ASX Announcement

ASX: BOE

27 August 2018

Honeymoon Infill Drilling Confirms Historic Results with Continuity of Significant Intercepts

HIGHLIGHTS

- Significant drill intercepts at Honeymoon Uranium Project confirm continuity of uranium mineralisation throughout targeted resource area, with best drill result of 4.25m thickness at 2,592ppm pU_3O_8, achieving a Grade x Thickness of 11,016ppm.m
- Infill drilling progress is ahead of schedule with more than half the planned drilling complete
- Drilling is part of Boss' restart strategy for the Honeymoon Project

Boss Resources Limited (ASX: BOE) (Boss Resources) is pleased to announce further impressive uranium intercepts from infill drilling on its Honeymoon Uranium Mining Licence in South Australia.

Boss has received results from a further 50 holes of its 200-hole infill program. Results show a continuation of promising results, with data to be used to update the Honeymoon Mineral Resource as the Company works towards restarting production at Honeymoon.

Drilling is underway at the East Kalkaroo Deposit immediately east of the Honeymoon processing plant, within the Honeymoon Mining Licence (**Figure 1**), and continues to intersect uranium mineralisation of significant grade and thickness throughout the resource area. Drilling remains ahead of schedule, with more than half of the planned infill program complete.

Boss Resources Managing Director Duncan Craib said, *"These important results confirm our current resource model, as well as validating the grade and thickness of the mineralisation reported by historic drilling throughout the deposit. We know that the mineralisation can form high-grade pods within the channels, and as part of our Wellfield Design these are the areas we will be targeting to ensure low cost production."*

Honeymoon Infill Drilling Progress

Following commencement of Boss' restart strategy, as announced to the ASX on 2 July 2018, results from the first 50 holes from its infill drilling campaign at the Honeymoon Uranium Mine were announced to the ASX on 2 August 2018. This announcement provides the drill results from the next 50 holes, with drilling having moved to East Kalkaroo.

East Kalkaroo comprises part of the overall Honeymoon Mineral Resource area which also incorporates the Honeymoon and Brooks Dam Deposits (collectively known as the Eastern Region). Boss is completing infill drilling in this area as it sits within the existing, fully-permitted Honeymoon Mining Licence and is close to the existing processing plant infrastructure at the main Honeymoon Uranium Mine. No further permitting is required to extract resources within this area and, so Boss intends to undertake initial wellfield operations in this area during the early years of operation.

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The main objectives of the infill drilling are to upgrade the existing Honeymoon Mineral Resource Estimate by:

- Converting the Inferred Resources to Indicated category;
- Upgrading a portion of the Indicated Resources to Measured category, with the ultimate purpose of converting Indicated and Measured Resources to Ore Reserves.

Boss Resources' geological team has achieved >96% mineralisation intersection success rate to date with the infill drilling campaign within the target Eastern Region. Results from first 100 holes confirm and validate the intercepts reported from historic drilling, prove that mineralisation of significant grade and thickness is continuous along the strike of the deposit. The strike remains open on the northern and southern boundaries of the currently delineated Mineral Resource area.

