



ASX ANNOUNCEMENT

29<sup>TH</sup> APRIL 2024

# Tumblegum South Gold Resource Review Shows Potential for Additional High-Grade Lodes

## HIGHLIGHTS

- **Structural Geology Consultant commissioned to review the mineral resource estimate and structural models and advise on the potential to increase the size of the Tumblegum South Resource.**
- **Revised structural interpretation indicates potential for additional high-grade lodes (subject to drilling).**
- **Only the central portion of the near surface extent of the duplex has been tested by the existing drilling.**
- **A review of the previously reported Scoping Study<sup>1</sup> is currently underway to reflect the sustained increase in gold price.**

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Star Minerals Limited (ASX: SMS, “the Company” or “SMS”) is pleased to advise, that a structural architecture review of the Tumble Gum South Gold resource, 40 km south of Meekatharra, shows potential for additional high-grade lodes (see FiCOgure 1 for location). This work follows an initial structural review completed in 2019 by the same structural consultant that was used as the basis for drilling programs and the subsequent revised Mineral Resource estimate<sup>2</sup>.

All information contained in this announcement should be read in conjunction with the Company’s ASX Announcements titled ‘Tumblegum South Mineral Resource Update’ dated 29 May 2023’ and ‘Positive Scoping Study or Tumblegum South’ – dated 8 December 2023.

This latest review commissioned to review the mineral resource estimate and structural models, is informed by detailed geological modelling based on a robust drill dataset and builds on the initial structural interpretation underpinning the geology model for the Mineral Resource. The new interpretation has identified areas for additional drilling targeting the maximum curvature of the duplex, and therefore dilation of the structures, with the aim being to identify additional high-grade mineralised gold lodes close to surface and materially increase the current Mineral Resource. The interpretation provided by the Structural Geology Consultant is shown in Figure 2.

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<sup>1</sup> See Star Minerals Limited (ASX: SMS) ASX Announcement dated 08 December 2023 titled: ‘Positive Scoping Study for Tumblegum South’.

<sup>2</sup> See Star Minerals Limited (SMS) ASX announcement dated 29 May 2023 ‘Tumblegum South Mineral Resource Update’.

Star Minerals' Chair, Ian Stuart commented:

*"The Structural review has shown additional potential to materially add to the gold resource. Star is using the revised interpretation and planning, to plan drilling to test for additional high-grade lodes that could add to the resource and bolster the overall economics of the gold resource.*

*The recently reported Scoping Study demonstrated the value and viability of the Tumblegum South Gold Project over a broad range of gold price. Star is now taking the next steps to monetising this asset and more accurately assess various strategies to achieve this, including sale, partial sale, or joint venture of the Project."*

