GENMINE

BESPOKE MEMBRANE CHEMISTRY FOR THE MINING INDUSTRY

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Case Study

Mining and Metals: Environmental Discharge at a Ghanaian Gold Mine

Project specifics

- Plant size: 24,000 m^3/d (2x500 m^3/hr)
- Feed water: Brackish water
- Recovery: 85 %
- Membranes: DOW
- Process: UF ➡ RO

The challenge

A large international mining company needed to reduce the nitrate, sulphate and ammonia content of the water discharged from a gold mine in Ghana to meet stringent regulations.

The Genesys solution

The company engaged us to conduct pilot plant testing, to work out the best approach. We initially recommended dosing with specialist antiscalant Genesys CAS. The mine is now trialling the newly developed GenMine AS26 anti-scalant which, can be used in acidic membrane feed waters to control calcium sulphate scale, without the need for expensive pH neutralisation.

Genesys International pilot plant

Innovation

We use our robust knowledge of membrane fouling to design client-specific antiscalant and cleaning regimes, based on our innovative products and technologies.

Our range of antiscalants help to maximise recovery and our GenMINE™ cleaning range helps to reduce cleaning duration and frequency. Furthermore, our innovative Genairclean™ method uses dual generation air-bubble technology to improve membrane cleaning efficiency.

Forensic analysis of membranes from operational plants, led by the team at our recognised centre of excellence in Madrid, enable us to provide mining companies with tailored solutions to optimise plant performance.

Sustainability

We have a verified track record of treating challenging, variable effluent mine waters, ensuring that mining operators protect the environment.

In addition to cleaning water for reuse in the mines, where possible, we enable them to supply potable water to their own camps and even surrounding villages.

The results have included

- ✔ Cleaner water
- ✔ Inhibited scaling
- ✔ Reduced operational downtime
- ✔ Improved plant availability

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