

## ASX Announcement

1 February 2021

ASX: MKR

MARKET SENSITIVE



# Resource Upgrade – Mt Boppy Gold Project

Manuka Resources Limited (“**Manuka**” or the “**Company**”) is pleased to provide an update on recent drilling programs at the Company’s Mt Boppy gold deposit at Canbelego, NSW.

## Highlights:

- **23% increase in contained ounces and**
- **20% increase in grade**
- Since its IPO Manuka has undertaken four drill programs to test the extent of high-grade mineralisation beneath the Mt Boppy designed pit, with assays received from three of the four programs thus far
- A comprehensive 3,139m grade control drilling program at an average 10m spacing within the existing Mt Boppy pit was completed in November 2020, to confirm the extent of gold ore remaining within the current designed pit.
- Based on the gold assay results received and modelled to date, the Resource Update in all categories totals 362,430 tonnes @ 4.62g/t Au for a total contained 53,870oz Au.
- The Mt Boppy Resource Update is a 23% increase in contained ounces vs the last reported JORC Resource (September 2016) and around a 20% improvement in grade (see Table 2 below). This calculation excludes the circa 16,000oz Au equivalent depletion (already mined from Mt Boppy) following the September 2016 Resource.
- Within the current pit design, the Measured and Indicated Resource now totals 217,580 tonnes @ 4.19g/t Au, containing 29,320 ounces Au (with a 1.6g/t cut off).
- Below the current pit design, the Measured, Indicated and Inferred Resource now totals 144,850 tonnes @ 5.27g/t Au, containing 24,550 ounces Au (with a 3.0g/t cut off).
- The updated Resource has 207,230 tonnes @ 4.89g/t Au in the Measured Category for a subtotal of 32,570oz Au, 144,200 tonnes @ 4.15g/t Au in the Indicated Category for a subtotal of 19,300oz Au & 11,000 tonnes @ 6.7g/t in the Inferred Category for a sub total of 2,000oz Au.
- The assay results of the fourth ‘below pit’ drill program, due in late February 2021, could yield further upside to the Mt Boppy Resource.

Received results from the drill programs have been incorporated into an update of the Mt Boppy Resource by Mining Associates P/L, a summary of which follows. The detailed Resource Report and estimate is available on the Manuka Resources Limited website.

## Introduction

The Mount Boppy Gold Mine is located at Canbelego, approximately 50 km east of Cobar, NSW. Underground mining from 1897 to 1923 extracted gold ore to a maximum depth of 230m below surface.

Open pit mining by Polymetals and Black Oak Minerals occurred in two phases between 2002-2005 and in 2015 down to a maximum depth of 80m below surface level. Open pit mining by Manuka Resources Ltd (MKR) recommenced in mid-2020.

Gold mineralisation occurs in quartz-sulphide veining hosted in tension fractures in two north-striking and steeply west-dipping zones: the thicker, more continuous East Lode and narrower, less well developed West Lode. Both lodes are truncated to the west and at depth by a NNE-striking and steeply east-dipping structure known as the West Fault.

During underground mining workings were supported with timber props and back-filled with processed tailings sands. Sand-fill samples grade between 0.05 g/t Au and 38 g/t Au. Highest grades in remnant (un-mined) material occur proximal to the upper (hanging wall) zone of the East Lode above dip flexures and near the intersection with the West Lode.

## Mineral Resource Estimate

The Mineral Resource estimate for Mt Boppy is reported within the designed pit that reaches a maximum depth of 115 m below surface at the southern end of the deposit.

Mining Associates (MA) has classified the current estimate as Measured, Indicated and inferred. Resources are reported with respect to the current pit design. Material within the pit design is reported at a 1.6 g/t cut off and material below the pit design is reported to a 3.0 g/t cut off.

Classification	Tonnes	Grade (g/t)	Gold (oz)
Measured	207,230	4.89	32,570
Indicated	144,200	4.15	19,300
Inferred	11,000	6.7	2,000
Total	362,430	4.62	53,870

**Table 1: Mt Boppy Resource Update**

\*The preceding statements of Mineral Resources conforms to the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code) 2012 Edition.

Due to rounding to appropriate significant figures, minor discrepancies may occur. All tonnages reported are dry metric.

