31 October 2018

# ASX Announcement

## Blackham gold reserves grow by 27%

### Highlights

- **Total Ore Reserves as at 30 June 2018 now 26Mt @1.8g/t for 1.53Moz**
- **Free milling Ore Reserves now total 550koz, an increase of 190% since last year**
- **Golden Age underground extended by a further 4 months to Apr'19 adding further high grade mill feed in the second half of FY19**
- **Opportunities to expand free milling Ore Reserves at Lake Way, Golden Age and Wiluna highlighted from drilling over the last 6 months**
- **Wiluna Open Pit Ore Reserves increase by 30% to 10.7Mt @2.5g/t for 867koz reinforcing the foundation for the expansion of the Wiluna Operation**
- **Significant opportunity of converting the substantial Wiluna underground inferred resources into indicated resources within 300m of the surface**

Blackham Resources Ltd **(ASX: BLK) ("Blackham")** is pleased to announce an increased Ore Reserve estimate for the Matilda-Wiluna Operation (Operation) of 26Mt @1.8g/t for 1.53Moz of gold as at 30 June 2018. The Company continues to progressively assess the Operation's Resource base total of 96Mt @ 2.2g/t for 6.7Moz (58% Indicated), with further conversion expected into reserves. There are currently 3.2Moz @ 4.6g/t Au in underground resources sitting outside of Reserves. The Ore Reserve is outlined in Table 1 below.

**Table 1: Ore Reserves as at 30 June 2018**

| OPEN PIT RESERVES | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Mining Centre | Proved | | | Probable | | | Total 100% | | | Free Milling | | |
| | Mt | g/t Au | Koz Au | Mt | g/t Au | Koz Au | Mt | g/t Au | Koz Au | Mt | g/t Au | Koz Au |
| Matilda | 0.03 | 1.7 | 2 | 1.23 | 1.7 | 68 | 1.26 | 1.7 | 70 | 1.26 | 1.7 | 70 |
| Williamson | | | | 0.95 | 2.2 | 68 | 0.95 | 2.2 | 68 | 0.95 | 2.2 | 68 |
| Wiluna | | | | 10.74 | 2.5 | 867 | 10.74 | 2.5 | 867 | 2.84 | 1.7 | 157 |
| Stockpiles | 0.54 | 0.8 | 15 | | | | 0.54 | 0.8 | 15 | 0.54 | 0.8 | 15 |
| OP Total | 0.57 | 0.9 | 16 | 12.92 | 2.4 | 1,003 | 13.49 | 2.3 | 1,019 | 5.59 | 1.7 | 309 |
| **UNDERGROUND RESERVES** | | | | | | | | | | | | |
| Mining Centre | Proved | | | Probable | | | Total 100% | | | Free Milling | | |
| | Mt | g/t Au | Koz Au | Mt | g/t Au | Koz Au | Mt | g/t Au | Koz Au | Mt | g/t Au | Koz Au |
| Golden Age | | | | 0.04 | 6.1 | 7 | 0.04 | 6.1 | 7 | 0.04 | 6.1 | 7 |
| East West | | | | 0.72 | 5.0 | 115 | 0.72 | 5.0 | 115 | | | |
| Bulletin[1] | | | | 1.03 | 4.6 | 155 | 1.03 | 4.6 | 155 | | | |
| UG Total | | | | 1.79 | 4.8 | 277 | 1.79 | 4.8 | 277 | 0.04 | 6.1 | 7 |
| **Wiluna Tailings** | | | | | | | | | | | | |
| Mining Centre | Proved | | | Probable | | | Total 100% | | | Free Milling | | |
| | Mt | g/t Au | Koz Au | Mt | g/t Au | Koz Au | Mt | g/t Au | Koz Au | Mt | g/t Au | Koz Au |
| Tailings Total | | | | 11.20 | 0.7 | 234 | 11.20 | 0.7 | 234 | 11.20 | 0.7 | 234 |
| Total | 0.57 | 0.9 | 16 | 25.91 | 1.8 | 1,514 | 26.48 | 1.8 | 1,530 | 16.82 | 1.0 | 550 |

1. Bulletin Underground includes reserves from the Essex, Creek Shear and Lennon underground mining areas
2. Calculations have been rounded to the nearest 10,000 t of ore, 0.1 g/t Au grade and 1,000 oz. Au metal.

Blackham Managing Director Bryan Dixon stated "An overall increase in reserves at Wiluna has shown the targeted drilling especially in the northern Wiluna Mine has resulted in a significant increase to both free milling and sulphide Ore Reserves. Open pit mining has now commenced at Wiluna to focus on the oxide material which is already providing higher grade feed to the Wiluna Processing Plant and will set a foundation for the next phase of the Wiluna Expansion."

The Matilda-Wiluna Operation is located in Australia's largest gold belt. The Operation encompasses four large scale gold systems surrounding the township of Wiluna that has historically produced 4.4Moz of gold (Figure 1).

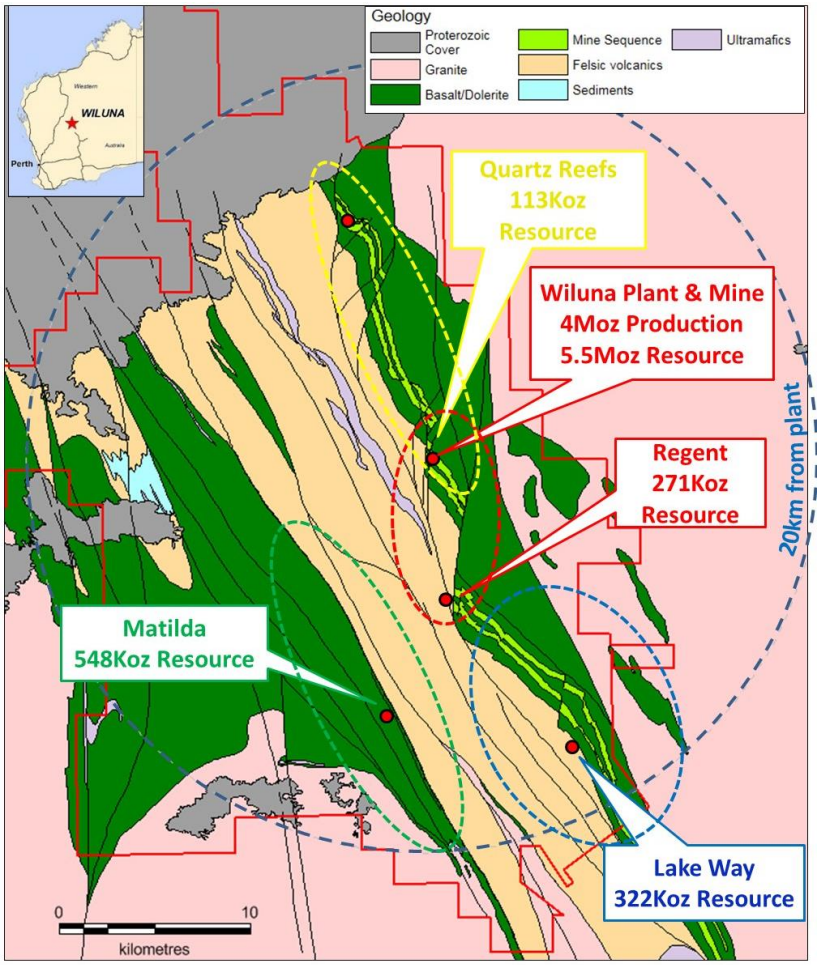


**Figure 1: Four large gold systems of the Matilda-Wiluna Gold Operation that have produced 4.4Moz**

Over the last 7 years, Blackham Resources acquired over 1,440km$^2$ of mining and exploration tenure in the historical Wiluna goldfield which is part of Australia's biggest gold belt. The Wiluna goldfield contains many different styles of gold mineralisation and has a combination of oxide, free-milling and sulphide refractory deposits which have been successfully mined and processed by many operators over the past 120 years. Blackham has a significant resource base containing all styles of mineralisation currently sitting at 6.7Mozs (announced 13$^{th}$ September 2018 "Wiluna gold resources continue to grow"). In 2016 Blackham commenced mining and processing of the free-milling resources through the refurbished Wiluna CIP processing facility as the first stage of its long-term Wiluna mining strategy. Free-milling gold production is the pre-curser to the Company's overall plan to unlock the value associated with the sulphide refractory mineralisation. Over the past two years, surface mining has focussed on the Matilda Mine. Wiluna ores are now being mined concurrently with these having the advantage of a higher grade profile and being located within three kilometres of the gold plant.

## Ore Reserve Commentary

All Ore Reserves have been reported from Measured and Indicated Resources only. Current operational pits at Matilda have been depleted via mining to the end of June 2018. Current underground operations at Golden Age were also depleted and updated in line with the companies rolling replacement strategy. All reserves relating to the Matilda Mine have been generated from internal optimisations and open pit designs using appropriate operational costs, geotechnical, dilution, recovery and cut-off grade parameters.

The Wiluna Ore Reserves are based on the Wiluna Expansion Preliminary Feasibility Study (PFS) announced to the market on the 30 August 2017, "Expansion PFS shows robust economics for a 200koz pa long life". Measured and Indicated Resources were converted to Proved and Probable Ore Reserves based on modifying factors, mine designs and economic evaluation. For this Ore Reserve update adjustments were made to ensure the evaluation of the Ore Reserves remained current. The updated Ore Reserves for the Underground were completed by Entech Pty Ltd (Entech) and the Open Pit Ore Reserves were completed by Blackham's Principal Planning Engineer.

Updates to the Original PFS are outlined below:

- Use of updated Ore Resource Estimates as outlined in the announcement on the 13th September 2018, "Wiluna Gold Resources Continue to Grow"
- Operating costs were reviewed for the underground to reflect the current industry climate, based on recent underground mining contractor quoted rates for similar Western Australian gold mines. Open Pit mining costs were also adjusted to reflect the escalation in costs from the original PFS submission
- All Ore Reserves utilised a gold price of A$1,650/oz
- Cut-off grades were adjusted based on the revised inputs
- Updated open pit designs were completed and applied to deplete the underground Ore Reserves
- The East-West underground mine is now to be accessed from the Happy Jack decline, instead of through the East-West pit as previously designed, as this avoids interaction with open pit mining and allows mining of this underground earlier in the mine plan.

Any Inferred material contained within the mine plan has been treated as waste. The Ore Reserves have been defined at delivery to the processing plant ROM pad.

## Open Pits

Production at Matilda will be on going with the mining of the M1 and M2 pits plus additional ore feed from Wiluna. The initial Wiluna pits, Figure 2, have maximum depths of 50-80m and are designed to access oxide mineralisation treatable through the existing plant. The initial planned pits are:

- The East-West pit – new pit currently being mined with high grade ore accessible near surface
- The Golden Age North pit – new pit along strike from the existing Golden Age pit scheduled to commence mining this quarter.


**Photo 1. Currently mining higher grade ore from East West oxide pit only 1,100m from the Wiluna Gold Plant.**

The Stage 2 large open pits will be mined as part of the expansion which will push them deeper into the fresh sulphide ores. The major variance to the previous Ore Reserve is from the resource upgrade to the Wiluna North area and the Moonlight trend as a result of additional drilling completed over the last 18 months. The resource upgrade in this area added in the order of 340,000oz. This contributed to an overall increase of Wiluna open pit Probable Ore Reserves of 198,000oz.

