

31 MARCH 2016 QUARTERLY REPORT HIGHLIGHTS

Honeymoon Uranium Project, South Australia

- **Honeymoon, East Kalkaroo and Brook's Dam Deposits Resource increased to 15.2 Mt @ 820ppm e U₃O₈ for 27.6 Mlb U₃O₈**
 - Maiden Measured Resource – 1.7 Mt @ 1720ppm e U₃O₈ for 6.5Mlb of U₃O₈
 - Indicated Resources – 1.5 Mt @ 1270ppm e U₃O₈ for 4.2 Mlb U₃O₈
 - Inferred Resources – 12 Mt @ 640ppm e U₃O₈ for 16.8 Mlb U₃O₈
- **Gould's Dam Maiden Mineral JORC Mineral Resource of 22.1MT at 510ppm eU₃O₈ for 25Mlb contained U₃O₈ above a 250ppm eU₃O₈ lower cutoff**
 - Indicated Resources – 4.4 Mt at 650ppm eU₃O₈ for 6.3 Mlb contained U₃O₈
 - Inferred Resources – 17.7 Mt at 480ppm eU₃O₈ for 18.7 Mlb contained U₃O₈
- **Current resource model indicates significant potential for future increases through extensional and infill drilling throughout the 15km strike length at Gould's Dam**
- **Resource grade excellent when compared to ASX listed peers and ISL uranium projects in Kazakhstan and USA where <500ppm is regularly mined**
- **Global Honeymoon Project resources now stand at 52.5Mlbs of U₃O₈ representing a 330% increase in resources since the project was acquired in December 2015**

Corporate

- **Appointment of experienced uranium executive, Mark Hohnen, as Chairman**

HONEYMOON URANIUM PROJECT

Boss Resources Ltd (Boss or the Company) announced the successful acquisition of the Honeymoon Uranium Project in South Australia via the acquisition of 100% of the issued share capital of Uranium One Australia Pty Ltd in December 2015 (ASX: 1 December 2015 for full acquisition details).

The Honeymoon Uranium Project ("**Honeymoon**" or the "**Project**") is located in South Australia and is 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. The Honeymoon mining infrastructure is located on ML6109 and has produced some 335t of U₃O₈ from 2011 to 2012. The large tenement package covers approximately 2,595km² and has excellent exploration potential to identify further resources.

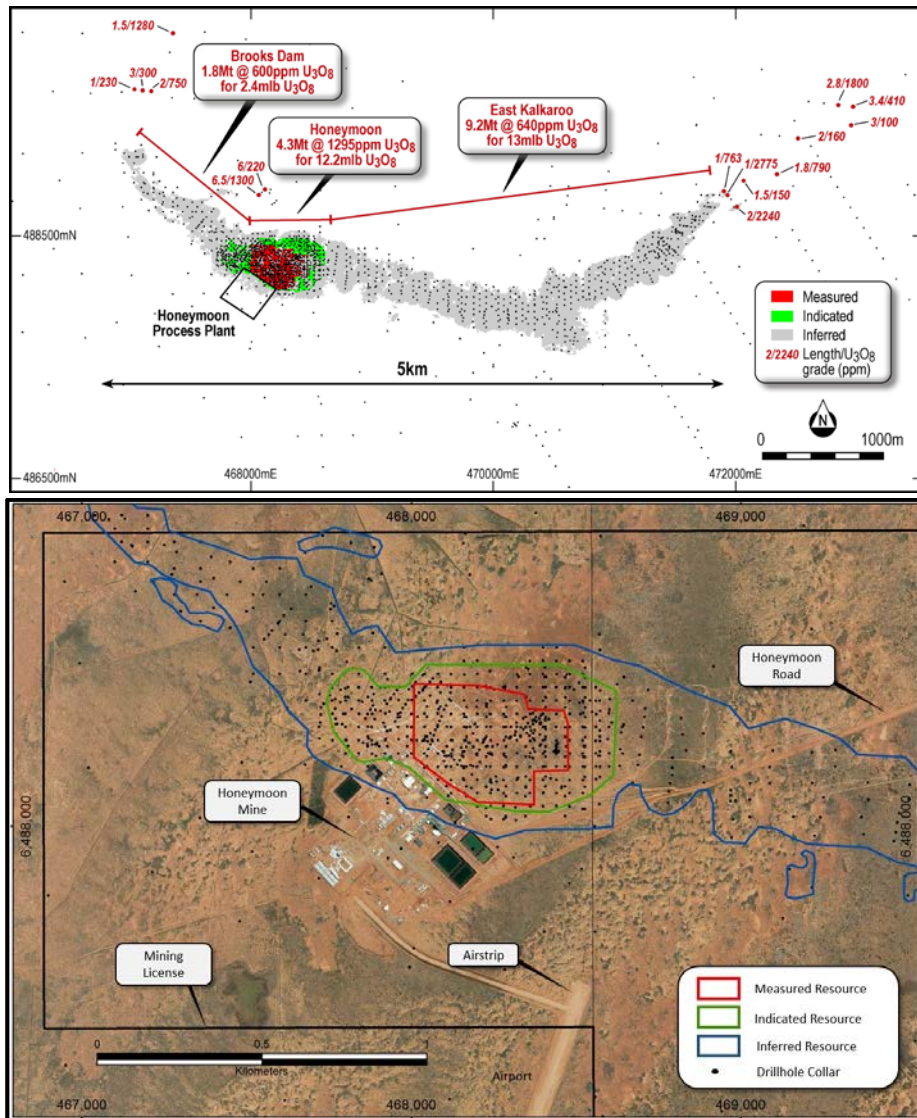
In 2016 the Company was pleased to announce two substantial increases in the Mineral Resources for the Project resulting in a global Mineral Resource for the Honeymoon Project of 52.5Mlbs of U₃O₈, representing an upgrade of 330% of the acquisition resource since December 2015 (Table 1) (ASX: 6 April 2016).

