Sandfire

ASX Release

ASX:SFR

21 July 2021

Sandfire delivers 34% increase in contained copper at satellite A4 Copper-Silver Deposit at Motheo

Highlights

- Updated JORC 2012 Indicated and Inferred Mineral Resource Estimate (MRE) completed for the A4 Copper-Silver Deposit, located 8km west of the Motheo Copper Mine in Botswana:
    - **Indicated and Inferred Mineral Resource:** 9.8Mt at 1.4% Cu and 21g/t Ag for 134,000t of contained copper and 6.6Moz of contained silver (using a 0.5% Cu cut-off).
- Updated MRE delivers a **34 per cent increase in total contained copper** compared with the maiden Inferred MRE announced in December 2020.
- **93 per cent of contained copper** now reported in the higher confidence Indicated Mineral Resource category and available for inclusion in Ore Reserves:
    - **Indicated Mineral Resource:** 8.9Mt at 1.4% Cu and 22g/t Ag for 124,000t of contained copper and 6.2Moz of contained silver.
- Vein-hosted mineralisation within the A4 Mineral Resource has delivered some outstanding intersections including a standout **35.7m at 7.1% Cu and 116g/t Ag** from 128.5m down-hole, which **includes 12.4m at 13.3% Cu and 232.8g/t Ag**, from 131.6m down-hole depth in hole MO-A4-138D, announced on 1 December 2020.
- A4 Deposit continuing to emerge as a **key potential source of satellite ore feed for the Motheo Copper Mine**, where full-scale construction and development is now underway following the award of the Mining Licence on 7 July 2021.
- Feasibility Study program continuing and maiden Ore Reserve on track to be completed during the December 2021 Quarter as the foundation for a Feasibility Study due in the March 2022 Quarter. This will provide a clear development pathway for the integration of A4 into the proposed 5.2Mtpa Motheo Production Hub.

Sandfire Resources Ltd (**Sandfire** or **the Company**) is pleased to report an updated JORC 2012 Indicated and Inferred Mineral Resource Estimate for the A4 Copper-Silver Deposit, located 8km west of the location of Company's Motheo Copper Mine in Botswana, delivering a 34 per cent increase in contained copper.

The updated A4 Mineral Resource Estimate (MRE) – which now totals **9.8Mt at 1.4% Cu and 21g/t Ag for 134,000t of contained copper and 6.6Moz of contained silver** (using a 0.5% Cu cut-off and constrained by a US$4.50/lb copper price optimised pit shell) – represents a key potential source of satellite ore feed for the Motheo Copper Mine, where development is underway targeting first production from the T3 Open Pit in early 2023.

Sandfire Resources Ltd
Level 2, 10 Kings Park Road
West Perth WA 6005
PO Box 1495
West Perth WA 6872
T: +61 8 6430 3800
F: +61 8 6430 3849
ABN 55 105 154 185
www.sandfire.com.au

Importantly, recent drilling has enabled Sandfire to upgrade a significant portion of the A4 Deposit to the higher confidence Indicated Resource status. Indicated Resources now stand at **8.9Mt at 1.4% Cu and 22g/t Ag for 124,000t of contained copper and 6.2Moz of contained silver**, representing 93 per cent of the total contained copper within the A4 Deposit.

Given its location just 8km from the planned processing plant and infrastructure at Motheo, the A4 Deposit has potential to become an important source of satellite ore for the Motheo Copper Mine to support Sandfire's plans to increase production from the Base Case 3.2Mtpa production rate to 5.2Mtpa (see ASX Announcement 1 December 2020: "Sandfire approves development of new long-life copper mine in Botswana").

The higher-confidence Indicated MRE at A4 is available for conversion to Ore Reserves, which will enable Sandfire to complete feasibility studies to support the proposed 5.2Mtpa Expansion Case for the Motheo Copper Mine. A maiden Ore Reserve is on track to be reported in the December 2021 Quarter as the foundation for a Feasibility Study targeted for completion in the March 2022 Quarter.

A4 is the first deposit to be delineated outside of the substantial T3 Open Pit Deposit within the highly prospective 1,000km^2 Motheo Expansion Project area.

The Motheo Expansion Project is the first area of the Kalahari Copper Belt to receive systematic and focused exploration within Sandfire's extensive licence holdings in the Kalahari Copper Belt, which extend from Botswana into Namibia (see Figure 1).

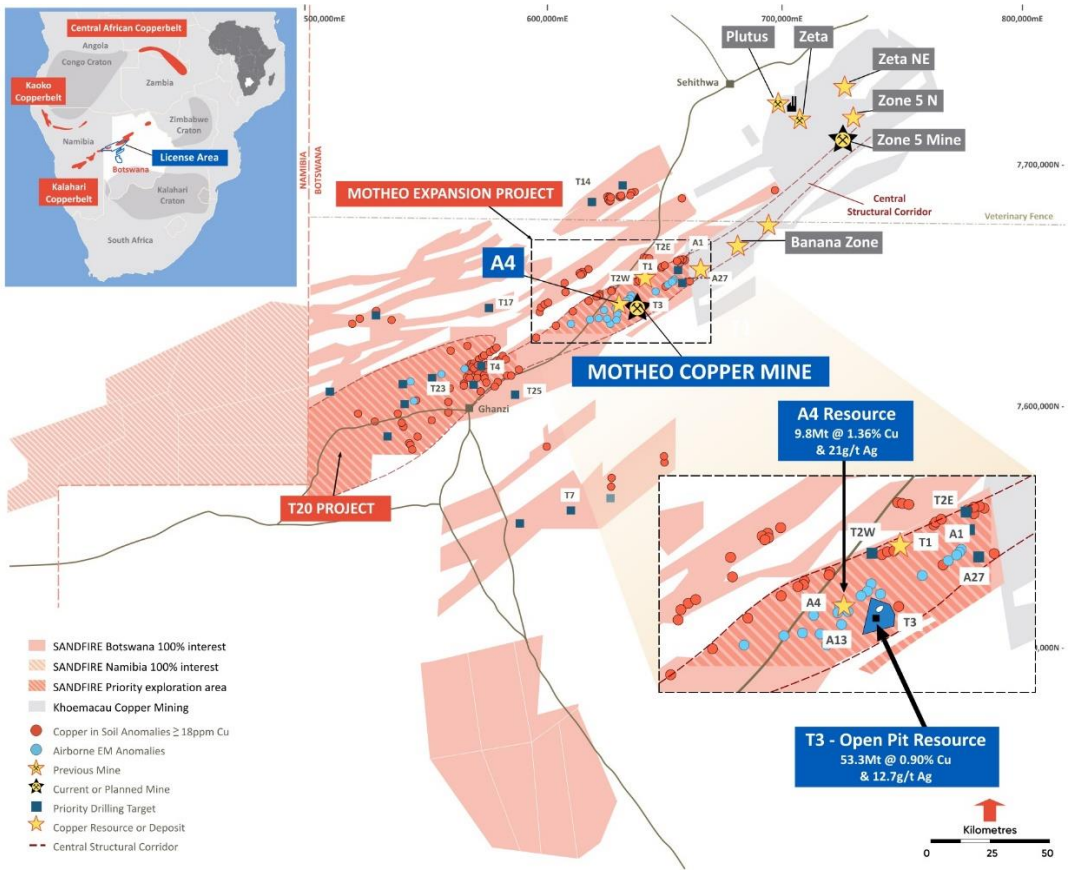

Figure 1: Regional Location Plan with Kalahari licence holdings showing the Motheo Copper Mine, including the T3 Open Pit, A4 Deposit, multiple exploration targets, the neighbouring Khoemacau Copper Mining licences and deposits (source: Khoemacau Copper Mining's website www.khoemacau.com) and Sandfire's ground-position in Botswana and Namibia.

