

ASX:AGE



Advancing Samphire Uranium Project into Trial Production



Alligator Energy

September 2024 – Greg Hall, Andrea Marsland-Smith, Kevin Smith

Forward Looking Statements

This presentation 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 – Uranium

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 by Alligator Energy as Chief Operating Officer (COO) and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity she is undertaking (including 15 years working with ISR uranium development and operations) 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.

Competent Person's Statement – Nickel Cobalt exploration

Information in this report is based on current and historic Exploration Results compiled by Mr Geoffrey Chapman who is a Fellow of the Australasian Institute of Mining and Metallurgy. Mr Chapman is a Consultant Geologist with Alligator Energy Limited and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity he 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. Mr Chapman consents to the inclusion in this release of the matters based on his information in the form and context in which it appears.



Company Snapshot

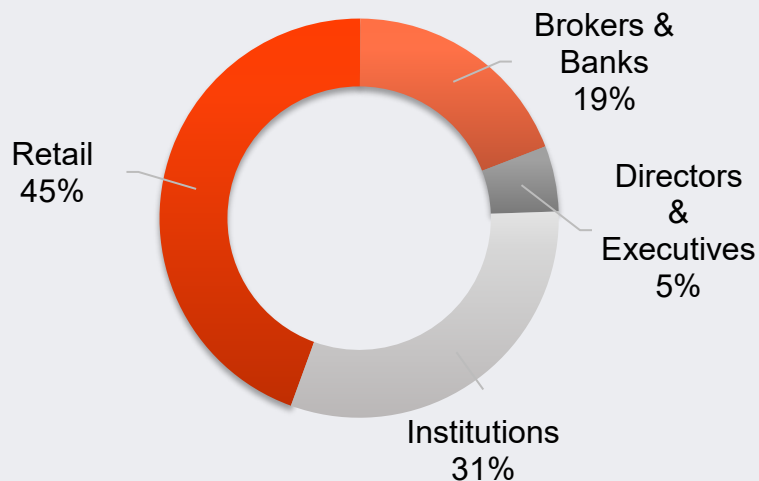
Greg Hall (CEO), Andrea Marsland-Smith (COO), Kevin Smith (Uranium Market and Investor Relations)

Capital Structure (as at 2 Sept 2024)

Share Price	\$0.042
Ordinary Shares	3,869.8 M
Perf Shares, Listed & Unlisted Options	461.6 M
Cash as at 30 June 2024	\$ 28.7 M
Market Cap	\$163 M



Top 50 Shareholders





Board & Management



Paul Dickson | Non-Executive Chairman

Paul is a finance and corporate advisory professional with more than 30 years' experience in the finance services industry. He was a Founding Director at Paradigm Capital, a boutique corporate advisory firm specialising in junior and mid-tier ASX listed resources companies, and a Director of Proserpine Capital a private equity firm for circa 4 years. Paul has been an AGE Board member since inception and Chairman for 3 years.



Callum McIntyre | Alternate Director

Callum has extensive experience in the finance and technology industries, both in Australia and overseas. He is currently Director Business and Investment at Labonne Enterprises, a private investment company. He is also a Director of ReCircle, a private Company researching the recovery and reuse of soft plastics. He holds a BSc from the University of WA, and Graduate Diploma of Applied Finance.



Gregory Hall | CEO & Managing Director

Greg is an experienced mining engineer and CEO with 35+ years' experience in uranium and other mine management. He previously held roles at WMC Olympic Dam & nickel mines, LKAB Iron Ore (Sweden), ERA Ranger & Jabiluka Uranium and international commodities marketing with Rio Tinto (ERA) Uranium, and Bauxite & Alumina groups. Greg was also founding CEO of Toro Energy Ltd.



Mike Meintjes | CFO & Company Secretary

Chartered Accountant/CFO/Company Secretary. Over 30 years professional services principally with a Big Four accounting firm and recently in part-time contracting and consulting roles. Extensive exposure to mining, oil & gas sectors in WA, QLD and South Africa. CFO and Co Sec for AGE for 11 years



Peter McIntyre | Non-Executive Director

Peter is a civil engineer and experienced CEO. He previously held GM roles with WMC Ltd, including development of major mining projects. Peter was the founding MD of Extract Resources during the discovery and pre-feasibility of Husab Uranium mine in Namibia, sold for US\$2.2 billion.



Dr Andrea Marsland-Smith | COO

Andrea was previously at Heathgate Resources with roles over 15 years covering technical and field positions in Geology, Head of Geology, Head of Regulatory & Compliance, Head of Operations and Head of Government Relations and Indigenous Affairs. She holds a PhD in Economic Geology and was the recipient of Exceptional Women in Resources in 2016.



Fiona Nicholls | Non-Executive Director

Fiona has 30 years of experience working across a range of business functions including strategy, planning, ESG and operations, multi-country project development and approvals and due diligence processes. Fiona was previously on the Board of Rössing Uranium and alternate director for ERA uranium.



Mike Barlow | Exploration Manager

Mike has over 30 years in mineral exploration leading greenfields and brownfields programs with BHP, Rio Tinto, Comalco and most recently, with Geoscience Australia. He has served in management and technical roles for resource identification and development in copper, lead and silver, along with oil and gas, and laterite deposits. Mike is also a member of ASEG and AusIMM.

Fundamentals point to stronger spot and term prices

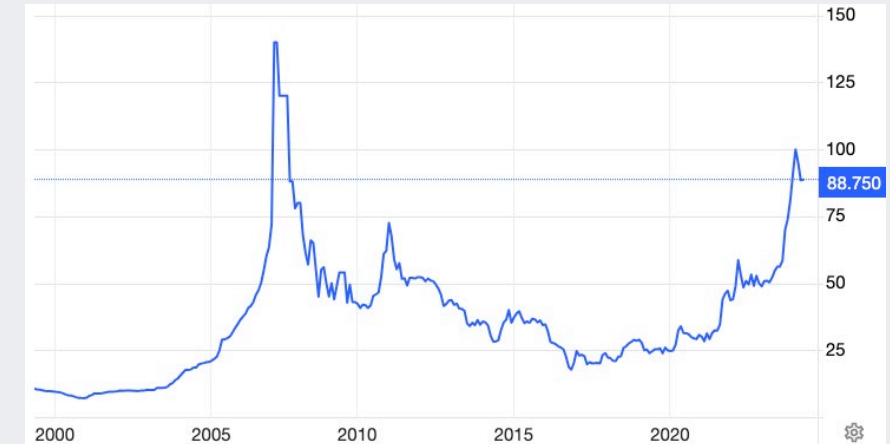
Supply

- Structural supply deficit forecast through to at least 2029/30
- Fragile supply picture, with elevated geopolitical risks
- Heightened supply risk from major producers, with Kazatomprom guiding to restricted production due to acid shortages and delays to mine construction.
- Kazakhstan produces 44% of world's uranium, and this is shipped via Russia.
- US close to imposing sanctions on Russia
- Structural deficit even after prices have tripled

Demand

- At COP28, 22 countries agreed to triple nuclear power by 2050
- 2023 LT uranium contracts of 160 Mlbs highest since 2012
- SPUT purchased >60 Mlbs of uranium and steadily acquiring more
- Amazon's acquisition of nuclear-powered data centre at Talen illustrative of the rising demand for reliable 24/7 power for this industry.
- Potential for SMRs to add to future demand

