

**Tuesday, 5<sup>th</sup> May 2009**

**AUSTRALIAN SECURITIES EXCHANGE  
COMPANY ANNOUNCEMENTS PLATFORM  
ASX CODE USA**

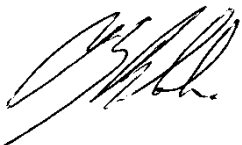
## **Inferred Resource for the Blackbush Prospect Western Mineralised Zone, Mullaquana Project**

**Attached please find a release detailing a JORC code compliant Inferred Resource of uranium mineralisation for the Blackbush Prospect within the Company's Mullaquana project.**

**The above release is the basis for a presentation being given today by the Company to the Paydirt South Australian Resources and Energy Conference, a copy of which is provided under separate cover.**

**Both of the above documents will be posted to the Company web site at**

**[www.uraniumsa.com.au](http://www.uraniumsa.com.au)**



**Russel Bluck  
Managing Director  
UraniumSA Limited**

## INFERRED RESOURCE FOR THE BLACKBUSH PROSPECT WESTERN MINERALISED ZONE, MULLAQUANA PROJECT

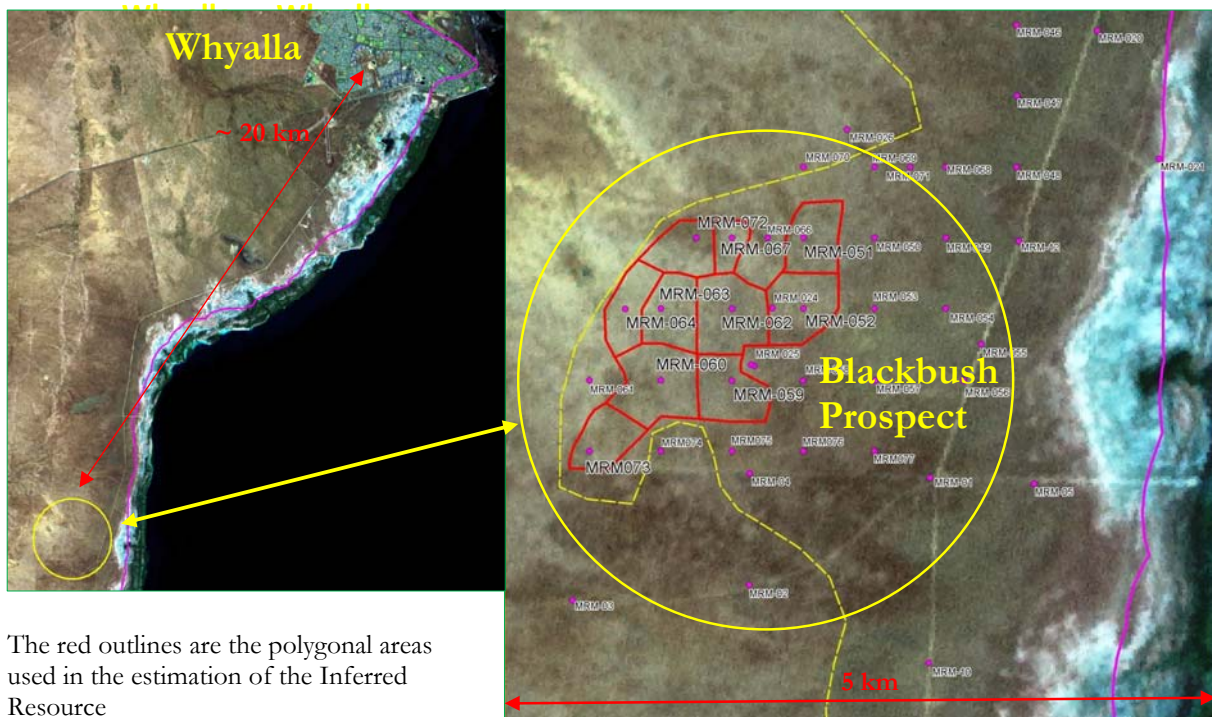
UraniumSA Limited (ASX code “USA”) is pleased to announce an initial resource estimate for its Blackbush Prospect located within the Western Mineralised Zone of the Company’s 100% owned Mullaquana Project, 20 km south of Whyalla on South Australia’s Eyre Peninsula.

