ASX: AGE

Samphire Uranium Project

SOUTH AUSTRALIAN EXPLORATION & MINING CONFERENCE – DECEMBER 2022

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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. Andrew Vigar who is a Fellow of the Australasian Institute of Mining and Metallurgy and the Australian Institute of Geoscientists. Mr. Vigar is a non-executive director of 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. Vigar consents to the inclusion in this release of the matters based on his information in the form and context in which it appears.

Alligator Energy – Vision and working with Stakeholders

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Alligator Energy is a responsible and progressive uranium and energy metals explorer and emerging producer

We look at our business activities through the eyes of our stakeholders:

- From a shareholder viewpoint we aim to add value in all of our decision-making
- From an employee perspective we wish to provide an engaging, challenging, enjoyable and respectful workplace
- From a landowner viewpoint we respect your rights and seek to collaborate for our mutual benefit
- From a traditional owner viewpoint, we respect your cultural heritage and your connection to country, and wish to create mutually beneficial opportunities
- From an environmental viewpoint we aim for a low impact through innovation, 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.

Alligator Energy – Strategy

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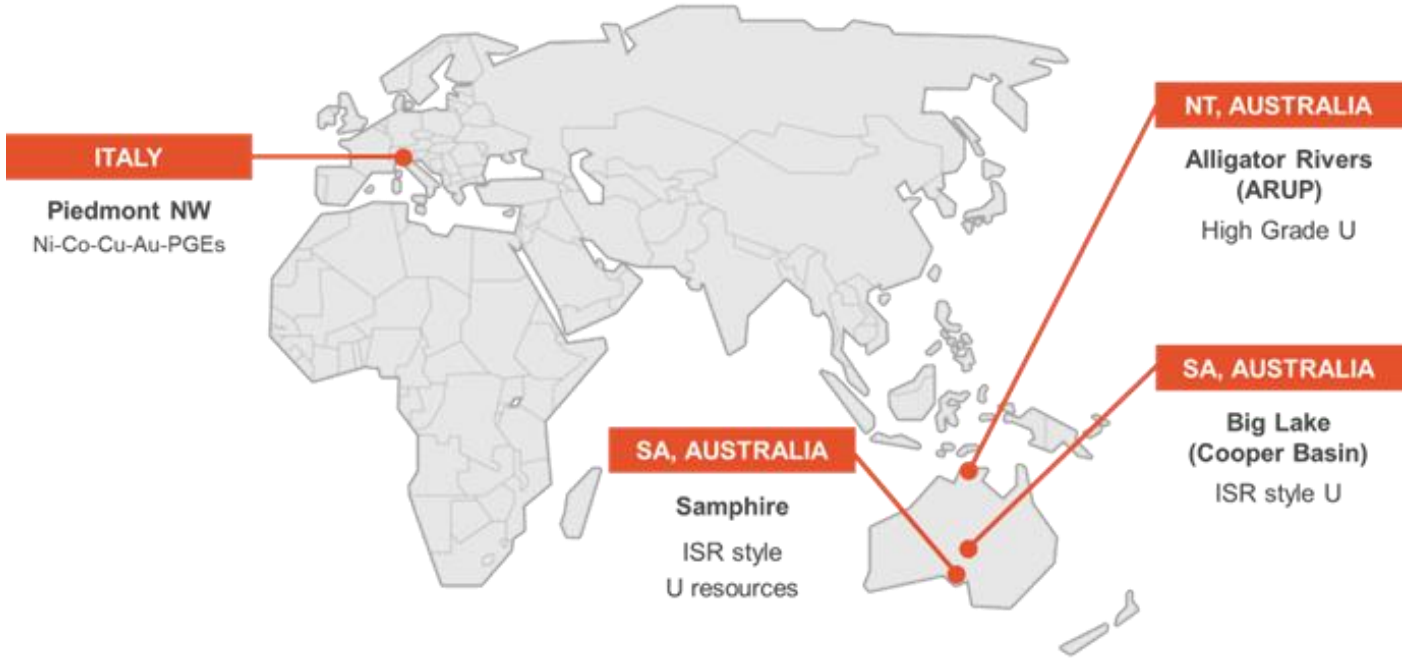
- **Advance Samphire Uranium Project through resource enhancement, evaluation, field recovery trial and pilot testwork, approvals and pre-development into production**
- Identify and test highly prospective exploration targets in the Alligator Rivers Uranium Province & Big Lake Uranium assets
- Value add to its Ni Co Cu Piedmont Project in northern Italy through on-ground work and exploring strategic partnership investment
- Commence evaluation on existing tenements for strategic energy related minerals and opportunities
- Continue to actively evaluate acquisition opportunities of further uranium and energy mineral assets – advanced and innovative



- **Strategic relationship with Traxys who are providing uranium marketing services for future uranium production, long-term offtake contracting, project development financing and assist in uranium project acquisition opportunities*[1]**

* Refer to numbered references on slide at end of presentation

Uranium Market Update

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Key Uranium and Nuclear market related events over the past year

