



# Australian Securities Exchange Notice

ILUKA

15 April 2019

ASX: ILU

## QUARTERLY REVIEW TO 31 MARCH 2019

### KEY FEATURES

- Synthetic rutile kiln (SR2) 45 day major maintenance outage completed, and kiln fully operational.
- Cataby mine commissioning underway, on schedule and budget, with successful first delivery of heavy mineral concentrate transported to Capel in April.
- Zircon/Rutile/Synthetic Rutile (Z/R/SR) production was down 17% to 154 thousand tonnes compared with December quarter 2018:
  - Kiln major maintenance outage completed in quarter ahead of next four year campaign
  - Rutile production up quarter on quarter despite Lanti dredge ceasing operations at end of February, as planned
  - Production in line with expectations and full year guidance metrics on track
- Z/R/SR revenue and sales lower than previous quarter, as anticipated:
  - Zircon sales lower in first quarter, consistent with seasonal pattern
  - High grade feedstock market remains strong, with production fully sold and
  - Lower sales due to kiln outage and shipping delays slipping into April

### SUMMARY OF PHYSICAL AND FINANCIAL DATA

	Mar-18 Qtr	Dec-18 Qtr	Mar-19 Qtr	Mar-19 Qtr vs Dec-18 Qtr	Mar-19 Qtr vs Mar-18 Qtr
	kt	kt	kt	%	%
<b>Production</b>					
Zircon	81.6	93.2	87.2	(6.5)	6.9
Rutile <sup>1</sup>	44.4	36.7	40.4	9.9	(9.0)
Synthetic Rutile	55.5	56.9	26.8	(52.8)	(51.6)
<b>Total Z/R/SR Production</b>	<b>181.5</b>	<b>186.8</b>	<b>154.4</b>	<b>(17.3)</b>	<b>(14.9)</b>
Ilmenite	99.0	65.9	42.8	(35.1)	(56.9)
<b>Total Mineral Sands Production</b>	<b>280.5</b>	<b>252.7</b>	<b>197.2</b>	<b>(22.0)</b>	<b>(29.7)</b>
<b>Sales</b>					
Zircon	90.2	81.5	65.6	(19.6)	(27.3)
Rutile <sup>1</sup>	60.5	50.3	43.4	(13.9)	(28.4)
Synthetic Rutile	53.8	58.5	28.2	(51.8)	(47.5)
<b>Total Z/R/SR sales</b>	<b>204.5</b>	<b>190.3</b>	<b>137.2</b>	<b>(27.9)</b>	<b>(32.9)</b>
Ilmenite	44.1	57.2	63.3	10.7	43.5
<b>Total Mineral Sands sales</b>	<b>248.6</b>	<b>247.5</b>	<b>200.5</b>	<b>(19.0)</b>	<b>(19.3)</b>
Z/R/SR sales revenue A\$ million	249.2	298.4	231.1	(22.5)	(7.3)
Ilmenite and other revenue A\$ million	14.9	19.8	19.2	(3.0)	29.0
<b>Mineral Sands Revenue A\$ million</b>	<b>264.1</b>	<b>318.2</b>	<b>250.3</b>	<b>(21.3)</b>	<b>(5.3)</b>
<b>Average AUD:USD cents</b>	<b>78.7</b>	<b>71.8</b>	<b>71.2</b>	<b>(0.8)</b>	<b>(9.5)</b>

<sup>1</sup> Rutile sales and production volumes include the lower value titanium dioxide product, HYTI, that typically has a titanium dioxide content of 70 to 90%. This product sells at a lower price than rutile, which typically has a titanium dioxide content of 95%.

## **PRODUCTION COMMENTARY**

Z/R/SR production for the March quarter was 154 thousand tonnes, 17% lower than the December 2018 quarter. This was largely due to the planned SR2 kiln major maintenance outage, which resulted in the kiln being offline for 45 days during the March quarter.

### **Australian Operations**

Iluka's primary zircon mine, Jacinth-Ambrosia, South Australia, operated at full capacity over the course of Q1 2019. Mining is now underway in the Jacinth North deposit, with 156 thousand tonnes of heavy mineral concentrate (HMC) produced for the quarter.