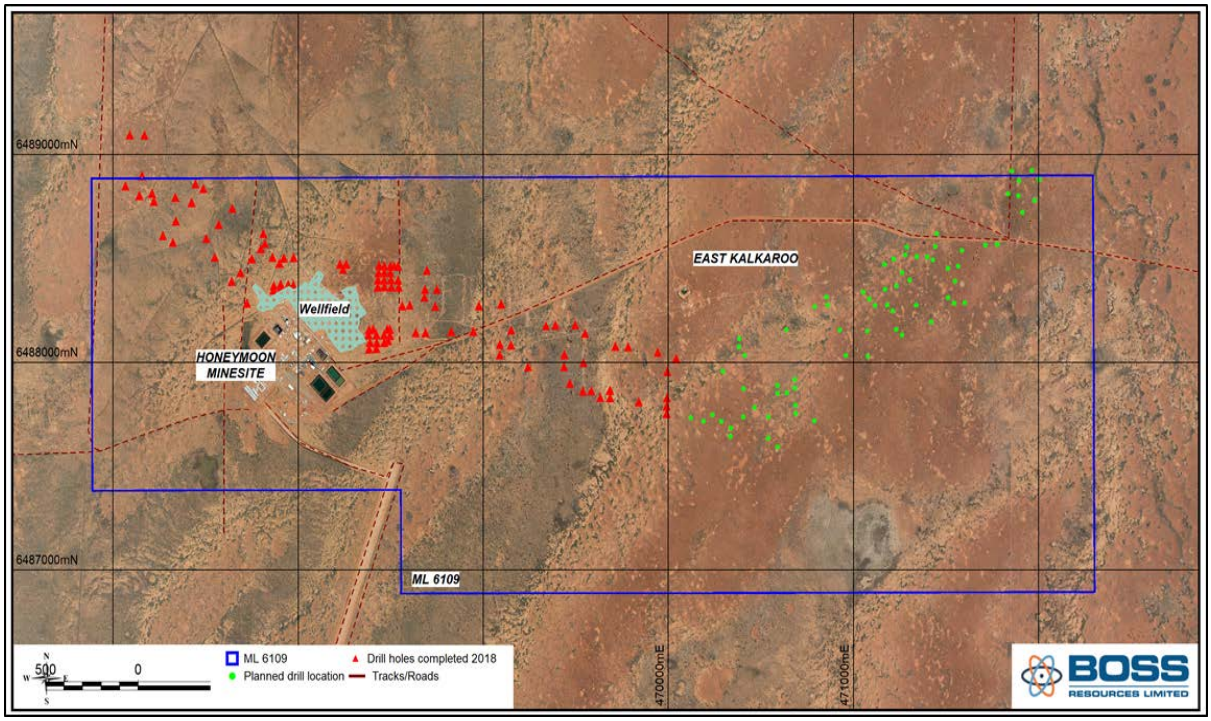

Figure 1: Location map of infill drill campaign showing updated drill status: red = holes completed to date, green = planned drilling.

Infill Drilling Results from 2nd Phase of 50 holes

The cut-off parameter selected for Mineral Resource Estimation is a nominal grade of 250ppm pU_3O_8, with a minimum interval thickness of 0.5 metres and a maximum internal dilution of 1 metre. Grades are reported in parts per million (ppm) pU_3O_8 (downhole Prompt Fission Neutron (PFN) results) and eU_3O_8 (downhole gamma results). Reporting of results is also shown in units of grade x thickness (GT) in order to be consistent with common practice in uranium deposits of this type.

At the conclusion of the infill drilling campaign, Boss will apply a revised Wellfield Design Criteria over the determined Mineral Resource Estimate to determine the optimal size and shape of a practical mineable resource for the Honeymoon Uranium Mine. The design methodology will be based on an Economic Grade Model (or GT model) and on the resource block model, by using first principles to determine the minimum grade x thickness that can be economically mined.

Table 1 of Appendix 1 provides the full list of significant intersections returned from the second tranche results for the infill drill campaign. Significant drilling highlights falling within expectations and historical interpretation include:

- BIF0052 from 97.00m GT 2,236 (2.75m @ 813 ppm pU_3O_8)
- BIF0055 from 99.75m GT 1,875 (3.25m @ 577 ppm pU_3O_8)
- BIF0056 from 115.50m GT 1,950 (3.25m @ 600 ppm pU_3O_8)
- BIF0057 from 94.00m GT 1,706 (3.25m @ 525 ppm pU_3O_8)
- BIF0059 from 118.25m GT 1,474 (2.75m @ 536 ppm pU_3O_8)
- BIF0061 from 114.75m GT 1,391 (2.25m @ 618 ppm pU_3O_8)
- BIF0062 from 117.00m GT 1,590 (2.75m @ 578 ppm pU_3O_8)
- BIF0063 from 93.75m GT 3,140 (3.25m @ 996 ppm pU_3O_8)
- BIF0064 from 93.50m GT 1,397 (2.75m @ 508 ppm pU_3O_8)
- BIF0066 from 110.25m GT 1,950 (3.75m @ 520 ppm pU_3O_8)
- BIF0067 from 115.25m GT 1,680 (3.25m @ 517 ppm pU_3O_8)
- BIF0068 from 108.25m GT 2,282 (3.50m @ 652 ppm pU_3O_8)
- BIF0069 from 102.75m GT 11,016 (4.25m @ 2,592 ppm pU_3O_8)
- BIF0090 from 95.25m GT 1,016 (2.00m @ 508 ppm pU_3O_8)
- BIF0099 from 110.00m GT 2,135 (2.50m @ 854 ppm pU_3O_8)

Interpretation of Infill Drill Results

The compiled dataset formed from the collective results of the various tools is creating the most advanced modelling to date for mineral delineation on the Honeymoon Project. It will be an invaluable component in optimising the design and development of the final wellfields in the next stage of the Definitive Feasibility Studies.