A4 Deposit Geology

The A4 Deposit is located within the Ghanzi-Chobe belt in western Botswana. The stratigraphy in this belt comprises the basal Kgwebe volcanics which are unconformably overlain by Ghanzi Group sediments. The Ghanzi Group is a meta-sedimentary group comprising (in successively higher stratigraphic order) the Kuke, Ngwako Pan, D'Kar and Mamuno Formations.

There is no outcrop of the Ghanzi Group within the A4 project area and the host meta-sediments are locally covered with a shallow layer of surficial calcrete, sand and soil.

A4 occupies a similar structural and stratigraphic position to that of the T3 Deposit in that it occurs within a NE-SW trending periclinal anticline (**A4 Dome**) with a core of Ngwako Pan Formation sandstone, overlain by a succession of D'Kar Formation shale, sandstone, siltstone and carbonates. All mineralisation modelled and incorporated in the Mineral Resource estimate occurs within the D'Kar Formation.

Second order (parasitic) upright to overturned folds are developed within the axial region of the periclinal anticline (Figure 2). The second order folds are cross-cut and displaced by moderately north-west dipping brittle-ductile, thrust-sense shear zones. These shear zones are characterised by zones of heterogeneous foliation of variable width and intensity. High strain zones have been recognised along which different sedimentary units have been juxtaposed by brittle displacement.

Flat-lying to shallow-dipping zones of extensional fracture and veining are developed in the footwall of the main shear zone. These extensional zones are interpreted to have formed as shear related extensional structures during thrust movement.

The extensional structures are preferentially developed within a sandstone dominated package but also penetrate into the overlying carbonate and siltstone dominated units.

Copper-Silver mineralisation at A4 is developed along both the shear zones and the extensional zones. Within the shear zones copper sulphides (bornite, chalcocite and chalcopyrite) are associated with quartz-carbonate veins developed sub-parallel to the shear foliation. Within the extensional zones, copper sulphides are associated with either quartz-carbonate veins or as sulphide fill to in-situ fragmentation zones (breccias) within the host sediments.

Mineralisation extends over a strike length of approximately 900m and 270m down-dip and remains open at depth and along strike. Wireframes were developed using the high strain zones and extensional structures to guide interpretation of hosted mineralisation (Figure 2). A nominal 0.3% Cu cut-off grade was used to determine the external boundary of the mineralised zones.

Immediately above the mineralised zone, soil/sand and calcrete extends to a depth ranging from 3 – 8m below surface. Saprolite (>25% oxidation) extends from 25 – 60m below surface and saprock (1 – 25% oxidation) from 55 – 85m below surface. Where oxidised, primary copper sulphides are altered to malachite, chrysocolla or covellite.

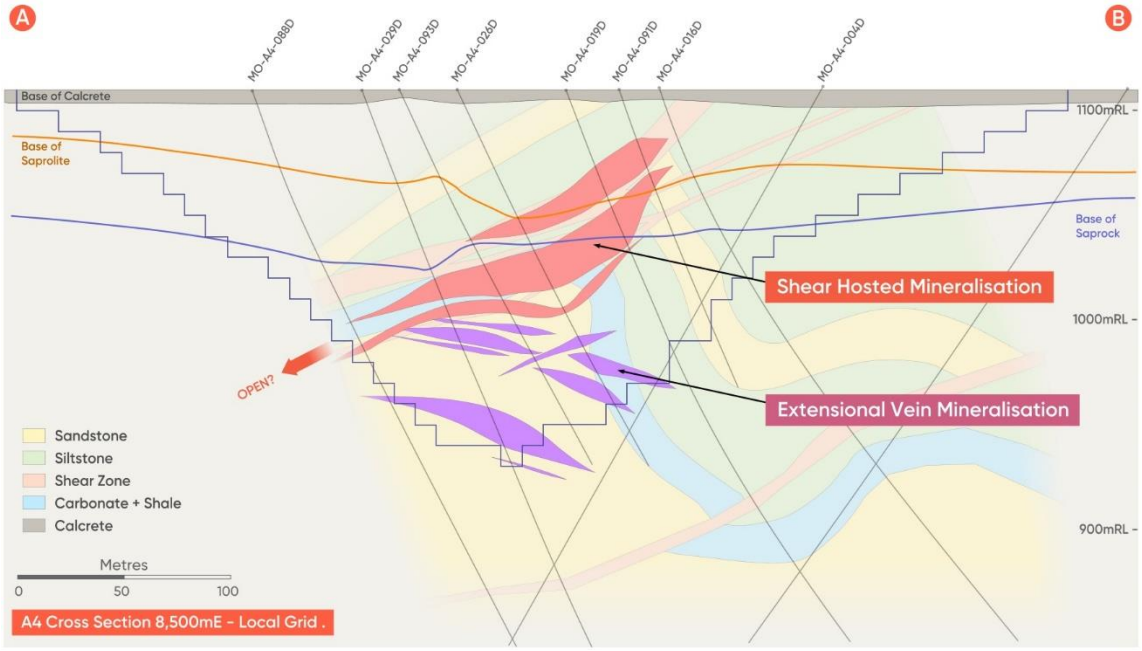

Figure 2: Schematic Cross-Sections – showing interpreted geology and mineralisation styles across the A4 Deposit. US$4.50/lb Cu price optimised pit shell used to constrain the Mineral Resource shown in blue outline.

A4 Mineral Resource Methodology

The grade estimation technique applied for estimation within Cu mineralisation domains is ordinary kriging. Variables estimated include Cu, Ag, Bi, Mo, S, acid soluble Cu and Density. Stationarity was assessed for the copper mineralisation domains with analysis suggesting that a stationarity assumption is reasonable for the style of deposit and linear estimation of grades.