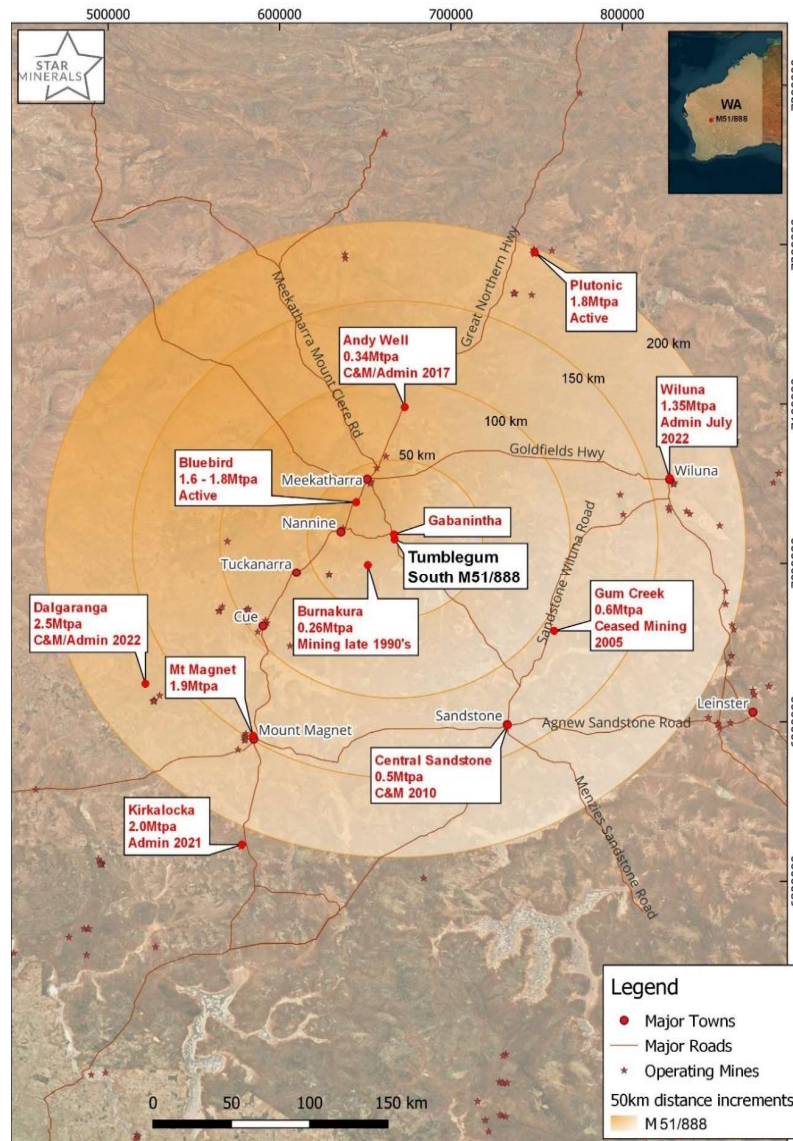
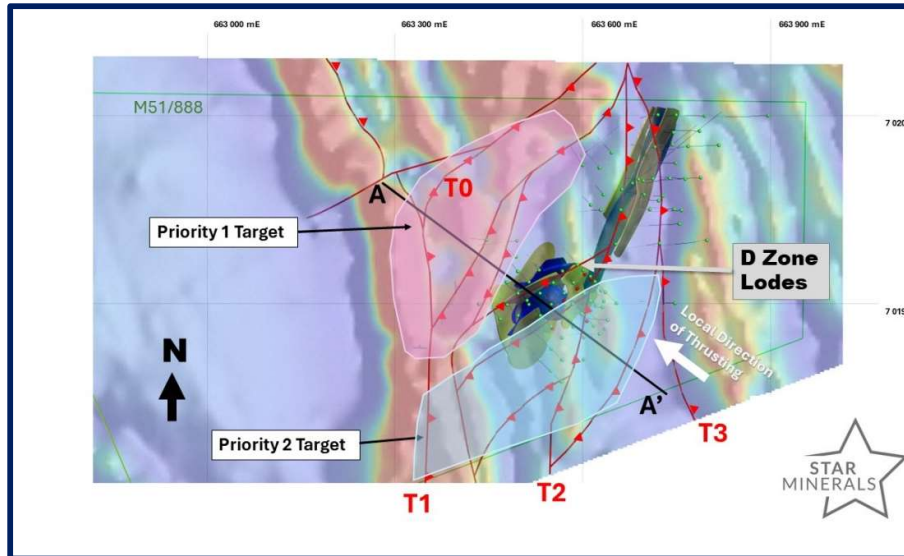


Figure 1: Location map and relevant infrastructure in the area



*Figure 2: Structural Interpretation of near surface duplex with targets for additional drilling*

### Observations from the Structural review

- Only the central portion of the near surface area of the duplex has previously been tested by the post-2019 drilling. This drilling revealed duplex geometries on the linking splay between T1 and T2. The zones of maximum curvature (in plan and section) in the shears plus high-grade gold mineralisation correspond to areas of maximum dilation in the thrust surfaces that make up the duplex.
- The resource model indicates that there is a strong thrust control on the gold mineralisation D Zone lodes with duplex geometries that control the high-grade mineralisation. There is potential to find more of these duplex geometries on and between the T1 and T3 thrusts.
- The presence of mineralised crackle breccia zones between the gold bearing shears indicates brittle deformation of the rock combined with high-fluid pressures to increase the volume of a potentially economic lode.
- Combining the observed geometries in the resource model with those interpreted from the initial aeromagnetic interpretation by the Structural Geology Consultant indicates potential to materially increase the resource from a combination of shear zone hosted and crackle breccia hosted gold mineralisation.

