

## 31 DECEMBER 2017 QUARTERLY REPORT

### HIGHLIGHTS

- Field Leach Trial outright success, completed on time and in budget:
  - major breakthrough for commercial development of the Honeymoon Uranium Project
  - leached uranium tenor peaks at historic high of over 370 mg/l  $U_3O_8$  ~800% higher than current plant design specification
  - ion exchange results demonstrate excellent performance of selected resin
  - higher uranium grades may reduce capital cost and increase efficiency
- Binding agreement to acquire 100% of the Honeymoon Uranium Project through acquisition of remaining 20% vendor interest in an equity only transaction; completing ownership of:
  - the Project's significant existing resource and exploration target;
  - process plant and mine infrastructure; and
  - licence to export
- Outstanding gold exploration results on Golden Hill Prospects (49% interest) held in Burkina Faso:
  - early-stage drilling yields high-grade, near-surface oxide gold mineralisation
  - ultra gold intercepts at Jackhammer Hill
  - close proximity of targets and prospects lends itself to a central mill/multi-deposit operation, all located approx. 5 kilometres from a central point

### Honeymoon Uranium Project

#### Field Leach Trial

During the quarter, the Company announced a series of positive results from the Field Leach Trial (FLT) at the Honeymoon Uranium Project, which far exceeded expectations in achieving the objectives:

- Improved leaching chemistry, resin selection and uranium recovery;
- Verify ion exchange performance on real leach liquor;
- Confirm pregnant liquor tenors and production rates;
- Generate information for improved design and cost estimates; and
- Provide necessary plant and wellfield technical data for the Definitive Feasibility Study.

On 4 October 2017, the Company announced that the operation of the FLT and IX pilot plant continued to deliver impressive results. The IX pilot plant reached a stable steady-state of operation with the first campaign underway.

The IX pilot plant performed exceptionally well, satisfying key technical validation steps during the early commissioning stages on real leach liquor, even when low-grade feed solutions were being treated.



*Figure 1: IX Pilot Plant Loading Columns*

On 26 October 2017, the Company announced that the operation of the FLT and IX pilot plant was providing excellent data that confirms the assumptions made in the PFS. Results clearly indicated uranium contained within the Honeymoon deposit can be leached, and as historically demonstrated by recovery data (335 tonnes of recovered uranium), confirming that the recovery of uranium from underground is achievable.

On 1 November 2017, the Company released further positive results from the FLT confirming that results were exceeding expectations. The injection solution chemistry for the patterns had been modified to reflect the improved process being considered by Boss (higher ferric tenors and lower pH). The results from the modification were immediately seen with the uranium tenors in the Pregnant Leach Solution (**PLS**) increasing rapidly. The high-grade pattern achieved grades between 75 and 80mg/l U<sub>3</sub>O<sub>8</sub> under these conditions.

The leaching conditions for the two well field patterns (low-grade [E3] and high-grade [E1]) were changed to reflect the modified approach considered by Boss. The PLS tenors in both patterns increased as a result, with tenors in excess of 75mg/l achieved for E1. This was the grade determined by the previous owners for their plant design, and well in excess of the tenor assumed by Boss for the redevelopment of the solvent extraction process of 48mg/l.

On 15 November 2017, the Company announced that the FLT had yielded historic high tenors of uranium. Following the stabilisation of leaching conditions for the wellfields and with the high-grade pattern continuously producing PLS in the 75-85mg/l U<sub>3</sub>O<sub>8</sub> range, the FLT progressed to a role-reversal / push-pull test for one week to determine the maximum possible tenor that can be achieved. The role reversal strategy involves switching the extractor and injector wells, thereby enabling the recovery of uranium from a “fully oxidised” zone and hence an indication of maximum tenor. Results were immediate with the uranium tenor in the PLS increasing to a peak of 377mg/l, far surpassing all previously known leaching results at Honeymoon, before settling in ranges 200-250mg/l U<sub>3</sub>O<sub>8</sub>.

