



31 July 2019

ASX ANNOUNCEMENT (ASX:LCK)

## Quarterly Report 3-months to June 30, 2019

### Highlights

- ✓ **Update on LCK Commercialisation Plans**
- ✓ **Pre-Commercial Demonstration (PCD) Shutdown Complete**
- ✓ **Corporate Presentation Outlining Commercial Pathway**
- ✓ **In-Depth Review of the Leigh Creek Energy Project PRMS**
- ✓ **International Interest in the Leigh Creek Energy Project**

Leigh Creek Energy Limited (“LCK” or “the Company”) is pleased to provide an update on the development of the Leigh Creek Energy Project (LCEP) in South Australia for the most recent three months ending 30 June 2019.

### Update on LCK Commercialisation Plans

The Company continues to advance its discussions with several investment-grade and bankable parties for Joint Ventures and other strategic relationships both in Australia, the United States and China. These potential partners have the ability to provide considerable project finance and funding. As previously announced, these meetings were held in Hong Kong and Beijing in June 2019 (refer announcements 25 June 2019 and 24 May 2019) and have continued throughout July. These discussions are in advanced stages and range from joint-venture partnerships, off-balance sheet financings to gas sales agreements. The Company looks forward to being able to update the market on further progress in due course.

### PCD Shutdown Complete

LCK announced on 25 June 2019 that it had successfully completed its program to cease operations, shutdown and preserve the Pre-Commercial Demonstration (PCD) plant and equipment.

Consequent to the shutdown of the PCD, LCK’s monthly operating expenditures have decreased by approximately A\$500,000 per month.

The Company has delivered a successful shut down and there were no incidents to report at the site. This successful project phase further supports the public statements by the Company and the South Australian Government (the “Regulator”) that the In-Situ Gasification (ISG) process at the LCEP could be operated and shutdown in a safe, regulated and controlled manner and that the Leigh Creek site is ideally suited to the ISG process. Supporting these conclusions, the Regulator’s Independent Assessment Report released in April 2018, concluded that “the Leigh Creek site represents one of the strongest opportunities for low risk commercial (ISG) anywhere in the world”.

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To date LCK confirms that no environmental impact or safety issues have resulted from the operations of the PCD. LCK will continue to operate within the guidelines and reporting of its three-year monitoring program.

### Corporate Presentation Outlining Commercial Pathway

LCK's recent Corporate Presentation (refer announcements of 20 May and 22 May 2019) outlined the corporate plan to commercialise its maiden 2P (proven and probable) gas reserve of 1,153PJ, which is Australia's largest uncontracted gas reserve available to be delivered to East Coast industrial and commercial gas users (refer *Figure 1* below).

The gas crisis on the East Coast of Australia is well-documented resulting from a combination of (i) on-shore supply restrictions, (ii) lack of exploration and rising development costs for new resources, (iii) Queensland's LNG export facilities coming online, and (iv) the declining productivity of existing gas fields.

This crisis is regularly cited by the media (for instance, the article in *The Australian*, titled "Years of High Gas Prices Ahead", published on 19 June 2019), broker analysts' as well as multiple publications by research organisations.

LCK's presentation discusses the LCEP's vast 1,153PJ 2P reserve in the context of this gas supply and price crisis and explains the two main options to monetise this reserve, fertilizer production and natural gas sales, and the commercial pathways to achieve these objectives.

