



## Corporate Details

**Ordinary Shares:**  
787,545,973

**Market Capitalisation:**  
~\$173 million

**Cash and bullion at 31 December 2017:**  
~\$22.4 million

**Debt:**  
NIL

**ASX Code:** MOY

## Board of Directors

**Greg Bittar**  
Non-Executive Chairman

**Michael Chye**  
Non-Executive Director

**Tim Kennedy**  
Non-Executive Director

**Peter Lester**  
Non-Executive Director

## Management

**Peter Cash**  
Chief Executive Officer

**Dean Will**  
Chief Operating Officer

**Ray Parry**  
Chief Financial Officer and  
Company Secretary

## Contact Details

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# Millennium poised to significantly extend mine life at Nullagine as newly identified processing option cuts costs

*Work well advanced on alternative processing configuration with potential to substantially reduce capital and operating costs for treatment of Sulphide Ore*

- Sulphide Ore Expansion Study at Nullagine Gold Project well advanced for completion this quarter, paving the way for Millennium to unlock the significant value of its large Sulphide Mineral Resource inventory.
- The proposed new processing method encompasses the addition of a small modular concentrating circuit to the tail-end of the existing CIL plant.
- Desktop studies following initial preliminary testwork indicate that this could result in a substantial reduction in capital requirements to A\$12-15M and lower operating costs, delivering superior cash-flow compared to the flotation option.
- This method is well understood and has been used successfully for many years to maximise the recovery of processed sulphide ore at other major WA gold mines including Granny Smith and KCGM in Kalgoorlie.
- Dale Harrison from MineScope Services appointed as Study Manager and engineering firm Ausenco also appointed to complete the trade-off study as part of the Sulphide Ore Expansion Study, which has identified a significant new processing option.

**Millennium Minerals Limited (Millennium or the Company – ASX: MOY)** is pleased to advise that it has appointed the leading Australian-based consulting engineering firm Ausenco to complete a Feasibility Study on an alternate processing option which has been identified as part of the Sulphide Ore Expansion Study for its 100%-owned Nullagine Gold Project in Western Australia.

The Sulphide Ore Expansion Study, which is aimed at unlocking the full economic potential of the Nullagine Resource base and identifying pathways to process the large sulphide Mineral Resource inventory, was largely completed last quarter.

The Study was originally based on a preferred plant configuration comprising an integrated CIL and flotation circuit. This expansion pathway would involve the integration of a flotation circuit capable of treating sulphide ore with the existing 2Mtpa CIL plant.



The additional requirements of the integrated flowsheet included the installation of a ball mill for additional grinding of fresh ore, a conventional flotation circuit and associated concentrate handling facilities.

The Study confirmed that the capital expenditure required to fund the plant modifications would be in the order of A\$40-46 million including contingency. Processing costs for the free-milling fresh ore were estimated to be approximately A\$19/tonne, while processing costs for the sulphide ore were estimated to be approximately A\$27.50/tonne.

With Mr Harrison from MineScope Services now on board, the Company has identified an alternative processing configuration which could result in a significant reduction in both capital and operating costs compared to the integrated CIL and flotation circuit while also delivering a number of strategic benefits to Millennium's expansion plans at Nullagine.

The basis of the new process method is scavenging un-leached sulphide concentrates from the existing CIL tailings and subjecting them to ultra-fine grinding and intense cyanidation in order to achieve an improvement in the overall leach recovery.

This is a similar processing configuration to that which is well understood and has been successfully used for many years to process sulphide ore at the world-class Granny Smith mine in WA and at KCGM's super pit operations in Kalgoorlie.

Preliminary financial estimates have indicated that the new processing option has the potential to substantially reduce the capital cost of the original flotation circuit pathway of A\$40-\$46 million to now be in the order of A\$12-15 million.

### **Management Comment**

Millennium Chief Executive Peter Cash said the Company was pleased to be working closely with Dale Harrison and MineScope Services, as well as with Ausenco, to pursue a new processing configuration which could represent a potential game-changer for the project.

"The Sulphide Ore Expansion Study, which underpins our corporate objective of becoming a 100,000oz-a-year producer by unlocking the existing large sulphide Mineral Resource inventory at Nullagine, is now in its final and most important stages," Mr Cash said.

"The identification of this new processing option could transform the economics of the expansion project, dramatically reducing both capital and operating costs and resulting in a major reassessment of our reserve inventory.

"We still have further work to do to confirm that this is the case, but the early indications are extremely positive.

"The imminent completion of the Expansion Study dovetails with our move underground at Nullagine, with development of our first underground mine at Bartons set to begin by the end of this quarter.

"It also comes at a time when our exploration team is continuing to enjoy success with deeper drilling identifying the potential to significantly grow the Mineral Resource base below and along strike of the existing open pits."

**ENDS**

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