# Australian Securities Exchange Notice



23 February 2012

### ORE RESERVES AND MINERAL RESOURCES INCREASES

Iluka Resources announces its 2011 year end Ore Reserves and Mineral Resources position.

**Ore Reserves** of 6.84 million tonnes of heavy mineral were added during the year. This represents a 25 per cent increase in Ore Reserves year-on-year. After depletions and adjustments during 2011, Iluka's total net Ore Reserves increased by 13 per cent year-on-year. The Ore Reserves additions include increased Ore Reserves for select deposits in the Eucla Basin and Perth Basin, as at 30 June 2011, which the company disclosed on 16 November 2011.

**Mineral Resources** of 10.14 million tonnes of heavy mineral were added in 2011, representing a 9 per cent increase in Mineral Resources year-on-year and, after depletions and adjustments, a 6 per cent net increase in Mineral Resources relative to the opening position in 2011.

Ore Reserves Cover (Ore Reserves divided by annual depletion) is nine years at 2011 depletion rates, while the amount of Mineral Resources is approximately four times the Ore Reserves level.

The material changes in Ore Reserves and Mineral Resources are reflected in the following:

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

- a minor net decrease (0.02 million tonnes) in Ore Reserves to 6.38 million tonnes, which resulted from the addition of 0.75 million tonnes of Ore Reserves for the Jacinth-Ambrosia deposits, offset by the high production outcome during the year; and
- a 32 per cent or 4.46 million tonne net increase in Mineral Resources in the Eucla Basin to 18.33 million tonnes, deriving from extensions to the Atacama and Typhoon deposits (5.23 million tonnes), offset partially by mining depletion at Jacinth (0.77 million tonnes).

Iluka is undertaking scoping studies for the Atacama and Typhoon resources, which are located in close proximity to the Jacinth-Ambrosia operation, while further evaluation of development options for the small but zircon-rich Tripitaka deposit, is also proceeding.

### Perth Basin, Western Australia

- a net increase in Perth Basin Ore Reserves of 5.25 million tonnes to 17.97 million tonnes was recorded, associated mainly with Eneabba deposits and the Cataby deposit. This represents a 41 per cent net increase in Perth Basin Ore Reserves. Minor production of 0.14 million tonnes was recorded as a result of the re-start, ahead of schedule, of the Eneabba mining operations; and
- a 4 per cent net increase in Perth Basin Mineral Resources of 2.44 million tonnes to 60.85 million tonnes, reflecting an addition of 2.59 million tonnes associated with the Cataby and select Eneabba deposits.

Iluka recommenced mining and processing operations at Eneabba at the end of 2011, while Cataby is subject to a pre-feasibility study which may lead to the development of this large, high quality chloride ilmenite (and associated zircon) ore body in 2014.

### Virginia, United States

 a minor net decrease (0.12 million tonnes) in Virginia Ore Reserves to 1.26 million tonnes, reflecting depletions during the year which were largely offset by reoptimisation of Ore Reserves by 0.41 million tonnes; and • a net increase in Mineral Resources for Virginia of 2.03 million tonnes to 3.58 million tonnes, associated with a new Mineral Resource for the Aurelian Springs (North Carolina) area. This represents a 131 per cent increase in the Virginia Resource base year-on-year.

Aurelian Springs is a sequence of chloride ilmenite deposits which have moved from scoping to prefeasibility stage, and which represent a potential material life extension to the current United States' operations.

### **Murray Basin**

Mineral Resources In Situ Heavy Mineral

- Ore Reserves decreased by 1.67 million tonnes to 4.83 million tonnes, associated with mining depletion of 1.96 million tonnes, partially offset by positive adjustments of 0.29 million tonnes through ore reserve optimisations linked mainly to higher mineral prices; and
- Mineral Resources in the Murray Basin decreased by 2.19 million tonnes to 38.04 million tonnes, due mainly to mining depletions (1.96 million tonnes) at the Douglas and Kulwin mining operations and a write down of Mineral Resources of 0.23 million tonnes, associated with completion of mining operations at the Echo satellite deposit.