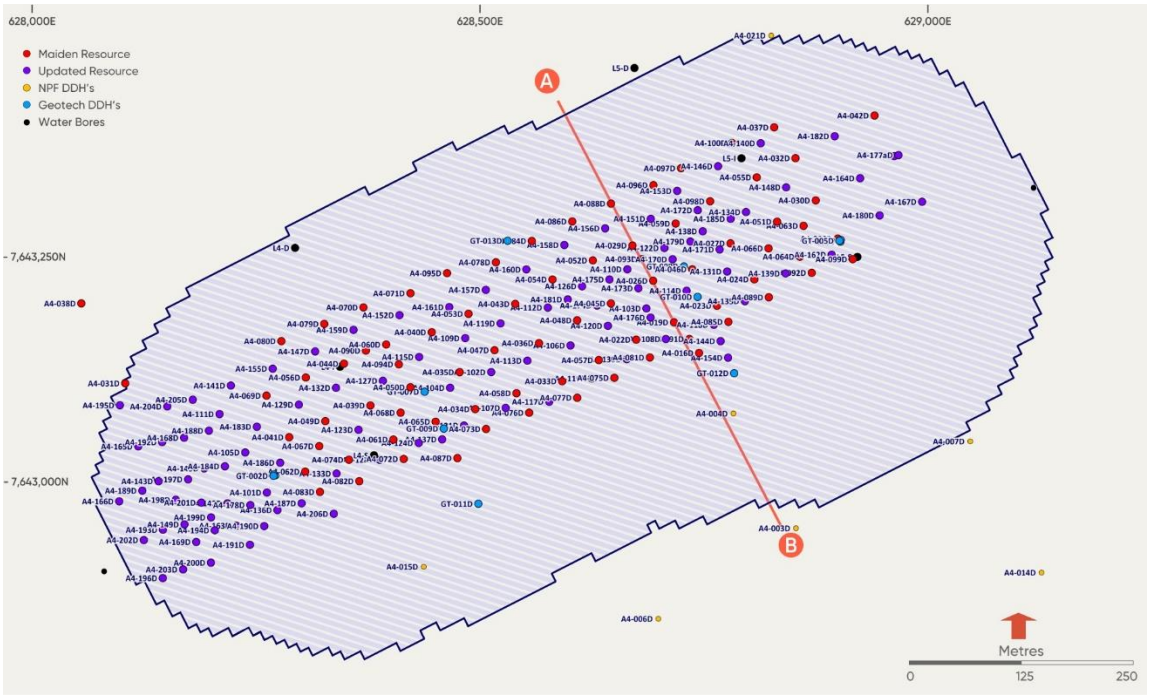

Figure 3: A4 Plan view – Collar location of drill holes used to inform the Mineral Resource. US$4.50/lb Cu price optimised pit shell shown in blue outline. The position of cross-section A-B (Figure 2) is indicated.

A4 Mineral Resource

The initial December 2020 Inferred Mineral Resource for the A4 Copper-Silver Deposit was based on the results of the initial 99 diamond drill holes, of which 79 intersected the deposit and informed the Mineral Resource (Figure 3). This drilling was completed on a nominal 50mE x 50mN spacing, providing sufficient confidence to allow the Company to complete a scoping study. Since the estimation of the Inferred resource an additional 104 holes have been drilled with drilling focused on infilling areas of sparse drilling. Drilling has been completed to a nominal 25m x 25m grid spacing, improving overall confidence in the resource estimate and subsequent resource classification.

The July 2021 Indicated and Inferred Mineral Resource for A4, at a 0.5% Cu cut-off, constrained within a US$4.50/lb Cu price optimised pit shell, is 9.8Mt grading 1.4% Cu and 22g/t Ag for 134,000t of contained copper and 6.6Moz of contained silver. The Resource is reported on a block cut-off basis. The A4 Mineral Resource is summarised in Table 1 below.

Table 1 – July 2021 A4 Mineral Resource

Cu % Cut-off	Mineral Resource Category	Weathering	Tonnes	Copper Grade (% Cu)	Silver Grade (ppm Ag)	Contained Cu (t)	Contained Ag (oz)
0.50%	Indicated	Saprolite	550,000	1.0	7.0	6,000	100,000
		Saprock	1,340,000	1.5	14.0	20,000	600,000
		Fresh	7,000,000	1.4	24.0	99,000	5,400,000
	Total Indicated		8,900,000	1.4	22.0	124,000	6,200,000
	Inferred	Saprolite	30,000	1.4	2.0	-	-
		Saprock	40,000	0.9	6.0	-	-
		Fresh	850,000	1.0	16.0	9,000	400,000
	Total Inferred		920,000	1.0	15.0	9,000	400,000
	GRAND TOTAL		9,820,000	1.4	21.0	134,000	6,600,000

Notes: Calculations have been rounded to the nearest: 10kt; 0.1% Cu grade; 1kt Cu metal; 1g/t Ag grade; and 100koz Ag metal. Differences may occur due to rounding.

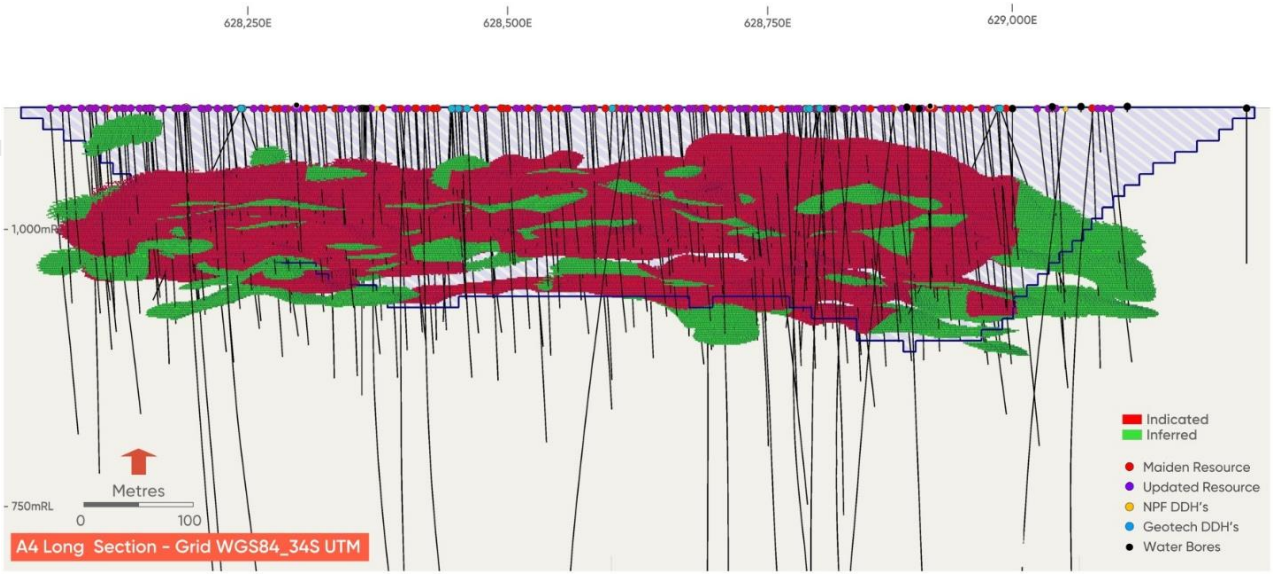

Figure 4: A4 Long Section – showing Mineral Resource Classification.

A4 Drilling Update

Sandfire has commenced a substantial diamond drilling program to test a number of targets along the A4 Dome. Drilling is focused on targets with potential for high-grade vein hosted mineralisation in the upper part of the Dome and the potential for extensive mineralisation associated with the Ngwako Pan Formation (NPF) contact below the Dome.

