

**ASX ANNOUNCEMENT**  
**12 September 2016**

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## **PEDRA BRANCA EAST SCOPING STUDY CLEARS PATHWAY TO DECLINE DEVELOPMENT**

Avanco is pleased to announce highly encouraging results from the Pedra Branca East Scoping Study and the start of underground development activities.

The decision to commence development underpins Avanco's strategy to become a mid-tier copper-gold company.

### **HIGHLIGHTS**

- **Scoping Study<sup>1</sup> demonstrates viability of a large scale underground mine at Pedra Branca East<sup>2</sup> (PBE)**
- **Financial modelling<sup>3</sup> of the Scoping Study findings provided sufficient confidence for the Board to approve commencement of the PBE mine decline access**
- **The PBE Pre-Feasibility Study, which envisages initial extraction of ore and treatment at the Antas Mine, is close to completion and results are expected to be released in coming months**
- **The selected underground mining contractor is mobilising to begin construction of the box-cut, portal and decline**
- **The decline will be sized adequately for the needs of the future full scale mine**
- **Underground access activities will be funded from existing cash reserves**
- **Commencement of underground works underscores Avanco's commitment to Pedra Branca and positions the Company to react quickly and benefit from any improvement in commodity prices**
- **The Company is now well-positioned to pursue an aggressive corporate growth strategy, leveraging of its recent successful transformation to "producer status"**
- **The Company aims through a series of staged expansions, at becoming a ~50,000tpa copper and 30,000ozpa gold producer**

## PEDRA BRANCA EAST - SCOPING STUDY

Pedra Branca is Avanco's second and much larger project, located ~50km southwest of the producing Antas Mine. Pedra Branca comprises two adjacent high grade, steeply dipping copper-gold deposits, East and West (PBE and PBW). PBE is the subject of the current study and the results are considered very positive.

Key outputs from financial modelling of the full scale development at PBE are:

- 1.2Mtpa production for 24,000t Cu (15,600t Cu to 32,400t Cu) and 17,000oz Au (11,050oz Au to 22,950oz Au) per annum<sup>4,5</sup>
- NPV<sub>7</sub> ~US\$213M (~US\$138.5M to ~US\$287.5M) and IRR 44%<sup>6,7,8</sup> (28.6% to 59.4%)
- ~US\$408 million LOM<sup>9</sup> net cash flow (~US\$265M to ~US\$551M)
- Pre-production CAPEX circa US\$150M<sup>10</sup>
- C1 cost ~US\$1.14/lb<sup>10</sup>

The PBE Scoping Study was completed to an overall ±35% level of accuracy.

### ASX Chapter 5 Compliance and Scoping Study Cautionary Statement

The information and production target presented herein is based on a Scoping Study. A scoping study is a low-level technical and-economic assessments and is insufficient for the estimation of an Ore Reserve, assurance of economic development and for the findings of this study to be realised.

The production target referred to is based on Mineral Resources which are classified 19% Measured, 55% Indicated, and 26% Inferred. There is a low level of geological confidence associated with Inferred Resources, and there is no certainty that further exploration work will result in the determination of Indicated Resources, or that the production target itself will be realised.

All JORC modifying factors have been sufficiently considered, including: mining studies, underground designs, processing studies, laboratory scale metallurgical testwork, conceptual engineering and infrastructure assessments. Capital and operating costs, where applicable, are based on actual costs from the Company's nearby Antas Mine. Third party accredited consultants have been used to complete or have contributed to the majority of technical aspects of the study and independent peer reviews, with the remainder of the work completed by Company technical staff. These studies support the assumptions that have been made in the Scoping Study. A Preliminary Economic Assessment has been submitted to the DNPM<sup>11</sup>, and the Company is now in the process of the application for both a trial mining license and a full mining license.

The Company has concluded it has a reasonable basis for providing the forward-looking statements included in this ASX Release. The Company also believes it has a reasonable basis to expect to be able to fund commencement of the mine decline access from existing cash reserves. Subject to additional financing it is also reasonable to expect that the "Development Stage" and ultimately the full scale Pedra Branca East Project will be developed in the future. Please refer to Annexures A to E for further information.

All material assumptions on which the forecast financial information is based are set out in this announcement.

## PEDRA BRANCA EAST – PRE-FEASIBILITY STUDY

The “Development Stage” of Pedra Branca East (PBE) focusses on the early development of the Hanging Wall High Grade Zone (HW-HGZ<sup>12</sup>) and is being examined to Pre-Feasibility Study (PFS) level. Provisional results have provided further support **for the Board’s decision to approve commencement of underground access.**

The HW-HGZ<sup>12</sup> has Measured and Indicated Resources<sup>13</sup> of:

**4.5Mt at 2.8% copper and 0.7g/t gold for 129,000t of copper and 106,000oz of gold**

The PFS study is examining haulage to surface (via a 5.5m x 5.5m decline) of over 200,000tpa of ore, which will be transported to Antas for processing.

**It is believed that in the short term, this initial development can potentially increase Avanco’s annual production with results to be released as part of the PFS.**

PBE underground access and other mine infrastructure is to be constructed during the “Development Stage” to support the later large scale mine as delineated by the Scoping Study.

**The PFS is well advanced and is expected to be finalised in coming months.**

## CORPORATE

Management considers the development decision at PBE an important milestone for the future growth the Company. The mine concept and all future expenditure in conjunction with the copper and foreign exchange markets will be monitored and prudently managed.

The Board’s approval is cognisant of the encouraging PBE studies, the recent success at Antas, the high grade and homogeneous nature of PBE mineralisation, the need to commence development before the wet season and the current strong balance sheet.

It is believed that this strategy will reduce the implementation time of the larger scale PBE mine, maintain optionality **and better position Avanco to capitalise on any future improvement in the copper price.**

Substantial upside associated with the proximal Pedra Branca West orebody remains, as the Company targets becoming a 50,000tpa copper producer in stages.

Tony Polglase  
Managing Director

## ABOUT AVANCO

- Avanco (ASX: AVB) is an emerging mid-tier copper and gold company situated in the mining friendly world class Carajas Mineral Province of Brazil
- Avanco either owns, or holds the rights to 100% of the second largest area of mineral tenure in the Carajas region behind Vale SA
- The Company is well positioned to potentially operate a number of high grade, low cost copper-gold mines in the region establishing Avanco as a profitable long life producer
- Management has been successful in financing the development of the Antas Copper Mine via an equity capital raising placing Avanco in a strong position, i.e. fully funded into production whilst remaining debt and covenant free
- The Antas Mine was built on time, under budget with an exceptional commissioning and ramp performance during Q2 2016
- Commercial production was declared in July 2016 for 12,000tpa of copper in concentrate and 7,000ozpa of gold bi-product credits
- Management believe the Antas plant output can possibly be increased to 17,000tpa by 2018 as a result of additional ore supply from Pedra Branca and/or new near mine discoveries
- Avanco has engaged MACA, an Australian mining contractor group for the Antas open pit
- Antas is producing a desirable, clean copper concentrate and the Company has executed a three-year offtake contract
- Development of the nearby Pedra Branca East and Pedra Branca West projects have the potential to increase Avanco's production to ~50,000tpa of copper with gold credits.
- Study of an initial, smaller scale operation at Pedra Branca East is at an advanced stage as a pre-cursor to full scale development with construction of access commenced.
- The Company is supported by institutional shareholders: Blackrock World Mining Trust, Appian Natural Resources Fund, Greenstone Resources and Glencore
- Avanco is managed by highly experienced international and Brazilian mining professionals, most of whom are Portuguese speaking and reside in Brazil
- Whilst near term priorities are focused on life-of-mine growth, Brazil offers significant opportunities to enhance shareholder value through new discoveries, acquisitions or partnerships with neighbouring majors and other companies to increase exposure to copper and gold assets

