



**Presentation Speaking Notes  
Iluka's Eucla Basin Operation and Opportunities**

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**Slide 3**

Relative to historical financial performance – transformation in Iluka's financial characteristics:

- underpinned by a change in production base of which Jacinth- Ambrosia is a key asset and a focus of my comments today, and
- favourable marketing and particular price outcomes have played a key role in both improved financial performance but also extension of reserve and resource position

A key area of Iluka's focus is now on evaluating and hopefully progressing new production options – a number of which are in South Australia – and to do so in a context of what we consider favourable medium term supply and demand conditions, and in an industry which does not have material or expedient supply responses, particularly in the high value products (zircon and rutile) where Iluka is a key player.

Longer term growth has to, in our view, be underpinned by exploration success. Here again, Iluka is a leading player and again with a major commitment to the Eucla Basin in South Australia

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Iluka's operational base is in Australia. Iluka currently has four mining operations in Australia – South Australia, Victoria and Western Australia.

The company has two large mineral processing plants, the globally largest at Eneabba in Western Australia, and a major facility at Hamilton in Victoria.

The company has four ilmenite upgrading or synthetic rutile kilns which produce high grade titanium dioxide products. These are in Western Australia.

Two are operational, with the company having plans to recommence the third kiln in late 2012 and the fourth kiln most likely the following year, depending on market conditions and commercial considerations.

Iluka has a mining and processing operation in Virginia. Until recently with a limited life but with two new deposits under investigation and the potential to extend the economic life by at least 10 years.

## **Slide 5**

Not an understatement to say that Jacinth-Ambrosia is the flag ship operation in the Iluka group.

Discovered in 2004 and in production since 2009, it is the largest single global source of concentrate production for the production of zircon.

Zircon is used in ceramics, in refractory and foundry applications and a range of zirconia and zirconium chemical derivative applications. China, the largest consumer, accounts for over 40% of global demand.

It is a high quality, capital-efficient operation – as it needed to be given its remote location – integral to the entire production base which in Australia is integrated and flexible.

Execution and now operation of the project demands, as you would expect with any resource project, requires the highest operating standards, and Jacinth-Ambrosia is possibly more demanding as it is the first resource development in a mixed use regional reserve in South Australia.

High environmental standards are prescribed, as well as undertakings made in relation to native title obligations, which are not just financial, but in training, employment and other forms of community development.

As I will indicate, Iluka's Jacinth-Ambrosia operation has a positive benefit for regional communities, including Ceduna.

We consider the Eucla Basin still highly prospective and our large tenement position and exploration commitment reflects this.

And, as I indicated, from exploration success to date, we have several potential development opportunities.

## **Slide 6**

The key physical characteristics of Jacinth-Ambrosia.

The key is the assemblage – 50% zircon; possibly in the order of 10 times richer in this the highest value mineral sand product, than typical mineral sands deposits which are usually ilmenite dominated.

The company spent post execution decision \$390 million; and brought the project in within budget and ahead of schedule.

Economic life is at least 10 years from this year, and with regional development opportunities, possibly as long as late 2020s or to 2030 period.

Production last year was 313 thousand tonnes of zircon, this is in a global market of something like 1.4 or 1.5 million tonnes.

## **Slide 7**

There has been an increase in reserves as a result of higher prices and operational efficiencies.

This chart indicates from an opening Ore Reserve position in 2009 of 6.4 million tonnes, with depletions (production) of 1.5 million tonnes.

Reserves of just under this level of 1.47 million tonnes have been added to retain Ore Reserves and hence estimated economic life the same now, two years after first production.

## **Slide 8**

Some brief information on the operation.

Located within the Yellabinna and Nullabor Regional Reserves.

The first mining operation in such reserves in South Australia; obviously the South Australian Government was very keen to ensure that we got it right as we were. Environmental assessments, planning and operational procedures obviously form a key part of Iluka's experience at the site.

Two contiguous deposits; we expect to move from the Jacinth to Ambrosia deposit around 2018. Entails moving in the in-pit mining unit plant and additional pumping facilities and piping.

The area of land disturbed is relatively minor – 610 hectares and subject to rehabilitation.

