

ASX announcement

20 September 2021

Uranium Exploration Assets: Cummins, SA

Argonaut Resources NL (ASX: ARE) (*Argonaut* or the *Company*) is pleased to announce details of the Cummins uranium exploration project in South Australia (Figure 1).

The Company has acquired a substantial package of prospective uranium exploration licences in South Australia and the Northern Territory (Figure 1). Argonaut holds these assets via a 100% held, unlisted public company, Orpheus Minerals Ltd (*Orpheus*). Argonaut plans to list Orpheus on the Australian Securities Exchange later this year.

Highlights

Cummins, SA

Multiple shallow, drill-ready uranium targets.

- Four distinct uranium exploration targets have been identified within the Cummins exploration licence. These targets are shown in Figure 3 and include:
 - ↪ Target A: upper paleochannel unit (20-30m depth) defined by a consistently high gamma response in historic drilling.
 - ↪ Target B: lower paleochannel unit (60-70m depth) containing reduced, pyritic sands, also defined by gamma logs in historic drilling.
 - ↪ Target C: dissolved uranium in groundwater defined by an historic groundwater sampling program.
 - ↪ Target D: potential near-surface calcrete-hosted uranium deposits defined by unusually high uranium responses in a modern (2011) airborne radiometric survey.
- The Cummins project is secured via an option, sale and milestone agreement which provides a clear pathway to 100% ownership of a 953km² mineral tenement.

Initial Public Offering

- IPO preparations are well advanced.
- The Argonaut board is considering:
 - ↪ an entitlement offer of Orpheus shares to Argonaut shareholders as part of the IPO process; and
 - ↪ a potential in-specie distribution of Orpheus shares to Argonaut shareholders (subject to statutory escrow provisions).

Uranium Assets

Orpheus has 100% ownership or a clear pathway to 100% ownership of all related mineral titles.

- Orpheus holds a 100% interest in three granted exploration licences and three exploration licence applications.
- Orpheus has executed option agreements to acquire 100% of one granted exploration licence (Cummins, SA) and one exploration licence application.

Argonaut, via Orpheus, has assembled a package of prospective, uranium projects in South Australia and the Northern Territory that are either 100% held or secured via an option to acquire 100%. Projects were chosen following a systematic review of uranium deposit-styles and available projects over the past two years. The review covered uranium opportunities available for application in South Australia or Northern Territory where the majority of permitted Australian mines are located. Three of the five projects selected were on open ground and were secured via application to the relevant department. The Mount Douglas project was purchased via a two-stage payment of \$80,000 (paid in 2021) and \$120,000.

South Australian Projects

South Australia hosts four out of six approved Australian uranium mines: Olympic Dam, Beverley, Four Mile and Honeymoon. Three of these mines are nearby to the Frome project. Uranium production at these existing, nearby mines is by in-situ recovery.

