

## WTP FILTER INLET PENSTOCKS

Queensland's Mt Crosby Water Treatment Plant treats 60% of the water servicing the greater Brisbane region. The plant processes water from the adjacent Brisbane River. Mt Crosby Water Treatment plant consists of; Mt Crosby West Bank WTP and Mt Crosby East Bank WTP. The East Bank WTP is the largest treatment plant owned and operated by Seqwater. The plant has 20 sand filters. Seqwater required 12 filter inlet gates to be replaced as they had reached the end of their useful life. These were the original inlet gates installed from 1945 and were leaking significantly. The specific requirement for this project was that the new penstocks had to be supplied without any leakage. Seqwater will use the new penstocks as a positive isolation for their upcoming filter upgrade project for which a completely dry filter cell is required.

Photo courtesy of Seqwater

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# GENERALLY SPEAKING

Over the last 12 months AWMA has been fortunate to experience significant growth.

One of the most rewarding elements of expanding a business, is the growth of the team. AWMA now employ over 50 full-time team members.

When we bring new people into the business, we not only identify skill sets relevant to their position, but also explore how their past experience and training can strengthen the team, add further value to the business and increase customer satisfaction.

In what has been a very tough employment market in recent times, we are very privileged to have added nearly 20 new team members that have many diverse skill sets and vast experience that will support the business and most importantly offer an excellent product and service for our clients.

At AWMA we measure business success by a metric of customer satisfaction. I therefore recognise that the AWMA team is critical to the sustainable success of the business.

Our new team members are well supported by the existing, experienced team and together we look forward to ensuring you are well looked after.

**Brett Kelly**  
Managing Director



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The new inlet penstocks were installed within existing filter boxes, and affixed to existing concrete walls. All equipment supplied was purpose built, suitable for the specified operating conditions and constructed for a minimum design life of 25 years.

Installation of the new filter inlet penstocks required the settled water channel to be isolated and drained, a process that results in a 60% reduction in plant capacity which was considered a high risk activity with the threat of not being able to meet the water demand. Construction was therefore planned for the replacement of all 12 inlet penstocks at the same time. Several installation crews were required, working simultaneously, 24hr /day.

All penstocks were installed within Seqwater's potable water infrastructure. The work site and all equipment in contact with potable water, was to be kept clean and disinfected at all times. Numerous mitigations were in place to avoid contamination of WTP assets and/or treated water during the delivery of this project. All construction and cleaning materials used were not to impact on water quality, required an AS/NZ 4020 certification and was subjected to an audited system of quality control.

The penstocks are downwards-closing AWMA WLF - S - R wedge penstocks manufactured from grade 316 stainless steel. All penstocks were free from visible leaks, delivering a 100% drip tight seal. All welds were pickled and passivated to ASTM A380.

All penstocks have a 780mm square opening, rising spindles and are fitted with electric (open/close) actuators.

The penstocks underwent Factory Acceptance Testing, including hydrostatic and seal performance testing, with a certificate of compliance provided for each gate. Further testing and inspection processes ensured full compliance in regards to sustained penstock quality during sustained operation.



## MODERNISATION PROGRAM FOR MIL EXTENDED

AWMA have successfully delivered 55 water control gates for Murray Irrigation's 'PIIOP Round 3' which substantially increased water efficiencies, enabled ordering flexibility and significantly reduced leakage through infrastructure upgrades. These works included 12 Mulwala Canal sites (28 LayFlats and 20 Undershots), Lawson Syphons (two Undershots), the Edward River Escape (two Bulkhead gates) and the Wakool Canal Offtake (three Undershots).

Progress has now begun on the 2019 Winter Works program, which will see the two companies partner once again to drive water delivery modernisation throughout the Murray Irrigation service area.

AWMA will deliver stainless steel water control infrastructure for an additional six sites along the

iconic Mulwala Canal. The water control gates will include 25 LayFlat gates and 3 Undershot gates.

All gates will be connected to the Murray Irrigation SCADA system to be managed remotely, a capability that has radically changed the way the company can deliver water to its customers.



# SELF-CLEANING DEBRIS SCREENS FOR NZ



AWMA were engaged to supply and deliver three Debris Screens for an irrigation intake project in New Zealand.