Vein-hosted mineralisation within the A4 Mineral Resource has delivered some outstanding intersections including a standout 35.7m at 7.1% Cu and 116g/t Ag from 128.5m down-hole, which includes 12.4m at 13.3% Cu and 232.8g/t Ag, from 131.6m down-hole depth in hole MO-A4-138D, announced on 1 December 2020.

NPF contact related mineralisation is more typical of sediment-hosted copper deposits globally and has the potential to extend over wide areas of the Kalahari Copper Belt.

The NPF contact hosts most of the major deposits in the eastern part of the belt including the 60-65ktpa Zone 5 underground mine, which is currently being commissioned. On 1 July 2021, the Khoemacau Copper Mining company announced first concentrate production from the Zone 5 Mine which Khoemacau reported is being ramped up to full production through H2 2021.

Previous, widely spaced drilling of the NPF contact along a 1.6km section of the interpreted 9km long A4 Dome has resulted in a number of significant intersections of disseminated and high-grade contact copper-silver mineralisation, announced by MOD Resources Ltd during 2018.

These intersections include: 27.0m at 1.1% Cu and 20g/t Ag from 394m down-hole, including 9m at 2.1% Cu and 39g/t Ag from 412m down-hole in hole MO-A4-010D, and: 31.5m at 1% Cu and 10g/t Ag from 538m down-hole, including 2.8m at 4.9% Cu and 54g/t Ag from 566.7m down-hole in hole MO-A4-020D. These results were announced by MOD Resources Ltd on 20 December 2018.

In addition to targeting high-grade vein systems, most holes in the current program will be extended to intersect the NPF contact. The objective is to scope out the extent of NPF contact mineralisation below the A4 Dome and identify areas with higher copper-silver grades to focus future drilling.

Drilling is also planned to commence at other high priority targets within 30km of the Motheo Copper Mine during the September 2021 Quarter. Targets include the large A1 Dome located 25km along strike from A4 and the T1 and T2 East prospects located 10km north of A1.

A4 Project Development Studies

Given its proximity to the processing plant and infrastructure being constructed at T3, the A4 Deposit has the potential to become an important source of higher-grade ore for the Motheo Production Hub and support potential expansion from the Base Case of 3.2Mtpa to 5.2Mtpa for the Motheo Production Hub.

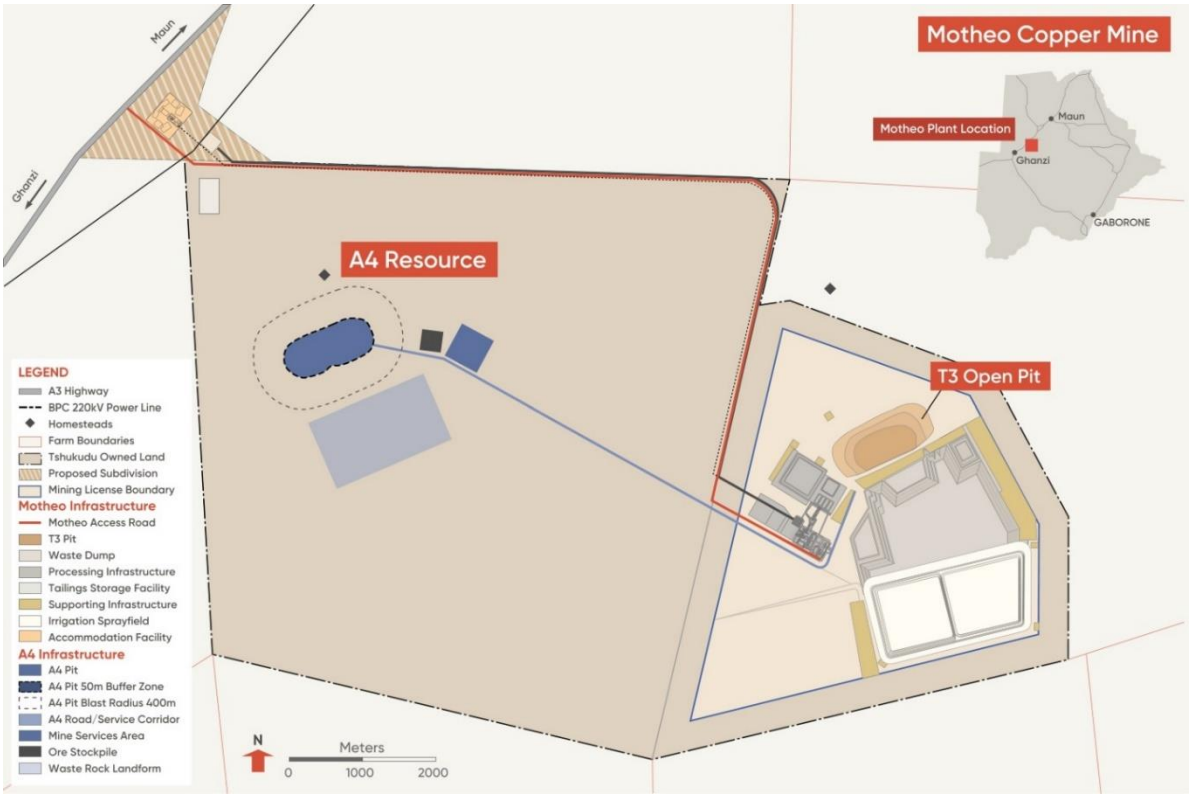

Figure 5: Motheo Production Hub, showing the planned integration of the A4 Deposit as part of an expanded 5.2Mtpa hub.

Work has commenced on the A4 Feasibility Study, with a target of completing the study and submitting the ESIA for the A4 project in the March 2022 Quarter.

Work programs currently underway include:

- Metallurgical test work to define ore characteristics including assessment of the suitability of processing when blended with ore from the T3 Deposit;
- Drilling for geotechnical and geo-hydrological purposes;
- Environmental studies;
- Mining studies;
- Regulatory and environmental approvals; and
- Infrastructure studies.

A maiden Ore Reserve is expected to be published during the December 2021 Quarter and will inform the A4 Feasibility Study due for completion during the March 2022 Quarter.

Management Comment

Sandfire Managing Director and CEO, Karl Simich, said the A4 Project was continuing to rapidly emerge as a valuable and strategically important source of higher-grade satellite ore feed for the Motheo Project to support the Company's rapid expansion plans and transition into a global mining business.

"This is an exceptional result, with recent drilling delivering a 34 per cent increase in contained copper at the A4 Deposit and more than 90 per cent of the Mineral Resource now reported in the higher-confidence Indicated Resource category, available for conversion to Ore Reserves.

"This puts us in a very strong position to deliver on our expansion plans at the Motheo Copper Mine, with the updated Mineral Resource to form the basis of feasibility studies for the proposed 5.2Mtpa Expansion Case scenario.

"Following the recent award of the Mining Licence, site works and construction activities have now kicked off in earnest at Motheo, with the current development plan already incorporating a significant upfront investment in additional processing and infrastructure capacity to support our growth objectives.