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CARAJAS - TOTAL JORC Reported Mineral Resources <sup>13, 14, 15, 16, 17</sup>							
DEPOSIT	Category	Million Tonnes	Cu (%)	Au (ppm)	Copper Metal (T)	Gold Metal (Oz)	
PB East <sup>18</sup>	Measured	1.98	2.7	0.7	53,000	43,000	
	Indicated	5.72	2.8	0.7	161,000	123,000	
	Inferred	2.78	2.7	0.6	75,000	55,000	
	<b>Total</b>	<b>10.48</b>	<b>2.8</b>	<b>0.7</b>	<b>289,000</b>	<b>221,000</b>	
PB West <sup>18</sup>	Indicated	4.46	2.04	0.61	91,000	87,000	
	Inferred	2.74	1.72	0.56	47,000	49,000	
	<b>Total</b>	<b>7.19</b>	<b>1.92</b>	<b>0.59</b>	<b>138,000</b>	<b>136,000</b>	
PEDRA BRANCA	<b>Total</b>	<b>17.67</b>	<b>2.44</b>	<b>0.65</b>	<b>427,000</b>	<b>357,000</b>	
ANTAS NORTH <sup>18</sup>	Measured	2.83	3.01	0.72	85,000	66,000	
	Indicated	1.65	2.20	0.42	36,000	22,000	
	Inferred	1.9	1.59	0.23	30,000	14,000	
	<b>Total</b>	<b>6.38</b>	<b>2.38</b>	<b>0.50</b>	<b>152,000</b>	<b>102,000</b>	
ANTAS SOUTH <sup>19</sup>	Measured	0.59	1.34	0.18	8,000	3,000	
	Indicated	7.50	0.7	0.2	53,000	49,000	
	Inferred	1.99	1.18	0.2	24,000	13,000	
	<b>Total</b>	<b>10.08</b>	<b>0.83</b>	<b>0.2</b>	<b>85,000</b>	<b>65,000</b>	
<b>TOTAL</b>		<b>34.13</b>	<b>1.95</b>	<b>0.49</b>	<b>664,000</b>	<b>524,000</b>	
ANTAS NORTH – JORC Reported Ore Reserves <sup>20,21</sup>							
Classification	Type	Economic Cut-Off Cu%	Tonnes (Mt)	Copper (%)	Gold (g/t)	Copper Metal (T)	Gold (Oz)
Proved	ROM Ore	0.90	1.385	3.62	0.74	50,137	33,046
Probable	ROM Ore	0.90	1.264	2.72	0.57	34,381	23,231
<b>PROVEN + PROBABLE ROM ORE</b>			<b>2.649</b>	<b>3.19</b>	<b>0.66</b>	<b>84,518</b>	<b>56,277</b>
Proved	Low Grade	0.65	0.342	0.74	0.30	2,531	3,308
Probable	Low Grade	0.65	0.635	0.72	0.23	4,572	4,709
<b>TOTAL PROVEN + PROBABLE</b>			<b>3.63</b>	<b>2.53</b>	<b>0.55</b>	<b>91,621</b>	<b>64,294</b>

Pedra Branca East HW-HGZ Mineral Resource Estimate <sup>22</sup>						
DEPOSIT	Category	Million Tonnes	Cu (%)	Au (g/t)	Copper Metal (T)	Gold Metal (Oz)
Pedra Branca East HW-HGZ Subset <sup>18</sup>	Measured	1.3	2.90	0.70	38,000	30,000
	Indicated	3.2	2.80	0.70	91,000	76,000
	<b>M + I</b>	<b>4.5</b>	<b>2.8</b>	<b>0.70</b>	<b>129,000</b>	<b>106,000</b>
	Inferred	1.6	2.40	0.50	37,000	27,000
	<b>Total</b>	<b>6.1</b>	<b>2.7</b>	<b>0.70</b>	<b>166,000</b>	<b>133,000</b>

## Footnotes:

1. See Scoping Study summary of economic results and material assumptions below. The Scoping Study is based on a low-level techno-financial assessment, and is not sufficient to for the estimation of an Ore Reserve Estimate, assurance of full economic development, or that the findings of this study will be realised
2. Iron Oxide Copper Gold (IOCG) deposit. Typical of that found in the Carajas Province of Brazil, and well documented in respected geological texts
3. EBITA model (Earnings Before Interest, Taxes and Amortisation)
4. Production of ore during the development stage would likely commence at lower tonnages and incrementally grow, increasing Avanco's production by ~40%
5. The production targets referred to, are based on Mineral Resources which are classified 19% Measured, 55% Indicated, and 26% Inferred. There is a low level of geological confidence associated with Inferred Resources, and there is no certainty that further exploration work will result in the determination of Indicated Resources, or that the production target itself will be realised
6. Based on Scoping Study findings for the development of the full PBE mining operation, with standalone plant
7. Net Present Value (NPV)
8. Internal Rate of Return (IRR)
9. Life of Mine (LOM)
10. These values are subject to the variance normally associated with Scoping Studies Pre-Feasibility Studies
11. National Department of Minerals and Petroleum
12. The HW-HGZ is defined as a geologically distinct zone of higher grade mineralisation that sits on the hangingwall contact of PBE. It is the widest and most prominent high grade zone within PBE and persists throughout the entire deposit
13. Refer ASX Announcement "Resource Upgrade Advances Pedra Branca Development Strategy", 26 May 2016, for Competent Person's Consent, material assumptions, and technical parameters underpinning the PBE and HW-HGZ Mineral Resource estimates. The material assumptions and technical parameters used in this Mineral Resource estimate continue to apply, and have not changed
14. See ASX Announcement "Pedra Branca Resource Upgrade Delivers Substantial Increase in Both Contained Copper and Confidence", 13 July 2015, for Competent Person's Consent, material assumptions, and technical parameters underpinning the Pedra Branca Mineral Resource estimates
15. See ASX Announcement "Stage 1 set to excel on new high grade Copper Resource", 7 May 2014, for Competent Person's Consent, material assumptions, and technical parameters underpinning the Antas North Mineral Resource estimate
16. See ASX announcement "Major Resource Upgrade for Rio Verde", 8 February 2012, for Competent Person's Consent, material assumptions, and technical parameters underpinning the Antas South Mineral Resource estimate
17. The Antas South Mineral Resource estimate was prepared and first disclosed under the JORC Code 2004. It has not been updated since to comply with the JORC Code 2012, on the basis that the information has not materially changed since it was last reported
18. Grade and tonnage reported above a cut-off grade of 0.9% copper
19. Grade and tonnage reported above a cut-off grade of 0.3% Cu for oxide resources
20. See ASX Announcement "Maiden Reserves Exceed Expectations for Antas Copper", 17 September 2014, for Competent Person's Consent, material assumptions, and technical parameters underpinning the Antas North JORC (2012) Ore Reserve estimate
21. Measured and Indicated Resources are inclusive of those Mineral Resources modified to produce the Ore Reserve
22. The Mineral Resource estimate for the HW-HGZ is a subset of the Pedra Branca East Mineral Resource estimate, and is not inclusive of those Mineral Resources

## PEDRA BRANCA EAST SCOPING STUDY

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## 1 Introduction

Avanco Resources Limited (“AVB”, “Avanco” or “the Company”) is developing the Pedra Branca copper-gold deposit in the Carajás region of the Pará State of Brazil. AVB engaged a number of consultants and independent contractors, and also used its in-house expertise to prepare the various inputs required for the Scoping Study.

## 2 Project Location, Access and Infrastructure

Pedra Branca is part of the Canaã Block Exploration area, consisting of a single concession with an area of 3,195.07 hectares. The site is some 20 kilometres directly southwest of the town of Canaã dos Carajás, which is ~50 kilometres south of the city of Parauapebas by sealed road PA-160. Access is via the western sealed road recently build by Vale, which accesses the large S11D iron ore project. After reaching the village of Feitosa, 10 kilometres of public gravel road accesses the deposit area (Figure 1).

Parauapebas is a well-developed city that services the agricultural needs of the region and provides services to the significant mining presence in the region, in particular the large Vale SA iron ore and copper mines nearby. Possessing fabrication and engineering facilities, as well as hosting the regional offices of the large mining equipment suppliers, support the numerous mining projects in the area.

The Carajás airport at Parauapebas has direct flights from Belém and Belo Horizonte, as well as flights from Brasília (via Marabá).

Pedra Branca is close to Sossego, which is one of two world class copper/gold mines operating (Vale SA) in the Carajás.

The Carajás also contains numerous undeveloped large and medium sized deposits close to infrastructure, including Alemão, Furnas, Tarzan, 118, Pojuca and more, some of which have been studied to an advanced level.

Pedra Branca is 72 kilometres by road from Avanco’s Antas operations. This consists of 10 kilometres on a local authority dirt road to be upgraded by Avanco as part of the project, 52 kilometres on surfaced roads to the entrance to the Antas mine, followed by 12 kilometres on the newly upgraded Antas access road. The route is relatively level and the 52 kilometres of paved road is also used by Vale to transport the concentrate produced by the nearby Sossego mine to the railhead at Parauapebas. A by-pass to the nearby Vila Feitosa village will be constructed as part of the project.

The Pedra Branca deposit is on flat ground to the east of the Parauapebas River. The site has good infrastructure, with available water and power nearby.

The area is used exclusively for cattle farming and has no environmental constraints.

The climate in the region is tropical and humid with two distinct seasons. The dry season extends from June to September and the rainy season from October to May. Annual rainfall is approximately 1,600mm and the average daily temperature is 25°C, but may be cooler during June and July.

