

# Solving Wastewater Challenges in North East Victoria, Australia with the world's first wastewater pumping system featuring integrated intelligence.

North East Water provides water and wastewater services to 41 localities across North East Victoria, Australia, serving an estimated 122,000 people in an area of approximately 20,000 square kilometres. The region extends from Corryong in the east, along the Murray River to Yarrawonga, then south to Benalla and the alpine towns of Bright, Mount Beauty and Dartmouth.

The municipal sewer pump station at Jordyn Terrace in Wangaratta receives very challenging wastewater containing a large quantity of sanitary items, and other fibrous waste objects, that cause 'ragging' of the pumps. This resulted in pumps having to be lifted and unblocked twice or three times every week.

In July 2016, North East Water became the first water business in Australia to install Xylem's Flygt Concertor system with the aim of resolving this issue and delivering clog-free pumping to Jordyn Terrace wastewater pump station.

Since the installation in July 2016, station managers have reported no blockages or clogging issues at the station, as well as a cleaner station with less visible material in the sump.

## The Challenge

Jordyn Terrace in Wangaratta, North East Victoria, is located within a busy residential area as well as being situated close to a retirement village. The pumping station receives very challenging wastewater including personal sanitary products and towelling that caused the pumps to clog a number of times each week. This frequent clogging required operations and maintenance staff to travel to the site to remove the blockage up to three times a week.

"Regular clogging of the pump station was a serious issue for us," said Mr. Grant Waite, Manager Assets and Operations, North East Water. "As a result, operation and maintenance staff had to leave their daily work schedules to travel to the pump station, unclog the pump and get the station up and running again. In addition to man-power, a maintenance crane truck was needed to perform the pump lifts which meant it had to be taken away from other projects, which added further expense to the repair job."

## New Integrated Clog-free Technology

In July 2016, North East Water agreed to have Flygt Concertor installed at the Jordyn Terrace pump station in order to resolve the chronic clogging experienced at the station.

The team had high hopes in this new system, as it combines Flygt's well-known self-cleaning hydraulics, Adaptive-N, as well as intelligent functionalities like pump cleaning. This function activates when a clogging instance is detected

**Customer:** North East Water, North East Victoria, Australia

**Challenge:** To deliver clog-free pumping at Jordyn Terrace wastewater pumping station in Wangaratta, Victoria. The station receives very challenging wastewater containing a significant amount of toweling and personal hygiene products that caused the station's old pumps to clog on a weekly basis.

**System:** Flygt Concertor™, the world's first wastewater pumping system with integrated intelligence.

### Results:

- Clog-free pumping with no emergency call outs since installation.
- A cleaner pump station with less visible material in the sump.
- Less site visits by maintenance truck and staff - a positive result for North East Water as well as for residents living in the surrounding neighbourhood.



Flygt Concertor™

and starts operating the impeller at different speeds and directions to remove the debris. Its efficiency has been proven in many applications all over the world and, together with other functions that ensure trouble-free pumping, offers a new level of reliability.

After installing the Flygt Concertor system, clogging issues at the Jordyn Terrace wastewater treatment plant were completely eliminated. Mr Waite, continued, "We have found Xylem's Flygt equipment to be of excellent quality so we were happy to trial the new wastewater pumping system. The trial pump we received is still running in our station and so far we haven't had one single case of clogging."

### Peace of Mind in the Long Run

Concertor's short term results in Jordyn Terrace were certainly a relief for the station's operators but their main concern was to find a sustainable solution that can bring peace of mind in the long run.

This is where the system's flexibility played an important role. One of its main hardware elements, the pump impeller, is offered in three different materials, to adapt to different conditions: Hard-Iron, Duplex Stainless Steel and Stainless Steel.

A high chrome alloy, Flygt Hard-Iron™ is five times more wear resistant than duplex stainless steel.\* In accelerated wear tests, Hard-Iron kept working efficiently and showed minimal wear after pumping water with a very high concentration of extremely abrasive particles. This durability and reliability saves customers time and money.

Mr. Waite stated, "The Hard-Iron™ impeller will ensure that the current pump performance is maintained for extended periods. In an application like this, with wastewater that contains a high level of non-biological solids, it is the best option."

### Compact Design and More Functionality

Flygt Concertor is proof that new technologies with sophisticated integrated intelligence for wastewater pumping do not require more components or complexities, rather Concertor is user friendly and simple to install, commission and operate.

"Since Flygt Concertor has been installed we haven't experienced any clogging issues at the station which is a dramatic improvement to how the station's old pumps had been running. The new wastewater pumping system has also had a positive impact on the local community - less visits to the station by large maintenance trucks and personnel. Station managers have also reported that the sump is cleaner as a result," concluded Mr Waite.

*\*Hard-Iron™ is a high-strength alloy containing 25% chromium and 3% carbon. During the solidification process, the chromium and carbon transform into very hard carbides. This makes Hard-Iron™ highly resistant to abrasive wear and erosion-corrosion.*



Installing Xylem's Flygt Concertor™ at Jordyn Terrace pumping station.

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