"It's also important to remember that A4 represents just the first in a long line of prospective targets that we've identified in the near-mine and broader regional environment that we'll progressively test.

"Recent drilling in the vicinity of A4 has already given us early encouragement, and we're very optimistic that we will be discovering new deposits and drilling out additional resources in the Kalahari Copper Belt for many years to come.

"Sandfire holds a large and highly-prospective land holding spanning much of the central portion of the world-class Kalahari Copper Belt, and we intend to significantly ramp-up exploration across this region over the coming months as we work to unlock its vast untapped potential."

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For further information, please contact:

Sandfire Resources Ltd
Ben Crowley – Head of Investor Relations
Office: +61 8 6430 3800

Media Inquiries:

Read Corporate
Nicholas Read
Mobile: +61 419 929 046

This announcement is authorised for release by Sandfire's Managing Director and CEO, Karl Simich.

Competent Person's Statement

The information in this report that relates to the A4 Mineral Resource is based on and fairly represents information and supporting documentation prepared by Mr Mark Zammit who is a Member of the Australian Institute of Geoscientists. Mr Zammit is a full time employee of Cube Consulting Pty Ltd. Mr Zammit has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity that he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Minerals Resources and Ore Reserves'. Mr Zammit consents to the inclusion in this report of the matters based on the information in the form and context in which it appears.

Forward-Looking Statements

Certain statements made during or in connection with this release contain or comprise certain forward-looking statements regarding Sandfire's Mineral Resources and Reserves, exploration and project development operations, production rates, life of mine, projected cash flow, capital expenditure, operating costs and other economic performance and financial condition as well as general market outlook. Although Sandfire believes that the expectations reflected in such forward-looking statements are reasonable, such expectations are only predictions and are subject to inherent risks and uncertainties which could cause actual values, results, performance or achievements

to differ materially from those expressed, implied or projected in any forward looking statements and no assurance can be given that such expectations will prove to have been correct.

There is continuing uncertainty as to the full impact of COVID-19 on Sandfire's business, the Australian economy, share markets and the economies in which Sandfire conducts business. Given the high degree of uncertainty surrounding the extent and duration of the COVID-19 pandemic, it is not currently possible to assess the full impact of COVID-19 on Sandfire's business or the price of Sandfire securities.

The Expansion Case to 5.2Mtpa referred to in this presentation, where it relates to A4 and other prospects, is based on resource drilling and preliminary technical and economic assessments. Study work at A4 is currently insufficient to support estimation of Ore Reserves or to provide assurance of an economic Expansion Case for the Motheo Production Hub.

Accordingly, results could differ materially from those set out in the forward-looking statements as a result of, among other factors, changes in economic and market conditions, delays or changes in project development, success of business and operating initiatives, changes in the regulatory environment and other government actions, fluctuations in metals prices and exchange rates and business and operational risk management.

Except for statutory liability which cannot be excluded, each of Sandfire, its officers, employees and advisors expressly disclaim any responsibility for the accuracy or completeness of the material contained in these forward-looking statements and excludes all liability whatsoever (including in negligence) for any loss or damage which may be suffered by any person as a consequence of any information in forward-looking statements or any error or omission. Sandfire undertakes no obligation to update publicly or release any revisions to these forward-looking statements to reflect events or circumstances after today's date or to reflect the occurrence of unanticipated events other than required by the Corporations Act and ASX Listing Rules. Accordingly, you should not place undue reliance on any forward-looking statement.

APPENDIX 1: JORC 2012 CODE

JORC 2012 MINERAL RESOURCE PARAMETERS

A4 COPPER-SILVER PROJECT

Section 1: Sampling Techniques and Data

Criteria	JORC Code Explanation	Commentary
Sampling techniques	*Nature and quality of sampling (e.g. cut channels, random chips, or specific specialised industry standard measurement tools appropriate to the minerals under investigation, such as downhole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.*	Sampling boundaries are geologically defined and commonly one metre in length unless a significant geological feature warrants a change from this standard unit.
	Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	Core is sawn along a cut line as defined by the logging geologist, which is marked to intersect the core orthogonal to the main core axis. Core is then routinely sampled along the same side of the line as cut to ensure sampling consistency.
	Aspects of the determination of mineralisation that are Material to the Public Report.	The determination of mineralisation is based on observed amount of sulphides and lithological differences.
	In cases where 'industry standard' work has been done this would be relatively simple (e.g. '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 (e.g. submarine nodules) may warrant disclosure of detailed information.	Diamond drill core sample is pulverised via LM2 to nominal 85% passing -75µm. Pulp charges of 0.25g are prepared using a four-acid digest and an ICP-AAS finish. Non-sulphide Cu is analysed, utilising a sulphuric acid leach with an ICP-AAS finish.
Drilling techniques	*Drill type (e.g. core, reverse circulation, open-hole hammer, rotary air blast, auger, Bangka, sonic, etc.) and details (e.g. 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.).*	Surface diamond drillholes used HQ3 (63.5mm) and NQ (47.6mm) core size (standard tubes). Core orientation is completed when possible, using the Boart Longyear TrueCore Tool.
Drill sample recovery	*Method of recording and assessing core and chip sample recoveries and results assessed.*	Diamond drillhole recoveries were quantitatively recorded using length measurements of core recoveries per-run. Core recoveries routinely exceeded 95%.
	Measures taken to maximise sample recovery and ensure representative nature of the samples.	Core was cut along a cut-line marked by the supervising geologist, which was marked orthogonal to the main core axis. Core was consistently sampled along the same side of this cut line for all holes. Core is metre marked and orientated to check against the driller's blocks, ensuring that all core loss is considered.
	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.	No sample recovery issues have impacted on potential sample bias.

