

**ILUKA**

# Australian Securities Exchange Notice

17 July 2013

## QUARTERLY PRODUCTION REPORT 30 JUNE 2013

### SUMMARY OF PHYSICAL AND FINANCIAL DATA

	Jun-12 Quarter	March-13 Quarter	Jun-13 Quarter	Jun-12 YTD	Jun-13 YTD	Jun-13 YTD vs Jun-12 YTD
	kt	kt	kt	kt	kt	%
<b>Production</b>						
Zircon	93.3	56.1	62.4	209.0	118.5	(43.3)
Rutile	52.9	25.8	34.8	103.6	60.6	(41.5)
Synthetic Rutile	80.6	29.0	30.0	131.2	59.0	(55.0)
<b>Total Z/R/SR Production</b>	<b>226.8</b>	<b>110.9</b>	<b>127.2</b>	<b>443.8</b>	<b>238.1</b>	<b>(46.3)</b>
Ilmenite – Saleable & Upgradeable	166.9	160.9	173.0	362.9	333.9	(8.0)
<b>Total Mineral Sands Production<sup>1</sup></b>	<b>393.7</b>	<b>271.8</b>	<b>300.2</b>	<b>806.7</b>	<b>572.0</b>	<b>(29.1)</b>
<b>Sales</b>						
Zircon				87.4	210.9	143.3
Rutile				85.4	56.3	(34.1)
Synthetic Rutile				101.1	20.0	(80.2)
<b>Total Z/R/SR Sales</b>				<b>273.9</b>	<b>287.2</b>	<b>4.9</b>
Ilmenite				218.9	147.0	(32.8)
<b>Total Mineral Sands Sales</b>				<b>492.8</b>	<b>434.2</b>	<b>(11.9)</b>
<b>Mineral Sands Revenue A\$ million</b>	<b>466.5</b>	<b>139.9</b>	<b>241.8</b>	<b>662.8</b>	<b>381.7</b>	<b>(42.4)</b>
<b>Average AUD:USD cents</b>	<b>101.0</b>	<b>103.9</b>	<b>99.2</b>	<b>103.3</b>	<b>101.5</b>	<b>1.7</b>
<b>Cash Costs of Production – A\$ million</b>				<b>314.7</b>	<b>201.9</b>	<b>(35.8)</b>
<b>Cash Costs per tonne of Z/R/SR produced – A\$</b>				<b>709</b>	<b>848</b>	<b>(19.6)</b>
<b>Revenue per tonne of Z/R/SR sold – A\$</b>				<b>2,255</b>	<b>1,178</b>	<b>(47.8)</b>

### OVERVIEW

- Iluka's combined production of zircon, rutile and synthetic rutile (Z/R/SR) in the June quarter was 127.2 thousand tonnes, 14.7 per cent higher than March 2013 quarter production of 110.9 thousand tonnes.
- Z/R/SR production in the June 2013 quarter was 43.9 per cent lower than in the June 2012 quarter (226.8 thousand tonnes), while Iluka's first half 2013 Z/R/SR production was 238.1 thousand tonnes, 46.3 per cent lower than the 443.8 thousand tonnes recorded in the first half of 2012. Lower production reflected completion, during the quarter, of Iluka's previously announced operating adjustments to

<sup>1</sup> Total mineral sands production includes ilmenite available for upgrading to synthetic rutile and that available for sale. For both commercial reasons and given the company's increased flexibility in utilising ilmenite production from multiple sources for upgrading to synthetic rutile, the company no longer separates ilmenite production into saleable and upgradeable components. The relative utilisation of ilmenite for upgrading or sale is more apparent with the reporting of sales volumes in the June and December quarterly reports.

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curtail output<sup>1</sup> in response to lower demand, to facilitate a progressive draw down of finished goods inventory, as well as to reduce total operating costs.

- Iluka's first half 2013 zircon sales volume of 210.9 thousand tonnes was a marked increase from the previous corresponding period sales volume of 87.4 thousand tonnes and was approximately equal to 2012 full year sales volumes of 213.8 thousand tonnes. Based on a strong first half, Iluka continues to expect that zircon sales in 2013 will exceed production (which has been increased to approximately 280 thousand tonnes).
- First half zircon demand recovered in most markets and trended well in excess of production, allowing a draw down in finished goods inventory. Conversely, a return to normal mining schedules at Jacinth-Ambrosia in South Australia led to an increase in zircon-rich heavy mineral concentrate at site, despite a modest restart in the shipment and processing of concentrate from the operation.
- First half rutile and synthetic production of 119.6 thousand tonnes exceeded sales of 76.3 thousand tonnes, reflecting expected weaker first half demand for high grade feedstocks and the completion of operational adjustments in the second quarter, including the idling of Iluka's largest synthetic rutile kiln, SR 2, in the South West of Western Australia, late in the June quarter. All Iluka Western Australian mining and synthetic rutile plants will be idle during the second half of 2013.
- Iluka's combined rutile and synthetic rutile sales volumes in the first half of 2013 were 76.3 thousand tonnes, a level similar to those in the second half of 2012 (88.6 thousand tonnes) and significantly lower than the first half of 2012 volume of 186.5 thousand tonnes, which was a period when Iluka had greater volumes contracted to customers and was prior to the emergence of demand weakness and inventory adjustment activities in the pigment industry. Iluka now expects rutile/synthetic rutile sales in 2013 to be in line with expected production of approximately 200 thousand tonnes.
- Mineral sands revenue for the three months to 30 June 2013 was \$241.8 million. Revenue for the first half of 2013 was \$381.7 million. The lower first half revenue compared with the same period in 2012 (\$662.8 million), notwithstanding higher Z/R/SR sales volumes, mainly reflects lower received prices period-on-period as demonstrated by the first half revenue per tonne of Z/R/SR of A\$1,178 per tonne compared with A\$2,255 per tonne in the first half of 2012 and A\$1,655 per tonne in the second half of 2012.
- Indications are that zircon prices have stabilised and Iluka's received zircon prices increased slightly towards the end of the half, whereas average rutile/synthetic rutile prices, as previously advised, having started the year at a level approximately 30 per cent below the December quarter 2012 rutile price levels, softened through the first half to a level approximately 40 per cent below the December quarter 2012 rutile price levels.<sup>2</sup>
- Cash costs of production were \$201.9 million in the first half of 2013, a 35.8 per cent decline relative to the first half of 2012 associated with previously announced operational adjustments, which included plant idling and reductions in workforce levels. On a unit basis, cash costs of production were \$848 per tonne of Z/R/SR, higher than the corresponding period last year, reflecting the 46.3 per cent lower production of Z/R/SR, partially offset by the 35.8 per cent decline in cash cost of production. Restructure costs incurred in the half amounted to approximately \$30 million and, with operating adjustments fully implemented, full year costs will be similar and remain well below the approximately the \$50 million figure guided previously.
- The average Australian/US dollar exchange rate for the quarter was 99.2 cents, down from 103.9 cents in the March quarter. The majority of Iluka's revenue is denominated in US dollars and as a result a lower Australian/US dollar exchange rate is favourable for revenues translated into reporting currency.

