TRI-STAR ENERGY COMPANY

Annual Report

Year 3

14 May 2010 - 13 May 2011

GEL309 – Marabooka Project

8 July 2011

Tri-Star Energy Company
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GEL 309 – Marabooka Project
Annual Report Year 3
14 May 2010 – 13 May 2011

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Introduction

Gel 309 was granted to Tri-Star Energy Company; ARBN 089 539 695, on 14 May, 2008, for a period of five years. The licence area is located in central South Australia, bounded by the following coordinates and has an approximate area of 482.5 km2:-

Latitude	Longitude
26 47	140 30
26 57 30	140 30
26 57 30	140 45
26 47	140 45

GEL 309 is located on Map 100 000: 7044 Cordillo III.

This report describes the work performed during year three of the licence (14 May 2009 to 13 May 2010), and planned activity during year three, in accordance with Regulation 33 of the *Petroleum and Geothermal Energy Regulations* 2000.

1 Work Requirements

The work program related to GEL 309 as set out in accordance with the conditions of the licence, are as follows:-

Licence Year	Minimum Work Program
Year 1	• Geological and geophysical studies.
Year 2	• Geological and geophysical studies.
Year 3	• Geological and geophysical studies.
Year 4	• Geological and geophysical studies; and • Drill and complete one injection well to a depth of 2,550 metres.
Year 5	• Geological and geophysical studies; and • Conduct fracture stimulation tests.

2 Work Conducted

Office-Based Work

During the reporting period, Tri-Star Energy Company furthered its research around the design and functionality of geothermal power plants. Tri-Star has also continued to build upon the geological and geophysical database gathered in the previous reporting period.

GEL 309 is located in the north east of South Australia covered by the Great Artesian, Eromanga, Lake Eyre, Warburton and Cooper Basin, as shown in **Figure 1 Location Map** and **Figure 2 Geological Region Map**. The South Australian Heat Flow Anomaly (SAHFA) occurs throughout the Curnamona Province down to the Delamerian Fold Belt, therefore flowing through GEL 309. GEL 309 is covered by Palaeozic and Tertiary sediments. A number of creeks flow through GEL 309 including Needle Creek, Marabooka Creek and Mudcarnie Creek, as shown in **Figure 3 Topographical Map**. The tenure is also covered by numerous small dry lakes between sand ridges.

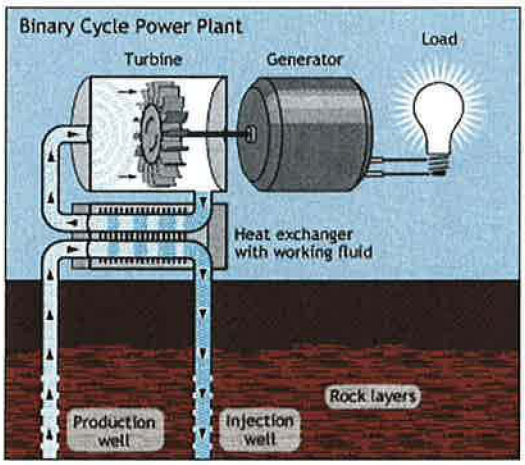
Tri-Star has previously identified all relevant parties in relation to the tenure, such as landowners and Native Title Claimants, as shown in **Figure 4 Native Title Map and Figure 5 Cadastral Map**.

The geological characteristics of the Cooper Basin area are that of hot rock, and a lack of natural subterranean reservoirs of hot water. It is this characteristic which has directed Tri-Star to investigate the binary cycle power plant.

The crucial benefit of using an organic Rankine cycle is the low boiling point of the organic working fluid. The efficiency of the system is increased due to the lower temperature the geothermal water needs to reach before converting the working fluid to power generating steam. The organic working fluids may include Ammonia, HCFC123 (Dicholortrifluoroethane), n-Pentane, PF5050 (Perflurotri-N-Butylamine) and i-Butane. In the upcoming reporting year the aforementioned fluids will be investigated to determine the most cost-effective design.

The binary system is a closed loop system. This ensures the working fluid and the geothermal water never come in contact with one another thus reducing the likelihood of environmental damage as there are virtually no emissions to atmosphere from the system.

The following depicts a typical dual well binary cycle power plant:



Field Work

No drilling or other field work was conducted during this third year of the tenure.

