SUPERIOR FILTRATION

CASE STUDY

GRAVIFILTER: SELF-CLEANING NON-PRESSURISED SCREEN FILTER

SEWAGE WASTEWATER TREATMENT PLANT – BORCHERD'S QUARRY

Client:	Zana Manzi Services (Pty) Ltd. for City of Cape Town
Industry:	Sewage Wastewater
Region:	Western Cape, South Africa
Product:	GraviFilter – 1 x VA4, 125m³/h
Installation:	2026

Challenge

- At Borcherd's Quarry Wastewater Treatment Plant in Cape Town, in-line pressurised filters protected the spray nozzles on the dewatering presses from blocking.
- The pressurised filter struggled with periodic high solids loads in the clarifier overflow and with the nature of the suspended solids (soft, fibrous, organic). During plant stress, the filter was prone to blockages, requiring frequent maintenance.
- Downtime and equipment failures disrupted operations.
- The City of Cape Town required an effective filter that could handle periodic elevated suspended solids levels and was fit for purpose to process soft, fibrous, and /or organic solids, significantly reducing system downtime and maintenance.

Application

- Final filtration/spray nozzle protection

Solution

- The client initially requested more in-line pressure filters to increase throughput volume and improve water quality.
- After consulting with Superior Filtration sales engineers, we agreed to trial a different technology instead.
- The GraviFilter is a non-pressurised screen filter with an integral self-cleaning mechanism.
- It is designed specifically to process the types of suspended solids encountered at sewage WWTPs (soft, fibrous, organic).
- The gentle, unforced filtration action avoids pushing suspended solids into the mesh openings, avoiding screen blinding.
- Superior Filtration supplied a GraviFilter on a trial basis. If the trial succeeded, the client would retain the filter and pay full price. If it failed, Superior Filtration would take the filter back at no cost to the client.
- Installed 1 x VA4 GraviFilter with an integral, self-cleaning mechanism, with a processing capacity of 125 m³/h at 250µm.

Results

- Following the installation, the client reported a significant decrease in downtime.
- The GraviFilter easily filters dirty water during periods of plant stress and also filters the soft, fibrous, and organic solids effectively. Less downtime to clean/unblock filter screens ensures reliable feed of clean water to the nozzles and other plant applications.
- Significantly reduces day-to-day maintenance and downtime.
- In challenging and variable conditions, the GraviFilter plays a critical role in supplying the plant with clean process water.

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Client experience

"The process plant is performing at an optimal level, with very little downtime due to nozzle blockages. Washed product also exits the plant in a cleaner condition (a direct result of nozzles not becoming blocked or partially blocked)."

"Maintenance has been reduced by at least 80–90%, with no more morning downtime or production delays."

"The client (City of Cape Town) is very pleased with the GraviFilter; they utilise roughly 60% of the daily filtered water in other process areas, with a definite increase in the availability of clean water and less downtime in their process areas. Ultimately, a win-win situation for all parties involved."

Willem Tredoux: Area Manager – Western Cape – WSSA (Pty) Ltd

Please contact us for more information

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