



# Quarterly Report

Period ending 31 December 2004

## HIGHLIGHTS

- Kimberlites located and being tested for diamond content at Flinders Ranges (SA), Adelaide Hills (SA) and Skeleton Flat (WA) Projects (Figure 1)
- Two additional diamondiferous kimberlites at Eurelia, Flinders Ranges (SA) Project
- Active program planned for four projects in 2005, with drilling and trenching of probable kimberlite targets and diamond evaluation of any resulting kimberlites
- The legal proceedings between Flinders Diamonds Limited and its former Chairman, Mr Patric Barry, were effectively terminated by FDL receiving costs of \$200,000, and by all defendants completely divesting their shareholdings
- By a placement to private investors, FDL raised \$477,000 to continue the Company's exploration program

### Flinders Ranges Project, SA

- Two additional diamondiferous kimberlite dykes located at Eurelia
- A new probable kimberlite pipe located at Pitcairn
- Active program continued with 52 targets covered by ground magnetic grids, 23 targets tested by trenching and 7 new kimberlites located
- Drilling and trenching program for March 2005 quarter aimed at locating further kimberlites



Figure 1 Flinders Diamonds' project locations.

### Adelaide Hills Project, SA

- Two additional kimberlite pipes located at Angaston in the Barossa Ranges

### Hamersley Project, WA

- Additional positive indicator mineral results confirm drill targets in three exploration licences
- An amalgamation application in the Hamersley exploration licence progressed, and is expected to be granted in the March 2005 quarter, enabling a drilling program in the June 2005 quarter

### Skeleton Flat, WA

- Further microdiamond tests being carried out on kimberlite dyke samples

### Bleechmore Vermiculite, NT

- Results of expansion tests on Bleechmore vermiculite concentrate carried out in South Africa showed a commercial product is possible
- A review report has been completed and sent to parties interested in a possible project purchase or Joint Venture

## EXPLORATION ACTIVITIES REVIEW

Reflecting on 2004 — it has been an important year of re-focussing for Flinders Diamonds Limited (FDL). During the resolution of our corporate difficulties, we have maintained an active exploration program which has resulted in the discovery of a number of kimberlites, some of them diamondiferous. At this time last year, although we had discovered some diamonds, we had not discovered any new kimberlites — the host rock to most of the world’s diamond mines. Particularly by carrying out reviews in early 2004, then acting on the resulting recommendations, we have been able to transform the situation, and in the December quarter located new kimberlites in three projects — Flinders Ranges, Adelaide Hills and Skeleton Flat. This is clearly a trend leading in the direction for a significant discovery.

One of the company’s strategies has been to not have “all our exploration eggs in one basket”, in other words, to increase our chances of success by exploring several projects at once. We are also planning to carry out a review process in early 2005, which is likely to lead to further project and exploration technique modifications and improvements. At the time of writing, our “flagship” Flinders Ranges Project is most likely to lead to further diamondiferous kimberlites in the near future. Two other projects which are highly prospective are our Adelaide Hills Project and the Hamersley Project in Western Australia. In the Adelaide Hills we located four new kimberlites in 2004, but have yet to create a single technique which easily leads to numerous additional kimberlites. At Hamersley, in the highly prospective Pilbara Craton of WA, our intended activities have been delayed by the need to have granted tenure prior to drilling. However, the project has returned numerous diamonds and high quality indicator minerals in FDL’s and previous work, and it remains a highly prospective project in which we hope to make a significant discovery in 2005.