Spot uranium in a multi-year bull market



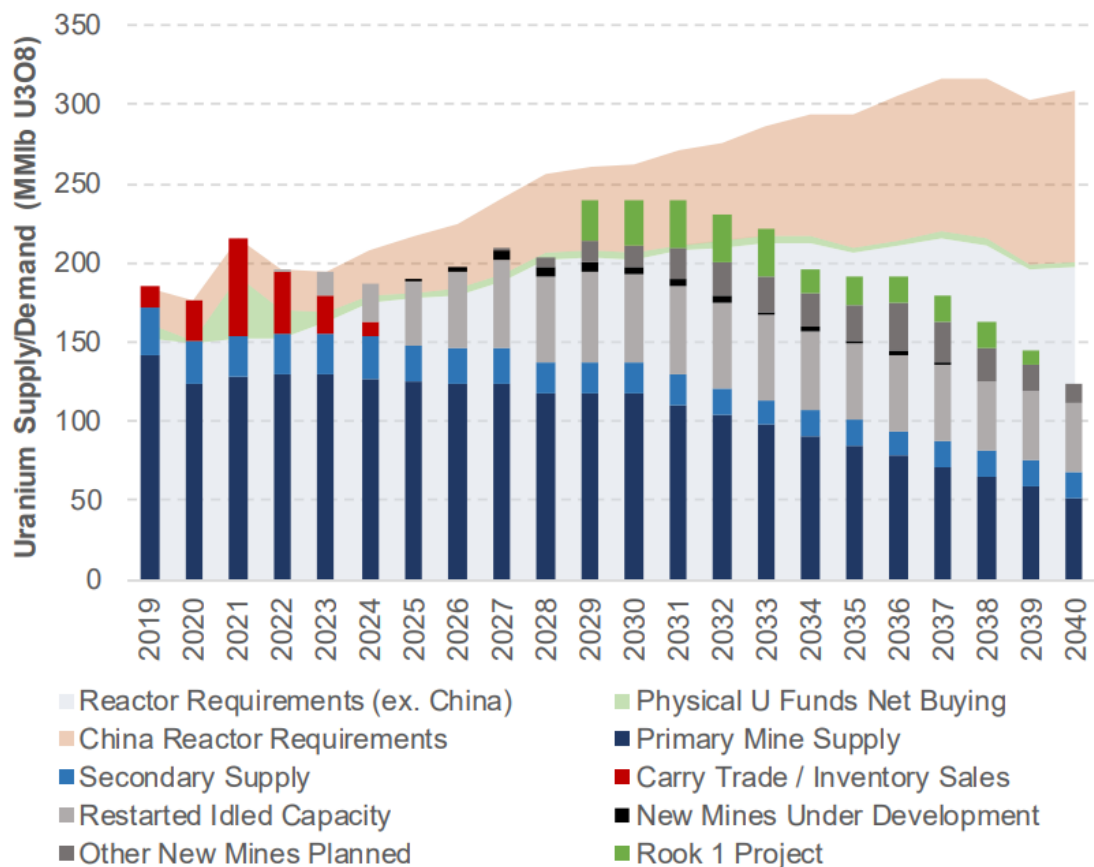
Source: Trading Economics

Prices

- Spot price doubled in ~12 months from US\$50 / lb to recent peak of US\$106 / lb.
- Long term price now estimated at
 - US\$80 / lb (Trade Tech)
 - US\$75 / lb (UxC)

Uranium and Nuclear Fuel - Commodity Price Drivers

Exhibit 1. Updated Supply/Demand Model

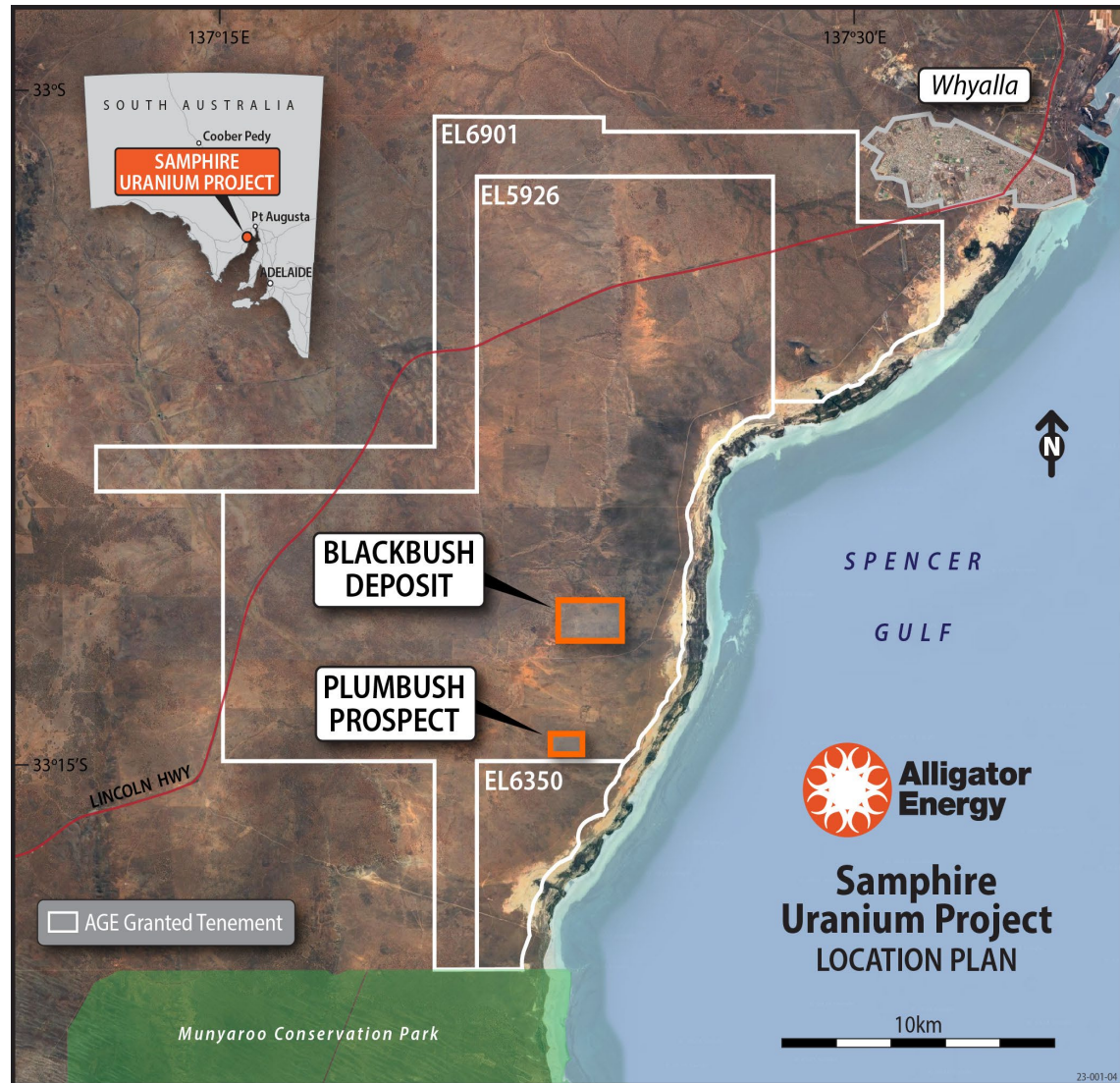


Source: Cantor Fitzgerald

- Primary mine supply, mine re-starts, new mines under development plus new planned mines still potentially not adequate for future supply.
- New mines are and will take longer to market due to approvals, development and design skills needed, financing and politics.
- Utility fuel buyers running inventories very low to avoid / delay coming to market while prices high.
- Due to relatively low impact of U prices on nuclear costs, largely inelastic demand despite rising prices.
- Existing producers will find ways to extend mine life, however will also take time.
- Faster to build a nuclear plant in China and India than it is to start a uranium mine in Australia.



Samphire Uranium project: South Australia – experience in uranium





Samphire Uranium Project, South Australia



20kms from Whyalla, SA

Excellent regional infrastructure and skilled labour-force



JORC compliant resource

17.5 Mlbs uranium resource with significant scope for further growth



Regional exploration opportunities

Exploration Target estimates additional 14 - 75 Mlbs



Robust Scoping Study- 1.2 Mlb / annum prod.

A\$131m capex, 42% IRR, and 2.45 yr payback



Pilot plant planned

Fabricated and delivered to site. Construction in Q4 subject to approvals

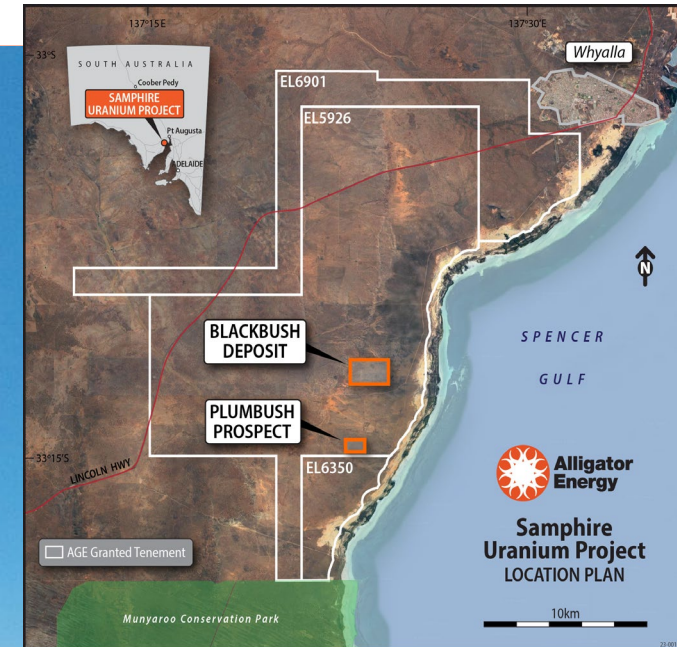


ESG

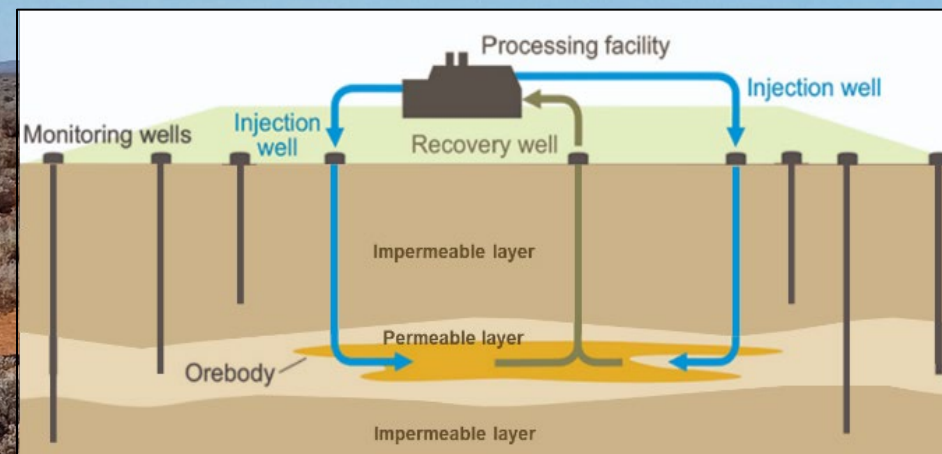
Strong ESG credentials, with environmental commendation awarded by SA government