### Next Steps

- Review all previous drilling with the benefit of the latest Tumblegum Resource Model (provided by the structural geological consultant), and the typical distribution of gold in duplex structures.
- Review shallow low-grade gold intercepts that may become higher grade at depth and with appropriate infill drilling define new resources.
- The planning of additional drilling, targeting the dilational geometry of the T1, T2 and T3 thrusts and internal linking structures.



### **Tumblegum South Gold Project – Scoping Study update initiated** <sup>3</sup>

The Scoping Study presented a range of outcomes for open-pit mining and third-party toll treatment of the Tumblegum South gold deposit (“**Tumblegum South**” or “**the Project**”) which is located approximately 40km south of Meekatharra in the Murchison district of Western Australia.

The Study used an Australian gold price of \$2,600/oz. In light of the sustained increase in the gold price Star has engaged Orelogy Consulting Pty Ltd (Orelogy) to update the findings of the recent scoping study to better reflect current Australian gold price and potential upside on a sustained increase in gold price. The study which is still underway, will also review and update processing and haulage costs as required.

Various options utilising third-party processing plants operating under a toll treatment agreement were considered. There are currently two active processing plants within a radius of 50km to 150km from Tumblegum South. A range of outcomes were defined based on gold price, and processing cost including trucking costs.

- At gold prices from AUD\$2,250 to AUD\$3,000/oz, the Production Target for the Project ranges from approximately:
  - 116kt at 2.25g/t producing 7.6koz gold, to
  - 286kt at 2.00g/t producing 16.6koz gold.
- The Production Target generates an undiscounted accumulated cash surplus after payment of all working capital costs, but excluding pre-mining capital requirements, of approximately \$7.2M to \$16.3M.
- Mining is contemplated as a single campaign over approximately 18-months.
- Pre-mining capital and start-up costs are estimated to be approximately \$0.7M to \$1.5M.
- Sensitivity of the Base Case scenario to gold price was assessed. Results suggest that project economics are robust for a broad range of gold prices.

### **Key Study Outcomes and Assumptions**

The study is based on the Tumblegum South mineral resource estimate described in Star’s announcement to the ASX on 29 May 2023. The resource model was prepared by Entech Pty Ltd, an independent competent person in accordance with the JORC Code (2012) and includes estimates classified as Indicated and Inferred. Orelogy’s study included generating an optimal pit geometry utilising Whittle optimisation software<sup>4</sup>.

Based upon the resource estimate model, slope parameters and the cost structure applied, the Production Target at gold prices AUD\$2,250 to AUD\$3,000/oz, ranges from approximately:

- 116kt at 2.25g/t producing 7.6koz gold recovered and an undiscounted accumulated cash surplus of \$7.2M to
- 286kt at 2.00g/t producing 16.6koz gold recovered and an undiscounted accumulated cash surplus of \$16.3M.

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<sup>3</sup> See Star Minerals Limited (ASX: SMS) ASX Announcement dated 08 December 2023 titled: ‘Positive Scoping Study for Tumblegum South’.

<sup>4</sup> See Star Minerals Limited (ASX: SMS) ASX Announcement dated 08 December 2023 titled: ‘Positive Scoping Study for Tumblegum South’.



Project sensitivities were examined for a range of gold prices demonstrating that Project economics are robust, with positive outcomes returned for gold prices ranging from AUD\$1,750 to AUD\$3,250 per ounce.