The Narngulu mineral separation plant in Western Australia was fully operational throughout the quarter, processing 123 thousand tonnes of HMC exclusively from Jacinth-Ambrosia. During the quarter, a total of 78 thousand tonnes of zircon was produced at Narngulu, including 8 thousand tonnes of zircon in concentrate. The plant is also being prepared to receive non-magnetic feed from the Cataby operation.

During Q1 2019, Iluka's SR2 kiln at Capel, Western Australia underwent a major maintenance outage. This outage was completed in 45 days, ahead of the planned 51 days. This resulted in the kiln being successfully returned to operation earlier than anticipated. The kiln produced a total of 27 thousand tonnes of synthetic rutile in the first quarter from stockpiled ilmenite.

### **Sierra Leone Operations**

Rutile production in the March quarter was 29 thousand tonnes, slightly up from 28 thousand tonnes in the preceding quarter.

As planned, the Lanti dredge successfully and safely ceased operating in February 2019, and is in the process of being decommissioned. The process of redeployment and redundancies has been successfully completed, in consultation with the United Mineworkers Union and Government of Sierra Leone. Those employees impacted have ended their employment and received their end of service payments during the quarter.

At the two remaining operations at SRL, Lanti dry mine and Gangama mine, Iluka continued to implement a range of operational improvement measures which began to yield results over the quarter. In particular, the Lanti mining unit, which performed poorly through 2018, has achieved nameplate throughput more consistently in March and to date in April. The focus is now on improving runtimes to ensure production rates achieve targeted levels.

With the wet season approaching the opportunity has been taken to stockpile ore at Gangama to mitigate the risk of downtime at the concentrator resulting from lack of available ore to feed the mining unit.

## Mineral Sands Production<sup>1</sup>

	Mar-18 Qtr	Dec-18 Qtr	Mar-19 Qtr	Mar-19 Qtr vs Dec-18 Qtr	Mar-19 Qtr vs Mar-18 Qtr
	kt	kt	kt	%	%
<b>Zircon<sup>2</sup></b>					
Jacinth-Ambrosia/Mid west WA	76.5	86.9	78.2	(10.0)	2.3
Cataby/South west WA	-	-	9.0	n/a	n/a
Sierra Leone	5.1	6.3	-	(100.0)	(100.0)
<b>Total Zircon Production</b>	<b>81.6</b>	<b>93.3</b>	<b>87.2</b>	<b>(6.4)</b>	<b>6.9</b>
<b>Rutile</b>					
Jacinth-Ambrosia/Mid west WA	10.9	8.6	9.3	7.0	(14.5)
Cataby/South west WA	-	-	1.7	n/a	n/a
Sierra Leone	33.5	28.1	29.4	4.8	(12.2)
<b>Total Rutile Production</b>	<b>44.4</b>	<b>36.7</b>	<b>40.4</b>	<b>10.1</b>	<b>(9.0)</b>
<b>Synthetic Rutile (WA)</b>	<b>55.5</b>	<b>56.9</b>	<b>26.8</b>	<b>(52.8)</b>	<b>(51.6)</b>
<b>TOTAL Z/R/SR PRODUCTION</b>	<b>181.5</b>	<b>186.8</b>	<b>154.4</b>	<b>(17.3)</b>	<b>(14.9)</b>
<b>Ilmenite</b>					
Jacinth-Ambrosia/Mid west WA	35.8	28.9	26.1	(9.5)	(26.9)
Cataby/South west WA	50.9	24.6	3.5	(85.9)	(93.2)
Sierra Leone	12.3	12.4	13.2	6.2	5.7
<b>Total Ilmenite</b>	<b>99.0</b>	<b>65.9</b>	<b>42.8</b>	<b>(35.1)</b>	<b>(56.8)</b>
<b>TOTAL MINERAL SANDS PRODUCTION</b>	<b>280.5</b>	<b>252.7</b>	<b>197.2</b>	<b>(22.0)</b>	<b>(29.7)</b>

<sup>1</sup> Table reflects changed reporting basis, explained fully on page 7.

<sup>2</sup> Iluka's zircon production figures include volumes of zircon attributable to external processing arrangements.

