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## HIGH GRADE URANIUM BELOW THE BLACKBUSH URANIUM RESOURCE AT WHYALLA

Uranium grades up to 3.8% eU<sub>3</sub>O<sub>8</sub> have been intersected in drilling by UraniumSA Limited (ASX: USA) below its established Blackbush deposit within the Samphire uranium project, located 20km south of Whyalla on the Eyre Peninsula in South Australia.

The Company contracted a maiden drilling program targeted on mineralisation in basement granites last month. This drilling was completed Sunday 18<sup>th</sup> March 2012 and preliminary results are reported herein.

The Blackbush deposit has an Inferred Resource of 28Mlb of mineralisation (45.5M tonnes at 280ppm U<sub>3</sub>O<sub>8</sub>) which is contained in sediment layers which sit directly on top of the granite basement. The drilling targeted granite immediately below the Inferred Resource and persistently high grades of mineralisation were found at the sediment/granite unconformity in the areas investigated.

Selected high grade intercepts include:

<b>MRM 840</b> including	<b>73.0m to 75.0m</b> <b>74.0m to 75.0m</b>	<b>2.0m @ 0.69% eU<sub>3</sub>O<sub>8</sub></b> <b>1.0m @ 1.15% eU<sub>3</sub>O<sub>8</sub></b>	<b>6,874ppm eU<sub>3</sub>O<sub>8</sub></b> <b>11,513ppm eU<sub>3</sub>O<sub>8</sub></b> <i>with a peak grade of 3.8% eU<sub>3</sub>O<sub>8</sub></i>
<b>MRM 835</b> and	<b>70.5m to 74.5m</b> <b>75.6m to 76.6m</b>	<b>4.0m @ 0.36% eU<sub>3</sub>O<sub>8</sub></b> <b>1.0m @ 0.36% eU<sub>3</sub>O<sub>8</sub></b>	<b>3,570ppm eU<sub>3</sub>O<sub>8</sub></b> <b>3,570ppm eU<sub>3</sub>O<sub>8</sub></b>
<b>MRM 850</b>	<b>68.0m to 69.5m</b>	<b>1.5m @ 0.22% eU<sub>3</sub>O<sub>8</sub></b>	<b>2,234ppm eU<sub>3</sub>O<sub>8</sub></b>

*(see the following pages)*

A total of 27 holes were completed, all intersected mineralisation above a 100ppm cut off. Of these holes, 19 targeted and intersected uranium mineralisation about the basal Eocene unconformity. The average result for these 19 drill holes is;

**@ 100ppm eU<sub>3</sub>O<sub>8</sub> cut off      average of 24.48m @ 454ppm eU<sub>3</sub>O<sub>8</sub>      0.045% eU<sub>3</sub>O<sub>8</sub>**

**@ 500ppm eU<sub>3</sub>O<sub>8</sub> cut off      average of 4.37m @ 1,750ppm eU<sub>3</sub>O<sub>8</sub>      0.1755% eU<sub>3</sub>O<sub>8</sub>**

UraniumSA considers that these initial results clearly establish the potential commercial significance of uranium mineralisation about the unconformity between Eocene and granite basement. More work will be carried out to delineate the newly discovered envelopes of high grade mineralisation and, once this has been achieved, the Blackbush resource estimate will be recalculated to include both the sediment-hosted and granite-hosted mineralisation.

*(refer to the following pages for information and individual drill hole results)*

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## HIGH GRADE DRILL RESULTS

### Blackbush deposit, Samphire Uranium project

#### OVERVIEW

Initial drilling of targets in granite basement underlying the Blackbush deposit has been completed, along with drilling of roll front mineralisation as part of the ongoing investigation of in-situ recovery mining. The Samphire project has a total inventory of 42Mlb in uranium oxide resources in the Blackbush and Plumbush deposits, and is located 20km south of Whyalla on the Eyre Peninsula in South Australia.