A Base Case at AUD\$2,600 per ounce gold price was used to assess the components of Inferred and Indicated Mineral Resources. The Production Target at the Base Case is approximately:

- 192kt at 2.22g/t producing 12.3koz gold recovered and an undiscounted accumulated cash surplus of \$10.8M.

Approximately 70% of the total Production Target resulting from the Scoping Study is based on Indicated Mineral Resources, and approximately 30% is based on Inferred Mineral Resources. There is a low level of geological confidence in Inferred Mineral Resources and there is no certainty that further drilling will result in the determination of Measured or Indicated Mineral Resources or that the Production Target will be realised. Although some of the Inferred Mineral Resources occur at shallow depths, there is sufficient, easily mined and readily accessible Indicated Mineral Resources within the optimum shell, to enable stockpiling of at least half of the Inferred Mineral Resources to be deferred to the latter processing (starting month 13) of the Project. This will mitigate the risk to the project as it can be grade controlled and resampled prior to processing.

No allowance was made for capital or start-up costs in the optimisation analysis stated above. The capital and start-up costs are comprised of the costs associated with, but not limited to mobilisation, site establishment, pre-mining earthworks, access and haulage road and demobilisation. These costs have been estimated for the purposes of the Scoping Study at approximately:

- \$1.1M and can be represented as a range from \$0.7M to \$1.5M to reflect the accuracy of cost parameters used in the study which is considered to be +/- 35%.

To estimate working capital requirements, an approach was taken to produce a mine schedule for the Base Case schedule at AUD\$2,600 per ounce gold price, which was evaluated using the same cost and revenue assumptions, with the maximum cash drawdown allocated as working capital.

The Base Case pit is estimated to have a mine life of less than 20 months with maximum cash drawdown occurring in month 6.

Based upon this approach the total working capital requirements were estimated to be approximately \$2.3M and can be represented by a range from \$1.5M to \$3.1M to reflect the limited accuracy of cost parameters used in the study.

To achieve the range of outcomes indicated in the Scoping Study, funding in the order of \$3.4M (\$2.2M to \$4.6M) will likely be required for capital, start-up costs and working capital requirements.

### **Material Assumptions and Modifying Factors**

The Scoping Study and the Production Target derived from the study are based on the material assumptions and modifying factors as described below and additionally in the Company's ASX Announcements dated 8 December 2023 'Positive Scoping Study for Tumblegum South' and ASX Announcement dated 29 May 2023 'Tumblegum South Mineral Resource Update'. Star's evaluation of the Project is at an early stage, and although there are reasonable grounds for these assumptions, they represent low level technical assessments that are not sufficient to support the estimation of Ore Reserves, or to provide assurance of an economic development case at this stage, or to provide certainty that the conclusions of the Scoping Study will be realised.



Material assumptions and modifying factors underpinning the Scoping Study and the Production Target comprise the following:

- The Ordinary Kriged (OK) resource estimate model was provided by Entech Geology Consultants (Australia). At a 0.5g/t cut-off, the resource estimate is:

Project Area	Resource Category	Weathering	Tonnes (kt)	Grade (g/t Au)	Gold ounces (koz)
Tumblegum South	Indicated	Transitional	25	2.99	2
		Fresh	312	2.48	25
		<b>Subtotal</b>	<b>337</b>	<b>2.52</b>	<b>27</b>
	Inferred	Transitional	40	1.76	2
		Fresh	239	2.03	16
		<b>Subtotal</b>	<b>279</b>	<b>1.99</b>	<b>18</b>
<b>Total</b>			<b>616</b>	<b>2.28</b>	<b>45</b>

\*Tonnes are dry metric tonnes. Minor discrepancies may occur due to rounding.

Table 1. Tumblegum South – May 2023 Mineral Resource Estimate at 0.5g/t cut-off by Weathering status

## Compliance Statements

The information in this announcement that relates to Exploration Results is based on information compiled by Mr Tony Standish, who is a Member of the Australian Institute of Geoscientists. Mr Standish is a consultant to Star Minerals Limited and Bryah Resources Limited. Mr Standish has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 Edition of the ‘Australasian Code for Reporting of Exploration Results, Mineral Resources and Ore Reserves’. Mr Standish consents to the inclusion in this announcement of the matters based on his information in the form and context in which it appears.

