



Drilling Commences at Big Lake Uranium Project, South Australia

Alligator Energy Limited **ASX: AGE (Alligator or the Company)** is pleased to advise that its inaugural stratigraphic drill program for the Big Lake Uranium Project (Big Lake) in the Cooper Basin, South Australia is now underway.

Highlights

- The Big Lake project is targeting northern extensions of the same Namba, Eyre and Winton sedimentary formations which host the Beverley, Four Mile and Honeymoon In-Situ Recovery (ISR) uranium mining operations in South Australia.
- Alligator has a significant exploration holding across six tenements (Figure 1)
- The Project has many attributes of similar global hydrocarbon-related ISR uranium fields (refer Figure 2). An historical drilling program in the region by a previous company ~16 years ago indicated the presence of uranium in thin bands.
- All approvals were completed to conduct the Company's inaugural drilling program at Big Lake, which has now commenced.
- The program is focused on Alligator's 100% owned EL6367, at the core of Project.
- A drilling contractor (Wallis Drilling) has been engaged to conduct up to 40 aircore holes on 3 to 4 hole fences (cross-sectional lines of drillholes placed 50 – 200 m apart), with an average depth of 150 m (Figure 3).
- This initial drilling program is targeting the Namba formation with the objectives of:
 - Corroborating seismic/AEM interpretations of potential mineralisation bearing channels; and
 - Testing the quality and variability of the potential host formation.
- Subject to final drilling meters, assays and analysis of results are expected in August – September.
- Results from this field program will inform a more targeted drilling program focused on the best opportunities to intersect uranium mineralisation within this portion of the Cooper Basin. This is scheduled for either later in 2024 or early 2025.

Alligator's CEO Greg Hall stated: *"We are very pleased to begin this long-awaited program and are fully appreciative to the Traditional Owners and other Stakeholders that have facilitated access. While at a very early green-field stage of the exploration/resource pipeline, all the signs are there that this has the potential to be a uranium-bearing basin following the Kazakhstan model. This drilling program is the start of our proof-of-concept work".*