An Inferred Resource of mineralisation has been estimated in accordance with the JORC code and comprises:

- **12 million tonnes of mineralisation at an average grade of 0.02% eU<sub>3</sub>O<sub>8</sub>**
- **estimated to contain some 2,700 tonnes of U<sub>3</sub>O<sub>8</sub> .**

The resource estimate is based on results obtained from rotary mud drilling on a 400 m by 400 m grid within the Western Mineralised Zone. The mineralisation has been intersected by 10 contiguous holes each with a cumulative thickness-grade in excess of 0.05 m % eU<sub>3</sub>O<sub>8</sub> calculated using a lower grade cutoff of 0.01 % eU<sub>3</sub>O<sub>8</sub> and a minimum individual intercept thickness of 0.40 m. Mineralisation is contained within an envelope extending approximately 1.6 km northeast to southwest, 1.3 km northwest to southeast, and covering an area of approximately 1.2 km<sup>2</sup> . The mineralisation is being explored and evaluated to determine its amenability for an in-situ recovery mining operation.

The Company is continuing drilling on a 400 m by 400 m grid across other prospects within the Mullaquana Project. On completion of this scheduled work, the rig will commence infill drilling of the Blackbush Prospect to increase the levels of confidence and work towards establishing Indicated and Measured Resources.



The red outlines are the polygonal areas used in the estimation of the Inferred Resource

A prospect location map for UraniumSA Limited’s tenements is given on the last page of this document.

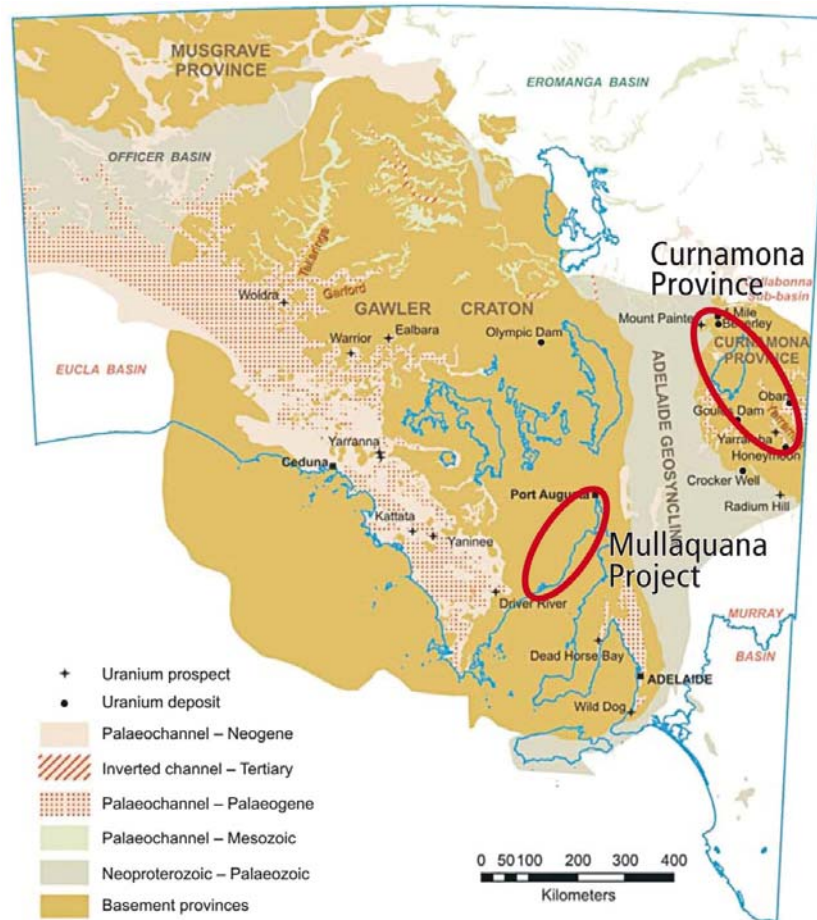
This estimate of an Inferred Resource for the Blackbush Prospect has been released in order to maintain an informed market as required by ASX listing rules. Accompanying this release are (1) a worksheet for the estimation of the Inferred Resource and (2) a discussion of the assumptions which have been made and the variables which have been considered in the estimation of the Inferred Resource. It is uncertain if further exploration work or feasibility studies will result in the determination of an Ore Reserve.