## **MINERAL SANDS MARKET CONDITIONS**

### **Zircon**

First quarter 2019 zircon sales were 66 thousand tonnes, in line with the company's expectations. Iluka has previously communicated that it expected buying of zircon to be lower during the first quarter of 2019; a function of seasonally lower activity. The lower sales volumes remained in line with historical averages for first quarter.

Underlying demand appears to be stable. However, buying activity remains slow in some sectors and geographies as global political tensions and trade uncertainties, against a backdrop of modest economic growth, continues to impact sentiment. In China, ceramic manufacturing plants have been slow to restart following Chinese New Year. Chinese consumption is expected to remain stable in 2019 and there are early indications of improved conditions in the housing market.

European and Indian zircon markets slowed down in the latter half of 2018 with buyers maintaining a cautious approach and drawing down on their inventories. Iluka remains of the view that this reduction of inventory in the supply chain will support buying in the short to medium term.

Global supply of premium zircon, required for ceramics manufacturing, remains tight. Several miners have experienced difficulties maintaining production of their premium products and produced more standard grade material. Iluka's product portfolio is more heavily weighted to premium grade zircon, reflecting the quality of material from the Jacinth-Ambrosia mine. The Cataby mine is also expected to yield a high quality product.

As previously guided, Iluka plans to produce and sell ~40 thousand tonnes less zircon in concentrate (ZIC) over 2019 compared to 2018, but maintains the capacity to increase ZIC production if market conditions support it.

As previously announced, Iluka maintained the Zircon Reference Price at US\$1,580 per tonne for the six months to September 2019, hence providing the market with a period of stable pricing. This decision remains supported by customers, for whom price visibility and stability are critical.

### **Titanium Dioxide Feedstocks**

High grade titanium dioxide feedstock sales (rutile and synthetic rutile) were 72 thousand tonnes in the first quarter 2019. This was due to limitations on availability of synthetic rutile during the planned major maintenance outage at Iluka's synthetic rutile kiln; and slippage of two large bulk shipments planned for March into the first week of April.

While pigment demand slowed over the second half of 2018, demand for high grade feedstocks remained strong. Demand for pigment has strengthened over the first quarter of 2019 and this has contributed to sustained strong demand for high-grade feedstocks. Based on our modelling of pigment demand, continued growth in demand is expected over 2019, absent major disruptions.

Demand from the welding sector remains stable however supply to this premium market is under significant pressure from mine closures and diversion of previously merchant material to internal consumption.

Demand for titanium feedstocks is such that the company is physically unable to satisfy all requests for feedstock, both high-grade and ilmenite.

## **PROJECT UPDATES**

A range of projects advanced across Iluka's operations during the quarter, all progressing on schedule and budget. Major projects at each site are detailed further below.

### **Cataby, Western Australia**

Cataby is a large, chloride ilmenite-rich deposit 150 kilometres north of Perth. The mine development was approved in December 2017, with first production scheduled for the first half of 2019. Site construction activities are complete and the plant and equipment is undergoing final commissioning and ramp-up activities. First heavy mineral concentrate was produced through the plant in early March. Capital expenditure is expected to be in the middle of the range previously advised of \$250 - \$275 million.

The mine is a conventional mineral sands development, utilising dozer push and truck and excavator mining to feed two in-pit mining units. An onsite Wet High Intensity Magnetic Separation (WHIMS) plant will separate the magnetic (ilmenite) and non-magnetic product streams (zircon and rutile), with the mine expected to produce approximately 370 thousand tonnes of chloride ilmenite, 50 thousand tonnes of zircon and 30 thousand tonnes of rutile on average over an eight and a half year mine life. Access to additional ore reserves could extend the mine life by a further four years.

Ilmenite sourced from Cataby will be transported to Capel for synthetic rutile production (approximately 200 thousand tonnes per year on average) and the non-magnetic stream to Iluka's Narngulu mineral separation plant at Geraldton for final processing (zircon and rutile). As previously announced, Iluka has secured offtake agreements with Western pigment producers for 85% of the synthetic rutile production from Cataby, underpinning returns from the project.

### **Ambrosia mine move, South Australia**

In October 2018 the Iluka Board approved funding of ~\$55 million to bring forward the mine move to the Ambrosia deposit to the fourth quarter of 2019 (previously planned for 2022). This was assessed as the best option to smooth production from Jacinth-Ambrosia and partially offset the impact of declining grade over the operation's remaining mine life.

