



Antas North
2019 Mineral Resource
Statement and Explanatory Notes

As at 30 April 2019

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ANTAS NORTH MINERAL RESOURCE STATEMENT AS AT

30 April 2019

Summary

The Antas North 30 April 2019 Mineral Resource has been estimated at 2.6 million tonnes of copper mineralisation grading 1.2 per cent copper and 0.4 grams per tonne gold. This updated Mineral Resource estimate supersedes the previously reported Mineral Resource estimate for Antas North as at 31 December 2017, released in the 2017 Avanco Resources Annual Report on 27 February 2018. The previous report was based on a re-reported and mining depleted version of the April 2014 Mineral Resource estimate.

The updated Antas North Mineral Resource estimate includes, substantial resource delineation diamond drilling (~8,600m) and reverse circulation drilling (~47,000m) completed since the drilling data cut-off date of the April 2014 Mineral Resource estimation (used as the foundation of the last reported Mineral Resources as at 31 December 2017). The additional data has resulted in a significant change in interpretation of the local geology and boundaries to mineralisation.

The April 2019 Mineral Resource estimate is ~74 per cent lower in mineralisation tonnes, ~80 per cent lower in copper metal tonnes and ~72 per cent lower in gold ounces than the 31 December 2017 Mineral Resource for the Antas North deposit.

The key drivers for change are as follows:

- Inclusion of additional drilling data and geological mapping information which was used to update the geological interpretation and estimation parameters. The changes in geological interpretation and estimation parameters resulted in a decrease of ~4.0 million tonnes and ~55kt of copper metal outside of the constraining pit shell and an additional decrease of ~19kt of copper metal inside the constraining pit shell after application of the 0.3 per cent copper cut-off.
- Limitation of estimated Mineral Resources to defined pit shells and zones of mineralisation with reasonable prospects for eventual economic extraction resulted in the reduction of ~2 million tonnes and ~19kt of copper metal.
- Mining depletion accounted for a reduction of ~1.5 million tonnes and ~28kt of copper metal.

A summary of the Antas North Mineral Resource estimate as at 30 April 2019 is presented in Table 1.

Table 1: Copper Mineral Resource estimate as at 30 April 2019¹

	Category	Tonnes (Mt)	Cu (%)	Au (g/t)	Cu (kt)	Au (koz)
Antas Open Pit² 0.3% Cu cut-off	Measured	0.20	1.0	0.2	1.9	1.4
	Indicated	1.2	1.2	0.4	15	15
	Inferred	0.52	1.6	0.6	8.2	9.9
	Subtotal	1.9	1.3	0.4	25	27
Azevedo Open Pit³ 0.3% Cu cut-off	Measured	-	-	-	-	-
	Indicated	0.44	0.9	0.1	3.8	2.0
	Inferred	0.12	0.6	0.1	0.78	0.40
	Subtotal	0.56	0.8	0.1	4.6	2.4
ROM Stocks² 0.3% Cu cut-off	Measured	0.08	0.6	0.1	0.50	0.37
Total	Measured	0.28	0.9	0.2	2.4	1.8
	Indicated	1.7	1.1	0.3	19	17
	Inferred	0.64	1.4	0.5	8.9	10
	Total	2.6	1.2	0.4	30	29

¹ Table subject to rounding errors.

² Mineral Resources consist of fresh material.

³ Mineral Resources consist of fresh and transitional material.

Setting

The Antas North mine site is located in the south-eastern portion of the State of Pará in the municipality of Curionópolis and is situated about 25 kilometres southeast of the city of Parauapebas (Figure 1). The mine site is accessible from Parauapebas by road via 20 kilometres of sealed highway to the south, then a further 10 kilometres of gravel road to the east.

The Antas North iron oxide copper gold deposit is hosted within the Carajás Mineral Province which is located in the southern part of the Amazon Craton. Locally the craton is overlain by metavolcanic–sedimentary units of the Rio Novo Group and the 2.76 Ga Itacaiúnas Supergroup. The Itacaiúnas Supergroup hosts all the known Carajás iron oxide copper gold deposits and is thought to have been deposited in a marine rift environment. The Carajás Mineral Province represents one of the best endowed mineral districts in the world and contains the world’s largest known concentration of iron oxide copper gold deposits including the, Salobo, Igarapé Bahia, Alemão, Cristalino, Gameleira, Furnas, Alvo 118, Antas, Pedra Branca and Pantera deposits.

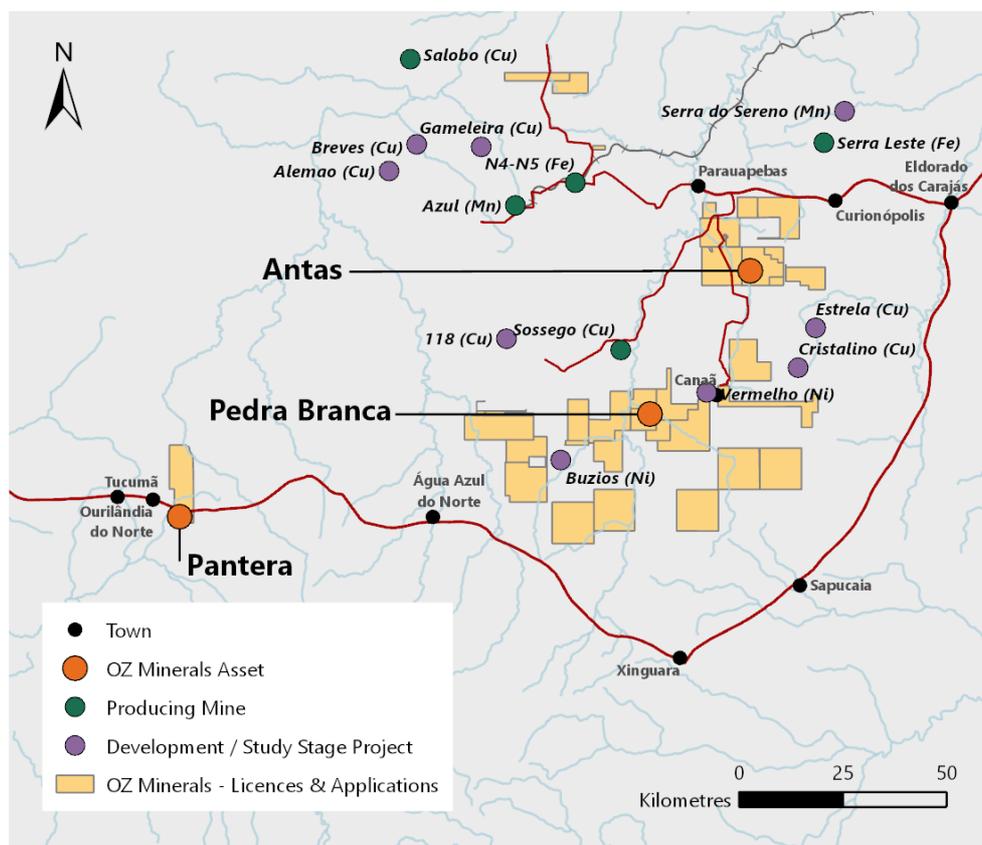


Figure 1: Local map showing OZ Minerals Carajás tenement portfolio⁴ and surrounding mineral deposits, townships and infrastructure.

⁴ Pantera subject to an option agreement with VALE METAIS BÁSICOS S.A. (Vale). Refer to ASX announcement "[Avanco acquires Pantera Project from Vale](#)" 16 January 2018 for detail on the terms and conditions of the option agreement with Vale.

Changes in the April 2019 Mineral Resource Estimate

The Antas North Mineral Resource estimate decreased by ~7 million tonnes (~74 per cent), ~120 thousand tonnes of copper metal (~80 per cent) and ~74 thousand ounces of gold metal (~72 per cent) relative to the previous reported Mineral Resource estimate for Antas North.