Table 1				
2016 Mineral Resource Updates				
Reported Above a preferred 250ppm eU ₃ O ₈ lower cut-off.				
Classification	Million Tonnes	eU ₃ O ₈ (ppm)	Contained U ₃ O ₈ (M Kg)	Contained U ₃ O ₈ (M Lb)
Gould's Dam (April 2016)				
Indicated	4.4	650	2.9	6.3
Inferred	17.7	480	8.5	18.7
Total	22.1	510	11.3	25.0
Honeymoon, East Kalkaroo and Brooks Dam (January 2015)¹				
Measured	1.7	1720	3.0	6.5
Indicated	1.5	1270	1.92	4.24
Inferred	12.0	640	7.62	16.8
Total	15.2	820	12.50	27.6
Global Honeymoon Uranium Project (Western and Eastern Tenement Regions)				
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. ¹ Quoted resources have been adjusted to exclude previous production of approximately 335t of U ₃ O ₈ .				

Honeymoon, East Kalkaroo and Brooks Dam Mineral Resources

The January Resource upgrade focussed on the Honeymoon, East Kalkaroo and Brooks Dam deposits (ASX: 20 January 2016). The increase in endowment and Resource Classification is related to a better understanding of the geology, mineralisation continuity and volume due to the advanced 3D geostatistical modelling used. Benchmarking to similar operating uranium projects worldwide indicates that a 250ppm eU₃O₈ lower cutoff should be the preferred reporting option.

Since the acquisition of the Honeymoon Project on 30 November 2015, Boss geologists have undertaken an extensive review of the historical exploration, drilling and geology, and have generated a cohesive 3D model (Figures 1 and 2) of the Brooks Dam, Honeymoon and East Kalkaroo mineralisation that covers 5km of the 50km mineralised trend hosted by the Yarramba Palaeochannel, directly around the main Honeymoon processing facility (Figure 1). Boss understands that this is the first time the combined resources have been modelled in 3D which will be invaluable in assisting the technical and development teams to understand the orebody from both an exploration and mining perspective and will allow for more accurate design of production wellfields and screen placement in each hole.



Figures 1 and 2: Location of the Honeymoon Resource update (top) and extent of the 3D model of +250ppm eU₃O₈ resource outline with drill positions; and (bottom) mine infrastructure adjacent to the high-grade Measure and Indicated Resources.

The Honeymoon Project boasts one of the highest grade uranium resources held by any ASX-listed uranium developer. Importantly, the resources are all within Boss’s existing Mining Lease (ML 6109) and located next to its fully constructed and permitted production facility (Figure 2).

The current exploration database contains multiple high grade mineralised intercepts over 1km along strike which are outside the existing resource boundaries highlighting the potential for future resource expansion (Figure 1).

