ASX: AGE

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Samphire Uranium Project Community Briefing

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DECEMBER 2022

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Acknowledgement of Country

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We would like to acknowledge the Barngarla People as the Traditional Custodians of the lands on which we are gathered. We pay our respects to their Elders, past, present and emerging.

We look forward to continuing to build our relationship with the Barngarla Determination Aboriginal Corporation (BDAC) and the Barngarla community into the future.

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This presentation contains projections and forward looking information that involve various risks and uncertainties regarding future events. Such forward-looking information can include without limitation statements based on current expectations involving a number of risks and uncertainties and are not guarantees of future performance of the Company. These risks and uncertainties could cause actual results and the Company's plans and objectives to differ materially from those expressed in the forward-looking information. Actual results and future events could differ materially from anticipated in such information. These and all subsequent written and oral forward-looking information are based on estimates and opinions of management on the dates they are made and expressly qualified in their entirety by this notice. The Company assumes no obligation to update forward-looking information should circumstances or management's estimates or opinions change.

Competent Person's Statement – Uranium

Information in this report is based on current and historic Exploration and Resource Drilling Results compiled by Dr Andrea Marsland-Smith, who is a Member of the AusIMM. Dr Marsland-Smith is employed by Alligator Energy as Chief Operating Officer (COO) and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity she is undertaking (including 15 years working with ISR uranium development and operations) to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves. Dr Marsland-Smith consents to the inclusion in this release of the matters based on her information in the form and context in which it appears.

Competent Person's Statement – Nickel Cobalt exploration

Information in this report is based on current and historic Exploration Results compiled by Mr 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.

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 Native Title & 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.

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Alligator Energy – Strategy

- Active uranium explorers in the Northern Territory since 2010
- Acquired the Samphire Uranium project near Whyalla in 2020
- Uranium exploration in the Cooper Basin, SA
- Nickel-Cobalt (Cu, Au) in Piedmont, Italy
- Advancing resource and exploration targets while evaluating and acquiring further uranium or energy mineral assets in key target regions

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Uranium – The Industry and Future Outlook

- Australia is the world's third largest uranium producer behind Kazakhstan and Canada.
- Nuclear Non-Proliferation Treaty (NPT) and bilateral treaty with the Australian Government.
- 5 approved uranium mines in South Australia - Beverley, Beverley North, Four Mile, Honeymoon (all In Situ Recovery (ISR) mines) & Olympic Dam (underground).
- Uranium provides around 10 per cent of the world's power. There are around 440 operating nuclear reactors globally.
- Impacts on uranium supply demand:
  - Global focus on reducing emissions – large emitters India, China
  - Countries re-committing to nuclear – Europe, USA, Scandinavia
  - New countries – UAE, Turkey, Bangladesh, Vietnam, Poland
- Significant innovation - new, smaller and safer designs for Small Modular Reactors (SMR's) and Micro reactors.

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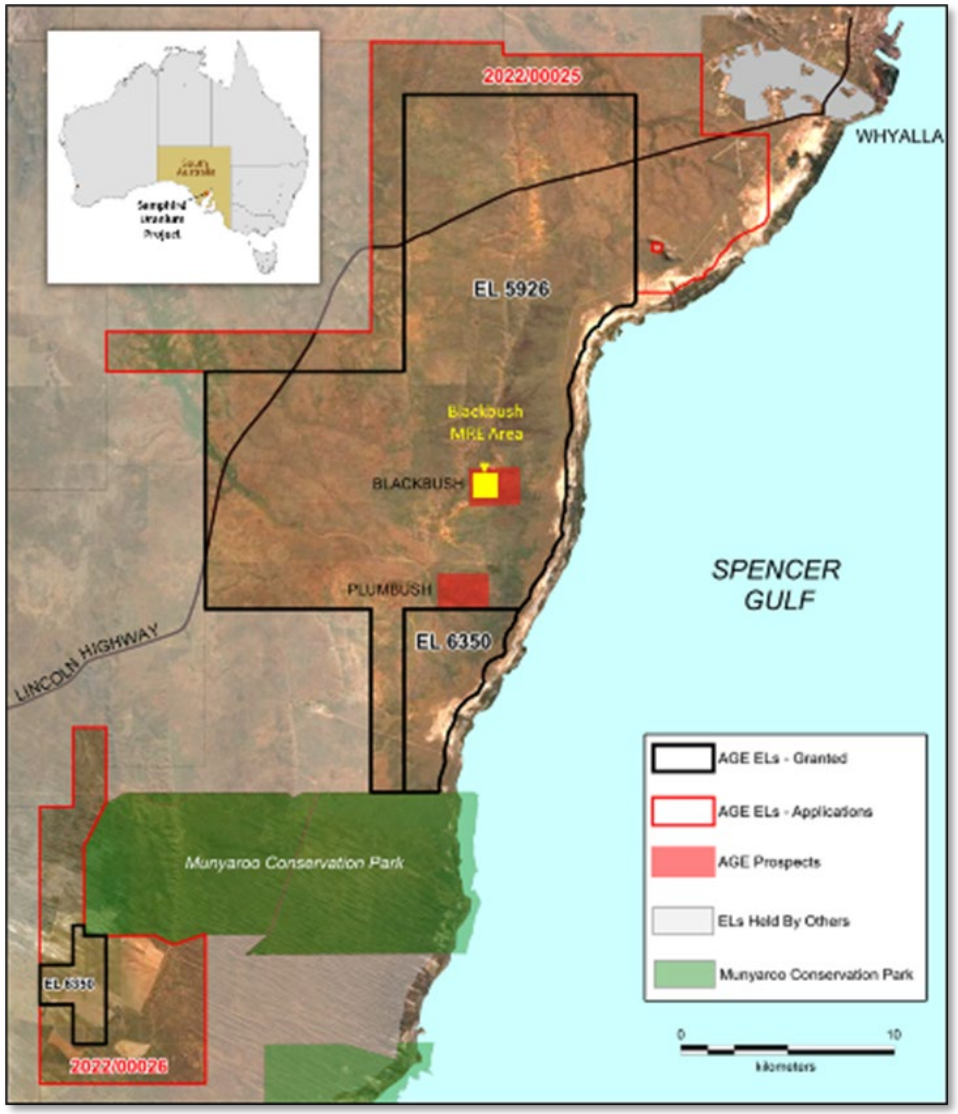
Samphire Uranium Project

- Located around 20km south of Whyalla (Mullaquana Road area) on exploration licences (EL's) 5926 & 6350
- Two uranium prospects (Blackbush and Plumbush) - further EL applications surrounding the project area which are pending approval
- Previously the focus of work by UraniumSA between 2009 and 2012 – drilled over 800 drillholes.
- To date AGE have completed confirmatory and extensional drilling, metallurgical test-work, geophysics and a mineral resource estimation at Blackbush.
- The resource is suitable for a small start-up in-situ recovery (ISR) operation - very low impact footprint compared to conventional open pit or underground mining.
- To progress the project, AGE is proposing a small-scale short-term Field Recovery Trial (FRT) using the ISR method in late 2023, following the receipt of all necessary approvals.
- Future steps would include further feasibility studies, additional resource drilling and full mine project approvals.