Capital expenditure of ~\$35 million is expected in 2019 for roads, earthworks, high voltage power, mining pipework and pumping infrastructure, as well as site infrastructure and buildings. Construction of site infrastructure commenced in Q1 2019 including the installation of power lines, field pipework and civil foundations. All major supply and construction contracts have been awarded and the project is currently progressing ahead of scheduled completion in Q4 2019.

The remaining deferred capital of ~\$20 million is to be spent over 2020-21, relates to tailings infrastructure and management.

### **Lanti dry and Gangama mine expansions, Sierra Leone**

Iluka is progressing with the doubling of capacity of both the Gangama and Lanti dry operations from 500-600 tonne per hour to 1,000-1,200 tonne per hour. Capital expenditure for these expansions received Board approval in December 2017.

Progress on the expansion projects is in line with schedule. Construction of the second Gangama concentrator is 92% complete with commissioning activities planned to commence from May 2019.

At Lanti, the re-purposing of the Lanti floating concentrator is progressing in accordance with plan, with some complex components of the project being completed in the quarter (the floating plant is now in place, ready for beaching late April). Construction of infrastructure for the concentrator is in progress and electrical refurbishment will commence during May. Lanti is scheduled for commissioning in the second half of 2019.

### **Sembehun mine, Sierra Leone**

The Sembehun group of deposits are situated 20 to 30 kilometres north-west of the existing Sierra Rutile operations. Iluka plans to initially develop a new 1,000-1,200 tonne per hour mine at these deposits.

The definitive feasibility study (DFS) on Stage 1 (early works including the haul road, bridge and process water dam) is continuing. Value optimisation studies are in progress to investigate options around the timing, capacity and sequence of mining and concentrating options across the Sembehun deposits. This work remains on schedule to conclude early in the second half of 2019, at the same time as the conclusion of the Sembehun Stage 1 DFS.

#### **Mineral separation plant upgrade, Sierra Leone**

Mineral separation plant equipment and general site upgrades are required to meet the additional capacity that will be generated from the Sembehun development. The upgrade will also assist in improving safety, operational and metallurgical efficiencies. The value optimisation study, which is considering various plant configurations, continues and will conclude early in the second half of 2019.

#### **Wimmera (formerly Fine Minerals), Murray Basin, Victoria**

Iluka holds exploration licences over a number of fine grained heavy minerals sands ore-bodies within the Victorian Murray Basin province. To date none of these deposits have been developed into mining operations due to technical challenges associated with purity and recovery of the valuable minerals.

In August 2018, Iluka commenced a pre-feasibility study on one of these fine grained deposits, the WIM100 deposit. This study into the mining and beneficiation of zircon and rare earth products is progressing as planned. Extraction of an ore sample for pilot plant processing was completed in December 2018. In Q1 2019, pilot plant test work is on track for the production of rare earth carbonate samples to be ready for customer testing in Q3 2019.

This project has the potential for the long term supply of zircon into the market along with rare earth elements in mixed carbonate form.

The pre-feasibility study is scheduled to be concluded by the end of 2019.

#### **Balranald, Murray Basin, New South Wales**

Balranald and Nepean are two rutile-rich deposits in the northern Murray Basin, New South Wales. Work on the development at Balranald has continued. A drilling programme to provide more detailed understanding of the deposit mineralisation has been completed. The proposed final trial has been designed to determine whether the underground mining and backfilling technology is economically viable in a continuous mining and processing environment. This trial is still subject to Board approval and is expected to be considered by the Board later this year.

#### **Eneabba tailings project, Western Australia**

A feasibility study has commenced into the extraction, processing and sale of an historical monazite-rich tailings stockpile that is currently stored in a mining void at Eneabba, Western Australia. Iluka has engaged with stakeholders and regulators on this project. Preliminary process engineering design is complete showing a simple flowsheet with low capital expenditure. The study is due to for completion early in Q3 2019.

#### **Puttalam (PQ), Sri Lanka**

The potential for the development of the mineral sands deposit known as the Puttalam Quarry (PQ) continues to be assessed. The PQ deposit is a large sulphate ilmenite deposit, located approximately 30 kilometres north of the town of Puttalam in the North Western Province of Sri Lanka, approximately 170 kilometres from the capital Colombo.