The updated Mineral Resource for the Honeymoon Project is summarised above in Table 1. For full details of the reporting criteria and input parameters, see ASX announcement dated 20 January 2016.

Gould's Dam Resources

The Gould's Dam Resource upgrade encompasses the Gould's Dam, Gould's Dam North and Billeroo Prospects and is based upon an extensive review of the substantial historical drilling and exploration database that Boss acquired in December 2015 with 968 drillholes available for analysis. Boss now has significant resources established on both the eastern and western project regions. (Figure 3).

Table 1 contains the 2016 Mineral Resource estimate for the Gould's Dam Project which totals 22.1Mt @ 510ppm eU₃O₈ for 25.0 Mlb of contained U₃O₈ reported using a 250ppm eU₃O₈ lower cutoff.

The central Indicated Resource region (historically referred to as Gould's Dam) of 1.5km long by 540m wide is based upon a detailed 3D model of 7 litho-stratigraphic zones using a nominal 100ppm eU₃O₈ lower grade cutoff. The grade modelling of these zones was based upon gamma and PFN eU₃O₈ grade data as well as chemical analysis of two sonic core holes (Figure 4) undertaken in 2014.

The broader Inferred Resource covers a region of 15km x 2.5km and was based upon grade modelling of greater than 100ppm eU₃O₈ 0.5m grade intercepts. These regions were modelled with a 180-200m north-south extent and 60-80m east-west extent from drillhole intercepts, based upon a geological and geostatistical review of the mineralisation in this area.