## INFORMATION USED

This report is based on technical data provided by Manuka Resources (MKR) to Mining Associates (MA). MKR provided open access to all the records necessary, in the opinion of MA, to enable a proper assessment of the project and resource estimates. MKR has warranted in writing to MA that full disclosure has been made of all material information and that, to the best of MKR's knowledge and understanding, such information is complete, accurate and true. Readers of this report must appreciate that there is an inherent risk of error in the acquisition, processing and interpretation of geological and geophysical data, and MA takes no responsibility for such errors.

Additional relevant material was acquired independently by MA from a variety of sources. The list of references at the end of this report lists the sources consulted. This material was used to expand on the information provided by MKR and, where appropriate, confirm or provide alternative assumptions to those made by MKR.

## RESOURCE ESTIMATION

Estimation used Ordinary Kriging in two passes.

Estimates were constrained by DTM planes representing breaks in grade tenor, three domains were created the northern, southern and deep domains. (1)

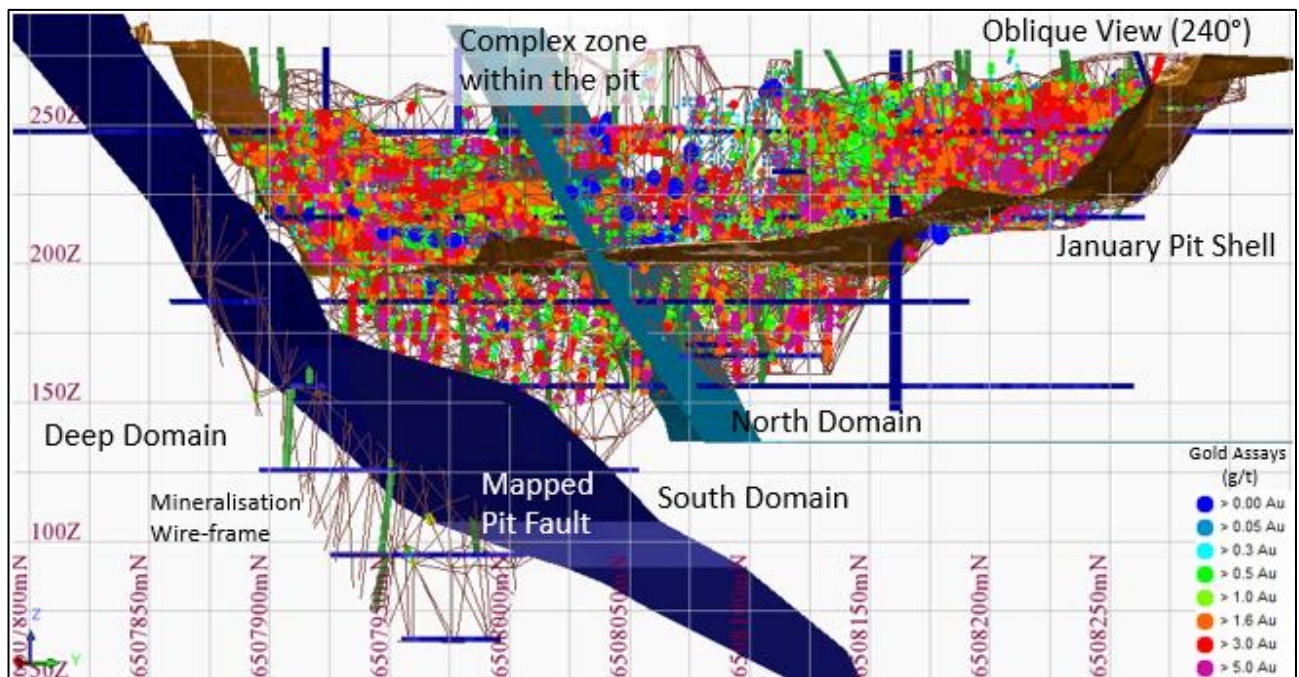


Figure 1: Oblique View N240°- Mt Boppy Estimation Domains

All stope fill (includes rises) material was assigned a grade of 3.6 g/t Au, an historical figure. This is lower than the average DD-RC composite grade for stope fill material that gives an uncapped mean of 3.79 g/t Au. Blast hole data is considered less useful for defining mean grades of stope fill due to the likelihood of samples being mixed fill and wall rock material (stope mean of blast holes is 4.99 g/t).

