ASX RELEASE

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PROJECTS
South Australia
Samphire ELs 4979, 5426
Western Shoal ELA 2008 / 00129
Murninnie EL 5440
Pine Hill EL 4787
Wild Horse Plains EL 4693
Muckanippie EL 4694

ISSUED CAPITAL
Shares on Issue: 162,274,756
Quoted shares: 162,274,756
Unlisted Options: 12,150,000

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Significant upside targeting high grade unconformity uranium mineralisation

Blackbush deposit, Samphire Project

UraniumSA Limited (ASX: USA) is pleased to provide an update of ongoing work in the Samphire Project focussed on identifying **drillable targets for the continued discovery of high grade uranium mineralisation at the unconformity below the Blackbush deposit**.

High grade uranium mineralisation at unconformities supplies ~30% of global demand and the deposits are some of the highest grade and lowest cost uranium mining operations. The majority are localised about Proterozoic unconformities in the Athabasca Basin, Canada, and the Pine Creek Geosyncline in the Northern Territory.

Unconformity uranium deposits are a high-value exploration target. The Geological Survey of South Australia and the Saskatchewan Geological Survey (who oversee uranium exploration and mining in the Athabasca Basin) are together evaluating the Proterozoic unconformity of the Cariewerloo Basin for unconformity deposits on the Eyre Peninsula.

The early decades of modern exploration in Australia used "deposit model" analogues which were very successful in the discovery of today's mines. Variations of a "systems model" approach are now widely and successfully used to conceptualise and direct exploration in Australia. The discovery of the Samphire project and Blackbush and Plumbush deposits was the result of an adaption of a systems model approach. This consisted of identifying an ultimate source for the uranium, the stratigraphy and structure which could provide pathways for mineralising fluids, and sites with the potential to cause redox reactions and deposit mineralisation. The same basic approach has been used in the present work.

USA's system approach evaluation of the Samphire project has focussed on the Blackbush deposit and in particular the known high grade mineralisation at the Eocene unconformity in the Western Zone. The work indicates that the structural, geochemical and geological physiochemical features and fundamental mineralising processes and deposit morphologies for an unconformity mineralising system are present in the Western Zone at Blackbush (table, page 3).

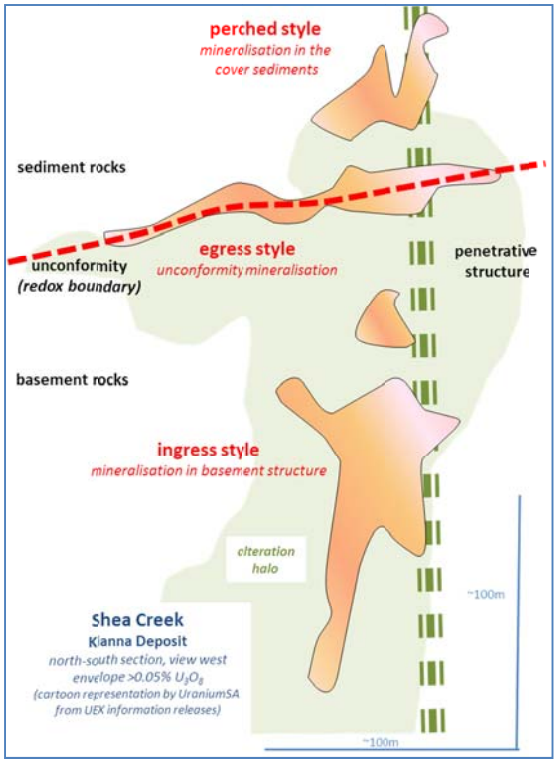
Specific outcomes from the work to construct a system model are:

1. **a logical framework for the known distribution of mineralisation and alteration within the Western Zone**
2. **predictive tools for drill targeting of shoots of high grade mineralisation within the known unconformity blanket mineralisation**
3. **a basis for targeting high grade shoot extensions and blind mineralisation down-structure into basement.**

Geological age is not a structural, geochemical or geological physiochemical attribute and accordingly it has not been considered in the system model developed for the Samphire project.

