

ASX Announcement

6 December 2016

ASX: BOE

# FIRST DRILL RESULTS RECEIVED FROM JASONS DRILLING

### **HIGHLIGHTS**

- Natural gamma eU<sub>3</sub>O<sub>8</sub> results from 30 holes received
- PFN probing indicates significant positive disequilibrium PFN results will be reviewed by an industry expert prior to final reporting
- Drilling results to date are similar to historical assays
- High grade intercepts encountered including:
  - **0.75m @ 1478ppm eU₃O<sub>8</sub>** from 94.25m in BMR007
  - **1.5m @ 1427ppm eU₃O**<sub>8</sub> from 90.25m in BMR008
  - 1.0m @ 1111ppm eU₃O<sub>8</sub> from 96.25m in BMR008
  - 1.25m @ 1488ppm eU<sub>3</sub>O<sub>8</sub> from 101.75m in BMR014
  - 1.25m @ 1389ppm eU<sub>3</sub>O<sub>8</sub> from 93.55m in BMR018
  - 1.25m @ 1056 ppm eU<sub>3</sub>O<sub>8</sub> from 88.5m in BMR022
  - 0.75m @ 1032 ppm eU<sub>3</sub>O<sub>8</sub> from 87.5m in BMR023
  - **1.25m @ 1436ppm eU₃O**<sub>8</sub> from 88.25m in BMR025
  - **0.75m @ 1297ppm eU₃O<sub>8</sub>** from 85.5m in BMR029
  - 0.75m @ 1676ppm eU<sub>3</sub>O<sub>8</sub> from 88.5m in BMR030
  - 2.5m @ 889ppm eU<sub>3</sub>O<sub>8</sub> from 102.25m in BMR030
- Drilling progressing well with 30 holes drilled to date

Boss Resources Limited (ASX: BOE) is pleased to announce that the first results of the mud-rotary program at the Jasons Prospect, located approximately 12km north of Boss' Honeymoon Uranium Mine Site (Figure 1), have been processed. Drilling to date has concentrated in the northern region of the prospect and has now shifted to the southern region.

Boss has received initial natural gamma  $eU_3O_8$  grade data from Borehole Wireline and will report these. Sequential PFN probing using two PFN tools owned by Boss indicate **significant positive disequilibrium on many intercepts (>50%)**. Boss is having these results reviewed by an independent expert and intends to report these results once they have been validated.

Drilling in the northern portion of the Jasons prospect has encountered significant intercepts **including** 1.5m @ 1427ppm eU<sub>3</sub>O<sub>8</sub> (BMR008 from 90.25m) and 0.7m @ 1478ppm eU<sub>3</sub>O<sub>8</sub> (BMR007 from 94.25m), 1.25m @ 1488ppm eU<sub>3</sub>O<sub>8</sub> (BMR014 from 101.75m), 1.25m @ 1436ppm eU<sub>3</sub>O<sub>8</sub> (BMR025 from 88.25m). Figure 1 shows the peak per-hole grade x thickness composites (single best composite, not amalgamated) for the recent drilled holes, along with historical holes for reference. Results seen to



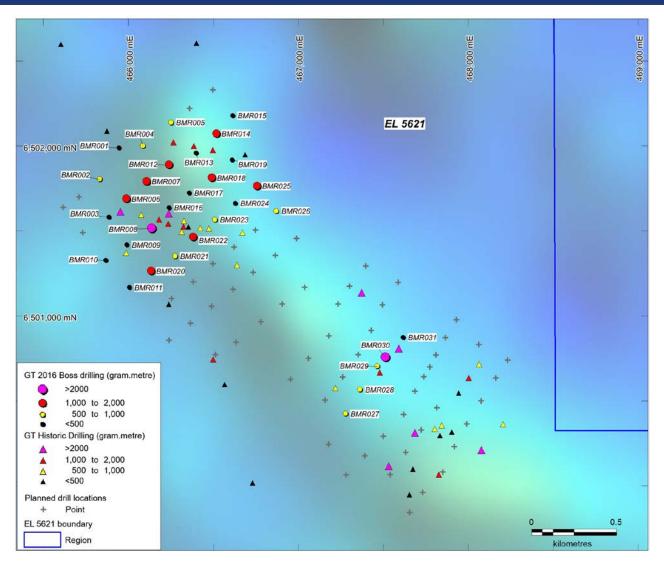
date support the general endowment seen by historical drilling, and show significantly good lateral continuity of mineralisation.

