



## Red River announces maiden gold resource for Hillgrove stockpile

### Highlights:

- **Maiden Inferred Mineral Resource of 225,000 tonnes @ 2.5 g/t Au for Bakers Creek Stockpile at Hillgrove Gold Mine**
- **Processing Bakers Creek Stockpile to underpin Hillgrove Gold Mine restart in 2020**
- **Potential for Stockpile to feed Hillgrove Mill for initial 12 months - planned transition to full restart of underground mining operations once Stockpile has been treated**
- **Stockpile provides rapid low capex restart with low cost gold production - no mining cost**
- **Hillgrove Gold Mine Restart Study is progressing - ~6 months to first gold production**

Base and precious metals producer Red River Resources Limited (ASX: RVR) (“Red River” or “the Company”) is pleased to announce an Inferred Mineral Resource of 225,000 tonnes @ 2.5 g/t Au for the Bakers Creek Stockpile at the Hillgrove Gold Mine in New South Wales (refer to Table 1).

Table 1 Bakers Creek Stockpile

Resource Class	Tonnage (kt)	Au (g/t)	Contained Au (koz)
Measured	-	-	-
Indicated	-	-	-
Inferred	225	2.5	18
<b>Total</b>	<b>225</b>	<b>2.5</b>	<b>18</b>

Processing the Bakers Creek stockpile will allow Red River to commence gold production at Hillgrove in CY2020 using existing equipment and infrastructure, leveraging its exposure to high gold prices. Red River acquired the project in August 2019.

Metallurgical test work carried out by Red River indicates 75-80% of the gold contained in the Bakers Creek Stockpile can be recovered to gold doré using the existing Hillgrove Mill (onsite gravity and flotation concentrate leaching) with minimal capital expenditure.

Red River Managing Director Mel Palancian said, *“The Bakers Creek Stockpile offers Red River an exceptionally low capital cost restart route for the Hillgrove Gold Mine. The short time line to restart operations combined with the forecast very low operating costs (no mining cost) will allow Red River to generate material cash flow over the 12 month period of processing the Stockpile, taking advantage of the current seven year high gold price. Red River is also working on the full restart of Hillgrove’s underground mining operations, which will occur once the Stockpile has been treated.”*

**Address:** Level 6, 350 Collins Street, Melbourne, VIC, 3000, Australia

**T:** +61 3 9017 5380 **F:** +61 3 9670 5942 **E:** info@redriverresources.com.au

[www.redriverresources.com.au](http://www.redriverresources.com.au)

### ***Bakers Creek Stockpile***

The Bakers Creek Stockpile was produced during the mining of the Bakers Creek Mine, which produced 303,900oz gold from 175,980 tonnes of ore at approximately 49 g/t Au during operation from 1877 to 1921 (production recorded up to 1916).

The ore was hand sorted underground and again on surface, with the stockpile containing material rejected during surface hand sorting. The stockpile is approximately 105m by 70m and 15-20m deep. The road that cuts the Bakers Creek Waste Stockpile (refer to Figure 1) was constructed by Straits Resources and is the main haul road to the Hillgrove Mill (distance to Hillgrove Mill of 4.2km).

