the uranium mining industry may also be applicable to Honeymoon and a trade-off study will be conducted to investigate these alternates.

### Yellow Cake Dryer Capacity

A thorough assessment of the drying capacity at Honeymoon is to be undertaken. The current set-up has two batch pin dryers, with a shared vacuum and hot oil system. This configuration has a design throughput of 880klbs per annum. The Pre-feasibility Study assumed that incorporating a new vacuum and hot oil system to allow the two dryers to run independently combined with improved yellow cake filtration characteristics (i.e. reduced moisture content) would allow the increased throughput of 2Mlbs per annum to be achieved. Confirmation of the modifications and upgrades that are possible and whether these will allow the expanded production rate to be achieved will be investigated as part of this study.

### Re-Start Assessment

An important component for the Project is the re-start of the existing solvent extraction processing plant at Honeymoon. These facilities have been on care and maintenance since the plant shutdown in 2015 with only critical maintenance activities undertaken. A complete assessment of the current state of the plant is required to determine the refurbishment or replacement costs for valves, piping, pumps, instrumentation etc. An engineering study will be undertaken to determine the scope, timing and updated cost estimate for the re-start scope.

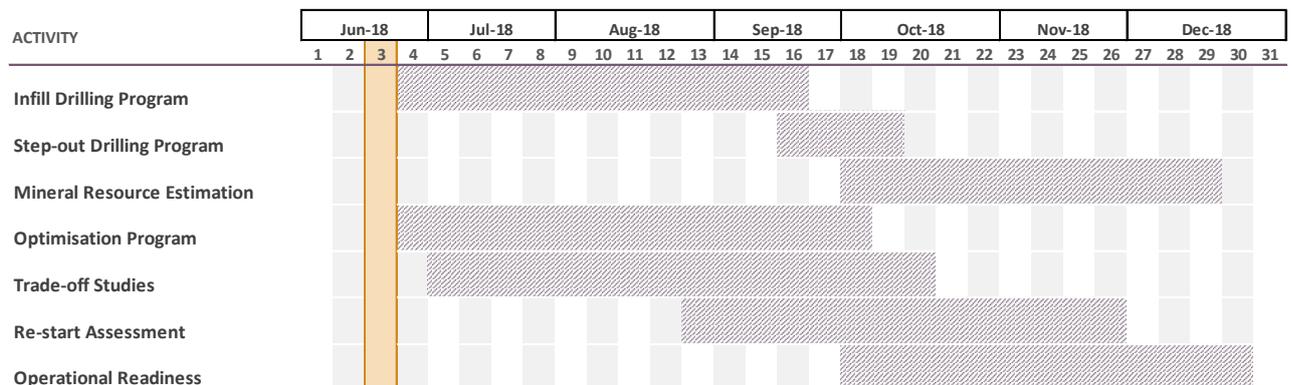
### Operational Readiness

Work will be undertaken on developing the first pass of an operational readiness plan which will cover what the Company needs to do at both a corporate and operational level to be ready to execute and re-start operations.

## RE-START PHASE 1 SCHEDULE

The drilling program and optimisation / trade-off studies commenced in July 2018. The mineral resource estimate will run off the backend of the drill program, while the preliminary restart and operational readiness programs will overlap with the last stages of the studies.

RE-START Phase 1 proposed timeline is detailed below.



Estimated dates for the main deliverables are as follows:

- Drilling program to be completed by mid-October
- Mineral Resource Estimate update by mid-December
- Optimisation work programs to be completed by early October
- Trade-off Studies to be completed by early October
- Preliminary Re-Start assessment delivered by beginning December
- Preliminary Operational Readiness plan delivered by beginning December

## BURKINA FASO ASSETS

Boss currently holds a 49% interest in joint venture with Teranga Gold Corporation ("Teranga") over the Golden Hill and Gourma Gold Projects located in Burkina Faso, West Africa.

Teranga manages the joint venture and is funding all exploration on the projects up to the completion of a DFS and Decision to Mine. On delivery of the DFS, Teranga's interest in the joint venture will increase to 70% and they retain the rights to acquire an additional 10% in the joint venture for A\$2.5 million. Upon completion of the DFS but prior to a Decision to Mine, Boss may elect to convert the remainder of their interest to a 1.5% Net Smelter Return, otherwise Boss shall be free carried to a decision to mine and will then be required to contribute on a pro rata basis.