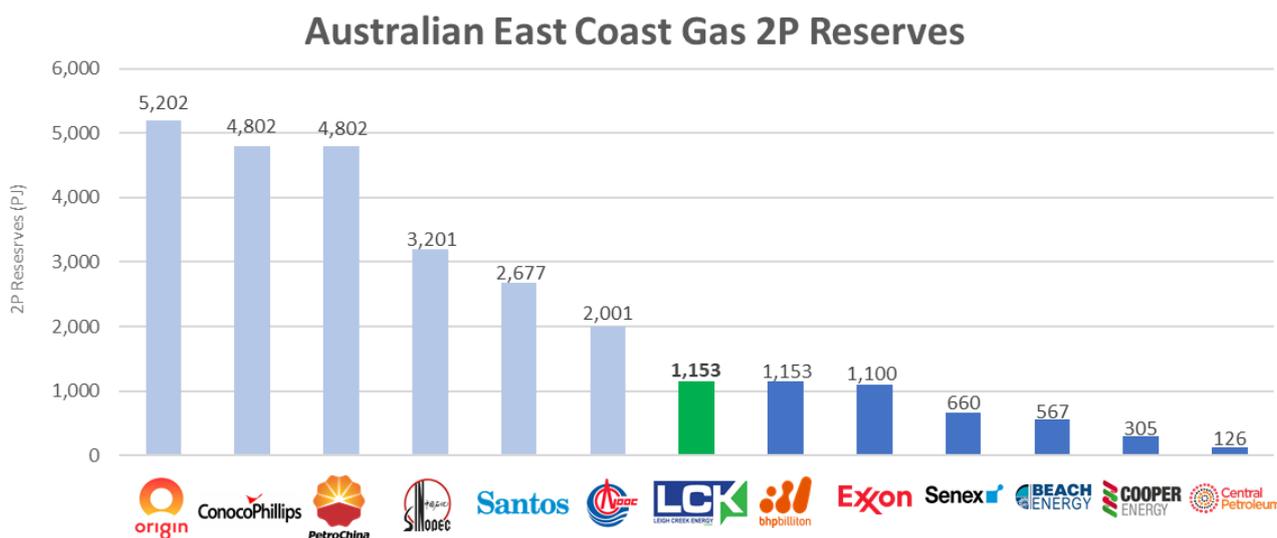


Figure 1: Australian East Coast Gas 2P Reserves

Note: (light blue colour denotes that gas reserves are contracted to LNG export projects)

Source: CCZ Statton Equities Research Note 28 March 2019

The most recent investor presentation provides peer group comparison of LCK to other select onshore oil and gas companies in Australia using an Enterprise Value per 2P gas reserve ratio (refer Figure 2 below). LCK is valued much lower than select peers, most-likely due to the fact that the LCEP is considered a development project. This peer group analysis includes development companies similar to LCK as well as larger more established revenue producing oil and gas companies. The analysis shows the potential valuation uplift that is possible as LCK continues to achieve operational milestones and drive toward commercial operations, sales and revenue.

LCK looks forward to providing more information to the market over the coming months on monetisation pathways for both gas and fertilizer/ammonia as well as the economic analysis that supports both business models.

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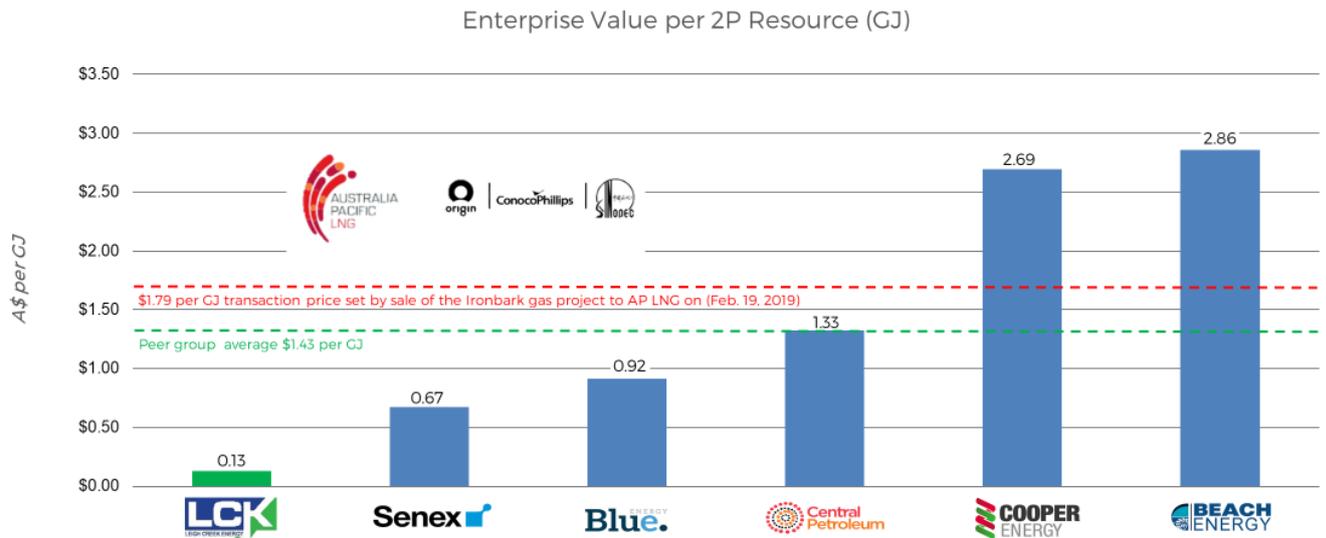


Figure 2

## In-Depth Review of the Leigh Creek Energy Project PRMS

As released in the 28 May 2019 announcement, LCK provided information on the two pre-conditions required to achieve 2P Reserve status under the international best-practice for reporting petroleum (oil and gas) resources and reserves. These two conditions are:

1. A successful production test (refer ASX announcement of 19 February 2019); and
2. A JORC compliant Indicated Resource estimation (refer ASX announcement of 27 March 2019).