Figure 1 Bakers Creek Stockpile



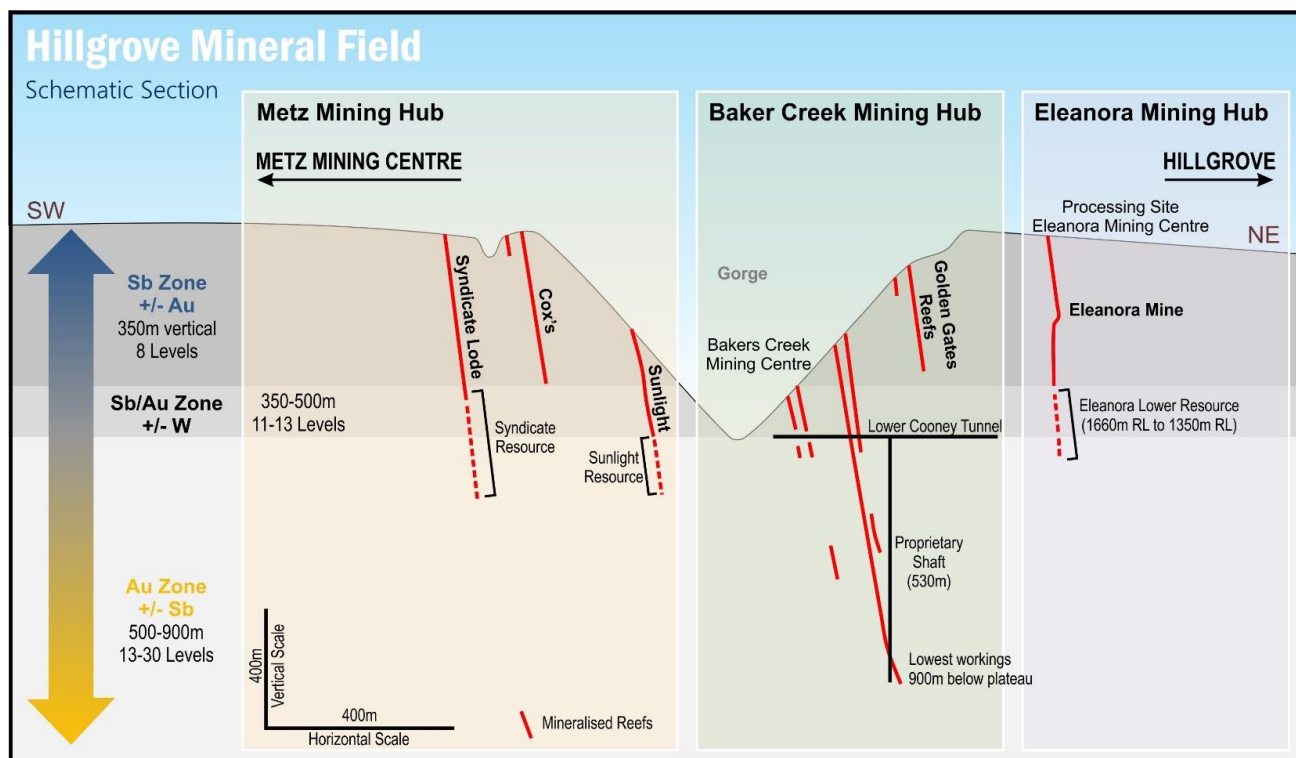
## Geology and Geological Interpretation

Gold and antimony mineralisation at Hillgrove occurred late in the orogenic development and is structurally controlled. The deposits exhibit various styles of hydrothermal activity, with veining ranging from simple single veins through parallel stringers to quartz stockwork and wall rock breccias.

The Bakers Creek Lode was historically mined to a depth of approximately 900m below surface. Similar to other deposits at Hillgrove, the Bakers Creek shear system has been subject to multiple hydrothermal fluid events and structural reactivation.

The vein systems in the Hillgrove Mineral Field are strongly zoned, with the highest zone (~350m vertical thickness) being antimony dominant (stibnite) plus gold, transitioning to an antimony-gold zone with scheelite (tungsten) mineralisation (~150m vertical thickness) transitioning to a gold dominant zone with minor antimony at depth. The gold zone is open at depth.

Figure 2 Hillgrove Mineral Field Schematic Section



### ***Sampling and sub-sampling techniques***

The Bakers Creek Stockpile has been subject to extensive sampling since 1982, with 337 samples taken for a total sample weight of 1,735kg.

Table 2 Review of Bakers Creek Waste Rock Dump Sampling (post 1982)

<b>Date</b>	<b>Company</b>	<b>Samples Taken</b>	<b>Sample Weight (kg)</b>	<b>Average Grade (Au g/t)*</b>
1982	Greg Karter & Associate Pty Ltd	4	4.0	0.7
1983	Pacific Goldmines NL	14	154.0	5.9
1987	Mt Gipps Ltd	60	1010.0	1.7
2007	Straits Hillgrove Gold	24	64.2	3.5
2018	Hillgrove Mines Pty Ltd	25	79.9	2.5
2019	Hillgrove Mines Pty Ltd	210	422.8	3.0
<b>Total</b>		<b>337</b>	<b>1735</b>	<b>2.5</b>

\*Average gold grade is calculated as weighted average grade

The majority of samples were taken as grab samples from various surface locations on the Stockpile. Straits Hillgrove Gold (2007) used an excavator to dig test pits at eight locations and three sampling depths were used including a surface depth (0-10cm), a middle depth (200-210cm) and a lower depth (500-510cm) below the surface to take the 24 samples.

