

28 January 2020

# **MORCK WELL AND CASHMAN JV UPDATE**

# **MORCK WELL JV**

- 322 Air Core (AC) drill holes completed (for 15,025m)
- Five reverse circulation (RC) drill hole completed (for 2,092m)
- Copper results intersected within First Pass Air Core Drilling at Tetris prospect including 5m @ 1,080ppm Cu from 30m and 5m @ 1,290ppm Cu from 40m (MWAC2139)
- Further RC drilling planned to test geochemical and geophysical anomalies

## **CASHMAN JV**

- Minimum expenditure condition of \$1.2M with Cashman JV met by Sandfire as at 31 December 2019 with an estimated expenditure in excess of \$8M for upcoming exploration programmes within both the Cashman JV and Morck Well JV
- Two reverse circulation (RC) drill hole completed (for 694m)
- First Pass Air Core Drilling commenced with 380 Air Core (AC) drill holes completed (for 22,665m)
- Gold result within Air Core of 5m @ 525ppb Au from 145m (CHAC0056)
- Further First Pass Air Core and RC Drilling Planned
- 380 Air core holes completed of planned 2,230 holes

Western Australian base metals explorer **Auris Minerals Limited** ("**Auris**" or "**the Company**") (**ASX: AUR**) is pleased to provide the following update on exploration activities completed during the December quarter 2019 within the Morck Well and Cashman Joint Ventures with Sandfire Resources Limited ("Sandfire"; ASX: SFR) in the Bryah Basin, Western Australia.

#### **MORCK WELL JV**

## **Air Core Drilling**

Regional air core (AC) drilling continued at the Tetris Prospect, with 222 drill holes (MWAC1968 - MWAC2000, MWAC2015 - MWAC2195 and MWAC2201 - MWAC2208) completed for a total of 15,025m. First pass air core drilling has now been completed at the Tetris Prospect.

All results from the completed drilling have been received and significant assays of **5m @ 1,080ppm Cu from 30m and 5m @ 1,290ppm Cu from 40m** were returned from MWAC2139, (Table 1).

710000mE

Tetris Prospect First
Pass AC Drilling

E51/1033

MWAC2139
Sm @ 1,080ppm Cu from 30m

The location of the completed drill holes and the significant result is displayed in Figure 1.

Figure 1. AC Drilling conducted within the Morck Well JV (Auris Tenements labelled with pink outline)

E51/1883

5m @ 1,290ppm Cu from 40m

705000mE

# **Reverse Circulation (RC) Drilling**

7135000mN

Five Reverse Circulation (RC) drill holes (MWRC0042 - MWRC0046) were completed within the Morck Well JV for a total advance of 2.092m.

One drill hole (MWRC0042) was completed for 354m at the Tetris Prospect. Drilling targeted an AEM geophysical anomaly and prospective stratigraphy along strike from Morck Well.

Two drill holes (MWRC0043 and MWRC0044) were designed to test prospective geology and anomalous geochemistry along-strike from significant intercepts intersected in MWDD0004 and MWRC0010, including 10m @ 2,966ppm Cu from 175m, (MWRC0010)(refer ASX announcement 29 January 2019).

A further two drill holes (MWRC0045 and MWRC0046) targeted a MLEM anomaly identified from testing with the new ARMIT sensor.

No significant assays were received from RC drilling within the Morck Well JV. Results for MWRC0046 are pending.

The location of the completed drill holes is displayed in Figure 2 and noted in Table 2.

A summary of the completed drilling is outlined in Table 3.

700000mE

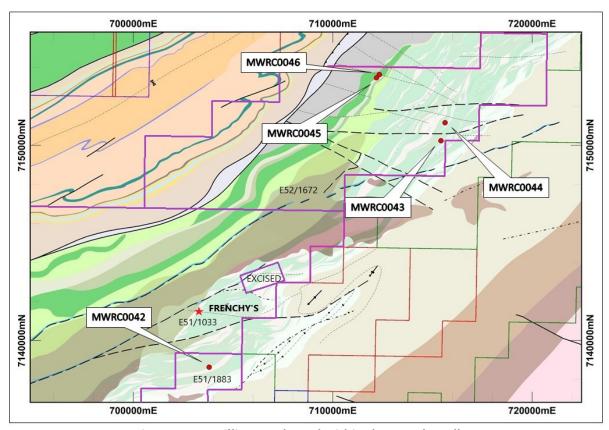


Figure 2. RC Drilling conducted within the Morck Well JV (Auris Tenements labelled with pink outline)

# **Geological Understanding**

MWRC0042 intersected mostly dolerite, however a narrow package of chlorite altered sediments including siltstone, quartz arenite and wacke and minor sedimentary conglomerate was intersected. This confirms the presence of prospective DeGrussa Member (Karalundi Formation) stratigraphy in the Prospect area. Air core drilling has intersected varying stratigraphy, confirming that the typical Doolgunna Formation, Karalundi Formation and Narracoota Formation stratigraphic relationships exist moving south-west along-strike from the Morck Well Prospect area. A review has been ongoing to ensure air core drilling is identifying the relationship between Magazine Member and DeGrussa Member of the Karalundi Formation, to enable better constrained and effective targeting.