<sup>1</sup> Refer Iluka ASX Release, Production Cuts and Cost Reductions, 21 February 2013.

<sup>2</sup> Refer Iluka ASX Release, Iluka Full Year Results, 21 February 2013, which stated: "Iluka average zircon prices started 2013 approximately 15 per cent below December quarter 2012 levels (US\$1,449/tonne), while rutile prices were approximately 30 per cent below December quarter 2012 levels (US\$2,094/tonne)."

## MARKET CONDITIONS

### Zircon

Aggregate zircon demand has improved significantly, although the recovery has not been uniform across markets or end sectors, with subdued conditions continuing in some markets, such as Europe, and in some sectors.

Geographically, demand in China represents the major component of Iluka's year-to-date zircon sales, with robust demand in the ceramics sector, as well as signs of recovery in other end use sectors. In the latter part of the half, the European ceramics sector displayed some signs of recovery with customers taking additional volumes. This mainly reflected a recovery in European export markets, including Asia and the Middle East. North American demand has been solid, particularly in investment casting, as well as in ceramic tiles and sanitary ware.

In China, positive indicators for zircon demand in the half included: floor space sold of approximately 500 million square metres for the six months to 30 June, a 30 per cent increase on 2012 levels; floor space starts growing year on year after declining in 2012; and total real estate loan growth at the highest level since the second quarter of 2011. Globally, most major tile producers for which data is available reported solid revenue growth in the first quarter of 2013.

Indications are that zircon prices have stabilised and Iluka's received prices increased slightly towards the end of the first half.

Some previous thrifting activities, including changes to typical product formulations, are believed to have reversed, or diminished, over recent months, in part influenced by pricing and in part by the superior attributes of zircon in a number of applications.

Improved sales and growing zircon customer business confidence levels were a feature of the first half of 2013, but Iluka remains of the view that forecasting demand for both zircon and titanium dioxide remains challenging, due to factors such as the volatility of global and regional economic performance and associated business confidence levels.

While zircon sales in 2013 are expected to exceed an increased production level of approximately 280 thousand tonnes, with the difference being met from inventory, Iluka is cautious about assuming that the typically second-half weighted sales profile will occur in 2013 and expects a more even half to half profile may be experienced as the year progresses.

### High Grade Titanium Dioxide

Consistent with Iluka's statements made earlier in the year, global demand for high grade feedstocks (including rutile and synthetic rutile) was subdued during the first half of the year. Lower pigment plant yields associated with pigment producers' efforts to work down pigment inventories, combined with the residual contractual availability of legacy-priced high grade feedstocks, meant demand for Iluka's high grade feedstocks was low during the first half of 2013.

High grade titanium dioxide weighted average feedstock prices softened through the first half, reflecting competition for sales in a low demand environment.

A strengthening US economy, particularly the US housing sector's cyclical recovery, with housing prices, remodelling activity and new home sales all trending positively, plus lower paint and pigment inventories, are expected to lead to a recovery in demand for higher grade feedstocks in the latter part of 2013 and into 2014.

However, sales results to date and caution on the part of major feedstock consumers regarding the pace of demand recovery and inventory destocking processes, lead Iluka to a view that total rutile and synthetic rutile sales in 2013 are more likely to be in line with 2012 production of approximately 200 thousand tonnes, rather than with 2012 sales of 275 thousand tonnes, as had been forecast previously.

## PRODUCTION

Lower production levels are in line with Iluka's previously announced operational adjustments, which reflect a major operational response to a cyclical low in market demand and the company's objective to draw down finished goods inventory, while preserving capacity to respond quickly to market demand recovery.

During the June quarter, Iluka completed the remainder of its earlier announced production adjustments, including idling synthetic rutile kiln 2 in the South West of Western Australia, along with one of its ilmenite feed sources, the Tutunup South mine. The completion of these measures means there is no planned synthetic rutile production or mining in Western Australia for the remainder of 2013.

As planned, mining operations at Woorack, Rownack and Pirro in the Murray Basin continued, while mineral processing operations at the Hamilton mineral separation plant continued on a reduced basis. At Jacinth-Ambrosia, mining operations continued at normal throughputs resulting in an increase in heavy mineral concentrate stored at site, as planned (refer Appendix 1 for concentrate production and processing at an operational level).

The Narngulu mineral separation plant in Western Australia operated at approximately 50 per cent capacity utilisation, as planned.

Towards the end of the quarter, and in light of strengthening demand for zircon and the progressive draw down in finished goods inventories, shipment of concentrate from Jacinth-Ambrosia resumed to support production of finished product as Iluka restocks parts of its logistics chain depleted by increased demand. Heavy mineral concentrate stockpiles continued to build in the quarter, as planned, and are consistent with Iluka's strategy to maintain production flexibility and ability to respond to improved market conditions.