## REGIONAL CONTEXT

The Curnamona Province of South Australia is a world-class in-situ recovery uranium field. The mineralisation supplying the Beverley uranium mine which is presently the world's largest in-situ recovery uranium operation was discovered in 1969. Since then, the area has been extensively explored by drilling and new discoveries continue to be made.

The Kanaka Beds of the Pirie Basin have similar geological components to the Curnamona and the prospective areas are comparable in size. The Pirie Basin Kanaka Beds at Mullaquana:

- |                                |  |
|--------------------------------|--|
| Are the right age              | Miocene, Eocene                                |
| Have the right lithologies     | sand and lignite                               |
| Have a proximal uranium source | Mullaquana Granite                             |
| And are uranium mineralised    | up to 1,700 ppm eU <sub>3</sub> O <sub>8</sub> |



'Cainozoic palaeochannel hosted uranium and current exploration methods, South Australia'. MESA Journal 46, September 2007

## EXPLORATION POTENTIAL

Exploration of the Pirie Basin for sediment hosted uranium is at a similar stage to that of the Curnamona Province in 1969 following the initial discovery of the Beverley prospect.

UraniumSA Limited intersected a uranium mineralised redox front in its first drill hole in the Mullaquana area in December 2007. Today, through its own tenure and by Joint Venture, the Company controls the majority of the presently recognised prospective ground in this new uranium district.

## WORKSHEET FOR THE ESTIMATION OF AN INFERRED RESOURCE BLACKBUSH PROSPECT

The Blackbush Prospect within the Mullaquana Project hosts an estimated Inferred Mineral Resource of 12.0 million tonnes at an average grade of 0.02 % eU<sub>3</sub>O<sub>8</sub> estimated to contain 2,700 tonnes of eU<sub>3</sub>O<sub>8</sub>.

The mineralization is hosted within a laterally continuous sand package with an average thickness of 5.6 m. Mineralization extends over an area 1.6 km long and 1.3 km wide at an average depth of 60 m. Due to the drill hole spacing, correlation of individual mineralized intervals within the sand package is not practicable at this time.

The estimate is based on drill hole intercepts of 0.40 m minimum thickness above a 0.01 % eU<sub>3</sub>O<sub>8</sub> grade, and allowing for up to 0.10 m dilution providing the average grade of the entire intercept is above 0.01 % eU<sub>3</sub>O<sub>8</sub>. For each drill hole, intervals exceeding the minimum grade-thickness are summed, and holes with a cumulative grade-thickness of 0.05 m %eU<sub>3</sub>O<sub>8</sub> or greater have been included into the resource estimate.

Ten drill holes drilled on a nominal 400m by 400m spacing have been included into the resource estimate. The holes are within an envelope constrained to the west and south by a geological basement feature, and to the north and east by grade-thickness variation. Tonnage calculations assume a specific gravity of 1.8 tonnes per cubic meter. The reader is referred to the “Consideration of Assumptions and Variables” presented below for information on each of these factors.

