



**Breakaway  
Research**

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**Grant Craighead** | Research Manager  
gcraighead@breakawayinvestmentgroup.com

**Mark Gordon** | Senior Research Analyst  
mgordon@breakawayresearch.com  
www.breakawayresearch.com

### Company Information

ASX Code	OGX
Share Price (26 August 2015)	A\$0.105
Ord Shares	204.7m
Options	121.1m
Performance Shares	15.0m
<b>Market Cap (FD)</b>	<b>A\$35.8m</b>
Cash (30 June 2015)	A\$3.6m
Total Debt	A\$0m
<b>Enterprise Value</b>	<b>A\$32.2m</b>

### Directors & Management

Non-Exec Chairman	John Hannaford
Managing Director	Mark Papendieck
GM, Operations	Andrew Tunks
President, Brazil ops	Klaus Peterson
Chief Geologist	Marcelho Carvalho
CFO	Tim Spencer
Non-Exec Director	Brian Thomas
Non-Exec Director	Jonathon Challis
Non-Exec Director	Ian Finch
Company Secretary	Phillip Wingate

### Company Details

Address	Ground Floor, 16 Ord St. West Perth, WA, 6005
Phone	+618 64633241
Web	www.orinocogold.com

### Top Five Shareholders

Admark Investments	14.76%
Ironclad Mining	6.69%
Kas Inv & Dev P/L	4.30%
Walid Khaole	3.51%
Gregorach P/L	2.41%
Top 20	52.11%

### 1 Year Price Chart



# Orinoco Gold Limited (OGX)

## Development on Track

*Recommendation: Maintain Speculative BUY*

### Company Update

#### Key Points

- **Development of the key Cascavel Gold Project progressing to plan**
- **Expected first production in early 2016**
- **Metallurgical testwork has returned >90% gold recovery via a simple gravity circuit using a coarse grind**
- **Ongoing project enhancements in parallel with development**
- **Excellent exploration and resource growth potential**
- **Our analysis indicates low C1 cash costs of ~A\$440/oz gold**
- **Updated risked base case valuation of \$0.17/share – a premium of 60% to the current price, with considerable upside in our view**

*Development of Orinoco's 70% held Cascavel Gold Project in Brazil is now well advanced, with activities running on schedule for plant commissioning in January 2016. The modular plant is being constructed by the Australian based Gekko Systems. Metallurgical testwork by Gekko has returned excellent results, indicating ~90% recoveries to a high grade concentrate through a simple gravity circuit and a coarse 600µm grind.*

*Recent months have seen key developments, including siting the processing plant at Cascavel rather than Sertão as initially planned, a move that has significant logistical and financial benefits. The Company has also increased its strategic holding in the highly prospective Faina Greenstone Belt to ~300km<sup>2</sup>, a step towards realising the strategy of finding more resources, and using Cascavel as a regional processing hub. Current drilling at Sertão also aims to define additional resources.*

*Corporately, the Company has made key management and board appointments, and successfully raised \$3.2 million through a rights issue and placement, in addition to finalising the gold streaming funding.*

*We continue to rate Orinoco a SPECULATIVE BUY, with a revised base case price target of \$0.17/share. Short to medium term price movers will include successful development and demonstrated production, exploration success, and we see considerable upside potential to this valuation.*

### Company Overview

Orinoco is an ASX-listed company concentrating efforts on orogenic gold mineralisation in the highly prospective Goiás region of central Brazil. The key development project is the Cascavel Gold Project, part of its broader Faina Goldfields Project, which covers some 300km<sup>2</sup> of greenstone units.

The Company's strategy is to initially develop a relatively small scale, start-up operation, with plans to then increase resources and mine life by funding drilling and other exploration activities from operational cash flow.



## Company Update

### Faina Goldfields Project - Background

*Activities concentrated on the Faina Goldfields Project in Goiás State, Brazil*

Orinoco, in which Breakaway initiated coverage in March 2015, is concentrating activities on its Faina Goldfields Project, located approximately 350km west of Brasilia in the State of Goiás in central Brazil. The state produced 27.4% of Brazil's 2013 gold production of around 2.3Moz, with current operations including AngloGold Ashanti's Crixas and Yamana's Pilar mines.

The Faina project comprises three key targets in a ~300km<sup>2</sup> tenement package located over the highly prospective Faina Greenstone Belt:

- Cascavel Gold (70% OGX)
- Sertão Gold (100% OGX)
- Tinteiro IOCG (70% OGX)

The regional tenements are variously held 70%, 75% and 80% by Orinoco's Brazilian subsidiaries, and contain a number of other very promising prospects.