PQ project work is focussed on legal and investment terms for the development and includes securing surface access rights, ministerial and other governmental approvals for any subsequent mining licence, and reaching agreement with the Sri Lankan Government regarding the fiscal and other arrangements that will apply to the project. Political uncertainty late last year delayed progress on government engagements. With stabilisation of the government this year, Iluka has recommenced engagement activities.

A PFS has been completed on the project, with planning of the next phase being initiated.

Refer Iluka's website ([www.iluka.com](http://www.iluka.com)) – Section: Company Overview, Projects, for more detail on these projects.

## EXPLORATION

Expenditure on exploration and evaluation charged to the profit and loss account for the March quarter 2019 was \$2.0 million.

Exploration during the quarter focussed on generating and validating green field targets in Australia and internationally. Several projects will progress to drilling in 2019 to test for heavy mineral deposits.

### Canada

Iluka continued to fund Societe d'Exploration Miniere Vior Inc. ("Vior") to undertake exploration for high grade rutile/ilmenite deposits in the Foothills and Grand Duc and Big Island Lake project areas in Quebec.

Technical analysis of the 2018 aerial survey data was completed. Ten targets were prioritised for drill testing at the Grand Duc and Foothills Projects later in the year. Land access and programme approvals are underway.

Figure 1: Grand Duc, Foothills and Big Island Lake Projects, Quebec, Canada



## CORPORATE UPDATES

### Reporting Changes

In 2019 Iluka has changed the reporting basis of its operations.

Previously Australian operations were reported as a single cash generating unit (CGU). From 2019, this will be split into two CGUs being Jacinth-Ambrosia / Mid west and Cataby / South west. With the commencement of Cataby operations, this reporting structure more closely aligns with the operational structure of the business and it provides greater transparency on Australian operations costs and revenue results.

In addition, reporting on the now idle assets at Murray Basin, Australia and Virginia, US will be combined into an Idle Asset group. Small amounts of material remain from these sites which will be recognised as production upon sale.

Iluka will aim to minimise any impact on those following the company with this change.

## **International Finance Corporation (IFC) Update**

As announced in Iluka's full year results in February 2019, the company has been in discussion with IFC, a member of the World Bank Group, regarding a potential investment by IFC in Iluka's Sierra Rutile operation. This would involve IFC acquiring an equity stake of up to 10% in Sierra Rutile for US\$60 million.

IFC's 60 day disclosure period for the potential investment will end on 21 April. This disclosure period is a requirement of IFC's review and approval process and must be completed prior to it committing to any investment.

As we noted in our full year results, the potential investment is subject to finalisation of documentation on commercially acceptable terms and the approval of both Iluka and IFC boards. Representatives from Iluka and IFC have been working closely together to finalise terms of the proposed investment.

## **Executive change**

Simon Hay, Head of Resource Development, tendered his resignation from Iluka to take up the position of CEO at Galaxy Resources Limited in July. Simon has worked at Iluka for 10 years and has made a significant contribution to the business in this time. Succession plans are being implemented.

## **TELECONFERENCE DETAILS**

An investment conference call will take place at 9.00am (AWST) on 15 April 2019. Dial in numbers are listed below. Please quote passcode ID: **9958556**.

For locations within Australia dial toll-free **1800 123 296**, or toll +61 (0)2 8038 5221.

If you are calling from another country, please use one of the following toll-free dial-in numbers:

Hong Kong (toll-free) 800 908 865

Japan (toll-free) 0120 477 087

Canada 1855 5616 766

Singapore (toll-free) 800 616 2288

United Kingdom (toll-free) 0808 234 0757

United States (toll-free) 1855 293 1544

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**APPENDIX 1 - OPERATING MINES – PHYSICAL DATA**  
**3 Months to 31 March 2019**