3 Proposed Operations for Year Four

During the fourth term, Tri-Star will focus on the development of a drilling program for an injection well on this tenure. Once a program is developed, Tri-Star will commence project planning and source tenders from contractors for the program. Tri-Star will also prepare and lodge the required activity notification, notify relevant landowners and prepare a Statement of Environmental Objectives for the drilling activities.

Tri-Star will commence field operations during the next term, drilling one injection well, to a depth of up to 2,500 metres. Tri-Star will also continue its geological and geophysical studies during the next year.

Tri-Star's future exploration program will also involve further research of the sedimentary cover contained in and around GEL 309, continued review and testing of available geological, geophysical and environmental data pertaining to the area, begin a feasibility study and conduct further mapping of available data.

4 Compliance Issues

Tri-Star Energy Company did not perform any activities that fall within the purview of Regulation 33. Given that no regulated activities were undertaken in the licence year, many of the regulations are inapplicable at this stage, and no instances of non-compliance have been noted. No reportable incident occurred and no threats have been identified during licence year three.

Tri-Star Energy Company recognises the importance of achieving regulatory compliance and is committed to achieving best practice in its management strategies, work practices, and procedures, in an environmentally and socially responsible manner.

5 Expenditure Statement

Please refer to **Appendix 1** for the expenditure statement for the current reporting period 14 May 2010 - 13 May 2011.

