

HONEYMOON URANIUM PROJECT EXPANSION STUDY COMMENCES

HIGHLIGHTS

- **Technical review of study completed in 2013 identifies suitable resin technology for use at Honeymoon deposit that could significantly reduce OPEX costs at Honeymoon**
- **ANSTO, a world leader in uranium technology, recently appointed to undertake additional test work on usage of identified resin technology**
- **Expansion study underway given 330% increase in global uranium resource aimed at reducing operating costs through larger volumes**
- **Resin technology to be potentially implemented for satellite expansion throughout entire 2600 km² uranium province**
- **Appointment of GR Engineering Services Limited (ASX: GNG) for expansion study**

Boss Resources Limited (ASX: BOE) is pleased to advise that a detailed technical review its Honeymoon Uranium Project in South Australia is currently underway. The review is designed to identify optimisation and cost reduction opportunities that will form the basis of the planned redesign and start-up of the processing plant.

Boss has initiated a new program of test work at the Australian Nuclear Science and Technology Organisation ("ANSTO"), a world leader in uranium and ion exchange technology, aimed at further investigating the use of two specific resins, and to provide further data for process design purposes.

Boss was recently made aware of development work undertaken by Honeymoon's previous owners (Uranium One Inc) including a preliminary test work program on ion exchange (resin) technology in 2013. The program was undertaken in conjunction with engineering firm AMEC Australia Pty Ltd and confirmed the benefits stemming from the use of resins and the concurrent lower operating costs that could be achieved as a result.

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The initial assessment by Boss indicates that the plant production rate was too low for a sustainably profitable uranium mine at current depressed uranium prices and, due to the sizing of the operation (880,000 lbs per annum), the cost structure for Honeymoon was inefficient with a high proportion of fixed costs within the overall cash cost for the mine.

Boss has identified that a larger processing plant facility, as well as the possible usage of resin technologies, could significantly reduce the cost of production.

Potential Satellite Expansion and Option Study

Since acquisition of the project in December 2015, Boss has announced a 330% total increase of the Global Honeymoon Resource, with an important part of the resource increase coming from satellite deposits located up to 50km away from the main processing plant (ASX: 20 January and 8 April 2016). It is also believed these satellite deposits could be effectively treated with the use of satellite ion exchange processing units.

Furthermore, resin technology has improved significantly since the initial Honeymoon development and resins capable of operating within the Honeymoon conditions have been developed and tested successfully.

As a result, Boss has initiated an option study focussing on expansion scenarios as well as processing design. At a high level, the three main processes being considered in the option study are:

- Optimise and expand the current solvent extraction plant in the near term, with an expansion to include satellite resin plants in the future when the remote satellite deposits come on line.
- Implement a combined ion exchange (resin) and solvent exchange process, with the resins upgrading the solutions prior to solvent extraction purification. Expansion will be based on satellite resin plants.
- Implement an ion exchange only process. Expansion will again be based on satellite resin plants.

Boss has selected GR Engineering Services to support the delivery of an expansion trade-off study. Using information generated during this study, Boss will be able to define the appropriate levels of input data required for the next stage of engineering development, and develop the scope for this study that will provide the necessary level of information to obtain regulatory approvals for any expansion.

The results from the expansion study are expected in August 2016.

Executive Director, Grant Davey said “the use of resins at Honeymoon is a development to be thoroughly investigated for the expansion and recommissioning of the Honeymoon uranium project. The project is far bigger than what the original process plant was designed for. Using resins as part of an expansion could allow Boss to drop operating costs, which we believe will make the project viable even at current uranium prices.”

For further information, please visit www.bossresources.com.au or contact:

Grant Davey (Executive Director) Tel: +61 8 6143 6730

About the Honeymoon Uranium Project

The Honeymoon Uranium Project is located in South Australia, approximately 80km north-west from the town of Broken Hill near the SA / NSW border. The Project consists of two main exploration areas (the Eastern and Western tenement regions) and comprises 1 granted Mining Lease, 5 granted Exploration Licenses, 8 Retention Leases and 2 Miscellaneous Purposes Licenses.

