

ASX ANNOUNCEMENT ASX Code: BDR 29 August 2011

# MAIDEN IRON ORE RESOURCE ON BEADELL'S MINING CONCESSION - BRAZIL

# 209 million tonnes @ 36.1% Fe

Beadell Resources Limited ("Beadell") is pleased to announce that a maiden JORC itabirite iron ore resource has been estimated at **209.1 Mt @ 36.1% Fe** from the Tap Norte Banded Iron Formation (BIF) by Independent Consultant, SRK. This includes Measured and Indicated resources of **75.4 Mt @ 37.3% Fe**. Potential extensions from Tap Sul and Tap Leste areas alone are estimated to contain an additional **120 - 180 Mt** of itabirite iron ore<sup>(1)</sup> which are currently being aggressively drilled (Figures 2, 3 & 4).

This maiden iron ore resource is the culmination of a major drilling and resampling program completed over the last 15 months. Coincident iron ore within the Tap AB and Tap C gold-only optimised pits total **35.9 Mt @ 35.5% Fe**, which comprises a majority of the gold "waste" currently modelled in the pits.

Itabirite iron ore is a form of friable hematite rich BIF which is particularly found in Brazil. Friable itabirites are beneficiated by a simple process route to concentrate the iron ore to form high grade sinter and pellet feed grading greater than 60% Fe fit for smelting.

Separately, metallurgical test work and scoping studies have commenced to determine the potential to extract saleable high grade iron ore from the CIL tailings by way of modifications to the gold plant. Gold production is nevertheless on track for the first half of 2012 and will not be delayed as a result of this work.

Under the terms of an Exploration Agreement entered into in 2005 between Beadell Brasil Ltda and Anglo Ferrous Amapa Mineracao Ltda, Anglo Ferrous has undertaken exploration for iron ore within the area of Beadell's 100% owned Mining Concession (which work comprises the reassaying and some additional drilling forming part of the work undertaken to complete the maiden resource described above). If Anglo Ferrous wishes to mine iron ore on Beadell's existing Mining Concession, then it must reach agreement with Beadell on terms of a Joint Operating Agreement. No such agreement has yet been reached. Clause 5(e) of the Exploration Agreement contemplates this scenario (Refer Appendix 2).

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<sup>&</sup>lt;sup>(1)</sup> The potential quantity and grade related to Exploration Targets in this report is conceptual in nature as there has been insufficient exploration to define a Mineral Resource. It is uncertain if further exploration will result in the determination of a Mineral Resource.

Beadell's Managing Director Peter Bowler commented "This is an outstanding maiden iron ore resource which will grow significantly over the coming months. This far outstripped our expectations and we are now quickly moving to determine the best way to maximise the value of this resource for our Shareholders. We are in discussions with Anglo Ferrous in relation to these iron ore resources on our Mining Concession to either continue on with negotiations centred around a Joint Operating Agreement whereby Anglo pay for iron ore extracted out of our gold pits or, our preferred outcome, to "go it alone" if the parties are unable to reach agreement on the terms of such a Joint Operating Agreement in respect of Beadell's Mining Concession. To this end we will immediately commence a detailed scoping study which will include a beneficiation plant and all associated logistics. I am confident that the outcome of negotiations will either materially improve the economics of our gold project or, alternatively, enable Beadell to proceed with a substantial iron ore business on a standalone basis".

## Tap Norte – Maiden JORC resource 209.1 Mt @ 36.1 % Fe

The Tap Norte iron ore JORC resource totals **209.1 Mt** @ **36.1% Fe** (Table 1, Figures 2, 3 & 4). The resource covers a single contiguous BIF unit over a strike length of approximately 4 km and averaging 250 m wide. The BIF has been extensively drilled for gold on approximately 25 m spaced sections through the gold resource areas and until recently only a handful of iron ore sampling had been completed. A significant iron ore resampling and drilling program completed over the last 15 months has defined a maiden iron ore resource comprising **31.7 Mt** @ **37.9% Fe of colluvium ore**, **148.4 Mt** @ **36.2% Fe** of friable saprolite oxide and **29.1 Mt** @ **33.6% Fe** of friable transitional zone Itabirite.

The Iron ore resource comprises Measured and Indicated resources of **75.4 Mt @ 37.3% Fe** and Inferred resources of **133.7 Mt @ 35.4% Fe**.

