3 February 2017



ASX Announcement ASX: BOE

Core Holes Confirm High Grade Mineralisation at Jasons with trend open to the North

HIGHLIGHTS

- Two sonic core holes confirm high-grade mineralisation seen at Jasons South is in coarse to very coarse sands, and expected therefore to be highly leachable
- High-grade trend open along to the north
- Additional mud rotary holes planned to test northern extents of high-grade mineralisation
- Significant intercepts encountered include:
 - 3m @ 3,500ppm pU₃O₈ (BSC001 from 105m)
 - 5m @ 1,872ppm pU₃O₈ (BSC002 from 105m)
 - 1.25m @ 1,839ppm pU₃O₈ (BMR065 from 94.4m)
 - 1.5m @ 1,650ppm pU₃O₈ (BMR056 from 97.2m)
 - 1m @ 1,115ppm pU₃O₈ (BMR058 from 93.4m)
 - 0.75m @ 1,642ppm pU₃O₈ (BMR066 from 101.4m)

Boss's Chief Executive Officer, Mr Duncan Craib, said "the sonic core results are a significant step forward at the Jasons Prospect as they indicate the real potential of a highly leachable roll front deposit and further validate high grade intercepts as identified by the drilled mud rotary holes. Given the satisfying results the PFS drill program has been extended to pursue the northern extents of the high-grade mineralisation."

Boss Resources Limited (ASX: BOE) is pleased to announce results from the last 12 mud-rotary holes (BMR055 to BMR066) have been received and validated; along with 2 sonic core holes (Figure 1). This drilling positively confirms the trend extent of the southern high-grade region. The current drill program was designed to enable further delineation and expansion as expected of the known resource (reported at 2.8Mt at 840ppm eU_3O_8 for 5.2Mlb contained U_3O_8 above a 250ppm U_3O_8 lower cutoff). The Jasons Prospect is located approximately 12km north of Boss's Honeymoon Uranium Mine Site.

The two sonic core holes (BSC001 and BSC002) were drilled as twins of BMR034 and BMR038 and have confirmed that the high-grade mineralisation in this region is associated with medium to coarse sand units, considered to be highly amenable to the ISL process. High grade mineralisation is seen along the reduction/oxidation ('redox') boundary of coarse to very coarse and pebbly sands, medium to coarse grained well sorted sands; very coarse to pebbly poorly sorted sands (Figure 2) and minor black silty clay carbonaceous/graphitic interbeds.

Only one sonic core hole remains outstanding to complete the four sonic hole program. This program had a twofold purpose of obtaining fresh core samples for metallurgical testwork and to further confirm the Prompt Fission Neutron Tool (PFN) pU_3O_8 calibration profile. This is an important validation step prior to potentially using the PFN data in Resource estimates.



The 2017 drilling program commenced 9 January with 12 mud rotary holes drilled for 1,358m. The mud rotary drilling results confirm a northerly trend extent of the high-grade, sandstone related mineralisation (e.g. BMR056 and BMR065) and confirmed a narrower trend in the north (BMR058). Considering these positive results 6 additional mud rotary holes will be drilled to test further trend extents.

The mineralisation trend directly south is closed off by holes BMR061 to BMR064; however, interpretation of the basement contacts indicate that this may be due to a local feature associated with a short-scale basement high. Historical drilling indicates further uranium mineralisation to the southeast within the paleo channel and further work will be required to test for suitable mineralisation between the current drill region and the distal eastern mineralisation (Figure 1).

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 support the general endowment seen by historical drilling with significantly good lateral continuity of mineralisation encountered. Figure 3 shows example sections along lines 13, 14 and 16.

Table 1 summarises pU_3O_8 and eU_3O_8 significant intercepts above a nominal 250ppm eU_3O_8 (gamma) lower cutoff and greater than 0.5m in thickness and less than 1m of internal dilution. Holes where the PFN data was either unreliable or the hole was blocked do not have a pU_3O_8 grade assigned. Based upon logging of the drilling muds and geophysical interpretations, the mineralisation encountered to date is from within sandy to silty units of the Lower and Middle Eyre Formation and along sand/clay interbeds and interfaces.

The gamma eU_3O_8 probing for holes BMR001 to BMR066 was undertaken by Borehole Wireline, a highly experienced South-Australian based geophysical contractor. The tool used has been calibrated in the South Australia Glenside test pits. The geophysical probing for the remaining holes was be undertaken using Boss's own logging truck with both gamma eU_3O_8 and PFN pU_3O_8 readings to be collected.