Each rotary mud hole is logged with a suite of downhole geophysical tools consisting of gamma, prompt fission neutron (PFN), nuclear magnetic resonance (NMR), resistivity, induction, neutron porosity, self-potential conductivity, caliper and magnetic deviation. Additionally, drill chips collected for geological logging are analysed with a handheld XRF (x-ray fluorescence) spectrometer to qualitatively measure sulphide and iron contents within the host sediments. Data gathered from these tools is used in the interpretation and understanding of the deposit-specific geology and mineralisation models.

In preparation for the subsequent wellfield design, the probing of holes with the NMR tool will provide useful information about the hydrological properties of the measured material, including total porosity, relative pore size distribution and estimated hydraulic conductivity.

Figure 2 illustrates a plan view of the grade times thickness distribution from the drilling completed to date at both the Honeymoon and East Kalkaroo Deposits. Historic drilling has also been plotted for reference, for the purpose of showing the position of the new drilling relative to those parts of the channel system that have already been delineated. Black lines A – A' and B – B' provide the reference lines for Figures 3 and 4, which show cross-sectional views from the area between the Honeymoon

Deposit and the East Kalkaroo Deposit. Mineralised zones defined by historic drilling are shown by the red lenses, while the red dashed lines illustrate the interpreted continuity of mineralisation between the historic holes and the recent drilling.

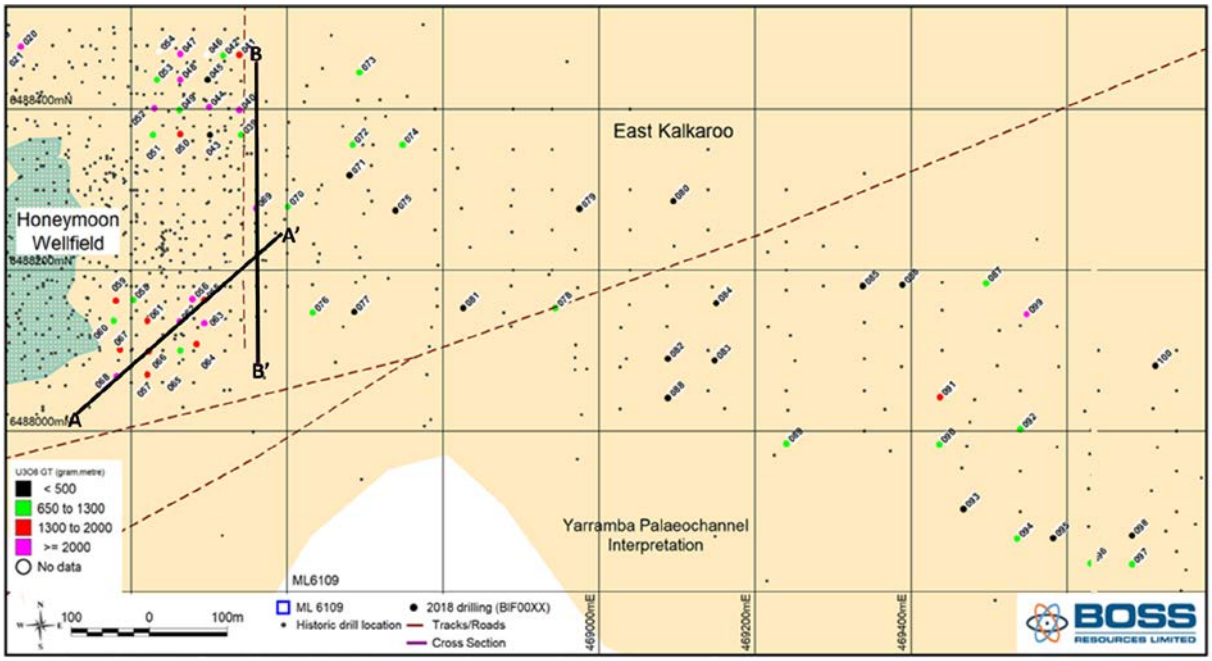

Figure 2: Plan view of infill drilling completed to date, showing grade x thickness distribution.