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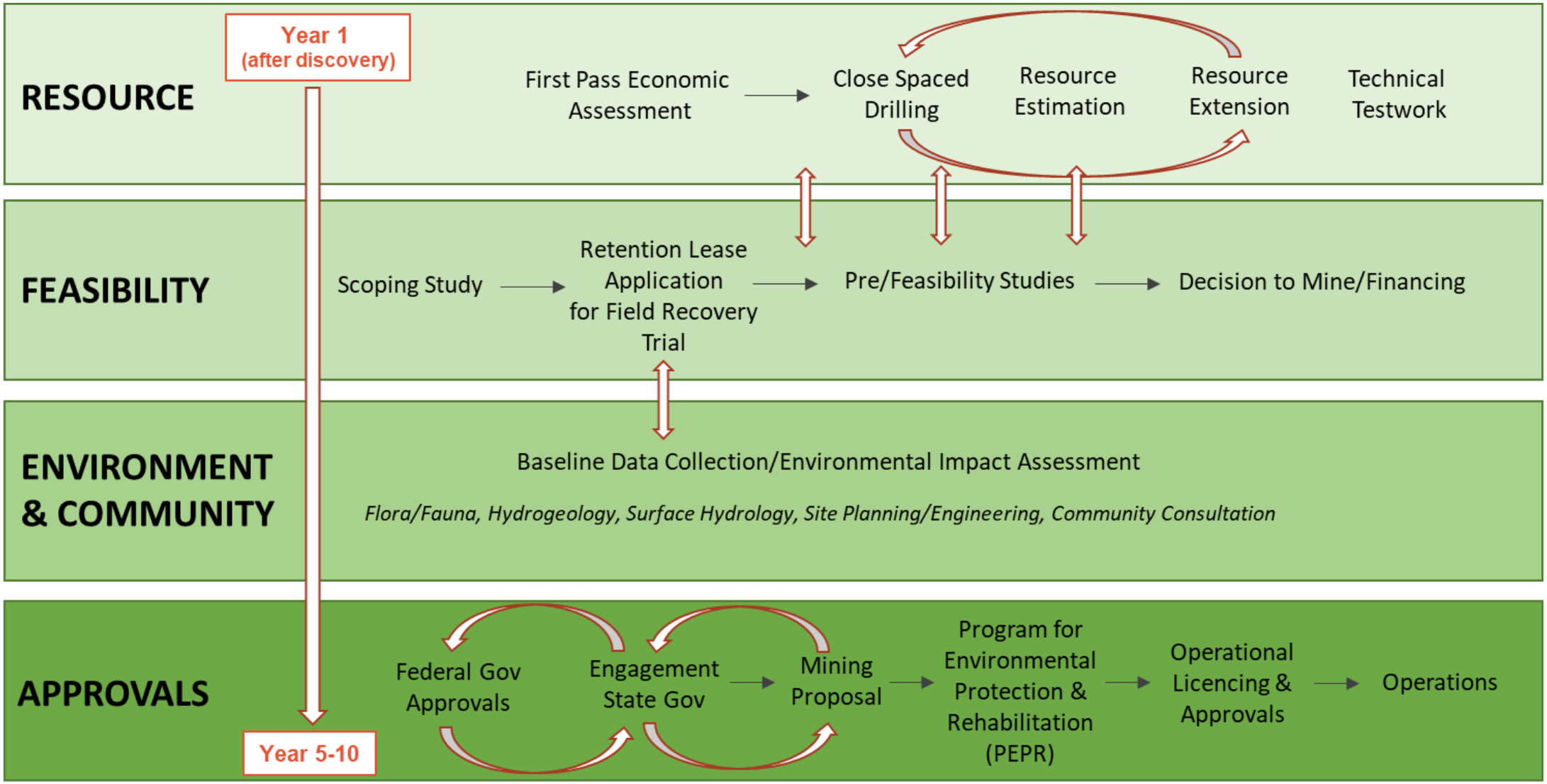
Approvals Pathway