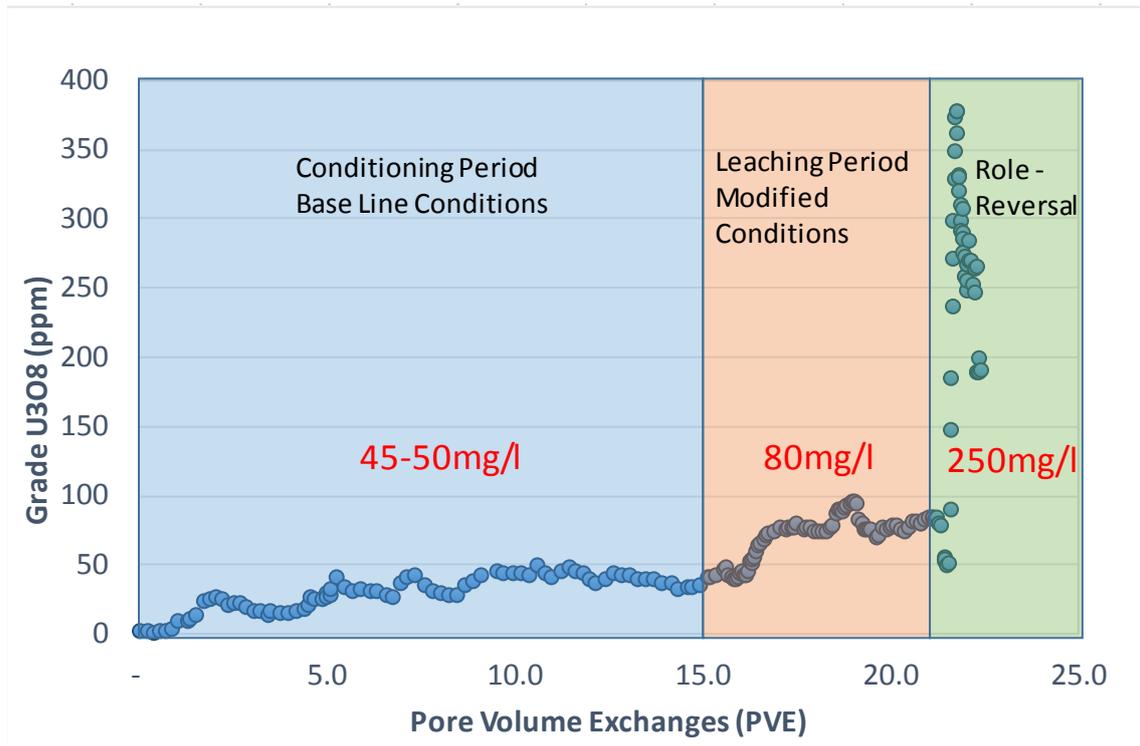


Figure 2: Uranium Tenor Achieved

The FLT was completed on schedule and within budget. The IX pilot plant was shut down, having successfully met all the performance requirements and generated all required design data for use in the Definitive Feasibility Study to more accurately design and cost the ion exchange process.

### Increase of Ownership to 100%

On 7 December 2017, the Company announced it had entered into a binding conditional agreement to acquire 100% of the shares in Wattle Mining Pty Ltd (**Wattle**). Wattle holds the remaining 20% of the shares in Boss Energy Pty Ltd, the holding company for Boss Uranium Pty Ltd and the Honeymoon Uranium Project.

The acquisition is conditional on Boss shareholder approval which is being sought at a meeting to be held on 28 February 2018. The Company will issue the vendors 300,000,000 Boss shares in consideration for the acquisition of Wattle. On completion, Boss’ ownership of the Honeymoon Project will increase from 80% to 100%, comprising mining lease 6109, exploration leases 5621, 5215, 5263, 5622, 6020 and retention lease 83-90. Full details of the acquisition are contained in the notice of meeting lodged with the ASX on 25 January 2018.

## Burkina Faso Gold Assets

Boss currently holds a 49% interest in joint venture with Teranga Gold Corporation (**Teranga**) (TSX: TGZ) 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.



*Figure 3: Displaying abundant visible gold in GHDD-111*

The Golden Hill Gold Project is situated in the heart of the Houndé Greenstone Belt, one of the most prospective gold belts in the world today which hosts a number of high-grade gold discoveries, including the Siou, Yaramoko and Houndé deposits.

Teranga has been fast tracking the assessment of the commercial potential of the Golden Hill Gold Project. The latter property being contiguous with Golden Hill. In just one year, Golden Hill has produced a series of high-grade, near-surface drill results at the first four prospects: Ma, Nahiri, Peksou, and Jackhammer Hill (where bonanza gold grades were intercepted).

Key exploration results as ASX announced on 17 and 20 November 2017 are set out below.

### Ma Prospect

High-grade results confirm continuity of grade and width from surface to depths now approaching 125 metres. Drill results include:

- 15 m @ 4.22 g/t Au, at vertical depth of 35 metres, including 7 m @ 7.89 g/t Au including 2 m @ 17.6 g/t Au (GHDD-067)
- 16 m @ 3.20 g/t Au, at vertical depth of 68 metres, including 1 m @ 15.7 g/t Au, and 3 m @ 6.14 g/t Au (GHDD-078)
- 6 m @ 5.79 g/t Au, at vertical depth of 61 metres, and 17 m @ 3.45 g/t Au, at vertical depth of 84 metres, including 6 m @ 6.32 g/t Au (GHDD-080)

## Jackhammer Hill Prospect

Drill results include:

- 14 m @ 110.6 g/t Au including 5 m @ 306.7 g/t Au including 1 m @ 1,499 g/t Au (48 ozs per tonne) (GHDD-111) (uncut)
- 15 m @ 5.72 g/t Au including 4 m @ 16.37 g/t Au including 1 m @ 42.1 g/t Au, and 9 m @ 4.13 g/t Au including 3 m @ 10.63 g/t Au including 1 m @ 25.3 g/t Au (GHDD-104)
- 10 m @ 3.44 g/t Au including 1 m @ 19.0 g/t Au (GHDD-103)

The close proximity of these targets and prospects lends itself to a central mill/multi-deposit operation and all are located approximately 5 kilometres from a central point. It is also important to note the Project is within trucking distance of the new Endeavour Mining Corporation processing plant.