SYNTHESIS AND HYPOTHESIS - NON-CONVENTIONAL UNCONFORMITY MINERALISATION AT BLACKBUSH

A text of the USA systems model for the Samphire project and Blackbush deposit discussed above is available on the web site at www.uraniumsa.com.au. That text contains the following hypothetical comparison of a schema of the Athabasca Basin Shea Creek Kianna Deposit (UEX November, 2010) and an interpretive schema of the Blackbush mineralisation. The schema scales are as shown. At Blackbush West;



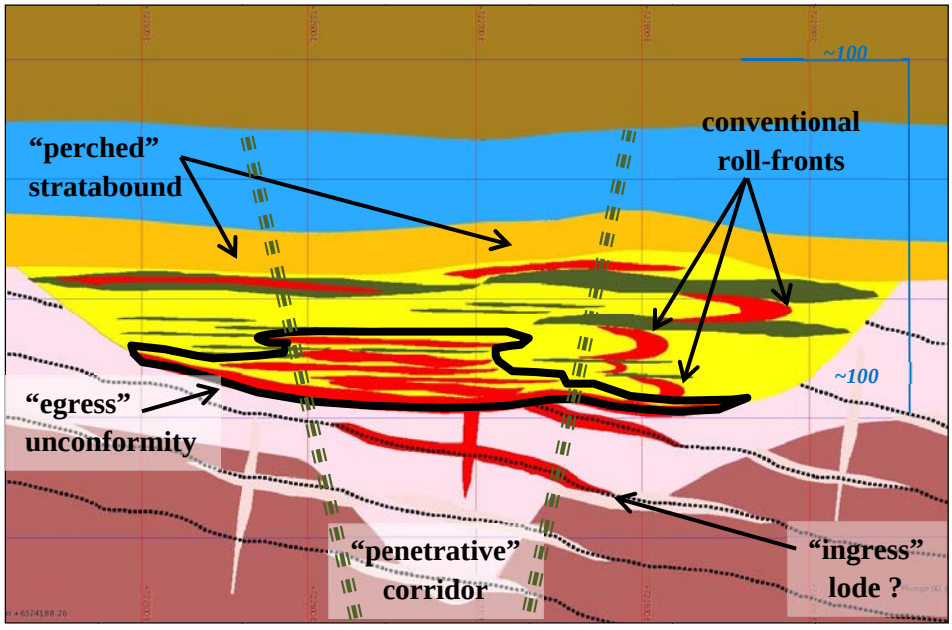
"**perched style**" mineralisation is postulated as stratabound mineralisation in Eocene sediments

"**egress style**" unconformity mineralisation is postulated as unconformity blanket mineralisation in the Western Zone

mineralisation in altered basement is present below the unconformity in clay lodes

"**ingress style**" mineralisation in basement is tentatively postulated in clay **l**odes

"**penetrative structures**" are apparent in mineralisation isopachs, geophysical imaging, hole-to-hole geological correlations and in stratigraphic upsets. Fluid flow is evidenced by clay alteration and veining.



Blackbush West Schematic. Samphire project.
view north, scale as shown. Underlying image ASX November 2013.