The last underlying estimation of Mineral Resources for Antas North was conducted in April 2014, prior to the commencement of mining. Since that time there have been several re-statements of the Mineral Resource at various cut-offs and reporting criteria, with the last publicly reported Mineral Resource being the reporting of the remaining Mineral Resources as at 31 December 2017, as part of the 2017 Avanco Resources Annual Report. The current update of the Antas North Mineral Resource estimate includes substantial resource delineation diamond drilling (~8,600m) and reverse circulation drilling (~47,000m) completed since the drilling data cut-off date of the previous April 2014 Mineral Resource. The additional drilling data included in the estimation has resulted in a significant change in the interpretation of the local geology and boundaries to mineralisation. This has resulted in decrease in the extent and grade of mineralisation resulting in a reduction of ~4.0 million tonnes and ~55kt of copper metal outside of the constraining pit shell and an additional ~19kt of copper metal inside the constraining pit shell after application of the 0.3 per cent copper cut-off.

To better reflect the reasonable prospects of eventual economic extraction as described by the JORC Code (2012), the reported Mineral Resource for the Antas North deposit was reported to a constraining pit shell developed using justifiable cost, revenue and geotechnical parameters which were critically reviewed by OZ Minerals personnel and relevant technical specialists. Limitation of estimated Mineral Resources to the constraining pit shell and interpreted Azevedo domains resulted in the reduction of ~2 million tonnes and ~19kt copper metal.

Mining depletion since 31 December 2017 accounted for reduction of ~1.5 million tonnes and ~28kt of copper metal from the estimated Mineral Resources.

Detailed outlines of changes in reported tonnage and contained copper metal relative to the December 2017 Antas North Mineral Resource estimate are presented in Figure 2 and Figure 3.

Future drilling activities during 2019 will be focused at the western end of the Antas open pit as indicated in Figure 4

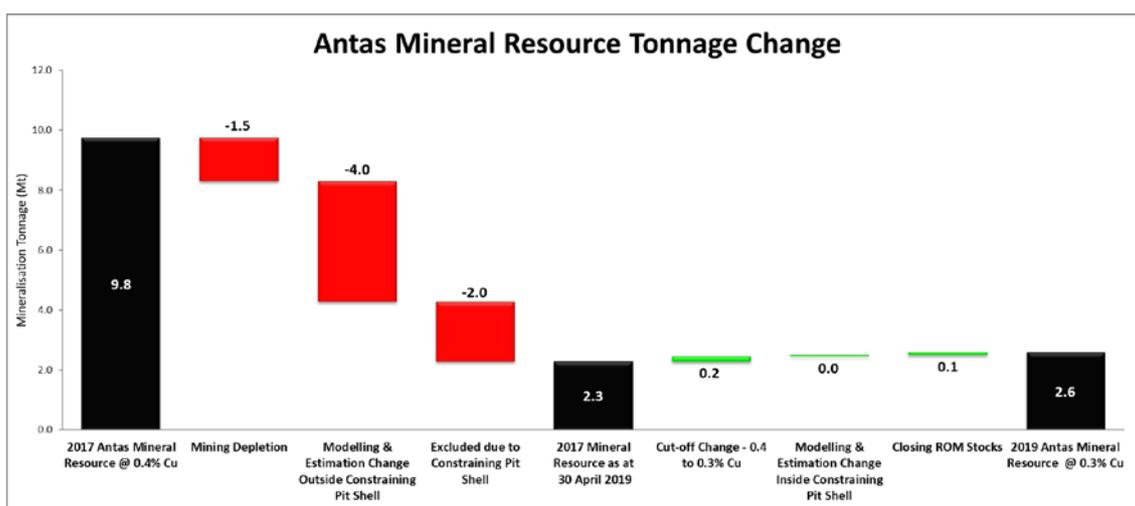


Figure 2: Mineralisation Tonnage changes in 30 April 2019 Antas Mineral Resource estimate update⁵

⁵ Tonnage totals subject to rounding. Data includes Measured, Indicated and Inferred Mineral Resources.

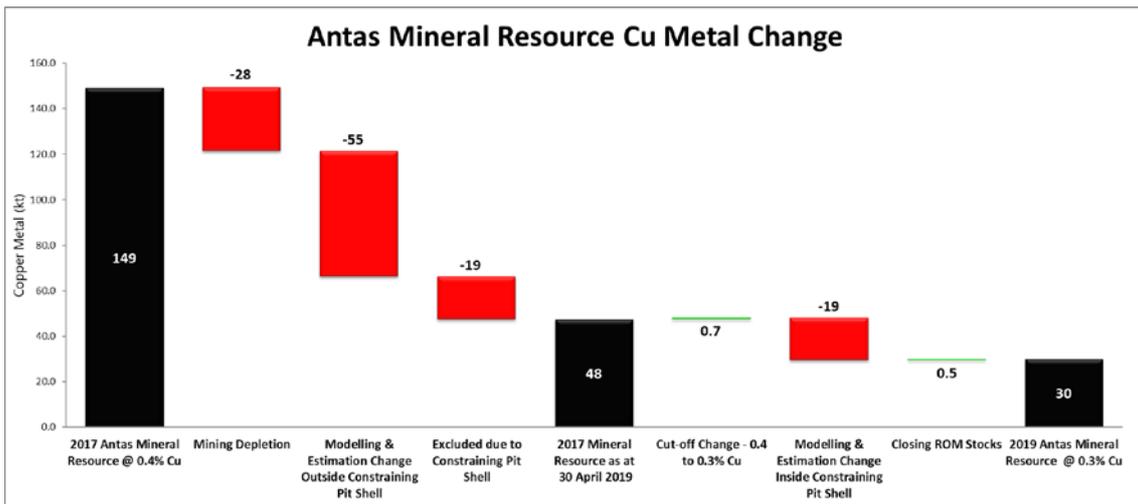


Figure 3: Copper metal changes in 30 April 2019 Antas Mineral Resource estimate update⁵

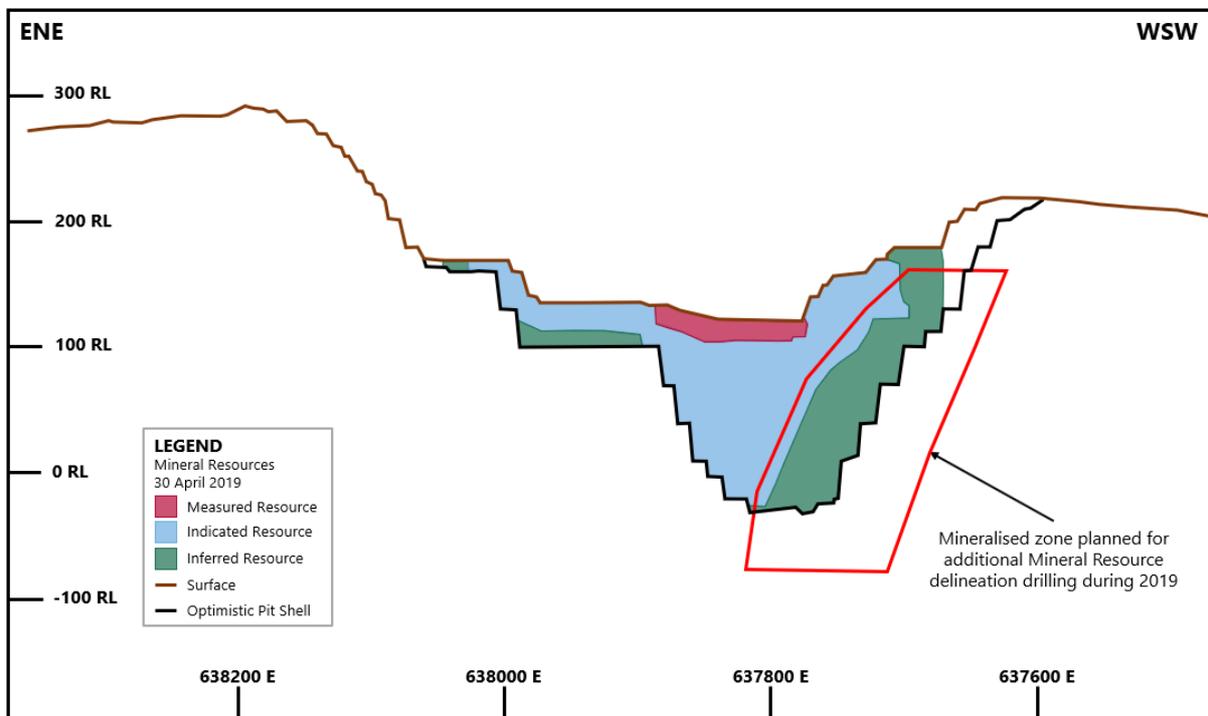


Figure 4: South facing long projection of Antas North Mineral Resource showing future drill target area.

