Alligator Energy

ASX Announcement

1 September 2022

Initial Mineral Resource at Blackbush Deposit Targeting In-Situ Recovery

Alligator Energy (ASX: AGE, 'Alligator' or 'the **Company')** is pleased to announce its initial combined Indicated and Inferred Mineral Resource estimate (**MRE**) targeting In-Situ Recovery (ISR) for the Blackbush Deposit.

Highlights

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

- An ISR Mineral Resource estimate of **14.8Mlbs U_3O_8 at 250ppm cut-off grade** (combined Inferred and Indicated) from **10Mt @ 666 ppm U_3O_8** for the Blackbush Deposit (Blackbush).
- The MRE applies to ISR amenable lithologies only (i.e., the Kanaka Beds), with a cut-off grade of 250 ppm U_3O_8 to identify a potential ISR mineable resource.

Higher Grade and Higher Resource Confidence

Through the additional drilling (50 holes) and validation work undertaken by AGE:

- The average grade of the MRE at Blackbush of 666ppm U_3O_8 has lifted from UraniumSA's (previous owner) global mean grade of 230ppm U_3O_8 and **is now on par with several existing and previously operating ISR projects in Australia and the USA**.
- A favourable increase in the uranium metal content which has increased by approximately 25% at a cut-off grade of 250ppm U_3O_8 (Figure 1).
- The confidence of historical gamma and PFN derived grades was improved which lifted **6Mlbs into the Indicated Mineral Resource category** (Figure 2).

Strong Resource Growth Potential, Extension Drilling Commencing

AGE's **next drilling program of 100 infill and extensional holes** at Blackbush (Figure 3) will commence early October 2022 to:

- target further conversion of its MRE from Inferred to an Indicated category,
- follow-up extensions of the known high-grade zones in the MRE where mineralisation is not closed off, and
- test areas where historical data outside the MRE flags potential for additional accumulations of uranium mineralisation.

Excellent Platform for Upcoming Scoping Study

AGE is pleased with the foundation that the MRE provides for potential project economics with its Scoping Study on track for delivery in early-mid Q4 2022.

Development Work

ANSTO leach and extraction testwork on Blackbush core is well advanced, with encouraging preliminary results so far, and is expected to be complete in mid-late September. A full Scoping Study model and tables are ready to be populated with the MRE and the ANSTO test results once received.

AGE has also secured Daishsat Geodetic Surveyors to undertake a **high-resolution ground gravity survey commencing on September 7, 2022** at Blackbush and surrounds to map the host palaeochannel in detail. This will inform AGE's 2023 district-scale exploration drilling program which is expected to focus on exploring the palaeochannel system south of Blackbush towards the Plumbush area.

The Plumbush area (Figure 4) contains an historical estimate of uranium mineralisation published by UraniumSA[1] and lies approximately ~5km south of Blackbush. Similar to Blackbush, Plumbush is also hosted within the Samphire palaeochannel within the Kanaka Beds. AGE has initiated discussions with the pastoral landowner regarding access for follow-up work.

Greg Hall, Alligator CEO, said: *"This updated initial Mineral Resource estimate on the Blackbush Deposit, at a potentially ISR mineable cut-off grade, is an improvement on the historical resource based on a 250ppm cut-off grade and Kanaka bed mineralisation only. AGE has not included mineralisation in lithologies we believe are not amenable to ISR and have included only Kanaka Beds with known hydrogeological properties in which updated leach tests are being completed.*

When undertaking a scoping study, it is important to focus on a high-quality resource that we believe can be economically extracted. Alligator is positioning itself as a uranium developer with projects that compare favourably on technical characteristics, which it believes creates more value for shareholders.

With around 50 drill holes lifting 6Mlbs into Indicated category, we are about to commence a further program of 100 holes in the Blackbush Deposit which will extend from early October through until next year where we expect to add to this initial Mineral Resource."

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[1] *Refer UraniumSA ASX Release – 8 April 2011 "Maiden Resource Estimate",*
https://www.asx.com.au/asxpdf/20110408/pdf/41xy4brvxj3d3c.pdf

Blackbush Mineral Resource Estimate

The MRE was prepared by AMC Consultants (Perth) using historical UraniumSA Ltd (UraniumSA) drilling data, along with recent data acquired in AGE rotary-mud and sonic drilling campaigns[2]. Historical data was reviewed for quality control purposes by AGE prior to AMC using these data in the MRE. Uranium grades were determined by a combination of chemical assay, downhole prompt fission neutron (PFN) and downhole gamma geophysical sonde measurements.

The MRE (Table 1) has been reported in accordance with the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code) and reports only that portion which has been assessed by AGE as amenable to ISR within the Kanaka Beds of the Samphire Palaeochannel.

Table 1: Blackbush Mineral Resource reported above a 250ppm U_3O_8 cut-off.

JORC Category	Mt	Grade (U_3O_8 ppm)	U_3O_8 Metal (KTonnes)	U_3O_8 Metal (Mlbs)
Indicated	3.9	697	2.7	6.0
Inferred	6.1	647	4.0	8.8
Total	**10.0**	**666**	**6.7**	**14.8**

The model is reported unconstrained and above a 250 ppm U_3O_8 lower cut-off grade for all zones in consideration of potential for recovery by In-Situ Recovery processes.
U_3O_8 grades have been determine by a combination of assay, downhole prompt fission neutron (PFN) and gamma geophysical tool measurements.
Estimation is by ordinary kriging for all mineralized zones.
Density is assigned as 1.8 t/m^3 based on limited testwork.
The model assumes agglomeration of 12.5mE x 12.5mN x 2mRL panels for definition of wellfields for production.
Classification is according to JORC Code Mineral Resource categories.
Totals may vary due to rounded figures.

Comparison of the uranium metal content estimated at various cut-off grades in the MRE with UraniumSA's 2013 MRE[3] for Blackbush within the ISR amenable Kanaka Beds (Figure 1) identifies a favourable 25% increase in metal content achieved by Alligator due to:

- Application of a higher cut-off grade (250ppm U_3O_8) for the MRE and additional drilling by AGE (50 holes).
- Changes in the interpretation of the geology and uranium mineralisation.
- Improved understanding of the disequilibrium[4] within the deposit by additional drilling and modelling.
- Eliminating uranium mineralisation and host lithologies from the MRE that at this stage, do not have reasonable prospects for eventual economic extraction or are considered not suitable for ISR

[2] *ASX Releases 31 Jan 2022 02480654.pdf (weblink.com.au) 29 March 2022 02503799.pdf (weblink.com.au); 10 May 2022 02520049.pdf (weblink.com.au); 6 July 2022 https://wcsecure.weblink.com.au/pdf/AGE/02539224.pdf.*

[3] *Refer* UraniumSA *ASX Release – 27 September 2013 "Samphire Uranium Project", https://www.asx.com.au/asxpdf/20130927/pdf/42jnqgsn2cqcgg.pdf*

[4] *Refer to section "Resource Estimation and Methodology" of this release for discussion on disequilibrium.*

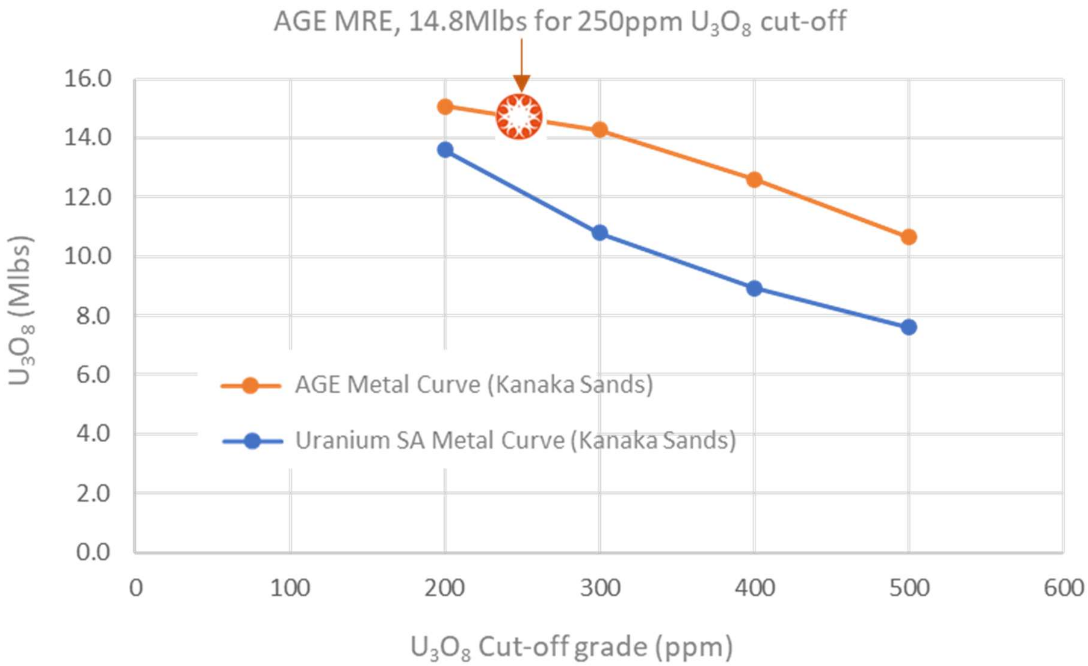

Figure 1: Uranium metal graph derived from grade tonnage tables from UraniumSA's 2013 MRE and AGE's 2022 MRE showing the upgrade of the Mineral Resource for Blackbush Deposit. Note: 250ppm U_3O_8 cut-off is the reported Mineral Resource Estimate for Blackbush.