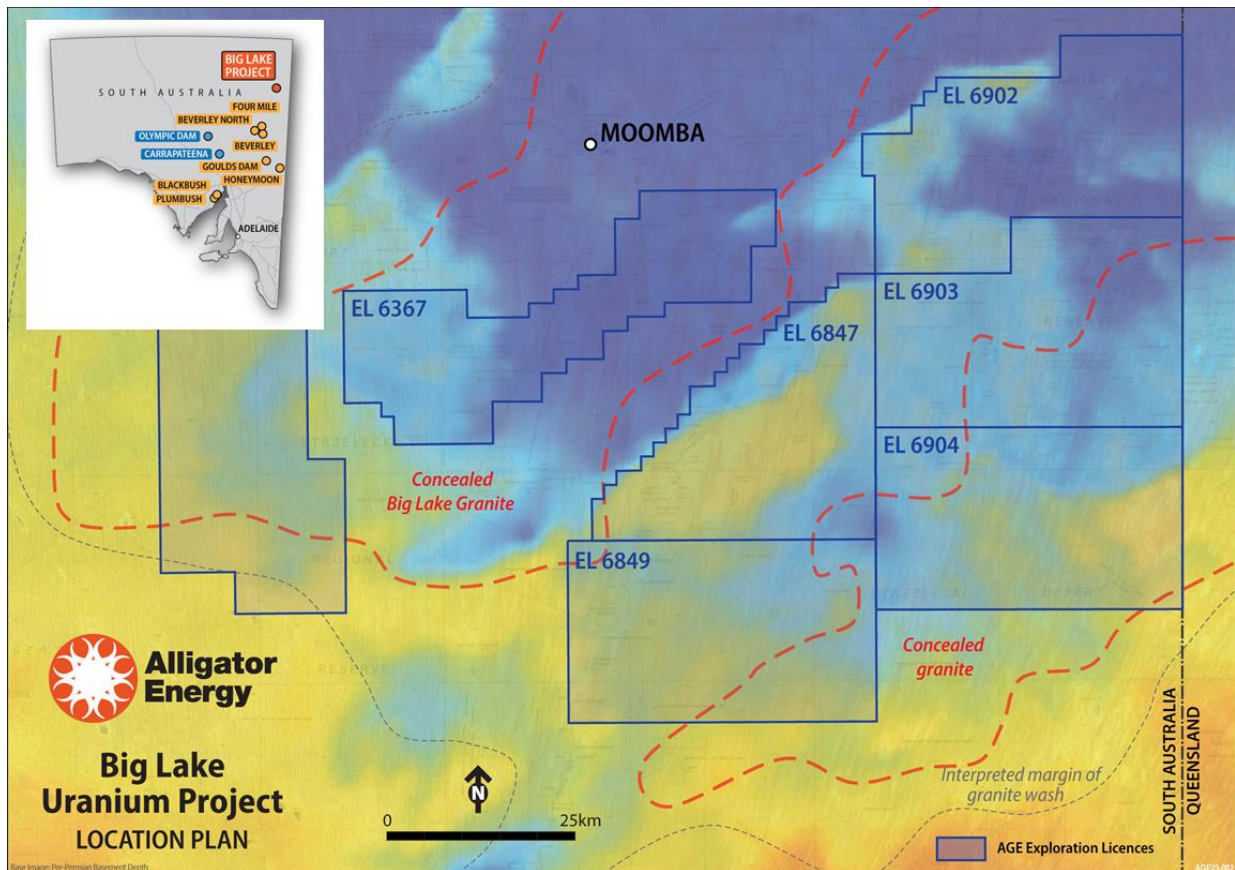


Figure 1: Alligator’s significant tenement holding over the southern Cooper Basin which comprise the Big Lake Project.






 Source rock	▶ Granite Suite present on edge of Cooper Basin	✓
 Permeable sedimentary sequences	▶ Targeting Eyre and Namba Formations	✓
 Hydrocarbon reductants (Kaza, Wyoming, Texas)	▶ Cooper Basin - known oil and gas field	✓
 Migration of uranium bearing fluids	▶ Seismic interpretation of paleochannels	To commence drill-testing May 2024
 Presence of uranium observed	▶ TC Development / Oil and Gas Operators	Thin bands of U occurrences - noted to date

Figure 2: Status of testing of Big Lake conceptual exploration model.

Project Background and Exploration Strategy

REDOX-controlled ‘roll front’ uranium mineralisation is being targeted by Alligator within the sedimentary Tertiary Namba and Eyre Formations and Cretaceous Winton Formation. The potential uranium source for the BLU Project is interpreted to be from weathering/leaching of the underlying uranium enriched Big Lake Granite Suite. The suite was recognised initially from regional heat flow maps of Australia and elevated geothermal gradients in the Cooper Basin petroleum wells. They were subsequently recognised in seismic data and later intersected in petroleum wells.

