



Adelaide Resources Limited
ABN: 75 061 503 375

Corporate details:

ASX Code: ADN

Cash: \$0.701million
(at 31 Mar 2016)

Issued Capital:
357,922,352 ordinary shares
37,222,104 listed options (ADNO)

Directors:

Colin G Jackson
Non-executive Chairman

Chris Drown
Managing Director

Nick Harding
Executive Director and
Company Secretary

Jonathan Buckley
Non-executive Director

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Fact: Lithium brine deposits occur in salt lakes that form in the arid latitudinal belts either side of the equator. Favorable zones lie between 19° and 37° south or north. **South Australia is the driest state in the driest continent.** It has a significant number of large salt lakes.



ASX announcement

27 April 2016

Lithium brine project (100% interest), South Australia

Lithium brine potential of two South Australian salt lakes to be investigated

Summary

Adelaide Resources has secured exploration tenure over a potential lithium brine play in South Australia to complement the application made earlier in 2016 for a hard rock lithium opportunity in the Davenport Ranges in the Northern Territory.

- Exploration licence application, ELA 2016/00047 “Lake Gilles” covers an area of 232 km² on the Eyre Peninsula and covers much of the Lake Gilles salt lake, identified by Geoscience Australia as having potential for associated lithium brines.
- The Company already holds a granted exploration title over a part of Lake Acraman, a second Eyre Peninsula salt lake that may also have lithium brine potential.
- There is no known previous exploration for lithium brines at either Lake Gilles or Lake Acraman, however extensive exposures of felsic Gawler Range Volcanics in the lake catchments may act as good lithium source rocks.
- A preliminary sampling programme to assess if lithium is present at elevated concentrations in the lake brines and sediments is planned.

Chris Drown
Managing Director

Direct enquiries to Chris Drown. Ph (08) 8271 0600 or 0427 770 653.

Introduction

Worldwide, lithium is extracted from two principal sources - hard rock deposits and lithium brines associated with salt lakes.

In March 2016 Adelaide Resources announced it had applied for an exploration licence over potential hard rock lithium occurrences in the Davenport Ranges in the Northern Territory.

Lake Gilles and Lake Acraman are salt pans located on the northern Eyre Peninsula in South Australia which may have potential for lithium brine deposits.

The Company has applied for a new tenement that covers a large part of

Lake Gilles (Figure 1), adding to an already granted tenement that secures part of Lake Acraman (Figure 2).

Lithium brine deposits

Lithium brine deposits are found in near-surface aquifers associated with salt lakes that form in the arid latitudinal belts north and south of the equator.

Lithium brines form when lithium and other soluble elements in soils are dissolved by surface waters which then flow into salt lakes. Felsic rocks like rhyolite and granite generally have higher background lithium contents than other lithologies, and their presence in the lake catchments is considered to be a positive feature.



Figure 1: Lake Gilles location plan.

If the salt lakes are hydrologically closed (ie evaporation exceeds precipitation and no waters escape from the basin) lithium concentrations in the residual lake brines gradually increase over time as a consequence of the removal of water through evaporation and the precipitation of sodium, potassium and calcium as evaporate minerals which form the lake's recognisable salt pan.

In producing lithium brine operations, lake brine, typically carrying between 200–1,400 milligrams per litre (mg/l) lithium, is pumped to the surface from aquifers under or adjacent to the salt lake bed. Lithium content is further concentrated in a chain of evaporation ponds until lithium concentrations reach 1 to 2 percent. The resulting lithium-rich liquor is then processed in a chemical plant to yield various end products, including lithium carbonate.

SA lithium brine investigation

The Company has secured title over parts of two South Australian salt lakes that may be prospective for lithium brines.

ELA 2016/00047 “Lake Gilles” is located west of Iron Knob on the Eyre Peninsula and covers much of the Lake Gilles salt pan (Figure 1). The Company’s Eyre Peninsula tenements, which include the advanced Barns and Baggy Green gold prospects, commence 50 km further to the west.

Lake Gilles is a large linear feature that stretches for approximately 50 km in a northeast direction. It sits in a large drainage basin bounded to the east by the Middleback Ranges, to the north by the Gawler Ranges, and to the south by higher country around Kimba. Lake Gilles is therefore considered likely to be a hydrologically closed system.

