



22 October 2019

Corporate Details

Ordinary Shares:
891,470,031

Market Capitalisation:
~\$73 million

Cash, bullion at 30 September 2019:
\$3 million

Debt at 30 September 2019:
\$35 million

ASX Code: MOY

Board of Directors

Greg Bittar
Non-Executive Chairman

Warren Hallam
Managing Director

Bruno Lorenzon
Non-Executive Director

Tim Kennedy
Non-Executive Director

Peter Lester
Non-Executive Director

Management

Ray Parry
Chief Financial Officer and
Company Secretary

Michael Poepjes
Chief Operating Officer

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September 2019 Quarterly Activities Report

Operations

- **Production for the September Quarter of 16,286oz, reflecting previously-announced delays in open pit mining approvals, combined with the cumulative impact of delays in the ramp-up at Bartons and the commissioning of the sulphide plant¹.**
- **Production guidance for the December 2019 Quarter is in excess of 20,000oz.**
- **Mining approvals for Golden Gate Mining Centre were received during the quarter, clearing the way for development of this important new high-grade ore source to commence.**
- **An optimisation study initiated in June found ~20,000oz to be the optimum quarterly production rate for the Nullagine mining and processing operation based on sustainable operating parameters¹.**
- **Focus on cost reduction measures to help offset the impact of lower production on unit costs. These measures include a switch to an owner-operator business model for open pit mining load and haul operations. This new model is expected to be in place later in the December 2019 Quarter.**
- **Sulphide plant expansion performing well, with throughput and recoveries in line with expectations. Current focus is to increase concentrate production to further enhance recoveries.**
- **Bartons Underground performing well, with reduced dilution and positive grade reconciliations achieved.**
- **Extensive water bore drilling program underway to mitigate water shortages experienced in recent weeks, which have also impacted production levels. First additional water bore now on-line with good flows achieved and second bore expected to come on-line shortly, followed by the drilling of other contingent bores.**
- **Exploration field activities resumed, with planning underway for a systematic drilling program to test open pit and underground targets across the highly fertile Nullagine Project area.**

Corporate

- **Appointment of highly experienced mining executive Mr Warren Hallam as Managing Director and CEO.**
- **Subsequent to quarter-end, agreement reached with the Company's major shareholder, IMC Group, for a \$7.5M extension to its existing \$20m Term Loan Facility (see MOY ASX release: 22/10/2019).**

¹ Refer MOY ASX release: 06/09/19



Management Overview

Millennium Managing Director Warren Hallam, who commenced with the Company on 27 August, said over the past year or so, the Company had invested significantly in the foundations for the Nullagine operations with the development of the Bartons underground mine and the construction of the sulphide concentrate plant.

“With these two key growth initiatives now in place, the Company continued to make important progress during the September quarter, completing an optimisation study for the Nullagine Gold Project to provide a clear roadmap for ongoing production, cost reduction and growth initiatives,” Mr Hallam said.

“We completed a wide ranging strategic review of the Nullagine Project, which has reaffirmed the project’s strong technical fundamentals and highlighted opportunities to enhance operational performance and improve cash flow.

“Production for the Quarter of 16,286oz reflected a delay in obtaining the open pit mining approvals for the new Golden Gate Mining Centre. However, in all other respects, the September Quarter was a positive period for Millennium, with Bartons Underground performing positively and the sulphide plant operating in line with expectations.

“The Golden Gate pit approvals were received during the quarter, however as a result of this delay, production guidance for the 2019 calendar year was revised to 70-75,000oz. This compares with the Company’s previously published guidance of 80,000-90,000oz.

“With the Golden Gate approvals now in place, construction of this important new ore source is now underway and is expected to underpin production for the December Quarter in excess of 20,000 ounces.

“The Strategic Review identified an optimised production profile for Nullagine of ~80,000 ounces per annum, reflecting more conservative operating parameters and a revised mining schedule. To help offset the impact of lower production on unit costs, Millennium is now focusing on a range of cost reduction measures aimed at reducing our all-in sustaining costs.

“One of the key opportunities we’ve identified in this regard is a move away from the owner-operator hybrid model at the open pits at Nullagine to an owner-operator model for load and haul operations which we expect to be completed in the December Quarter.

“This change to our business model for open pit mining is expected to deliver significant savings, which will be further quantified in our December 2019 Quarterly Report.

“Millennium will continue to investigate further such opportunities to improve cash flow over the long term.

