

# ASX announcement

11 June 2020

## Murdie Copper Project Update

Argonaut Resources NL (ASX: ARE) (*Argonaut* or the *Company*) is pleased to announce that the South Australian Government has commenced the consultation process required to consider Argonaut's application for final authorisation to drill at the Murdie project in South Australia.

### Highlights

- The South Australian Government has commenced a consultation process which is required under the Aboriginal Heritage Act to consider Argonaut's application for final authorisation to drill at the Murdie copper project.
- Drilling will target some of the most compelling copper exploration targets in Australia.
- This is the final approval required to undertake a major drilling program targeting Iron Oxide Copper-Gold (IOCG) deposits at Murdie.
- Argonaut expects the Minister for Aboriginal Affairs will be able to consider the application during August 2020.

### Murdie Project (100% Argonaut)

The Murdie project is in South Australia near the eastern margin of the Gawler Craton (Figure 1). The project area covers over 1,000 square kilometres of highly prospective Olympic Domain geology and includes over 50 discrete gravity targets.

Argonaut holds a 100% interest in the Murdie project.

#### Highly Compelling Targets

Many of these targets have two important and sought-after qualities:

- they are within or at the margin of the same Donnington Suite granite body that hosts both the Oak Dam and Carrapateena IOCG deposits; and
- the Oak Dam and Carrapateena deposits and Argonaut's targets are defined by 'gravity only' geophysical anomalies.

Gravity-only anomalies don't have an associated magnetic anomaly and can be indicative of IOCG deposits that have been entirely altered from magnetite-dominant, low-grade systems to high-grade, hematite-dominant IOCG systems.

**"Large, gravity-only anomalies within Donnington Suite granite are the most compelling copper exploration targets in country," Lindsay Owler.**

## Target Modelling

Argonaut has geophysically modelled an airborne gravity survey (Barrick, 2010) and an aeromagnetic survey (SA Government, 2017). These data were modelled by 3D inversion and 54 distinctive anomalies were defined (Figure 2).

Of these 54 anomalies, eight gravity-only anomalies were selected for 2D modelling on the basis of size and host lithology. The 2D modelling resulted in the definition of seven anomalies that warrant drill testing. Further 2D modelling is required to assess many of the remaining 3D anomalies.

## Lower Cost Drilling

The Murdie drill targets are in three operational domains (Figure 2): onshore, nearshore and offshore. Each of these domains involves different drilling procedures due to different surface and subsurface conditions. Table 1 below summaries these conditions.

Many of the granite-hosted gravity targets at the Murdie project are located at the shoreline of the Lake Torrens (Figure 2), which means that these targets can be drilled without the cost of helicopter support.

Nearshore targets and the most prospective offshore targets can be drilled without intersecting the artesian aquifer that frustrated 2019 drilling efforts at the neighbouring Torrens anomaly.

**Table 1** *Murdie Project operational domains and required drilling techniques*

	Drilling Techniques		
	Helicopter Supported	Artesian Groundwater	Percussion Pre-Collar
Onshore	No	No	Yes
Nearshore	No	No	Yes
Offshore – No Aquifer	Yes	No	No
Offshore – Aquifer	Yes	Yes	No

## Authorisations

### Authority under the Aboriginal Heritage Act

In February 2020, Argonaut lodged an application under the South Australian Aboriginal Heritage Act for final authorisation to drill at the Murdie copper project. This application seeks authorisation in similar terms to two authorisations previously granted for the neighbouring Torrens project.

On 11 June 2020, the South Australian Government commenced a consultation process which is required to consider Argonaut's application.

The Company expects that the Minister for Aboriginal Affairs and Reconciliation will be able to consider Argonaut's application during August 2020.

### Operational Approval

The 'Exploration Program for Environment Protection and Rehabilitation' for ongoing exploration activities including ground gravity surveys and diamond drilling at exploration licences 5937 and 5945 was approved under the South Australian Mining Act in January 2020.

The approval allows for up to 200 deep diamond drill holes into a string of large and prospective Iron Oxide Copper-Gold (IOCG) anomalies from nearshore and offshore locations on the salt crust of Lake Torrens.