- Uranium spot price US$43.50 per lb U3O8 at start of year– currently around US$50.25 per lb.
- Continued Sprott Uranium Fund buying, Russian invasion of Ukraine and associated sanctions drove temporary rally to over US$60 per lb mid year.
- European Commission included nuclear power in its sustainable finance taxonomy.
- Multiple European and other countries announced plans to reverse nuclear phase out policies, initiate plans for new reactors, including SMR's.
- Inflation Reduction Act passed through US Congress - tax credits and enhanced financial access for nuclear generation, Russian imports of uranium and enriched product to zero over three years.
- Russian nuclear fuel purchasing phase-out leading to shortages in global enrichment and conversion markets - expected to flow through to uranium.
- **Quantum of LT contracting for uranium markedly increased, with 106 Mlbs contracted forward in 53 deals this year.**
- International Atomic Energy Agency increased its high case nuclear forecast by 10% through 2050
- Cameco purchase of Westinghouse - becoming further vertically integrated.
- M&A activity amongst uranium companies increased
- Australian Federal Senators introduce a bill to lift the nuclear power ban

Uranium Spot Price – Nov 21 to Nov 22 - Source: Trading Economics

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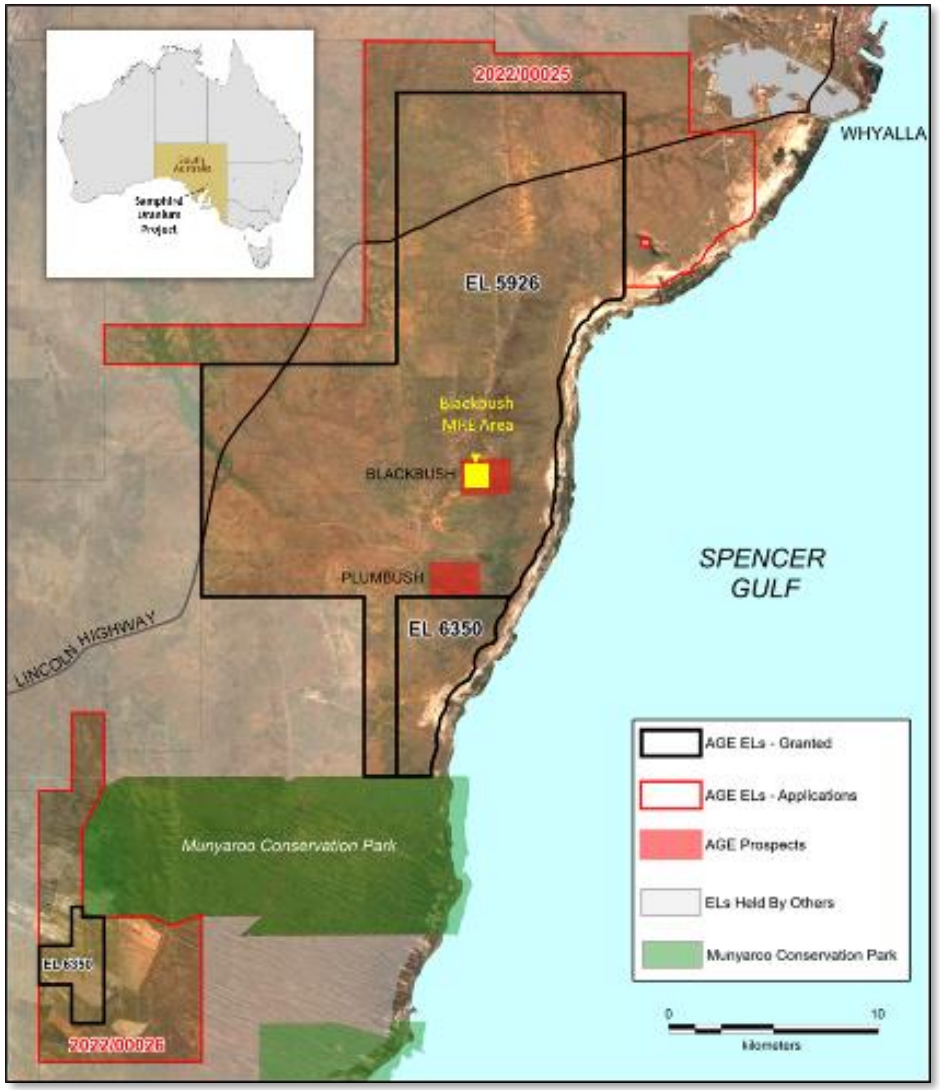
Samphire Uranium Project Overview

- Mineral Resource of **14.8Mlbs U_3O_8 at 250ppm cut-off, 666ppm average grade**
- Coherent multi-level high-grade zones with cumulative strike length of >2.7km and width between 300-450m
- Multiple open positions not adequately tested – first drill program highlights:

Hole ID: BBRM22-	Metres @ pU_3O_8 %	pU_3O_8 ppm	Depth from (m):	GT
021	3.44m @ 0.854%	8,540	56.68	29,068
026	4.00m @ 0.706%	7,060	63.00	28,240
020	4.24m @ 0.414%	4,140	61.23	17,554
034	4.35m @ 0.313%	3,130	69.10	13,616

0.5m minimum thickness, >0.025% pU_3O_8 (250ppm pU3O8), internal dilution 0.25m, GT= grade(ppm) x thickness(m)