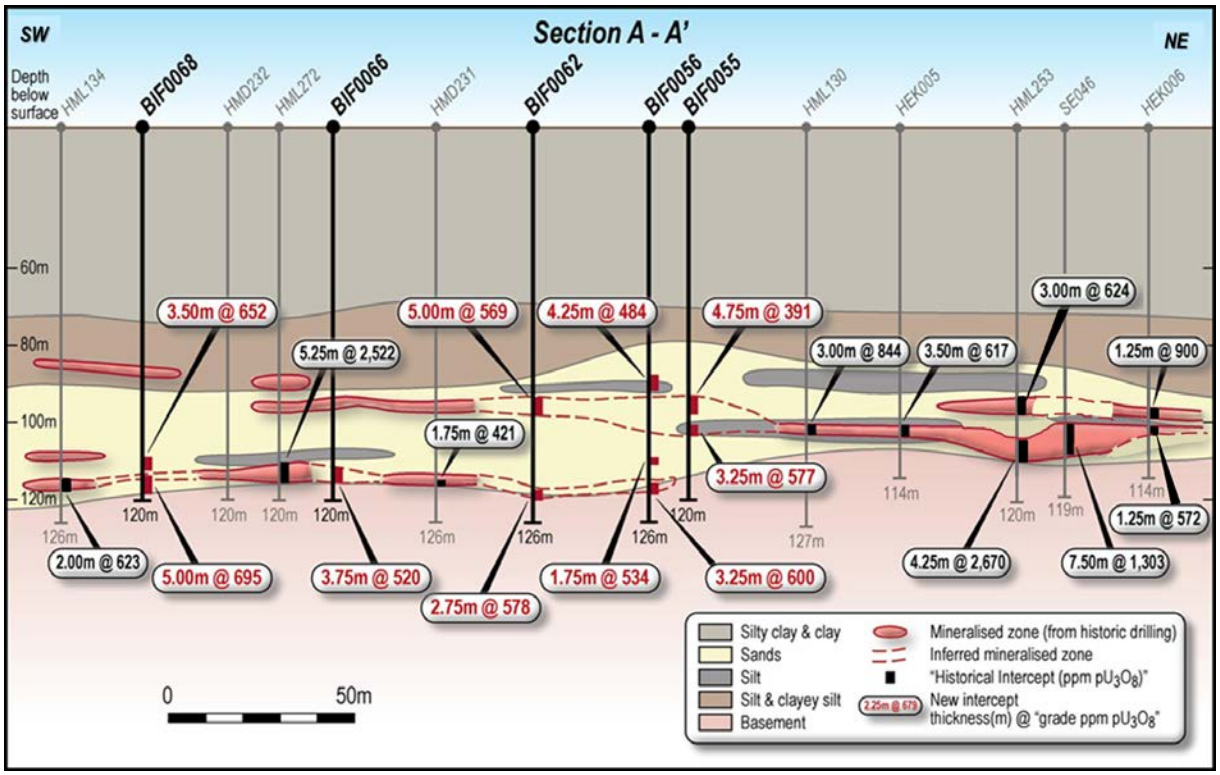

Figure 3: Cross section A – A', Honeymoon Deposit, showing the continuity of mineralisation between the recent drilling and historical holes. Results are shown as grade (ppm eU3O8 or pU3O8 / thickness in metres where available). Note: section only shows the bottom ~60m of each section.