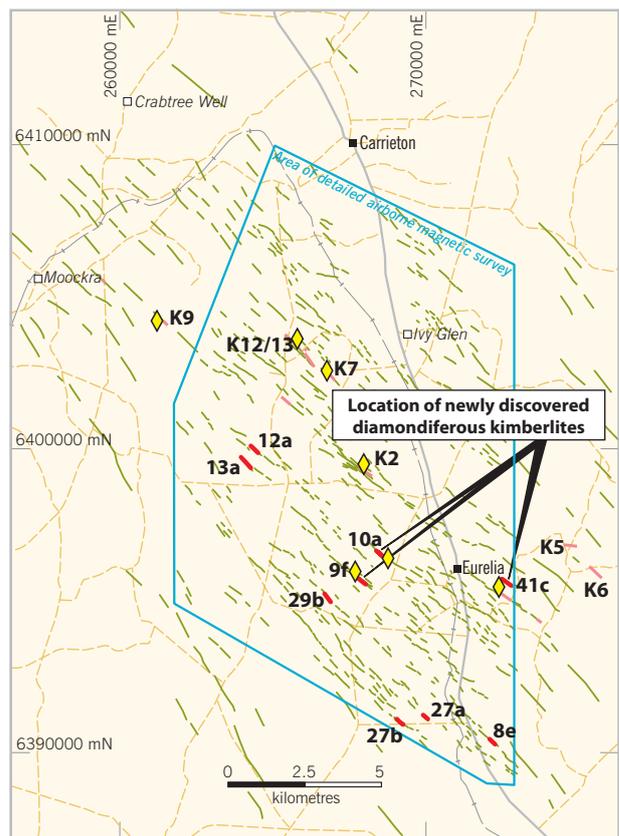
## SOUTH AUSTRALIA

### Flinders Ranges Project

The December 2004 quarter was particularly active for FDL’s flagship Flinders Ranges Project, with numerous additional targets identified and tested, resulting in the discovery of two new diamondiferous kimberlites. Project work now has a degree of momentum which, over the coming months, should ensure numerous additional kimberlites will be located, some being diamondiferous.

### Kimberlite Targeting

The process of target selection is ongoing with over 70 magnetic features worthy of investigation outlined during the quarter. Once identified, targets are surveyed with a detailed ground magnetic grid. This data enables both an assessment of the quality of the anomaly and provides ground truth information to control the exact location of trenches or drill holes to test the target. In the December quarter, 75 grids were surveyed, totalling 146 line kilometres of ground magnetics. This work has been assessed and at least 20 quality targets are now ready for testing. There are also a number of targets, including some from the previous quarter’s work, which were either too deep to trench or were located in fields under crop and had to await suitable conditions for testing. In early 2005, a drilling program to test the deeper targets and another trenching program will be carried out. This is likely to provide another batch of new kimberlites for diamond evaluation.



**Figure 2** Eureka kimberlite targets.

**Kimberlites Located**

In 2004, FDL located a total of 11 new kimberlite dykes, mostly at Eurelia, three of which are diamondiferous (Figure 2). These kimberlites were designated 9f, 10a and 41c and they contained 2, 2 and 5 microdiamonds, between 0.1 and 0.5 mm in size from 20 kg samples, respectively. FDL's strategy involves locating a large number of new diamondiferous kimberlites prior to carrying out further evaluation on the highest grade dykes. This further evaluation would involve microdiamond determination on for example, 200 kg samples from the highest grade kimberlites, so that sufficient diamonds to construct a size distribution plot can be recovered. After evaluation of these size distribution plots, targets for bulk sampling for macrodiamonds would be selected. A commercial discovery is dependant on economic results from such bulk sampling.

