

CASE STUDY

KLEERFLO: AUTOMATIC SELF-CLEANING FILTER

IMPALA PLATINUM MINE - BLOCKED FLOATATION CELL NOZZLES

Client: Impala Platinum Mine
Industry: Mining and Processing
Region: North West Province of South Africa
Product: 1 x Kleerflo Automatic Self-Cleaning Filter

Challenge

- Impala Platinum Mine, a nine-shaft mining complex with concentrating and smelting plants, produces around 800,000 ounces of platinum per year.
- Efficient and sustainable mineral recovery requires effective flotation solutions that reduce downtime and maintenance costs, and enable higher recovery and throughput, which lead to major improvements in operational performance.
- Previously operating without a filtration solution, the spray nozzles on the flotation cells at the Concentrator Plant were continuously becoming blocked, resulting in daily downtime and additional labour costs.

Application

A Kleerflo Automatic Self-Cleaning Filter was installed at the Impala Concentrator Plant in the beginning of 2023.

Solution

- Kleerflo Filters are pressurised, automatic, self-cleaning filters installed in process lines to prevent nozzles from becoming blocked.

- Factors taken into consideration:
 - Kleerflo filters have a unique design that ensures a continuous flow to prevent blockages, resulting in virtually zero downtime.
 - Automatic backwash function requiring no human inputs, no backwash pumps, and no external controls.
 - Low maintenance, robust performance and proven reliability thanks to no rotating parts or close tolerance elements, very few moving parts and no electric motor.
 - A strong, positive backwash action that ensures thorough cleaning of the stainless-steel screens that never need to be replaced.
 - Almost Zero energy consumption.

Results

- By preventing the spray nozzles from becoming blocked, the Kleerflo filtration system at the Concentrator Plant has reduced daily downtime and interruptions to almost zero.
- By eliminating the need for continuously and manually cleaning the nozzles, labour costs have been reduced.
- Thanks to the high in-service time, coupled with low maintenance and low operational costs, substantial cost savings have been achieved and the efficiency of the flotation cells have been optimised.