The JORC Compliant Report covered a total of 301 million tonnes of coal at the LCEP. The Company's successful PCD production test was undertaken only on 93 of the 301 million tonnes which served as the Main Series Indicated Resource. Therefore, the LCEP's PRMS certification of 1,153 PJ 2P Reserve only corresponds to 31% of the coal available to the LCEP at Leigh Creek.

This indicates that there is further potential for the LCEP's gas reserves to be increased over time, as more step-out drilling, seismic work and production tests are completed.

### International Interest in LCEP

LCK signed a Heads of Agreement (HoA) with South African based African Carbon Energy Pty Ltd (Africary) earlier in 2019 (see ASX announcement 16 January 2019).

Dr Johan van Dyk, Africary Technical Manager, visited LCK in June 2019 for a peer review of Africary's ISG operations in South Africa. The visit also featured discussions regarding the potential for further future technical collaboration and use of LCK's PCD plant and equipment for Africary's Theunissen ISG project.

Dr van Dyk is an internationally recognised coal expert, a renowned coal gasification specialist and the Co-Chairman of Gasification at the International Pittsburgh Coal Conference.



*LCK Managing Director, Mr Phil Staveley, with Africary Technical Manager Johan van Dyk*

## Finance

As of 30 June 2019, the Company's total cash balance was A\$3.1 million. Since 7 February 2017, LCK has successfully maintained a Research and Development ("R&D") Working Capital Facility ("Facility") with the Commonwealth Bank of Australia ("CBA") to support R&D rebates provided by the Federal Government through the Innovation and Science Australia program. During the quarter, the CBA Facility was extended to A\$4.0 million. As of 30 June, the amount drawn under the Facility was A\$3.9 million. It is important to note that this Facility is not traditionally considered as debt rather a receivables factoring facility since it is limited only to cover the Federal Government R&D refund that is directly applicable to LCK's operations that qualify for the rebate. The facility and rebates are determined under the CBA advanced finding process and a detailed review of LCK's R&D spending. A summary of the actual cash flows for the quarter and forecast cash receipts from financing activities for the June 2019 quarter are attached in the Appendix 5B.

## Tenements

As of 30 June 2019, LCK holds 100% interest in the licences listed below, all in South Australia, through LCK's wholly owned subsidiary Leigh Creek Operations Pty Ltd:

- Petroleum Exploration Licence 650; and
- Gas Storage Exploration Licence 662.

Leigh Creek Operations Pty Ltd also has the following licence applications in progress:

- Petroleum Exploration Licence Application 582;
- Petroleum Exploration Licence Application 643;
- Petroleum Exploration Licence Application 644;
- Petroleum Exploration Licence Application 647; and
- Petroleum Exploration Licence Application 649.

Typical with any resource development program, the Government requires the relinquishment of acreage outside of the intended development area. As part of its licence commitments LCK is currently reviewing areas of PEL 650 to relinquish later in 2019. We have exceeded our work and expenditure program requirement and any relinquishment required by the Regulator will not be material and impact on the LCEP. There are large areas within PEL 650 that do not have coal and the relinquishment of this property will not reduce or impact on LCK's coal resource, JORC Report or the PRMS.

