



LEFROY EXPLORATION LTD

LEX:AU, \$0.19. Market cap A\$19m

What we've been waiting for: The start of deep RC drilling by Gold Fields into gold anomalies beneath the sediments of Lake Lefroy

- Gold Fields Ltd (NYSE/JSE: GFI) is underway with a 6800 metre RC drilling programme at the Lake Lefroy JV to test key gold anomalies identified with the recently completed +40,000 metre air core drilling programme.
- GFI is earning a 70% interest in LEX's West Lake Lefroy tenements by spending \$25m over 6 years (with a minimum spend of \$4m). Other than small drilling programmes completed historically by LEX and earlier operators, the sub-salt lake rocks were largely unexplored. The JV area is immense, covering some 372km².
- GFI holds around 18% in LEX and participated in the recent \$3.8m capital raise on a pro-rata basis. This leaves LEX with a healthy balance sheet to advance its 100%-owned projects.
- Exploration by GFI in a similar geological setting, beneath lake sediments, yielded the impressive Invincible discovery at its adjoining St Ives project. Total endowment of Invincible is approaching 2.5Moz with St Ives now over 16Moz. This is elephant country.
- The immediate target is a +4km zone of gold anomalism along the inferred Woolibar Fault centred on the Zanex prospect. Drilling by GFI has already commenced.
- LEX will continue to focus on Lucky Strike and other 100%-owned projects to the east of Lake Lefroy. A 4000m RC/diamond programme is currently underway targeting basement gold mineralisation at Lucky Strike and Lucky Strike Extended.
- LEX is a very inexpensive WA gold exploration play, strongly leveraged to an aggressive exploration programme on Lake Lefroy, and to exploration within its 100%-owned tenements in the Mt Monger area. Expect plenty of exploration news over the forthcoming months.

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COMMENCEMENT OF RC DRILLING AT THE LAKE LEFROY JV WITH GOLD FIELDS

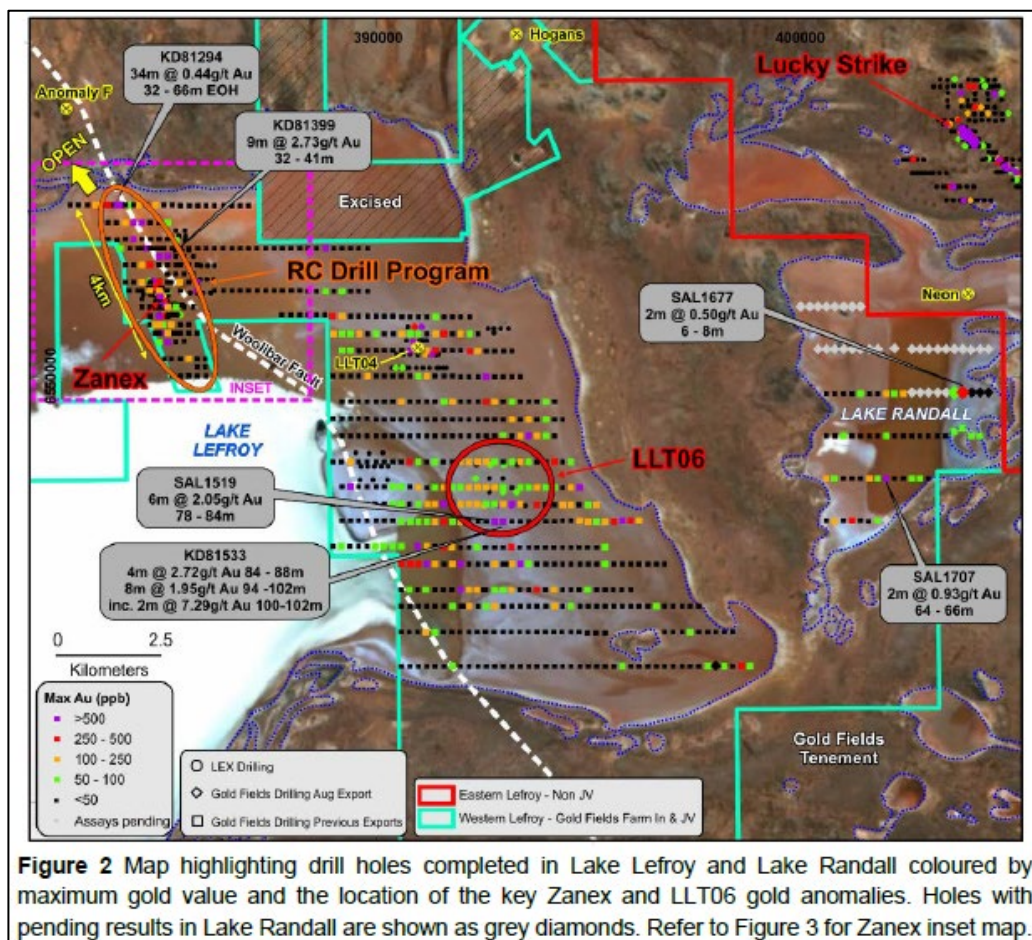
Goldfields has now largely completed its reconnaissance foundation air core drilling at the Lake Lefroy JV. As a reminder, air core drilling is a prospecting tool, aiming to identify gold anomalies in oxidised rocks underlying the sediments of Lake Lefroy.