	Jacinth- Ambrosia / Mid west	Cataby / South west	Australia Total	Sierra Leone	Idle Assets	Group Total
<b>Mining</b>						
Overburden Moved kbcm	16	3,130	<b>3,146</b>	-	-	<b>3,146</b>
Ore Mined kt	2,274	1,623	<b>3,897</b>	2,211	-	<b>6,109</b>
Ore Grade HM %	7.9%	-	<b>4.6%</b>	3.0%	-	<b>4.0%</b>
VHM Grade %	7.0%	-	<b>4.1%</b>	2.4%	-	<b>3.4%</b>
<b>Concentrating</b>						
HMC Produced kt	156	-	<b>156</b>	60	-	<b>216</b>
VHM Produced kt	134	-	<b>134</b>	40	-	<b>174</b>
VHM in HMC Assemblage %	86.3%	-	<b>86.3%</b>	66.4%	-	<b>80.8%</b>
Zircon	42.6%	-	<b>42.6%</b>	2.7%	-	<b>31.7%</b>
Rutile	8.3%	-	<b>8.3%</b>	42.9%	-	<b>18.0%</b>
Ilmenite	35.5%	-	<b>35.5%</b>	19.2%	-	<b>31.1%</b>
HMC Processed kt	123	26	<b>149</b>	63	-	<b>212</b>
Finished Product <sup>1</sup> kt						
Zircon	78.2	9.0	87.2	0.0	0.0	<b>87.2</b>
Rutile	9.3	1.7	11.0	29.4	0.0	<b>40.4</b>
Ilmenite (saleable/upgradeable)	26.1	3.5	29.6	13.2	30.5	<b>73.3</b>
Synthetic Rutile Produced kt	-	26.8	<b>26.8</b>	-	-	<b>26.8</b>

**Explanatory comments on terminology**

**Overburden moved** (bank cubic metres) refers to material moved to enable mining of an ore body.

**Ore mined** (thousands of tonnes) refers to material moved containing heavy mineral ore.

**Ore Grade HM %** refers to percentage of heavy mineral (HM) found in a deposit.

**VHM Grade %** refers to percentage of valuable heavy mineral (VHM) - titanium dioxide (rutile and ilmenite), and zircon found in a deposit.

**Concentrating** refers to the production of heavy mineral concentrate (HMC) through a wet concentrating process at the mine site, which is then transported for final processing into finished product at the company's Australian mineral processing plant, or the Sierra Leone mineral processing plant.

**HMC produced** refers to HMC, which includes the valuable heavy mineral concentrate (zircon, rutile, ilmenite) as well as other non-valuable heavy minerals (gangue).

**VHM produced** refers to an estimate of valuable heavy mineral in heavy mineral concentrate expected to be processed.

**VHM produced and the VHM assemblage** - provided to enable an indication of the valuable heavy mineral component in HMC.

**HMC processed** provides an indication of material emanating from each mining operation to be processed.

**Finished product** is provided as an indication of the finished production (zircon, rutile, ilmenite) attributable to the VHM in HMC production streams from the various mining operations. Finished product levels are subject to recovery factors which can vary. The difference between the VHM produced and finished product reflects the recovery level by operation, as well as processing of finished material/concentrate in inventory. Ultimate finished product production (rutile, ilmenite, and zircon) is subject to recovery loss at the processing stage – this may be in the order of 10 per cent.

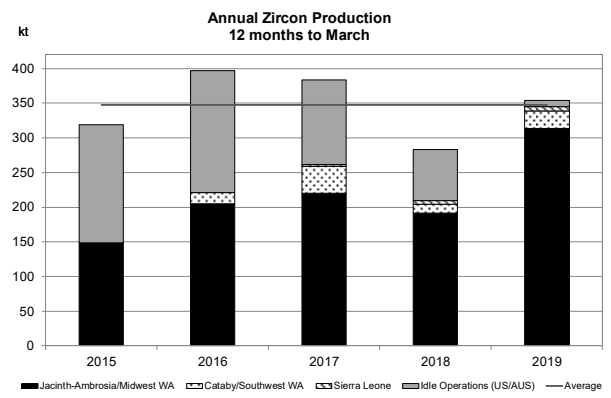
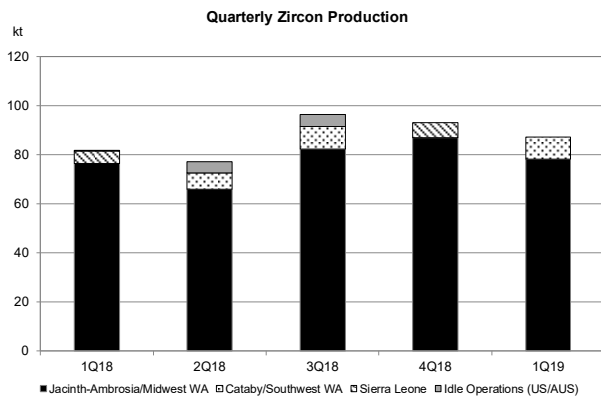
**Ilmenite** is produced for sale or as a feedstock for synthetic rutile production.