Full sampling and drilling details are shown in Appendix 1; previously disclosed drill results are shown in Table 2.





Figure 1: Location of drilling at the Jasons Prospect, maximum grade times thickness (eU_3O_8 [in ppm] x m) shown to assist in illustrating high-grade trends. The southern trend extent target area is shown in the inset.



Figure 2: Showing sonic core from BSC001 (104-107.6m).









Figure 3: Example cross sections through Lines 13, 14 and 16. Results are shown as grade (ppm eU_3O_8 or pU_3O_8 / thickness in metres where available). Note: sections only show the bottom ~60m of each section.



Table 1: Recent Drilling - 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									
								eU ₃ O ₈ ¹	
Hole ID	Easting	Northing	RL	Dip	Az.	From	length	(ppm)	pU ₃ O ₈ ² (ppm)
BSC001	467673	6500627	96	-90	0	85.75	0.75	1018	949
						96.25	1	433	505
						99.75	0.75	387	387
						105	3	1174	3500
BSC002	467563	6500803	96	-90	0	91	1	1400	1200
						105	4	400	1872
BMR055	467243	6501061	95.15	-90	0	82.9	0.5	268	
BMR055						90.9	0.5	654	634
BMR055						101.15	0.75	584	1,082
BMR056	467307	6501176	95.31	-90	0	73.2	0.5	294	
BMR056						73.95	0.75	324	
BMR056						78.7	0.5	293	
BMR056						88.7	0.5	287	
BMR056						97.2	1.5	1,581	1,650
BMR056						106.95	0.5	381	818
BMR057	466736	6501250	96.19	-90	0	85.9	0.5	283	518
BMR057						88.9	0.5	332	1,080
BMR057						90.65	0.75	779	622
BMR058	466867	6501356	95.37	-90	0	76.9	0.75	693	1,238
BMR058						84.9	0.5	710	2,281
BMR058						86.65	1.5	355	826
BMR058						93.4	1	948	1,115
BMR058						77.65	0.5	272	457
BMR059	466992	6501458	94.91	-90	0	87.15	1.25	350	518
BMR059						98.4	0.5	257	291
BMR059						104.65	0.75	796	1,160
BMR059						106.4	0.5	339	1,354
BMR060	466617	6501153	96.63	-90	0	83.45	0.5	343	937
BMR060						87.7	0.75	383	547
BMR060						90.2	0.5	482	931
BMR060						92.95	1	721	643
BMR060						108.95	0.75	639	512
BMR061	468217	6499907	98.04	-90	0	No significant re	sults		
BMR062	468372	6500188	98.5	-90	0	92.4	0.5	271	532
BMR062			ļ			105.15	0.5	456	433
BMR063	468313	6500048	98.31	-90	0	No significant re	esults		
BMR064	468341	6500110	98.24	-90	0	No significant re	sults		
BMR065	467396	6501290	95.35	-90	0	94.4	1.25	1,040	1,839
BMR065						103.65	0.5	487	1,314
BMR066	466847	6501829	95.4	-90	0	101.4	0.75	604	1,642

¹ - eU₃O₈ grade data derived from natural gamma downhole tool calibrated and operated by Borehole Wireline 2(South Australia) for holes BMR001 to BMR064. All other holes are by the Boss gamma tool.. No top cuts applied.

² - pU₃O₈ grade derived from Boss's Prompt Fission Neutron (PFN) tools. These have been calibrated to the groundwater and sedimentary

conditions at the Honeymoon Mine Site.