MWRC0043 intersected a package of strongly chlorite altered and exhalative sediments with minor jasper and pyrite and chalcopyrite mineralisation, confirming the presence and continuation of the host sediment horizon to the south-west of MWRC0010 and MWDD0004. MWRC0044 intersected a thick sedimentary horizon of mostly sedimentary and minor mafic-derived conglomerates with only thin packages of chlorite altered siltstone in between. The strongly chlorite altered and exhalative sediments observed in MWRC0043 were not intersected in MWRC0044, suggesting that the geological interpretation requires a review in the immediate vicinity of the drill hole.

MWRC0045 was drilled relatively high in the Karalundi stratigraphy, close to the interpreted base of the Narracoota Formation. The stratigraphic position is higher than where typical anomalism is encountered elsewhere in the basin. The drill hole intersected predominantly sediments including mixed siltstone, arenites and wackes, with minor dolerite. Of interest was a package of haematitic and exhalative sediments with minor chlorite and magnetite. MWRC0046 intersected a large package of silicified basalt and mafic derived conglomerate and breccia. Given that this drill hole is located 200m adjacent to MWRC0045, the significant change in intersected geology along-strike indicates possible structural complexity around the target MLEM plate.

## Geophysics

MWRC0042, MWRC0043, MWRC0044 and MWRC0045 were surveyed but preliminary interpretations suggest no anomalous responses associated with bedrock conductors were observed.

## **Ongoing and Forecast Work**

One RC drill hole is planned within the Morck Well Prospect to complete the programme testing identified MLEM anomalism.

Three RC drill holes have been planned at the Tetris Prospect, designed to test for anomalous geochemistry associated with significant results intersected in first pass air core drilling and subtle MLEM anomalies identified using the new ARMIT sensor.

## **CASHMAN JV**

In accordance with the Cashman JV farm-in agreement dated 19 September 2019, Sandfire is required spend a minimum of \$1,200,000 on exploration within the first 12 months and has the right to earn a 70% interest in the project upon completion of a Feasibility Study on a discovery of not less than 50,000t contained copper (or metal equivalent).

Sandfire has confirmed it has met the minimum expenditure condition by incurring more than \$1,200,000 on exploration expenditure on the Cashman JV tenements as at 31 December 2019 and an estimated expenditure in excess of \$8M for upcoming exploration programmes within both the Cashman and Morck Well JV's.

## **Air Core Drilling**

Air core drilling commenced within the Cashman JV with 380 drill holes (CHAC0001 – CHAC0329 and CHAC0401 – CHAC0451) were completed for a total advance of 22,665m, representing approximately 16% of the proposed first pass air core drill programme for the project.

A significant assay was returned of **5m @ 525ppb Au from 145m** within CHAC0056, (Table 4). Results for 143 of these drill holes (CHAC0177 - CHAC0200, CHAC0262 - CHAC0329, CHAC0401 - CHAC0451) are pending.

The location of the completed drill holes and the significant result is displayed in Figure 3.

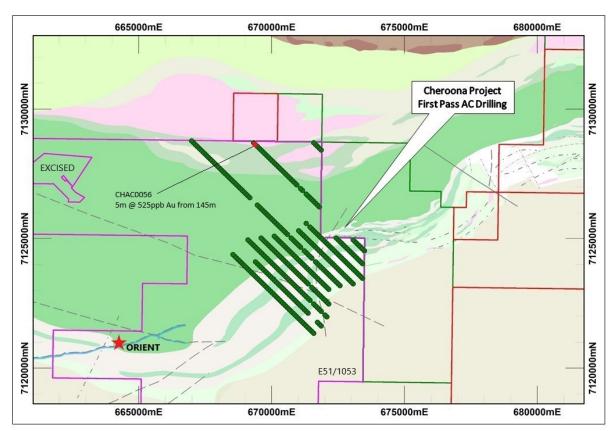


Figure 3. AC Drilling conducted within the Cashman JV (Auris Tenements labelled with pink outline)

# **Reverse Circulation (RC) Drilling**

Two RC exploration drill holes (CHRC0003 and CHRC0004) were completed for a total advance of 694m within the Cashman JV. Drilling was designed to target anomalous geochemistry intersected in Air core and RC drilling completed by Auris adjacent to the Orient prospect.