High grade mineralisation is developed at and about the unconformity between the Eocene sediments and underlying granite at the Blackbush deposit. Selected high grade intercepts include:

<b>MRM 840</b>	<b>73.0m to 75.0m</b>	<b>2.0m @ 0.69% eU<sub>3</sub>O<sub>8</sub></b>	<b>6,874ppm eU<sub>3</sub>O<sub>8</sub></b>
<i>including</i>	<b>74.0m to 75.0m</b>	<b>1.0m @ 1.15% eU<sub>3</sub>O<sub>8</sub></b>	<b>11,513ppm eU<sub>3</sub>O<sub>8</sub></b>
			<i>with a peak grade of 3.8% eU<sub>3</sub>O<sub>8</sub></i>
<b>MRM 835</b>	<b>70.5m to 74.5m</b>	<b>4.0m @ 0.36% eU<sub>3</sub>O<sub>8</sub></b>	<b>3,570ppm eU<sub>3</sub>O<sub>8</sub></b>
<i>and</i>	<b>75.6m to 76.6m</b>	<b>1.0m @ 0.36% eU<sub>3</sub>O<sub>8</sub></b>	<b>3,570ppm eU<sub>3</sub>O<sub>8</sub></b>
<b>MRM 850</b>	<b>68.0m to 69.5m</b>	<b>1.5m @ 0.22% eU<sub>3</sub>O<sub>8</sub></b>	<b>2,234ppm eU<sub>3</sub>O<sub>8</sub></b>

*NOTE. The limits of these intercepts have been visually picked from the down hole radiometric profile, no upper or lower grade limits have been imposed. Because exploration is at an early stage, and development options are still being evaluated, UraniumSA does not normally separately detail high grade intercepts, instead reporting bulk averages above the assumed cut-off as being a more reasonable representation of the nature of the work being reported. However, in this instance, these results have been separately reported because of the persistent localisation of high grade intercepts above and below the unconformity between Eocene sediments and basement granite.*

A total of 27 holes were completed; 24 at 15 to 50m separations to depths of between 88m and 162m in three locations; 3 as 50m step-outs to an existing pattern. Drilling in the central and northern areas targeted known anomalous or mineralised granite basement below Eocene Kanaka Beds within the Blackbush deposit, the southern area investigated a mapped roll front position and 50m step out drilling was carried out about the circulation trial area. Figure 1.

Drilling commenced at the "central" location (17 drill holes centred at approximately 722800/6324300) continued at the "northern" location (2 drill holes some 600m north at approximately 722700/6324900) and finished at the "southern" location (5 drill holes some 450m south at approximately 722900/6323800) and circulation trial site (MRM 804, 806, 818).

The average result for the 19 drill holes which were targeted to test the basal Eocene unconformity (northern and central locations) is;

@ 100ppm eU<sub>3</sub>O<sub>8</sub> cut off      **average of 24.48m @ 454ppm eU<sub>3</sub>O<sub>8</sub>**      0.045% eU<sub>3</sub>O<sub>8</sub>

@ 500ppm eU<sub>3</sub>O<sub>8</sub> cut off      **average of 4.37m @ 1,750ppm eU<sub>3</sub>O<sub>8</sub>**      0.1755% eU<sub>3</sub>O<sub>8</sub>

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These initial drilling results clearly establish the potential economic significance of the granite hosted mineralisation which underlies the existing Inferred Resource of 28Mlb of sediment-hosted  $U_3O_8$  in the Blackbush deposit (45.5Mt at 280ppm  $U_3O_8$ ).

Areas of significantly better than deposit average grade and thicknesses occur where Kanaka Beds directly overlie mineralised granite basement (Figures 2 and 3). More drilling will be required to delineate the envelopes of higher grade/thickness zones at the unconformity. Once this work is completed a re-calculation of the Blackbush deposit resource estimate to include both sediment-hosted and granite-hosted mineralisation will be undertaken.

The areas of better thicknesses and grades which have been identified in this drilling program will impact positively in the scoping study of the open cut mining option which has commenced.

