

# Australian Securities Exchange Notice



20 April 2017

## QUARTERLY PRODUCTION REPORT 31 MARCH 2017

### KEY FEATURES

- Zircon/Rutile/Synthetic Rutile (Z/R/SR) revenue increased 118.5 per cent compared with the previous corresponding period, reflecting a major period-on-period increase in sales volumes (inclusive of Sierra Rutile sales volumes).
- Improved mineral sands market conditions were evident in the first quarter 2017. Iluka recorded:
  - 131.5 per cent higher total Z/R/SR sales volumes (inclusive of Sierra Rutile) compared with the first quarter in 2016 (exclusive of Sierra Rutile);
  - approximately double Z/R/SR sales volumes (excluding Sierra Rutile); and
  - higher weighted average received prices for both zircon and rutile from average 2016 levels, with the achievement of price increases in the first quarter.
- Reflecting the favourable market outcome year-to-date, Iluka's free cash flow generation to the end of March has enabled net debt, which was \$506 million at 31 December to be reduced to \$403 million as at 31 March. Of the \$103 million reduction in net debt, \$80 million is attributable to free cash flow generation during the first quarter, with the remainder due to the revaluation of USD denominated debt in a strengthening Australian dollar environment (AUD:USD exchange rate increased from 72.14 cents at 31 December 2016 to 76.75 cents at 31 March 2017).<sup>1</sup>
- Total Z/R/SR production increased by 52.9 per cent to 232.2 thousand tonnes compared with March quarter 2016, reflecting the inclusion of Sierra Rutile product and increased zircon production.
- Rutile production increased 112.5 per cent with the inclusion of 35.7 thousand tonnes from Sierra Rutile. Excluding the Sierra Rutile contribution, rutile production increased 26.9 per cent (to 32.1 thousand tonnes), reflecting the drawdown of the remaining Murray Basin heavy mineral concentrate.

### SUMMARY OF PHYSICAL AND FINANCIAL DATA

	Mar-16 Qtr	Dec-16 Qtr	Mar-17 Qtr	Mar-17 Qtr vs Dec-16 Qtr	Mar-17 Qtr vs Mar-16 Qtr
	kt	kt	kt	%	%
<b>Production</b>					
Zircon	74.2	65.3	110.9	69.8	49.5
Rutile	25.3	31.9	67.8	112.5	168.0
Synthetic Rutile	52.4	52.0	53.5	2.9	2.1
<b>Total Z/R/SR Production</b>	<b>151.9</b>	<b>149.2</b>	<b>232.2</b>	<b>55.6</b>	<b>52.9</b>
Ilmenite	81.3	68.3	104.7	53.3	28.8
<b>Total Mineral Sands Production</b>	<b>233.2</b>	<b>217.5</b>	<b>336.9</b>	<b>54.9</b>	<b>44.5</b>
<b>Total Z/R/SR Sales<sup>1</sup></b>	<b>87.7</b>	<b>na</b>	<b>203.0</b>	<b>na</b>	<b>131.5</b>
Z/R/SR sales revenue A\$million	93.5	243.6	204.3	(16.1)	118.5
Ilmenite and other revenue A\$million	8.6	9.6	14.2	47.9	65.1
<b>Mineral Sands Revenue A\$million</b>	<b>102.1</b>	<b>253.2</b>	<b>218.5</b>	<b>(13.7)</b>	<b>114.0</b>
<b>Average AUD:USD cents</b>	<b>72.1</b>	<b>75.1</b>	<b>75.8</b>	<b>0.9</b>	<b>5.1</b>

1. Sales volumes for March quarter 2017 are provided on a one-off basis given the magnitude of increase period-on-period.

<sup>1</sup> During March, Iluka entered into foreign currency hedges in relation to 2017 contracted synthetic rutile sales. Iluka hedged US\$114 million at an average rate of 76.1 cents across the year.