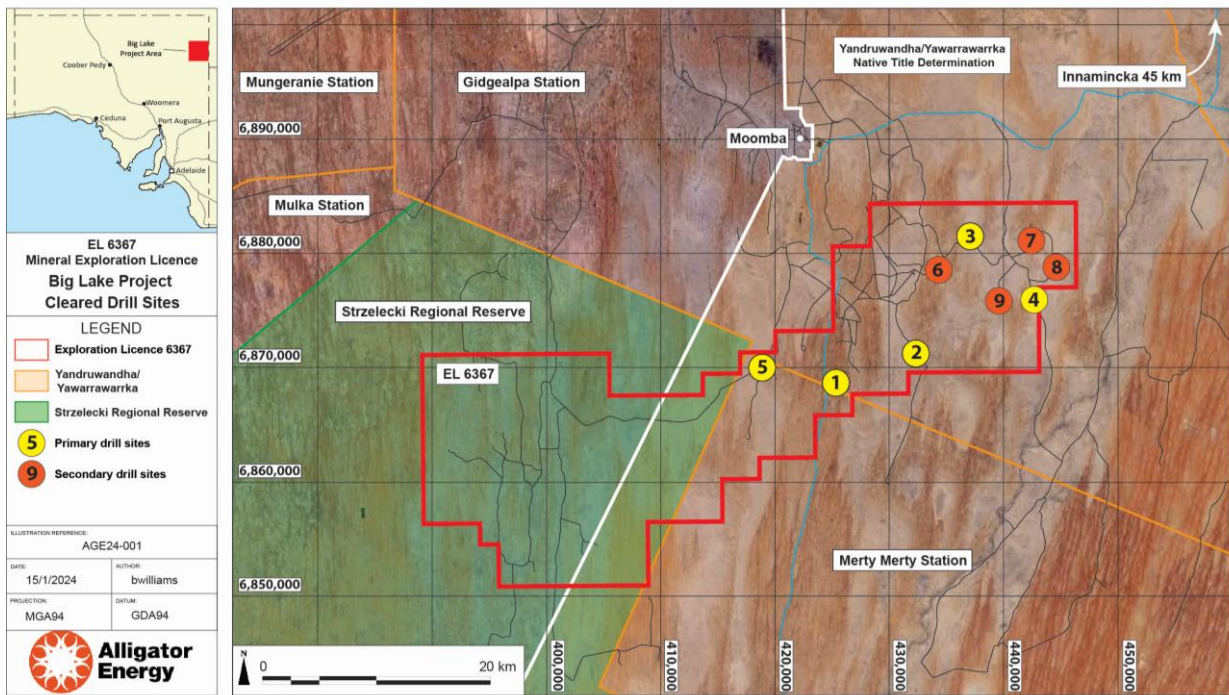


Figure 3: Proposed drill sites on EL6367 for 2024. Priority (1 – 9) based on logistical simplicity and testing a broad range of basin sections and interpretations.

Uranium from this potential source is interpreted to migrate via oxidised groundwater into permeable units and paleochannels within the basin. Hydrocarbons generated in the lower part of the basin are known to have transgressed stratigraphy and leaked into the upper parts providing the reductant for uranium to precipitate from the groundwater (**Figure 4**). Numerous regional petroleum wells show traces of uranium throughout the sedimentary sequences of the basin, confirming the potential for the mineralisation model described above, with recently acquired airborne electromagnetics and reprocessed seismic data demonstrating continuity and volume potential.

To achieve exploration success at the Big Lake Project, namely the identification of uranium mineralisation, the Company is focussing its exploration targeting strategy around the following key criteria:

- Source rock – Big Lake Granite Suite and associated ‘Granite Wash Plays’.
- Migration of uranium bearing fluids into shallower parts of the Cooper Basin stratigraphy.
- Presence of hydrocarbon reductants ($\text{CH}_4/\text{H}_2\text{S}$) for redox reactions to occur, and
- Development, preservation and capping of permeable sedimentary sequences