Comparative Table of systems attributes

	Conventional unconformity style Athabasca	Non-conventional unconformity style Blackbush
1. Ultimate source of uranium in the deposits	Uranium is sourced from dispersed uranium-bearing minerals within basement metamorphic and granite rocks (significant variation, usually <10ppm) and from pre-existing vein mineralisation. Potentially also from overlying basinal sequence from basement-derived minerals incorporated into the sediments.	The Samphire granite is a significantly uranium enriched A-type (average 53ppm uranium, range 13-117ppm). Drill hole MRM873 returned a granite intercept of 50.09 m @ 142ppm eU_3O_8 with a peak grade of 537ppm eU_3O_8 (ASX Release 29 May 2012) . Minor uranium (range 3-6ppm uranium, peak 12ppm) is present in the adjacent metasediment basement.
2. Mobilisation of uranium from source into a mineralising fluid	Palaeo-weathering at the unconformity may pre-condition the protolith for subsequent mobilisation of uranium. Circulation of metamorphic and basinal derived brines through structural plumbing pathways will mobilise disseminated and other sources of uranium. Depositional temperatures are in the 100 – 225^0 C temperate range.	There is a regionally extensive saprolite weathering profile at the Eocene unconformity with evidence of mobilisation of uranium and other soluble metals in oxidising solution. At Blackbush, proximal epithermal minerals indicate depositional temperatures in the 50 to $<300^0$ C range in the granite. No temperate estimates are available for unconformity or sediment hosted mineralisation.
3. Structure and circulation pathways for the mineralising fluid from source to where it is deposited	Regional crustal scale structures and repeated compressive - dilational re-activation create plumbing pathways. Mineralisation is localised in pathways at the intersections of primary and secondary structures. Sub-vertical penetrative structures extend from basement across the unconformity and through the cover sequences. Structure determines the circulation pathways and resulting patterns of alteration and uranium deposition.	Regionally, the Kalinjala and associated crustal scale structures show repeated re-activation, folding and dilation. Magnetic-destructive alteration pre and post Hiltaba emplacement and evidences hydrothermal fluid movement. Locally at Blackbush, alteration and mineralisation is associated with structural intersections and with sub-vertical structure which penetrate upward from basement, through the unconformity and the overlying sediment sequences.
4. Hydrogeological drivers move mineralising fluids mobilising uranium	Structural compressive - dilational pumping drives mineralising brines upwards through basement during compressive events and downward during dilational events. Thermal convection and hydrostatic variation drives circulation through sediments and basement. Repeated hydrogeological events result in multiphase deposits.	Interaction between crustal structures and Hiltaba intrusion created basement plumbing and drove hydrothermal alteration and epithermal activity. Basin-bounding structures were active pumping drivers pre-Eocene, during the Eocene, Miocene and Pliocene sedimentation, they remain active. Hydrostatic head varies with sea level changes.
5. Alteration	Regional clay alteration envelopes in sediments and more locally in basement. Clay alteration intensifies and is associated with quartz dissolution and deposition close to mineralisation and along penetrative structures. Specific alteration assemblages are determined by the chemistry of the protolith and the mineralising fluids. Common alteration assemblages are kaolinite/dickite, illite species and silica dissolution/deposition.	Extensive kaolinite/illite clay alteration at the top of Samphire granite. At Blackbush, envelopes of clay alteration below the unconformity extend down corridors bounded by sub-vertical structures. Silicification at the top of Eocene – base of Miocene is localised by the upward projection of penetrative structures. Individual mineralised grains show indications of silica dissolution along fractures and infilling with complex uranium mineralisation.

6. Depositional triggers	Contrasting oxidative and reducing settings either side of the unconformity generate redox reactions with fluid movement facilitated by differing physical characteristics of the two protoliths. The basement protolith variation and alteration types may trigger redox reactions along penetrative structures.	An oxidised, clay altered and uranium anomalous granite basement is unconformably overlain by a reduced sequence of fluvial Eocene sediments. The change from oxidative to reductive conditions is functionally indistinguishable from the inverse situation in a conventional setting. Penetrative structures extend from basement through the unconformity and up through the sediment section.
7. Depositional sites	There is a clear spatial association with physiochemical changes at an unconformity marked by a regolith. The contrasting physiochemical characteristics of the protoliths either side of the unconformity initiate a redox reaction. Halos of alteration and mineralisation extend along penetrative structures above and below the unconformity with mineralisation occurring as "perched" sediment hosted outliers and at depth below the unconformity, often separated from it by a zone of sparse alteration/anomalism. An unconformity and significant basement-penetrative structure are pre-requisites for the formation of these deposits.	Significant thickness and grades of uranium are associated with the change from oxidised basement to reduced sediment across the unconformity. Structures and structural intersections determine the distribution of thickness/ grade across the unconformity, influence to location of mineralisation and silica deposition up sequence above the unconformity, and determine the penetration of clay alteration into basement. The physiochemical characteristics of the protolith either side of the unconformity determine the alteration and mineralisation. Age is not a physiochemical attribute.
8. Size and scale	Mineralised systems often have strike extents of several hundred to thousands of meters with a number of discrete prospects/deposits within a continuous/discontinuous envelope of anomalism/alteration. Individual prospects/deposits tend to have strike elongate plan footprints (several 10's of meters by 1 to several 100's meters long) tending to equi-dimensional when localised by cross-structures.	The regional and local structures in and about the Samphire project are of significant scale and sufficient for the purpose of the model. Scalar schema representations of examples of Athabasca unconformity deposits are shown against the Blackbush mineralisation elsewhere in this text. The intention is to provide scalar reference not deposit-to-deposit comparison.