Composite statistics were analysed to determine if grade capping was necessary to reduce the influence of outliers on the estimation. Combined RC-DD data was examined and a grade cap at the 98.5 percentile, or 35.2 g/t Au, was determined to be optimal. The derived Block model uses parent blocks 5 m (x) by 10 m (y) by 5 m (z) with sub-blocking to 0.625 m by 1.25 m by 0.625 m. The block model was extended down to 60 m RL in order to fully cover the interpreted extent of mineralisation at depth.

### Previous Resources

Following completion of mining at Mt Boppy, resource definition for the Mt Boppy MLs focused on remaining material below the Black Oak Minerals (BOK) pit. MKR undertook drilling programs designed to intersect high the grade lodes beneath the open pit. Resources were updated by MA in May 2016, 6 additional RC holes were drilled and the resource updated for September 2016, the MA 2021 model using all grade control and exploration drilling to date was reported to the same

parameters as previous report for direct comparison.

For comparison purposes the model was reported as per the 2016 reported resource, above the BOK designed pit (mt\_boppy\_design\_goodbye\_cut\_201511.dtm) and above 2.0 g/t Au. (Table 2).

Model	Tonnes	Grade (g/t Au)	Gold (ounces)
BOK Schedule December 2015	343,000	3.58	39,500
Mining Associates May 2016	293,000	3.83	36,000
Mining Associates September 2016	292,000	3.72	35,000
Mining Associates January 2021	301,000	4.44	43,000

Table 2: Reported as per 2016 resource (>2.0g/t)

*A qualified person has not done sufficient work to classify the historical estimates as current mineral resources and the issuer has superseded these estimate with the current mineral resource.*

### **Reasonable Prospects for economic extraction.**

Manuka are currently operating the Mt Boppy Mine site and associated costs to date have been used in the Resource review process.

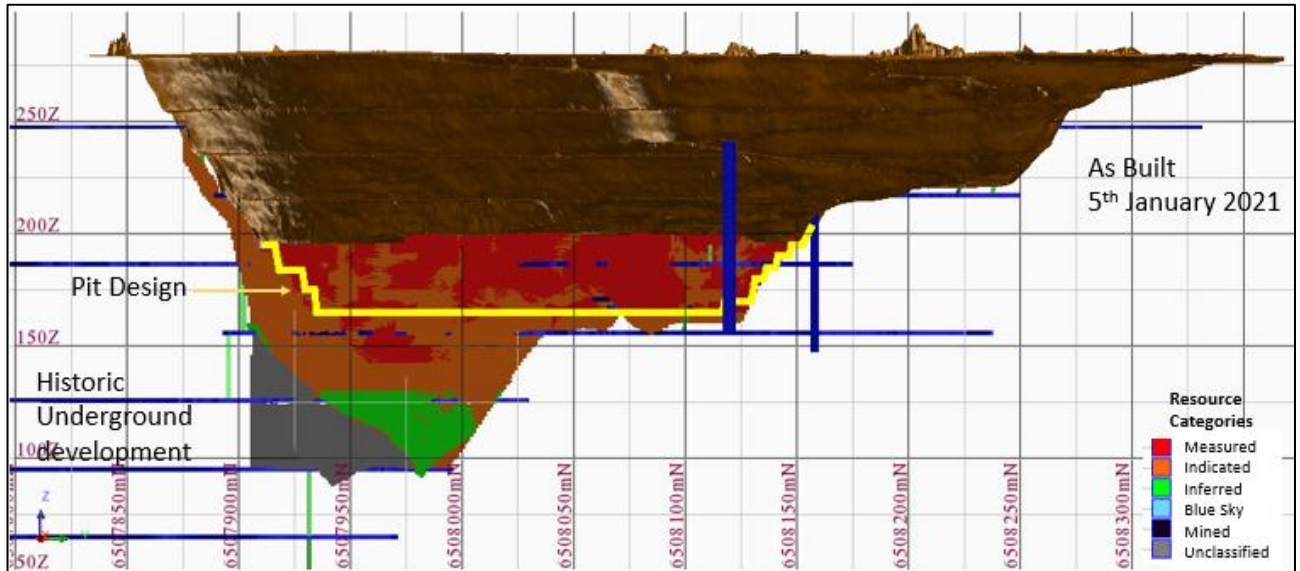
Resources reported within the pit design are reported to the current mining cut off (1.6g/t) for fresh material. Resource reported below the designed pit are expected to carry higher mining costs and have been reported above 3.0 g/t, other costs are assumed to be similar.