Supporting Information Required Under ASX Listing Rules, Chapter 5

The supporting information below is required, under Chapter 5 Section 5.8.1 of the ASX Listing Rules, to be included in market announcements reporting estimates of Mineral Resources and Ore Reserves which have materially changed from when those estimates were last reported.

Geology and geological interpretation

The Antas North deposit is located close to the southern border of the Estrela Granite Complex. Mineralisation is hosted within hydrothermal brecciated and altered felsic and mafic volcanic units which are cut by younger gabbro and dolerite dykes. Striking northeast, the main ore zone is hosted by a hydrothermal breccia zone with strong amphibolite - silica - apatite - ilmenite alteration. The intensity of alteration decreases moving away from the deposit and into the surrounding halo zone, which consists of chlorite, biotite, weak silicification, and fine grained magnetite and pyrrhotite.

At the Antas North deposit, copper mineralisation occurs as disseminated and massive sulfides which are spatially and genetically associated with brecciation and quartz + plagioclase + scapolite + magnetite alteration. The massive sulfide high grade zones contain variable proportions of chalcopyrite, pyrrhotite, and magnetite as the dominant minerals. Chalcopyrite is the most abundant sulfide (over 30 per cent) forming a massive aggregate within the massive sulfide high grade zones. The surrounding disseminated sulfide zone shows less brecciation and silicification and typically grades from 0.2 to 2.0 percent copper.

Sampling and sub-sampling techniques

The Antas North mineralisation was sampled using reverse circulation and diamond drill holes.

Drill core samples were taken from NQ and HQ diamond drill core and cut longitudinally in half using a core saw. If a duplicate sample was required to be taken for quality control purposes then two quarter core samples were taken and submitted to the laboratory. Samples were typically one metre in length, but where required, sample lengths were adjusted to avoid samples crossing changes in lithology, mineralisation or alteration. Drill core recovery was typically good (greater than 99 per cent) in unweathered primary material and sample masses of half core range from nominally 3 to 5 kilograms.

A number of phases of reverse circulation percussion (RC) drilling were conducted by Avanco Resources and subsequently by OZ Minerals. A total of 1,449 RC drill holes were drilled at the Antas North mine and the nearby Azevedo deposit (ANGC-001 to ANGC-01466 and ANRC-001 to ANRC-023 and AZGC-001 to AZGC-018) as at the end of January, 2019. RC samples were typically one metre in length and samples were split using a riffle splitter to obtain a 1/8 split weighing 3 to 5 kilograms which was sent to the laboratory for sample preparation and assaying.

Drill core was crushed to a nominal two millimetre (95 per cent passing) particle size. All samples (drill core and reverse circulation) were sub-sampled via a Jones Riffle splitter to obtain a 750 gram to 1250 gram sample for pulverisation. Samples were pulverized to ensure 95 per cent of sample passed a 150# mesh particle size. A pulp-sample of approximately 150 grams was then obtained from the pulverised material. Two sub-samples were taken from each pulp sample. A 0.25 gram sub-sample was selected for aqua-regia digestion and subsequent assay for copper by Atomic Absorption Spectrometry (AAS). A 50 gram sub-sample was selected for Fire Assay for the analysis of gold.

Drilling techniques

Drilling at the Antas North deposit has been completed by diamond drilling (HQ and NQ diameter) and reverse circulation (RC) drilling methods. A total of 154 diamond drill holes totalling 28,052 metres have been drilled at the Antas North deposit. The majority of these drill holes (142 drill holes) were drilled by Avanco Resources between 2008 and 2018.

In addition to the diamond drilling completed at the Antas North deposit a number of programs of Reverse Circulation (RC) drilling have been completed. As of the end of January, 2019 a total of 1,449 RC drill holes totalling 47,437 metres had been drilled at the Antas North deposit.

Sample analysis method

Assaying of drill core samples was initially completed by SGS-Geosol's laboratory in Belo Horizonte (AAND-01 to AAND-011) and then by ALS laboratory in Contagem through to 2012. All samples thereafter were analysed by Intertek at their laboratory in Parauapebas. The analytical process completed by Intertek is summarised below:

A 0.25 gram sample is selected for aqua-regia digestion and subsequent assay for copper by Atomic Absorption Spectrometry (AAS). Some selected samples were also analysed for silver, nickel and cobalt. The digestion process involves the addition of an aqua-regia solution to the sample (0.25 grams of pulp sample + 5 mL HNO₃ + 15 mL HCl) and the heating of the sample at 120 degrees Celsius for a period of 60 minutes. Once digestion is complete the solution is analysed via AAS. The AAS machine is regularly calibrated using certified reference material across the expected grade range of samples. High grade copper results which fall above a 20 per cent copper threshold are diluted 20 times and re-assayed.

For 'Fire Assay' analysis of gold, a 50 gram sample is mixed thoroughly for 30 minutes with a 170 gram flux mixture (35% Na₂CO₃, 28% sodium tetraborate, 32% PbO, 6.67% SiO₂, 16g AgNO₃ + 300mL liquid Vaseline). Cupels are cleaned to remove any residue, prior to loading the mixture to cupels. Fusion occurs by insertion of sample + flux within oven under temperature of 1100±50°C for 45 minutes. Cupellation occurs by insertion of sample in a pre-heated oven at 950 ±50° per 45 to 90 minutes.

Estimation methodology

Estimation of copper and gold block grades into 10 mE by 5 mN by 10 mRL blocks was completed using a three pass ordinary kriging estimation approach using MineSight™ software. Estimation criteria and the chosen block size were optimised taking into account drill spacing, and the results of Kriging Neighbourhood Analysis (KNA) using Supervisor™ software.

Density estimates were completed using an Inverse Distance estimation approach using MineSight™ software. In areas where estimation of density was not possible due to a lack of density data, an assigned density value was applied to blocks taking into account the correlation with estimated block copper grades. Blocks which did not receive an estimated density value but had an estimated block copper grade of greater than 2.0 per cent copper were assigned the domain average density value.

Resource classification criteria

The Mineral Resource estimate was classified under the guiding principles of the JORC Code (2012). In particular, drill spacing, estimation search pass, and geological / grade continuity were taken into account in the generation of resource classification wireframes of Measured, Indicated and Inferred material. Areas within the reported Mineral Resource which had limited density data, QAQC data, and/or performed poorly statistically were critically reviewed and, if required, a downgrade in resource classification was applied.

Drilling targeting the remaining Open Pit Mineral Resource at the Antas North deposit highlights that notable grade variation is present between drill holes both along strike and down dip. Drill spacing is variable and ranges from 25 metres by 25 metres spaced drilling near the base of the current pit to 50 metres by 50 metres spaced drilling at depth. The Competent Person assigned an Indicated resource classification to the majority of Mineral Resources that remain within the optimal pit shell. The Competent Person considers a phase of infill drilling targeting the remaining Mineral Resource at the Antas North pit is required to substantiate the application of a Measured resource category and limit the potential error present in the interpreted position of mineralised domain boundaries and error in resource estimation. Until further infill drilling is completed it is considered that the reported Mineral Resource could be subject to a potential 25 per cent change in reported tonnes and grade.

Cut-off grade

Cut-off criteria were determined following a review of mining costs, processing costs and metallurgical recovery results from the Antas North mine in recent years. Taking this information as well as the price outlook for copper into account the assigned cut-off for surface Mineral Resources was reduced from 0.4 per cent copper to 0.3 per cent copper. It is considered that a 0.3 per cent copper cut-off meets 'reasonable prospects of economic extraction' as described by the JORC Code (JORC, 2012).

Mining and metallurgical methods and parameters and other material modifying factors considered to date.

The Antas North mine is an open pit mine. The approximate dimensions of the open pit at completion will be 650 metres in length, 500 metres in width and 200 metres deep. Mining comprises conventional loader/excavator load and haul methods, with ore being mined in 5 metre benches on 2.5 metre fitches.