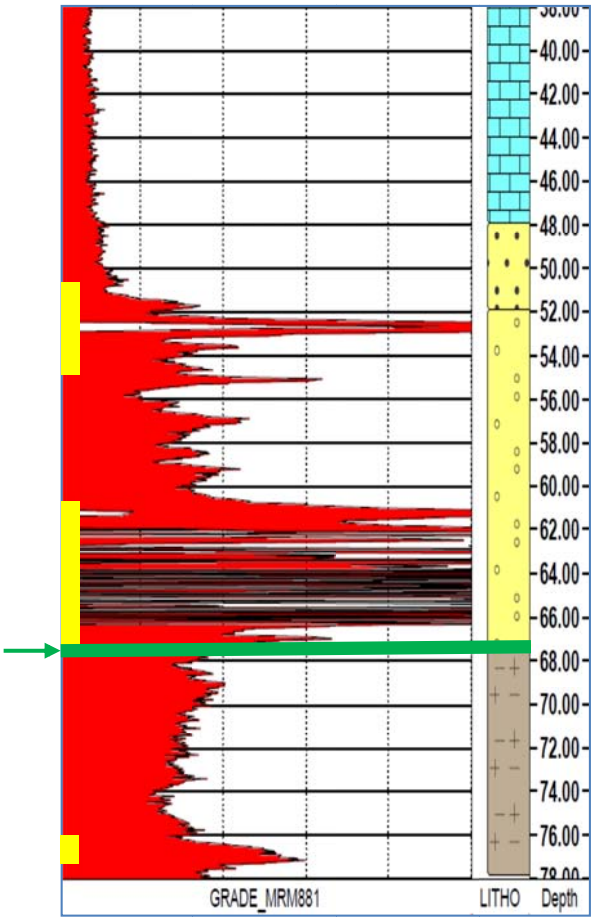
Application of a systems model for unconformity uranium at Blackbush

The use of a systems model to the distribution of uranium mineralisation in the Western Zone a Blackbush enables it to be differentiated as "perched styles" in the sediment system and above the unconformity, as "egress style" mineralisation at the unconformity, and below the unconformity in basement as an "ingress style". Apparent roll-front mineralisation in sediments above the unconformity has not been brought into the conceptual classification.

For example, the results for drill hole MRM 881 in the South area of the Western Zone at Blackbush which were previously reported (ASX Tuesday 15th May 2012) as:

> "MRM 881 reported a peak grade of **5.04% eU_3O_8** (50,362 ppm) within a broader high grade intercept (*cut-off 100ppm eU_3O_8*):
>
> | | | | | |
> |---|---|---|---|---|
> | **MRM 881** | from 51.4m | **26.5m** | **@ 0.19% eU_3O_8** | *1,900ppm eU_3O_8* |
> | *including* | | **15.9m** | **@ 0.30% eU_3O_8** | *3,050ppm eU_3O_8* |
> | *including* | | **4.5m** | **@ 1.02% eU_3O_8** | *10,180ppm eU_3O_8* |
>
> PFN results from the high grade interval show positive disequilibria;
>
> | | | |
> |---|---|---|
> | peak grade | natural gamma sonde | 5.04% eU_3O_8 |
> | | PFN | 7.41% pU_3O_8 |
> | 4.5m intercept | natural gamma sonde | 1.02% eU_3O_8 |
> | | PFN | 1.15% pU_3O_8 " |

