



# Resolute



## **Syama - Mali, West Africa**

### **Syama is a long-life flagship project with robust economics.**

Located in the south of Mali, West Africa, the mine is approximately 30kms from the Côte d'Ivoire border and 300km southeast of the capital Bamako.

Syama benefits from two fully operational parallel sulphide and oxide processing plants with site production capable of more than 250,000oz/pa.

Ore for the 2.1Mtpa sulphide circuit is currently sourced from the Syama open pit stockpiles while the A21 satellite pit supplies oxide ore to the newly constructed 1.3Mtpa oxide circuit.

Resolute's positive Definitive Feasibility Study completed in June 2016 has extended mine life to at least 2028 and led to immediate development of the Syama UG with first development ore expected to be delivered by December 2018.



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### **Syama UG Highlights (DFS June 2016):**

- Life of Mine All-In Sustaining-Costs of US\$881 per ounce and strong Life of Mine margins
- Initial operating life of more than 12 years
- Total Syama Gold Mine production will grow to 250,000 ounces per annum
- Pre-production capital of US\$95 million which will be fully funded from current balance sheet and future operating cash flows
- Processing innovation will continue to enhance project economics
- Underground development to commence immediately with first ore expected to be delivered to the mill in December 2018 which allows for continuous production from Syama to be maintained
- Resolute's successful Mt Wright underground experience to deliver efficiency and productivity gains at Syama underground mine
- Substantial upside with opportunities to extend mine life, increase mining recovery and further reduce All-In-Sustaining Costs

DOWNLOAD THE SYAMA DFS ANNOUNCEMENT

([https://www.rml.com.au/uploads/7/2/0/8/72081691/160801-rsg-asx-syama\\_drilling\\_results\\_confirm\\_major\\_extension.pdf](https://www.rml.com.au/uploads/7/2/0/8/72081691/160801-rsg-asx-syama_drilling_results_confirm_major_extension.pdf))