FIGURE 1

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LOCATION MAP

GEL 309 Location Map

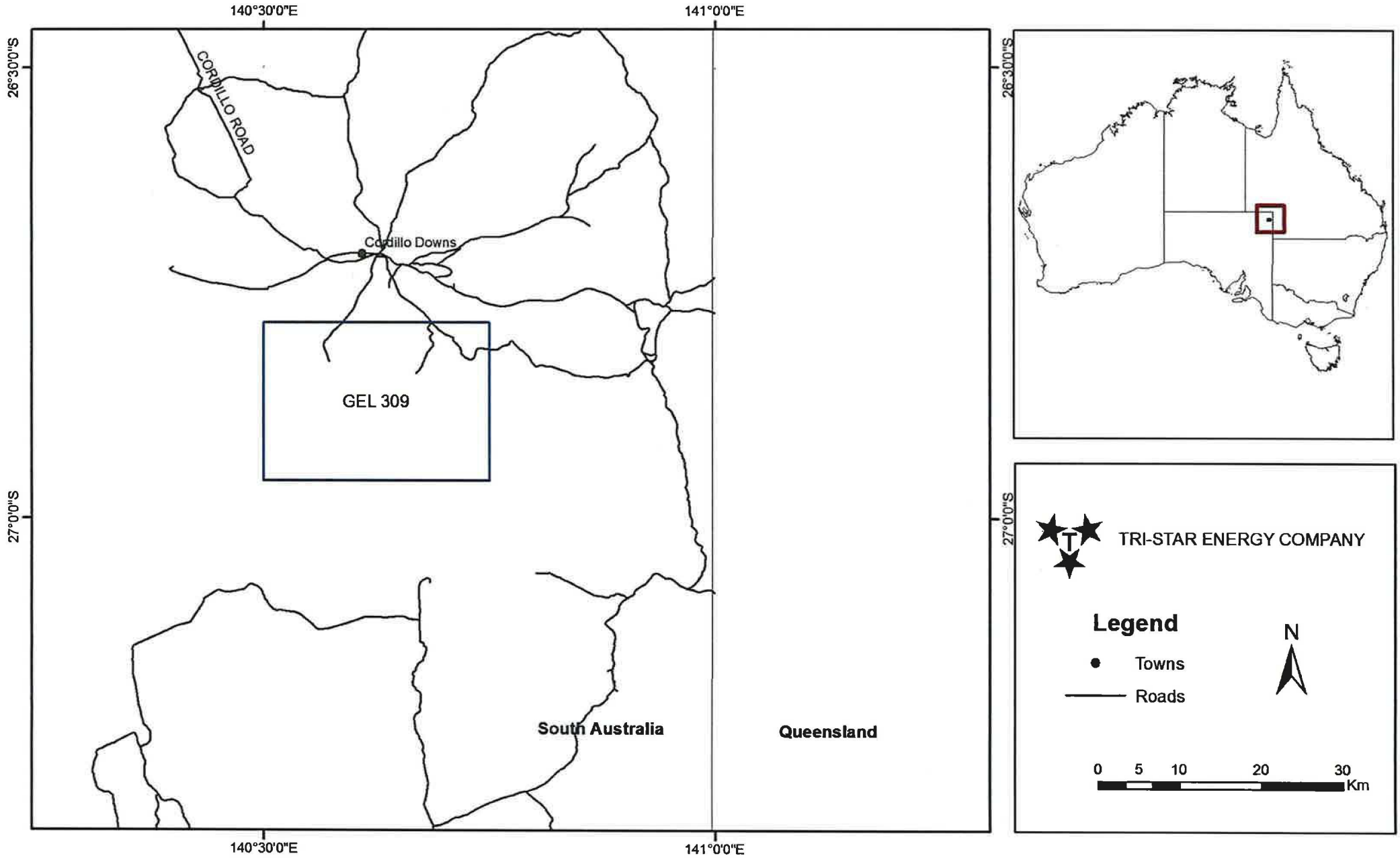

FIGURE 2

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