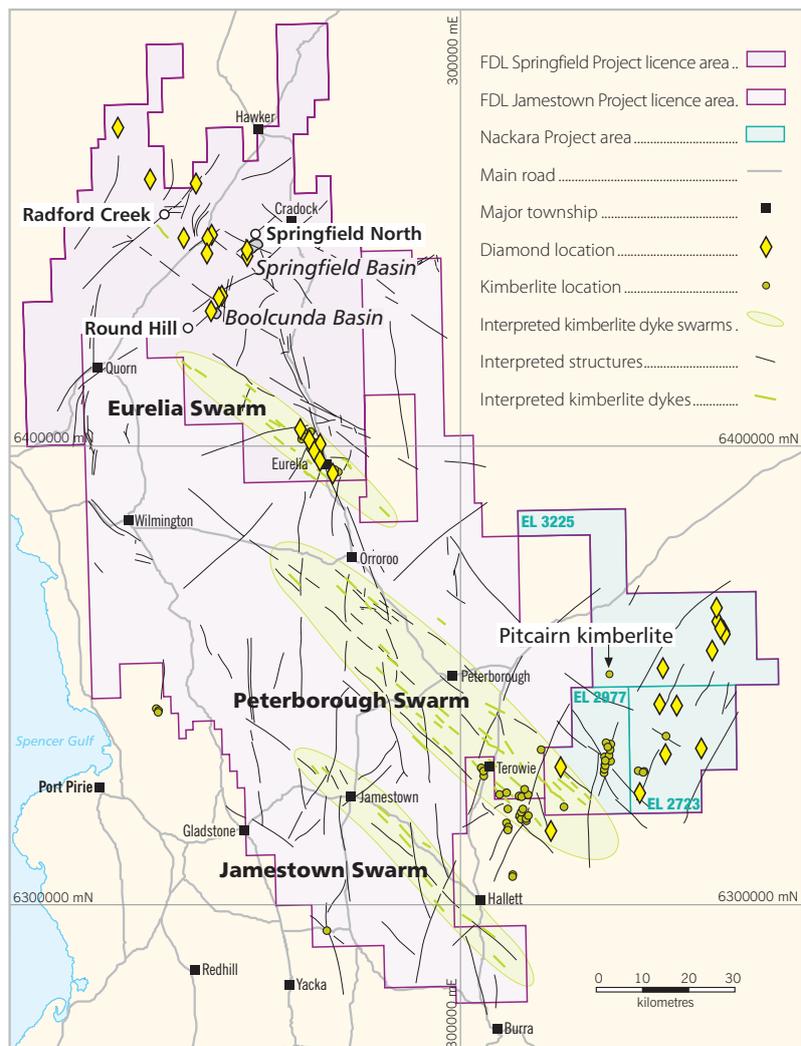
**Project Area**

At 31 December 2004, the Flinders Ranges Project covered a large area of 15,120 square kilometres. This is equivalent to a square area with sides 123 kilometres long. Neither the South Australian Department of Mines nor FDL want the project area to remain so large for too long. FDL is only able to explore such a large area with the use of airborne magnetics, which enables us to focus on targets of interest. To aid our regional understanding, FDL has also been carrying out interpretation of regional airborne magnetic data and has been assembling a computer database of the results of previous explorers' diamond indicator mineral sampling (DIMS). Accordingly, at the end of December, FDL proposed a 25% area reduction in the Springfield project area and will also reduce the Jamestown project area by 25% before the end of the March 2005 quarter (Figure 3). This will reduce the total area to about 11,800 square kilometres.

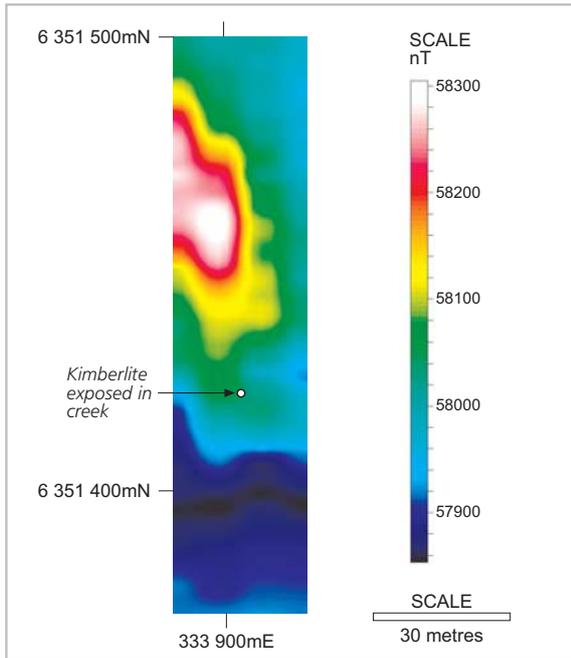
**Pitcairn Kimberlite**

Apart from the anomaly assessment and kimberlite location in the Eurelia

and Nackara areas, a number of other targets were explored during the quarter, as shown on Figure 3. These include the Springfield North, Radford Creek and Round Hill targets, where trenches were put down on a combination of DIMS and magnetic anomalies. To date, no kimberlites have been located, but further work is planned. A target of interest is the Pitcairn kimberlite, which was originally discovered by the Nackara Project vendor, Mr John Simnovac. In an area where a previous explorer had found several kimberlite dykes, he had located a new small kimberlite exposure in a creek bank. FDL has recently carried out a ground magnetic survey with results as shown by Figure 4. The image can be seen to represent only part of the anomalous body, hence further ground magnetics and trenching is needed to completely define it. It currently looks at least like a small kimberlite pipe or blow, which will be further explored in the March quarter.