The Tap Norte iron ore resource averages approximately 60 m depth before grading into less weathered compact iron ore beneath the transition zone. The considerable amount of compact iron ore beneath the friable itabirite resource has not been included in the current resource estimate and remains a major potential additional source of iron ore.

Tucano	> 25% Fe cut off									
	Resource Class	Tonnes (million)	Fe %	SiO2 %	Al2O3 %	TiO2 %	P %	Mn %	K2O %	LOI
Colluvium	Measured	0.1	40.4	18.9	13.4	1.1	0.05	0.3	0.0	10.5
	Indicated	17.4	37.4	23.1	10.9	0.7	0.07	1.2	0.1	8.9
	Inferred	14.3	38.5	23.5	8.9	0.5	0.08	2.0	0.1	8.4
	Total	31.7	37.9	23.2	10.0	0.6	0.07	1.5	0.1	8.7
Friable Oxide	Measured	2.6	41.0	25.4	5.1	0.3	0.13	2.4	0.1	5.0
	Indicated	44.3	39.1	27.7	6.7	0.4	0.11	1.9	0.2	5.3
	Inferred	101.4	34.8	29.6	9.4	0.3	0.16	2.1	0.4	7.8
	Total	148.4	36.2	29.0	8.5	0.2	0.14	2.0	0.1	7.0
Friable Transitional	Measured	0.2	30.3	45.8	0.9	0.1	0.08	0.4	0.1	0.2
	Indicated	10.9	28.8	44.6	1.0	0.1	0.09	0.7	0.1	1.0
	Inferred	18.1	36.5	25.8	6.1	0.1	0.16	2.7	0.3	5.1
	Total	29.1	33.6	32.9	4.1	0.1	0.14	1.9	0.1	3.6
Total Tucano	Measured	2.9	40.4	26.5	5.0	0.3	0.13	2.2	0.1	4.8
	Indicated	72.5	37.2	29.1	6.8	0.4	0.10	1.5	0.1	5.5
	Inferred	133.7	35.4	28.5	8.9	0.2	0.15	2.1	0.1	7.5
	Total	209.1	36.1	28.7	8.1	0.2	0.13	1.9	0.1	6.8

Mineral resources were calculated using Ordinary Kriging (OK) methodology. The resources have been reported using a 25% Fe lower cut off. All Mineral Resources are stated as wet metric tonnes, assays in dry basis. See Appendix 1 for resource estimation parameters.

 Table 1. Tucano Maiden Iron Ore Resource

## Tap Norte – Iron ore within the current optimised gold pits totals 35.9 Mt @ 35.5 % Fe

The Tap Norte Iron ore resource is coincident with defined gold mineralisation being hosted in the same BIF. Current gold drilling throughout the gold resource and reserve area has been resampled for iron ore on 50 m drill traverses. The results confirmed the presence of widespread, high quality itabirite iron ore throughout and adjacent to the optimised gold pits.

Within the gold optimised pits of Tap AB and Tap C there is a total of **35.9 Mt** @ **35.5% Fe** (Table 2, Figure 4). The iron ore within the optimised pits comprises a majority of the current waste within the pits. Realising economic value for the iron ore within the gold pits will dramatically reduce operating costs for the gold operation.

Additionally, no joint optimisation of iron ore and gold has been completed, but is expected to dramatically increase the size of the open pits and materially increase existing gold reserves, as widespread, high grade iron ore is located within and adjacent to current gold pit walls.