“Since starting with the Company in late August, I have also been greatly impressed by the exceptional exploration upside within Millennium’s tenements, which host a 40km-long prospective corridor with very limited drilling below 60m depth.

“Planning is well underway for a systematic drilling campaign targeting additional high-grade open pit and underground ore bodies.”

Mine Safety, Environment and Community

Safety

There were no lost-time or medically treated injuries with only one alternative duty injury recorded for the quarter.

The Total Reportable Injury Frequency Rate (TRIFR) has decreased to 5.65 and the 12-month moving average Lost Time Injury Frequency Rate (LTIFR) has remained at 1.12.



The Company's health and safety focus in the third quarter was the ergonomic assessments for mobile equipment, field work, processing plant and office environment program which has seen a reduction in soft tissue injuries.

Environment and Heritage

The Golden Gate Mining Proposal Amendment for the Crow and Condor pit extensions was approved during the quarter, with development and mining operations currently underway.

The development and review of the Company's Mine Closure Plan continued during the Quarter.

Environmental Survey work and preparation of a site-wide Mining Proposal continues, with promising exploration targets and future underground opportunities highlighted for proposed future development envelopes.

Community

Millennium has been working closely with the Nullagine Remote Community School to assist in continued education outside of the local region. Assistance was provided during Science Week with a donation of educational solar powered cars being provided to the children, and Millennium representatives attending a day of activities.

Bartons Underground

During the September Quarter, stoping continued on the 245 and 210 Levels from both the northern and southern ends. Stopes mined in the September quarter are shown in dark blue in Figure 1 below, while the stopes in pink were mined during the previous Quarters.

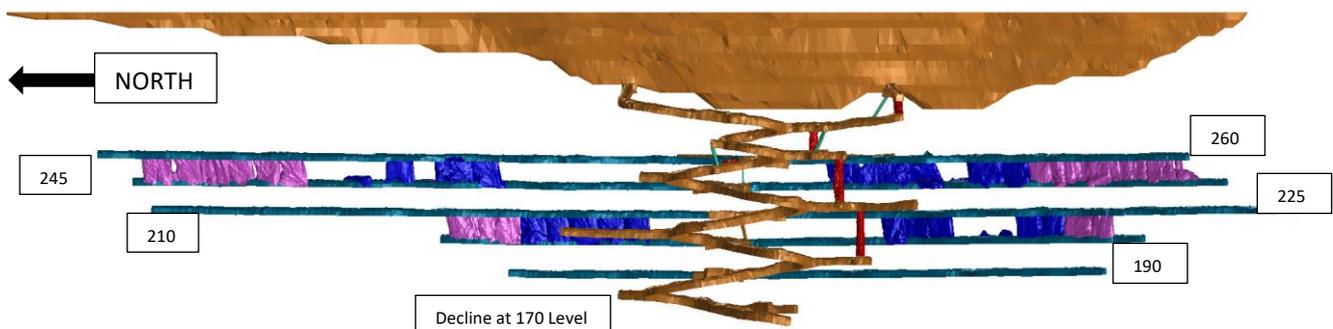


Figure 1: *Bartons Underground Project Long Section showing mine development to date (blue).*

Rehabilitation activities commenced during the quarter to enable stoping to commence on the 260 Level with the completion of the 245 Level Main Lode Stopes. During these activities stoping is continuing on a parallel hanging wall lode on the 245 Level. Stopping activities continue to be refined, and alternative ground support techniques trialled to reduce the overbreak encountered within the stopes have proved to be effective. Development of the 170 Level, which is the sixth level in the mine, has commenced, with the next stoping block to commence late in the December Quarter.

Sulphide Expansion Project

The Stage 1a upgrade to the Nullagine processing plant is complete and delivering improved ore recoveries as anticipated.

Recent testwork has indicated the potential to further improve gold recoveries by increasing the oxygen addition to the existing CIL tanks. This low-cost enhancement to the processing route (estimated capital cost of ~\$0.5M) will assist in improved leaching of the finely ground concentrates and would potentially delay the current requirement to implement the Stage 1b and Stage 2 processing plant expansions (estimated capital cost of \$4-5M) assisting with near-term cash flow.



During the quarter, works were undertaken to install an oxygen tank and associated pipework in preparation to complement the current Oxygen PSA plant. This installation is expected to be completed and on line in November.

Operational Activities Summary

In September, the Company completed the construction of a new tailings dam which is now undergoing commissioning. Until this phase is completed, the company's ability to recover process water is reduced. This, combined with a decline in water reserves from open pit harvesting, resulted in water constraints in the latter part of the reporting period.

