ASX Announcement 8 December 2016

ASX: BOE

FURTHER HIGH-GRADE DRILL RESULTS FROM JASONS PROSPECT DRILLING

HIGHLIGHTS

- High-grade core developing in the southern Jasons Prospect Region
  - >900m in trend extent, open to the south
- Independent review confirms veracity of PFN data
  - PFN results being processed now – will be announced once finalised
- Significant intercepts encountered including:
  - 1m @ 1012ppm eU3O8 from 99.65m in BMR033
  - 4m @ 464ppm eU3O8 from 100.65m in BMR038
  - 1m @ 1531ppm eU3O8 from 86.95m in BMR042
  - 1m @ 1353ppm eU3O8 from 86.2m in BMR043
  - 2.5m @ 1394ppm eU3O8 from 105.45m in BMR043
  - 1.75m @ 875ppm eU3O8 from 93.45m in BMR044
  - 6.75m @ 524ppm eU3O8 from 103.9m in BMR050
    - Including 1m @ 1096ppm eU_3O from 109.6m
- Drilling progressing well with 50 holes drilled to date

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

Drilling in the southern portion of the Jasons Prospect (Figure 1) is defining a high-tenor core to the mineralisation with significant wide intercepts including 4m @ 464ppm eU3O8 (from 100.65m in BMR038), 2.5m @ 1394ppm eU3O8 (from 105.45m in BMR043) and 6.75m @ 524ppm eU3O8 (from 103.9m in BMR050). These results are along trend of the historical drillhole YAM040 which contained 2.3m @ 3981ppm pU_3O_8 (PFN derived grade).

Boss has PFN grade data for the majority of the new drilling. An initial independent review of the PFN grade data and calibration routines has confirmed that the PFN results are appropriate for reporting and that correct calibration procedures have been used. Following this confirmation, Boss is now validating and interpreting the PFN results which will be released to market when available.

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, significantly good lateral continuity of mineralisation has been encountered.

Suite 23, 513 Hay St, Subiaco WA
P: +61 (8) 6143 6730
E: admin@bossresources.com.au
ABN 38 116 834 336

Table 1 summarises significant intercepts above a nominal 250ppm eU_3O_8 lower cutoff 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 and Lower 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_3O_8 for 5.2Mlb contained U_3O_8 above a 250ppm U_3O_8 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 independent certified test pits in Adelaide. 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's PFN tools have been are calibrated using four on-site test pits which were established by the previous owners of the operation. The operating, calibration and results of the PFN tool have been reviewed by an independent PFN expert. Full sampling and drilling details are shown in Appendix 1.