- Shallow (<85m depth) uranium mineralisation in sands amenable to ISR
- Strong potential for a lower development cost profile
  - Close to Whyalla and service providers, close to infrastructure and coms
  - Competitive wellfield drilling development costs due to shallow nature of the deposit
- Significant local & district-scale exploration potential



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Samphire Project – Initial Mineral Resource at Blackbush

Strong Resource Growth Potential, Extension Drilling Commenced

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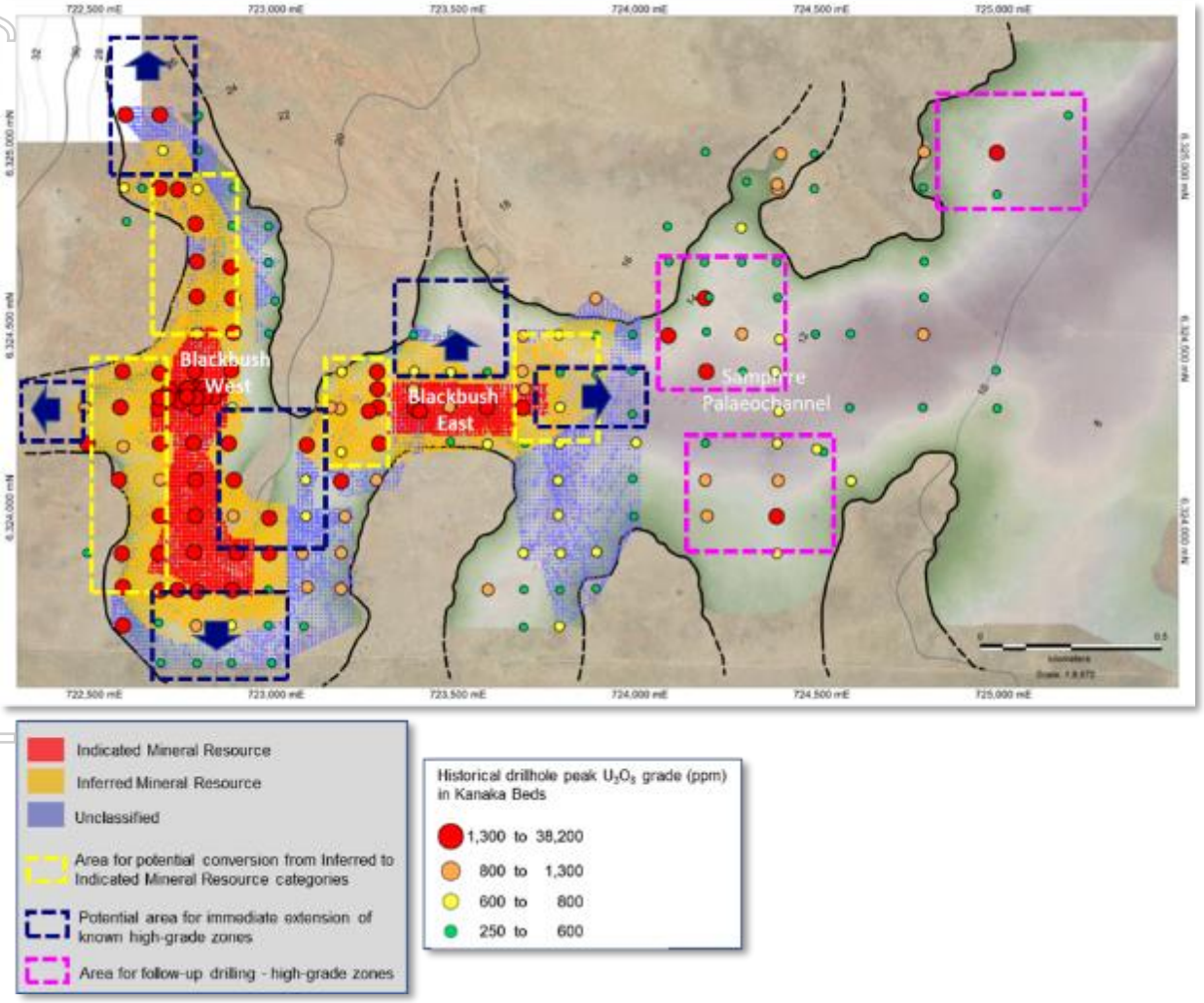

- Mainly coffinite uranium mineralisation
- Historical drilling by UraniumSA, plus AGE undertook 14 sonic cored holes and 39 rotary mud holes
- **Assay data, PFN, gamma, spectral gamma data**
- Further conversion of resource from Inferred to an Indicated category, plus extensional drilling – underway on a 100+ hole program
- Updated resource calculation underway
- Follow-up extensions of the known high-grade zones where mineralisation is not closed off
- Test areas where historical data flag potential for additional accumulations of uranium mineralisation

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Samphire Uranium Project – lithologies and mineralised horizons