## Managing Director's Commentary

Commenting on the Company's quarterly performance, LCK Managing Director Phil Staveley said:

*"The recent quarter has again delivered several de-risking events for LCK and its flagship Leigh Creek Energy Project (LCEP). The LCEP has now progressed beyond the demonstration stage and into the commercialisation stages. Having successfully completed the shutdown of the PCD, we are now able to consolidate site activities around delivering the required monitoring and reporting of environmental conditions and we will continue working closely with the South Australian government."*

*"As the Company progresses with finalising its funding options for the commercial facility at the LCEP, we look forward to another pivotal period ahead, and to making more announcements over the coming weeks and months on our progress."*

### **For further information, contact:**

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### **About Leigh Creek Energy**

*Leigh Creek Energy Limited is an emerging energy company focused on developing its Leigh Creek Energy Project (LCEP), located in South Australia. The LCEP will produce synthetic natural gas and/or ammonium nitrate products (fertiliser and industrial explosives) from the remnant coal resources at Leigh Creek, utilising In Situ Gasification technologies, and will provide long term stability and economic development opportunities to the communities of the Upper Spencer Gulf, northern Flinders Ranges and South Australia.*

*The Company is committed to developing the LCEP using a best practice approach to mitigate the technical, environmental and financial project risks.*

### **Resource Compliance Statement**

*The PRMS resources estimates stated herein are based on, and fairly represent, information and supporting documentation prepared by Timothy Hower of MHA Petroleum Consulting, Denver USA. Mr Hower is a member of the Society of Petroleum Engineers and has consented to the use of the Resource estimates and supporting information contained herein in the form and context in which it appears. A copy of the report by Mr Hower is attached to the Company's announcement dated 27 March 2019.*

# Fast Facts

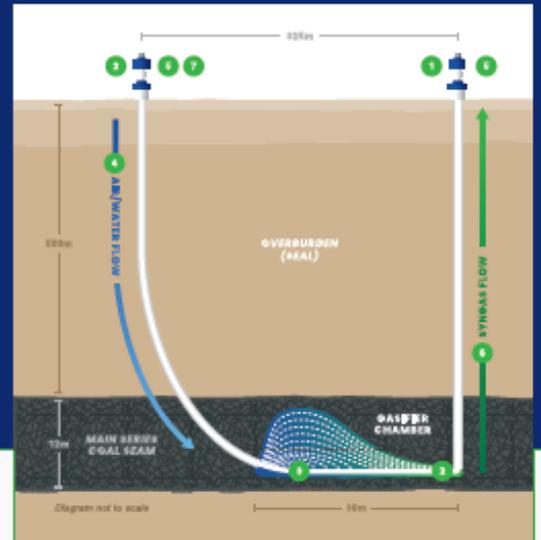
1153 PJ syngas - largest uncontracted gas reserve available to eastern Australia

## How does the ISG process work?

The In-Situ Gasification (ISG) process converts coal, through a series of chemical reactions, from its solid state into a gaseous form, resulting in the generation of syngas, or synthetic gas.

Syngas comprises energy gases, such as methane, hydrogen and carbon monoxide with variable amounts of inert gases, such as carbon dioxide and nitrogen.

1. Outlet well is drilled to intersect coal seam.
2. Inlet well is drilled and steered to link up with outlet well.
3. Initiation tool is placed down the inlet well to heat the coal and starts the gasification process.
4. Addition of air and water creates a series of chemical reactions transforming coal to syngas.
5. Process is controlled by using inlet well to manage the flow of air and water.
6. Syngas will flow up through the outlet well and is analysed on the surface.
7. Process is stopped by turning off air and water supply from the inlet well.



The demonstration plant was located in the heavily modified Telford Basin in the former Leigh Creek Coalfield.

## What is the Leigh Creek Energy Project?

The project location at the now closed Leigh Creek Coalfield was initially identified as a highly favourable location for In-Situ Gasification using environmental, technical and commercial criteria.

The coal reserve is technically suitable for undertaking ISG in a safe manner minimising environmental impact, and the local area is well serviced by existing and useful infrastructure.

The State Government Regulator's Independent Assessment Report concluded that "... the Leigh Creeksite represents one of the strongest opportunities for low risk commercial UCG anywhere in the world."

## What is LCK's Pre-Commercial Demonstration?

LCK's Pre-Commercial Demonstration (PCD) commenced Q4 2018 and concluded Q1 2019 and had five main objectives:

1. Produce syngas comprising Methane (CH<sub>4</sub>), Hydrogen (H<sub>2</sub>), Carbon Monoxide (CO) and Nitrogen (N<sub>2</sub>).
2. Produce syngas at over 1 million cubic feet per day.
3. Capture information required to upgrade the existing Petroleum Resources Management System (PRMS)

2,964 PJ 2C resource to 2P reserve.