Table 1 summarises significant intercepts above a nominal 250ppm  $eU_3O_8$  lower cut-off and greater than 0.5m in thickness and less than 1m of internal dilution. Based upon logging of the drilling muds, the mineralisation encountered to date is from within sandy units of the Middle Eyre Formation and also along sand/clay interbeds and interfaces. Interpretation of geophysical logs is in progress to ensure correct interpretation of lithological units is applied.

Boss has an approximately 70 drillhole mud-rotary program planned for the Jasons Prospect (Figure 2) which will enable further delineation and expected expansion of the current resource (currently at 2.8Mt at 840ppm eU<sub>3</sub>O<sub>8</sub> for 5.2Mlb contained U<sub>3</sub>O<sub>8</sub> above a 250ppm U<sub>3</sub>O<sub>8</sub> lower cutoff) .

The sampling results have been based upon natural gamma  $eU_3O_8$  probing undertaken by Borehole Wireline, a highly experienced South-Australian based geophysical contractor. The tool used has been calibrated in the Adelaide certified test pits. Additionally, Boss is also probing all holes using its two wholly owned Prompt Fission Neutron (PFN) tools, which are capable of providing calibrated  $eU_3O_8$  grade data which is not affected by radioactive disequilibrium. Boss' PFN tools have been calibrated using four on-site test pits which were established by the previous owners of the operation. Early indications are that a significant positive disequilibrium may be present for some regions, however at this stage Boss is still validating these results. Full sampling and drilling details are shown in Appendix 1





**Figure 1:** Location of drilling at the Jasons Prospect, approximately 15km north of the Honeymoon Mine site. EM depth slice underlay.





Figure 2: Photos Showing Field Activities in November 2016



Table 1: Summary Results from 2016 Jasons Mud Rotary Drilling

Summarised above a nominal 50cm minimum thickness, 1m internal dilution, and above 250ppm eU $_3$ O $_8$   $^1$ 