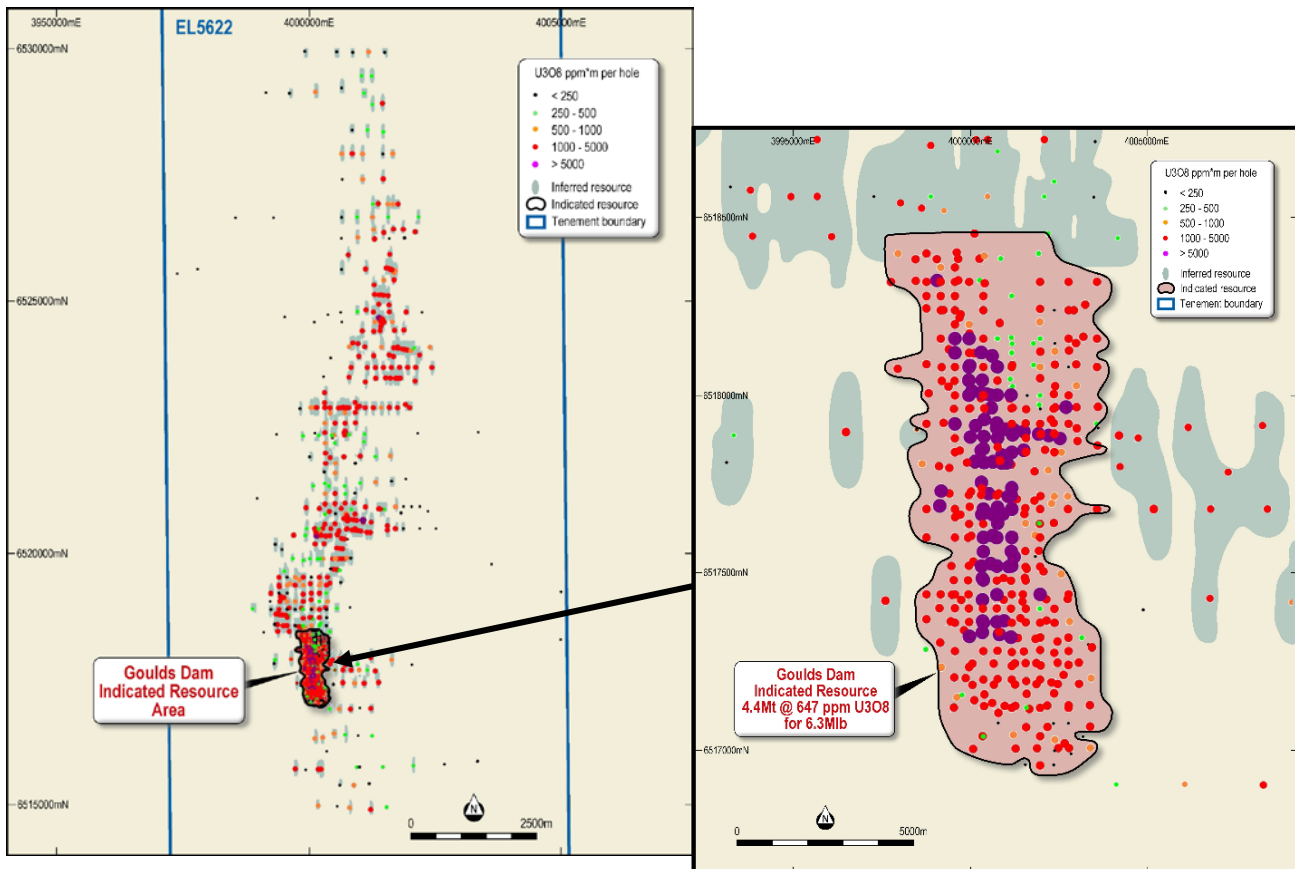


Figure 3: Location of the Gould's Dam Resource update > 250ppm U₃O₈ (left) and extents of the of the Indicated region (right). Coloured dots are accumulation of grade x thickness (ppm x m) of intercepts used in the resource.

The 2016 Mineral Resource estimate for Gould’s Dam incorporated the results of 937 drill holes utilising PFN pU_3O_8 grade data (125 holes for 16,704m) and natural gamma eU_3O_8 grade data (812 holes for 111,661m) for a total of 128,365 metres of drilling. Drill spacing ranges from 20-40m by 40m in the Indicated portion of the resource and 100m x 200m up to 200m x 500m in the Inferred portion of the resource.

Several generations of gamma data and the results of chemical analysis of two sonic core holes were used to determine the optimum calibration regime to use for the pfn grade data and to ensure an appropriate plus 100ppm eU_3O_8 grade response. Importantly, analysis of sonic coring from two holes undertaken in 2011 indicate the potential for a positive disequilibrium in this region (up to 170%) (Figure 4). Further sonic drilling is required to investigate if this is more pervasive across the deposit, if so this could have a positive impact on the grade assessment.

The model was generated using Isatis and Micromine software and utilised localised uniform conditioning (LUC) to emulate a selective mining unit (SMU) of 5m (x) by 5m (y) by 0.5m (z) for the Indicated region and 10m (x) by 10m (y) by 0.5m (z) for the Inferred region. An insitu dry bulk density of 1.9 t/m^3 was used. Panels of 50m x 50m x 0.5m were used for the Indicated region and 100m x 100m x 0.5m for the Inferred region. The SMU sizes were selected so as to allow for effective mining amalgamation individual blocks and to also honour smaller scale grade zonation. Uncut 0.5m gamma eU_3O_8 and PFN pU_3O_8 composites were used. Extensive geostatistical studies were undertaken to determine the optimal variography and modelling parameters to use in the estimate.

