Alligator Energy

ASX Announcement

27 February 2025

Follow-up Drilling Commences at Big Lake Uranium Discovery, South Australia

Alligator Energy Limited **ASX: AGE** (**Alligator** or the **Company**) is pleased to advise that its follow-up drill program at the Big Lake Uranium Project (Big Lake) in the Lake Eyre Basin, South Australia is now underway following the initial discovery success in 2024.

Highlights

- In August 2024[1], the intersection of significant thicknesses of anomalous uranium mineralisation within interbedded sand units of the Namba Formation was first reported in holes drilled at "Site 10" **(Figure 1).** This discovery represents the first 'proof of concept' that significant uranium is present in the Lake Eyre Basin sediments.
- The Big Lake Project is targeting northern extensions of the same Namba and Eyre sedimentary formations which host the Beverley, Four Mile and Honeymoon In-Situ Recovery (ISR) uranium mining operations in South Australia.
- The Project has many attributes of similar global hydrocarbon-related ISR uranium fields.
- All approvals are in place and crews have been mobilised to site for a follow-up drill program aimed at expanding the discovery area around Site 10, plus to investigate other locations on EL 6367 for mineralised stratigraphy and interpreted palaeochannels **(Figure 3)**.
- The program will comprise of:
  - up to 30 aircore holes to test targets identified in the Namba Formation.
  - up to 20 rotary-mud holes to test targets identified in the deeper Eyre Formation.
- Rotary mud drilling will be to a depth of approximately 250 meters, intersecting both the Namba and Eyre formations. This will provide geological information to test the current mineralisation model **(Figure 4)** and determine if potential stacked roll-fronts occur within the Eyre Formation below previously identified areas of known uranium mineralisation.
- Subject to completion of the drill program, assays and analysis of results are expected to be released in late May or early June 2025.
- Results from this field program will inform a more targeted drilling program focused on the best opportunities to intersect uranium mineralisation within this region of the Lake Eyre Basin. This work is scheduled for either later in 2025 or early 2026.

Alligator's CEO Greg Hall stated: *"We are very excited to be back on the ground drilling at the Big Lake Project and thank the Yandruwandha Yawarrawarrka Aboriginal Corporation for their assistance in cultural heritage survey work late last year. We also acknowledge the pastoral stations and the oil and gas tenement holders for their mutual engagement work with us.*

[1] ASX Releases – 12 August and 23 October 2024

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The discovery of significant thicknesses of uranium-bearing sands last year is now being followed up with some deeper drilling to test the underlaying Eyre Formation for similar palaeochannel sand structures, and their potential to host uranium. The drilling is aimed at identifying additional host sand formations, further uranium mineralisation, and adding geological knowledge to advance the thinking around the mineralisation model."