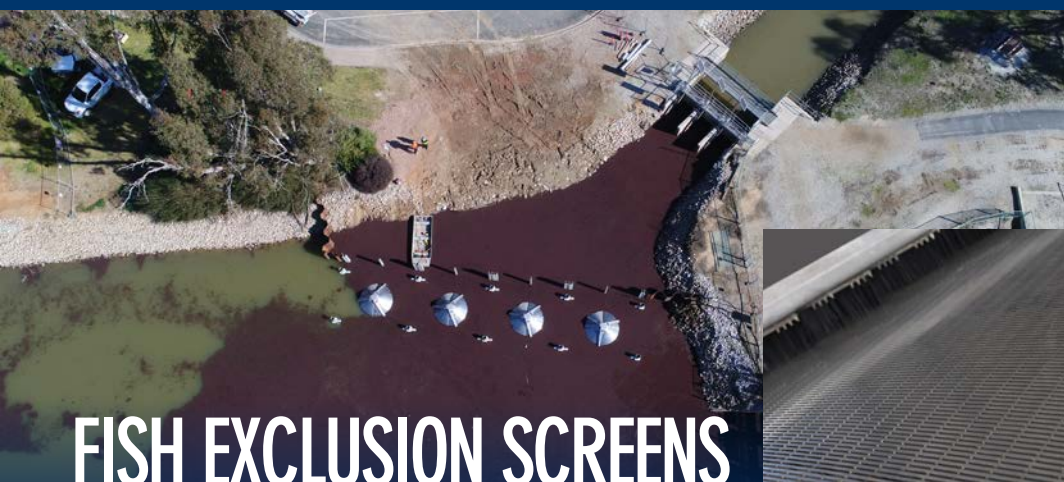
Three screens with 1.7mm slot width were required. Two for an Intake Canal, 2400mm wide by 9200mm long. The other 3200mm wide by 9200mm long, was installed on a Pond Outlet.

The self-cleaning Travelling Screens can be manufactured to virtually any width or length and can be installed at a variety of angles to facilitate debris removal.

The innovative chainless screen design and unique engineered polymer material delivers lower ownership costs, operational efficiencies and reliable performance.

The engineered polymer screens are proven to last up to five times longer than steel. The positive-drive system, requires no chains, is driven by direct sprocket engagement and virtually eliminates uneven wear and mistracking.

Apart from the screen mesh the system contains no submerged moving parts and requires almost no unscheduled maintenance or downtime. The modular design allows repairs to be made on site with reduced operational costs. Screens are designed to remain in the water year round with the capability of operating continuously (24/7/365) when required with reduced risk of biofouling.



## FISH EXCLUSION SCREENS

Each year hundreds of thousands of native fish and larvae are lost from the natural river system as they move into irrigation channels. This loss is having a negative impact on native fish populations.

For the past two years AWMA have been involved in designing fish screens that provide irrigation flows whilst protecting native fish and irrigation infrastructure. The Cohuna Irrigation Diversion Screen is the first of its kind in Australia. Funded by the Victorian Environmental Water Holder (VEWH), the project was successfully delivered in partnership between the North Central Catchment Management Authority (NCCMA) and AWMA.

A sheet pile wall, manifolds and four Cone Screens were installed in front of the Number 3 Channel offtake in Cohuna, northern Victoria. The screens act like large sieves, with slot sizes of 3mm to prevent fish of all life stages from entering the channel.

The Cohuna screens are permanently submerged

below the surface without a requirement for regular maintenance.

Retrieval systems can be designed to allow above water screen maintenance if required.

The screens are self-cleaning with internal and external brushes that are programmed to operate automatically via electric, hydraulic or self-powered systems.

The screens can be designed to deliver required irrigation flows of 1 ML/day to 20,000 ML/day for gravity or pumped diversions at velocities as low as 0.1m/sec.

AWMA are working with many interested parties to provide a range of Fish Exclusion Screens that are fit-for-purpose systems manufactured in Australia; suitable for our conditions, for our fish and for our Irrigators.

# FLOOD BARRIER FOR THE BLOCK

FLOOD FREE



AWMA were engaged by Erilyan Projects Pty Ltd to provide a Concealed Flood Barrier for 'The Block – St Kilda'.

The Concealed Flood Barrier has been designed to automatically deploy ahead of rising flood waters without the need for external power or human intervention.

The barrier is constructed from a structural marine grade aluminium ensuring it is lightweight but strong. The concealed flood barrier design incorporates a narrow barrier footprint combined with heel safe grating over the entire length of the strip drain. The barrier top plate can be covered with any number of flooring materials to ensure the barrier is 'concealed' or 'hidden' within the existing infrastructure.

At a predetermined level a 'High Water Alarm' is triggered which activates an alarm beacon. The provision of the alarm and strobe light alerts anyone in the vicinity, of the impending flood barrier activation.

As water levels continue to rise the barrier 'floats', using the principles of buoyancy. This system ensures automatic deployment 24/7, 365 days a year, even in a blackout.

The Concealed Flood Barrier remains in the deployed state until the surrounding water levels recede below a predetermined level.

AWMA's flood mitigation solutions are manufactured to Australian Standards and in compliance with the ISO9001:2015 quality system. Each flood barrier is designed and manufactured for the specific application and location. With increased flood levels, as specified by associated regulatory bodies, flood barriers are installed to comply with these 1:100 year flood events.



# RECENT PROJECT GALLERY

INNOVATIVE - CUSTOMISED - SUSTAINABLE



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