

CASE STUDY

KLEERFLO: AUTOMATIC SELF-CLEANING FILTER

FINAL FILTRATION, MINE PROCESS WATER, MINERAL SANDS MINE, BRAND-SE-BAAI



Client: Mineral Sands Mine
Industry: Mining
Region: West Coast, South Africa
Product: KleeFlo (various models)
Installation Date: From 2003, Ongoing

Challenge

- At a Mineral Sands Mine on the West Coast of Southern Africa they use sea water as process water.
- Chlorine helps to eliminate biological fouling of the pipelines (including colonization from mussels).
- Shells and other solids dislodge into the water stream.
- To remove these suspended solids, the mine required efficient, in-line filtration that would deliver an uninterrupted clean water supply to their own processes.
- The filters had to stand up to the tough operating conditions:
 - Chlorinated seawater
 - Marine, coastal environment
 - A range of solids, including hard, sharp edged marine shells, scale and pebbles.

Application

- **Final Filtration / Gland Service Water (GSW).**
- **Final Filtration / Spray nozzle protection.**
- **Final Filtration / WHIMS (Wet High Intensity Magnetic Separation) wash water.**

Solution

- Design of the KleeFlo filter is rooted in the principle of inherent simplicity:

- no rotating parts
- very few moving parts
- no close tolerance elements
- no electric motor
- high quality, durable, stainless steel wedgewire screens.
- KleeFlo filters are designed specifically for tough industrial applications.
- Low maintenance- and running costs.
- Long uninterrupted filter runs, efficient filtration and filtrate in compliance with client acceptance standards.
- Integral processing of oversized particles – so no manual pre-screens required.
- The Mine installed **10 x KleeFlo Automatic Self-Cleaning Filters** at different locations throughout the process plant to remove suspended solids, including:
 - 2 x **KleeFlo** model **CS6E4** filters, 1000µm, 1500m³/h per unit.

Results

- Efficient filtration results in reduced wear and tear on the gland and shaft seals of high-pressure pumps, reducing maintenance costs.
- Efficient filtration protects the WHIMS wash water spray nozzles, reducing down time.