There is currently a Global Resource of 52.5mlbs of contained U₃O₈ for the Honeymoon Project (see Table 1) and a global Exploration Target currently estimated to be between 42 to 100mlbs of contained U₃O₈ (32mt to 78mt at a grade between 450 to 1400ppm U₃O₈) and in addition to the global resource of 53Mlb of contained U₃O₈. 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.

Classification	Million Tonnes	eU3O8 (ppm)	Contained U₃O₈ (mkg)	Contained U₃O₈ (mlb)
Measured	1.7	1720	2.95	6.5
Indicated	5.9	810	4.8	10.6
Inferred	29.6	540	16.1	35.5
Total	37.3	640	23.8	52.5

Note: Figures have been rounded. Quoted resources have been adjusted to exclude previous production of approximately 335t of U₃O₈.

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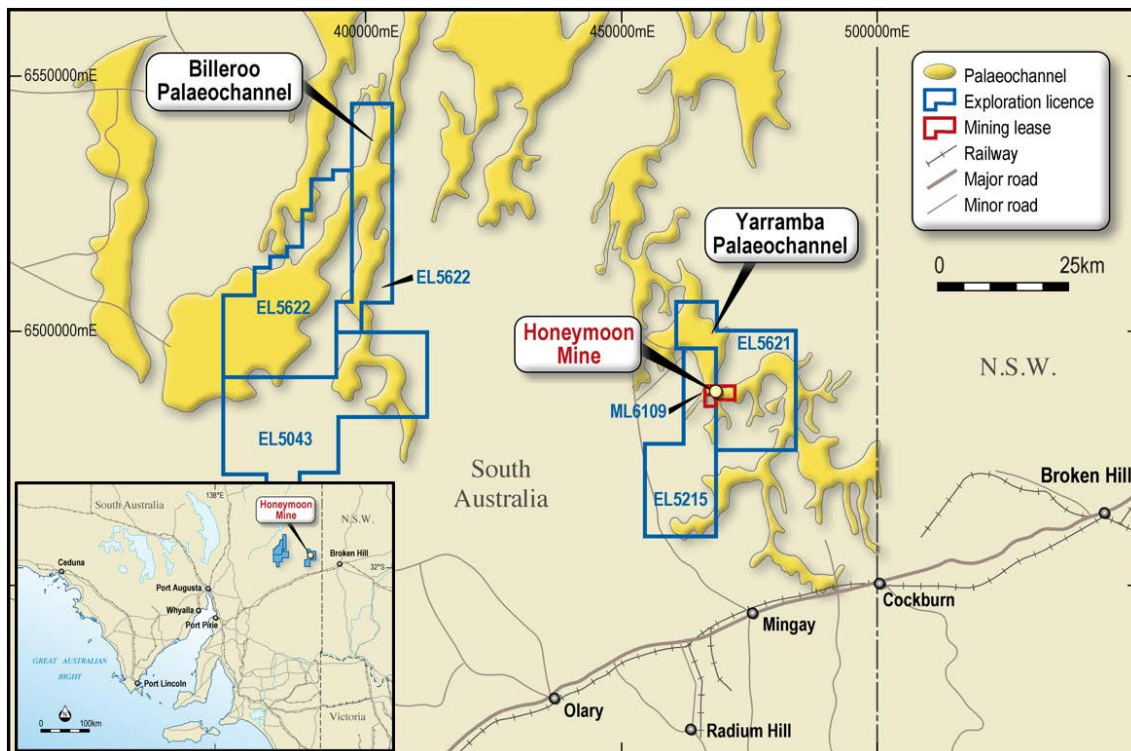


Figure 1: Honeymoon Uranium Project.

Competent Persons Statements

The information in this report that relates to the Mineral Resources is based on information compiled by Dr. M. Abzalov, who is a Competent Person according to the JORC 2012 Code. Dr. M. 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. M. Abzalov is employed as a director of Boss Resources Ltd and also working as independent consultant and Director of MASSA Geoservices (Australia). M. Abzalov consent to the inclusion in the report of the matters based on their information in the form and context in which it appears. This information was initially report to the ASX on 8 April 2016 and has not materially changed since.

The information in this document that relates to the Honeymoon Mine 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 Ltd. This information was initially report to the ASX on 8 April 2016 and has not materially changed since.

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