Table 2: Previously Announced Summary Results from 2016 Jasons Mud Rotary Drilling								lg		
Sumn	narised abov	ve a nominal	l 50cm m	inimur	n thickne	ess,	, 1m internal	dilution, and a	above 250pp	m eU ₃ O ₈ ¹
Hole ID	Easting	Northing	RL	Dip	Az.		From	length	eU ₃ O ₈ ¹ (ppm)	pU₃O₃ ² (ppm)
BMR001	465,947	6,501,988	94	-90		0	93.25	0.75	399	399
BMR002	465,834	6,501,804	94	-90	1	0	87.75	0.75	684	Not available
	1			1	1	ĺ	91.75	0.75	1,084	Not available
BMR003	465,887	6,501,581	95	-90	1	0	92.25	0.5	473	Not available
BMR004	466,088	6,502,000	94	-90	İ	0	80.5	0.5	309	830
							87.25	0.75	749	658
BMR005	466,254	6,502,138	95	-90	0	ĺ	94	0.75	1,114	1289
BMR006	465,991	6,501,688	95	-90	0	Î	87.5	0.5	389	623
BMR006	465,991	6,501,688	95	-90	0	Î	92.75	1.25	1,062	1137
BMR007	466,109	6,501,790	95	-90	0		94.25	0.75	1,478	1878
BMR008	466,139	6,501,514	96	-90	0		90.25	1.5	1,427	1167
							96.25	1	1,111	Not available
BMR009	465,992	6,501,417	96	-90	0		92	0.75	409	511
	1						94	0.75	521	523
BMR010	465,869	6,501,327	95	-90	0	Ì	92.5	0.5	587	857
BMR011	466,008	6,501,167	96	-90	0		87.25	0.5	834	Not available
	1					Î	94	0.75	425	Not available
BMR012	466.242	6.501.889	95	-90	0	Î	79.75	0.5	325	828
							84	0.5	389	692
				Ì	1		85.5	0.75	501	1327
							95.5	1.5	766	808
BMR013	466.400	6.501.958	95	-90	0		90.25	0.75	391	616
BMR014	466.521	6.502.072	95	-90	0		96	0.5	392	920
5		0,002,072					101 75	1 25	1 488	3024
BMR015	466.615	6.502.179	95	-90	0	Ì	105.25	0.5	582	1594
BMR016	466 242	6 501 637	96	-90	0		95.5	0.75	478	652
BMR017	466,360	6.501.723	96	-90	0	Ì	85	0.5	381	1262
BMR018	466.494	6.501.812	96	-90	0		74.8	0.5	411	503
	1				-	Ì	85.55	0.75	775	2076
				i		Ì	87.3	0.5	429	440
	1			1		Ì	93.55	1.25	1,389	1662
BMR019	466.612	6.501.917	96	-90	0		83	0.5	311	417
	1	-,,			-		86.25	0.5	828	1205
BMR020	466,137	6.501.263	96	-90	0		88	2	584	Not available
5	100,207	0,001,200	50				96.75	0.5	320	Not available
BMR021	466.278	6.501.350	96	-90	0		81	2	395	676
DIIIIOEE	100,270	0,001,000				Ì	91	0.5	265	176
	1						95.25	1	787	943
BMR022	466.384	6.501.464	96	-90	0	Ì	88.5	1.25	1.056	1153
					-	Ì	94.75	0.75	799	781
BMR023	466.509	6.501.563	96	-90	0	Ì	87.5	0.75	1.032	1505
					-	Ì	90.75	0.5	362	199
							92	0.75	759	862
BMR024							84	0.5	470	1256
							88.5	0.5	209	793
BMR025	466.760	6.501.764	96	-90	0	İ	85.25	1.5	989	Not available
		,,.		1 20	1	Ť	88.25	1.25	1.436	Not available
	i				1	İ	104	1.25	776	Not available
	1			1	1	Ť	105.75	0.5	273	Not available
BMR026	466.872	6.501.616	96	-90	0		76	0.5	759	1154
			20		-		80.25	1	717	1036
	1			1	1	Ť	86.25	0.75	593	1425
BMR027	467.279	6.500.423	96	-90	0		90.75	1	956	1665
BMR028	467.365	6.500.565	96	-90	0	İ	85.5	0.75	736	303
BMR029	467,466	6,500,703	96	-90	0		85.5	0.75	1,297	1537