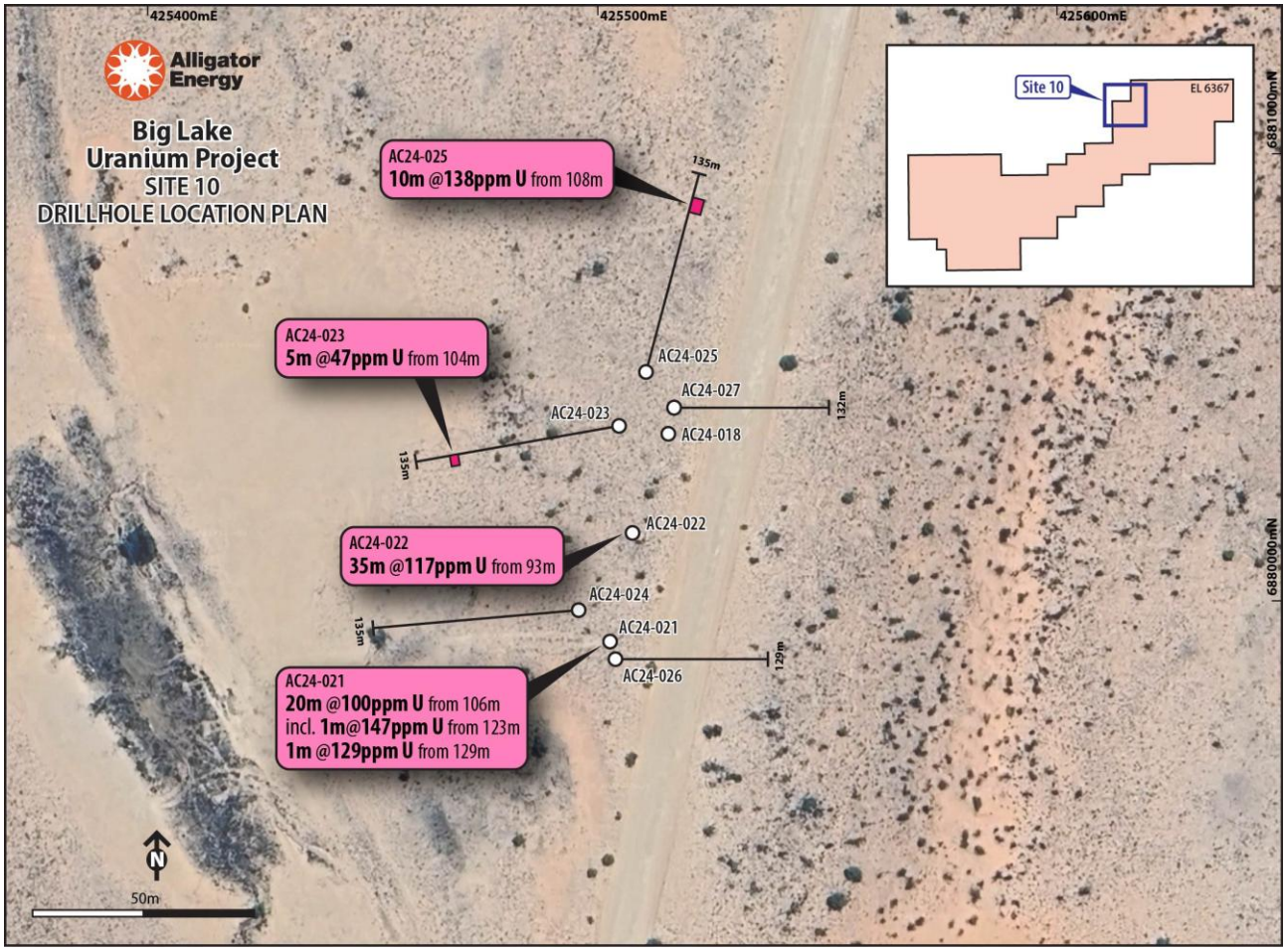

Figure 1: Drillhole location map (Site 10) showing uranium grades (ppm) encountered in AGE's 2024 drilling program. Rotary Mud drilling in this area will be targeted to both expand the mineralisation footprint and look for deeper sand units.

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 Big Lake 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. The individual formations were subsequently recognised in seismic data and later intersected in petroleum wells.

Note that the Lake Eyre Basin overlies the Eromanga Basin and the Cooper Basin, with unconformities between each Basin.

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Source rock	Big Lake Suite granites present on margin of Cooper Basin	✓
Permeable sedimentary sequences	Targeting Namba and Eyre formations	✓
Hydrocarbon reductants	Cooper Basin - known oil and gas field	✓
Migration of uranium bearing fluids	Seismic interpretation of structural architecture and palaeochannel systems	To be further drill-tested in 2025
Presence	Confirmed in 2024 drilling program	Significant thicknesses of anomalous uranium intersected in Namba Formation