Based on the spacing and number of drill holes grades and thicknesses have been assigned by the traditional polygonal technique (assigning the variable to an area of influence surrounding each drill hole).

<b>Inferred Mineral Resource</b>	<b>Mineralisation tonnes</b>	<b>Grade % eU<sub>3</sub>O<sub>8</sub></b>	<b>Tonnes eU<sub>3</sub>O<sub>8</sub></b>	<b>Thickness m</b>	<b>GxT m % eU<sub>3</sub>O<sub>8</sub></b>
<b>Blackbush Prospect</b>	12,000,000	0.02	2,700	5.62	0.13

Notes:

1. Figures in this table are rounded out from detailed spreadsheet data.
2. This Inferred Mineral Resource has been calculated by N. Galloway Warland.
3. A Mineral Resource is not a reserve and has no demonstrated economic constraints.

### ASSUMPTIONS AND VARIABLES

UraniumSA Limited believes that on the basis of the information available to it at this time that the mineralisation within the Blackbush Prospect is in such form, quality and quantity that there are reasonable prospects for eventual economic extraction. However, the Company advise that there are technical issues which have to be addressed by ongoing exploration and evaluation, and that there is no certainty that all or any of the estimated Inferred Resource will be converted to Ore Reserves.

The Blackbush Prospect Inferred Resource estimate is reported in accordance with the JORC code (2004) and guidelines. This consideration of Assumptions and Variables is intended to comply with the JORC code requirements for materiality and transparency by providing information to enable a third party to make their own assessment of the range of error arising from the use of such assumptions and variables in this estimation of an Inferred Resource. Because of these assumptions and uncertainties the figures given for the estimated Inferred Resource are not appropriate for use in technical or economic modelling.

This estimate has been prepared by UraniumSA Limited staff who have the qualifications and experience required for them to be classified as Competent Persons under the JORC code. The radiometric data and methodology employed in the estimate have been independently reviewed by a Competent Person.

## Location and tenure

The Blackbush Prospect is in the Western Mineralised Zone within the Mullaquana Exploration Licence 3652 which is held by Gingertom Resources Pty Ltd, a wholly owned subsidiary of UraniumSA Limited.

The Blackbush Prospect is some 23 km south of the industrial city of Whyalla on the east coast of the Eyre Peninsula in South Australia. Onesteel Limited operates a blast furnace in Whyalla fed by magnetite ore sourced from its mining operations southwest of the city. The Whyalla region has a stable and skilled workforce and extensive, well established infrastructure.

The Mullaquana project is located on the coastal plain south of the city of Whyalla and the eastern tenement boundary is 800m inland from the high-water line. Land tenure is privately owned Perpetual Leasehold pastoral land.

## Geology

The stratigraphic succession hosting mineralisation is predictable at both the district and local prospect scales. Drilling shows the succession is essentially flat lying and drill intercepts are effectively true widths. Collar elevations are estimated from published topographic maps and vertical upsets of a few meters apparent in the data may be a result of elevation estimation errors.

Within the Blackbush Prospect significant mineralisation occurs at and below the contact between an oxidised, mature, polymictic sand unit of apparent Miocene age, and carbonaceous to lignitic mature, monomictic sand units of apparent Eocene age. The stratigraphy and continuity of mineralisation are predictable at high levels of confidence at the existing drill hole separation; drilling is required to determine grade and thickness variations.

Geological logging of rotary mud samples indicates that the majority of significant mineralisation is associated with light to dark grey, medium to coarse grained, well rounded, mature quartzose sand with subordinate carbonaceous clay and lignite bands.

The sequence hosting mineralisation is water saturated. Formation waters are hypersaline and isolated from surface environments by a regionally developed Pliocene clay aquatard. The hosting sequences are used to provide water for exploration drilling and high volumes of hypersaline water are produced during well development.