Comparison to Previous Estimates

The focus of this MRE was to estimate the Mineral Resource only in ISR amenable lithologies i.e., the Kanaka Beds, and to lift the cut-off grade to allow focus on a potential ISR resource. Relative changes in tonnage, grade, and metal between AGE's MRE and the UraniumSA's 2013 MRE[5] relate to:

1. AGE's infill drilling rotary-mud and sonic core drilling programs undertaken Q4 2021/Q1 2022 used both gamma and PFN downhole tools. The latter increased the confidence to those areas where uranium grade was solely defined by gamma. Sonic core holes provided uranium assay for further data verification. This successfully increased the confidence level of the historical data, such that 6Mlbs is now classified as an Indicated Mineral Resource at 250ppm cut-off (Figure 2).

2. A change to the model approaches for interpretations, block sizes, estimation method and use of dynamic anisotropy for the estimation.

3. Disequilibrium modelling for gamma data based on AGE PFN data which precipitated some detailed changes (both positive and negative), dependent on lateral location and stratigraphic positions within the palaeochannel.

4. A general change in classification to drilled areas due to improved data, interpretations, and the model improved classification of some previously Inferred material to Indicated category.

[5] *Refer UraniumSA ASX Release – 27 September 2013 "Samphire Uranium Project", https://www.asx.com.au/asxpdf/20130927/pdf/42jnqgsn2cqcgg.pdf*

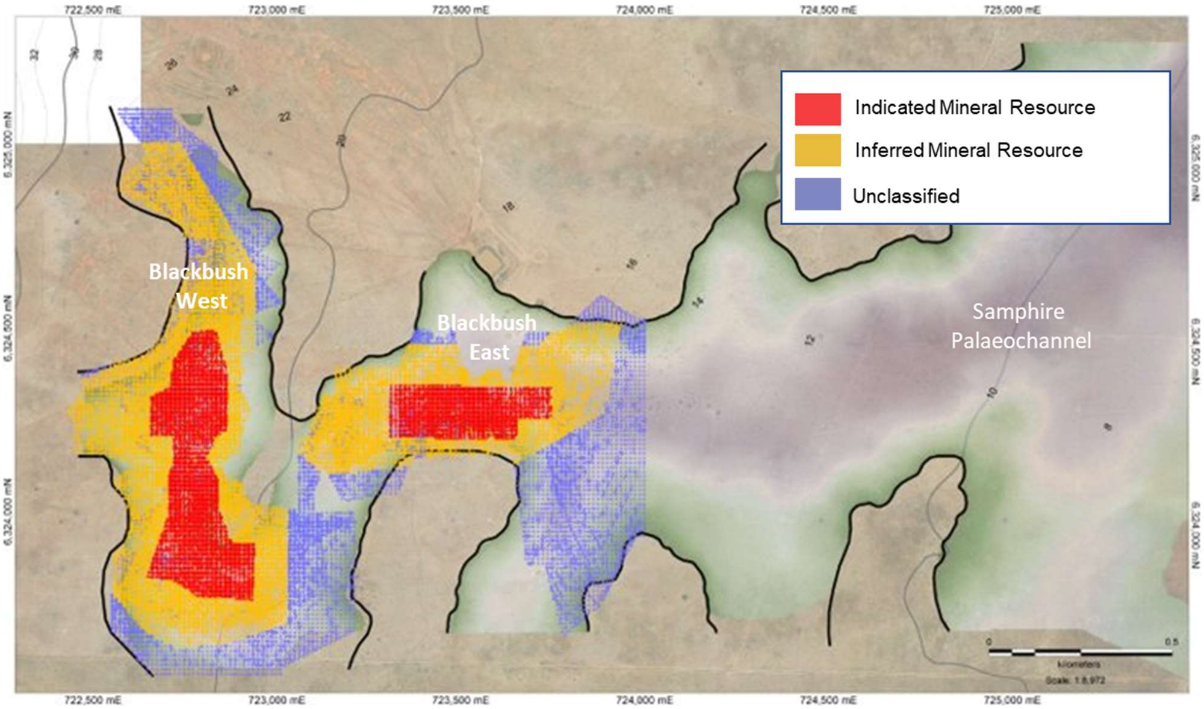

Figure 2: Plan view of the location/area of the Inferred and Indicated Mineral Resource and unclassified[6] (saprolite/granitic basement hosted mineralisation) material within the broader palaeochannel structure, Blackbush Deposit.

Resource Growth Potential

Forthcoming Drilling Program Focus

Drilling of 50 holes by AGE has successfully increased the confidence level of a significant portion of the JORC Mineral Resource at Blackbush. Drilling of a further 100 infill and extensional holes commencing in early October 2022 will focus on the following:

1) Further conversion of the Mineral Resource from Inferred to Indicated categories, using a 250ppm cut-off, thus giving the potential to increase the grade and the amount of Indicated Mineral Resource within the deposit (*yellow areas denoted in Figure 3*).

2) Follow-up of extensions of the known high-grade zones in the MRE where mineralisation is not closed off (*blue areas denoted in Figure 3*).

3) Testing areas where historical data outside the MRE flags potential for additional accumulations of uranium mineralisation (*pink areas denoted in Figure 3*).

[6] *Note the unclassified uranium metal (blue) shown in Figure 2 is below the Kanaka Beds (below the base of the palaeochannel) and considered not to have "reasonable prospects for eventual economic extraction" at this stage.*

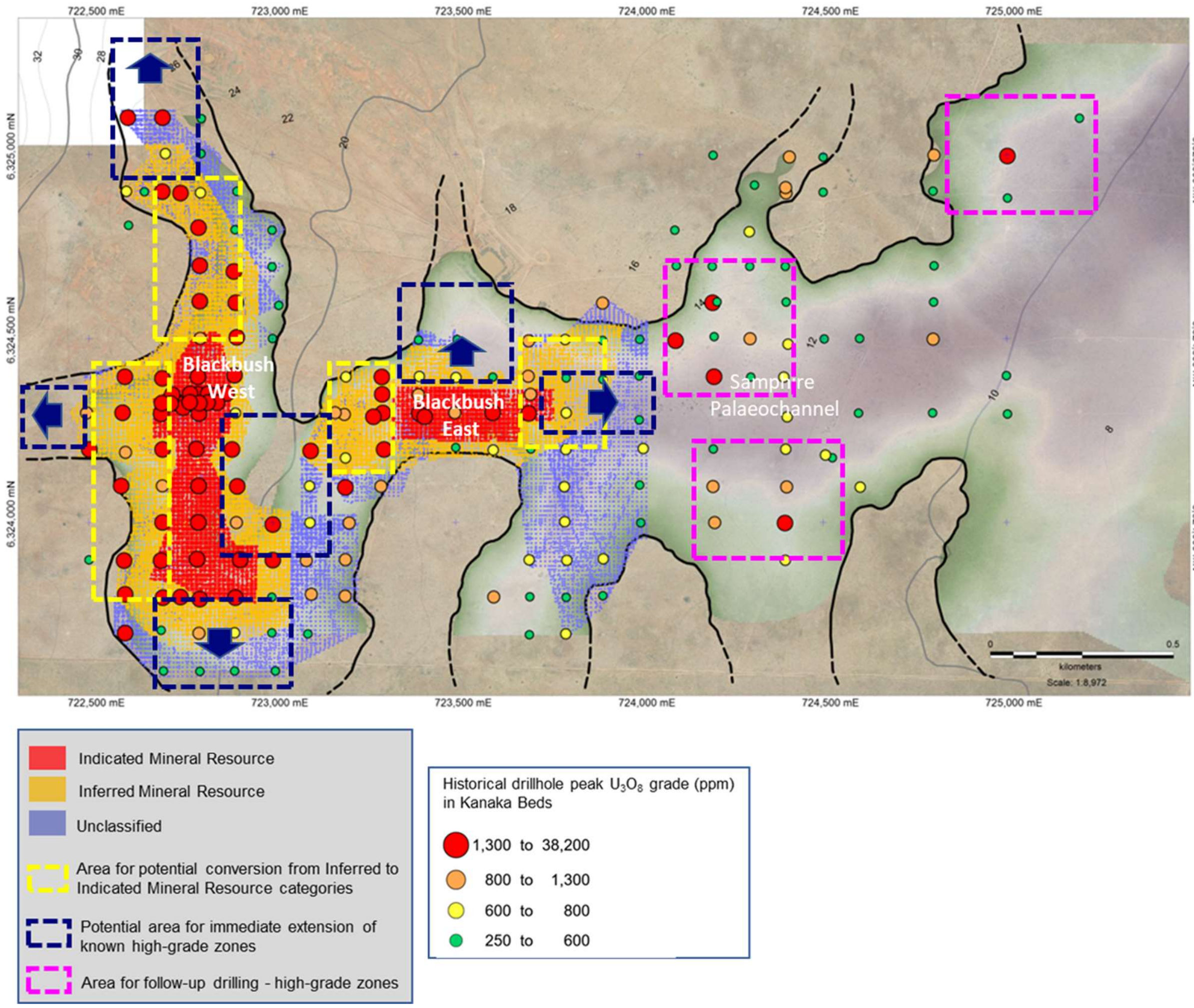

Figure 3: Areas targeted for Mineral Resource upgrade infill drilling and extension at Blackbush. **Note only drillholes that have peak grades above 250ppm U3O8 cut-off within the Kanaka Beds are shown.**

District-Scale Exploration

AGE has secured Daishsat Geodetic Surveyors to undertake a high-resolution ground gravity survey at Blackbush and surrounds to map the host palaeochannel in detail commencing on September 7, 2022. This will form the basis for planning AGE's 2023 exploration drilling programs which is expected to focus on the palaeochannel system which spans 5km between the Blackbush deposit and the Plumbush area.