Two significant zones of gold anomalism have been encountered and extended as part of this initial exploration work. In total GFI have drilled +40,000m of aircore, commonly on lines 500m apart and now propose to follow this up with around 6,800m of reverse circulation (RC) drilling. The RC holes will extend into unweathered rocks and hopefully identify the source of the shallower gold.

The nature of gold mineralisation – and hopefully orebodies – can be of two types:

1. Primary gold mineralisation hosted within weathered and unweathered rock types, but hidden beneath lake sediments. The Invincible discovery within GFI's St Ives project is such an example. (See Appendix 1)
2. Gold located within palaeochannels (or old river channels). LEX's Red Dale resource is an example of this type of deposit, but again, overlain by lake sediments. Recall, just 2 years ago, GFI's CEO anticipated that there could be as much as 5Moz of gold contained within St Ives palaeochannels. (There has been no further news on these prospects).

RC drilling has commenced on Lake Lefroy. The two key targets are now Zanex and LLT06.



Source: LEX release, 6 September 2019

The **Zanex** anomaly had already been identified by LEX and appears to be positioned on a major interpreted structure, the Woolibar fault. Extensive air core drilling by GFI geologists extended the anomaly to a strike length of around 4km. It remains open to the north, and extends toward the on-shore 'Anomaly F'.

The southern portion of Zanex had been tested by three early stage diamond drillholes in early 2018 by LEX. Results were disappointing, but were focussed over a limited area and were aimed at understanding the geology of rocks underlying the salt lake. (The holes were jointly funded by the WA Government's Exploration Incentive scheme). Rocks intersected included highly deformed and altered high Mg basalt and metasediment, intruded by porphyries, which certainly have the potential to host gold mineralisation.

The **LLT06** anomaly may be associated with a splay of the Woolibar fault. GFI's results expanded the footprint of the anomaly to over 2km.

To us the **LLT04** anomaly the NW of LLT06 looks like an obvious drilling target, as do the scattered high-grade intercepts to the SE of LLT06. The GFI air core drilling has also identified zones of anomalism beneath **Lake Randall**, an easterly offshoot of Lake Lefroy, and along strike of the undrilled Neon anomaly.

As shown on the plan above, there are numerous other anomalies identified by the air core work. And as with the GFI Invincible discovery, it might not always be the most obvious anomaly which delivers success (again, see Appendix 1). There are certainly palaeochannels beneath the lake sediments. This may have concentrated alluvial/eluvial/supergene gold, but equally might be a distraction from the real targets.

The GFI geologists undoubtedly have many exploration methods in their toolbox, including geophysics and trace element geochemistry. No doubt these data are being used in assisting to locate future RC drill holes.