## **Slide 9**

Mining operations at Jacinth-Ambrosia are near surface, free running sand which is pushed by dozer into a trap.

The red loam is dominantly low grade HM [heavy mineral] with higher slimes, and the white sand is higher HM grade and lower slimes.

These are blended in a ratio dependent on ore block grade to get a consistent feed through the mining unit and concentrator.

The mining unit plant removes oversized material and ore is slurry pumped to the wet concentrator plant.

## **Slide 10**

Jacinth deposit is just less than a kilometre in width and 5 kms long.

Minimal overburden as indicated; average ore thickness of 20 metres.

Main equipment on site is the in-pit mining unit plant, which is mobile and the wet concentrator plant.

Operate on a fly-in, fly-out basis from Ceduna and Adelaide.

Hyper saline water is used for pumping and concentrating; we draw approximately 7 GL/annum raw water from a bore field the company discovered and developed 32 kms away.

Heavy mineral concentrate is transported by B triple road trains to Ceduna where the company has storage facilities and loading facilities.

Concentrate is then transported to the Port of Geraldton or Port of Portland for processing at one or both of the company's mineral processing plants.

### **Slide 11**

Approximately 160 personnel on site split between direct employees and a contract work force – mainly mining, but also transport.

Iluka set a voluntary but “aspirational” target of 20% employment for people from the Far West Coast group – this has been met in the past and we are doing all we can to work with the FWC group to get back to or above this level again.

I am told there have been many success stories – including some indigenous employees who have moved to other mining companies after working with Iluka.

There is a focus on regional employment and we draw the majority of our employees, as do our main contractors, from the Far West region, Ceduna.

### **Slide 12**

Both indigenous and the broader local community engagement has been a key to the operation's progress and smooth running to date.

For indigenous community, under our commitments to the Far West Coast people, joint ventures have been established – for example in the areas of dozer hire, excavator and generator hire etc..

Business development assistance takes the form of mining related businesses, including indigenous awareness training.

### **Slide 13**

As a result of an optimisation of Iluka's reserve and resource base, assuming higher long term product prices, the company identified 30 NPV positive internal development options.

This has been further refined to 11 (and if we add the Sonoran resource which I will come to in a minute), there are 12 internal options which are expected to move through scoping, pre-feasibility and definitive feasibility stages.

Obviously, all such opportunities need to progress through both internal and regulatory approvals, the latter of which can represent a challenge in terms of differing regulatory agencies, consultative processes etc.

The opportunities in the Eucla Basin now involve 3 near field potential tie-in opportunities and the Tripitaka deposit.

#### **Slide 14**

Our aim with the internal production options is to be the party that is first to market with a capital efficient supply response in what we expect to be constrained market supply conditions for zircon.

The modelling we have done, with all necessary caveats give the stage of the evaluation, is that Iluka may be able to increase production and or extend the economic life of its production base.

This chart shows an indicative production profile for zircon, based on 12 of the projects I referred to. We have a similar profile for rutile production potential.

#### **Slide 15**

If we turn to the regional setting for Jacinth-Ambrosia and exploration, Iluka has a tenement holding of 40,000 sq kms. I am told about the size of Denmark or Switzerland, which doesn't actually give me a feel. This area is about 60% of the land area of Tasmania – so probably a better comparison for those here today.

A large part of Iluka's tenure is with regional reserve, Iluka holds tenements on the prospective margin of the Eucla Basin.

Exploration activities involve generating drill targets with geophysics and topographic modeling.

Aircore drilling with track rigs – and I will show you a photograph in a moment. Crews are flown by helicopter from exploration camps each day to the drill rig and back to reduce environmental impact of vehicle movements.

Iluka have been using the PEPR approval process for approximately 12 months which has led to a clearer set of agreed and measurable environmental outcomes with the regulators and more efficient approval process. This has been a very valuable initiative by the South Australian Government.

#### **Slide 16**

Some data on the scope of Iluka's activities.

The focus is obviously two fold – identifying potential near field tie-in opportunities to existing infrastructure, for which we have been successful and also to attempt to replicate the success of Jacinth-Ambrosia by finding another large, long life and desirably higher assemblage deposit or deposits.