A ramp-up in mining and processing operations occurred in Virginia, consistent with the plan to meet additional demand for high grade zircon, including for export.

Iluka now expects full year zircon production to be approximately 280 thousand tonnes compared with the 220 thousand tonnes forecast at the beginning of the year.

## CASH COSTS OF PRODUCTION

Total cash costs of production for the six months were \$201.9 million, a 19.6 per cent reduction compared with \$314.7 million incurred during the first half of 2012. The markedly lower costs reflect the significant production curtailment activities, which included a reduction in employee and contractor workforces. As referred to earlier, restructure costs in the half amounted to ~\$30 million.

Half year cash costs of production are in line with full year guidance estimates provided in February 2013<sup>1</sup>, of approximately \$375 million for the full year. Cash costs of production in the second half of 2013 of ~\$175 million, reflect lower production relative to the first half and the completion of all planned operational adjustments. The full year cash costs guidance of approximately \$375 million (excluding restructuring costs) is materially lower than full year 2012 cash costs of \$583 million.

On a unit of production basis cash costs were \$848 per tonne of Z/R/SR, higher than the corresponding period last year, reflecting the 46.3 per cent lower production of Z/R/SR.

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<sup>1</sup> Refer Iluka ASX Release, Iluka Key Physical and Financial Parameters 2013, 21 February 2013

## Sales Revenue and Cash Cost/Revenue per Tonne

	Jun-12 Quarter	Dec-12 Quarter	Mar-13 Quarter	Jun-13 Quarter	Jun-12 YTD	Jun-13 YTD	Jun-13 YTD vs Jun-12 YTD
Mineral sands revenue - A\$m	466.5	182.5	139.9	241.8	662.8	381.7	(42.4)
Total cash costs - A\$m					314.7	201.9	(35.8)
Cash costs per tonne of Z/R/SR produced - A\$					709	848	(19.6)
Revenue per tonne of Z/R/SR sold - A\$					2,255	1,178	(47.8)
Average A\$/US\$ spot rate - cents	101.0	103.9	103.9	99.2	103.3	101.5	1.7

## MINERAL SANDS PRODUCTION

The following table details Iluka's total production by product group, with the source of that production attributed to the regional operating mines and basins. Processing of final product occurs in Australia, at one of two mineral separation plants, at Hamilton, Victoria, and Nargulu, Western Australia. Iluka also has a mineral separation plant in Virginia, United States. A similar table showing a 12 month comparison is on page 6. Given the integrated nature of Iluka's Australian operations, heavy mineral concentrate is capable of being processed into final product at either of the Australian mineral processing facilities. Appendix 1 provides details of the physical flows from mining operations to mineral processing facilities.

### Physical Production

	Jun-12 Quarter	Mar-13 Quarter	Jun-13 Quarter	Jun-12 YTD	Jun-13 YTD	Jun-13 YTD vs Jun-12 YTD
	kt	kt	kt	kt	kt	%
<b>Zircon<sup>1</sup></b>						
Eucla/Perth Basin (SAWA)	42.9	32.8	36.9	110.1	69.7	(36.7)
Murray Basin (VIC)	36.5	13.3	17.2	71.3	30.5	(57.2)
<b>Australia</b>	<b>79.4</b>	<b>46.1</b>	<b>54.1</b>	<b>181.4</b>	<b>100.2</b>	<b>(44.8)</b>
Virginia (USA)	13.9	10.0	8.3	27.6	18.3	(33.7)
<b>Total Zircon Production</b>	<b>93.3</b>	<b>56.1</b>	<b>62.4</b>	<b>209.0</b>	<b>118.5</b>	<b>(43.3)</b>
<b>Rutile</b>						
Eucla/Perth Basin (SAWA)	14.1	9.5	7.3	30.9	16.8	(45.6)
Murray Basin (VIC)	38.8	16.3	27.5	72.7	43.8	(39.8)
<b>Total Rutile Production</b>	<b>52.9</b>	<b>25.8</b>	<b>34.8</b>	<b>103.6</b>	<b>60.6</b>	<b>(41.5)</b>
<b>Synthetic Rutile (WA)</b>	<b>80.6</b>	<b>29.0</b>	<b>30.0</b>	<b>131.2</b>	<b>59.0</b>	<b>(55.0)</b>
<b>TOTAL Z/R/SR PRODUCTION</b>	<b>226.8</b>	<b>110.9</b>	<b>127.2</b>	<b>443.8</b>	<b>238.1</b>	<b>(46.3)</b>
<b>Ilmenite – Saleable &amp; Upgradeable</b>						
Eucla/Perth Basin (SAWA)	80.5	91.9	61.8	172.7	153.7	(11.0)
Murray Basin (VIC)	32.4	21.1	66.5	82.9	87.6	5.7
<b>Australia</b>	<b>112.9</b>	<b>113.0</b>	<b>128.3</b>	<b>255.6</b>	<b>241.3</b>	<b>(5.6)</b>
Virginia (USA)	54.0	47.9	44.7	107.3	92.6	(13.7)
<b>Total Ilmenite – Saleable &amp; Upgradeable</b>	<b>166.9</b>	<b>160.9</b>	<b>173.0</b>	<b>362.9</b>	<b>333.9</b>	<b>(8.0)</b>
<b>TOTAL MINERAL SANDS PRODUCTION</b>	<b>393.7</b>	<b>271.8</b>	<b>300.2</b>	<b>806.7</b>	<b>572.0</b>	<b>(29.1)</b>