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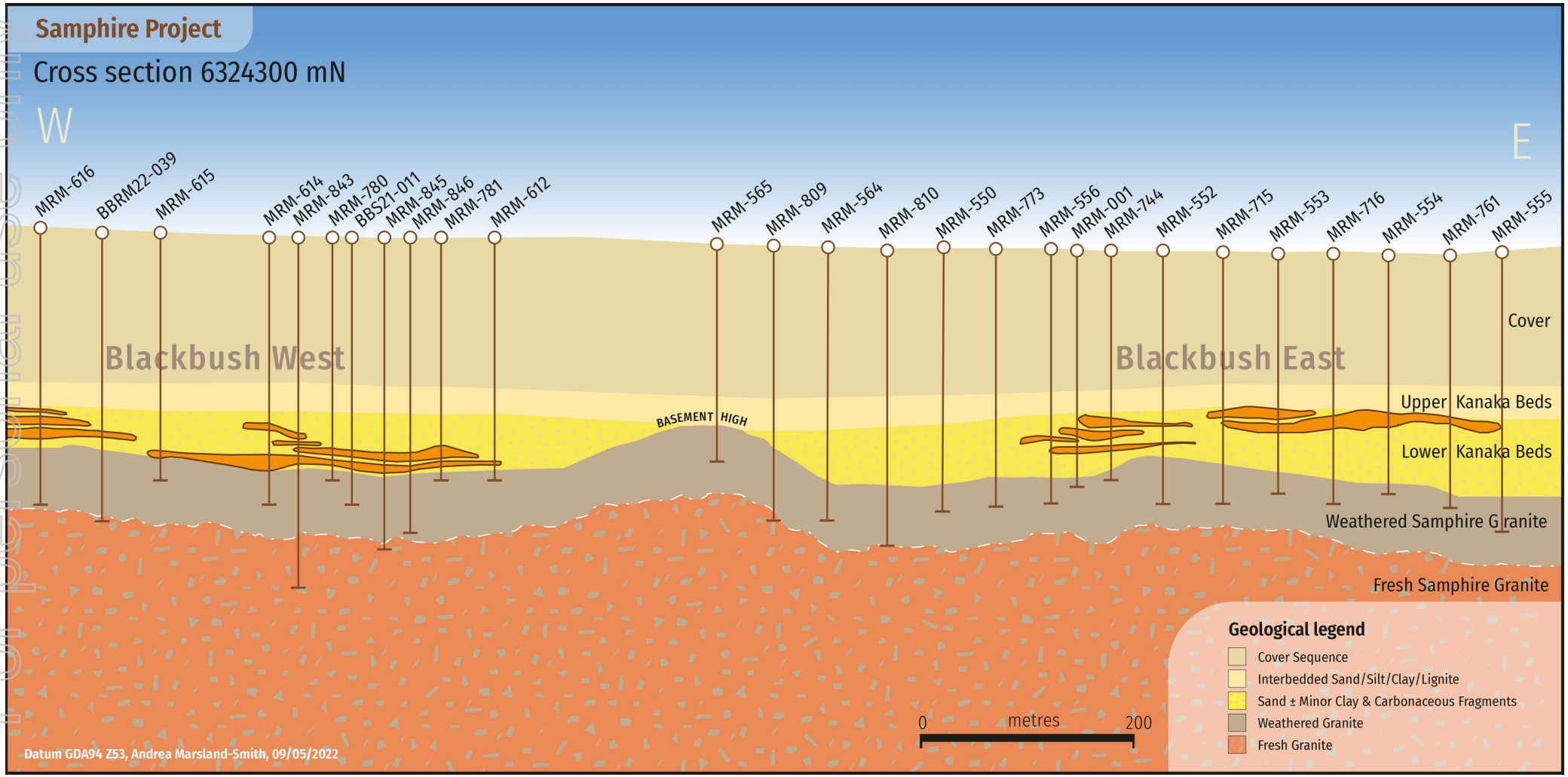
Blackbush Deposit - Geology



Lower Kanaka Beds
Host to Mineralisation
(ISR Amenable)

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What is ISR or 'Solution Mining'?

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Source: Infographic: Everything You Need to Know About In-Situ Mining (visualcapitalist.com)

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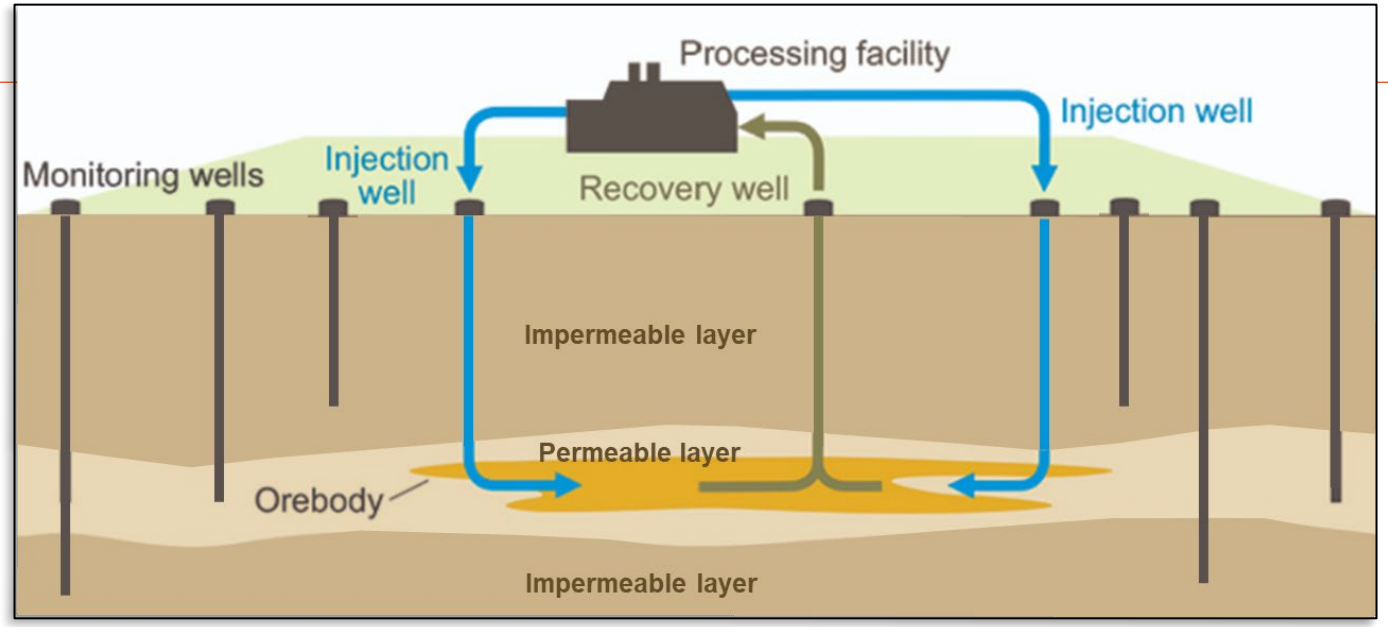
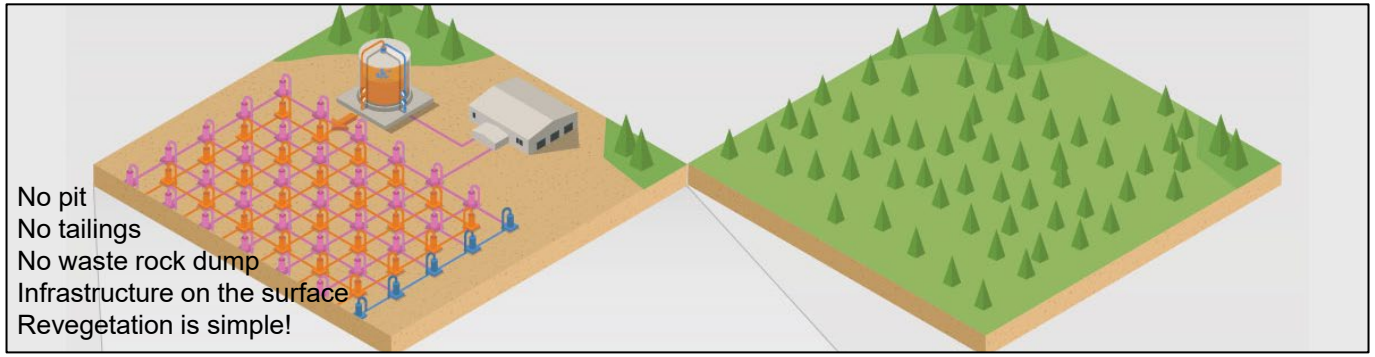
What is ISR or 'Solution Mining'?