Samphire Uranium project: A highly competitive ISR project

- **Initial capital cost estimate of A\$131 million is low**, despite significant contingencies and inflation totalling 35%.
- **AISC at the lower end of cost curve**, due to:
 - In-situ Recovery (ISR) amenable,
 - nature of the deposit, shallow depth, excellent formation porosity, and
 - high leaching dynamics.
- **Location** near Whyalla affords lower cost of key infrastructure, locally based workforce (i.e. no FIFO or camp), experienced mining services and business support.
- **Expansion potential** - Exploration Target Range (Dec 23) estimating an additional 14 - 75 Mlbs on top of 17.5Mlbs resource. Multi-year resource extension and step-out drilling to increase mine life and production rate.
- **Field Recovery Trial (derisking underway)** on receipt of regulatory approvals (approx. Q3), to de-risk project and confirm parameters to be used in a full feasibility study during 2025



Conceptual Model of ISR



Samphire Uranium Project – Dec 2023 Scoping Study† : 1.2 Mlbs pa project

Study metrics* at US\$75 / lb uranium price



A\$131m

CAPEX
(including contingency)



2.45 years

Payback



42%

IRR*
(post-tax, real,
ungeared)



A\$257m

NPV₈*
(post-tax, real,
ungeared)



US\$33.31/lb

AISC
(A\$47.58/lb)



US\$16.06/lb

Cash Costs
(A\$22.94 /lb)

Study metrics* based on analysts current long-term price projections of US\$90 / lb



A\$131m

CAPEX
(including contingency)



1.93 years

Payback



55%

IRR*
(post-tax, real,
ungeared)



A\$371m

NPV₈*
(post-tax, real,
ungeared)



US\$34.06/lb

AISC
(A\$48.96/lb)



US\$16.06/lb

Cash Costs
(A\$22.94/lb)

† Ref ASX release 14 December 2023 “Scoping Study Update”: Alligator confirms that all material assumptions underpinning the ‘production target’ or the forecast financial information derived from the ‘production target’ continue to apply and have not materially changed other than the outlook for the long-term uranium price as set out above; *Calculated using 0.70 US/A\$ exchange rate inclusion of significant contingencies and inflation of 35%.



Samphire Uranium Project - Scope to Scale & Optimise

Recent Scoping Study update increased production target to 1.2Mlbs pa. Future drilling will target increased mine life and/or production rate

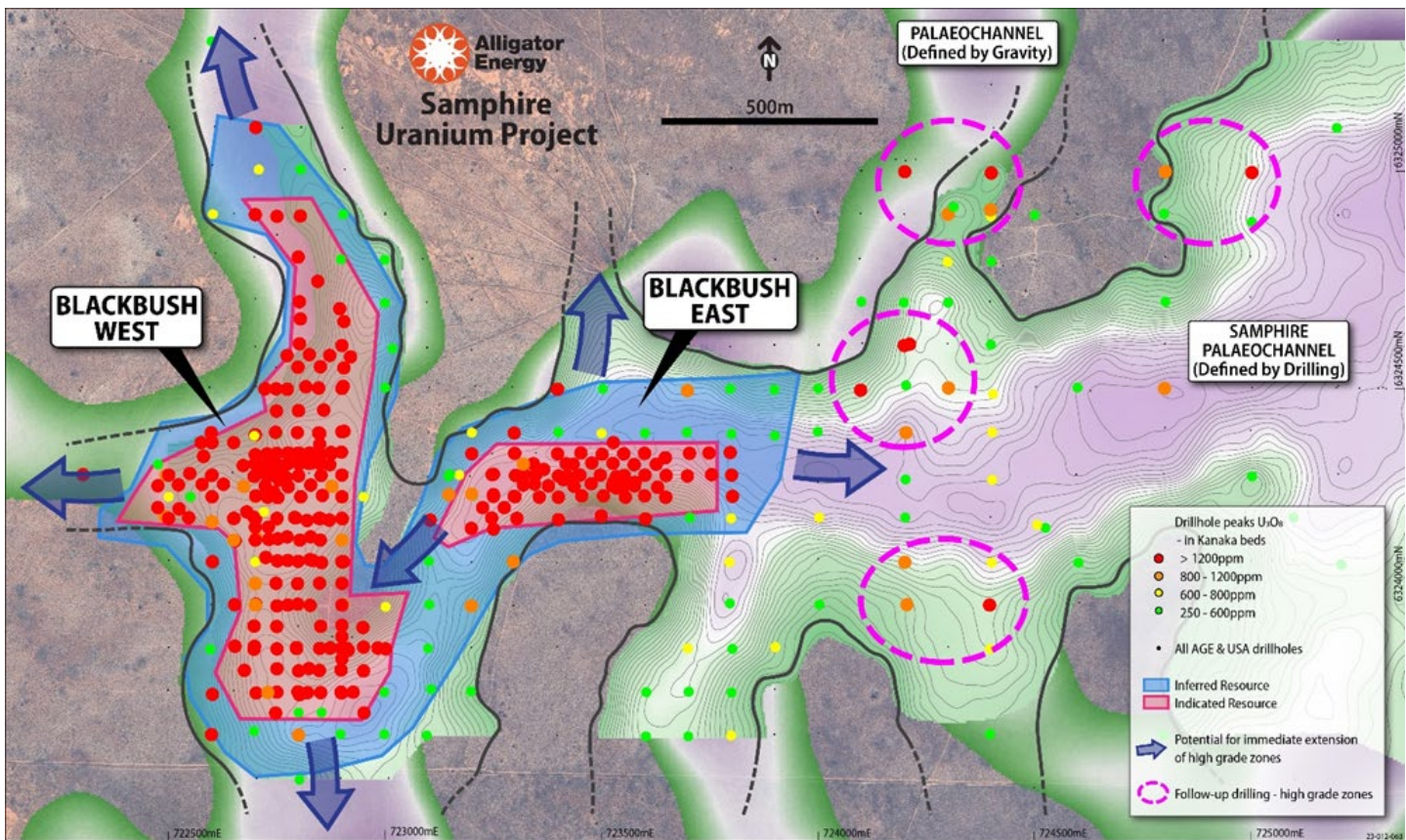
Further extension potential at the Blackbush deposit & Plumbush prospect, including regional exploration on known mineralised channels

Modular plant for scalable production capacity

Scope for processing efficiencies, to reduce costs for the Reverse Osmosis (RO) plant and also increasing recovery rates



Samphire Uranium Project – Blackbush JORC Resource



JORC Category	Mt	Grade (U ₃ O ₈ ppm)	U ₃ O ₈ Metal (KTonnes)	U ₃ O ₈ Metal (Mlbs)
Indicated	7.8	754	5.9	12.9
Inferred	4.6	447	2.1	4.6
Total	12.4	640	7.9	17.5