Iluka is undertaking a pre-feasibility study for the large rutile-rich Balranald and Nepean deposits in South Western New South Wales.

A summary of the Ore Reserves and Mineral Resources changes is shown below. The detailed tables are shown on pages 3 to 6.

### **Summary Ore Reserves and Mineral Resources - 2011**

Ore Reserves In Situ Heavy Mineral	Tonnes (millions)
Opening Reserves 2011 Production/Depletions	<b>27.00</b> (3.40)
New Ore Reserves/Adjustments	6.84
Closing Ore Reserves – end 2011	30.44
Ore Reserves Net Change	3.44

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Opening Resources 2011	114.06
Production/Depletions	(3.40)
New Mineral Resources/Adjustments	10.14
Closing Mineral Resources – end 2011	120.80
Mineral Resources Net Change	6.74

The information in this report that relates to Mineral Resources or Ore Reserves is based on information compiled by Greg Jones and Chris Lee who are Members of the Australasian Institute of Mining and Metallurgy. Each of Messrs Jones and Lee is a full time employee of Iluka and has sufficient experience which is relevant to the style of mineralisation and the type of deposits under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2004 Edition of the "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves" (JORC Code). Messrs Jones and Lee consent to the inclusion in this report of the matters based on their information in the form and context in which it appears.

Investment market and media inquiries
Dr Robert Porter
General Manager, Investor Relations

Phone: + 61 8 9600 0807 Mobile: +61 (0) 407 391 829 Email: robert.porter@iluka.com **Tonnes (millions)** 

## **Iluka Ore Reserves and Mineral Resources 2011**

Table 1 Iluka Ore Reserves at 31 December 2011

ILUKA ORE RESERVE BREAKDOWN BY COUNTRY, REGION AND JORC CATEGORY AT DECEMBER 31 2011

Summary	y of Ore Reserves <sup>(1,2</sup>				HM Assemblage <sup>(4)</sup>				
		Ore Reserve	Ore	In Situ HM	НМ	Ilmenite			Change
Country	Region	Category	Tonnes	Tonnes	Grade	Grade	Grade	Grade	HM Tonnes
		•	Millions	Millions	(%)	(%)	(%)	(%)	Millions
Australia	Eucla Basin	Proved	139.7	6.31	4.5	28	50	4	
		Probable	3.4	0.07	2.1	20	51	5	
Total	Eucla Basin		143.1	6.38	4.5	28	50	5	(0.02)
	Murray Basin	Proved	10.6	2.84	26.8	52	10	17	
		Probable	12.7	1.99	15.7	47	13	18	
Total	Murray Basin		23.3	4.83	20.8	50	12	17	(1.67)
	Perth Basin	Proved	11.6	1.07	9.2	63	14	2	
		Probable	316.2	16.90	5.3	59	10	5	
Total	Perth Basin		327.8	17.97	5.5	59	10	5	5.25
USA	Virginia	Proved	25.5	1.19	4.7	70	15	-	
		Probable	2.1	0.07	3.3	68	18	-	
Total	Virginia <sup>(5)</sup>		27.6	1.26	4.6	70	15	-	(0.12)
Total	Proved		187.4	11.41	6.1	42	33	7	
Total	Probable		334.4	19.03	5.7	58	10	6	
	Grand Total		521.7	30.44	5.8	52	19	7	3.44

#### Notes

- (1) Competent Persons Ore Reserves

  Eucla Basin, Perth Basin and Murray Basin: C Lee (MAusIMM)

  Virginia: C Stilson (SME)
- (2) Ore Reserves are a sub-set of Mineral Resources.
- (3) Rounding may generate differences in last decimal place.
- (4) Mineral assemblage is reported as a percentage of in situ HM content.
- (5) Rutile is included in Ilmenite for the Virginia region.