The location of the completed drill holes is displayed in Figure 4 and noted in Table 5.

A summary of the completed drilling is outlined in Table 6.

All results have been received for the completed RC drilling with no significant assays received.

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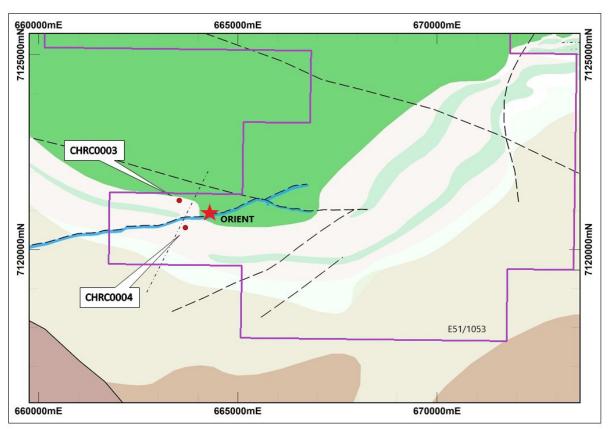


Figure 4. RC Drilling conducted within the Cashman JV (Auris Tenements labelled with pink outline)

# **Geological Understanding**

CHRC0003 intersected interbedded dolerites and sediments indicating the presence of prospective sedimentary package of the Degrussa Member. The hole successfully intersected a magnetite and haematite exhalite sequence with jaspers and disseminated pyrite throughout, a potential indicator of nearby VMS systems.

CHRC0004 intersected a thick package of varied sediments and mafics and no significant mineralisation of geologically favourable indicators were observed. Initial interpretation is that this drill hole may be drilled too low in the stratigraphy and intersected Magazine member lithologies of the Karalundi Formation.

Drilling of the regional first pass air core programme has identified Doolgunna Formation, Karalundi Formation and Narracoota Formation lithologies, suggesting the stratigraphic relationships seen at the Ruby Well and White Well Prospects (Enterprise Project) continue south-west through the Cashman JV. Integration with significant field mapping and geophysical datasets is suggesting structural complexity exists throughout the Cashman JV area with possible stratigraphic repeats, affecting ongoing interpretation and targeting.

## Geophysics

MLEM surveying has begun at Orient East, moving west. Interrogation of the data for anomalies consistent with historic CRA gossans is underway. CHRC0003 and CHRC0004 have been surveyed and no anomalous bedrock responses have been identified.

Atlas Geophysics completed gravity survey P2019140 within the Cashman JV during the quarter. Data has been processed and merged grids and images will be reported once received and interpreted.

## **Ongoing and Forecast Work**

Approximately 430 air core holes remain to be drilled in the East Orient Prospect, followed by 1,000 drill holes to complete the first pass programme over the Orient and Goodin Find Prospects, testing the prospective Karalundi Formation trend (along strike from Ruby Well – Enterprise Project). A further 1,500 AC drill holes are planned to the north and north-west, designed to test for prospective Karalundi Formation stratigraphy through to Mount Fraser and Beatty Pool. This drilling is planned for wider spacing to initially identify stratigraphy before infilling using closer spaced, targeted drill patterns.

Geological interpretation of the Cashman JV tenements has begun and will continue as drilling is completed and assay results returned.

One reverse circulation drill hole has been planned to target magnetic sediments and trace malachite observed in field mapping samples to the south of Orient.

Auris Chief Operating Officer, Mike Hendriks said:

"We are delighted that Sandfire has hit the ground running with exploration within the Cashman JV, spending \$1.2M on exploration within the first 4 months. With an estimated expenditure in excess of \$8M for upcoming exploration programmes within both the Cashman and Morck Well JV, we are looking forward to the continued aggressive and comprehensive exploration programmes throughout 2020 and potential positive results that they should yield."

-ENDS-

For and on behalf of the Board.