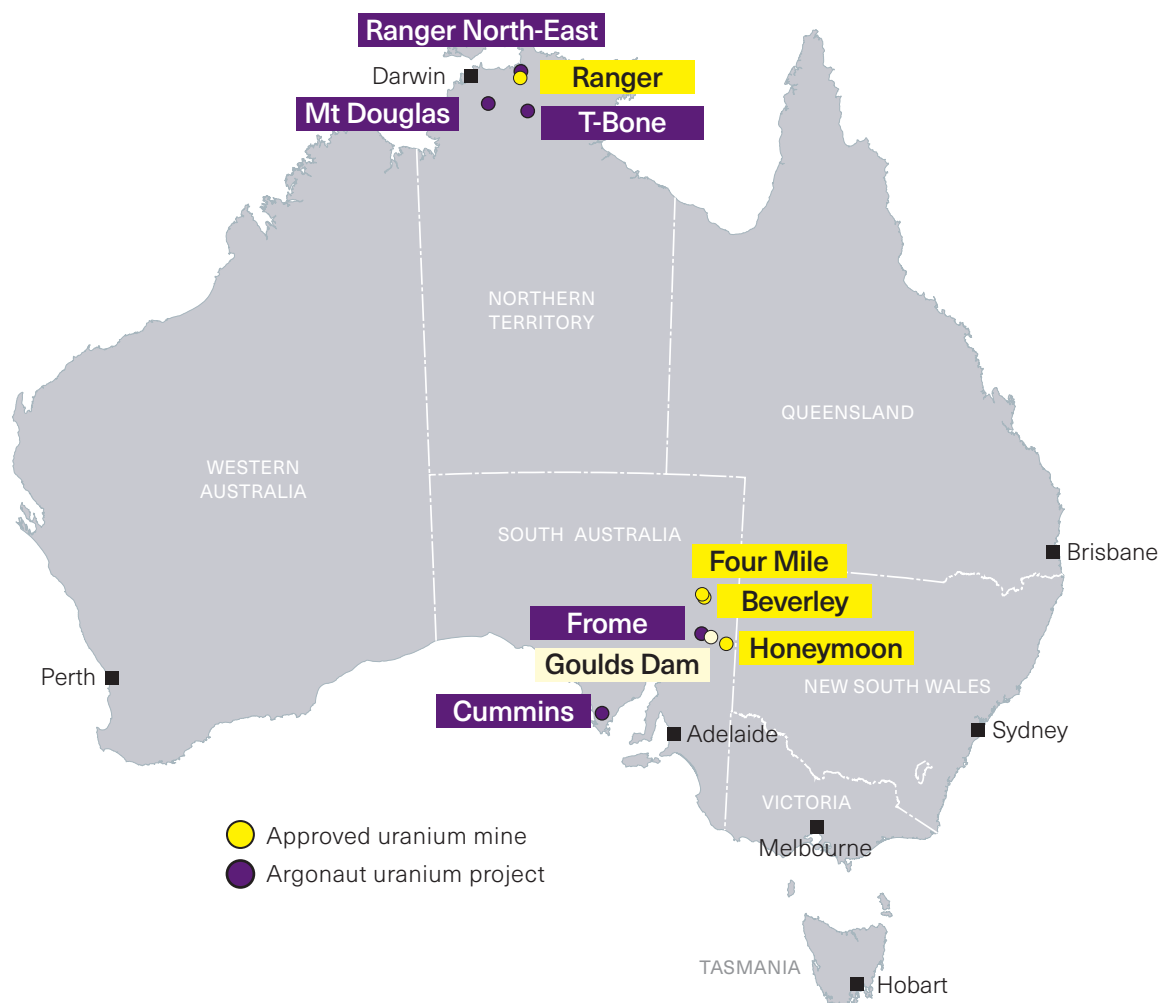


Figure 1 Location map of Orpheus Minerals' uranium assets.

Cummins Project, SA

The Cummins project area is located on the southern Eyre Peninsula, South Australia. The area features Tertiary age paleochannels that have been demonstrated by historic drilling to contain concentrations of uranium. The paleochannels have upper and lower units that are similarly prospective. The upper unit is very close to surface and presents as a walk-up drilling target in urgent need of further drilling.

Uranium contained in these subsurface channels is interpreted to have been sourced from two adjacent uranium-bearing granites (Figure 2).

The Cummins licence area also contains prospective calcrete uranium targets and dissolved uranium in groundwater.

Prospectivity

Four distinct uranium exploration targets have been identified within the Cummins exploration licence. These targets are:

- Target A: upper paleochannel unit (20-30m depth) defined by a consistently high gamma ray response from wireline logs of historic drill holes.
- Target B: lower paleochannel unit (60-70m depth) containing reduced, pyritic sands, also defined by gamma ray logs of historic drilling.
- Target C: dissolved uranium in groundwater defined by a groundwater sampling program undertaken in the 1970s.
- Target D: potential near-surface calcrete-hosted uranium deposits defined by unusually high uranium channel responses in a modern (2011) airborne radiometric survey.