Ref: ASX Release 7 December 2023



Samphire Uranium Project – Resource Growth Potential

Blackbush resource growth potential

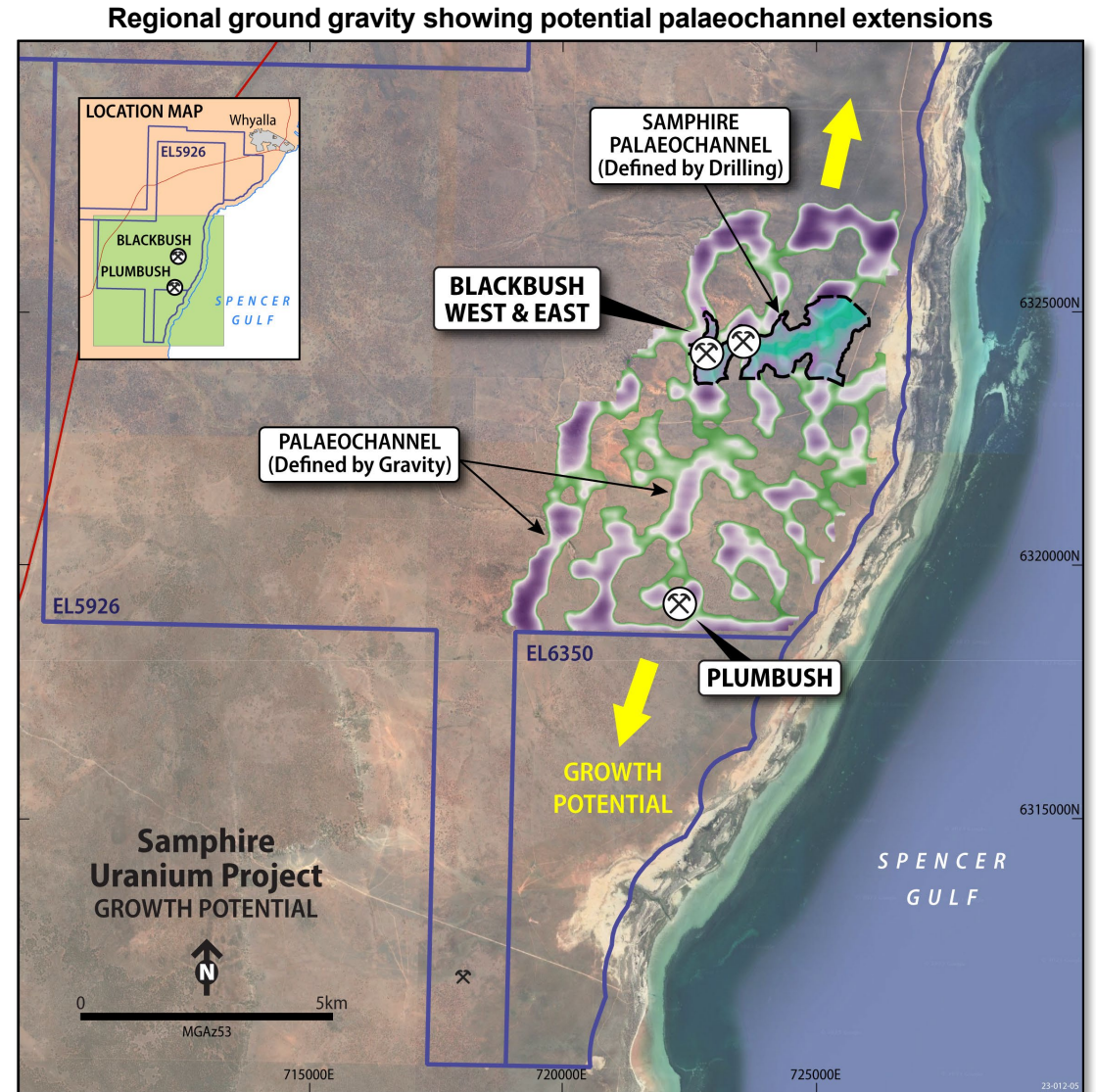
- Coherent multi-level medium to high-grade zones with current >2,700m cumulative strike, with widths of 300-450m.

Creating value through the drill bit

- Multi-year step-out drilling program planned
- Blackbush extension drilling underway for all of 2024

District-scale resource growth potential

- Blackbush resource growth
- Plumbush Prospect and extensions not adequately tested
- High-resolution ground gravity shows significant palaeochannel extensions north and south of Blackbush. 64kms of known palaeochannels, with 58% unexplored.
- Potential for additional satellite deposits based on historical mineralised intersections.



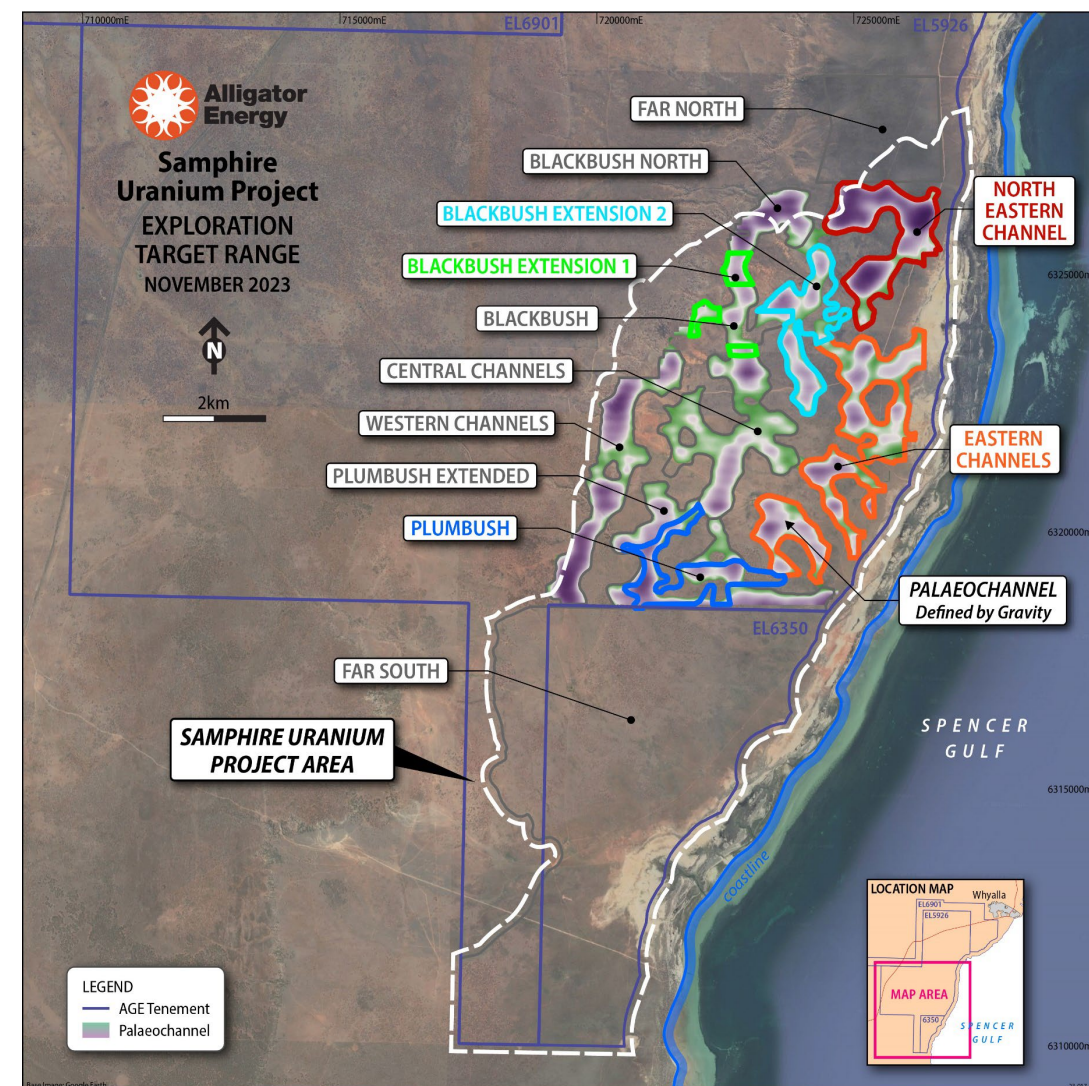


Samphire Uranium Project – Exploration Target Range - up to 75 Mlb

Target Area	Estimated Tonnage (Mt)		Estimated Grade (ppm U ₃ O ₈)			Estimated Exploration Target Range (Mlb)	
	Min	Max	Min	Max	Average	Min	Max
Blackbush Extension 1	0.82	1.69	354	922	543	0.64	3.43
Blackbush Extension 2	2.09	4.94	382	697	487	1.76	7.59
North-eastern Channels	3.18	7.20	353	795	500	2.47	12.62
Eastern Channels	6.77	12.62	332	426	363	4.95	11.85
Plumbush	3.11	10.63	530	1676	912	3.63	39.28
Blackbush North	Not included in Target Range						
Central Channels	Not included in Target Range						
Western Channels	Not included in Target Range						
Plumbush Extended	Not included in Target Range						
Far North	Not included in Target Range						
Far South	Not included in Target Range						
TOTAL						14	75

Next Steps:

- Current exploration drilling within Blackbush Extension 1 & 2 areas.
- Multi-year plan to explore palaeochannels surrounding Blackbush and commence greenfield exploration between the Blackbush & Plumbush target areas.
- Identify channel extensions within the Far North and South target areas from ground gravity data recently acquired in these areas.