Hole ID	Easting	Northing	RL	From	То	length	eu3o8
BMR001	465,947	6,501,988	94	93.25	94	0.75	399
BMR002	465,834	6,501,804	94	87.75	88.5	0.75	684
				91.75	92.5	0.75	1,084
BMR003	465,887	6,501,581	95	92.25	92.75	0.5	473
BMR004	466,088	6,502,000	94	80.5	81	0.5	309
		, ,		87.25	88	0.75	749
BMR005	466,254	6,502,138	95	94	94.75	0.75	1,114
BMR006	465,991	6,501,688	95	87.5	88	0.5	389
BMR006	465,991	6,501,688	95	92.75	94	1.25	1,062
			95	94.25	95	0.75	
BMR007	466,109	6,501,790					1,478
BMR008	466,139	6,501,514	96	90.25	91.75	1.5	1,427
				96.25	97.25	1	1,111
BMR009	465,992	6,501,417	96	92	92.75	0.75	409
				94	94.75	0.75	521
BMR010	465,869	6,501,327	95	92.5	93	0.5	587
BMR011	466,008	6,501,167	96	87.25	87.75	0.5	834
				94	94.75	0.75	425
BMR012	466,242	6,501,889	95	79.75	80.25	0.5	325
				84	84.5	0.5	389
				85.5	86.25	0.75	501
				95.5	97	1.5	766
BMR013	466,400	6,501,958	95	90.25	91	0.75	391
BMR014	466,521	6,502,072	95	96	96.5	0.5	392
DIVINOTA	+00,321	0,302,072		101.75	103	1.25	1,488
DN4DO1F	466 615	6,502,179	95	i		0.5	582
BMR015	466,615			105.25	105.75		
BMR016	466,242	6,501,637	96	95.5	96.25	0.75	478
BMR017	466,360	6,501,723	96	85	85.5	0.5	381
BMR018	466,494	6,501,812	96	74.8	75.3	0.5	411
				85.55	86.3	0.75	775
				87.3	87.8	0.5	429
				93.55	94.8	1.25	1,389
BMR019	466,612	6,501,917	96	83	83.5	0.5	311
				86.25	86.75	0.5	828
BMR020	466,137	6,501,263	96	88	90	2	584
				96.75	97.25	0.5	320
BMR021	466,278	6,501,350	96	81	83	2	395
		, ,		91	91.5	0.5	265
				95.25	96.25	1	787
BMR022	466,384	6,501,464	96	88.5	89.75	1.25	1,056
DIVINOZZ	100,301	0,301,101	30	94.75	95.5	0.75	799
BMR023	466,509	6,501,563	96	87.5	88.25	0.75	1,032
DIVINU25	400,309	0,301,303	90	i			
				90.75	91.25	0.5	362
DA 4D 0 2 5				92	92.75	0.75	759
BMR025	466,760	6,501,764	96	85.25	86.75	1.5	989
				88.25	89.5	1.25	1,436
				104	105.25	1.25	776
				105.75	106.25	0.5	273
BMR026	466,872	6,501,616	96	76	76.5	0.5	759
				80.25	81.25	1	717
				86.25	87	0.75	593
BMR027	467,279	6,500,423	96	90.75	91.75	1	956
BMR028	467,365	6,500,565	96	85.5	86.25	0.75	736
BMR029	467,466	6,500,703	96	85.5	86.25	0.75	1,297
	.0.,100	5,555,765	- 55	98.75	99.5	0.75	702
BMR030	467,515	6,500,756	96	88.5	89.25	0.75	1,676
DIVINU3U	407,313	0,300,730	30	102.25	104.75	2.5	
DN4D024	467.640	C F00 073	00				889
BMR031	467,618	6,500,873	96	94.25	94.75	0.5	466
BMR031				~~ -	400		
BMR031	·			99.5 101.5	100 102	0.5 0.5	422 297



## About the Honeymoon Uranium Project

The Honeymoon Uranium Project (Figure 3) is located in South Australia, approximately 80km northwest from the town of Broken Hill near the SA / NSW border. The Project consists of 1 granted Mining Lease, 5 granted Exploration Licenses, 8 Retention Leases and 2 Miscellaneous Purposes Licenses.

There are 2 main exploration regions: the Eastern Region (ELs 5215 and 5621) which hosts the Honeymoon, Brooks Dam and East Kalkaroo Resources; and the Western Region (ELs 5043, 5623 and 5622) which hosts the Gould's Dam and Billeroo deposits.

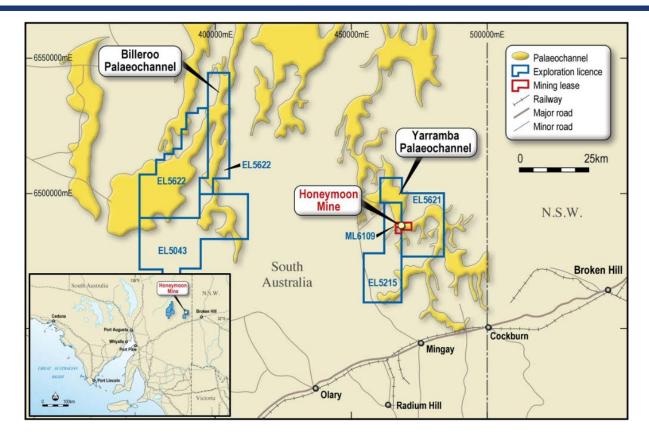
The Project has combined JORC 2012 Mineral Resources across three main project areas of 40Mt at 650ppm  $eU_3O_8$  for 57.8Mlb of contained  $U_3O_8$ . Including Measured Resources of 1.7MT @ 1720ppm  $eU_3O_8$ , Indicated Resources of 5.9Mt @ 810ppm  $eU_3O_8$  and Inferred resources of 32.5Mt @ 569ppm  $eU_3O_8$  reported above a 250ppm lower cutoff.