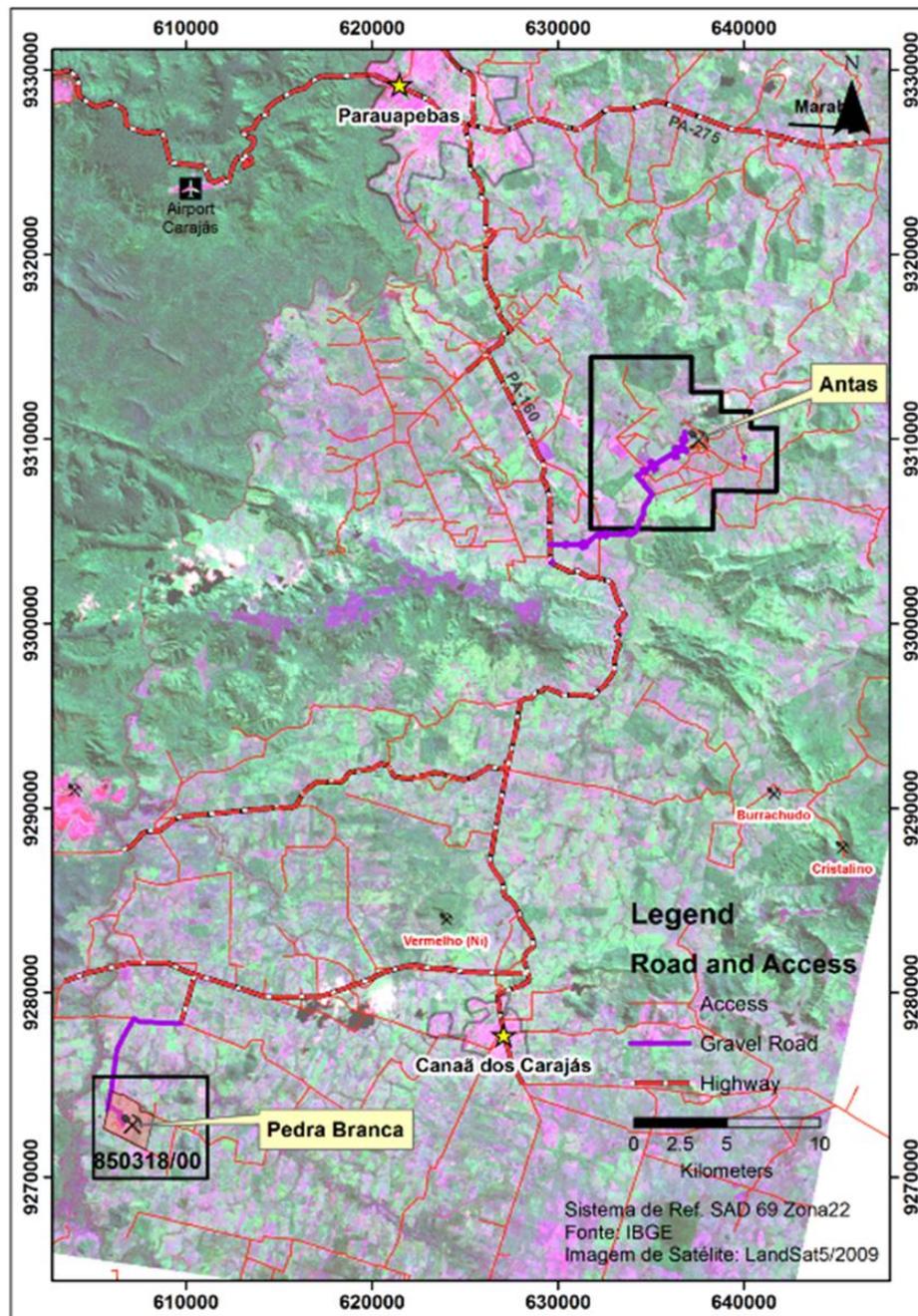


Figure 1. Regional Location and Access for Pedra Branca Project

### 3 Mineral Rights, Licenses and Land

The Pedra Branca Project lies within Exploration Licence DNPM No 850318/00, consisting of 3,195.07 hectares as shown in Figure 1.

A Preliminary Economic Assessment has been submitted to the DNPM<sup>11</sup>, and the Company is now in the process of the application for both a trial mining license and a full mining license, which the Company believes will be granted in due course.

The Pedra Branca Project and all proposed infrastructure lie within a single farm, which has been purchased, and thus AVB hold exclusive rights to the land.

## 4 Scoping Study Parameters and Material Assumptions

The PBE Scoping Study was completed to an overall  $\pm 35\%$  level of accuracy using the parameters and assumptions set out in Table 1.

The key considerations in the Scoping Study were a preferred mining and processing route, throughput rate, project life, and community and environmental impacts. The minimum life of the Project is 11 years, but has potential to be increased at depth and along strike, where the orebody is still open. The Scoping Study is therefore considered to be a base case scenario.

**Table 1: Key Assumptions and Outcomes**

Development period	18 months
Ramp up of underground mining (post development period)	18 months
Mine life (years)	11
LOM mill throughput (Mt) - includes low grade material	10.8Mt
Average LOM copper production (tpa post ramp-up)	24,000t
Average LOM gold production (ozpa post ramp-up)	17,000oz
Measured Resource used in study	19%
Indicated Resource used in study	55%
Inferred Resource used in study	26%
Annual throughput (Mtpa)	~1.2Mtpa
Average LOM mill copper feed grade (% copper)	2.06%
Average LOM mill gold feed grade (g/t gold)	0.49g/t
Flotation plant copper recovery	94%
Flotation plant gold recovery	86%
Copper price (US\$/lb)	2017: \$2.40 2018: \$2.55 2019: \$2.70 >2019: \$3.00
Gold Price (US\$/oz)	\$1,300
Copper royalties	5%
Gold royalties	27%
Concentrate transport costs (US\$/t)	\$132
Treatment charge (US\$/t)	\$75
Refining charges– copper (US\$/lb)	\$0.075
Refining charge – gold (US\$/oz)	\$6
Exchange rate (USD:BRL)	Current 3.20 Long term 4.00
Mining recovery	95%
Underground mining cost (US\$/t)	\$32.00
Processing cost (US\$/t)	\$15.00
General and admin (US\$/t)	\$3.00
Pre-production CAPEX estimate (US\$)	\$150 Million <sup>10</sup>
Projected C1 cost (US\$/lb)	~\$1.14 <sup>10</sup>

## 5 Study Team

Third party accredited consultants have been used to complete or have contributed to the majority of technical aspects of the Study and for independent peer reviews, with the remainder of the work completed by Company technical staff. Table 2 summarises the principal study activities and the responsible entities.

**Table 2. Principal Study Team and Activities**

<b>Study Discipline</b>	<b>Industry Expert</b>
Project Manager	Avanco
Site Infrastructure/Basic engineering	Onix Engenharia e Consultoria Ltda.
Geology	Avanco
Resource Estimation	CSA Global Pty Ltd, Perth
Geotechnical Engineering	Mauri Ferreira, Geotécnica e Mecânica de Rochas Ltda.
Mining Engineering	Diogo Caupers, Consulting Mining Engineer
Process Engineering	Avanco
Metallurgical Testwork	Avanco
Environmental Assessment	Terra Meia Ambiente, Belém
Tailings Dam Design	Antonio Landi Borges
Brazilian Legal	FFA Legal, Rio de Janeiro
<b>Independent/Peer Review</b>	
Mining Engineering	Keith Marshall, of Marshall Mining Associates
Metallurgical Testwork	Frank Rezende, of AU@BR
Comminution and Process Engineering	Frank Rezende, of AU@BR
Field data and QA/QC procedures	CSA Global Pty Ltd, Perth

## 6 Local Geology and Mineralisation

Pedra Branca East (PBE) is an Iron Oxide Copper Gold (IOCG) type deposit located within the Carajás Basement, and is hosted predominantly by diorite and sheared granite. Country rocks are mostly biotite-gneisses (ortho-gneisses), while pegmatite dykes are abundant in proximity to the ore zones.

This deposit occurs along an E-W striking regional shear zone, which is represented by metres wide mylonitic zones marked by intense silicification. This shear zone is regionally crosscut by north-south, northeast and northwest striking faults.

Hydrothermal alteration shows a typical IOCG zonation.

- a. Regional (distal) sodic-calcic alteration: albite, scapolite, silica, chlorite.
- b. Proximal potassic alteration: K-feldspar, biotite.
- c. Iron and calcic alteration (ore related): magnetite, coarse amphibole (mostly actinolite), apatite. This is directly associated with the ore zone (sulphides).
- d. Sulphidation: including principally chalcopyrite in balance with variable quantities of pyrrhotite and more rarely pyrite.