Criteria	JORC Code Explanation	Commentary
Logging	*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.*	Geological logging is completed for all holes and is representative across the ore body. The major rock unit (colour, grain size, texture), weathering, alteration (style and intensity), mineralisation (type), interpreted origin of mineralisation, estimation of % sulphides/oxides, and veining (type, style, origin, intensity) are logged following Sandfire standard procedures. Data is originally recorded on paper (hard copies) and then transferred to Excel logging sheets. Once validated the data is imported to the central database.
	Whether logging is qualitative or quantitative in nature. Core (or costean, channel, etc.) photography.	Logging is both qualitative and quantitative depending on the field being logged. All drill core is photographed and catalogued appropriately.
	The total length and percentage of the relevant intersections logged.	All drill holes are fully logged.
	If core, whether cut or sawn and whether quarter, half or all core taken.	Longitudinally cut half core samples are produced using a core saw.
	If non-core, whether riffled, tube sampled, rotary split, etc. and whether sampled wet or dry.	No non-core used in Mineral Resource Estimate
Sub-sampling techniques and sample preparation	For all sample types, the nature, quality and appropriateness of the sample preparation technique.	Samples were submitted to the Botswana on-site preparation facility managed by ALS. Samples are first crushed in their entirety to 70% <2 mm using a jaw crusher. The entire samples are then milled to 85% passing 75 µm. The procedure is considered to represent industry standard practices and are considered appropriate for the style of mineralisation.
	Quality control procedures adopted for all sub-sampling stages to maximise representivity of samples.	For sample preparation, every 20th sample prepared at both the coarse crush, and milling stages is screened for consistency. Any failure triggers the re-crush/mill of the previous three samples. If any one of those samples should also fail, then the entire submitted batch is re-crushed/milled. Between each batch the coarse crushing equipment is cleaned using blank quartz material. LM2 ring mills are cleaned with acetone and compressed air between each sample.
	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.	Duplicate analysis of pulp samples has been completed and identified no issues with sampling representatively with assays showing a high level of correlation.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	The sample size is considered appropriate for the mineralisation style.
Quality of assay data and laboratory tests	*The nature, quality and appropriateness of the assaying and laboratory procedures used and whether the technique is considered partial or total.*	Samples analysed by ALS Laboratories were also assayed for total and non-sulphide Cu, Ag, Mo, Pb and Zn. Prepared and analysed using ALS method ME-ICP61 for total Cu and other elements, with an over-range trigger to ME-OG62 for high-grade Cu samples. In addition, two additional methods Cu-VOL61 (for Cu over 50%) and ME-XRF15c (for Mo over 10%) were utilised by ALS. Pulp charges of 0.25 grams are prepared using a four-acid digest, and an ICP-AAS finish. Non-sulphide Cu is analysed via method AA05, utilising a sulphuric acid leach with an ICP-AAS finish, whilst total sulphur was determined using oxidation, induction furnace and infrared spectroscopy (IR08 method) as opposed to the standard ICP method. The non-sulphide method is considered partial and is conducted for the purposes of determining the acid-soluble Cu component of the sample.

Criteria	JORC Code Explanation	Commentary
	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.	No geophysical tools were used to analyse the drilling products
	Nature of quality control procedures adopted (e.g. standards, blanks, duplicates, external laboratory checks) and whether acceptable levels of accuracy (i.e. lack of bias) and precision have been established.	Precision and accuracy were monitored throughout their sample chain of custody through the use of coarse and pulp duplicates, and the insertion of certified reference materials (CRMs) and blanks into the sample stream. CRMs are sourced from Ore Research Laboratories in Australia, and with the exception of the blank, span a range of Cu grades appropriate to the A4 project mineralisation. Control samples are inserted alternately at a rate of 1 in 10. Analysis of duplicate samples shows acceptable repeatability and no significant bias
Verification of sampling and assaying	*The verification of significant intersections by either independent or alternative company personnel.*	Significant intersections have been verified by alternative company personnel.
	The use of twinned holes.	There are no twinned holes drilled
	Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.	Logging data (including geotechnical parameters) are first recorded on paper, then scanned to preserve a digital image. Original documents are filed in hardcopy. Data logged to paper is also entered into a Microsoft Excel spreadsheet template which has been specifically designed for the capture of A4 Deposit logging data. The data is then imported into Sandfire Resources SQL database. The SQL server database is configured for optimal validation through constraints, library tables, triggers and stored procedures. Data that fails these rules on import is rejected or quarantined until it is corrected.
	Discuss any adjustment to assay data.	The primary data is always kept and is never replaced by adjusted or interpreted data.
Location of data points	*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.*	Drillholes are initially set-out prior to drilling using a handheld global positioning system (GPS). Subsequent to completion, holes are capped and marked with a marker peg. Periodically, collar locations are surveyed by Afro-Geodata Surveys Pty Ltd, a commercial contract land surveyor using Leica VIVA GNSS GPS system instrumentation, which provides sub-decimetre accuracy. Downhole surveying is completed on all diamond drillholes via north-seeking gyroscopic survey. In late-2020, Sandfire employed a registered site surveyor for the Motheo Copper project who has been completing RTK GPS collar pick-ups for the most recent drilling completed over the A4 project area. This includes all holes from MO-A4-166D through to MO-A4-206D.
	Specification of the grid system used.	Collars are marked out and picked up in the Botswanan National Grid in UTM format. Subsequent Mineral Resource modelling has been conducted in a local Mine grid, which is rotated 27° to the east to align the strike of the A4 Deposit along local east-west.
	Quality and adequacy of topographic control	Topographic control is provided by the GPS survey system used for collar pickup. The topography of the A4 Deposit area is very flat, and significant variations in topography within the project are not apparent. The topographic control is considered fit for purpose.
	Data spacing for reporting of Exploration Results.	No Exploration Results are included in this release.

Criteria	JORC Code Explanation	Commentary
Data spacing and distribution	*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.*	Drillhole spacing's are approximately 25mE x 25mN. The spacing and distribution are sufficient to establish the degree of geological and grade continuity appropriate for the classifications applied.
	Whether sample compositing has been applied.	No sample compositing is applied during the sampling process.
Orientation of data in relation to geological structure	*Whether the orientation of sampling achieves unbiased sampling of possible structures and the extent to which this is known, considering the deposit type.*	Drillholes have been oriented to intersect A4 mineralisation approximately orthogonal to the known dip of the deposit. No bias is considered to have been introduced to the sample dataset as a result of drilling orientation.
	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.	No significant sampling bias occurs in the data due to the orientation of drilling with regards to mineralisation.
Sample security	*The measures taken to ensure sample security.*	Samples are collected at the end of each shift by Tshukudu staff and driven directly from the rig to the storage and logging yard in Ghanzi, which is a secure compound. Samples are prepared to pulp stage on-site at the core logging and storage facility, within a purpose built commercially operated facility (ALS Laboratories). Sample security is not considered to be a significant risk to the A4 project.
Audits or reviews	*The results of any audits or reviews of sampling techniques and data.*	The sampling techniques and data collection processes are of industry standard and have been subjected to internal reviews by Sandfire personal.

Section 2: Reporting of Exploration Results

Criteria	JORC Code Explanation	Commentary
Mineral tenement and land tenure status	*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.*	Sandfire, through their 100% ownership of Botswanan company Tshukudu Metals Botswana (Pty) Ltd, hold prospecting license PL190/2008 as part of a larger tenement package. This licence, on which A4 occurs, was renewed on 1st October 2020 and is valid till 30th September 2022. UK-listed company Metal Tiger Plc. holds a US$2.0 million capped Net Smelter Royalty over the Company's T3 Copper Project in Botswana. Metal Tiger Plc also holds an uncapped 2% Net Smelter Royalty over 8,000km^2 of the Company's Botswana exploration license holding in the Kalahari Copper Belt. This uncapped royalty covers the area subject to the historical Tshukudu joint venture with MOD Resources Ltd and includes PL190/2008, which hosts the A4 resource area.
	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.	There are no known impediments to obtaining a license to operate in the area.
Exploration done by other parties	*Acknowledgment and appraisal of exploration by other parties.*	Limited previous exploration in the area of the drilling reported in this announcement, apart from widely spaced soil sampling conducted by Discovery Metals Limited, and 20 diamond drill holes completed by Tshukudu Exploration on behalf of MOD Resources Ltd during 2018 and 2019.
Geology	*Deposit type, geological setting and style of mineralisation.*	The A4 Deposit is located within the Ghanzi-Chobe belt in western Botswana. The stratigraphy in this belt comprises the basal Kgwebe volcanics which are unconformably overlain by Ghanzi Group sediments. The Ghanzi Group is a meta-sedimentary group comprising (in successively higher stratigraphic order) the Kuke, Ngwako Pan, D'Kar and Mamuno Formations.