### Native Title Access

In 2018, the South Australian ERD Court granted native title authority to enter and undertake mining operations (exploration) within the area of EL5937 and EL5945.

### Lindsay Owler

Director and CEO

*This announcement was authorised for release to the ASX by Lindsay Owler, Director and CEO, Argonaut Resources NL.*

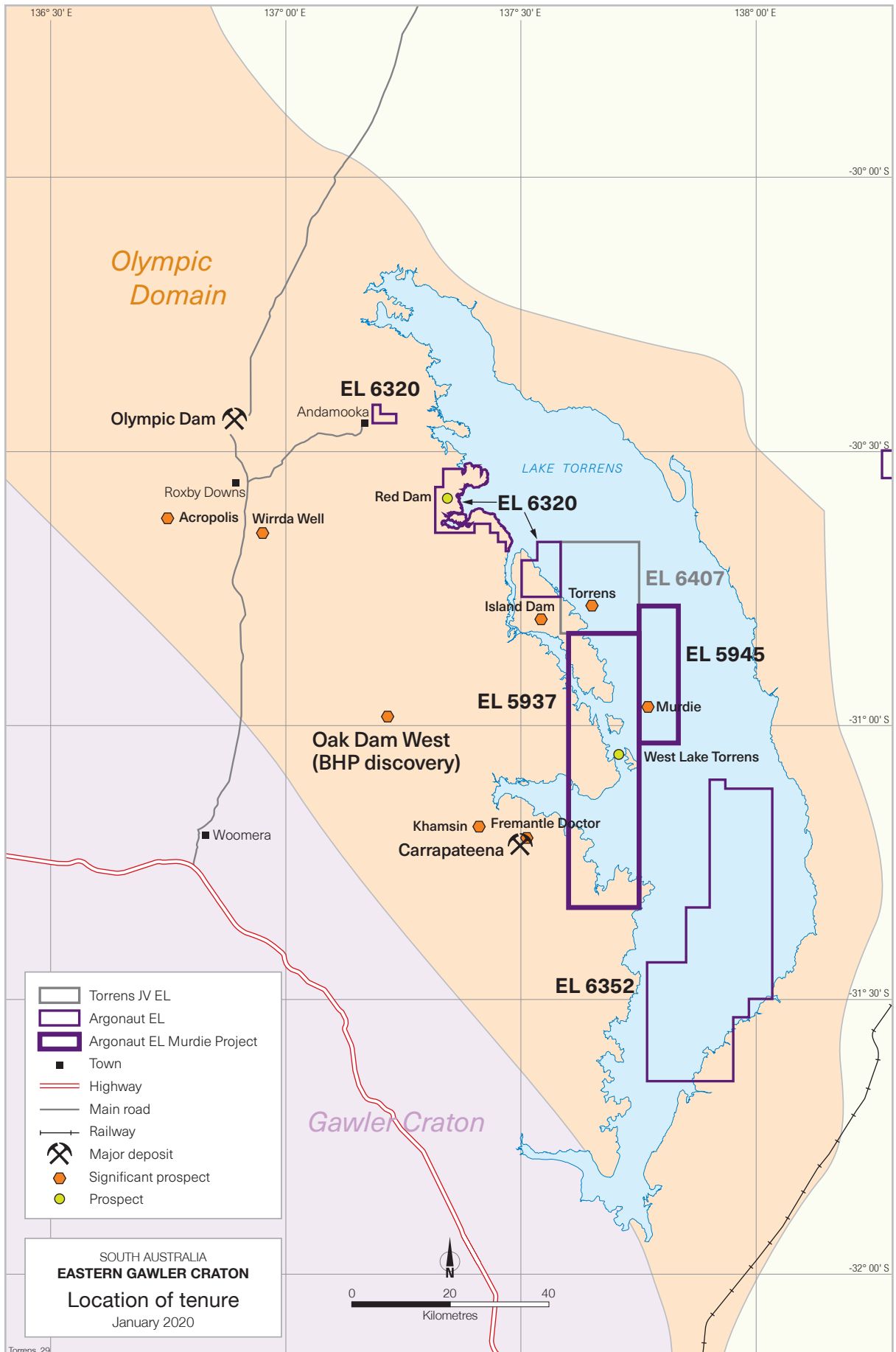


Figure 1 Lake Torrens exploration licences.