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

## Physical Production – 12 Month Comparison

	12 mths to Jun-12	12 mths to Jun-13	12 mths Jun-13 vs 12 mths Jun-12
	kt	kt	%
<b>Zircon</b>			
Eucla/Perth Basin (SA/WA)	276.1	117.8	(57.3)
Murray Basin (VIC)	188.3	94.9	(49.6)
<b>Australia</b>	<b>464.4</b>	<b>212.7</b>	<b>(54.2)</b>
<b>Virginia (USA)</b>	<b>60.2</b>	<b>40.1</b>	<b>(33.4)</b>
<b>Total Zircon Production</b>	<b>524.6</b>	<b>252.8</b>	<b>(51.8)</b>
<b>Rutile</b>			
Eucla/Perth Basin (SA/WA)	65.8	36.0	(45.3)
Murray Basin (VIC)	182.3	141.4	(22.4)
<b>Total Rutile Production</b>	<b>248.1</b>	<b>177.4</b>	<b>(28.5)</b>
<b>Synthetic Rutile (WA)</b>	<b>263.9</b>	<b>176.1</b>	<b>(33.3)</b>
<b>TOTAL Z/R/SR PRODUCTION</b>	<b>1,036.6</b>	<b>606.3</b>	<b>(41.5)</b>
<b>Ilmenite – Saleable &amp; Upgradeable</b>			
Eucla/Perth Basin (SA/WA)	328.6	271.6	(17.3)
Murray Basin (VIC)	130.2	173.6	33.3
<b>Australia</b>	<b>458.8</b>	<b>445.1</b>	<b>(3.0)</b>
<b>Virginia (USA)</b>	<b>248.9</b>	<b>200.0</b>	<b>(19.6)</b>
<b>Total Ilmenite –Saleable &amp; Upgradeable</b>	<b>707.7</b>	<b>645.1</b>	<b>(8.8)</b>
<b>TOTAL MINERAL SANDS PRODUCTION</b>	<b>1,744.3</b>	<b>1,251.4</b>	<b>(28.3)</b>

## PLANNED NEW PRODUCTION

### Balranald, New South Wales

Balranald and Nepean are two rutile-rich mineral sands deposits in the northern Murray Basin, New South Wales.

During the quarter a pre-feasibility study for the potential development of the Balranald and Nepean deposits was largely completed. The development is assessed on current forecasts to be economically attractive and would provide the potential for approximately eight years of rutile and associated zircon production.

Iluka is proceeding with the necessary regulatory approvals and innovative mine design work for the project.

### Catby, Western Australia

The Catby mineral sands deposit, located north of Perth, is a chloride ilmenite deposit that is also expected to produce material levels of zircon during its initial years.

The pre-feasibility study on the deposit is nearing completion, as planned for in mid-2013. A planned definitive feasibility study is anticipated to commence in the third quarter of 2013.

### **Hickory, Virginia, United States of America**

The Hickory mineral sands deposits in Virginia are located approximately 19 kilometres west of the existing Iluka Stony Creek mineral separation plant. The Hickory project represents one of two potential extensions to the economic life of Iluka's current United States' mineral sands operation and will constitute a third mine and mineral concentrating operation in Virginia, producing high quality chloride ilmenite and an associated zircon production stream.

The definitive feasibility study for the Hickory project was completed in the December quarter 2012. Detailed engineering studies were progressed in accordance with the schedule. Operating permits were advanced and investment incentives secured from the Commonwealth of Virginia. The project remains on-track for a development decision expected later in 2013.

### **Aurelian Springs, North Carolina, United States of America**

The Aurelian Springs project involves a pre-feasibility study for the potential development of multiple mineral sands deposits located in Halifax County, North Carolina, approximately 90 kilometres south of Iluka's mineral separation plant at Stony Creek, Virginia.

The evaluation is based currently on the relocation of the Concord mining unit and concentrator plant to Aurelian Springs in 2015. The mine is capable of producing high quality chloride ilmenite and an associated zircon production stream and would extend the economic life of Iluka's current United States' mineral sands operation.

During the quarter, the pre-feasibility study was advanced in accordance to plan and it is expected the project will move to the definitive feasibility stage in the third quarter, subject to approval. One key outcome of the pre-feasibility study has been confirmation that the ilmenite produced is suitable not only for use in the chloride pigment manufacturing process, but also the sulphate pigment manufacturing process, increasing the marketability of the product significantly.

### **Eucla Basin, South Australia**

Iluka has undertaken a scoping study on the Sonoran, Atacama and Typhoon satellite deposits in close proximity to the Jacinth-Ambrosia operation in the Eucla Basin. Chloride ilmenite from these deposits is expected to be suitable as a feed source to Iluka's synthetic rutile kilns or for direct sale. The deposits would also produce associated zircon. The company has commenced a pre-feasibility study, scheduled for completion in 2014, on the potential development of one or more of these deposits.