Plumbush

Plumbush lies approximately 5km to the south of the Blackbush Deposit (Figure 4) which has an historical estimate of uranium mineralisation published by UraniumSA[7] which is based on 43 rotary-mud holes drilled on 200m by 200m and 200m by 400m grids. The mineralisation is also hosted within the Kanaka Beds. While no new work has been undertaken here by AGE to date, initial discussions with pastoral landowner regarding access have been held in order to progress on groundwork.

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[7] *Refer UraniumSA ASX Release – 8 April 2011 "Maiden Resource Estimate", https://www.asx.com.au/asxpdf/20110408/pdf/41xy4brvxj3d3c.pdf*

Additional Technical Information

Geology and Mineralisation

The Blackbush Deposit (Blackbush) is located within Exploration License (EL) 5926 (Figure 4). The geological setting for mineralisation has been interpreted by AGE and AMC based on a review of the historical UraniumSA drilling and the 2021-2022 infill and twin-drilling program completed by AGE.

The uranium mineralisation at Blackbush occurs in horizontal tabular lenses (50-85m depth) in sand-dominated basal sediments (Eocene Kanaka Beds) within a Tertiary paleochannel system. The paleochannel is incised into a Proterozoic granite (Samphire Granite) which has a variably weathered saprolite surface at its contact with the Kanaka Beds. The Kanaka Beds comprise cyclic fluvial quartz dominated sands and gravels intercalated with silts and clays with fine grained carbonaceous material towards the top of the sequence. The Kanaka Beds are overlain by the laterally continuous Miocene Melton Limestone (marl and limestone), the clay dominated Pliocene Gibbon Beds and a cover of Quaternary sediments (Figure 5A & B).

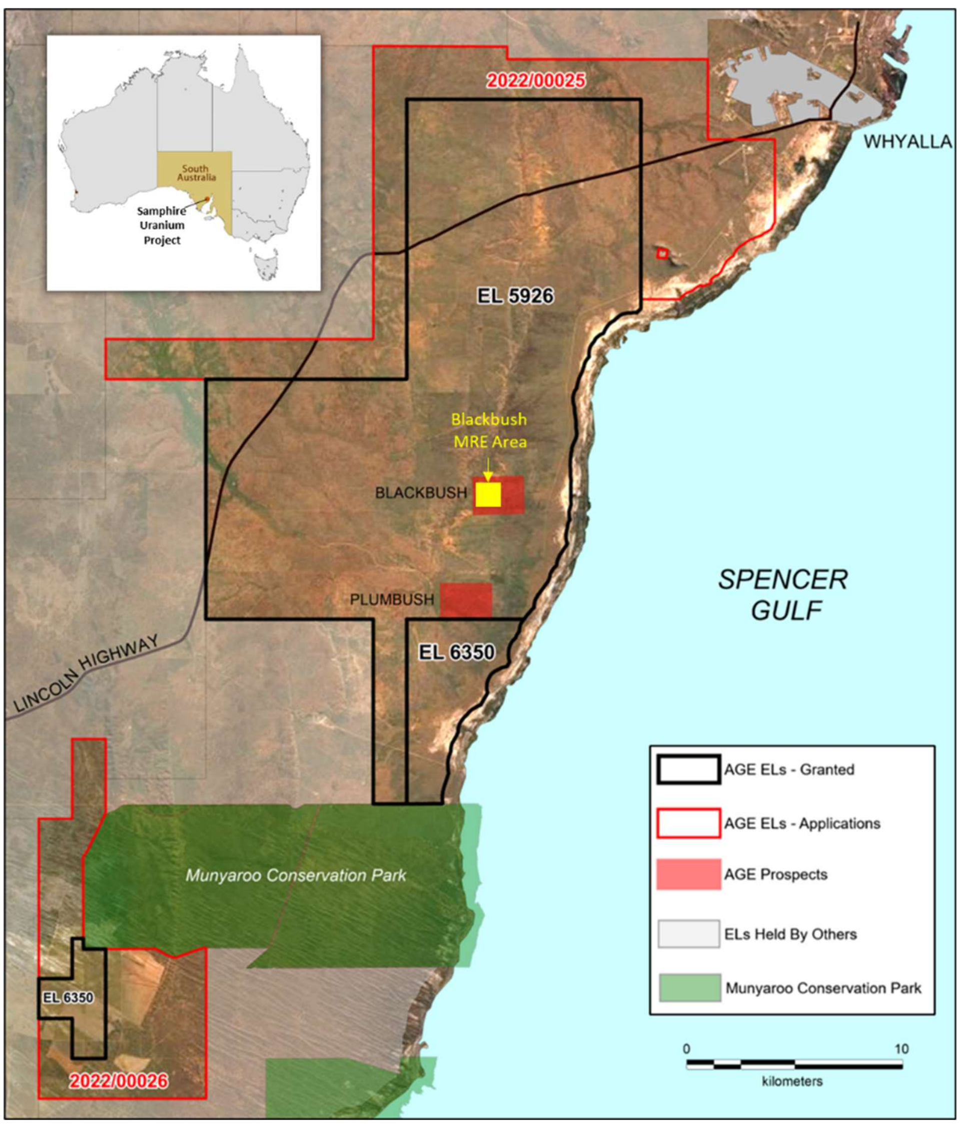
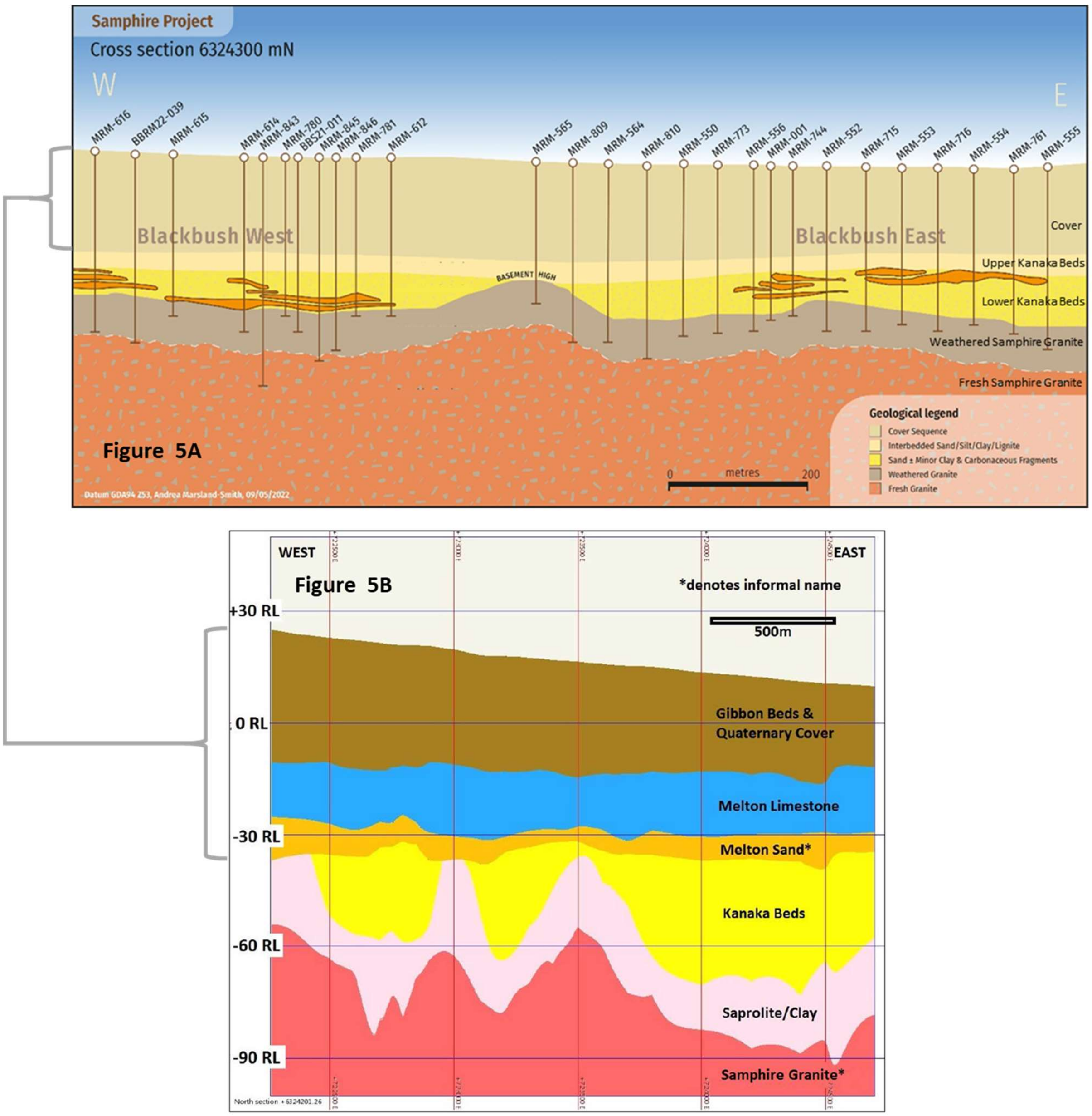


Figure 4: Location map of AGE's exploration licences and location of the MRE area of the Blackbush deposit.