Mike Hendriks Chief Operating Officer

 $For \ Further \ information \ please \ contact:$ 

Mike Hendriks Chief Operating Officer Ph: 08 6109 4333

Table 1. Significant assays returned for Morck Well JV AC

				Down hole		Inters	ection	
Hole ID	Prospect	From	То	Thickness	Cu [ppm]	Au [ppb]	Zn [ppm]	Pb [ppm]
MWAC2139	Tetris	30	35	5	1,080	24	167	10
MWAC2139	Tetris	40	45	5	1,290	13	290	10

Table 2 – Morck Well JV RC Drilling Collar Details

Hole ID	Prospect	EOH Depth (m)	Easting	Northing	Date Completed
MWRC0042	Tetris	354	703800.1	7138645.4	11/10/2019
MWRC0043	Morck Well	394	715423.7	7150233.2	16/10/2019
MWRC0044	Morck Well	448	715631.7	7151156.5	21/10/2019
MWRC0045	Morck Well	448	712193.0	7153453.0	25/11/2019
MWRC0046	Morck Well	448	712335.6	7153622.2	16/12/2019

Table 3. Summary of Geology intersected in Morck Well RC drilling.

	Table 5. Summary of Geology intersected in Morck Well RC drilling.				
Hole ID	Prospect	EOH Depth (m)	Geology	Mineralisation	
MWRC0042	Morck Well	354	0 – 2m – Cover. 2 – 182m – Dolerite. 182 – 239m – Sequence of siltstones and sedimentary conglomerates. 239 – 354m – Dolerite and minor basalt, chloritic.	Minor pyrite 187 – 188m, 259 – 267m.	
MWRC0043	Morck Well	394	0 – 223m – Dolerite. 223 – 364m – Strongly chlorite altered siltstone and exhalite sediments including minor jasper. 364 – 398m – Dolerite.	Minor pyrite and chalcopyrite 330 – 331m and 347 – 348m.	
MWRC0044	Morck Well	448	0 – 2m – Cover. 2 – 89m – Dolerite. 89 – 351m – mixed sequence of siltstones and polymictic sedimentary breccias and conglomerates. Occasional dolerite interval. 351 – 448m – Dolerite.	No significant mineralisation observed.	
MWRC0045	Morck Well	448	0 – 8m – Cover.  8 – 92m – Mixed, weathered silts and arenites.  92 – 139m – Dolerite.  139 – 216m – Red haematitic siltstones and exhalative seds with magnetite.  216 – 342m – Mixed arenites and silts.  342 – 344m – Exhalite horizon with jasper clasts  344 – 448m – Mixed lithic to mafic wackes	Weak to moderate magnetite 139 – 216m	
MWRC0046	Morck Well	448	0 – 145m – Basalt.  145 – 245m – Mixed sequence of basalt and mafic conglomerate.  245 – 352m – Mixed sequence of quartz wacke, sedimentary derived breccia and mafic derived conglomerate.  352 – 373m – Mafic conglomerate.  373 – 396m – Basalt.  396 – 418m – Sedimentary conglomerate.  418 – 421m – Dolerite.  421 – 448m – Sedimentary breccia.	No significant mineralisation observed.	

Table 4. Significant assays returned for Cashman JV AC drilling

				Down hole		Inters	ection	
Hole ID	Prospect	From	То	Thickness	Cu [ppm]	Au [ppb]	Zn [ppm]	Pb [ppm]
CHAC0056	NE Orient	145	150	5	46	525	32	-

Table 5. RC drilling completed at the Cashman JV

Hole ID	Prospect	EOH Depth (m)	Easting	Northing	Date Completed
CHRC0003	Orient	384	663531.2	7121256.9	30/11/2019
CHRC0004	Orient	310	663685.0	7120560.0	05/12/2019

Table 6. Summary of geology intersected in Cashman JV RC drilling

Hole ID	Prospect	EOH Depth (m)	Geology	Mineralisation
CHRC0003	Orient	384	0 – 59m – Mixed siltstone and dolerite and basalt 59 – 307m – Dolerite with multiple thin lenses of siltstone and quartz arenite, variably chlorite altered.  307 – 331m – Haematite and magnetite rich exhalite sediments  331 – 384m – Dolerite.	Horizon of jasper and magnetite + haematite rich exhalite sediments, trace pyrite throughout
CHRC0004	Orient	310	0 - 87m - Mixed dolerite, siltstone and sedimentary conglomerate with minor basalt. 87 - 165m - Dolerite with minor thin lenses of quartz wacke and sedimentary conglomerate. 165 - 228m - Mixed sequence of siltstone, sedimentary conglomerate, lithic wacke and minor thin dolerite. 228 - 235m - Weakly magnetic exhalite sediments. 235 - 310m - Mixed sequence of quartz arenite, siltstone, sedimentary conglomerate and minor thin dolerite.	No significant mineralisation observed.

## **ABOUT AURIS MINERALS LIMITED**

Auris is exploring for base metals and gold in the Bryah Basin of Western Australia. Auris has consolidated a tenement portfolio of 1,520km², which is divided into seven well-defined project areas: Forrest, Cashman, Doolgunna, Morck Well, Feather Cap, Milgun and Horseshoe Well (Figure 5).

