

CASE STUDY

GRAVIFILTER: SELF-CLEANING GRAVITY SCREEN FILTER

PRIMARY FILTER, RAW RIVER WATER FOR CEMENT FACTORY, DE HOEK



Client: PPC Ltd
Industry: Mineral Processing - Cement Production
Region: Western Cape, South Africa
Product: VA4, 100m³/h, 250µm
Installation Date: 2014

Challenge

- PPC Ltd uses raw river water for plant process water as well as for potable water.
- Suspended solids in the raw water cause damage to high-pressure pumps. The solids also block spray nozzles on the plant and it is an unacceptable component of the potable water.
- The suspended solids in the raw water consist of organic detritus (decomposing leaves, bark fibers), pebbles, grit and sand.
- These types of solids present problems to in-line pressure filters and the solids are best removed by gravity filters (not pressure filters).
- The long distance between the extraction point and the plant makes it necessary that the filter must operate unattended for long periods of time and be self-cleaning.

Application

- Final Filtration / **Protection** of the **high-pressure pump**.
- Final Filtration / **Protection** of **spray nozzles** on the plant.
- **Pre-Filtration** / Removal of suspended solids from the feed to the **potable water** treatment plant.

Solution

- The gentle, unforced filtration action of the GraviFilter is ideally suited to remove soft, organic and fibrous suspended solids from process streams.

- Raw water gravitates through the screen, avoiding the vulnerability of permanent blockage or damage to the screen.
- The unforced filtration process prevents the breaking up of flocculated particles and organic matter.
- Stapling of fibrous suspended solids is greatly reduced.
- The integral, self-cleaning mechanism ensures long filtration runs without the need for manual cleaning of the screens.
- The client installed a **GraviFilter** model **VA4** with integral, self-cleaning mechanism. 100m³/h. 250µm screens.

Results

- Reduction in maintenance costs and downtime on the high-pressure pump.
- Reduction in costs associated with blocked nozzles on the plant.
- Improvement in the quality of water presented to the potable water treatment plant.

Testimonial

"We are very satisfied with the results of installing this GraviFilter. There has been a significant reduction in the maintenance costs on the high-pressure pump. The filter is self-cleaning with very low maintenance. It is durable and operates unattended for extended periods."

Pieter van den Heever –
PPC Ltd – De Hoek Factory