Table 2 Iluka Ore Reserves Mined and Adjusted at 31 December 2011

ILUKA ORE RESERVES MINED AND ADJUSTED BY COUNTRY AND REGION AT DECEMBER 31 2011

Summary o	f Ore Reserve Deplet	ion <sup>(1)</sup>	In Situ	In Situ	In Situ	In Situ	In Situ
			HM Tonnes	HM Tonnes	HM Tonnes <sup>(2)</sup>	HM Tonnes	HM Tonnes <sup>(3)</sup>
Country	Region	Category	Millions	Millions	Millions	Millions	Millions
			2010	Mined 2011	Adjusted 2011	2011	Net Change
Australia	Eucla Basin	Active Mines	4.85	(0.77)	0.35	4.43	(0.42)
		Non-Active Sites	1.55	-	0.40	1.95	0.40
Total	Eucla Basin		6.40	(0.77)	0.75	6.38	(0.02)
	Murray Basin	Active Mines	1.97	(1.96)	0.29	0.30	(1.67)
		Non-Active Sites	4.53	-	-	4.53	-
Total	Murray Basin		6.50	(1.96)	0.29	4.83	(1.67)
	Perth Basin	Active Mines	1.11	(0.14)	0.69	1.65	0.54
		Non-Active Sites	11.60	-	4.71	16.31	4.71
Total	Perth Basin		12.71	(0.14)	5.40	17.97	5.25
USA	Virginia	Active Mines	1.38	(0.53)	0.41	1.26	(0.12)
		Non-Active Sites	-	-	-	-	-
Total	Virginia		1.38	(0.53)	0.41	1.26	(0.12)
Total	Active Mines		9.31	(3.40)	1.73	7.64	(1.67)
Total	Non-Active Sites		17.68	-	5.11	22.79	5.11
Total	Ore Reserves		27.00	(3.40)	6.84	30.44	3.44

### Notes:

- (1) Rounding may generate differences in last decimal place.
- (2) Adjusted figure includes write-downs and modifications in mine design.
- (3) Net change includes depletion by mining and adjustments.

Table 3 Iluka Mineral Resources at 31 December 2011

ILUKA MINERAL RESOURCE BREAKDOWN BY COUNTRY, REGION AND JORC CATEGORY AT DECEMBER 31 2011

Summar	y of Mineral Resou	ırces <sup>(1,2,3)</sup> for Iluka				НМ	Assembla	ge <sup>(4)</sup>	_
Country	Region	Mineral Resource Category	Material Tonnes Millions	In Situ HM Tonnes Millions	HM Grade (%)	Ilmenite Grade (%)	Zircon Grade (%)	Rutile Grade (%)	Change HM Tonne: Millions
Australia	Eucla Basin	Measured	195.3	7.32	3.7	28	49	4	
		Indicated	80.8	1.47	1.8	13	60	5	
		Inferred	146.2	9.54	6.5	66	15	2	
Total	Eucla Basin		422.3	18.33	4.3	47	32	3	4.46
	Murray Basin	Measured	23.8	4.53	19.1	51	11	15	
		Indicated	124.7	23.31	18.7	56	11	13	
		Inferred	81.1	10.19	12.6	50	10	15	
Total	Murray Basin		229.5	38.04	16.6	54	10	14	(2.19)
	Perth Basin	Measured	528.8	29.71	5.6	58	10	5	
		Indicated	355.8	18.95	5.3	57	10	5	
		Inferred	257.4	12.19	4.7	57	9	5	
Total	Perth Basin		1,142.1	60.84	5.3	57	10	5	2.44
USA	Virginia	Measured	28.0	1.25	4.5	70	15	-	
		Indicated	20.1	1.59	7.9	70	8	-	
		Inferred	10.7	0.74	6.9	66	6	-	
Total	Virginia <sup>(5)</sup>		58.8	3.58	6.1	69	10	-	2.03
Total	Measured		775.9	42.81	5.5	53	17	6	
Total	Indicated		581.4	45.32	7.8	55	12	9	
Total	Inferred		495.4	32.66	6.6	57	11	7	
	Grand Total		1,852.6	120.80	6.5	55	13	7	6.74