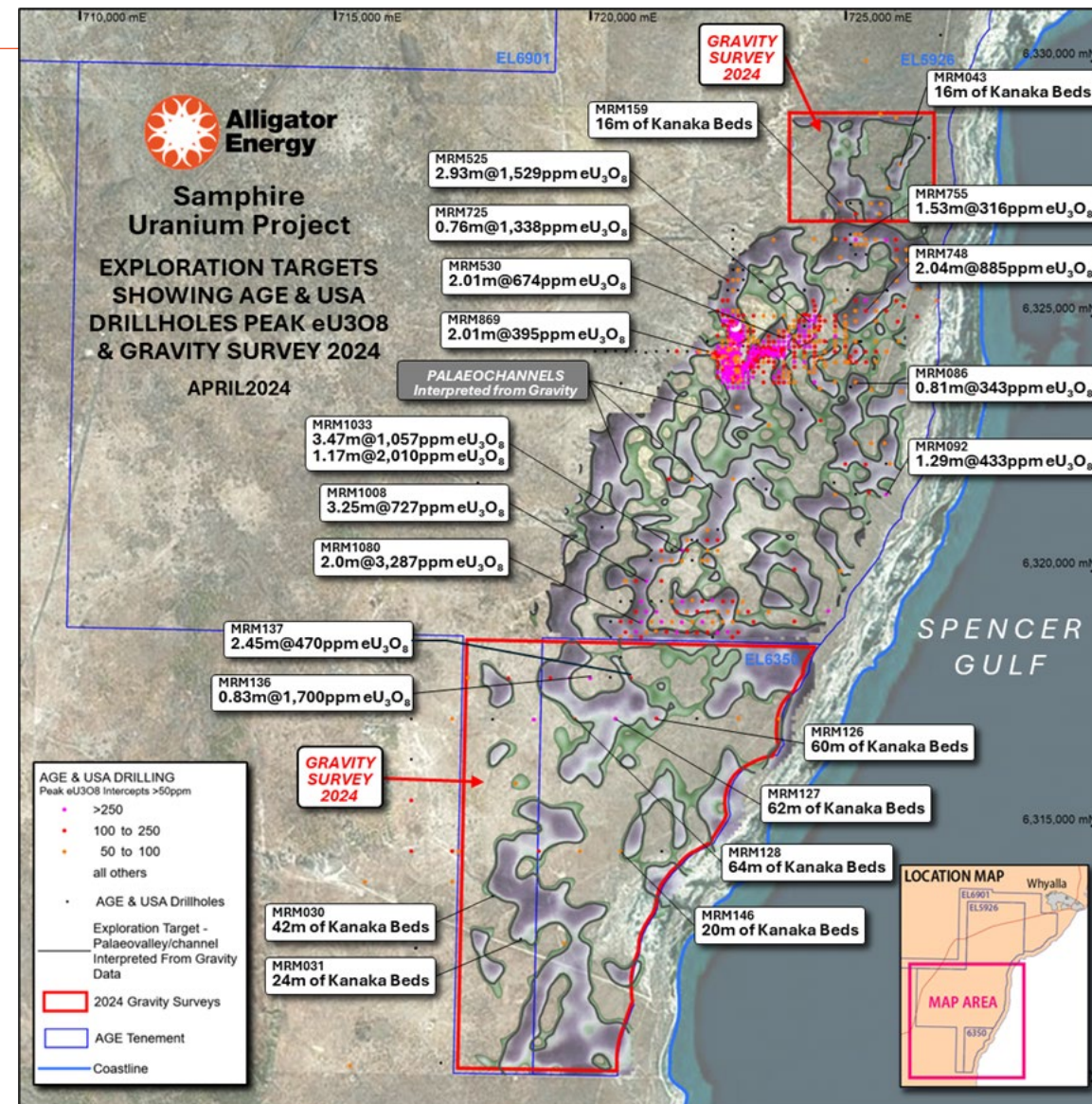




Further Extensions outside the Exploration Target Range Envelope

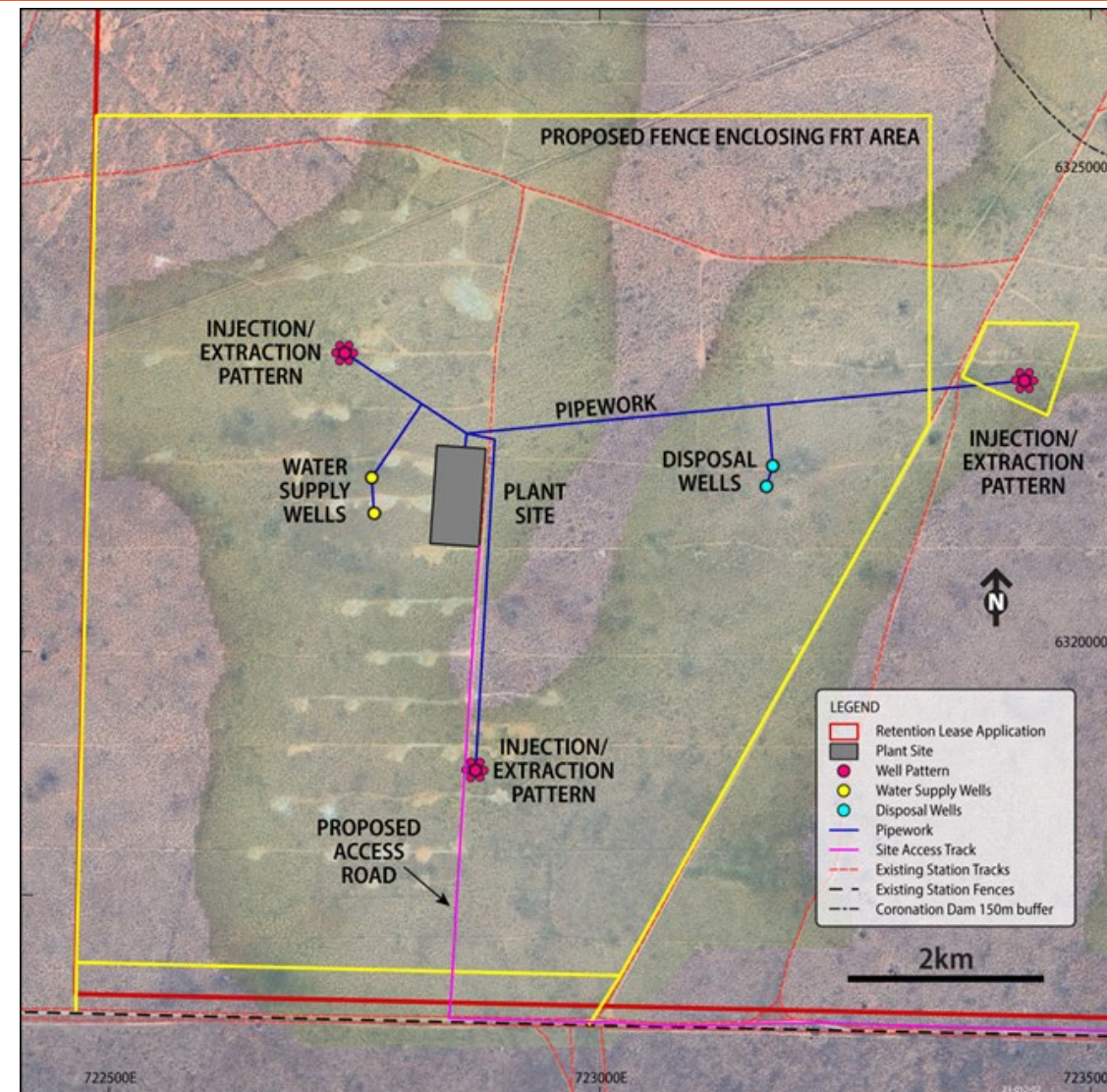
Recent Ground Gravity Survey- April 2024

- Data shows outstanding continuity of the Samphire palaeochannel system by 34 lineal km's.
- 50% increase to the existing 64km of palaeochannel strike length.
- Historical drillholes confirm that extensions contain the same thick sequences of Kanaka Bed sands which host the Blackbush Mineral Resource .
- Multiple historical drillhole intersections (above 250ppm eU3O8 cutoff) confirm that uranium is ubiquitous throughout this system.
- 72% (over 70km) of the prospective areas of the entire Samphire palaeochannel system remain completely untested by drilling.
- Significant potential for new discoveries and resource growth in the Project area.



Samphire Uranium Project – Field Recovery Trial (FRT)

- Field Recovery Trial (FRT) construction targeted for Q4, pending regulatory approvals. Plant full fabricated and delivered to site.
- In operation for 3-4 months and consists of three producing well patterns and a containerised pilot plant.
- FRT is designed to confirm key parameters and marks an important step toward development.
- Parameters to be assessed include in-situ chemistry, hydrogeology, uranium recovery, reagent usage, and other environmental and economic factors.
- Data and learnings further de-risk the Project and provides the necessary inputs to a full feasibility study and Mining Lease Application during 2025.