Encouraging results were obtained from the drilling of a discrete sequence of roll fronts in the "southern" area for the ISR evaluation.

*The locations of the "northern", "central" and southern" areas of work are illustrated in Figure 1. A schematic cross section of the relationship between mineralisation in the Kanaka Beds and in the granite basement below the unconformity is given in Figure 2 and Figure 3. Collar locations and summary results are given in Table 1.*

## DISCUSSION

The results reported are from holes in-filling the existing pattern of holes at 100m and 50m centres which has delineated the Kanaka Bed hosted mineralisation at the Blackbush deposit. Across the Blackbush deposit, the norm for sediment-hosted mineralisation is for better thickness and grades to be present in the upper parts of the section. In the three locations investigated this usual pattern of mineralisation is complemented by a strong development of mineralisation towards the basal unconformity, and in two of the three areas, associated with or in clay-sericite altered granite basement.

1. In the **northern area** of Figure 1, two new holes (MRM 849, 850) were drilled 50m either side of a granite basement intersection obtained in previous pattern drilling. A shallow east dipping sheet of low grade basement granite mineralisation is intersected by a more steeply east-inclined unconformity. Adjacent to this intersection high grades are present in the Kanaka Beds (see the summary results from MRM 850 given on the previous page).
2. The **central area** of Figure 1 (and cross section Figure 2) was tested with 17 drill holes at 15m to 25m separations in-filling the pre-existing pattern. Mineralisation in the Kanaka Beds is preferentially developed towards the basal unconformity (Figure 3). Mineralisation in basement granites is associated with a clay-sericite altered granite which forms a shallow east dipping blanket. Where the more steeply east dipping unconformity cuts through the blanket mineralisation high grades are present about the unconformity.
3. In the **southern area** of Figure 1, five new holes (MRM 859 to 863 inclusive) were drilled to investigate a known sediment-hosted mineralised roll front in the Kanaka Beds, work which is part of the on-going investigation into in-situ recovery mining of the resource. Two holes twinned previously reported drill holes MRM 645 and MRM 654 together with a 25m step-out, and two further holes were drilled at 50m in-fills of the existing 100m pattern.

**This drilling program has been an outstanding success and has;**

1. Shown that high grade intersections occur where shallow east dipping mineralised granite is intersected by the basal Eocene unconformity.

A review of the existing drill information is in progress to trace out where potentially mineralised granite is exposed by the unconformity.

2. Demonstrated that significant areas of the Blackbush deposit contain mineralisation at much better than the deposit-average grades and thicknesses of the existing Inferred Resource.

Such areas of better thicknesses and grades will impact positively in the scoping study of possible open cut mining options for the deposit.

3. Confirmed that uranium mineralised clay-sericite altered granite has sufficient continuity, grade and thickness potential to warrant further exploration drilling for new, stand-alone, resources of mineralisation both within and away from the area of the Blackbush deposit. The controls on the distribution of the flat lying blanket mineralisation are not known. A sub-vertical vein system was intersected in core drilling below one of the blankets; however no relationship has yet been established between the blanket and these veins.