Typically, 1 tonne of upgradeable ilmenite will produce between 0.56 to 0.60 tonnes of SR. Iluka also purchases external ilmenite for its synthetic rutile production process.

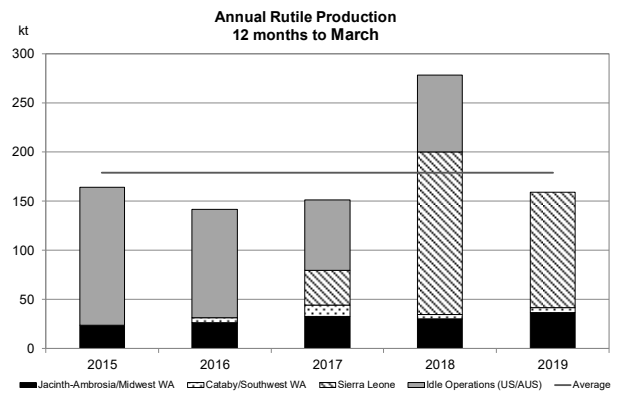
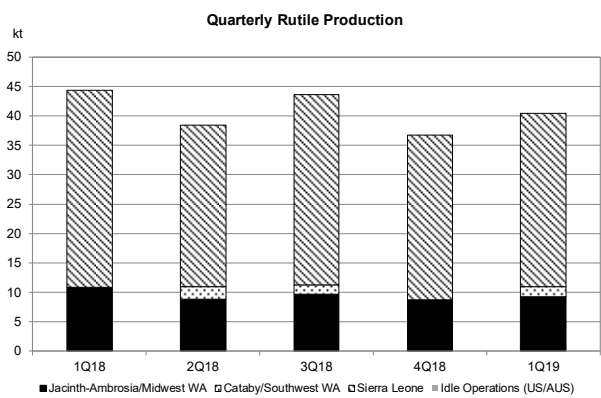
<sup>1</sup> Finished product includes material from heavy mineral concentrate (HMC) initially processed in prior periods.

## APPENDIX 2 – PRODUCTION SUMMARIES

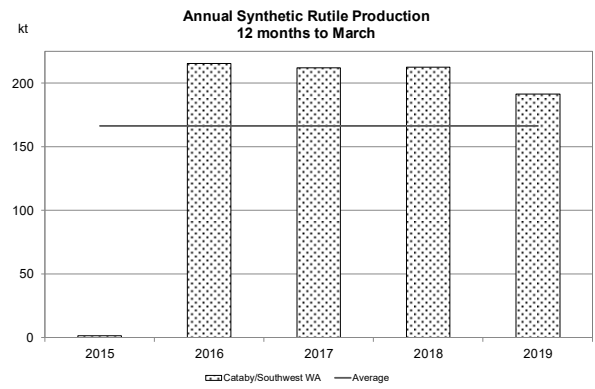
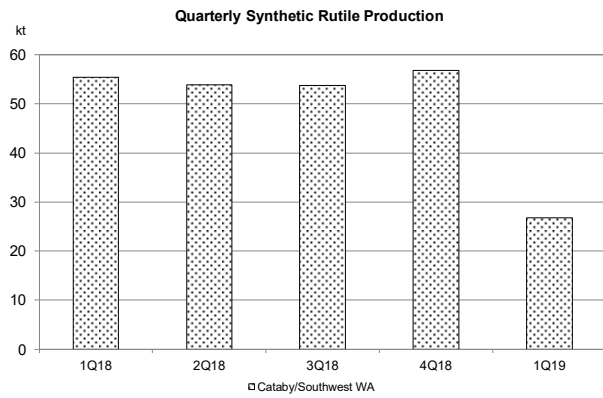
### Zircon



### Rutile



## Synthetic Rutile



## Ilmenite