## Drilling

### *method*

The primary exploration tool used by UraniumSA Limited is rotary mud drilling. This is an industry standard drilling method used in exploration for sediment hosted uranium to provide openings through prospective horizons for logging with down-hole geophysical tools.

### *quality control*

UraniumSA Limited operates its own drilling plant and equipment. In-house development and training is directed to ensuring that drill holes are consistent in diameter, which is important for reliable radiometric data, and that they stand open without risk for down-hole geophysical logging. On completion of down-hole logging drill holes are backfilled, made safe and the collar sites rehabilitated.

### *hole distribution*

The drill holes which form the basis of the estimate follow on from a program of regional drilling where holes were located along existing tracks and fence lines at separations of one to several kilometres. Commencing from drill hole MRM045 holes were drilled at a 400 m separation along a north-south traverse. Drill holes MRM049 and above were drilled in a 400 m grid pattern along east-west traverses.

On completion of drilling collars are located by hand held GPS. Collar elevations are estimated from published 1:50,000 topographic maps. There are only a few metres of elevation variation across the prospect area and differences of collar elevation have not been considered at this stage.

A total of 10 holes have intersected the Blackbush Prospect mineralisation. These are predominantly drilled on 400m centres. However several along the western margin were drilled at a 200 m separation in an attempt to close the mineralisation off to the west.

## Sampling

### *natural gamma logging*

UraniumSA Limited owns and operates modern Geovista down hole geophysical logging equipment. The primary tool is a natural gamma sonde calibrated against the Adelaide Calibration Models maintained by Geophysical Technical Services, Department of Water, Land and Biodiversity, Government of South Australia. Sondes are regularly checked for drift at the same facility. An algorithm for the conversion of natural gamma to percent equivalent uranium oxide (% eU<sub>3</sub>O<sub>8</sub>) was written by Independent Expert Grant Koch (ASX Wednesday, 12 December 2007) and is considered reliable at the levels being reported and for the estimation of an Inferred Resource. At each field site a reference station is used to ensure that reproducible natural gamma count rates are obtained from the sonde in use.

It is not known if the mineralisation is in radiometric equilibrium. Determination of the equilibrium status will require the collection of core samples for chemical assay.

### *quality control*

Down-hole geophysical logs are run by UraniumSA Limited staff, either by the geologist responsible for the operation in the field or an appropriately trained technician. Holes are logged with a natural gamma sonde. The initial down run is used to identify significant mineralisation and confirms the drillers hole depth. Data from the sequential up run is regarded as the most reliable for subsequent data manipulation.

Natural gamma is an industry standard indirect method of estimating the uranium content of a material. There are a range of natural materials which have the potential to contribute to the measured gamma count and therefore lead to an overestimation of grade. At Mullaquana, the principle contributor to the natural gamma count is considered to be uranium mineralisation. Heavy and other minerals containing uranium, potassium and thorium, and radon gas are potential contributors.

To check for possible heavy mineral contributors to the natural gamma count, grab samples of sands associated with natural gamma peaks are panned down in the field and the concentrates examined for heavy minerals and the composition of the clastic fragments checked. To date, no heavy minerals have been seen and the clastic fragments in the mineralised intervals have predominantly been mature quartzose materials with few composite lithic fragments or ironstone. Glauconite is present in some sand units overlying the main mineralisation, but is not directly associated with a significant natural gamma response.

To check for radon gas in the system, the down and up-hole runs from selected holes are compared, and several holes have been re-logged the day following completion and initial logging. The assumption is that any gas in the system will have been disturbed and released by the drilling and will be at least partially mobile in the open hole within the timeframe of the logging runs, leading to differences in the down and up-hole profiles. To date, no secondary peaks or background noise have been observed and it is considered that radon gas is not a significant contributor to the natural gamma count.

UraniumSA Limited considers that the above procedures for checking the results of natural gamma logging, while not definitive, provide a reasonable basis for it to conclude that the responses obtained do reflect uranium mineralisation. The issue of disequilibrium has not been addressed at this stage of exploration.