- ISR, or In Situ Recovery, is a low cost and low impact mining method used for extracting shallow mineral deposits in permeable host rocks or sands.
- Accounts for around 60% of global uranium production and is the method used in uranium mines in the north of SA, USA & Kazakhstan.
- Preferred mining method due to low ground impacts compared to open cut mining.
- Involves dissolving the minerals within the orebody in place via injection wells and then pumping to the surface via recovery wells for the uranium to be recovered in a processing facility.
- Remaining solution is then retreated and re-circulated to recover more uranium, which continues until recovery rates reduce.
- The mine is progressively rehabilitated after each wellfield and closed in line with strict regulatory requirements at the end of mining.



Conceptual Model of ISR



Source: Infographic: Everything You Need to Know About In-Situ Mining (visualcapitalist.com)

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Field Recovery Trial (FRT)

- **The FRT will not produce uranium oxide**
- **Objective** is to develop a better understanding how well uranium is liberated from the underlying sediments (about 60 to 80 metres below the surface) via the ISR solution mining method.
- **Short-term** (approx. 3-months) FRT proposed for late 2023, following receipt of all necessary approvals.
- **Regulated** by the Department for Energy and Mining (DEM) , SafeworkSA and the Environment Protection Agency (EPA).
- **A Retention Lease (not a mining lease) is required to operate the FRT**. This is the instrument that Department of Mining (DEM) regulates FRT; it allows strong regulation and oversight of all environmental aspects, including closure and rehabilitation.
- Small-scale field trials have been undertaken previously in South Australia and around the world as a precursor to more detailed feasibility studies.
- Full-scale ISR mining requires a mining lease and uses ~150 wells at any one time – the FRT only consists of 3 wells.
- Upon completion, well infrastructure and containerised pilot processing plant will be removed, and the site remediated to its original state
- If successful, further mining lease approvals from State and Federal Governments will be required (along with project financing etc). This takes several years.

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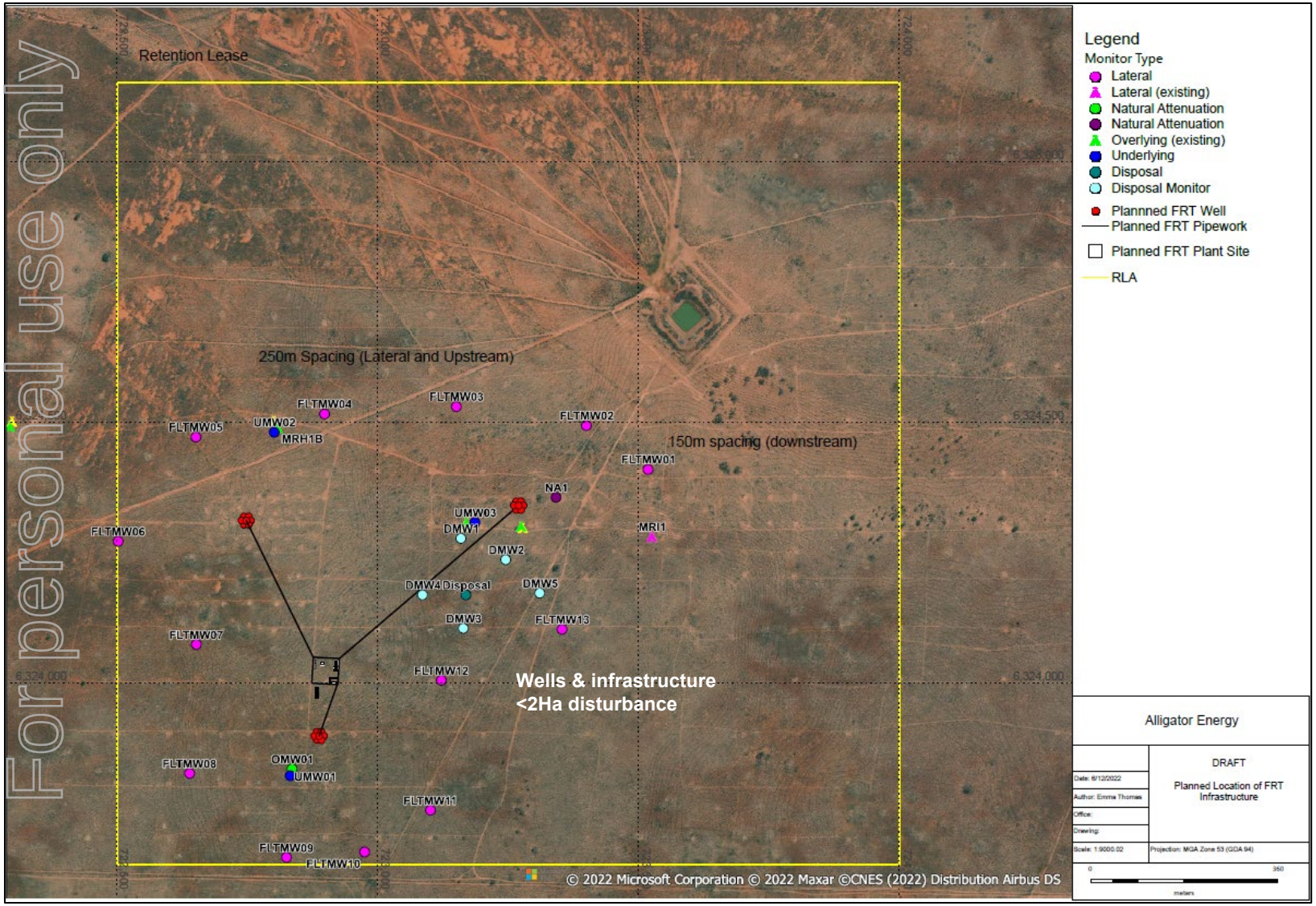
Field Recovery Trial (FRT)