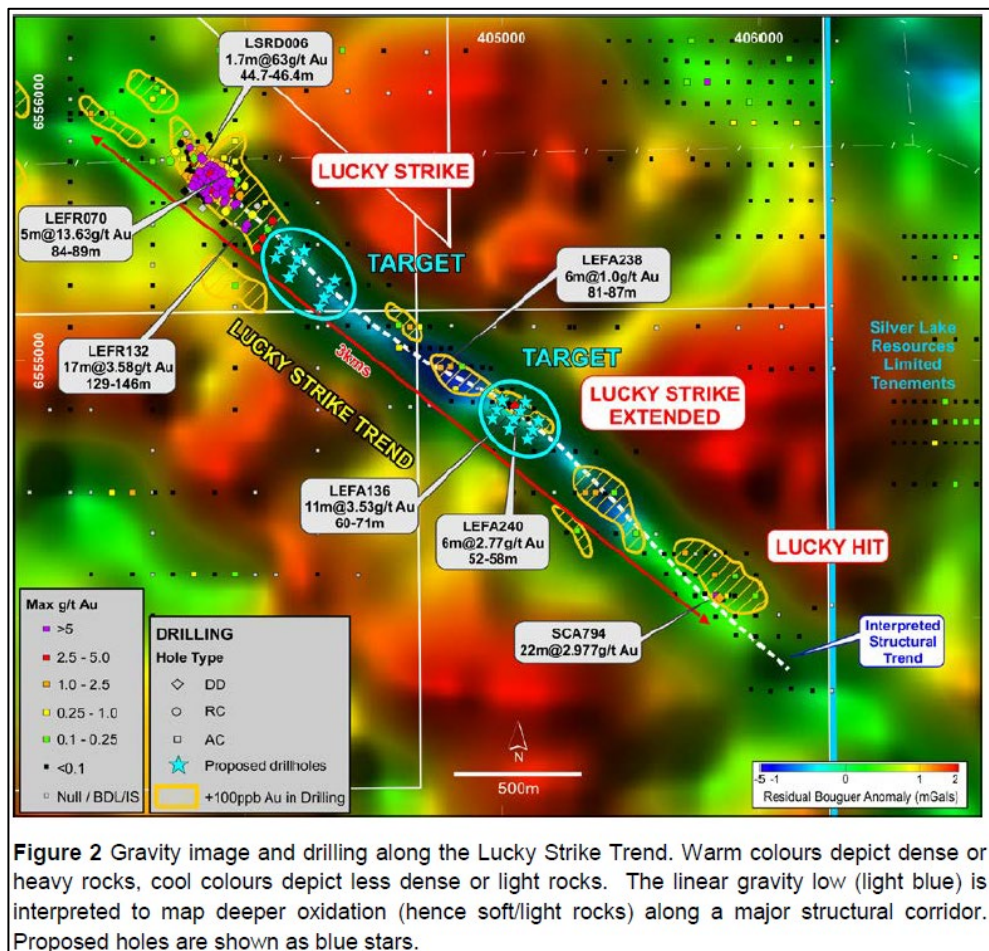
As a reminder, GFI can earn up to 70% of LEX's western Lake Lefroy tenements with the expenditure of A\$25m over 6 years (June 2018 was the start date for the JV). There is a minimum spend of \$4m prior to June 2020.

LEX'S 100%-OWNED TENEMENTS

The recent capital raising (\$3.8m at 20c on 15 August) will allow LEX geologists to push ahead and test targets within the tenements to the east of Lake Lefroy. Key targets over the next 2-3 months will be **Lucky Strike and Lucky Strike Extended**. As well, initial RC and diamond drill holes will be put into the **Hang Glider Hill prospect**.

Exploration at **Lucky Strike** has been frustrating. Past drilling programmes have delivered several very attractive 'hits', the most recent of which was 17m at 3.58gpt from 129m obtained in May 2019. Three step-out drill holes to the SE have confirmed low tenor gold grades at depth, but have failed to deliver ore grade intercepts.

The LEX geologists appear to have a good handle on the Lucky Strike geology, which consists of steeply dipping Banded Iron units, which are very deeply oxidised (around 150m vertical). This is attributed to the presence of a major structure and intense alteration of the deeper rocks which allows preferential oxidation. The zone of deep oxidation is clearly delineated by a significant gravity low extending over 4 to 5km. The targets remain quite obvious, but it has been challenging to establish continuity of the higher-grade gold intercepts and deliver a gold resource.



Source: LEX Exploration update, 12 August 2019

LEX has proposed the drilling of around 21 holes (4000m in total) which will involve multiple step out drill sections to test an additional 280m of strike to the SE at Lucky Strike. Drilling has already commenced and initial results should be available within 4 weeks.

This programme will also see the first deep RC holes targeting gold mineralisation under several promising air core intercepts at Lucky Strike Extended, around 2km to the SE.

The approximate position of the drill holes is highlighted in pale blue in the plan above.

There are a number of hungry gold mills around the area, including Silver Lake's Randall mill (4km away from Lucky Strike). Northern Star's Jubilee mill, not to mention GFI's St Ives mill. Should LEX find

insufficient resources/reserves to establish a mill itself, there are several groups who may likely toll treat at very competitive rates.