Source Figure 5B UraniumSA report (Scardigno et al; 2013)[8]

Figure 5A Cross section 6324300 mN through the Blackbush Deposit showing multi-level high-grade zones (>250ppm cut-off) on simplified geology. Cross section constructed from pU3O8 intersections from AGE sonic core hole BBRM22-034[9] and historic drilling eU_3O_8 intersections[10].

Figure 5B: Stratigraphic section west to east across the Blackbush Deposit, 15x vertical exaggeration, depth in RL meters.

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[8] *Scardigno M, and Bluck R, September 2013. Inferred Resource Estimation September 2013, Blackbush deposit. Internal UraniumSA Ltd report.*

[9] *Drilling details including JORC Table 1 previously reported by Alligator Energy Ltd (ASX:AGE) in ASX release "Exceptional High-grade uranium results from Samphire Uranium Project, SA" 29 March 2022. 02503799.pdf (weblink.com.au)*

[10] *Historic drilling details including JORC Table 1 previously reported by Uranium SA (ASX:USA) in ASX release "Samphire Project Update" 27 September 2013, https://www.asx.com.au/asxpdf/20130927/pdf/42jnqgsn2cqcgg.pdf*

The Blackbush mineralisation is consistent with sandstone-hosted roll-front style uranium mineralisation occurring in up to 3 sub-horizontal zones[11] which are constrained within the upper, middle, and lower lithologies of the Kanaka Beds. The common uranium minerals at Blackbush are uraninite and coffinite, common for this class of uranium deposit.

The cumulative strike length of the deposit is approximately 2.7 km. Width of mineralisation across strike averages ~300m, with widths of up to 450m in some areas. Figure 6 shows the Blackbush deposit uranium mineralisation above 250ppm U_3O_8 cut-off grade.

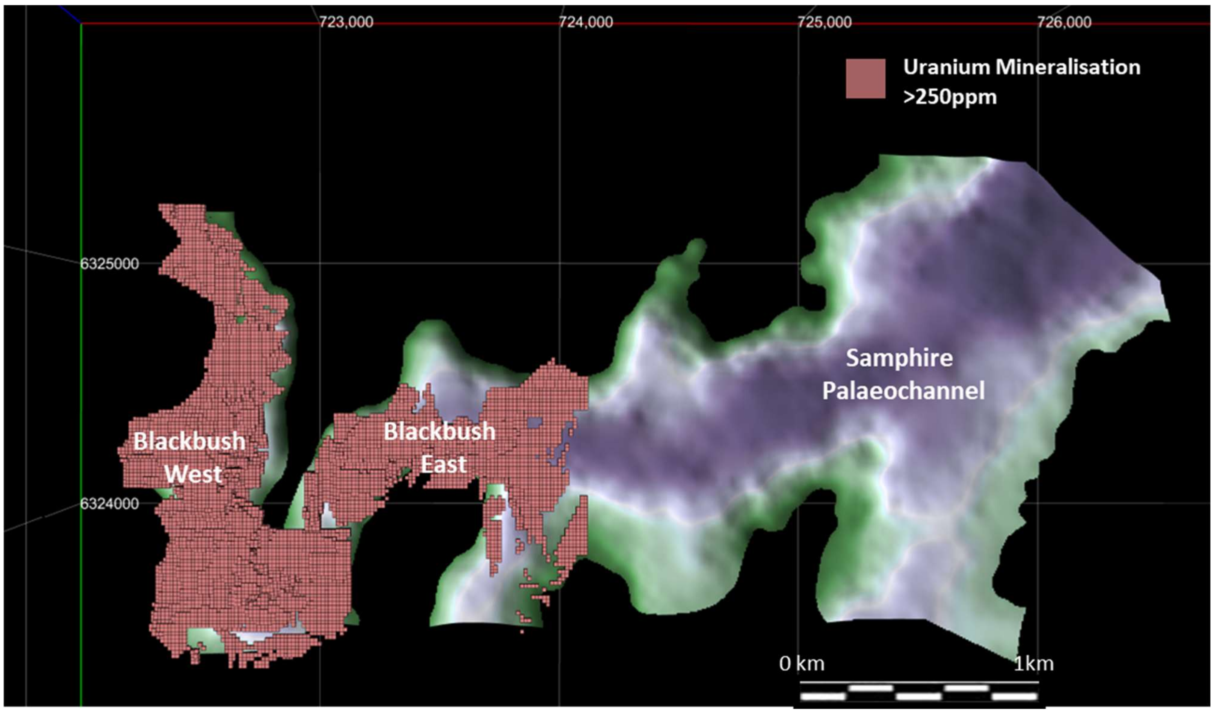

Figure 6: Projection to surface of the uranium mineralisation modelled by AMC greater than 250ppm U_3O_8 cut-off draped on the Samphire palaeochannel model (looking from above). *Note the palaeochannel model is only that portion which was used by AMC for the MRE and does not portray the entire palaeochannel system which is regionally extensive).*

Drilling Techniques

The MRE was calculated from a drillhole database compiled by AGE from historical reports and drilling data acquired by UraniumSA between 2007 to 2012 and AGE's drilling undertaken Q4 2021-Q1 2022. All drillholes used in the MRE were vertical and comprise a combination of rotary-mud (484) and sonic core holes (14) for a total of 498 holes (40,000m). AGE drilled all 14 sonic core holes and a further 39 rotary mud holes (3 abandoned) in Blackbush West. The purpose of the sonic core drilling program was to provide physical samples (assay) for the purpose of verifying pU_3O_8 and eU_3O_8 grades derived grades from historical drilling. Samples of sonic core were also collected for metallurgical testwork as part of the AGE **Scoping Study** which is currently underway.

Drill spacings are variable throughout the MRE area reflecting the different generations of drilling but generally conform to drill spacing ranging from 25m, 50m, 100m and 200m, some selected twinning

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[11] *Note: An additional zone below the Kanaka Beds is present but not considered to have "reasonable prospects for eventual economic extraction".*

of older UraniumSA holes by AGE was done in order to increase the confidence level of the UraniumSA data. Figure 7 shows the drillhole locations by hole type.

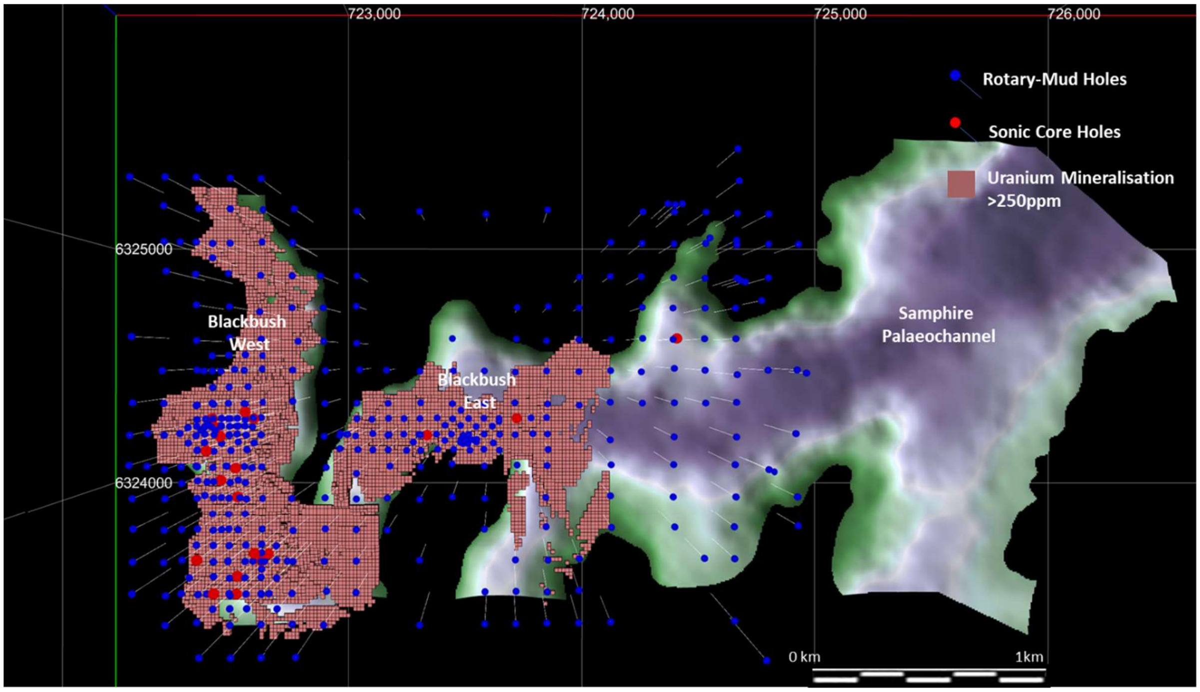

Figure 7: Location of drillholes by type in the Mineral Resource area.

Sampling and Sample Analysis

The principal sampling method to estimate uranium grade in all rotary-mud drillholes was downhole geophysical logging using standard industry procedures to estimate eU_3O_8 from gamma sondes[12] and pU_3O_8 from the Prompt Fission Neutron (PFN) sondes[13]. Gamma data was collected at variable sample intervals between 10mm and 100mm, whereas PFN logging data was collected at 10mm sample intervals. All sondes were calibrated using industry standard procedures at the Australian Mineral Development Laboratories (AMDEL) calibration facility (Adelaide).

Uranium grade data from both sources was composited to 25 cm intervals to aid in the geological interpretation and assignment of mineralisation to the respective zones. There are a significant number of holes that were sampled using both downhole geophysical gamma and PFN tool suites which gives a very good comparison of data results on common 0.25 m intervals. All sonic drillholes were sampled by geological boundaries with a maximum sample length of 0.5 m and a minimum interval of 0.1 m. Samples were assayed for a total suite of 61 elements[14]. In the MRE, sonic core assay uranium grades were used whereas for all other drillholes, pU_3O_8 used in preference to eU_3O_8 grades.