An extensive bore drilling program commenced during the Quarter following an extensive EM survey. The first of these bores is now feeding the process dams, with a second bore to be brought on line shortly. These two bores should be sufficient to return production to full levels. Additional bores will be drilled as contingent bores to ensure there is sufficient water available over the summer months.

These water constraints, combined with delays in open pit mining approvals and the cumulative impact of previously announced delays in the ramp-up at Bartons and the commissioning of the sulphide plant, resulted in the Company revising its production guidance for CY2019 of 70-75koz (previously 80-90koz) in September (refer ASX:MOY announcement 06/09/19).

As a result of the constraints outlined above, production was lower than expected at 16,286oz for the quarter. This reduced production level impacted unit operating costs, with a C1 cash cost of A\$1,793/oz and an AISC of A\$2,068/oz for the reporting period.

Production was primarily sourced from the Au81, Golden Eagle and Agate pits, and the Bartons Underground.

The open pit mining rate at Nullagine in the September Quarter was a monthly average of approximately 412,000 Bank Cubic Metres (BCM). This was in line with the open pit operating strategy for FY19.

Mill throughput averaged approximately 160,000 tonnes per month over the Quarter.

The grade of the open pit material processed during the quarter was 1.24g/t Au, which was slightly below plan due to unplanned dilution in the Au81 pit. As a result of the delays in receiving the Golden Gate Mining Approvals, additional ore was sourced from the transitional zones of the Golden Eagle Pit, which are known to have higher grades but lower metallurgical recoveries. Recoveries from the depths of Au81 were also lower than forecast.

In the December Quarter, the mine plan will focus on oxide areas of Golden Eagle as well as the commencement of mining at the Golden Gate Mining Centre. It is expected that ore recoveries will significantly improve in the December Quarter.

Alternative ground support techniques were trialled at the Bartons Underground during the quarter, with a considerable improvement in unplanned dilution being seen. The focus in the December Quarter is to continue trialling ways to improve overbreak and hence improve the mined grade at Bartons Underground.

The sulphide plant suffered some commissioning issues, with the ultra-fine grind mill gearboxes failing in late July. These have been repaired and the sulphide plant has since operated at designed performance levels. The Company has mobilised a specialist commissioning team to ensure the circuit operates at its design parameters before handing over to the operational team.


Table 1 – Quarterly Comparative Results

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	Unit	Mar19 Qtr	Jun19 Qtr	Sep19 Qtr
Open pit				
Ore mined	<i>t</i>	498,493	276,809	357,689
Mined ore grade	<i>g/t</i>	1.35	1.29	1.54
Contained gold mined	<i>oz</i>	21,597	11,464	17,682
Total volume mined	<i>bcm</i>	1,052,086	965,106	1,235,405
Underground				
Ore mined	<i>t</i>	56,039	79,886	83,515
Mined ore grade	<i>g/t</i>	2.40	2.41	2.33
Contained gold mined	<i>oz</i>	4,329	6,198	6,260
Total development	<i>m</i>	1,300	759	533
All mining				
Ore mined	<i>t</i>	554,532	356,695	441,204
Mined ore grade	<i>g/t</i>	1.45	1.54	1.69
Contained gold mined	<i>oz</i>	25,926	17,662	23,942
Processing				
Ore milled	<i>t</i>	521,052	502,216	478,865
Processing grade	<i>g/t</i>	1.35	1.12	1.63
Contained gold	<i>oz</i>	22,567	18,073	25,053
Gold recoveries	<i>%</i>	82	82	65
Gold metrics				
Gold produced	<i>oz</i>	17,393	14,871	16,286
Gold sold	<i>oz</i>	20,008	13,760	17,261
Gold on hand	<i>oz</i>	58	1,477	707
Average selling price	<i>\$/oz</i>	1,751	1,742	1,866
Cash operating cost *	<i>\$/oz</i>	1,480	1,343	1,793
All-in sustaining cost *	<i>\$/oz</i>	1,564	1,733	2,068

* Bartons underground mine achieved commercial levels of production on 1 July 2019

Revised Guidance – September Update

Delays in open pit mining approvals, combined with the cumulative impact of previously announced delays in the ramp-up at Bartons and the commissioning of the sulphide plant, resulted in the Company revising its production guidance for CY2019 of 70-75koz (previously 80-90koz) in September (refer ASX:MOY announcement 06/09/19).

Production for the December Quarter is expected to be in excess of 20,000 ounces.