### Notes:

(1) Competent Persons - Mineral Resources Eucla Basin: I Warland (MAusIMM) Perth Basin: R Stockwell (MAIG) Murray Basin: R Cobcroft (MAusIMM)

Virginia: A Karst (SME)

- (2) Mineral Resources are inclusive of Ore Reserves.
- (3) Rounding may generate differences in last decimal place.
- (4) Mineral assemblage is reported as a percentage of in situ HM content.
- (5) Rutile is included in Ilmenite for the Virginia region.

Table 4 Iluka Mineral Resources Mined and Adjusted at 31 December 2011

ILUKA MINERAL RESOURCES MINED AND ADJUSTED BY COUNTRY AND REGION AT DECEMBER 31 2011

Summary of Mineral Resource Depletion <sup>(1)</sup>		In Situ HM Tonnes	In Situ HM Tonnes	In Situ HM Tonnes <sup>(2)</sup>	In Situ HM Tonnes	In Situ HM Tonnes <sup>(3)</sup>	
Country	Region	Category	Millions	Millions	Millions	Millions	Millions
			2010	Mined 2011	Adjusted 2011	2011	Net Change
Australia	Eucla Basin	Active Mines	5.47	(0.77)	0.23	4.93	(0.54)
		Non-Active Sites	8.40	-	5.00	13.40	5.00
Total	Eucla Basin		13.87	(0.77)	5.23	18.33	4.46
	Murray Basin	Active Mines	2.69	(1.96)	(0.28)	0.45	(2.24)
		Non-Active Sites	37.54	-	0.05	37.59	0.05
Total	Murray Basin		40.23	(1.96)	(0.23)	38.04	(2.19)
	Perth Basin	Active Mines	2.41	(0.14)	0.02	2.29	(0.13)
		Non-Active Sites	55.99	-	2.57	58.56	2.57
Total	Perth Basin		58.41	(0.14)	2.59	60.85	2.44
USA	Virginia	Active Mines	1.55	(0.53)	0.31	1.33	(0.22)
		Non-Active Sites	-	-	2.25	2.25	2.25
Total	Virginia		1.55	(0.53)	2.56	3.58	2.03
Total	Active Mines		12.12	(3.40)	0.27	9.00	(3.13)
Total	Non-Active Sites		101.94	-	9.87	111.80	9.87
Total	Mineral Resources		114.06	(3.40)	10.14	120.80	6.74

### Notes:

- (1) Rounding may generate differences in last decimal place.
- (2) Adjusted figure includes write-downs and modifications in mine design.
- (3) Net difference includes depletion by mining and adjustments.

Investment market and media inquiries
Dr Robert Porter
General Manager, Investor Relations

Phone: + 61 8 9600 0807 Mobile: +61 (0) 407 391 829 Email: robert.porter@iluka.com

### Attachment 1 - Mineral Resource and Ore Reserve Estimation Assumptions

### **Background**

All Ore Reserve estimates have been based on Measured and Indicated Resource estimates.

The following criteria from Table 1 in the 2004 JORC Code were used to prepare the Mineral Resources and Ore Reserves in this report in conjunction with the Modifying Factors outlined in Figure 1 of the 2004 JORC Code.