In February 2018, Auris entered a Farm-in Agreement with Sandfire Resources Limited in relation to the Morck Well East and Doolgunna Projects which covers ~430km² (the Morck Well JV). During September 2019, Auris entered into a Farm-in with Sandfire Resources Limited in relation to the Cashman Project tenements, E51/1053 and E51/1120, (the Cashman JV). Sandfire has the right to earn a 70% interest in the projects upon completion of a Feasibility Study on a discovery of not less than 50,000t contained copper (or metal equivalent). Auris manages exploration on all other tenements, including those that are subject to arrangements with third parties.

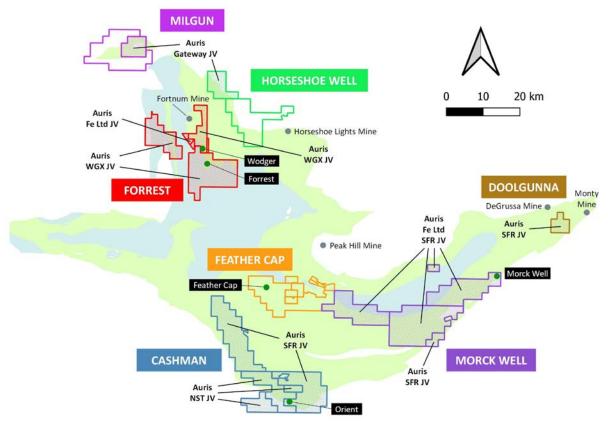


Figure 5: Auris' copper-gold exploration tenement portfolio, with Sandfire (SFR), Northern Star (NST), Westgold (WGX), Fe Ltd and Gateway JV areas indicated

#### Notes:

- 1. The Forrest Project tenements E52/1659 and E52/1671 have the following outside interests:
  - Auris 80%; Westgold Resources Ltd 20% (ASX:WGX). Westgold Resources Ltd interest is free carried until a Decision to Mine
  - Westgold Resources Ltd own the gold rights over the Auris interest.
- 2. The Forrest Project tenements P52/1494-1496 have the following outside interests:
  - Auris 80%; Fe Ltd 20% (ASX:FEL). Fe Ltd interest is free carried until a Decision to Mine
  - Westgold Resources Ltd own the gold rights over the Auris interest.
- 3. The Cashman Project tenements E51/1391, E51/1837-38 have the following outside interests:
  - Auris 70%; Northern Star Resources Ltd 30% (ASX:NST)
- 4. The Horseshoe Well Project tenement E52/3291 has the following outside interests:
  - Auris 85%; Gateway Projects WA Pty Ltd (formerly OMNI Projects Pty Ltd) 15% (Gateway Projects free carried until a Decision to Mine)
- 5. The Milgun Project tenement E52/3248 has the following outside interests:
  - Auris 85%; Gateway Projects WA Pty Ltd (formerly OMNI Projects Pty Ltd) 15% (Gateway Projects free carried until a Decision to Mine)

## **Competent Person's Statement**

Information in this announcement that relates to exploration results is based on and fairly represents information and supporting documentation prepared and compiled by Mr Matthew Svensson, who is a Member of the Australian Institute of Geoscientists. Mr Svensson is Exploration Manager for Auris Minerals Limited. Mr Svensson has sufficient experience, which is relevant to the style of mineralisation and type of deposit under consideration, and to the activity which he is undertaking to qualify as a Competent Person, as defined in the 2012 Edition of the Australasian Code for Reporting Exploration Results, Mineral Resources and Ore Reserves. Mr Svensson consents to the inclusion in the announcement of the matters based on this information in the form and context in which it appears.

#### No New Information

Except where explicitly stated, this announcement contains references to prior exploration results and Mineral Resource estimates, all of which have been cross-referenced to previous market announcements made by the Company. The Company confirms that it is not aware of any new information or data that materially affects the information included in the relevant market announcements and, in the case of estimates of Mineral Resources that all material assumptions and technical parameters underpinning the results and/or estimates in the relevant market announcement continue to apply and have not materially changed.

## **Forward Looking Statements**

This announcement has been prepared by Auris Minerals Limited. This document contains background information about Auris Minerals Limited and its related entities current at the date of this announcement. This is in summary form and does not purport to be all inclusive or complete. Recipients should conduct their own investigations and perform their own analysis in order to satisfy themselves as to the accuracy and completeness of the information, statements and opinions contained in this announcement. This announcement is for information purposes only. Neither this document nor the information contained in it constitutes an offer, invitation, solicitation or recommendation in relation to the purchase or sale of shares in any jurisdiction.