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## PRODUCTION

Iluka's only current operational Australian mine continued to be Tutunup South, which is the principal source of ilmenite for the company's synthetic rutile kiln (SR2) in the south-west of Western Australia. Iluka's Jacinth-Ambrosia mine remained suspended to enable the further draw down of heavy mineral concentrate inventories. During the quarter, Iluka produced 154 thousand tonnes of heavy mineral concentrate in the period and processed 366 thousand tonnes.

Iluka's Narngulu mineral separation plant in Western Australia was operational in the March quarter following a planned shutdown in the final months of 2016. Zircon and rutile production from Iluka's Australian operations increased by 58.1 per cent and 39.0 per cent respectively from the December 2016 quarter. Zircon production is up 49.5 per cent relative to the March quarter 2016. This largely reflects the Narngulu plant being operational for more days in March quarter 2017, in comparison to a shutdown that occurred in January 2016.

The Hamilton mineral separation plant in the Murray Basin, Victoria and the Narngulu plant continued to process stockpiled heavy mineral concentrate from the Jacinth-Ambrosia operation and the Murray Basin.

In March, Iluka determined that Jacinth-Ambrosia feed will be processed at the Narngulu facility, with the Hamilton plant processing the remaining heavy mineral concentrate from the Murray Basin, which is expected to be drawn down by October 2017. As a result, operations at Hamilton will be suspended from October 2017 until concentrate becomes available from Iluka's next planned mining development in the Murray Basin, the Balranald deposit, New South Wales. This decision enables the optimal operational settings for the company's two Australian mineral separation plants.

Commentary on the Sierra Rutile operational settings and integration activities is provided below.

## Mineral Sands Production

	Mar-16 Qtr	Dec-16 Qtr	Mar-17 Qtr	Mar-17 Qtr vs Dec-16 Qtr	Mar-17 Qtr vs Mar-16 Qtr	12 mths to Mar-16	12 mths to Mar-17	12 mths Mar-17 vs 12 mths Mar-16
	kt	kt	kt	%	%	kt	kt	%
<b>Zircon<sup>1</sup></b>								
Eucla/Perth Basin (SA/WA)	64.4	56.8	91.2	60.7	41.8	312.4	334.5	7.1
Murray Basin (VIC)	9.8	8.4	11.9	41.7	21.4	56.5	41.4	(26.7)
<b>Australia</b>	<b>74.2</b>	<b>65.2</b>	<b>103.1</b>	<b>58.1</b>	<b>38.9</b>	<b>368.9</b>	<b>375.9</b>	<b>1.9</b>
Sierra Leone	-	0.1	2.1	2,000.0	n/a	-	2.2	n/a
Virginia (USA)	-	-	5.7	n/a	n/a	28.2	5.7	(79.8)
<b>Total Zircon Production</b>	<b>74.2</b>	<b>65.3</b>	<b>110.9</b>	<b>69.8</b>	<b>49.5</b>	<b>397.1</b>	<b>383.8</b>	<b>(3.3)</b>
<b>Rutile</b>								
Eucla/Perth Basin (SA/WA)	8.5	10.6	15.5	46.2	82.4	41.1	53.5	30.2
Murray Basin (VIC)	16.8	12.5	16.6	32.8	(1.2)	100.4	62.1	(38.1)
<b>Australia</b>	<b>25.3</b>	<b>23.1</b>	<b>32.1</b>	<b>39.0</b>	<b>26.9</b>	<b>141.5</b>	<b>115.6</b>	<b>(18.3)</b>
Sierra Leone	-	8.8	35.7	305.7	n/a	-	44.5	n/a
<b>Total Rutile Production</b>	<b>25.3</b>	<b>31.9</b>	<b>67.8</b>	<b>112.5</b>	<b>168.0</b>	<b>141.5</b>	<b>160.1</b>	<b>13.1</b>
<b>Synthetic Rutile (WA)</b>	<b>52.4</b>	<b>52.0</b>	<b>53.5</b>	<b>2.9</b>	<b>2.1</b>	<b>215.8</b>	<b>212.0</b>	<b>(1.8)</b>
<b>TOTAL Z/R/SR PRODUCTION</b>	<b>151.9</b>	<b>149.2</b>	<b>232.2</b>	<b>55.6</b>	<b>52.9</b>	<b>754.4</b>	<b>755.9</b>	<b>0.2</b>
<b>Ilmenite</b>								
Eucla/Perth Basin (SA/WA)	72.1	57.5	83.4	45.0	15.7	267.9	299.7	11.9
Murray Basin (VIC)	9.2	7.6	9.7	27.6	5.4	90.0	38.4	(57.3)
<b>Australia</b>	<b>81.3</b>	<b>65.1</b>	<b>93.1</b>	<b>43.0</b>	<b>14.5</b>	<b>357.9</b>	<b>338.1</b>	<b>(5.5)</b>
Sierra Leone	-	3.2	11.6	262.5	n/a	-	14.8	n/a
Virginia (USA)	-	-	-	n/a	n/a	109.9	-	n/a
<b>Total Ilmenite</b>	<b>81.3</b>	<b>68.3</b>	<b>104.7</b>	<b>53.3</b>	<b>28.8</b>	<b>467.8</b>	<b>352.9</b>	<b>(24.6)</b>
<b>TOTAL MINERAL SANDS PRODUCTION</b>	<b>233.2</b>	<b>217.5</b>	<b>336.9</b>	<b>54.9</b>	<b>44.5</b>	<b>1,222.2</b>	<b>1,108.8</b>	<b>(9.3)</b>