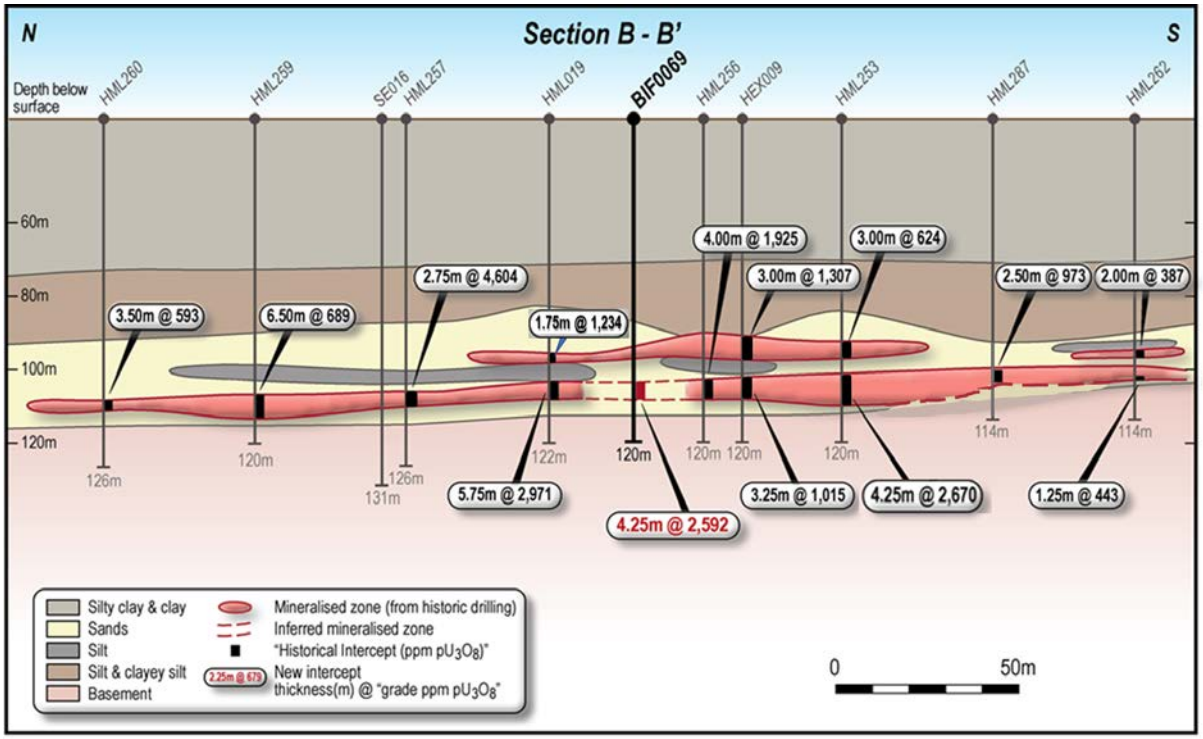

Figure 4: Section B – B', East Kalkaroo Deposit, showing grade continuity between recent drillhole BIF0069 and historical drilling. Results are shown as grade (ppm eU3O8 or pU3O8 / thickness in metres where available). Note: section only shows the bottom ~60m of each section.

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Competent Persons' Statements

The information in this report that relates to Exploration Results for the Honeymoon Project is based on and fairly represents information compiled by Dr M. Abzalov, who is a Fellow of the Australian Institute of Mining and Metallurgy (AusIMM). He has sufficient experience relevant to the style of mineralisation and type of deposit under consideration, and to the activities being undertaken 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' (JORC Code). Dr M. Abzalov serves on the Technical Committee of Boss Resources Ltd. 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.

APPENDIX 1 – DRILL HOLE DATA

In accordance with ASX Listing Rule 5.7.2, the Company provides the following information.

Table 1: Recent Drilling - Summary Results from 2018 Mud Rotary Drilling

Summarised above a nominal 50cm minimum thickness, 1m internal dilution, and above 250ppm pU_3O_8 [1]

