

# MINING - HCN STRIPPING



## TWO STAGE TREATMENT SYSTEM

A large gold mine in Mexico, using the cyanide process, sought a solution to reduce their wastewater production and minimize treatment costs as the processed liquid volume requiring treatment was relatively large.

There were many environmental hazards associated with this extraction method, largely due to the high toxicity of the cyanide compounds involved. As a consequence, most countries now have strict environmental regulations for cyanide in plant discharges.

This cyanide process uses a solution of HCN to produce a gold cyanide solution. Later processing steps allow the purified gold to be precipitated.

This process produces large volumes of water contaminated with HCN which must be removed prior to discharging into the environment or to other recycling steps in the mining process.

Verantis was able to provide the ideal solution by designing a two-stage treatment system containing a packed tower stripping column, optimized for high efficiency removal of HCN from the process wastewater, and a packed tower scrubber to remove HCN from the stripper off-gas to concentrate it in a high pH solution. This approach allowed the wastewater volume to be reduced by over 95%.

## OVERVIEW

Project included supply and design of absorption and desorption towers for processing waste leachate to reduce waste water volume.



## EQUIPMENT

System included a two stage treatment system containing a packed tower stripping column that was optimized for high efficiency removal of HCN.



## AUXILIARY EQUIPMENT

In addition to the towers, Verantis also provided all the mass transfer internals and entrainment separators.

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## FEATURES

- Solutions provided for a large gold mine in Mexico.
- Designed a solution to reduce wastewater production and minimize treatments costs of a large volume of processed liquid. The cyanide process produces large volumes of HCN contaminated water that must be removed.
- Verantis design/build services provided an ideal solution with a two stage treatment system including a packed tower stripping column which was optimized for high efficiency removal of HCN. Wastewater volume was reduced by over 95%.
- Verantis was able to provide a solution for the very strict regulations that revolve around cyanide in plant discharges as this process is highly toxic with many environmental hazards.

For more information and resources,  
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## TECHNICAL CAPABILITIES

All parts of the system were designed in-house. System components were sourced through a world-wide network of fabricators and suppliers.



## DESIGN CAPABILITIES

Systems can be designed to accommodate a variety of requirements including NFPA, API, ASME, and regulatory codes such as Chinese GB, European EN and US EPA standards.



## TURNKEY SOLUTIONS

Verantis is able to provide Turnkey Solutions globally for most of your incineration and pollution control needs. For more information on any of our production or solutions, please visit us at [www.verantis.com](http://www.verantis.com)