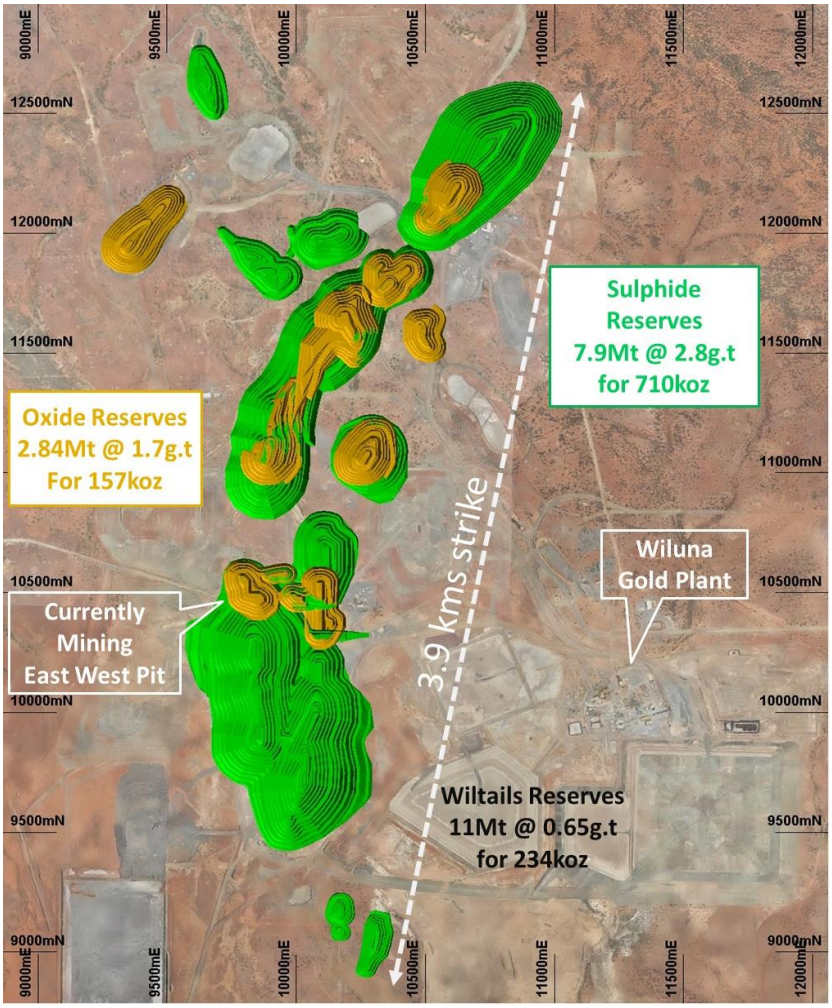


**Figure 2: Initial Stage 1 Wiluna Pits in orange and Expansion Sulphide Pits in green stretching over 3.9kms of strike next to the Wiluna Gold Plant**

## Bulletin - Creek Shear (Wiluna North) Underground

The Bulletin-Creek Shear Underground has **Probable Reserves of 1.0Mt @ 4.6g/t for 155koz Au** and is currently the access to the Golden Age Underground which is being mined at 300 to 600m below surface and has underground infrastructure already in place. Many of the Bulletin stopes can be accessed with minimal development. The only changes made to the Bulletin underground mine plan relate to the updated designs at the Bulletin, Essex and Happy Jack North pits. Shallow portions of the 2017 Underground Reserve areas that have been depleted by the 2018 open pits now fall into the 2018 Open Pit Ore Reserve estimate are shown in Figure 3.

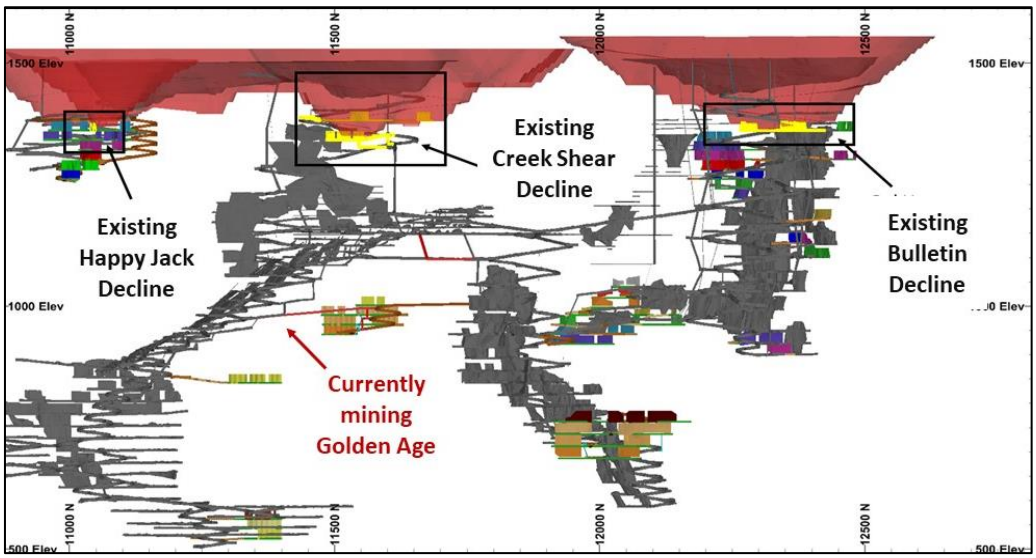


**Figure 3: 2018 Wiluna North Ore Reserves, Open Pit depletion (highlighted in yellow) and 3 existing declines which significantly reduces development costs**

## East-West Underground (Wiluna South)

The East-West (EW) Underground has **Probable Reserves of 0.7Mt @ 5.0g/t for 115koz Au** calculated based on an updated Mineral Resource estimate including the additional drilling undertaken in the area over the last 15 months.

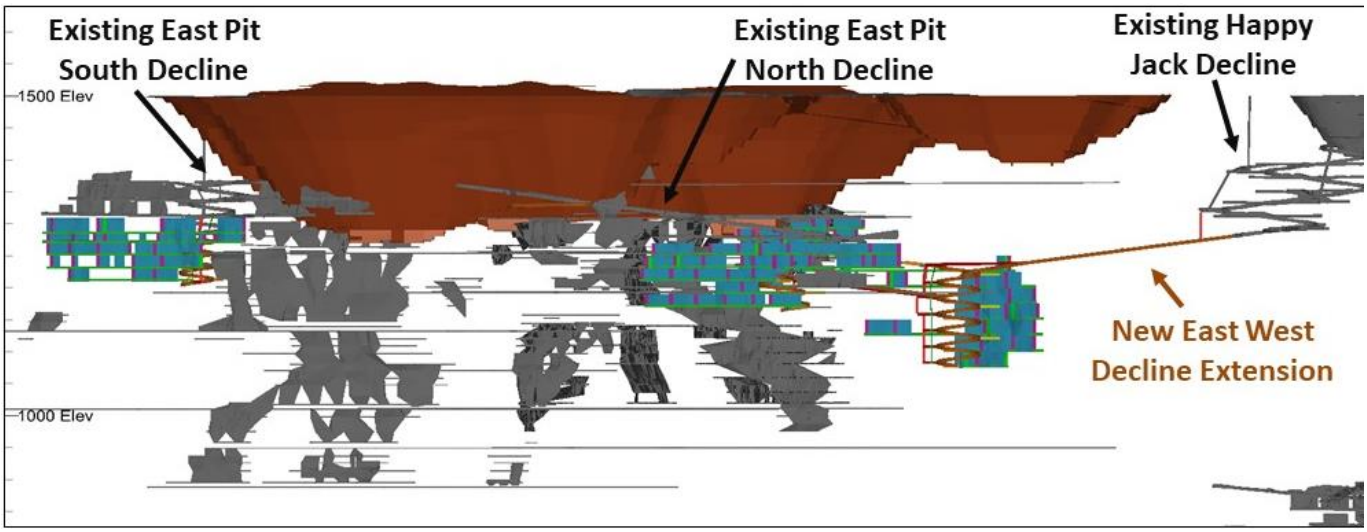


**Figure 4: East & West Lode Underground long section showing Reserves, existing declines (grey) and new development**

The 2018 East-West Ore Reserve mine plan has been improved compared to previous iterations as the initial access is now planned to be through a link from the existing Happy Jack North (HJN) Decline (all previous iterations involved access through the existing East Lode portals in the East-West pit). This was changed to reduce scheduling constraints imposed on the underground mine by surface mining of the East-West pit cutback, and to provide a platform for access to potential new ore zones identified during recent drilling to the north of the

existing East-West pit. Sequencing for the underground mine was changed so all development is now developed south, towards the East-West pit, rather than out of the East Pit declines as per previous plans. This is shown in Figure 4. The HJN Decline, EW underground workings and EW pit are all currently filled with water and will require dewatering which is scheduled to take place over a 10 month period and has been allowed for in the financial modelling. Ventilation through the workings is initially planned to be through the HJN ventilation raises via the ventilation decline. Once the rehabilitation of the southern accesses to the EW pit is complete, the ventilation system described in the 2017 PFS can be implemented. A long-section view of the East Lode and West Lode/Calvert areas is shown in Figure 4.

## Additional East-West Underground Potential

The East West Underground potential is shown in Figures 5 and 6 with the stope shapes run over all mineral resource categories at a cut-off grade of 2.5g/t. The figures shows the potential of a much larger underground operation with extensions from the current reserves plus mining of areas adjacent to historical high grade production. With the system being open at depth in all directions and averaging approximately 3,600oz/vm after mining depletion and 7,800oz/vm prior to mine depletion the scale of a larger underground operation is being investigated.

Further infill drill programmes are currently being planned targeting the conversion of inferred resources within the top 300m of surface that appear amenable to underground mining.

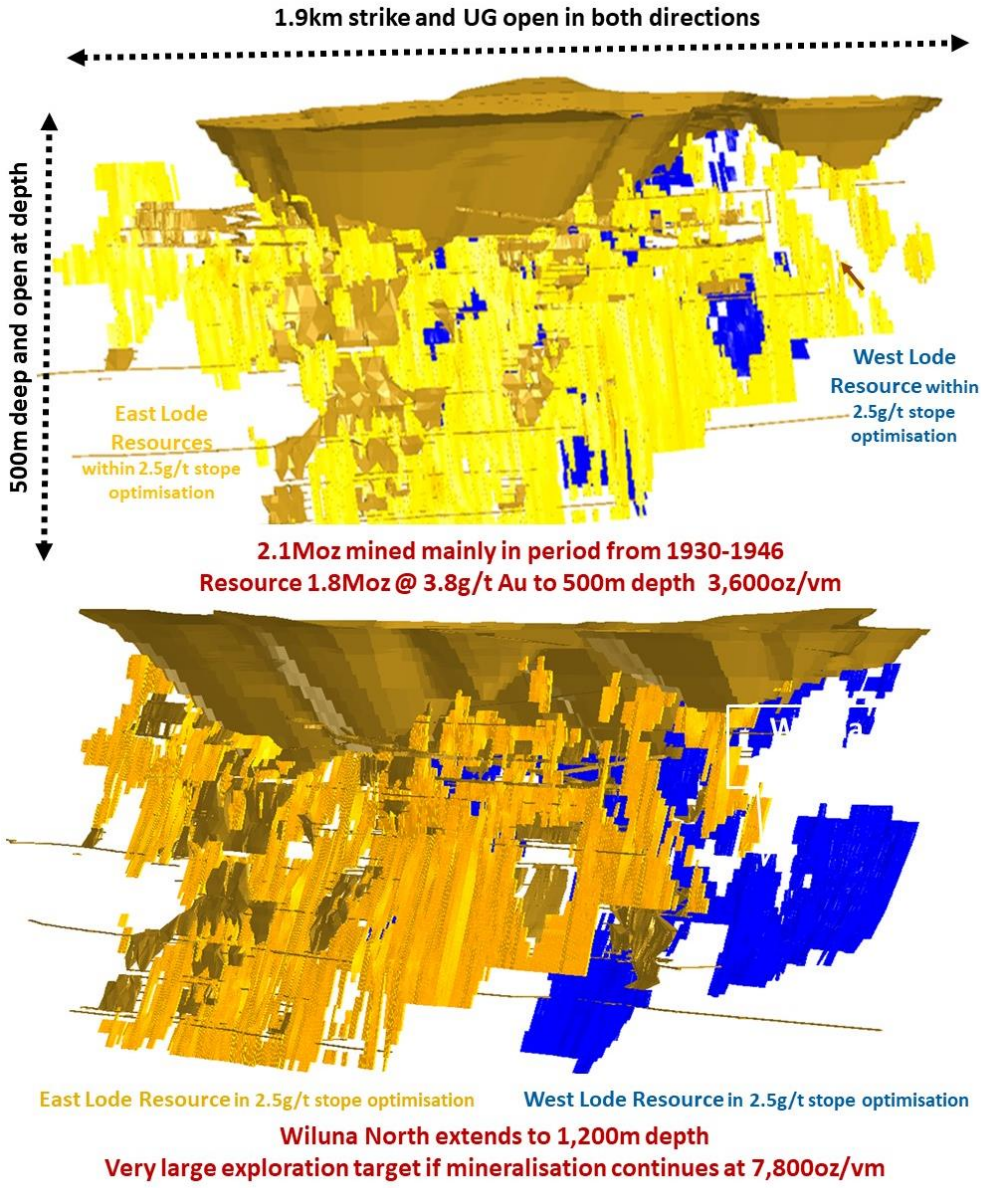


**Figure 5 & 6: East (Yellow) and West (Blue) stope shapes with a 2.5g/t cut-off over all resource**

## Golden Age Underground

The current underground mining operation, Figure 7, involves recovery of remnant ore from the Golden Age orebody, which has been mined intermittently between 2001 and 2018 and has produced over 180,000oz @ 9g/t Au.