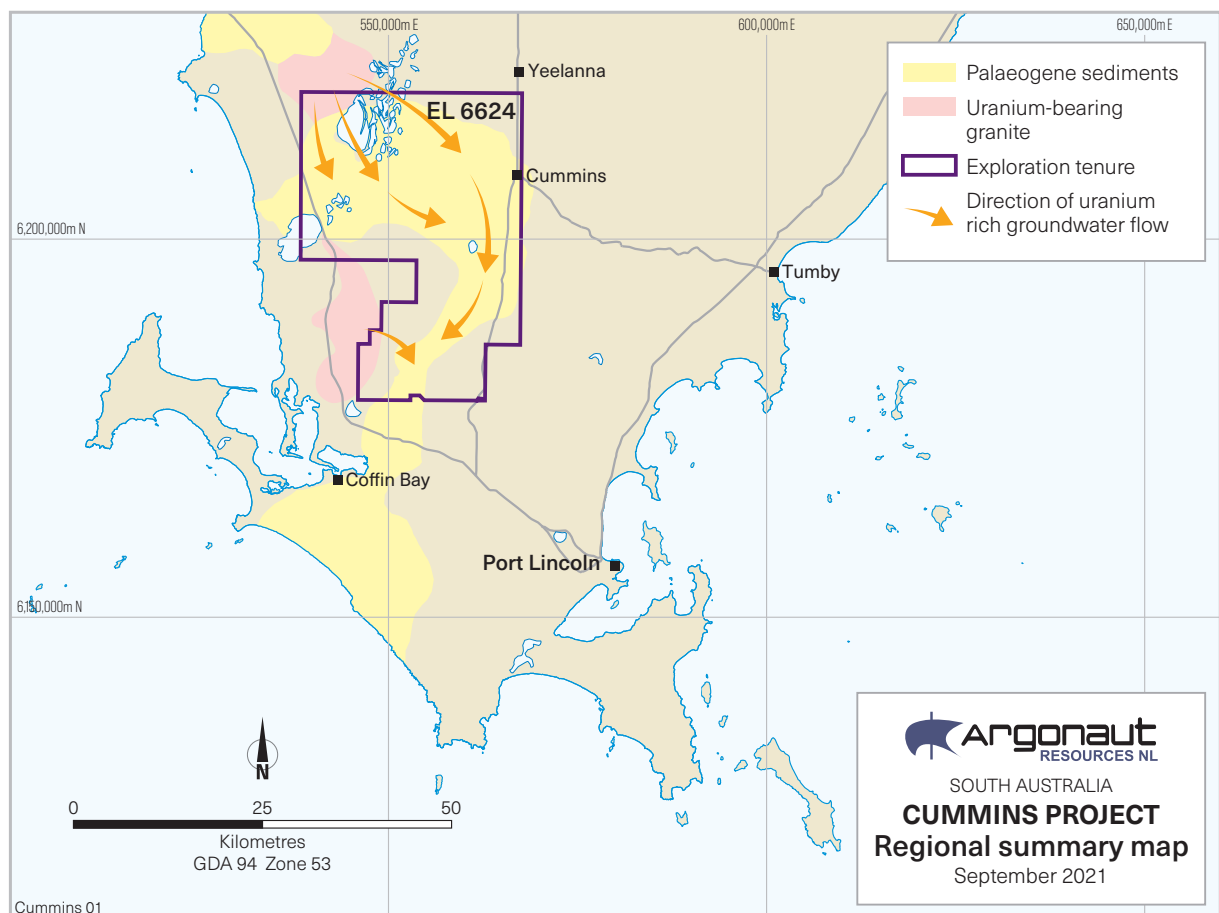


Figure 2 The Cummins project licence showing palaeochannels with demonstrated uranium content within the area of the licence and the granite bodies which are interpreted to have provided the uranium source material.

Orpheus has developed exploration programs designed to test all targets and it plans to execute these programs following the successful completion of the proposed IPO.

Targets A and B relate to a sandstone-bearing paleochannel that contains groundwater that drains from uranium-bearing granites (Figure 3). Previous drilling of these paleochannels confirms the presence of sandstone aquifers within the channels. These sandstone aquifers contain the necessary permeable coarse sands and have been shown by gamma ray logging of historic drill holes to contain uranium.

Tenure

Option, Sale and Milestone Agreement

Orpheus holds its interest in the Cummins licence via an option, sale and milestone agreement. This agreement provides for the acquisition by Orpheus of a 100% interest of this large, recently granted exploration licence.

Cummins project exploration licence:

- Cummins, SA – sandstone-hosted roll front targets plus calcrete groundwater uranium targets:
 - EL 6624, Cummins – 953km² – option to acquire 100%.

About Argonaut

Argonaut Resources NL is an Australian Securities Exchange listed exploration and development company focused on the Murdie copper project in South Australia and copper development at the Nyungu copper-cobalt deposit at the Lumwana West project in North-western Zambia.