<sup>1</sup> Iluka's zircon production figures include small volumes of zircon attributable to external processing arrangements.

## SIERRA RUTILE INTEGRATION UPDATE

The following provides the first integration update related to Iluka's management of the Sierra Rutile operation. Iluka gained control of Sierra Rutile Limited on 7 December 2016.

### Integration and management team

Iluka's integration management team at Sierra Rutile consists of Rob Hattingh (Chief Executive Officer) and Shane Tilka (Chief Operating Officer). Other key management and operational positions filled by Iluka personnel include the Safety Manager, Human Resources Director, Technical Integration Manager, Surface Mobile Equipment Manager and Financial Integration Manager. Further support is provided by one of Iluka's Principal Metallurgists and its Chief Metallurgist, with various mine engineering and environmental support personnel also called upon as required. The integration team is expected to be in place for at least three years and includes some personnel that were involved in the due diligence process. Project planning and management for the expansion options is under the control of Gavin Swart, Iluka's General Manager, Major Projects and Engineering.

### Key areas of operational focus

The current areas of operational focus include the following:

- implementation of sustainable initiatives to improve Sierra Rutile's environmental health and safety performance;
- embedding processes that ensure plant throughput is maximised and operated within design constraints;
- the replacement and commissioning of the mining fleet with 41 of the planned 44 pieces of new surface mobile equipment delivered to site;
- a detailed review of in-fill drilling to improve resource and reserve confidence, potentially extending current mine life and supporting mine planning and feasibility studies;
- development of a detailed metallurgical work plan to aid in improving both product quality and recovery;
- a detailed assessment of the maintenance systems and current availability of operational spare parts and consumables; and
- a detailed review of rehabilitation practices with the view to introduce Iluka expertise and methods as relevant.

### Mine planning

The integration team has focussed on aligning mine planning processes to ensure there is adherence to a mining sequence to provide a higher degree of focus on consistent ore recovery characteristics. All medium to long term mine planning has been centralised in the Iluka Perth corporate office, with only the short term mine planning to be completed on site at this stage. This is expected to improve the quality of mine planning outcomes.

### March quarter production

Production for the first quarter under Iluka control was lower than planned as a result of lower heavy mineral concentrate production. This was due to the following factors:

- a lower level of surface mobile equipment availability prior to the commissioning of the new mining fleet, which occurred in March, limiting ore supply volumes to the feed preparation circuits of the dry mining operations;
- lower availability of the Lanti Dredge operation due to unplanned mechanical failures, lower throughput and lower ore grade. These issues are being addressed with a detailed rectification plan; and
- lower availability at the Lanti Dry Mine with 32 days downtime incurred from 7 December 2016 to complete construction of downstream embankments to address inadequate freeboard levels in containment dams. This was a necessary rectification measure, identified at the time of acquisition.