When the raw data for MRM 881 is re-examined using a systems model grouping (no formal cut-off, visual picks, these numbers are for interpretive use and have no economic significance):



Perched

51.3m to 55.6m 4.3m @ 236ppm eU_3O_8

Egress

60.6m to 67.4m 6.4m @ 6,824ppm eU_3O_8

(which includes the above 4.5m @ 1.02% eU_3O_8)

Unconformity (green) between basement Samphire granite (oxidised) and overlying Eocene sediments (reduced)

Ingress

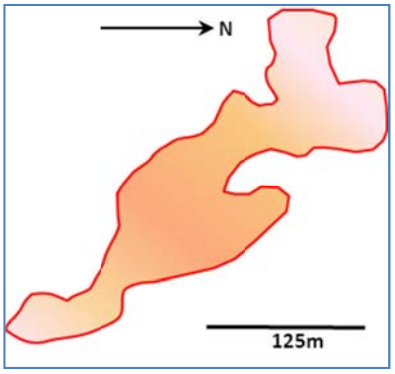
76.2m to 77.6 m 1.4m @ 230ppm eU_3O_8

(the hole ended at 78.0m potentially in mineralisation)

Immediate opportunity

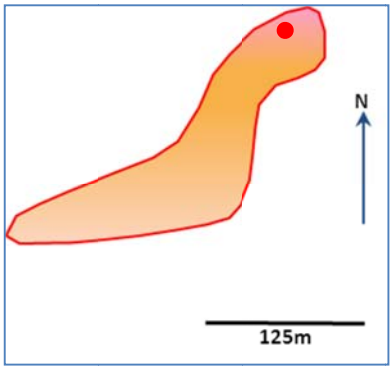
The existing Blackbush drilling data is being re-examined, mineralisation classified into its various conceptual styles, and alteration identified and mapped out. The objective is to delineate areas where the geology, geometry and existing grade/thickness information indicates opportunity for the discovery of significant intercepts of mineralisation.

An example of the exploration upside from the systems approach is illustrated by the area about MRM 881 (above) where the 1m% [A] footprint of mineralisation now classified as egress style (developed at and across the unconformity) can be visually compared to the footprint of 1m% total mineralisation (perched plus egress plus ingress in this present model) at the Anne deposit, Shea Creek, Athabasca Basin in Canada (owned by UEX Corporation and AREVA Resources Canada Inc., the schema is drawn by USA from public domain information, UEX November, 2010).



Shea Creek. Schema plan footprint of >1m% uranium mineralisation, Anne deposit, Shea Creek. The footprint is of all mineralisation within the deposit envelope which extends from overlying sediments, through the unconformity and into basement. The area of the footprint has been delineated by in excess of 60 drill holes (collars discernable on the available images).

The aggregate of all mineralisation styles within the Anne deposit exceed 500,000 tonnes at a grade approaching 2% U_3O_8.



South area, Western Zone, Blackbush. Plan footprint of >1m% uranium classified herein as egress style, developed in basement and sediments across the Eocene unconformity. The area of the footprint is from 8 drill holes: an average grade within the envelope from these few holes is in excess of 2,500ppm eU_3O_8. Peak grades are in excess of 1% as described previously for MRM 881 (the red dot in the image).