A steady mine life of 6 to 9 months production has been maintained ahead of operations since July 2017, with 78kt @ 5.6g/t mined for 12,280koz in FY18.

The Underground Probable Reserve at Golden Age is currently 35kt @ 6.1g/t for 6.9koz. Drilling continues to define additional resources that are planned to be rolled into the mine plan as has been done since operations recommenced.

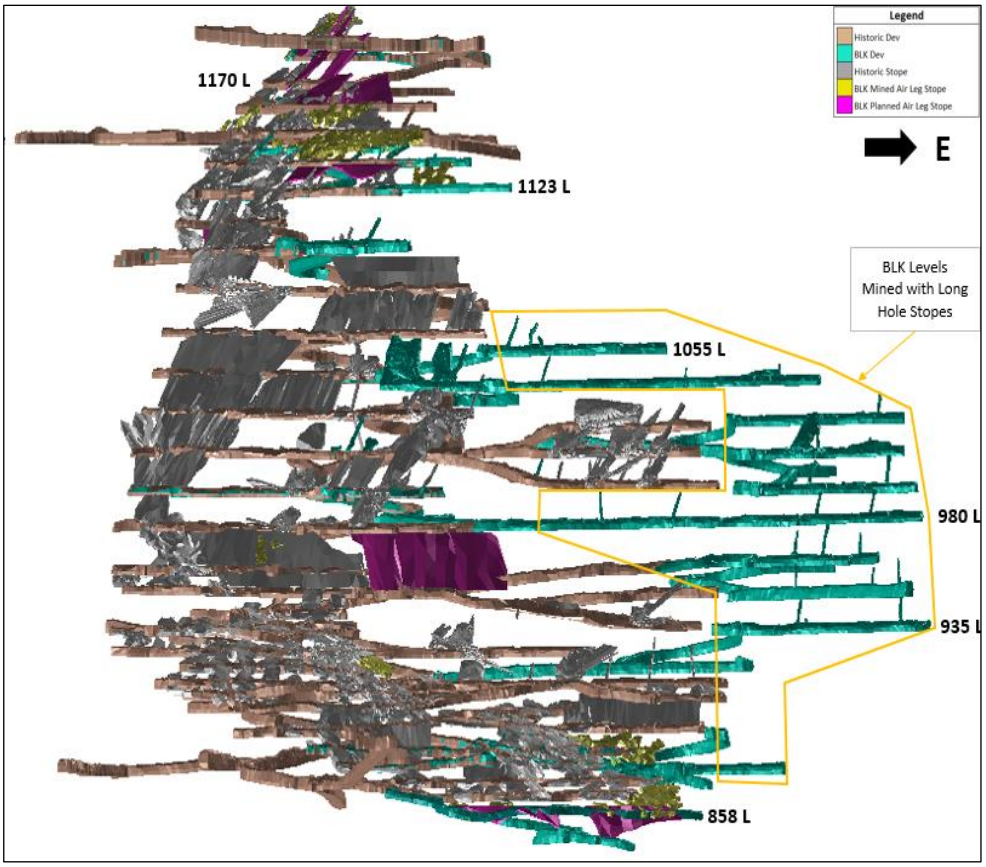


**Figure 7: Golden Age Underground Mine Plan in purple and yellow**

## Wiltails - Tailings Retreatment

Wiltails has a Probable Reserve of 11.2Mt @ 0.65g/t for 234koz Au. Metallurgical test work has been conducted on the tailings at the Wiluna Mine Site. The results of this work have been used as inputs to a study to provide a pre-feasibility level of confidence for a tailings reprocessing operation utilising a combination of existing and additional plant and infrastructure. Gold recoveries from the Probable Reserve range from 44 to 55%. Economic evaluations continue on the 446koz of Wiltails indicated resource that is not classified as reserve.

The mining and processing comprises:

- Extraction of historical tailings by dredging
- Partial dewatering of the slurry produced by the dredge prior to pumping to the plant site
- Rejection of a coarse fraction by wet screening at 0.3 mm with the screen undersize being dewatered in a thickener to produce leach feed and process water for reuse
- Leaching in the existing Wiluna leach tanks with the entire circuit converted to a carbon in leach circuit
- Production of gold dore through existing elution and gold room.

The screening and thickening circuit location will be adjacent to the existing Wiluna processing plant to minimise costs associated with operational, services and infrastructure. The current assumption is that the Wiltails reserves will be fed through the plant after the open pit and underground free milling reserves of 5.6Mt @ 1.7g/t for 316koz has been processed. The Wiltails are planned to be processed at a rate of 2.2Mtpa which the plant achieved over the last 6 months. Blackham will also investigate processing the Wiltails in parallel to the free milling reserves if the Wiluna plant becomes grind constrained.

## Free Milling Exploration, Resources and Reserve Definition

Blackham intends to keep strengthening and lengthening its free milling reserves and has had significant success over the last 6 months from drilling that has not been included in the current reserve update. See the following ASX Announcements.

| | |
|---|---|
| 19-Sep-2018 | Additional Wiluna high grade free milling mineralisation extended |
| 28-Aug-2018 | Lake Way Drilling confirms large mineralised gold system |
| 21-Jun-2018 | Wiluna high grade free milling mineralisation extended |
| 12-Jun-2018 | Multiple high grade extensions identified at Golden Age |

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**OPEN PIT RESOURCES**

| Mining Centre | Measured | | | Indicated | | | Inferred | | | Total 100% | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mt | g/t Au | Koz Au | Mt | g/t Au | Koz Au | Mt | g/t Au | Koz Au | **Mt** | **g/t Au** | **Koz Au** |
| **Matilda** | 0.1 | 1.14 | 4 | 7.0 | 1.44 | 323 | 3.6 | 1.30 | 151 | **10.7** | **1.39** | **477** |
| **Wiluna** | - | | - | 15.4 | 2.38 | 1,181 | 3.1 | 3.21 | 324 | **18.6** | **2.52** | **1,505** |
| **Williamson** | - | | - | 4.1 | 1.68 | 219 | 1.6 | 1.58 | 79 | **5.6** | **1.65** | **298** |
| **Regent** | - | | - | 0.7 | 2.71 | 61 | 3.1 | 2.11 | 210 | **3.8** | **2.22** | **271** |
| **Tailings** | - | | - | 34.0 | 0.62 | 680 | - | | - | **34.0** | **0.62** | **680** |
| **Stockpiles** | | | | 0.5 | 0.84 | 15 | | | | **0.5** | **0.84** | **15** |
| **OP Total** | **0.1** | **1.14** | **4** | **61.7** | **1.25** | **2,479** | **11.4** | **2.08** | **763** | **73.2** | **1.38** | **3,246** |

**UNDERGROUND RESOURCES**

| Mining Centre | Measured | | | Indicated | | | Inferred | | | Total 100% | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | Mt | g/t Au | Koz Au | Mt | g/t Au | Koz Au | Mt | g/t Au | Koz Au | **Mt** | **g/t Au** | **Koz Au** |
| **Matilda** | - | | - | 0.1 | 2.51 | 10 | 0.5 | 3.66 | 61 | **0.6** | **3.44** | **71** |
| **Wiluna** | - | | - | 8.0 | 5.37 | 1,376 | 13.5 | 4.33 | 1,885 | **21.5** | **4.72** | **3,262** |
| **Williamson** | - | | - | - | | - | 0.3 | 2.61 | 23 | **0.3** | **2.61** | **23** |
| **Golden Age** | 0.02 | 6.80 | 4 | 0.1 | 7.66 | 24 | 0.5 | 3.77 | 63 | **0.6** | **4.46** | **91** |
| **Galaxy** | | | | 0.1 | 3.70 | 6 | 0.2 | 2.80 | 16 | **0.2** | **2.98** | **22** |
| **UG Total** | **0.0** | **6.80** | **4** | **8.3** | **5.31** | **1,416** | **15.0** | **4.24** | **2,049** | **23.3** | **4.63** | **3,469** |
| **Grand Total** | **0.1** | **2.12** | **8** | **70.0** | **1.73** | **3,895** | **26.4** | **3.31** | **2,812** | **96.5** | **2.16** | **6,715** |

**Competent Persons Statement**

The information contained in the report that relates to all other Mineral Resources is based on information compiled or reviewed by Mr Marcus Osiejak, who is a full-time employee of the Company. Mr Osiejak, is a Member of the Australian Institute of Mining and Metallurgy and has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which is being undertaken to qualify as a Competent Person as defined in the 2012 Edition of the 'Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves'. Mr Osiejak has given consent to the inclusion in the report of the matters based on this information in the form and context in which it appears.

With regard to the Matilda-Wiluna Gold Operation Mineral Resources, the Company is not aware of any new information or data that materially affects the information included in this report and that all material assumptions and parameters underpinning Mineral Resource Estimates as reported in the market announcements dated 13th September 2018 continue to apply and have not materially changed.

The information contained in the report that relates to Ore Reserves for the Bulletin, Creek Shear, Essex and East-West underground mines at the Wiluna Gold Mine is based on information compiled or reviewed by Matthew Keenan. Mr Keenan confirmed that he has read and understood the requirements of the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code 2012 JORC Edition). He is a Competent Person as defined by the JORC Code 2012 Edition, having more than five years' experience which is relevant to the style of mineralisation and type of deposit described in the Report, and to the activity for which he is accepting responsibility. Mr Keenan is a Member of The Australasian Institute of Mining and Metallurgy, has reviewed the Report to which this consent statement applies and is a full time employee working for Entech Pty Ltd having been engaged by Blackham Resources Ltd to prepare the documentation for the Matilda Gold Project on which the Report is based, for the period ended 30 June 2018. He disclosed to the reporting company the full nature of the relationship between himself and the company, including any issue that could be perceived by investors as a conflict of interest. Mr Keenan verifies that the Report is based on and fairly and accurately reflects in the form and context in which it appears, the information in his supporting documentation relating to Ore Reserves.

The information contained in the report that relates to Ore Reserves for the Open Pits at the Matilda-Wiluna Gold Operation is based on information compiled or reviewed by Simon Hewson. Mr Hewson confirmed that he has read and understood the requirements of the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code 2012 JORC Edition). He is a Competent Person as defined by the JORC Code 2012 Edition, having more than five years' experience which is relevant to the style of mineralisation and type of deposit described in the Report, and to the activity for which he is accepting responsibility. Mr Hewson is a Member of The Australasian Institute of Mining and Metallurgy, has reviewed the Report to which this consent statement applies and is a full time employee of Blackham Resources Limited and having prepared the documentation for the Matilda/Wiluna Gold Project on which the Report is based, for the period ended 30 June 2018. He has disclosed to the reporting company the full nature of the relationship between himself and the company, including any issue that could be perceived by investors as a conflict of interest. Mr Hewson verifies that the Report is based on and fairly and accurately reflects in the form and context in which it appears, the information in his supporting documentation relating to Ore Reserves.