### **Resource Summary**

The Mt Boppy Resources are classified in accordance with the guidelines of JORC (2012), using a combination of average distance to informing samples, number of informing samples used and kriging statistics (conditional bias slope and kriging variance).

The following classification criteria were applied:

- Measured: blocks estimated in pass 1 using a distance to the nearest sample of < 10 m, average sample distance of < 20 m and conditional bias slope >0.7 and kriging variance <0.4.
- Indicated: blocks estimated in pass 1 using a distance to the nearest sample of 20m, and average sample distance of < 40 m, with a conditional bias slope >0.5, plus all stope fill material
- Inferred: remaining blocks estimated with at least 6 samples
- Unclassified: blocks estimated with less than 6 samples.



**Figure 2: Long Section: Resource Classification**

Based on the study (Resource Report available on the Manuka Resources Limited website), delineated mineralization of Mt Boppy deposit is classified as Measured, Indicated and Inferred resources according to the definitions of the JORC Code (2012) as presented in Table 3.

Resource	Category	Tonnes	Grade	Ounces	Stope fill
Current Open Pit (> 1.6 g/t)	Measured	147,980	4.46	21,220	0%
	Indicated	69,600	3.60	8,100	100%
Below current Pit (> 3.0 g/t)	Measured	59,250	5.96	11,350	0%
	Indicated	74,600	4.67	11,200	59%
	Inferred	11,000	6.7	2,000	0%
Sub Total	Measured	207,230	4.89	32,570	0%
	Indicated	144,200	4.15	19,300	79%
	Inferred	11,000	6.7	2,000	0%
Total		362,430	4.62	53,870	31%

**Table 3: Resource Summary (Mineral Resource 2020)**

\*The preceding statements of Mineral Resources conforms to the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code) 2012 Edition.

Due to rounding to appropriate significant figures, minor discrepancies may occur  
All tonnages reported are dry metric

## About Manuka

Manuka Resources Limited (ASX: MKR) is an Australian mining company located in the Cobar Basin, central west New South Wales. It is the 100% owner of two fully permitted gold and silver projects which include the following:

Mt Boppy Gold mine and neighbouring tenements hosting an existing open pit Measured and Indicated Resource of 351,430 tonnes grading 4.62 g/t gold, based on a cut-off grade of 1.6 g/t for material within its current open pit design and a cut-off grade of 3.0 g/t for material below the current pit design, and an inferred resource of 11,000 tonnes grading 6.7 g/t below the designed pit reported at a 3.0 g/t cut off. The Mt Boppy project is currently in production and processing its gold ore through the Company's processing plant at Wonawinta.

Wonawinta silver project, with mine, processing plant and neighbouring tenements, hosting 52 million ounces of silver in an inferred JORC compliant silver resource grading 42 g/t silver at a cut-off grade of 20 g/t silver. The Wonawinta processing plant has a nameplate capacity of 850,000 tonnes per year. The Company expects to announce a Resource Update during Q1 2021.

The Wonawinta silver project was previously the largest producer of primary silver in Australia. Manuka intends to resume the production of silver doré in mid-2021, following the completion of mining at Mt Boppy.

**This announcement has been approved for release by the Board of Directors of Manuka Resources Limited.**

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**Important Information**

This report includes forward-looking statements and comments about future events, including the Company's expectations about the performance of its businesses. Forward-looking words such as "expect", "should", "could", "may", "predict", "plan", "will", "believe", "forecast", "estimate", "target" or other similar expressions are intended to identify forward-looking statements. Such statements involve known and unknown risks, uncertainties, assumptions and other important factors, many of which are beyond the control of the Company and which may cause actual results, performance or achievements to differ materially from those expressed or implied by such statements. Forward-looking statements are provided as a general guide only, and should not be relied on as an indication or guarantee of future performance. Given these uncertainties, recipients are cautioned to not place undue reliance on any forward-looking statement. Subject to any continuing obligations under applicable law, the Company disclaims any obligation or undertaking to disseminate any updates or revisions to any forward-looking statements in this report to reflect any change in expectations in relation to any forward-looking statements or any change in events, conditions or circumstances on which any such statement is based. No Limited Party or any other person makes any representation, or gives any assurance or guarantee that the occurrence of the events expressed or implied in any forward-looking statements in the report will occur.

