



# North Stawell Minerals

## ASX Announcement

14 May 2024

### **CSIRO collaborates with NSM for a new round of Stawell Corridor gold exploration.**

- **Building off the success of the first-round North Stawell and CSIRO collaborative modelling project to understand fluid flow around 3D modelled sub-surface geology.**
- **North Stawell Minerals and CSIRO team up for second round - gold exploration and discovery through CSIRO's Kick-Start program.**
- **CSIRO will provide funding of A\$50,000 to access state-of-the art ML and predictive modelling.**
- **The Kick-Start program will target prospective and highly productive gold-bearing rocks under Murray Basin cover.**

North Stawell Minerals (ASX:NSM) is pleased to announce that it has been successful in its round two application with Australia's national science agency, CSIRO, for funding of \$50,000 within the agency's Kick-Start program.

CSIRO's Kick-Start program is an initiative that provides funding and support for innovative Australian start-ups and small businesses to access CSIRO's research expertise and capabilities to help grow and develop their businesses.

Building on the success of the first round collaborative Kick-Start program (ASX: 7 November 2022) which used numerical modelling to map the effects of regional structure on dilation sites around sub-surface basalts, the new Kick-Start collaboration will further enhance the results by using machine learning to refine fluid pathways and potential mineralisation sites by integrating numerical modelling, geological, geochemical, geophysical and exploration data into a machine-learning environment to generate maps of mineral system components relevant to targeting Orogenic Gold north of Stawell – aka, predictive modelling.

NSM is exploring for gold in the Stawell Corridor, immediately north of the 5 Moz Stawell Gold Mine. A thin blanket on unmineralised Murray Basin sediments ("cover") obscures the gold-prospective rocks in the Corridor. This cover complicates targeting and exploration, but preserves the potential for very shallow, large, mineral (gold-bearing) systems to remain undiscovered. Effective methods to explore through cover are imperative for efficient exploration.

Stawell-type mineralisation has proven to be an excellent target through cover. Gold at Stawell wraps around the margins of buttressed basalts that are readily detected with geophysics. High-resolution gravity data (ASX: 24 March 2021) has dramatically improved geophysical resolution of geological features beneath cover – and 60km of basalts have been identified (ASX: 15 November 2023) – these are a proxy for gold prospectivity.

Commenting on the renewal of the CSIRO Kick-Start program, NSM's CEO, Russell Krause said "This ongoing collaboration combines North Stawell's local knowledge and field work with funds and expertise from the CSIRO. The collaboration, with round one, has been very successful. It has led to a new round of exploration and a focus on predictive modelling.

"There is exciting potential to substantially refine or redefine targets and discovery under Murray Basin cover in the Wimmera region of Victoria while reducing required drilling, time and cost to identify the next multi-million-ounce gold system in the Stawell Corridor."

Numerical modelling has already demonstrated success in the Stawell region, where it was employed on drilling defined basalt shapes at three known Stawell-type, basalt-related gold systems (Stawell, Wildwood and Kewell, *Schaubs et al. 2006*).

"Integration of other available datasets with machine learning may be a significant step forward for predicting targets and gold prospectivity in the Stawell region of Victoria," Mr Krause added.

NSM's second Kick-Start research program is planned to commence in July 2024.

**References:**

Schaubs, PM, Rawling, TJ, Dugdale, LJ and Wilson, CJL **2006** – Factors controlling the location of gold mineralisation around basalt domes in the Stawell Corridor: insights from coupled 3D deformation – fluid-flow numerical models, *Australian Journal of Earth Sciences*, 53:5, 841-862.