The information contained in the report that relates to Ore Reserves for the Golden Age Underground main and Remnant areas at the Matilda-Wiluna Gold Operation is based on information compiled or reviewed by Richard Boffey. Mr Boffey confirmed that he has read and understood the requirements of the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code 2012 JORC Edition). He is a Competent Person as defined by the JORC Code 2012 Edition, having more than five years' experience which is relevant to the style of mineralisation and type of deposit described in the Report, and to the activity for which he is accepting responsibility. Mr Boffey is a Member of The Australasian Institute of Mining and Metallurgy, has reviewed the Report to which this consent statement applies and is a full time employee working for Blackham Resources Limited and prepared and reviewed the documentation for the Golden Age Underground main and Remnant areas at the Matilda Gold Project on which the Report is based, for the period ended 30 June 2018. He disclosed to the reporting company the full nature of the relationship between himself and the company, including any issue that could be perceived by investors as a conflict of interest. Mr Boffey verifies that the Report is based on and fairly and accurately reflects in the form and context in which it appears, the information in his supporting documentation relating to Ore Reserves.

The information contained in the report that relates to Ore Reserves for Wiluna Tailings at the Matilda-Wiluna Gold Operation is based on information compiled or reviewed by Daryl Evans. Mr Evans confirmed that he has read and understood the requirements of the 2012 Edition of the Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves (JORC Code 2012 JORC Edition). He is a Competent Person as defined by the JORC Code 2012 Edition, having more than five years' experience which is relevant to the style of mineralisation and type of deposit described in the Report, and to the activity for which he is accepting responsibility. Mr Evans is a Fellow of The Australasian Institute of Mining and Metallurgy, has reviewed the Report to which this consent statement applies and is a full time employee working for Independent Metallurgical Operations Pty Ltd having been engaged by Blackham Resources Ltd to prepare/review the documentation for the Matilda/Wiluna Gold Project on which the Report is based, for the period ended 30 June 2018. He disclosed to the reporting company the full nature of the relationship between himself and the company, including any issue that could be perceived by investors as a conflict of interest. Mr Evans verifies that the Report is based on and fairly and accurately reflects in the form and context in which it appears, the information in his supporting documentation relating to Ore Reserves.

**Forward Looking Statements**

This announcement includes certain statements that may be deemed 'forward-looking statements'. All statements that refer to any future production, resources or reserves, exploration results and events or production that Blackham Resources Ltd ('Blackham' or 'the Company') expects to occur are forward-looking statements. Although the Company believes that the expectations in those forward-looking statements are based upon reasonable assumptions, such statements are not a guarantee of future performance and actual results or developments may differ materially from the outcomes. This may be due to several factors, including market prices, exploration and exploitation success, and the continued availability of capital and financing, plus general economic, market or business conditions. Investors are cautioned that any such statements are not guarantees of future performance, and actual results or performance may differ materially from those projected in the forward-looking statements. The Company does not assume any obligation to update or revise its forward-looking statements, whether as a result of new information, future events or otherwise.

## Appendix A- JORC Table 1, Section 4

**Section 4 - Estimation and Reporting of Underground Ore Reserves**

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| **Mineral Resource estimate for conversion to Ore Reserves** | Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve. | The Mineral Resources used as the basis of this Ore Reserve update was released to market;<br>• 13/9/18 "Wiluna Gold Resources Continue to Grow" |
| | Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves. | Mineral resources are reported inclusive of Ore Reserves. |
| **Site visits** | Comment on any site visits undertaken by the Competent Person and the outcome of those visits. | The Competent Person was previously employed at the Wiluna Gold mine under previous owners and is familiar with the underground operations, the surrounding area and access routes and the Wiluna site infrastructure including the processing plant.<br>The Competent Person's most recent visit to the site and underground workings was from 31st May to 3rd June 2016. |
| | If no site visits have been undertaken indicate why this is the case. | The Competent Person has visited the Site. |
| **Study status** | The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves. | The Ore Reserve is underpinned by mining studies conducted to a Definitive Feasibility Study level and to a Prefeasibility Level in line with the geotechnical and metallurgical confidence. |
| | The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered. | Modifying factors accurate to the study level have been applied based on detailed stope design analysis. Modelling indicates that the resulting mine plan is technically achievable and economically viable. |
| **Cut-off parameters** | The basis of the cut-off grade(s) or quality parameters applied. | Cut-off grades were determined based on a gold price of AU$1,650/oz.<br>Mining and administration costs for cut-off grade estimation were sourced from the detailed DFS site cost model, based on supplier quotes for infrastructure, and recent underground mining contractor tendered rates for similar operations. Treatment costs were sourced from a processing PFS carried out on the Wiluna Expansion by independent engineers Minnovo Pty Ltd in 2017. Metallurgical recoveries were estimated by Blackham Resources Ltd (BLK) based on extensive historical sulphide plant operating data and historical metallurgical test work. Royalty estimates were provided by BLK based on current agreements. Wiluna UG incremental stope cut-off of 2.5g/t was used. |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| **Mining factors or assumptions** | The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design). | Ore Reserves were estimated by a Competent Person employed by independent mining consultants Entech Pty Ltd (Entech).<br>Cut-off grades and geotechnical inputs were used to apply automated optimisation algorithms on the Mineral Resource to identify economic areas. Detailed underground mine designs were then carried out on the deposit incorporating the optimisation results, and these were used as the basis of the Ore Reserve estimate. |
| | The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc. | The Ore Reserve is planned to be predominantly mined using a top-down mechanised longhole open stoping method, with in-situ pillars left unmined for support. Deeper areas of the Bulletin Mine have been assumed to be mined using a bottom-up modified Avoca method with unconsolidated backfill based on geotechnical advice.<br>Diesel powered trucks and loaders will be used for materials handling. Diesel-electric jumbo drill rigs will be used for development and ground support installation, and diesel-electric longhole rigs used for production drilling.<br>The mining method chosen is well-known and widely used in the local mining industry, and production rates and costing can be predicted with a suitable degree of accuracy. The method has been chosen based on the spatial characteristics of the orebody, geotechnical analysis, and historical performance of similar methods used at the mine previously.<br>Suitable access will be available to all areas through existing declines. Open pit interaction with accesses has been allowed for in designs and schedules. Dewatering and refurbishment of currently flooded workings (Happy Jack North, East-West and Bulletin Deeps) has been allowed for in the costing and schedules.<br>Ore will be trucked to run-of-mine (ROM) pads on the surface, from where it will be hauled to the processing plant using private mine site roads by a separate road train contractor. |
| | The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc), grade control and pre-production drilling. | Independent geotechnical consultants Peter O'Bryan and Associates contributed appropriate geotechnical analyses to a suitable level of detail. These form the basis of mining method selection, mine design, mining factors, and ground support design for the Ore Reserve estimate. |
| | The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate). | The Mineral Resource models used for stope optimisation are as detailed in previously in this table. Only the Indicated portion of the Mineral Resource was used to estimate the Ore Reserve (there was no Measured material present). Optimisations were carried out on all material, inclusive of Inferred. Inferred material contained within the mine |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | | plan was subsequently set to waste grade and the economics of the design re-evaluated for the Ore Reserve estimate.<br>Stope economics were determined using the cut-off grade revenue and cost inputs. A minimum stoping width of 2.0 m was applied. Sub-level intervals of 25 m and stope section strike length of 5.0 m were also applied. Some areas had a 20 m sub-level interval to fit into existing mine levels in the Bulletin upper and East Lode areas. |
| | The mining dilution factors used. | Dilution was applied as a factor to the stope tonnes and grades based on a dilution skin of a width as determined by detailed geotechnical analysis. Generally, this consisted of a 0.2 m dilution skin on each contact. The lower Creekshear area had a dilution of 0.3 m on each contact applied based on geotechnical advice. All dilution was assumed to be waste grade. |
| | The mining recovery factors used. | A 95% mining recovery factor was applied to all stoping. Mining recovery was also reduced based on exclusion of half-height rib pillars and 4.0 m thick sill pillars from the ore production, placed as required by the geotechnical analysis and to avoid down-dip migration of local failures. Ore development had an assumed 100% mining recovery, based on historical experience and industry standards. |
| | Any minimum mining widths used. | A pre-dilution minimum mining width of 2.0 m was assumed. This results in a minimum void width of 2.4 m for stoping (2.6 m in the lower Creekshear area) when combined with the dilution estimate, over stope sub-level intervals of 20-25 m. |
| | The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion. | Only the Indicated portion of the Mineral Resource was used to estimate the Ore Reserve. Any Inferred material contained within the Ore Reserve design had grade set to waste for the purposes of evaluation. The Ore Reserve is technically and economically viable without the inclusion of Inferred Mineral Resource material. |
| | The infrastructure requirements of the selected mining methods. | Most of the infrastructure required for the operations is already in place and operating at the Matilda site, including a processing plant and associated infrastructure, camp, airstrip, offices, workshops, power station and surface power reticulation, borefields and coreyards.<br>The Ore Reserve mine plan will require installation of additional infrastructure including extension of electrical power supply overhead lines, re-establishment of power, pumping and services in currently flooded workings and upgraded primary ventilation systems. This has all been taken into account in the financial analysis. |

| Criteria | JORC Code explanation | Commentary |
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| **Metallurgical factors or assumptions** | The metallurgical process proposed and the appropriateness of that process to the style of mineralisation. | The ore will be treated in the Wiluna processing plant, which is currently processing free-milling ore via a conventional crush-grind-gravity-separation-carbon in leach (CIL) circuit.<br>The installed BIOX® circuit (which is currently inactive) will be re-commissioned and expanded to treat the refractory sulphide ore generated by the MGP Underground Sulphide Ore Reserve mine plan. This will provide adequate recovery in the carbon-in-leach circuit. Material from all the planned orebodies has been successfully processed at the plant in the past. |
| | Whether the metallurgical process is well-tested technology or novel in nature. | This circuit was operated successfully on this type of material for over 20 years during previous operations. |
| | The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied. | Enough recent processing plant production data exists to estimate metallurgical recoveries and throughput rates to a suitable degree of accuracy. |
| | Any assumptions or allowances made for deleterious elements. | No problematic levels of deleterious elements have been detected during test work or processing. |
| | The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole. | This circuit was operated successfully on this type of material for over 20 years during previous operations. |
| | For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications? | The final product is gold dore, therefore this is not applicable. |
| **Environmental** | The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported. | The MGP is currently fully permitted and operational.<br>Historical data indicates that the rock mass is non-acid forming.<br>Extra tailings storage will be required for the Wiluna Expansion.<br>Some land clearance will be required for waste dump and ROM pad construction during the Wiluna Expansion works.<br>The permitting process for these outstanding items has not commenced, however the Competent Person knows of no reason why permitting would not be granted within a reasonable time frame. |
| **Infrastructure** | The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk | Substantial infrastructure exists on-site at the Matilda Gold Project (MGP), which has been operating for over two years following a three-year hiatus in care and |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed. | maintenance.<br>The site is located proximal to the township of Wiluna and the all-weather Goldfields Highway. The Wiluna airport services both the mine and the town<br>The Bulletin mine has semi-operational services provision systems installed (water, compressed air, power and pumping). These will require some refurbishment and extension into flooded areas. The East-West mine will require dewatering and re-establishment of all service provision infrastructure.<br>Labour is currently sourced from Perth on a fly in-fly out basis.<br>Sufficient water will be available for operations from operational borefields. |
| **Costs** | The derivation of, or assumptions made, regarding projected capital costs in the study. | Underground mining capital costs have been estimated based on recent underground mining contractor quotes for a similar operation, vendor quotes or estimates for refurbishment of capital infrastructure following inspection by independent experts, as collated during the 2016 DFS work. |
| | The methodology used to estimate operating costs. | Underground mining operating costs have been estimated based on recent underground mining contractor quotes for a similar operation. Power, diesel and accommodation costs have been determined based on vendor quotes. Staff costs have been assumed based on recent market salary levels.<br>Processing operating costs were determined based on a PFS carried out by independent engineers Minnovo Pty Ltd |
| | Allowances made for the content of deleterious elements. | No allowance was made as no deleterious elements are expected, based on metallurgical testwork. |
| | The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co- products. | Single commodity pricing for gold only, using a long-term gold price of AU$1,650 per ounce per Blackham Resources Ltd (BLK) corporate guidance. The Competent Person considers this to be an appropriate commodity price assumption based on the current environment. |
| | The source of exchange rates used in the study. | All costs and revenues have been estimated in Australian dollars. No exchange rate adjustments were required. |
| | Derivation of transportation charges. | All ore transportation charges are based on supplier quotes. This cost component has been used to determine the cut-off grades as well as applied to the operating cash flow estimate. |
| | The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc. | Refining and product transport costs have been provided by BLK based on current agreements. No penalties will be applicable to the gold doré product. |