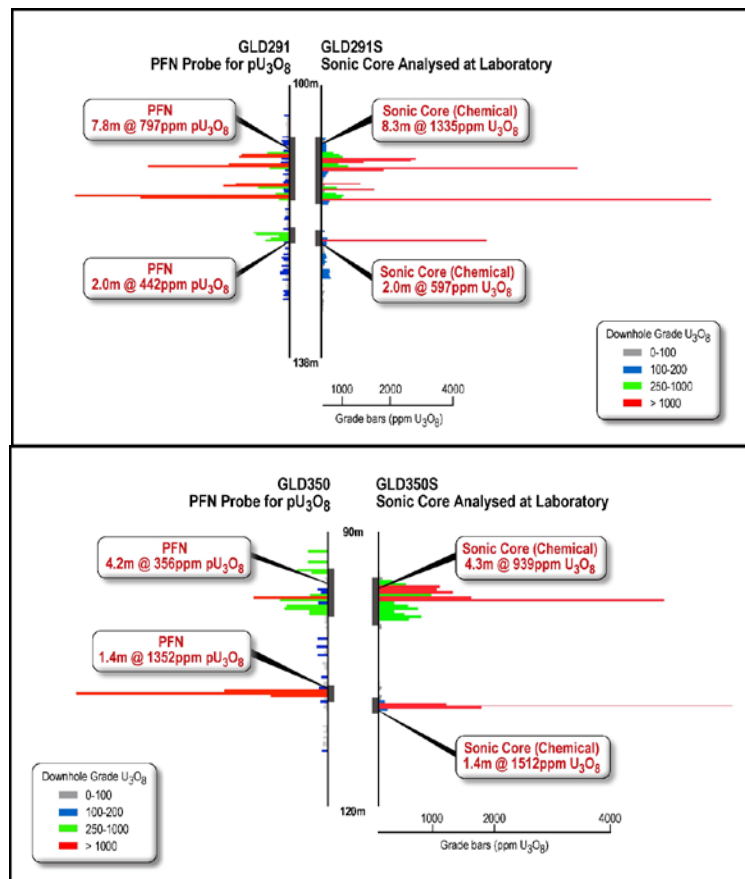


Figure 4: Summary sections showing the strong positive disequilibrium experienced with the two sonic holes drilled within the Gould’s Dam deposit. The original PFN logged holes (GLD291 and GLD350) are shown on the left hand side and the chemically assayed sonic twin holes (GLD291S and GLD350) are shown on the right hand side. The results from these two holes indicate that the PFN calibration is producing realistic interval thicknesses and may under estimate grade.

Honeymoon Project Exploration Potential

Based upon the review of the exploration databases acquired with the Honeymoon Project, Boss geologists have interpreted an Exploration Target of between 32Mt to 78Mt at a grade of between 450ppm and 1400ppm U₃O₈ for the Project. This points towards a potential target endowment of between 42Mlb and 100Mlb of contained U₃O₈. The 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.

The Exploration Target has been based upon a review of approximately 2,500 historical and recent drillholes, custom flown geophysical data by previous workers, recent geostatistical investigations and a review of field work conducted over the last 15 years on the Project.

Table 2									
Honeymoon Uranium Project Exploration Target									
December 2015									
Tenement	Project Region	Tonnage Range		Grade Range		Contained Metal			
		Min Mt	Max Mt	Min. Grade U ₃ O ₈ (ppm)	Max Grade U ₃ O ₈ (ppm)	Min Kg U ₃ O ₈	Max Kg U ₃ O ₈	Min Lb U ₃ O ₈	Max Lb U ₃ O ₈
Honeymoon Region									
EL5621	A - Yarramba - South	2	5	400	800	1.4	2.7	3	6
EL5621	B - Yarramba - North	1.5	6	600	1,500	3.2	8.2	7	18
EL5621	C - Yarramba - Mid	4	10	300	1,200	2.7	7.7	5	17
EL5215	D - South Eagle	3	4	400	1,500	1.4	2.7	3	6
Total		11	25	380	1,200	8	21	18	47
Billeroo Region									
EL5623	E - Gould's Dam and Billeroo – historical grade estimates [^]	10	20	300	1,200	4.5	9.1	10	20
EL5623	F - Gould's Dam and Billeroo lateral extents	3	15	400	1,200	2.7	5.4	6	12
EL5622	G - Katchwilleroo	5.5	12	400	2,000	3.6	6.8	5	15
EL5043	H - Ethiunda	3	6	600	2,000	1.4	2.7	3	6
Total		21.5	53	480	1,500	12	24	24	53
Grand Total		32	78	450	1,400	20	45	42	100

Note: Figures have been rounded. [^] These historical grade estimates are non-JORC 2012.

To conduct the review, the Project was divided into eight distinct areas which allowed for assessment of the exploration potential to be made by area (Table 2). Where drilling information was available (e.g. Brooks Dam, Billeroo, Yarramba) the Exploration Target was based upon assessment of eU₃O₈ grade data, thickness intervals, geology and historical grade-tonnage estimates (if available). In other areas (e.g. Katchwilleroo, Ethiunda), the Exploration Target has relied upon data which is sparse and potentially inconsistent in some regions and has been based upon conceptual geological models to derive potential endowments. The bulk of the grade assessment used for the exploration data is based upon historical (pre-Uranium One Australia) and more recent (Uranium One Australia and Southern Cross Australia) gamma-derived eU₃O₈ data.