### ***Drilling Techniques***

No drilling was carried out

### ***Classification Criteria***

The resources have been reported above a 0 g/t Au cut-off grade, a value considered appropriate for potential economic extraction and have been classified as Inferred based on the demonstrated continuity and consistency of the Stockpile.

It is Red River's intention to mine and process the entirety of the Stockpile and as such there is no mining cost allocated to the Stockpile as it is freely available to be loaded and transported to the Hillgrove Mill for processing.

### ***Sample Analysis Method***

Samples taken by Hillgrove Mines Pty Ltd (2018 & 2019) were sent to ALS (Brisbane) for analysis. Analysis consisted of 50g Fire Assay for Au & four acid digest and Inductively Coupled Plasma Mass Spectrometry (ICP-MS) for the following elements; As, Sb, Ag, Cu, Fe, Pb, S, W and Zn.

### **Estimation Methodology**

The Stockpile was flown by a drone survey to create a detailed 3D wireframe of the surface of the Stockpile and the surrounding terrain. The 3D model was then used to create a volume estimate for the Stockpile, which was then used to calculate the estimated tonnage of the Stockpile

The Bakers Creek Stockpile has been subject to extensive sampling since 1982, with 137 samples taken for a total sample weight of 1,735kg. The most recent sampling (2018 & 2019) was carried out by Red River. Red River's personnel have reviewed the records of the sampling carried out by third parties and believe that the weighted average gold grade (for sampling conducted post 1982) is an appropriate grade to allocate to the Stockpile.

Table 3 Review of Bakers Creek Waste Rock Dump Sampling (post 1982)

<b>Date</b>	<b>Company</b>	<b>Samples Taken</b>	<b>Sample Weight (kg)</b>	<b>Average Grade (Au g/t)*</b>
1982	Greg Karter & Associate Pty Ltd	4	4.0	0.7
1983	Pacific Goldmines NL	14	154.0	5.9
1987	Mt Gipps Ltd	60	1010.0	1.7
2007	Straits Hillgrove Gold	24	64.2	3.5
2018	Hillgrove Mines Pty Ltd	25	79.9	2.5
2019	Hillgrove Mines Pty Ltd	210	422.8	3.0
<b>Total</b>		<b>337</b>	<b>1735</b>	<b>2.5</b>

\*Average gold grade is calculated as weighted average grade

### **Cut-Off Grade Selection**

The Mineral Resources have been reported above a 0 g/t Au cut-off into the Inferred categories. The basis for cut-off grade is that a 0 g/t Au cut-off grade is assessed as the lower cut-off for definition of potential economic mineralisation based on the intention to mine and process the entire stockpile.



### **Mining and Metallurgical Methods and Parameters, and Other Material Modifying Factors**

The bulk density of the Mineral Resource was calculated by filling a 44-gallon drum with the rock from the Bakers Creek Stockpile. This drum was then driven to the Hillgrove Mill, and during this trip a small amount of settling took place, thus the drum was topped up with a small amount of extra Bakers Creek Stockpile rock. Water was then added to the drum until it was flush with the top, the amount of water added was carefully measured and recorded. It took 94.5L of water to fill the drum to the top, refer to figure 3.

Figure 3 44 gallon drum filled with Bakers Creek Stockpile rock and 94.5L of water.



Based on 44-gallon drum test the following calculations were made;

		Units
44 Gallon drum volume	220.5	L
Volume of Water	94.5	L
Volume of Rock + Moisture*	126.0	L
Volume of Rock dry	124.7	L
SG of Rock (in-situ)**	2.73	g/cm3
Weight of Rock dry	340.5	kg
Weight of Water + Moisture	95.8	kg
Total Weight	436.2	kg
SG of broken rock dry	1.98	g/cm3

\*estimate that rock has 1% moisture, \*\*Derived from the Bakers Creek diamond drilling.

The 44-gallon drum volume was calculated by measuring the drum. The in-situ rock density was derived from the measured S.G of Bakers Creek DDH drilling. The test showed that the bulk density of the Bakers Creek Stockpile was 1.98 g/m<sup>3</sup>, this is inline with the S.G used to calculate other known stocks onsite.

Metallurgical test work was carried out by Consep (gravity concentrate) and Core Resources (flotation concentrate and cyanide leach tests) on representative samples derived from a 423kg bulk sample taken from the Bakers Creek Waste Dump in 2019 by Red River (refer to ASX release “Sampling confirms the gold potential at Hillgrove Project”, 12 November 2019).