Golden Hill is emerging as one of the most exciting gold projects in West Africa and continuing high grade gold intercepts further increase confidence that this project may represent Teranga's next multi-asset, mid-tier gold producer in West Africa.

### Further high-grade gold confirmed at C-Zone prospect

In April, the JV announced that its Phase 2 diamond drill program at the C-Zone prospect on the Golden Hill property in Burkina Faso, West Africa has returned near surface and deeper high-grade gold intersections. The results from Phase 2 elevate C-Zone to the category of advanced exploration prospect from a drill target.

#### C-Zone Prospect – Phase 2 Highlight Results

- **7 m @ 21.86 g/t Au including 1 m @ 136.01 g/t Au** (GHDD-290) uncut grade from 26 m downhole depth (DHD)
- **10 m @ 6.03 g/t Au including 1 m @ 23.85 g/t Au** (GHDD-247) from 91 m DHD
- **12 m @ 3.91 g/t Au including 5 m @ 6.66 g/t Au** (GHDD-245) from 84 m DHD
- **8 m @ 3.64 g/t Au** (GHDD-272) from 35 m DHD

C-Zone is just one of a series of advanced exploration prospects at Golden Hill all located within six kilometres of a central point. To date, the JV has drill tested C-Zone with diamond core drilling over a minimum strike extent of approximately 600 metres. Gold mineralisation is localised within a discrete, mafic volcanic hosted, northwest-southeast striking shear zone system that displays alteration, veining and breccia characteristics similar to those observed at Golden Hill's nearby high-grade Ma and Ma North prospects.

Work at Golden Hill is advancing rapidly. Teranga is investing \$8 million in Golden Hill drill programs in 2018. The Company plans to release an initial resource for the project's most advanced prospects by year end. Preliminary metallurgical test work programs are underway and base line environmental studies are planned for later this year. Teranga has secured \$25 million for future advancement of its Golden Hill project to feasibility study.

**For further information, contact:**

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**Competent Persons' Statements**

The information in this report that relates to Mineral Resources for the Honeymoon Project was initially reported to the ASX on 20 January 2016, 6 April 2016, 14 June 2016 and 15 March 2017. The Company is not aware of any new information or data that materially affects the information included in the relevant announcements and, in the case of the Mineral Resource estimates, that all material assumptions and technical parameters underpinning the Mineral Resource estimates in the relevant announcements continues to apply and have not materially changed.

The information in this document that relates to the Honeymoon Project Exploration Target and associated Exploration Data is based on information provided by Mr. Neil Inwood, who is a Fellow of the AUSIMM. Consent is granted only for the purposes of outlining an Exploration Target, no warranty is made on the use of the exploration information and data for other purposes. 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. An entity associated with Mr Inwood has shares in Boss Resources.

Teranga's exploration programs are being managed by Peter Mann, FAusIMM. Mr. Mann is a full-time employee of Teranga and is not "independent" within the meaning of National Instrument 43-101. Mr. Mann has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking 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" (the "JORC Code"). Mr. Mann is a "Qualified Person" under National Instrument 43-101 Standards of Disclosure for Mineral Projects. The technical information contained in this news release relating exploration results are based on, and fairly represents, information compiled by Mr. Mann. Mr. Mann has verified and approved the data disclosed in this release, including the sampling, analytical and test data underlying the information. The RC and diamond core samples are assayed at the BIGS Laboratory in Ouagadougou, Burkina Faso. Mr. Mann has consented to the inclusion in this news release of the matters based on his compiled information in the form and context in which it appears herein.

## Appendix 1

The following information is provided pursuant to Listing Rule 5.3.3 for the quarter ended 30 June 2018.

### 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%
Lilltrask Project	Sweden	Lilltrask nr1, 2 and 3	100%
Yarramba	South Australia	EL5621	100%
South Eagle	South Australia	EL6081	100%
Goulds Dam	South Australia	EL5623	100%
Katchiwilleroo	South Australia	EL5622	100%
Ethiudna	South Australia	EL6020	100%
Goulds Dam	South Australia	RL83-85	100%
Honeymoon Mine	South Australia	ML6109	100%

There were no acquisitions or disposals during the quarter.