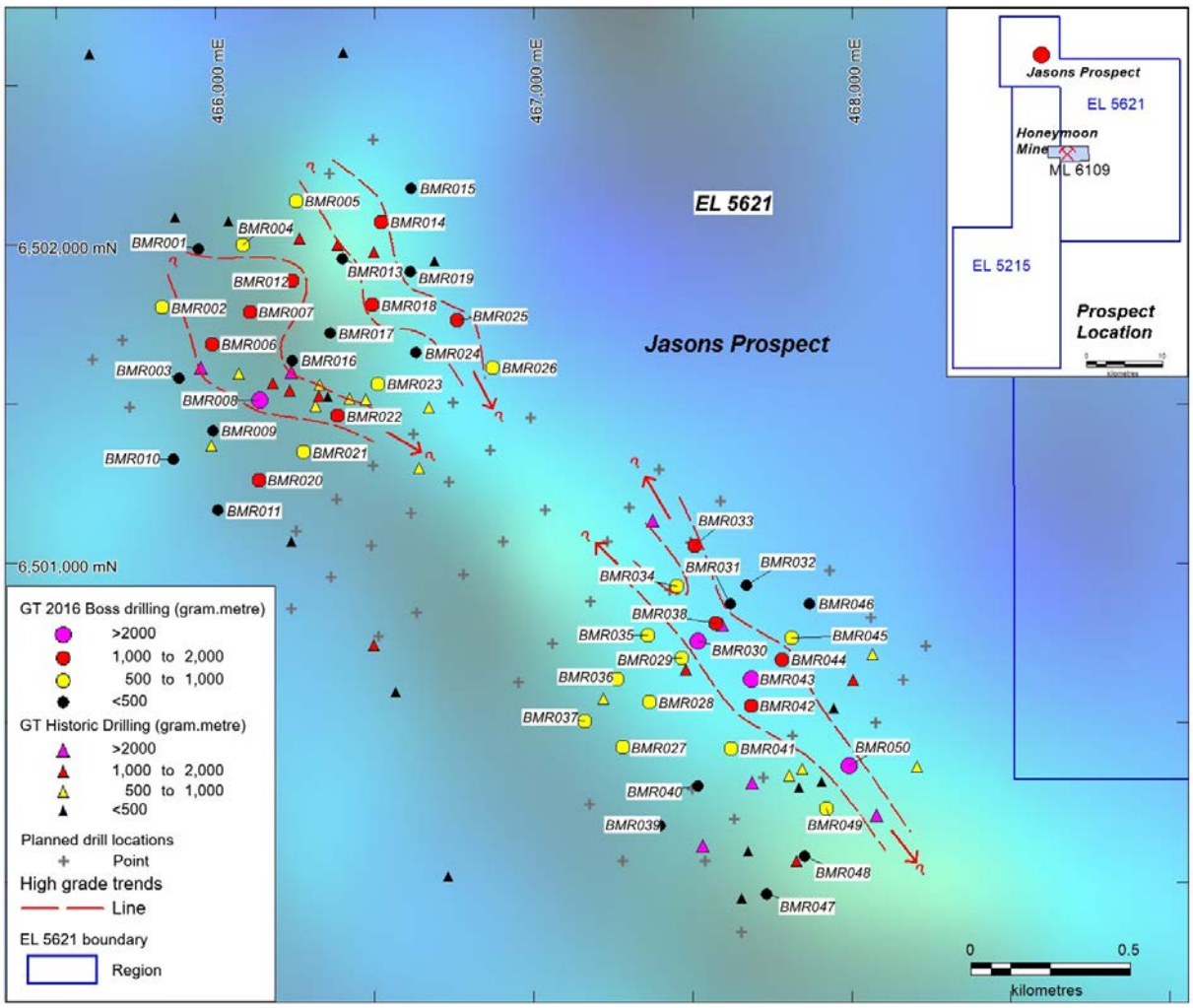


Figure 1: Summary grade x thickness plot of the Jasons drilling. EM depth slice underlay.



Figure 2: Field photos showing field activities in November 2016. Top left: Watsons Drilling rig; Top right: drill cuttings laid out in 2m intervals; Bottom left: Chip trays and hand-held spectrometer; Bottom right: Boss' geophysical logging truck which is running our two calibrated PFN tools.

Table 1: Second Round Results from 2016 Jasons Mud Rotary Drilling

Summarised above a nominal 50cm minimum thickness, 1m internal dilution, and above 250ppm eU_3O_8 [1]

Hole ID	Easting	Northing	RL	Dip	Azimuth	Depth From (m)	Length (m)	eu3o8 (ppm)
BMR033	467,506	6,501,057	96	-90	0	89.9	0.75	729
BMR033			96	-90	0	**99.65**	**1**	**1,012**
BMR033			96	-90	0	106.9	0.5	393
BMR034	467,451	6,500,929	96	-90	0	103.65	2	374
BMR035	467,359	6,500,774	96	-90	0	86.45	1	683
BMR036	467,263	6,500,637	96	-90	0	85.45	0.75	976
BMR036			96	-90	0	100.45	0.5	267
BMR037	467,161	6,500,505	96	-90	0	87.15	0.75	995
BMR038	467,573	6,500,813	96	-90	0	86.4	1	407
BMR038			96	-90	0	90.9	1	991
BMR038			96	-90	0	94.4	0.5	308
BMR038			96	-90	0	**100.65**	**4**	**464**
BMR038			96	-90	0	106.15	1.25	410
BMR039	467,397	6,500,177	96	-90	0	92.2	0.5	742
BMR041	467,621	6,500,419	96	-90	0	85.2	0.75	762
BMR042	467,683	6,500,553	96	-90	0	**86.95**	**1**	**1,531**
BMR042			96	-90	0	103.95	1.5	605
BMR043	467,683	6,500,637	**96**	**-90**	**0**	**86.2**	**1**	**1,353**
BMR043			96	-90	0	96.2	1	491
BMR043			96	-90	0	99.95	0.5	444
BMR043			96	**-90**	**0**	**105.45**	**2.5**	**1,394**
BMR044	467,780	6,500,698	96	-90	0	83.95	0.5	357
BMR044			**96**	**-90**	**0**	**93.45**	**1.75**	**875**
BMR045	467,811	6,500,766	**96**	**-90**	**0**	**110.7**	**0.5**	**1,215**
BMR046	467,867	6,500,873	96	-90	0	97.95	0.5	417
BMR047	467,733	6,499,961	96	-90	0	88.45	0.5	559
BMR049	467,920	6,500,230	96	-90	0	85.15	0.75	910
BMR050	467,992	6,500,365	96	-90	0	80.4	0.75	398
BMR050			96	-90	0	85.65	0.5	484
BMR050			96	-90	0	95.4	0.5	374
BMR050			**96**	**-90**	**0**	**103.9**	**6.75**	**524**
					including	**106.4**	**0.5**	**1124**
						109.6	**1.0**	**1096**