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[12] *Downhole gamma sondes measure the daughter isotopes in the radioactive decay series, thus is not a direct reading of uranium in the host formation if the gamma-emitting daughter isotopes are not in secular equilibrium with the parent ^{238}Uranium. If the parent ^{238}Uranium is in secular equilibrium with the daughter isotopes the response of the natural gamma is directly proportional to the amount of uranium in the host formation. Note: Typically for this style of uranium mineralisation, secular disequilibrium is the common situation where the uranium and various decay daughter products move around significantly and variably over time with changes in water table, oxidation states and water chemistry.*

[13] *PFN sondes emit pulsed epithermal neutron into the host formation via a neutron generator which interact directly with the uranium via a fission reaction which generate thermal neutrons which is proportional to the amount of uranium present. Uranium grade is thus derived from the ratio of epithermal and thermal neutrons and borehole size.*

[14] *Assays by XRF - Bureau Veritas Laboratories, Adelaide.*

AGE twinned 11 UraniumSA holes with new rotary mud and sonic core holes which confirm chemical assays are comparable to the PFN results and detects the presence of the uranium mineralisation in similar positions. The total data set comprises 98% gamma data, 10% PFN data, and 1% chemical assay data with some overlap of both gamma data and PFN data where the PFN data exists.

Historical drilling undertaken by UraniumSA also utilised density sondes with a significant amount of short-spaced density (SSD) and long spaced density (LSD) data acquired for the gamma-probed UraniumSA drillholes. These data show an average wet bulk density value of approximately 2.0 t/m^3 for the Blackbush mineralised zones but with uncertainty over moisture content and/or porosity, a nominal dry bulk density of 1.8 t/m^3 was applied in this MRE.

Resource Estimation and Methodology

The MRE was undertaken by AMC Consultants Pty Ltd (Perth) and based on all available geological and analytical data. U_3O_8 grade estimation was completed using Ordinary Kriging with restricted search neighbourhood and limited vertical smoothing. Dynamic anisotropy was used during estimation to consider the variable and complex strike orientations of the palaeochannel and uranium distribution.

Wireframes of the mineralisation were based on the upper and lower contacts of each individual mineralisation lens using a nominal lower cut-off value of 250 ppm eU_3O_8, pU_3O_8 or cU_3O_8 (chemical assay). Four sub-horizontal mineralised zones were defined as shown in Figure 8. Note that some uranium metal accumulation occurs below the Kanaka Beds (i.e., in the saprolite/granitic basement) and is considered not to have "reasonable prospects for eventual economic extraction" at this stage. It is therefore not reported as part of this MRE and is categorised as unclassified.

Validated PFN data against chemical assays showed that PFN data is comparable. This allowed disequilibrium factors (DEF[15]) in mineralisation greater than 250ppm U_3O_8 to be estimated using 4,369 x 0.25 m intervals which contained pairs of natural gamma and PFN grades. The data pairs were modelled using an inverse distance interpolation method and power of 1 into 12.5 mE by 12.5 mN by 2 mRL blocks for each of the individual mineralised zones, with a block DEF calculated. Disequilibrium factors were assigned to the 0.25 m intervals for the mineralised zone data sets occurring within the block area and applied only to the gamma data (eU_3O_8). The disequilibrium model highlighted some lateral consistency with factors showing variability with mineralised zones consistent with typical roll front disequilibrium distribution i.e., disequilibrium >1 in the "roll" and disequilibrium <1 in the "tails" of the front.

Sample search parameters for the MRE considered the block size estimation method, variography and data spacing. It also considers a nominal ISR production wellfield drillhole spacing approaching 25m by 25m and vertical variability at the scale of the interpreted mineralised zones. A 150m by 80m by 10m search ellipse was used in conjunction with dynamic anisotropy and a two-pass search strategy with hard boundaries used for all zones.

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[15] DEF = pU_3O_8/eU_3O_8 if DEF>1 parent ^{238}Uranium is enriched relative to decay chain daughter isotopes, DEF <1 parent ^{238}Uranium is depleted relative to decay chain daughter isotopes. The basis for this process is that the gamma sonde measures gamma ray intensity from the decay chain daughter isotopes, whereas the PFN sonde directly measures the ^{235}U with a pulsed neutron source where the ^{235}U represents a small but relatively stable proportion of the ^{238}U mineralization.

The Mineral Resource for Blackbush has been classified as a combination of Indicated and Inferred material (Figure 8) in accordance with JORC Code guidelines and assumes potential extraction by ISR. It is based on confidence levels of key criteria such as confidence in the geology, interpretations, data quality, data types (including disequilibrium factored gamma data), drilling density, apparent grade and spatial continuity of the mineralisation, estimation quality, and stratigraphic position.

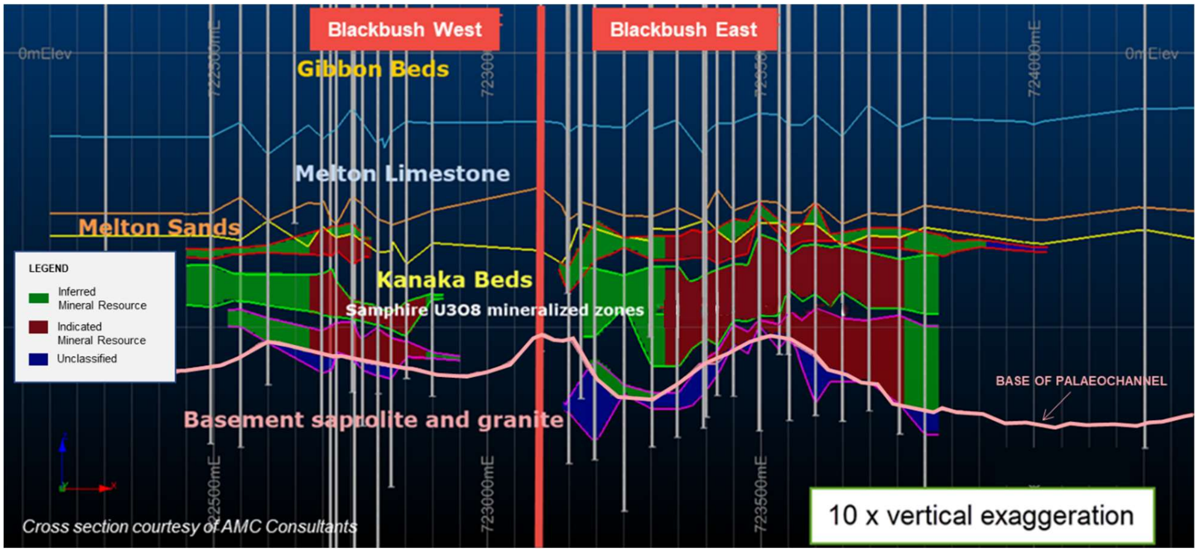

Figure 8: Mineral Resource classification, section 6,324,300mN view looking north showing four levels[16] of sub-horizontal uranium mineralisation. Note: the orientation of the cross-section cuts through generally perpendicular to the orientation of uranium mineralisation at Blackbush West and parallel (longitudinally) to orientation of uranium mineralisation at Blackbush East.

This announcement has been authorised for release by the Alligator Energy Board.

[16] *Note the lower zone (blue) in Figure 8 is below the Kanaka Beds (below the base of the palaeochannel) and considered not to have "reasonable prospects for eventual economic extraction" at this stage.*

APPENDIX 1

JORC Code, 2012 Edition – Table 1 Sections 1, 2 & 3

Section1 – Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
Sampling techniques	• *Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.* • *Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.* • *Aspects of the determination of mineralisation that are Material to the Public Report.* • *In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.*	**AGE Sampling Techniques** **Rotary Mud Drilling** Rotary mud drilling was used to obtain 2m samples in the non-target area and 1m mud /chip samples within the target area. Downhole wireline logging using a Prompt Fission Neutron (PFN) tool was used to calculate pU_3O_8 from the ratio of epithermal and thermal neutrons. Rotary mud samples are not suitable for assay for the determination of grade. The PFN used in this program was calibrated using industry standard procedures at the Australian Mineral Development Laboratories (AMDEL) calibration facility (Adelaide). **Sonic Core Drilling** Drill core was extracted direct from the drill rod and placed into a 1-metre-long plastic sleave to contain the core. The sleaved core was then sealed and placed in 1 metre intervals in core trays. Due to the nature of the sonic drilling technique some redistribution of unconsolidated material can take place. Adjustment of core downhole depths and sampling intervals was undertaken by reconciliation with downhole geophysical data. Following collection and prior to sampling trays of core were transported to a coldroom for storage at 1.5 ºC. **UraniumSA Data Sampling Techniques** The work is based on rotary mud drilling and all grade determinations are from down hole geophysical logging. Sondes were appropriately calibrated.
Drilling techniques	• *Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).*	**AGE Drilling Techniques** **Rotary Mud Drilling** All holes were drilled by Watson Drilling with typical hole diameter being 6" (152.4mm). All holes were vertical. **Sonic Core Drilling** All holes were drilled by Star Drilling using sonic drilling. Hole diameter was 100cm within 150cm steel cased. Core was not oriented (vertical). **UraniumSA Drilling Techniques** Holes used were drilled using the rotary mud drilling technique. Mud was based on saline formation waters and very successfully facilitated hole stability and minimised collapse and wash out – all vertical
Drill sample recovery	• *Method of recording and assessing core and chip sample recoveries and results assessed.*	**Rotary Mud Drilling** Downhole wireline logging using a downhole PFN or