Tucano Iron Ore	>25% Fe cut off									
	Resource Class	Tonnes (million)	Fe %	SiO2 %	Al2O3 %	TiO2 %	P %	Mn %	K2O %	LOI
Colluvium	Measured	0.0	38.7	19.7	14.9	1.1	0.05	0.4	0.0	11.1
	Indicated	2.2	38.0	23.8	12.1	0.8	0.07	1.0	0.1	9.4
	Inferred	0.5	35.5	26.4	12.9	0.7	0.07	1.3	0.1	9.8
	<b>Total</b>	<b>2.7</b>	<b>37.6</b>	<b>24.2</b>	<b>12.3</b>	<b>0.8</b>	<b>0.07</b>	<b>1.0</b>	<b>0.1</b>	<b>9.5</b>
Friable Oxide	Measured	0.9	40.5	25.9	4.8	0.4	0.13	2.5	0.1	4.5
	Indicated	11.1	38.8	28.0	6.0	0.4	0.11	1.9	0.1	4.3
	Inferred	17.5	34.3	30.2	8.3	0.3	0.16	2.1	0.1	6.7
	<b>Total</b>	<b>29.5</b>	<b>36.2</b>	<b>29.3</b>	<b>7.3</b>	<b>0.2</b>	<b>0.14</b>	<b>2.0</b>	<b>0.1</b>	<b>5.7</b>
Friable Transitional	Measured	0.0	29.4	40.4	0.9	0.1	0.09	0.8	0.0	0.2
	Indicated	2.0	27.4	44.7	1.0	0.1	0.09	0.9	0.1	0.5
	Inferred	1.6	28.3	43.7	1.3	0.1	0.09	1.0	0.1	0.9
	<b>Total</b>	<b>3.7</b>	<b>27.8</b>	<b>44.2</b>	<b>1.1</b>	<b>0.1</b>	<b>0.09</b>	<b>0.9</b>	<b>0.1</b>	<b>0.7</b>
Total Tucano	Measured	1.0	40.1	26.1	5.0	0.4	0.13	2.4	0.1	4.6
	Indicated	15.3	37.2	29.5	6.3	0.4	0.10	1.6	0.1	4.6
	Inferred	19.6	33.8	31.3	7.8	0.2	0.15	2.0	0.1	6.3
	<b>Total</b>	35.9	35.5	30.4	7.1	0.3	0.13	1.8	0.1	5.5

Mineral resources were calculated using Ordinary Kriging (OK) methodology. The resources have been reported using a 25% Fe lower cut off. All Mineral Resources are stated as wet metric tonnes, assays in dry basis. See Appendix 1 for resource estimation parameters. Table 2. Tucano Iron Ore resource within current gold optimised pit

## Tap Sul – Target 40 - 60 Mt iron ore

Tap Sul represents the southern continuation of the BIF south of Tap AB (Figures 3 & 4). Currently drill spacing in excess of 700 m is too wide to allow classification as a resource, however drilling results confirm the continuity of the iron ore to the south of Tap AB. A conceptual target of **40 - 60 Mt of iron ore** is estimated at Tap Sul<sup>(1)</sup>. Further drilling is planned to define an initial iron resource at Tap Sul.

## Tap Leste – Target 80 - 120 Mt iron ore

Tap Leste is a parallel BIF unit approximately 1 km east of the main Tap Norte BIF (Figures 3 & 4). The Tap Leste BIF has a strike length of at least 5 km and averages 150 m wide with deep weathering down to at least 60 m providing high quality friable itabirite iron ore. Until recently, no drilling of Tap Leste had been completed within Beadell's tenure, however adjacent tenements have defined iron ore resources within the same BIF horizon. A conceptual target of **80 - 120 Mt** of iron ore has been estimated for Tap Leste<sup>(1)</sup>. Anglo Ferrous is currently completing a 10,000 m drilling program to define a resource at Tap Leste.

## Tucano Greenstone – Large potential resource growth throughout the greenstone belt

The wider Tucano greenstone belt covering 2,500 km<sup>2</sup> contains significant additional occurrences of BIF (Figure 2). To date there has been no drilling to expand of any of the regional BIF occurrences. There is considerable longer term potential to rapidly expand the iron ore resource throughout the greenstone belt and this will form the basis of regional exploration drilling campaigns in the future.

<sup>(1)</sup> The potential quantity and grade related to Exploration Targets in this report is conceptual in nature as there has been insufficient exploration to define a Mineral Resource. It is uncertain if further exploration will result in the determination of a Mineral Resource.

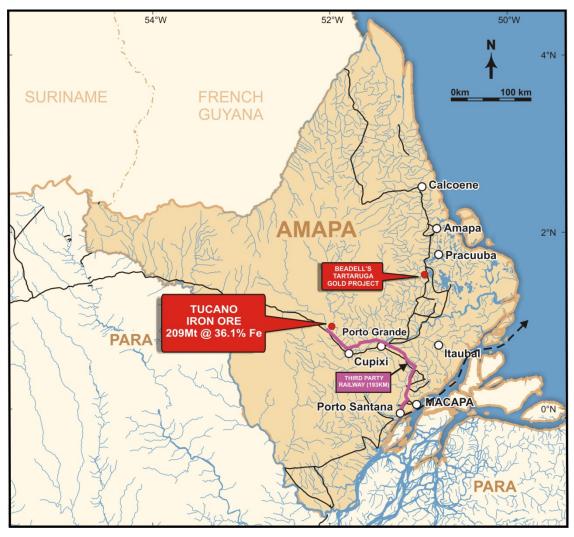


Figure 1. Tucano project location plan showing existing railway and port facility