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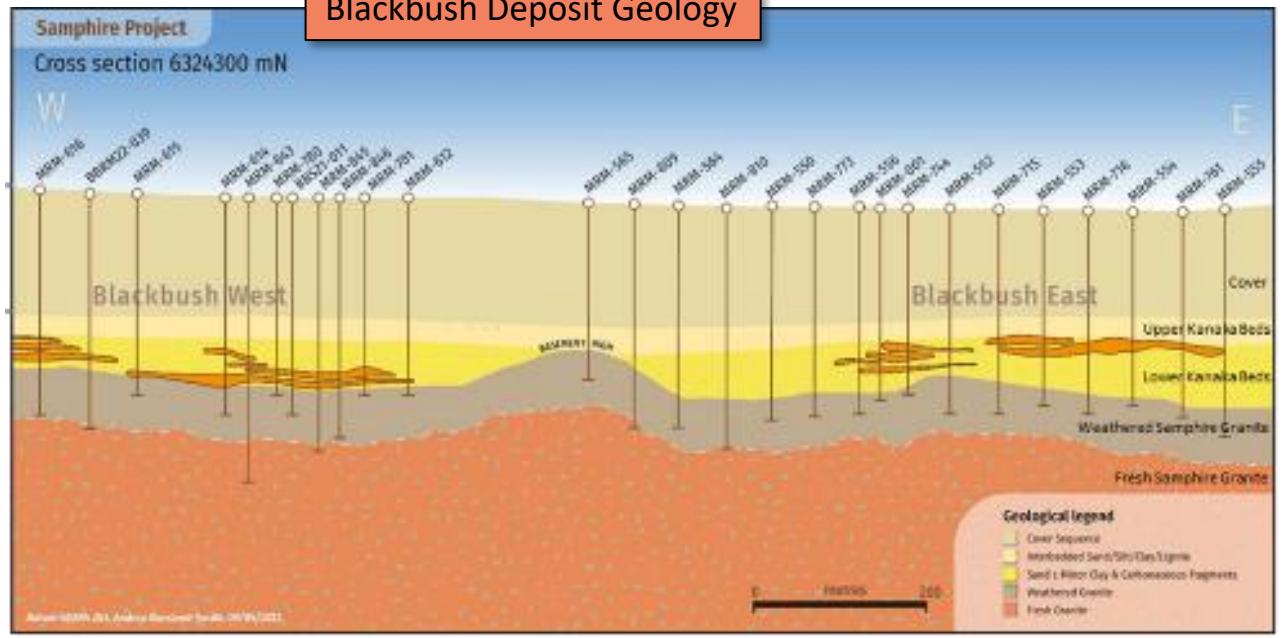
Blackbush Deposit Geology



- Kanaka Beds (ISR Amenable)
- Host to Samphire Uranium Mineralisation

ANSTO carrying out leach and extraction testwork – final report imminent – results have been very consistent with our expectations

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Samphire Project – Extension Drilling Commenced