## EXPLORATION

### Eucla Basin, Gippsland Basin and Murray Basin

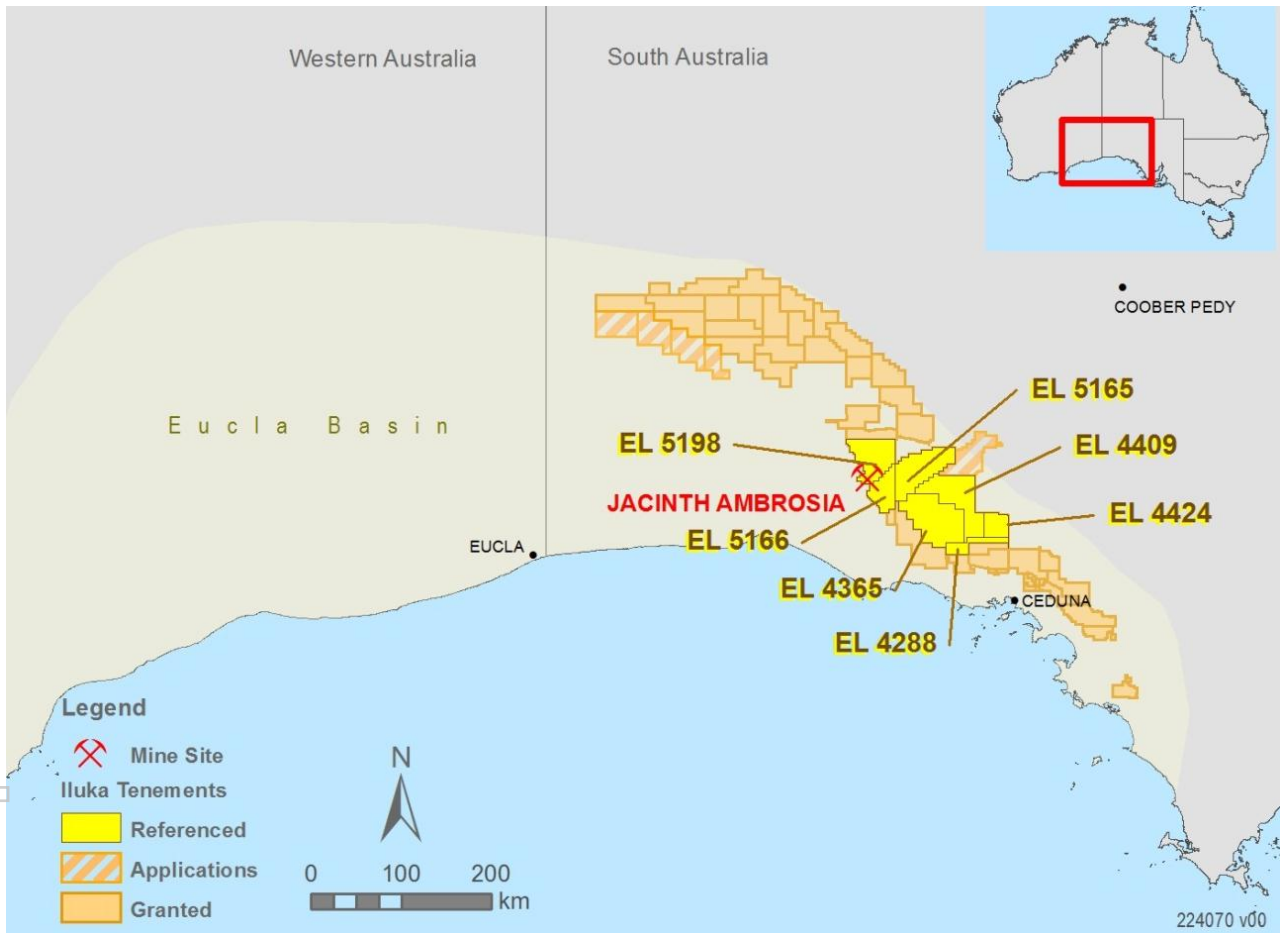
Exploration activity during the quarter included:

- completion of greenfields exploration drilling in the Gippsland Basin on EL5404 in eastern Victoria; and
- greenfields exploration drilling along the western margin of the Murray Basin on EL5251 in South Australia.

Exploration activity in the Eucla Basin included greenfields drilling at several locations:

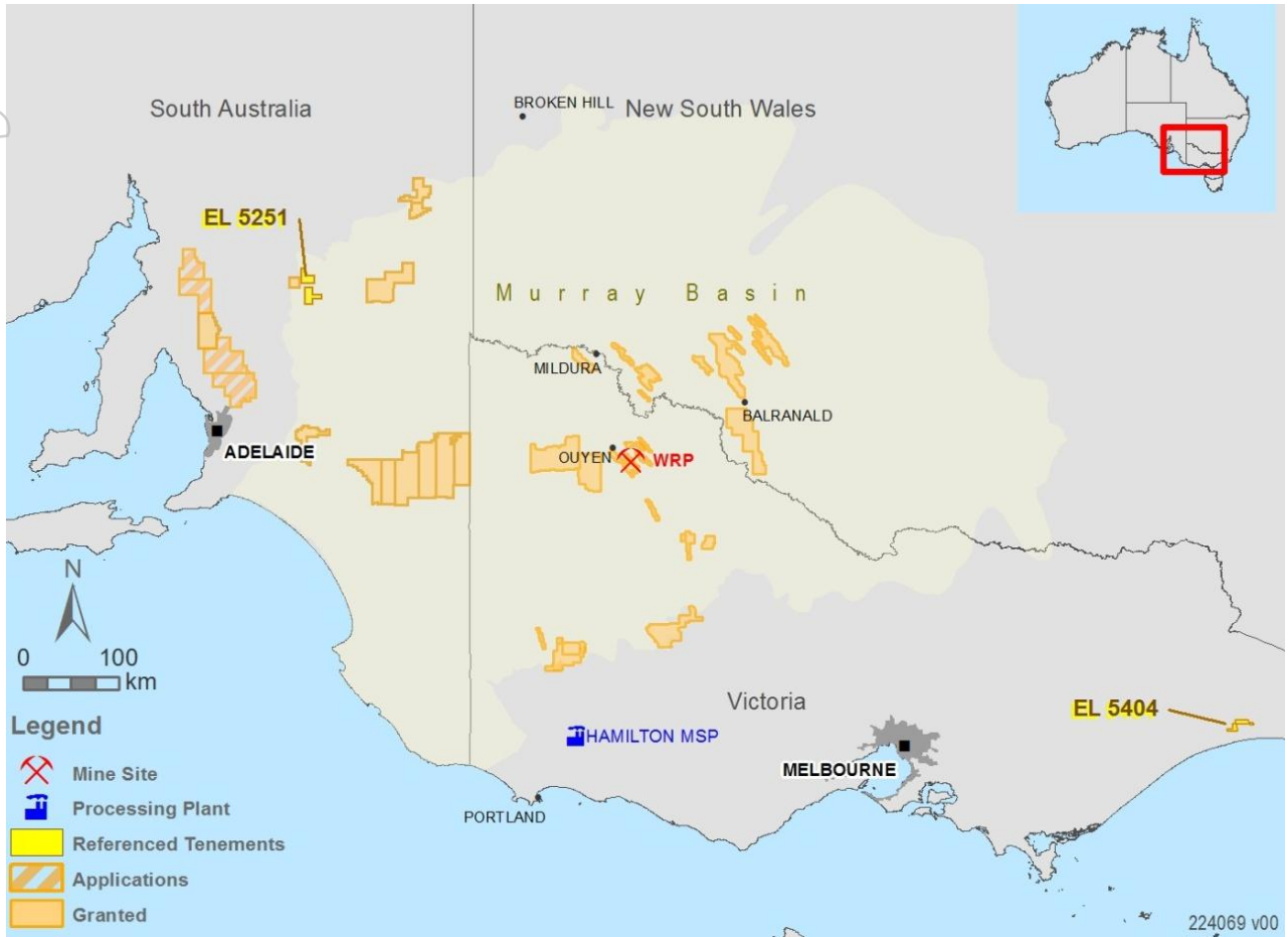
- Bay of Plenty region on EL4365 and EL4409;
- Group 1 Regional area on EL5165, EL5166 and EL5198; and
- North Yumburra on EL4288 and EL4424.