#### *Consep Concentrate Test Work*

Modelling of a suitable gravity circuit by Consep indicates that 60-65% of the gold in the Bakers Creek Waste Dump would be recovered by gravity methods to a gravity gold concentrate. It is estimated that in excess of 95% of the contained gold in the gravity gold concentrate will be recovered by cyanide leaching to gold doré on site.

#### *Core Resources Flotation Concentrate Test Work*

Core Resources’ flotation testwork on the Bakers Creek Waste Dump samples generated a gold recovery of 83.9% to a flotation gold concentrate. This concentrate then underwent gold cyanide leaching tests which indicated a gold recovery of 85%.

The remaining material produced from the grinding circuit will then be treated through the existing flotation circuit to produce a flotation concentrate. Based on the testwork results, Red River estimates that a further 20-25% of gold contained in the feed material will report to the flotation concentrate.

Total gold recovery to the combined gravity and flotation concentrates is estimated to be about 80-90%.

The gravity gold concentrate and flotation gold concentrate will then be leached on site using cyanide to produce saleable gold doré. The total gold recovery (of gold contained in the feed material) to a saleable gold doré is estimated to be 75-80% of the contained gold in the Bakers Creek Waste Dump feed material.

## **COMPETENT PERSON STATEMENT**

### **Mineral Resources**

The information in this report that relates to the estimation and reporting of the Bakers Creek Stockpile Resource is based on and fairly represents, information and supporting documentation compiled by Mr Mitchell Tarrant who is a Member of The Australasian Institute of Mining and Metallurgy and a full time employee of Red River Resources Ltd.

Mr Tarrant has sufficient experience 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 of Exploration Results, Mineral Resources and Ore Reserves’.

Mr Tarrant consents to the inclusion in the report of the matters based on the information in the form and context in which it appears. The information in this report that relates to database compilation, geological interpretation and mineralisation wireframing, project parameters and costs and overall supervision and direction of the Bakers Creek Stockpile estimation is based on and fairly represents, information and supporting documentation compiled under the overall supervision and direction of Mr Carolan.

## About Red River Resources (ASX: RVR)

RVR is seeking to build a multi-asset operating business focused on base and precious metals with the objective of delivering prosperity through lean and clever resource development.

RVR's foundation asset is the Thalanga Base Metal Operation in Northern Queensland, which was acquired in 2014 and where RVR commenced copper, lead and zinc concentrate production in September 2017.

RVR has recently acquired the high-grade Hillgrove Gold-Antimony Project in New South Wales, which will enable RVR to build a multi-asset operating business focused on base and precious metals.

On behalf of the Board,

**Mel Palancian**

**Managing Director**

Red River Resources Limited

---

For further information please visit Red River's website or contact:

Mel Palancian

Managing Director

[mpalancian@redriverresources.com.au](mailto:mpalancian@redriverresources.com.au)

D: +61 3 9017 5380

Nathan Ryan

NWR Communications

[nathan.ryan@nwrcommunications.com.au](mailto:nathan.ryan@nwrcommunications.com.au)

