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ESCUOLA TÉCNICA SUPERIOR
DE INGENIEROS DE MINAS Y ENERGÍA

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*BLASTING
SOLUTIONS IN*

GOLD Mining

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Although gold ore has been classified as a commodity according to the Wall Street Journal, it continues to play an essential role as the standard of most value in times of crisis. History has shown that gold keeps its value even in times of upheaval. Thanks to its beauty and its economic value, gold has seduced mankind since ancient times. It was first used as a currency in the 18th century, and became a reference in international monetary transactions in the 19th century. 50% of world production of this ore nowadays is for the jewellery industry, 40% for reserves and investment, and the remaining 10% for industrial uses

*Source: World Gold Council

April 2017.

Images: MAXAM & Thinkstock.

Goukoto God Mine (Mali).

OPEN-PIT GOLD MINING

Gold mining can be carried out through different methods, which depend on factors such as the depth of the deposit or and geological and environmental conditions.

The most widely used method of open-pit mining is the multiple bench technique. This is an exploitation process which consists of excavating or cutting into the surface of the land in order to extract the ore with minimum environmental impact. Selecting the design parameters and programming the ore extraction plan are complex engineering decisions of great economic importance. Planning an open-pit mine is therefore an exercise in economy.

MAXAM AND GOLD MINING

Since gold concentrations in mineral deposits are generally very low, controlling these areas with exploitable laws is extremely important. In this context, blasting plays a fundamental role in controlling dilution. Blasting must be designed with a degree of precision which allows the rock to be fragmented with hardly any movement, whilst also separating the sterile material areas from those which contain ore concentrations.

Specific dilution studies are essential in order to quantify and model movement of the material, envisage possible alternatives in terms of energy, time and detonation sequence, and minimize or eliminate possible mixes of ore and sterile material.

Blasting solutions which include dilution control as a value proposal have a very important economic impact on the exploitation of a mine.



Gold nugget



MAXAM flexi-trucks in the Polyus gold mine in Russia.

They are the means to reduce gold ore extraction costs and increase marketability of the ore per tonne exploited.

Given these challenges, the value propositions developed by MAXAM include:

- Innovative safety policies.
- Reliable supply
- Minimal movement.
- Control of ore dilution
- Control of fragmentation.
- Environmental control.
- Reduced Total Cost of Ownership (TCO).

The combination of all these factors is key to the success of gold mining operations.

Be sure to contact MAXAM for further information on value proposals and blasting solutions for gold mining.