Estim	nation and Reporting of Mineral Resources
Database integrity.	All data has been validated using standard database checks and balances. Data has been loaded automatically from field logs, LIMS and is signed off by key administrators. Industry standard QA/QC practices have been undertaken for drilling and assaying with standard and duplicate sample submission undertaken by both the exploration and laboratory departments within Iluka.
Geological interpretation.	Consideration of geology, induration and other key characteristics of mineral sands has been made during geological interpretation. An appropriate degree of confidence and evaluation of any geological uncertainty has been taken into consideration. Consideration of the key mineralised sequences and extent and relationship to heavy mineral grade continuity has been made by the Competent Persons.
Estimation and modelling techniques.	Geological resource models have been prepared for the various deposits making up the Mineral Resource estimates using Datamine Studio mining software. Geological interpretations used to constrain the modelling have been prepared by company geologists. Resource estimates have been derived from 3 dimensional block models prepared using geological and mineralogical domain constraints as per normal company practice. Industry standard block estimation techniques (Inverse Distance weighting) have been used to interpolate grades into block models. Model cells have been sized appropriately to provide a balance between representative geological and grade continuity and geostatistical volume variance.
Moisture.	Tonnage estimates for Mineral Resources and Ore Reserves are dry tonnage with no account for moisture.
Cut-off parameters.	A range of heavy mineral grade cut offs have been used ranging from 0.5 to 5 per cent HM. Cut-off-grades vary depending on the mining method, mineral assemblage and thickness of overburden as primary considerations.
Mining factors or assumptions.	Consideration of mining methods has been made as appropriate and where advance project planning information is available. Consideration of various dry mining methods, including low and high cost, selective and bulk mining methods has been made where appropriate.
Metallurgical factors or assumptions.	Metallurgical and marketing factors are important considerations for the mineral sands industry. An appropriate level of metallurgical testwork and consideration of the marketability of various mineral sands products has been undertaken at the requisite level of confidence for the given Mineral Resource category by the Competent Persons.
Bulk density.	A standard Iluka Bulk Density calculation has been used for the preparation of all Ore Reserves. This is based on testwork and operational experience in each of the regions and is consistently reconciled against production.

The classification of Mineral Resources has been made with consideration of the following:  - statistical evaluation of the HM strand sample data;  - current operational practices for dry mining and concentrating HM strand mineralisation;  - consideration of mineralisation thickness vs. overburden ratios;  - the potential mining and extraction methodology; and
the reasonable prospects for eventual economic extraction as determined by the Competent Persons.
Iluka conducts internal peer review and external industry consultant led reviews of individual Mineral Resource estimates and resource estimation procedures.
Consideration of the confidence in the full suite of resource estimation techniques, the appropriateness of HM cut-off-grades, metallurgical and marketability of HM products has been undertaken. Experience in mining, processing and reconciling heavy mineral sands deposits by the Competent Persons underpins the classification of Mineral Resources making up the total HM Mineral Resource base for Iluka.
timation and Reporting of Ore Reserves
No constraint was applied to the Mineral Resources used in the preparation of the Ore Reserves. No assumed conversion ratio or cut-off-grade was used. All Ore Reserves are inclusive or a subset of Mineral Resources.
The Ore Reserves are either based on a minimum level of study, several levels of Preliminary Feasibility Studies (PFS) and Definitive Feasibility Study (DFS) coupled with considerable operating and planning experience. Updated Ore Reserves have also been prepared for deposits currently in production and represent an expansion of existing production capability.
Unconstrained geological block models were used which are then manipulated using Minemap optimisation software. Cutoff parameters are determined during the optimisation process utilising the Lerch - Grossman algorithm.
A standard Iluka Bulk Density calculation was used for the preparation of all Ore Reserves. This is based on testwork and operational experience in each of the regions and is consistently reconciled against production.
The classification of Ore Reserves is based on the Mineral Resources classification being Measured and Indicated.
The Ore Reserves have been prepared using optimisation via Mine Map mining software (which uses the Lerch-Grossman algorithm). Mining methods used in the Ore Reserve determination are based on existing dozer push methods in practice at Jacinth (and considered relevant for Ambrosia) and conventional loader to hopper and drive over truck and scraper dump ore mining methods which are applicable and have been successfully utilised at Eneabba and are also assumed to be relevant at Cataby, given similar expected mining conditions. Overburden removal is assumed to be by excavator and truck in all the above deposits. Costs for mining and processing are based on actual operating experience (including earthmoving contractor unit rates) and adjusted by first principles if it is considered necessary to better fit the mining method proposed.