**Figure 3** Flinders Ranges Projects - regional diamond prospectivity.



**Figure 4** Pitcairn ground magnetic image of possible kimberlite pipe.

#### Future Plans

The Company has a large ongoing exploration program planned in the Flinders Ranges to try to locate a diamond mine. Persistence here is likely to be the key to success. FDL has now demonstrated an ability to cost-effectively locate new diamondiferous kimberlites and it is likely that many more will be located in 2005. Due to the

large amount of ground magnetic surveying that is planned, we have decided to purchase our own “state-of-the-art” GPS-controlled magnetometer and base station. This should be available for work in February. It will save on expensive hire charges and avoid availability delays. As it is linked to GPS, it will enable the Company to survey undulating areas in the bush without having to erect a grid. The Company also has plans to fly new 100-metre line-spaced airborne magnetic surveys over large prospective parts of the project area in 2005.

#### Adelaide Hills Project

December quarter activities were at a historically high level for FDL and were focussed on follow up of the June 2004 airborne magnetic survey and indicator mineral anomalies in the Barossa Ranges. This work included additional processing and interpretation of airborne magnetic data to identify kimberlite targets. These were then assessed by soil sampling and trenching of sites anomalous in kimberlitic indicator elements such as nickel, chromium and niobium. Additional work carried out included ground magnetics, prospecting and drilling of the Bunyara Kimberlite targets. (Figure 5)

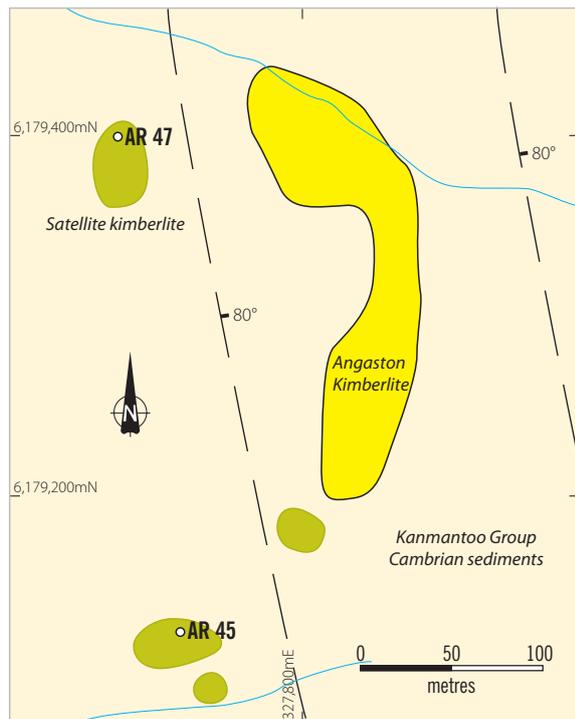
Results of this work were mixed, with promising new potentially-diamondiferous kimberlites located at the Angaston Prospect, but negative results from testing the postulated kimberlite pipe targets at Bunyara.



**Figure 5** Rehabilitation of trench investigating geochemical/geophysical anomalies from the Barossa Ranges Survey. From left to right, Darren Jones, Peter Everuss, (FDL field hands) and backhoe operator Chris Martin.

At the Angaston Kimberlite Prospect, located about six kilometres southeast of Angaston, a non-diamondiferous kimberlite pipe had been previously discovered by Rio Tinto in 1995. FDL's recent airborne survey had suggested possible extensions to this pipe and by detailed ground magnetics, mapping, soil sampling and trenching, two smaller satellite kimberlite pipes were discovered (Figures 6). Some of the indicator minerals from these areas suggest association with diamonds. A 20 kg sample from each satellite (AR 45 and AR 47) has been collected and sent to the laboratory for microdiamond determination.