Hole ID	Easting	Northing	RL	EOH	Dip	Az.	From	length	eU_3O_8 [1]	pU_3O_8 [2] (ppm)
BIF0051	468428	6488368	122	126	-90	0	99.25	2.5	588	480
BIF0051	468428	6488368	122	126	-90	0	101.75	0.75	434	289
BIF0051	468428	6488368	122	126	-90	0	103	0.5	227	260
BIF0051	468428	6488368	122	126	-90	0	105.25	1	320	278
BIF0052	468430	6488401	122	124	-90	0	97	2.75	549	813
BIF0052	468430	6488401	122	124	-90	0	104.25	2	465	412
BIF0052	468430	6488401	122	124	-90	0	119.5	0.75	228	302
BIF0053	468433	6488437	122	124	-90	0	98.25	2.25	277	264
BIF0053	468433	6488437	122	124	-90	0	110.75	1.5	1362	689
BIF0053	468433	6488437	122	124	-90	0	116.75	1.5	395	386
BIF0054	468436	6488472	122	18	-90	0	Hole collapsed, no PFN logging			
BIF0055	468494	6488163	122	120	-90	0	88	2.75	181	273
BIF0055	468494	6488163	122	120	-90	0	91.5	4.75	296	391
BIF0055	468494	6488163	122	120	-90	0	99.75	3.25	505	577
BIF0055	468494	6488163	122	120	-90	0	107	2	317	325
BIF0055	468494	6488163	122	120	-90	0	109	2.5	341	287
BIF0055	468494	6488163	122	120	-90	0	113	4.25	329	372
BIF0056	468479	6488164	122	126	-90	0	87.5	4.25	269	484
BIF0056	468479	6488164	122	126	-90	0	91.75	5.25	253	368
BIF0056	468479	6488164	122	126	-90	0	97.25	1.25	263	256
BIF0056	468479	6488164	122	126	-90	0	98.75	1.25	209	271
BIF0056	468479	6488164	122	126	-90	0	100	1.5	229	340
BIF0056	468479	6488164	122	126	-90	0	101.5	1.25	191	255
BIF0056	468479	6488164	122	126	-90	0	108	1.75	788	534
BIF0056	468479	6488164	122	126	-90	0	115.5	3.25	539	600
BIF0057	468421	6488070	122	120	-90	0	94	3.25	436	525
BIF0058	468403	6488163	122	120	-90	0	87	3.5	184	328
BIF0058	468403	6488163	122	120	-90	0	117.75	0.75		256
BIF0059	468381	6488162	122	126	-90	0	118.25	2.75	536	
BIF0060	468378	6488137	122	120	-90	0	82.5	3.25	147	308
BIF0060	468378	6488137	122	120	-90	0	111.25	1.75	306	358
BIF0061	468421	6488137	122	120	-90	0	87	0.75	135	254
BIF0061	468421	6488137	122	120	-90	0	96	1.5	191	257
BIF0061	468421	6488137	122	120	-90	0	107.5	1.75	302	318
BIF0061	468421	6488137	122	120	-90	0	110.25	1.75	342	300
BIF0061	468421	6488137	122	120	-90	0	114.75	2.25	360	618
BIF0061	468421	6488137	122	120	-90	0	117.5	0.5		298
BIF0062	468462	6488136	122	126	-90	0	92.5	5	447	569