Iluka retains its production guidance for Sierra Rutile of ~150 thousand tonnes of rutile in 2017.

Sierra Rutile product specification sheets have now been standardised and are consistent with the Iluka format, recognised by all customers.

Wet concentrator and mineral separation plant enhancements have been supported by the completion of a metallurgical work program, focussing on optimising the standard grade and industrial grade rutile product specifications through improved mineral separation plant screening. Wet concentrator enhancements have been implemented including ensuring plant settings are altered to achieve a higher heavy mineral concentrate grade and heavy mineral recovery.

The work plan to reduce the operational risk levels associated with the tailings storage facilities has progressed and is due for completion in April. All facilities are now being operated within the required level of freeboard and geotechnical parameters, determined as necessary immediately prior to the acquisition.

A project aimed at reducing the risks associated with the logistics chain has been initiated. A second "push boat" is planned to be purchased in 2017 to reduce the risks associated with relying on a single unit for loading, while also increasing the productivity of ship loading rates.

### Sierra Rutile Key Operating Parameters

	Dec-16 Quarter Attributable production <sup>1</sup>	Mar-17 Quarter
	kt	kt
<b>Mining and Concentrating</b>		
Ore Mined	729	2,570
Heavy Mineral Concentrate Produced	24	91
<b>Final Product</b>		
Zircon	0.1	0.3
Rutile	8.8	35.7
Ilmenite	3.2	11.6

<sup>1</sup> Iluka acquired Sierra Rutile on 7 December and this reflects production from this date.

### Sierra Rutile major projects update

#### *Mobile mining unit*

The Lanti wet concentrator plant (in the Gbeni deposit) was commissioned in 2013 with a nameplate capacity of 500 tonnes per hour. However, since this time the plant has not consistently reached its capacity. A new mobile mining unit (comprising of an in-pit mineral sizer and ex-pit scrubber) is planned to debottleneck the ore feed process and reduce unit costs of production.

The supply of the mining unit has recently been awarded and project completion is planned by end of 2017.

#### *Mineral separation plant upgrade*

Assessment of the upgrade requirements for the mineral separation plant have commenced in order to meet additional capacity that will be generated by the planned mine expansions. This will also assist in improving safety, operational and metallurgical efficiencies.

#### *Lanti dry and Gangama mine expansions*

As the company has outlined previously, Iluka plans to double the capacity of both the Gangama and Lanti dry operations from 500 tonne per hour to 1,000 tonne per hour.

Development options for these two expansions are being examined with the objective to select the preferred method of development by mid 2017. Detailed engineering and construction planning is likely in the second half of 2017.

#### *Sembehun dry mine*

The Sembehun group of deposits are situated 20 to 30 kilometres north west of the existing Sierra Rutile operations. Early desktop assessment of the development options has commenced with the intention to initiate a pre-feasibility engineering study from mid 2017. Environmental baseline studies are planned to commence in the second quarter of 2017.

## ILUKA MARKET CONDITIONS

Iluka has experienced a favourable commencement to the 2017 year. Reflecting the 118.5 per cent increase in zircon/rutile/synthetic rutile (Z/R/SR) sales revenue, the following features characterised the first quarter:

- Iluka's total Z/R/SR sales volumes (inclusive of Sierra Rutile) increased by 131.5 per cent compared with the first quarter in 2016;
- excluding Sierra Rutile volumes (largely rutile), Z/R/SR volumes approximately doubled compared with the first quarter of 2016; and
- Iluka's weighted average received prices for both zircon and rutile increased in the first quarter from the level prevailing at the end of 2016, reflecting more favourable market demand conditions and the achievement of price increases in the first quarter for both zircon and rutile.