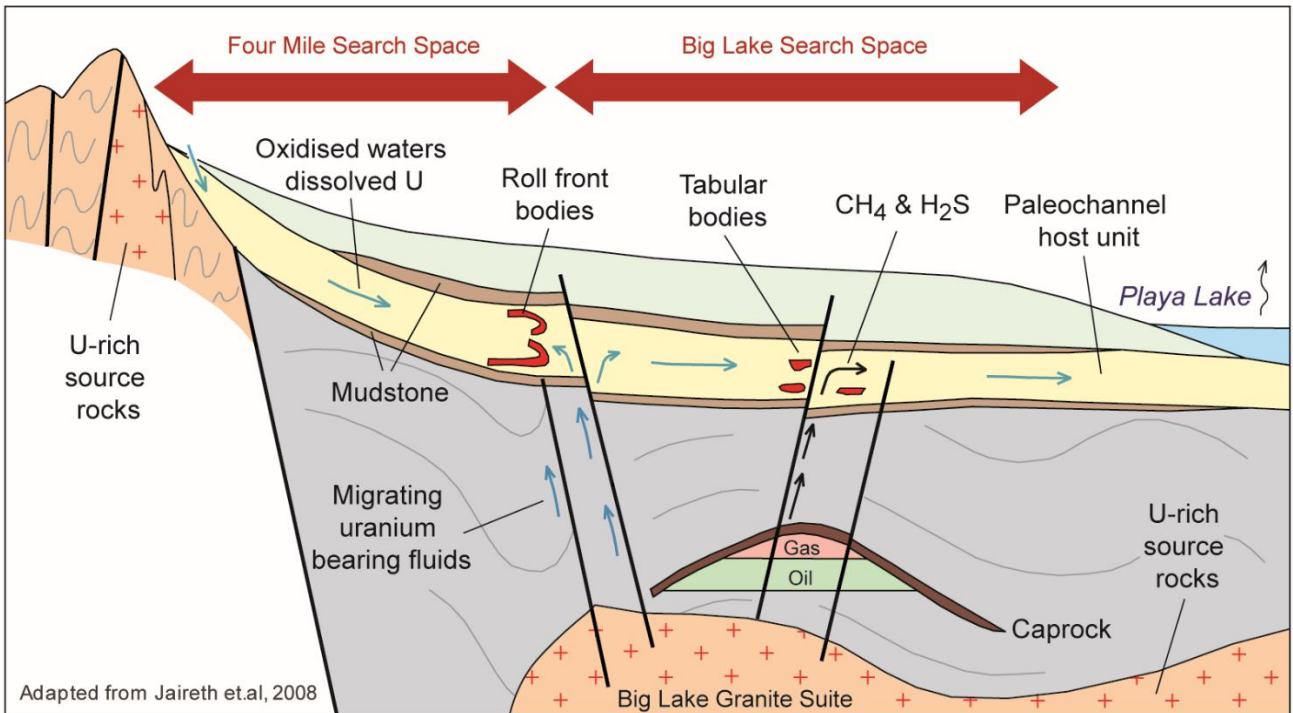


Figure 4: Basic conceptual model for the Big Lake Project.



Figure 5: Photo of Alligator's contractor (Wallis Drilling) drill rig at Big Lake Project.

This released was authorised by Greg Hall, CEO and Managing Director.

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Forward Looking Statement

This announcement contains projections and forward-looking information that involve various risks and uncertainties regarding future events. Such forward-looking information can include without limitation statements based on current expectations involving a number of risks and uncertainties and are not guarantees of future performance of the Company. These risks and uncertainties could cause actual results and the Company's plans and objectives to differ materially from

those expressed in the forward-looking information. Actual results and future events could differ materially from anticipated in such information. These and all subsequent written and oral forward-looking information are based on estimates and opinions of management on the dates they are made and expressly qualified in their entirety by this notice. The Company assumes no obligation to update forward-looking information should circumstances or management's estimates or opinions change.

Competent Person's Statement

Information in this report is based on current and historic Exploration and Resource Drilling Results compiled by Dr Andrea Marsland-Smith who is a Member of the AusIMM. Dr Marsland-Smith is employed on a full-time basis with Alligator Energy as Chief Operating Officer, and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration (including 21 years in ISR uranium mining operations and technical work) and to the activity she is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Dr Marsland-Smith consents to the inclusion in this release of the matters based on her information in the form and context in which it appears.

About Alligator Energy

Alligator Energy Ltd is an Australian, ASX-listed, exploration company focused on uranium and energy related minerals, principally cobalt-nickel. Alligator's Directors have significant experience in the exploration, development and operations of both uranium and nickel projects (both laterites and sulphides).

Projects