BURKINA FASO GOLD ASSETS

In March 2014, Boss and Gryphon Minerals Ltd (ASX: GRY) signed a binding heads of agreement to establish a joint venture over Boss' Golden Hill and Gourma Gold Projects located in Burkina Faso (ASX: 4 July 2014 for full terms of the agreement). At the end of the quarter, Gryphon Minerals indicated that they had reached the first milestone of the agreement. Subsequent to the end of the quarter, Boss transferred 51% of the joint venture to Gryphon Minerals in accordance with the agreement.

Gryphon Minerals continues to apply proven low-cost exploration techniques to explore the two projects. Since work commenced on the JV, Gryphon Minerals has acquired high resolution remote sensing datasets, completed relatively high density (>1 sample per ~6 km²) drainage sampling, supplemented by laterite sampling, where appropriate, across all joint venture projects, and undertaken progressive soil and auger sampling on the most prospective portions of the tenements. To date Gryphon Minerals has collected over 18,000 surface samples and drilled over 2,400 auger holes for ~8,500m. During the current quarter a further 3,286m of auger drilling took place leading to some pleasing results with assays still pending.

Golden Hill

Exploration work by Gryphon Minerals on the Golden Hill Project has comprised of geological mapping, channel, mullock and rock chip sampling.

The channel sampling took place across a shallow artisanal mining site at the Ma Prospect where a strongly sulphidic hydrothermal breccia has been exposed. A total of 55 one metre channel samples were collected over this zone with better results include 4m @ 9.28 g/t, 6m @ 4.43 g/t, 17m @ 1.81 g/t (including 6m @ 3.92 g/t), 15m @ 1.43 g/t (including 3m @ 4.47 g/t), 7m @ 1.84 g/t. The true width of the breccia zone including the intermediate stringer zone is approximately 15 metres and narrows to 5 metres to the south and is of unknown width to the north. The significance of these results is still being evaluated and continuity of mineralisation may be limited as it represents a dilational jog along through-going structures. Work is continuing to trace this mineralisation to the north and to demonstrate a link between this hydrothermal breccia and strongly altered bleached basalt with pervasive millimetre scale sulphide veins seen elsewhere within the Ma Prospect.

The mullock sampling took place at the Jack Hammer Hill prospect where a ridge of auriferous ferricrete was briefly exploited by orpailleur using pneumatic drills in 2015. The mullock samples were collected on four lines with samples collected at approximately 20 metre intervals over 500 meters of strike. The samples were systematic composites and not selective grab samples, nevertheless they returned values to a peak of 1.40 g/t gold. These mullock samples confirm the southward continuation of two short auger lines drilled 250m apart immediately north of this ridge. The auger lines indicated a north-east striking zone of +100 ppb gold anomalism that is approximately 100 metres wide with peak values of 1.14 g/t gold in GHAU1013 and 0.73 g/t Au in GHAU0990 along strike.

Field mapping took place concurrent with mullock sampling, confirming the geological interpretation at Jack Hammer Hill, with two main lithologies separated by a north west trending mafic dyke. To the north of this dyke the saprolite is generally after medium grained equi-granular granitoid with quartz veinlets visible in mullock. To the south of the dyke the saprolite is finer grained massive diorite. Close to the dyke there is evidence for sulphide bearing intrusive breccia in the diorite. The mineralisation at this stage is thought to be in fine grained disseminated sulphides. Induced polarisation (IP) data connect the auger and mullock sampling at Jack Hammer Hill to anomalous historical vertical drill data several kilometres to the south between which there are scattered artisanal workings and anomalous soil results. This area represents one of several priority areas for additional low cost follow-up.

Gourma Project

Work on Gourma shear zone has included auger testing beneath a number of soil anomalies. The best results were returned from the Djinta Prospect, where a peak auger assay of 25.7 g/t gold was returned from weathered bedrock as part of an 80m wide zone of anomalous saprolite extending over 80m width at greater than 0.5 g/t gold. As the nearest auger line is still 600m away the significance of these results is unknown and requires further evaluation.

Work on the Gariaga-Diabatou trend has focused on the collection and assay of soil samples for multi-element determinations using a portable XRF. These results assist with lithogeochemical mapping as well as the identification of pathfinder elements. The Gariaga-Diabatou trend has been found to have elevated arsenic and copper, some of which coincides with known artisanal gold occurrences and best aircore intercepts, while other arsenic anomalous soils are away from artisanal workings. The multi-element soil data is currently being evaluated in geological and regolith terrain context but initial evaluation is that is extremely useful for guiding auger testing, and eventually more penetrative drilling techniques in the search for economic gold mineralisation.