*Initial focus is on developing the low cost, high grade Cascavel underground operation*

The Company's initial focus is on developing a low cost (around A\$440/ounce), 40,000tpa underground operation at Cascavel, which is expected to produce at a high grade (diluted) of around 20g/t. Cash flow from Cascavel will be used to fund exploration over its highly prospective tenements, and to further develop Cascavel and potential future mining developments at Sertão and other discoveries that may be made. The Cascavel site can then be used as a regional processing hub.

*Cascavel is largely funded through a gold streaming arrangement*

The Cascavel development is largely being funded through a gold streaming facility of US\$8 million through Cartesian Royalty Holdings ("Cartesian", previously Chancery Asset Management) of Singapore.

### Project Location Map



Source: Orinoco Gold



## Recent Events and Milestones

Orinoco has achieved a number of major milestones in the period subsequent to our March 2015 initiation report. Key events include:

*Orinoco has made significant progress since our March 2015 initiation note*

- Commencement of construction at Cascavel in May, with incline shaft development in mineralisation
- Gekko Systems (“Gekko”) appointed to construct the Cascavel Processing Plant
- The plant is now to be located at the Cascavel site rather than Sertão, resulting in estimated operating cost savings of over \$500k per year.
- Metallurgical testwork undertaken by Gekko resulted in +90% recoveries via simple gravity processing
- Acquisition of an additional 100km<sup>2</sup> of exploration properties over the Faina belt, taking the total landholding to over 300km<sup>2</sup>
- Commencement of drilling at Sertão
- Signing of a Memorandum of Understanding (“MoU”) with the Goiás State Government
- Board and senior management appointments
- Drawdowns from the US\$8 million Cartesian funding facility
- Completion of an equity raising of \$3.2 million through a 1 for 4 rights issue and \$500,000 placement, both at \$0.07/share.

### Cascavel – Orinoco 70%

#### Development

Development at Cascavel is now well underway, with an expected six week commissioning period planned to commence in January 2016, followed by commercial production.

*A key advance has been the securing of licences to allow for the construction of the processing plant at Cascavel, rather than Sertão as originally planned*

A key advance has been the securing of licences to allow for the construction of the processing plant at Cascavel (within 200m of the portal), rather than 28km away at Sertão as previously planned. This follows on from extensive negotiations with the relevant environmental agencies, and approvals for the operation of the plant are expected to be granted in mid Q4, CY2015.

The change of plant location has a number of benefits:

*This move has logistical and financial advantages*

- Expected savings of A\$500,000 per annum in haulage costs
- Additional savings in truck maintenance costs
- Reduced level of security and administration costs required to operate one site rather than two
- Central location with regards to other potential sources of mill feed, such as Cuca and Garimpo
- Sertão freed up for drilling (now underway)

The plant, which has a nameplate capacity of 15tph (and thus has significant excess capacity over the initially planned 40,000tpa Cascavel operation), is being built in modular form by Gekko. The crushing circuit is being fabricated in Brazil under the supervision of Gekko, with the gravity circuit being built in Gekko’s Ballarat facility in Australia. Delivery for the crushing circuit is expected in November, with the gravity module expected to be delivered in December.

Each module will be factory commissioned before being shipped to site – this will allow for a short installation and on-site commissioning period.



*Incline shaft size has been increased – will allow for any future increase in output*

The plant will be commissioned using material from development, with the incline shaft appearing to be in a payable zone. However, given that the Company has now decided to enlarge the incline shaft to 3.5m wide x 2.8m high from the original 2.5m x 2.5m profile, this will be diluted relative to the envisaged grade from stopes, which have planned minimum heights of 1.5m. The enlarged incline shaft however has a number of advantages, including:

- Potential haulage capacity will be increased to allow it to meet the mill's nameplate capacity of ~90ktpa, although it will be originally fitted out for the planned 40ktpa operation
- The extra height will allow additional room for ground support and mine services

The incline shaft is currently in oxide and transitional material, with ground support being a key consideration in the development of this zone.