M: +61 420 582 887



## Bakers Creek Stockpile Mineral Resource JORC 2012 Tables

### Section 3 Estimation and Reporting of Mineral Resources

Criteria	JORC Code explanation	Commentary
<b>Database integrity</b>	<ul style="list-style-type: none"> <li>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.</li> <li>Data validation procedures used.</li> </ul>	<ul style="list-style-type: none"> <li>The survey, sampling and logging data was electronically imported into the resource database. Checks were made of the original lab sample sheets and the database to ensure that transcription errors were not present. A visual check was made of the assay data to ensure that the data was entered correctly</li> </ul>
<b>Site visits</b>	<ul style="list-style-type: none"> <li>Comment on any site visits undertaken by the Competent Person and the outcome of those visits.</li> <li>If no site visits have been undertaken indicate why this is the case.</li> </ul>	<ul style="list-style-type: none"> <li>The Competent Person is an employee of Red River Resources and based at Hillgrove Gold Mine</li> <li>The Competent Person supervised the Bakers Creek Stockpile sampling carried out Hillgrove Mines Pty Ltd in 2018 and 2019</li> <li>A review of data collection processes was undertaken</li> </ul>
<b>Geological interpretation</b>	<ul style="list-style-type: none"> <li>Confidence in (or conversely, the uncertainty of) the geological interpretation of the mineral deposit.</li> <li>Nature of the data used and of any assumptions made.</li> <li>The effect, if any, of alternative interpretations on Mineral Resource estimation.</li> <li>The use of geology in guiding and controlling Mineral Resource estimation.</li> <li>The factors affecting continuity both of grade and geology.</li> </ul>	<ul style="list-style-type: none"> <li>No geological interpretation was carried out or required as the Mineral Resource is a Stockpile</li> </ul>
<b>Dimensions</b>	<ul style="list-style-type: none"> <li>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.</li> </ul>	<ul style="list-style-type: none"> <li>The stockpile is approximately 105m by 70m and 15-20m deep</li> </ul>
<b>Estimation and modelling techniques</b>	<ul style="list-style-type: none"> <li>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.</li> <li>The availability of check estimates, previous estimates and/or mine production records and whether the Mineral Resource estimate takes appropriate account of such data.</li> <li>The assumptions made regarding recovery of by-products.</li> <li>Estimation of deleterious elements or other non-grade variables of economic significance (eg sulphur for acid mine drainage</li> </ul>	<ul style="list-style-type: none"> <li>The Stockpile was flown with a drone to create a 3D digital terrain model (DTM) of the stockpile and the surrounding land. The DTM was used to estimate the volume of the Stockpile</li> <li>The Bakers Creek Stockpile has been extensively sampled since 1982 - 37 samples taken with a total sample weight of 1,735kg</li> <li>Weighted average grade of Stockpile based on the sampling is 2.5 g/t Au</li> <li>This method is suitable for an Inferred Resource estimation for the Stockpile</li> <li>The Stockpile was generated by the Bakers Creek Gold Mine which operated from 1877 to 1921 – there are no accurate historical production records available for the Bakers Creek Mine</li> <li>There are no deleterious elements present in</li> </ul>

Criteria	JORC Code explanation	Commentary
	<p><i>characterisation).</i></p> <ul style="list-style-type: none"> <li><i>In the case of block model interpolation, the block size in relation to the average sample spacing and the search employed.</i></li> <li><i>Any assumptions behind modelling of selective mining units.</i></li> <li><i>Any assumptions about correlation between variables.</i></li> <li><i>Description of how the geological interpretation was used to control the resource estimates.</i></li> <li><i>Discussion of basis for using or not using grade cutting or capping.</i></li> <li><i>The process of validation, the checking process used, the comparison of model data to drill hole data, and use of reconciliation data if available.</i></li> </ul>	<p>the Stockpile</p> <ul style="list-style-type: none"> <li>No block model was created for the Stockpile</li> <li>No selective mining units were modelled as the intention would be to mine the entire Stockpile</li> <li>No geological interpretation was used to control the resource estimate as the Stockpile was modelled as one discrete volume</li> <li>All assay and survey data were checked and validated prior to being utilised</li> </ul>
<b>Moisture</b>	<ul style="list-style-type: none"> <li><i>Whether the tonnages are estimated on a dry basis or with natural moisture, and the method of determination of the moisture content.</i></li> </ul>	<ul style="list-style-type: none"> <li>The resource tonnages have been estimated on a dry basis</li> </ul>
<b>Cut-off parameters</b>	<ul style="list-style-type: none"> <li><i>The basis of the adopted cut-off grade(s) or quality parameters applied.</i></li> </ul>	<ul style="list-style-type: none"> <li>A cut-off of 0 g/t Au has been used to report resources. This was chosen as the lower limit of potentially economically extractable material within a surface Stockpile.</li> </ul>
<b>Mining factors or assumptions</b>	<ul style="list-style-type: none"> <li><i>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.</i></li> </ul>	<ul style="list-style-type: none"> <li>The Resource has been estimated with the intent of being mined by standard Stockpile reclamation techniques (front end loader)</li> <li>The Stockpile is located on the surface and is freely available for mining.</li> <li>No dilution was assumed</li> </ul>
<b>Metallurgical factors or assumptions</b>	<ul style="list-style-type: none"> <li><i>The basis for assumptions or predictions regarding metallurgical amenability. It is always necessary as part of the process of determining reasonable prospects for eventual economic extraction to consider potential metallurgical methods, but the assumptions regarding metallurgical treatment processes and parameters made when reporting Mineral Resources may not always be rigorous. Where this is the case, this should be reported with an explanation of the basis of the metallurgical assumptions made.</i></li> </ul>	<ul style="list-style-type: none"> <li>Red River has carried out extensive metallurgical test work</li> <li>Stockpile will be processed through the existing Hillgrove Mill</li> <li>Gravity concentrate test work undertaken indicates 60-65% gold recovery</li> <li>Flotation concentrate testwork indicates a further 20-25% of gold can be recovered</li> <li>Onsite gravity and flotation concentrate leaching to produce gold doré with total gold recovery (of gold contained in the Bakers Creek feed material) of 75-80%</li> </ul>
<b>Environmental factors or assumptions</b>	<ul style="list-style-type: none"> <li><i>Assumptions made regarding possible waste and process residue disposal options. It is always necessary as part of the process of determining reasonable prospects for eventual</i></li> </ul>	<ul style="list-style-type: none"> <li>Bakers Creek Stockpile is located on ML1440 which is held by Hillgrove Mines Pty Ltd. (a wholly owned subsidiary of Red River Resources)</li> </ul>

