

SELF-CLEANING INTAKE SCREENS

AWMA CYLINDER SCREENS WERE CUSTOM-ENGINEERED FOR WATERCARE'S WAIKATO 50 PROJECT



Watercare's Waikato 50 Project was an integral part of the Auckland region's 'drought response initiative and water resilience plan'.

Raw water is drawn from the Waikato River via a purpose built floating pump station.

The Pump Station Intakes are fitted with AWMA Fish and Debris Screens featuring specifically sized wedge-wire and automated internal and external brushes to maintain self-cleaning functionality.

This system allows a safer, more fish-friendly and effective means of delivering screened water to the new Water Treatment Plant, even during times of exceptionally challenging river turbidity.

The design process for the bespoke intake screens was focused on:

- delivering the required flow rate
- meeting the specified 1.5mm wedge wire aperture
- achieving a through screen (slot) velocity of 0.15m/s or less across the entire screen surface
- construction from stainless steel materials for longevity
- maintaining a clean screen surface to accommodate expected river weed and debris conditions
- programmable screen cleaning intervals ensuring uninterrupted flows
- low operating and maintenance costs

The original intake screens require regular, underwater maintenance, to clean the screens from algae build-up, an inconvenient and costly process.

The new intake screen's self-cleaning system utilises automated, internal and external brushes to successfully keep the intake screens clear. This enhances the safety of the installation, decreases maintenance frequencies and reduces the need to put divers into the water.

The unique self-cleaning intake screens provide fine filtration with low approach velocity and even flow distribution, to ensure minimal impingement and entrapment of particles onto the screen.

This promotes clean screens, uninterrupted flow, and the protection of aquatic flora and fauna.

The specified screens are compliant with New Zealand's 'Fish Screening: Good practice guidelines' for fish exclusion.



Internal Brush System



External Brush System