GEOLOGICAL REGION MAP

GEL 309 Geologcial Region Map

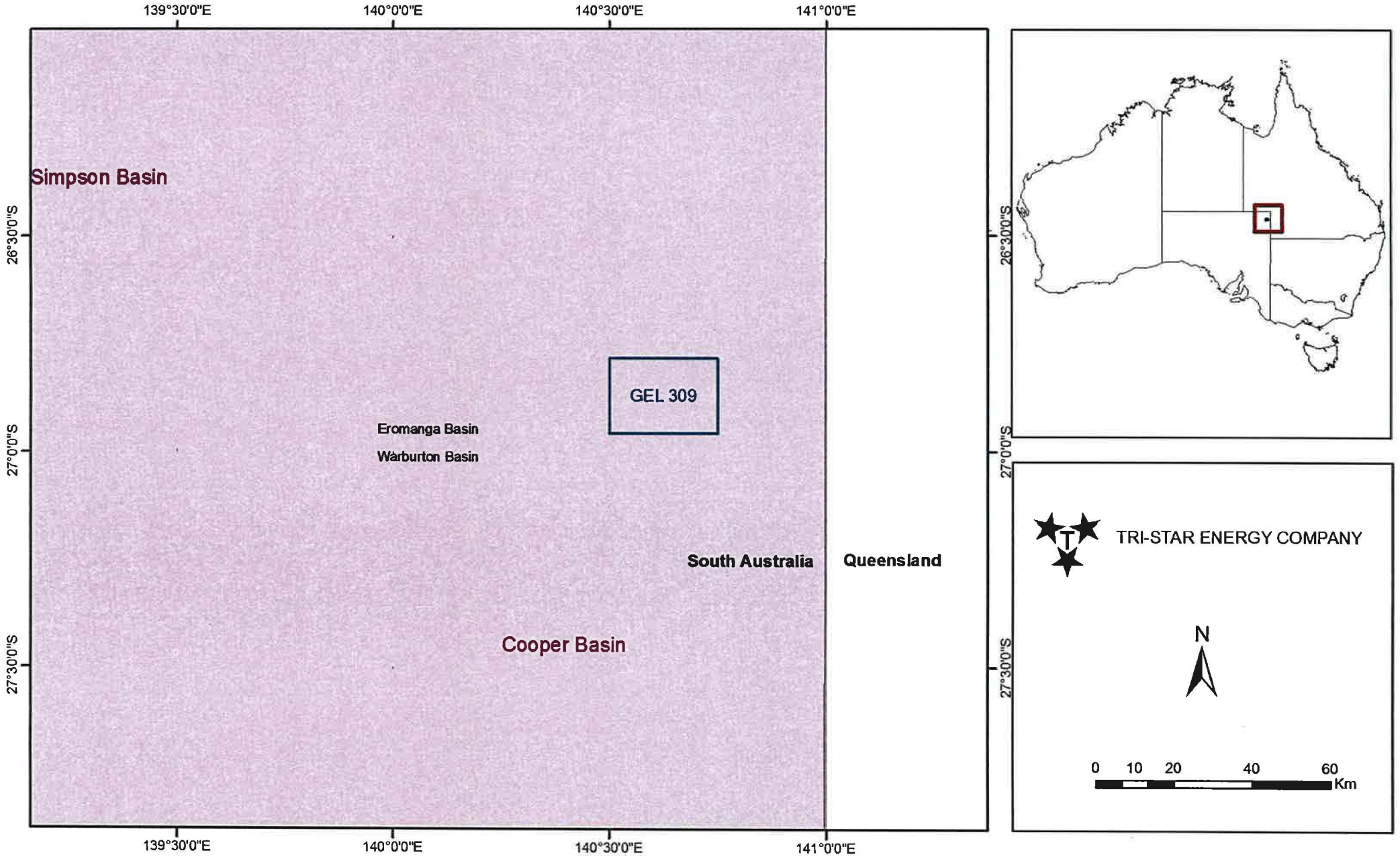

FIGURE 3

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TOPOGRAPHICAL MAP