**Previously reported information**

This report includes information that relates to Mineral Resources and Ore Reserves which were prepared and first disclosed under JORC Code 2012. The information was extracted from the Company's previous ASX announcement dated 10 July 2020 (Prospectus). The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and, in the case of reporting of Ore Reserves and Mineral Resources, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which any Competent Person's findings are presented have not been materially modified from the original market announcement.

**Competent Person Statement**

Information in this announcement that relates to Exploration Results and Resource Updates is based on, and fairly represents, information and supporting documentation prepared by Mr Ian Taylor, a Competent Person who is a Member of the Australian Institute of Geoscientists. Mr Taylor 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 (or "CP") as defined in the 2012 Edition of the Australasian Code for Reporting of Information in this announcement that relates to Exploration Results. Mr Taylor is employed by Mining Associates Pty Ltd, a consulting firm engaged by Manuka Resources to provide technical expertise and does not hold any interest in Manuka Resources. Mr Taylor consents to the inclusion in this announcement of all technical statements based on his information in the form and context in which they appear.

**APPENDIX 1: JORC CODE 2012 EDITION – TABLE 1**

**Section 1 Sampling Techniques and DATA**

(Criteria in this section apply to all succeeding sections)

<b>Criteria</b>	<b>Commentary</b>
<b>Sampling techniques</b>	<ul style="list-style-type: none"> <li>• Samples were collected from a variety of methods from three main phases of drilling: Polymetals (PML, 2002-2015), Black Oak Minerals (BOK, 2015), MAAS (2016) and Manuka Resources (MKR, 2020-present).</li> <li>• From historic reports, PML and BOK sampling techniques all followed industry best practice.</li> <li>• Sampling techniques for RC drilling comprised 1 m reverse circulation samples, from which 3 kg was pulverised to produce a 50 g charge for fire assay.</li> <li>• Diamond drill core was cut in half over varying interval lengths depending on logged geological units and was crushed and pulverised to produce a 50 g charge for fire assay.</li> <li>• Open hole percussion samples collected over 2.5 m intervals using a 3 tier riffle splitter and pulverised to produce a 50g charge for fire assay or 200g charge for bottle roll leach</li> </ul>
<b>Drilling techniques</b>	<ul style="list-style-type: none"> <li>• PML: Diamond (HQ diameter) and RC drilling (5.5 inch face sampling bit), Open hole percussion blasthole drilling</li> <li>• PML: Diamond (HQ diameter) and RC drilling (5.5 inch face sampling bit), Open hole percussion blasthole drilling</li> <li>• MAAS: RC drilling (5.5 inch face sampling bit)</li> <li>• MKR: RC drilling (5.5 inch face sampling bit), open hole percussion blasthole drilling</li> </ul>
<b>Drill sample recovery</b>	<ul style="list-style-type: none"> <li>• No recovery information is available for pre-2011 drilling</li> <li>• For PML and BOK RC drilling from 2011 onwards, recoveries were recorded by comparing the weight of each metre of sample to a theoretical sample weight, estimated using the hole diameter and the degree of weathering. The average recovery was calculated to be 80%, with no appreciable difference between weathering domains.</li> <li>• PML and BOK Diamond drilling recoveries were measured and recorded, with average recoveries of 98% within mineralized zones. There was no correlation between recovery and gold grades.</li> <li>• MKR RC drilling did not quantitatively record recovery but RC piles were qualitatively assessed. Poor to no recovery zones were commonly associated with historic stopes.</li> <li>• No relationship exists between gold grades and recoveries in either RC or diamond logging.</li> </ul>
<b>Logging</b>	<ul style="list-style-type: none"> <li>• Drill holes were geologically logged to various standards over the project history. Hardcopy logs are available for historic drilling.</li> <li>• For post-2011 PML diamond core drilling, core recovery and RQD data were recorded for the core run intervals, and core was routinely photographed.</li> <li>• It is unlikely that the historical grade control drilling was logged geologically. Recent (post-2013) grade control RC and blasthole drilling was logged for the presence of stope fill.</li> </ul>
<b>Sub-sampling techniques and sample preparation</b>	<ul style="list-style-type: none"> <li>• PML Diamond core intervals for sampling were cut in half, following the orientation line to ensure a consistent side of the core was sent for assay.</li> <li>• PML and BOK RC samples were split at the rig by cone splitter at 1 m intervals.</li> <li>• MKR RC samples were split at the rig by a 3 tier riffle splitter at 1 m intervals</li> <li>• BOK and PML blasthole grade control samples were split at the rig by a 3-tier riffle splitter.</li> <li>• MKR blasthole samples were collected by quartering of the blasthole cuttings cone</li> <li>• Field duplicate results for RC and diamond core samples for PML, BOK and MKR showed &gt;95% of data within ±15%, with no appreciable difference between drilling phases.</li> <li>• Samples were dried and pulverised to a nominal 90% passing 75 µm screen.</li> <li>• Gold is finely disseminated and associated with sulphides in quartz veins and the RC sub-sample size is considered appropriate.</li> </ul>
<b>Quality of assay data and laboratory tests</b>	<ul style="list-style-type: none"> <li>• PML, BOK, MAAS and MKR RC samples were analysed at ALS Laboratories Orange using Fire Assay with a 50g charge. Fire Assay is considered a 'total' technique for non-coarse gold.</li> <li>• Blank and standard samples were included in batches sent to ALS at a rate of 1 standard and one blank for every 30 routine samples. No issues were noted with blank and standard analysis.</li> <li>• ALS laboratories undertake internal QC checks including standards, blanks and duplicates.</li> </ul>