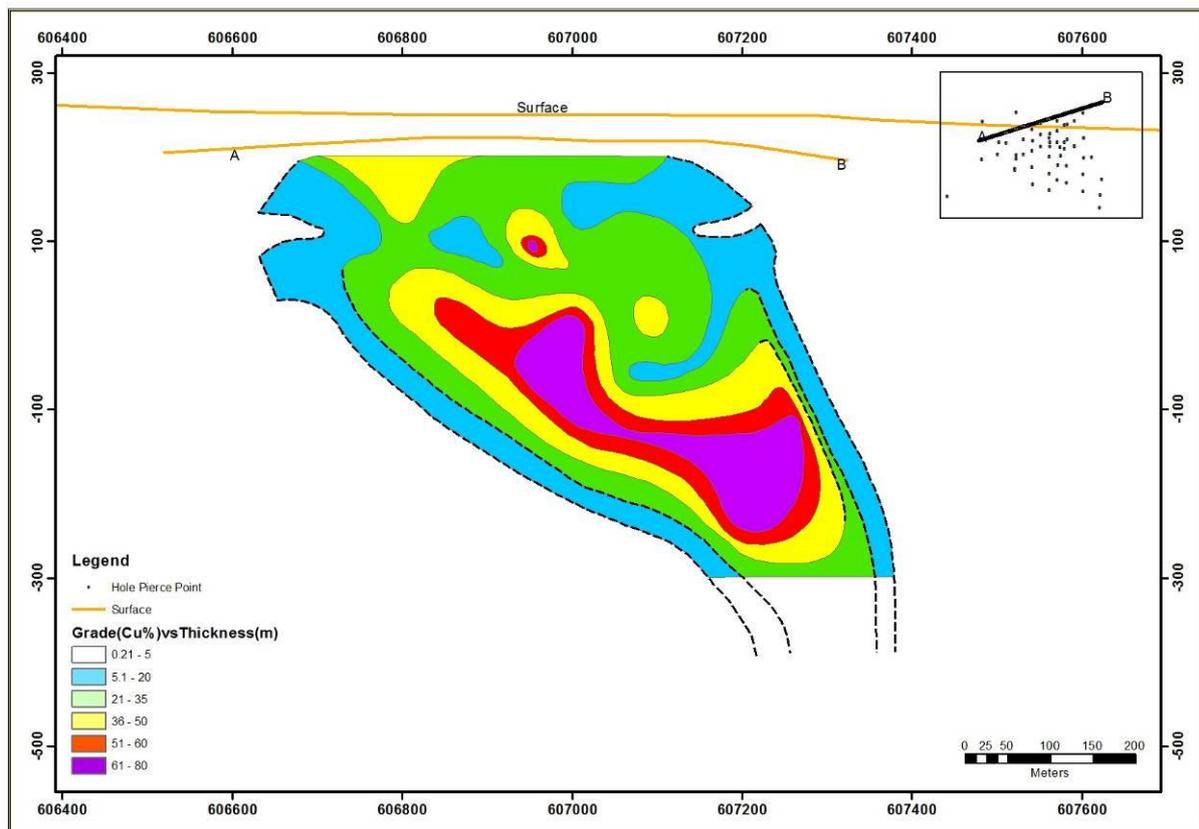
Alteration phases “a” to “d” are sequential in time frame, i. e., regional sodic-calcic alteration comes first and sulphidation (mineralisation) is the last phase.

The structural evolution of the area includes three main phases of deformation:

- Phase 1 – Main East / West structure, with strong tectonic imbrication and related to shearing, generally sub-vertical to steep south dipping.
- Phase 2 – Northeast oriented brittle-ductile faulting with inferred strike-slip movement. A North West fault interpreted from the AB magnetic data, which separates PBE from PBW also belongs to this phase.
- Phase 3 – This is related to North - South fracturing and minor faulting, which were identified in the drill cores.

PBE consists of a single continuous orebody, which strikes east-west and has a >600m strike extension. It is a sub-vertical to steeply dipping (south) plunging shoot (Figure 2), with a thicker higher grade central core which follows the plunge. The orebody begins to shallow out in dip at depth, >400m below surface and beyond.

The ore zone itself is typified by zones of high grade breccia matrix ore (fragments of hydrothermal breccia cemented together by semi-massive sulphides), which are interspersed with zones of lower grade disseminated mineralisation. The most dominant of the high grade zones is the Hanging Wall High Grade Zone (HW-HGZ), which sits on the hanging wall contact and is present across the entire depth and breadth of the PBE orebody. The hanging wall high grade zone has a sharp and easily identifiable “knife edge” contact, as can be seen in Figure 3.



**Figure 2. Longitudinal Section of Pedra Branca East deposit showing a central high grade zone and shallow plunge to the east**

Two main ore types are identified:

- Semi-massive, high grade breccia matrix ore: consists of hydrothermal breccia zones with matrix filled by magnetite and chalcopyrite, plus subordinate pyrrhotite and less pyrite. The

clasts are made of altered host rock and coarse amphibole. The typical range of assays for this ore type is between 4.0% copper to 10.0% copper.

- Disseminated ore: a low to medium grade ore which envelops the high grade zone. It consists of the same sulphide assemblage, which is also associated with magnetite that occurs as fine disseminations in the host rock, sometimes following the foliation, and also filling veinlets and fractures. The typical assays range from below cut-off grade (0.9% copper) to 2.5% copper.

The contacts between the high grade breccia matrix ore and adjacent low grade disseminated ore or barren wall rock are usually quite sharp (Figure 3).



**Figure 3. High grade breccia matrix - Hole APBD-12-15: 2.60m at 9.73% copper, 1.92 g/t gold from 474.5m. Notice the proximal potassic alteration (K-feldspar in red)**

## 7 Mineral Resources

CSA Global was commissioned by Avanco to complete Mineral Resource estimates for Pedra Branca East (PBE) and Pedra Branca West (PBW) soon after the acquisition of the project in 2012.

In May 2016, CSA Global updated the Mineral Resource estimate for PBE (refer to ASX Announcement “Resource Upgrade Advances Pedra Branca Development Strategy”, 26 May 2016, for Competent Person’s Consent, material assumptions and technical parameters underpinning the PBE Mineral Resource estimate, including JORC Table 1, Sections 1, 2, and 3).

Three dimensional solids were created by joining sectional interpretations of the copper mineralisation, which were based on a nominal lower cut-off grade of 0.2% copper for the disseminated mineralisation and 1.0% copper for the high grade domain. These solids were used to constrain the Mineral Resource estimate. A block model was created using 10.0m east by 5.0m north by 10.0m RL parent blocks. Ordinary Kriging was used to estimate grades into the blocks from composited sample data. A 1.0m composite data set was used for variography and grade estimation.

The PBE Mineral Resource is classified and reported in accordance with the JORC Code 2012. Mineral Resource classification is based on data quality, confidence in the geological interpretation, drill spacing and geostatistical measures.

The PBE Mineral Resource is summarised in Table 3. The HW-HGZ Mineral Resource is reported separately in Table 4.

**Table 3. Mineral Resource Estimate for Pedra Branca East, May 2016**

PEDRA BRANCA EAST – Mineral Resource as at May 2016							
Classification	Type	Economic Cut-Off Cu%	Tonnes (Mt)	Copper (Cu %)	Gold (Au g/t)	Copper Metal (kt)	Gold (koz)
Measured	PRIMARY	0.90	1.98	2.7	0.7	53	43
Indicated	PRIMARY	0.90	5.72	2.8	0.7	162	123
<b>Measured + Indicated</b>			<b>7.70</b>	<b>2.8</b>	<b>0.7</b>	<b>215</b>	<b>166</b>
Inferred	PRIMARY	0.90	2.78	2.7	0.6	75	55
<b>TOTAL</b>			<b>10.48</b>	<b>2.8</b>	<b>0.7</b>	<b>289</b>	<b>221</b>

**Notes:**

- 1 The Mineral Resource was estimated within constraining wireframe solids created using a 0.2% and 1.0% Cu cut-off grades for the low grade and high grade domains respectively.
- 2 The Mineral Resource is globally reported above 0.9% Cu assuming underground mining methods.
- 3 The table above includes the HW-HGZ separately reported below.
- 4 Due to the effects of rounding the sum of individual values will not necessarily equal the total.