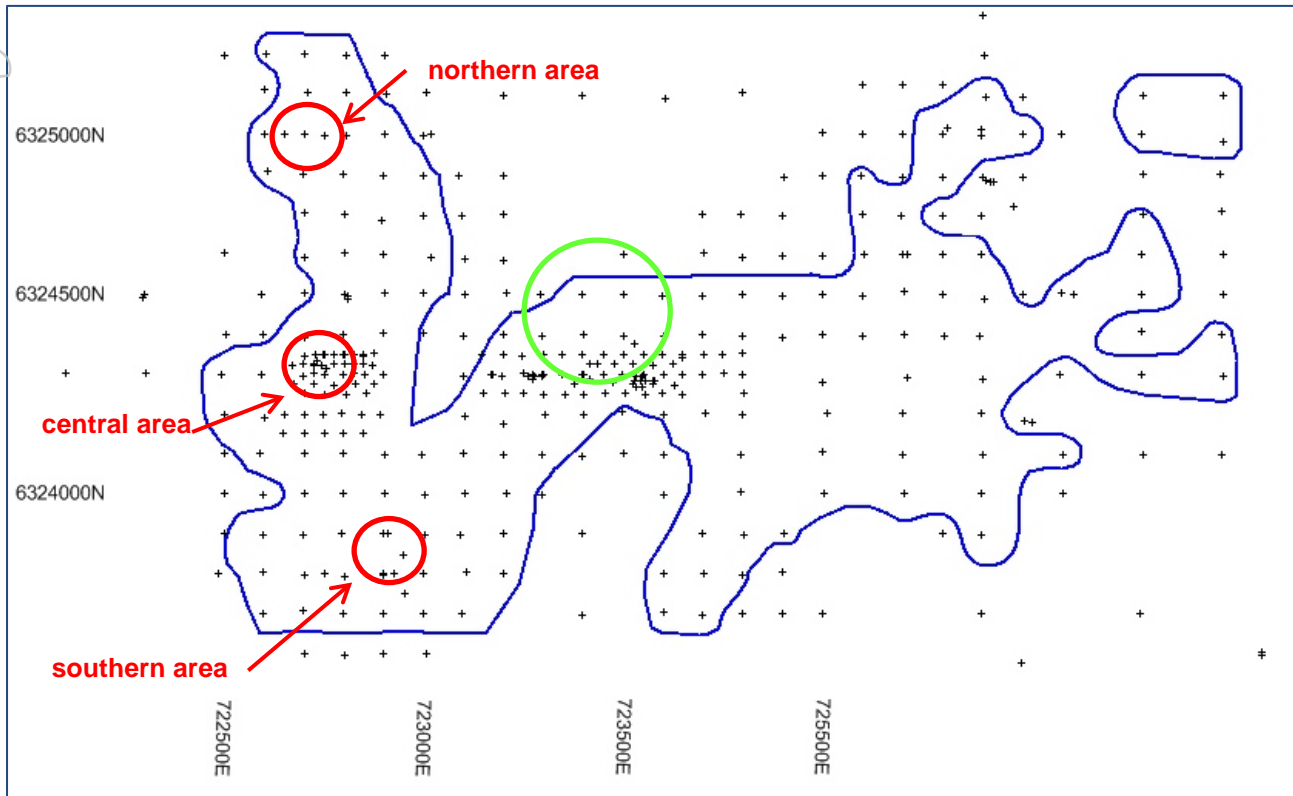
This present “proof-of-concept” drilling has focussed on granite mineralisation underlying Eocene mineralisation at the Blackbush deposit. The next stages of the investigation will examine anomalous granites elsewhere in the Samphire project area which occur both deeper into the granite and away from Eocene sediments.