**This announcement is authorised for release by Russell Krause, Chief Executive Officer, North Stawell Minerals Ltd.**

**For Investor and Media Enquiries:**

[info@northstawellminerals.com](mailto:info@northstawellminerals.com)

For further information visit the NSM website: <https://www.northstawellminerals.com/>

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## **Competent Person's Statement**

*The information that relates to Exploration Targets, Exploration Results and Mineral Resources is based on information compiled by Mr. Bill Reid, a Competent Person who is a Member of The Australian Institute of Geoscientists (AIG) and Head of Exploration of North Stawell Minerals. Mr. Reid has sufficient experience that is relevant to the style of mineralisation and type of deposit under consideration and to the activity 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' (2012 JORC Code). Mr. Reid consents to the inclusion in this 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" within the meaning of securities laws of applicable jurisdictions. Forward-looking statements can generally be identified by the use of forward-looking words such as "may", "will", "expect", "intend", "plan", "estimate", "anticipate", "believe", "continue", "objectives", "outlook", "guidance" or other similar words, and include statements regarding certain plans, strategies and objectives of management and expected financial performance. These forward-looking statements involve known and unknown risks, uncertainties and other factors, many of which are outside the control of NSM and any of its officers, employees, agents or associates. Actual results, performance or achievements may vary materially from any projections and forward-looking statements and the assumptions on which those statements are based. Exploration potential is conceptual in nature. There has been insufficient exploration to define a Mineral Resource and it is uncertain if further exploration will result in the determination of a Mineral Resource. Readers are cautioned not to place undue reliance on forward-looking statements and NSM assumes no obligation to update such information.*

## **About North Stawell Minerals Limited:**

**North Stawell Minerals Limited (ASX:NSM) is an Australian-based gold exploration company, solely focused on discovering large scale gold deposits in the highly prospective Stawell Mineralised Corridor in Victoria.**

The Company is exploring prospective tenements located along-strike of and to the immediate north of the Stawell Gold Mine which has produced in excess of five million ounces of gold. NSM's granted tenure has a total land area of 504 km<sup>2</sup>. NSM believes there is potential for the discovery of large gold mineralised systems under cover, using Stawell Gold Mine's Magdala orebody as an exploration model to test the 51km length of tenements - northerly strike extension of the under-explored Stawell Mineralised Corridor.

### **Stawell-type mineralisation – the Magdala orebody at Stawell**

The multimillion-ounce Magdala orebody (or Stawell Mine) is owned and operated by Stawell Gold Mines (SGM) and makes an excellent model for exploration. The style of mineralisation is termed Orogenic Gold and has many similarities to other Victorian gold deposits (e.g. Bendigo, Ballarat, Fosterville) where the mineralisation exploits structures that are developing as the host rocks are compressed, folded and faulted. The mine is 3.5km long, approx. 400m wide and mined to depths of around 1,600m. The mineralisation is centred on a large buttress of doubly plunging basaltic rock (the Magdala "Dome"). Ore shoots are on – or proximal to – the margins of the basalt, occurring where the structures that control the mineralisation bend and warp around the basalt. The mine is still operational.

### **Exploring for Stawell-type mineralisation through cover**

The Stawell Gold Mine was found in the 1850s where gold occurred close to the surface and was not obscured by a blanket of sedimentary cover. Over 80% of NSM's tenements are masked by sediments, but the underlying rocks and structures are similar to Stawell. Multiple repeats of basaltic "domes" are interpreted throughout the NSM tenements and elsewhere along the Stawell Corridor. The basalt domes - intrinsically associated with Stawell-type mineralisation – can be detected with geophysics and identified through the blanket of cover. New geophysical processing and acquisition by the Company is leveraging off the geophysics response to find "domes" as a pathway to finding the next, multi million-ounce, shallow gold deposit north of Stawell

### **Other mineralisation potential**

Multiple shears, thrusts, faults and folds occur through the NSM tenements. These also have potential to host Orogenic Gold systems without basalt domes (more typical of Ballarat and Bendigo). However, they are more challenging targets through the covering sediments as they lack the geophysical signature of the "domes" found in Stawell-type mineralisation. Intrusion related gold (IRG) and thermal aureole gold (TAG) type deposits are possible as late granites intrude the folded rocks with potential to remobilise and upgrade existing mineralisation or be mineralised themselves. Volcanogenic-Hosted Massive Sulphides also occur in the Stawell Corridor. At surface, within the cover sediments, Heavy Minerals Sands are known to occur in impressive volumes.