The reported Open Pit Mineral Resource within the Antas North pit area only includes material which falls within an optimistic optimised pit shell. The optimised pit shell used for Mineral Resource reporting has been developed using justifiable cost and revenue parameters derived from current operations, as well as justifiable geotechnical parameters which were critically reviewed by OZ Minerals personnel and relevant technical specialists. Metallurgical assumptions are based on comprehensive metallurgical test work that has been completed for the Antas North deposit and reconciliation results. Metallurgical recovery has been set at 83 per cent for gold and 97 per cent for copper.

Analysis of concentrate material developed at the Antas North mine highlights that the concentrate typically averages ~27 to 28 per cent copper, is low in deleterious elements (As, Bi, F, Hg and U), and is a desirable high-quality saleable concentrate on the global market. OZ Minerals currently have sales contracts in place for 100 per cent of production from the Antas mine until the end 2020.

All environmental factors were reviewed as part of the Feasibility Study completed in 2014. There are no environmental factors which impact the reporting of all potentially economic material at Antas North.

JORC CODE, 2012 EDITION, TABLE 1

Section 1 Sampling Techniques and Data

Criteria	JORC Code explanation	Commentary
<p>Sampling techniques</p>	<ul style="list-style-type: none"> • <i>Nature and quality of sampling (eg cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as down hole gamma sondes, or handheld XRF instruments, etc). These examples should not be taken as limiting the broad meaning of sampling.</i> • <i>Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.</i> • <i>Aspects of the determination of mineralisation that are Material to the Public Report.</i> • <i>In cases where 'industry standard' work has been done this would be relatively simple (eg 'reverse circulation drilling was used to obtain 1 m samples from which 3 kg was pulverised to produce a 30 g charge for fire assay'). In other cases more explanation may be required, such as where there is coarse gold that has inherent sampling problems. Unusual commodities or mineralisation types (eg submarine nodules) may warrant disclosure of detailed information.</i> 	<p>Exploration commenced around the Antas North deposit in 1997 with drilling commencing in 2001. Drilling has been completed by diamond drilling and reverse circulation percussion ('RC') drilling techniques. Drill spacing is variable and ranges from tight spaced (10 mE by 5 mN) RC grade control drilling to widely spaced (up to 100 metre spaced) diamond drilling targeting down dip or along strike extensions of the Mineral Resource. Diamond drilling targeting the main zone of mineralisation has been completed in places down to a drill spacing of 25 mE by 25 mN.</p> <p>Drill core samples were taken from NQ and HQ diamond drill core and cut longitudinally in half using a core saw. If a duplicate sample was required to be taken for quality control purposes, then two quarter core samples were taken and submitted to the laboratory. Samples were typically one metre in length but, where required, sample lengths were adjusted to avoid samples crossing changes in lithology, mineralisation or alteration. Drill core recovery was typically good (greater than 99 per cent) in unweathered primary material and sample masses of half core nominally range from 3 kilograms to 5 kilograms.</p> <p>Drill core is crushed to a nominal 2 millimetre (95 per cent passing) particle size and a quarter sub-sample was taken via Jones Riffle splitter to obtain a 750 grams to 1250 grams for pulverisation. Samples were pulverized to ensure 95 per cent of sample passed a 150# mesh particle size. A pulp-sample of approximately 150 grams was then obtained from the pulverised material. Two sub-samples were taken from each pulp sample. A 0.25 gram sub-sample is selected for aqua-regia digestion and subsequent assay for copper by Atomic Absorption Spectrometry (AAS). A 50 gram sub-sample is selected for Fire Assay for the analysis of gold. A number of phases of reverse circulation percussion (RC) drilling were</p>

Criteria	JORC Code explanation	Commentary
		<p>also conducted by Avanco Resources and OZ Minerals. A total of 1,449 RC drill holes had been drilled at the Antas North mine and the nearby Azevedo deposit (ANGC-001 to ANGC-01466 and ANRC-001 to ANRC-023 and AZGC-001 to AZGC-018) as at the end of January, 2019. RC samples were one metre in length and samples were split using a riffle splitter to obtain a 1/8 split weighing 3 kilograms to 5 kilograms which was sent to the laboratory for sample preparation and assaying. All drilling and sampling activities were reported by Avanco Resources to be overseen by a qualified geologist.</p> <p>A review of quality control results of field duplicates show that a notable scatter of results is present. Some concern subsequently arises over whether quarter core sampling of NQ core results in a representative sample for assaying for the style of mineralisation present. The Competent Person noted that quarter core samples are relatively small and that the style of mineralisation present within certain parts of the deposit (coarse grained, brecciated and extensive veining) may be a factor in the variation of assays results for quarter core duplicate sample pairs. Improved performance of assay results for the sample size chosen for use in Mineral Resource estimation (half core duplicates and RC duplicates) is expected given the larger sample volume present associated with these sample types. It is recommended that a phase of testwork is completed to substantiate that representative samples are obtained from half core NQ drill core.</p>
Drilling techniques	<ul style="list-style-type: none"> • <i>Drill type (eg core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc) and details (eg core diameter, triple or standard tube, depth of diamond tails, face-sampling bit or other type, whether core is oriented and if so, by what method, etc).</i> 	<p>Drilling at the Antas North deposit has been completed by diamond drilling (HQ and NQ diameter) and reverse circulation (RC) drilling methods. A total of 154 diamond drill holes totalling 28,052 metres have been drilled at the Antas North deposit. The majority of these drill holes (142 drill holes) were drilled by Avanco Resources between 2008 and 2018.</p>

Criteria	JORC Code explanation	Commentary
		<p>In addition to the diamond drilling completed at the Antas North deposit a number of programs of Reverse Circulation (RC) drilling have been completed. As at the end of January, 2019 a total of 1,449 RC drill holes totalling 47,437 metres had been drilled at the Antas North deposit. Orientation measurements on diamond drill core are not completed as a standard practice.</p>
<p>Drill sample recovery</p>	<ul style="list-style-type: none"> • <i>Method of recording and assessing core and chip sample recoveries and results assessed.</i> • <i>Measures taken to maximise sample recovery and ensure representative nature of the samples.</i> • <i>Whether a relationship exists between sample recovery and grade and whether sample bias may have occurred due to preferential loss/gain of fine/coarse material.</i> 	<p>Diamond core is reconstructed into continuous runs on an angle iron cradle for recovery measurement and core orientation. Depths are checked against those marked on the core blocks, and against the drilling company's records.</p> <p>Drill core recovery for diamond drilling has been recorded in the drill hole database for drill holes AAND-001 to AAND-133. Drill core recovery was recorded per one metre interval. Statistical analysis of drill core recovery data contained within the database highlights drill core recovery was excellent, particularly in fresh rock. Drill core recoveries in saprolite material were consistently greater than 90 per cent and in fresh rock drill core recovery was greater than 99 per cent.</p> <p>Drill core recovery data for historic drilling (11 drill holes) completed by Barrick and Noranda was not present within the supplied database.</p> <p>RC sample recovery data or sample mass data has not been recorded to the drill hole database. Further investigation and discussion with the Intertek laboratory is warranted to see whether recorded sample mass data for RC samples is still present and can be loaded into the drill hole database and evaluated accordingly.</p>