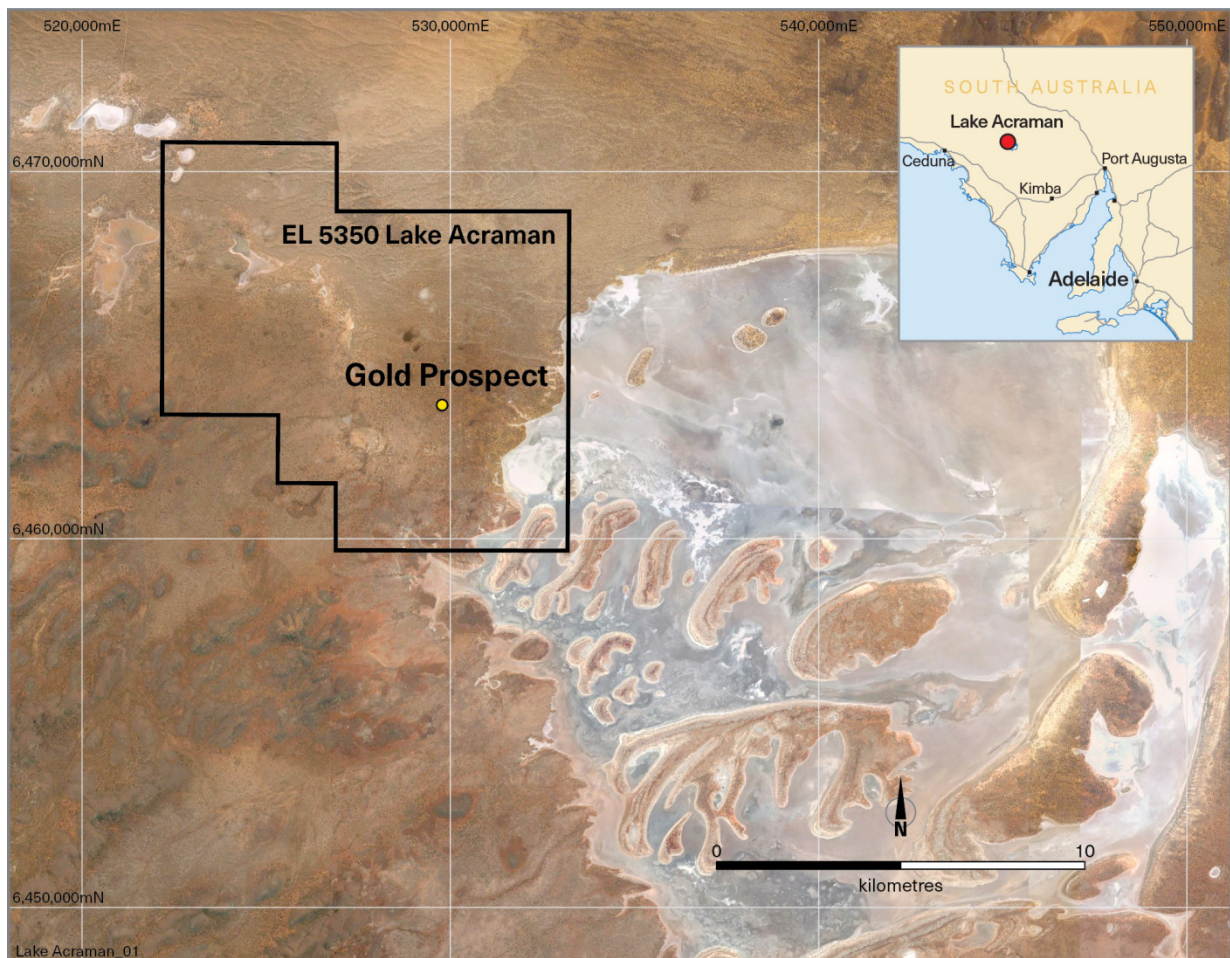


Figure 2: Lake Acraman location plan.

Rock types in the northern catchments of Lake Gilles are dominated by felsic volcanics that form the Gawler Ranges, and may act as a good source of lithium.

There is no recorded past exploration for lithium brines at Lake Gilles, however Geoscience Australia, in its “Critical commodities for a high-tech world” publication, has nominated Lake Gilles as worth investigating for lithium.

Adelaide Resources already holds granted EL 5350 “Lake Acraman” within its Eyre Peninsula gold project. The tenement secures a gold prospect situated 2.5 km west of the Lake Acraman shore line, and a small part of the lake falls in EL 5350 (Figure 2). There is no recorded exploration for lithium at Lake Acraman.

Lake Acraman is a circular feature some 20 km in diameter, and is believed to sit in a meteorite impact structure that formed 580 million years ago.

A chain of small salt pans near the northwest corner of EL 5350 is interpreted to indicate the presence of a north westerly trending palaeochannel extending through the tenement from Lake Acraman. The palaeochannel might serve as a significant brine reservoir.

Lithologies in the catchments of Lake Acraman comprise felsic Gawler Range Volcanics and Hiltaba Granite, which may be suitable lithium source rocks.

Competent Person Statement

The information in this report that relates to Exploration Targets, Exploration Results, Mineral Resources or Ore Reserves is based on information compiled by Chris Drown, a Competent Person, who is a Member of The Australasian Institute of Mining and Metallurgy. Mr Drown is employed by Drown Geological Services Pty Ltd and consults to the Company on a full time basis. Mr Drown has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken 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 Drown consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

Next steps

Ultimately a successful lithium brine exploration program would entail the delineation, through drilling, of significant volumes of treatable lithium brine in aquifers associated with a salt lake.

A positive first step would be confirmation that the lake brines contain elevated lithium concentrations. This can be investigated through preliminary water sampling and analysis. The presence of lithium-bearing clays in the salt lake sediments would also be considered a positive indicator of brine prospectivity.

A preliminary programme aimed at sampling and analysing the brine and lake sediments at Lake Acraman is planned. Similar work on the Lake Gilles tenement will require tenement grant and access approvals. The salt pan at Lake Gilles forms the Lake Gilles Conservation Park, a park where exploration and mining activity are allowed subject to meeting certain environmental conditions.

The Company is also planning a field trip to the Davenport Ranges application in early May to sample two historical tantalum-niobium-tungsten-tin prospects to determine if hard-rock lithium mineralization is present.

Adelaide Resources’ lithium exploration programme is complementary to the Company’s ongoing gold exploration programmes in the Drummond Basin and on the Eyre Peninsula.