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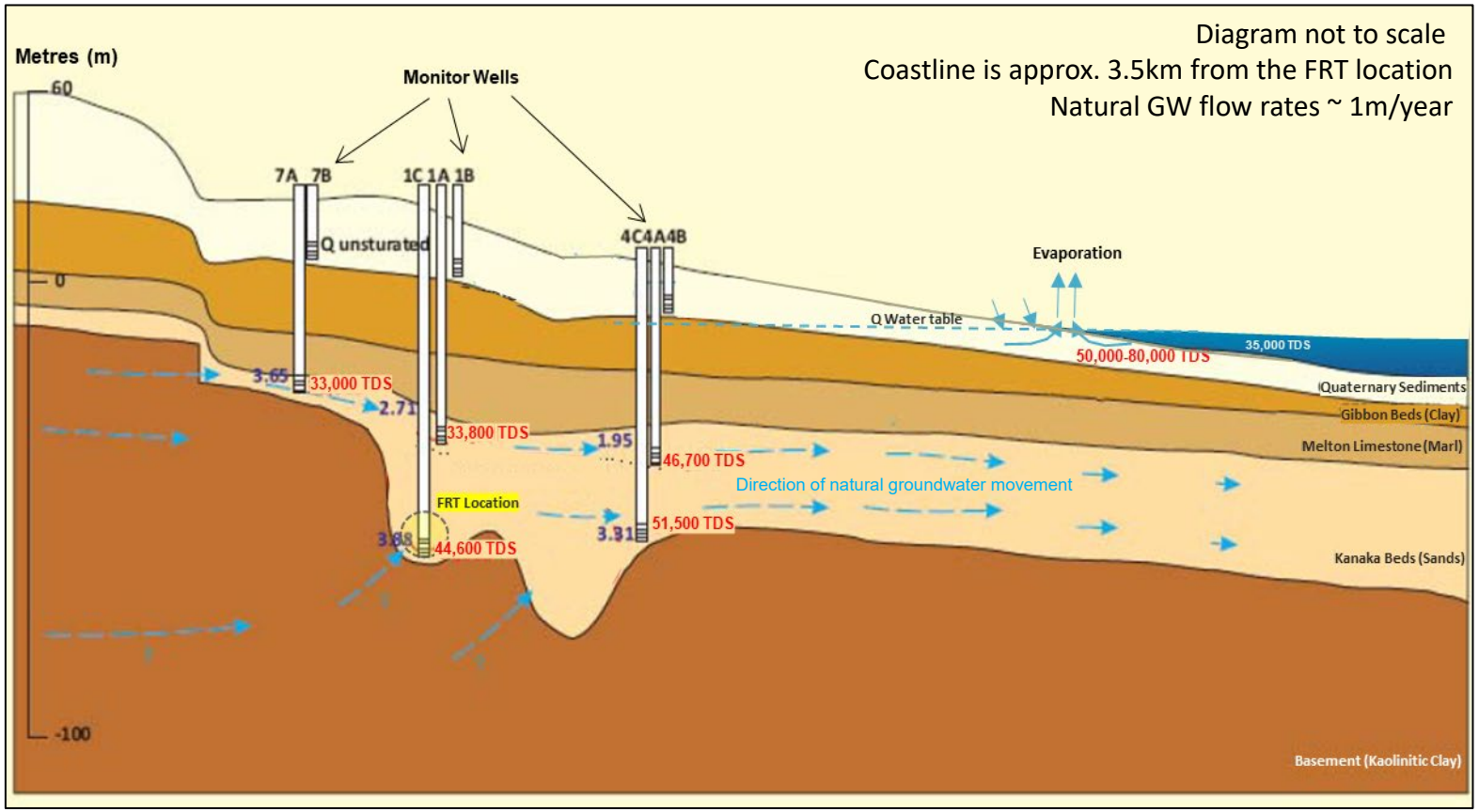
Groundwater

- Project is located ~3.5km from the coastline.
- The Kanaka Beds are isolated from overlying sediments by clays.
- Water quality is hypersaline (not being suitable for potable, agricultural or pastoral uses).
- AGE is required to ensure that FRT fluids do not reach any overlying or underlying formations/aquifers (via monitoring).
- Fluids circulated during FRT activities will not migrate above or below the test area by:
  - All wells are constructed in line with national standards and pressure tested to ensure they isolate all but the target aquifer.
  - Managing fluid pressures in wells during operations.
  - Ongoing monitoring to demonstrate fluids do not move outside of the operational area.
- On closure, groundwaters will be actively monitored until neutralisation can be demonstrated in line with modelling completed.



Stylised Hydrogeological Model: Red labels – groundwater salinity (mg/L)
Blue labels - aquifer Pressure (mAHD freshwater equivalent)

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Groundwater- What happens to the fluid after completion of the FRT?