Criteria	Commentary
	<ul style="list-style-type: none"> <li>Some BOK grade control samples were analysed by 200 g bottle roll leach with AAS finish. A series of duplicates were analysed by both fire assay and bottle roll leach to determine an average leach recovery.</li> </ul>
<b>Verification of sampling and assaying</b>	<ul style="list-style-type: none"> <li>Two PML RC holes were twinned with diamond core holes.</li> <li>Analyses of twinned RC and diamond holes showed a very close match between grade and length of intersected mineralisation.</li> </ul>
<b>Location of data points</b>	<ul style="list-style-type: none"> <li>Drill hole collars were located by either Total Station or differential GPS (DGPS) surveys to a high degree of accuracy using the Map Grid of Australia zone 55 coordinate system.</li> <li>Down hole surveys were collected by camera or Reflex magnetic multishot system at 30 m intervals.</li> <li>Some RC grade control and other drill holes were unable to be surveyed due to hole collapse during or after drilling.</li> <li>Topographic control is via a triangulated wireframe surface derived from an aerial photogrammetry survey as well as Total station surveys of the pit.</li> <li>Topographic control is considered adequate given the relatively subdued relief in the resource area.</li> </ul>
<b>Data spacing and distribution</b>	<ul style="list-style-type: none"> <li>Drilling was undertaken on a nominal 10-12.5 m (along strike) by 20 m grid throughout the majority of the Resource as well as closely spaced grade control drilling (2.5 m x 3 m).</li> <li>The data spacing and distribution is sufficient to establish the degree of geological and grade continuity appropriate for estimation by Ordinary Kriging and the classifications of Measured, Indicated and Inferred Resources.</li> <li>RC and diamond core samples were composited over 2 m and grade control holes over 2.5 m to minimize sample splitting.</li> </ul>
<b>Orientation of data in relation to geological structure</b>	<ul style="list-style-type: none"> <li>Mineralisation is controlled by steeply west dipping vein structures.</li> <li>PML, BOK and MKR surface RC and diamond drilling is generally at high angles to the gold mineralisation, drilled towards the east at 50°-70°</li> <li>MKR in-pit grade control RC drilling was completed using a variety of drill hole orientations due to access and space constraints on the pit floor, with vertical holes avoided where possible.</li> <li>All blast hole grade control holes are vertical, however the greater density of this sampling reduces the chances of introducing bias.</li> </ul>
<b>Sample security</b>	<ul style="list-style-type: none"> <li>BOK and MKR sampling was supervised by a company representative up to the point of dispatch to ALS laboratories using a local freight company.</li> <li>Samples dispatched by MKR to ALS in Orange were bagged in larger polyweave sacks secured with zip ties and delivered by a local freight company. Sample numbers received by ALS were checked against dispatched numbers.</li> </ul>
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li>No audits/reviews of sampling techniques and data have been undertaken on any drill programs.</li> </ul>



## Section 2 Reporting of Exploration Results

(Criteria in this section apply to all succeeding sections.)

