

CASE STUDY

GRAVIFILTER: SELF-CLEANING GRAVITY SCREEN FILTER

PRE-FILTRATION, INDUSTRIAL PROCESS WATER - LAUNDRY, CAPE TOWN



Client: Texcare Laundry
Industry: Industrial Process Water (Textiles) · Re-use of process water / removal of lint
Region: Western Cape, South Africa
Product: VAI, 10m³/h, 200µm
Installation Date: 2017

Challenge

- Texcare is an industrial size laundry and dry-cleaning operation based in the Western Cape (South Africa).
- Regional drought (2015 – 2018) made re-use of process water essential.
- Texcare developed a water treatment plant that includes **prefiltration**, DAF, final filtration and membrane separation (UF / NF) stages.
- Lint is a significant component of the suspended solids in the process water. It interferes directly with the efficiency of the membrane separation processes and will debilitate the process if not removed.
- **Lint** cannot be removed efficiently with pressure filters and it blocks manual gravity screen filters within minutes.
- A self-cleaning gravity (non-pressurized) screen filter was required that could remove soft, fibrous suspended solids.

Application

- **Pre-Filtration** / To reduce suspended solids load (mainly **lint**) in process water in preparation for downstream separation processes (DAF, UF and NF).

Solution

- Texcare installed a **GraviFilter** model **VAI** with integral, self-cleaning mechanism. 10m³/h. 200µm screens.
- The GraviFilter is an essential component within the larger treatment process.
- Dirty water from the washing machines is delivered to the GraviFilter.
- Larger solids and lint is filtered out. Lint will blind a manual gravity screen filter very quickly, but the integral, continuous self-cleaning mechanism of the GraviFilter ensures uninterrupted filtration for extended periods of time.
- Filtrate from the GraviFilter is processed further (DAF and sand filters) before the UF / NF separation processes take place.

Results

- The integral, continuous self-cleaning mechanism of the GraviFilter ensures intervention free filtration for long periods of time.
- Improvement in the quality of water supplied to downstream treatment processes.
- Reduction in maintenance costs and downtime on the UF/NF Membranes.