The information in this announcement relating to the current resource estimate for the Tumblegum South gold deposit is extracted from the Company’s announcement ‘Tumblegum South Mineral Resource Update’ dated 29 May 2023 and is available to view on the Star website, [Starminerals.com.au](http://Starminerals.com.au).

The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have not materially changed. The Company confirms that the form and context in which the Competent Person’s findings are presented have not been materially modified from the original market announcement. The estimated mineral resources underpinning the Production Target have been prepared by the Competent Person in accordance with the requirements of the JORC Code (2012).

The information in this announcement relating to metallurgy of the Tumblegum South gold deposit is extracted from the announcement of Bryah Resources Limited<sup>5</sup> released to the market on 20 April 2020 and included in the Company’s announcement ‘Tumblegum South Mineral Resource Update’ dated 29 May 2023. The Company confirms that it is not aware of any new information or data that materially affects the information included in the original market announcement and, that all material assumptions and technical parameters underpinning the estimates in the relevant market announcement continue to apply and have

<sup>5</sup> ASX announcement (ASX:BYH) 8 April 2020 ‘Positive Gold Recoveries for Tumblegum South’.



not materially changed. The Company confirms that the form and context in which the Competent Person's findings are presented have not been materially modified from the original market announcement.

The information in this report that relates to the Open Pit Mining Scoping Study for Tumblegum South and to the Production Target derived from the Scoping Study is based on information compiled by Mr Jake Fitzsimons, a Competent Person who is a Member or Fellow of The Australian Institute of Mining and Metallurgy and a full time employee of Orelogy Pty Ltd. Mr Fitzsimons has sufficient experience which is relevant to the style of mineralisation and type of deposit under consideration and to the activity which he is undertaking to qualify as a Competent Person as defined in the 2012 edition of the "Australasian Code for Reporting Exploration Results, Mineral Resources and Ore Reserves". Mr Fitzsimons consents to the inclusion in the report of the matters based on his information in the form and context in which it appears.'



## Forward Looking Statements

This Announcement contains forward-looking statements which are identified by words such as 'may', 'could', 'should', 'believes', 'estimates', 'targets', 'expected', or 'intends' and other similar words that involve risks and uncertainties. These statements are based on an assessment of present economic and operating conditions, and on a number of assumptions regarding future events and actions that, as at the date of this Announcement, are considered reasonable. Such forward-looking statements are not a guarantee of future performance and involve known and unknown risks, uncertainties, assumptions and other important factors, many of which are beyond the control of the Company, the Directors and the management. The Directors cannot and do not give any assurance that the results, performance, or achievements expressed or implied by the forward-looking statements contained in this announce will actually occur and investors are cautioned not to place undue reliance on these forward-looking statements.

*For further information, please contact:*

**Ian Stuart, Chair** +61 8 9226 1860

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*This announcement has been produced in accordance with the Company's published continuous disclosure policy and has been approved by the Board*

## ABOUT STAR MINERALS LIMITED

SMS is focused on development and exploration of its copper and gold projects. The Company will be using the data gathered to complete the required works to bring the Tumblegum South project up to the necessary level for a decision to mine to be made. In addition, it will use the latest exploration techniques as well as results of previous exploration work undertaken by Bryah Resources and other explorers to investigate the potential of both the Tumblegum South and West Bryah projects.

The Board's strategy is to advance the exploration and development of its deposits wherever possible, utilising established mining operations and infrastructure to achieve low risk early production outcomes.

In addition, the Company intends to continue to investigate ways to grow its business by:

- acquisition, application, or joint venturing into areas surrounding and adjacent to the Projects; and
- acquisition, application, or joint venturing into other, unrelated but economically attractive projects compatible with the Company's goals and capabilities if, and when opportunities of this type come available.