4. Provided information on the orientation and continuity of roll fronts identified within the Kanaka Beds.

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**FIGURE 1**

**Blackbush deposit, Samphire project. General drill hole locations**



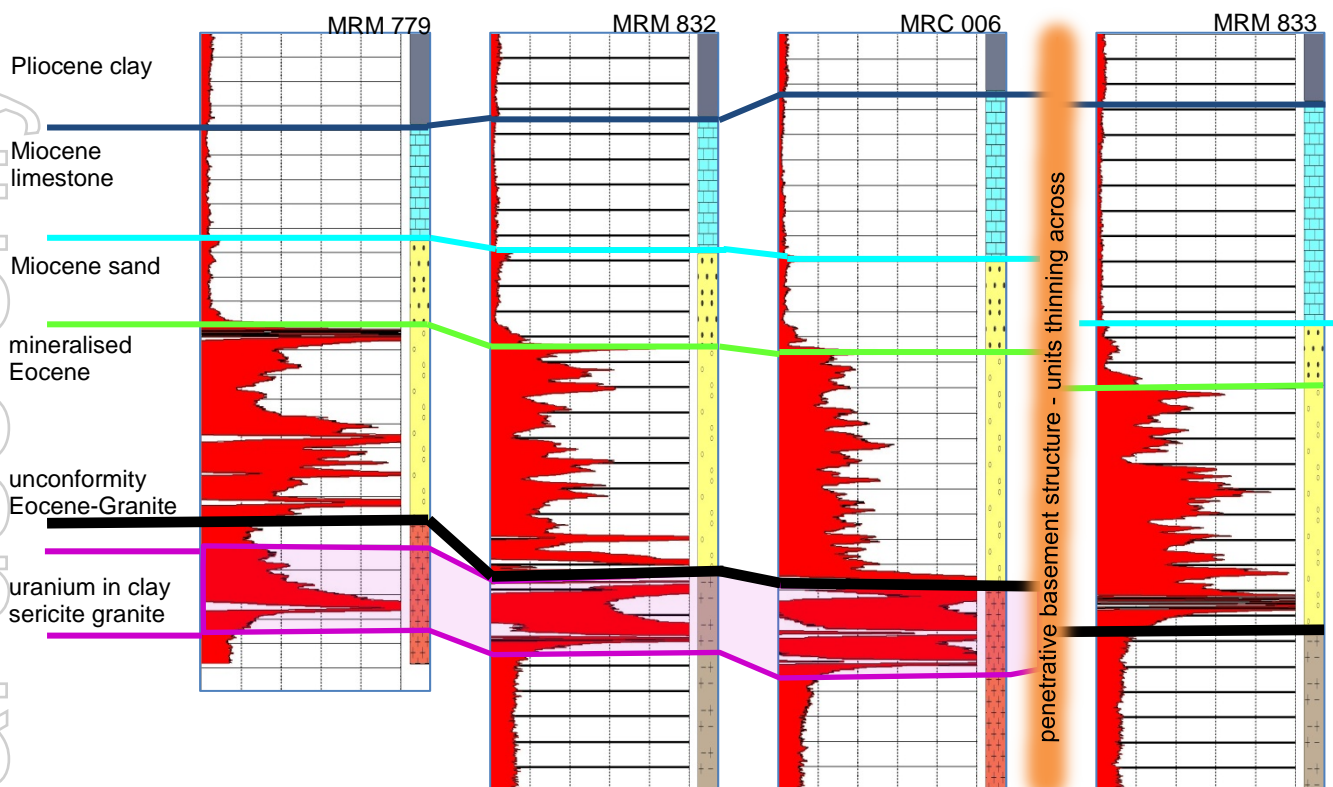
Notes to Figure 1

1. The blue outline is the boundary of the existing Inferred Resource of mineralisation for the Blackbush deposit. The area is ~ 2.6km east-west and ~1.5km north-south.
2. The red circles are the general location of the drill holes reported on herein.
3. The green circle is the location of works and well field development associated with the circulation trial, part of the work leading up to a proposed ISR field trial, step out holes MRM 804, 806, 818.
4. View north, scale from the 500m graticules.

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## FIGURE 2

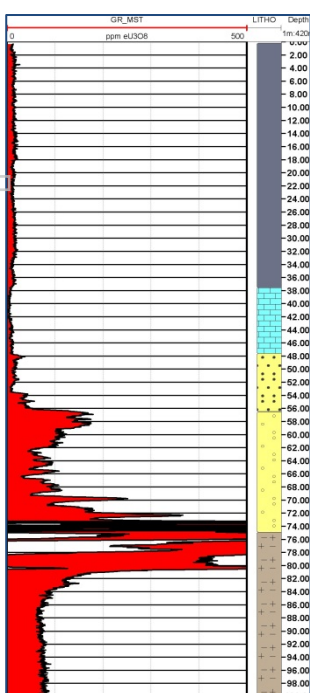
### Schematic cross section 6324350N (central area)



1. The radiometric logs start at 30m and terminate at 84m (MRM 779) or 90m (others), 2m intervals.
2. West to east the drill collars are 27m, 20m and 26m apart. MRM 779, MRC 006 previously reported.
3. The lateral scale is 100ppm  $eU_3O_8$  per division; full scale is 500ppm  $eU_3O_8$ .