Samphire Uranium Project – Field Recovery Trial Plant

- Fabrication of the containerised FRT processing plant complete, factory acceptance testing complete and now delivered to site.
- Post completion the plant will be transported to Whyalla ahead of securing the necessary approvals to conduct the trial.
- Scope of work for on-site assembly being prepared for quotation from Whyalla-based construction contractors/businesses.
- Commissioning and operating plans are under development for initiation.
- Post-FRT and subject to further testing, well infrastructure and plant removed, and area rehabilitated – pilot plant available for future satellite field testing.

Pilot plant layout



Ion Exchange Module



Wellhouse Module (pipe room)



Delivered to site



Exploration projects



NT, AUSTRALIA

**Alligator Rivers
(ARUP)**
High Grade U

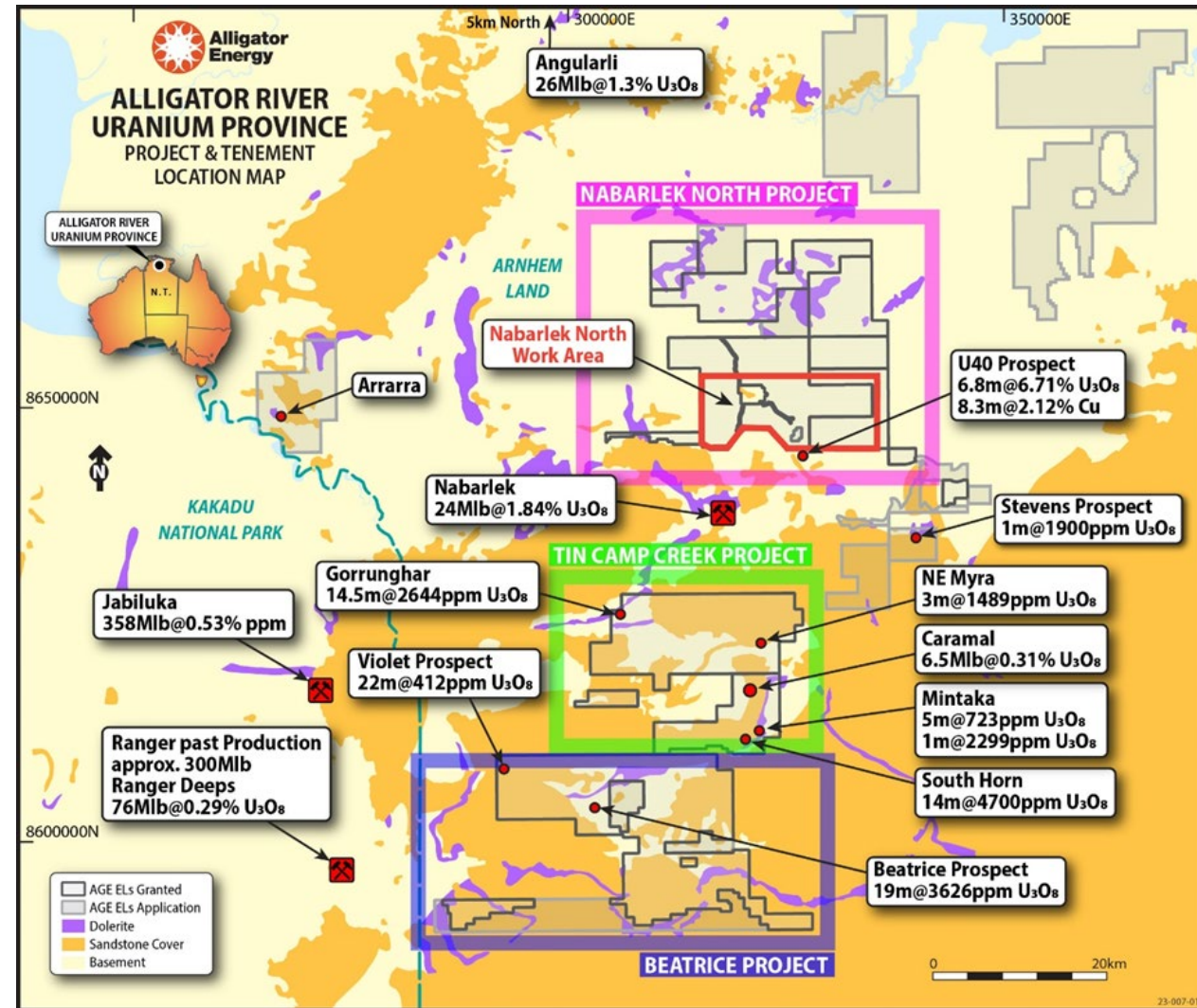
SA, AUSTRALIA

**Big Lake
(Cooper Basin)**
ISR style U

Alligator Rivers Uranium Province, NT

- Three projects: Nabarlek North, Tin Camp Creek and Beatrice, in Australia's premier **high-grade** uranium province.
- Province is host to existing high-grade deposits including Jabiluka (358Mlb @ 5,300ppm U₃O₈).
- Multiple uranium targets in well-defined regional uranium bearing zone including the Caramal Resource 6.5 Mlbs U₃O₈ @3,100ppm.
- Nabarlek North is the current focus of exploration program – including northerly extensions to the U40 Prospect*, based on 2023 results (AGE and 3rd party).
- A small field program will be carried out on the Tin Camp Creek project in 2024 to revisit preferred targets for future work.

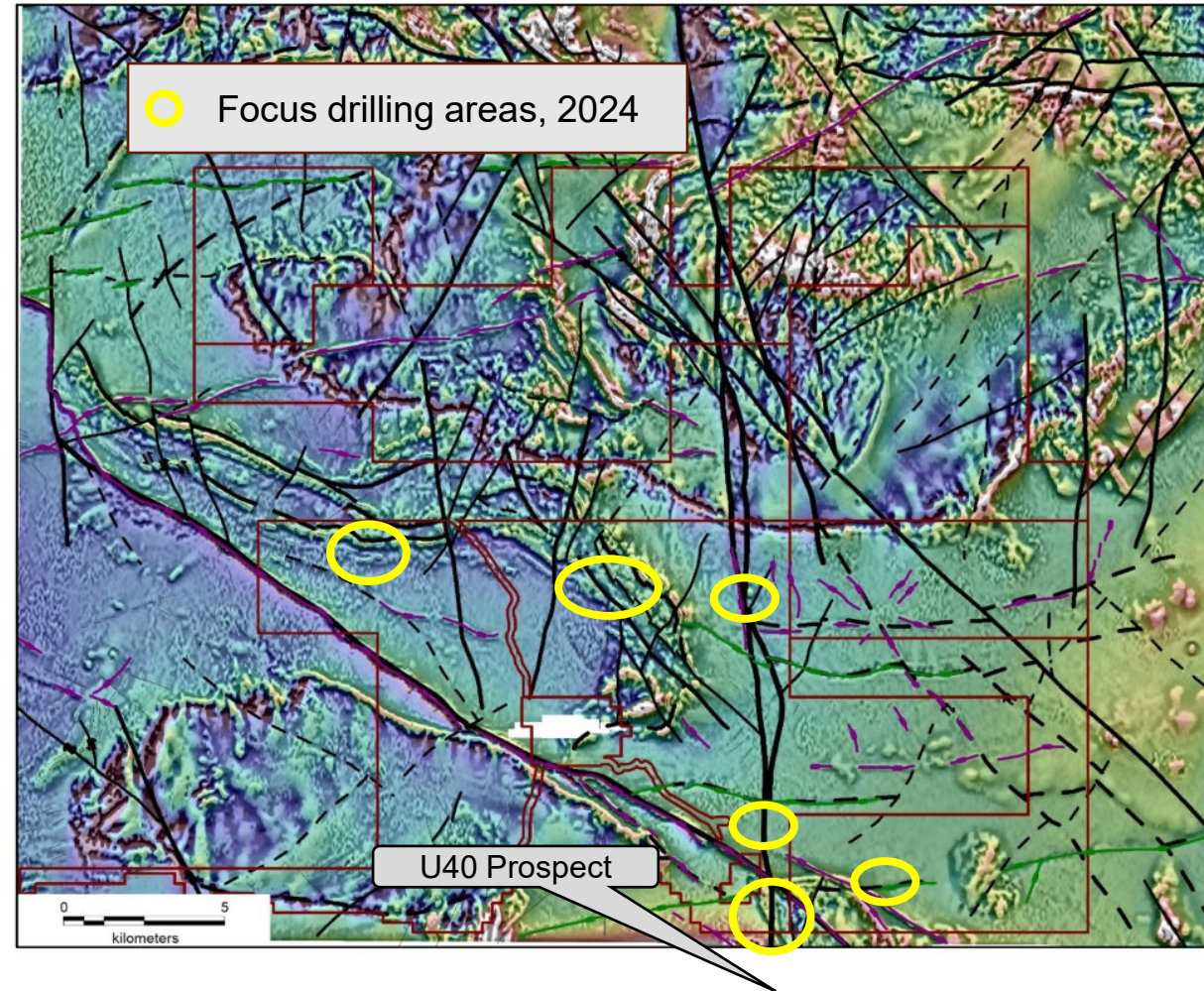
* Includes 6.3m at 7.23% U₃O₈ and 8.3m @ 2.12% Cu (Uranium Equities Ltd now DevEx Resources Ltd release – 4 October 2017).