[1]- eU_3O_8 grade data derived from natural gamma downhole tool calibrated and operated by Borehole Wireline (South Australia). No top cuts applied.

About the Honeymoon Uranium Project

The Honeymoon Uranium Project (Figure 3) is located in South Australia, approximately 80km north-west 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 inter-bedded 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.

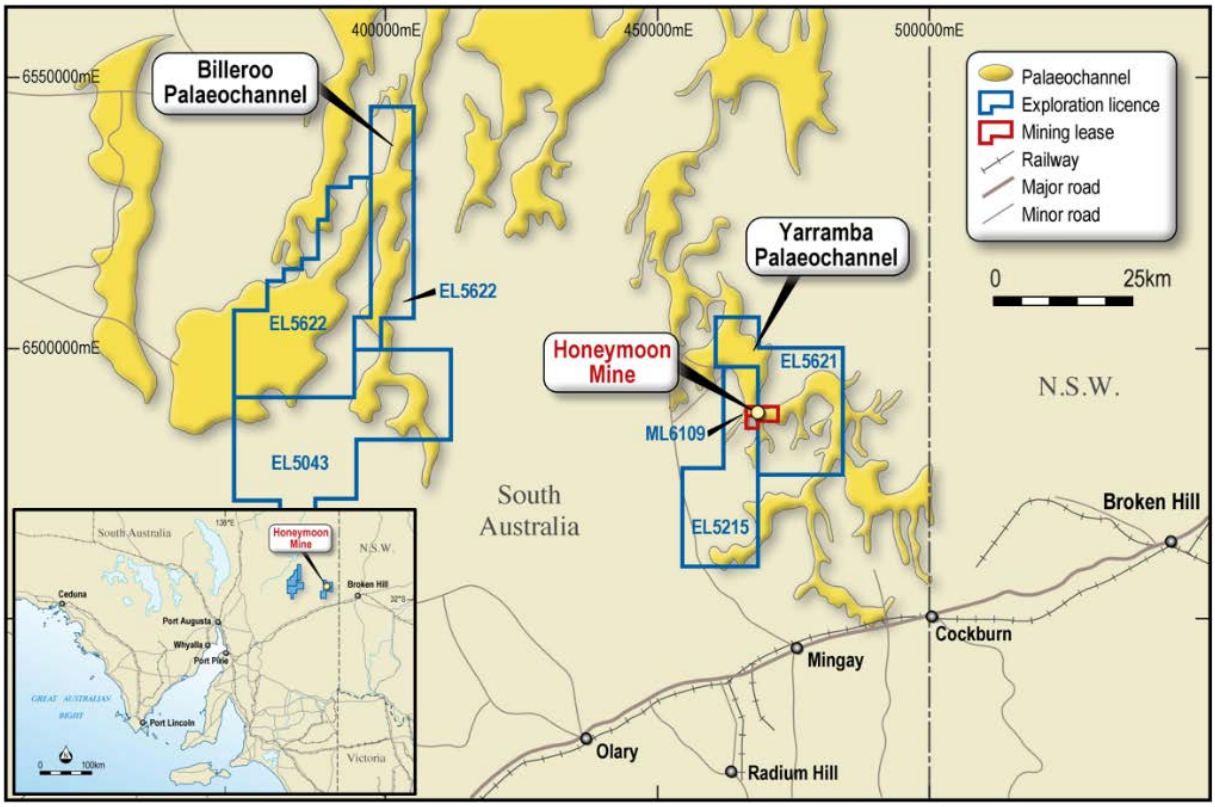


Figure 3: Honeymoon Uranium Project. The yellow shaded regions represent palaeodrainage channels which have potential to host uranium mineralisation and are the focus of exploration efforts.