	respective areas and were also used to sense check the Cataby projected operating costs.  Geotechnical parameters such as pit slope are based on current mining operating experience, geotechnical studies and test pit trials.  Mining dilution factors, mining recovery factors, and minimum mining widths used are based on current operations and previous experience in similar deposit styles.
Metallurgical factors or assumptions	Each individual deposit metallurgical characteristics together with any quality constraints were applied where relevant, to modify the revenue generated by each mining block.  In all cases, no metallurgical factors were determined to be critical issues in the development of the Ore Reserves.  The metallurgical separation process utilises known technology where the performance and recovery of mineral products has been well established by the company. Recoveries were benchmarked from the company's relevant Mineral Separation Plant (MSP), Narngulu in the case of Eneabba and Jacinth-Ambrosia and Narngulu and Capel, in the case of Cataby.  Where relevant, representative metallurgical testwork has also been utilised to modify metallurgical recovery factors.
Cost and revenue factors	Actual operational costs, including overheads, are used to benchmark those used in the optimisation process. In some instances, modification of these costs will be undertaken to reflect an anticipated change to the mining method or process. Revenue factors are used to establish pit sensitivities and to test for robustness of the Ore Reserve. All cost and revenue inputs are consistent with Iluka's corporate planning process.
Market assessment	The company's forward looking pricing forecasts are the basis of the product pricing used in the optimisation to determine Ore Reserves. These forecasts, based on Iluka's supply/demand analysis have been compared with those of TZMI – an independent mineral sands industry consultancy body - and found to be soundly based and supported by recent actual sales history. A long term exchange rate of parity with the US dollar has been used. All optimisations are undertaken in Australian dollars. Iluka establishes short, medium and long term contractual agreements with customers and these reflect the pricing forecasts adopted. Part of the Eneabba restart is underwritten by newly negotiated SR contracts.
Other	Approvals are considered critical to the development of an Ore Reserve.  In respect to Jacinth-Ambrosia, the Ore Reserves are essentially contained within existing pits and are predominantly within current approvals.  The Eneabba Ore Reserves that include Twin Hills, Depot Hill North and Depot Hill East are within currently approved footprints. The IPL North deposit will require further approvals and it is considered that an appropriate strategy can be put in place to give a reasonable assurance that these approvals can be secured.  The expanded Cataby Ore Reserve contains contiguous mining areas (continuation along strike and new areas to the north east of the Brand Highway) which will require additional approvals above those which apply to the currently planned development.  Development of the deposit is suited to a two staged approach with subsequent approvals being sought following development and establishment and confirmation of an appropriate operating strategy. Based on the company's experience with previous operations, it is considered reasonable to assume that further

	approvals will be able to be gained.
Discussion of relative accuracy/confidence	Iluka has considerable experience in reconciliation of its Mineral Resources and Ore Reserves. Actual results generally indicate very good agreement with the geological model and close reconciliation with HM tonnes, ore tonnes and HM percentage head grade. The risk of not achieving good physical Ore Reserve reconciliation is considered to be low.
	Operational metallurgical experience, relevant testwork and lluka's experience supports the view that metallurgical risk is low.
	Revenue generation is impacted by pricing forecasts. The company's forward predictions are considered well balanced and supported by external forecasters. The Eneabba recommencement Ore Reserves are underwritten by contract prices. As such, pricing risk is considered low. Jacinth- Ambrosia product pricing forecasts are considered robust and with a low pricing risk. Cataby has a considerable quantity of lower grade mineralisation that reverts back to overburden as price falls. Consequently, pricing risk is considered moderate.
	Mining methods selected are not novel and have been demonstrated in all cases, and are considered a low risk of impacting Ore Reserves.
	All costs used in the optimisation and Ore Reserve process are supported by an extended operational history and actual results. Risk of significant underestimation and effect of that underestimation is considered to be low in all cases.
	Ore Reserves for IPL North and Cataby may be impacted by subsequent approvals.