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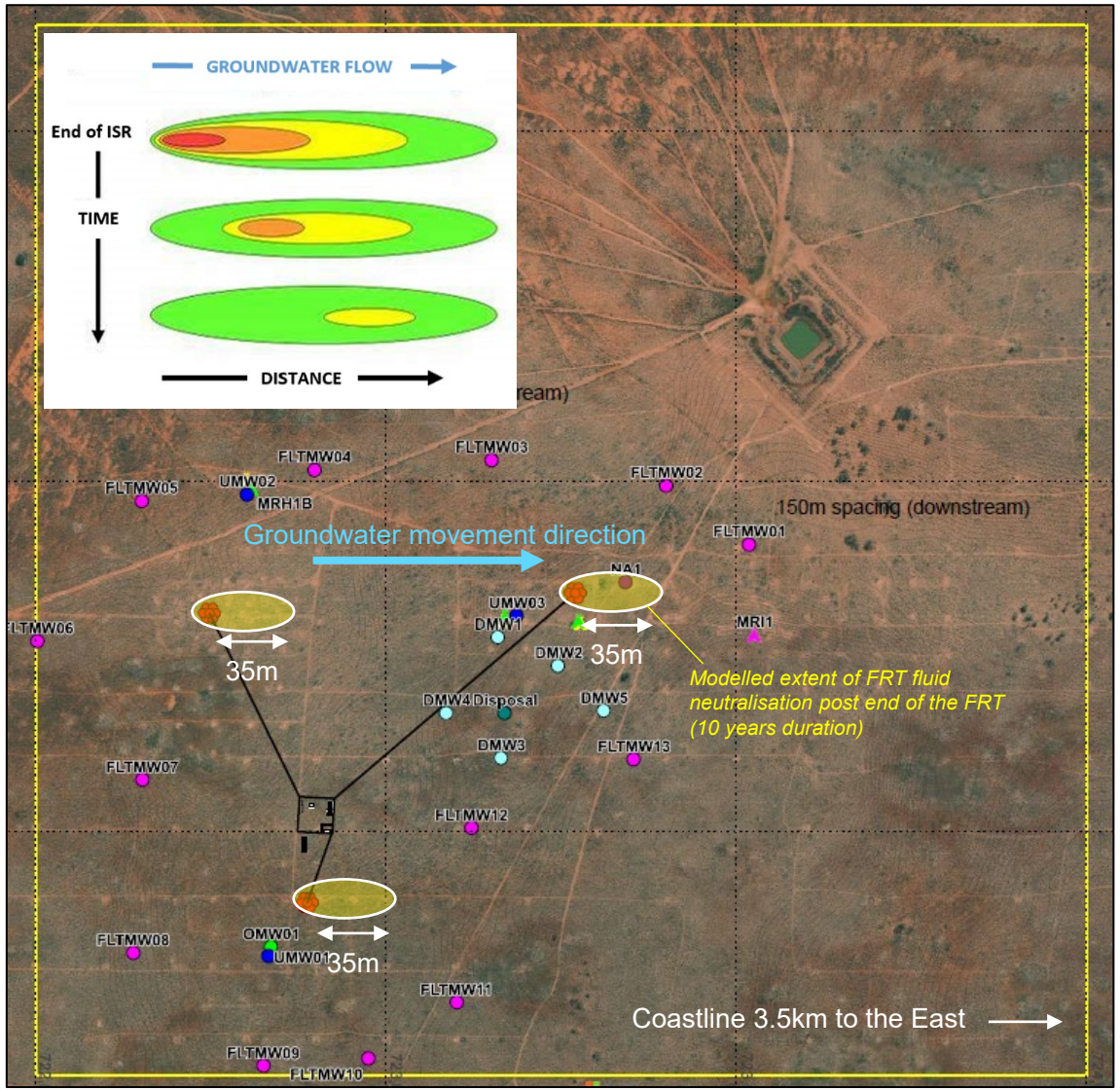

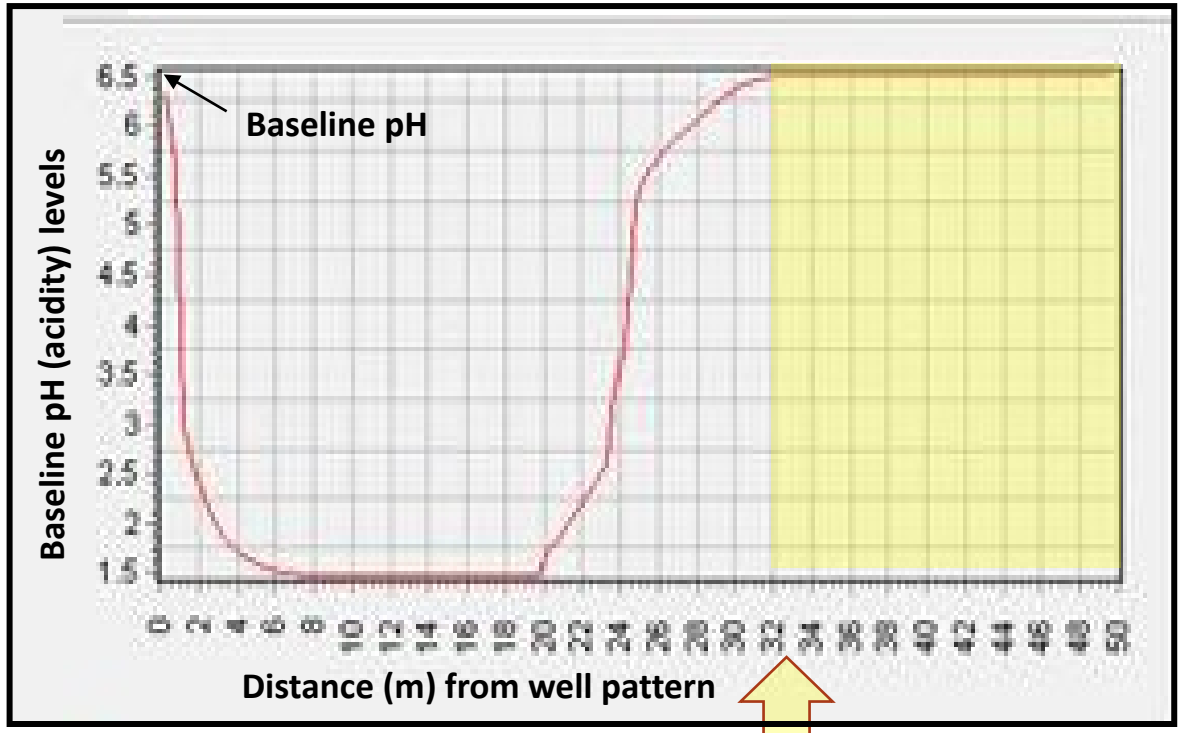

Independent consultant chemical modelling shows return to baseline pH (acidity level) within 32-35m from original area of FRT operation