Criteria	JORC Code explanation	Commentary
	• *Measures taken to maximise sample recovery and ensure representative nature of the samples.* • *Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.*	natural gamma sonde was used to calculate grade for all holes as rotary mud samples are not suitable for assay for the determination of grade. For AGE holes: • Caliper data show that borehole size increases in zones of unconsolidated sands, hence all pU_3O_8 grades were calculated and corrected for borehole size from caliper data taken every 5cm downhole using the equation {2.737*({EPITHERM}/{THERMAL}-0.02)} *{-1*Power(10,-06)*Power({CAL},2)+0.0097*{CAL}-0.0313} • For sonic core holes PFN grade calculations this equation was 2.737*({EPITHERM}/{THERMAL}-0.02)} *0.94 **Sonic Core (AGE)** AGE used the Sonic coring method. All intervals measured for length during sonic core logging and sampling. - Sample lost in the sample cutting process was collected and weighed for each metre. This was minimal in relation to the core interval. - No analysis conducted on sample recovery and grade.
Logging	• *Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.* • *Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.* • *The total length and percentage of the relevant intersections logged.*	**Rotary Mud Drilling (AGE)** Chip/mud samples were collected 2m in non-target areas and then 1m in the zones of interest (i.e. the target Kanaka Beds). All samples are geologically logged compliant with industry standards which included lithology, mineralogy, grain size/rounding/sorting, colour, redox. All samples were photographed using a high-resolution camera. **Sonic Core Drilling (AGE)** All (100%) drill core has been geologically logged and core photographs taken. Logging is qualitative with description of colour, weathering status, major and minor rock types, texture, sedimentary features grain size, regolith zone, presence of organic material and comments added where further observation is made.
Sub-sampling techniques and sample preparation	• *If core, whether cut or sawn and whether quarter, half or all core taken.* • *If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.* • *For all sample types, the nature, quality and appropriateness of the sample preparation technique.* • *Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.* • *Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.*	**Rotary Mud Drilling (AGE)** The depth of investigation of the PFN tool approximately 25-40 cm radius around the borehole to allow for accurate measurement of the ratio of epithermal/thermal neutrons for pU_3O_8 calculations. QA/QC of pU_3O_8 data included repeatability checks by regularly logging a fibreglass-cased calibration hole onsite (MRC002,723703E, 6324350N (GDA94), depth 84.5m). MRC002 has sufficient assay data in the target zone to compare/calibrate PFN data. Repeat runs in rotary mud holes that remained open after drilling for sufficient time to allow for PFN logging

Criteria	JORC Code explanation	Commentary
	• *Whether sample sizes are appropriate to the grain size of the material being sampled.*	was also performed. **Sonic Core Drilling (AGE)** Core was halved, photographed and geologically logged. One half core component was subsequently halved to create quarter core increments for chemical assay samples. Sample intervals were determined by geological boundaries with a maximum sample length of 0.5 metres and a minimum interval of 0.1 metres. Full quarter core sample increments were selected directly from the core tray using a modified scoop or plaster knife. Samples were placed directly in uniquely numbered calico sample bags with a waxed paper sample ticket showing the same sample number placed inside the bag with the sample. Each individual sample was weighed following collection. Duplicate quarter core samples were analysed at a frequency of 1:20 primary samples. Contamination was minimised in the cutting and sampling process by regular washing of cutting equipment in fresh water. Sampling areas were routinely vacuum cleaned and wiped down to remove loose dust and fragments and checked with handheld scintillometer, to check for and eliminate potential radiation contamination in the cutting and sampling process.
Quality of assay data and laboratory tests	• *The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.* • *For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.* • *Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.*	**Rotary Mud Drilling (AGE)** Three geophysical tools were used: • Prompt Fission Neutron Tool (PFN) serial number 22 manufactured by Geoinstruments Inc, Nacogdoches, Texas. Neutron generator 78-80kV, logging at 0.5m/minute. • Multisurvey tool (MST) serial number 24 manufactured by Geoinstruments Inc, Nacogdoches, Texas. Measures 16Normal, 64Long borehole resistance, Point Resistance, and Self Potential and uncalibrated natural gamma for depth matching. • GeoVista 3-arm caliper, serial number 5589, measures the bore-hole size in millimetres for the length of the bore hole. **Rotary Mud Drilling (UraniumSA)** • All drill holes used in the estimation were logged with calibrated a natural gamma sonde with raw data collected and field checked using industry standard WellCad software and verified material captured to database. • 37% of drill holes were logged with PFN and density tools by independent contractors. QA/QC control has been applied by the contractor and UraniumSA; calibration certificates are retained for all tools. • Individual tool identifications were recorded at the time of use and cross checked by UraniumSA to ensure the currency of calibration certificates.

Criteria	JORC Code explanation	Commentary
		Sonic Core Drilling (AGE) • Laboratory techniques are industry standard • Analysis is considered total for all elements • Commercial analytical standards inserted in sample submission at a rate of a minimum of 1: 20 primary samples. • Analytical blank samples submitted at a rate of 1:20 primary samples and following suspected high-grade samples. • Duplicate ¼ core samples submitted at a rate of 1:20 primary samples. • QAQC results indicate no bias in analysis.
Verification of sampling and assaying	• *The verification of significant intersections by either independent or alternative company personnel.* • *The use of twinned holes.* • *Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.* • *Discuss any adjustment to assay data.*	AGE have Standard Operating Procedures to safeguard data integrity in relation to all data capture, QAQC of geology from logging vs downhole geophysical logs, assay from commercial laboratories database import and data storage. **Rotary Mud Drilling (AGE)** ~20% of rotary mud holes twinned historical and/or sonic core holes which were used as a calibration check on the pU_3O_8 grades being acquired in this program. Natural gamma (on the caliper tool) was used for depth matching the PFN. No wireline stretch was observed during the program. **Sonic Core Drilling (AGE)** No independent verification of significant intersections undertaken. No twinning of holes Assay data was received in digital format from the laboratory and merged with sampling data into an Excel spreadsheet format for QAQC analysis and review against field data. Data validation of assay data and sampling data have been conducted to ensure data entry is correct. All assay data is received from the laboratory in element form is unadjusted for data entry. Elemental uranium has been converted to U_3O_8 by applying a conversion factor of: U ppm x 1.179243 = U_3O_8 ppm Percentage (%) U_3O_8 =U3O8 ppm/10,000 **UraniumSA sample and assay verification** All holes used were logged by UraniumSA calibrated natural gamma tools. Duplicate runs were used to qualitatively investigate response variation with time. No material variation was identified. Approximately 37% of the holes were logged under contract by Geoscience Associates Australia. The duplication of natural gamma logging by UraniumSA was the basis for QA/QC of gamma equivalent grade and depth. Natural gamma profiles were evaluated in the field by the Site Geologist, intersections to standard assumptions calculated using certified algorithms

Criteria	JORC Code explanation	Commentary
		and an in-house developed intercept calculator, then plotted against geology from cutting logging. Raw data, field estimations and plots were electronically interrogated and checked by a Senior Geologist, corrected if necessary in consultation and captured in a database.
Location of data points	• *Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.* • *Specification of the grid system used.* • *Quality and adequacy of topographic control.*	**AGE Drill Collars** Drillholes sited using a Garmin handheld GPS Drilled holes surveyed post drilling with a Leica iCON GPS 60 which uses the 4G network to obtain corrections from SmartNet base stations (Continuously Operating Reference Stations (CORS)) located around Whyalla. The SmartNet corrections result in RTK RMS accuracy of 10-20mm in XY and 20-30mm in Z. Grid system GDA94 Projection 53H Downhole directional survey in sonic holes measured by magnetic deviation tool by Borehole Wireline. **UraniumSA Drill Collars** Handheld GPS was used for drill collar location. Precision is sufficient for the present estimation. Grid system AMG94 Zone 53.
Data spacing and distribution	• *Data spacing for reporting of Exploration Results.* • *Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.* • *Whether sample compositing has been applied.*	Drill spacing (all drillholes used in the Mineral Resource estimation) varies from 50x100m, 200x200m, 50 x 25m and 200 x 200m centres. The data spacing is consistent with the degree of geological & grade continuity for this Mineral Resource estimate and the classifications applied for various drill spacings.
Orientation of data in relation to geological structure	• *Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.* • *If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.*	The Blackbush mineralisation is interpreted to be contained in horizontal to sub-horizontal sequence of sediments and underlying weathered granite. This interpretation is derived from the significant historic drilling and geological interpretation of the area. All drillholes are vertical which is appropriate for the orientation of the mineralisation
Sample security	• *The measures taken to ensure sample security.*	Rotary mud/chip samples are stored in AGE's secured storage facility in Whyalla. UraniumSA's rotary mud chip samples are stored at AGE's Adelaide warehouse. Chemical assay samples were stored in a secured storage facility in Whyalla then transported by road by an Alligator Energy staff member to the Adelaide laboratory.
Audits or reviews	• *The results of any audits or reviews of sampling techniques and data.*	All drilling data used in this MRE was validated by AGE prior to providing it the AMC consultants for use in the resource estimate. Any errors within the data were investigated and corrected or omitted if discrepancies could not be resolved.

Section 2 – Reporting of Exploration Results

(Criteria listed in the preceding section also apply to this section.)