### *sample assaying*

Samples from rotary mud drilling are not reliably representative of the intervals to which they are ascribed in the sample field as there can be significant lags in sample return to surface and losses and cross-contamination of fine materials between intervals. For these reasons, rotary mud materials are not appropriate for laboratory assay to determine grades of mineralisation. They do have limited use as geochemical indicators.

In addition to the statistical and contamination errors discussed above, samples obtained from UraniumSA Limited rotary mud drilling are unsuitable for uranium assay for mineralisation potentially amenable to in-situ recovery extraction because of the potential for uranium to be stripped into the drilling fluids. Natural formation waters have a pH ~7 while drilling fluids are adjusted to maintain a pH ~9. This pH differential and the residence time of cutting in suspension during up-hole circulation may be sufficient to strip any uranium attaching to the sediments making up the sample.

### *sample collection and retention*

The material management protocols developed by UraniumSA Limited for its uranium exploration activities require that only the minimum amount of drill cuttings are collected and stored. For each drill hole, geological

durotype samples (approximately 35 cubic centimetres for each interval) are collected for the entire drill hole and stored in industry standard chip trays. A bottom hole sample of basement material is collected from each hole. On the completion of drilling all materials which are not required for other purposes are returned down the hole or backfilled into the sump and buried.

## **Data**

Only drill hole data relevant to the Blackbush Prospect is reported herein. Other drill holes which have intersected anomalous mineralisation but which are outside the area of potential economic significance are not considered in this report. There is no data from previous exploration by third parties which is relevant to this estimate.

### ***management***

Field data from the down hole logging is collected in digital format using Geovista software. The Geovista files are manipulated using WelCAD software and working files generated and imported into Excel where they are combined with drill hole statistics and geological logs into a working record. The Geovista logging files and field geological log comprise the fundamental analytical data for each drill hole and are stored within the UraniumSA Limited system.

### ***manipulation and verification***

For the present resource estimates, natural gamma counts which are read over 1cm intervals have been converted to percentage equivalent uranium oxide (% eU<sub>3</sub>O<sub>8</sub>) and the values averaged over sequential 10cm widths using Excel software. Averaged 10cm intervals for inclusion into the estimate have been manually selected on the basis of the minimum grade, thickness, and internal dilution criteria described below.

Manipulation and transfer of data within and between packages is routinely done by the geologist operating in the field. For the holes forming the basis of the estimate two UraniumSA Limited geologists have independently checked and confirmed the transfer and manipulation of data with each replicating all or part of the procedure.

## **Estimation methodology**

The Blackbush Prospect is being explored as a potential in-situ recovery resource. At this stage of exploration there is no information available from the prospect to indicate what economic parameters should be applied. The figures used for this estimate are derived from comparison with potentially similar deposits in South Australia.

Some economic parameters for sediment-hosted uranium in-situ recovery deposits are available in the public domain for the Goulds Dam (Bampton, 2005) and the Oban deposits (Randell, 2007), both located in the geologically similar Curnamona Province of South Australia.

The assumptions described below and used in the estimation of an Inferred Resource are considered appropriate for the stage of exploration and the data and data quality which is available for the Blackbush Prospect.

### ***cutoff grade***

A published resource estimate for the Goulds Dam deposit discusses minimum cutoff grades of 0.01 % eU<sub>3</sub>O<sub>8</sub> and 0.03 % eU<sub>3</sub>O<sub>8</sub> determined using a Prompt Fission Neutron (PFN) tool; the final resource estimate used the higher cutoff. Public presentations describing progress of the Oban prospect towards production have described the use of a cutoff grade of 0.01 % eU<sub>3</sub>O<sub>8</sub>. UraniumSA Limited is not aware of any public domain assay data accompanying the Goulds Dam or Oban estimates of % eU<sub>3</sub>O<sub>8</sub>.