Criteria	JORC Code Explanation	Commentary
		A4 occupies a similar structural and stratigraphic position to that of the T3 Deposit in that it occurs within a NE-SW trending periclinal anticline ("Dome") with a core of Ngwako Pan Formation sandstone, overlain by a succession of D'Kar Formation shale, sandstone, siltstone and carbonates. All mineralisation modelled and incorporated in the Mineral Resource estimate occurs within the D'Kar Formation. Second order (parasitic) upright to overturned folds are developed within the axial region of the periclinal anticline. The second order folds are cross-cut and displaced by moderately north-west dipping brittle-ductile, thrust-sense shear zones. These shear zones are characterised by zones of heterogeneous foliation of variable width and intensity. High strain zones have been recognised along which different sedimentary units have been juxtaposed by brittle displacement. Flat lying to shallow dipping zones of extensional fracture and veining are developed in the footwall of the main shear zone. These extensional zones are interpreted to have formed as shear related extensional structures during thrust movement. The extensional structures are preferentially developed within a sandstone dominated package but also penetrate the overlying carbonate and siltstone dominated units. Cu-Ag mineralisation that forms the focus of A4 is developed along both the shear zones and the extensional zones. Within the shear zones copper sulphides (bornite, chalcocite, chalcopyrite) are associated with quartz-carbonate veins developed sub-parallel to the shear foliation. Within the extensional zones copper sulphides are associated with either quartz-carbonate veins or as sulphide fill to in-situ fragmentation zones (breccias) within the host sediments.
Drillhole information	*A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drillholes:* • *Easting and northing of the drillhole collar;* • *Elevation or RL (Reduced Level – elevation above sea level in metres) of the drillhole collar;* • *Dip and azimuth of the hole;* • *Downhole length and interception depth; and* • *Hole length.*	No exploration results are reported in this release.
	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.	No exploration results are reported in this release.
Data aggregation methods	*In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. 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.*	No exploration results are reported in this release.

Criteria	JORC Code Explanation	Commentary
	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 (e.g. 'down hole length, true width not known').*	No exploration results are reported in this release.
	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 drillhole collar locations and appropriate sectional views.	No exploration results are reported in this release.
Relationship between mineralisation widths and intercept lengths	*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.*	No exploration results are reported in this release.
	Other exploration data, if meaningful and material, should be reported including (but not limited to): geological observations; geophysical 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.	No exploration results are reported in this release.
	The nature and scale of planned further work (tests for lateral, depth extensions or large-scale step-out drilling). *Diagrams clearly highlighting the areas of possible extensions, including the main geological interpretations and future drilling areas, provided this information is not commercially sensitive.*	No exploration results are reported in this release.
Diagrams	*A summary of all information material to the understanding of the exploration results including a tabulation of the following information for all Material drillholes:* • *Easting and northing of the drillhole collar* • *Elevation or RL (Reduced Level – elevation above sea level in metres) of the drillhole collar* • *Dip and azimuth of the hole* • *Downhole length and interception depth* • *Hole length.*	No exploration results are reported in this release.
Balanced reporting	*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.*	No exploration results are reported in this release.
Other substantive exploration data	*In reporting Exploration Results, weighting averaging techniques, maximum and/or minimum grade truncations (e.g. 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*	No exploration results are reported in this release.

Criteria	JORC Code Explanation	Commentary
	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.*	
Further work	*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 (e.g. 'down hole length, true width not known').*	No exploration results are reported in this release.
	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 drillhole collar locations and appropriate sectional views.	No exploration results are reported in this release.

Section 3: Estimation and Reporting of Mineral Resources

Criteria	JORC Code Explanation	Commentary
Database integrity	*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.*	Sandfire uses SQL as the central data storage system. User access to the database is regulated by specific user permissions. Only the Database Management team can overwrite data. Existing protocols maximise data functionality and quality whilst minimising the likelihood of error introduction at primary data collection points and subsequent database upload, storage and retrieval points. An IT contracting company is responsible for the daily Server backups of both the source file data on the file server and the SQL Server databases. The selected SQL databases are backed up each day to allow for a full recovery.
	Data validation procedures used.	The SQL server database is configured for optimal validation through constraints, library tables, triggers and stored procedures. Data that fails these rules on import is rejected or quarantined until it is corrected. Database is centrally managed by a Database Manager who is responsible for all aspects of data entry, validation, development, quality control and specialist queries. There is a standard suite of vigorous validation checks for all data.
Site Visits	*Comment on any site visits undertaken by the Competent Person and the outcome of those visits.*	Site visits have been undertaken by Sandfire personnel. No material concerns were identified during those site visits.
	If no site visits have been undertaken indicate why this is the case.	The Competent Persons for Mineral Resources from Cube Consulting have not been able to undertake a site visit due to travel restrictions imposed from COVID-19. Prior to COVID-19 restrictions, Sandfire's Competent Person (Brad Ackroyd) completed numerous site visits to the A4 project area.
Geological interpretation	*Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.*	A preliminary lithostratigraphic and structural model forms the basis for confidence in the geological interpretation and continuity of mineralisation.

Criteria	JORC Code Explanation	Commentary
	Nature of the data used and of any assumptions made.	All available geological logging data from diamond core are used for the interpretations. Interpreted master displacement planes have been used to constrain and guide wireframes.
	The effect, if any, of alternative interpretations on Mineral Resource estimation.	The geological interpretation of mineralised boundaries are considered robust and alternative interpretations do not have the potential to impact significantly on the Mineral Resources.
	The use of geology in guiding and controlling Mineral Resource estimation.	The interpreted mineralisation boundaries are used as hard boundaries during the Mineral Resource estimation.
	The factors affecting continuity both of grade and geology.	The Mineralisation is considered to be a structurally hosted, epigenetic deposit. The continuity of mineralisation is structurally controlled.
Dimensions	*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.*	Cu-Ag mineralisation that forms the focus of the A4 study extends from approximately 5m – 220m below surface. Mineralisation extends for 1,200m along strike and the cumulative total true width of mineralisation ranges from 10m – 80m.
Estimation and modelling techniques	*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.*	Grade estimation technique applied for estimation within Cu mineralisation domains is ordinary kriging (OK) for variables including Cu, Ag, Bi, Mo, S, and acid soluble Cu. Analysis suggests that a stationarity assumption is reasonable for the style of deposit and linear estimation of grades. Density has been estimated with Inverse Distance Squared (IDW2). Grade estimation technique applied for estimation within high level Pb-Zn mineralisation domains is Ordinary Kriging. Variables estimated include As, Pb and Zn. Top cuts were applied to isolated high-grade composites prior to estimation where applicable based on review of histograms, disintegration analysis and statistical analysis of composites. Distance based top cuts were also used to limit the influence of isolated high-grade composites. Copper-Silver mineralisation at A4 is developed along both the thrust sense shear zones and the extensional zones. Within the thrust sense shear zones copper sulphides (bornite, chalcocite, chalcopyrite) are intimately associated with quartz-carbonate veins developed sub-parallel to the shear foliation. Within the extensional zones copper sulphides are associated with either quartz-carbonate veins or as sulphide fill to in-situ fragmentation zones (breccias) within the host sedimentary lithofacies. A nominal 0.3% Cu cut-off grade was used to determine the external boundary of the mineralised zones. The Pb-Zn mineralisation was modelled separately from the Cu mineralisation on the basis of a (Pb+Zn)/2 nominal 0.15% lower cut-off. The search ellipsoid corresponds to the range of the variogram structures and is constrained by the optimum number of samples to ensure data used to estimate blocks is within the constraints of the variograms. Blocks that were not estimated within the first search (<5%) were estimated in a second pass where search ranges were doubled. Mineral Resource estimation is completed within GEOVIA Surpac 2020 software. Three dimensional mineralisation wireframes were completed within Seequent™ Leapfrog software and these are then imported into Surpac.