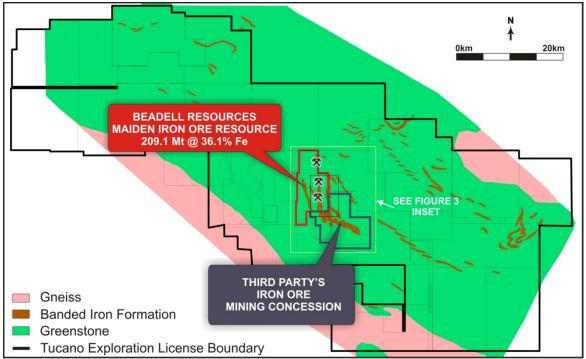


Figure 2. Tucano Greenstone Belt showing location of Banded Iron Formation

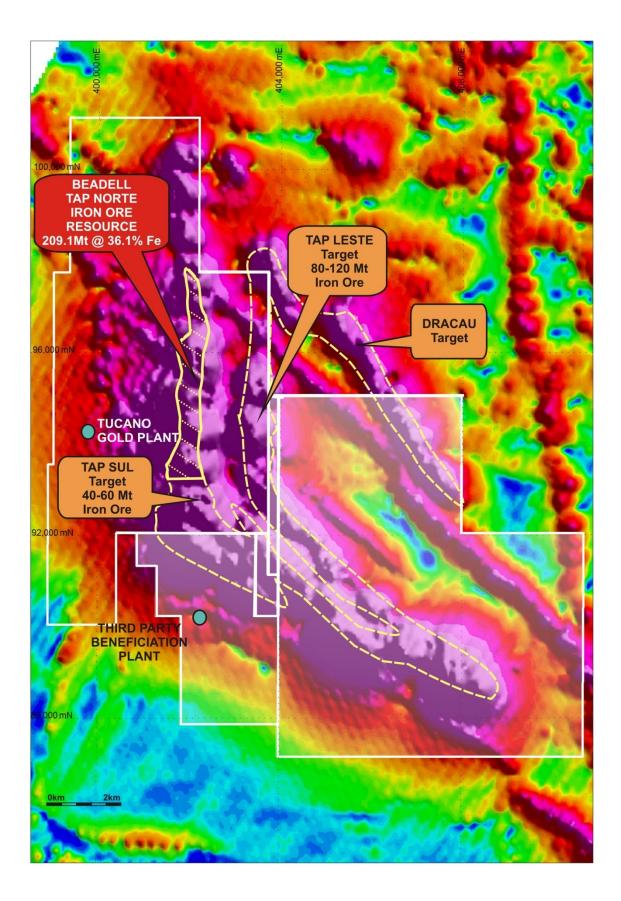


Figure 3. Tucano Banded Iron Formation on aeromagentics

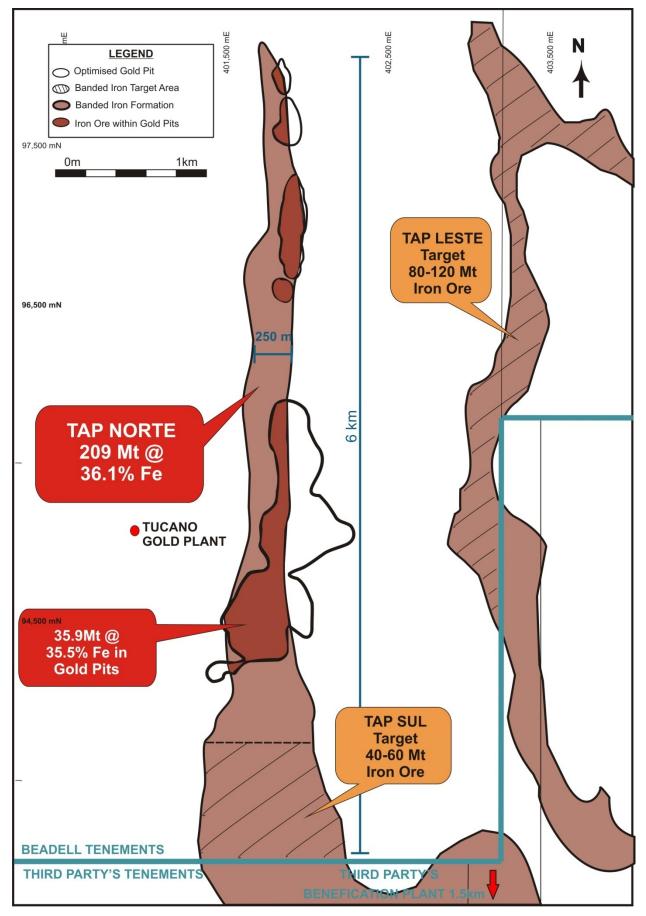


Figure 4. Tucano Banded Iron Formation Resource and Target Location

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#### Competency Statement

Mineral resources were calculated using Ordinary Kriging (OK) methodology. The resources have been reported using a 25% Fe lower cut off. All Mineral Resources are stated as wet metric tonnes, assays in dry basis.

The information in this report relating to Tucano Mineral Resources or Ore Reserves is based on information compiled by Mr Daniel Guibal who is a member of the Australian Institute of Mining and Metallurgy and has sufficient exploration experience which is relevant to the various styles of mineralisation under consideration to qualify as a Competent Person as defined in the 2004 Edition of the 'Australian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Guibal is a full time employee of SRK and he consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

The information in this report relating to Exploration targets is based on information compiled by Mr Robert Watkins who is a member of the Australian Institute of Mining and Metallurgy and has sufficient exploration experience which is relevant to the various styles of mineralisation under consideration to qualify as a Competent Person as defined in the 2004 Edition of the 'Australian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Watkins is a full time employee of Beadell Resources Ltd and he consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

#### Appendix 1.

## Estimation Parameters for Tucano Iron Ore Deposits.

- The iron mineralisation occurs mainly as folded banded iron formations (BIFs) metamorphosed to amphibolite grade, hosted by the Vila Nova Group, a sequence of metamorphosed volcanic and sedimentary rocks. The BIFs typically form ridges with a NW-SE or N-S alignment. Fe enriched itabirites, which are banded iron rocks, have been metamorphosed to amphibolite grade. Colluvium occurs at the top of the stratigraphic sequence. Pegmatite intrusions cross cut the itabirites. This resulted in a package of hydrothermally altered rocks. It is postulated that in some areas the iron mineralisation was remobilized and enriched at the contact between the pegmatites and the itabirites. The itabirites have been subjected to weathering processes which leached away portions of quartz resulting in enriched friable iron ore. The granitic intrusions and the intense hydrothermal alteration are also responsible for introducing some of the deleterious elements such as Al2O3 and Mn into the ore bodies.