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Any forward-looking statements in this announcement speak only at the date of issue of this announcement. Subject to any continuing obligations under applicable law and ASX Listing Rules, Auris Minerals Limited does not undertake any obligation to update or revise any information or any of the forward-looking statements in this document or any changes in events, conditions or circumstances on which any such forward-looking statement is based.

# JORC Code, 2012 Edition, Table 1 (Information provided by Sandfire Resources Limited)

**Section 1: Sampling Techniques and Data** 

Critorio	IORC Code Explanation	
Criteria	JORC Code Explanation	Commentary  AC complex are collected using appear took nimuses.
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 down hole gamma sondes, or handheld XRF instruments, etc.). These examples should not be taken as limiting the broad meaning of sampling.  Include reference to measures taken to ensure sample representivity and the appropriate calibration of any measurement tools or systems used.	AC samples are collected using spear techniques for both composite and single metre samples.  RC samples are collected by a cone splitter for single metre samples or a sampling spear for first pass composite samples using a face sampling hammer with a nominal 140mm hole.  Sampling of diamond drilling (DD) includes half or quarter-core sampling of NQ2 core.  Sampling is guided by Sandfire protocols and Quality Control (QC) procedures as per industry standard.
	Aspects of the determination of mineralisation that are Material to the Public Report. 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.	DD Sample size reduction is through a Jaques jaw crusher to -10mm with a second stage reduction via Boyd crusher to -4mm. Representative subsamples are split and pulverised through LM5. AC and RC samples are crushed to -4mm through a Boyd crusher and representative subsamples pulverised via LM5. Pulverising is to nominal 90% passing -75µm and checked using wet sieving technique. Samples are assayed using Mixed 4 Acid Digest (MAD) 0.3g charge and MAD Hotbox 0.15g charge methods with ICPOES or ICPMS. Fire Assay is completed by firing 40g portion of the sample with ICPMS finish.
Drilling techniques	Drill type (e.g. core, reverse circulation, openhole 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.).	All AC drilling was completed with a Drillboss 300 with on-board compressor (700cfm at 400psi) using a nominal 90mm diameter air core drill bit. AC drill collars are surveyed using a Garmin GPS Map 64.  All RC drilling was completed with a Schramm T685 drill rig using a sampling hammer with a nominal 140mm hole diameter.  DD is completed using NQ2 size coring equipment. RC and DD drill collars are surveyed using RTK GPS with down hole surveying.  Downhole surveying is undertaken using a gyroscopic survey instrument.  All core where possible is oriented using a Reflex ACT II RD orientation tool.
Drill sample recovery	Method of recording and assessing core and chip sample recoveries and results assessed.	AC, RC and DD sample recoveries are logged and captured into the database.  DD core recoveries are measured by drillers for every drill run. The core length recovered is physically

Criteria	JORC Code Explanation	Commentary
		measured for each run and recorded and used to
		calculate the core recovery as a percentage core
		recovered.
	Measures taken to maximise sample recovery	Appropriate measures are taken to maximise
	and ensure representative nature of the	sample recovery and ensure the representative
	samples.	nature of the samples. This includes diamond core
		being reconstructed into continuous intervals on angle iron racks for orientation, metre marking
		and reconciled against core block markers.
		Recovery and moisture content are routinely
		recorded for composite and 1m samples.
		The majority of AC and RC samples collected are
		of good quality with minimal wet sampling in the
		project area.
	Whether a relationship exists between sample	No sample recovery issues are believed to have
	recovery and grade and whether sample bias may have occurred due to preferential loss/gain	impacted on potential sample bias. When grades are available the comparison can be completed.
	of fine/coarse material.	are available the comparison can be completed.
Logging	Whether core and chip samples have been	AC and RC chips are washed and stored in chip
	geologically and geotechnically logged to a level	trays in 1m intervals.
	of detail to support appropriate Mineral	Geological logging is completed for all holes and
	Resource estimation, mining studies and	representative across the project area. All
	metallurgical studies.	geological fields (i.e. lithology, alteration etc.) are
		logged directly to a digital format following procedures and using Sandfire geological codes.
		Data is imported into Sandfire's central database
		after validation in Ocris.
	Whether logging is qualitative or quantitative in	Logging is both qualitative and quantitative
	nature. Core (or costean, channel, etc.)	depending on field being logged.
	photography.	All core and chip trays are photographed.
	The total length and percentage of the relevant	All drill holes are fully logged.
Sub-sampling	intersections logged.  If core, whether cut or sawn and whether	Core orientation is completed where possible and
techniques	quarter, half or all core taken.	all are marked prior to sampling. Half and quarter
and sample	quarter, man or an oor a tantam	core samples are produced using Almonte Core
preparation		Saw. Samples are weighed and recorded.
	If non-core, whether riffled, tube sampled,	AC samples consist of 5m composite spear
	rotary split, etc. and whether sampled wet or	samples produced from 1m sample piles.
	dry.	Additional 1m sampling is completed depending
		on results from 5m composite samples or where mineralisation is observed while drilling is
		occurring.
		RC 1m samples are split using a cone or riffle
		splitter. The majority of RC samples are dry. On
		occasions that wet samples are encountered they
		are dried prior to splitting with a riffle splitter.
	For all sample types, the nature, quality and	All samples are sorted, dried at 80° for up to 24
	appropriateness of the sample preparation	hours and weighed. Samples are Boyd crushed to
	technique.	-4mm and pulverised using LM5 mill to 90%
		passing 75μm. Sample splits are weighed at a frequency of 1:20
		and entered into the job results file. Pulverising is
		and sittle and the job results mer raivensing is