Criteria	JORC Code Explanation	Commentary
	The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.	The current Mineral Resource estimate (MRE) is an update of the maiden A4 MRE completed in December 2020 by Sandfire Resources. The current MRE uses all previous data as well as an additional 104 holes completed since the previous MRE. The estimates have been checked by comparing composite data with block model grades for all domains. Visual comparison in has also been completed between block grades and composite samples. The block model visually and statistically reflects the input data. There is no mining production to date from A4 to make a comparison.
	The assumptions made regarding recovery of by-products.	Silver has been estimated as a by-product within the A4 Deposit. It is assumed that silver will be recovered only where copper is being mined.
	Estimation of deleterious elements or other non-grade variables of economic significance (e.g. sulphur for acid mine drainage characterisation).	Estimates include deleterious or penalty elements As, Bi, Pb, Mo and Zn. Estimates also include the ratio of acid soluble Cu to total Cu.
	In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.	Data spacing was the primary consideration taken into account when selecting an appropriate estimation block size. The A4 project is drilled on an approximate 25mE x 25mN support. The parent cell sizes of 6.25mE x 12.5mN x 2.5mRL were based on approximately half to one third of the average drill spacing.
	Any assumptions behind modelling of selective mining units.	No selective mining units are assumed in this estimate.
	Any assumptions about correlation between variables.	Correlation analysis was completed for all variables with Cu showing moderate to strong correlation with Ag, S and Bi, and weak to moderate correlation with Cu_AS and Mo. In the Pb-Zn domains there is a weak correlation between all of Pb, Zn and As. However, all variables are treated in the univariate sense for estimation. Correlation between the estimated block values for all constituents are checked after interpolation to ensure that they are similar to the correlation of the input composites.
	Description of how the geological interpretation was used to control the resource estimates.	The block model is assigned unique domain codes that corresponds with the domain codes as defined by mineralisation wireframes. Wireframes are then used as hard boundaries during interpolation where blocks are estimated only with composites having the corresponding domain code.
	Discussion of basis for using or not using grade cutting or capping.	Top cuts were applied to isolated composites prior to estimation where applicable based on review of histograms and statistical analysis.
	The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.	The process of validation includes standard model validation using visual and numerical methods: • The block model estimates are checked visually against the input composite/drillhole data; • Swath plots of the estimated block grades and composite mean grades are generated by eastings, northings and elevations and reviewed to ensure acceptable correlation, and ; • Global statistical comparisons of mean estimated block grades to mean composite grades. No reconciliation data is available as no mining has taken place.
Moisture	Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.	Tonnages are estimated on a dry basis.

Criteria	JORC Code Explanation	Commentary
Cut-off parameters	*The basis of the adopted cut-off grade(s) or quality parameters applied.*	The Mineral Resource has been reported above a cut-off of 0.5% Cu within an optimised open pit shell run at a US $4.50/lb Cu price. It is the opinion of the Competent Person that the cut-off grade represents a suitable assessment of a potential lower economic cut-off, when likely mining methods for the current A4 Mineral Resource are considered.
Mining factors or assumptions	*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.*	Preliminary mining studies for the A4 Deposit have shown that the currently defined Mineral Resource could potentially be economically mined using open-cut methods at the currently reported average Cu grade.
Metallurgical factors or assumptions	*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.*	Preliminary test work has been conducted on material from the A4 Deposit. 4 composites were used for comminution test work, along with 6 variability samples to test for metallurgical recovery. The variability samples used the same laboratory flowsheet that was used to assess T3. Initial results showed the A4 material to be similar in ore competency to T3, and responded well to the T3 flowsheet, producing metallurgical recoveries in line with T3. A larger, more comprehensive test work program will be conducted as part of the next project stage.
Environmental factors or assumptions	*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.*	It has been assumed that the waste material produced as a result of open-cut mining will be stored in dry stacked waste dumps on site, adjacent to the mining operation. The sulphide content of the mineralisation poses the risk for potentially acid generating waste to be produced. It has been assumed that the treatment and appropriate storage of this waste will not pose any significant impediment to the sustainable mining of the deposit and would be correctly managed in accordance with regulatory conditions imposed by the Botswanan government.
Bulk density	*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.*	Sample mass was determined by weighing the core in air and sample volume was determined by the Archimedes principle. Density is estimated using Inverse Distance Squared within the Cu domains. Density is assigned to waste blocks outside of the Cu domains based on weathering profile averages.
	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.	The procedure used is suitable for non-porous or very low porosity samples, which can be quickly weighed in water before saturation occurs.
	Discuss assumptions for bulk density estimates used in the evaluation process of the different materials	No assumptions for bulk density made.

Criteria	JORC Code Explanation	Commentary
Classification	*The basis for the classification of the Mineral Resources into varying confidence categories.*	The Mineral Resource is classified as a function of drillhole spacing, geological and grade continuity, database integrity and QAQC. Areas where drilling has been completed on a nominal 25m x 25m pattern and classified as Indicated. Areas where the drillhole spacing is larger than the nominal 25m x 25m pattern have been classified as Inferred. The MRE was also spatially constrained within a Whittle optimized open pit shell generated using optimistic input parameters based on a Cu price of US $4.50/lb.
	Whether appropriate account has been taken of all relevant factors (i.e. 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).	The Mineral Resource classification has appropriately taken into account data spacing, distribution, reliability, quality and quantity of input data as well as the confidence in predicting grade and geological continuity.
	Whether the result appropriately reflects the Competent Person's view of the deposit.	The Mineral Resource estimation appropriately reflects the Competent Person's view of the deposit.
Audits or reviews	*The results of any audits or reviews of Mineral Resource estimates.*	No audits or reviews have been completed
Discussion of relative accuracy/ confidence	*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.*	The Mineral Resources has been reported in accordance with the guidelines of the 2012 edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves and reflects the relative accuracy of the Mineral Resources estimates.
	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.	The A4 Mineral Resource Estimate is a global estimate.
	These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.	The deposit has not been mined.