Initial drilling will also be undertaken at **Hang Glider Hill**, a topographic feature some 17km to the NW of Lucky Strike. Associated with a regional geological survey of the region, LEX provided access to a local prospector who identified a large number of gold nuggets (10% of which were delivered to LEX the tenement holder, under agreement). LEX has completed a soil geochemical survey which has identified a >1.5km long +20ppb gold anomaly. Hang Glider Hill represents an intriguing exploration opportunity within a little known and seemingly little prospected part of the Eastern Goldfields. It deserves a more comprehensive exploration approach.



Figure 2 Selection of gold nuggets found along the Hang Glider Hill trend highlighting variable shape and size

Source: LEX ASX release 27 September 2018

Capital structure

Lefroy Exploration Ltd (LEX AU)		
Share price	A\$	\$0.19
Number of shares (fpo)	m	99.06
Market capitalisation	A\$m	\$18.82
Share options	m	1.0
Cash (approx. post raise)	A\$m	\$3.5
Debt	A\$m	\$0.0
Top 20 shareholders, appr.		73%
Board ownership, appr.		34%
Goldfields ownership		18.12%

Investment view

LEX has accumulated a significant land position within rocks of the St Ives and Mt Monger gold fields, themselves extensions of the major crustal sutures extending south from the world class Kalgoorlie goldfields. The Lake Lefroy JV is well funded, and managers GFI have excellent local geological knowledge and all the exploration tools necessary to find the next 'big one'. The St Ives mill is rated at 4.7Mtpa, so GFI are strongly motivated to identify reserves given the last stated reserve position of 19Mt (or around 4 years). Any discovery here, especially a higher grade deposit, in our opinion would accelerate development. LEX would be an immediate beneficiary. With good science and a little

geological luck an orebody will emerge from the recently identified anomalies. Simultaneously, LEX is drilling the Lucky Strike structure in an effort to put together a resource.

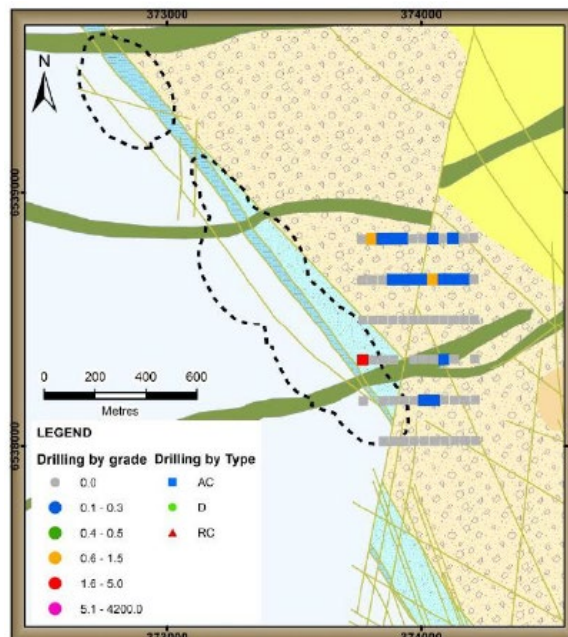
The next 6 months will have plenty of news flow. With a market cap of \$20m and two fully funded programmes, LEX is very inexpensive for a company exploring in elephant country. Any encouragement from either programme would likely see a strong rerating of the LEX share price.

Appendix 1. GFI’s Invincible discovery

GFI’s 100%-owned St Ives project is host to a significant gold camp located in the Eastern Goldfields of Western Australia, which has delivered over 13 million ounces of production since the late 1980’s. St Ives is forecast to produce some 360koz gold this year at a cash cost of around US\$1000/oz. This is around 17% of Gold Fields’ production world-wide.