At Bunyara a five-hole, 151 metre combined RAB and RC percussion drilling program was carried out on the kimberlite pipe targets recognised earlier in 2004 and reported in the March 2004 quarterly report (Figure 7). Drilling had been delayed by a request from



**Figure 6** Angaston kimberlite pipes.

the landowner not to take heavy equipment onto his land while it was waterlogged. By late November, the

ground had dried out, but results were disappointing, with none of the holes drilled intersecting kimberlite. There remains the original kimberlite in Bunyara Creek, which is now thought to be a small kimberlite blow or a kimberlite dyke. However, this has already been tested for microdiamonds, with negative results.



**Figure 7** Drilling at Bunyara - November 2004.

The Adelaide Hills project retains numerous unexplained magnetic and indicator mineral anomalies and FDL is committed to continuing work. All data is currently under review, with an aim of developing new insights, exploration models and techniques prior to resumption of significant field activities, probably in the June quarter of 2005.

### G2 Project

A program of further reconnaissance drilling has been planned and approved for the June quarter of 2005. This work will continue the search for shallow kimberlites under Mesozoic cover on the Gawler Craton. FDL obtained encouraging results from previous reconnaissance drilling in October 2002.

**NORTHERN TERRITORY**

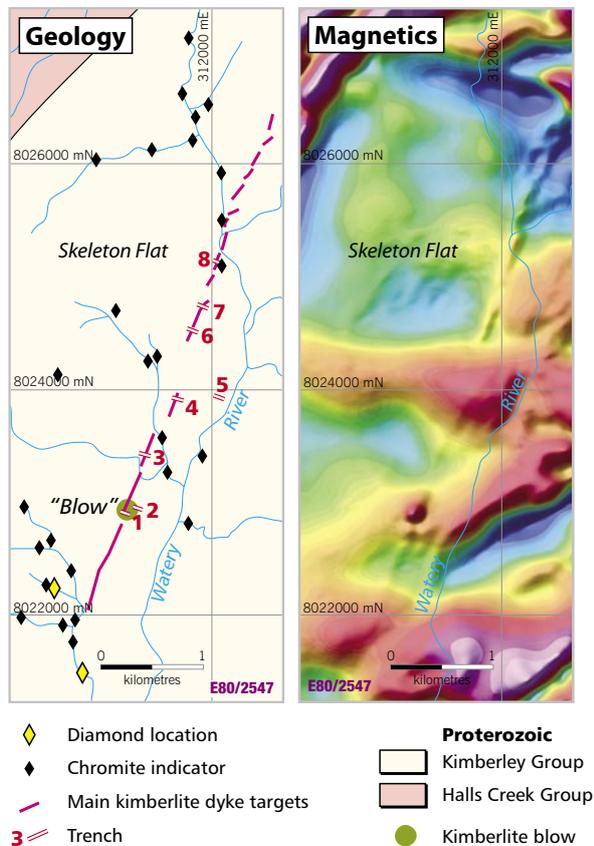
**Bleechmore Vermiculite Project**

Results on the expansion properties of Bleechmore vermiculite samples under normal commercial exfoliation conditions were received from South Africa. For the samples tested, it is concluded that a commercially acceptable product can be produced. Receipt of these results enabled the completion of a Project Review Report which has been sent to interested parties to consider making a purchase or joint venture offer to continue the project's development.

FDL's application to acquire tenure over 28 square kilometres of the Mud Tank Reserve RO 303 has been approved. Also, a request has been lodged with the NT Government for a small boundary modification of the Mud Tank Fossicking Area FA 11. These areas include previously outlined vermiculite mineralisation and will substantially increase potential for vermiculite resources in FDL's Bleechmore and Mud Tank areas.

**WESTERN AUSTRALIA**

**Skeleton Flat Project**



**Figure 8** October kimberlite dyke sampling locations at Skeleton Flat.

An exploration program of trenching and kimberlite dyke location was carried out between 15 and 20 October as illustrated in Figures 8 and 9. Six kimberlite dyke samples from trenches 1(2 samples), 3, 4, 7 and 8 were sent for microdiamond determination. Preliminary results were negative so it was decided to carry out confirmatory testing at additional laboratories. If negative results are confirmed, FDL will review its involvement in the Skeleton Flat Project.