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

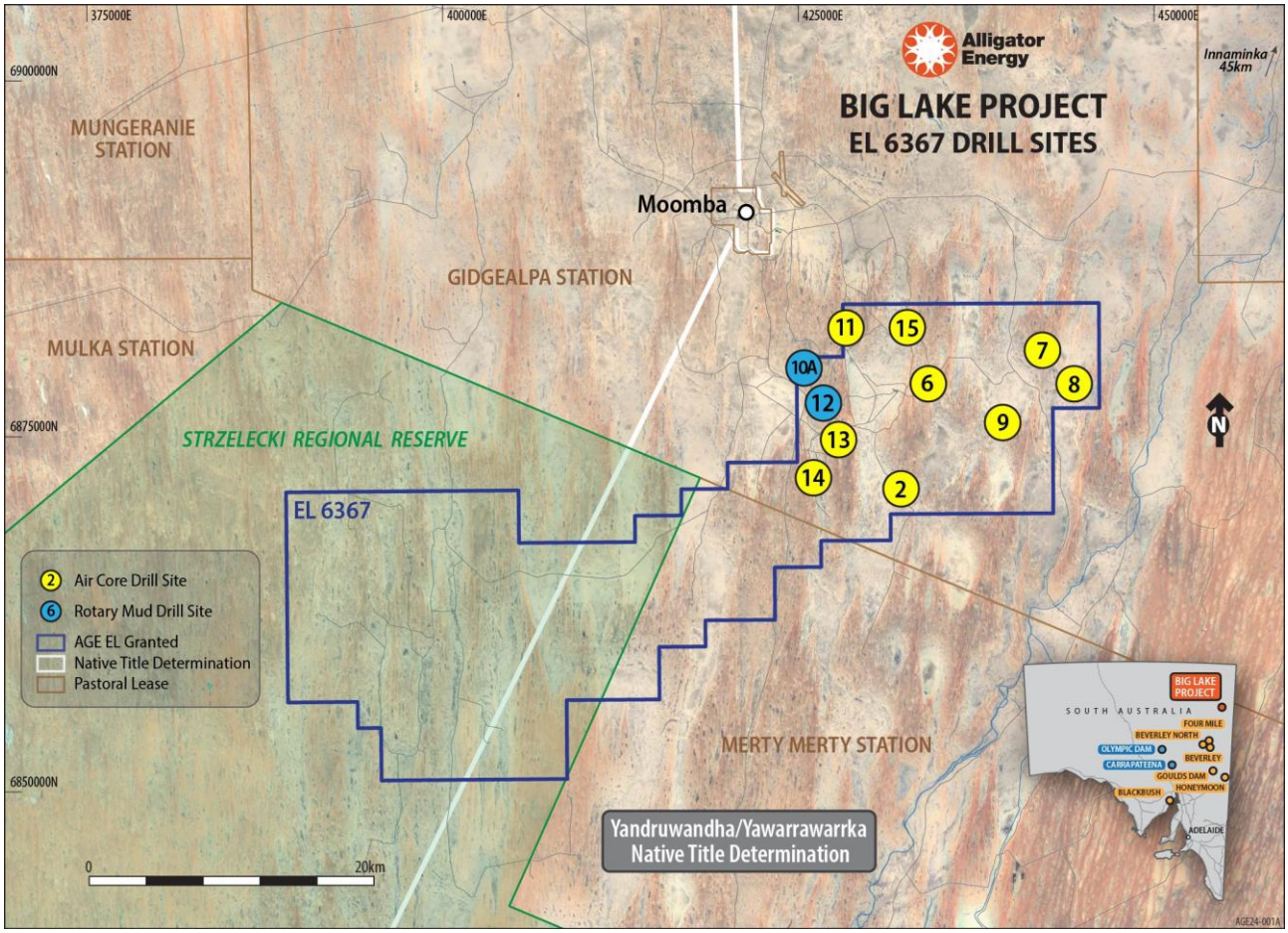

Figure 3: Sites on EL6367 with heritage clearance for 2025 drilling activity. Note Site 10A is the newly heritage surveyed larger area for 2025 drilling.

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.

In achieving 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 Lake Eyre Basin stratigraphy.
- Presence of hydrocarbon reductants (Ch_4/H_2S) for redox reactions to occur, and
- Development, preservation and capping of permeable sedimentary sequences