Exploration

Field exploration activities resumed during the September Quarter with early-stage field work carried out in the Five Mile, Golden Eagle, Golden Gate, Middle Creek and Twenty Mile Mining Centres. This included ground checking, reconnaissance mapping and rock chip sampling (608 samples) to progress early stage targets and prospects. Opportunistic drilling is planned to be carried out in October to test the Blackbeard and Captains targets.

Five Mile

A total of 177 rock chip samples were collected whilst mapping in the Corkscrew, Gambols Hill, Hut, Margie and Otways areas. This was completed to test a number of recently generated targets and to gain a greater understanding of the existing prospects.

Golden Eagle

Mapping was carried out and 20 rock chip samples were collected from the greater Au81 area to locate the extensions to north and parallel zones of mineralisation. A further 10 rock chip samples



were collected from the Fishers Reward area, as a preliminary assessment for the presence of significant mineralisation.

Golden Gate

A total of 106 rock chip samples were collected during reconnaissance mapping that focussed around the Blue Spec Fault and further parallel trends to the north-east. Work was carried out in the Condor NorthWest, Monte Carlo United, NE #2, NE #4, Parnell and Vulture areas.

Middle Creek

Mapping and rock chip sampling (68 samples) were completed to assess the Bartons East and Bartons North areas, as well as to assess the exhalative horizons for base metal potential. The mapped cherts will aid in the reconstruction of the stratigraphy and the interpretation of the structural framework.

Twenty Mile Sandy

Focus was on working through recently-generated conceptual targets by ground checking and rock chip sampling. A total of 227 samples were collected from the Blackbeard, Blunderbuss, Calico Jack, Captains, Cutlass, Cutty Sark, Mountain Maid, Potter, Rattler, Readbeard and Sunday areas. Positive results were returned from the Blackbeard and Captains prospects with planning underway for opportunistic drilling to be carried out in October.

Planning has commenced for a systematic drilling program targeting new open pit and underground discoveries across the Nullagine Project area.

Planned Activities for the December Quarter

The focus during the December Quarter will be on the development of the new Condor and Crow open pits at the Golden Gate Mining Centre, which is expected to form an important source of high-grade ore feed over the medium term.

Exploration field work programs will also continue to ramp up to assist with target prioritisation for planned drilling programs across the Nullagine Project area. Exploration will focus on delineating the underground potential at Golden Gate, defining potential high-grade oxide targets and early stage work to expand the exploration pipeline.

Metallurgical testwork programs will also continue to assess the potential to further improve gold recoveries by adding oxygen to the existing CIL tanks.

The ongoing cost review will also continue with the aim of identifying opportunities to reduce operating costs.

Corporate Activities

As at 30 September 2019, the Company held cash and bullion of \$3.0 million.

Subsequent to the end of the Quarter, the Company reached agreement with IMC Group for a \$7.5m extension to its existing A\$20 Million Term Loan Facility (see separate ASX Announcement released today). This will provide additional liquidity to assist with the next stage of ongoing optimisation, improvement and exploration initiatives at Nullagine, as well as to provide a working capital buffer while mining ramps up from the Golden Gate Mining Centre.

Gold sales revenue for the Quarter totalled \$32.2 million, which was achieved at an average realised gold price of \$1,866/oz.

At 30 September 2019, the Company's hedge book consisted of 26,800 ounces to be delivered over the period October 2019 – June 2020 at an average forward gold price of \$1,816/oz. September quarter cash and bullion movements are shown in Figure 2 below.