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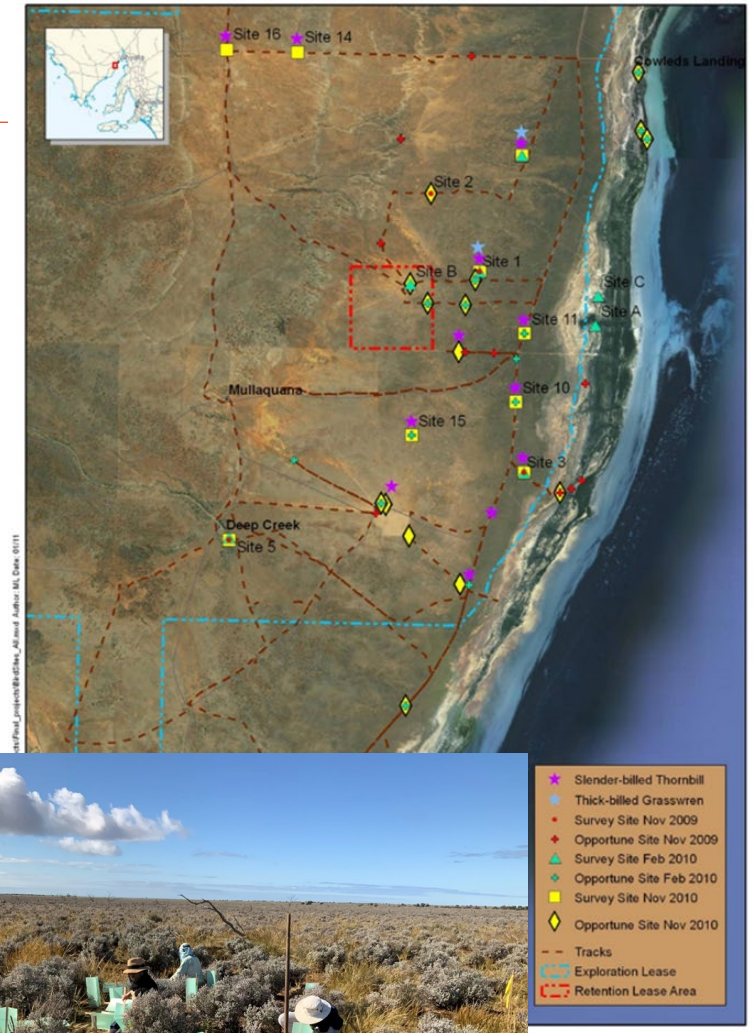
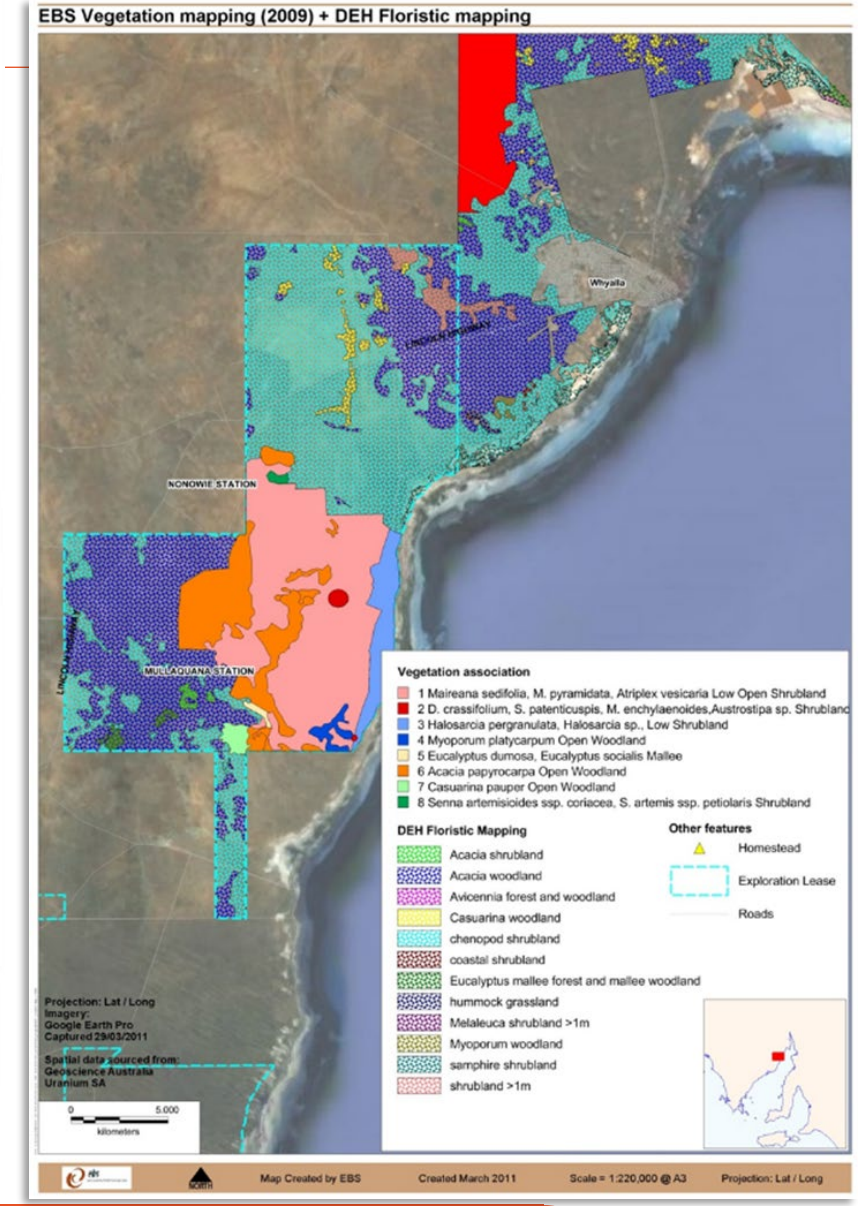
Flora & Fauna

- No endangered or rare (called 'listed') plants on the proposed Retention Lease area
- Flora and fauna studies have been completed by EBS Ecology for the Retention Lease application
- Flora is mainly Pearl Bluebush Shrubland habitat
- Within the wider area there are some habitats for 4 listed bird species
  - 2 species of Grasswrens
  - Shy Heathwren
  - Slender-billed Thornbill
  - Australian Bustard often seen on Mullaquana Road.