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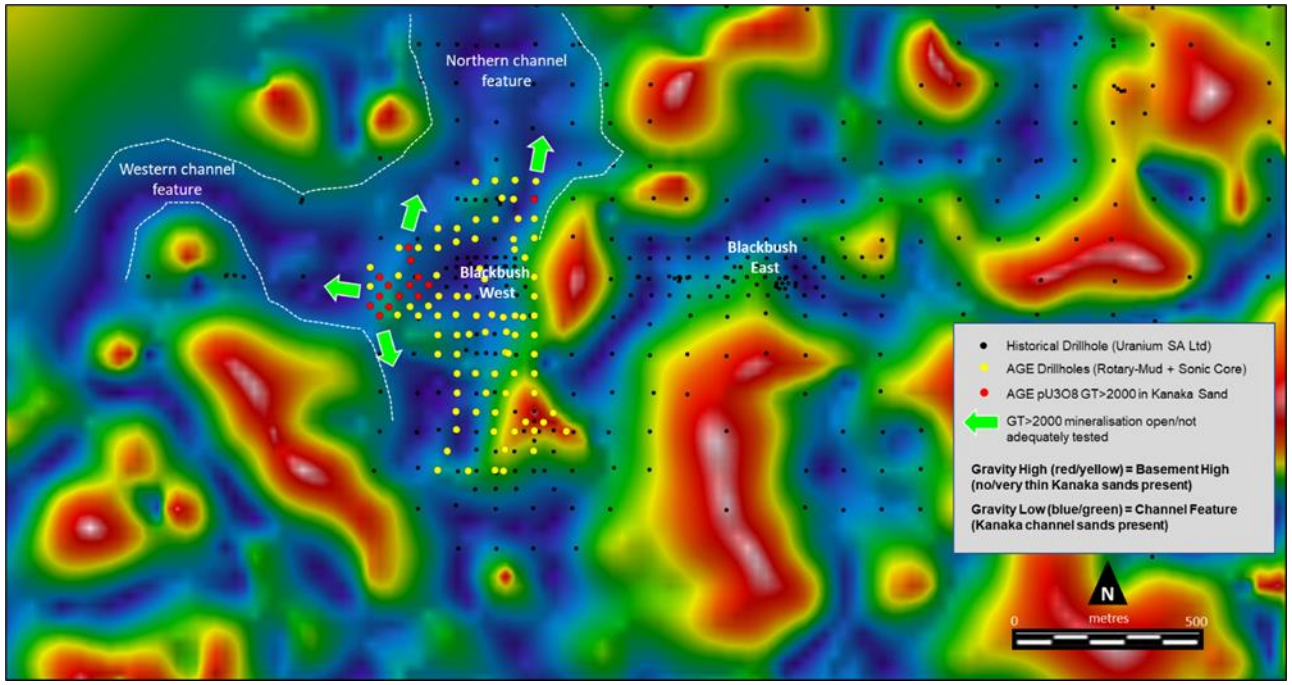
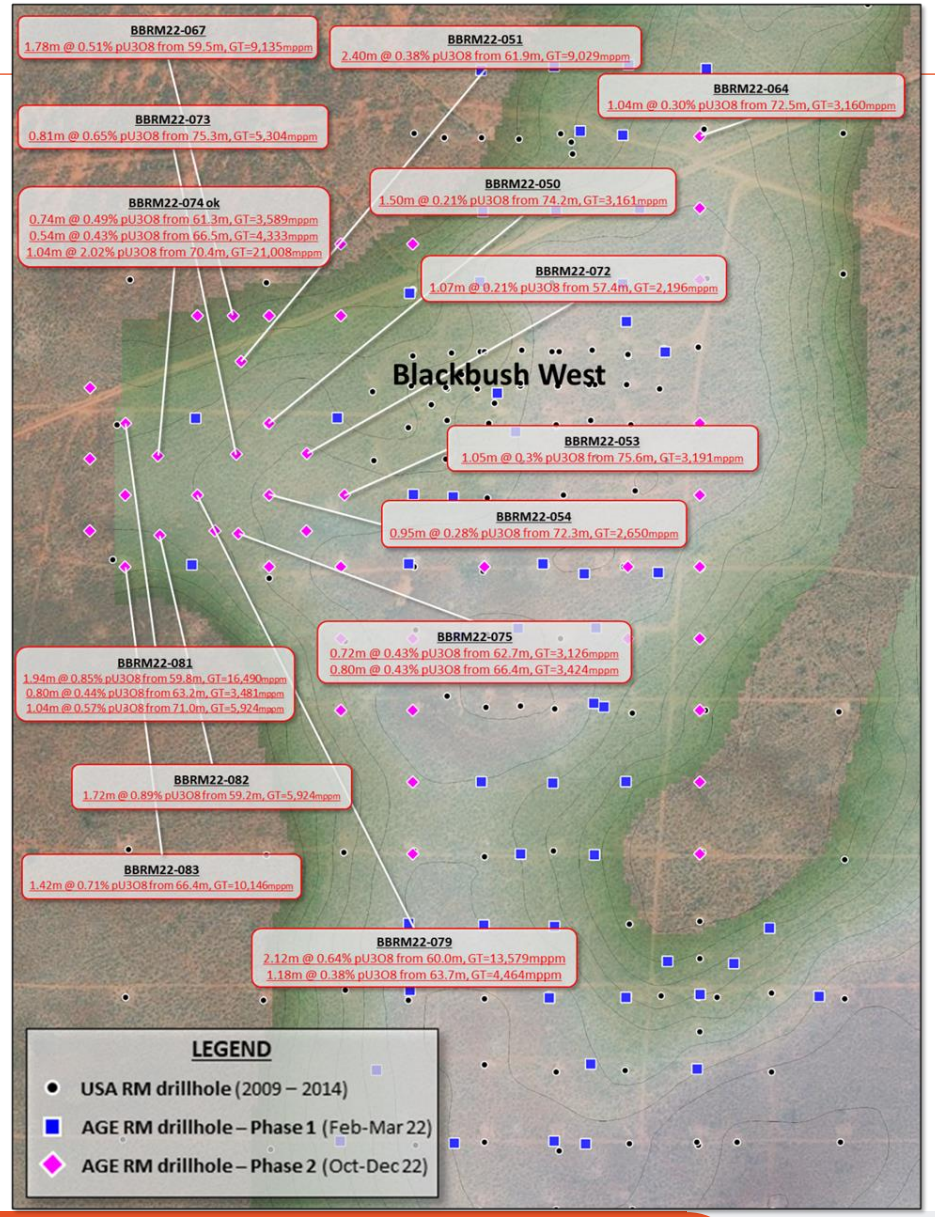
Highlights of latest drilling – highest grade results found to date

- 1.04 metres at 2.02% (20,200ppm) pU_3O_8 from 70.4 metres (GT 21,010)
  - *Including 0.5 metres @ 3.54% pU_3O_8 from 70.6 metres (GT 17,700)*
- 2.12 metres at 0.64% (6,400ppm) pU_3O_8 from 60.0 metres (GT 13,570)
- 1.94 metres at 0.85% (8,500ppm) pU_3O_8 from 59.8 metres (GT 16,490)
- 1.72 metres at 0.89% (8,900ppm) pU_3O_8 from 59.2 metres (GT 16,490)
- 1.42 metres at 0.71% (7,145ppm) pU_3O_8 from 66.4 metres (GT 10,150)





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The Samphire Uranium Project