For the purpose of the present estimate a cutoff grade of 0.01 % eU<sub>3</sub>O<sub>8</sub> has been adopted.

### ***minimum thickness***

Referring again to the above Curnamona Province deposits, at Goulds Dam a minimum intercept thickness of 0.40m above cutoff was used with up to 1.0m of internal dilution, while at Oban minimum intercepts of 0.30m are reportedly considered.

For the purpose of the present estimate, the minimum intercept is 0.40m above a 0.01 % eU<sub>3</sub>O<sub>8</sub> cutoff, with isolated 0.10m intervals below 0.01 % eU<sub>3</sub>O<sub>8</sub> allowable within an intercept provided the average grade of the whole intercept exceeds of 0.01 % eU<sub>3</sub>O<sub>8</sub>.

***polygonal area of influence***

On the basis of the geological continuity of the mineralisation apparent from the drill results a simplified polygonal area of influence method has been adopted for the estimation of an Inferred Resource. The data density is not sufficient for modelling of grade and thickness variations within individual drill holes or across the mineralised area.

A polygonal area of influence has been calculated for each drill hole with a cumulative thickness grade intercept in excess of 0.05 m % eU<sub>3</sub>O<sub>8</sub>. The boundaries of individual polygons are determined by the half-way point between adjacent drill holes, and where there is no adjacent drill hole by an interpretation of geological and geophysical data. Each polygon is assigned the thickness and grade of mineralisation of the drill hole at its centre.

***density***

The sand hosted mineralisation at Blackbush Prospect is very similar to that described elsewhere in South Australia which have been assigned dry bulk densities of between 1.8 t/m<sup>3</sup> (Gould Dam) and 1.9 t/m<sup>3</sup> (Honeymoon). In the absence of any data specific to the Blackbush Prospect a density of 1.8 t/m<sup>3</sup> has been assumed for the present estimate.

***recovery***

There is no data upon which to make an estimate of what proportion of the Blackbush Prospect Inferred Resource may be recoverable by in-situ methods. Public domain estimates of recovery range between a generalised 60-70% (with no deposit specific information) with informal commentary suggesting higher recoveries in particular circumstances. The recovery achieved will be dependant on a wide range of variables including, but not limited to, the porosity and permeability of the mineralised host, the mineralogy of the uranium and its dissolution in leach liquors, and the effectiveness of the recovery circuit.

In the absence of any reasonably transferrable information on what recoveries may be anticipated at the Blackbush Prospect the present estimate for contained uranium oxide is not discounted for recovery.

**ABOUT URANIUMSA LTD**



UraniumSA is an Adelaide-based uranium-only explorer specialising in sediment-hosted styles of uranium mineralisation within a substantial portfolio of properties in South Australia’s Gawler Craton.

The Company has discovered sediment hosted uranium mineralisation at Mullaquana. The Blackbush Prospect has an Inferred Resources of ~2,700 t contained U<sub>3</sub>O<sub>8</sub> and exploration of other prospects is continuing.

Through its own tenure and by Joint Venture UraniumSA Limited controls the majority of the presently recognised prospective area in this newly recognised uranium district.

Russel Bluck  
 Managing Director  
 UraniumSA Limited

The exploration results and mineral resources reported herein are based on work and information compiled by Russel Bluck and Nicole Galloway Warland, who are both Members of the Australian Institute of Geoscience and employees of UraniumSA Limited. The geophysical results reported herein are based on work and information compiled by Mr Grant Koch, a Member of the Australian Society of Exploration Geophysicists and an Independent Consultant to UraniumSA Limited. Each of these persons has sufficient experience relevant to the style of mineralisation and type of deposits being considered and to the activity which they are undertaking to qualify as a Competent Person as defined by the 2004 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code, 2004 Edition) and have consented in writing to the inclusion in this report of matters based on their information in the form and context in which it appears.