4. Demonstrate safe and environmentally responsible ISG operations.

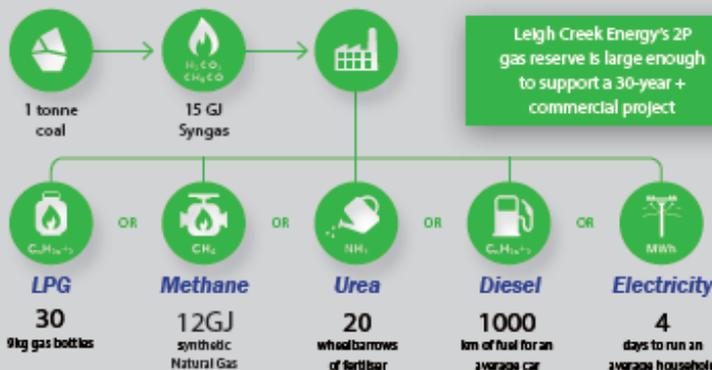
5. Provide key data and information for commercial project development.

The PCD was deemed a success having met or exceeded all objectives, taking the company another step closer to commercial operations.

## Leigh Creek Energy milestones



LCK's PCD facility.



Leigh Creek Energy's 2P gas reserve is large enough to support a 30-year + commercial project

## What is a 2P Reserve?

The project has a PRMS reserve of 2P 1,153 PJ, which is now the largest uncontracted gas reserve available to eastern Australia and larger than what is commercially available in the entire Cooper Basin (ACCC, 2018).

LCK's certification comes after having successfully extracted gas at economic flow rates at its PCD.

The size of the reserve indicates that LCK has multiple commercialisation paths, mainly the sale of synthetic natural gas in the Australian East Coast market and/or using the gas to manufacture ammonia-based fertiliser products.



## Appendix 5B

### Mining exploration entity and oil and gas exploration entity quarterly report

Introduced 01/07/96 Origin Appendix 8 Amended 01/07/97, 01/07/98, 30/09/01, 01/06/10, 17/12/10, 01/05/13, 01/09/16

**Name of entity**

LEIGH CREEK ENERGY LIMITED

**ABN**

31 107 531 822

**Quarter ended ("current quarter")**

June 2019

Consolidated statement of cash flows	Current quarter \$A'000	Year to date (12 months) \$A'000
<b>1. Cash flows from operating activities</b>		
1.1 Receipts from customers		
1.2 Payments for		
(a) exploration & evaluation	347	(13,541)
(b) development		
(c) production		
(d) staff costs	(1,225)	(3,156)
(e) administration and corporate costs	(592)	(2,825)
1.3 Dividends received (see note 3)		
1.4 Interest received	(1)	115
1.5 Interest and other costs of finance paid		
1.6 Income taxes paid		
1.7 Research and development refunds	(2,363)	2,647
1.8 Other (provide details if material)		
<b>1.9 Net cash from / (used in) operating activities</b>	<b>(3,834)</b>	<b>(16,760)</b>
<b>2. Cash flows from investing activities</b>		
2.1 Payments to acquire:		
(a) property, plant and equipment	6	(190)
(b) tenements (see item 10)		
(c) investments		
(d) other non-current assets		

## Mining exploration entity and oil and gas exploration entity quarterly report

<b>Consolidated statement of cash flows</b>		<b>Current quarter \$A'000</b>	<b>Year to date (12 months) \$A'000</b>
2.2	Proceeds from the disposal of:		
	(a) property, plant and equipment	4	4
	(b) tenements (see item 10)		
	(c) investments	10	10
	(d) other non-current assets		
2.3	Cash flows from loans to other entities		
2.4	Dividends received (see note 3)		
2.5	Other (provide details if material)		
<b>2.6</b>	<b>Net cash from / (used in) investing activities</b>	<b>20</b>	<b>(176)</b>

<b>3.</b>	<b>Cash flows from financing activities</b>		
3.1	Proceeds from issues of shares	2,416	13,506
3.2	Proceeds from issue of convertible notes		
3.3	Proceeds from exercise of share options		
3.4	Transaction costs related to issues of shares, convertible notes or options	(501)	(833)
3.5	Proceeds from borrowings	4,219	3,989
3.6	Repayment of borrowings	(3,830)	(3,830)
3.7	Transaction costs related to loans and borrowings	(1,992)	(2,163)
3.8	Dividends paid		
3.9	Other (provide details if material)		
<b>3.10</b>	<b>Net cash from / (used in) financing activities</b>	<b>312</b>	<b>10,669</b>