### Cascavel mine and plant site



Source: Orinoco

### Metallurgy

A positive development has been the results of gravity testwork on two 70kg samples of Cascavel ore carried out by Gekko. The testwork, which resulted in recoveries of 89% to 95.6% at a coarse 600µm grind, demonstrated the suitability of the Gekko plant for Cascavel, and strongly supports the results of previous work, and also points towards relatively low operating costs

Gold recoveries, from a sample with (based on our calculations) a head grade of 13.5g/t included:

- 89% recovery into a gravity concentrate of 2.9% of the mass, with a grade of 417g/t Au
- 91.6% recovery into a gravity concentrate of 5.9% of the mass, with a grade of 209g/t Au
- 95.6% recovery into a gravity concentrate of 30% of the mass, with a grade of 43g/t Au

*Metallurgical testwork has returned ~90% gold recovery to a high grade concentrate using a coarse grind*



### Sertão – Orinoco 100%

*Drilling has commenced at Sertão, testing for dip and strike extensions of the known mineralisation*

The moving of the plant site to Cascavel has freed up the Sertão site for a two stage 23 hole, 3,165m diamond drilling programme which has already commenced.

This drilling will test for down dip (up to 200m) and along strike (around 1,140m) extensions to the known mineralisation - between 2001 and 2005, ~256,000oz of gold was produced at 24.9g/t from an oxide open pit by Troy Resources. Mineralisation at Sertão is similar to that at Cascavel, being hosted in a shallowly (~20°-30°) SW dipping contact zone, marked by layer parallel thrusting, and an extensive down-dip extent.

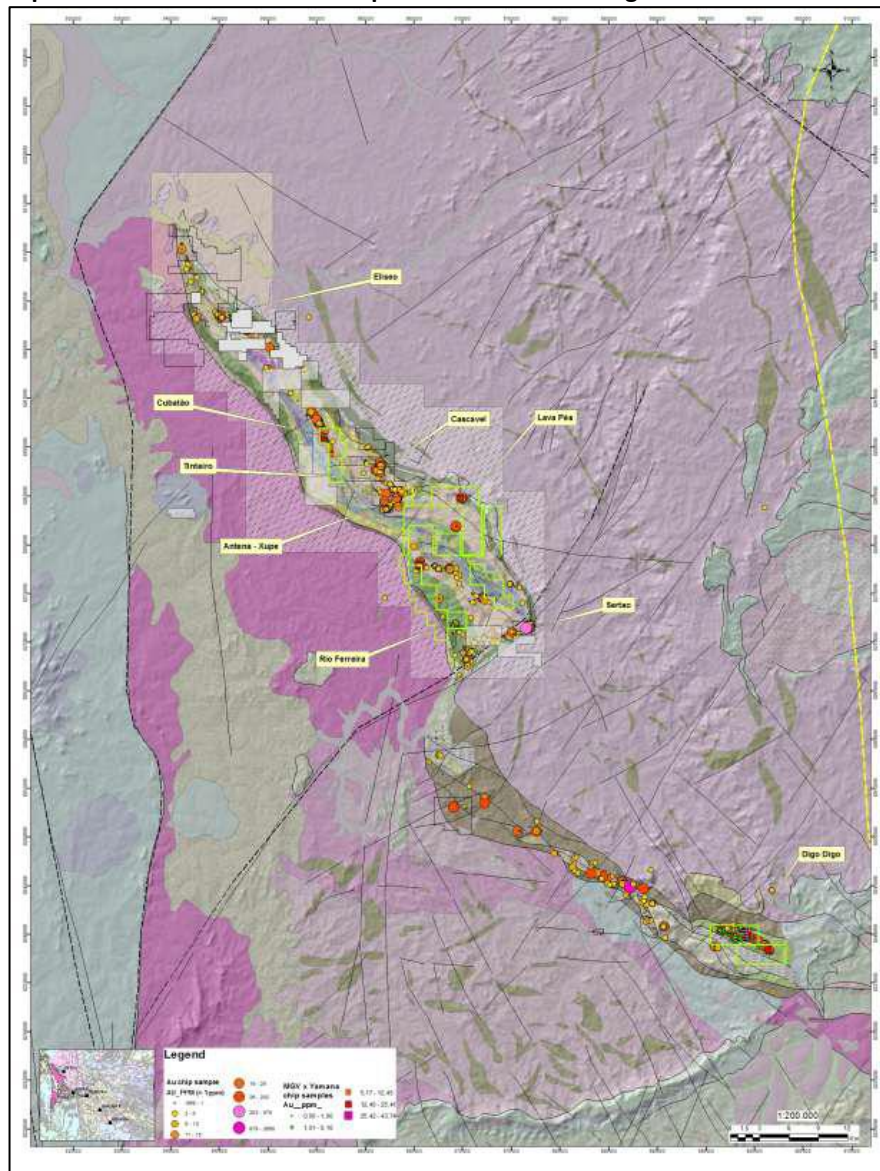
### Exploration Tenement Acquisition – Orinoco 80%