**Figure 1 Eucla Basin and Murray Basin Tenements and Recent Areas of Exploration Activity**





**Figure 2 Murray Basin Tenements and Recent Areas of Exploration Activity**



**Project Generation**

Iluka is continuing exploration activities (from initial prospecting and tenement acquisition to drilling activity) for mineral sands in several other areas in both Australia and at early stages in numerous international jurisdictions.

**Investment market and media inquiries:**

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**APPENDIX 1 - OPERATING MINES – PHYSICAL DATA**  
**6 Months to 30 June 2013**

	Jacinth- Ambrosia	Murray Basin	Western Australia	Australia Total	Virginia	Group Total
<b>Mining</b>						
Overburden Moved bcm	279.4	5,254.1	236.4	5,769.9	0.0	<b>5,769.9</b>
Ore Mined kt	4,282.3	1,782.5	2,600.9	8,665.7	2,234.9	<b>10,900.6</b>
Ore Grade HM %	9.1	28.0	7.3	12.4	7.4	<b>11.4</b>
VHM Grade %	8.3	30.0	6.4	12.2	6.4	<b>11.0</b>
<b>Concentrating</b>						
HMC Produced kt	349.1	204.4	163.2	716.7	163.7	<b>880.4</b>
VHM Produced kt	310.9	175.7	139.2	625.8	132.2	<b>758.0</b>
VHM in HMC Assemblage %	89.1	86.0	85.3	87.3	80.8	<b>86.1</b>
Zircon	53.7	23.8	11.7	35.6	14.5	<b>31.7</b>
Rutile	6.4	41.4	6.0	16.3	0.0	<b>13.3</b>
Ilmenite - Saleable & Upgradeable	28.5	22.2	59.6	33.8	66.3	<b>39.8</b>
HMC Processed kt	37.0	100.4	254.5	391.9	142.9	<b>534.8</b>
Finished Product <sup>1</sup> kt						
Zircon	54.1	30.5	15.6	100.2	18.3	<b>118.5</b>
Rutile	0.0	43.8	16.8	60.6	0.0	<b>60.6</b>
Ilmenite - Saleable & Upgradeable	11.0	87.6	142.7	241.3	92.6	<b>333.9</b>
Synthetic Rutile Produced kt			59.0	59.0		<b>59.0</b>

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 [www.iluka.com](http://www.iluka.com), under Investor Relations, Mineral Sands Briefing Material. The nature of the Iluka operations base means that HMC from various mining locations can be processed at various mineral separation plants.

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

## 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. In the case of Murray Basin it excludes grade attributable to low quality, unsaleable ilmenite which is returned to the mine.

**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 Virginia 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 – both saleable and upgradeable) 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.

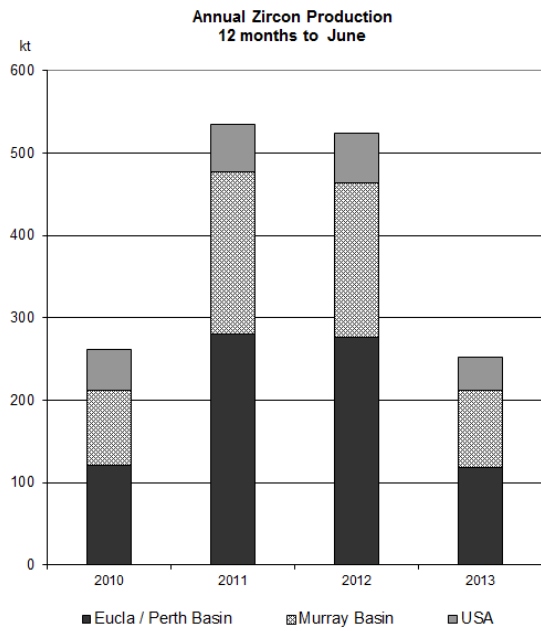
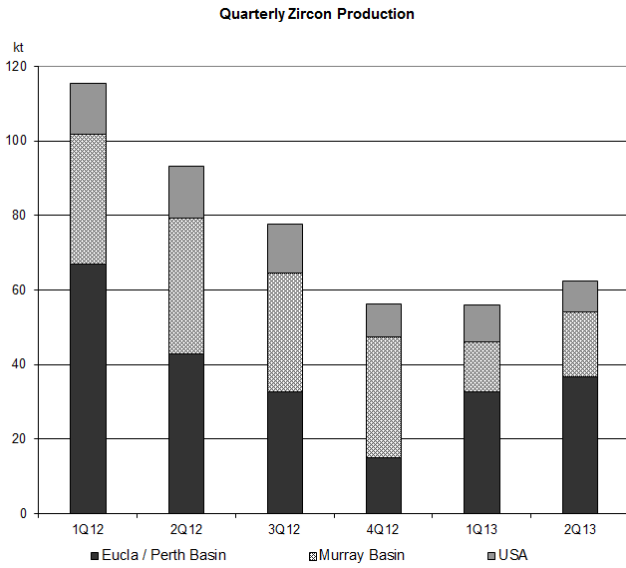
**Ilmenite** is produced for sale or as a feedstock for synthetic rutile production.