| Criteria | JORC Code explanation | Commentary |
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| | The allowances made for royalties payable, both Government and private. | A Western Australian State Government royalty of 2.5% has been applied. An additional 3.6% third party royalty has been applied based on advice from BLK. |
| **Revenue factors** | The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc. | Forecasts for head grade delivered to the plant are based on detailed mine plans and mining factors.<br>Revenue has been based on the commodity price and exchange data provided by BLK.<br>Single commodity pricing for gold only, using a long-term gold price of A$1,650 per ounce, with a 2.5% WA State Government royalty and additional 3.6% third party royalty. |
| | The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products. | The assumed gold price is per BLK Corporate Guidance and recent spot prices. |
| **Market assessment** | The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future. | Gold doré from the mine is further refined at an independent LMBA certified refiner, and then then sold to the company's various gold sale counterparties |
| | A customer and competitor analysis along with the identification of likely market windows for the product. | NA |
| | Price and volume forecasts and the basis for these forecasts. | Gold doré from the mine is to be forecast to be sold at AUD1650/oz. |
| | For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract. | Not an industrial mineral so not applicable. |
| **Economic** | The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc. | The Ore Reserve estimate is based on a financial model that has been prepared from inputs at a minimum pre-feasibility study level of accuracy. All inputs from mining operations, processing, transportation and sustaining capital as well as contingencies have been scheduled and evaluated to generate a full life of mine cost model.<br>Economic inputs have been sourced from suppliers or generated from database information relating to the relevant area of discipline.<br>A discount rate of 7% has been applied.<br>The NPV of the project is positive at the assumed commodity price. |
| | NPV ranges and sensitivity to variations in the significant assumptions and inputs. | The Competent Person is satisfied that the project economics based on mining the Ore Reserve retains a suitable margin of profitability against reasonably foreseeable commodity price movements. |
| **Social** | The status of agreements with key stakeholders and matters leading to social licence to operate. | The MGP is currently operational.<br>BKM will continue to communicate and negotiate in good faith with key stakeholders. Based on advice provided to the Competent Person by BKM, it is not expected that |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | | there will be any significant impediments to continuation and expansion of operations at the MGP. |
| **Other** | To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves: | |
| | Any identified material naturally occurring risks. | A formal process to assess and mitigate naturally occurring risks will be undertaken prior to execution of the Ore Reserve mine plan. Currently, all naturally occurring risks are assumed to have adequate prospects for control and mitigation. |
| | The status of material legal agreements and marketing arrangements. | A wholly owned subsidiary of BLK owns the project and intends to sell gold produced from the operation in line with the market assessment. |
| | The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent. | The MGP is currently operational. The permitting process has not yet been commenced for the expansion works, however; based on the information provided by BKM, the Competent Person sees no reason all required approvals will not be successfully granted within a reasonable timeframe. |
| **Classification** | The basis for the classification of the Ore Reserves into varying confidence categories. | The Probable Ore Reserve is based on that portion of the Indicated Mineral Resource within the mine designs that may be economically extracted and includes an allowance for dilution and ore loss.<br>No Measured material was present in the Mineral Resources. |
| | Whether the result appropriately reflects the Competent Person's view of the deposit. | The results appropriately reflect the Competent Person's view of the deposit |
| | The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any). | No Measured Mineral Resource contributes to Probable Ore Reserves. |
| **Audits or reviews** | The results of any audits or reviews of Ore Reserve estimates. | The Ore Reserves reporting processes has been subjected to an internal review by Entech's senior technical personnel in August 2018. |
| **Discussion of relative accuracy/ confidence** | Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve 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 reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of | The design, schedule, and financial model on which the Ore Reserve is based has been completed to a Pre-Feasibility Study standard as a minimum, with a corresponding level of confidence. |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | the factors which could affect the relative accuracy and confidence of the estimate. | |
| | The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used. | All modifying factors have been applied to designed mining shapes on a global scale. |
| | Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage. | Considerations in favour of a high confidence in the Ore Reserve include:<br>• The mining process is well-known and utilises proven technology and methods widely used in the local area, with sufficient data to generate adequate costing estimates to pre-feasibility standard.<br>• The treatment process has been successfully applied to the material over 20 years during historical operations.<br>• The MGP is currently operational<br><br>Considerations in favour of a lower confidence in the Ore Reserve include:<br>• Future commodity price forecasts carry an inherent level of risk<br>• There is a degree of uncertainty associated with geological estimates. The Ore Reserve classifications reflect the levels of geological confidence in the estimates.<br>• There is a degree of uncertainty regarding estimates of impacts of natural phenomena including geotechnical assumptions, hydrological assumptions, and the modifying mining factors, commensurate with the level of study.<br>Further, i.e. quantitative, analysis of risk is not warranted or considered appropriate at the current level of technical and financial study. |
| | It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available. | |

*Section 4 – Estimation and Reporting of Open Pit Ore Reserves*

| Criteria | Explanation | Commentary |
|---|---|---|
| **Mineral Resource estimate for conversion to Ore Reserves** | • Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve.<br>• Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves. | • The Ore Reserve is based on Mineral Resource market information for:<br>▪ Wiluna & Matilda released 13th September 2018.<br>• The stated Mineral Resource is inclusive of the Ore Reserve. |
| **Site visits** | • Comment on any site visits undertaken by the Competent Person and the outcome of those visits.<br>• If no site visits have been undertaken indicate why this is the case. | • The Competent Person has visited site on multiple occasions and conducts ongoing mine planning for the Matilda and Wiluna open cut deposits.<br>• The Competent Person has also relied on reports from other independent consultants and site surveys in determining the viability of the Ore Reserve. |
| **Study status** | • The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves.<br>• The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered. | • A Pre-Feasibility level estimation of costs, modifying factors and parameters resulting in a mine plan that is technically achievable and economic using the determined Ore Reserve.<br>• Costs and modifying factors have been reviewed against existing operational performance and experience. This includes mining and milling reconciliations and wall stability performance from a range of mined deposits in the Wiluna camp. |
| **Cut-off parameters** | • The basis of the cut-off grade(s) or quality parameters applied. | • The cut-off grades applied are based on a gold price of AU$1,650/oz.<br>• Open cut mining unit costs have been applied based on the current contractual rates or the Matilda Mine.<br>• Open cut mining unit rates have been estimated to a PFS level by the incumbent mining contractor for the Wiluna resource and used in the PFS and adjusted for this Ore Reserve.<br>• Open cut mining unit rates have been estimated to a PFS level based on the contractual rates provided by the incumbent contractor for the Williamson Ore Reserve.<br>• Matilda resource treatment costs are based on current BLK operating costs.<br>• Wiluna resource treatment costs are sourced from a processing PFS carried out by independent engineers Minnovo Pty Ltd.<br>• Williamson resource treatment and metallurgical recoveries are based on the 2017 DFS study and updated based on subsequent operational experience.<br>• Matilda metallurgical recoveries were provided by BLK based on current operational results for oxide and metallurgical test work for transitional and fresh resource as per the February 2016 DFS.<br>• Wiluna metallurgical recoveries were estimated by BLK based on extensive historical sulphide plant operating data and historical metallurgical test work.<br>• Other administration costs were based on existing operational data provided by BLK. |

<table>
<tr><th>Criteria</th><th>Explanation</th><th>Commentary</th></tr>
<tr><td></td><td></td><td>
• Royalty estimates were provided by BLK based on current agreements.<br>
• Declared Reserve cut off grades are as follows;<br><br>
<table>
<tr><th></th><th>OXIDE</th><th>TRANS</th><th>FRESH</th></tr>
<tr><td>Matilda (M1 South/North)</td><td>0.7g/t</td><td>0.75g/t</td><td>0.9g/t</td></tr>
<tr><td>Matilda (M2, M5, M6)</td><td>0.7g/t</td><td>0.75g/t</td><td>2.20g/t</td></tr>
<tr><td>Williamson</td><td>0.7g/t</td><td>0.8g/t</td><td>1.00g/t</td></tr>
<tr><td>Wiluna (OP normal)</td><td>0.6g/t</td><td>0.75g/t</td><td>1.00g/t</td></tr>
<tr><td>Wiluna (OP Bulletin Stope Skins)</td><td></td><td>0.9g/t</td><td>1.00g/t</td></tr>
</table>
NOTE: Cutoff grades for Fresh ore in both M1 North and Williamson are lower as this material is free-milling.
</td></tr>
<tr><td>Mining factors or assumptions</td><td>
• The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design).<br>
• The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc.<br>
• The assumptions made regarding geotechnical parameters (eg pit slopes, stope sizes, etc), grade control and pre-production drilling.<br>
• The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate).<br>
• The mining dilution factors used.<br>
• The mining recovery factors used.<br>
• Any minimum mining widths used.<br>
• The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion.<br>
• The infrastructure requirements of the selected mining methods.
</td><td>
• Whittle optimisations have been applied to the following Resource:<br>
▪ For Matilda and Williamson the Whittle optimisations have included Measured and Indicated Resources only, and based on a free-milling processing model (M1 North, Williamson). For other Matilda deposits only the Oxide and Transitional material has been deemed economic to process through the free-milling circuit.<br>
▪ For Wiluna the Whittle optimisations have included Inferred Resources in the determination of a final pit shell where i.) there is a reasonable geological confidence that with increased drilling density the Inferred resources would be re-classified and recovered, and ii.) a review of the resultant Whittle pit shells (Measured/Indicated versus Measured/Indicated and Inferred) does not demonstrate a material difference in final pit outcome.<br>
• The Ore Reserve has been reported within pit designs based on the Whittle optimisations. Pit designs have been developed utilising pit shells from the Whittle optimisations and with appropriate design parameters applied. These include Geotechnical and mine design parameters currently used in other operating mines in the area.<br>
• Conventional open cut mining methods using 120t excavators and 90t trucks are employed in the existing operations at Matilda. The mining methods employed are widely used in the mining industry and production rates and costings are based on existing contract rates.<br>
• Conventional open cut mining methods using 120t and 180t excavators with 90t and 150t trucks will be employed at Wiluna. Production rates and costings are based on detailed estimations (quotes) supplied by the existing mining contractor who is readily familiar with the operating environment.
</td></tr>
</table>