*An additional 100km<sup>2</sup> of highly prospective exploration tenements have been acquired*

Orinoco has further expanded its landholding in the Faina Greenstone Belt, through the acquisition of 80% of an additional 12 tenements, covering some ~100km<sup>2</sup>. These have been acquired from the private Brazilian company Mineração Goiás Velho (“MGV”) for payments totalling US\$120,000 over the next six months.

### Exploration tenements – new acquisitions are shown in green

*This gives the Company control over the belt*



Source: Orinoco

The acquisition means that the Company now controls the highly prospective central portion of the belt between Sertão and Cascavel, with the tenements also covering additional portions of the shear zones that host the known mineralisation.



Previous exploration work, including rock chip sampling has returned very promising results over the area, with samples returning up to 43.7g/t gold. Historic largely RAB drilling also gives encouragement.

### **MoU – Goiás State Government**

*The signing of an MoU with the Goiás State Government reflects the strong relationship between the parties*

The signing of the MoU, and the entering of a strategic relationship with the Goiás State Government reflects the strong relationship between the parties, and the recognition that the government has for the wider benefits of the Cascavel project. Under the terms of the document, the government will provide its full support and assistance, with the Company committing to build the project.

### **Corporate**

#### ***Brazilian Organisational Restructure***

*The Brazilian technical team now includes separate exploration and development groups*

The Company has formed an “Exploration Group” within its current Brazilian technical team who will focus purely on exploration, with the aim over the next 12 months of finding additional high grade ore that can be processed at Cascavel. This will also result in the personnel involved in the development and operation of the Cascavel mine being able to focus on the mine.

#### ***Board and Management Appointments***

*There have been a number of management appointments*

The Company has appointed a number of experienced mining industry executives to the management and board. These include:

- Non-Executive Director – Mr Jonathon Challis, a mining engineer by training, with over 30 years’ experience in mining operations and the financial industry
- CFO – Mr Tim Spencer, previously the CFO and an Executive Director of Kingsrose Mining, and with 20 years of experience
- GM – Operations – Dr. Andrew Tunks, who has previously worked as a consultant to Orinoco on the Faina project
- Process Consultant – Mr Noel O’Brian
- Mining Consultant – Mr Jim Porter.

#### ***Equity Raising***

*Activities are fully funded, with a successful rights issue and placement, and the drawdown of the first gold streaming tranche*

The Company raised \$3,217,512 through a 1 for 4 rights issue and a \$500,000 placement, both at \$0.07. Although originally not fully subscribed, the demand for shortfall from the rights issue was such that the additional \$500,000 facility was introduced. The issue also included one free attaching option per share, exercisable at \$0.11 and expiring on November 30, 2016.

#### ***Cartesian Facility Drawdown***

Following the formal execution of the Cartesian funding agreement in May, two tranches of the US\$8 million gold streaming facility have thus far been drawn down, which are being used to fund development at Casacavel.

### ***Planned and Current Activities***

News flow over coming months will largely be related to the ongoing development at Cascavel, drilling at Sertão and regional exploration. It is estimated that underground development at Cascavel will include 70m of incline shaft and 50m of level developments in the September quarter.

On the exploration front, given the Company’s focus on gold, it is considering the potential of bringing a partner in to progress activities on the Tinteiro IOCG target.



*We have an updated  
\$0.17/share valuation  
for Orinoco*

## Valuation

We have updated our valuation for Orinoco, with our price target increasing from \$0.155 to \$0.17/share, even taking into account dilution from the rights issue and placement.

The main increase in value has been at Cascavel, with this largely due to our increasing the expected gold metallurgical recovery to 90% from the previously used 85% in light of recent testwork. The valuation also takes into account \$500,000pa in savings due to the relocation of the plant from Sertão to Cascavel.

We have not however here considered movements in the Brazilian Real – since our initiation report the currency has depreciated some 8% against the Australian Dollar, which should increase the Australian Dollar valuation through the decrease in Australian Dollar denominated mining costs. Currency movements may also provide savings in the pre-production capital.