The revenue increase period-on-period is lower than the increase in sales volumes. This reflects both mix of products (proportionately more zircon in concentrate sold in the March quarter 2017 compared to the March quarter 2016) and pricing (despite a price increase of US\$50 per tonne effective from 15 February 2017, zircon prices in the March quarter 2017 were lower than zircon prices in the March quarter 2016).

### Zircon

Iluka's first quarter zircon sales volume growth reflects increased share of underlying demand in zircon end markets, largely influenced by customer restocking from depleted levels.

As Iluka advised previously, a number of competitors undertook significant de-stocking in 2016. This adversely impacted product prices in that year and, ultimately, Iluka's market share as the company took what actions it could to attempt to stabilise market conditions. Consequently, in the early part of 2017, Iluka has gained incremental volumes at higher prices through meeting inventory replenishment by customers - consistent and expected behaviour at this point of the cycle - and has recovered market share foregone in 2016.

Iluka is well positioned to continue to supply the demand recovery for zircon, being the major holder of significant inventories. Iluka also has the ability to re-activate idled capacity, namely, the Jacinth-Ambrosia operation.

A price increase of US\$50 per tonne, effective from 15 February 2017, has been accepted by Iluka customers. Iluka has also observed price appreciation, beyond US\$50 per tonne, in the zircon spot market.

Iluka is experiencing a shift in customer purchasing inquiries to premium zircon. This is not unexpected behaviour, as market conditions improve and the relative economic value of different products becomes more discernible.

### Titanium Dioxide Feedstocks

Sales of rutile were in line with the first quarter of 2016, excluding the contribution of Sierra Rutile volumes. The inclusion of Sierra Rutile sales to the business, for the first full quarter, has resulted in total rutile sales more than doubling period-on-period.

Sales of synthetic rutile increased relative to the first quarter of 2016 despite some slippage of volumes from the first quarter into the early part of the second quarter, due to port congestion.

Iluka has received requests for additional high grade material and for some contracted shipments to be brought forward from the second half. This reflects the improving market conditions in pigment and continued leanness in the pigment and titanium feedstocks supply chain.

Rutile and synthetic rutile prices increased relative to 2016 levels, consistent with market conditions and contractual arrangements. Weighted average rutile price rises, year-to-date, have been consistent with Iluka's expectation of achieving up to a 4 per cent price increase in the first half of 2017. With the exception of a proportion of Sierra Rutile production, most rutile has been contracted for the first six months of 2017 or less.

During the quarter, Iluka's synthetic rutile was trialled in two Chinese chloride pigment facilities and rutile was trialled in two titanium sponge plants. In the welding market, Iluka has achieved up to US\$50 per tonne price increases, in some regions, for the second quarter.

Modest sales of ilmenite reflect volumes predominately from Sierra Rutile. The majority of Iluka's existing ilmenite is consumed internally in the production of synthetic rutile.

## **PLANNED NEW PRODUCTION**

### **Cataby, Western Australia**

The Cataby mineral sands deposit, located north of Perth, is a deposit that is planned to produce ilmenite suitable for sale, or as a feed source for synthetic rutile production, as well as material volumes of zircon and rutile. Cataby is expected to have an economic life of approximately 8.5 years.

The definitive feasibility study has been completed and various pre-execute activities, including environmental approvals and amenity agreements, continue on schedule, along with work to further refine and optimise the project configuration. A development decision on Cataby is linked to the execution of appropriate commercial arrangements.

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

Balranald and Nepean are two rutile-rich mineral sands deposits in the northern Murray Basin, New South Wales. The Balranald development, subject to regulatory approvals and the approval of the Iluka Board, will provide the potential for approximately eight years of substantial rutile, zircon and associated ilmenite production, dependent on production settings.

The company completed a field trial on an unconventional mining method to access the deposits and further evaluative work is planned in 2017. Activities have commenced on the development, operational, regulatory and financial planning for the next phase.

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

The potential for the development of the mineral sands deposit known as the Puttalam Quarry (PQ), is currently being 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 and 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. Discussions with the Sri Lankan Government have commenced on establishing a pathway towards Iluka securing a binding Investment Agreement. Iluka is in the process of revising a comprehensive project proposal and has suggested forming a joint working committee with the appropriate government ministries to progress the negotiation of the Investment Agreement.