Criteria	Commentary
<b>Mineral tenement and land tenure status</b>	<ul style="list-style-type: none"> <li>ML1681, ML311, MPL 240, GL 3255, GL 5836, GL 5848, and GL5898 and exploration license EL 5842 are all held by Mt Boppy Resources Pty Ltd. (wholly owned by MKR)</li> <li>The property on which the Mount Boppy mine situated is Crown Land.</li> <li>A Native Title Agreement is in place with the traditional owners.</li> <li>The Company notes that no land within the license area may be classified as sensitive land. No further approvals other than those required under the Mining Act 1992 are required.</li> </ul>
<b>Exploration done by other parties</b>	<ul style="list-style-type: none"> <li>The deposit was first discovered in 1896 and mined by underground methods up to 1923.</li> <li>Various companies (notably PML, Golden Cross and BOK) have conducted exploration activities around Mt Boppy since the 1960s, with treatment of tailings and open pit mining up until 2015.</li> </ul>
<b>Geology</b>	<ul style="list-style-type: none"> <li>The Mount Boppy deposit is located in the northern part of Devonian Canbelego-Mineral Hill Rift Zone, flanked by the Kopyje Shelf, on the far eastern side of the Cobar Basin.</li> <li>Mineralisation occurs in brecciated and silicified sediments and quartz veining developed along a west-dipping fault that down-throws Devonian aged Baledmund Formation rocks on its western side against Orodovician age Girilambone Group rocks on its eastern side.</li> <li>The Main Lode strikes approximately north-south and dips at approximately 70-80° west.</li> <li>The best mineralisation in wall rocks occurs within the Baledmund Formation rocks on the western side of the Main Lode where the lode has a shallower dip.</li> <li>Historical underground workings were supported with timber and back-filled with tailings sands from processing. Sand fill samples grade between 0.05 g/t Au and 38 g/t Au with an average of 3.5 g/t Au.</li> <li>Mineralisation is predominantly gold, associated with grey quartz veins and minor pyrite.</li> </ul>
<b>Drill hole Information</b>	<ul style="list-style-type: none"> <li>Exploration results not being reported.</li> </ul>
<b>Data aggregation methods</b>	<ul style="list-style-type: none"> <li>Exploration results not being reported.</li> </ul>
<b>Relationship between mineralisation widths and intercept lengths</b>	<ul style="list-style-type: none"> <li>Exploration results not being reported.</li> </ul>
<b>Diagrams</b>	<ul style="list-style-type: none"> <li>Exploration results not being reported.</li> </ul>
<b>Balanced reporting</b>	<ul style="list-style-type: none"> <li>Exploration results not being reported.</li> </ul>
<b>Other substantive exploration data</b>	<ul style="list-style-type: none"> <li>Exploration results not being reported.</li> </ul>
<b>Further work</b>	<ul style="list-style-type: none"> <li>There is scope for further definition of high grades that extend below the current planned pit floor.</li> </ul>

### Section 3 Estimation and Reporting of Mineral Resources

(Criteria listed in section 1, and where relevant in section 2, also apply to this section.)