## Key Statistics

**Commissioned:** 2009

**Mine life:** Beyond 2028

**Total Reserves:** 2.9Moz

**Total Resources:** 7.5Moz



## Syama Gold Mine

### Overview

**7.5Moz** Total Resource\*

**2.9Moz** Total Reserve

**12 Year**  
Underground Mine Life

**US\$881/oz**  
LOM AISC - Underground

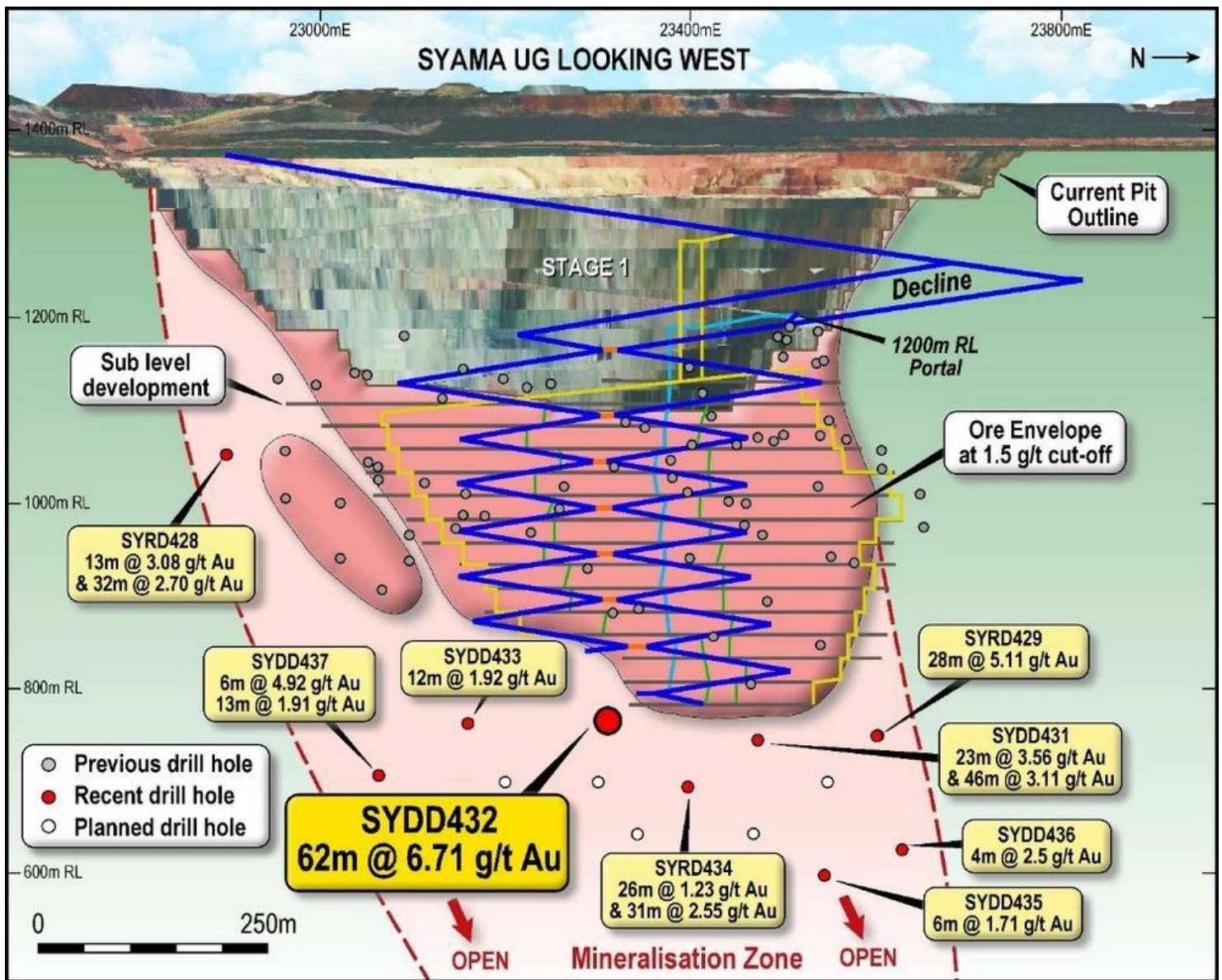
### Production Rate

**Sulphide**  
**2.4Mtpa**  
(170kozpa)

**Oxide**  
**1.5Mtpa**  
(70kozpa)

\* Includes upgraded Syama U/G resource – see ASX Ann. 23 October 2017

It was determined that Sub Level Caving (SLC) represented the optimal mining method to develop the extensive sulphide orebody beneath the open pit – providing controlled, high-productivity ore delivery from the deposit. Furthermore, the Company’s operating history at the owner-operated SLC at Mt Wright has provided significant learnings and in-house expertise.