For full details of work undertaken during the quarter by Gryphon Minerals, please see ASX: GRY.

FENNOSCANDIAN NI-CU PROJECTS

Due to the Company's focus on the Honeymoon Project during the quarter, no material work was undertaken on the Company's assets in Finland, Sweden and Norway. During the quarter the Company notified Newgenco Pty Ltd that it no longer intended to continue the joint venture over the Liakka Project.



CORPORATE

Subsequent to the end of the quarter, the Company was pleased to announce the appointment of experienced uranium executive, Mark Hohnen, as Chairman of the Board. With the appointment of Executive Director, Grant Davey, in January 2016, the Board is now comprised of a strong team with the expertise and previous experience that will be invaluable to the Company as it works to develop the Honeymoon Uranium Project in South Australia.

For further information please contact:

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Grant Davey	Executive Director:	+61 (0) 447 753 163

Appendix 1

The following information is provided pursuant to Listing Rule 5.3.3 for the quarter ended 31 March 2016:

SCHEDULE OF MINING TENEMENTS

Tenement Name	Location	Licence Number	Interest
Boutouanou	Burkina Faso	2011/11/410	100% (GRY farming in)
Diabatou	Burkina Faso	2011/11/409	100% (GRY farming in)
Tyara	Burkina Faso	2011/11-159	100% (GRY farming in)
Foutouri	Burkina Faso	2011/11-160	100% (GRY farming in)
Baniri	Burkina Faso	2009/09-060	100% (GRY farming in)
Intiedougou	Burkina Faso	2009/09-061	100% (GRY farming in)
Mougue	Burkina Faso	2009/09-062	100% (GRY farming in)
Kankandi	Burkina Faso	10/142/MCE	100% (GRY farming in)
Tyabo	Burkina Faso	10/144/MCE	100% (GRY farming in)
Skogtrask Project	Sweden	Skogtrask nr.3	100%
		Palange nr.1	100%
Nottrask Project	Sweden	Norrtrask nr.9	100%
Lilltrask Project	Sweden	Lilltrask nr1, 2 and 3	100%
Linn Project	Norway	Linn 1 - 12	100%
Yarramba	South Australia	ELA2014/00228	80% (Right to acquire 100%)
South Eagle	South Australia	EL5215	80% (Right to acquire 100%)
Goulds Dam	South Australia	ELA2014/00240	80% (Right to acquire 100%)
Katchiwilleroo	South Australia	ELA2014/00239	80% (Right to acquire 100%)
Ethiudna	South Australia	EL5043	80% (Right to acquire 100%)
Goulds Dam	South Australia	RL83-90	80% (Right to acquire 100%)
Honeymoon Mine	South Australia	ML6109	80% (Right to acquire 100%)

The Liakka nr. 1 tenement was disposed of during the quarter by way of the disposal of a joint venture agreement with Newgenco Pty Ltd.

There were no acquisitions during the quarter.

Competent Person's 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 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. The information has not materially changed since first being reported to the ASX on 20 January 2016 and 6 April 2016.

The information in this report that relates to the drillhole database used for the estimate is based on information compiled by Mr Jason Cherry, who is a Competent Person according to the JORC 2012 Code. Mr Cherry is a Member of the AIG. He 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 Cherry has previously worked on the Goults Dam project region. Mr Cherry consents to the inclusion in the report of the matters based on their information in the form and context in which it appears.

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. This information has not materially changed since first being reported to the ASX on 8 December 2015.

The information in this report that relates to recent exploration results for the Company's projects in Burkina Faso under Joint Venture with Gryphon Minerals Ltd (ASX: GRY) is based on and fairly represents information which has been compiled by Mr Sam Brooks who is a member of the Australian Institute of Geoscientists. Mr Brooks has sufficient experience relevant to the styles of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person, as defined in the 2012 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resource and Ore Reserves". Mr Brooks is a full time employee of Gryphon Minerals Ltd, the joint venture partner of Boss Resources Ltd for the Company's Burkina Faso Projects, and has consented to the inclusion of the matters in this report based on his information in the form and context in which it appears. This information has not materially changed since first being reported to the ASX on 28 January 2015, 17 February 2015, 27 July 2015, 28 October 2015 and 28 January 2016.