case study

Location:
Rustenburg, North West

Customer:
Samancor Chrome, Lesedi Mine

Industry:
Mining

Final water usage:
Irrigation, dust suppression and toilet flushing

Plant information:
200KLPD steel tank WWTP

Problem

Lesedi Mine, a chrome mining operation near Rustenburg, South Africa, required an upgraded wastewater treatment facility to replace its outdated system. The existing infrastructure was insufficient to support the mine's planned expansion, which would eventually require a 400kl per day treatment capacity. Additionally, the site experienced variable wastewater flow rates, with peak flows reaching up to five times the average hourly flow. A flexible and cost-effective solution was necessary to ensure efficient wastewater management while accommodating future growth.

Solution

SewTreat designed and installed a modular wastewater treatment system for Lesedi Mine, allowing for a phased expansion from 200kl to 400kl per day as the mine grows. The system integrates the existing 120m^3 sump as a buffer tank to manage peak flow variations efficiently. Using Integrated Fixed Film Activated Sludge (IFAS) technology, the solution combines Moving Bed Biofilm Reactor (MBBR) and Return Activated Sludge (RAS) technology, reducing sludge production, lowering costs, and ensuring high-quality effluent for reuse in irrigation, dust suppression, and toilet flushing. This approach provides cost-effective, scalable, and low-maintenance wastewater management, ensuring regulatory compliance and sustainability.

Benefits to the customer

- ✓ Cost Efficiency and Future Scalability
- ✓ Environmental and Regulatory Compliance
- ✓ Operational Flexibility and Reliability

SEWTREAT
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