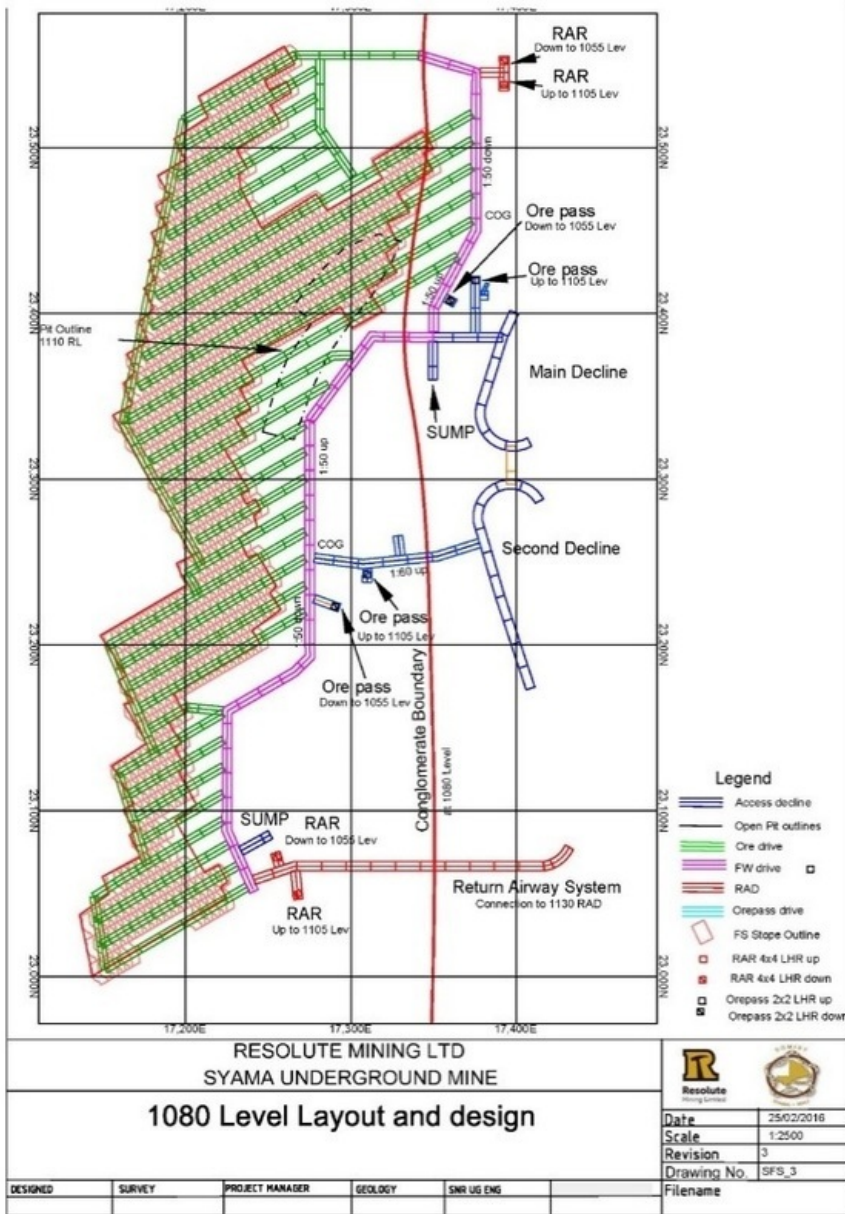


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### Advantages of SLC at Syama:

- SLC is highly mechanized, well understood and used in many locations around the world and is able to deliver the required production rate to replace open pit production at a comparable cost.
- The orebody geometry and geotechnical conditions are suited to SLC.
- The subsidence zone will not affect critical infrastructure.
- Geotechnical conditions are unfavorable for more traditional open stopping methods, which would deliver lower production rates and higher costs.
- Resolute successfully uses a similar method at its Mt Wright underground mine at Ravenswood.
- It allows the Company to fully exploit the Resource without leaving a crown pillar below the open pit.

SLC therefore suits the large Syama orebody footprint and provides sufficient productivity to replace the open pit operation without significant modification to the process plant.



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diagram2\_orig.jpg)  
Mining level layout

A key determinant of successful caving is achieving routine and predictable production from stoping. Therefore, stope design was used as the major consideration for the level layout with the design also addressing ventilation, drainage, geotechnical considerations, cost and timing. When the infrastructure requirements were established the level was then linked to the decline access design.

With a targeted ore production rate of 2.4Mtpa plus development waste, the mine haulage system was an important consideration for the project and crucial for sustaining projected cash flows.