		I I	1			98 75	0.75	702	1103
BMB030	467 515	6 500 756	96	-90	0	88 5	0.75	1 676	1969
DIVINOSO	407,515	0,300,730	50	-50	0	102.25	2.5	889	Not available
BMR031	167 618	6 500 873	96	-90	0	94.25	0.5	466	11/
DIVINOSI	407,018	0,300,873	50	-50	0	99.5	0.5	400	1045
						101 5	0.5	297	533
BMR032			96	-90	0	101.5	0.5	No signifi	cant intersections
BMR033	467 506	6 501 057	96	-90	0	89.2	15	478	486
BMR033	407,500	0,501,057	50	50	0	99.65	1.5	1 012	1102
BMR033					0	106.9	05	393	Not available
BMR034	467 451	6 500 929	96	-90	0	100.5	2	374	857
BMR035	467 359	6 500 774	96	-90	0	86.45	1	683	635
Divinto55	107,555	0,000,771	50	50		101.2	0.75	252	720
BMR036	467.263	6.500.637	96	-90	0	85.45	0.75	976	1428
BMR036	,	-,,			0	100.45	0.5	267	409
BMR037	467.161	6.500.505	96	-90	0	87.15	0.75	995	1255
BMR038	467.573	6.500.813	96	-90	0	86.4	1	407	405
BMR038	,	-,,			0	90.9	1	991	1143
BMR038					0	94.4	0.5	308	412
BMR038					0	100.65	4	464	440
BMR038					0	106.15	1.25	410	532
BMR039	467.397	6.500.177	96	-90	0	92.2	0.5	742	802
BMR040		-,,	96	-90				No Signific	cant Intersections
BMR041	467.621	6.500.419	96	-90	0	85.2	0.75	762	691
						106.7	1.25	165	544
BMR042	467,683	6,500,553	96	-90	0	86.95	1	1,531	1332
BMR042					0	103.95	1.5	605	1389
BMR043	467,683	6,500,637	96	-90	0	86.2	1	1,353	1780
BMR043					0	96.2	1	491	672
BMR043					0	99.95	1	297	439
BMR043					0	105.45	2.5	1,394	4005
BMR044	467,780	6,500,698	96	-90	0	83.95	0.5	357	344
BMR044					0	93.45	1.75	875	1317
BMR045	467,811	6,500,766	96	-90	0	110.7	0.75	887	1100
BMR046	467,867	6,500,873	96	-90	0	97.95	0.5	417	569
BMR047	467,733	6,499,961	96	-90	0	88.45	0.5	559	Not available
BMR048			96	-90	0			No Signifi	cant Intersections
BMR049	467,920	6,500,230	96	-90	0	85.15	0.75	910	1911
BMR050	467,992	6,500,365	96	-90	0	80.4	0.75	398	548
BMR050					0	85.65	0.5	484	286
BMR050					0	95.4	0.5	374	584
BMR050					0	103.9	6.75	524	940
					including	106.4	0.5	1124	1067
						109.6	1.0	1096	3208
BMR051			96	-90				No Signifi	cant Intersections
BMR052	468,041	6,500,425	96	-90	0	78.95	.5	447	435
						86.7	0.75	1214	1477
BMR053	467,967	6,500,294	96	-90	0	86.4	0.75	665	308
						104.15	1	725	2727
						108.15	2	254	200
BMR054	467,181	6,500,881	96	-90	0	86.65	1.25	741	775
						91.9	1	1242	1522

¹ - eU₃O₈ grade data derived from natural gamma downhole tool calibrated and operated by Borehole Wireline 2(South Australia). No top cuts applied.

² - pU_sO_s grade derived from Boss's Prompt Fission Neutron (PFN) tools. These have been calibrated to the groundwater and sedimentary conditions at the Honeymoon Mine Site.



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 8 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 Company confirms that the form and context in which the Competent Person's previous findings are presented have not been materially modified from the original market announcements released on 6 December, 8 December and 14 December 2016.

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

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JORC Table 1: Section 1 Sampling Techniques and Data

Criteria of	Reference to the Current Report
JORC Code	Comments / Findings
2012	
Sampling techniques	In-hole radiometric uranium grade data was intially determined by Borehole Wireline with eU_3O_8 determined from the down-hole natural gamma-logs and pU_3O_8 . Additionally Boss is utilising it's own PFN tools to obtain pU_3O_8 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, ConyIngham St, Adelaide. Standard industry procedures were used for geophysical logging of the drill holes and estimation from the geophysical logs for the eU_3O_8 (from the gamma-ray logs) and pU_3O_8 (from the PFN instruments) grades
Drilling	The holes were drilled by Watsons Drilling using the mud rotary method. The typical hole diameter is
techniques	14.5cm.
Drill sample recovery	Not applicable. Calliper readings indicate that hole size diameters are predominantly consistent.
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 ₃ O ₈ 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 \$058
	• 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 ₃ O ₈ 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. PFN grade data was only
of sampling	reported where there was a good correlation between PFN and gamma anomalies; and where PFN tool
and assaying	readings were considered to be robust.



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 Comments / Findings							
2012								
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 parties	The Honeymoon deposit and surrounding areas of the Yarramba palaeochannel have been intensely explored and systematically drilled starting from 1969. 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 250ppm U ₃ O ₈ cutoff and over 50cm for reporting. Consideration was given to mineralisation defined by a combination of PFN eU ₃ O ₈ and natural gamma eU ₃ O ₈ co-existent intervals.							