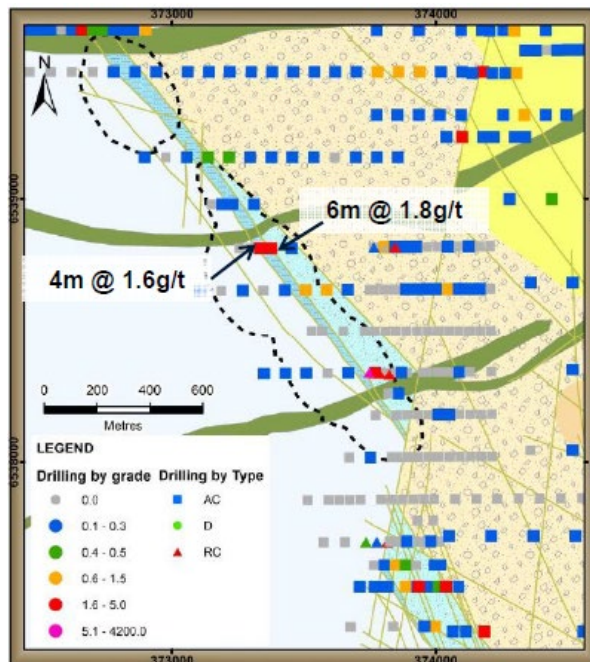
In 2012 GFI geologists discovered the now 1.4moz Invincible orebody, which has become a key source of ore for the 4.5mtpa St Ives mill. This was a totally blind discovery, with the orebody hidden by the sediments of Lake Lefroy. It is quite clear that the Invincible discovery prompted the) farm-in to its LEX tenements.

As we discussed in a previous LEX report, air core drilling in the area of the Invincible orebody commenced in 1994 (under previous owner WMC). A single hit was obtained in the south (the red dot below was 1m at 1.6gpt) and in 1998 additional holes were drilled near the first and yielded under 1gpt. A shallow RC drill hole intersected 1m at 9.7gpt but missed the orebody by 15m.



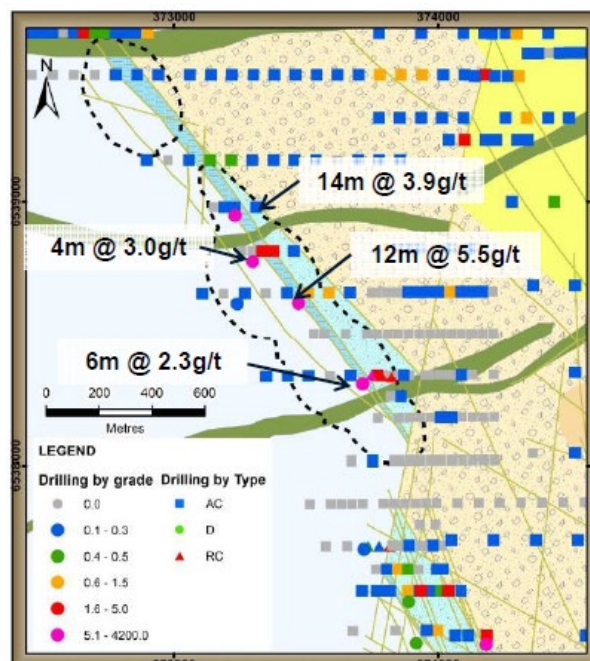
Exploration of Invincible as it was in 1994. Dashed line is the current outline of the open pit.
 Source: J Woodcock, Invincible – Discovery to Development, NewGengold, 2015