**Figure 9** Trenching at Skeleton Flat - November 2004.

**Twin Swamps Project**

Drill targets at Twin Swamps remained waterlogged throughout the quarter due to 2004's unseasonable wet weather. FDL is keen to drill these kimberlite pipe targets in 2005, as soon as conditions permit access. This is likely to be in the June quarter of 2005.

## Hamersley Project

Results of field work carried out during the 2004 dry season were assessed. Sampling had been carried out with positive indicator mineral results in all four exploration licences of the Hamersley Project, namely: Mulga Downs, Bold Cliff, Hamersley and Elvire. Together with the numerous previously discovered diamonds, and the interest generated by the Helix Minerals - De Beers Joint Venture announcement of new diamondiferous kimberlite dykes in another part of the Pilbara Craton about 70 kilometres north of the Elvire tenement, the prospectivity of the Hamersley project continues to be assessed by FDL as very high.

FDL's drill targets at the Hamersley tenement lie inside two Prospecting Licence Applications which need to be amalgamated with FDL's surrounding Exploration Licence (E47/882) before drilling can commence. Confirmation was received from the National Native Title Tribunal that no objections were received during the notification period ending 28 November 2004, so we can expect the amalgamation to be granted during the March quarter of 2005. Assuming access is possible, and other approvals are obtained, drilling is planned for the second half of the June 2005 quarter.

## CORPORATE

The December quarter of 2004 saw various developments which terminated a two year period of legal proceedings between Flinders Diamonds Limited and its former Chairman, Mr Patric Barry. The settlement which had been announced on 16 August 2004 was effected by the Company receiving its costs as agreed between the parties to be \$200,000. The costs were recovered as part of the proceeds from share sales by Mr Barry (announced on 20 October 2004) and by Tiger International Resources Inc (announced on 24 November 2004).

All defendants in the legal proceedings, namely Tiger International Resources Inc, Patric Barry, Anthony Campbell, Campbell Corporation and Balance Tax Pty Ltd have now completely divested their shareholdings in Flinders Diamonds Limited.

In addition to these developments, the Company announced on 26 November 2004 that, to further the Company's exploration program, it had raised approximately \$477,000 by a placement to private investors of 19.1 million shares.

The Company's AGM was held in Adelaide on 29 November 2004, where Mr Ewan Vickery was re-elected as a director.

Presentations on FDL's activities were given by the Company's Managing Director at the AGM, the World Diamond Conference in Perth on 22 November 2004 and the SA Explorers' Conference in Adelaide on 3 December 2004. Illustrations from these presentations can be viewed on the Company's website.

## Finance

On 31 December 2004, the Company had available funds of \$0.75 million. Exploration expenditure by the company during the December quarter was \$576,000 and forecast expenditure for the March quarter 2005 is \$300,000.



Dr Kevin JA Wills  
Managing Director

31 January 2005

The information in this report has been compiled by Dr KJA Wills who is a Fellow of the Australasian Institute of Mining and Metallurgy and who is bound by and follows the Institute's codes and recommended practices. He has a minimum of five years experience in the types of activities being reported.

### Contact us

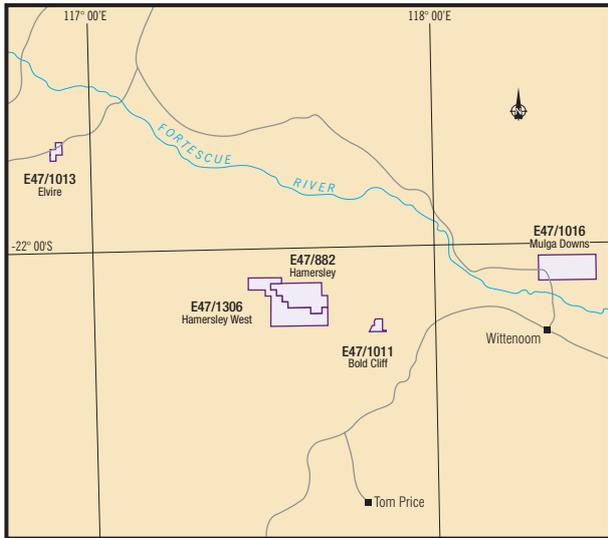
Enquires should be directed to Dr Kevin Wills, Managing Director on 1300 559 564 or 0419 850 997.