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	• *Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.* • *The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.*	The Blackbush deposit references historical drilling and geophysics covering the SUP which are now located on Exploration Licence EL5926 originally granted 20th November 2016 for a term expiring 2018. A renewal has been lodged with DEM and is pending but is not under threat of not being renewed (pers comm SA Department of Energy and Minerals). AGE is currently drafting the relevant documents for an application for a Retention Lease over the area that contains the Blackbush deposit to progress with a Field Recovery Trial at Blackbush. EL5926 is 100% held by S Uranium Pty Ltd a wholly owned subsidiary of Alligator Energy Ltd. The land covering the licence area is Crown Lease; consisting of several leases over 2 pastoral stations.
Exploration done by other parties	• *Acknowledgment and appraisal of exploration by other parties.*	Samphire Uranium Limited (SUL), previously UraniumSA (ASX: USA) historically conducted almost all previous exploration within EL5926 defining the Plumbush (JORC2004) and Blackbush (JORC2012) resources and all relevant drilling, geophysics except ground magnetics conducted by AGE in 2021. UraniumSA conducted preliminary In-Situ Recovery (ISR) hydrogeological and metallurgical testwork on the Blackbush deposit with pump testing and hydrogeological modelling.
Geology	• *Deposit type, geological setting and style of mineralisation.*	Mineralisation is dominantly sediment hosted roll-front uranium style within the Eocene Kanaka Beds (sands). Minor amounts of mineralisation are present in the overlying Miocene Melton sands (informal name) and underlying Samphire granite (informal name).

Drill hole Information	• *A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:*
	  ○ *easting and northing of the drill hole collar*
	  ○ *elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar*
	  ○ *dip and azimuth of the hole*
	  ○ *down hole length and interception depth*
	  ○ *hole length.*
	• *If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case.*
		The topography in the region of the Samphire Uranium Project is predominantly flat. All holes were drilled vertically with an average hole depth of approximately 80 m.
		Additional images, tables and relevant cross-sections have been included in the body and appendices of this report.

Data aggregation methods	• *In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated.* • *Where aggregate intercepts incorporate short lengths of high grade results and longer lengths of low grade results, the procedure used for such*	Mineralized intervals were chosen based upon a nominal 250 ppm U_3O_8 cut-off, minimum 0.5 m interval thickness, and no fixed internal dilution. Consideration was given to mineralisation defined by a combination of PFN-derived (pU_3O_8) data, natural gamma (eU_3O_8) data, and chemical assay (cU_3O_8) data for uranium grades.

Criteria	JORC Code explanation	Commentary
	aggregation should be stated and some typical examples of such aggregations should be shown in detail. • *The assumptions used for any reporting of metal equivalent values should be clearly stated.*	
Relationship between mineralisation widths and intercept lengths	• *These relationships are particularly important in the reporting of Exploration Results.* • *If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported.* • *If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known').*	Mineralised widths are considered true widths or close to true widths due to the generally flat lying orientation of the mineralisation and use of perpendicular vertical drilling.
Diagrams	• *Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views.*	Results are reported in appropriate diagrams and tables within this release.
Balanced reporting	• *Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high grades and/or widths should be practiced to avoid misleading reporting of Exploration Results.*	This is for reporting of a Mineral Resource and not new Exploration Results. Appendix B lists the drillhole collar locations used in the Mineral Resource estimate. Otherwise, recent drilling has been reported as part of AGE public announcements or presentations. All other historic drilling data used in the Mineral Resource estimate have previously been released to market and have not been included in this report.
Other substantive exploration data	• *Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.*	Ground gravity data has been reprocessed by AGE over the Samphire Uranium Project including Blackbush area to provide guidance on the profile of the paleochannel. However, these surveys have not been used directly in the 2022 update (as drilling density is sufficient to override resolution of information provided by the gravity data deemed irrelevant for the purpose of this report.
Further work	• *The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).* • *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	Program for 2022 includes: Continued detailed geological interpretation/well log correlations of all rotary mud and cored holes. Follow-up infill drilling program on the inferred resource at Blackbush subject of this report. Extraction (leaching and recovery) testwork on sonic core samples. Infill high-resolution ground geophysical surveys and follow-up exploration drilling to test for extensions to the Blackbush deposit.

Section 3 – Estimation and Reporting of Mineral Resources

Criteria	JORC Code explanation	Commentary
Database integrity	• *Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes.*	AGE undertook a QA/QC study of all historical drilling data prior to being used in this MRE which included: • Hole collar coordinate projection

Criteria	JORC Code explanation	Commentary
	• *Data validation procedures used.*	inconsistencies/changes throughout the course of historical data acquisition and correction of input field errors in the UraniumSA historical database. • Review of all lithology/stratigraphy logged by UraniumSA geologists by visual inspection of the rotary-mud chips and chemical analysis using a handheld XRF. Reconciliation of UraniumSA lithology and stratigraphic codes with those used by AGE was also undertaken to ensure consistent coding with historical and current geological logs. • Depth matching of geological logs (+/-2m accuracy due to rotary-mud samples) with downhole geophysical logs (2cm accuracy). Lithology, stratigraphy, PFN and gamma grade was then exported and provided to AMC consultants for the MRE.
Site visits	• *Comment on any site visits undertaken by the Competent Person and the outcome of those visits.* • *If no site visits have been undertaken indicate why this is the case.*	Dr Andrea Marsland-Smith, COO of AGE and Competent Person for the geology and data of the project, has visited and worked on site during the 2021-2022 drilling programmes. Ingvar Kirchner, of AMC Consultants and Competent Person for the Mineral Resource has not been able to visit site yet.
Geological interpretation	• *Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.* • *Nature of the data used and of any assumptions made.* • *The effect, if any, of alternative interpretations on Mineral Resource estimation.* • *The use of geology in guiding and controlling Mineral Resource estimation.* • *The factors affecting continuity both of grade and geology.*	Paleochannel hosted, oxidation-controlled (roll-fronts) uranium mineralisation is interpreted from the available data. The density of the drilling is sufficient for interpretation and constraining the tabular lenses of uranium mineralisation. The geological setting for mineralisation within the SUP Blackbush deposit has been reinterpreted based on a review of historical drilling and AGE's 2021 and 2022 infill and twin hole drilling campaign. The updated geological model consists of tabular-shaped, elongate lenses of uranium mineralisation within a paleovalley-type, sandstone-hosted deposit. The uranium mineralisation is hosted primarily within the Kanaka Beds – an Eocene-aged formation comprised of interbedded sands, interbedded silts, and discontinuous lenses of fine-grained sedimentary layers. Locally, uranium grades within the mineralized zones are noted to be highly variable. Updated wireframes were based on the reinterpretation of all available geological data and assay data. The wireframes were created by constraining the upper and lower contacts of each individual mineralisation lens using a nominal lower cut-off value of 250 ppm eU_3O_8 (gamma data), pU_3O_8 (PFN data) and cU_3O_8 (chemical assay data). A nominal minimum interval thickness of 0.5 m to 1 m was used with variable internal dilution allowed due to the uncertainty related to the different datatypes and apparent internal roll-front geometries. Three sub-horizontal mineralized zones have been defined. The mineralized zones are mostly grouped and constrained within the lower, middle and upper Kanaka Beds. (Note an additional zone below the Kanak Beds is present but not considered to have "reasonable prospects for eventual economic extraction"). Within the Kanaka Beds, the definition of

Criteria	JORC Code explanation	Commentary
		the mineralized zones is not visually distinct, and is defined by changes in oxidation, gamma and PFN data, grade breaks between the layers, and occasional proximity to silty sand layers or lithological contacts. Lateral variations in thickness, grade and geological continuity are noted within the mineralized zones along the complex paleovalley and paleochannels.
Dimensions	• *The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.*	The Blackbush uranium deposit follows the complex paleochannel system from north to south through an oxbow-type bend to then run west to east. The cumulative strike length of the deposit is approximately 2.7 km. Width of mineralisation measured across strike averages 300 m but widens in some apparent tributary areas to widths up to 450 m. Mineralisation remains open in some areas along the paleochannel. Mineralisation generally occurs approximately 60 to 80 m below surface.
Estimation and modelling techniques	• *The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.* • *The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.* • *The assumptions made regarding recovery of by-products.* • *Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).* • *In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.* • *Any assumptions behind modelling of selective mining units.* • *Any assumptions about correlation between variables.* • *Description of how the geological interpretation was used to control the resource estimates.* • *Discussion of basis for using or not using the grade cutting or capping.* • *The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation of data if available.*	An updated Mineral Resource for the SUP Blackbush deposit has been generated as of August 2022. The estimations used the interpreted mineralized zones as hard-boundaries in all cases. AGE validated PFN data against chemical assays from a relatively small number of sonic core holes, concluding that the PFN data is comparable. A large data set of 4,369 0.25 m intervals from the mineralized zones containing pairs of gamma data (eU_3O_8 grades) and PFN data (pU_3O_8 grades) were studied for residual disequilibrium variability. This study noted the potential for variance within pairs related to depth matching and calibration of the different tools. The data was trimmed to eliminate pairs with PFN grades of less than 250 ppm pU_3O_8 considering the lower detection limit of the PFN tools. The gamma tool measures gamma radiation from decay daughter products of uranium such as ^{214}Pb and ^{214}Bi whereas the PFN tool measures ^{235}U, a small relatively stable fraction of ^{238}U. While being indicative of mineralisation, it is possible for high eU_3O_8 values to occur in uranium-poor areas, for low eU_3O_8 values to occur in uranium-rich areas, or for the eU_3O_8 and pU_3O_8 to be relatively similar, depending on how the uranium and decay daughter products have been mobilized and reworked laterally and vertically through the palaeochannels through fluctuations in the water table. Regions of both positive and negative disequilibrium were noted along with trends both along the palaeochannels, across the palaeochannels and vertically through the mineralized zones. Further adjustment to the gamma data was required for the disequilibrium. The 0.25 m data pairs of eU_3O_8 and pU_3O_8 were modelled using an inverse distance interpolation method and power of 1 (ID1) into the model 12.5 mE by 12.5 mN by 2 mRL panels for each of the individual mineralized zones, with a panel disequilibrium factor calculated from the estimated values (DISEQFAC=pU_3O_8/eU_3O_8). The block model confirmed the observed trends in the mineralized data pairs and incorporated adequate