### Revised Orinoco valuation

Item	AUD – Un-risked	Risk Weighting	AUD - Risked	Notes
Cascavel - 2015-2019 - 70%	\$31,196,672	50%	\$15,598,336	5% DCF, funded, after tax
Cascavel 2020-2023 -70%	\$32,639,662	30%	\$9,791,899	5% DCF, conceptual years 5 to 8, after tax
Regional exploration	\$6,000,000	100%	\$6,000,000	
Sertão - 100%	\$5,000,000	100%	\$5,000,000	
Head Office NPV - 2015-2019 - 100%	-\$5,216,795	100%	-\$5,216,795	5% DCF \$1.2m per annum
Cash	\$3,571,000	100%	\$3,571,000	
Company NPV	\$73,190,539	47%	\$34,744,440	
Shares on Issue – 204,665,911	<b>\$0.358</b>		<b>\$0.170</b>	

Source: Breakaway analysis

### Breakaway's View

Orinoco continues to make excellent progress at its key Cascavel Gold Project, with construction and development on time and within budget for a January 2016 commissioning. Also, in parallel, the Company is continuing to refine aspects the project, with expected positive logistical and financial outcomes.

One key enhancement has been the negotiations and subsequent licencing to allow the plant to be sited at Cascavel, with expected savings in operating costs and rationalisation of logistics. This has also allowed the Company to accelerate its exploration programme, freeing up Sertão for a drilling programme to ascertain the potential for this previous mining site to host resources that could potentially be treated at Cascavel. The already strong exploration potential has also been enhanced by the new tenement acquisition.

The Company's move in splitting its Brazilian technical team into separate exploration and development groups in our view is prudent, allowing the relevant personnel to concentrate on what they are best at, and not be distracted. This move, and the exploration aspects mentioned above bode well for a successful search for new sources of ore to complement the feed to the Cascavel plant, and to provide long term resources.

The possibility of farming out Tinteiro in our view is also positive. IOCG targets can prove relatively expensive to explore and drill and retaining an interest here whilst another party funds activities will keep Orinoco leveraged to any success at this very promising target.

The results of the metallurgical testwork should also be viewed as being very positive. In addition to the high recoveries, the coarse grind size points towards relatively low power,



and hence overall treatment costs – power is a major cost in processing, commonly comprising ~30% of the total treatment cost.

An important aspect of any operations is having good relationships with the locals – this has been shown by the MoU with the Goiás government (and also, in our view with the successful negotiation of the plant move).

Being fully funded (and with the potential for cash from the 81 million \$0.11 listed options on issue), the key risks for Orinoco remain development risk (including cost increases) and resource risk, the latter through no JORC-compliant resource being defined for Cascavel due to the nuggetty nature of the mineralisation, however with work to date indicating that the resource will stack up as expected as discussed in our initiation note.

Regarding development costs, in our view the additional cost for the incline, including ground support and enlargement should add at the most a few \$100,000's to the pre-production costs, and hence not be significant given the estimated total estimated capex of US\$8.6m. In addition it is expected that the development material will be mineralised, and we would also expect some savings from the original capex estimate due to exchange rate movements.

There is still some (albeit in our view very minor) risk in permitting – although the Company has received the construction permits to allow the plant to be located at Cascavel, it has yet to receive the operational permits, which are expected in the December quarter. We would, however be very surprised if these permits were not granted, given the relationships of the Company with the government and its agencies, and the prior approval of the construction permits.

*We maintain our  
Speculative Buy rating  
with an revised price  
target of \$0.17/share*

Given the above we continue to rate Orinoco as a SPECULATIVE BUY, with a revised price target of \$0.17/share, with considerable upside. Price movers include the successful development and demonstrated production at Cascavel. We also see the potential for exploration success, particularly positive results for the Sertão drilling to move the price.





### **Analyst Verification**

We, Grant Craighead and Mark Gordon, as the Research Analysts, hereby certify that the views expressed in this research accurately reflect our personal views about the subject securities or issuers and no part of analyst compensation is directly or indirectly related to the inclusion of specific recommendations or views in this research.

### **Disclosure**

Breakaway Investment Group (AFSL 290093) may receive corporate advisory fees, consultancy fees and commissions on sale and purchase of the shares of Orinoco Gold and may hold direct and indirect shares in the company. It has also received a commission on the preparation of this research note.

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#### **Breakaway Investment Group**

AFSL 290093 ABN 84127962387

T+61293928010

F+61292792727

PO Box H116 Australia Square

Sydney, NSW 2001

Suite 505, 35 Lime Street,

Sydney, NSW 2000