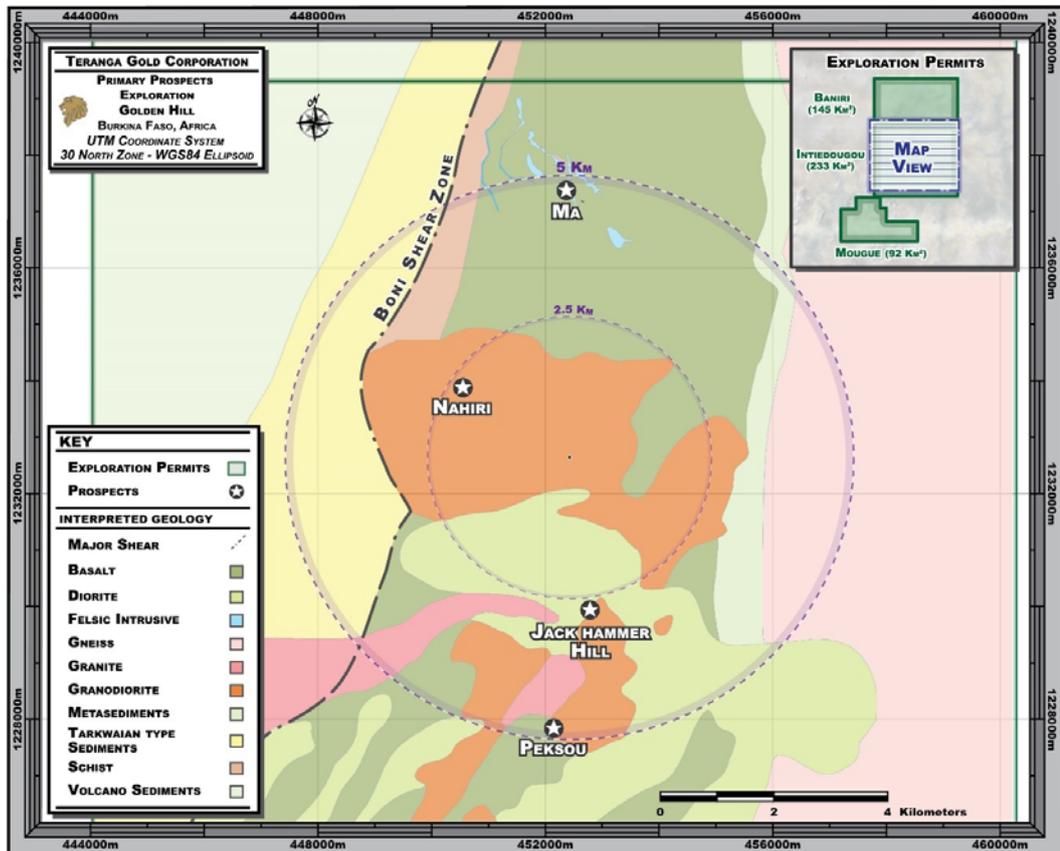


Figure 4: Golden Hill Property – Prospect Location Plan Map

Boss will benefit from an expanded exploration program planned for 2018 following the recent highly encouraging drill results. The solid results combined with a renewed interest in the West African gold sector has resulted in the Company being approached regarding the potential divestment of its interest in the joint venture. To assist in assessing this interest, Boss has appointed corporate advisors in relation to assessing options to maximise the inherent value of the joint venture interest and the Company will provide further updates as appropriate.

For further information please contact:

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## Appendix 1

The following information is provided pursuant to Listing Rule 5.3.3 for the quarter ended 31 December 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%
Lilltrask Project	Sweden	Lilltrask nr1, 2 and 3	100%
Yarramba	South Australia	EL5621	80% (Right to acquire 100%)
South Eagle	South Australia	EL6081 (previously EL5215)	80% (Right to acquire 100%)
Goulds Dam	South Australia	EL5623	80% (Right to acquire 100%)
Katchiwilleroo	South Australia	EL5622	80% (Right to acquire 100%)
Ethiudna	South Australia	EL6020	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 Statement

The information in this announcement that relates to Exploration Results (as that term is defined in the JORC Code) in respect of the Ma Prospect and Jackhammer Hill Prospect was reported by the Company in announcements released to ASX on 17 November 2017 and 20 November 2017. The Company confirms that it is not aware of any new information or data that materially affects these Exploration Results.