Typically, 1 tonne of upgradeable ilmenite will produce between 0.58 to 0.62 tonnes of SR. Iluka also purchases external ilmenite for its synthetic rutile production process.

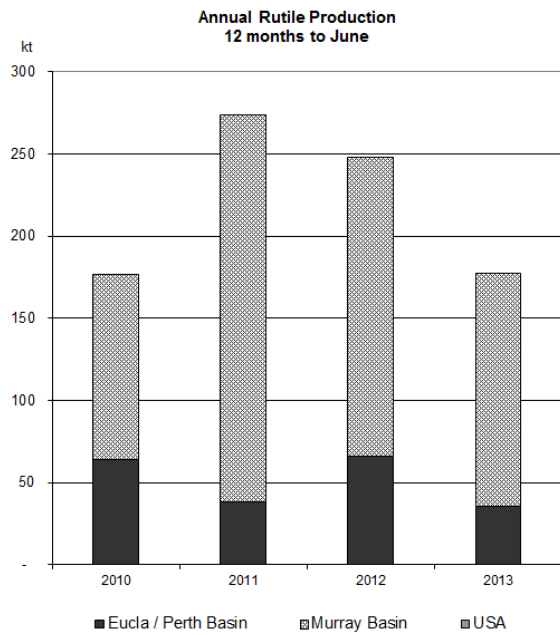
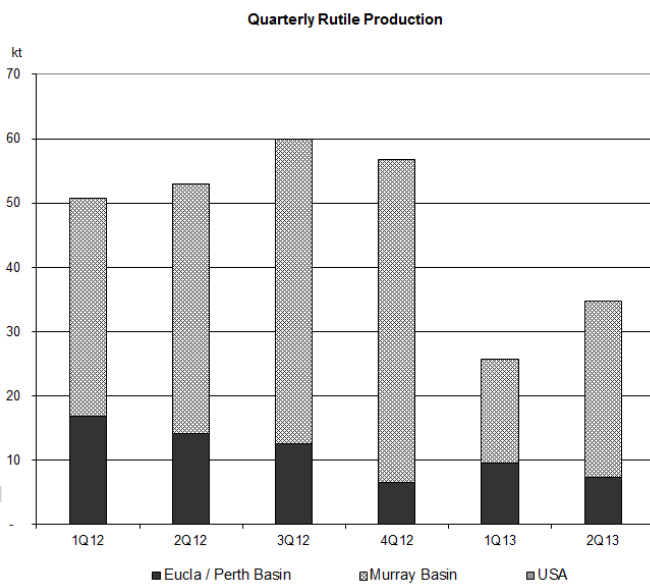
Refer Iluka's website [www.iluka.com](http://www.iluka.com) – Mineral Sands Technical Information for more detailed information on the mineral sands mining and production process.

## APPENDIX 2 – PRODUCTION SUMMARIES

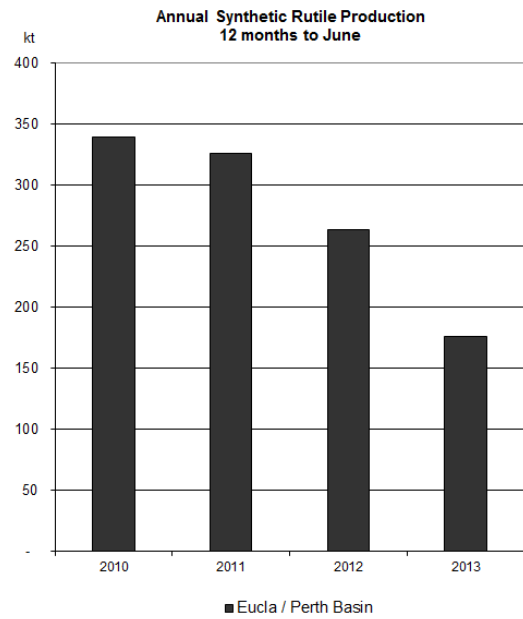
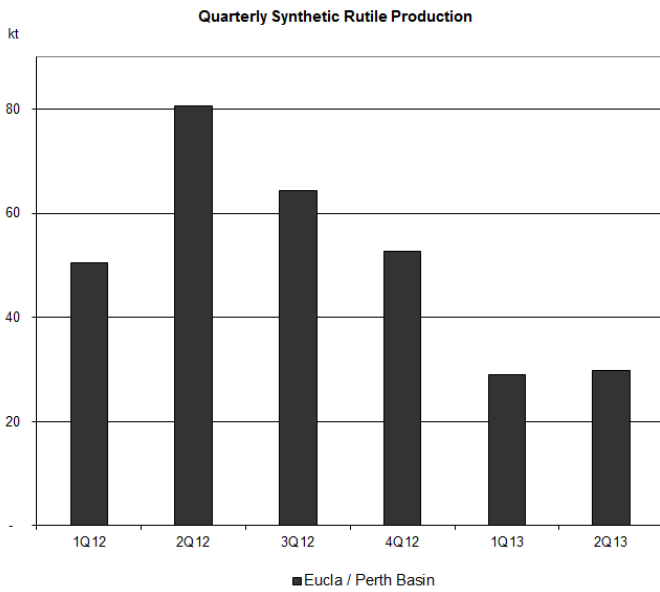
### Zircon