Expenditure in 2011 was \$9m; with activity including drilling over 96 sq kms, plus extensive radiometric and magnetic airborne surveys over about 20 per cent of the tenement holding.

Search areas have been identified.

### **Slide 17**

This map shows the areas of 2011 drilling focus. Let me orient you to Jacinth-Ambrosia.

The Barton Range is shown in green and the Ooldea Range in yellow.

These ranges are the main target features in the Eucla Basin for HM strands.

There are also prospective marine sands between the 2 ranges that are under exploration.

### **Slide 18**

In terms of brownfield success, Iluka discovered Typhoon which extends to almost 4km long and Atacama main strand to around 7kms long.

Most recently the Sonoran area to the east of Typhoon has added 2.2mt of HM at 7.3% HM and 17% zircon.

Iluka's typical practice is to wait until we have confidence that we have an Inferred Resource or likely to before making drilling announcements, so there can often be a lag from discovery to formal disclosure.

I think it noteworthy that one broking analyst remarked in their research that the size and quality of Iluka's Eucla resources are as good if not better in many instances – and obviously aided by jurisdiction and proximity to infrastructure – that some potential developments in less benign jurisdictions, being marketed.

### **Slide 19**

I venture in trepidation into this area of commentary, and Ian Warland, our principal geologist for the Eucla Basin is here as a more authoritative source of information than me, but Atacama has a radiometric anomaly which led to its drilling and subsequent resource estimation.

The magnetic data collected has also been reviewed for precious and base metal targets as this area is, as Ian tells me, one of the remaining under explored regions of the Gawler Craton.

## **Slide 20**

Iluka have accelerated the exploration effort in the Eucla Basin to provide access to development options as quickly as possible.

As you can see the expenditure in 2012 is 33% higher than 2011.

There is a continuing major emphasis on greenfield work.

But with the necessary delineation and project related drilling for Tripitaka and Atacama, and one assumes the other two deposits of Typhoon and Sonoran to follow.

## **Slide 21**

In 2012 the key areas of focus of brownfield work are, as you would expect, around Jacinth-Ambrosia.

Greenfields targets include:

- the area around Tripitaka and Mojave; and
- the Barton Range in the Maralinga area.

## **Slide 22**

In keeping with the recognition of the environmental features of this area, we seek in everything we can to reduce exploration impact. I mentioned the helicopter fly in and fly out for drill crews.

These photos show the rehabilitation of vehicle tracks from 2007 to mid last year.

## **Slide 23**

It is clear that Iluka has had considerable exploration success in the Eucla Basin beyond the original discovery of Jacinth-Ambrosia.

This is the resource breakdown of Iluka's discoveries in the Basin. There is a lot of data but the key point is that Sonoran, Atacama and Typhoon have added more HM tonnes than the original Jacinth-Ambrosia Resources; if you add on Tripitaka (which was originally a joint Adelaide Resources venture); the resource increase has been 125%.

Clearly – the differentiating factor is that, with the exception of Tripitaka, the assemblage characteristics – that is the composition of the higher value product of zircon to ilmenite, the lower value product, has not been as great.

Nonetheless, this is an impressive achievement, backed by a substantial, well funded and geological experienced ongoing exploration effort.

## **Slide 24**

To recap the implication of exploration in terms of opportunities for development, it has presented a number of South Australian regional development opportunities, which we are keen to get after.

An integrated project management team has been established, headed here in Adelaide. We see opportunities to utilise the Jacinth-Ambrosia infrastructure.

As with Jacinth-Ambrosia, the challenges of remoteness, infrastructure and water are there, as are the regulatory approvals process, but we are confident given our very pleasing track record of co-operation with the South Australian Government, that there will be a further collaborative approach both with the Government and with other stakeholders.

As you would appreciate, none of these opportunities are a given and they are assessed, in our usual way, against other internal opportunities we have in Victoria, New South Wales, Western Australia and the United States. We also assess internal options against external projects.

## **Slide 25**

In summary, our activities in the Eucla Basin are a cornerstone of Iluka's production base. They also represent a major feature in Iluka's improved financial prospects and in the global supply equation for zircon.

We have a base upon which we are keen to build and there is a commitment both via the project management work I referred to and exploration to extending and expanding Iluka's investments and operations in this State.

Thank you.