A pre-feasibility study is being undertaken on the PQ deposit with in-country consultants being engaged to progress various environmental, hydrogeological and infrastructure work packages.

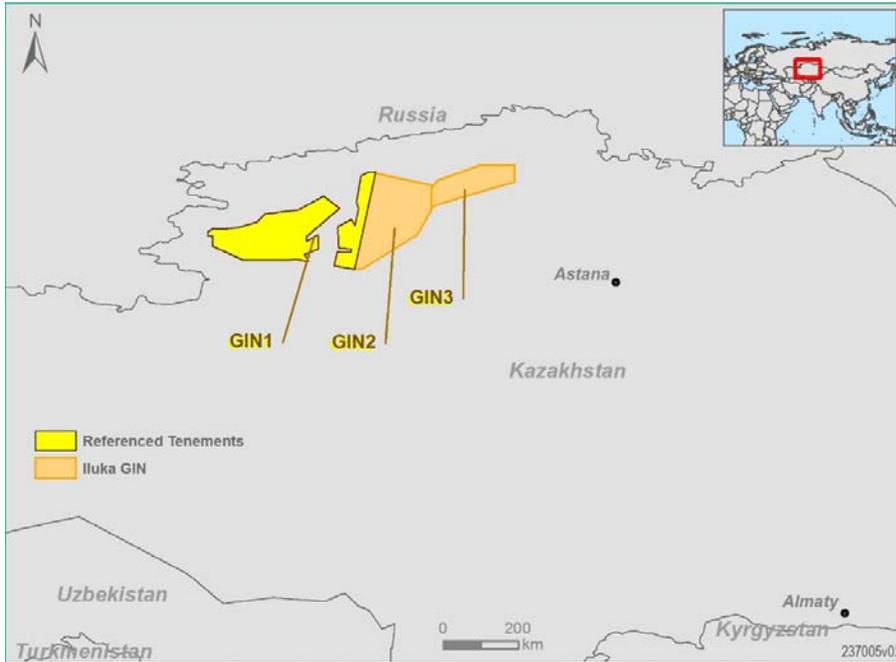
Refer Iluka's website ([www.iluka.com](http://www.iluka.com)) – Section: Company Overview, Projects, for more detail on these projects.

## EXPLORATION

### Kazakhstan

An air core drilling rig has been imported into Kazakhstan in preparation for a two to three month exploration drilling program commencing in the second quarter. This work follows on from auger drilling completed in the GIN 1 area in 2016 and will extend regional testing to GIN 2 and GIN 3. Approvals required for land access are progressing.