Criteria	JORC Code explanation	Commentary
Logging	<ul style="list-style-type: none"> • <i>Whether core and chip samples have been geologically and geotechnically logged to a level of detail to support appropriate Mineral Resource estimation, mining studies and metallurgical studies.</i> • <i>Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc) photography.</i> • <i>The total length and percentage of the relevant intersections logged.</i> 	<p>Drill samples are logged for lithology, weathering, structure (diamond core), mineralogy, mineralisation, colour and alteration, qualitatively and/or quantitatively where appropriate.</p> <p>Core is photographed both wet and dry and core photography is stored on the server at the Antas North mine.</p> <p>All drill holes were logged in full, from start to finish of the drill hole.</p> <p>Geological and structural logging was recorded on paper and subsequently reviewed and transferred to Microsoft Excel spreadsheets and stored on the Antas North mine computer server.</p>
Sub-sampling techniques and sample preparation	<ul style="list-style-type: none"> • <i>If core, whether cut or sawn and whether quarter, half or all core taken.</i> • <i>If non-core, whether riffled, tube sampled, rotary split, etc and whether sampled wet or dry.</i> • <i>For all sample types, the nature, quality and appropriateness of the sample preparation technique.</i> • <i>Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.</i> • <i>Measures taken to ensure that the sampling is representative of the in situ material collected, including for instance results for field duplicate/second-half sampling.</i> • <i>Whether sample sizes are appropriate to the grain size of the material being sampled.</i> 	<p>Where sampled, core is cut longitudinally in half onsite using an industry standard core saw, to produce two identical (mirrored) halves. Samples are collected consistently from the same side of cut core.</p> <p>Drill core was crushed to a nominal 2 millimetre (95 per cent passing) particle size and a quarter sub-sample was taken via a Jones Riffle splitter to obtain a 750 to 1250 gram sample for pulverisation. Samples were pulverized to ensure 95 per cent of sample passed a 150# mesh particle size. A pulp-sample of approximately 150 gram was then obtained from the pulverised material. Two sub-samples were taken from each pulp sample. A 0.25 gram sub-sample was selected for aqua-regia digestion and subsequent assay for copper by Atomic Absorption Spectrometry (AAS). A 50 gram sub-sample was selected for Fire Assay for the analysis of gold.</p> <p>A quality assurance program for drilling at the Antas North deposit has been in place since the commencement of drilling by Avanco Resources in 2008. The quality assurance program included:</p> <p>Insertion of certified reference material and blank material to monitor contamination in sample preparation and the accuracy of analytical techniques. Certified reference material samples were inserted at an approximate rate of one control sample per 20 normal samples. Blank samples were inserted at an approximate rate of one control sample per</p>

Criteria	JORC Code explanation	Commentary
		<p>40 normal samples.</p> <p>Insertion of field duplicate samples (quarter core samples) to monitor sampling activities and to ascertain whether representative samples were being attained from sampling activities. Duplicate samples were inserted at an approximate rate of one control sample per 40 normal samples.</p> <p>Check assaying program by an independent 3rd party laboratory on selected samples at an approximate rate of 1 control sample per 20 normal samples, or a minimum of 3 umpire check samples per drill hole.</p>
<p>Quality of assay data and laboratory tests</p>	<ul style="list-style-type: none"> • <i>The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.</i> • <i>For geophysical tools, spectrometers, handheld XRF instruments, etc, the parameters used in determining the analysis including instrument make and model, reading times, calibrations factors applied and their derivation, etc.</i> • <i>Nature of quality control procedures adopted (eg standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (ie lack of bias) and precision have been established.</i> 	<p>Assaying of drill core samples was initially completed by SGS-Geosol's laboratory in Belo Horizonte (AAND-01 to AAND-011) and then by ALS laboratory in Contagem through to 2012. All samples thereafter were analysed by Intertek at their laboratory in Parauapebas. The analytical process completed by Intertek is summarised below:</p> <ol style="list-style-type: none"> a. A 0.25 gram sample is selected for aqua-regia digestion and subsequent assay for copper by Atomic Absorption Spectrometry (AAS). Some selected samples were also analysed for silver, nickel and cobalt. The digestion process involves the addition of an aqua-regia solution to the sample (0.25 grams of pulp sample + 5 mL HNO₃ + 15 mL HCl) and the heating of the sample at 120 degrees Celsius for a period of 60 minutes. Once digestion is complete the solution is analysed via AAS. The AAS machine is regularly calibrated using certified reference material across the expected grade range of samples. High grade copper results which fall above a 20 per cent copper threshold are diluted 20 times and re-assayed b. A 50 gram sample is selected for Fire Assay to determine the gold content of samples. For 'Fire Assay' analysis a 50 gram sample is mixed thoroughly for 30 minutes with a 170 gram flux mixture (35% Na₂CO₃, 28% sodium tetraborate, 32% PbO, 6.67% SiO₂, 16g AgNO₃ + 300mL liquid Vaseline). Before loading the mixture to cupels, cupels are cleaned to remove any residue. Fusion occurs by insertion

Criteria	JORC Code explanation	Commentary
		<p>of sample + flux within oven under temperature of 1100±50°C for 45 minutes. Cupellation occurs by insertion of sample in pre-heated oven at 950 ±50° per 45 to 90 minutes.</p> <p>The Competent Person visited site in August, 2018 and undertook a review of laboratory activities and associated documentation. The Competent Person considered that there were a number of areas for improvement but believed assay results were appropriate for use in Mineral Resource estimation.</p>
<p>Verification of sampling and assaying</p>	<ul style="list-style-type: none"> • <i>The verification of significant intersections by either independent or alternative company personnel.</i> • <i>The use of twinned holes.</i> • <i>Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.</i> • <i>Discuss any adjustment to assay data.</i> 	<p>Visual verification of drill core and core photography by a trained geologist occurs for significant assay results. A check assaying program by an independent 3rd party laboratory on selected samples (1 control sample per 20 samples) was also completed.</p> <p>A small number of drill holes have been twinned, or lie in close proximity to adjacent drill holes. A review of drill hole grades and overall thickness of the interpreted mineralised zone between nearby or twin diamond drill holes shows good comparison when taking into account the inherent grade variability present within this style of deposit.</p> <p>Assay data is supplied to the database via Microsoft Excel spreadsheets. Geological and structural logging is recorded on paper and is subsequently reviewed and transferred to Microsoft Excel spreadsheets for future reference. All drill hole related information is transferred, validated, compiled, and managed by the Company's in-house database manager in a relational database. All drill hole related data is stored on a central server, kept in a secure and environmentally controlled room at the Antas North mine. Automated tape back-up occurs on a nightly basis and duplicate back-ups are regularly rotated "off-site" as a secondary precaution in case a complete failure of the Server occurs at the Antas North mine site.</p> <p>No adjustments or calibrations are made to assay data.</p>

Criteria	JORC Code explanation	Commentary
Location of data points	<ul style="list-style-type: none"> • <i>Accuracy and quality of surveys used to locate drill holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.</i> • <i>Specification of the grid system used.</i> • <i>Quality and adequacy of topographic control.</i> 	<p>All drill holes were pegged and surveyed with handheld GPS in coordinate system SAD69 Zone 22M. Following completion of the drill hole, the drill hole ID number and depth were written on the survey peg and on the drill hole plug. A handheld GPS reading was recorded as a backup and for validation against the planned and surveyed coordinates. Collar surveying was then completed by qualified local survey contractors, who used a Trimble 5700 DGPS, tied into the State Survey Datum using true Sea Level RL's, with a horizontal accuracy of +/- 5 millimetres and the data was supplied to OZ Minerals Resources Database Manager in Microsoft Access format. The contractor maintains a network of local survey marks onsite at topographic highs, tied to the State Survey Datum.</p> <p>Downhole surveys were completed using a Maxibor digital downhole tool with readings every 3 m. The electronic multishot cameras used for the downhole surveys, had a reported accuracy of ± 0.3 degrees in azimuth and ± 0.3 degrees in dip. No check surveys using an alternate downhole surveying technique have been completed.</p> <p>The topography surface for the Antas North mine and surrounding area have been surveyed using a Drone Survey Aircraft by a local survey contractor. The topographic survey data was post processed into Digital Terrain Models which were contoured into one metre spaced contour lines.</p> <p>A review of the supplied topographic surface against drill hole collar co-ordinates highlights a good correlation for all drill holes which were drilled on the natural surface. The combination of DGPS and DTM is considered adequate to provide sufficient control on the accuracy of collar surveys.</p>