Local and district-scale potential

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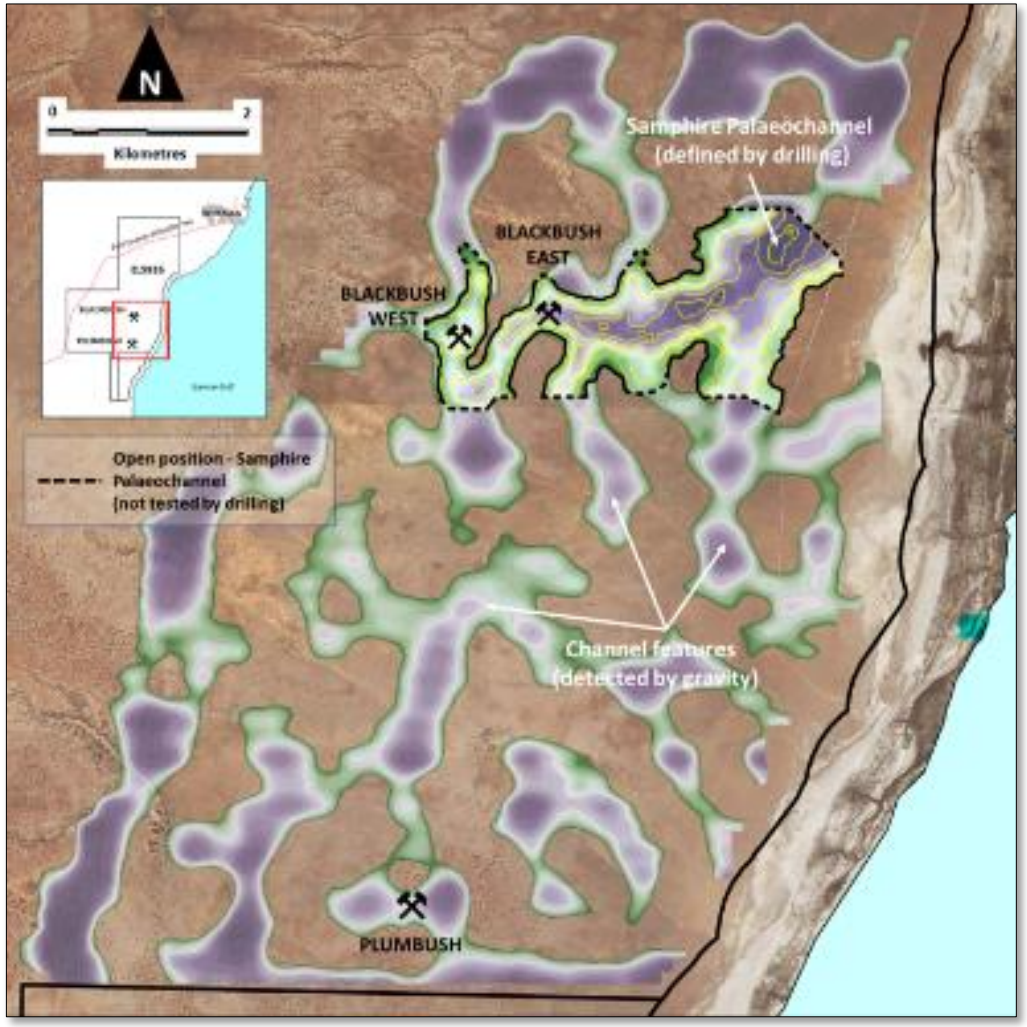
- Walk up drill targets for extension of known mineralisation at Blackbush
  - Open positions not adequately tested by previous drilling show potential for extensions of the known mineralisation
  - 100+ hole infill and extensional drilling campaign underway
- Plumbush not adequately tested nor its relationship to Blackbush known
- Regional ground gravity shows significant palaeochannel extensions
  - Immediate focus for near-future drill programs
  - Potential for palaeochannel system to extend north and south of the current defined area
  - Potential for additional satellite deposits
- High-resolution ground gravity acquired September 2022 to improve palaeochannel resolution.



Regional filtered ground gravity showing potential palaeochannel extensions and Blackbush palaeochannel (defined by drilling).

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Samphire Project: Planned Activities and Workflow – 2022/23