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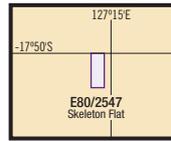
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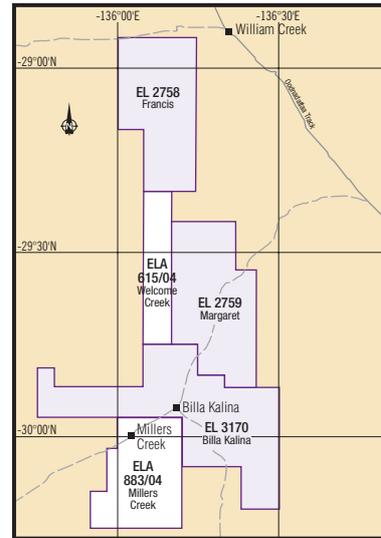
### Hamersley



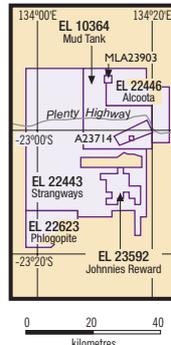
### Skeleton Flat



### G2



### Strangways



## Tenement locations

31 December 2004

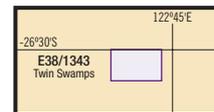
### Legend

- FDL exploration licence
- FDL licence application
- FDL Option
- Road
- Track
- River / creek

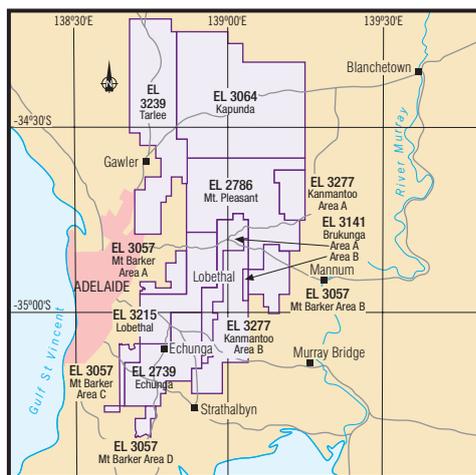
Note: All tenement maps shown at the same scale



### Twin Swamps



### Adelaide Hills



### Springfield/Jamestown/Nackara

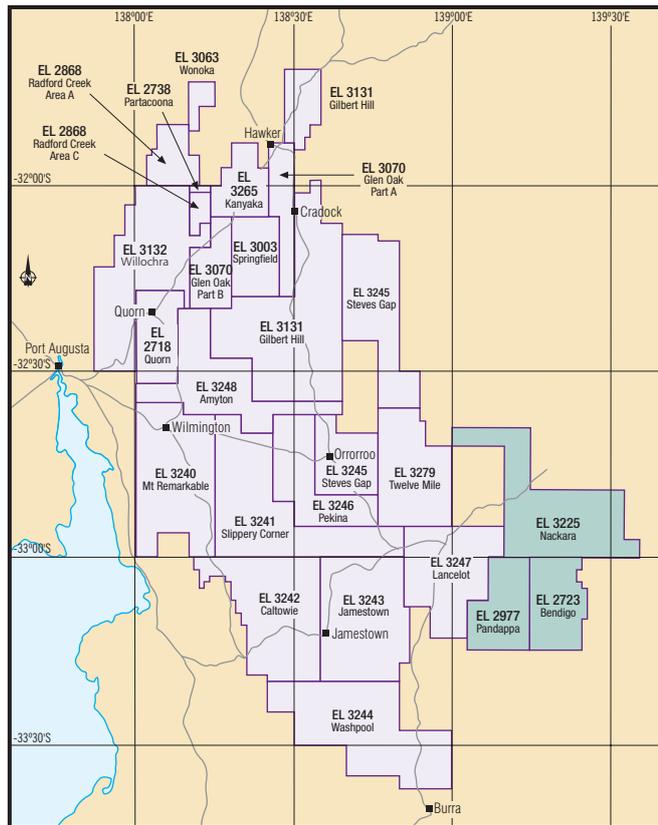


Figure 10 Tenement locations 31 December 2004.

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