Criteria	JORC Code explanation	Commentary
Data spacing and distribution	<ul style="list-style-type: none"> • <i>Data spacing for reporting of Exploration Results.</i> • <i>Whether the data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for the Mineral Resource and Ore Reserve estimation procedure(s) and classifications applied.</i> • <i>Whether sample compositing has been applied.</i> 	<p>The current drill spacing at Antas North is nominally 50 metres by 50 metres. The Drill spacing is variable and ranges from tight spaced (10 mE by 5 mN) RC grade control drilling to widely spaced (up to 100 metre spaced) diamond drilling which targets down dip or along strike extensions of the Mineral Resource. Diamond drilling targeting the main zone of mineralisation has been completed in places down to a drill spacing of 25 mE by 25 mN. The Competent Person considers a 25 metre by 25 metre drill spacing appropriate to accurately demarcate the boundaries and grade of mineralisation to a level which supports the application of a Measured Resource classification.</p> <p>Identified mineralised zones have been sampled predominantly on one metre intervals, but where required, sample lengths were adjusted to avoid samples crossing changes in lithology, mineralisation or alteration. A review of sample lengths highlights that a total of 447 or ~3 per cent of mineralised samples have a sample length which are greater than one metre. Assay data within each domain were composited to a sample length of two metre to provide consistent sample 'support' (or weighting) for univariate and spatial analysis and grade estimation. The compositing algorithm employed weighted assays by sample length and ensured all small less than one metre sample lengths were merged into the above sample interval in order to obtain equal sample support.</p>
Orientation of data in relation to geological structure	<ul style="list-style-type: none"> • <i>Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.</i> • <i>If the relationship between the drilling orientation and the orientation of key mineralised structures is considered to have introduced a sampling bias, this should be assessed and reported if material.</i> 	<p>Geology and mineralisation at Antas North is approximately sub-vertical. Drilling has been predominantly been completed at low angles (~50° to 60°) in order to achieve intersections at the most optimal angle possible. A number of drill holes have been drilled vertically. All drill holes were reviewed in section against interpreted mineralised domains. Any drill hole which was drilled down the dip of mineralisation was added to an exclusion list and was subsequently not used in Mineral Resource estimation.</p>

Criteria	JORC Code explanation	Commentary
Sample security	<ul style="list-style-type: none"> <i>The measures taken to ensure sample security.</i> 	<p>All drill core samples were received intact and in their entirety in their core trays at Avanco Resources/OZ Minerals secure core yard in Parauapebas, Pará, Brazil. All sampling and work on the drill core samples was carried out within the confines of this secure facility. Samples were delivered by Avanco/OZ Minerals personnel directly to the laboratory in Parauapebas and thus at no point did the samples leave the possession of Avanco/OZ Minerals staff prior to arriving at the Intertek laboratory.</p>
Audits or reviews	<ul style="list-style-type: none"> <i>The results of any audits or reviews of sampling techniques and data.</i> 	<p>In February 2012, CSA Global Pty Ltd ('CSA') completed a site visit and undertook an independent review of data collection and QA/QC procedures. CSA also visited the Intertek Laboratory in Parauapebas (sample preparation laboratory) and the Intertek Laboratory in Sao Paulo (assay laboratory). CSA considered the procedures adequate and appropriate to obtain robust datasets for use in Mineral Resource estimation (CSA, 2012a).</p> <p>Xstract Mining Consultants ("Xstract") completed a site visit in August 2018 and completed a Mineral Resource audit which included a review of all inputs (drilling, sampling, assaying, geological modelling, estimation and resource classification) into the Mineral Resource estimation process. The visit included a site visit to the Antas North mine, Pantera deposit, Pedra Branca deposit and Centro Gold deposit to review drilling, sampling and logging practices. A visit to Intertek's laboratory facilities in Parauapebas was also undertaken. A number of recommendations were made to improve current practices (Xstract, 2018) but no 'Fatal Flaws' were identified in the drilling, sampling, assaying and data management practices employed by Avanco Resources personnel.</p> <p>An external review was undertaken by AMC Consultants on the 30 April 2019 Mineral Resource estimate. In its review, AMC considered that the Mineral Resource estimate had been completed using recognised processes with drill hole data supported by a quality assurance and quality control (QA/QC) protocol.</p>

Section 2 Reporting of Exploration Results

Criteria	JORC Code explanation	Commentary
Mineral tenement and land tenure status	<ul style="list-style-type: none"> • <i>Type, reference name/number, location and ownership including agreements or material issues with third parties such as joint ventures, partnerships, overriding royalties, native title interests, historical sites, wilderness or national park and environmental settings.</i> • <i>The security of the tenure held at the time of reporting along with any known impediments to obtaining a licence to operate in the area.</i> 	<p>The Antas North project lies within the boundaries of Mining License PL470/2014 attained on 9/9/2014 by AVB Mineração Ltda who are wholly owned by OZ Minerals. The mining license to operate (LO 8796/2014) has been granted in perpetuity until such time all reserves are exhausted, as is the norm under Brazilian law. All current tenements are outside military or government reserves and outside National Park or State Forests. There are no known historic sites or registered sites within the Antas North tenement package.</p> <p>AVB Mineração Ltda, a wholly owned Brazilian subsidiary of Avanco Resources Ltd which was acquired by OZ Minerals in August 2018, owns the rights to 100 per cent of tenement 835.714/93.</p>
Exploration done by other parties	<ul style="list-style-type: none"> • <i>Acknowledgment and appraisal of exploration by other parties.</i> 	<p>Exploration around the Antas North deposit initially commenced in 1997 when Brilasa applied for an exploration concession. A Joint Venture (JV) with Barrick occurred in 1997 and Barrick completed a program of work between 1997 to 2001, which consisted of soil sampling, geological mapping and geophysical surveys. A total of 8 RC drill holes and 16 diamond drill holes ('RVD' series) were drilled by Barrick. In 2001, Barrick entered into a JV with Noranda who conducted further exploration including trenching, petrographic studies, geophysical surveying and diamond drilling. Noranda completed a total of 32 diamond drill holes (NRV prefix) around the Antas North deposit between 2001 and 2002.</p> <p>In 2002 the project was acquired by Apoquindo (a junior Chilean company) who completed no work on the project through to 2007, when Avanco Resources acquired the project.</p> <p>Where drilling fell within the Mineral Resource area, the quality of the data was appraised and, if deemed of suitable quality, was included in the Mineral Resource estimation dataset.</p>

Criteria	JORC Code explanation	Commentary
Geology	<ul style="list-style-type: none"> • <i>Deposit type, geological setting and style of mineralisation.</i> 	<p>The Antas North deposit is a structurally controlled iron oxide copper gold deposit which is spatially related to (WNW-ESE) regional shear zones, specifically the Carajás fault and the Cinzento shear system. Mineralisation is hosted within hydrothermal brecciated and altered felsic and mafic volcanic units. Mineralised fluids have been sourced from nearby large granitoid bodies and have been focussed along structural conduits resulting in the deposition of high grade (greater than 10 per cent copper) massive sulfide zones immediately adjacent to or within the interpreted main structural zone. These high-grade massive sulfide zones are commonly 2 to 5 metres wide and are surrounded by a broader zone of lower grade disseminated mineralisation grading 0.2 to 2.0 per cent copper.</p> <p>The main zone of mineralisation at the Antas North mine has been defined over 350 metres along strike, 300 metres down dip and can be up to 35 metres wide. Mineralisation contains variable proportions of chalcopyrite, pyrrhotite, and magnetite. Mineralisation in the eastern part of the pit is offset and truncated by late stage dykes which, during emplacement, have remobilised mineralisation locally along dyke margins.</p>
Drill hole Information	<ul style="list-style-type: none"> • <i>A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drill holes:</i> <ul style="list-style-type: none"> ○ <i>easting and northing of the drill hole collar</i> ○ <i>elevation or RL (Reduced Level – elevation above sea level in metres) of the drill hole collar</i> ○ <i>dip and azimuth of the hole</i> ○ <i>down hole length and interception depth</i> ○ <i>hole length.</i> 	<p>This section is not relevant as Exploration Results are not being separately reported.</p>

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> If the exclusion of this information is justified on the basis that the information is not Material and this exclusion does not detract from the understanding of the report, the Competent Person should clearly explain why this is the case. 	
Data aggregation methods	<ul style="list-style-type: none"> In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (eg cutting of high grades) and cut-off grades are usually Material and should be stated. Where aggregate intercepts incorporate short lengths of high-grade results and longer lengths of low-grade results, the procedure used for such aggregation should be stated and some typical examples of such aggregations should be shown in detail. The assumptions used for any reporting of metal equivalent values should be clearly stated. 	This section is not relevant as data is composited for Mineral Resource estimation (Refer to Section 3).
Relationship between mineralisation widths and intercept lengths	<ul style="list-style-type: none"> These relationships are particularly important in the reporting of Exploration Results. If the geometry of the mineralisation with respect to the drill hole angle is known, its nature should be reported. If it is not known and only the down hole lengths are reported, there should be a clear statement to this effect (eg 'down hole length, true width not known'). 	Geology and mineralisation at Antas North is approximately sub-vertical, dipping slightly to the North. The majority of drilling is angled to the south, dipping as low as possible (typically -50° to 60°) in order to achieve intersections at the most optimal angle possible.
Diagrams	<ul style="list-style-type: none"> Appropriate maps and sections (with scales) and tabulations of intercepts should be included for any significant discovery being reported These should include, but not be limited to a plan view of drill hole collar locations and appropriate sectional views. 	This section is not applicable as Exploration Results are not being reported.
Balanced reporting	<ul style="list-style-type: none"> Where comprehensive reporting of all Exploration Results is not practicable, representative reporting of both low and high-grades and/or widths should be practiced to avoid misleading reporting of Exploration Results. 	Not applicable. Exploration Results are not being reported.
Other substantive	<ul style="list-style-type: none"> Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical 	This section is not applicable as no exploration data or results of a meaningful or material nature are not being reported.