**Table 4. Mineral Resource Estimate for Pedra Branca East Hanging Wall High Grade Zone**

PEDRA BRANCA EAST – HW-HGZ Mineral Resource as at May 2016							
Classification	Type	Economic Cut-Off Cu%	Tonnes (Mt)	Copper (Cu %)	Gold (Au g/t)	Copper Metal (kt)	Gold (koz)
Measured	PRIMARY	0.90	1.3	2.9	0.7	38	30
Indicated	PRIMARY	0.90	3.2	2.8	0.7	91	76
<b>Measured + Indicated</b>			<b>4.5</b>	<b>2.8</b>	<b>0.7</b>	<b>127</b>	<b>106</b>
Inferred	PRIMARY	0.90	1.6	2.4	0.5	37	27
<b>TOTAL</b>			<b>6.1</b>	<b>2.7</b>	<b>0.7</b>	<b>166</b>	<b>133</b>

**Notes:**

- 1 The HW-HGZ Mineral Resource is included in the Pedra Branca East Mineral Resource (Table 3).
- 2 The Mineral Resource for HW-HGZ was estimated within constraining wireframe solids created using 1.0% Cu cut-off grade.
- 3 The Mineral Resource is reported above 0.9% Cu assuming underground mining methods.
- 4 Due to the effects of rounding the sum of individual values will not necessarily equal the total.

## 8 Mining

### Underground Mining Method Selection

The choice of underground mining method depends on a large number factors, that includes, but is not limited to:

- Size and continuity of the orebody;
- Shape of the orebody: tabular, cylindrical, or spherical;
- Orientation of the orebody: vertical, sub-vertical, sub-horizontal;
- Strength of the orebody and host-rocks;
- Ore-grade: high-grade, low-grade;
- Orebody mineral distribution: massive or disseminated with a cut-off grade;
- Depth of the orebody;
- Projected production rates;
- Capital costs, rate of financial recovery, cash-flow; and
- Safety aspects – non -entry methods tend to be safer than entry methods.

PBE has a number of attributes that make it ideal for some form of sub-level mining. The mineralisation is relatively wide and competent, and is steep dipping with strong wall rocks.

Following a comparison of direct operating costs, pre-production capital costs and advantages / disadvantages of various methods, Sub-Level Open Stopping (SLOS) with delayed filling was selected as the mining method.

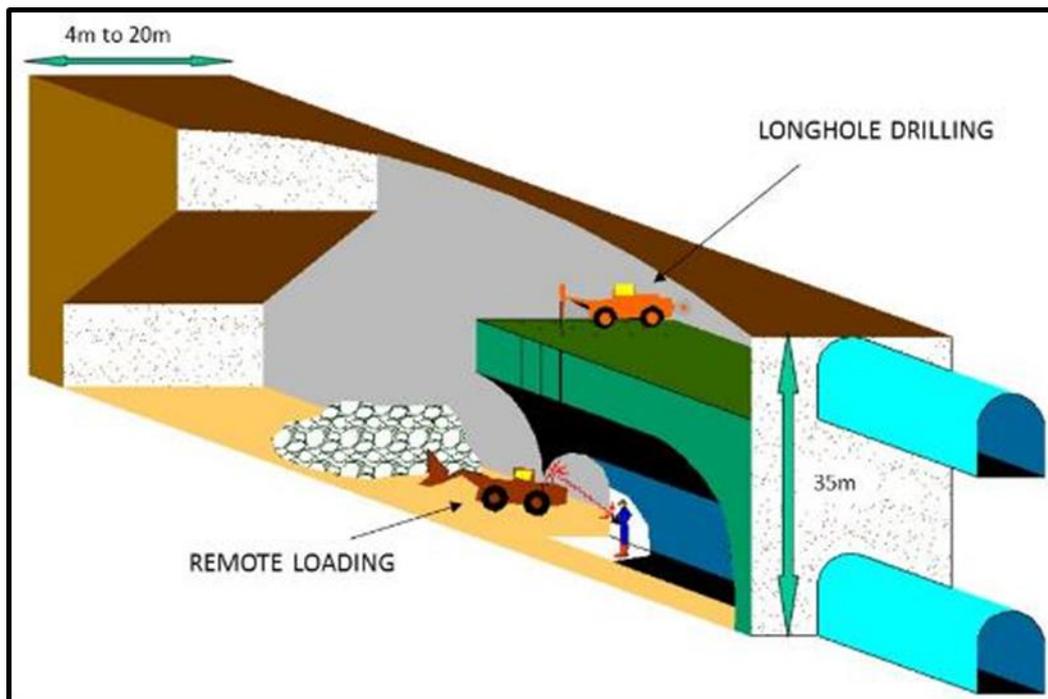
There are a number of variants to SLOS, with the variant to be employed at Pedra Branca termed “Bench and Fill” which minimizes the waste development required through the application of radio remote controlled loading in the open stope.

Each stope includes a drill level at the top and an extraction level at the bottom, developed in ore longitudinally along the hanging wall contact with the drive then enlarged to the footwall contact ahead of stoping. Geotechnical analysis indicates that ground support will vary with ground conditions, but the majority of the stopes will require support by means of “Swelllex Bolts” supplemented by the installation of cable bolting with cable bolts in wider areas.

Once stope development to limits is complete, a slot raise is mined between the two sub-levels employing a technique called “drop raising” where precision holes are drilled from top to bottom and, following survey, are progressively blasted. With wide orebody widths, the sharp hanging wall contact, good interpretation and with modern drilling equipment, dilution due to drilling accuracy will be minimal.

Blastholes will be loaded with emulsion and shot in one to three row blasts to monitor blasting practices and maximize effective work time.

Large capacity load-haul-dump (LHD) units remove broken muck from the extraction elevation and either transport to a “transfer stock point” on the level or dump directly into mine trucks. It is expected that contracted 40 tonne articulated trucks will be used during the development phase and larger capacity, more efficient machines will be used once the mine moves to a higher production rate. The LHDs will be operated by radio remote control allowing loading inside the open stope while the operator remains in a safe location.



*Figure 4. Longitudinal Bench and Fill Stopping*

### Backfilling

Backfill will be by means of cemented paste fill supplied through a series of boreholes and pipes connected to the backfill plant on surface. Stopes will be filled to within 5 metres of the back, with the remaining opening being used as the loading level for the stope above.

Whenever possible waste development rock will be disposed of directly in to empty stopes as part of the backfilling process; however, it will not always possible or convenient to synchronize waste development and stope backfilling and in such cases waste will be hauled to surface and will be re-handled and trucked later to stopes that are being filled.

### Safety

The SLOS method of mining, employing remote loading, is a safe and well understood method that has been applied worldwide, including a number of mines within Brazil. It is classified as a “Non-Entry” method as, through the use of radio controlled loading equipment, workers do not enter the working stope but remain under a supported secured roof at all times.

### Cut-Off Grades

Two cut-off grade calculations have been used:

1. True Cut-Off

Here all costs, i.e. mining, transport, processing and overheads are computed and are divided by the calculated income per tonne of ore, i.e. total income at the twin metal price of interest, after all metallurgical recoveries, smelter terms and royalties have been applied.

2. Forced Development Cut-Off

Forced Development Cut-Off is applied where mining development must be carried out through material that is below the overall cut-off grade, but could have value. Here the mining cost is

considered to be “sunk” and the cut-off grade is calculated as 1. above, applying only the other costs to be incurred after mining.

In the above calculations, the actual Antas process costs, metallurgical recoveries and smelter terms were applied to a range of copper price scenarios, coming from the Avanco consensus pricing model, then an average taken, see Table 5.

**Table 5. Cut-Off Grade Summary**

<b>Copper Price</b>	<b>US\$4,800/t</b>	<b>US\$5,500/t</b>	<b>US\$5,929/t</b>
<b>Gold Price</b>	<b>US\$1,200/oz</b>	<b>US\$1,162/oz</b>	<b>US\$1,162/oz</b>
%Gold Value	14.9%	12.5%	11.6%
Combined Copper Gold price	US\$5,514/t	US\$6,188/t	US\$6,614/t
<b>Revenue 1 t of copper</b>			
Net Value after NSR & Royalties	US\$3,841/t	US\$4,448/t	US\$4,827/t
<b>Calculated Cut Off Grade</b>			
Mine Project	1.4%	1.2%	1.1%
<b>Applied Cut-Off Grade</b>			
Mine Project		1.2%	
<b>Forced Development Cut-Off Grade</b>			
Mine Project	0.7%	0.6%	0.5%
<b>Applied Development Cut-Off Grade</b>			
Mine Project		0.6%	

### Mine Dilution

Transforming the mineable resource estimate to a diluted mineable reserve requires incorporating planned, unplanned, and backfill dilution, in addition to applying production losses.

Planned dilution is integral to the stope designs and the sub-grade material contained within stope layouts is classified as planned dilution. It is measured as a component of the mineable resource estimate, rather than added to the mineable resource estimate and is included as the grade of the material in the block model by the mine planning software.

Unplanned dilution is defined as sub-grade material that originates outside the stope design boundaries and gets mined inadvertently; a “wall rock allowance” was included to cater for this dilution. Backfill dilution will also be inadvertently incurred while extracting ore on top of previously filled stopes and backfill dilution is assumed to contain no metal with remnant grades in tailings ignored.