**Figure 2 Northern Kazakhstan**

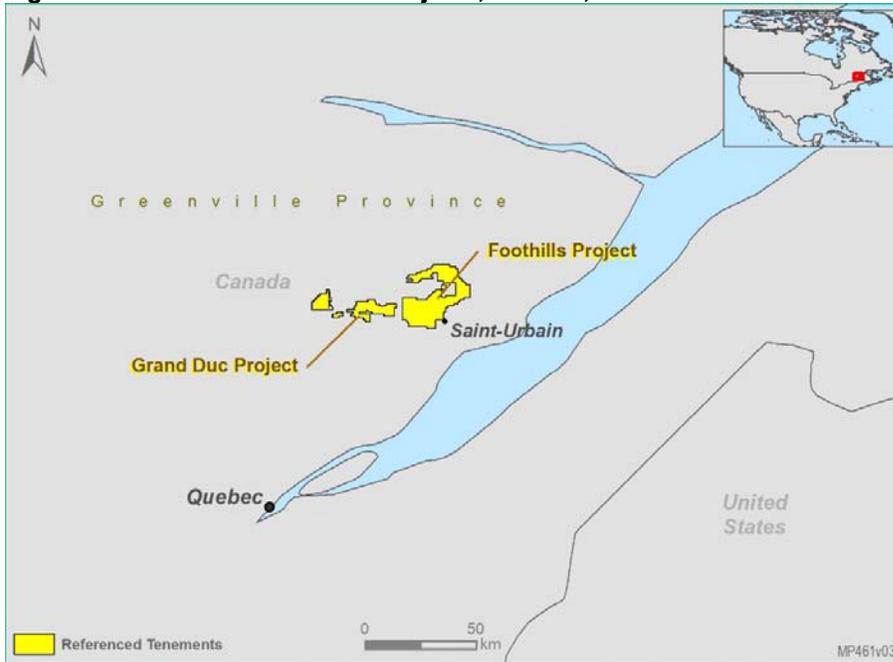


Note: Within Kazakhstan, a GIN is a geological investigation licence. Iluka has the exclusive rights (in conjunction with Kazgeology) to explore for titanium minerals, zircon and tin within these licences.

### Canada

Iluka continued to fund exploration activity at the Foothills and Grand Duc Projects in Quebec, Canada. Analysis of glacial and petrographic studies at the Foothills Project was finalised. At the adjacent Grand Duc Project, an aeromagnetic survey was completed and targets generated will be further investigated.

**Figure 3 Grand Duc & Foothills Projects, Quebec, Canada**



### **Project Generation**

Iluka continues generative exploration activities, including initial prospecting and tenement acquisition and drilling activity for mineral sands in Australia and internationally.

### **Investment market and media enquiries:**

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**APPENDIX 1 - OPERATING MINES – PHYSICAL DATA**  
**3 Months to 31 March 2017**

	Jacinth-Ambrosia	Murray Basin	Western Australia	Australia Total	Sierra Leone <sup>1</sup>	Virginia	Group Total
<b>Mining</b>							
Overburden Moved kbcm	-	-	3	3	7	-	10
Ore Mined kt	-	-	536	536	2,570	-	3,106
Ore Grade HM %			14.0	14.0			Na
VHM Grade %			12.6	12.6			Na
<b>Concentrating</b>							
HMC Produced kt	-	-	63	63	91	-	154
VHM Produced kt	-	-	55	55	56	-	111
VHM in HMC Assemblage %	-	-	86.4	86.4	61.3	-	71.6
Zircon	-	-	14.9	14.9	3.7	-	8.3
Rutile	-	-	5.5	5.5	43.5	-	27.9
Ilmenite	-	-	66.0	66.0	14.1	-	35.4
<b>Processing (HMC to finished product at a mineral separation plant)</b>							
HMC Processed kt	162	43	70	275	91	-	366
Finished Product <sup>1</sup> kt							
Zircon	82.3	11.9	8.9	103.1	2.1	5.7	110.9
Rutile	13.4	16.6	2.1	32.1	35.7	-	67.8
Ilmenite (saleable/upgradeable)	44.3	9.7	39.1	93.1	11.6	-	104.7
Synthetic Rutile Produced kt			53.5	53.5			53.5

1. HM and VHM grade are unavailable for Sierra Rutile at this time.

An explanation of the Iluka's physical flow information can be obtained from [Iluka's Briefing Paper - Iluka Physical Flow Information](#) on the company's website. The nature of the Iluka operations base means that HMC from various mining locations can be processed at various mineral separation plants.

**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 one of the company's two Australian mineral processing plants, 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.