For further information, contact:
Grant Davey: +61 (0) 447 753 163

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

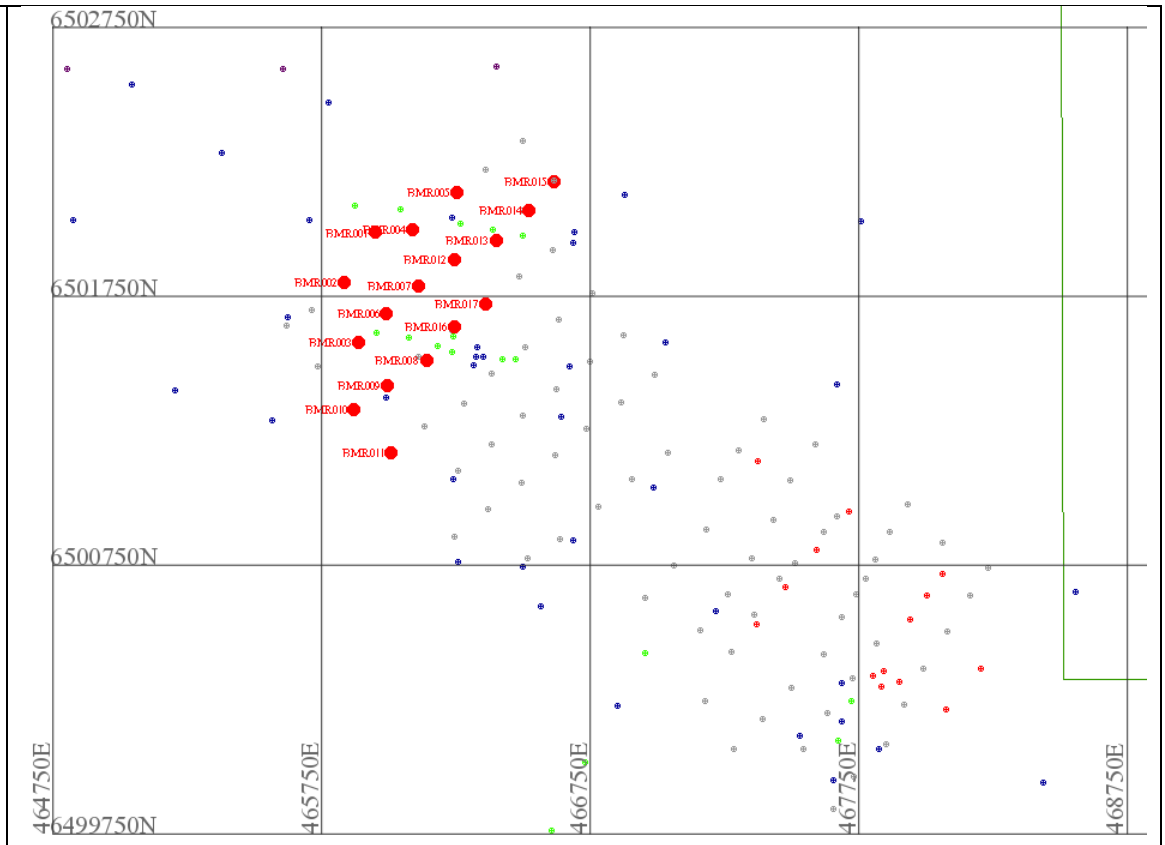
JORC Table 1: Section 1 Sampling Techniques and Data

Criteria of JORC Code 2012	Reference to the Current Report Comments / Findings
Sampling techniques	In-hole radiometric uranium grade data was 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 techniques	The holes were drilled by Watsons Drilling using the mud rotary method. The typical hole diameter is 14cm.
Drill sample recovery	Not applicable
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-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 • 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_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.
Location of data points	Positions are set out using a Garmin handheld GPS, 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 100m x 180m. 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	A independent review of the PFN calibration and sampling has been undertaken by Mr J Oram in December 2016, the review conculded tha the PFN data is suitable for eporting.

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, 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 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 widths and intercept lengths	Drill traverses are oriented at right angle across the domain strike. Holes are drilled vertically down.
Diagrams	Appropriate and relevant diagrams have been included in the announcement. The following diagram illustrates currently drilled holes. Red and blue collars denote historical drillholes.

	
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.