### Mine Recovery and Production Losses

Production losses account for ore grade material that will not be recovered during the mining process. Production loss grades are assumed to be the weighted average of the mineable resource, unplanned dilution and backfill dilution grades. As the orebody is wide and the inclination is steep it is considered that these losses will be relatively low and the total material mass was reduced by 5% to cater for production losses.

The Ore Reserve therefore is estimated as the sum of the stope envelope, including planned and unplanned dilution including backfill dilution; finally a 95% percentage mining recovery is applied to allow for production losses.

## Access

Access to the Pedra Branca mine will be by means of a decline from surface, designed so as to allow access for personnel and equipment and the haulage of ore from underground to surface.

## Box Cut and Portal

Initially seven possible positions were identified for the start of the access decline, however after review these were reduced to two; a position to the east of PBE and a position to the west of PBE, between the East and West deposits.

Detail survey and outline geotechnical drilling was undertaken at both sites and it was decided that the east position was the most favourable. This decision was based on the thickness and profile of saprolite and the surface topography at the positions. Following this decision, the easterly position was drilled in more detail and in addition a number of holes were drilled deeper into the granite along the alignment of the decline.

Due to the thickness of the saprolite the decision was made to incline the floor of the box cut and the initial decline at 15%, flattening once within thicker granite cover to 12.5%. Although access declines are often mined steeper, it is considered that the gradient chosen offers the best combination for access and haulage of higher production rates.

## Geotechnical/Hydrogeological

A basic geotechnical and hydrogeological study was completed by independent consultant Mauri Ferreira of Geotécnica e Mecânica de Rochas Ltda. This study indicated that conditions, both in the country rock and in the orebody, were considered to be favourable for mine development and very suitable for sub-level mining.

Projected water inflows were considered to be low.

## Decline

The access decline will be mined in footwall granites and will be sized at 5.5m x 5.5m (30m<sup>2</sup>). The profile selected will allow the use of 50 tonne mine trucks already in use in Brazil and, if required, will also support the use of the larger mine trucks currently in use in Australia. The decline will be provided with 8m wide “passing bays” at suitable intervals and initially carry the mine services, although these will be re-routed through an intake ventilation raise at a later stage.

Development will be by means of standard trackless underground equipment with a twin boom electro-hydraulic jumbo being employed for drilling.

Removal of blasted material will be by means of a LHD machine loading to “re-muck” positions mined at suitable intervals. This will clean the face efficiently and ensure that reasonable development rates are achieved.

Ramp development ventilation will be by means of a surface mounted auxiliary axial fan forcing through ventilation ducting to the working face. Initially sub-level development will be ventilated by means of a combination of series ventilation and “Tees” from the main system until an upcast raisebore completes the first circuit.

## Sub Levels

Access cross cuts from the decline to the orebody will be driven at a 5.5m x 5.5m profile and are designed to provide a position for a mobile substation and a stocking position for development/stopping ore.

Sub-level development will then be undertaken on a 5m x 5m cross section in ore. Support of sub-levels will be by means of “Swellex” bolts supplemented by cable bolts when the level is enlarged to full ore width ahead of stoping.

### **Production**

The mine production stage requires footwall drifts to be mined in granite to provide sufficient stoping faces to achieve the required production rate. Typically, four cross cut accesses will be mined on each sub-level to provide a minimum of 4 faces retreating each way towards the access.

Stopes are sequenced so that one side can be stopped for filling, whilst the other side continues producing. Once the filling is complete to within 5m of the back, “re-slotting” will take place followed by enlargement and production. On completion of the stoping and filling of one side of the central access, production moves up, with the drilling drift of the previous level becoming the loading drift of the upper stope.

### **Ore Handling**

The production loaders will load from the stope under remote control and transfer directly to a truck if available or will transfer back to a purpose mined stock bay, located close to the decline crosscut. Haulage to surface will be in 50 tonne trucks (or possibly 63 tonne trucks if necessary) loaded directly from the stopes by the production LHDs or by means of a dedicated front end loader (FEL) when hauling from the stock points.

### **Waste**

The underground mining method chosen for PBE produces limited quantities of waste during access development. During initial development this waste will be stockpiled on surface until stoping commences, whereupon it will be trucked into the mine as backfill. It is envisaged that initially a total of 150,000t will be required to be stored for a period up to 18 months before stoping commences.

The location of the proposed waste dump is shown on the conceptual site plan (Figure 5).

After production ramp-up, the paste fill will be commissioned, however development waste will continue to be disposed of into stopes being backfilled, while 60% of plant tailings is also estimated to be used for paste fill.

### **Ventilation**

The primary functions of the mine ventilation system is to distribute fresh air to all mine workings and dilute equipment exhaust, dust, blasting gases and other pollutants to acceptable levels and direct the contaminated air to surface. A negative pressure ventilation system will provide sufficient fresh air for these purposes with fans installed on each of the exhaust raises.

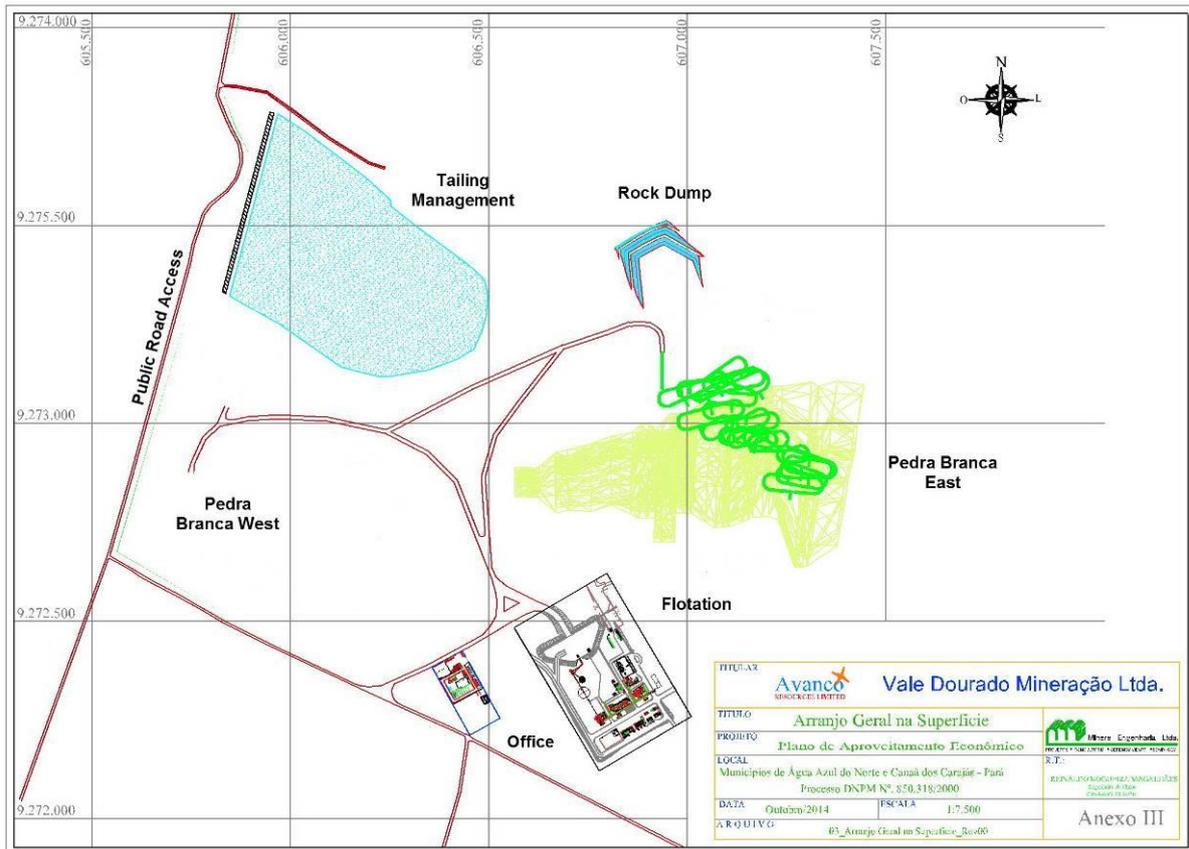


Figure 5. Conceptual Site Layout

## 9 Production Schedule

Table 6 below, presents the scoping study production schedule, showing the percentage of material used in the schedule which was derived from Inferred Resources.