| Criteria | Explanation | Commentary |
|---|---|---|
| | | • Geotechnical parameters are based on investigations by Peter O'Bryan and Associates utilising existing pit wall experience. Parameters have allowed pit designs at Wiluna to be completed conforming to the recommendations. Probe drilling will be utilised for existing void detection. Ongoing pit wall management programs and slope performance reviews are conducted at the Matilda operations to maintain wall stability.<br>• Internal and external dilution has been addressed in the orebody estimation process through the adoption of LUC models.<br>• A further (additional) allowance for mining dilution and ore loss factors has been applied to the reserve calculations and includes:<br>▪ 5% dilution and 5% ore loss for existing Matilda resource, including those with grade control resource models.<br>▪ 2% dilution and 3% ore loss, based on reconciliation and dilution modelling, for the Wiluna East-West and the Wiluna North models.<br>▪ 1% dilution and 2% ore loss on the Williamson resource. .<br>▪ For the Bulletin stope skins ore (see further below) 10% dilution and 10% recovery factors have been applied.<br>• The Mineral resource models used are as noted previously in this table. The models have been modified with additional fields to flag different material types to assist calculation of the Ore Reserves but no change to the grade or density fields has been made.<br>• The resource classifications consist of Measured, Indicated and Inferred. Only at the Wiluna resource has the Inferred resource been evaluated in the pit optimisations. The Ore Reserve does not include any Inferred resource and the Ore Reserve is technically and economically viable without the inclusion of the Inferred resource.<br>• For Bulletin (within Wiluna North) special consideration has been given to mining the 'skin' surrounding existing mining (underground) voids (previously classified as Inferred). The process for mining this material will be as follows;<br>• **i**.) remnant voids will be backfilled from the open pit mining operations using direct tipping and, where required, installation of fill passes. Costs associated with developing the fill passes and backfilling have been factored into the total mining costs.<br>• **ii**.) Once the stopes are back-filled mining of the bench including the stope skin and backfill material will be completed. The presence of backfill in the void should allow a significantly greater proportion of the stope skin to be recovered.<br>• **iii**.) The application of this method allows the previously Inferred ore present in the stope skins to be re-classified to Indicated. |

| Criteria | Explanation | Commentary |
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| | | • **iv**.) In recognition of the increased technical difficulty and risk of extracting the stope skins a mining dilution factor of 10% and recovery of 10% have been applied. |
| **Metallurgical factors or assumptions** | • The metallurgical process proposed and the appropriateness of that process to the style of mineralisation.<br>• Whether the metallurgical process is well-tested technology or novel in nature.<br>• The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied.<br>• Any assumptions or allowances made for deleterious elements.<br>• The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole.<br>• For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications? | • No deleterious elements of any note have been detected.<br>• The Matilda and Williamson ore has been previously treated and Matilda is currently being treated in the Wiluna processing plant as free-milling ore via a conventional crush-grind-gravity-separation-carbon in leach (CIL) circuit.<br>• The installed BIOX® circuit (which is currently inactive) will be re-commissioned and expanded to treat the refractory sulphide ore generated by the Wiluna open cut Reserve. This will provide adequate recovery in the carbon-in-leach circuit. This circuit was operated successfully on this type of material for over 20 years during previous operations.<br>• Enough recent processing plant production data exists to estimate metallurgical recoveries and throughput rates to a suitable degree of accuracy.<br>• No problematic levels of deleterious elements have been detected during test work or processing.<br>• The BIOX circuit was operated successfully on this type of material for over 20 years during previous operations. |
| **Environmental** | • The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported. | • The MGP is currently fully permitted and operational.<br>• Historical data indicates that the rock mass is generally non-acid forming. Additional testing will be undertaken in FY19 as interim mining of oxide and transitional rocks types is commenced to confirm the non-acid forming state.<br>• An operational tailings storage facility exists and plans for extra storage for the Wiluna expansion will be required.<br>• Some land clearance will be required for waste dump and ROM pad construction during the Wiluna Expansion works; this will be located around existing infrastructure areas.<br>• The permitting process for these outstanding items has not commenced, however the Competent Person knows of no reason why permitting would not be granted within a reasonable time frame. |
| **Infrastructure** | • The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed. | • Substantial infrastructure exists on-site at the MGP, which has been operating for over 2 years following a three-year hiatus in care and maintenance.<br>• Open cut infrastructure is currently in place and operational at Matilda.<br>• The site is located proximal to the township of Wiluna and the all-weather Goldfields Highway. The Wiluna airport services both the mine and the town<br>• Labour is currently sourced from Perth on a fly in-fly out basis.<br>• Sufficient water will be available for operations from operational borefields. |

| Criteria | Explanation | Commentary |
|---|---|---|
| **Costs** | • The derivation of, or assumptions made, regarding projected capital costs in the study.<br>• The methodology used to estimate operating costs.<br>• Allowances made for the content of deleterious elements.<br>• The source of exchange rates used in the study.<br>• Derivation of transportation charges.<br>• The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc.<br>• The allowances made for royalties payable, both Government and private. | • Mine operating costs are based on :<br>▪ Existing contract rates for Matilda and Williamson covering haulage distances and monthly total movement, drill and blast targets and overheads with incumbent contractor.<br>▪ Estimated unit rates based on results of studies for Wiluna resource by the current contractor for the PFS.<br>• Mine administration and ancillary costs have been based on current market levels and provided by BKM.<br>• All costs and revenue are in AUD.<br>• Processing operating costs were determined based on:<br>▪ Existing operating costs at Wiluna mill.<br>▪ A PFS carried out by independent engineers Minnovo Pty Ltd for the treatment of sulphide ore.<br>• Royalties for a 2.5% WA State Government royalty and additional 3.6% third party royalty the gold produced. |
| **Revenue factors** | • The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc.<br>• The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products. | • Single commodity pricing for gold only, using a long-term gold price of AU$1,650 per ounce as per BLK corporate guidance.<br>• The Competent Person considers this to be an appropriate commodity price assumption based on the current environment.<br>• Whittle pit optimisation outcomes (pit-shells) are typically selected at lower than RF = 1 positions, especially in larger (long-life) pits to account for potential softening in the assumed commodity price. |
| **Market assessment** | • The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future.<br>• A customer and competitor analysis along with the identification of likely market windows for the product.<br>• Price and volume forecasts and the basis for these forecasts.<br>• For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract. | • Gold doré from the mine is further refined at an independent LMBA certified refiner, and then then sold to the company's various gold sale counterparties.<br>• The gold price of AU$1,650/oz is as per BLK guidance. |
| **Economic** | • The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc.<br>• NPV ranges and sensitivity to variations in the significant assumptions and inputs. | • The Ore Reserve estimate is supported by a detailed model that has been prepared from current operating inputs at Matilda/Williamson and inputs to a Pre-Feasibility level at Wiluna. All relevant capital and operating costs as well as revenue and royalty factors have been included with appropriate discount factor for cash flow analysis.<br>• A full financial model is developed with sensitivities applied to all key inputs and assumptions. |

| Criteria | Explanation | Commentary |
|---|---|---|
| **Social** | • The status of agreements with key stakeholders and matters leading to social licence to operate. | • The MGP is currently operational and it is not expected that there will be any impediments for the Wiluna Expansion to proceed.<br>• Interim mining of the Wiluna Oxide and Transitional ores (free-milling), within the overall Wiluna Expansion mining centre is commencing in the FY19 Life of Mine that will confirm operational assumptions. |
| **Other** | • To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves:<br>• Any identified material naturally occurring risks.<br>• The status of material legal agreements and marketing arrangements.<br>• The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent. | • A risk control process will be undertaken prior to implementation of the Wiluna Expansion and it is assumed that there will an adequate process for control and mitigation.<br>• The MGP is currently operational. The permitting process has not yet been commenced for the expansion works, however; based on the information provided by BLK, the Competent Person sees no reason all required approvals will not be successfully granted within a reasonable timeframe. |
| **Classification** | • The basis for the classification of the Ore Reserves into varying confidence categories.<br>• Whether the result appropriately reflects the Competent Person's view of the deposit.<br>• The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any). | • Classification of the Ore Reserve is based on the Mineral Resource classification.<br>• The Matilda grade control Measured Resource has been converted to a Proved Reserve.<br>• At other Matilda deposits Measured Resources have been converted to a Proved Reserve and Indicated Resource to a Probable Reserve.<br>• The Wiluna Indicated Resource has been converted to a Probable Reserve.<br>• The Williamson Indicated Resource has been converted to a Probable Reserve.<br>• The results appropriately reflect the Competent Person's view of the respective deposits. |
| **Audits or reviews** | • The results of any audits or reviews of Ore Reserve estimates. | • The Ore Reserve estimate has been reviewed internally by BLK and is considered to appropriately reflect the results of the application of the modifying factors to the Mineral Resources to a Pre-Feasibility Study level. |

| Criteria | Explanation | Commentary |
|---|---|---|
| **Discussion of relative accuracy/ confidence** | • Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve 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 reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate.<br>• The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used.<br>• Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage. | • The design, schedule and financial model for the Matilda Ore Reserve has been completed to a Definite Feasibility standard with a corresponding level of confidence. Inputs applied to generate the Ore Reserve are supported by operating experience over the last 1.5 years at Matilda.<br>• The design, schedule and financial model for the Wiluna Ore Reserve has been completed to a Pre-Feasibility standard with a corresponding level of confidence.<br>• The Williamson design has been completed to a Pre-Feasibility standard with a corresponding level of confidence. Prior mining experience and performance has been used to support the stated Ore Reserve.<br>• A degree of uncertainty is associated with geological estimates and the Reserve classification reflects the level of confidence in the Resource.<br>• There is a degree of uncertainty regarding estimates of modifying mining factors, geotechnical and processing parameters that are of a confidence level reflected in the level of the study. The Competent Person is satisfied that a suitable margin exists that the Reserve estimate would remain economically viable with any negative impacts applied to these factors or parameters.<br>• There is a degree of uncertainty in the commodity price used however the Competent person is satisfied that the assumptions used to determine the economic viability of the Ore Reserve are based on reasonable current data. |

**Section 4 - Estimation and Reporting of Golden Age Underground Ore Reserves**

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| **Mineral Resource estimate for conversion to Ore Reserves** | Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve. | The Mineral Resources used as the basis of this Ore Reserve update were released to market 13/9/18 “Wiluna Gold Resources Continue to Grow”. |
| | Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves. | Mineral resources are reported inclusive of ore reserves. |
| **Site visits** | Comment on any site visits undertaken by the Competent Person and the outcome of those visits. | The Competent Person is currently employed at the Wiluna Gold mine and is familiar with the underground operations, the surrounding area and access routes and the Wiluna site infrastructure including the processing plant. The Competent person regularly commutes to Wiluna Gold Mine. |
| | If no site visits have been undertaken indicate why this is the case. | The Competent Person regularly visits the site. |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| **Study status** | The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves. | The Ore Reserve is based upon mining operational designs and planning standards. |
| | The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered. | Stope design factors are based upon technical parameters established by Mining Professionals and contained within Geotechnical and Mining Management Plans. Modelling indicates that the resulting mine plan is technically achievable and economically viable. |
| **Cut-off parameters** | The basis of the cut-off grade(s) or quality parameters applied. | Cut-off grades were determined based on a gold price of AU$1,650/oz.<br>Treatment, mining and administration costs for cut-off grade estimation were sourced from monthly site cost reports and from current Contract rates.<br>Metallurgical recoveries were estimated by BLK based on metallurgical testwork data which compares closely to 2016/17 operating results.<br>Royalty estimates are based upon current agreements. |
| **Mining factors or assumptions** | The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design). | Cut-off grades and geotechnical inputs were applied to the mineral resources to provide detailed underground mine designs. These designs which were economically viable were used as the basis of the Ore Reserve estimate. |
| | The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc. | The Ore Reserve is planned to be a combination of top-down mechanised longhole open stoping method, with in-situ pillars left unmined for support, and airleg stoping in areas with a dip less than 35 degrees.<br>Diesel powered trucks and loaders will be used for materials handling. Diesel-electric jumbo drill rigs will be used for development and ground support installation, and diesel-electric longhole rigs used for production drilling.<br>The mining methods chosen are well-known and widely used in the local mining industry, and production rates and costing can be predicted with a suitable degree of accuracy. The method has been chosen based on the spatial characteristics of the orebody, geotechnical analysis, and historical performance of similar methods used at the mine previously.<br>Suitable access is available to all areas through existing declines. Dewatering and refurbishment of older development in the Golden Age Remnant area has been allowed for in the costing and schedules.<br>Ore will be trucked to run-of-mine (ROM) pads on the surface, from where it will be hauled to the processing plant using private mine site roads by a separate road train |