## FIGURE 3

### Drill hole profiles 6324325N (central area)



High grade uranium mineralisation is developed in Eocene sediments above the unconformity (MRM 840, yellow stipple) and in basement granite below the unconformity (MRM 751, grey texture)

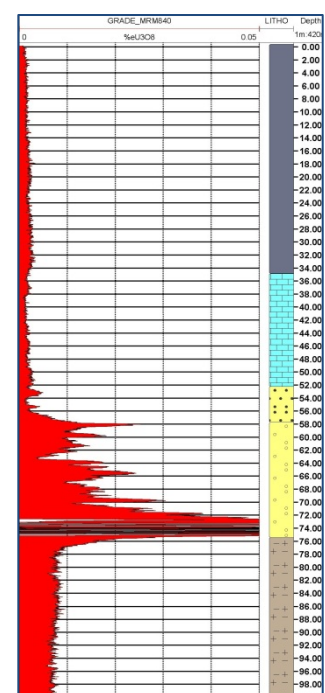
MRM 751 (left)

MRM 840 (right)

*Lateral scale as above, black line traces indicate scalar wrapping at higher grades at the unconformity*

*the vertical trace is from ground surface to 100m depth showing 2m depth intervals*

*drill holes are ~30m apart*



**TABLE 1**
**DRILL HOLE SUMMARY - Blackbush deposit**

Coordinates: GDA94 MGA Zone 53			100 ppm Cut Off					500 ppm Cut Off	
Hole ID	Easting	Northing	Peak eU <sub>3</sub> O <sub>8</sub> ppm	Depth	Metres	Grade eU <sub>3</sub> O <sub>8</sub> ppm	GTm%	Metres	Grade eU <sub>3</sub> O <sub>8</sub> ppm
MRM741	722734	6324334	1962	54.58	<b>24.08</b>	<b>284</b>	<b>0.68</b>	<b>3.01</b>	<b>939</b>
MRM751	722745	6324324	6434	65.76	<b>14.04</b>	<b>774</b>	<b>1.09</b>	<b>6.78</b>	<b>1376</b>
MRM762	722757	6324314	7706	56.59	<b>12.17</b>	<b>522</b>	<b>0.64</b>	<b>2.59</b>	<b>1787</b>
MRM804	723398	6324349	879	51.6	<b>14.08</b>	<b>284</b>	<b>0.40</b>	<b>1.34</b>	<b>581</b>
MRM806	723299	6324350	1523	51.9	<b>7.72</b>	<b>378</b>	<b>0.29</b>	<b>1.24</b>	<b>706</b>
MRM818	723500	6324601	230	56.17	<b>8.92</b>	<b>107</b>	<b>0.10</b>	None	None
MRM832	722727	6324349	2557	54.51	<b>24.54</b>	<b>370</b>	<b>0.91</b>	<b>4.25</b>	<b>1123</b>
MRM833	722776	6324351	5244	56.98	<b>20.22</b>	<b>366</b>	<b>0.74</b>	<b>1.25</b>	<b>2538</b>
MRM834	722825	6324351	2713	57.8	<b>31.67</b>	<b>269</b>	<b>0.85</b>	<b>2.66</b>	<b>799</b>
MRM835	722850	6324348	9261	58.85	<b>21.86</b>	<b>949</b>	<b>2.08</b>	<b>5.41</b>	<b>3290</b>
MRM836	722875	6324352	3680	57.96	<b>30.75</b>	<b>429</b>	<b>1.32</b>	<b>5.79</b>	<b>1534</b>
MRM837	722849	6324327	4394	58.77	<b>36.88</b>	<b>386</b>	<b>1.42</b>	<b>4.26</b>	<b>2035</b>
MRM838	722823	6324327	1745	58.35	<b>26.10</b>	<b>385</b>	<b>1.00</b>	<b>6.75</b>	<b>896</b>
MRM839	722801	6324326	3167	56.89	<b>20.79</b>	<b>354</b>	<b>0.74</b>	<b>3.43</b>	<b>1090</b>