GEL 309 Topographical Map

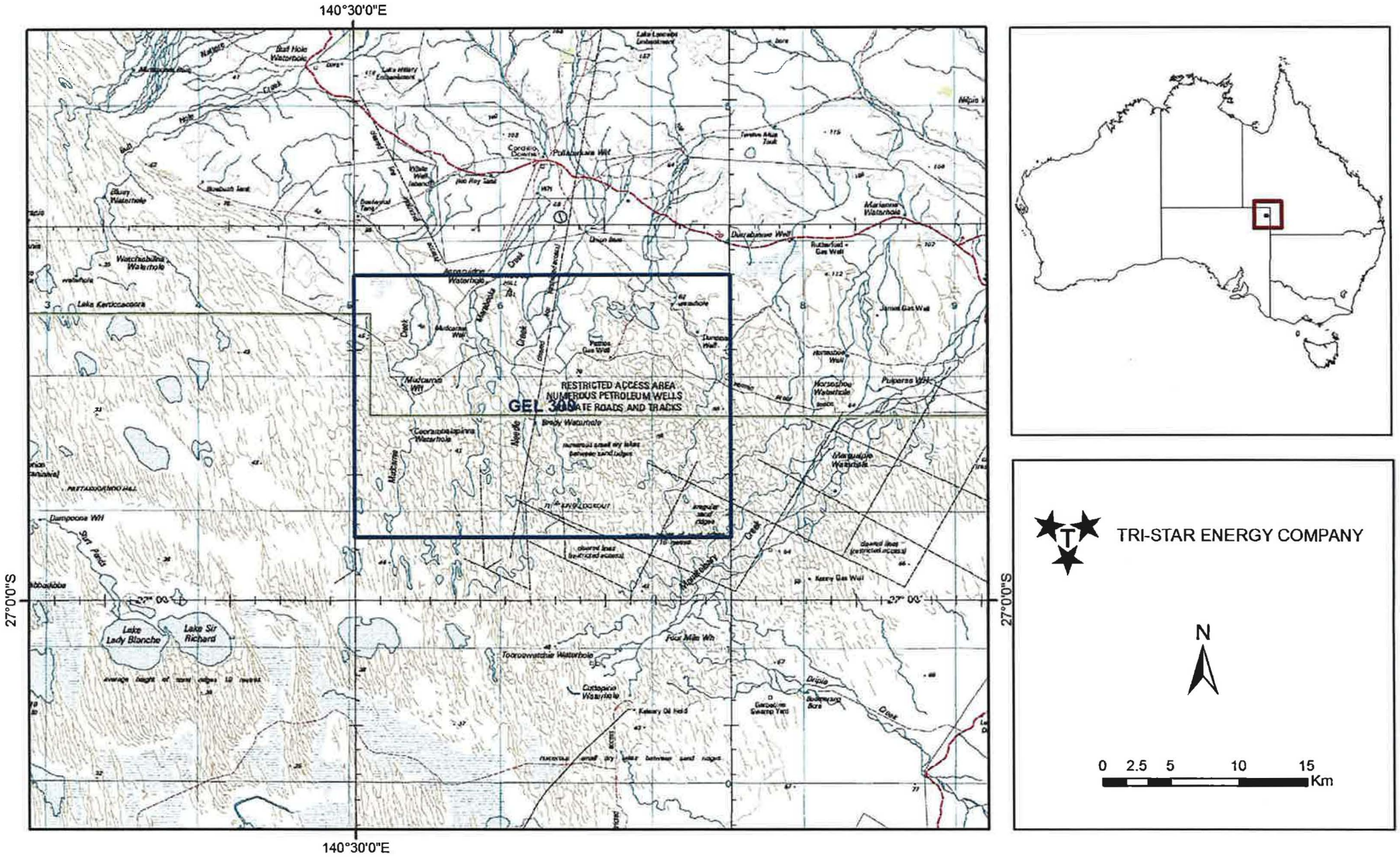

FIGURE 4

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NATIVE TITLE MAP

GEL 309 Native Title Map

