

COMMENCEMENT OF FIELD LEACH TRIAL

HIGHLIGHTS

- Successful completion of the Field Leach Trial infrastructure
- Wellfield injection & extraction systems and feed liquor systems commissioned
- Ion Exchange Pilot Plant dispatched from ANSTO and arrived at Honeymoon site
- Leading international ISR expert, Dr Dennis Stover, providing ongoing support and independent assessment of performance

Boss Resources Limited (ASX: BOE) ("Boss" or the "Company") is pleased to announce the successful completion of the construction and official commencement on 11 August 2017 of the Field Leach Trial ("FLT") on the Honeymoon Uranium Project. The commissioning of the FLT is a significant milestone in the staged development approach being progressed by the Company, and incorporates both a wellfield leach trial and ion exchange pilot plant.

Boss Resources Managing Director, Mr Duncan Craib stated, *"the Field Leach Trial is an integral technical validation step for the Honeymoon Uranium Project. Overwhelming stakeholder support continues to be received from the South Australian government, ANSTO, leading technical consultants and of course the operational workforce. It is also especially pleasing to have Dr Dennis Stover, a leading international ISR uranium expert, join our team to provide independent and objective analysis of results and pilot plant performance, which will be announced over the forthcoming months."*



Figure 1: Overview of Field Leach Trial Area

Field Leach Trial Update

The Field Leach Trial forms a critical part of the Definitive Feasibility Study and will seek to demonstrate:

- 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.

The construction, pre-commissioning and testing of the various system was completed on 10 August 2017 and continuous operation with groundwater of the E3 pattern commenced on 11 August 2017. Once the systems were stabilised, acid injection commenced and conditions are being monitored for acid breakthrough, after which the addition of the leach oxidant (ferric chloride) will occur, expected in next few days. The second pattern (E1) will be brought online in approximately 3 weeks' time when the E3 pattern shows signs of production peaking.

Operations are 24 hours a day with the plant permanently manned. The onsite laboratory has been re-commissioned and onsite analysis of the critical elements is now possible to ensure tight control of the process. The plant layout for the process is shown below in Figure 2.

Initial results from the trial should be available in early September.

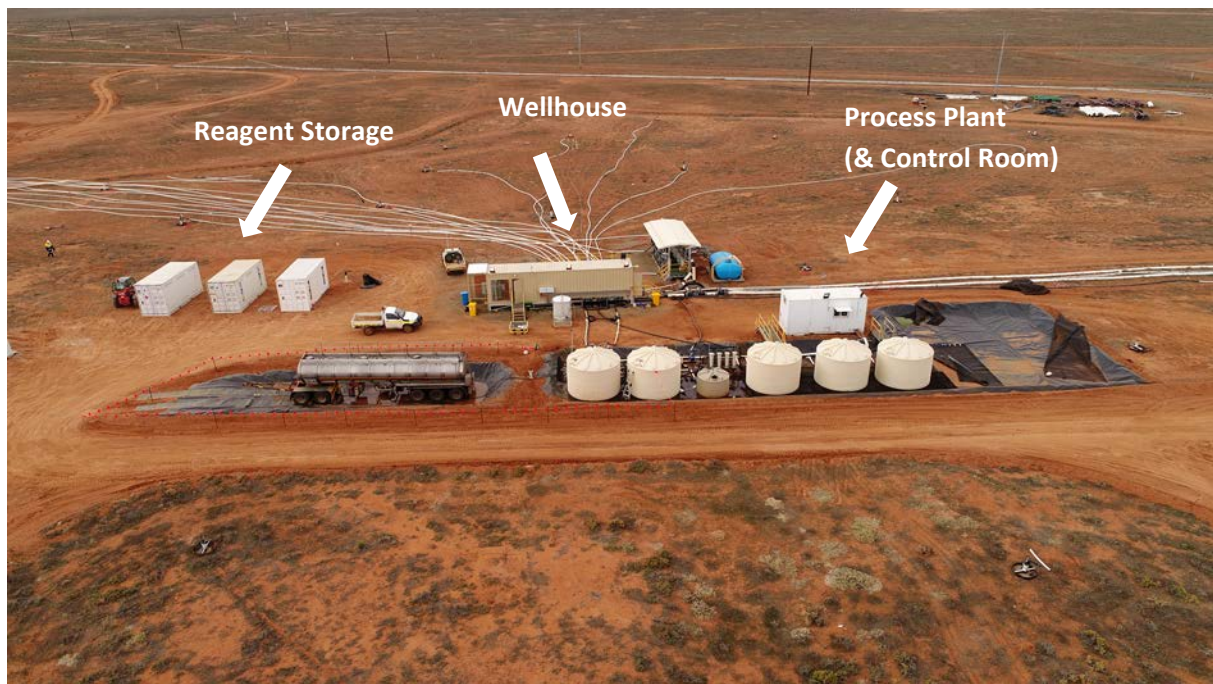


Figure 2: Field Leach Trial infrastructure (Feed & Reagent Systems)

The Ion Exchange Pilot Plant has arrived on site. The ANSTO Minerals team are scheduled to visit site at the end of August to erect the pilot plant and train personnel in the operation of the unit. The start-up date for this will be dependent on well field performance.