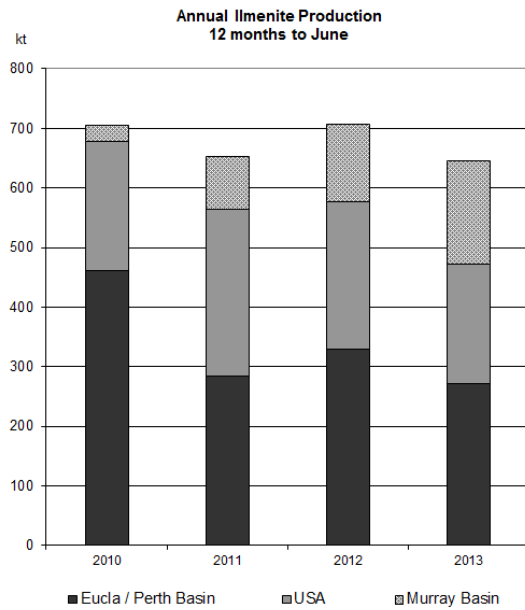
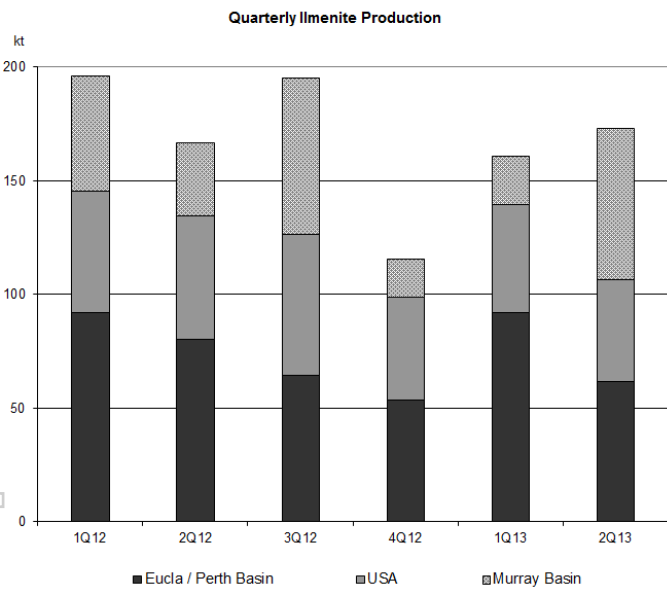
### Rutile



## Synthetic Rutile

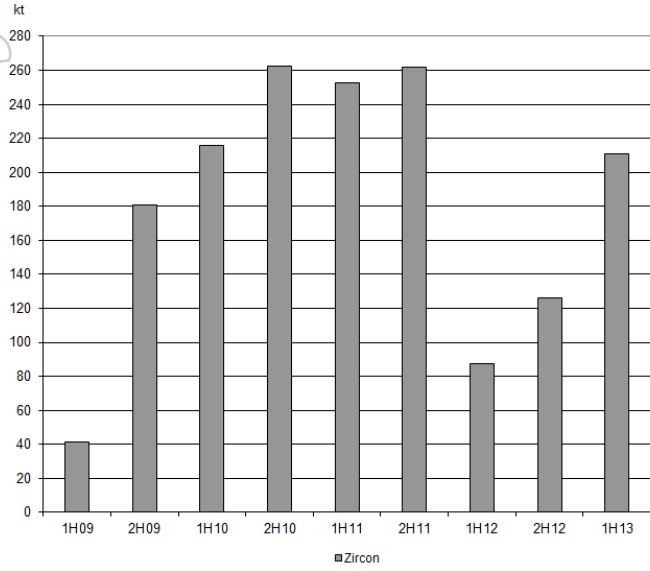


## Ilmenite (upgradeable and saleable ilmenite)

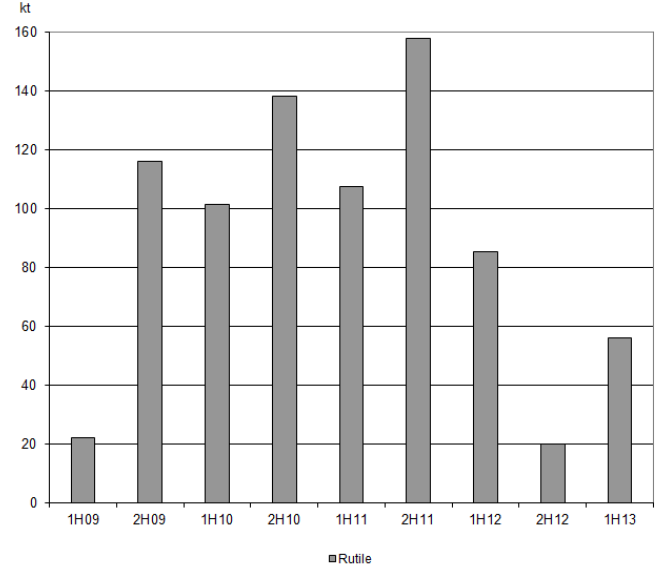


**APPENDIX 3 – HALF YEARLY SALES SUMMARIES**

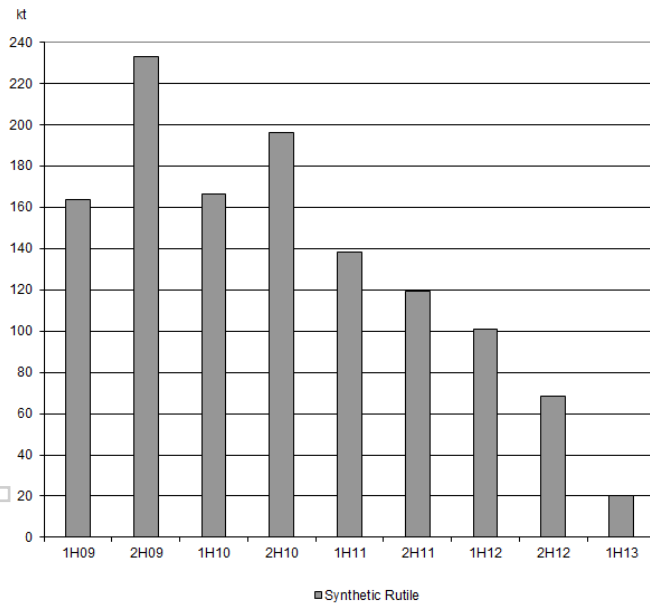
**Zircon**



**Rutile**



**Synthetic Rutile**



**Ilmenite**

