



case study

Location:

Kolwezi, Democratic Republic of Congo

Customer:

Kamoa Copper Mine, DRA Global

Industry:

Mining

Final water usage:

Irrigation, toilet flushing and dust suppression

Plant information:

300KLPD, 350KLPD, 850KLPD Steel Tank Wastewater Treatment Plant

Problem

The Kamoa Copper Mine required an effective wastewater management solution to support its sustainable mining practices. Effluent from copper mining operations presents unique challenges, including elevated solids loading, hydrocarbons and fine copper particulates from processing, laundry and washing facilities. These contaminants impact key wastewater treatment parameters such as pH balance, retention times and biological growth, which are critical for the effective reduction of Chemical Oxygen Demand. Additionally, high influx periods during operational peaks, such as shift changes, necessitated a wastewater treatment system capable of handling variable flow rates efficiently.

**Solution**

SewTreat was awarded the contract to design, supply, install and commission three steel tank-configured wastewater treatment plants at the Kamoa Copper Mine. The plants were designed with the following capacities to meet the operational demands of the mine:

- 850 KLPD
- 300 KLPD
- 350 KLPD

To address the specific challenges of copper mine effluent, SewTreat implemented an Integrated Fixed Film Activated Sludge (IFAS) process, which combines Moving Bed Biofilm Reactor (MBBR) and Return Activated Sludge (RAS) technologies. This advanced system was chosen for its ability to:

- Reduce sludge and waste production.
- Handle a wide range of contamination levels, ensuring flexibility for seasonal or varied peak flows.
- Operate efficiently in remote locations where municipal wastewater disposal facilities are unavailable or costly.

Benefits to the customer

- ✓ Regulatory Compliance
- ✓ Optimized Water Management
- ✓ Cost Efficiency
- ✓ Operational Resilience