| Criteria | JORC Code explanation | Commentary |
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| | | contractor. |
| | The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc), grade control and pre-production drilling. | The site Ground Control Management Plan (GCMP) for the Golden Age orebody has been used as the basis of the geotechnical parameters in these reserves. The GCMP has been developed with in-house geotechnical engineering expertise and independent geotechnical consultants Peter O'Bryan and Associates. These form the basis of mining method selection, mine design, mining factors, and ground support design for the Ore Reserve estimate. |
| | The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate). | The Mineral Resource models used for stope optimisation are as detailed in previously in this table. Only the Measured and Indicated portions of the Mineral Resource was used to estimate the Ore Reserve.<br>Stope economics were determined using the cut-off grade revenue and cost inputs. A minimum stoping width of 1.8m was applied. Sub-level intervals of 8-15 m and stope section strike length of 5.0 m were also applied. |
| | The mining dilution factors used. | The majority of the remaining Golden Age orebody averages less than 1.3m true width. A minimum mining width of 1.8m for longhole stopes and airleg stopes has been applied for orebody true widths less than 1.3m. For ore widths greater than 1.5m, dilution skins of 0.3m and 0.2m have been applied to the hangingwall and footwall of the stopes respectively. In specific instances where geological structures are well understood, dilution has been applied based upon a structurally controlled mining shape. |
| | The mining recovery factors used. | A 95% mining recovery factor was applied to all stoping. Mining recovery was also reduced based on exclusion of 3.0m high, 3m wide island pillars, placed as required by the geotechnical analysis and to avoid down-dip migration of local failures. Ore development had an assumed 100% mining recovery, based on historical experience and industry standards. |
| | Any minimum mining widths used. | A minimum mining width of 1.8 m was assumed for longhole stopes and airleg stopes. |
| | The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion. | Only the Measured and Indicated portion of the Mineral Resource was used to estimate the Ore Reserve. Any Inferred material contained within the Ore Reserve design had grade set to waste for the purposes of optimisation and evaluation. The Ore Reserve is technically and economically viable without the inclusion of Inferred Mineral Resource material. |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | The infrastructure requirements of the selected mining methods. | All of the infrastructure required for the operations is already in place and operating at the Matilda site, including a processing plant and associated infrastructure, camp, airstrip, offices, workshops, power station and surface power reticulation, borefields and coreyards. |
| **Metallurgical factors or assumptions** | The metallurgical process proposed and the appropriateness of that process to the style of mineralisation. | The ore will be treated in the Wiluna processing plant, which is currently processing free-milling ore via a conventional crush-grind-gravity-separation-carbon in leach (CIP) circuit. |
| | Whether the metallurgical process is well-tested technology or novel in nature. | This circuit is operating successfully on this type of material currently. |
| | The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied. | Enough recent processing plant production data exists to estimate metallurgical recoveries and throughput rates to a suitable degree of accuracy. |
| | Any assumptions or allowances made for deleterious elements. | No problematic levels of deleterious elements have been detected during test work or processing. |
| | The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole. | This circuit is operating successfully on this type of material currently. |
| | For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications? | The final product is gold dore, therefore this is not applicable. |
| **Environmental** | The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported. | The MCP is currently fully permitted and operational.<br>Historical data indicates that the rock mass is non-acid forming.<br>There is adequate storage space within the currently permitted and operational TSF |
| **Infrastructure** | The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed. | All necessary infrastructure exists on-site at the MGP, which has been operating for over a year following a three-year hiatus in care and maintenance.<br>The site is located proximal to the township of Wiluna and the all-weather Goldfields Highway. The Wiluna airport services both the mine and the town<br>The Golden Age mine has operational services provision systems installed and operational (water, compressed air, power and pumping). Labour is currently sourced from Perth on a fly in-fly out basis. |

| Criteria | JORC Code explanation | Commentary |
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| | | Sufficient water will be available for operations from operational borefields. |
| **Costs** | The derivation of, or assumptions made, regarding projected capital costs in the study. | Underground mining capital costs have been estimated based on a services contract, recent vendor quotes or estimates for refurbishment of capital infrastructure following inspection by independent experts, as collated during the 2016 DFS work. |
| | The methodology used to estimate operating costs. | Mining operating costs have been estimated based on a detailed underground mining services contract existing between Matilda Operations Pty Ltd and a mining contractor. Power, diesel and accommodation costs have been determined based on vendor quotes and operating data. Staff costs have been assumed based on current market salary levels.<br>Plant operating costs are derived from the ore treated through the Wiluna processing plant, which is currently processing free-milling ore via a conventional crush-grind-gravity-separation-carbon in leach (CIP) circuit. |
| | Allowances made for the content of deleterious elements. | No allowance was made as no deleterious elements are expected, based on operational data and metallurgical testwork. |
| | The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co- products. | Single commodity pricing for gold only, using a long-term gold price of AU$1,650 per ounce per BLK corporate guidance. The Competent Person considers this to be an appropriate commodity price assumption based on the current environment. |
| | The source of exchange rates used in the study. | All costs and revenues have been estimated in Australian dollars. No exchange rate adjustments were required. |
| | Derivation of transportation charges. | All ore transportation charges are based on supplier quotes. This cost component has been used to determine the cut-off grades as well as applied to the operating cash flow estimate. |
| | The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc. | Refining and product transport costs have been provided by BKM based on current agreements. No penalties will be applicable to the gold doré product. |
| | The allowances made for royalties payable, both Government and private. | A Western Australian State Government royalty of 2.5% has been applied. An additional 3.6% third party royalty has been applied based on advice from BKM. |
| **Revenue factors** | The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc. | Forecasts for head grade delivered to the plant are based on detailed mine plans and mining factors.<br>Revenue has been based on the commodity price and exchange data provided by BKM.<br>Single commodity pricing for gold only, using a long-term gold price of A$1,650 per ounce, with a 2.5% WA State Government royalty and additional 3.6% third party |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | | royalty. |
| | The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products. | The assumed gold price is per BKM Corporate Guidance. |
| **Market assessment** | The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future. | Gold doré from the mine is further refined at an independent LMBA certified refiner, and then then sold to the company's various gold sale counterparties |
| | A customer and competitor analysis along with the identification of likely market windows for the product. | NA |
| | Price and volume forecasts and the basis for these forecasts. | Gold doré from the mine is to be forecast to be sold at AUD1650/oz Au |
| | For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract. | Not an industrial mineral so not applicable. |
| **Economic** | The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc. | The Ore Reserve estimate is supported by a detailed model that has been prepared from current operating inputs at Golden Age. All relevant capital and operating costs as well as revenue and royalty factors have been included with appropriate discount factor for cash flow analysis. |
| | NPV ranges and sensitivity to variations in the significant assumptions and inputs. | A full financial model is developed with sensitivities applied to all key inputs and assumptions |
| **Social** | The status of agreements with key stakeholders and matters leading to social licence to operate. | The MGP is currently operational.<br>BKM will continue to communicate and negotiate in good faith with key stakeholders. Based on advice provided to the Competent Person by BLK, it is not expected that there will be any significant impediments to continuation and expansion of operations at the MGP. |
| **Other** | To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves: | |
| | Any identified material naturally occurring risks. | A formal process to assess and mitigate naturally occurring risks will be undertaken prior to execution of the Ore Reserve mine plan. Currently, all naturally occurring risks are assumed to have adequate prospects for control and mitigation. |
| | The status of material legal agreements and marketing arrangements. | None known. A wholly owned subsidiary of BLK owns the project, and intends to sell gold produced from the operation in line with the Market assessment. |
| | The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and | The MGP is currently operational and mining of the Golden Age is fully permitted. |

| Criteria | JORC Code explanation | Commentary |
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| | government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent. | |
| **Classification** | The basis for the classification of the Ore Reserves into varying confidence categories. | The Proved Ore Reserve is based on that portion of the Measured Mineral Resource within the mine designs that may be economically extracted and includes an allowance for dilution and ore loss.<br>The Probable Ore Reserve is based on that portion of the Indicated Mineral Resource within the mine designs that may be economically extracted and includes an allowance for dilution and ore loss. |
| | Whether the result appropriately reflects the Competent Person's view of the deposit. | The results appropriately reflect the Competent Person's view of the deposit |
| | The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any). | No Measured Mineral Resource contributes to Probable Ore Reserves. |
| **Audits or reviews** | The results of any audits or reviews of Ore Reserve estimates. | The Ore Reserves reporting processes has been not been subjected to any internal review. A standard procedure of design and methodology checks and balances by senior operational staff is in place to ensure the viability of the reserves. |
| **Discussion of relative accuracy/ confidence** | Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve 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 reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate. | The design, schedule, and financial model on which the Ore Reserve is based has been completed to a Pre-Feasibility Study standard as a minimum, with a corresponding level of confidence. |
| | The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used. | All modifying factors have been applied to designed mining shapes on a global scale. |
| | Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas | Considerations in favour of a high confidence in the Ore Reserve include:<br>• The mining process is well-known and utilises proven technology |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | of uncertainty at the current study stage. | and methods widely used in the local area, with sufficient data to generate adequate costing estimates to a minimum of pre-feasibility standard.<br>• The Golden Age orebody is currently operational<br>• The treatment process is currently operational.<br>• The MGP is currently operational<br><br>Considerations in favour of a lower confidence in the Ore Reserve include:<br>• Future commodity price forecasts carry an inherent level of risk<br>• There is a degree of uncertainty associated with geological estimates. The Ore Reserve classifications reflect the levels of geological confidence in the estimates.<br>• There is a degree of uncertainty regarding estimates of impacts of natural phenomena including geotechnical assumptions, hydrological assumptions, and the modifying mining factors, commensurate with the level of study.<br>Further, i.e. quantitative, analysis of risk is not warranted or considered appropriate at the current level of technical and financial study. |
| | It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available. | |

**Section 4 - Estimation and Reporting of Wiluna Tailings Ore Reserves**

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| Mineral Resource estimate for conversion to Ore Reserves | Description of the Mineral Resource estimate used as a basis for the conversion to an Ore Reserve. | The Mineral Resources used as the basis of this Ore Reserve update were released to market 13/9/18 “Wiluna Gold Resources Continue to Grow”. |
| | Clear statement as to whether the Mineral Resources are reported additional to, or inclusive of, the Ore Reserves. | Mineral resources are reported inclusive of ore reserves. |
| Site visits | Comment on any site visits undertaken by the Competent Person and the outcome of those visits. | The Competent Person is currently a full time employee of Independent Metallurgical Operations Pty Ltd (IMO). The Competent Person has not visited the Wiluna Site. |
| | If no site visits have been undertaken indicate why this is the case. | The Competent Person is familiar with the operations as IMO has been working with BLK on the Matilda Wiluna Gold Project over a number of years |
| Study status | The type and level of study undertaken to enable Mineral Resources to be converted to Ore Reserves. | The Ore Reserve is based upon a PFS for a standalone Tailings Retreatment Operation. |
| | The Code requires that a study to at least Pre-Feasibility Study level has been undertaken to convert Mineral Resources to Ore Reserves. Such studies will have been carried out and will have determined a mine plan that is technically achievable and economically viable, and that material Modifying Factors have been considered. | Detailed capital and operating costs estimates to a minimum of a prefeasibility level of assessment have been used plus actual plant operating data. Material modifying factors have been considered plus detailed metallurgical test work for modelling that indicates that the resulting mine plan is technically achievable and economically viable. |
| Cut-off parameters | The basis of the cut-off grade(s) or quality parameters applied. | Economic analysis is based on a gold price of AU$1,650/oz.<br>Treatment, mining and administration cost estimations were sourced from monthly site cost reports and from mining contractor submissions.<br>Metallurgical recoveries were estimated by IMO based on metallurgical testwork. Royalty estimates are based upon current agreements. |
| Mining factors or assumptions | The method and assumptions used as reported in the Pre-Feasibility or Feasibility Study to convert the Mineral Resource to an Ore Reserve (i.e. either by application of appropriate factors by optimisation or by preliminary or detailed design). | Metallurgical recoveries and a review of recovery appropriate for a tailings operation based on the mining method was undertaken. This was combined with preliminary designs for material that is not included as part of the ore reserve that is left to maintain stability of existing structures at the Wiluna site |
| | The choice, nature and appropriateness of the selected mining method(s) and other mining parameters including associated design issues such as pre-strip, access, etc. | The planned mining method for the extraction of tailings is the common practice of dredging. The dredge will be floated on the tailings area and a slurry of tails will be pumped to a screening and preparation area to pump into a CIL circuit for extraction of the gold. Two dredges in two working |