Criteria	Commentary
<b>Database integrity</b>	<ul style="list-style-type: none"> <li>MA was provided with an export of the current MKR drill hole database</li> <li>The database contained tables for Collar details and metadata, downhole surveys, assays, lithology, alteration, core recoveries, veins, minerals and oriented structures.</li> <li>MS Access queries were used to perform basic validation checks, and holes were then loaded into Surpac for a second round of validation, hole lengths, sample lengths, down hole survey errors.</li> </ul>
<b>Site visits</b>	<ul style="list-style-type: none"> <li>Ian Taylor (AusIMM(CP)) of Mining Associates visited the property at several times during 2020 including a period acting as Mt Boppy Senior Geologist.</li> </ul>
<b>Geological interpretation</b>	<ul style="list-style-type: none"> <li>Geological and mineralisation interpretation was carried out on approximately 10 m spaced sections, oriented perpendicular to the strike of mineralization.</li> <li>Mineralisation was modelled as a single domain above 1 g/t Au, which represents a clear natural break in grade statistics</li> <li>Intercepts of lesser grade were included where necessary to aid continuity.</li> <li>The mineralised domain surrounded other 3D shapes modelled to represent historic underground workings filled with tailings material and timber supports.</li> <li>Historic workings outlines were derived from old mine plans and drill hole logging.</li> <li>Drill hole logging and sampling, surface mapping and grade control blast hole sampling were all used to help build the geological and mineralisation model to a high degree of confidence.</li> <li>Mineralisation displayed very good continuity between sections</li> </ul>
<b>Dimensions</b>	<ul style="list-style-type: none"> <li>The Mineral Resource has a strike length of 455 m and a maximum depth below surface of 215 m. The horizontal width of combined mineralised domains averages 60 m, and dip 85° to the west.</li> </ul>
<b>Estimation and modelling techniques</b>	<ul style="list-style-type: none"> <li>Estimation was carried out in Surpac 7.3.</li> <li>Statistical analyses was carried out on composite samples from mineralization each domain to establish declustered means, top cuts and spatial variability (Variography)</li> <li>Directional variography indicated differences in spatial anisotropy between the northern and southern parts of the deposit, divided by an interpreted cross-structure striking northwest.</li> <li>Gold grades were estimated by Ordinary Kriging (OK) interpolation methods into a Surpac block model with parent block dimensions of 10 m (along strike) by 5 m (across strike) by 5 m (vertical).</li> <li>The parent block size is approximately half of the sample separation distance. The parent blocks were sub-celled to 1.25 m (along strike) by 0.625 m (across strike) by 0.625 m (vertical) for volume resolution.</li> <li>All estimates were made into parent blocks. Blocks were filled using two estimation passes, with an increasing search radius and decreasing minimum number of samples. Details are given in the report.</li> <li>Search ellipse directions and anisotropy were aligned with variography results.</li> <li>Domain boundaries were treated as hard</li> <li>The estimates were validated by visual inspection of block grades and drill hole data, comparison of alternate estimation methods</li> </ul>
<b>Moisture</b>	<ul style="list-style-type: none"> <li>Tonnages are based on dry tonnes.</li> </ul>
<b>Cut-off parameters</b>	<ul style="list-style-type: none"> <li>Cut-off grades applied according to potential mining and processing methods. A cut-off grade of 1.6 g/t was used for material within the designed open pit, based on current production. Resources below the pit are reported to a 3.0 g/t Au cut off, to reflect higher mining costs associated with underground mining methods.</li> </ul>
<b>Mining factors or assumptions</b>	<ul style="list-style-type: none"> <li>The current mineral resource does not include any dilution or ore loss associated with practical mining constraints.</li> </ul>
<b>Metallurgical factors or assumptions</b>	<ul style="list-style-type: none"> <li>Metallurgical test work and previous processing operations indicate recoveries of around 78% for CIL. Current metallurgical recoveries average 75.7%, based on an aqua regia determined head grade at the plant.</li> </ul>
<b>Environmental factors or</b>	<ul style="list-style-type: none"> <li>The project is located on an existing mining lease</li> </ul>

Criteria	Commentary
<b>assumptions</b>	<ul style="list-style-type: none"> <li>No specific issues beyond normal requirements for open pit mining in NSW</li> </ul>
<b>Bulk density</b>	<ul style="list-style-type: none"> <li>Bulk density values used for conversion of block model volumes to tonnages were derived from 1,306 core sample density measurements using water displacement methods.</li> <li>Density was assigned to the block model based on weathering domain; 2.4 t/m<sup>3</sup> for oxide, 2.68 t/m<sup>3</sup> for transitional and 2.77 t/m<sup>3</sup> for fresh material.</li> <li>Weathering domains were defined by drill hole logging for the oxide/transitional boundary and an RL of 175 m for the transitional/fresh boundary.</li> <li>Stope fill was assigned a density value 1.2 t/m<sup>3</sup> based on a density of 1.5 t/m<sup>3</sup> and 80% of the stopes being filled. This figure is considered somewhat conservative based on previous mining experience.</li> <li>No correlation was observed between grade and density</li> </ul>
<b>Classification</b>	<ul style="list-style-type: none"> <li>Resources were classified according to the number of samples used, distance to samples and estimation confidence statistics:</li> <li>Resource categories Measured, indicated and inferred were assigned to the resource reflecting the various confidence levels in the resource estimate</li> </ul>
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li>No external audits or reviews of the resource estimate have been carried out to date.</li> </ul>
<b>Discussion of relative accuracy/confidence</b>	<ul style="list-style-type: none"> <li>The Resource estimate for Mt Boppy is considered robust. Measured resources are considered representative of local tonnes and grade. Grade control drilling and pit mapping has informed the measured resource areas. Indicated and inferred resources are considered representative of the global tonnes and grade contained within the area of the deposit tested by diamond and RC drilling</li> <li>The interpretations of geology and mineralisation are well constrained and support high confidence in the estimate.</li> </ul>