The Project also has a combined Exploration Target of between 32Mt to 78Mt at a grade of between 450ppm and 1400ppm  $U_3O_8$  with a potential target endowment of between 42Mlb and 100Mlb of contained  $U_3O_8$ . 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 announcement of 8th December, 2015, for further information.

The Honeymoon Uranium Project is located in the southern part of the Callabonna sub-basin in South Australia. Uranium mineralisation within the project area is hosted by the Yarramba and Billeroo palaeochannels (Figure 3). These consist of Palaeogene age palaeovalleys filled by a sequence of interbedded sand, silt and clay). Thickness of the palaeochannels at Honeymoon deposit area reaches a maximum of 55m thick, and is around a depth from surface of approximately 110 metres.

The uranium mineralisation represents a classic basal channel type sandstone-hosted uranium roll-front model. This model implies the movement of oxidised, uranium-bearing fluid through a largely reduced aquifer, with mineralisation occurring at the redox front of the fluid. A geochemical zonation is associated with the roll front, including oxidation of the sands upstream (orange and yellow limonite) and abundance of pyrite/marcasites and organic matter downstream. Mineralisation is associated with discreet accumulations of organic matter and pyrite within the palaeovalley sequence.





**Figure 3: Honeymoon Uranium Project.** The yellow shaded regions represent palaeodrainage channels which have potential to host uranium mineralisation and are the focus of exploration efforts.

## For further information, contact:

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#### **Competent Persons' 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. An entity associated with Mr Inwood has shares in Boss Resources.

The information in this document relating to the Mineral Resources is extracted from the announcements entitled 'Substantial Increase And Upgrade In Honeymoon Uranium Resource' dated 20 January 2016, 'Boss Increases Honeymoon Uranium Project Resource' dated 8 April 2016, 'Maiden Resource of 5.2Mlb for Jason's Deposit' dated 14 June 2016 and is available to view on www.bossresources.com.au. The information relating to the Exploration Target is extracted from the announcement entitled 'Honeymoon Project Exploration Update' and dated 8 December 2015. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcements and that, in the case of Mineral Resources or Ore Reserves, all the material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcements.