Criteria	JORC Code Explanation	Commentary
		completed using LM5 mill to 90% passing 75%μm using wet sieving technique.
	Quality control procedures adopted for all sub- sampling stages to maximise representivity of samples.	1:20 grind quality checks are completed for 90% passing 75%µm criteria to ensure representativeness of sub-samples.
	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.	Sampling is carried out in accordance with Sandfire protocols as per industry best practice.
	Whether sample sizes are appropriate to the grain size of the material being sampled.	The sample sizes are considered appropriate for the VHMS and Gold mineralisation types.
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 are assayed using Mixed 4 Acid Digest (MAD) 0.3g charge and MAD Hotbox 0.15g charge methods with ICPOES or ICPMS. The samples are digested and refluxed with a mixture of acids including Hydrofluoric, Nitric, Hydrochloric and Perchloric acids and conducted for multi elements including Cu, Pb, Zn, Ag, As, Fe, S, Sb, Bi, Mo, Re, Mn, Co, Cd, Cr, Ni, Se, Te, Ti, Zr, V, Sn, W and Ba. The MAD Hotbox method is an extended digest method that approaches a total digest for many elements however some refractory minerals are not completely attacked. The elements S, Cu, Zn, Co, Fe, Ca, Mg, Mn, Ni, Cr, Ti, K, Na, V are determined by ICPOES, and Ag, Pb, As, Sb, Bi, Cd, Se, Te, Mo, Re, Zr, Ba, Sn, W are determined by ICPMS. Samples are analysed for Au, Pd and Pt by firing a 40g of sample with ICP AES/MS finish. Lower sample weights are employed where samples have very high S contents. This is a classical FA process and results in total separation of Au, Pt and Pd in the samples. The analytical methods are considered
	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	appropriate for this mineralisation style.  For DD and RC drilling downhole Electromagnetic (DHEM) Geophysical Surveys have been completed for Sandfire by Merlin Geophysical Solutions. Geophysical survey parameters include:  • Merlin Geophysical Solutions MT-200 and MT-400P transmitters, DigiAtlantis probe and receiver  • 300m x 300m single turn loop, or as appropriate to the geological context.  Moving Loop Electromagnetic (MLEM) surveys have been undertaken by Merlin Geophysical Solutions with the following parameters.  • Merlin Geophysical Solutions MT-400P transmitters, Monex Geoscope receiver system  • 200m x 200m single turn loop, or as appropriate to the geological context.

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.  Verification of sampling of sampling of sampling and assaying  The verification of significant intersections by either independent or alternative company personnel.  The use of twinned holes.  Documentation of primary data, data entry procedures, data verification, data storage (physical and electronic) protocols.  Discuss any adjustment to assay data.  Discuss any adjustment to assay data.  Discuss any adjustment to assay data.  Accuracy and quality of surveys used to locate diffil holes (collar and down-hole surveys), trenches, mine workings and other locations used in Mineral Resource estimation.  Specification of the grid system used.  Quality and adequacy of topographic control.  Quality and adequacy of topographic control.  Data spacing and distribution  Data spacing and distribution  Whether the data spacing and distribution procedure(s) and classifications applied.  Whether the data spacing and distribution procedure(s) and classifications applied.  Whether the data spacing and distribution procedure(s) and classifications applied.  Whether the data spacing and distribution procedure(s) and classifications applied.  Whether the data spacing and distribution procedure(s) and classifications applied.  Whether sample compositing has been applied.	Criteria	JORC Code Explanation	Commentary
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Criteria	JORC Code Explanation	Commentary
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.  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.	All reported mineralised intervals are downhole
Sample security	The measures taken to ensure sample security.	intervals not true widths.  Appropriate security measures are taken to dispatch samples to the laboratory. Chain of custody of samples is being managed by Sandfire Resources Limited. Samples are stored onsite and transported to laboratory by a licenced transport company in sealed bulker bags. The laboratory receipts received samples against the sample dispatch documents and issues a reconciliation report for every sample batch.
Audits or reviews	The results of any audits or reviews of sampling techniques and data.	No external audits or reviews of the sampling techniques and data have been completed, on this project.