Criteria	JORC Code explanation	Commentary
		data (up to 64 0.25 m interval pairs) to smooth erratic data pairs generated by issues such as depth matching, calibration of tools on individual holes, and natural short-scale variability. The local estimated disequilibrium factors (DISEQFAC) were assigned to any 0.25 m interval gamma data for the mineralized zone datasets occurring within the panel area. the mineralized zones at Blackbush exhibit internally variable disequilibrium factors based on the available data with an apparent minor increase in factors with increasing depth. High factors were arbitrarily capped at a maximum of three to prevent over-correction of the eU_3O_8 data based on other regression analysis of the data. The factored eU_3O_8 data was then used in conjunction with the pU_3O_8 and cU_3O_8 data with the other data types taking priority where it existed in the drillholes. Statistics for high-grade cuts were generated for individual mineralized zones Light high-grade cuts were applied to the combined U_3O_8 data on 1 m composite intervals. Cuts of 15,000 ppm U_3O_8 were applied to 3 of the 4 mineralized zones. Three dimensional directional experimental variograms were generated for the grade variable according to combined mineralized zones within the Kanaka Beds at Blackbush West. The experimental variograms were generally moderate to well-structured with a moderate to high nugget variance ranging from 50% and a major axis range of 75 m. Given thin mineralized zones, variable grades within the zones and mining by In-Situ Recovery (ISR) methods, U_3O_8 grade estimation was completed using an Ordinary Kriging (OK) estimation process with a limited search neighbourhood. Dynamic anisotropy was used during estimation to accommodate the variable and complex orientations of the palaeochannels at the different stratigraphic levels. Sample search parameters were defined based on the estimation method, variography and the data spacing. A two-pass search strategy with hard boundaries was used for all zones. Block estimates were visually and statistically compared to the input composite samples. No mining has occurred at the SUP Blackbush project. No by-products are considered or modelled for the project. The 12.5 mE by 12.5 mN by 2 mRL panel dimension considers the typical production borefield drillhole spacing approaching 20 to 25 m and stated vertical selectivity within production bores at the scale of the interpreted mineralized zones. Mining will be by ISL. Details are currently the subject of early-stage ``mining studies. The 2022 SUP Blackbush Mineral Resource has changed from the previous 2013 Mineral Resource primarily due to the following items: Additional drilling throughout the project area including additional PFN data in key areas. Introduction of interpreted mineralisation and stratigraphic zones to better honour local geology,

Criteria	JORC Code explanation	Commentary
		palaeochannel profile, tenor of mineralisation, and disequilibrium characteristics. Disequilibrium modelling has improved parity between the eU_3O_8 gamma data and the pU_3O_8 PFN data, honouring local variations and trends. Improved resource classification through additional drilling, PFN data in key areas, localized correction of the gamma data and classification according to confidence issues related to individual mineralized zones.
Moisture	• *Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.*	Tonnages and metal are reported on a dry basis.
Cut-off parameters	• *The basis of the adopted cut-off grade(s) or quality parameters applied.*	The nominal 250 ppm U_3O_8 lower cut-off used to interpret the mineralisation wireframe domains was chosen as it represents a natural break in the data and reflects a limitation of the various tools used to generate the data. A block cut-off grade of 250 ppm U_3O_8 is currently applied for reporting of the Mineral Resource as it assumes ISR as a mining method and some selectivity limited to extraction well field design and operation. Early-stage mining studies are currently planned or in progress.
Mining factors or assumptions	• *Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made.*	Uranium mineralisation at the SUP Blackbush deposit appears to be amenable for exploitation using ISR technologies. Mineralisation is located within the aquifer where it is hosted by permeable sands and silty sands. A moderate depth of mineralisation, and good spatial continuity coupled with the tabular shapes of the mineralized zones are favourable characteristics for exploitation using ISR technologies. Field leach/recovery tests have not been conducted yet but is planned for late 2023.
Metallurgical factors or assumptions	• *The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.*	Metallurgical work is currently underway using sonic core samples from the 2021 – 2022 AGE drilling programme. The results of this test-work will form part of future mining studies.
Environmental factors or assumptions	• *Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well*	The project is at an early stage. No mining licenses have been applied for or granted yet. AGE is in the process of applying for a Retention Lease over the SUP Blackbush area. AGE advise that there are no known environmental, social, or legal issues that currently pose limitations on reasonable prospects for eventual economic extraction. The commodity is uranium which has been subjected

Criteria	JORC Code explanation	Commentary
	advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.	to Australian government controls and limits on mining in the past.
Bulk density	• *Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.* • *The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.* • *Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.*	A dry bulk density, 1.8 t/m3 was used as a tonnage factor based on limited data. The dry bulk density is considered reasonable for the lithologies encountered in the Kanaka Beds and adjacent stratigraphy.
Classification	• *The basis for the classification of the Mineral Resources into varying confidence categories.* • *Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).* • *Whether the result appropriately reflects the Competent Person's view of the deposit.*	The Mineralized Resource for the SUP Blackbush deposit has been classified as a combination of Indicated and Inferred material in accordance with JORC Code 2012 guidelines. Resource classification is based on the confidence levels of the key criteria considered during the resource estimation process. This includes confidence in the input data, drill hole spacing, geological interpretation, and grade estimation. The resource classification assumes exploitation by ISR mining methods. The classification reflects the Competent Persons' view of the deposit.
Audits or reviews	• *The results of any audits or reviews of Mineral Resource estimates.*	No audits or technical reviews have been completed for the 2022 Mineral Resource beyond AMC's own internal peer review process.
Discussion of relative accuracy/ confidence	• *Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate* • *The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.* • *These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.*	The resource classification represents the relative confidence in the resource estimate as determined by the Competent Person. Issues contributing to or detracting from that confidence are discussed above. No quantitative approach has been conducted to determine the relative accuracy of the resource estimate. The OK estimation method model is considered to reflect potential recovery on a typical well field selectivity maintaining some internal vertical variability where appropriate within the interpreted mineralized zones. The Mineral Resource model cannot anticipate well field design, continuity issues (either grade or geological) that might impact on the well field design, or variable recoveries related to the ISR mining process (including geochemical and/or permeability constraints). Accurate ISR scenarios are yet to be determined by a full mining study, a field recovery trial and the extent to which marginal grade mineralized zones might be targeted and recovered. Determination of actual wellfield % recoveries via an ISR mining method is currently uncertain for the project however historical testwork by UraniumSA showed the following:

Criteria	JORC Code explanation	Commentary
		• Mineralisation is uraninite and coffinite (UraniumSA ASX release 3 September 2010) with metallurgical bottle-roll leach tests indicating uranium is readily extracted into an acidified sea water solution. • Initial column leach trials (UraniumSA ASX release 16 June 2011) using composites of mineralise Kanaka sands from core drilling demonstrated mineralisation is readily extracted into acidified saline solution within potentially permissive timeframe and reagent consumption. • Successful testing programme on commercially available ion exchange resins that can function effectively for saline formation waters (groundwater). This work utilised hyper saline, acidic, pregnant leach liquors generated in the metallurgical investigations and a proof-of-concept process has been completed via: extracting uranium from core samples, loading uranium onto resins, stripping uranium from resins to eluate, and final precipitation or uranium from eluate. This testwork produced a high grade yellow cake product (UraniumSA ASX release 12 August 2011). • Field Hydrogeological pump testing show the targeted Kanaka Beds are hydrologically isolated from the surficial environments. The local accuracy of the Mineral Resource model is considered fit-for-purpose for the expected use of the model in early-stage mining studies. Due to the nature of the uranium mineralisation, the degree of radiochemical disequilibrium is likely to vary laterally between drillholes and with depth within each drillhole. Disequilibrium factoring applied for the 2022 resource estimate is considered to have resulted in satisfactory global results, but local variations are still expected particularly for areas requiring additional drilling and close-spaced PFN data. Quality of the PFN data also needs to be continually monitored for correct calibration of the tools. Additional drilling by AGE over the last few years has continued to improve confidence in the continuity and consistency of uranium mineralisation within the project area. Further infill drilling, investigation into dry bulk density determination, radioactive disequilibrium (both vertical and lateral), metallurgical, and hydrogeological testing to understand potential recoveries from the ISR mining process will be required to raise the level of resource classification further.

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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

The information in this announcement that relates to the Blackbush Mineral Resource estimate (uranium) is based on and fairly represents information compiled by and generated by Mr Ingvar Kirchner, a full-time employee of AMC Consultants. Mr Kirchner is a Fellow of the Australasian Institute of Mining and Metallurgy (the AusIMM) and a Member of the Australian Institute of Geoscientists (the AIG). Mr Kirchner has reviewed this Report and consents to the inclusion, form and context relevant information herein as derived from the AMC Consultants Samphire Mineral Resource estimate. Mr Kirchner has sufficient experience relevant to the style of mineralisation and type of deposit under consideration and to the activity which is being undertaken to qualify as a Competent Person as defined by the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (the JORC Code).

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 20 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