MRM840	722775	6324328	38103	57.34	<b>18.89</b>	<b>903</b>	<b>1.71</b>	<b>2.63</b>	<b>5417</b>
MRM841	722723	6324325	3244	54.42	<b>24.56</b>	<b>369</b>	<b>0.91</b>	<b>3.78</b>	<b>1089</b>
MRM842	722699	6324326	2993	54.51	<b>47.05</b>	<b>226</b>	<b>1.06</b>	<b>5.32</b>	<b>1213</b>
MRM849	722651	6324901	446	60.51	<b>15.31</b>	<b>155</b>	<b>0.24</b>	None	None
MRM850	722750	6324897	6249	59.48	<b>23.55</b>	<b>484</b>	<b>1.14</b>	<b>7.53</b>	<b>1150</b>
MRM843	722724	6324302	4746	54.25	<b>23.75</b>	<b>501</b>	<b>1.19</b>	<b>4.45</b>	<b>1720</b>
MRM845	722800	6324299	3553	66.00	<b>18.00</b>	<b>384</b>	<b>0.69</b>	<b>3.85</b>	<b>989</b>
MRM846	722824	6324302	2377	58.00	<b>25.60</b>	<b>406</b>	<b>1.04</b>	<b>6.80</b>	<b>956</b>
MRM859	722899	6323900	4330	53.00	<b>21.00</b>	<b>990</b>	<b>2.08</b>	<b>8.40</b>	<b>2231</b>
MRM860	722950	6323848	1313	51.60	<b>28.40</b>	<b>289</b>	<b>0.82</b>	<b>6.00</b>	<b>672</b>
MRM863	722951	6323751	372	50.90	<b>14.00</b>	<b>150</b>	<b>0.21</b>	None	None
MRM862	722926	6323799	1055	52.80	<b>12.30</b>	<b>361</b>	<b>0.44</b>	<b>3.90</b>	<b>629</b>
MRM861	722898	6323799	3225	68.80	<b>13.20</b>	<b>589</b>	<b>0.78</b>	<b>5.00</b>	<b>1198</b>

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**Notes to Table 1**

1. “**Depth**” is the depth from surface to the top of mineralisation at the 100 eU<sub>3</sub>O<sub>8</sub> cut-off grade.
2. “**Meters**” is the cumulative meters of mineralisation above the eU<sub>3</sub>O<sub>8</sub> cut off in the header row.
3. “**eU<sub>3</sub>O<sub>8</sub> ppm**” is the grade of uranium oxide estimated from down hole radiometric logging using a natural gamma tool. This is an industry standard method for estimating uranium grade of in-situ materials but cannot take account of radiometric disequilibria which may exist in the material being estimated.
4. “**Grade eU<sub>3</sub>O<sub>8</sub> ppm**” is the length weighted average grade in ppm eU<sub>3</sub>O<sub>8</sub> over the identified “meters”.
5. “**GTm%**” is the grade-thickness ascribed to the drill hole and is calculated by multiplying “meters” and “grade”. Drill holes reporting a GT in excess of 0.05 m% are regarded as being of potential economic significance.