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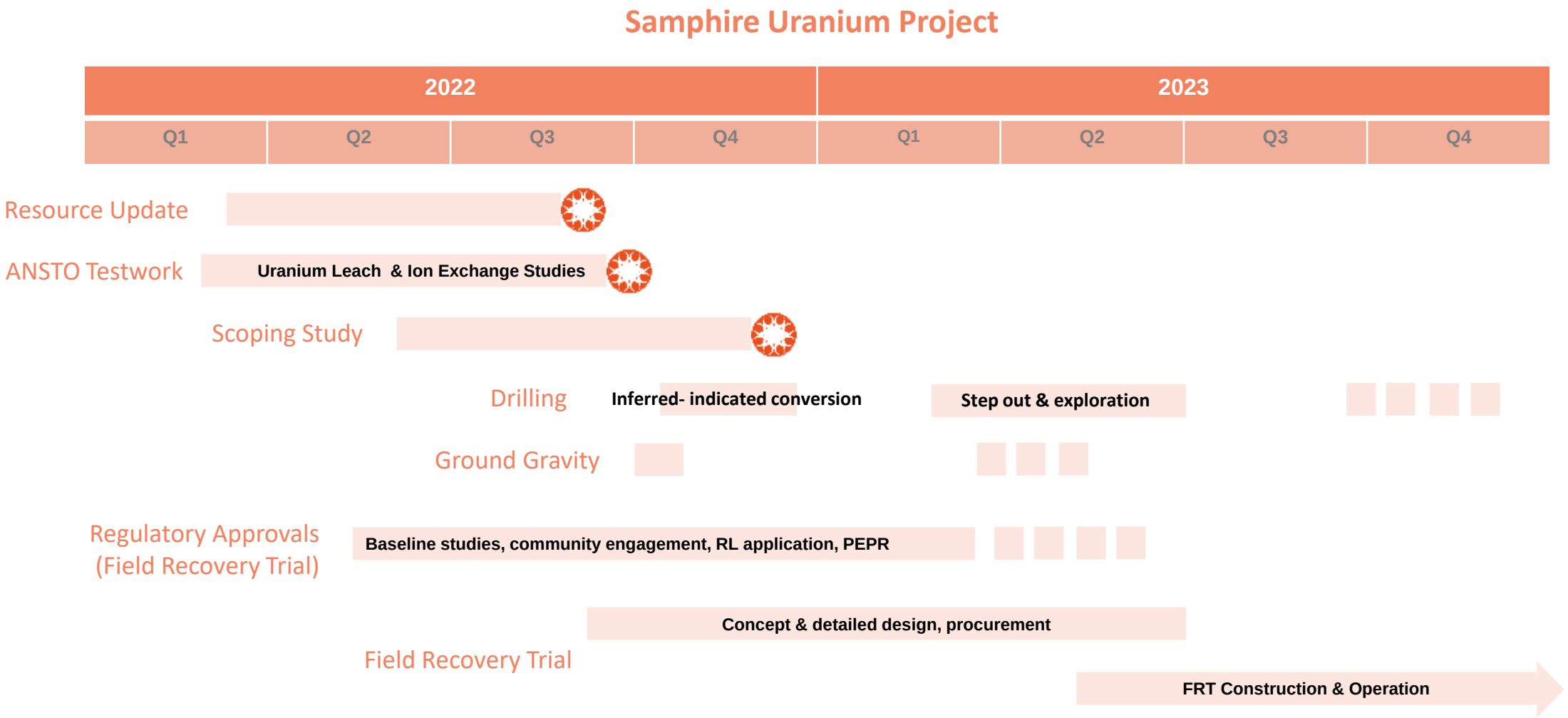

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The Samphire Uranium Project - Status

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2022 Achievements

- ✓ Historical rehab of old drilling areas prior to any work commencing
- ✓ First sonic core and rotary mud drilling program at Blackbush
- ✓ Engagement with pastoralists on rangeland improvement and access for future work
- ✓ Work area clearances undertaken with local Traditional Owners
- ✓ Initial Mineral Resource Estimate targeting in-situ recovery of 14.8M at a 250ppm cut-off and average grade of 666ppm
- ✓ ANSTO uranium leach and recovery testwork – establishment of Scoping Study models
- ✓ Commenced Federal and State approvals for FRT, plus design engineering for FLT
- ✓ Drilling for next resource upgrade underway

Proposed plans for late 2022 / into 2023

- Complete infill and extensional drilling and preparation of updated Mineral Resource Estimate for Blackbush deposit.
- Completion of ANSTO testwork & Scoping Study for the Blackbush deposit.
- **Continuation of State/Federal Government approvals for a RL to allow for the 2023 Field Recovery Trial at Blackbush.**
- **Commencement of planning and regulatory approvals for 2023 development and exploration programs for extension of the Blackbush deposit and exploration in the wider Samphire palaeochannel system.**
- Ongoing recruitment to enhance and develop the Samphire Project technical team.
- Continue work with TO's and landholders to secure access outside of the Blackbush area for further geophysical surveys and drilling.
- Regional gravity survey south of Plumbush deposit for wider exploration

Alligator Energy - ESG in practice

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Alligator Rivers:

- Over 35 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 – Indigenous owned and operated drilling company
- Exploration rehabilitation after each program

Samphire Project

- Completed remaining historical rehabilitation during project acquisition
- Ongoing drill hole rehab – targeting lifting of bush density to double existing
- Early and ongoing engagement with pastoralists, Traditional owner group, Whyalla community reps
- Working with pastoralists with rangeland improvement initiatives
- Early initiatives for low impact site facilities, Northern Water, sustainable energy

Big Lake Uranium

- Full draft agreement with YYTLOAC indigenous group being finalised
- Direct indigenous employment from first programs

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Thanks to our shareholders and Board, indigenous groups, communities, and particularly our employees

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Samphire Project – Initial Mineral Resource at Blackbush

Targeting In-Situ Recovery – September 2022

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Initial High Grade ISR Mineral Resource Estimate of 14.8Mlbs at 666ppm U_3O_8

