

CASE STUDY

PROJECT EFFLUENT FILTRATION FOR ONSITE REUSE

PRODUCT Cloth Media Filter (CMF)

INDUSTRY Municipal

LOCATION Albany, Western Australia



BACKGROUND

A regional wastewater treatment plant was suffering problems with key equipment in their process train. Equipment was either operating inefficiently or was regularly out of service, due to the variability in the quality of onsite washwater. Treated effluent from the plant was discharged into a pond, then pumped into two storage tanks, before being reused for site reticulation and washwater for equipment. Spray nozzles on the inlet screens and on the sludge dewatering equipment were blocking frequently due to solids in the washwater, causing equipment downtime and impacting overall plant operation.

The water authority decided to install a filtration system to treat pond effluent before it is stored for reuse. The filtration system had to meet the site's tight hydraulic and footprint constraints and installation required minimum interruption to normal operations. MAK Water was selected to provide a packaged mechanical Cloth Media Filter (CMF) complete with standalone control system.

The CMF was installed upstream of the reuse storage tanks, allowing filtered effluent to gravitate from the CMF into the tanks. It receives feed water from the existing pond feed pump without modifications.. Since installation of the CMF, the site has not experienced any spray nozzle blockages or associated equipment downtime.

SOLUTION

Packaged drum-type Cloth Media Filter (CMF)

DESIGN SPECIFICATIONS

- Packaged CMF drum filter with:
 - 30 m³/h treatment capacity
 - 6 m² filtration area
 - Microfibre 5µm nominal pore size, 4-5mm thick pile cloth media
 - 316 stainless steel carpentry
- Treating pond effluent with highly variable solids up to 100mg/L including high algal solids content
- Low headloss filtration allows for installation without modification to upstream and downstream equipment
- High recovery with low backwash losses, using onboard automatic backwash system

RESULTS AND BENEFITS

- **Pre-assembled.** Equipment designed and manufactured off site minimising site installation works
- **Compliance** Consistently achieves filtered effluent quality 5-10mgTSS/L allowing for effective onsite reuse
- **Low operating costs** Very low power consumption <4.6kWh/d, and minimal operator input and maintenance requirements
- **Minimal disruption.** Straightforward installation allowed minimal intrusion on normal operation of the main plant