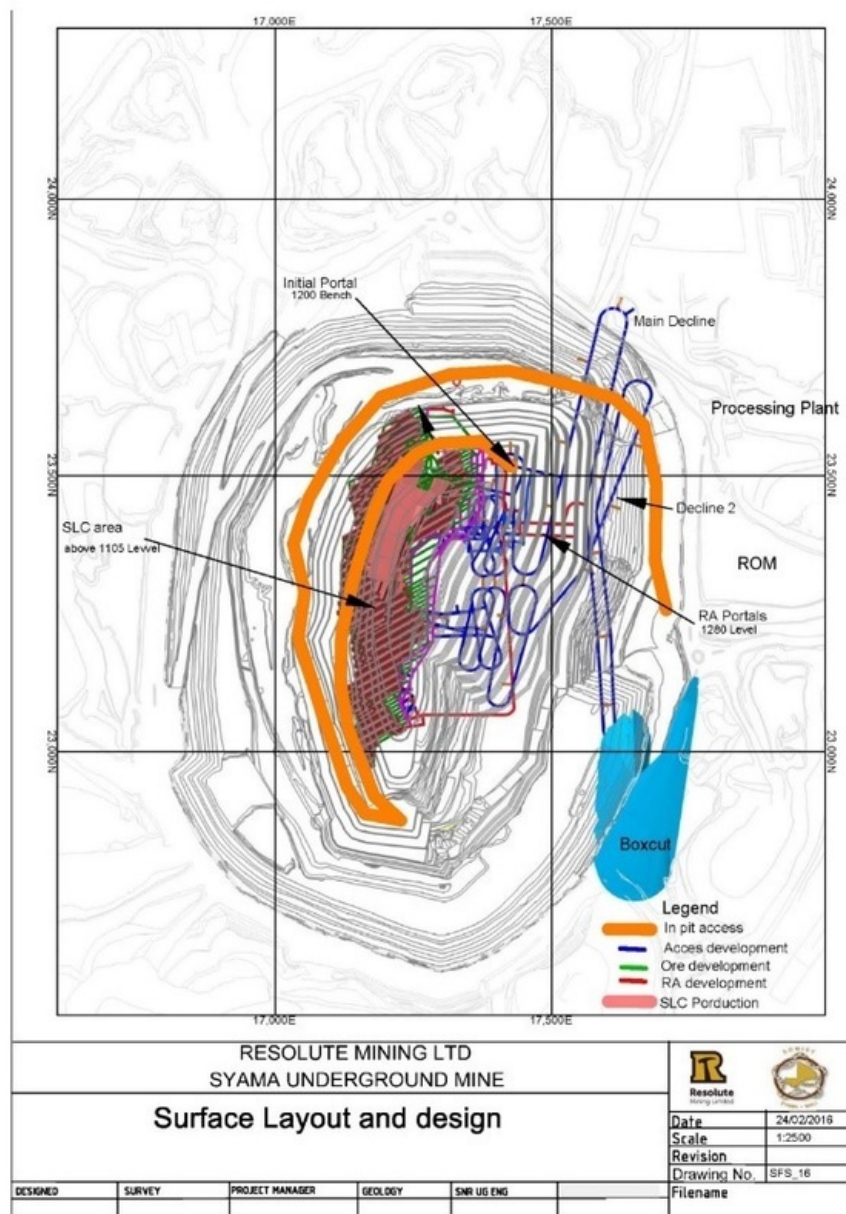
A twin decline truck option and internal ore passes will be used for more efficient loading.

The incorporation of a second decline provides distinct advantages for efficient trucking with separate traffic directions to minimise congestion, allowing improved spatial layout for ore passes, better ventilation and a second means of egress.

While the DFS has been based on the twin decline truck option, there is sufficient flexibility in the design and timing to more comprehensively assess the option to include conveyor haulage as an alternative to trucks. The twin access also allows Resolute to consider expansions in mine production rates in the future.

Some extensive pods of mineralization with grades over 2.5 grams per tonne were identified external to the SLC footprint. Much of this material was considered amenable to long hole open stoping, therefore an additional 1.5 million tonnes has been included in the mining schedule.

The proposed access locations for the fresh air and return airway portals inside the pit have provided an improved timing advantage. In particular, there are significant cost savings associated with portal airway connections in contrast with shafts external to the pit, which must be advanced through the surface oxide profile.



Surface projection of mining layout

## Innovation and Future Technology Application

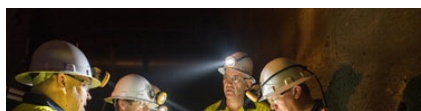
The Syama UG development has been designed to ensure it is able to accommodate the best available technology for mining, haulage and processing.

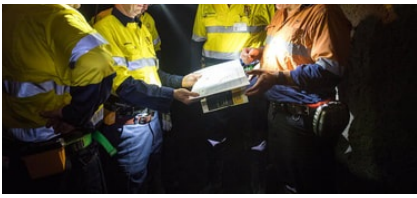
Underground development costs include provision for a high capacity fibre optic system, which will be installed throughout the mine. This will allow the operation to install sophisticated mobile equipment monitoring and guidance systems, which will in turn improve safety and productivity in the mine. The design of underground loading points and ore passes has also been influenced by current trends in mobile equipment operation and automation technology. As these technologies develop their use will be progressively incorporated into the operation of the mine.

The twin decline design has been specifically adopted to ensure future flexibility and allow Resolute to critically examine alternative haulage technologies. In particular conveyer haulage offers potential for improved productivity and lower operating costs.

## Potential Upside

The deposit at Syama remains open at depth and the Company will maintain an active drilling program with the aim of extending Resources and Reserves.





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**Resolute**

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(<http://www.resolute.com.au/Resolute-Company-beta/864697/>)

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