- For each deposit a wireframe surface marked the base of colluvium and current topography. These models were extended to match the limits of the resource block models by maintaining a locally consistent depth below the topographic surface.
- Wireframe models representing the boundary between oxide and fresh material referred to as "W3". A "R4" hardness surface was also supplied, as the boundary between R3 and R4. Where R4 material occurred above the W3 surface this was classified as transitional (i.e. friable oxide but too hard to free dig). When required, the W3 and R4 surfaces were extended to the block model limits.
- When good continuity of logging could be identified during a 3D inspection of the data, a deterministic or traditional wireframe modelling technique was employed. This generated BIF and
- Carbonate models for Tap Norte and intrusive models for Tap Norte. The modelling employed the implicit modelling technology in Leapfrog<sup>™</sup> software package to speed up the wireframing process for cross cutting intrusive units and internal waste units.
- Bulk densities have been measured on wet samples at irregular intervals in the oxide (where reasonable intact core can be collected) and every metre in the fresh material. For SG assignment, the transition material was grouped with the Fresh material. Block model densities have been estimated using nearest neighbour technique and constrained within lithological, hardness and oxidation domains.
- Blocks 8m x 20m x 4m (x,y,z) were defined and ordinary kriging was used to estimate block grades within individual wireframes.
- Drill hole samples have been composited to 2m intervals for the resource calculation.
- No top cuts were applied.

## Appendix 2.

"If the parties are unable to obtain two (2) separate and distinct Mining Concessions or split (desmembrar) a Mining Concession, they will mutually agree on terms for the joint mining of the Mining Concession, which terms shall be without prejudice to the rights of each Party to mine for its own Minerals. Anglo Ferrous shall not conduct or carry out any Mining Operations on the properties of such Mining Concession unless and until the parties have agreed on such joint mining terms".