BIF0062	468462	6488136	122	126	-90	0	106.5	1.75	214	301
BIF0062	468462	6488136	122	126	-90	0	117	2.75	456	578
BIF0062	468462	6488136	122	126	-90	0	120	1.25	219	264
BIF0063	468494	6488134	122	114	-90	0	93.75	3.25	451	966
BIF0063	468494	6488134	122	114	-90	0	98.5	2.75	324	461
BIF0063	468494	6488134	122	114	-90	0	109.75	1.25	200	268
BIF0064	468484	6488108	122	114	-90	0	93.5	2.75	473	508
BIF0064	468484	6488108	122	114	-90	0	96.25	2.75	326	452
BIF0065	468463	6488100	122	114	-90	0	96.25	1.5	304	291
BIF0065	468463	6488100	122	114	-90	0	107.25	2	614	329
BIF0066	468423	6488099	122	120	-90	0	110.25	3.75	520	
BIF0067	468386	6488101	122	120	-90	0	115.25	3.25	319	517
BIF0068	468382	6488068	122	120	-90	0	84.25	3.25	206	340
BIF0068	468382	6488068	122	120	-90	0	108.25	3.5	759	652
BIF0068	468382	6488068	122	120	-90	0	113.25	5	490	695
BIF0069	468560	6488277	122	120	-90	0	102.75	4.25	1309	2592
BIF0069	468560	6488277	122	120	-90	0	107.25	1	215	279
BIF0069	468560	6488277	122	120	-90	0	109.5	3.25	510	320
BIF0069	468560	6488277	122	120	-90	0	113.25	1.75	236	254
BIF0070	468601	6488279	122	114	-90	0	94.25	1.5	187	258
BIF0070	468601	6488279	122	114	-90	0	102	1.25	211	253
BIF0070	468601	6488279	122	114	-90	0	104	1.75	294	383
BIF0070	468601	6488279	122	114	-90	0	105.75	1	288	281
BIF0070	468601	6488279	122	114	-90	0	108.75	0.5	242	263
BIF0071	468680	6488318	122	114	-90	0	97	1.5	229	252
BIF0071	468680	6488318	122	114	-90	0	102.25	1.25	215	271
BIF0072	468684	6488356	122	114	-90	0	95.75	2.25	318	372
BIF0072	468684	6488356	122	114	-90	0	105.25	1.5	268	349
BIF0073	468693	6488446	122	120	-90	0	115.25	1.5	139	337
BIF0074	468748	6488356	122	116	-90	0	94.5	2.5	331	415
BIF0074	468748	6488356	122	116	-90	0	104.5	0.5	230	301
BIF0075	468739	6488274	122	116	-90	0	95.25	1	217	268
BIF0075	468739	6488274	122	116	-90	0	105.5	1.5	142	253
BIF0076	468633	6488147	122	108	-90	0	89.75	1	226	266
BIF0076	468633	6488147	122	108	-90	0	93.25	1.25	162	283
BIF0076	468633	6488147	122	108	-90	0	96.5	0.5	231	316
BIF0076	468633	6488147	122	108	-90	0	99.75	2	139	318
BIF0077	468686	6488148	122	114	-90	0	100.5	1.5	374	330
BIF0078	468944	6488153	122	114	-90	0	81.5	1.5	310	300
BIF0078	468944	6488153	122	114	-90	0	95.75	2.25	210	296
BIF0078	468944	6488153	122	114	-90	0	101.5	0.75	362	258
BIF0078	468944	6488153	122	114	-90	0	103.25	1.25	374	251
BIF0078	468944	6488153	122	114	-90	0	104.75	1.75	189	309
BIF0079	468975	6488276	122	114	-90	0	101.5	1.25	337	272
BIF0080	469095	6488286	122	126	-90	0	NSA			
BIF0081	468826	6488153	122	114	-90	0	NSA			

BIF0082	469088	6488090	122	126	-90	0	NSA			
BIF0083	469148	6488088	122	126	-90	0	108	1.25	252	265
BIF0083	469148	6488088	122	126	-90	0	112.75	0.5	274	255
BIF0083	469148	6488088	122	126	-90	0	116	0.75	206	282
BIF0084	469150	6488159	122	126	-90	0	105	1.75	342	258
BIF0085	469338	6488180	122	126	-90	0	NSA			
BIF0086	469389	6488182	122	126	-90	0	109.25	1.5	255	
BIF0087	469496	6488184	122	120	-90	0	109.5	1.75	932	739
BIF0088	469088	6488041	122	126	-90	0	104.5	1	402	287
BIF0088	469088	6488041	122	126	-90	0	116.25	1.25	205	264
BIF0089	469240	6487984	122	126	-90	0	79	2.25	415	424
BIF0089	469240	6487984	122	126	-90	0	89	0.75	280	280
BIF0090	469436	6487983	122	120	-90	0	95.25	2	509	508
BIF0090	469436	6487983	122	120	-90	0	99	1.75	384	329
BIF0091	469437	6488042	122	126	-90	0	97.25	1.75	501	406
BIF0091	469437	6488042	122	126	-90	0	100.5	0.5	229	294
BIF0091	469437	6488042	122	126	-90	0	102.25	1.75	295	980
BIF0092	469540	6488002	122	120	-90	0	96.25	1.75	269	537
BIF0093	469467	6487903	122	126	-90	0	102.75	1	228	269
BIF0094	469536	6487866	122	120	-90	0	90.5	1.5	234	378
BIF0094	469536	6487866	122	120	-90	0	99.5	1.5	512	493
BIF0095	469582	6487867	122	120	-90	0	103.75	1	173	255
BIF0096	469630	6487835	122	126	-90	0	76.75	0.75	262	279
BIF0096	469630	6487835	122	126	-90	0	78	1.5	295	312
BIF0096	469630	6487835	122	126	-90	0	85	1.5	461	688
BIF0096	469630	6487835	122	126	-90	0	96	0.75	211	280
BIF0096	469630	6487835	122	126	-90	0	100.75	1.5	145	266
BIF0097	469683	6487834	122	120	-90	0	81.5	1.5	372	398
BIF0098	469683	6487870	122	120	-90	0	86.5	0.5	183	262
BIF0098	469683	6487870	122	120	-90	0	102.5	0.5	290	269
BIF0099	469548	6488145	122	120	-90	0	110	2.5	1095	854
BIF0100	469713	6488081	122	120	-90	0	114.25	0.75	253	
BIF0100	469713	6488081	122	120	-90	0	115.25	1	250	
BIF0100	469713	6488081	122	120	-90	0	116.25	1	320	