In 2011, 17 years later, there was follow up air core, with some encouragement



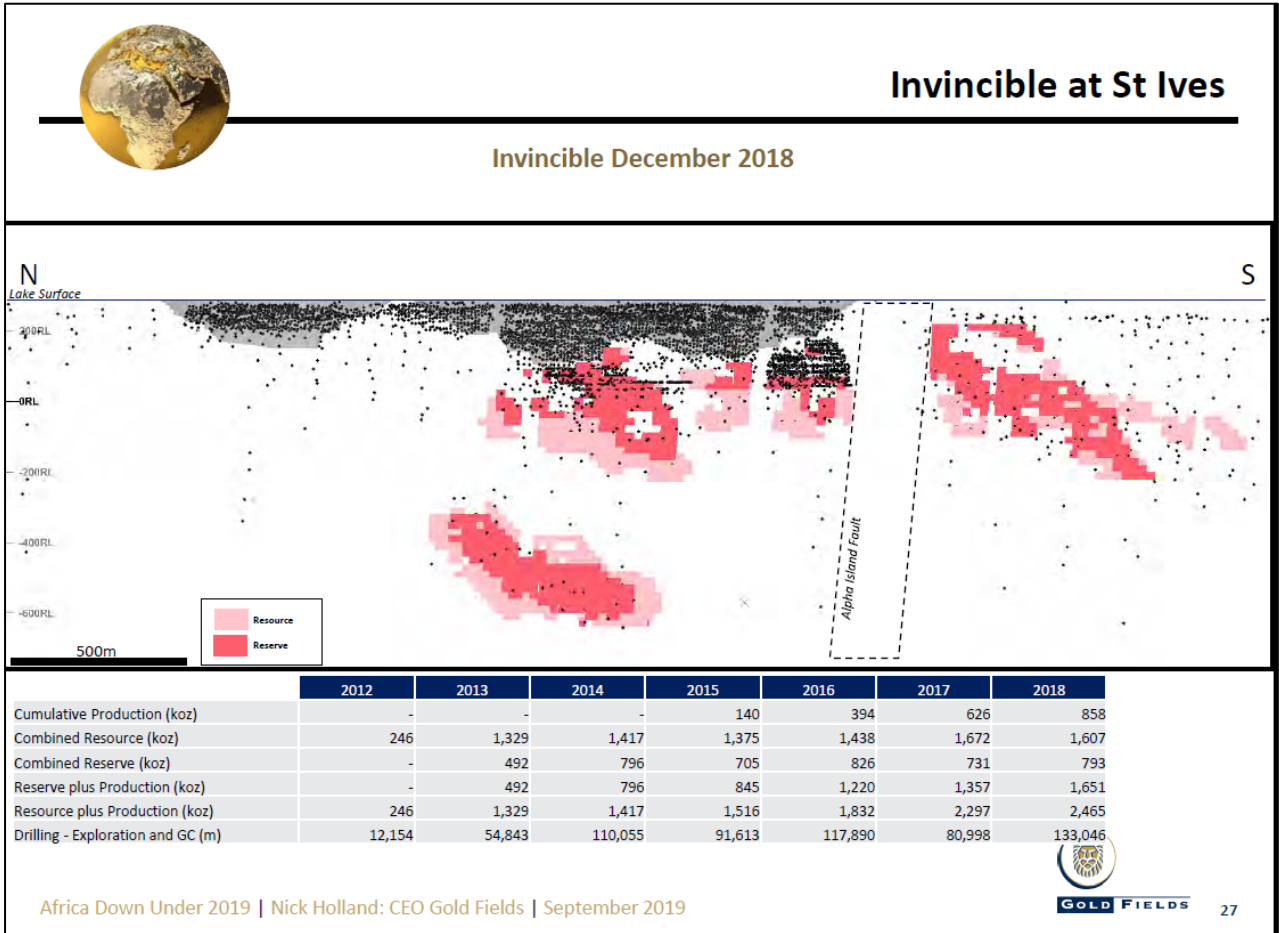
Status of drilling at Invincible in 2011. Dashed line is the current outline of the open pit. Source: J Woodcock, Invincible – Discovery to Development, NewGengold, 2015

Then in 1Q12, Invincible was discovered as they rolled in the RC rig: 4 out of 5 holes hit ore grades.



Source: J Woodcock, Invincible – Discovery to Development, NewGengold, 2015

A recent presentation by GFI has shown how Invincible has developed over the past 7 years. Post discovery, resources have grown rapidly, with total endowment now approaching 2.5Moz. There seems to be little doubt that Invincible will be one of the largest orebodies within the St Ives field, and an important source of ore to the St Ives mill.



Source: GFI presentation, September 2019

This is clearly what GFI are looking for within the LEX tenements: blind deposits beneath the sediments of the eastern part of Lake Lefroy. Perhaps targets are not exactly the same as Invincible; here we understand mineralisation is hosted in sediments, analogous to the Black Flag Beds seen in the Kalgoorlie area and often host to Kalgoorlie/Superpit mineralisation.

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Dr Chris Baker, an authorised representative of BCP, certifies that the advice in this report reflects his honest view of the company. He has 29 years investment experience in wholesale capital markets. He worked as a mining analyst for brokers BZW and UBS for 11 years and has a further 16 years' experience as a mining analyst and portfolio manager with Colonial First State and Caledonia Investments. He now provides independent financial advice on a part time basis. He may own securities in companies he recommends but will declare this when providing advice. He currently owns shares in LEX. He is remunerated from corporate finance fees.

BCP acted as Joint Lead Manager of the IPO of LEX in October 2016 and received corporate finance fees for this role. BCP acted as Joint Lead Manager of a placement of shares for LEX in July 2018 and August 2019 and received corporate finance fees for this role.

Appendix 1

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