Criteria	JORC Code explanation	Commentary
	<p><i>economic extraction to consider the potential environmental impacts of the mining and processing operation. While at this stage the determination of potential environmental impacts, particularly for a greenfields project, may not always be well advanced, the status of early consideration of these potential environmental impacts should be reported. Where these aspects have not been considered this should be reported with an explanation of the environmental assumptions made.</i></p>	<ul style="list-style-type: none"> <li>• Native title does exist over ML1440.</li> <li>• The Mining Lease is in good standing</li> <li>• The tailings produced during the processing of the Stockpile will be disposed of at the currently permitted Hillgrove Gold Mine tailings facility.</li> </ul>
<b>Bulk density</b>	<ul style="list-style-type: none"> <li>• <i>Whether assumed or determined. If assumed, the basis for the assumptions. If determined, the method used, whether wet or dry, the frequency of the measurements, the nature, size and representativeness of the samples.</i></li> <li>• <i>The bulk density for bulk material must have been measured by methods that adequately account for void spaces (vugs, porosity, etc), moisture and differences between rock and alteration zones within the deposit.</i></li> <li>• <i>Discuss assumptions for bulk density estimates used in the evaluation process of the different materials.</i></li> </ul>	<ul style="list-style-type: none"> <li>• Bulk density was determined using the 44 gallon drum test discussed above.</li> <li>• The results of this test are inline with other known bulk densities onsite.</li> <li>• The densities are reported on a dry basis.</li> </ul>
<b>Classification</b>	<ul style="list-style-type: none"> <li>• <i>The basis for the classification of the Mineral Resources into varying confidence categories.</i></li> <li>• <i>Whether appropriate account has been taken of all relevant factors (ie relative confidence in tonnage/grade estimations, reliability of input data, confidence in continuity of geology and metal values, quality, quantity and distribution of the data).</i></li> <li>• <i>Whether the result appropriately reflects the Competent Person's view of the deposit.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The resources have been classified as an Inferred Mineral Resource in the view of the competent geologist.</li> <li>• The resource classification of Inferred is deemed appropriate in relation to the sampling carried out, likely geological continuity of the mineralised domains and the reliability of supporting data. With the reliability being demonstrated through quality assessment processes.</li> </ul>
<b>Audits or reviews</b>	<ul style="list-style-type: none"> <li>• <i>The results of any audits or reviews of Mineral Resource estimates.</i></li> </ul>	<ul style="list-style-type: none"> <li>• This maiden Inferred Resource Estimate has not been reviewed or audited.</li> </ul>
<b>Discussion of relative accuracy/ confidence</b>	<ul style="list-style-type: none"> <li>• <i>Where appropriate a statement of the relative accuracy and confidence level in the Mineral Resource estimate using an approach or procedure deemed appropriate by the Competent Person. For example, the application of statistical or geostatistical procedures to quantify the relative accuracy of the resource within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors that could affect the relative accuracy and confidence of the estimate.</i></li> <li>• <i>The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation.</i></li> </ul>	<ul style="list-style-type: none"> <li>• The Resource estimate is deemed to be an accurate reflection, to the precision allowable via the current modelling</li> <li>• The Resource is reported at a 0 g/t Au cut off.</li> <li>• The Resource area is not open as the Stockpile is a finite surface body</li> <li>• No production history has occurred from the Bakers Creek Stockpile</li> </ul>

Criteria	JORC Code explanation	Commentary
	<p><i>Documentation should include assumptions made and the procedures used.</i></p> <ul style="list-style-type: none"> <li>• <i>These statements of relative accuracy and confidence of the estimate should be compared with production data, where available.</i></li> </ul>	