<b>4.</b>	<b>Net increase / (decrease) in cash and cash equivalents for the period</b>		
4.1	Cash and cash equivalents at beginning of period	6,559	9,324
4.2	Net cash from / (used in) operating activities (item 1.9 above)	(3,834)	(16,760)
4.3	Net cash from / (used in) investing activities (item 2.6 above)	20	(176)
4.4	Net cash from / (used in) financing activities (item 3.10 above)	312	10,669
4.5	Effect of movement in exchange rates on cash held		
<b>4.6</b>	<b>Cash and cash equivalents at end of period</b>	<b>3,057</b>	<b>3,057</b>

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5. <b>Reconciliation of cash and cash equivalents</b> at the end of the quarter (as shown in the consolidated statement of cash flows) to the related items in the accounts	Current quarter \$A'000	Previous quarter \$A'000
5.1 Bank balances	324	1,088
5.2 Call deposits	1,981	4,789
5.3 Bank overdrafts		
5.4 Other (Term deposits)	752	682
<b>5.5 Cash and cash equivalents at end of quarter (should equal item 4.6 above)</b>	<b>3,057</b>	<b>6,559</b>

6. <b>Payments to directors of the entity and their associates</b>	Current quarter \$A'000
6.1 Aggregate amount of payments to these parties included in item 1.2	395
6.2 Aggregate amount of cash flow from loans to these parties included in item 2.3	
6.3 Include below any explanation necessary to understand the transactions included in items 6.1 and 6.2	

Item 6.1 includes Directors fees

7. <b>Payments to related entities of the entity and their associates</b>	Current quarter \$A'000
7.1 Aggregate amount of payments to these parties included in item 1.2	10
7.2 Aggregate amount of cash flow from loans to these parties included in item 2.3	
7.3 Include below any explanation necessary to understand the transactions included in items 7.1 and 7.2	

Piper Alderman lawyers were paid for legal services rendered to the Group. Non-Executive Director Greg English is a partner at Piper Alderman lawyers.

8. <b>Financing facilities available</b> <i>Add notes as necessary for an understanding of the position</i>	Total facility amount at quarter end \$A'000	Amount drawn at quarter end \$A'000
8.1 Loan facilities	4,000	3,870
8.2 Credit standby arrangements		
8.3 Other (please specify)		
8.4 Include below a description of each facility above, including the lender, interest rate and whether it is secured or unsecured. If any additional facilities have been entered into or are proposed to be entered into after quarter end, include details of those facilities as well.		

R&D working capital facility with Commonwealth Bank of Australia. Facility limit Increased to \$4.0m from March 2019. The term of the facility remains unchanged and is available until December 2019.

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<b>9. Estimated cash outflows for next quarter</b>		<b>\$A'000</b>
9.1	Exploration and evaluation	933
9.2	Development	
9.3	Production	
9.4	Staff costs	1,030
9.5	Administration and corporate costs	272
9.6	Other (Interest Expense)	30
<b>9.7</b>	<b>Total estimated cash outflows</b>	<b>2,265</b>

<b>10.</b>	<b>Changes in tenements (items 2.1(b) and 2.2(b) above)</b>	<b>Tenement reference and location</b>	<b>Nature of interest</b>	<b>Interest at beginning of quarter</b>	<b>Interest at end of quarter</b>
10.1	Interests in mining tenements and petroleum tenements lapsed, relinquished or reduced				
10.2	Interests in mining tenements and petroleum tenements acquired or increased				

### Compliance statement

- 1 This statement has been prepared in accordance with accounting standards and policies which comply with Listing Rule 19.11A.
- 2 This statement gives a true and fair view of the matters disclosed.

Sign here:   
Company secretary

Date: 31 July 2019

Print name: Jordan Mehrtens

### Notes

1. The quarterly report provides a basis for informing the market how the entity's activities have been financed for the past quarter and the effect on its cash position. An entity that wishes to disclose additional information is encouraged to do so, in a note or notes included in or attached to this report.
2. If this quarterly report has been prepared in accordance with Australian Accounting Standards, the definitions in, and provisions of, AASB 6: Exploration for and Evaluation of Mineral Resources and AASB 107: Statement of Cash Flows apply to this report. If this quarterly report has been

prepared in accordance with other accounting standards agreed by ASX pursuant to Listing Rule 19.11A, the corresponding equivalent standards apply to this report.

3. Dividends received may be classified either as cash flows from operating activities or cash flows from investing activities, depending on the accounting policy of the entity.

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