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Environmental & Social Governance (ESG) in Practice

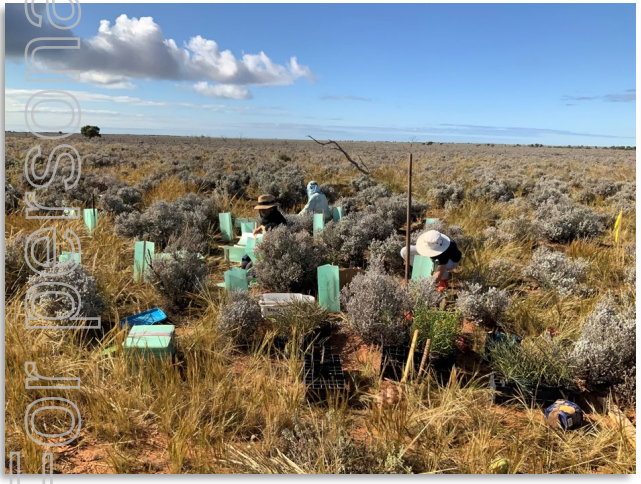
Roll bushes at drill sites, no grading or bulldozing

Collecting local seed each year

Seed ready for rehabilitation

Hydroseeding truck

Hydroseeded drillpads



Tube stock planting - Myall and Sandalwood

Weed spraying

Fenced off rehab areas from rabbits & sheep

All trees protected

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Retention Lease (RL) - Environmental & Community Values

As part of our RL application to the State Government, AGE is required to have detailed operational management/monitoring plans, remediation and closure plans that meet 'Environmental Outcomes' regarding:

- Soil – *Soil condition remains unchanged*
- Groundwater – *No change in nearby aquifers*
- Surface Water – *No change in environmental values*
- Flora – *No negative change in native flora populations*
- Fauna – *No native animal deaths or population decline, no increase in feral species*
- Air quality/Radiation – *No change from baseline*

Any RL approval will be contingent upon AGE demonstrating that we can conduct the FRT within strict 'Environmental Outcomes' as determined by the Department of Energy and Mining (DEM) and the Federal Government (Dept for Climate Change, Energy, the Environment and Water).

Looking forward, we intend to host sessions focussed on environmental management and our commitments to the local environment and community, early in 2023.

Fenced drill site (July 2022), showing successful regeneration of vegetation

Hydroseeding stops dust and holds soil and seed in place

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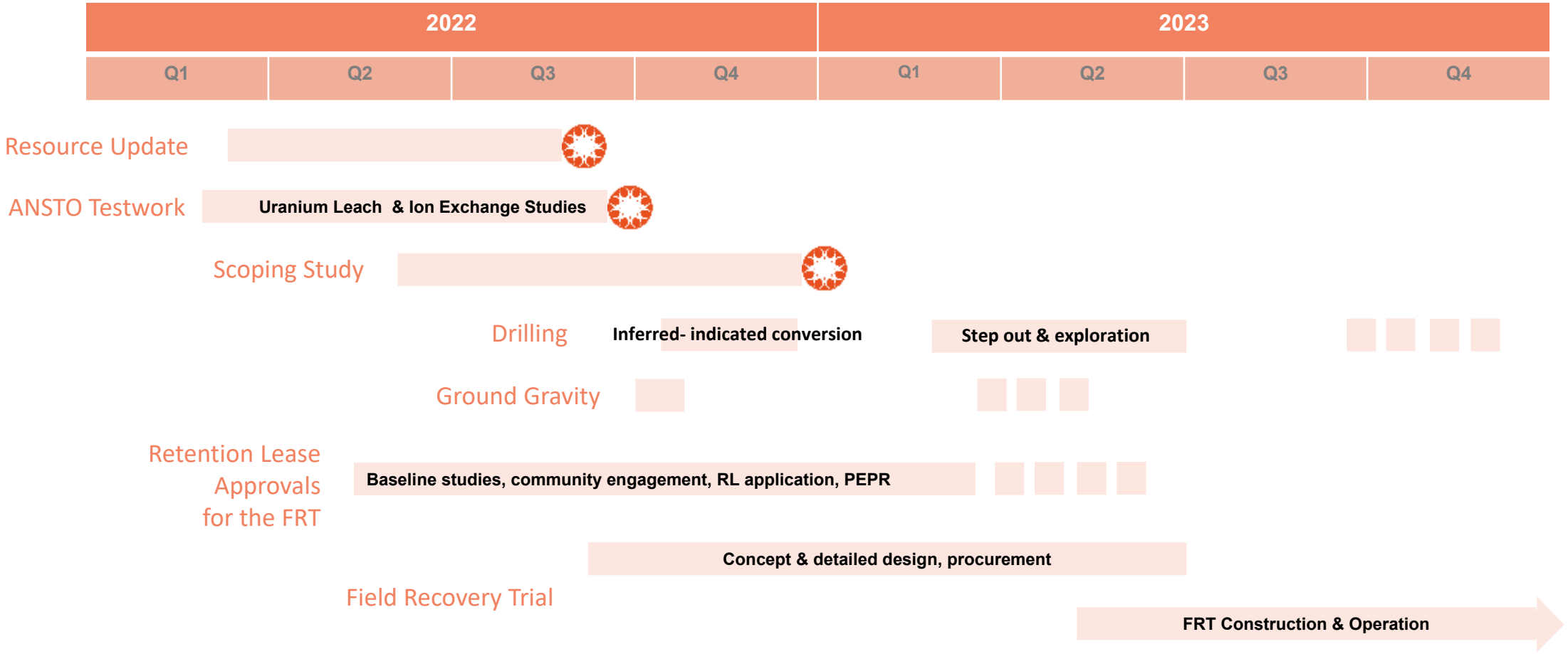
Planned Activities 2022/23



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Working with the Community

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- Over $500,000 spent (since Sept 2021) in the local community, with more than 30 businesses to date.
- Equipment hire, accommodation, fabrication services, vehicle hire, exploration consumables and others.
- Future spend to also include LV & HV maintenance, air-conditioning maintenance, cleaning, engineering and fabrication, laboratory services, medical services, Dangerous Goods Transport, general freight and borehole logging, to name just a few.
- Future labour requirements - administration, warehousing, poly-welding, electrical trades, boilermakers, mechanical fitters, operators, earthmoving (backhoe), field technicians and others.
- Being closely located to Whyalla is a significant advantage for AGE, given the city's quality workforce and extensive industrial and other business offerings.

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Contact Us and Questions

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We would greatly appreciate any questions or feedback on aspects raised today, so please contact the AGE team:

- feedback@alligatorenergy.com.au
- (07) 3839 3904
- www.alligatorenergy.com.au

Further briefings and engagement opportunities will be provided over coming months and will be promoted through local media and other sources – we look forward to seeing you again.

Questions?

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