Criteria	JORC Code explanation	Commentary
exploration data	<i>survey results; geochemical survey results; bulk samples – size and method of treatment; metallurgical test results; bulk density, groundwater, geotechnical and rock characteristics; potential deleterious or contaminating substances.</i>	
Further work	<ul style="list-style-type: none"> • <i>The nature and scale of planned further work (eg tests for lateral extensions or depth extensions or large-scale step-out drilling).</i> • <i>Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.</i> 	<p>Drilling to test for lateral extension to mineralisation at the western end of the Antas North pit, immediately adjacent to and below will be undertaken in mid-2019.</p> <p>A long projection image of the reported Mineral Resources and the main area of short to medium term drilling focus is presented in Figure 4.</p>

Section 3 Estimation and Reporting of Mineral Resources

Criteria	JORC Code explanation	Commentary
Database integrity	<ul style="list-style-type: none"> Measures taken to ensure that data has not been corrupted by, for example, transcription or keying errors, between its initial collection and its use for Mineral Resource estimation purposes. Data validation procedures used. 	<p>Data from the laboratory was manually entered into Microsoft Excel workbooks and sent to the Database Manager at the Antas North mine to load into Microsoft Access Database. Some validation queries are used in access database for overlapping and final depth checks; however, no documented procedure for database validation exists.</p> <p>A user login and password are required for accessing the Microsoft Access Database, but any database user can manipulate and potentially delete data. No tracking report can be issued regarding insertion/deletion of data. Backups of the project databases are made to the server at the Antas North mine every 24 hours and a backup to an external hard drive located offsite occurs on a monthly basis.</p>
Site visits	<ul style="list-style-type: none"> Comment on any site visits undertaken by the Competent Person and the outcome of those visits. If no site visits have been undertaken indicate why this is the case. 	<p>A site visit by Xstract occurred from the 9th to 17th August 2018. The Antas North mine site, core shed, and laboratory facilities were visited. At the time of the site visit drilling was not being completed at the Antas North mine and a review of logging and sampling practices of drill core at the Antas North deposit by the Competent Person was not possible. Logging and sampling practices employed by Avanco Resources personnel were observed at the Pantera, Pedra Branca and Centro Gold projects. Xstract completed an independent review of drill core logging of select drill holes at the Antas North deposit against a review of actual drill core. This review although limited to a few select drill holes, indicated that all key features including lithological and grade boundaries had been identified.</p>
Geological interpretation	<ul style="list-style-type: none"> Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit. Nature of the data used and of any assumptions made. The effect, if any, of alternative interpretations on Mineral Resource estimation. The use of geology in guiding and controlling Mineral Resource estimation. 	<p>Significant changes in geological interpretation and domaining have occurred since the April 2014 resource estimate completed by CSA. Changes in interpreted geology and mineralisation boundaries have occurred fundamentally due to the additional drilling completed since April 2014. In particular, a high-grade domain was developed to demarcate high grade massive sulfide mineralisation from lower grade disseminated mineralisation. This has resulted in the refinement of high</p>

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> <i>The factors affecting continuity both of grade and geology.</i> 	<p>grade mineralisation to an interpreted 2 to 5 metre high grade zone and limited the extent of grade smearing that can occur during estimation when high grade samples from this zone are used in the estimation of block grades in the surrounding lower grade disseminated mineralisation zone.</p> <p>Geological modelling has been based primarily on analytical data for copper and gold but was supported by geological logging and mapping data where present. A total of 8 mineralised domains (2 high grade and 6 lower-grade mineralised domains) were developed for use in estimation for the Antas North Mineral Resource.</p> <p>Domain boundaries for the high-grade massive sulfide domain are distinct from a grade perspective and require a hard boundary estimation approach. The lower grade disseminated mineralisation / waste boundary has a more gradational nature but can be quite distinct in places and requires a hard boundary estimation approach to limit grade smearing into adjacent known waste material. Ongoing development of interpreted domain solids will occur with additional drilling, structural interpretation and in-pit geological mapping.</p> <p>Mineralisation is hosted within hydrothermal brecciated and altered felsic and mafic volcanic units which are cut by younger gabbro and dolerite dykes. The Competent Person reviewed previously interpreted dyke models developed by CSA in 2014 and have amended these, taking into account new drilling data. Ongoing development of interpreted dyke solids will occur with additional drilling, structural interpretation and in-pit geological mapping.</p> <p>Weathering domains were developed by CSA in 2014, to demarcate oxide material from saprolite material from primary material. The Competent Person did not complete further development of weathering domains for this estimate as the remaining Mineral Resource within the Antas North pit falls completely within fresh bedrock.</p> <p>The Competent Person noted that a small proportion of the Azevedo</p>

Criteria	JORC Code explanation	Commentary
		deposit lies within the interpreted saprolite zone. Ongoing development of weathering surfaces will be required following further drilling at the Azevedo deposit.
Dimensions	<ul style="list-style-type: none"> <i>The extent and variability of the Mineral Resource expressed as length (along strike or otherwise), plan width, and depth below surface to the upper and lower limits of the Mineral Resource.</i> 	The main zone of mineralisation at the Antas North mine has been defined over 350 metres along strike, 300 metres down dip and can be up to 35 metres wide. Extensions of mineralisation along strike and down plunge to the west are considered possible. Economic mineralisation has also been identified near surface at the Azevedo deposit which is located 300 metres from the current Antas North pit limits. Azevedo mineralisation has currently been identified over a 140 metres strike length and a plunging down dip extent of 100 metres to 140 metres. The mineralisation at Azevedo is typically lower grade (~0.8% copper) and thinner (up to 10 metres wide) than mineralisation inside the Antas North pit.
Estimation and modelling techniques	<ul style="list-style-type: none"> <i>The nature and appropriateness of the estimation technique(s) applied and key assumptions, including treatment of extreme grade values, domaining, interpolation parameters and maximum distance of extrapolation from data points. If a computer assisted estimation method was chosen include a description of computer software and parameters used.</i> <i>The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.</i> <i>The assumptions made regarding recovery of by-products.</i> <i>Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage characterisation).</i> <i>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</i> <i>Any assumptions behind modelling of selective mining units.</i> 	<p>Estimation of copper and gold block grades into 10 mE by 5 mN by 10 mRL blocks was completed using a three pass ordinary kriging estimation approach.</p> <p>Estimation criteria and the chosen block size were optimised, taking into account drill spacing, and the results of Kriging Neighbourhood Analysis (KNA).</p> <p>Top-cuts were applied based on statistical analysis of the input composite data per domain.</p> <p>Density estimates were completed using an Inverse Distance estimation approach. In areas where estimation of density was not possible due to a lack of density data, an assigned density value was applied to blocks, taking into account the correlation with estimated block copper grades. Blocks which did not receive an estimated density value but had an estimated block copper grade of less than 2.0 per cent copper were assigned the domain average density value.</p> <p>Discretization of 4x4x4 was used.</p> <p>A comparison between the global mean grades of the declustered and</p>