This report is authorised for release by:

Lindsay Owler

Director and CEO

Argonaut Resources NL

Sections of information contained in this report that relate to Exploration Results were compiled or supervised by Mr Lindsay Owler BSc, MAusIMM who is a Member of the Australasian Institute of Mining and Metallurgy and is a full-time employee of Argonaut Resources NL. Mr Owler holds shares and options in Argonaut Resources NL, details of which are disclosed in the Company's 2020 Annual Report. Mr Owler has sufficient experience which is relevant to the style of mineral deposits under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 edition of the "Australasian Code for Reporting of Mineral Resources and Ore Reserves". Mr Owler consents to the inclusion in this report of the matters based on his information in the form and context in which it appears.

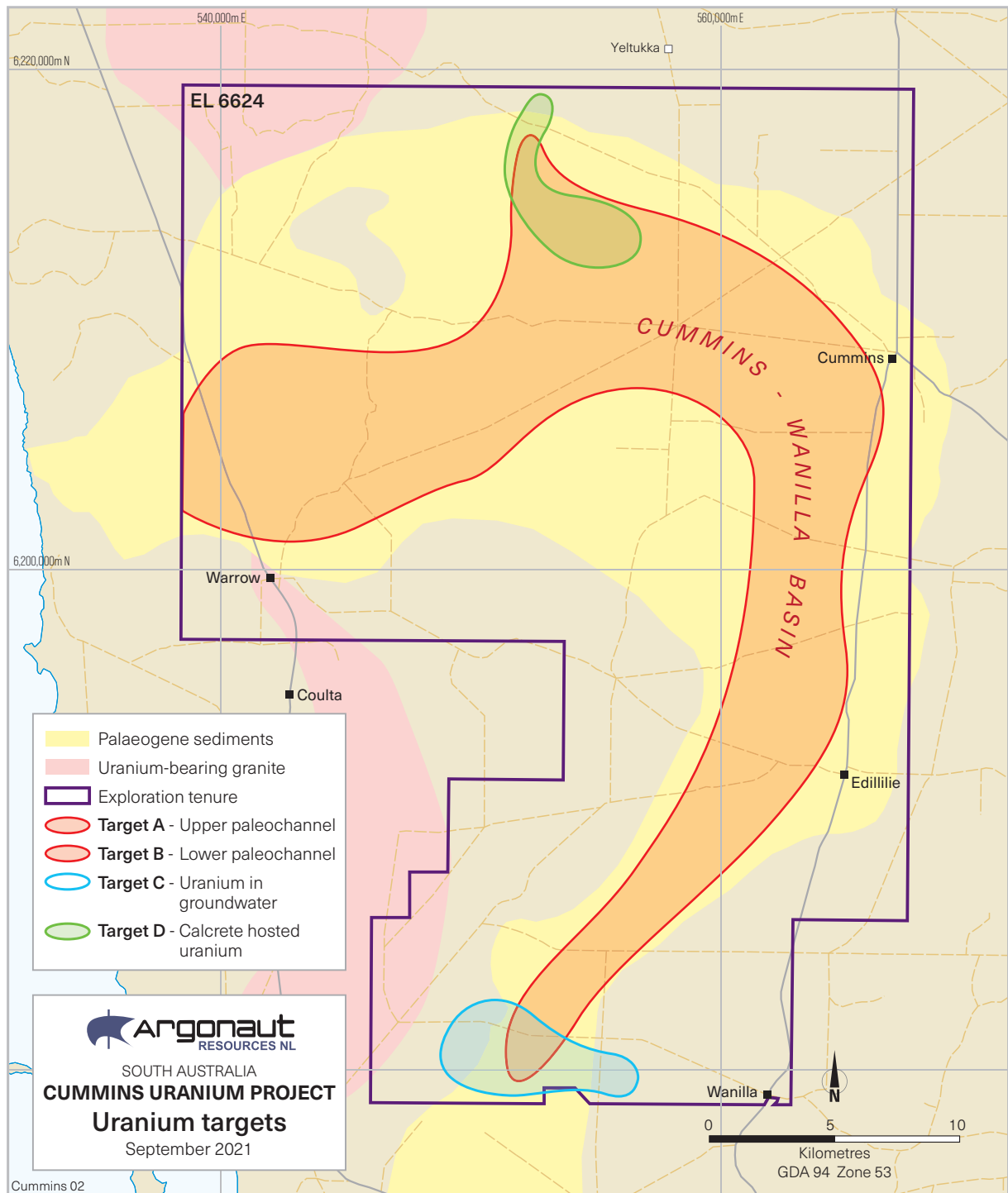


Figure 3 Cummins uranium exploration project – target locations.