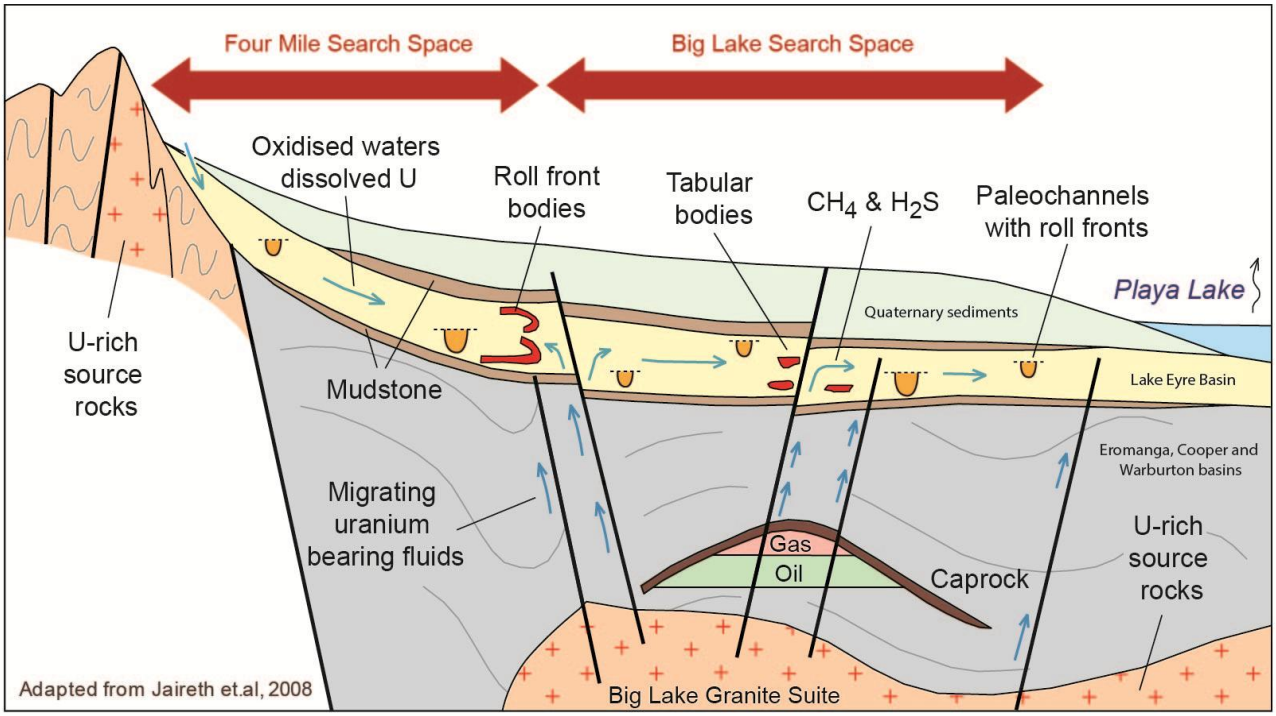

Figure 4: Basic conceptual model for the Big Lake Project.

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.

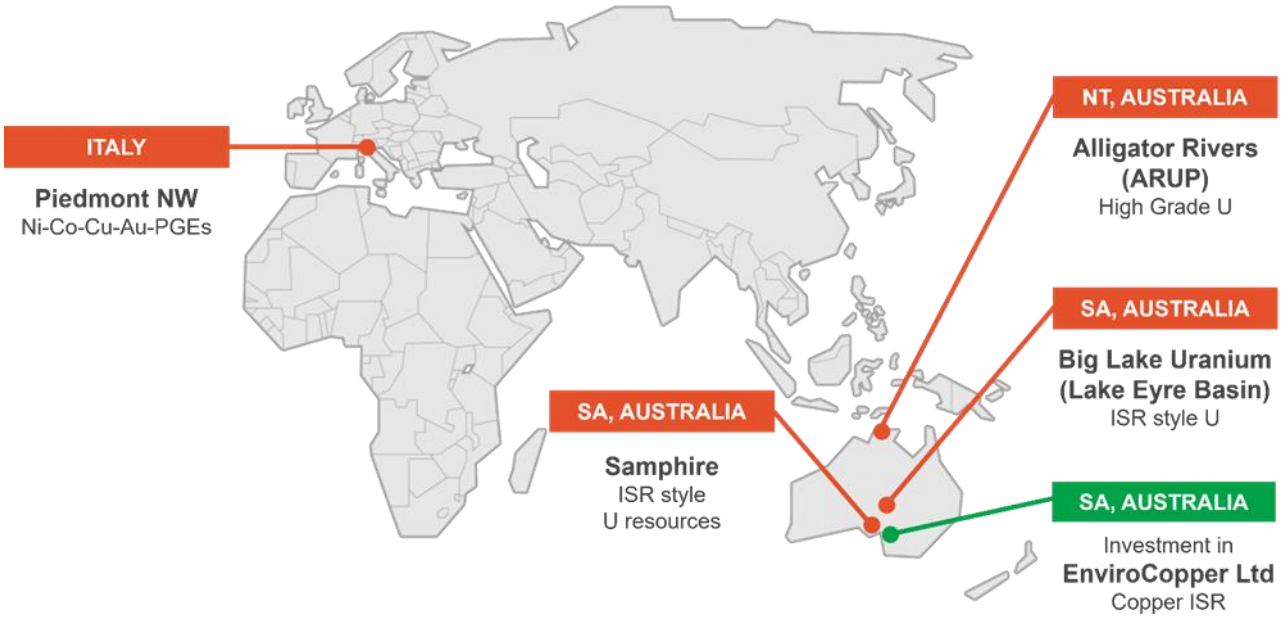
Competent Person's Statement

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



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