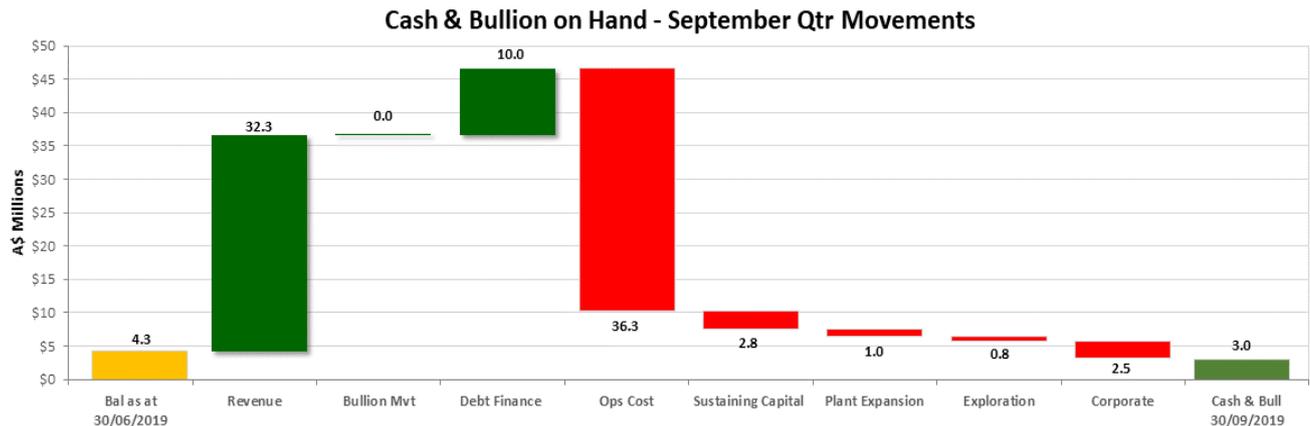


Figure 2: September 2019 quarter cash and bullion movements

Appointment of Managing Director

During the Quarter, Millennium appointed highly experienced mining executive Mr Warren Hallam as Managing Director and CEO, effective from the EGM on 27 August 2019.

Mr Hallam is a highly-regarded mining executive and Director with wide-ranging experience in a variety of board and senior management roles in the Australian mining industry, including lengthy periods with ASX-300 mining company Metals X Limited and Western Mining Corporation.

As part of the senior leadership team at Metals X between 2004 and 2018 (both as Executive Director and Managing Director) Mr Hallam played an instrumental role in acquiring and transforming the Renison mine in Tasmania into a world-class tin business.

During his tenure, he also played a critical role in the development of Metals X as an Australian top-10 gold business through the merger with Westgold Resources and the acquisition of Alacer Australia, Meekatharra Gold Operations and Fortnum Gold.

Between 1988 and 2003, Mr Hallam held a range of senior roles with diversified ASX-100 resource company Western Mining Corporation including as Manager of Corporate Planning with responsibility for the company's strategic and business plans for all its business and functional units and as a key member of WMC's defence strategy team.

Mr Hallam holds a Master of Science (Mineral Economics) from the WA School of Mines (Curtin University), a Bachelor of Applied Science (Metallurgy) from Ballarat University and a Graduate Diploma in Business (Curtin University).

Mr Hallam succeeds Peter Cash, who stepped down as CEO following four-and-half years of dedicated service to Millennium. The Company would like to sincerely thank Peter for his outstanding contribution.

ENDS

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Competent Persons Statement – Exploration Results

The information relating to exploration results from the Nullagine project is extracted from the announcements titled:

1. *First high-grade ore exposed at Bartons following outstanding progress with underground development dated 13 August 2018;*
2. *Millennium makes key exploration breakthrough at Nullagine dated 27 August 2018;*
3. *Outstanding new high-grade results of up to 54.9 g/t transform outlook for Golden Eagle dated 10 September 2018;*
4. *Millennium achieves 100,000ozpa production run-rate at Nullagine ahead of schedule dated 11 September 2018;*
5. *New high-grade intercepts of up to 42.35g/t upgrade discovery potential at Golden Eagle SW dated 17 September 2018;*

all of which are available to view at www.millenniumminerals.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 announcements relating to the drill results and that all material assumptions and technical parameters underpinning the drill results 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 as presented here have not been materially modified from the original market announcement.

Qualifying Statement

This report may include forward-looking statements. These forward-looking statements are based on Millennium's expectations and beliefs concerning future events. Forward-looking statements are necessarily subject to risks, uncertainties and other factors, many of which are outside the control of Millennium, which could cause actual results to differ materially from such statements. Millennium makes no undertaking to subsequently update or revise the forward-looking statements made in this report or to reflect the circumstances or events after the date of this report.

Notes

- ¹ *All-In Sustaining Cost (AISC) per ounce sold represents: C1 Cash Costs, corporate administration costs related to operations, royalties, sustaining capital, development capital, tenement management of active mining tenements, rehabilitation and reclamation accretion, employee share payments provided to operational staff and production stripping adjustments and amortisation. It does not include expansionary development costs, including the sulphide plant expansion study, corporate development costs, tenement acquisition expenditure, or exploration and evaluation expenditure of new deposits and projects.*
- ² *C1 cash cost represents the costs for mining, processing, administration, by-product credits, royalties and accounting adjustments for movements in stockpiles, gold in circuit and waste stripping. It does not include capital expenditure, exploration, tenement management and corporate administration costs.*

Unless otherwise denoted all currency units are Australian dollars.

All data provided is unaudited.