Alligator Rivers Uranium Province, NT

2024 Work Program at Nabarlek North:

- New high resolution airborne magnetic / radiometric survey to better define key structures and host stratigraphy across the entire tenure (*completed July 2024*)
- Reconnaissance mapping of outcrop throughout northern half to 'truth' regional stratigraphic knowledge and tie geophysical data.
- An RC drilling program of ~ 25 holes with an average depth of 150 m focussed on 5 – 6 areas across the tenement (*commenced August 2024*).
- Includes further work at U40 North – to follow up last year's intercept and 'chase' system to the north.
- Another two RC targets picked up from 2022 – 2023 sampling program
- Drilling / geophysics programs co-funded with NT Govt as part of their 2024 'Resourcing the Territory' Program

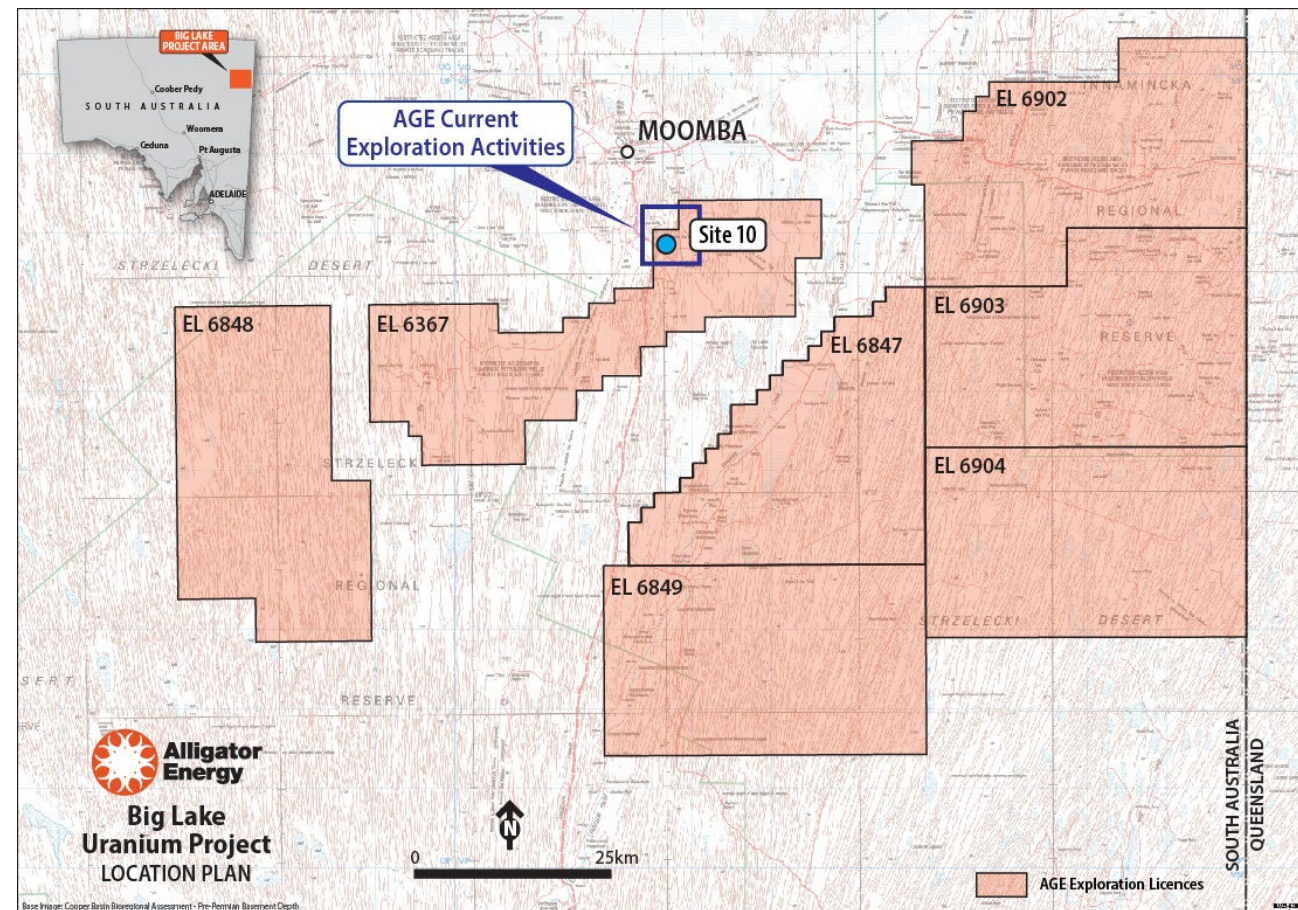


Big Lake Uranium Project, SA

- Overlies Cooper Basin in NW SA – unexplored for uranium despite geological analogies to existing world-class ISR fields in hydrocarbon basins in Kazakhstan, Wyoming and Texas.
- Several potential uranium sources including; weathering / leaching of underlying ‘hot’ granite suite or distal migration of uranium bearing fluids toward basin depo-centres.
- EM results and analysis of publicly available 2D seismic data indicated potential presence of paleochannel systems.

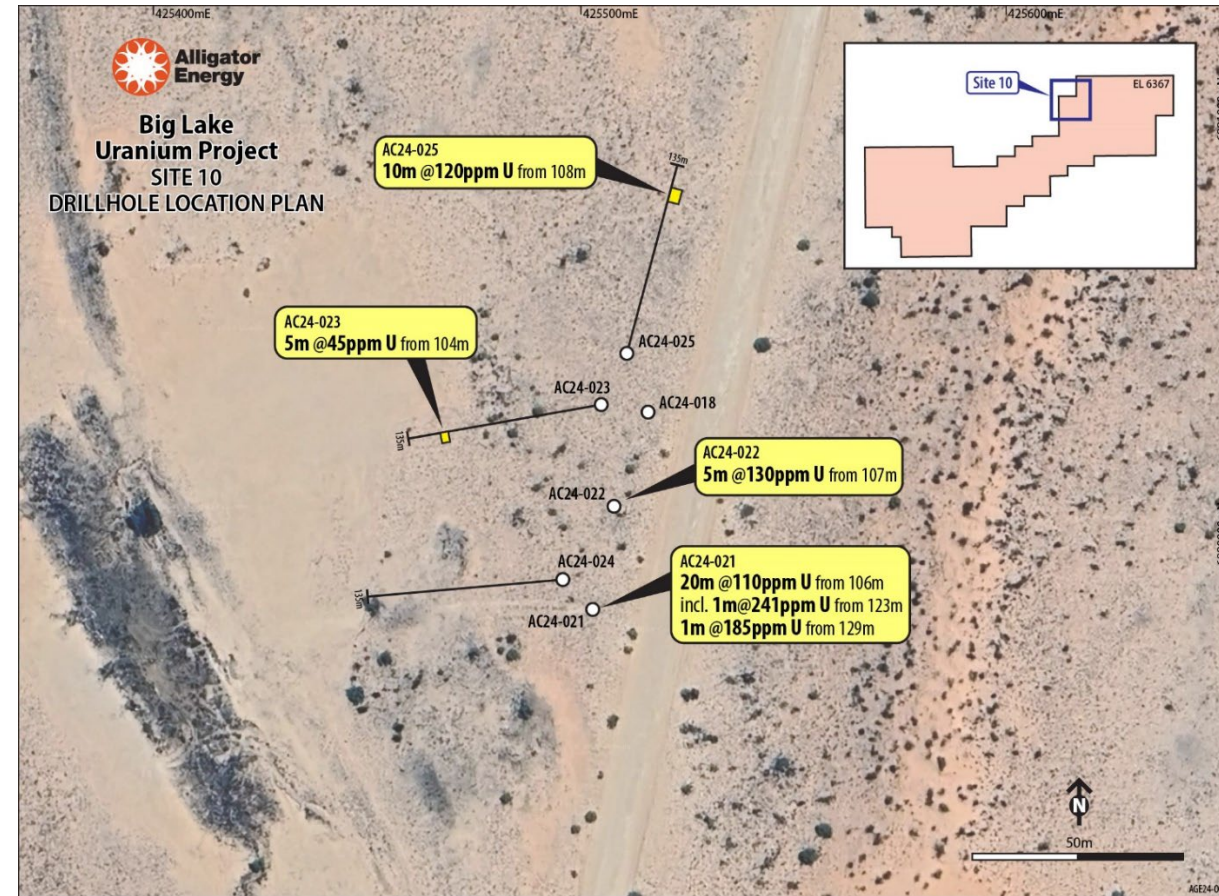
2024 Big Lake Drilling Program:

- Interpretation of seismic and other datasets towards a full 3D basin model across the entire basin.
- Selection of ~20 drill sites to test stratigraphy, paleochannel model and qualities of U-trap rocks
- Traditional Owner clearances for drill lines.
- Engagement with other key stakeholders
- Remote logistics considerations, including access to fuel, water, accommodation and emergency support








Big Lake Uranium - Inaugural Drilling Program Discovery Success

- Alligator's drilling program intersected significant thicknesses of anomalous uranium mineralisation within interbedded palaeochannel sand units in the Namba Formation.
- Discovery is first proof of concept that significant uranium is present within Lake Eyre basin sediments above the hydrocarbon-rich Cooper Basin within potentially In-Situ Recovery (ISR) amenable host and depths.
- Initial preliminary estimates of the tenor of uranium grades include:
 - AC24-021 20m @ 110 ppm U from 106m (inc. 1 m @ 241 ppm U from 123m)
 - AC24-022 5 m @ 130 ppm U from 107 m
 - AC24-023 5 m @ 45 ppm U from 104 m
 - AC24-025 10 m @ 120 ppm U from 180 m
- The indicative grade-thickness of two intersections is at or near the economic cut off used at the Company's Samphire ISR uranium project near Whyalla, SA.
- Indicative uranium grades found in these holes are approximately 10 to 50 times background levels.



Big Lake Uranium - Next Steps: 2024 - 2025

- All samples of mineralised horizons have been sent for detailed elemental analysis. Results expected within 4 – 6 weeks (~ end September / October).
- Full analysis of data, including refinement of the geological model across the basin.
- Sample analysis for evidence of oxidation/reduction front and mineral migration vectors to confirm and refine trap /paleochannel model.
- Detailed review of petroleum wells across the most prospective sections of the basin looking for equivalent signs of intercepts based on litho and gamma logs.
- Commencement of government approvals and initiate heritage clearances for follow-up drilling, early 2025.
- Considerations for another ~ 5 – 10 target areas (including follow-up on Area 10) possibly with mud-rotary drilling to enable wireline logging (gamma, sonic, PFN) and better quality of sample return.
- Work towards drilling program over 2 months starting Q1 of 2025

Requirements	AGE interpretation	Status
 Source rock	▶ Granite Suite present on edge of Cooper Basin	✓
 Permeable sedimentary sequences	▶ Targeting Eyre and Namba Formations	✓
 Hydrocarbon reductants <small>(Kazak, Wyoming, Texas)</small>	▶ Cooper Basin - known oil and gas field	✓
 Migration of uranium bearing fluids	▶ Seismic interpretation of paleochannels	AGE currently drill-testing (program commenced May 2024)
 Presence of uranium observed	▶ TC Development / Oil and Gas Operators	U occurrences - 'sniffs' noted to date

Investment into EnviroCopper Ltd ISR copper, SA

- Alligator expanded energy minerals interests with \$0.9M strategic investment in private group, EnviroCopper (ECL), with option up to 50.1%.
- This investment and resultant collaboration is extremely complimentary to our existing and substantial in-house ISR expertise.
- Provides exposure to In-Situ Recovery ('ISR') copper project portfolio (over 200kt Cu resource) and experienced ISR and research team.
- Advancing ISR trials at Kapunda copper project - similar plans for Alford West copper project. BHP funding field trials at Kapunda for IP access.
- ISR successfully used to extract copper in projects in Australia and the US - offers distinct advantages and environmental benefits.
- ECL has undertaken significant exploration, R&D and approvals for test work into ISR of shallow fractured rock aquifer hosted oxide copper deposits.



ESG in practice: Working with Stakeholders

- We aim to add value in all of our decision-making for **shareholders**.
- We wish to provide an engaging, challenging, enjoyable and respectful workplace for our **employees**.
- We respect the rights of **landowners** and **communities** and seek to collaborate for our mutual benefit.
- We respect the cultural heritage and connection to country of **Traditional Owners** and wish to create mutually beneficial opportunities.
- We aim for a low impact on the **environment**, through innovation, use of latest technology, and responsible land management techniques.



Our aim is to discover, source and economically extract these needed commodities with an innovative approach, with either zero or minimal impact, and with positive value and experience for our stakeholders and communities.

Samphire Project

- Completed remaining historical rehabilitation during project acquisition
- Ongoing drill hole rehab – targeting lifting of bush density to double the existing
- Early and ongoing engagement with pastoralists, Indigenous group, Whyalla community
- Working with pastoralists for weed and pest control, and with rangeland improvement initiatives
- Early initiatives for low impact site facilities, sustainable energy opportunity

Alligator Rivers

- Over 40 indigenous employees on drilling and exploration programs over 10 years
- On country work and support for indigenous ranger groups – even when not exploring
- Nabarlek North agreement – potential for TO groups to become 25% partner
- Drilling at Nabarlek North in 2022/23– Indigenous owned and operated drilling company
- Exploration rehabilitation after each program

Big Lake Uranium

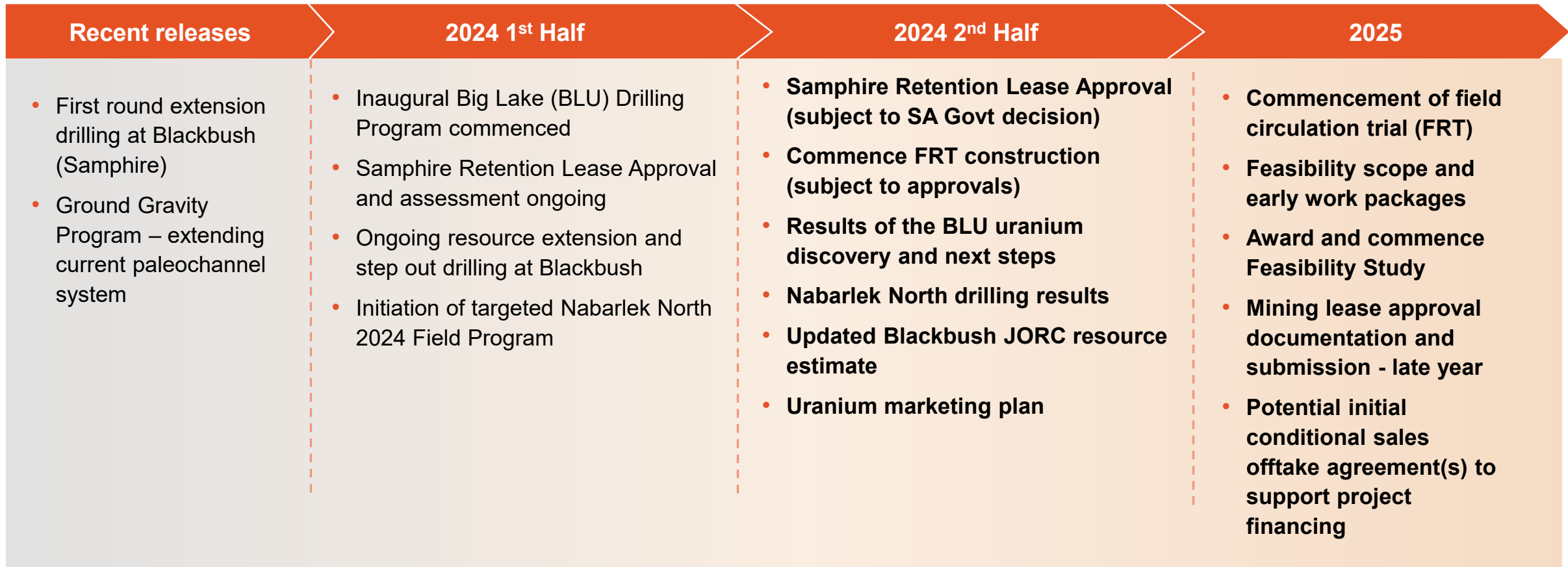
- Full draft agreement with YYTLOAC indigenous group
- Engagement and cultural clearance programs
- Direct indigenous employment from first program in 2024



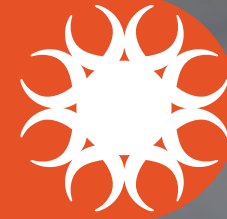
Samphire Uranium Project: Opportunity for a near carbon-free energy project

- Lower power consumption as ISR method has no rock / material movement, nor crushing / grinding of rock. Renewable power with backup may be adequate?
- Distance to Whyalla may allow all electric vehicles, light trucks, cranes etc to be used?
- Advances in battery on-highway prime movers may support the level of logistics and product transport needed?
- This potential opportunity aligns with SA Government Hydrogen Hub for Whyalla region and extensive potential renewable projects.
- We will be scoping this opportunity in parallel with our feasibility and economic studies.





ASX:AGE



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Energy**

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