Table 6. Scoping Study Production Schedule

Year	kt	% Cu	g/t Au	Material that is comprised of Inferred Resources (% of total resource)
2016	0	-	-	0%
2017	110	2.2	0.58	1%
2018	243	2.6	0.73	3%
2019	856	2.3	0.65	9%
2020	1,281	2.15	0.56	12%
2021	1,242	2.16	0.51	7%
2022	1,264	2.25	0.48	18%
2023	1,221	2.07	0.47	18%
2024	1,201	1.88	0.44	18%
2025	1,256	1.95	0.45	38%
2026	1,102	1.78	0.40	65%
2027	1,033	1.90	0.43	60%

## 10 Capital Cost Estimates

The capital budget was estimated by Avanco engineering staff based on actual costs from the recent construction and commissioning of the Antas Copper Mine, supplemented by the schedule of rates from the mining contractor and the earthmoving contractor.

The capital cost estimate includes all surface infrastructure (box cut and portal, provision of services, access improvements and bridge upgrade, construction of a bypass road around Villa Feitosa village, plant, tailings dam, etc.) and initial mine development. The table below summarises the estimated pre-production capital cost.

	US Dollars (\$M)
<b>Box-cut/Portal</b>	\$2.5
<b>Underground Development</b>	\$50
<b>Site Infrastructure</b>	\$10.5
<b>Plant</b>	\$52
<b>Indirect Costs</b>	\$13
<b>Contingency</b>	\$25
<b>TOTAL</b>	<b>\$153</b>

### Ongoing Mine Development

The ongoing mine capital estimate consists of continuing mine development, equipment purchases and required infrastructure. The estimate was prepared by an independent consulting mining engineer employing the mine design, a schedule of rates prepared by the contractor, equipment costs from original equipment manufacturers and includes AVB costs incurred servicing and supervising the project.

In line with the “Underhand” mining approach, capitalised development will continue throughout a large proportion of mine life, as the mine is continually being deepened by means of decline development.

The accuracy of the Scoping Study is considered to be +/-35%. The PFS will have an accuracy of +/-20%.

## 11 Operating Cost Estimates

Operating costs were based on actual costs at the Company’s producing Antas Copper mine, supplemented by an estimate of mining costs based on the schedule of rates from the selected mining contractor. These costs are considered both representative and better than Scoping Study level accuracy; however, for the purposes of the financial evaluation a 10% contingency factor was applied.

	Cost Per Tonne (US\$)
<b>Mining</b>	\$32.00
<b>Processing</b>	\$15.00
<b>G&amp;A</b>	\$3.00
<b>Total</b>	<b>\$50.00</b>

## 12 Financing Options

Avanco has 100% ownership of the Pedra Branca Project, with no debt or other covenants. This very clean ownership structure enhances opportunities and provides maximum flexibility for potential funding structures for the Project's development.

The Company is in a strong position with greater than USD\$20,000,000 in the bank with no debt or other covenants over its cash or assets, enabling the funding of continued feasibility studies and initial development work.

The Company's major shareholders comprise high quality investment funds including the BlackRock Group (BlackRock Inc. and its subsidiaries), Greenstone Management Limited (in its capacity as general partner of Greenstone Resources LP) and Appian Natural Resources Fund GP LP and Appian Holdings Limited, all of which participated in the Company's financing of the Antas Copper Mine into production.

The Study has provided positive economic metrics and the planned timetable of activities to deliver key development milestones that is conducive to the staged funding of the Project. The positive technical and economic fundamentals provide a platform for discussions on traditional debt, equity financiers and forward sales arrangements. The Company's aim will be to avoid dilution to existing shareholders as much as possible.

The Company's board has extensive experience in financing and in developing projects internationally. Five current board members have been involved with Avanco since the IPO in 2007. Current management has recently developed and constructed the capital cost efficient Antas Copper Mine (Antas) within the same geological area, approximately 70 kilometres from the Pedra Branca Project. The declaration of commercial production at Antas was announced on 1 July 2016 and the successful negotiation of an offtake agreement for the sale of its copper, gold and silver production was finalised in April 2016.

In summary, the board and management of Avanco have a demonstrated track record of success in Brazil, achieved through technical and financial capability to identify, acquire, define, develop and operate quality mineral assets. In particular, the Company's Chairman, Mr Colin Jones has over 50 years of underground mining experience, including 10 years of supervising mine development, 20 years of operational experience in a number of commodities. Importantly Mr Jones has operational experience of the mining method to be adopted at Pedra Branca and was the lead consultant for Rio Tinto for the successful development of the MSF nickel mine in Minas Gerais, Brazil.

All the material assumptions on which the forecast financial information is based has been included in this announcement.

For the reasons outlined above, the board believes that there is a 'reasonable basis' to assume that future funding will be available and securable.

## **Annexure A: Forward Looking Statement**

The announcement may contain certain forward-looking statements. Words ‘anticipate’, ‘believe’, ‘expect’, ‘forecast’, ‘estimate’, ‘likely’, ‘intend’, ‘should’, ‘could’, ‘may’, ‘target’, ‘plan’, ‘potential’ and other similar expressions are intended to identify forward-looking statements. Indication of, and guidance on, future costings, earnings and financial position and performance are also forward-looking statements.

Such forward looking statements are not guarantees of future performance, and involve known and unknown risks, uncertainties and other factors, many of which are beyond the control of Avanco Resources Ltd, its officers, employees, agents and associates, which may cause actual results to differ materially from those expressed or implied in such forward-looking statements.

Actual results, performance, or outcomes may differ materially from any projections or forward-looking statements or the assumptions on which those statements are based.

You should not place any undue reliance on forward-looking statements and neither Avanco nor its directors, officers, employees, servants or agents assume any responsibility to update such information.

The stated production target is based on the Company’s current expectations of future results or events and should not be relied upon by investors when making investment decisions. Further evaluation work and appropriate studies are required to establish sufficient confidence that this target will be met.

This announcement has been prepared in compliance with the JORC Code 2012 Edition and the current ASX Listing Rules.

## **Annexure B: Reasonable Basis**

The Board of Avanco believe that it has a reasonable basis for making the forward-looking statements in this announcement, including with respect to the production target and forecast financial information.

The following information is specifically provided in support of the Board’s belief:

- (a) The Scoping Study has been prepared to what the Company considered equal or better than a Scoping Study level of accuracy of  $\pm 35\%$ . Furthermore, the Company believes that the level of detail of work carried out for this Study exceeds what is required/expected at a Scoping Study level;
- (b) The production targets referred to, are based on Mineral Resources which are classified 19% Measured, 55% Indicated, and 26% Inferred;
- (c) The Mineral Resource estimate for PBE was last updated and published in 26 May 2016. Refer ASX Announcement “Resource Upgrade Advances Pedra Branca Development Strategy”, 26 May 2016, for Competent Person’s Consent, material assumptions, and technical parameters underpinning the PBE and HW-HGZ Mineral Resource estimates. The material assumptions and technical parameters used in this Mineral Resource estimate continue to apply, and have not changed;
- (d) A Preliminary Economic Assessment has been submitted to the DNPM<sup>11</sup>, and the Company is now in the process of the application for both a trial mining license and a full mining license., which the Company believes will be granted in due course;
- (e) As declared in this document, the Company is close to completion of a more detailed PFS targeting near term production from the HW-HGZ. The results of the PFS will be released to the market in the near term;

- (f) As declared in this document, the Company is now proceeding with implementation works/construction on the smaller scale HW-HGZ, and it is the Company's intention to continue working towards the full scale mine development at PBE;
- (g) Metallurgical testwork on PBE samples has shown near identical properties to ore from the Company's producing Antas Copper Mine, compatibility with the Antas flotation plant, and the compatibility for blending of feed stocks from both deposits;
- (h) Processing and operating costs were based on actual costs at the Company's producing Antas Copper Mine, located ~50km (straight line) to the north of Pedra Branca. These costs are considered both representative and better than Scoping Study level accuracy;
- (i) Mining costs were derived from a selection of appropriately chosen operating underground mines, both in Brazil and in Portugal, in particular operations where members of the team responsible for production of the Scoping Study have actual recent experience;
- (j) A basic geotechnical engineering study was completed by independent consultant Mauri Ferreira of Geotécnica e Mecânica de Rochas Ltda. Mr. Ferreira was responsible for the geotechnical engineering in the Feasibility Study (and subsequent successful mining operation) for the Company's producing Antas Copper Mine. Mr. Ferreira is widely considered to be one of Brazil's leading experts in the field of geotechnical engineering, in both underground and open pit mining;
- (k) Capital costs for the 1.2Mtpa plant were based on actual costs for the construction of the recently commissioned Antas Copper Mine's flotation plant. Refer ASX Announcement "Commencement of Commercial Production", 04 July 2016;
- (l) The Scoping Study was completed internally by the Company, using both employees and directors, none of which have less than 20 years' experience, and most of which also qualify as a Competent Person (CP) as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) "Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves". Independent consultants were used for key areas of the Study, in particular site Infrastructure and basic engineering, resource estimation, geotechnical engineering, mining engineering, and environmental assessment. Furthermore, independent consultants have been used for Peer Review of the completed works. All material assumptions on which the forecast financial information is based have been included in the announcement;
- (m) As a group, the Avanco Board has a long and successful track record in identifying, discovering, developing, implementing and commissioning of both open pit and underground mineral resource projects internationally, including Brazil, and operating quality mining assets;
- (n) The Company also believes it has a reasonable basis to expect to be able to fund commencement of development for HW-HGZ from existing cash reserves, and the development of the full scale PBE Project in the future; and
- (o) The Company already has an off-take contract for the sale of its high quality Antas copper concentrate. The Board does not see any impediment to extending this contract, or executing a new contract to include what it believes will be equally high quality concentrates from Pedra Branca.

