GOLD FENIX ECOLOGICAL PLANT: SUSTAINABLE EXTRACTION OF GOLD AND RARE EARTHS







GOLD FENIX: THE FUTURE OF SUSTAINABLE GOLD MINING

Gold Fenix is an environmentally friendly gold mining plant, with a focus on primary mining in rocky terrain and processing of mining waste. The system aims to combine the recovery of valuable resources with environmentally responsible practices, without the use of toxic chemicals.





TECHNOLOGY AND PROCESS

The plant uses a combination of mechanical technologies to optimize gold extraction from different materials, including virgin rocks and tailings. The process involves the following main steps:



• Hammer mills reduce the size of raw ore.



A dredge can be used to extract and transport large volumes of material for processing.



Impact mills refine the material to micrometric sizes, breaking the mineralized crystals by impact, taking advantage of their internal weaknesses.







A unique feature is the ability to adjust the centrifugal force according to the grain size of the material, allowing for optimized recovery, including of microfine gold. The centrifuges automatically discharge the concentrate into a secure vault in the event of a shutdown.



Flash furnaces are used for extraction and final metallization, without the use of mercury or other toxic chemicals.





CAPACITY AND OPERATION

The plant has a processing capacity of 25 tons per hour and operates 20 hours a day, totaling 500 tons per shift. (Note: A mention of 50 t/h also exists, but 25 t/h is more consistent with the components described.)

It can process materials of varying grades; a standard estimate of 2 grams/tonne would result in about 1 kg of gold per day.

It is a mobile plant, electronically controlled by a single operator.

It uses a closed water circuit, consuming little.

hydrogen.



Energy is supplied by a dedicated H2Verde system, which generates electricity from green





Primary gold mining in rocky terrain.

Efficient processing of mining tailings, which often contain gold not recovered by previous methods. The focus is on large tailings, which are considered to be richer.





BENEFITS

Although the main focus of the Gold Fenix Ecological Plant is gold extraction, the precious metals recovery system can also be applied to other metals, such as silver, platinum, palladium and copper. In addition, the business plan points out the selection of rare earths as part of the business, although it does not detail whether the processing of these is done by the same plant.

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Ecological

Eliminates the use of mercury, cyanide and other harmful chemicals, making extraction clean and safe. Helps reduce environmental liabilities.

Efficient

High gold processing and recovery capacity, even in tailings and with microfine gold, thanks to adjustable impact and centrifugation grinding technology.

Economic

Transforms waste (environmental liabilities) into resources. The business plan estimates a quick return on investment (Payback) of 12 months after installation.

Operational

Mobile plant, low water consumption, dedicated clean energy and simplified operation.





SUSTAINABILITY AND SOCIAL RESPONSIBILITY

Sustainability and Social Responsibility in business means operating in a way that meets the needs of the present without compromising the ability of future generations to meet their own needs.





The Gold Fenix plant operates without using toxic chemicals such as mercury or cyanide, promoting safe mining and minimizing direct environmental impact.

Green Energy

It exclusively uses energy generated by the H2Verde system from green hydrogen, drastically reducing the carbon footprint of the operation.

Resource Conservation

The system works with a closed water circuit, resulting in low consumption, and is capable of processing mine waste, transforming an environmental liability into a resource and making use of material that has already been extracted.



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Clean Extraction



FUTURE PROJECTS AND EXPANSION

Gold Fenix Ecological Plant, its mobile design and adaptable technology pave the way for future expansion. Operational success and the expected rapid financial return could position Gold Fenix as a replicable model for new locations or for processing different types of ores, including other precious metals and potentially rare earths.





Success validates model for replication.





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