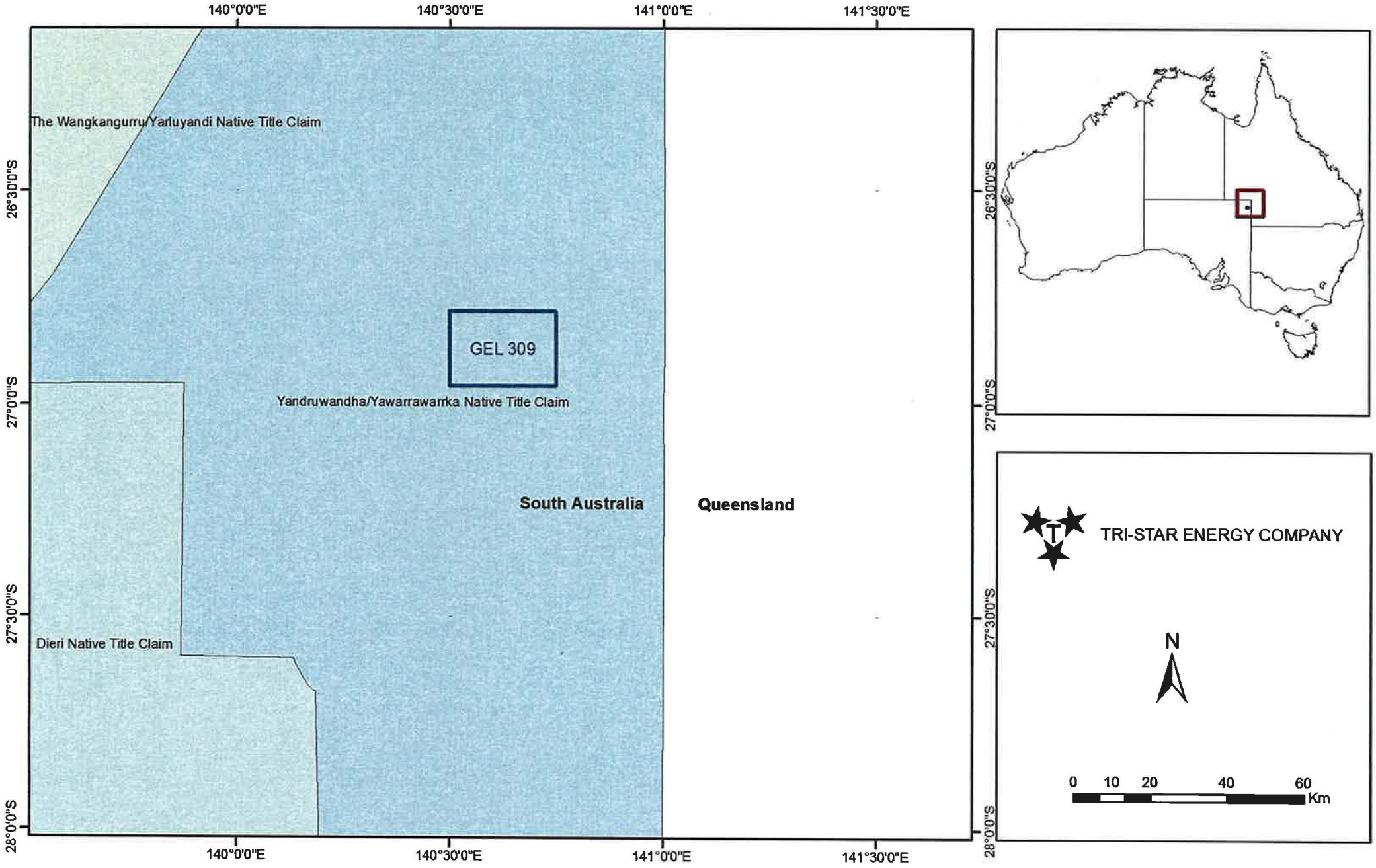

FIGURE 5

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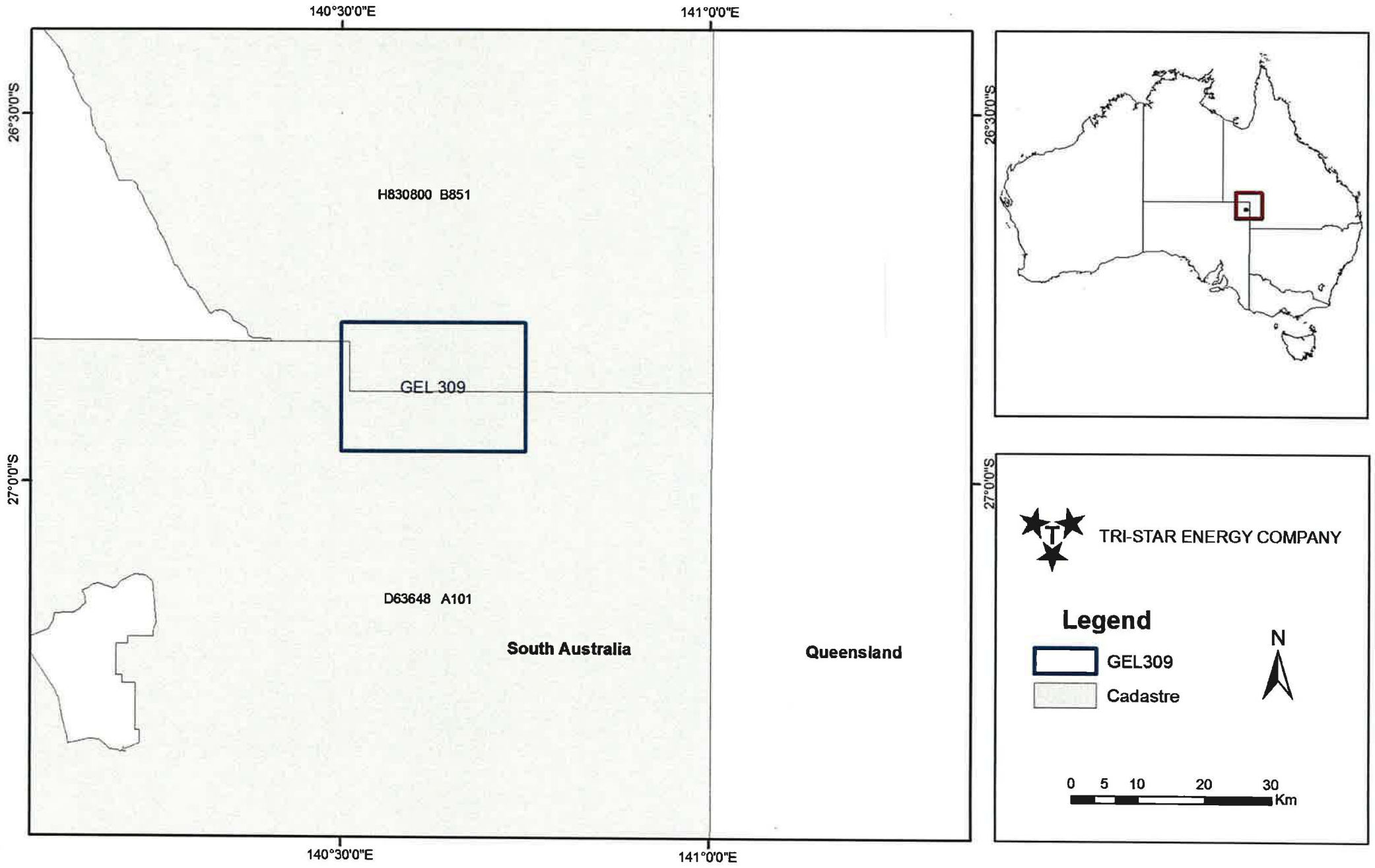
CADASTRAL MAP

GEL 309 Cadastral Map