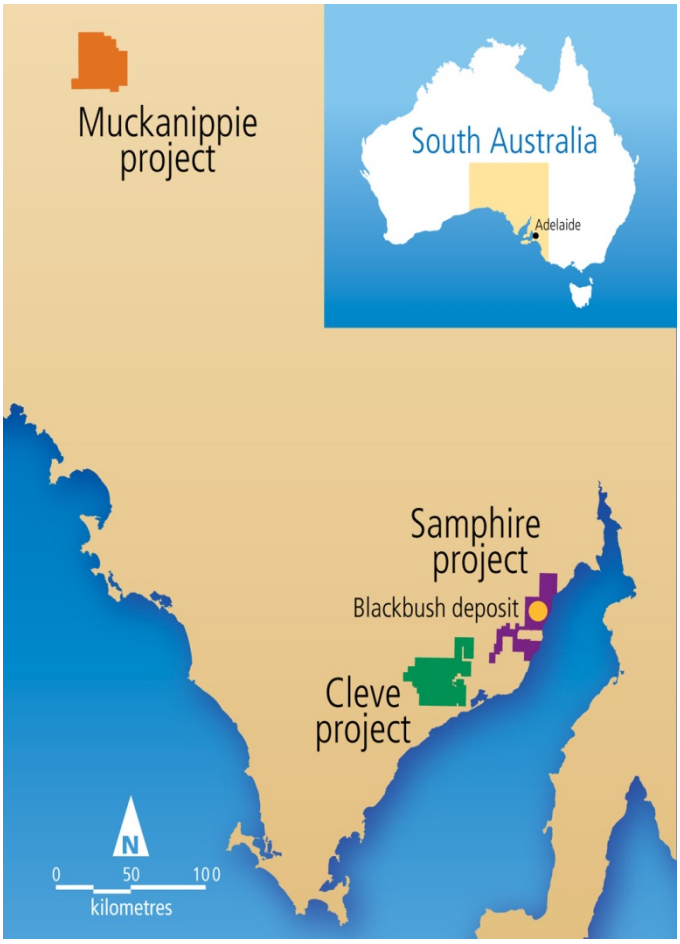
As the USA work proceeds and other components of the systems model are incorporated targets for high grade/thickness mineralisation at the unconformity and in basement will be identified, exploration estimates made, and drill holes targeted to test them. The objective of the work is to select and prioritise drill targets which have the potential to significantly increase the contained tonnage of uranium within the Blackbush deposit.

Forward opportunity

Preliminary work has been done to apply the systems model across the Blackbush deposit and the Samphire project as a whole where a number of other target areas have been identified.

[A] m% is the percentage grade of uranium multiplied by the thickness of the intercept, for example 1% over 1.5m = 1.5m%

About UraniumSA Limited



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

The Company has discovered sediment hosted uranium mineralisation within Exploration Licence 4979, 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 Samphire project contains the:

Blackbush deposit with an estimated inferred resource 64.5 million tonnes of mineralisation at a bulk grade of 230ppm containing 14,850 tonnes U_3O_8 at a 100ppm eU_3O_8 cut-off grade (JORC 2012).

Plumbush deposit with an estimated inferred resource 21.8 million tonnes of mineralisation at a bulk grade of 292ppm containing 6,300 tonnes U_3O_8 at a 100ppm eU_3O_8 cut-off grade (JORC 2004).

The estimated mineralisation is predominantly sediment hosted in Eocene age Kanaka Beds. Exploration has discovered uranium mineralisation in other geological settings and exploration is continuing.

An evaluation of mining methods to optimise the recovery of uranium from the identified resources of mineralisation is continuing. Application has been made for a Retention Lease for an in-situ recovery field trial at the Blackbush deposit. Consideration of open cut options for the sediment-hosted and granite basement hosted uranium mineralisation continues.

Through its own tenure and by joint venture UraniumSA has exploration control over what it considers the most prospective portions of the Pirie Basin. The Board has continued its diversification of UraniumSA's exploration efforts into commodities and opportunities other than uranium. Work on the Blackbush deposit within the Samphire project will continue at a rate which reflects the current global uranium market, production opportunities and investor sentiment.

David Paterson
Acting Chief Executive Officer
UraniumSA Limited

The exploration results mineral resources reported herein, insofar as they relate to mineralisation, are based on information compiled by Mr Russel Bluck a Director of UraniumSA Limited and Member of the Australian Institute of Geoscientists with 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, 2012 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.