[1] - eU_3O_8 grade data derived from natural gamma downhole tool calibrated and operated by Boss Resources. No top cuts applied.

[2] - pU_3O_8 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.

APPENDIX 2 - JORC TABLES

JORC Table 1: Section 1 Sampling Techniques and Data

Criteria of JORC Code 2012	Reference to the Current Report Comments / Findings
Sampling techniques	Boss is utilising its own PFN tools to obtain pU_3O_8 grades which when properly calibrated reduce the effect of radioactive disequilibrium. In-hole radiometric uranium grade data was also determined by Wireline Services with eU_3O_8 determined from the down-hole natural gamma-logs and pU_3O_8. All tools were maintained by specialised electronic companies and technicians based in Adelaide and Perth. 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, Conyngham 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 techniques	The holes were drilled by Watsons Drilling using the mud rotary method. The typical hole diameter is 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 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-sampling techniques and sample preparation	QA/QC of the geophysical data has included systematic control of the depth logged and control of the recorded U_3O_8 grade values. Geophysical tools estimate uranium content at large volumes, approximately 25 to 40 cm radius. The volume is sufficiently large allowing accurate measure of the grade.
Quality of assay data and laboratory tests	Company Geophysical tools used to collect data include: • Auslog Gamma (with Guard) S422 • Prompt Fission Neutron tool PFN#27 • Prompt Fission Neutron tool PFN#32 • Prompt Fission Neutron tool PFN#8 • Gamma combined with guard S058 • Auslog 3 arm calliper A326 Wireline Services tools used to collect data include: Natural gamma, Induction, SP, Density, Neutron Porosity, Resistivity, Magnetic Resonance, 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_3O_8 grade values. The winches in the logging truck have their depth calibration checked periodically.
Verification of sampling and assaying	The gamma-log data were additionally validated against the PFN logs. PFN grade data was only reported where there was a good correlation between PFN and gamma anomalies; and where PFN tool readings were considered to be robust.

Location of data points	• Positions are set out using a Garmin handheld GPS and recorded after drilling. • 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 and distribution	Drill spacing is approximately 40m x 80m. Uranium grade is composited to 0.25cm to aid in interpretation.
Orientation of data in relation to geological structure	All holes are drilled vertically which provides an accurate intersection of the flat laying mineralised bodies.
Sample security	N/A
Audits or reviews	N/A

JORC Table 1: Section 2 Reporting of Exploration Results

Criteria of JORC Code 2012	**Reference to the Current Report** **Comments / Findings**
Mineral tenement and land tenure status	The Project consists of 1 granted Mining Lease, 5 granted Exploration Licenses, 3 Retention Leases and 2 Miscellaneous Purpose Licenses. The Mining license expires in 2023, exploration licenses expire in 2019 (except EL 5623 which expires in 2018).
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_3O_8 cutoff and over 50cm for reporting. 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 widths and intercept lengths	Drill traverses are oriented at right angle across the domain strike. Holes are drilled vertically down. All holes have been down-hole surveyed with only minimal deviation identified (e.g. <2m over 100m).
Diagrams	Appropriate and relevant diagrams have been included in the announcement. The following diagram illustrates currently drilled holes.
Balanced reporting	Balanced reporting has been adhered to. See previous exploration announcements.
Other substantive exploration data	Mineralisation is still open along the strike of the domain.
Further work	Sonic holes will be planned to enable a fuller understanding of practical disequilibrium and sedimentological conditions within the deposit. Chemical analysis of core will be an important step in validating the observed PFN grades and disequilibrium effect prior to use of this data in resource estimation.