Figure 3: Members of the FLT Team prior to Commissioning

Dr Dennis Stover

A chemical engineering professional by background, Dr Dennis Stover has extensive experience in enhanced energy production and utilization at levels ranging from basic fuel cells R&D to commercial In Situ Recovery (“ISR”) uranium operations. The nature of Dr Stover’s contractual involvement with the Company will include, but is not limited to the following:

- Review concepts and plans for the FLT and provide constructive feedback prior to commissioning;
- Provide independent critique, review and comment for the duration of the FLT and IX piloting; and
- On-site inspection of the Honeymoon Uranium Project during the FLT and IX piloting program.

Dr Stover has been involved with numerous acidic and alkaline ISR projects in a distinguished career of over 40 years in the international uranium sector. He is a former Senior Executive with a major uranium mining company and has served on international technical committees for the International Atomic Energy Agency, co-authoring two major studies. He served as a member of the Technical Advisory Committee of the National Mining Association and as U.S. Co-Chair of the U.S.-Mexico Chamber of Commerce Energy Task Force.

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About the Honeymoon Uranium Project

The Honeymoon Uranium Project (“**Project**”) is located in South Australia, approximately 80km north-west from the town of Broken Hill near the SA / NSW border. In addition to holding a mining lease and exploration licences, there exists infrastructure on site to the value of \$170M which incorporates an 880,000 lb per annum solvent extraction plant, currently placed on care and maintenance.

The Project is fully permitted with a 3.3Mlb U_3O_8 per annum export licence.

The Project has a combined JORC 2012 Mineral Resource across three main Project areas of 43.5 Mt at an average grade of 660 ppm eU_3O_8 (for 63.3Mlb eU_3O) above the 250ppm lower cut-off. See original announcement dated 15 March 2017 for further information.

The Project also has a combined Exploration Target of between 32Mt to 78Mt at a grade of between 450ppm and 1400ppm eU_3O_8 with a potential target endowment of between 42Mlb and 100Mlb of contained uranium. This Exploration Target is conceptual in nature and there has been insufficient exploration to estimate a Mineral Resource. It is uncertain if further exploration will result in the estimation of a Mineral Resource. See original announcement dated 8 December 2015 for further information.

The Honeymoon processing plant was placed into care and maintenance over the summer of 2013/14 due to several factors; primary of which was a decline in uranium price. During the 18-month commissioning period the plant successfully produced and exported over 670,000lbs of uranium. To optimise processing performance Boss’s assessment of the plant also identified:

- The existing plant is constrained by volume, and production rates (and costs) are driven by the uranium tenor in the feed solution to the plant; and
- The uranium tenor in the feed solution is dependent on wellfield performance and this is where the previous operator encountered their key issues.

Accordingly, Boss has taken the considered approach that:

- A minimum production rate of 2Mlbs/annum is required to be competitive;
- The 2Mlb/annum process plant has been designed with a lower feed tenor of 47mg/l compared the previous average operating tenor of 53mg/l so that the new plant will not be volumetrically constrained;
- A dedicated process for managing gypsum has been included in the process design, and recent results (announced May 2017) demonstrate that the calcium (gypsum) can be successfully managed; and
- Any upside in feed tenors achieved from the improved leaching and/or wellfield performance should result in higher production rates and therefore even lower costs.

An endorsed restart strategy is in place following the successful development work undertaken in the expansion study and Pre-Feasibility Study (announced 31 May 2017). Final technical confirmation will be provided by the current Field Leach Trial to validate assumptions made regarding wellfield production rates and production profiles to attain the planned 2Mlb U_3O_8 /annum and 3.2Mlb U_3O_8 /annum considered in the Pre-Feasibility Study (see original announcement dated 31 May 2017). All material assumptions underpinning these production targets as announced on 31 May 2017 continue to apply and have not materially changed. These staged developmental steps are to ensure Honeymoon can operate in the lowest cost quartile of competitive global producers. As underlying uranium prices rise, Honeymoon is arguably being positioned to be Australia’s next uranium producer.

Competent Person's Statement

The information in this report that relates to the Exploration Targets, Exploration Results and Mineral Resources are based on information compiled by Dr M. Abzalov, a Competent Person who 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 M. Abzalov is a director of Boss Resources Limited and is also working as an independent consultant and director of 'MASSA Geoservices (Australia)'. Dr M. Abzalov consents to the inclusion in the report of the matters based on their information in the form and context in which it appears. The Company confirms that the form and context of the results presented have not been materially modified from the original market announcements released on 8 December 2015, 6 December 2016, 8 December 2016, 14 December 2016 and 15 March 2017 (available at <http://bossresources.com.au/announcements/>).

Honeymoon Uranium Project Mineral Resource

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
TOTAL	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	27.5
Project Total (All deposits)				
Measured	1.7	1720	3.0	6.5
Indicated	5.9	810	4.8	10.5
Inferred	35.9	586	21.0	46.2
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.