**Section 2: Reporting of Exploration Results** 

Criteria	JORC Code Explanation	Commentary
Criteria  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.	The Morck Well project encompasses E52/1672, E52/1613 and E51/1033 which are jointly owned by Auris Minerals Limited (80%) and Fe Limited (20%). Sandfire is currently farming into the project with the right to earn 70% interest in the project area. (Refer to terms of Farm-In Agreement dated 27 February 2018). The adjacent tenement, E52/2049, is part of Enterprise Minerals' wholly owned Doolgunna project, which covers 975km². Sandfire is currently farming into the project with the right to earn 75% in the project area (Refer to terms of Farm-In Agreement dated 12 October 2016). The Project is centred ~120km north-east of Meekatharra, in Western Australia and forms part of Sandfire's Doolgunna Project, comprising of a package of 6,276 square kilometres of contiguous
		tenements surrounding the DeGrussa Copper Mine.
	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.	All tenements are current and in good standing.
Exploration	Acknowledgment and appraisal of exploration	Aside from Sandfire Resources and Auris Minerals
done by other	by other parties.	Limited there has been no recent exploration
parties		undertaken on the Morck Well Project.
		Exploration work completed prior to Auris's tenure included geochemical soil, stream

Criteria	JORC Code Explanation	Commentary
		sediment, laterite and rock chip sampling combined with geological mapping.  Exploration work on E52/2049 of the Doolgunna Project by Enterprise included a detailed fixed wing airborne magnetic survey in 2007, reassaying of pulps from a 1km x 1km spaced Maglag geochemical survey in 2009, a heli borne VTEM survey in 2009, 100m x 100m soil sampling and multielement geochemical analysis, and a 400m line spaced Slingram Moving Loop EM (MLEM) survey conducted in 2015.
Geology	Deposit type, geological setting and style of mineralisation.	The Morck Well Project lies within the Proterozoic-aged Bryah rift basin enclosed between the Archaean Marymia Inlier to the north and the Proterozoic Yerrida basin to the south. The principal exploration targets in the Doolgunna Project area are Volcanogenic Massive Sulphide (VMS) deposits located within the Proterozoic Bryah Basin of Western Australia. Secondary targets include orogenic gold deposits.
Drill hole Information	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:  o easting and northing of the drill hole collar;  elevation or RL (Reduced Level – elevation above sea level in metres);  o of the drill hole collar;  o dip and azimuth of the hole;  o down hole length and interception depth; and  o hole length.  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.	Refer to Tables 1-6 in the main body of 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.	Significant intersections are based on a cut-off grade of 0.1% Cu and/or 0.1ppm Au and may include up to a maximum of 3m of internal dilution. Cu and Au grades used for calculating significant intersections are uncut. Reported intersections are based on 5m samples from AC drilling.

Criteria	JORC Code Explanation	Commentary
	The assumptions used for any reporting of metal equivalent values should be clearly stated.	No metal equivalents are used in the intersection calculation.
Relationship between mineralisation widths and intercept lengths	These relationships are particularly important in the reporting of Exploration Results.	Downhole intercepts of mineralisation reported in this release are from a drillhole orientated approximately perpendicular to the understood regional stratigraphy. The drillhole may not necessarily be perpendicular to the mineralised zone. All widths are reported as downhole intervals.
	If the geometry of the mineralisation with respect to the drill-hole angle is known, its nature should be reported.	The geometry of the mineralisation, relative to the drillhole, is unknown at this stage.
	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').	All intersections reported in this release are downhole intervals. True widths are not known at this stage.
Diagrams	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.	Appropriate maps are included within the body of the accompanying document.
Balanced reporting	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.	The accompanying document is considered to represent a balanced report.
Other substantive exploration data	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.	Downhole Electromagnetic Surveying was completed by Merlin Geophysics. Details for the configuration of the survey can be seen in Appendix 1 of this release.
Further work	The nature and scale of planned further work (e.g. tests for lateral extensions or 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.	Additional work including additional drilling, downhole geophysics and surface geophysics is being planned.