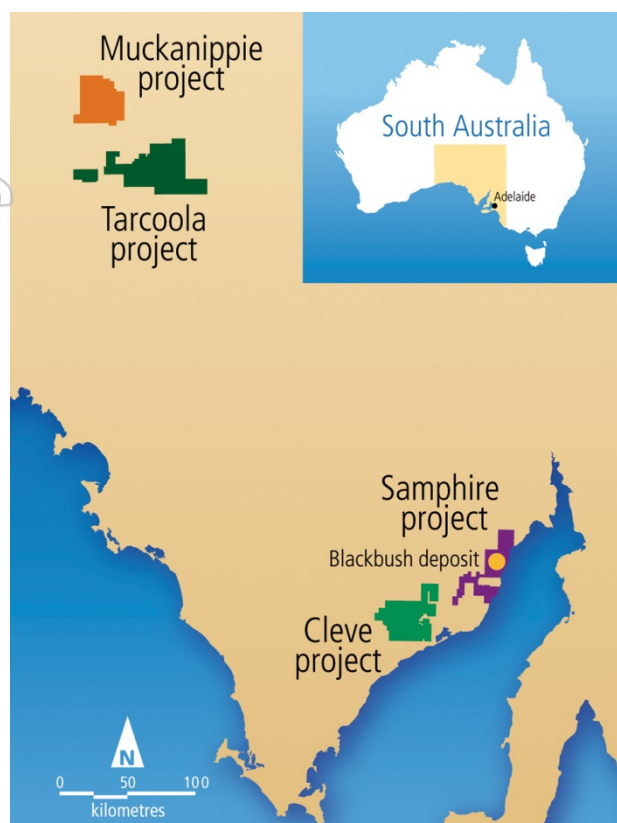
**Methodology**

All holes were geophysically logged using a natural gamma tool and equivalent uranium grades expressed as % eU<sub>3</sub>O<sub>8</sub> are assigned to each logged interval. Geophysical tools are regularly calibrated at the Department of Land, Water and Biodiversity Conservation’s calibration facility in Adelaide. The geophysical logging reported herein was carried out by UraniumSA Limited.

Disequilibrium. All drill holes have been logged by Geoscience Associates Australia Pty Ltd (GAA) using a prompt fission neutron tool (PFN). At the time of this report the PFN data has not been fully compiled and assessed. On the basis of experience at the Blackbush deposit the use of natural gamma equivalent grades is appropriate for the exploration data being reported.



## About UraniumSA Limited



UraniumSA is an Adelaide based uranium only explorer specialising in uranium mineralisation within a substantial portfolio of properties in South Australia's Gawler Craton.

The Company has discovered uranium mineralisation within Exploration Licence 3652, Samphire, which is located 20km south of the industrial city of Whyalla on the eastern Eyre Peninsula in South Australia. The Exploration Licence is owned and operated by Samphire Uranium Pty Ltd, a wholly owned subsidiary of UraniumSA Limited.

The inventory of sediment-hosted uranium mineralisation in the Blackbush and Plumbush deposits within the Samphire project is some 19,000 tonnes of  $U_3O_8$  (equivalent to approximately 42 million pounds).

The discovery of high grade uranium below the established Blackbush deposit sediment-hosted resource of 28Mlb  $U_3O_8$  at the unconformity between Eocene sediments and uranium mineralised granite provides significant new exploration and development opportunities for the project.

An evaluation of mining methods to optimise the recovery of uranium from the identified resources of mineralisation has commenced. This will include consideration of open cut options for the sediment-hosted and granite basement hosted uranium mineralisation in addition to an ongoing evaluation of in-situ recovery operations. Application has been made for a Retention Lease for an in-situ recovery field trial at the Blackbush deposit.

Through its own tenure and by Joint Venture the Company has exploration control over what it considers the most prospective portions of the Pirie Basin.

Russel Bluck

Managing Director  
UraniumSA Limited

*The exploration results and mineral resources reported herein, insofar as they relate to mineralisation, are based on information compiled by Mr Russel Bluck, Managing Director, UraniumSA Limited who is a Member of the Australian Institute of Geoscientists and has sufficient experience relevant to the style of mineralisation and type of deposits being considered, and to the activity which is reported to qualify as a Competent Person as defined by the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code, 2004 Edition). Mr. Bluck consents to the inclusion in the report of matters based on his information in the form and context in which it appears. It should be noted that the abovementioned exploration results are preliminary.*

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