

CASE STUDY

GRAVIFILTER: SELF-CLEANING GRAVITY SCREEN FILTER

PRIMARY FILTER, FINAL TREATED EFFLUENT, WASTEWATER TREATMENT PLANT

Client: Nelson Mandela Bay Municipality, Kelvin Jones Wastewater Treatment Works
Industry: Sewage Wastewater
Region: Eastern Cape, South Africa
Product: VA4, 125m³/h, 250µm
Installation Date: 2021

Challenge

- At Kelvin Jones Wastewater Treatment Works in Uitenhage, final treated effluent (clarifier overflow) is re-used.
- Applications include spray water, irrigation water for agriculture and recreational facilities and process water for industrial clients
- The clarifier overflow contains suspended solids that can block downstream spray nozzles or that are in excess of industrial/agricultural client acceptance standards
- A travelling bridge sand filter provided tertiary filtration
- The sand filter fell into early disuse and was bypassed permanently
- The result was tertiary effluent that did not comply with client acceptance standards leading to a loss in revenue
- Nelson Mandela Bay Municipality required efficient filtration that would deliver compliant, uninterrupted water supply to their customers
- Maintenance and downtime needed to be at a minimum

Application

- **Final Filtration / Spray nozzle protection**
- **Final Filtration / Industrial re-use**

Solution

- Perform on-site diagnostics to determine the needs at the plant
- Provide a solution that is fit for purpose
- Move from filtering “as fine as possible” to filtering “at the appropriate level”
- Provide filtration that is suited to the removal of soft, organic and fibrous solids from process streams
- The gentle, unforced filtration action of the GraviFilter is ideally suited to this application, preventing the break up of flocculated particles and organic matter
- Water gravitates through the screen, avoiding the vulnerability of permanent blockage or damage to the screen.
- Stapling of fibrous suspended solids is greatly reduced
- The integral, continuous self-cleaning mechanism of the GraviFilter ensures uninterrupted filtration for extended periods of time
- The client installed a **GraviFilter** model **VA4** with integral, self-cleaning mechanism. 125m³/h. 250µm screens.

Results

- Travelling bridge sand filter permanently eliminated
- Tertiary effluent that complies with client acceptance standards
- Minimal maintenance
- Downtime approximating zero
- Regeneration of the revenue stream