### **Annexure C: Competent Person's Statements**

The information in this report that relates to Exploration Targets, Exploration Results, or Mineral Resources is an accurate representation of the available data and is based on information compiled by Mr Simon Mottram who is a Fellow of the Australasian Institute of Mining and Metallurgy. Mr Mottram is an Executive Director of Avanco Resources Limited; in which he is also a shareholder. Mr

Mottram has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person (CP) as defined in the 2012 Edition of the Joint Ore Reserves Committee (JORC) “Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves”. Mr Mottram 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 ASX Release that relates to Production Targets, mining engineering, and underground mine design in the Scoping Study was undertaken by Mr Diogo Caupers, a Mining Engineer and a full-time independent consultant with over 30 years’ experience. Mr Caupers is a member of the Australasian Institute of Mining and Metallurgy and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking, as defined by the 2012 Edition of the Joint Ore Reserves Committee (JORC) “Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves”. Mr Caupers 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 ASX Release that relates to production targets, mining engineering and underground mine design in the Scoping Study has been peer reviewed by Mr Colin Jones (MIMM), an Independent Non-Executive Director (Chairman) of Avanco Resources Limited and a consulting Mining Engineer, specialising in underground mining, with over 40 years’ experience, including operational experience with the chosen mining method. Mr Jones 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 ASX Release that relates to metallurgy, metallurgical testwork, froth flotation and mineral processing in the Scoping Study was undertaken by Mr Wayne Phillips. Mr Phillips is an Executive Director of Avanco Resources Limited; in which he is also a shareholder. Mr Phillips is a Chemical Engineer with over 35 years’ experience, with a focus on metallurgy, froth flotation and hydrometallurgy. Mr Phillips consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

#### **Annexure D: Project Risks**

Key risks identified during the Scoping Study work include, but are not limited to:

- Adverse movements in the US\$ copper and gold prices;
- Adverse movements in the US\$:BRL exchange rates;
- Conversion of existing Mineral Resources to Ore Reserves;
- Access to project funding;
- Timely approval by Government Authorities of the various licenses and permits required;
- Sovereign and legal risks of Brazil;
- The Company depends on key management personnel and may not be able to attract and retain qualified personnel;
- General global economic conditions that may adversely affect the Company’s growth and future prospects; and
- Results of future Pre-Feasibility and Definitive Feasibility Studies.

### Annexure E: Material Assumptions used in the Scoping Study

Criteria	Commentary																								
<b>Status of Study</b>	<ul style="list-style-type: none"> <li>The information and production target presented herein is based on a Scoping Study. A scoping study is a low-level techno-financial assessment, and is not sufficient to for the estimation of a Mineral Reserve Estimate, assurance of economic development, or that the findings of this study will be realised</li> <li>All project costs are in US Dollars (US\$)</li> </ul>																								
<b>MRE supporting Production Targets</b>	<ul style="list-style-type: none"> <li>Refer ASX Announcement “Resource Upgrade Advances Pedra Branca Development Strategy”, 26 May 2016, for Competent Person’s Consent, material assumptions, and technical parameters underpinning the PBE MRE, including JORC Table 1, Sections 1, 2, and 3</li> <li>The PBE (JORC 2012 compliant) MRE was last updated and disclosed in May 2016. It has not been updated since, nor is Avanco aware of new data/information that could materially affect information contained within that announcement. All material assumptions and technical parameters relating to that MRE continue to apply. The form and context in which the Competent Person’s findings have been presented have not been materially modified since that that announcement.</li> </ul>																								
<b>Capital Costs</b>	<ul style="list-style-type: none"> <li>All costs have been estimated to a Scoping Study level of accuracy</li> <li>The pre-production CAPEX estimates used in the Scoping Study are as follows:</li> </ul> <table border="1" data-bbox="472 1016 1310 1352"> <thead> <tr> <th></th> <th>US Dollars (\$M)</th> </tr> </thead> <tbody> <tr> <td>Box-cut/Portal</td> <td>\$2.5</td> </tr> <tr> <td>U/G Development</td> <td>\$50</td> </tr> <tr> <td>Site Infrastructure</td> <td>\$10.5</td> </tr> <tr> <td>Plant</td> <td>\$52</td> </tr> <tr> <td>Indirect Costs</td> <td>\$13</td> </tr> <tr> <td>Contingency</td> <td>\$25</td> </tr> <tr> <td><b>TOTAL</b></td> <td><b>\$153</b></td> </tr> </tbody> </table>		US Dollars (\$M)	Box-cut/Portal	\$2.5	U/G Development	\$50	Site Infrastructure	\$10.5	Plant	\$52	Indirect Costs	\$13	Contingency	\$25	<b>TOTAL</b>	<b>\$153</b>								
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<b>Mining Assumptions</b>	<ul style="list-style-type: none"> <li>The production target is based on Sub-Level Open Stopping (SLOS) as the chosen mining method at PBE, at a production/processing rate of 1.2Mtpa</li> <li>Geotechnical assumptions were drawn from work carried out at a scoping study level by independent consultants, and later more advanced study carried out as part of the ongoing Pre- Feasibility Study for the Development phase at PBE</li> <li>Material mining assumptions <table border="1" data-bbox="472 510 1310 595"> <tr> <td><b>Mining Dilution</b></td> <td>Derived from Stope design plus wall rock allowance</td> </tr> <tr> <td><b>Mining Recovery</b></td> <td>95%</td> </tr> </table> </li> </ul>	<b>Mining Dilution</b>	Derived from Stope design plus wall rock allowance	<b>Mining Recovery</b>	95%						
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<b>Infrastructure</b>	<ul style="list-style-type: none"> <li>Infrastructure costs were estimated to a Scoping Study level of accuracy, and based on the installation of a 1.2Mtpa froth flotation plant and all associated infrastructure at PB</li> <li>Costs were factored from actual costs from the recently built and operating Antas Copper Mine, owned and operated by Avanco</li> <li>General information regarding the Company's PB project can be found on the Company's website</li> </ul>										
<b>Classification</b>	<ul style="list-style-type: none"> <li>The production targets referred to, are based on Mineral Resources which are classified 19% Measured, 55% Indicated, and 26% Inferred. Inferred resources have a low level of geological confidence and there is no guarantee that further exploration work will result in their conversion to higher levels of confidence, or the realisation of these production targets</li> </ul>										
<b>Economic Cut-off</b>	<ul style="list-style-type: none"> <li>All costs have been estimated to a Scoping Study level of accuracy</li> <li>A design production/processing rate of 1.2Mtpa was used, while SLOS is the chosen mining method</li> <li>The break-even cut-off grade was estimated at 1.2% Copper equivalent (using a Copper price of \$2.50/lb and a Gold price of \$1300/Oz), or \$62.50 per tonne as shown below. <table border="1" data-bbox="472 1518 1327 1740"> <thead> <tr> <th></th> <th>Cost Per Tonne (US\$)</th> </tr> </thead> <tbody> <tr> <td><b>Mining</b></td> <td>\$32.00</td> </tr> <tr> <td><b>Processing</b></td> <td>\$15.00</td> </tr> <tr> <td><b>G&amp;A</b></td> <td>\$3.00</td> </tr> <tr> <td><b>Total</b></td> <td><b>\$50.00</b></td> </tr> </tbody> </table> </li> </ul>		Cost Per Tonne (US\$)	<b>Mining</b>	\$32.00	<b>Processing</b>	\$15.00	<b>G&amp;A</b>	\$3.00	<b>Total</b>	<b>\$50.00</b>
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<b>Independent Audit</b>	<ul style="list-style-type: none"> <li>Key parts of the scoping study have been independently reviewed. Specifically: <ul style="list-style-type: none"> <li>Underground mining methods and assumptions, and economic assumptions and assessment, by Keith Marshall, of Marshall Mining Associates</li> <li>Metallurgical testwork and assumptions, and flow sheet analysis by Frank Rezende, of AU@BR</li> </ul> </li> </ul>										