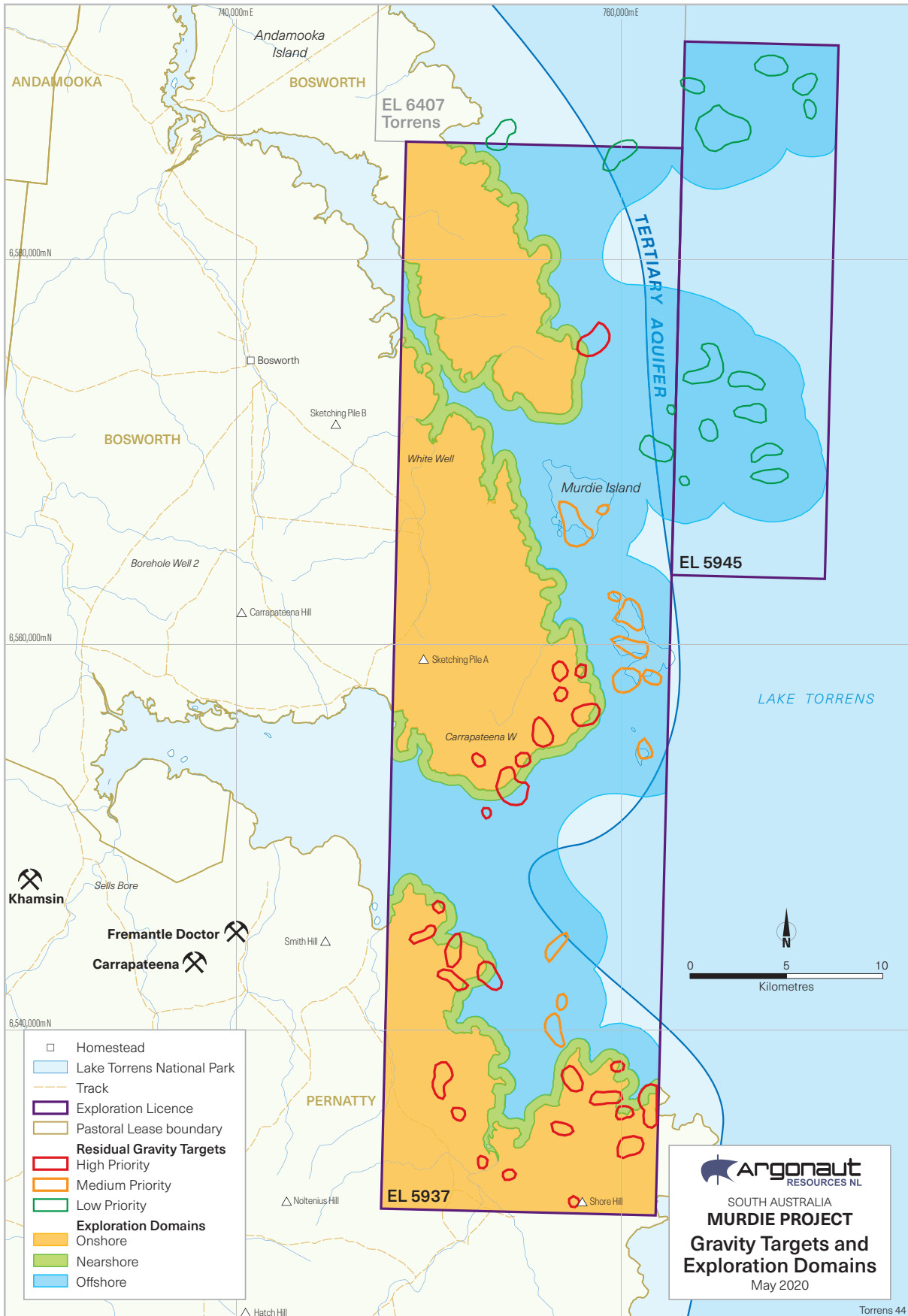


Figure 2 Gravity targets and exploration domains.