| Criteria | JORC Code explanation | Commentary |
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| | | areas with mobile generators will be used to maintain a constant feed. |
| | The assumptions made regarding geotechnical parameters (e.g. pit slopes, stope sizes, etc), grade control and pre-production drilling. | The site Ground Control Management Plan has been developed with in-house geotechnical engineering expertise and independent geotechnical consultants Peter O'Bryan and Associates and forms the basis of geotechnical parameters that are applicable. |
| | The major assumptions made and Mineral Resource model used for pit and stope optimisation (if appropriate). | The Mineral Resource estimate & models used for the dredging operation study are outlined in the announcement released to market on 13/9/18 "Wiluna Gold Resources Continue to Grow". |
| | The mining dilution factors used. | No additional dilution has been added to the resource estimate as announced on the 13/9/18 due to any additional material from an edge effect being negligible. |
| | The mining recovery factors used. | An 88% recovery factor has been applied to Dam H to allow for stability of slopes adjoining associated infrastructure. |
| | Any minimum mining widths used. | Not applicable |
| | The manner in which Inferred Mineral Resources are utilised in mining studies and the sensitivity of the outcome to their inclusion. | No inferred Mineral Resources were used. |
| | The infrastructure requirements of the selected mining methods. | The majority of the infrastructure required for the operations is already in place and operating at the Matilda site, including a processing plant and associated infrastructure, camp, airstrip, offices, workshops, power station and surface power reticulation, bore fields and core yards. Additional capital for the tailings project has been estimated by an independent EPC contractor to a minimum of a prefeasibility level of confidence. |
| Metallurgical factors or assumptions | The metallurgical process proposed and the appropriateness of that process to the style of mineralisation. | The ore will be treated in the Wiluna processing plant, which is currently processing free-milling ore via a conventional crush-grind-gravity-separation-carbon in leach (CIP) circuit which will be upgraded to a full CIL circuit. |
| | Whether the metallurgical process is well-tested technology or novel in nature. | This circuit is operating and is a well-tested technology used in the industry. |
| | The nature, amount and representativeness of metallurgical test work undertaken, the nature of the metallurgical domaining applied and the corresponding metallurgical recovery factors applied. | Enough recent metallurgical test work has been undertaken to assess the metallurgical nature of the project to a prefeasibility level of confidence. |
| | Any assumptions or allowances made for deleterious | No problematic levels of deleterious elements have been detected during test work or processing. |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | elements. | |
| | The existence of any bulk sample or pilot scale test work and the degree to which such samples are considered representative of the orebody as a whole. | Samples for Metallurgical test work were collected via a number of techniques included sonic core drilling, air core drilling and auger drilling. The samples collected from the Tailings and used in the Metallurgical test work program are considered appropriate and representative. |
| | For minerals that are defined by a specification, has the ore reserve estimation been based on the appropriate mineralogy to meet the specifications? | The final product is gold dore, therefore this is not applicable. |
| Environmental | The status of studies of potential environmental impacts of the mining and processing operation. Details of waste rock characterisation and the consideration of potential sites, status of design options considered and, where applicable, the status of approvals for process residue storage and waste dumps should be reported. | The project is currently fully permitted and operational.<br>Historical data indicates that the rock mass is non-acid forming.<br>There is adequate storage space within the currently permitted and operational TSF plus additional storage is planned as part of an operation expansion. |
| Infrastructure | The existence of appropriate infrastructure: availability of land for plant development, power, water, transportation (particularly for bulk commodities), labour, accommodation; or the ease with which the infrastructure can be provided, or accessed. | All necessary infrastructure exists on-site at the MGP, which has been operating for over 2 years following a three-year hiatus in care and maintenance.<br>The site is located proximal to the township of Wiluna and the all-weather Goldfields Highway. The Wiluna airport services both the mine and the town |
| Costs | The derivation of, or assumptions made, regarding projected capital costs in the study. | Additional capital for the tailings project has been estimated by an independent EPC contractor to a minimum of a prefeasibility level of confidence. |
| | The methodology used to estimate operating costs. | Mining operating costs have been estimated based on a detailed estimate from an independent contractor. Power, diesel and accommodation costs have been determined based on vendor quotes and operating data. Staff costs have been assumed based on current market salary levels.<br>Plant operating costs are derived from the Wiluna processing plant, which is currently processing free-milling ore via a conventional crush-grind-gravity-separation-carbon in leach (CIP) circuit. |
| | Allowances made for the content of deleterious elements. | No allowance was made as no deleterious elements are expected, based on operational data and metallurgical testwork. |
| | The derivation of assumptions made of metal or commodity price(s), for the principal minerals and co- products. | Single commodity pricing for gold only, using a long-term gold price of AU$1,650 per ounce. The Competent Person considers this to be an appropriate commodity price assumption based on the current environment. |
| | The source of exchange rates used in the study. | All costs and revenues have been estimated in Australian dollars. No exchange rate adjustments were required. |

| Criteria | JORC Code explanation | Commentary |
|---|---|---|
| | Derivation of transportation charges. | All ore transportation charges are based on supplier quotes. |
| | The basis for forecasting or source of treatment and refining charges, penalties for failure to meet specification, etc. | Refining and product transport costs have been provided by BLK based on current agreements. No penalties will be applicable to the gold doré product. |
| | The allowances made for royalties payable, both Government and private. | A Western Australian State Government royalty of 2.5% has been applied. An additional 3.6% third party royalty has been applied based on advice from BLK. |
| Revenue factors | The derivation of, or assumptions made regarding revenue factors including head grade, metal or commodity price(s) exchange rates, transportation and treatment charges, penalties, net smelter returns, etc. | Forecasts for head grade delivered to the plant are based on mine plans and mining factors.<br>Revenue has been based on the commodity price and exchange data provided by BLK.<br>Single commodity pricing for gold only, using a long-term gold price of A$1,650 per ounce, with a 2.5% WA State Government royalty and additional 3.6% third party royalty. |
| | The derivation of assumptions made of metal or commodity price(s), for the principal metals, minerals and co-products. | The assumed gold price is per BLK Corporate Guidance. |
| Market assessment | The demand, supply and stock situation for the particular commodity, consumption trends and factors likely to affect supply and demand into the future. | Gold doré from the mine is further refined at an independent LMBA certified refiner, and then then sold to the company's various gold sale counterparties |
| | A customer and competitor analysis along with the identification of likely market windows for the product. | NA |
| | Price and volume forecasts and the basis for these forecasts. | Gold doré from the mine is to be forecast to be sold at AUD1650/oz Au |
| | For industrial minerals the customer specification, testing and acceptance requirements prior to a supply contract. | Not an industrial mineral so not applicable. |
| Economic | The inputs to the economic analysis to produce the net present value (NPV) in the study, the source and confidence of these economic inputs including estimated inflation, discount rate, etc. | The Ore Reserve estimate is based on a financial model for that has been prepared from inputs at an operational study level of accuracy. All inputs from mining operations, processing, transportation and sustaining capital as well as contingencies have been scheduled and evaluated to generate a full life of mine cost model.<br>Economic inputs have been sourced from contractors, suppliers or generated from database information relating to the relevant area of discipline.<br>The NPV of the project is positive at the assumed commodity price. The Competent Person is satisfied that the project economics based on mining the Ore Reserve retains a suitable margin of profitability against reasonably foreseeable commodity price movements. |
| | NPV ranges and sensitivity to variations in the significant assumptions and inputs. | The Ore Reserve estimate is supported by a detailed model that has been prepared from current operating inputs and inputs to a Pre-Feasibility level at Wiluna. All relevant capital and operating costs as well as revenue and royalty factors have been included with appropriate discount factor |

| Criteria | JORC Code explanation | Commentary |
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| | | for cash flow analysis.<br>A full financial model is developed with sensitivities applied to all key inputs and assumptions. |
| Social | The status of agreements with key stakeholders and matters leading to social licence to operate. | The MGP is currently operational.<br>BLK will continue to communicate and negotiate in good faith with key stakeholders. Based on advice provided to the Competent Person by BLK, it is not expected that there will be any significant impediments to continuation and expansion of operations at the MGP. |
| Other | To the extent relevant, the impact of the following on the project and/or on the estimation and classification of the Ore Reserves: | |
| | Any identified material naturally occurring risks. | A formal process to assess and mitigate naturally occurring risks will be undertaken prior to execution of the Ore Reserve mine plan. Currently, all naturally occurring risks are assumed to have adequate prospects for control and mitigation. |
| | The status of material legal agreements and marketing arrangements. | None known. A wholly owned subsidiary of BLK owns the project, and intends to sell gold produced from the operation in line with the Market assessment. |
| | The status of governmental agreements and approvals critical to the viability of the project, such as mineral tenement status, and government and statutory approvals. There must be reasonable grounds to expect that all necessary Government approvals will be received within the timeframes anticipated in the Pre-Feasibility or Feasibility study. Highlight and discuss the materiality of any unresolved matter that is dependent on a third party on which extraction of the reserve is contingent. | The MGP is currently operational and any further approvals will be minimal in nature. |
| Classification | The basis for the classification of the Ore Reserves into varying confidence categories. | The Probable Ore Reserve is based on that portion of the Indicated Mineral Resource within the mine designs that may be economically extracted and includes an allowances for applicable modifying factors. |
| | Whether the result appropriately reflects the Competent Person's view of the deposit. | The results appropriately reflect the Competent Person's view of the deposit |
| | The proportion of Probable Ore Reserves that have been derived from Measured Mineral Resources (if any). | No Measured Mineral Resource contributes to Probable Ore Reserves. |
| Audits or reviews | The results of any audits or reviews of Ore Reserve estimates. | The Ore Reserves reporting processes has been subjected to an internal review by BLK. A standard procedure of design and methodology checks and balances by IMO is in place to ensure the viability of the reserves. |

| Criteria | JORC Code explanation | Commentary |
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| Discussion of relative accuracy/ confidence | Where appropriate a statement of the relative accuracy and confidence level in the Ore Reserve 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 reserve within stated confidence limits, or, if such an approach is not deemed appropriate, a qualitative discussion of the factors which could affect the relative accuracy and confidence of the estimate. | The design, schedule, and financial model on which the Ore Reserve is based has been completed to a Pre-Feasibility Study standard as a minimum, with a corresponding level of confidence. |
| | The statement should specify whether it relates to global or local estimates, and, if local, state the relevant tonnages, which should be relevant to technical and economic evaluation. Documentation should include assumptions made and the procedures used. | All modifying factors were appropriate have been applied to designed mining shapes on a global scale. |
| | Accuracy and confidence discussions should extend to specific discussions of any applied Modifying Factors that may have a material impact on Ore Reserve viability, or for which there are remaining areas of uncertainty at the current study stage. | Considerations in favour of a high confidence in the Ore Reserve include:<br>• The mining process is well-known and utilises proven technology and methods used in the industry with sufficient data to generate adequate costing estimates to a minimum of pre-feasibility standard.<br><br>Considerations in favour of a lower confidence in the Ore Reserve include:<br>• Future commodity price forecasts carry an inherent level of risk<br>• There is a degree of uncertainty associated with geological estimates. The Ore Reserve classifications reflect the levels of geological confidence in the estimates.<br>• There is a degree of uncertainty regarding estimates of impacts of natural phenomena including geotechnical assumptions, hydrological assumptions, and the modifying mining factors, commensurate with the level of study.<br>Further, i.e. quantitative, analysis of risk is not warranted or considered appropriate at the current level of technical and financial study. |
| | It is recognised that this may not be possible or appropriate in all circumstances. These statements of relative accuracy and confidence of the estimate should be compared with production data, where available. | |