# Appendix 1 - JORC TABLES

## JORC Table 1: Section 1 Sampling Techniques and Data

Criteria of	Reference to the Current Report				
JORC Code	Comments / Findings				
2012					
Sampling	In-hole radiometric uranium grade data was determined by Borehole Wireline with eU₃O <sub>8</sub> determined from the				
techniques	down-hole natural gamma-logs and pU <sub>3</sub> O <sub>8</sub> . Additionally Boss is utilising it's own PFN tools to obtain pU <sub>3</sub> O <sub>8</sub> grades				
	which when properly calibrated reduce the efect of radioactive disequilibrium.				
	All tools were maintained by specialised electronic companies and technicians based in Adelaide.				
	Calibration for the PFN tool was regularly undertaken using in-house calibration pits available at the Honeymoon				
	Project and for the gamma tools externally, at the certified calibration facilities at Glenside, Conylngham St,				
	Adelaide. Standard industry procedures were used for geophysical logging of the drill holes and estimation from				
D ://:	the geophysical logs for the eU <sub>3</sub> O <sub>8</sub> (from the gamma-ray logs) and pU <sub>3</sub> O <sub>8</sub> (from the PFN instruments) grades				
Drilling	The holes were drilled by Watsons Drilling using the mud rotary method. The typical hole diameter is				
techniques	14cm.				
Drill sample	Not applicable				
recovery					
Logging	Chip samples are collected every 2m and piles are s photographed and geologically logged.				
	Documentation has included colour, grain size, texture, sorting, alteration and oxidation state. All				
	mineralised intervals were geologically logged with logging standards compliant with the industry				
	standards.				
Sub-	QA/QC of the geophysical data has included systematic control of the depth logged and control of the				
sampling	recorded U <sub>3</sub> O <sub>8</sub> grade values. Geophysical tools estimate uranium content at large volumes,				
techniques	approximately 25 to 40 cm radius. The volume is sufficiently large allowing accurate measure of the				
and sample	grade.				
preparation					
Quality of	Company Geophysical tools used to collect data include:				
assay data	Auslog Gamma (with Guard) S422				
and	Prompt Fission Neutron tool PFN#27				
laboratory	Prompt Fission Neutron tool PFN#32				
tests	Gamma combined with guard S058				
	Auslog 3 arm calliper A326				
	Borehole wireline tools used to collect data include: Natural gamma, Induction, SP, Density, Spectral				
	Gamma, deviation and 3 arm calliper				
	Holes were logged in down and up directions, which provided a good control of logging consistency.				
	All geophysical tools were regularly calibrated, using in-house facilities and the certified laboratories in				
	Adelaide.				
	QA/QC of the geophysical data has included systematic control of the depth logged and control of the				
	recorded eU <sub>3</sub> O <sub>8</sub> grade values.				
	The winches in the logging truck have their depth calibration checked periodically.				
Verification	The gamma-log data were additionally validated against the PFN logs.				
of sampling					
and assaying					
Location of	Positions are set out using a Garmin handheld GPS, after drilling.				
data points	The projection adopted for surveying is GDA 94, MGA zone 54 with AHD elevation. All surveys were tied				
	to the existing registered base stations.				



	Topographic control was improved by Aerometrx Pty. Ltd flying 10cm pixel aerial photography which was rectified using registered survey points installed at site before plant construction began.
Data spacing	Drill spacing is approximately 100m x 180m. Uranium grade is composited to 0.25cm to aid in
and	interpretation.
distribution	
Orientation	All holes are drilled vertically which provides an accurate intersection of the flat laying mineralised
of data in	bodies.
relation to	
geological	
structure	
Sample	N/A
security	
Audits or	N/A
reviews	

# JORC Table 1: Section 2 Reporting of Exploration Results

Criteria of JORC Code	Reference to the Current Report				
2012	Comments / Findings				
Mineral tenement and land tenure status	The Project consists of 1 granted Mining Lease, 5 granted Exploration Licenses, 8 Retention Leases and 2 Miscellaneous Purposes Licenses.  The Mining license expires in 2023, exploration licenses expire in 2017 (except EL 5043 which expires in 2016).				
Exploration done by other	The Honeymoon deposit and surrounding areas of the Yarramba palaeochannel have been intensely explored and systematically drilled starting from 1969.				
parties	The Honeymoon Project was evaluated several times, with the degree of details varying from scoping studies to bankable feasibility undertaken in 2006. Resource estimates have been made from 1998 to 2016.				
Geology	Palaeochannel type sandstone hosted uranium roll and tabular style.				
Drill hole Information	See previously exploration announcements and drillhole collar diagrams. The topography in this region is predominantly flat. All holes were drilled vertically with an average hole length of approximately 120m.				
Data aggregation methods	Mineralised intervals were chosen based upon a nominal 100ppm $U_3O_8$ cutoff. Consideration was given to mineralisation defined by a combination of PFN $eU_3O_8$ and natural gamma $eU_3O_8$ co-existent intervals.				
Relationship between mineralisation	Drill traverses are oriented at right angle across the domain strike.  Holes are drilled vertically down.				