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> • Any assumptions about correlation between variables. • Description of how the geological interpretation was used to control the resource estimates. • Discussion of basis for using or not using grade cutting or capping. • The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available. 	<p>top-cut composite data and the block estimates was performed to ensure the global grade estimate was unbiased.</p> <p>General grade trends were validated using 'swath plot' comparisons between input data and block grade means in section and plan 'slices' of varying width. Input data was also declustered to indicate any local bias introduced by irregular drill spacing.</p> <p>Local grade variability was also validated by comparing composite and block grades visually in cross-section, long-section, and in plan.</p>
Moisture	<ul style="list-style-type: none"> • Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content. 	<p>Tonnages are estimated on a dry basis.</p> <p>All drill hole samples are dried at the laboratory prior to sample preparation and analysis.</p>
Cut-off parameters	<ul style="list-style-type: none"> • The basis of the adopted cut-off grade(s) or quality parameters applied. 	<p>The Competent Person has reviewed cut-off criteria following a review of mining costs, processing costs and metallurgical recovery results from the Antas North mine in recent years. Taking this information as well as the price outlook for copper into account, the Competent Person reduced the assigned cut-off criteria from 0.4 to 0.3 per cent copper. The Competent Person considers that a 0.3 per cent copper cut-off meets 'reasonable prospects of economic extraction' as described by the JORC Code (JORC, 2012). The lowering of cut-off criteria from 0.4 to 0.3 per cent copper has resulted in an increase of ~186,000 tonnes to the reported Antas North Mineral Resource.</p>
Mining factors or assumptions	<ul style="list-style-type: none"> • Assumptions made regarding possible mining methods, minimum mining dimensions and internal (or, if applicable, external) mining dilution. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential mining methods, but the assumptions made regarding mining methods and parameters when estimating Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the mining assumptions made. 	<p>The Antas North mine is an open pit mine. The approximate dimensions of the open pit at completion will be 650 metres in length, 500 metres in width and 200 metres deep.</p> <p>Mining comprises conventional loader/excavator load and haul methods, with ore being mined in 5 metre benches on 2.5 metre flitches. Grade estimation has occurred into blocks sized 10 mE by 5 mN by 10 mRL.</p> <p>The reported Open Pit Mineral Resource within the Antas North pit area only includes material which falls within an optimistic optimised pit shell. The optimised pit shell used for Mineral Resource reporting has been developed using justifiable cost, revenue parameters derived from</p>

Criteria	JORC Code explanation	Commentary
		current operations and justifiable geotechnical parameters which were critically reviewed by OZ Minerals personnel and relevant technical specialists. Revenue assumptions are based on a US\$ 2.995 / lb copper price and a US\$1,297 per oz gold price, 97 per cent copper recovery and an 83 per cent gold recovery.
Metallurgical factors or assumptions	<ul style="list-style-type: none"> <i>The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.</i> 	<p>Metallurgical assumptions are based on comprehensive metallurgical test work that has been completed for the Antas North deposit and reconciliation results. Metallurgical recovery for net smelter return calculations have been set at 83 per cent for gold and 97 per cent for copper.</p> <p>Analysis of concentrate material developed at the Antas mine highlights that the concentrate typically averages ~27 to 28 per cent copper, is low in deleterious elements (As, Bi, F, Hg and U), and is a desirable high quality saleable concentrate on the global market. OZ Minerals currently have sales contracts in place for 100 per cent of production from the Antas North mine until the end 2020.</p>
Environmental factors or assumptions	<ul style="list-style-type: none"> <i>Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.</i> 	All environmental factors were reviewed as part of the Feasibility Study completed in 2014 by CSA. There are no environmental factors which impact the reporting of all potentially economic material within the planned final pit shell.
Bulk density	<ul style="list-style-type: none"> <i>Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.</i> 	Density data has been collected from diamond drill core, and all density testwork has been performed by the Intertek laboratory in Parauapebas. The Antas North drill database includes 2,134 density measurements. Data has been selected to cover different mineralisation types and rock types and density samples selected for testwork are spread spatially

Criteria	JORC Code explanation	Commentary
	<ul style="list-style-type: none"> • <i>The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc.), moisture and differences between rock and alteration zones within the deposit.</i> • <i>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</i> 	<p>throughout the deposit.</p> <p>A review of the density testing procedure by the Competent Person highlights that the procedure is appropriate and density results obtained from this method are accurate and appropriate for use in resource estimation.</p> <p>Statistical analysis of density data shows unmineralised material has a bulk density of approximate 2.95 g/cm³.</p> <p>Dry bulk density estimates were completed using an Inverse Distance estimation approach. In areas where estimation of density was not possible due to a lack of density data, an assigned density value was applied to blocks, taking into account the correlation with estimated block copper grades. Blocks which did not receive an estimated density value but had an estimated block copper grade of less than 2.0 per cent copper were assigned the domain average density value</p>
Classification	<ul style="list-style-type: none"> • <i>The basis for the classification of the Mineral Resources into varying confidence categories.</i> • <i>Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).</i> • <i>Whether the result appropriately reflects the Competent Person's view of the deposit.</i> 	<p>The 2019 Antas North Mineral Resource was classified under the guiding principles of the JORC Code (2012). In particular drill spacing, estimation search pass, and geological / grade continuity were taken into account in the generation of resource classification wireframes of Measured, Indicated and Inferred material. Areas within the reported Mineral Resource which had limited density data, QAQC data and/or performed poorly statistically were critically reviewed and if required a downgrade in resource classification was applied.</p>
Audits or reviews	<ul style="list-style-type: none"> • <i>The results of any audits or reviews of Mineral Resource estimates.</i> 	<p>An external review was undertaken by AMC Consultants of the 30 April 2019 Mineral Resource estimates. In its review, AMC considered that the surface Mineral Resource estimate was completed using recognised processes, to an acceptable standard and that it had been appropriately classified as Measured, Indicated and Inferred Resources in accordance with the JORC Code (2012).</p>

Criteria	JORC Code explanation	Commentary
<p>Discussion of relative accuracy/ confidence</p>	<ul style="list-style-type: none"> • <i>Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.</i> • <i>The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.</i> • <i>These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</i> 	<p>The Antas North deposit as per most iron oxide copper gold deposits shows notable grade variation on a local basis. Low grade or unmineralised host rocks can be present within the interpreted mineralised shear / breccia zone. Barren host rock clasts can lie adjacent to high grade massive sulfides. Furthermore, mineralisation is focussed along structural corridors which are faulted and intersected by cross cutting dykes.</p> <p>Accurate demarcation of massive high sulfides and cross cutting waste dykes requires tight spaced drilling and the collection of structural data from drill core.</p> <p>Drilling within the Mineral Resource at the Antas North deposit highlights notable grade variation is present between drill holes both along strike and down dip. Drill spacing is variable and ranges from 25 metres by 25 metres near the base of the current pit to 50 metres by 50 metres at depth.</p> <p>The Competent Person has assigned an Indicated resource classification to the majority of Mineral Resources that remain within the optimal pit shell. The Competent Person considers a phase of infill drilling targeting the remaining Mineral Resource at the Antas North pit is required to substantiate the application of a Measured resource category and limit the potential error present in the interpreted position of mineralised domain boundaries and error in resource estimation. Until further infill drilling is completed, the Competent Person considers the reported Mineral Resource could be subject to a potential 25 per cent change in reported tonnes and grade.</p>

Competent Person Declaration

Competent Person Statement

The information in this report that relates to Mineral Resources is based on and fairly represents information and supporting documentation compiled and prepared by Mr. Justin Watson, a Competent Person who is a Member of the Australasian Institute of Mining and Metallurgy (AusIMM Membership No. 205253). Mr. Watson is a full-time employee of Xstract Mining Consultants Pty Ltd and has no material interest or entitlement, direct or indirect in the securities of OZ Minerals, and is entirely independent of, OZ Minerals.

Mr. Watson has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves' (JORC 2012). Mr. Watson consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.

Mr. Watson MAusIMM and Chartered Professional (Geology) has over 22 years' experience in geology and resource estimation with sufficient experience specifically related to iron oxide copper gold deposits.

This Mineral Resource Statement has been compiled in accordance with the guidelines defined in the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (The JORC Code, 2012 Edition).

Justin Watson

Manager Geology – Brisbane

Principal Consultant

Xstract Mining Consultants Pty Ltd