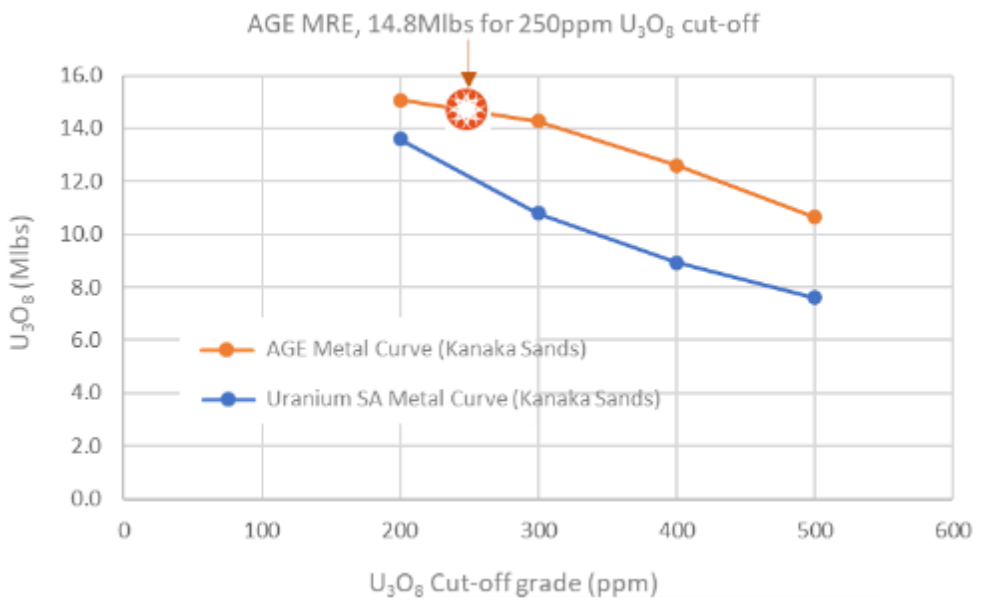
- Combined Inferred and Indicated from **10Mt @ 666 ppm U_3O_8 at 250ppm cut-off grade** for the Blackbush Deposit (Blackbush)

Higher Grade and Higher Resource Confidence from AGE's work

- Ave grade of 666ppm U_3O_8 – increase from previous lower cut-off global mean grade of 230ppm U_3O_8
- Uranium metal content increased by 25%
- Lifted 6Mlbs into the Indicated Mineral Resource category

Strong Resource Growth Potential, Extension Drilling Commencing

- Further conversion of resource from Inferred to an Indicated category
- Follow-up extensions of the known high-grade zones where mineralisation is not closed off
- Test areas where historical data flag potential for additional accumulations of uranium mineralisation.



Uranium metal graph derived from grade tonnage tables from UraniumSA's 2013 MRE and AGE's 2022 MRE.

Blackbush is now on par with several existing and previously operating ISR projects in Australia and the USA.

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ASX References and Statements

Reference	Date	Announcement	Link
0.	31 January, 29 March and 10 May 2022	Alligator Energy – Samphire Drilling Results reported to ASX	2924-02480654-2A1353533 (markitdigital.com); 2924-02503799-2A1365315 (markitdigital.com) and 2924-02520049-2A1373216 (markitdigital.com);
1.	10 May 2021	Alligator Partners with Global Uranium Group Traxys	2924-02372956-2A1297261 (markitdigital.com)
2.	26 February 2020	Narbarlek North tenements to proceed to grant	02206728.pdf (weblink.com.au)
3.	16 December 2020	Samphire Uranium Project – Desk Top Study findings	2924-02322873-2A1270492 (markitdigital.com)
4.	19 April 2012	Alligator announces Caramal resource of 6.5 Mlb U308 @ 0.31%	https://www.asx.com.au/asxpdf/20120419/pdf/425pwnq4grbc7v.pdf
5.	17 May 2022	Piedmont Option Agreement Finalisation	2924-02522295-2A1374286 (markitdigital.com)
6A	9 July 2019	Rediscovered Ni Co province in Italy	2019 07 09 Market Update - Re-discovered Ni Co Cu province (markitdigital.com)
6B.	26 July 2018	Alligator's first Piedmont assays confirm significant mineralisation with grades up to 2.5% Ni and 0.17% Co	https://www.asx.com.au/asxpdf/20180726/pdf/43wsdn8f3tq4l1.pdf
6C.	14 September 2018	Arnhem Land drilling update and further high-grade Ni Co Cu Au assays at Alligator's Piedmont project	https://www.asx.com.au/asxpdf/20180914/pdf/43ybd4j8dtcpy6.pdf
7.	23 May 2022	Big Lake Additional Applications	2924-02523830-2A1375062 (markitdigital.com)
8.	8 April 2011	Maiden Resource Estimate	20 June 2007 (asx.com.au)
9.	8 August 2022	First exploration work commences – Nabarlek North Project	02550741.pdf (weblink.com.au)
10.	1 September 2022	Initial Mineral Resource at Blackbush Deposit Targeting In-Situ Recovery	2022-08-31 Resource-ASX announcement
11.	23 May 2022	Big-Lake Uranium Project – Expanded Footprint	02523830.pdf (weblink.com.au)
12	9 November 2022	Inaugural Alligator Rivers drilling program successfully completed	

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