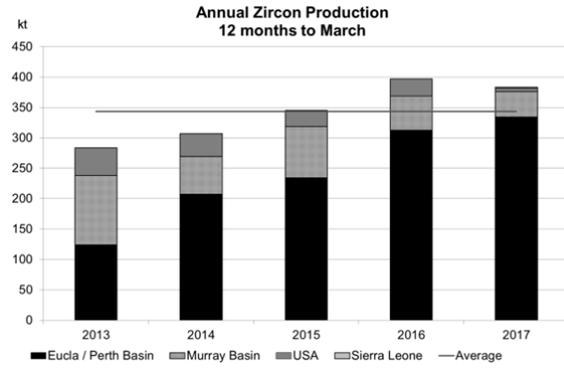
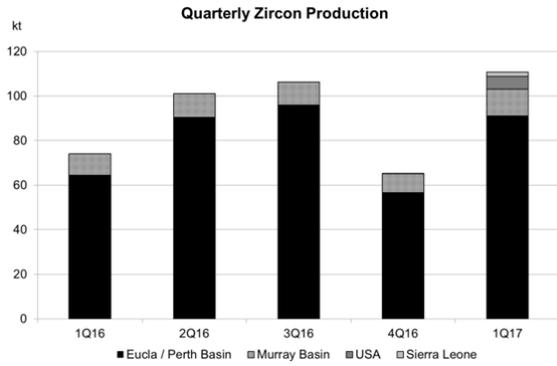
**Ilmenite** is produced for sale or as a feedstock for synthetic rutile production.

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.

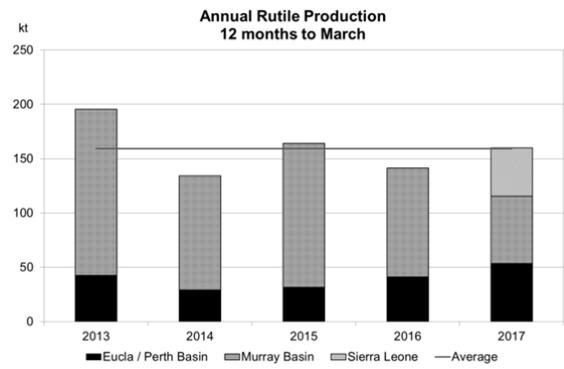
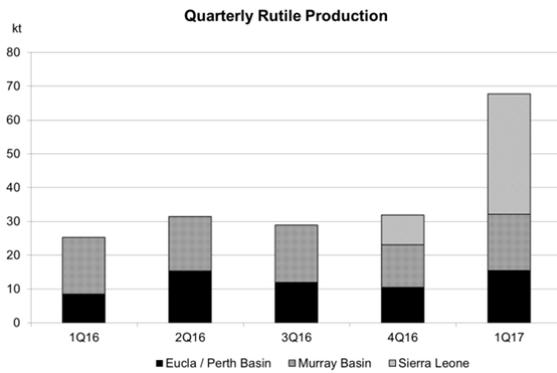
<sup>1</sup> Finished product includes material from heavy mineral concentrate (HMC) initially processed in prior periods.

## APPENDIX 2 – PRODUCTION SUMMARIES

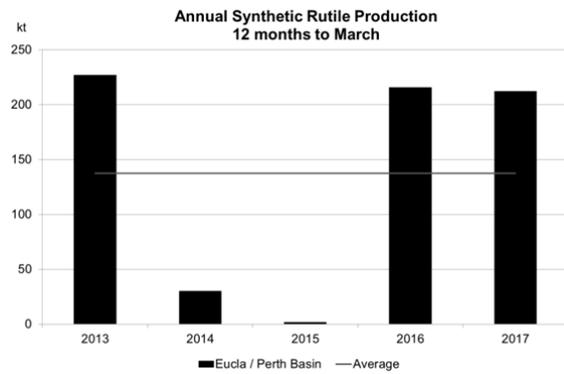
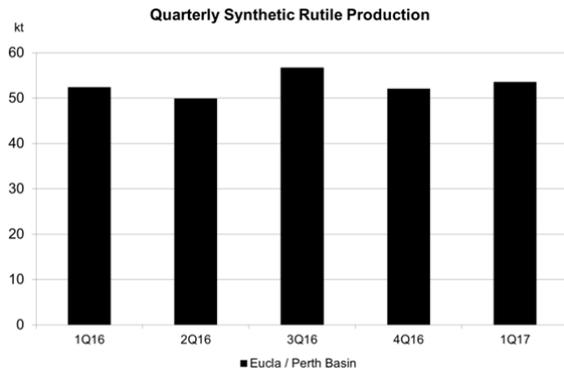
### Zircon



### Rutile



## Synthetic Rutile



## Ilmenite

